


1977

# Social Impact Summary : Dickey-Lincoln School Lakes Project / Prepared for the Department of the Army, Corps of Engineers, New England Division

Edward C. Jordan Company, Inc.

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## Repository Citation

Edward C. Jordan Company, Inc., "Social Impact Summary : Dickey-Lincoln School Lakes Project / Prepared for the Department of the Army, Corps of Engineers, New England Division" (1977). *Dickey-Lincoln School Lakes Project*. 71.  
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SOCIAL IMPACT SUMMARY  
DICKY-LINCOLN SCHOOL LAKES PROJECT

MAY 1977

PREPARED FOR THE  
DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
NEW ENGLAND DIVISION  
WALTHAM, MASSACHUSETTS

BY THE  
EDWARD C. JORDAN CO., INC.  
PORTLAND, MAINE

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## SECTION 1 INTRODUCTION

### 1.1 STUDY OBJECTIVES

The Dickey-Lincoln Hydroelectric Dam is a water resources project proposed by the Federal Government (U. S. Army Corps of Engineers). Therefore, in accordance with the National Environmental Policy Act, the Corps of Engineers is required to prepare an environmental impact statement (EIS) on the project.

A federal plan or project such as Dickey-Lincoln should take into account its effect upon man's health, safety, welfare and economic well-being, as well as effects upon the surrounding environment. More importantly, project plans should be evaluated in a "manner calculated to encourage harmony between man and his environment." In other words, project plans or policies which have adverse impacts upon the environment should be reexamined to see if they can be modified. This provides for mitigation of defined impacts.

One objective of this social study, then, is to assess the effects or impacts of preconstruction, construction and operation of the Dickey-Lincoln hydroelectric project upon the people in the St. John Valley, Maine, and New England.

Having determined the effects of the project, a second objective is to discuss mitigation of defined adverse impacts. More specifically, this study will attempt to identify adverse social impacts and deal with how to minimize such impacts if at all possible.

### 1.2 STUDY CONSTRAINTS

The social assessment of the Dickey-Lincoln project has been constrained by the following:

1. Due to the desires of the Corps of Engineers, primary data gathering did not take place in Canada, and inclusion of Canadian interest has been limited to an overview level.
2. A complete evaluation of social effects, as well as other environmental effects, cannot be put into proper perspective unless a complete range of reasonable alternatives to Dickey-Lincoln has been simultaneously examined. As was mentioned earlier, this study considers only one alternative to project implementation-no dam at all.
3. The social assessment of any project should include input from the involved or concerned citizenry. Except for the social questionnaire and other interviews conducted during the course of data gathering, this has not been done at this time.

4. Manpower requirements and length of construction period were provided by the Corps of Engineers. No attempt was made to question their validity.
5. No comprehensive institutional study was undertaken to assess which agencies, federal, state, or local or involved parties could or should be responsible for carrying out suggested impact mitigation programs or procedures. Without previous commitment, in some cases there can be no assurances the mitigation efforts would be enacted.

### 1.3 METHODOLOGY

Profiling the existing social conditions of the project area has been accomplished primarily by use of a questionnaire developed by the Jordan Company and administered in-person to a randomly selected and statistically relevant sample of households in the political subdivisions of Allagash, St. Francis, St. John and Fort Kent<sup>1</sup>. Among other desired results, the questionnaire was designed to determine community activities and participation, household composition, attitudes regarding development, feelings on the future of the area, and understanding of the project. The most recent secondary data available has also been used to aid in describing local culture, community structure and population.

Other sources of information used are found in the bibliographies and noted within paragraphs and footnotes. Briefly, these include numerous sources of secondary data such as the federal census and local development plans, and discussions with experts on the area and the project itself.

Utilizing the results of the questionnaire and experience with similar projects, projections of future conditions were made with the Dickey-Lincoln dam. Future conditions with the dam include those effects which are believed to impact the social/cultural sphere.

### 1.4 DESCRIPTION OF SOCIAL BASELINE CONDITIONS

A discussion of social impacts in a local area from induced change in that area must start with examining the social characteristics of the area before the changes take place. For the Upper St. John River Valley, important characteristics to examine include the source, culture, and size of population groups, the family, household, work, and recreation patterns, and their existing understandings and attitudes about the changes that may be introduced into their communities. This portion of the work focused on the towns of Fort Kent, St. John St. Francis and Allagash due to transportation and service patterns in the area. Additional communities were added for a housing analysis.

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<sup>1</sup>This methodology is covered in detail in Appendix A.

## 1.5 POPULATION OF LOCAL AREA

The population of the Upper St. John Valley is largely of French Canadian and Acadian ancestry in the first three towns and of Scotch/Irish origin in Allagash. Original settlement of the area took place during the middle 1800's.

The population in the Immediate Impact Area peaked in 1940, (as shown in Table 1) after which time many people left the area to work in war-related industries in southern New England. The establishment of these migrant communities of St. John Valley residents elsewhere has afforded a comfortable target area for subsequent out-migrants from the area. Families in the Valley area have traditionally had a large number of children. This has resulted in out-migration, since the constantly expanding work force from the maturing of these children could not be accommodated by the static economic base.

Aroostook County as a whole reached its population peak around 1960, probably reflecting the industrial and food processing expansion occurring at about that time in southern and eastern portions of the county. The county as a whole has a greater dependence on agriculture and industry than the Upper St. John Valley. Estimates for 1973 show a slight population increase in most Immediate Impact Area towns and the county as a whole.

Table 2 shows that, for a similar period of time, the population dynamics in the adjacent parishes in New Brunswick show a very similar pattern. The 1921 or 1931 populations for most parishes were almost as large or larger than the 1971 population. Only in the cases of the larger communities, St. Jacques and Edmundston, have there been substantial population increases. This was the same pattern found on the U. S. side of the Valley. The Canadian population in the Valley appears to be somewhat larger, particularly making Edmundston an important growing center, as is Madawaska on a smaller scale.

Briefly, then, in the years preceding 1970 the St. John Valley had been slowly losing population.

The major components of population change in Aroostook County from 1950 to 1970 include high but declining birth rates, high and increasing outmigration, and decreasing population. Similar dynamics may have occurred in the four towns of the Immediate Impact Area with a somewhat more intermediate migration rate for both decades, but a similar decline in the rate of natural increase.

Important population changes by age in the ten towns in the Service Impact Area include the large declines in the 0-9 age categories, reflecting a generally lowering birth rate between 1960 and 1970. Population increases in the categories around age 20 suggest that the high outmigration in these ages may be decreasing. Increases in the older age groups may indicate greater longevity; it may also suggest that people who left to seek employment during World War II may be returning.

Estimates for 1973 done by the Maine Treasury Department for revenue sharing purposes (and included in Table 1) shown an estimated population in the Immediate Impact Area towns. The populations in these towns continue to fluctuate slightly, but reflect a slight increase as opposed to the decrease which occurred over the previous decade.



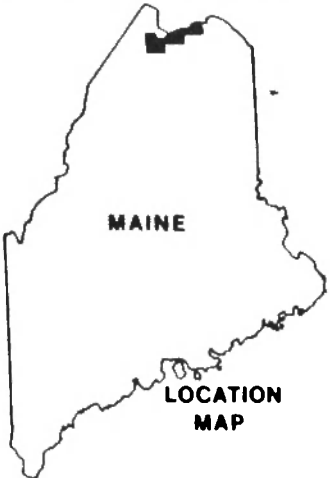
TABLE 1

POPULATION CHANGE IN THE SERVICE IMPACT AREA, 1870 TO 1973

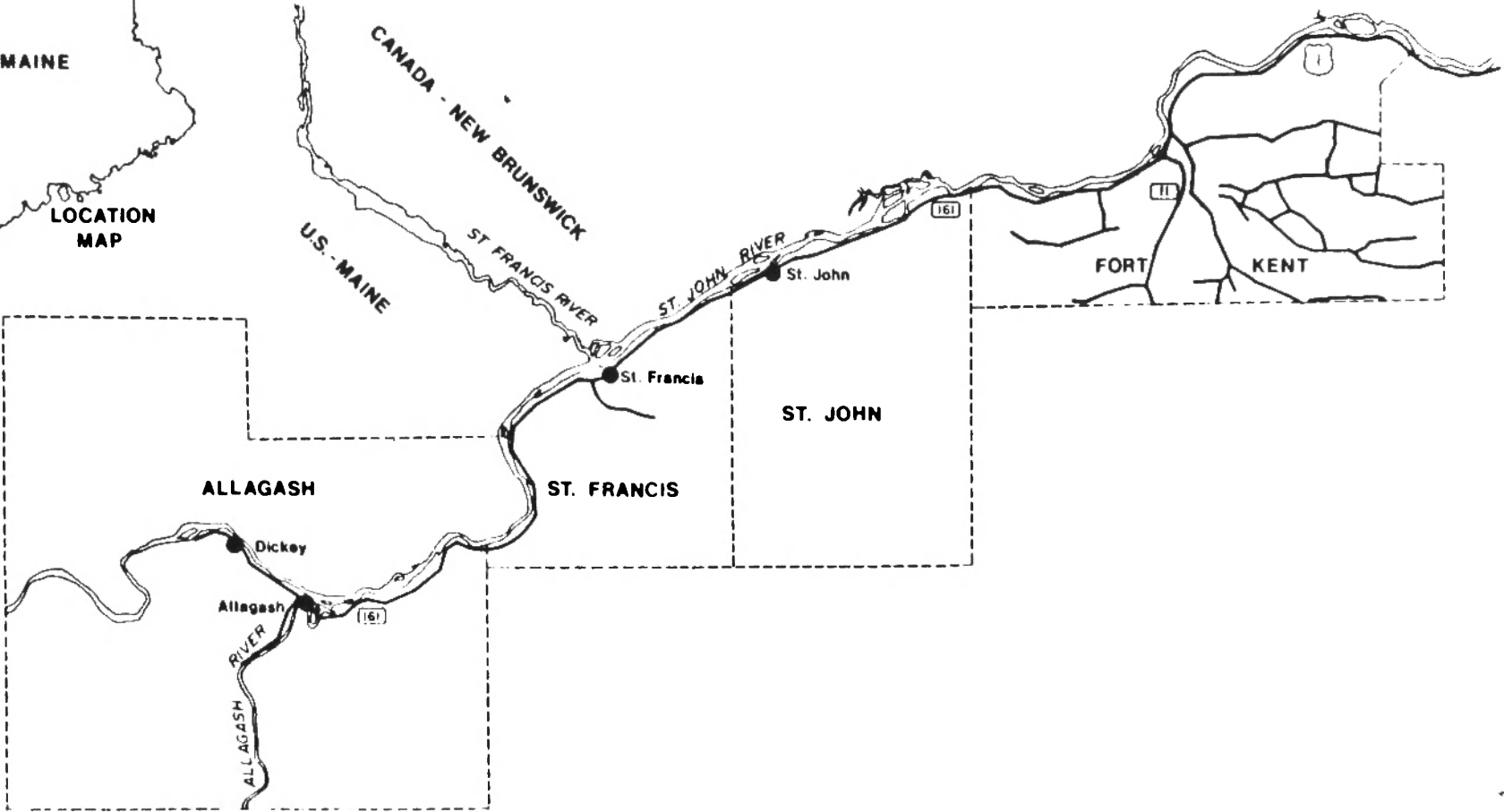
	<u>1870</u>	<u>1900</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1973</u>
Allagash	--	190	644	680	557	456	486
St. Francis	253	568	1,489	1,384	1,058	811	830
St. John	127	371	628	569	407	377	369
Fort Kent	1,034	2,528	5,363	5,343	4,671	4,575	4,702
Frenchville	1,851	1,316	1,566	1,528	1,421	1,375	1,252
New Canada	83	419	633	444	288	300	286
St. Agatha	--	1,396	1,874	1,512	1,137	868	890
Madawaska	1,041	1,698	4,477	4,900	5,507	5,585	5,897
Wallagrass	297	784	1,123	1,035	818	617	615
Eagle Lake	<u>143</u>	<u>406</u>	<u>1,891</u>	<u>1,516</u>	<u>1,138</u>	<u>908</u>	<u>912</u>
	4,829	9,676	19,688	18,911	17,092	15,872	16,339
Total Aroostook County	29,609	60,744	94,436	96,039	106,064	94,078	96,169

Source: Aroostook County Statistics. Cooperative Extension Service. University of Maine ARE 229  
Department of Treasury, General Revenue Sharing Data Element Listing for July 1, 1973.

# SOCIO-ECONOMIC ASSESSMENT DICKEY-LINCOLN PROJECT



LOCATION  
MAP



SCALE (MILES)



IMMEDIATE IMPACT AREA



TABLE 2

POPULATION CHANGE IN THE NEW BRUNSWICK, CANADA  
VALLEY AREA, 1921 TO 1971

<u>Parishes*</u>	<u>1921</u>	<u>1931</u>	<u>1941</u>	<u>1951</u>	<u>1961</u>	<u>1971</u>
St. Francis	1,269	1,323	1,474	1,808	1,741	1,223
Clair	892	841	867	1,089	1,195	1,018
Lac Baker	985	1,018	1,003	1,021	1,090	748
Baker Brook	--	1,230	1,273	1,618	1,431	1,025
St. Hilaire	1,702	506	605	522	570	515
St. Jacques	--	1,179	1,846	1,760	2,323	2,397
Edmundston	4,035	6,430	7,096	10,753	12,791	12,365

\*Population figures includes incorporated towns that lie within the parish borders and which have incorporated within the last 20 years.

Source: 1971 Canadian Census, supplied by Office of Economic Advisor, Province of New Brunswick, Fredericton, N.B.

## SECTION 2 EXISTING SOCIAL BASE

### 2.1 INTRODUCTION

The discussion of a cultural and social system, to be truly adequate, must be as subtle and complex as the culture itself. Such a discussion is not possible in the confines of a report such as this. The effort here, beyond a brief description of the culture, will focus on the elements that can be identified in the social fabric that will most likely be affected by the development of the Dickey and Lincoln dams. This can provide a point of departure to understand which people will most likely be affected by the process of development. These people must be relied on to react to this discussion to enhance their own understandings regarding how their lives might change, as well as respond to important gaps of this discussion so decision-makers at every level can take such factors into account.

### 2.2 CULTURE, LANGUAGE, AND RELIGION

Cultural diversity in the area is reflected in the fact that as late as 1967, 95 percent of the households in Allagash spoke English as the dominant language. This figure is as high as 94 percent for Fort Kent.

Ethnicity is further expressed by the religious preference of area residents. Eight-five percent of respondents to the 1976 survey in the four communities classified their dominant household religious preference as Catholic, 6 percent Baptist, while another 6 percent was Protestant, unspecified. Only 10 percent of respondents indicated a different religion from that which was dominant in the household, suggesting largely religiously homogenous households. Attendance rates at church services appear to be high, with 83 percent of the respondents reportedly attending church once a month or more.

The French language has been a source of a strong sense of community and identity in a state dominated by the English language and customs. It has been a source of controversy in the local school systems, characterized until recently by a ban on the use of French in the local elementary school or on the school playgrounds.<sup>1</sup>

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<sup>1</sup>Guy, Don. "Vive La Difference?" Yankee, July 1976.

Religion's role in the Immediate Impact Area is expressed in the influence of the organized Catholic Church on people's lives. The formation of churches and definition of parishes were important historically in developing identity with a geographic area and a community of people. It is still a strong spiritual and social force, although the strong strain of independence and nonadherence to authority in the local population extends to questions of church authority as well.<sup>1</sup>

The influence of the church in social life is found not only in the percentage of residents that are members but also in membership in related social organizations. Thirty-three percent of the households have some member who is a member of a church-related social or community group, the highest membership rate of any of the community groups mentioned. Fifty percent of the total households, however, have members attending church social activities.

Whereas Allagash is the only community without a Catholic Church, it also is the only one in which the Protestant Church is a major factor in community life. Protestant denominations include Baptist and Pentecostal in Allagash, Bible and Congregational Churches in St. Francis, and Congregational and Jehovah's Witnesses in Fort Kent. There is also a Jewish congregation in Fort Kent.

### 2.3 FAMILY, HOUSEHOLD, AND ACTIVITY PATTERNS

This analysis focuses on how families in the Immediate Impact Area organize their family lives and living situations. These factors also play important roles in identity for individuals and their expressiveness of the strength of community closeness. The family and household living patterns are important to examine, particularly in an area like northern Maine, as the extended family is a more important factor than in many communities.

Responses to Question H3<sup>2</sup> in the 1976 survey show that of the households surveyed, 11 percent were single individual households. Ninety percent

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<sup>1</sup>Conversation with Lowell Daigle, Professor of Anthropology University of Maine at Fort Kent, March 1976. Her Ph.D. dissertation, submitted to Harvard University is titled "Maintenance of Cultural Integrity Among The Acadians of the St. John Valley."

<sup>2</sup>H3 - I want to know how members of your household are related to each other. Let's call the couple in the household who may have both their children and parents, or just their children living in the household with them the primary couple. What is each person's relationship to the primary couple.

of the households showed women in a primary status,<sup>1</sup> while 84 percent had men, showing at least 6 percent of the households with female heads, although it may be greater as some of men may be living as a head of household without a wife. Very few of the individual households have an extended family pattern with only 10 persons in the surveyed households appearing as a parent or either the primary husband or wife and nine persons responding as some other relative. Very few households have nonrelatives either living with a family or living together. Families with children reported having had an average of 3.2 children, either living with them or someplace else.

As shown in responses to Question L7<sup>2</sup> regarding marital status, 78 percent of respondents are married, 8 percent never married, and 12 percent were previously married (reflecting 10 percent that are widows or widowers and 2 percent divorced). The most striking factor here is marriage stability as reflected in only 2 percent of respondents in a divorced status.

One factor of continuing concern to residents of the northern Maine area has been the tendency toward outmigration of family members and their dispersion throughout New England. Question L10<sup>3</sup> was asked to get some notion of where relatives are living and how often visits occur.

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<sup>1</sup>Primary status was a concept developed as a basic reference point from which to define household relationships. The couple or individual adult in the household who may have both their children and their parents, or just children, living in the household with them, are a primary couple. The concept is an effort to draw out the persons of a middle age group or financial supporter as primary operationally, if there are young children, parents in their 40's and their parents, in the same household, the couple in their 40's will be the primary couple. If there is only a single individual, then they are a primary individual. Primary status in some cases may be based on home ownership or priority in household in cases of distant or no familiar relationships.

<sup>2</sup>L7 Are you now or have every been married?

<sup>3</sup>L10 In what town do members of your immediate family (grandparents, parents, brothers, sisters, children, grandchildren) live who do not live in your home?

In general, the relatives of residents of the Immediate Impact Area predominantly live in the Impact Area, the county, or nearby Canada. It is unusual for grandparents or parents of respondents to live outside the above area; but siblings and children are also quite likely to live in Connecticut. As mentioned before, this is a result of residents leaving during World War II to work in defense industries. They established a base of familiar names and culture in areas that are now comfortable for present Immediate Impact Area residents to emigrate to when either seeking a job or more urban lifestyle. This emigration has been a source of unhappiness to many parents who have seen their children leave and would like to see them return.

The profound family and community ties in the northern Aroostook area are further highlighted by information regarding location of birth, length of time lived in the present community, and how long the respondent has lived in his present home. Responses to question L1<sup>1</sup> regarding length of residence in the local area show a fairly even distribution from 2 to 70 years residence. Residence of one year or less is slightly higher than the other single year categories, suggesting the very recent migration rate into the area may be on the increase. Seventy-five percent of respondents have lived in their present town of residence for 20 years or more. This results, however, from the remoteness and social cohesion of the area. The large family sizes have spawned out-migrants but the remoteness, distinct social and cultural character, and economic climate have probably discouraged in-migrants. Seventy percent of the respondents were born in the Immediate Impact Area towns and another 12 percent were born elsewhere in Aroostook. Another 11 percent of respondents were born in either the rest of Maine (3 percent) or Quebec (8 percent); very few (7 percent) were born elsewhere. Only 29 of the 303 respondents were born in Quebec, suggesting the relative unlikelihood of crossing that border in migration patterns. When asked where respondents have lived longest in question L1b, 81 percent had lived in the Immediate Impact Area, while 8 percent had lived longest elsewhere in the county or state.

When looking at length of residence in their present home in Question L1c, only 27 percent had lived in their present home more than 20 years. This indicates a substantial amount of mobility within the Immediate Impact Area. Question L4<sup>2</sup> shows that only 27 percent of present homes have been in the family for more than 20 years, suggesting a pattern of passing family homes on through younger generations is not commonplace. To change homes, or leave the family home, probably to seek a more appropriate or better quality home, is fairly commonplace. Homes are largely owned, with 84 percent owning and 11 percent renting. Most

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<sup>1</sup>How long have you lived in this town?

<sup>2</sup>L4 How long has this house been owned by your family?



respondents were quite contented with their present home as a place to live; 94 percent of respondents reported that it was very good as a place to live in response to Question L5<sup>1</sup>.

It is important also to examine educational background and work activities of area residents. Most area residents (71%) have a high school diploma or less. This pattern is particularly pronounced for residents 30 years old or older. A big leap in attaining higher education appears to have occurred over the last 5 to 10 years, with 37 percent of those in the 20-29 year age group having at least some college education, while this percentage for the older age groups is much lower. The greater prevalence of the college experience suggests the possibility of a growing awareness of new and different ways of living in the county, with the threat which that can bring to traditional values, but also the vitality it can introduce.

Table 3 summarizes all roles residents play in their households. The number can be greater than the total number of residents in a given role since each person had the opportunity to indicate three activities.

The most common activities for husbands in primary families to be involved in is work for wages (55 percent of total husbands) and then work in the woods (13 percent). A total of 24 percent of the husbands are not in the labor force, with 18 percent retired and 6 percent unable to work. Seventy-three percent of the wives are keeping house while only 43 percent are taking care of children. The 27 percent working for wage labor is relatively low, compared with 35 percent for the county. Only 18 percent of children living with their parents are working. When compared with the approximate total number of working age (49 working out of 127 from 15-19 years old) this number appears fairly high, given that many of these people are still in school. Most residents in single individual households are retired with only 32 percent earning income, 29 percent in wage labor.

The most common principal job activity, other than woods work, for husbands in primary households is machine operation (14 percent of total husbands) and skilled craftsmen (11 percent). Some of these machine operators operate log loading cranes, which relates to woods work as well. A large proportion of husbands in primary families in the area, about 40% in the three primary jobs mentioned above, are in jobs or job markets that closely relate to work such as dam construction.

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<sup>1</sup>L5 Would you say as a place for you (and your family) to live, this house is very good, fairly good, neither good nor bad, not very good, or not good at all?

TABLE 3

RELATIONSHIP IN HOUSEHOLD BY HOUSEHOLD AND WORK ACTIVITIES <sup>1</sup>

	Work on Home Farm	Farm Work	Work in Woods	Wages	Military Service	Keeping House	Care of Children	Care of Elderly	Attending School	Unemployed	Unable to Work	Retired	Total Resi- dents in Role
Husband in Primary Family	13 .5%	10 4%	33 13%	140 55%	5 2%	2 1%	4 2%	--	1 *	6 2%	15 6%	45 18%	255
Wife in Primary Family	8 3%	1 *	--	75 27%	--	201 73%	118 43%	4 1%	1 *	4 1%	4 1%	33 12%	274
Child in Primary Family	2 1%	4 1%	3 1%	49 48%	1 *	--	--	1 *	56 20%	5 2%	1 *	--	502
Parent of Primary Husband or Wife	--	--	--	--	--	1 10%	--	--	1 10%	--	1 10%	6 6%	9
Other Relative	--	--	--	--	--	--	--	--	--	--	2 22%	2 22%	9
Nonrelative	--	--	--	3 33%	--	3 33%	--	--	2 22%	--	2 22%	--	9
Child of Other Relative	--	--	--	--	--	--	--	--	--	--	--	--	2
Single Individual Household	--	--	1 3%	10 29%	--	12 35%	--	--	2 6%	1 3%	3 9%	18 53%	34

<sup>1</sup>The number of roles played for each household may be larger than the total number of residents in that status as each resident was asked to indicate up to 3 roles they played. The percentages of residents involved in a role is of the total number in that role, so percentages may add to more or less than 100%.

Women in primary families are basically found in only three working categories: professional-technical (8 percent of total) being largely teaching; clerical and sales (9 percent); and service work (11 percent). This is a very different pattern from the male work force and is focused on community maintenance needs more than work oriented to outside markets.

Only 27 husbands or men in primary families surveyed have a second wage-paying job, although a number probably both work in the woods and have one other wage-paying job. Most women with second jobs are professional or managerial workers, possibly teachers having a summer job or workers who do something like the bookkeeping for the family business.

In question H10 respondents were asked what they felt were the household's sources of income during the last year and in question H10a they were asked which was the most important source. The most common sources of income for households in the area are wages or salary (73 percent of all households), government retirement or disability pay (24 percent) or retirement or disability from former employers (16 percent). These same categories are also most commonly mentioned in the same order as the most important source of income. Although 9 percent of the households received unemployment compensation during the last year, it was the most important source of income for only two families.

When respondents were asked if they or members of their household were interested in jobs related to the building of the dams (Question H 6), most felt they would not be. With a total of 681 responses recorded, 162 or 24 percent of responses were positive. Many of the negative responses are from people who feel they either have good jobs, don't work, or don't have the required skills. Many of these residents might, however, work in secondary jobs generated by the project. The primary reason given for wanting to work on the project is that respondents generally want a job, are presently unemployed or desire higher wages.

## 2.4 COMMUNITY INVOLVEMENT

In a rural area with sparse services and a relatively homogenous population, community interaction and involvement becomes important not only for friendships, but also in fulfilling some of the basic needs of life. This community involvement includes informal gatherings and sharing of information and resources, formal participation in organized clubs or activities, and participation in local political events.

The most popular outlets for participation in formal groups, as shown in responses to Question C2<sup>1</sup>, were school sports, in which members in 39 percent of the households participated, and church-related social

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<sup>1</sup>C2 How many members of your household are active members (attend at least 3 meetings/year) in any of the following organizations?

or community groups attracting members from 31 percent of the households. Other than veteran groups (drawing members from 23 percent of the households), no other type of activity drew members from more than 20 percent of the households. These most important groups are drawn from bases of school attendance, church attendance and veteran status. Other than church attendance, these memberships sources are based on year-round residence in the community or an historical event of armed forces membership that could limit new membership in these groups by new populations.

Formal involvement with the political process was shown in Questions C4, C5, and C6<sup>1</sup>, with 5 percent of the questioned households having had any member hold a public office or position in the last 10 years. For voluntary meeting attendance, six percent of the households surveyed had during the last three years, attended selectman's meetings and planning board meetings, with 3 percent attending school related meetings. When questioned about household member attendance at the last five town meetings, while 42 percent of the households reported no members attending, 16 percent reported attendance at all meetings.

Questions C7 and C8<sup>2</sup> cover both the formal and informal sources that exist for information on activities and concerns of the local community. The formal media of television (85 percent of households), newspapers (79 percent) and radio (64 percent) are the most popularly used sources of this type of information. Friends and neighbors are a more popular local information source than either family members or local officials. When the respondent was asked to indicate the most used information source, the overwhelming responses were for television and local newspapers at 30 and 27 percent, respectively. All local personal contact sources were indicated by about 10 percent of the households each as being most important. Finally, the newspapers most often present in area households were the St. John Valley Times, found in 87 percent of households, and the Bangor Daily News, found in 72 percent. Given the readership levels of newspapers and their perceived value, they are important forums for education and informational exchange.

In these relatively rural communities with few services and organized activities, informal social exchange becomes an important source for communication, socializing, and sharing. Respondents were asked which of the activities listed in question C3<sup>3</sup> they shared with other community residents. The most popular activities were meals or social gatherings in their homes (58 percent of households) and discussing issues of economic and political concern (56 percent). Other popular activities were church socials (50 percent), evening entertainment (49 percent) and helping with home and equipment repair (43 percent).

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<sup>1</sup>C4 Has any member of your household held a public office or position during the last 16 years (1965-1976) C5 About how many of the last 5 town (plantation) meetings have you attended? C6 What other civic boards or meetings have you attended at least 3 times during the last year?

<sup>2</sup>C7 Which of the following publications do you have in your home?

<sup>3</sup>C3 Which of the following activities do you regularly share with other people in your community? C8 Where do you go to get reliable information about community activities and concerns?

The general picture that can be drawn is one of communities in which informal socializing and sharing is more widespread than the formal group participation. Formal sources, however, are largely relied upon for reliable information on issues, although much discussion with friends and neighbors does occur on such topics.

Much of the political exchange in the area occurs on an informal level of familial or friendship and is brought to bear on those who do participate in the formal political system. The tendency to see the seat of authority in the male family members and not in the political system, its policies, or its representatives which have been openly defied in the past, further emphasizes the differences in effectiveness between the formal and informal channels.<sup>1</sup>

## 2.5 RECREATIONAL CHARACTERISTICS

Recreation locations, types, and values can be an important outlet and area of expression for a population group. In the Immediate Impact Area, characterized by few commercial recreation opportunities, low incomes, variable job participation providing recreation time, and abundant woodland and wildlife, outdoor recreation that centers on harvesting the animals of the forests to fulfill food requirements is a natural. Social situations focused around the home and church are also obvious bases for recreational activities in this rural and religious culture. The only really popular commercial outlets are local drinking and gathering spots. Questions in the 1976 survey included a question on recreation activities shared with other community members (C3); one regarding the importance of recreation to households specifying which members participate (C11)<sup>2</sup>, plus other information obtainable from other questions.

Of the 11 recreational activities mentioned in Question C11 of the questionnaire, those seen as very important to the highest number of area households were fishing (42 percent) and hunting (38 percent). Boating, snowmobiling and school sports activities were next, with 26, 22 and 21 percent of the households respectively. Attending restaurants and evening entertainment spots are third and fourth in importance when adding together both very and somewhat important response categories. Participation was very low for bowling (88 percent of the households not participating), hiking (58 percent not participating), and social clubs (57 percent not participating).

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<sup>1</sup>Conversations with Lowell Daigle, Professor of Anthropology, University of Maine at Fort Kent.

<sup>2</sup>Could you tell me how important the following recreation activities are to you or any member of your household in relaxing and having a good time. Is the activity very important, somewhat important, not very important, not important at all?

Responses to Question C3 show 49 percent of the households sharing attendance at evening entertainment spots with friends and neighbors. This is approximately the same percentage as attend with family. This type of activity, then, is shared both with family and friends. Attending church social activities is another form of recreation commonly shared with friends.

Forty-one percent of respondents reported that members of their households used the St. John River area upstream of the confluence of the Allagash (the impoundment area) for a number of recreational activities. Again, fishing and hunting are the most popular activities in this area with 36 percent of the entire population using the area for fishing and 32 percent for hunting. Just about half of all households responding that members hunted or fished used the proposed impoundment area for those activities. Somewhat less than half of the households that boat (46 percent) used the area for boating (19 percent). Of those using the proposed impoundment area, 57 percent of them (or 23 percent of total households) went there more than four times per year, while most others went at least once a year. This area, then, is quite popularly used by local residents for outdoor recreation purposes.

In Question A3 regarding respondents' feelings about the natural environment in the area, 68 percent felt it was very important to them while another 23 percent found it somewhat important. Of these respondents, 51 percent gave as their first reason the area's importance as recreation. There was a total of 253 mentions of recreation factors as important aspects of the natural environment, equivalent to 84 percent of the total number of respondents. The real number of respondents is probably somewhat lower as some respondents may have mentioned two factors relating to recreation.

## 2.6 ATTITUDES REGARDING COMMUNITY GROWTH AND DEVELOPMENT AND DICKEY-LINCOLN

This discussion will provide an update (as of summer 1976) on local attitudes towards development and specifically how attitudes toward the development of Dickey-Lincoln evolved to its present form. The project has already had many impacts in the area. As the project was redefined to its present design of the two dams, one at Dickey and one at Lincoln School in St. Francis, and as design work proceeded, belief that the dam might actually be build increased. These feelings were perhaps at their peak in the mid-1960's when a sociologist from the University of Maine fielded a major social survey in the area to assess social characteristics

in the area and attitudes regarding dam construction<sup>1</sup>. The study was conducted in the summer of 1966, when initial construction was scheduled to begin in late 1967 or early 1968. Inquiries were focused toward particular aspects of community life.

Some of the major concerns at that time, which are still important today, regard expectation of the impact of the project on job opportunities and the influx of construction workers on community life. In the area of economic and job concerns at the the time of the study, 200 of 538 codeable responses indicated respondents wanted the area to develop with "more industries or work opportunities." A total of 62.3 percent of interviewed households reported at least one member willing to work on jobs related to the dam. There was some concern that Canadians would take many of the jobs from American workers.

Expectation of job opportunities appears to have been an important factor in residents' feelings regarding the dam development.

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<sup>1</sup>See Ploch, Louis and LeRay, Nelson, "Social and Economic Consequences of the Dickey-Lincoln...", Miscellaneous Report 123, Maine Agricultural Experiment Station, March 1968.

This study focused on the possible effects of the project on families and their members in the four communities of Allagash, St. Francis, St. John, and Eagle Lake. Rural households west of the Fish River in Fort Kent were also included.

Household interviewing was conducted during June-July, 1966. An effort was made to contact every household in the area with responsible adult, preferably the household head, was selected as respondent. At least two call backs were made as necessary. There was a response rate of greater than 90% of households, with a refusal rate of only 4%.

Pretest showed that only a written English interview was required but the bilingual interviewers conducted an interview in French where necessary.

It was felt the effects of increased demands for goods and service from the construction activities and increased population could also provide more jobs and generate business. Eighty-six percent of respondents were basically optimistic about the effect the dam would have on the "existence of stores and other services in the area." Most positive respondents felt the number and variety of stores would be improved, as would the quality of products. "This is another indication that, in general, the dams are looked forward to in a favorable way."<sup>1</sup>

Respondents in the 1966 study were asked what effect they thought dam construction might have on other aspects of community life. Thirty-four percent of respondents felt there would be an expansion in church attendance. Only 5 percent of respondents perceived any negative impact from the dam project on local organizations and activities. Very few, however, saw any particular positive effect of the project either.

Although no question was asked regarding awareness of the project in the 1966 study, it could be expected that few people had any notion of the number and type of jobs that would be made available by the project or many of the other important characteristics of the project that will affect area residents. The National Environmental Policy Act requirements for environmental impact statements have now matured to the point of generating scenarios of the socio-economic futures of affected areas. The Act has also incorporated a commitment to public hearings and citizen involvement in the assessment process. Information has become much more available to concerned citizens over the last 10 years.

As local and regional residents have been gaining in understanding and involvement in such projects, local events have led to a greater desire for the dam in order to solve specific problems. Major floods occurred in the springs of 1973 and 1974 which resulted in heavy damage, particularly to the downtown area of Fort Kent. The feelings of residents ran high towards finding an easy and complete solution to such devastating events. These years were probably peak years for local support for the Dickey-Lincoln project as evidenced in newspaper and magazine articles, and as expressed in the proceedings from a local public information workshop.<sup>2</sup>

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<sup>1</sup>Ploch and LeRay. op. cit.

<sup>2</sup>Information workshop sponsored by the University of Maine at Fort Kent on May 23, 1974.



In addition to greater support for dam construction, the flooding caused the closing of a major department store in the downtown area which felt it could not afford the insurance rates. The subsequent bankruptcy of another major store left town residents with the feeling that their downtown was dying.

At the time of the 1976 survey, the understanding of and attitudes towards the project of the impact area residents was vacillating. New attention was given in local newspapers on an almost weekly basis regarding the design of the dam, the proposed transmission lines, or efforts being undertaken to research their feasibility. The construction of dikes to provide flood control for Fort Kent was underway, alleviating the anxiety about flooding of many of that community's residents. The erosion of downtown shopping opportunities made people look positively toward events that might encourage further commercial development in Fort Kent.

Before specifically discussing respondents' attitudes on the construction and operation of the proposed dam, it is valuable to assess their general attitudes regarding the area itself, its positive and negative aspects, and its future.

A general question was asked respondents whether they wanted the area to change or not, by their age<sup>1</sup>. For each age category, most respondents wanted the area to stay the same, although a large percentage also would like it to change. Respondents over 50 years old were more likely to want the area to stay the same. Those who wanted the area to remain the same overwhelmingly gave a general response that they were satisfied with it, that it was home. This amounted to 34 percent of total responses, or 54 percent of respondents who felt it should stay the same. Those who felt the area should change cited that more jobs were needed (16 percent of all respondents and 32 percent of respondents desiring changes). More commercial services close by were also cited as a desirable change by a combined 16 percent of all respondents and 32 percent of those wanting things to change. Social services, government and schools were not areas where many respondents felt change was necessary.

Respondents were also asked what they felt the positive and negative characteristics of the area are. The responses here can provide extra insight into why people want the area to change or not. The most popular responses were the quiet, pastoral qualities of the area (43 percent of total), the friendliness of local people (33 percent of total), the small and uncommercialized character (22 percent of total), and natural environment factors (19 percent). The absence of pollution and the fact that many people were born in that area were also important factors. Many fewer negative than positive responses were recorded. The most popular negative responses included few shopping opportunities (17 percent of total respondents), the cold weather (14 percent), and not enough work (13 percent). These simple questions demonstrate much stronger and consistent positive than negative feelings about the area but also show community goals that could be in opposition with each other.

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<sup>1</sup>A6 Thinking about this area - your friends, local government, the schools and services you have here for example, would you like to see such aspects of community life stay the same or change in future years?

When asked in what ways the area is changing, there are more changes seen for the worse rather than for the better. Better schools (9 percent of total respondents) and general social aspects (6 percent of total) are the most popular areas for improvement seen by respondents. Regarding the ways life in the area is getting worse, 20 percent see jobs and the employment situation deteriorating, 15 percent see shopping opportunities declining, while 13 percent see the cost of living going up.

In the last question of a general nature, respondents were asked if they would move out of the area if they had a chance, and why they would move. Only 18 percent said they would move, while 73 percent said they would not, with only 7 percent undecided. The most popular responses revolved around seeking better economic opportunity, with 6 percent of all respondents considering leaving to seek a better job. Better environmental conditions were next most commonly mentioned.

Generally, then, residents express a reasonably high degree of contentment with the social situation in the immediate impact area, with a somewhat lesser degree of contentment with the economic climate.

With this background, direct focus can be taken on the respondents' attitudes towards the proposed dam. Table 4 tabulates the age of respondents by whether they foresee the area getting better, worse, or staying the same over the next 10 years if the dam is built. Overall, 65 percent of respondents see the local situation getting better while 13 percent see things worsening with the dam. Respondents in older age categories are more likely to see the situation getting better, while younger respondents are more likely than older residents to see things getting worse. This is somewhat surprising since the younger respondents (those less than 50 years old) are more likely to gain from increased jobs and economic activity. Conversely, when asked how things would change if the project were not built, most respondents felt the area would stay just about the same, although about a third in each age group felt it would get worse. Respondents in younger age categories are more likely to feel the situation will get better without the project than are respondents over 50 years old.

Respondents recorded their more specific feelings regarding how they think the area will change if the project is built. The primary benefits seen include more jobs (38 percent of total respondents), economic improvement or area redevelopment (24 percent of total), cheaper electricity (17 percent), and flood control (15 percent). The most popular responses regarding negative effects of the development include overpopulation in the area (7 percent), general worsening of conditions (6 percent), and different kinds of people moving in (5 percent).

Respondents were also asked how specifically they think the area will change if the project is not built. Negative responses include continued high unemployment (12 percent), general worsening of conditions (7 percent), and continued store closings (7 percent). Positive views of the nonconstruction option include general improvement in the area (5 percent) and improvement in the woods industry (3 percent).

TABLE 4

AGE OF RESPONDENT BY CHANGE IN THE AREA  
IF THE PROJECT IS DEVELOPED OR IS NOT DEVELOPED

## A. PROJECT BUILT

Age	Better	Worse	Some Better, Some Worse	About the Same	Don't Know	Total <sup>1,2</sup>
15-19	3 100%	---	---	--	---	3 100%
20-29	33 58%	10 18%	9 16%	1 2%	4 7%	57 100%
30-39	37 61%	12 20%	5 8%	3 5%	4 7%	61 100%
40-49	29 59%	8 16%	9 18%	2 4%	1 2%	49 100%
50-59	31 67%	4 9%	2 4%	3	6 13%	46 100%
60+	57 74%	3 4%	7 9%	4 5%	6 8%	77 100%

## B. PROJECT NOT BUILT

15-19	---	2 67%	--	1 33%	---	3 100%
20-29	7 12%	19 33%	1 2%	29 50%	2 3%	58 100%
30-39	9 15%	17 28%	-- --	33 54%	2 3%	61 100%
40-49	6 12%	19 39%	-- --	22 45%	2 4%	49 100%
50-59	3 7%	17 37%	2 4%	22 48%	2 4%	46 100%
60+	2 3%	28 37%	4 5%	34 45%	8 11%	76 100%

<sup>1</sup>Error due to rounding<sup>2</sup>Discrepancies in totals due to nonresponses

The primary concern of local residents is the general economic climate, lack of jobs, and lack of commercial opportunities. Residents express general contentment with the social situation in the area, their neighbors and family.

Perhaps the most direct question about the proposed dam project regarded how respondents think their lives might change during the construction and during the operation of the dams if they were to be built. These two questions were cross-tabulated with age of respondents, how well-informed they feel they are on the Dickey-Lincoln project, and how often they use the St. John River and its watershed in the area that would be flooded if the project were developed.

The most common positive responses were that the project would yield more jobs (29 percent of total respondents) and that it would result in higher income (10 percent). Of the negative responses, 12 percent felt there would be more people, 8 percent felt these people would be undesirable, and 6 percent feared higher crime rates. During project operation the most common responses of a positive nature were that the dam would provide cheaper electricity (17 percent), more jobs (13 percent) and generally improve the local economy (6 percent). Negative factors most commonly voiced were the necessity for relocation of local residents (6 percent), the community might get impersonal (5 percent), and it could hurt the local economy. The largest response category to both the questions regarding changes during construction and changes during operation was the "don't know" response, 20 and 22 percent respectively.

Table 5 displays the responses regarding changes to respondents, lives during construction by age, and perceived information level on Dickey-Lincoln. The major pattern appearing in Part A shows respondents in the 40-49 age group more negative about the construction phase, particularly citing the negative aspects of new people, and less positive about new jobs being created. Older people are less likely to perceive the project affecting their lives. In Part B, those who perceived themselves as most highly informed are more positive about the project, particularly mentioning that it would be good for business. Less informed respondents are more negative, particularly focusing on the negative aspects of new people.

Table 6 displays the responses regarding the changes to respondents' lives during the operation of the dam by age and perceived information level on Dickey-Lincoln. The 50-59 age group is most positive about the project's operation, being also more likely than other age groups to see more jobs come out of it. The 40-49 year age group is least positive about the project, being relatively more concerned about a possibly increased impersonality of the community and the destruction of natural beauty. On Part B of the table, those respondents who considered themselves most highly informed about the project were more negative than other groups about the operation phase, while the somewhat informed group was most positive citing cheaper electricity more than the other groups.

TABLE 5

## PERCEIVED IMPACT OF PROJECT CONSTRUCTION IN RESPONDENTS LIFE

## A. BY AGE OF RESPONDENT

Age	Generally Positive Will Help Area	More People	May Provide Jobs for Out-of-State Relatives	Higher Income	More Jobs	Good for Local Business, More Housing Construction	Total Positive Responses	Generally Negative Will Hurt Area	More People
15-19	-- --	-- --	-- --	-- --	2 67%	-- --	2	-- --	-- --
20-29	2 4%	6 12%	1 2%	3 6%	12 24%	1 2%	25 49%	3 6%	8 16%
30-39	1 2%	1 2%	-- --	4 7%	16 37%	-- --	22 37%	8 13%	2 3%
40-49	--	2 4%	1 2%	-- --	8 16%	3 6%	14 28%	6 12%	5 10%
50-59	2 4%	-- --	1 2%	--	11 24%	3 7%	17 39%	6 13%	4 9%
60+	7 9%	--	2 3%	4 5%	15 19%	1 6%	29 38%	5 6%	4 5%

\*1%

## B. BY PERCEIVED INFORMATION LEVEL ON DICKEY-LINCOLN

	Generally Positive Will Help Area	More People	May Provide Jobs for Out-of-State Relatives	Higher Income	More Jobs	Good for Local Business, More Housing Construction	Total Positive Responses	Generally Negative Will Hurt Area
Highly Informed	2 7%	--	--	--	9 30%	5 17%	16 53%	6 17
Somewhat Informed	7 4%	9 5%	3 2%	6 3%	35 20%	2 1%	62 36%	20 11%
Not very Informed	3 4%	--	2 1%	5 6%	19 23%	1 1%	30 37%	3 4%
Not at all Informed	--	--	--	--	2 40%	--	2 40%	--

TABLE 3 - Continued

## A. BY AGE OF RESPONDENT

Age	New People Undesirable Bring Trouble	Higher Crime Have to Lock Doors	Less Freedom & Privacy	Have to Relocate	Higher Taxes More Services to Support	Total Negative Responses	Don't Know	No Change	TOTAL
15-19	--	--	--	--	--	--	--	1 *	3 1%
20-29	--	1 2%	2 4%	3 6%	--	17 33%	2 4%	7 14%	21 100%
30-39	4 7%	2 3%	--	5 8%	1 2%	22 37%	7 12%	9 15%	60 100%
40-49	5 10%	1 2%	1 2%	5 10%	1 2%	24 48%	4 8%	7 14%	49 100%
50-59	--	--	--	3 7%	1 2%	14 31%	6 13%	8 18%	45 100%
60+	1 1%	1 1%	--	--	--	11 14%	7 9%	30 40%	77 27%

## B. BY PERCEIVED INFORMATION LEVEL ON DICKEY-LINCOLN

	More People	New People Undesirable Bring Trouble	Higher Crime Have to Lock Doors	Less Freedom & Privacy	Have to Relocate	Higher Taxes More Services to Support	Total Negative Responses	Don't Know	No Change	TOTAL
Highly Informed	--	--	--	--	--	2 7%	6 20%	1 3%	6 20%	30 100%
Somewhat Informed	13 7%	4 2%	4 2%	3 2%	11 6%	1 .5%	74 43%	18 10%	38 22%	174 100%
Not Very Informed	9 11%	6 7%	1 1%	--	5 6%	--	29 36%	5 6%	22 27%	81 100%
Not at all Informed	--	--	--	1 20%	--	--	2 40%	1 20%	1 20%	5 100%



TABLE 6 - Continued

Community Will Get Too Big, Impersonal	Increase Pollution	Destroy Natural Beauty	Hurt Local Economy	Total Negative Responses	Neutral Comments or Unassignable	More People Growth	Will Quiet Down	Don't Know	Won't Change	Total
--	1 25%	1 25%	--	2 50%	--	--	--	---	---	4 100%
2 3%	1 1%	1 1%	3 5%	11 19%	2 3%	1 *	4 7%	8 14%	9 15%	58 100%
1 2%	4 6%	---	1 2%	15 24%	--	2 3%	2 3%	11 18%	3 5%	62 100%
3 6%	---	3 6%	2 4%	14 30%	3 6%	2 4%	3 6%	6 13%	5 11%	47 100%
1 2%	1 2%	1 2%	1 2%	8 18%	1 2%	1 2%	1 2%	6 14%	1 2%	44 100%
2 3%	2 3%	1 1%	1 1%	13 17%	4 5%	1 1%	2 3%	7 9%	13 17%	78 100%

Total Negative Responses	Generally Hurt	Have to Relocate	Community Will Get Too Big, Impersonal	Increase Pollution	Destroy Natural Beauty	Hurt Local Economy	Neutral Comments	More People Growth	Will Quiet Down	Don't Know	Total
9 30%	2 7%	2 1%	0	2 1%	1 3%	2 1%	2 7%	1 3%	1 3%	2 7%	30 100%
36 21%	9 5%	9 5%	4 2%	6 3%	4 2%	4 2%	4 2%	4 2%	9 5%	24 14%	175 100%
15 19%	4 5%	2 2%	4 5%	1 1%	2 2%	2 2%	4 5%	2 2%	1 1%	13 16%	81 100%
3 60%	0	2 40%	0	0	0	1 20%	0	0	0	1 20%	5 100%



Generally, the age group 40-49 see themselves and their families as most affected by the project in a negative way. This age group is most likely to be more threatened by changes because they are still in the mainstream of work and social activities but not young enough to really adapt to changes such as new job skill requirements. Their children are teenagers and likely to be influenced by the young construction workers with different lifestyles - which would be an exposure to other values at a crucial point in their lives. Negative feelings expressed largely relate to a deterioration of the social environment.

Finally, in question A12 through A12b<sup>1</sup>, respondents were asked how informed they feel they are regarding the proposed development. Ninety-eight percent claimed they had heard about the project before the interview, with the most popular information sources being newspapers (47 percent of total respondents) and television (42 percent). Most respondents, however, considered themselves somewhat or not very well informed (86 percent of total), with only 10 percent considering themselves very informed.

The purpose of the Environmental Impact Statement hearing procedure is designed to provide information on many more far-reaching and subtle impacts of such a project. This often comes, however, at a point that is fairly late in the decision-making process and does not encourage real input or participation, but rather review. To somewhat alleviate this shortcoming, the Corps has requested that the State government appoint a Citizens Advisory Committee to hold meetings and hearings over a longer period of time with more focused meetings for both the local and state citizens as the entire state has a stake in Dickey-Lincoln.

In response to question A1<sup>2</sup>, respondents said they felt having an opportunity to share their opinions and needs on the planning of the proposed project was largely either very important (39 percent) or somewhat important (37 percent), with only 23 percent not expressing interest. This is a strong indication of a local desire for indepth participation in the planning process.

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<sup>1</sup>A12 Have you heard about the Dickey-Lincoln project before I came here today?

A12a From what sources did you hear about the project?

A12b Do you consider yourself highly informed, somewhat informed, not very well informed, or not at all informed about the project?

<sup>2</sup>A1 How important is it to you to have an opportunity to share your opinions and needs on the planning of the proposed Dickey-Lincoln project? Is it very important, somewhat important, not very important, not at all important?

## 2.7 HOUSING

Information gathered through the survey questionnaire indicated that the majority of the total people interviewed (84 percent) owned their own homes and felt that by and large they were situated in a house which was good for them and their families. Of the remaining people, about 11 percent rented and about 3 percent had some other living arrangement, such as staying with relatives, etc.

There is a perceived shortage of housing in about half the communities in the Service Impact Area for the present population (Fort Kent, Eagle Lake, Allagash, St. Francis and Wallagrass). All of the remaining communities, except Madawaska, indicated that their housing was just adequate to meet the needs of the current population. There is a particular lack of rental units in all surveyed communities.

Table 7 shows total housing units and available units in the market as of April 1, 1970. There have been small population increases, and probably almost comparable increases in new housing so housing availability could be similar in the middle 1970's as it was in the early 1970's. A complete housing availability study was not performed, so secondary sources of data such as the U.S. Census and the knowledge of relevant local residents provide a good approximation, particularly in an area of small and slow change.

Vacancy Rate. Public officials in all the communities within the service impact area except Madawaska reported a vacancy rate of less than 1 percent.<sup>1</sup> A vacancy rate of 2.6 percent, still very low, appears in the 1970 Census. These differences might suggest that housing hasn't kept up with a population increase. Madawaska was the only community that felt it could support an increase of population without adverse housing impacts. It was the feeling of town officials that Madawaska could accommodate an increase in population of about 10 percent.

Adequacy. Not all of the nine communities with a vacancy rate less than 1 percent felt that their housing stock was inadequate for their present population. The five communities of Allagash, Fort Kent, Eagle Lake, St. Francis and Wallagrass did, however. The most severe problem was expressed in Eagle Lake, where absolutely no housing was available; people were living in other communities temporarily and waiting for housing units to become available<sup>2</sup> at the time of this study.

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<sup>1</sup>Vacancy rate as used here means the percentage of total housing, including substandard units on the market that are available at any given time (there could be vacant substandard units available that are not on the market). This is different from normal vacancy rate determination which excludes substandard unit.

<sup>2</sup>The town manager related that many people originally from Eagle Lake were returning and that this was causing a large portion of the excessive demand.

TABLE 7  
1970\* Housing Supply

	Total Housing Units	Owned	Rented	For Rent	For Sale
Allagash	162	88	19	0	4
Fort Kent	1,176	828	275	31	8
St. Francis	256	186	21	4	7
St. John	103	75	13	0	4
Eagle Lake	420	198	30	14	8
Frenchville	330	248	61	2	0
New Canada	73	46	14	0	1
St. Agatha	240	149	38	0	4
Wallagrass	201	138	19	2	8
Madawaska	1,642	1,028	384	19	2

\*As of April 1, 1970

Source: 1970 U.S. Census as made available by the Maine State  
Planning Office

Due to the low vacancy rate, there are very few homes available, and those that are, are not always affordable by people in a lower income range. Although the situation in Fort Kent isn't as severe as that in Eagle Lake, it is nevertheless inadequate. According to local officials, people are currently living in Clair, New Brunswick because they can't find housing in Fort Kent.

Allagash has a need for more single family residences. Thus far their need for additional housing has been met through the increased use of mobile homes. Currently, Allagash has adopted a 1-year housing moratorium, to give the community time to assess their attitudes toward growth. St. Francis has a general need for more housing of all types including rentals.

Wallagrass feels that they need a site on which to develop housing and are, in fact, moving to provide housing sites for single family residences.

Most of the units on the market in 1970 were rentals, with most of those found in the two larger communities.

Seasonal Units. There are few seasonal units (cottages and camps) that are both regularly and periodically offered for rent in St. Agatha, Wallagrass and Madawaska.

Expansions. St. Francis and Fort Kent have definite plans for residential development activities (although a recent vote not to support a sewer and water extension may hinder any further development in Fort Kent).

Wallagrass is trying to obtain land acceptable for housing in order to provide for more residents, Allagash has tentative plans for expansion and New Canada has witnessed increases in its housing stock by about three units per year.

Although there is housing available in New Brunswick, it is not easily accessible to U.S. citizens, particularly those seeking short term housing. This is due to the fact that a permanent resident permit must be applied for to live in Canada; a process which takes from 3-4 months.<sup>1</sup>

Taking into account that the conditions of some of these units may be poor by urbanized standards given the age of housing in the area and the common use of wood heat, some may not be usable by construction workers.

In summation, the availability of units is very low in the Service Impact Area. Comparing the 1970 figures and the estimates of local town officials, available units might appear as in Table 8.

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<sup>1</sup>Canadian Consul - Boston, Massachusetts

Table 8  
 Estimated Available Housing Units, 1976

	<u>Rentals</u>	<u>Sales</u>	<u>Total</u>
Immediate Impact Area	20-25	15-20	35-45
Service Impact Area (other than IIA)	<u>20-25</u>	<u>15-20</u>	<u>35-45</u>
TOTAL	40-50	30-40	70-90

Source: Estimates from 1970 Census data and information provided by local municipal officials.

SECTION 3  
SOCIAL EFFECTS RESULTING FROM PROJECT IMPLEMENTATION

The social and economic fabric of an area, even a homogenous rural culture with an economic base that is not very diversified such as exists in the Upper St. John Valley, is highly complex. It is impossible to comprehend all the subtle interactions and impacts of describing the system as it presently exists. The task of projecting how they might evolve in the future becomes more difficult, but the task of assessing induced changes is the most humbling of all. This work is offered as an effort to assess the impacts of possible changes induced by the development of the Dickey-Lincoln project on the futures of the Upper St. John River Valley and Aroostook County.

The bases of the work presented here are detailed analyses of conditions presently existing in the project area, as extensive examination of changes that have occurred in other areas where similar projects have been developed. The possible impacts discussed here are offered as likely occurrences based on the analytic resources outlined above. Such an exchange, prompted by the suggestions contained here, can provide the richness to allow understanding of this complex situation to become more possible.

### 3.1 CONSTRUCTION PHASE

#### 3.1.1 Population

The construction of the Dickey-Lincoln project will result in a major increase in population in the Service Impact Area, but more specifically in the Immediate Impact Area. This population increase occurs in several phases in conjunction with the project stages.

The first phase, preproject funding, is occurring at the present time and includes temporary populations moving in and out of the area to work on the many data gathering efforts required for the preparation of the research required for approval of the project. Some researchers stay over a period of months, some for just a day or two.

During the second phase, construction, many workers will be required to cut wood, relocate, and to construct the actual dam. These workers will have to come from other parts of the county, the state, New England and possibly Canada, due to the shortage of skilled workers in the Immediate Impact Area. This section will primarily focus on the components and size of populations resulting from the construction project on the Service and Immediate Impact Areas.

In the third phase of the project, operation, virtually all workers required for the operation of the dam will come from outside the Immediate Impact Area due to the technical job skills required for those positions.

Table 9 presents approximate sizes of different elements of the population increase that would likely result from the construction workers coming to the area. Sources of data and information, and assumptions made in the preparation of the table, are found immediately following the table. Although the numbers appear precise, they are in that form only so they will remain additive. These numbers should be considered approximate, not actual, figures. The table is organized by yearly quarters which coincide with construction phases for the 7-1/2-year construction period. Of particular note in this table are the number of workers who will live in the area on a year-round basis probably for at least a two-year period (column II), who will fulfill some administrative and supervisory jobs. Column VI displays the approximate total number of children in the area on a year-round basis that could put pressure on local school and day care facilities, or create the need for new public or private facilities. Finally, column VII includes the total population that will be introduced into the area as a result of the dam construction. Peak population coming into the area occurs in the first and second quarters of the 6th year, where the approximately 2,700 new residents represent 43 percent of the estimated 1973 population of the Immediate Impact Area.

It is likely that most workers will leave the area at the end of construction. This has been the case in other rural dam construction projects such as the dam built by the Corps in Sweet Home, Oregon<sup>1</sup>. The urban background, job characteristics and migratory life of most construction workers makes it highly unlikely they would choose to settle permanently in the northern Aroostook area.

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<sup>1</sup>Smith, Courtland, et. al. "Economic Development: Panacea or Perplexity for Rural Areas?" Rural Sociology. V. 36, #2, June, 1971. pp 173-186.

TABLE 9

POPULATION INCREASES BY TYPE GENERATED  
BY CONSTRUCTION OF THE DAMS PROJECT IN THE SERVICE IMPACT AREA<sup>1</sup>

		I	II	III	IV	V	VI	VII
Yearly Quarter Starting in:		Total Construction <sup>2</sup> Workers Required On Project	Workers Remaining in <sup>3</sup> Area Year-round for a Two-year Period	Workers Commuting <sup>4</sup> from Local Area	Workers Living in <sup>4</sup> Area During Sea- sonal Construction	Workers Dependents <sup>4</sup> Residing in Area	Workers Children Residing on Year-round Basis	Total Construc- tion Population Generated in in Area
Year 1	May	100	80	8	12	231	161	323
	August	100	80	8	12	231	161	323
	November	80	80	---	---	231	161	311
	January	80	80	---	---	231	161	311
Year 2	May	180	100	18	62	287	200	449
	August	233	100	23	110	287	200	497
	November	130	100	13	17	287	200	404
	January	130	100	13	17	287	200	404
Year 3	May	340	100	34	206	287	200	593
	August	340	100	34	206	287	200	593
	November	107	100	7	---	287	200	387
	January	100	100	---	---	287	200	387
Year 4	May	1043	120	104	819	515	240	1454
	August	1273	120	127	1026	630	240	1776
	November	120	120	---	---	343	240	463
	January	120	120	---	---	343	240	463
Year 5	May	1656	240	166	1250	819	480	2309
	August	1850	240	185	1425	915	480	2580
	November	280	240	28	12	689	480	945
	January	240	240	---	---	689	480	929
Year 6	May	1766	240	177	1349	1139	480	2728
	August	1766	240	177	1349	1139	480	2728
	November	260	240	20	---	689	480	929
	January	260	240	20	---	689	480	929
Year 7	May	1586	100	159	1327	785	200	2212
	August	970	100	97	773	481	200	1354
	November	207	100	21	86	287	200	473
	January	127	100	13	14	287	200	401
Year 8	May	60	40	6	14	115	80	169
	August	40	40	---	---	115	80	155

<sup>1</sup>These numbers should be considered approximations and not absolute numbers; assumptions used in developing these numbers follow immediately

<sup>2</sup>From Army Corps of Engineers New England Division

<sup>3</sup>Estimates by E.C. Jordan personnel derived from numbers of workers in skilled work categories required on a year round basis supplied by Army Corps of Engineers, New England Division.

<sup>4</sup>Estimates derived by E. C. Jordan personnel based on information provided by Maine construction companies, available in Appendix E and from estimates of average family size in Maine from the 1970 Census of Population. Detailed Characteristics, Final Report PC (1)-D21, Maine.



## TABLE 9 NOTES

- . Workers remaining year-round in the area for at least two years will have marriage and family patterns similar to those of the population of Maine, which will be the major source of construction labor. Thus, about 87 percent of these workers will be married and will have an average of approximately 2.3 children.
- . Most of these workers are over 30 years old.
- . All base workers who will be working on the project for at least two years, and who are married, will bring their families.
- . At peak work periods, a total of about 15 percent of workers will have brought their families with them. This percentage includes the estimated 87 percent of the base year-round workers who are married and will have brought families.
- . Most workers who have not secured some type of standard housing in town or brought mobile homes with them will not stay in the area during the non-working months.
- . Daily commuters will come from the Service Impact Area and Van Buren. This will include workers from the Fort Kent area plus the workers from the remainder of the county in proportion to the population in the remainder of the county. Population size is expected to bear more influence on worker location than proximity to the site. This is because a project of this magnitude will offer a pay scale higher than available elsewhere in the county. These higher wages will compensate for the distance travelled.
- . The existence of labor camps will, if built, make it easy to secure on-site temporary housing, thus encouraging workers not within commuting distance to live at the site during the week and to commute home on weekends.

It is expected that the construction jobs on the Dickey-Lincoln School dams will generate jobs in the community in a ratio of 1/.55 on an average basis (i.e., for each 10 jobs on the dams, 5.5 jobs will be created in area communities). Given the fairly erratic peaks and troughs represented by the seasonal employment, it is estimated this will average out over the year to 500-600 secondary and tertiary jobs, with a large proportion of them occurring in the Immediate and Service Impact Areas. It is unlikely that these jobs would generate any more than a few new residents to the area beyond those that already will be coming for the construction project itself. Depending on the point in the construction phase, there could be as many as 240 spouses of construction workers in the area potentially looking for work. Many women, graduating high school students, and presently unemployed will also seek these jobs. These sources of labor should provide a sufficient number of workers for the jobs created. Some workers may come to the area because they know residents there, or because they hear there is a large construction project there that is generating jobs. However, it is unlikely that a large number of people will come in this manner due to the remoteness of the area.

### 3.1.2 Social Base

General. The social impacts of a development of this magnitude inevitably affect all sectors of a local population and certain sectors of a state or regional population. Some people are affected very deeply and others only superficially; some are affected positively, others negatively.

It is impossible to say which impacts will definitely be positive and which negative because it can't be predicted with certainty how those changes may be valued by people in the future. Flood control may not be valued so highly if residents genuinely feel the dam might break. Many strangers in the area may not appear so negative if the construction provides jobs for local residents. The negative or positive nature of the impacts can only be determined by the residents who will experience them. An environmental assessment can inform residents how people in other similar locales have experienced these changes so they may be able to foresee how changes might affect their lives.

Immediate Impact Area. The preconstruction phase of the project will have an influence on the impact felt during construction. Therefore, some of the impacts from the preconstruction phase will be briefly reviewed.

As construction becomes more imminent, it may receive more attention in local newspapers and other communications channels. Local residents will come in contact with more people working on the preliminary stages of the study. This will stimulate whatever preparatory action residents

feel is appropriate. For example, residents of St. Francis have already bought land as a possible site for labor camps, and residents of Allagash are not selling any land, since they feel they may be able to get a better price from the Federal government.<sup>1</sup> In general, as the project construction draws near, some residents will commit their actions to the probability of the dam existence, while others will become more fervent in opposition to it.

Also, during preconstruction, the Corps of Engineers has suggested they will hold information, education, and workshop programs with area residents, both to inform them on the progress and findings of the studies and to obtain their input. This will demand a great deal of time and energy from residents, but it will also provide them with a better understanding of the possibility of dam construction and encourage them to react and form opinions more in line with what events may actually occur in the area, as construction plans become more finalized.

When the actual construction phase is reached, some major impacts of the project will result from the presence of the construction workers from outside the area, many single, male construction workers living in the area, both within the community and in labor camps.<sup>2</sup> This factor will become more important from the second through the seventh year of construction<sup>3</sup>.

Also of importance will be the relocation of a substantial portion of Allagash, and some residents of St. Francis. The physical construction of the dam requiring the movement of material, the change in the river and the hiring of local workers all will have major impacts. These impacts will begin with the preparation of the construction and impoundment areas by massive tree clearing.

These early changes will have significant impact on aesthetics, the flow of the river, and labor, all of which are important resources which will be committed to the project for the long term.

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<sup>1</sup>Conversations with local residents, April 1976.

<sup>2</sup>Berkshire Regional Planning Commission. Evaluation of Power Facilities April 1974 and information provided by local construction firms.

<sup>3</sup>Project labor needs as provided by the Army Corps of Engineers.

### 3.1.3 Cultural Factors, Language and Religion

The clash of cultures and cultural values will last for as long as there are many workers from outside living in the area. The workers will start coming in large numbers during the second year of construction. Language will play an important role in the interaction of the construction worker culture and local resident culture. Many residents prefer to use French or are more at ease using French.<sup>1</sup> This will occur for those employed in the service sector (e.g. restaurants, bars, and laudramats), as well as construction jobs. Language may serve as an important source of identification for local residents, and differentiation from workers from elsewhere; it could prove pivotal in worker compatibility. Construction workers who do not speak French may find their ability to operate and to satisfy their needs in the new culture diminished because of the language barrier.<sup>2</sup>

The major religion of the area will probably not be challenged by the growth of other religions. In all the towns but Allagash, local Catholicism is a pervasive element of lifestyle and value system centrally based around the family, in an area where large families and family cooperation are the pattern.

The church as an institution will have somewhat increased attendance, mostly from workers and their families living within the existing communities. This will result in higher donation rates and somewhat increased attendance at church-sponsored social events.<sup>3</sup> Given the value similarities existing in both old and new residents attending church functions, this should be a positive experience for both groups.

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<sup>1</sup>Experience with the interviewing process for this study has shown this to be the case.

<sup>2</sup>From the experience of non French-speaking consultants working in the area.

<sup>3</sup>Ploch and LeRay. op. cit.

### 3.1.4 Household, Family, and Employment Factors

The household and family patterns may be affected at many major points during the construction of the dams. Most development projects studied which have involved large numbers of laborers and semi-skilled workers moving into a rural area, largely without their families, have shown this to be true.<sup>1</sup>

During the first year the longer-term workers will begin to move into the area, most looking for either mobile home parks or sale homes. The first impacts of this would be felt in the tightening of the housing market, and in the first meetings with these more highly paid newcomers who, as a rule, will speak only English. These early workers will not be numerous, and most will have their families, seek respectable homes, and generally be respected by local residents. This first-year thrust may encourage local residents to expand local opportunities such as planning for home building speculation, opening new stores and commercial establishments, and seeking jobs.

The second and third year will bring larger numbers of workers, many seasonal and many without their families. Many more jobs, both in construction and services, will become available to local residents, starting in motion many of the changes in family and household patterns, and employment.

Both men and women, husbands and wives, and teenage children will be seeking and securing work. Some will be women and children who have never worked before and they will feel the self-satisfaction of earning money and getting work experience. Many of the men and women will earn more or get a better job than they ever had.

These work opportunities, for as long as they last, will provide higher incomes for some families in the area and make work available to more family members. The higher incomes will allow local residents who secure jobs to have more disposable income to spend on desired choices, in many cases consumer goods. Because of the local patterns of sharing with extended family members,<sup>2</sup> this increase in income and consumer goods will likely be spread throughout the population and not necessarily be confined to those securing jobs.

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<sup>1</sup>Berkshire County Regional Planning Commission op. cit.

<sup>2</sup>As discussed with Lowell Daigle.

As consumption and ability to consume increases, prices will also increase on many items. This could result in local residents not really being any better off financially, and resenting local store keepers for raising prices affecting local residents as well as newcomers.<sup>1</sup>

A number of residents in the local area expecting to obtain jobs in construction of the dams may be disappointed. From the 20% sample used for the survey done for this report, 162 persons were reported as interested in obtaining work related to the construction of the dams. For the entire population of the four town area this would result in about 800 local residents possibly seeking work. This is quite a bit higher than the number of local residents who are actually likely to obtain work in project development.

The time spent working by residents who were playing other roles in their families and households will be taken away from those functions. Women with small children may be tempted to work with the new availability of higher paying jobs. Without adequate child care services, this could leave children without adequate care.<sup>2</sup> Since women would probably secure the lower-paying service jobs, the cost of private day care may be prohibitive. At any rate, the job availability will provide both opportunity and frustration, both better lives and worse lives as perceived by local adults and children.

Community roles, jobs, and functions might also be left vacant as residents who previously filled them seek more lucrative work in construction. In the small communities of the Immediate Impact Areas, where some individuals play key community roles, their absence could be very difficult. Old employers, left to seek new, less qualified help in a tight labor market, may resent the dam construction project for taking them. It has been the case with other development projects, notably Sweethome, Oregon, that local government also suffered for loss of talent and had to make do with less experience and qualified workers.<sup>3</sup> In many cases, these workers can't return to their old jobs during off season or at the end of construction as they have since been filled.

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<sup>1</sup>These dynamics are well documented in the Alaskan Pipeline situation in reports published by the Impact Information Center in Fairbanks, Alaska.

<sup>2</sup>Impact Information Center Reports, Fairbanks, Alaska.

<sup>3</sup>Smith, Courtland et. al., op. cit.

The interaction of local residents and immigrants in the job place could provide for a major exchange or clash of values. Exposure to the values of immigrant workers, largely working class single men from urban cultures, will have an influence on local workers. The rowdiness and alcohol problems characteristic of such massive rural construction jobs may create tension, and result in fights between the two groups.<sup>1</sup> Drugs are an inevitable issue. Local children will be exposed to urban values possibly tempting them to try out this new lifestyle perpetuating the trend of youth out-migration.

As of early 1977, the Corps had held several meetings with town officials and special committees to discuss potential relocation sites and develop criteria for site selection. Interviews with area home-owners to be relocated occurred during the Spring of 1977. Basic data was collected on each household.

Finally, education may become a more important issue for area residents if the project is constructed. The lower educational levels of local residents may keep them from being strong contenders for some of the job openings requiring high school competition. Work availability leading to immediate employment may discourage others from continuing their education, either in high school or college.

The clearest impact on household and family life will occur for those local residents who will be relocated. Although the actual relocation work will begin during the first year of construction, planning for relocation could begin as early as one to two years before to allow residents time to choose a location for their new community, to plan for its layout, services, and distribution of lots, and to prepare themselves for the move. There may be points of organizational disagreement between the residents of Allagash and the Corps, including the local desire to have all houses fronted on the main road while the site of the land might require a different arrangement.<sup>2</sup>

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<sup>1</sup>Impact Information Center Reports, Fairbanks, Alaska

<sup>2</sup>Discussion with Corps of Engineers personnel.

After the completion of planning, the physical reality of relocation will occur. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URARPAP) will provide the guidelines for this procedure.<sup>1</sup> The decisions involved in new housing choice and the moving process will likely entail many family discussions. This could result in different impacts in different families, ranging from crisis and argument to agreement and optimism. Resident's choices of homes under URARPAP are limited to those approved by Farmers Home Administration (FmHA) guidelines to receive supplemental assistance. The guidelines include central heating and hot and cold running water in both the required full bathroom and full kitchen. The central heating stipulation has been relaxed to allow wood central heating, but it should be able to maintain all rooms in the house at 70°. In some cases, these guidelines will require a more elaborate housing system.

Thirty of the 160 households are considered marginal properties and cannot be relocated because of the \$15,000 limitation set forth in Section 203 of Relocation Assistance Act.<sup>2</sup> Under Section 206, last resort housing can be constructed with project funds if the head of the federal agency involved determines that there is no available decent, safe and sanitary replacement housing. In order to receive either the supplemental housing payment or "last resort" assistance, the displaced homeowner must move in a replacement dwelling which is decent, safe and sanitary as established in accordance with Farmers Home Administration, state and local standards. This would involve, then, a substantial

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<sup>1</sup>Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. Public Law 91-646 provides that no person shall be required to move from his existing dwelling unless there is available a decent, safe and sanitary replacement dwelling with a reasonable time prior to displacement. Farmers Home Administration minimum housing standards, as well as state and local building codes, will be utilized for criteria in establishing decent, safe and sanitary replacement housing.

<sup>2</sup>The Relocation Assistance Act provides a displaced homeowner a housing replacement payment of up to \$15,000 over the price paid for his old home. Eligibility for this supplemental benefit is contingent on moving into decent, safe and sanitary housing. Minimum housing standards include central heating and hot and cold running water in both the required full bathroom and full kitchen.



change in lifestyle to those residents, which may or may not be desirable to residents.<sup>1</sup> Upgraded homes could be more costly for energy, including a hot water heater and more wood or oil to heat an entire home instead of just part of it, and the cost of maintaining a septic system. The income of many residents could not support these increased costs, in addition to the factor that these stipulations may be more wasteful of energy.

After relocation is complete and the residents are in their new homes, the reality of the loss of their old homes, land, and habits may set in. In previous relocation situations this has been described as "grief", with residents feeling a real loss for their old homes. In the case of the Quabbin Reservoir in Massachusetts, built in the 1930's, old residents of the flooded valley still gather together on a regular basis with old photographs and stories to try to relive the life they lost.<sup>2</sup> Although Allagash residents would be able to maintain some elements of their community, the loss of so many homes and a woodland so important to their lives will still be a serious shock.

### 3.1.5 Community Involvement

Community activities and the involvement of local residents may change importantly in some respects, and stay very much the same in others. Much of the residents' social involvement with other community residents occurs at home, in social groups based on organizational involvement (veteran status, church membership, etc.) or in mutual helping activities. These bases of involvement are not subject to intrusion by new residents or, in a case such as the churches, by people that would be considered undesirable as social companions. The major community locations where tension might arise between old and new residents would be community planning or council meetings, or commercial locations such as restaurants, bars, or taverns.

Local Class A restaurants where alcohol is available, are relatively important social centers. Considerable use of these can be anticipated by construction workers. The fact that many of these men will be working in the same place, competing for jobs and raises, may aggravate competitive bravado and conflicts between local residents and outsiders. Past experience in the area with such outsiders, specifically Loring Air Force personnel, has resulted in such antagonism and conflict.<sup>3</sup> As

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<sup>1</sup>From discussions with local residents.

<sup>2</sup>Perry, Phillips. "The Quabbin Survivors" Yankee, May 1976.

<sup>3</sup>Discussions with Lowell Daigle.

the demand for drinking establishments increases, new ones will go into business, possibly resulting in informally separate bars for the workers and residents.

Physical change in the community could require a large number of meetings for local residents to make decisions regarding that development. It could also provide a meeting ground for local residents, project developers, and new residents seeking to have that development meet their needs. Towns in the Immediate Impact Area are already considering the possibility of dam construction. St. Francis is considering the purchase of a tract of land for relocation of its residents, and Fort Kent officials have considered restrictive trailer ordinances to prevent rapid, uncontrolled development.

Local residents will have widely varying attitudes towards development. Some will want to sell their land; people in the local construction business stand to profit a great deal. Others could lose by having land values and taxes rise, by changes in neighborhoods, and by loss of open space. These changes, and the decisions required to handle them, will primarily occur just before construction begins and through the first several years as housing is built.

If a construction labor camp is built, the town or towns that have agreed to have such a camp will receive the greatest impacts by the fourth year with the peak of workers in the area. The social problems associated with such camps will then become the focus of community concern.

All these externally engendered issues will demand the time, energy and commitment of local residents and decision-makers. Local conflicts will arise among those residents who stand to either profit or lose.

The physical changes resulting from development must also be considered. Only time will tell exactly where such development as commercial services, new homes, trailers and trailer parks, labor camps, and dam construction contractors and suppliers will be located. Such activities radically change neighborhood patterns, road usage, local aesthetics, and noise levels.

### 3.1.6 Recreation

Social interaction plays a role in some recreation activities, but is not so important for the more popular and more solitary outdoor activities, such as hunting and fishing. Evening recreation, such as attending bars and taverns, is popular in the upper St. John Valley. These activities, engaged in primarily by the men of the community, are a major site for interaction of local male residents and the construction work force for the dam project.

Outdoor recreation activities, most popular in the area, will be affected during construction of Dickey-Lincoln. Hunting and fishing seasons that overlap with peak construction activity may experience an increase of users. This could lead to more activity in the woods and possibly increased danger during hunting season.

The major impact of the dam development on recreation would be the impoundment of the St. John River and changes in the character of the river upstream from the dam that would alter its use for recreation. This area, important in that area of the state, will be lost to river and woodland recreation for most of the seven and one-half year duration of the project. This will affect the work of hunting, fishing, and boating guides in the area and activities of recreation users.

### 3.1.7 Social Problems

At peak construction there will be around 1200 workers, mostly men without families, living in labor camps, trailer parks or rental housing.<sup>1</sup> These workers will be in a far more rural, less developed environment than they are used to, with fewer long-term acquaintances, female companions, or commercial recreation facilities available.<sup>2</sup>

Assuming a construction labor camp is built, it is likely that the developers of the required facility will provide some type of recreation facilities for the workers to respond to these needs. The creativity and variety of this recreation will be important in fulfilling the needs of the workers. Nevertheless, these men will also go into the community for their recreation needs, as they can't all be fulfilled in one place.<sup>3</sup>

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<sup>1</sup>See Paragraph 3.1.4

<sup>2</sup>Berkshire County Regional Planning Commission. Evaluation of Power Facilities

<sup>3</sup>Berkshire County Regional Planning Commission. Evaluation of Power Facilities

In other projects, particularly documented in the Alaskan pipeline situation, has been the development of prostitution, both individual and organized.<sup>1</sup> The development of prostitution in the area to serve the the construction population could also make it available to the local population. The dating of local women and construction workers could develop value clashes, and dissatisfaction on the part of local parents.

Of substantial importance in such situations are the problems created not only for local residents, but also for the construction workers. Feelings of solitude or boredom could express themselves not only in behavior that may be destructive to the local community, such as brawling, theft, and prostitution, but also destructive to themselves. In similar cases, alcoholism and drug abuse have become more common, along with a general level of frustration amongst the workers.<sup>2</sup> In the St. John Valley area, alcohol has always been available.

### 3.1.8 Housing

The type and extent of the demand on housing services and facilities within the Service Impact Area is dependent upon how the increased population from construction workers is dispersed in that area. The dispersion pattern will, to a large extent, be a function of supply since the demands for housing will far exceed supply. The current supply of available housing, however, is quite small in all communities.

This paragraph will describe housing supply and demand during construction, alternatives for making supply and demand commensurate and the potential impact of each alternative.

In general, the types of housing demand generated by the construction work force include workers wanting to bring their own mobile homes, those wanting housing provided for them by the contractor,<sup>3</sup> and those seeking more permanent housing available in the communities (i.e. purchase or rental).

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<sup>1</sup>Impact Information Center Report

<sup>2</sup>Berkshire County Regional Planning Commission, op. cit.

<sup>3</sup>A popular housing solution offered by contractors is a labor camp format. Such camps can be composed of temporary pre-fab units with portable waste disposal and accessory buildings for food service and recreation. These can also include development of trailer pads for workers bringing their own housing.

These different demands for housing will be largely related to how long a construction worker will be staying in the impact areas (seasonal or year-round) and, whether or not they will be bringing their families. It can be expected that:

- (a) Year-round workers not bringing mobile homes will want to seek housing in the communities of the area. The majority of year-round workers bringing families will seek single family dwellings. Single workers will probably seek apartments.
- (b) About 25 percent of year-round workers and 25 percent of seasonal workers will bring their own mobile homes.
- (c) Year-round workers bringing mobile homes will probably desire space in mobile home parks separate from any labor camp site so as to obtain more privacy for themselves and their families.
- (d) Seasonal workers bringing trailers may prefer locating at a labor camp site due to the expected level of services available.
- (e) Seasonal workers not bringing mobile homes will probably prefer to have housing provided by the developer or contractor.
- (f) Workers from Aroostook County (outside the Service Impact Area and Van Buren) will probably find commuting distances excessive. They may desire to have weekly housing available to them and commute home on the weekends.

These speculations are based on information provided by labor unions and construction contractors in the New England Region, and from the experience of other developers on projects in rural areas.

The number of workers likely to be in the area during the construction phase has been translated into housing demand types shown in Table 10. As can be seen, there will be a substantial demand for housing in the area, particularly during the fourth to seventh years of construction.

In addition to construction workers, secondary jobs created will probably create additional demands for housing. It appears that, based upon the unemployment level in Aroostook County, most of these jobs will be filled by residents from the county, and/or members of the construction workers' families. In general, then, it is expected the secondary work force will not require a significant amount of housing. New entrants into the housing market from the local area (in particular, first-time house or apartment seekers) will also generate some housing demands. Local economic prosperity during construction may accelerate this process. Demand in this case is expected to be small, but represents yet another type of housing need.

TABLE 10

ESTIMATED HYPOTHETICAL HOUSING DEMAND IN SERVICE IMPACT AREA  
BY YEAR OF CONSTRUCTION PHASE<sup>1</sup>

Year of Project	Year-round Single Family Dwellings	Year-round Apartments	Year-round Own Trailers	Seasonal Housing Provided (Contractor Developer or Commercial)	Seasonal Own Trailers
1	50	10	20	10	2
2	65	10	25	60	20
3	65	10	25	150	50
4	80	10	30	675	225
5	160	20	60	1010	340
6	160	20	60	1010	340
7	65	10	25	975	325
8	25	5	10	10	4

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<sup>1</sup>Estimated assuming items (1) to (5) presented in this paragraph.

Available sale housing in the Service Impact Area would easily be filled within the first year of construction. The rest of the families would then seek the rental unit, filling these units by the second year. Housing availability is not at all commensurate with housing demand.

Given this array of diverse demands, three options must now be considered for satisfying demand given the level of supply:

- (1) no special efforts could be taken by the Corps or contractors to provide housing, leaving the construction workers on their own to secure housing.
- (2) the Corps or contractors could plan housing of the construction work force in one generalized location; a large diversified labor camp situation for all employees.
- (3) the Corps could seek a combination of concentrating construction workers in some areas, utilizing local available housing in combination with future local housing needs, and utilizing existing large scale housing resources.

Option (1) would have the greatest overall impact in the Service Impact Area, especially some of the larger towns such as Fort Kent. Most of the towns have little or no housing available, and support services are either already in need of expansion or just adequate for current needs. Therefore all of the towns would have to make some type of adjustment requiring substantial evaluations and possible expansions of services. The impact on zoning from individualized construction or trailer placement could be substantial, or ordinances against trailers could impede construction progress. Furthermore, such dispersion does not take advantage of the potential economies of scale available in the second or third option.

The second option would have a much greater impact in a smaller area, but less of an overall effect on the Service Impact Area. The concentrated area would have to assimilate an average of about 100 new people (or more) per year in the first 3-year period, about 400-1,000 in each year of the second 3-year period, declines beginning to occur in the next year, after which the population tapers back to an average of 150-300 in the last year of construction.

In addition, this option would place less impact on residents other than the construction workers who will be seeking housing. It would not provide a diversified choice of living situations and could generate specific on or near site problems, such as traffic congestion or waste disposal.

The third option would minimize service impacts, while possibly maximizing short and long-term benefits by utilizing existing resources and largely developing ones in a high density area. In some towns, such as Madawaska, there is some housing available. In addition, approximately 4 percent of the households in the Immediate Impact Area responded they would consider renting portions of their homes to construction workers. Short term benefits will then be realized by taking advantage of these opportunities. Long-term benefits could be gained in the impact area by constructing housing that could be used when the project is completed. This could take the form of single-family housing, since there will be a demand of approximately 160 units at peak construction, or multi-family or multi-purpose housing (e.g. dormitories, apartment houses). The development of a temporary construction labor camp using portable housing and service units can minimize the service facilities impacts as well as encourage concentration of commercial services in that area for use of camp residents. Traylor hook-ups could be provided at such a site to provide diversity of housing choice as desired by construction workers.<sup>1</sup>

Relocation of parts of the towns of Allagash and St. Francis, 115 and 44 households respectively, will create a special case of housing demand and supply for those affected residents. The Corps of Engineers is currently analyzing the housing needs of relocated households.

Provisions for relocating these towns are covered under the Uniform Relocation Assistance and Real Property Acquisition Policy Act which is designed to ensure a more equitable treatment of relocated residents under law. However, the impacts may vary from family to family. Some will obtain housing superior to that currently owned and some may find operating expenses of their new homes unaffordable.<sup>2</sup> In one Corps of Engineers project,<sup>3</sup> the relocation process was aggravated by changes in key Corps personnel. The affected residents found it difficult to work with the Corps when one employee was not willing to commit to the decisions of his predecessor.

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<sup>1</sup>From conversations with contractors and union officials.

<sup>2</sup>Source: Conversation with Lincoln County Commissioner, re: Libby Dam, Libby, Montana.

<sup>3</sup>The "Uniform Relocation Assistance & Real Property Acquisition Policies Act of 1970," Public Law 91-646, approved 2 January 1971, is designed to minimize or eliminate impact on individuals displaced by federal acquisition. The thrust of the legislation is elimination of economic loss for persons displaced by a federal or federally-assisted project. Some of the issues in applying this law justly and equitably are discussed in paragraph 3.1.4.



## 3.2 OPERATION PHASE

### 3.2.1 Population

At the end of construction of the dams most of the workers will leave the area; their largely urban background, base of economic livelihood, and migratory lifestyle make it unlikely that these construction workers would choose to settle in the northern Aroostook area.<sup>1</sup> Some, however, will stay. Coupled with local residents who stayed in the area to work on the project or related jobs, population in the area after completion of construction will not drop to what it otherwise would have been without the project. During a dam construction project in the Sweet-home, Oregon area during the 1960's (requiring a peak of 1300 construction workers), population in the town of Sweethome rose 24 percent from before dam construction to the peak construction phase, but dropped back only 2 percent by one year after termination of construction.<sup>2</sup>

During the operational phase of Dickey-Lincoln the dams will require only 40 workers. Of these, about 30 will be skilled workers moving into the area, and 10 will be maintenance workers from the local area. Assuming similar marriage and childbearing ratio for those moving in as were assumed for the immigrant construction population, this operational population would also add 26 spouses and 60 children for a population increase of 116. It is most likely that these families would locate in the permanent housing made available for the long-term construction workers but now vacant.

These workers will be viewed in a positive light by local residents, because their consumption of goods and services within the community will take up at least a small part of the consumer slack created by the departure of construction workers.

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<sup>1</sup>Discussion with Chief Engineer, Northwest Pacific Division, Army Corps of Engineers regarding the construction and operation of the Libby Dam in Montana.

<sup>2</sup>Smith, Courtland, et al, op. cit.

Taking these factors into consideration, an examination can be made of possible population levels within the Service Impact Area, the area that will encompass the residences of virtually all of the construction workers on the project. The peak population in the Service Impact Area will occur around 1983 (assuming construction start-up in 1978) and will reach a population of about 21,103. This is an increase of about 3,973 or 23 percent over estimated 1978 population before construction commencement. A population estimate for 1990 (taking only the population of the area without the project) and that generated by the 30 operation jobs that will be taken by residents moving into the area, shows a population of 20,705. This represents a decrease of approximately 2 percent from the population peak occurring in 1983. It is likely that this figure is low. If the Fort Kent area followed a pattern similar to Sweethome, Oregon, that figure (20,705) would be reached shortly after termination of the project, possibly around 1987. It is possible the 1990 population could be in the area of 21,000 to 22,000 residents in the Service Impact Area.

These population increases will most likely occur in Fort Kent and Madawaska, although other employers moving into the area could affect that. It is unlikely any subsequent population increase could occur in Allagash due to the shortage of land available for residential development, and the dominating appearance of the dam. Population is likely to remain high in communities where housing was constructed during the dam building process.

### 3.2.2 Social Base

Immediate Impact Area. As the construction phase ends the effects of the operational phase will begin. The major factor here will be the immigration of the construction workers, the cleanup of the development sites in Allagash and St. Francis, and the decline in the number of jobs and consumer demand for goods and services in the area.

As the sites are cleaned up and construction activity with its attendant noise, heavy traffic, and dust, slows down, the Immediate Impact Area along Rt. 161 will begin to quiet down. Dust will no longer fall on laundry, children will not have to be watched so closely from going in the road, and certain areas around the sites could be returned for recreation use. According to the Corps of Engineers, the water level in the reregulating reservoir (Lincoln School) will vary 5.8 to 12 feet depending on needs. Such deviations may warrant restricting access to this area.<sup>1</sup> As a minimum this will be a hazard to the children in Allagash School since the high water level will come very close to the back of the school.

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<sup>1</sup>Discussion with Corps of Engineers personnel.

At the same time, the drastically reduced number of construction workers may leave expanded businesses and facilities without consumers or users. This will be accompanied by unemployment of many of the local residents who were working on the project. If stores were opened in the area, the remaining people may continue patronizing them, but incomes will not be as high. This will be a difficult time, possibly generating out-migration among some young local residents who matured during the period of high activity and will leave to seek jobs elsewhere.

The huge dams will exist as finished entities; residents will be used to them by the time they start generating electricity. The local availability and prices of that electricity are still in question. If the electricity is not locally available, there could be a resentment toward the project. The vast presence of the Dickey Dam will become an integral part of local residents' environment. If, for any reason, fear of the collapse of the dam became widespread, it could have a profound affect on at least the towns of Allagash and St. Francis.

One possible long-term benefit of the project for the local area would be the existence of the lake which would attract at least some lake recreation users to the area. This would depend on the type of recreation for which the area is developed and the relative attractiveness of the lake compared to other lakes and the location of users.

Another possible long-term benefit for the residents in the Service Impact Area is flood control. Certainly in the short run flooding of the St. John will be alleviated and this will probably create a spirit of optimism.

TABLE 11

IMMEDIATE AND SERVICE IMPACT AREAS

A. FROM PRESENT TO PROJECT FUNDING

NEGATIVE IMPACTS

1. Inadequate and inconsistent information available to local residents on the project resulting in misinformation, unnecessary conflict, and inappropriate speculation and expectations.
2. Lack of definition of decision-making points and timing on the project to allow citizens to intercede on the issues they desire at the appropriate time.
3. Performance of many studies of the area including social, economic, natural resource, and relocation resulting in imposition on the time, space, and privacy of area residents.

TABLE 11 - continued

DURING CONSTRUCTION

B. CULTURE, LANGUAGE AND RELIGION

NEGATIVE IMPACTS

1. A large number of English-speaking workers will come into this largely French-speaking area either requiring a decline in local cultural use of French to meet the needs of the new population or resulting in the use of French as an exclusionary technique to help maintain their culture in the face of a large number of outsiders. This could create problems on the job, but also in commercial service establishments and in the public schools.
2. Introduction of a mixed and no religion population into an area where Catholicism is dominant may create value clashes.
3. Possible introduction of Canadian workers into the area, particularly during the tree-clearing phase, so that although there will be little direct contact between local residents and these workers, the contact that arises will be intense basen on past animosities regarding taking of jobs by Canadians.

POSITIVE IMPACTS

1. Increase in base for local church attendance and financial support primarily from longer-term workers and their families.

TABLE 11 - continued

C. HOUSEHOLD, FAMILY EMPLOYMENT

NEGATIVE IMPACTS

1. Given relatively low educational levels and skill attainment of local residents, particularly those over 30, they may not be able to secure construction jobs competing in a market with workers from elsewhere with higher educational and skill levels. As job and pay availability is seen locally as the most positive aspect of the project, this could generate resentment against the development.
2. Primary heads of households and other workers may leave their present jobs for higher paying work on dam construction leaving their previous jobs to less experienced and capable workers. If they had year-round jobs, they may be unable to return in the fall as jobs have been filled. Such occurrences create resentment on the parts of both employers and employees.
3. Women may leave their present house and child care roles to take work as the service sector expands, possibly leaving their usual roles inadequately covered.
4. High school students and post-high school students may fill some construction and service jobs exposing them to values and activities not considered desirable by the local culture.

POSITIVE IMPACTS

1. Jobs available to local residents otherwise not able to secure a job due to lack of education, young age, or work experience will be provided with work experience and income.
2. Local men in primary families will be able to earn more money in the higher paying construction jobs allowing them to have more disposable income or savings. Items needed by the family may now be affordable. It could result in higher self-esteem.
3. Women will be able to get jobs providing the family or themselves with income not previously available. This could be an opportunity for increased self-esteem and independence not available in the area of high unemployment and male dominance.
4. New homes available to relocated residents may provide them with a better living situation in the area with more or better land, more insulation in their home, or a style or facilities they are happier with.

TABLE 11 - continued

NEGATIVE IMPACTS

5. Required relocation of 115 households in Allagash will demand a great amount of time and energy of local residents in determining general location, layout, size, and allocation of lots resulting in competition for locations, disappointment, and animosity amongst themselves and against the government for necessitating it.
6. Required relocation of 44 households in St. Francis will demand some time and energy of local residents to find adequate sites, secure them, and approve them through town political process.
7. Once relocation is completed (several years into the project) relocated residents may begin to "grieve" for their old home, land, and neighborhood structure.
8. In order to receive maximum compensation for their original properties, residents who do not have their old homes moved will be required to have an FmHA approved home built, demanding a different type of heating (central as opposed to space) and plumbing situation than they may be able to afford to maintain or desire.
9. The aesthetics, peace, and solitude of living environments of anyone living on Rt. 161 or any major routes receiving commuter or trucking traffic may be changed by the presence of heavy traffic, noise, and increased danger.

TABLE 11 - continued

D. COMMUNITY INVOLVEMENT, POLITICAL ACTIVITIES

NEGATIVE IMPACTS

1. Use of commercial recreation sites by construction workers with different social values and behavior; temporary destruction of small, intimate social group; potential conflict.
2. Many changes in physical community (new homes, apartments, roads, zoning, commercial development) requiring more meetings, special committees, local conflict and political decision-making in communities without strong patterns of meeting attendance and problem solving.



TABLE 11 - continued

E. RECREATION

NEGATIVE IMPACTS

1. Loss of lands in an area used by 41% of the households in the Immediate Impact Area for recreation, primarily for fishing and hunting, providing both recreation experiences and food supplements.
2. Recreation and psychic loss of the impoundment area by users and residents causing emotions such as anger and grief, loss of game harvested in the area as an income supplement, and simply loss of the area as a place to go.
3. More crowded situations at other outdoor recreation sites due to increased population in the area leading to generally greater use and possibly more hunting or snowmobiling accidents.
4. New children in the school system may enter school sports activities and take participation opportunities away from local children.

POSITIVE IMPACTS

1. Increased demand for services of hunting and fishing guides from population increase.

TABLE 11 - continued

F. SOCIAL PROBLEMS NOT MENTIONED ELSEWHERE

NEGATIVE IMPACTS

1. Given the expected large number of single male construction workers or those without their families, prostitution will probably increase in the area.
2. Since workers will be in a relatively simple environment compared to urban life, many of them without their families, they might also turn to alcohol and possibly alcoholism, and drug use to ease their lives in the new environment.

TABLE 11 - continued

OPERATION

NEGATIVE IMPACTS

1. Hazards of fluctuating flows of Lincoln School reservoir may create safety hazards for Allagash school.
2. Rapid decline in population with the end of the construction phase may cause dislocation for local businesses whose market was based on construction workers and municipal services that expanded to serve the needs of the much larger population.
3. Possible psychological reaction of fear of the future and depression as the economy declines perhaps increased out-migration of local residents who returned to or remained in the area during the construction phase.
4. Fear of dam collapse.
5. Continuation of problems relative to adaptation to a new home (see C7).

POSITIVE IMPACTS

1. No fear from flooding of farmland, other rural land along the river, and parts of Fort Kent.

SECTION 4  
MITIGATION OF ADVERSE SOCIAL IMPACTS

4.1 INTRODUCTION

Adverse impacts cannot be effectively mitigated unless there is a well defined process, responsibility and authority for implementation. There is an available array of public, private, and federal institutions that could and should be used for this purpose. Many of these institutions have been identified in this assessment, but a study of institutional responsibilities and functions per se was not made. It is felt that such a study is necessary to identify which institutions are the most adequate to deal with mitigation procedures, and also to identify where institutions must be created to solve project-related impacts. In this assessment, recommendations for implementation authority have been named where possible.

A common thread running through most suggested mitigation procedures is the need for citizen participation in the decision-making process, particularly within the Immediate Impact Area. One of the most effective methods of mitigating impacts is to involve affected people in the planning and construction of the project. It is for this reason that certain recommendations are made (with qualifications) concerning such issues as the preferred methodology for locating a construction labor camp. It is also for this reason that one cannot state that some impacts are certain; in some cases local citizens could act to prevent their occurrence if they have adequate information and resources available.

It must be recognized that mitigation procedures cost money and as such should be included in project costs.<sup>1</sup> This will then more accurately reflect the cost of producing the benefits of the project.

And, finally, it should be noted that suggested mitigation of impacts are not ultimate solutions to the identified impacts or even comprehensive solution to a whole set of impacts. Within the constraints of this study, and based on what decisions have been made to date, problems have identified and ways suggested to solve those that can be solved. Should the project be funded, a significant amount of further problem-identification, formulation of possible solutions, and implementation of those solutions will remain.

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<sup>1</sup>The term project costs is defined as those costs which have to be recovered in the marketing scheme developed by the Department of Interior.

## 4.2 MITIGATION OF ADVERSE SOCIAL IMPACTS

Table 12 provides a display of projected adverse impacts of the project on local residents, and regional residents and suggests methods for mitigation. This discussion will focus on the general areas and approaches that can be utilized for mitigating adverse impacts in several areas.

The mitigation process that seems most required is in the area of information and education. From now through project completion there should be a large-scale, methodical education program that provides residents with information as to the present status of the project, its effect on their lives, and any future impacts of the project that can be anticipated and planned for.<sup>1</sup> The need for this is evident from the incorrect responses of local residents regarding benefits they expect to get from the project. These services could range from a resident education and participation program throughout EIS preparation and review, to information and advisory sessions with town political leaders and businessmen to help them plan for expansion in a realistic way without overextending themselves. Knowledgeable planning assistance is essential in the location of development in existing towns and in the very complex planning process that will occur in the relocation of Allagash.

Psychological counsellors could also be available, provided as a routine and integrated part of the residential relocation services.

Other counsellors will need to be available in larger numbers to deal with increases in social problems other than those related to relocation that will occur. Such problems include alcoholism, drug addiction, prostitution, unemployment, and general depression due to the rapidity of change.<sup>2</sup>

Counsellors working with construction contractors might meet with each incoming worker regarding the nature of the culture the worker will become a temporary resident in, a possible need to learn some of the French spoken there, types of housing available, and possible personal and psychological problems he could face in his stay in the area. Early attention to these issues, and the worker's recognition that there is someone to talk with about his problems, could be useful in averting future difficulties.

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<sup>1</sup>Similar to a program suggested by the Edward C. Jordan Co., Inc. in a June memo to Bud Barrett of the Corps of Engineers.

<sup>2</sup>Information in the Impact Information Center Reports from Fairbanks, Alaska consistently document the increased need for social service and counselling personnel.

Provision of responsive recreation opportunities for workers is also important in providing alternative activities and an opportunity for social interaction and release of tension.

To alleviate general resentment toward the massive changes that would be made in community life in the area, every effort should be taken to channel economic benefits to the local economy and to local residents in the form of employment and purchase of goods and services.

In order for these mitigation procedures to be effective, they must receive a wide range of planning input. Planned measures must be defined, although flexible, and there must be a commitment to action. Many professionals, both counseling and planning oriented, will be required. These people must be competent and knowledgeable of mitigation procedures, and thus could provide a wide range of choices and innovative approaches to the profoundly difficult tasks that will affect the communities of the Immediate Impact Area. It is conceivable that the cost of such services over the lifetime of the project could be in the area of \$1 million.<sup>1</sup>

#### 4.3 MITIGATION OF ADVERSE HOUSING IMPACTS

Because of the demand and supply relationships discussed earlier, it would appear that the most viable method for housing the incoming construction workers and families is a housing program or authority sponsored by the Corps of Engineers with decision-making input from contractors, residents, and towns in the Service Impact Area. Decision-makers in this program should recognize that:

- . Nearly all incoming construction workers will require housing units not currently available. Therefore, housing will have to be created.
- . Housing needs are diverse in function and are for the most part temporary (7 years).
- . Even though most needs are temporary, long-term opportunities for housing should be examined.

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<sup>1</sup>Estimated on the basis of about 12 counsellors and planners working for the seven-year construction phase of the project.

A comprehensive study of housing needs in the communities should be evaluated as a first step. This should include both the long and short-term opportunities discussed earlier. Housing created for project-related activities may be turned over to the communities or individuals with agreed upon financial arrangements when construction is over. For instance, the University of Maine at Fort Kent may need another dormitory. One could be built for the workers, and then turned over to the school when the dam is completed. Also, housing could be created along the shoreline of the proposed reservoir and could thereby serve as residential housing when the reservoir is filled.

Once these options have been evaluated concurrently with housing needs for the immigrant workers, an assessment can be made of the housing needed by the work force beyond what the communities can subsequently utilize.

One alternative which has been considered is the use of housing of Loring Air Force Base which may become available if the base has a reduction in activities. However, the travel time between Loring and the construction site (approximately 1.5 hours) makes this alternative unfeasible.

On the 1976 survey conducted as part of this study, a question was included regarding the most desirable housing options for the incoming construction workers as perceived by local residents.

Respondents were offered the seemingly most feasible options of: 1) permanent cluster housing built for the workers that could be available for future use; 2) temporary cluster housing that would be removed after project completion; or 3) workers would obtain their own housing in local communities, including houses that are already here, new houses, and trailers. No type of housing is clearly preferred over any other. Thirty-seven percent of respondents felt the temporary housing option was best, 35 percent chose permanent cluster, and 21 percent felt the workers should find their own housing.

When asked where the housing should be, the most popular response was "don't know." Fort Kent was the most popularly named location (by 24 percent of respondents). Responses for the other three towns ranged between 16 percent and 19 percent, so there is no clear preference one way or the other.

Satisfaction of housing needs with minimum impact on other municipal services can best be accomplished by construction of a labor camp as shown by available information. This conclusion must be qualified by noting the fact that no site feasibility analysis has been done. There is land available for a construction labor camp in St. Francis. This decision, however, is somewhat subject to the desires of the local townspeople, who may feel such a facility is undesirable.<sup>1</sup>

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<sup>1</sup>It is important to point out here that the local citizens should be made aware of all the ramifications of unconstrained and scattered development for a 7-year period.

The dwelling units themselves may differ. Some people will bring their own mobile homes and, therefore, space at the main camp or a private site with mobile homes may be sufficient. Portable buildings built especially for labor camps may also be used.<sup>1</sup> Based upon experience in other Corps projects,<sup>2</sup> Corps-built labor camps of a more permanent nature have not worked satisfactorily. A number of options of housing types should be available to workers to provide greater satisfaction from the otherwise difficult living situation.

Consideration should also be given to what facilities are provided at a construction work camp(s). Recreational outlets, food service, security, medical service, and various service needs could be provided specifically for the people living in labor camps. By concentrating needed services (both public and private) in the vicinity of a labor camp, the pressure that would be exerted upon other alternative services available (and on transportation) may be minimized. This is especially true in the case of medical services, since the Service Impact Area is currently in need of more doctors and the construction nature of the projects will inevitably result in some accidents.

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<sup>1</sup>Companies such as Porta-Kamp of Houston, Texas provide planning and facilities for labor camps.

<sup>2</sup>Conversation with Philip Cole, Chief, Engineering Division, North Pacific Division, Corps of Engineers.



TABLE 12

A. FROM PRESENT TO PROJECT FUNDING

NEGATIVE IMPACTS

1. Inadequate and inconsistent information available to local residents on the project resulting in misinformation, unnecessary conflict, and speculation and expectations.
2. Lack of definition of decision-making points and timing on the project to allow citizens to intercede on the issues they desire at the appropriate time.
3. Performance of many studies of the area including social, economic, natural resource, and relocation resulting in imposition on the time, space, and privacy of area residents generating possible annoyance and animosity.

MITIGATION OF NEGATIVE IMPACTS

1. Development of planned, methodical information and participation programs, including local meetings, workshops, and newspaper articles, to allow citizens to understand the important characteristics of the project and its potential impact. To make more reliable decisions about future needs of their communities and their own lives. Joint meetings of the Corps and local opposition groups with key area newspapers to assure availability of all important information by that source.
2. Publication of an information sheet explaining the present stage of project planning, future decisions that need to be made as they affect the local community, who will make those decisions and when will they be made. Make decision-makers accessible and responsive to citizens.
3. Coordination of studies requiring household information to minimize invasion of privacy and confusion on the part of residents. Use the opportunity to answer important questions residents may have, provide reliable and needed information.

TABLE 12 - continued

B. CULTURE, LANGUAGE, RELIGION

NEGATIVE IMPACTS

1. A large number of English-speaking workers will come into this largely French-speaking area either requiring a decline of local cultural use of French to meet the needs of the new population or resulting in the use of French as an exclusionary technique to help maintain their culture in the face of a large number of outsiders. This could be difficult on the job, but also in commercial service establishments and in the public schools.
2. Introduction of a mixed and no religion population into an area where Catholicism is dominant may create value clashes.
3. Possible introduction of Canadian workers into the area, particularly during the tree-clearing phase, so that although there will be little direct contact between local residents and these workers, the contact that arises could be difficult based on past animosities expressed by area residents regarding taking of jobs by Canadians.

MITIGATION

1. Workers and their families living in the area over several years should be encouraged to learn the local language.
2. Encourage positive mixing of two cultures in a church-related environment as appropriate to needs of construction workers and families.
3. Take positive efforts to hire American woodcutters and construction workers from the area and county as possible.

TABLE 12 continued

C. HOUSEHOLD, FAMILY ACTIVITY PATTERNS

NEGATIVE IMPACTS

1. Given relatively low educational levels and skill attainment of local residents, particularly those over 30, they may not be able to secure construction jobs competing in a market with workers from elsewhere with higher educational and skill levels. As job and pay availability is seen locally as the most positive aspect of the project, this could generate a great deal of resentment against the development.
2. Primary heads of households and other workers may leave their present jobs for higher paying work on dam construction possibly leaving their previous jobs to less experienced and capable workers. If they had year-round jobs, they may be unable to return in the fall as jobs have been filled. Such occurrences create resentment on the parts of both employers and employees.
3. Women may leave their present house and child care roles to take work, possibly leaving their usual roles inadequately covered.
4. High school students and post-high school students may fill some construction and service jobs exposing them to values and activities of immigrant construction workers not considered desirable by the local culture.

MITIGATION

1. The Corps and contractor should have a commitment to hire local workers to maximize area redevelopment benefits.
2. Dam personnel workers should counsel applicants regarding the exact length and nature of construction jobs and some problems they may encounter reentering their own community.
3. Provision of day-care facilities for pre-school children and after school hours as needed as determined by a need study with costs commensurate with income.

TABLE 12 continued

NEGATIVE IMPACTS

5. Required relocation of 115 households in Allagash will demand a great amount of time and energy of local residents in determining general location, layout, size, and allocation of lots resulting in possible competition for locations,
6. Required relocation of 44 households in St. Francis will demand some time and energy of local residents to find adequate sites, secure them, and approve them through town political process.
7. Once relocation is completed (several years into the project) relocated residents may begin to "grieve" for their old home, land, and neighborhood structure.
8. In order to receive maximum compensation for their original properties, residents who do not have their old homes moved will be required to have an FHA approved home built, demanding a different type of heating (central as opposed to space) and plumbing situation than they may be able to afford to maintain or desire.
9. The aesthetics, peace, and solitude of living environments of anyone living on Rt. 161 or any major routes receiving commuter or trucking traffic may be eroded by heavy traffic, noise, and increased danger.

MITIGATION

5. Developer should provide independent, planning, and counselling help available for the relocation planning and procedure phase to assist in the choices and allocation of living locations and homes, and ease the difficulties of moving. Use of the Uniform Relocation Assistance and Real Property Acquisition Policy Act (URARPAP). To assure more adequate economic compensation, adequate time, 1 to 2 years, should be allowed for this process. (This conforms with the Uniform Relocation Assistance and Property Acquisition Act (URARPAP).)
6. See C5
7. From the beginning, counsel residents required to relocate of feelings they may experience and why, provide information on the experience of others in similar situations, and explore appropriate actions and decisions with them.
8. Examine the stipulations of the URARPAP to determine which can be altered, in addition to the use of wood central heating, to allow local residents to maintain the living style they wish.
9. Consider relocating homes back from the road. Stagger working hours.

TABLE 12 continued

D. COMMUNITY INVOLVEMENT, POLITICAL ACTIVITIES

NEGATIVE IMPACTS

1. Use of commercial recreation sites by construction workers with different social values and behavior; temporary destruction of small social group; potential conflict.
2. Many changes in physical community (new homes, apartments, roads, zoning, commercial development) requiring more meetings, special committees, local conflict and political decision-making in communities without strong patterns of meeting attendance and problem solving.

MITIGATION OF NEGATIVE IMPACTS

1. Development of new commercial recreation sites at construction camp site or by private developers. Direct workers to larger facilities in entire service impact area (Edmunston and Madawaska) to minimize impact in any one area. Counsel workers on local culture.
2. The developer of the project should see that the local communities are provided with planning assistance to help with such decision-making processes. Every effort should be taken by developer to provide information needed by the communities to prepare for this process, such as how many workers might like to live in town. Work together with communities to direct workers to available housing opportunities.

TABLE 12 continued

E. RECREATION

NEGATIVE IMPACTS

1. Loss of lands in an area used by 41% of the households in the Immediate Impact Area for recreation, primarily for fishing and hunting, providing both recreation experiences and food supplements.
2. Recreation and psychic loss of the impoundment area by users and residents causing emotions such as anger and grief, loss of game harvested in the area as an income supplement, and simply loss of the area as a place to go.
3. More crowded situations at other outdoor recreation sites due to increased population in the area may lead to overuse of some activities such as hunting.
4. New children in the school system may enter school sports activities and take participation opportunities away from local children, or may be excluded if not enough opportunities exist.
5. Loss of wilderness recreation now popular in the St. John River project area, including fishing, hunting, camping and canoeing.

MITIGATION OF NEGATIVE IMPACTS

1. Consider intensifying game management practices, develop other areas of the region for the type of recreation that would be lost, possibly including purchase by the developer.
2. See E1
3. See E1
4. Towns can expand recreation programs.
5. Identification and development of access to wilderness recreation opportunities similar to those lost on the St. John River and available to the same user groups.

TABLE 12 continued

F. SOCIAL PROBLEMS NOT MENTIONED ELSEWHERE

NEGATIVE IMPACTS

1. Given the expected large number of single male construction workers or those without their families, prostitution will probably increase in the area.
2. Since workers will be in a relatively austere environment compared to urban life, many of them without their families, some may turn to alcohol, possibly alcoholism, and drug use to ease their lives in the new environment.

MITIGATION OF NEGATIVE IMPACTS

1. Provide police services to assure that no individual or group of individuals is harmed or excessively exploited. Provide numerous alternative recreation activities for workers.
2. Provide counselling and counsellors for workers with adjustment problems or addiction problems to help them and to keep them from working with dangerous equipment when not capable of operating them properly.

TABLE 12 continued

G. OPERATION

NEGATIVE IMPACTS

1. Hazards of fluctuating flow in Lincoln School Reservoir.
2. Decline in population with the end of the construction phase may cause dislocation for local businesses whose market was based on construction workers and municipal services that expanded to serve the needs of the much larger population.
3. Reaction of fear of future and depression as the economy declines, perhaps increased out-migration of local residents who returned to or remained in the area during the construction phase.
4. Fear of dam collapse.
5. Continuation of problems relative to adaptation to a new home (see C7).

MITIGATION OF NEGATIVE IMPACTS

1. Consideration should be given to prevent access to the reservoir if necessary.
2. Plan locations and housing types carefully in the beginning to minimize investment in costly services that won't be needed.
3. Should lessen as careful planning eases economic transition. The provision of professional advisors to the public and business communities at the expense of the developer is suggested from the start of the project to ease this transition period.
4. Go to all possible lengths to test for any factors that could lead to instability, including tests and opinions from a range of experts to assuage residents fear as much as possible.
- 5) See C7



APPENDIX A  
PROCEDURES FOR SOCIAL SURVEY INTERVIEWS

I. CHOICE OF SAMPLING FRAME

It was decided that all households in the towns of Allagash, St. Francis, St. John and Fort Kent should be the basic sampling unit. Using maps indicating residences, which were secured from the Land Use Regulation Commission, Northern Maine Regional Planning Commission, and the General Highway Atlas, residential households in the four towns were identified and counted. These maps were field checked through a windshield survey to include new construction and exclude abandoned homes. The corrected number of residences totaled approximately 1600 which, due to time and budgetary constraints, dictated sampling as opposed to canvassing the entire population.

II. SAMPLING PROCEDURES

In order to make any inferences about the entire population based on sample results, a statistically relevant sample size has to be chosen. It was decided that a 95% confidence level was sufficient, that a conservative approach to the proportional relationship parameters was needed (this results in a slightly larger sample size, see Statistics, An Introductory Analysis, T. Yamane, p. 581) and that a reasonable range around any estimated parameter was +5%.

For example: suppose the sample estimated the proportional number of people who went to Fort Kent for health services to be 20% of the population. It could then be said that we were 95% sure our estimate was within +5% of 20% or a range of 15%-25%. Using the previous criteria, then, a sample size of approximately 300 households was required (see T. Yamane, pp. 579-582 and p. 886).

A total of 317 households were sampled to allow a small margin for nonresponses and for sampling without replacement as discussed below. A random number table was used to generate the 317 numbers between 1 and 1,600. (Households appearing on the sampling maps were assigned consecutive numbers from 1 to 1,600.) These two were then matched to create maps of the sample to be used. These were divided into sections and assigned to appropriate interviewers.

However, the procedure used to select the sample requires the user to sample with replacement. In the procedure used we did not replace households once chosen which results in a larger variance.

This means in order to maintain a confidence level (95%) we would have to select a larger sample or sacrifice a reduction in the confidence level for a sample size of 300. Because the drop in confidence level was expected to be minimal should a sample of 300 be taken, we chose the latter option. In fact, taking into account how much the variance is overstated in the sampling with replacement procedures (see Survey Sampling, Leslie Kish, pp 43-45) one can solve for the confidence level:

$$\text{Population Variance (with replacement)} = \left(1 - \frac{n}{N}\right) \frac{S^2}{n} \quad (\text{Kish})$$

Where:

n = sample size

N = population size

S<sup>2</sup> = sample variance without replacement

Therefore, variance without replacement is approximately  $1 + \frac{n}{N}$  times larger than with replacement.

Solving for confidence level at a sample size of 300 (which has assumed replacement) then equals:

$$300 = \frac{.295 z^2}{.295 z^2 + 1600} \frac{1600}{(.05)^2} \quad (\text{Yamane})$$

Where: z is in standardized unit normal form  
 assumes variance is at maximum (p = .5)  
 range is +5%

And: z = 1.72  
 or a confidence level of approximately 91%

Quota cards were made up for each town showing the breakdown by age and sex for the town, with the number of respondents needed to generally supply a good cross section of respondents. On going to each sample household, interviewers attempted to interview respondents who would fill the quota for that town for each age and sex category.

Of the 317 sampled households, 303 questionnaires were completed. Three call backs were required for each interview, but since the homes were in such close proximity, four or five call backs were generally made to secure an interview. These resulted in 2 refusals, one questionnaire that had to be discarded and the remaining 11 were either "vacant homes" or "no one at home." Such a high response rate can be attributed to a number of factors. The rural nature of the area makes many people very trusting and open to strangers. There is, at the present time, a substantial interest in the project and a desire to see that it gets resolved and some decision be made. The response rate to the 1967 study of over 90% supports this, as it is not too different from the present rate of about 95%. The fact that the interviewers were mature women instead of male college students suggests an improved response since women generally are more likely to be admitted into a home than are men.

Interviewers were secured through contacts with other research organizations that maintain lists of interviewers they have used, and by placing ads in the local newspapers. All but one of the interviewers hired had had previous experience.

Candidates were interviewed in the Presque Isle Office of the Edward C. Jordan Co., Inc. Eight interviewers were hired, 3 men and 5 women, 6 bilingual and 2 who could speak only English.

An all day training session was held in Presque Isle to acquaint the interviewers with the procedures to be used and the specific questionnaires. They were supplied with identification cards, and cover letters for each household. Each interviewer was assigned a section of the study area to cover. Corps of Engineers Fact sheets were made available to respondents after the interview was completed if they wanted one.

The interview contained basic questions on household composition, land use, recreation, community activities, and attitudes about the area in general and Dickey-Lincoln specifically. The interview took from about 20 minutes to an hour to administer.

The principal researcher remained in the study area for a week to advise all interviewers through the beginning of the interviewing process. Problems were caught, explained, and rectified. Subsequent completed questionnaires were sent to Portland. Quality control was further assured by calling a random sample of respondents to check if they had been interviewed and if the information was correct.

Five coders were hired in the Portland area. They were largely college students in the social sciences, and thus were interested in the procedure. Being different from the interviewers, they served as a further check on consistency of responses.

APPENDIX B  
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