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PRELIMINARY SOCIOECONOMIC IMPACT ANALYSIS OF EXXON'S PROPOSED CRANDON PROJECT

Prepared for:

Department of Natural Resources
State of Wisconsin

Prepared by:

Denver Research Institute
University of Denver
Denver, Colorado 80208

July 1985

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State of Wisconsin

DEPARTMENT OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

July 30, 1985

File Ref: 1630 - Exxon

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Ladies and Gentlemen:

Attached for your information and use is the "Preliminary Socioeconomic Impact Analysis of Exxon's Proposed Crandon Project." This was prepared by Denver Research Institute for the Department of Natural Resources. The impact analyses will be used in DNR's Draft Environmental Impact Statement on Exxon's proposed mine and mill near Crandon.

The attached socioeconomic analyses are based on Exxon's proposal to the Department contained in their revised Environmental Impact Report. However, in May of this year, Exxon announced that due to the depressed minerals industry, they were investigating ways to improve the project's economics, and most likely would "downsize" their proposal. The most significant anticipated changes would be ore production from the zinc portion of the orebody first, reducing ore production rates, and shortening the construction period. Additional changes may include a slightly longer mine operations period and a reduced level of operations employment.

The project changes proposed by Exxon were not used in the evaluation of socioeconomic impacts contained in this report. While we believe the proposed project changes will not result in significantly different socioeconomic impacts, the Department plans to reevaluate these impact analyses using the new project description. Following those analyses, we will release the final version of this report.

If you have any comments or questions, please contact me at (608) 266-3524.

Sincerely,
Bureau of Environmental Analysis and Review

William E. Tans

William E. Tans
Environmental Specialist

WET:bt

Attachment

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PRELIMINARY SOCIOECONOMIC IMPACT ANALYSIS OF
EXXON'S PROPOSED CRANDON PROJECT

Prepared for:

Department of Natural Resources
State of Wisconsin

Prepared by:

Denver Research Institute
University of Denver
Denver, Colorado 80208

July 1985

EXECUTIVE SUMMARY

The Denver Research Institute (DRI) has assisted the Wisconsin Department of Natural Resources (DNR) in its consideration of the socioeconomic effects of the construction, operation, and closure of Exxon's proposed Crandon mine and mill in Forest County. DRI has utilized the latest available information from Exxon Minerals Company (EMC) on the proposed Crandon Project with a particular emphasis on Project construction and operating costs and work force requirements. These data are presented in Chapter I.

DRI has estimated that approximately 25 percent of the construction jobs (total construction employment peaks at about 1,550 jobs in the third year of construction) and 40 to 50 percent of the 703 operations jobs associated directly with the Project could be filled by existing residents of a three-county area surrounding the Project. This three-county area and its constituent towns, cities, and school districts is defined in the DRI analysis as the "local study area" and is subdivided further into three parts: (1) Crandon and the Project vicinity; (2) the Rhinelander area; and (3) the Antigo area.

Existing socioeconomic conditions in the local study area are described in Chapter II and reveal a fairly stable and intermittently declining population in the area until the period 1970 to 1984 when Forest and Oneida counties experienced a slight increase in the rate of population growth. The population in the three-county area is approximately 63,000 (1984 estimate), in the local study area about 53,000, and in the area most susceptible to impact about 34,000. Forestry, wood products, and manufacturing dominate the local economy, particularly in Forest and Oneida counties, while agriculture is important in Langlade County. Recreation and tourism are important sources of employment and income. Unemployment in the region has typically been higher than the state average, and in the last four years nearly double the state average. The average weekly wage in the three counties in 1984 was below the state average. Total employment was about 21,000 in 1984 in the three counties.

Net earnings in Oneida and Langlade counties by place of work exceed net earnings by place of residence, indicating that those two counties serve as a net source of jobs and income for residents of surrounding counties. The relationship is reversed for Forest County, indicating that on balance Forest County residents rely on employment opportunities outside the county.

Residential patterns within the study area are medium to low density (dispersed) surrounding the three population centers of Rhinelander, Antigo, and Crandon. There are about 22,000 year-round housing units in the local study area, with a total vacancy rate of 16 percent. However, about 19 percent of these are "substandard." There are some 18,000 residential parcels potentially available, the majority being approved tracts.

The rural nature of the study area is reflected in the provision of public services. Except for the three principal cities and the village of Elcho, the study area townships rely on individual wells for water supply and septic tanks for wastewater disposal. Four school districts are within the local study area--Antigo, Elcho, Rhinelander, and Crandon. The age of school buildings and equipment is a major concern in each of the districts. Snow removal, highway maintenance, and equipment upkeep are problematic throughout the three-county region.

The major highway transportation network includes U.S. Highway 8 between Rhinelander and Crandon (27 miles), while State Highway 55 southward from Crandon (7 miles) lies adjacent to the Project site. Antigo lies about 31 miles south of Monico, midway between Crandon and Rhinelander, on U.S. Highway 45.

The socioeconomic effects surrounding the construction, operation, and closure of the Crandon Project are described in Chapter III. The DRI analysis projects a peak population effect of 2,642 persons in-migrating to the area by 1989 and a cumulative in-migration of slightly more than 1,800 persons during the 26-year operational period, or an increase over the baseline population in the study area of slightly more than 3 percent. This increase is not expected to be uniform throughout the study area, but is concentrated in three primary "settlement areas"--the Project area, the Rhinelander area, and the Antigo area--which together are expected to account for 75 percent of the Project-related population.

The economic base of the study area will also be affected by the Project. The introduction of more than a thousand new jobs in the study area is expected to have a positive effect on local unemployment, although DRI estimates that less than half of these jobs will be filled by existing local study area residents; the rest would be filled by in-migrants to the study area. Also, notwithstanding the number of new jobs (and new types of jobs) to be filled by existing residents, it is not expected that the overall economic base of the region will change substantially.

The local economy would also be stimulated by the income effect of the Project. Wages paid to mine workers would be substantially higher than prevailing wages in the Project study area, and business activity would increase, both because of the wages being spent locally and because of the expenditures that would be made by EMC. In addition, secondary and indirect business development would be stimulated to provide needed services for the increased population.

The need for new housing in the study area is expected to be consistent with population increases over the Project period. Excluding conversion of second homes to primary residences, it is estimated that of the increased housing supply of approximately 2,400 new homes projected over the entire Project period, about 800 units would result directly or indirectly from the Project.

Incremental public facility and service costs are projected to total about \$90 million over the life of the Project, including about

\$12 million during the construction period. With the exception of a new jail holding facility in Forest County, no new capital facilities will be required to accommodate the projected increase in population. Conventional population-based thresholds determining wastewater treatment facility requirements are, in fact, projected to be exceeded in the towns of Pelican and Pine Lake. However, these have been disregarded in light of the very low density that the new population is assumed to reflect and in light of the acceptability of septic sewage treatment. Costs for public facilities and services have been calculated on the basis of existing service delivery standards and per capita and per unit cost factors. A portion of these estimated costs for public facilities and services (i.e., the fiscal impact of the Project) may not constitute a direct cash outlay by local governments but will, in effect, be avoided through the local population's acceptance of diminished facility and service standards and conditions. Thus, to the extent that actual service delivery and facility provision falls below prevailing standards, the net fiscal impact and actual cash outlay by local governments will be less than the total public cost estimates cited above and presented in Chapter III.

The public revenues associated directly and indirectly with the Project over its entire life are expected to exceed total public costs. The property tax base, representing the largest single source of revenue for the local jurisdictions, would be substantially increased by the Project's mine and facilities, as well as by the construction of new homes and businesses due indirectly to the Project.

It should be recognized that assumptions regarding residential property tax revenue are extremely tenuous since they are tied directly to the estimate of new housing construction generated by the Project. The number, valuation, and distribution of newly constructed housing units occasioned by the Project will be subject to wide variation.

In addition to these local tax sources, the state would realize additional sales and income tax revenues (in excess of \$100 million over the life of the Project), part of which would return to the study area in the form of state aids. Further, the State Department of Revenue estimates that the Project could pay approximately \$117 million in net proceeds taxes, 60 percent of which will be deposited in the investment and local impact fund, and a large portion of which would be expected to be returned back to the local study area. The combined implication of these revenue expectations (disregarding their individual uncertainties and the lag between the absorption of public costs and the receipt of revenues) is that public revenues are expected to exceed public costs over the life of the Project.

Adverse sociocultural impacts of the Project resulting from demographic and cultural differences between the dominant study area population and in-migrant families are expected to be minimal. The increased diversity represented by the in-migrants will have some positive effects on the level of and types of amenities available in the community, and the small size of the Project relative to the existing economic base is likely to produce only minor effects (both positively and negatively) over the long run. An important exception to this

conclusion regarding the Project's minimal sociocultural impacts is noted in Chapter V which identifies certain adverse impacts the Project is likely to have on the Forest County Potawatomi and the Sokaogon Chippewa Native American communities. The separate analyses of the Forest County Potawatomi and the Sokaogon Chippewa presented in Chapter V indicate that Native American employment opportunities at the Project are apt to be quite limited and social conflict between Indian and non-Indian segments of the study area population could be exacerbated by the Project, particularly during the construction phase.

The towns of Nashville and Lincoln, as well as the Forest County and Sokaogon Chippewa tribes, would receive "construction period" payments from the investment and local impact fund upon the commencement of Project construction. Later, when the mine is profitable, Nashville, Lincoln, the two tribes, and Forest County would be eligible for "first dollar" payments, and Forest County for additional funding up to \$250,000 per year.

Because the incidence of public costs and the collection of public revenues are not simultaneous nor geographically uniform, certain timing and jurisdictional mismatches would occur. To avoid the negative consequences of fiscal shortfalls and to alleviate other adverse Project-related effects, various mitigation actions need to be considered. These actions could be undertaken independently or collectively by EMC, the agencies and branches of state and local government, and private agencies, groups, and individuals. Mitigation measures, which are outlined in Chapter IV, include direct cash payments, regulatory actions, and cooperative intergovernmental relations, with the specific mix of actions dependent on the timing, magnitude, and type of impacts to be addressed.

The scheduled closure of the Crandon Project (and a premature closure of the Project) will present a major challenge to local residents in the study area. As the mine and mill are dismantled, permanent jobs at the facility will be terminated, and many secondary jobs supported by Project expenditures will also end. Out-migration will occur in the absence of alternative employment opportunities in the area and property values are apt to decline. Taxes in the towns of Lincoln and Nashville and in Forest county and the Crandon School District will likely increase due to the reduction in and eventual elimination of the assessed valuation of Project facilities and property.

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PREFACE

The Denver Research Institute's socioeconomic impact analysis of the Exxon Minerals Company's Crandon Project conveys the Institute's appraisal of the potential socioeconomic consequences of the Project in the area most likely to be affected and includes a comparison of future conditions in the area in the event the Project is not developed. This analysis was designed to provide the Department of Natural Resources with the information required to prepare the socioeconomic sections of its Environmental Impact Statement on the Exxon Project.

The analysis has involved personal interaction and written communication by the Institute's Industrial Economics and Management Division staff with over 200 residents, public agency representatives, and elected officials in the State of Wisconsin and the various communities in proximity to the proposed Crandon mine and mill. The analysis would not have been possible without their cooperation and obvious willingness to assist the Project study team in the difficult task of data acquisition and field research.

The Industrial Economics and Management Division staff is particularly grateful to Dr. Elizabeth David, Mr. Williams Tans, and Mr. Robert Ramharter of the Wisconsin Department of Natural Resources, and to Ms. Linda Bochert for the Department's sponsorship of this important study. Dr. David made valuable, substantive contributions to the analysis and along with Messrs. Tans and Ramharter provided logistical and administrative support. The Institute also acknowledges the valuable assistance and cooperation received from Mr. Tom Coefield and Mr. Barry Hansen of Exxon Minerals Company.

Final responsibility for all research findings contained in this study rests solely with the Industrial Economics and Management Division and the Denver Research Institute.

INTRODUCTION

A. BACKGROUND

The Exxon Minerals Company, a division of Exxon Corporation, wishes to obtain mining and other related permits for the Crandon Project, a proposed zinc, copper, and lead mine and mill in Forest County, Wisconsin.

The Wisconsin Department of Natural Resources (DNR) is the permitting agency. It must prepare and consider an environmental impact statement describing the environmental consequences of this proposed action before making its permitting decision.

The University of Denver Research Institute (DRI) was competitively selected by DNR to review and verify the socioeconomic elements of the Environmental Impact Report and other documents submitted by Exxon Minerals Company (EMC) in support of its application, to supplement those materials as needed, to assist in the preparation of the socioeconomic portions of the draft and final environmental impact statements, and participate with DNR in discussing socioeconomic concerns and impacts with individuals, groups, and municipalities in the study area.

Specifically, DRI's study efforts have included the following tasks:

1. Evaluate and update where necessary EMC's projection of baseline socioeconomic conditions in the Crandon Project study area, including a re-examination of the local study area definition.
2. Evaluate, revise, and update as necessary EMC's socioeconomic impact analysis where different assumptions are warranted or updated data are available.
3. Evaluate and where necessary formulate reasonable alternatives to EMC's assumptions regarding local and regional employment, economic effects of the Project, and residential and commuting patterns of the Project's work forces.
4. Identify the possible implications of a premature closure or suspension of the Project during its construction and operation phases.
5. Derive where necessary alternative public cost and revenue analyses to those provided by EMC.
6. Provide an in-depth analysis of the sociocultural effects of the Project as these relate to neighboring Native American communities.

7. Identify policies and programmatic strategies that could offset or mitigate adverse socioeconomic effects of the Project.
8. Develop information for DNR which would aid in its determination of whether the mine would result in a ". . . net substantial adverse economic impact in the area reasonably expected to be most impacted by the activity."

The permit applicant, EMC, has sponsored and compiled a substantial body of research and analysis dealing with the socioeconomic effects of the proposed Project. Most prominent among this existing research is the work entitled Forecast of Future Conditions, Socioeconomic Assessment, Crandon Project, (Research and Planning Consultants, Inc., 1983). This latter document, referred to hereinafter as EMC's Forecast of Future Conditions report, together with its technical appendices, conveys the permit applicant's best estimate of the baseline socioeconomic environment likely to prevail in the absence of the Crandon Project and an assessment of the social and economic impacts that may be associated with the Project's construction, operation and scheduled closure. The projection of the baseline conditions and the conclusions presented in the report regarding potential socioeconomic impacts of the Crandon Project have necessitated thorough re-evaluation by DRI in light of new information provided by EMC related to the Project's construction schedule and work force requirements and DRI's acquisition of more recent baseline data than that which was available at the time EMC's earlier analysis was conducted.

The Project's assumed timetable of construction and related work force requirements have changed since the original EMC socioeconomic analysis, and they are clearly subject to further change. EMC estimates of Project expenditures for labor, equipment, and supplies that will be made within the local study area and the state of Wisconsin have also been substantially revised (reduced) by EMC.

Similarly, EMC's assumptions regarding Project employment opportunities for existing study area residents during both the construction and operations phases are also subject to significant uncertainty, as is the assumed residential distribution of the in-migrant construction and operations work force. While EMC's profile of future study area growth without the Project (i.e., the baseline projection) is quite reasonable, the computer-based modeling of the Crandon Project's effects on this baseline environment is highly theoretical. The use of a national input-output model "adjusted" to fit the study area suggests an accuracy or precision in EMC's economic impact analysis of the Project that is unsupportable, and the assumption that existing local study area standards for public services and facilities will continue to prevail throughout the Project period in effect assures dramatic reductions in property tax rates as a main outcome of the new, Project-based assessed valuation being added to the study area tax base.

There is no reference in EMC's Forecast of Future Conditions report to the possibility of a premature or unschedule closure or suspension of the Crandon Project, nor has there been sufficient recognition of the variability in metals prices and the effect that this would have on the timing and magnitude of Wisconsin's corporate income and net proceeds tax revenue. Finally, there are a number of unresolved questions relating to data input and possible errors of calculation in the EMC Forecast of Future Conditions analysis which may both understate and overstate the Project's fiscal and overall economic effects in the local study area. The ostensible precision in the EMC Forecast of Future Conditions report could, in fact, be seriously misleading to the extent that study area residents ascribe unequivocally to the EMC analysis in making major public and private planning and investment decisions.

It should be recognized that there are inherent and unavoidable weaknesses in all future-oriented socioeconomic analyses owing to the unpredictability of the broad sociological, economic, and political forces upon which they are based. EMC's assessment of the socioeconomic effects of the Crandon Project and DRI's independent and supplementary analyses of the Project should not, in other words, be taken as definitive predictions of the future. In combination they provide the best estimate of the potential social and economic ramifications of the Project but within fairly limiting bounds of uncertainty.

It has not been DRI's intent to fashion a set of quantitative predictions of economic and socioeconomic change for the study area and its various jurisdictions. Definitive forecasting is simply not possible to undertake with confidence given the inherent uncertainty of the Crandon Project itself and the limitations in economic and sociological analysis.

It should also be emphasized that this same veil of uncertainty makes the Crandon Project itself susceptible to change from the standpoint of its scheduled timetable of construction, its level of operation, and its anticipated date of closure. The audience of this report and particularly those who stand to be affected most directly by the Crandon Project should therefore also appreciate that global metal markets and prices, EMC's costs of production, Exxon's alternative corporate investment opportunities, and public environmental attitudes and regulatory measures are all subject to change. These and other uncertainties surrounding the Project are discussed in more detail in the following section.

It is important to note that DRI's charge under its agreement with the State of Wisconsin has not included the development of a full-scale alternative modeling capability to that which has been employed by EMC or in any other way to duplicate the efforts of EMC. DRI's efforts have focused on those areas where supplemental analysis, sensitivity analysis, and alternative interpretations of simulated impacts of the Project have been warranted. DRI's role and responsibility in the EIS preparation is thus one of assisting the Department of Natural Resources

in its fulfillment of its statutory obligation to evaluate the applicant's supporting environmental impact report and analyses. The Forecast of Future Conditions report is again a major reference and, far from being totally supplanted by the DRI analysis, it is cited freely and extensively wherever appropriate throughout the following analysis. DRI's intent has not been to foster a competition between socioeconomic models or analytical capabilities or to uniformly disagree out of principle with EMC's research and findings. Such a posture would unduly prolong the application review process and would be contrary to the public interests of the citizens of Wisconsin.

B. UNCERTAINTY DOMINATES THE IMPACT ASSESSMENT/FORECASTS

As with most socioeconomic assessments and their baseline projections and future effects forecasts, and even their descriptions of the proposed action, this assessment of the Crandon Project is subject to a series of major uncertainties. Some of them have a compounding effect, with one uncertain forecast dependent on the outcome of preceding forecasts filled with uncertainty. Specific statements as to exactly what will happen in what year in what place affected by the Crandon Project should be evaluated with caution, taking into account the many uncertainties which are found throughout the proposal.

Assumptions must be made, therefore, about some of the factors of uncertainty and their outcome(s). In other cases, the outcome will depend on which way a decision may be made by various State of Wisconsin agencies, by Exxon Mineral Company (EMC) and its parent company, by local governmental jurisdictions and their officials (some of whom are yet to be elected or selected), and decisions by various families on where they will live, shop, and where their breadwinners will work.

Assumed Outcomes

First, it is assumed that the Crandon Project will be permitted by the Wisconsin Department of Natural Resources (DNR)--an assumption subject to some uncertainty, of course. Second, it is assumed that any litigation against granting the permit will fail, but there is uncertainty both as to whether there will be such litigation, its outcome, and the delay it will cause.

Therefore, it is assumed that EMC will receive a permit to build and mine the Crandon Project some time in the late 1980s.

Uncertain Outcomes

Most of the yet-to-be-made decisions by Project-affected persons, groups, and institutions would certainly influence the socioeconomic effects discussed in this report. Some examples follow.

EMC Decision-Making. With the permit in hand, the EMC decision to proceed would depend on the economic feasibility (return on investment) of the mine over its then expected life. The return on investment can only be finally determined depending on the capital investment required, including meeting any design changes imposed by the permit conditions or by EMC.

EMC then would consider anticipated revenues and costs, based on then current and future expected metal prices, and costs of labor, equipment, and materials. It would consider then current national and international economic conditions and competition and those for the future, and expected markets for its output.

EMC would then prepare its recommendation on whether or not to open the mine. If conditions look favorable, the Crandon Project will be proposed to the parent company (Exxon Corporation) for a capital appropriation (in competition with other capital requests from within Exxon and its other subsidiaries). If (and when) a go decision is given EMC, Project construction would start.¹ This is one of the most crucial uncertainty factors, both from its triggering role for future actions (and socioeconomic effects) and from its extreme unpredictability.

If a go-ahead decision is made, EMC would then select its contractor(s). In the past, an important part of such a decision would be selection of a union or a nonunion contractor. A union contractor would hire only through union hiring halls. However, this rigidity is decreasing, and there is a trend toward skilled union journeymen (and apprentices and helpers) working on nonunion construction. Barring a radical change in this trend, a significant uncertainty would be whether Exxon and its contractor(s) decide to hire for maximum local representation or for maximum experience and skill. The Wausau-based North Central Wisconsin Building Trades Council alone has the skills called for in numbers meeting the manning tables in the Project Environmental Impact Report, and mostly living within daily or weekend commuting distance.² Green Bay and Eau Claire have similar numbers in their building trades councils.

The significant exceptions are the mine development specialists, who will be largely nonlocal in any case. The union-only job may be a

¹This decision process was explained by Frank Sonderman of Exxon at a DNR-sponsored meeting in the Nashville Town Hall, July 25, 1984, and, quoting Barry Hanson of EMC, as reported in [Antigo] Daily Journal, July 27, 1984. A somewhat similar process would be followed if the operation were closed down, e.g., because of market conditions, etc., in deciding whether or not to reopen the mine and mill, or at what level. See Crandon Project Environmental Impact Report, pp. 1.4.1-1.4.4.

²Personal interviews with staff of North Central Wisconsin Building Trades Council (Wausau), October 15, 1984.

matter of rather free choice by the late 1980s with a union project agreement largely a matter of inclination by the project owner and the contractor(s).³

A similar situation may exist if and when the mine is put into operation and the present EMC permitting team would be augmented and evolve into the Crandon Project operating management team. That latter team will decide the mix desired of local employees or skilled and experienced mining workers. A reservoir of many hundreds of unemployed or underemployed underground miners and reduction mill specialists live on the Michigan Upper Peninsula who would like to have mining jobs and mining company fringe benefits while still living in the Upper Great Lakes region. They would probably settle for lower pay than the Steelworkers Union's 1982 (typified by the White Pine Copper Mine) contract of \$12 to \$14 per hour and \$7 in fringe benefits if they could avoid changing careers and moving to another part of North America.⁴

A similar situation exists on the Iron Range of Minnesota with experienced surface miners. There the unemployed or underemployed miners and related skills are estimated at 5,000 to 7,000, with many willing to hold out for five years hoping for something in mining.⁵ It seems unlikely that either copper or iron mining in that region will ever again use either group in large numbers.

³Telephone interviews with three project construction managers (different contractors or companies) who prefer not to be identified. Business Week, February 4, 1985, "Construction Unions Shore Up Crumbling Base," pp. 52-55.

⁴Telephone interviews with John Suffron, former director of external affairs, White Pine Copper Division of Copper Range Co., March 4, 1984, and Russell Wood, former president of Copper Range Co., March 8, 1984.

This situation is dramatized by recent announcements by Russell Wood and Michigan Governor James Blanchard that the White Pine mine may soon reopen. A precedent-setting agreement has been reached with the miners' union, the United Steelworkers, to establish an employee stock ownership plan, substantially modify the past work rules, and possibly offer incentive compensation. The project would probably employ 500 to 600 people directly and its prospects will be greatly enhanced by any firming of copper prices. This would still leave on the Upper Peninsula a large pool of skilled miners without mine jobs.

"Colorado Firm Helps Mine Deal," Denver Post, April 26, 1985; and "Last Copper Mine and Its Jobs On Line," [Rhineland] Daily News, April 1, 1985.

⁵Telephone interview with Al France, Lake Superior Industrial Bureau (Duluth), March 8, 1984.

Another area of uncertainty is the local purchasing policy followed by EMC construction management, its contractors, and the eventual operating management. The decision would depend on whether Exxon's policy of competitive bidding is followed strictly or if some concessions are made to in-state or local suppliers.

Finally, as mentioned in an earlier note, there is the uncertainty about shutdown(s), temporary or permanent, prior to the scheduled closure of the mine or, also, extension of that scheduled mine life.

State Agency (Other than DNR) Decision-Making. Several State of Wisconsin agencies (other than DNR) will have periodic decisions to make which, depending on their outcome, may differently affect the socioeconomic environment, and the Crandon Project's effects on it.

For instance, the legislature may have to periodically (between now and the beginning of flow from the net proceeds occupational tax) decide whether or not to furnish money from other sources than the net proceeds occupational tax to the Investment and Local Impact Fund.

The Mining Investment and Local Impact Fund Board (also known as the Mining Impact Board) would have to decide how to allocate limited (if any) funds, and how to evaluate past use of its funds to better allocate in the future. It may wish to recommend changes in its enabling legislation, e.g., to provide for impact monitoring.

The Wisconsin Department of Transportation would repeatedly (between now and the actual start of construction) have to decide whether to make substantial improvements in highways on its system which would bear additional loads and traffic or be faced with increased hazard levels and accident rates in anticipation of the Crandon Project's construction and operation or to wait until loads and traffic actually increase.

Local Government Decision-Making. One set of uncertainties involves changes in use of the police power of local government: cities; towns; and--in some cases--the counties. This includes zoning and land use regulation, both in the jurisdictions containing the Crandon Project and those others which might also be affected by population changes or other pressures for changes in use. The prospect of new, large-scale mobile home parks, initially built to house construction workers, is likely. Adoption of mobile home park regulations (which might reduce public costs of servicing them while enhancing quality of life for their residents) is typical of the uncertain decisions affecting private investment and settlement patterns of temporary or permanent in-migrants.

Finding the means to finance the building of capital facilities needed wholly or in part because of the development of the Crandon Project may prove to be difficult. Further, although some portion of the additional capital would be triggered by the Project development, it

is difficult to decide on criteria for assigning a specific share to the Project. Finally, construction of public facilities in anticipation of the Project, while desirable to forestall unacceptable crowding or lack of capacity to provide service, is risky for several reasons. Not the least of these is uncertainty about settlement patterns of the people attracted to the area by the Project.

Similar uncertainty results from the prospect that increased operating, maintenance, and equipment money for local government activities might be required by several jurisdictions as soon as construction might start. Roads, bridges, streets, and traffic control all offer this possibility; so does public safety. One uncertainty exists as to (1) whether more funds would be available from outside the affected jurisdiction's present sources or (2) how it would choose between degraded service (presently marginal in some cases, e.g., Forest County road maintenance) or increases in local property taxes.

An uncertainty varying among jurisdictions is the extent to which Project local hiring for either construction or operations would attract skilled employees from local public employers. At high levels of unemployment (as exist in Forest County in early 1985), such people could probably be replaced, but on-job (or more formal) training and reduced experience levels would add to costs of local government or degrade service for a while.

One of the most significant uncertainties affects the four jurisdictions which would benefit from the large increases in assessed valuation due to Project construction. The uncertainty lies in how this windfall would be distributed: (1) major reductions in present property tax rates; (2) major increases in public facilities construction or public services and ancillary equipment, e.g., road maintenance equipment; or (3) some effort by Forest County and possibly the Crandon School District to augment the public services available to the City of Crandon (which does not share in the assessed valuation windfall, but

will have some additional demands on its services and amenities if the Project is built).⁶

Local Private Sector Firm Decision-Making. As mentioned under Local Government (above), to the extent the Crandon Project hires local people, it would probably find some of the most qualified applicants among those already employed locally.⁷ It is uncertain whether this hiring would (1) be clustered among a few employers or a few occupations, or (2) be generally diffused. The effects would be greater if alternative 1 were the case as far as costs to local employers would be concerned. Another uncertainty is the state of the local labor market at the time of such hiring: if unemployment were high, the main cost to affected employers would be frictional costs of recruiting, training, and rebuilding the experience level of their work force. If

⁶DRI experience elsewhere shows almost invariably a compromise between (1) and (2).

A typical example of the compromise is found in the Joseph City (Arizona) School District, which contains the Cholla Power Plant of Arizona Public Service Co. A frugal community, largely settled by farmers belonging to the LDS (Mormon) church, they recently hosted a major project adding to the Cholla Plant (and the district's) assessed valuation. Its effect is summarized:

<u>Year</u>	<u>District Assessed Valuation</u>	<u>Plant Assessed Valuation</u>	<u>Mill Levy</u>
1976	\$ 59.9 million	\$ 42.5 million	2.34
1979	173.7	170.2	1.39

In the meantime, the school district built (and maintains) an elaborate education and recreation complex for the community. Enrollment in 1976 was 397, it is now 420 (current mill levies are not comparable because of state aid changes). Denver Research Institute, Socioeconomic Impacts of Power Plants, Case Study 23, Palo Alto: Electric Power Research Institute, 1982.

There are examples of (3), both informally (e.g., Colorado and Montana) and through legislative enablement (e.g., Wyoming, voluntarily among jurisdictions; and North Dakota, by legislatively mandated distribution of certain revenues).

⁷At the Quinnesec (Michigan) pulp mill of Champion International, soon to commence operations, most of the several thousand applicants for an initial 350 operating jobs are presently employed in the region. Telephone interview by Michael Hughes with Ron Christison, Michigan Employment Security Commission, Iron Mountain, Michigan, February 27, 1985. Also see "Champion Gets 2,750 Applications," [Green Bay] Press, January 20, 1985.

unemployment were low, they might have to selectively (with reverberations through their wage structures) raise wages for certain jobs.

A related uncertainty exists as to the turnover rate among local residents who might be hired by the Crandon Project. If the rate would be high (not uncommon among new mines, particularly when employing people without mine experience for the first year or two), there would be substantial churning in the local labor market--again if the hiring was clustered. Otherwise, little or no problem.

An uncertainty for local merchants and investors is whether or not to invest in new or expanded operations. For those who decide to do so, there is uncertainty as to when to do it. Finally, there are the uncertainties as to which businesses (if any) in which communities would be most likely to capture significant proportions of the additional personal income that would be generated by the Crandon Project.

Individual and Household Decision-Making. The decisions on where to work, where to live, where to shop, and how to get from home to work would be some of the most significant decisions leading to socioeconomic effects--beneficial, harmful, or mixed. They also are subject to some of the greatest levels of uncertainty because they all would be made by many different people or households at some unknown date in the future. They would be influenced by now uncertain economic and social conditions, and future changes in fads and preferences for different lifestyles. They may be particularly affected by future changes in amenity levels in a single community, e.g., the rehabilitation of the Antigo High School or other changes in the amenities offered by various communities as affected by the outcome of some of the uncertain decisions already identified.

C. FRAMEWORK FOR ANALYSIS

DRI's approach to the socioeconomic assessment of the Crandon Project includes, first, a description of the socioeconomic environment that is most directly susceptible to change due to the Project's construction, operation, and closure. This environment is referred to in geographical terms as the local study area, and the existing socioeconomic characteristics of the local study area as well as those that are expected to prevail in the future in the absence of the Project are collectively referred to as the baseline socioeconomic environment. The local study area is shown in Figure 1. DRI's basis for determining the geographical scope of the local study area and its selection of certain towns and cities and school districts and Indian reservations within the study area for this analysis is discussed in Section A of Chapter II. Further description of the baseline socioeconomic environment is presented in Section C of Chapter II.

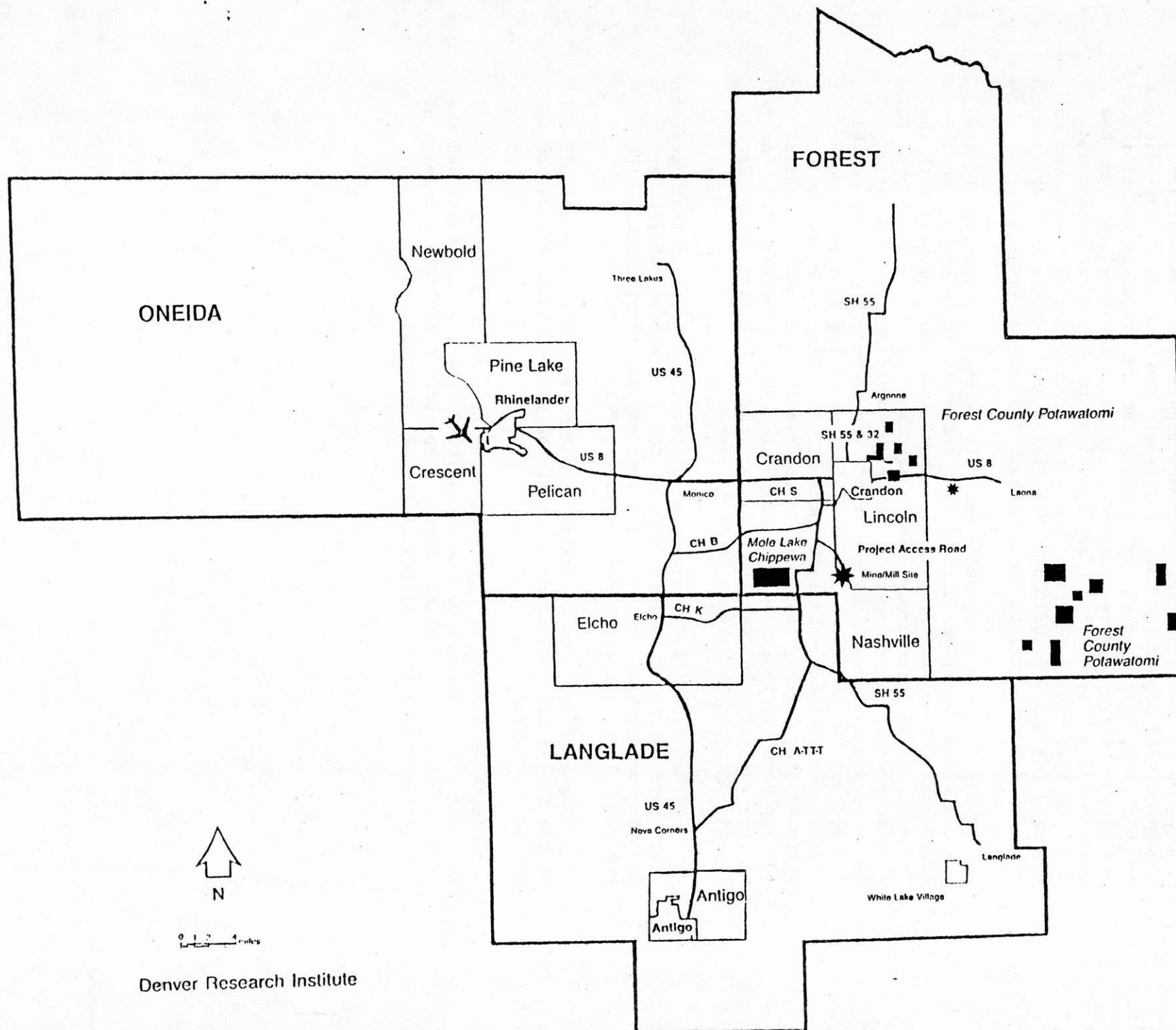


FIGURE 1
LOCAL STUDY AREA

The Crandon Project is superimposed on the baseline environment by adding the new Project work force members and their related family members to the baseline work force and population. The additional employment and population that will result from the yearly expenditures that EMC will make in the study area during the Project's construction and operation are also calculated and added to the baseline. The new housing and public costs for any additions to public facilities and services that may be required due to the Project are then compared to the need for housing and public facilities and services and public costs that would be expected to occur without the Crandon Project.

The ultimate goal of DRI's analysis is thus a comparison between overall socioeconomic conditions that are expected to prevail in the study area without the Project with those that would prevail with the Project. This latter comparative analysis is presented in Chapter III, "Environmental Consequences of the Proposed Action," and includes separate discussions of the construction and operation phases of the Project and the scheduled and possible unscheduled closure of the Project. Also considered in Chapter III is a discussion of the statutory requirement that the Project result in no net substantial adverse economic impact on the area most likely to be affected. As part of this analysis, DRI has also examined the possibility of cumulative impacts occurring in the local study area.

DRI has identified a number of policies and programs that local and state government and EMC may consider to alleviate or mitigate any adverse socioeconomic consequences that may be associated with the Project. These are discussed in Chapter IV.

Chapter V presents an analysis of the Project's potential effects on the Native American communities of the Forest County Potawatomi and Sokaogon Chippewa.

Appendix A contains a more detailed discussion of DRI's methodological approach to the analysis of baseline conditions and the Crandon Project's potential impacts. Appendix B contains a summary of the data compiled and utilized in the DRI analysis.

CHAPTER I

DESCRIPTION OF PROPOSED ACTION

It is useful to analyze the Crandon Project in terms of its construction phase, its operation phase, and the period during which the Project is scheduled to be decommissioned, the closure phase. The most important aspects of the Project from the standpoint of socioeconomic analysis are the levels of employment and capital expenditures that will be associated with the Project's three main phases: construction; operation; and closure.

I.A. PROJECT WORK FORCE CHARACTERISTICS

EMC has indicated that the construction phase of the Crandon Project will be performed utilizing three shifts per day working throughout the 24-hour period, seven days a week, for the development of underground mine and associated facilities. Work on the surface facilities will normally be performed by one to two eight-hour shifts working up to 16 hours per day, five days a week.

According to the most recent EMC estimates, the Project construction phase will span 42 months, or 3.5 years. In the first year total employment is estimated to reach 696 employees. In the second year peak employment reaches 872 employees, and in year 3 total employment peaks at 1,567 persons. In the final year of the construction phase, 1,430 persons are employed. Table 1 lists the construction phase total employment by month and divides those totals into surface facilities contractors, mine facilities contractors, and EMC staff. These employees are referred to in the DRI analysis as direct Project employees and are distinguished from secondary or indirect employees, a category which includes the additional jobs created in the study area due to Project expenditures and the consumer spending of direct Project employees. Secondary employment effects of the Crandon Project are discussed in Chapter III.

Table 2 identifies the skills and educational requirements associated with the construction phase and the number of employees by job category. (The employment shown in Table 2 is for a period during the third year of construction, selected because all job categories are represented; therefore, the total employment portrayed does not correspond with average or peak work force data shown elsewhere.) It should be noted that these work force data are taken directly from EMC's revised Environmental Impact Report (1984) and categorizes Project employees as "direct," "indirect," and "supervisory." In the DRI analysis and in the discussion that follows, all of these categories are treated in the aggregate and referred to as direct Project employment.

The operations phase of the Project is expected to have the following work force characteristics:

TABLE I. OVERALL MAN-LOADING SUMMARY
CONSTRUCTION PHASE

Months from Construction Start	Surface Facilities Contractors			Mine Facilities Contractors			EMC				Total
	Direct	Indirect	Construction Supervision	Direct	Indirect	Supervision	Direct	Indirect	Owner's	Project	
								(Construction Staff)	Organization	Management Team	
1	119	20	20	74	11	11	--	3	6	17	281
2	216	37	37	68	10	11	--	10	6	19	414
3	312	53	60	68	10	9	--	11	6	20	549
4	360	61	60	101	15	14	--	11	7	21	650
5	362	62	60	135	23	13	--	11	9	21	696
6	274	47	60	148	25	13	--	13	11	22	613
7	171	29	60	76	12	16	--	13	12	24	413
8	168	29	60	92	16	16	--	13	12	25	431
9	168	29	60	142	24	16	--	13	13	25	490
10	168	29	60	120	20	16	--	13	14	25	465
11	165	28	60	105	18	18	--	14	16	25	449
12	226	38	60	126	21	18	--	14	29	25	557
13	302	51	70	117	20	18	--	14	30	27	649
14	414	70	80	95	16	18	--	15	31	28	767
15	499	85	90	85	14	18	7	14	31	29	872
16	462	79	90	106	18	15	20	15	32	31	868
17	407	69	90	98	16	15	34	24	37	35	825
18	326	55	90	71	12	15	58	25	43	36	731
19	260	44	90	82	13	15	75	30	62	41	712
20	236	40	90	60	10	14	86	33	80	42	691
21	247	42	90	106	18	14	110	35	90	43	795
22	254	43	90	104	22	14	120	36	90	44	817
23	278	47	90	99	21	14	120	36	90	45	840
24	369	63	95	94	20	14	120	36	90	45	946
25	500	85	105	50	11	13	112	37	101	45	1,059
26	647	110	120	61	13	13	132	37	108	48	1,289
27	741	126	130	61	13	13	142	39	113	50	1,428
28	785	133	130	108	23	13	164	41	119	51	1,567
29	621	106	120	110	23	13	183	41	134	51	1,402
30	458	78	110	115	24	13	183	41	153	52	1,227
31	396	67	80	121	25	14	193	45	162	54	1,157
32	397	67	80	118	20	19	221	46	175	55	1,198
33	409	70	80	145	30	20	240	47	186	56	1,283
34	413	70	80	158	33	20	250	49	198	57	1,328
35	402	68	80	182	38	20	266	54	210	57	1,377
36	383	65	80	226	47	20	275	55	220	59	1,430
37	360	61	80	213	45	20	270	55	232	60	1,396
38	315	54	54	213	45	20	270	55	248	62	1,336
39	240	41	40	246	52	20	270	56	275	64	1,304
40	124	21	20	277	58	20	266	57	307	67	1,217
41	50	9	9	145	30	20	260	60	331	69	983
42	--	--	--	145	30	20	260	64	336	69	924

TABLE 2. CONTRACTOR EMPLOYEES DURING PROJECT CONSTRUCTION

Job Category	SOC ¹	Number of Employees ²	Education ³	Experience ⁴
<u>Mine Construction</u>		351		
Pipefitters	6450	5	V	Y
Welders	7710	5	V	Y
Electricians	6430	20	V	Y
Millwrights	6178	10	V	Y
Mechanics	6140	22	H	Y
Equipment operators	8310	10	H	Y
Ironworkers	6472 & 6473	8	V	Y
Carpenters	6420	8	H	Y
Laborers	8710	24	H	N-Y
Cement Masons	6463	10	H	Y
Shaft and drift miners/rock drillers	6530	190	H	Y
Hoistmen	8314	8	H	Y
Surveyors	1640	6	V	Y
Supervisors	6310	20	H-C	Y
Engineers	162 & 163	5	C	Y
<u>Surface Facilities Construction</u>		1,095		
Boilermakers	6814	60	V	Y
Carpenters	6420	70	H	Y
Electricians	6430	130	V	Y
Laborers	8710	205	H	N-Y
Operating Engineers	8310	75	H	Y
Millwrights	6178	65	V	Y
Painters	6440	20	H	Y
Pipefitters	6450	160	V	Y
Ironworkers	6472 & 6473	130	V	Y
Teamsters/ mechanics	6140	30	H	Y
Cement masons	6463	15	H	Y
Surveyors (rodmen)	1640	5	V	Y
Finishers	6463	5	H	Y
Supervisors	6310	100	H-C	Y
Engineers	162 & 163	25	C	Y

¹Standard Occupational Classification Code (SOC)--U.S. Department of Commerce.

²Numbers reflect employment needs within job categories. Due to timing differences, totals may not agree with Project employment totals.

³Education: H = High school; V = Vocational technology; C = College

⁴Y = Yes; N = None required; N-Y = Some employees will need prior experience and others will be trained on the job.

Source: Crandon Environmental Impact Report, EMC, 1984.

	<u>Shifts/Day</u>	<u>Hours/Shift</u>	<u>Days/Week</u>
Mine stope production and development	3	8	5
Primary crushing and ore and waste hoisting	2	8	5
Mine backfilling	3	8	7
Concentrator	3	8	7
Waste disposal and water treatment	3	8	7

By the end of year 5 of the overall Project schedule, after two years of start-up production rates, the mine is projected to be fully operational, with a sustained level of employment of 703 persons. This level of employment is assumed to continue into year 26. Operations phase employment, including the skills and educational requirements of the various operations jobs, is detailed in Table 3. Table 4 and Figure 2 display both construction and operation phase employment by year and indicate annual peak employment levels.

Based on an analysis of unemployment and labor force participation rates in the local study area, and an evaluation of the experience, skills, and educational requirements associated with the various job categories listed in Tables 2 and 3, DRI has estimated the proportion of direct Project employment that may be filled by existing residents of the study area. This is a critical factor in determining local economic benefits of the Project, the number of in-migrants to the local study area and the Project's overall impact on the demand for public facilities and services, and housing.

Tables 5 and 6 replicate the various occupational and job categories associated with the construction and operations phases of the Project (shown in Tables 2 and 3) and include DRI's estimates of the number of jobs that could be filled by existing residents of the study area. DRI's estimates of the proportion of Project construction employment that would be secured by existing study area residents (as opposed to in-migrant jobseekers) is approximately one-fourth of total construction employment, which is considerably lower than EMC's analogous estimate of 35 percent. DRI's estimates of the direct operations Project employment filled by study area residents is also substantially lower than EMC's published estimate. EMC has indicated that 60 percent of the operations work force (some 440 jobs) could possibly be filled by existing residents of the study area; DRI's analogous estimate is about 45 percent (a range of 40 to 50 percent) or approximately 320 jobs (a likely range of 280 to 350 jobs). This figure was derived through discussions with local job service and trade association officials and DRI's attempt to match skill level and experience of study area residents with EMC job categories.

Both DRI and EMC project that, in addition to this significant number of new in-migrants to the study area, a relatively small proportion of the construction work force (approximately 10 percent) will commute on a daily or weekly basis from residences outside the

study area--from the Upper Peninsula (Iron River, Iron Mountain, and Quinnesec), Wausau, the Green Bay area, and other locations surrounding the study area. These workers would exert a significantly lower effect on the study area--both positively and negatively--because spending patterns of part-time resident workers are substantially lower than those of full-time residents. Part-time resident workers are therefore excluded from the analysis of income, employment, and fiscal impacts of the Project. (However, their influence on traffic flow within the study area is included.)

The difficulty in both the EMC and DRI analyses of confidently projecting personal job preferences, job mobility, and the composition of skills education and experience in the study area work force needs to be frankly acknowledged. The more conservative (i.e., lower) estimate of local resident employment in the construction phase is clearly more reasonable when one considers that all of the prospective employees from the study area are assumed to come from the ranks of the unemployed. Under both the EMC and DRI analysis, direct Project jobs filled by existing study area residents are assumed to be filled by unemployed persons currently residing in the study area and thus occasioning no new employment-related in-migration. It is also assumed by DRI (and implicitly in the EMC analysis) that EMC and EMC's construction contractor and related subcontractors will be predisposed to hiring local residents for the indicated jobs in Table 5 and will not adhere to or pursue recruitment and hiring policies leading to a transference to the study area of their existing employees on assignment elsewhere or promoting the in-migration of job seekers with the requisite skills, education, and experience. All of these assumptions warrant careful examination since the skills and experience of the unemployed in the study area may not match those associated with the indicated jobs in Tables 5 and 6. The importance of these assumptions relating to the Project's employment benefits are discussed further in Chapter III.

EMC has indicated that when the ore body is depleted and production ceases, a period of approximately 3.5 years will be required for closure of the facilities and reclamation. The closure phase of the Crandon Project might involve conversion of Project facilities to other possible uses and the removal of the remaining facilities, and would involve reclamation of the sites. EMC has indicated that in the event no other use can be found for the facility, it will be removed and its site reclaimed. Employment estimates for the final three years (years 27 through 29) are 600, 250 and 80, respectively. A small number of employees are expected to remain in the study area to oversee reclamation of the mine site in year 30. In addition, EMC is responsible for long-term care of the facility for up to 30 years following closure, which would involve periodic environmental monitoring. EMC's scheduling of closure activities is quite obviously subject to variation and can only be detailed as the production phase of the Project draws to a close.

TABLE 3. EMC EMPLOYEES

Job Category	SOC ¹	Number of Employees ²	Education ³	Experience ⁴
<u>Administration</u>		86		
Secretaries/clerks	46-47	25	H	N-Y
Janitors	5240	7	H	N-Y
Security	5140	8	V	Y
Accountants	1412	3	C	Y
Warehouse	8724	11	H	N-Y
Purchasing	1449	2	H	Y
Paramedics	5236	3	V	Y
Employee relations/ safety/training	1430	8	C	Y
Public affairs	3320	1	C	Y
Environmental	1849	3	C	N-Y
Supervision	12-13	8	C	Y
Engineers	162 & 163	7	C	Y
<u>Mine Technical</u>		35		
Supervisors/ engineers	162 & 163	10	C	N-Y
Geologists	1847	6	C	N-Y
Draftsmen	3720	3	V	N-Y
Engineers/geology technicians	3710	8	V	N-Y
Surveyors	1640	6	V	Y
Clerks	46-47	2	H	N-Y
<u>Mine Operations</u>		298		
Secretaries/clerks	46-47	4	H	N-Y
Miners	6530	89	H	N-Y
Equipment operators	6540	102	H	N-Y
Laborers	6560	69	H	N
Supervisors	6320	30	V	Y
Hoistmen	8314	4	H	Y
<u>Mine Maintenance</u>		96		
Equipment mechanics	6110	57	H	N-Y
Pump/fan mechanics	6130	3	H	Y
Welders	7710	4	V	Y
Electricians	6430	9	V	Y
Maintenance	6179	13	H	N-Y

TABLE 3. EMC EMPLOYEES (Continued)

Job Category	SOC ¹	Number of Employees ²	Education ³	Experience ⁴
Clerks	46-47	3	H	N-Y
Supervisors	6000	7	V	Y
<u>Mill Operations</u>		63		
Secretaries/clerks	46-47	2	H	N-Y
Mill operators	6960	43	H	N-Y
Laborers	8650	11	H	N-Y
Supervisors	6320	7	H	Y
<u>Mill Technical</u>		26		
Lab technicians	3831	13	V	N-Y
Metallurgists/ chemists/ engineers	162 & 163	10	C	N-Y
Technicians	3710	2	V	N-Y
Typists/clerks	46-47	1	H	N-Y
<u>Mill Maintenance</u>		30		
Supervisors	6000	2	V	Y
Mechanics/oilers	6140	20	H	N-Y
Welders	7710	4	V	Y
Instrument Repairs	6170	4	V	Y
<u>Central Maintenance</u>		69		
Supervisors	6000	8	V	Y
Machinists	6813	2	V	Y
Electricians	6430	18	V	N-Y
Mobile equipment maintenance	6110	27	H	N-Y
Draftsmen	3720	1	V	N-Y
Welders/fabricators	7710	6	V	Y
Carpenters	6420	1	H	Y
Secretaries/clerks	46-47	2	H	N-Y

TABLE 3. EMC EMPLOYEES (Continued)

Job Category	SOC ¹	Number of Employees ²	Education ³	Experience ⁴
Maintenance planners	4750	2	H	Y
Engineers	162 & 163	2	C	Y

¹Standard Occupational Classification Code (SOC)--U.S. Department of Commerce.

²Numbers reflect employment needs within job categories. Due to timing differences, totals may not agree with Project employment totals.

³Education: H = High school
V = Vocational technology
C = College

⁴Y = Yes; N = None required; N-Y = Some employees will need prior experience and others will be trained on the job.

TABLE 4. CRANDON PROJECT WORK FORCE
ANNUAL EMPLOYMENT PEAKS

<u>Construction Phase</u>	
Year 1	696
Year 2	872
Year 3	1,567
Year 4	1,430
<u>Operations Phase</u>	
Year 5 ¹	703
Year 27 ²	600
Year 28	250
Year 29	80
Year 30	--

¹Employment remains at 703 level to year 26.

²Year 27 begins closure of project.

FIGURE 2. CRANDON PROJECT WORK FORCE

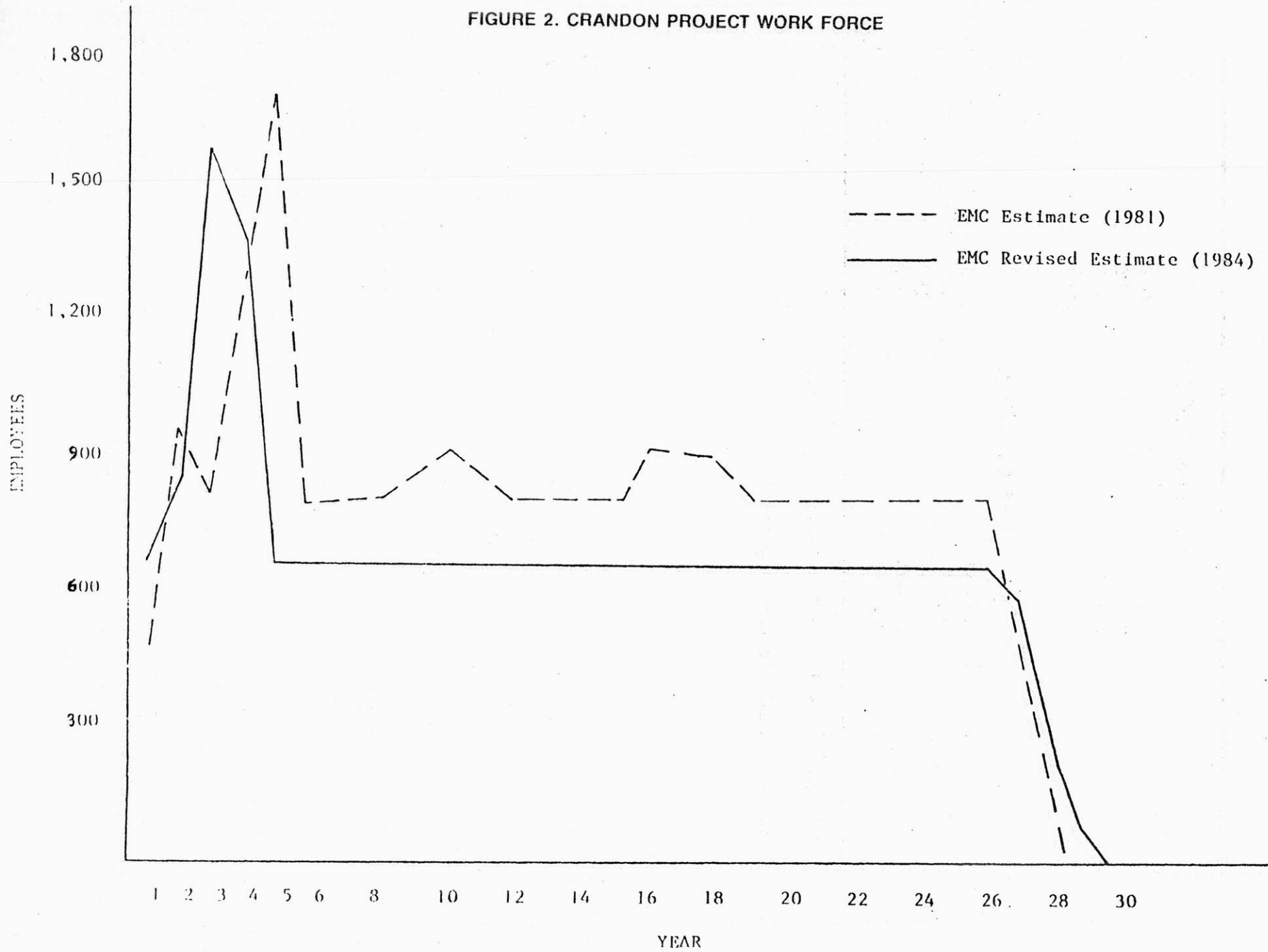


TABLE 5. CONTRACTOR EMPLOYEES DURING PROJECT CONSTRUCTION
DRI ESTIMATES OF LOCALLY HIRED EMPLOYEES

Job Category	SOC ¹	Number of Employees ²	Estimated Number of Locally Hired
<u>Mine Construction</u>		351	59
Pipefitters	6450	5	1
Welders	7710	5	2
Electricians	6430	20	2
Millwrights	6178	10	2
Mechanics	6140	22	5
Equipment operators	8310	10	5
Ironworkers	6472 & 6473	8	1
Carpenters	6420	8	4
Laborers	8710	24	24
Cement Masons	6463	10	5
Shaft and drift miners/rock drillers	6530	190	5
Hoistmen	8314	8	3
Surveyors	1640	6	0
Supervisors	6310	20	0
Engineers	162 & 163	5	0
<u>Surface Facilities Construction</u>		1,095	294
Boilermakers	6814	60	5
Carpenters	6420	70	20
Electricians	6430	130	5
Laborers	8710	205	205
Operating Engineers	8310	75	10
Millwrights	6178	65	6
Painters	6440	20	10
Pipefitters	6450	160	10
Ironworkers	6472 & 6473	130	5
Teamsters/mechanics	6140	30	10
Cement masons	6463	15	2
Surveyors (rodmen)	1640	5	2
Finishers	6463	5	5
Supervisors	6310	100	0
Engineers	162 & 163	25	0

¹Standard Occupational Classification Code (SOC)--U.S. Department of Commerce.

²Numbers reflect employment needs within job categories. Due to timing differences, totals may not agree with Project employment totals.

TABLE 6. DRI ESTIMATED NUMBER OF STUDY AREA RESIDENTS FILLING
DIRECT JOBS--OPERATIONS PHASE

Job Category	SOC ¹	Number of Employees ²	Estimated Number of Locally Hired	Estimated Wage Levels (1982 \$/hr.)
<u>Administration</u>		86	60	\$10.75
Secretaries/clerks	46-47	25	25	
Janitors	5240	7	7	
Security	5140	8	8	
Accountants	1412	3	1	
Warehouse	8724	11	11	
Purchasing	1449	2	2	
Paramedics	5236	3	1	
Employee relations/ safety/training	1430	8	3	
Public affairs	3320	1	0	
Environmental	1849	3	1	
Supervision	12-13	8	1	
Engineers	162 & 163	7	0	
<u>Mine Technical</u>		35	15	13.50
Supervisors/ engineers	162 & 163	10	2	
Geologists	1847	6	1	
Draftsmen	3720	3	2	
Engineers/geology technicians	3710	8	2	
Surveyors	1640	6	6	
Clerks	46-47	2	2	
<u>Mine Operations</u>		298	127	11.00
Secretaries/clerks	46-47	4	4	
Miners	6530	89	9	
Equipment operators	6540	102	48	
Laborers	6560	69	69	
Supervisors	6320	30	5	
Hoistmen	8314	4	2	
<u>Mine Maintenance</u>		96	37	12.50
Equipment mechanics	6110	57	14	
Pump/fan mechanics	6130	3	1	
Welders	7710	4	2	

TABLE 6. DRI ESTIMATED NUMBER OF STUDY AREA RESIDENTS FILLING
DIRECT JOBS--OPERATIONS PHASE (Continued)

Job Category	SOC ¹	Number of Employees ²	Estimated Number of Locally Hired	Estimated Wage Levels (1982 \$/hr.)
Electricians	6430	9	7	
Maintenance	6179	13	10	
Clerks	46-47	3	3	
Supervisors	6000	7	0	
<u>Mill Operations</u>		63	38	11.25
Secretaries/clerks	46-47	2	2	
Mill operators	6960	43	28	
Laborers	8650	11	8	
Supervisors	6320	7	0	
<u>Mill Technical</u>		26	6	12.75
Lab technicians	3831	13	3	
Metallurgists/ chemists/ engineers	162 & 163	10	2	
Technicians	3710	2	0	
Typists/clerks	46-47	1	1	
<u>Mill Maintenance</u>		30	12	10.50
Supervisors	6000	2	0	
Mechanics/oilers	6140	20	10	
Welders	7710	4	2	
Instrument Repairs	6170	4	0	
<u>Central Maintenance</u>		69	29	10.50
Supervisors	6000	8	1	
Machinists	6813	2	0	
Electricians	6430	18	3	
Mobile equipment maintenance	6110	27	17	
Draftsmen	3720	1	1	
Welders/fabricators	7710	6	4	
Carpenters	6420	1	1	
Secretaries/clerks	46-47	2	2	

TABLE 6. DRI ESTIMATED NUMBER OF STUDY AREA RESIDENTS FILLING
DIRECT JOBS--OPERATIONS PHASE (Continued)

Job Category	SOC ¹	Number of Employees ²	Estimated Number of Locally Hired	Estimated Wage Levels (1982 \$/hr.)
Maintenance planners	4750	2	0	
Engineers	162 & 163	2	0	
TOTAL		703	324	

¹Standard Occupational Classification Code (SOC)--U.S. Department of Commerce.

²Numbers reflect employment needs within job categories. Due to timing differences, totals may not agree with Project employment totals.

Technical Note

The first three columns, Job Category, Standard Occupational Code (SOC), and Number of Employees, are taken from the EMC Environmental Impact Report. Their reference indicates that the SOC's were those in: U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, Standard Occupational Classification Manual, Washington, D.C.: Government Printing Office, 1980.

The fourth column, Estimated Number of Locally Hired, are estimates by DRI staff. The estimates are based on the detailed job descriptions for the SOC's in: U.S. Department of Labor, Employment and Training Administration, Dictionary of Occupational Titles, Fourth Edition, Washington, D.C.: Government Printing Office, 1977.

The job descriptions are quite detailed and indicate that substantial mining experience, often underground, is required to qualify for a good many of the SOC's listed in the second column. This is particularly true of the mining jobs, many of the technical and managerial jobs, and some of the administrative and maintenance jobs.

The DRI estimates are based on study of each SOC's job content and inquiry and observation of sources of the various skills and experience available in the study area. The local hiring estimate for any single SOC is obviously a guess, subject to uncertainty. However, the DRI estimates of local hiring were oriented toward favoring local hires, and some of the errors inevitable in such uncertain, detailed estimates are expected to cancel each other out.

TABLE 6. DRI ESTIMATED NUMBER OF STUDY AREA RESIDENTS FILLING
DIRECT JOBS--OPERATIONS PHASE (Continued)

Technical Note (Continued)

Thus, the specific local hire estimates for any single SOC are very questionable; the sum of them comes to about 45 percent local hires, significantly different from the generalized assumption of 60 percent local hiring offered by EMC.

Some of the uncertainties affecting local hiring were described earlier in Section C of the Introduction.

DRI assumes that the estimated wages shown in column 5 (which are furnished by Exxon but are based on census figures rather than actual EMC practices) will be supplemented by a fringe benefit package costing \$4 to \$5 per hour. Some benefits, such as health insurance payments, will increase personal income within the study area and are therefore added to disposable income when considering the effect of the Project on the economic base of the study area.

The only actual EMC wage rate available at the preparation of this report (based on an interview on July 27, 1984, with Barry Hanson, EMC's permitting manager) was an estimated hiring-in rate of \$8.50 to \$9.50 for entry level mining jobs. The wage rates shown in column 5 are weighted averages for all jobs within each major job category.

I.B. PROJECT EXPENDITURES DURING CONSTRUCTION AND OPERATIONS PHASES

EMC has estimated that expenditures on the Crandon Project from initial discovery of the ore body in 1975 through the construction phase will total \$534 million in 1983 dollars (\$512 million in 1982 dollars). Capital expenditures during the operations phase are expected to total \$141 million for a total estimated cost of the Project throughout its entire life of \$675 million (\$647 million in 1982 dollars). A portion of these construction and operation expenditures, portrayed in Table 7, will be made within the state of Wisconsin and within the local study area and thus will be a source of new secondary business income, employment, and public revenue.

EMC previously provided estimates of the dollar value of direct purchases from the local study area and from the state of Wisconsin. However, since these estimates were originally provided, EMC has revised and substantially reduced them commensurate with recent reductions in the overall cost and revised schedule of the Project. EMC has not yet released substitute estimates of construction period and operations period purchases in the state or local study area analogous to those estimates previously announced. The importance of obtaining current EMC estimates of statewide and study area expenditures is discussed further in Chapter III.

TABLE 7. ESTIMATED PROJECT FACILITIES AND
EQUIPMENT COSTS IN 1982 DOLLARS

Description	Construction (\$M)	Operations (\$M)	Total (\$M)
Mine and surface facilities and land	450	63	513
Pollution control facilities			
Water treatment	26	0	26
Tailings	36	33	69
Reclamation	<u>0</u>	<u>39</u>	<u>39</u>
TOTAL	512	135	647

Source: EMC communication to DRI, March 1985; deflation to 1982 dollars by DRI.

CHAPTER II

DESCRIPTION OF EXISTING ENVIRONMENT

This chapter provides a definition of the local study area and provides a profile of current socioeconomic conditions. Projected socioeconomic conditions in the local study area under the without-project and impact scenarios are discussed in Chapter III. The socioeconomic elements of the study area environment that are of interest in this analysis include the cultural history of the region, population, economic base, housing, public facilities and services, government structure, public finance, transportation, and sociocultural characteristics of the environment.

II.A LOCAL STUDY AREA: DEFINITION AND CRITERIA FOR SELECTION

An impact area usually is defined in geographic terms as the area in which significant impacts are likely to occur. However, an impact area also should be defined in political terms, as the governmental entities which are likely to experience significant impacts. For example, the impact area for the Crandon Project may include the geographic area bounded by Langlade, Forest, and Oneida counties, but it need not include every political entity within those boundaries. The reason for excluding political entities, such as certain towns, is that they are unlikely to experience significant impacts from the Project.

In this report, the impact area is defined in political terms as those government entities requiring study for their vulnerability to significant impacts.

Examples of significant, discernible socioeconomic impacts include the following:

- Higher rates of employment and higher levels of personal income due to growth in job opportunities for local residents
- Visible changes in a community's appearance due to increases or substantial changes in the character or value of the housing stock
- New business opportunities as a result of increased demand for retail goods
- Changes in an entity's property tax base or in payments received from a governmental impact assistance program, e.g., the Mining Investment and Local Impact Fund Board (MIB) due to construction of the project

- Need for new revenues for a jurisdiction because of project-related activities, leading to increased tax or fee burden per household

This list is not comprehensive, nor is it necessarily the case that all of these impacts will result from the Crandon Project. The list does illustrate the kinds of concerns that are the subject of socioeconomic impact analysis, and it indicates what criteria are appropriate for defining an impact area.

To arrive at a manageable definition of a local study area, five questions are asked with particular reference to the Crandon Project:

- Where will Project work force in-migrants work?
- Where will Project work force in-migrants live?
- Where will the Project-related population shop?
- What governmental entities can tax the Project or receive MIB-mandated payments?
- Where will social contacts foster change?

Where Will In-Migrants Work?

In-migrants employed by the Project are assumed to work at the Project site or in Project offices. In-migrants employed in secondary jobs are assumed to work mostly in the major trade centers, with smaller portions going to the less developed retail centers. The Project site is in the towns of Lincoln and Nashville, near the city of Crandon. Project offices currently are in Rhinelander. Rhinelander and Antigo are the major trade centers in the areas, as discussed below.

Where Will In-Migrants Live?

A number of factors influence where people live: commuting time to work; the availability of shopping and entertainment centers; the quality of schools; housing availability; and so on. Commuting times to the Project site are easily measured and provide a convenient indicator of in-migrant settlement patterns. Other factors influencing settlement patterns can be more difficult to measure and may change over time. To address these issues, DRI has made the simplifying assumption that larger communities tend to attract more in-migrants than smaller ones because they offer more urban amenities. Recent studies support the use

of commuting times and population concentrations as indicators of settlement patterns.¹

Commuting Times

DRI has found that construction workers tend to tolerate longer commuting times than operations workers. Since the construction worker's job on the site is a temporary one, he or she is willing to accept a longer commute as a short-term inconvenience. An operations worker is more prone to regard his or her job as a permanent one and therefore takes a greater interest in keeping commuting time at a minimum.

In a recent study of power plant construction, DRI found that construction workers tend to live within 73 miles or 1.42 hours of the job site. Operations workers tend to live within 40 miles or 0.84 hours.² Workers who live farther away than these distances tend to move closer to the project site. These in-migrants tend to settle within 30 miles of the project or in major population centers within an hour's drive of the project site.³

For its assessment of the impact area, EMC considered the geographic area within a one-hour commute of the Project site. This area is sufficiently large to include probable residences of most in-migrants. In-migrants who choose to live in settlements with 30 minutes of the Project site may reside in the city of Crandon or the towns of Nashville, Lincoln, Crandon, and Elcho. The towns of Ainsworth, Schoepke, Monico, and Laona were candidates for inclusion in the study area, but it is not apparent that they offer sufficient housing close enough to the Project site to attract population. In-migrants who prefer larger cities are likely to settle in or around Rhinelander or Antigo, both of which are within an hour's drive of the Project site. No other cities of comparable size (more than 4,000 population) are within 60 minutes of the Project.

¹Denver Research Institute, et al., Socioeconomic Impacts of Power Plants, 1982.

²Denver Research Institute, et al., Socioeconomic Impacts of Power Plants, 1982. The findings were affected by the inclusion of extremely rural study areas where speed limits were poorly enforced. Average commuting times are lower than the average maximum times cited.

³Denver Research Institute, Socioeconomic Impacts of Power Plants: Case Study No. 1 - Coal Creek Station, November 1983. In sparsely populated southwest Wyoming about 800 miners (operating) regularly ride buses from their job sites to their homes in Rock Springs (35 to 45 miles).

Population Concentrations

The Rhinelander and Antigo areas are the major population centers in the vicinity of the Project. The Rhinelander area has a population of around 17,800 if one includes the city of Rhinelander and the towns of Crescent, Newbold, Pelican, and Pine Lake. The Antigo area has a population of around 11,000 if one includes the city of Antigo and the adjacent towns of Ackley and Antigo. Because of their aggregate sizes, these two areas are likely to attract in-migrants. Certain individual towns within these areas may be more attractive than others because of their locations relative to the project site and the amenities offered. DRI has included Rhinelander, Crescent, Newbold, Pelican, and Pine Lake in the local study area. Likewise, the city of Antigo is included, as is the town of Antigo. Although more development is occurring south and west of Antigo in the towns of Rolling and Ackley, these areas are too distant from the mine site for significant numbers of in-migrants to settle.

Where Will the Project-Related Population Shop?

Shopping patterns determine the distribution of one of the Project's positive impacts--increased retail sales stemming from higher levels of personal income. These increases in income may be attributable to direct employment by the Project or secondary employment associated with Project-related growth.

Rhinelander and Antigo are the major trade centers in the area of the Project. According to census figures for 1977, Rhinelander accounted for 34.8 percent of total retail sales in Langlade, Forest, and Oneida counties, while Antigo accounted for 24.5 percent.⁴ Rhinelander and Antigo accounted for significant, but smaller shares of service receipts in the three counties (28.4 and 17.4 percent respectively).⁵ The position of these two cities as sales leaders supports their inclusion in the study area.

Wausau and Green Bay are within two-hour drives of the Project and support significantly larger retail sectors than Rhinelander or Antigo. However, their distances from the Project site would discourage casual shopping trips, and purchases made by the Project-related population would be relatively minor in comparison to total retail volumes in the two cities. For these reasons, they are not included in the study area.

⁴EMC, Report on Current Conditions, Exxon Crandon Project, 1981.

⁵EMC, Report on Current Conditions, Exxon Crandon Project, 1981.

What Government Entities Can Tax the Project or Receive MIB-Mandated Payments?

Increases in local government revenues can be another positive impact of the Project. These increases can occur when local governments have the right to tax the Project directly or when the Mining Impact Board makes payments to local entities from net proceeds tax revenues.

The following local government entities could levy property taxes on the proposed Crandon Project:

- Town of Lincoln
- Town of Nashville
- Crandon School District
- Forest County
- Nicolet VTAE District

Mandatory allocations of a portion of the net proceeds funds are provided for the following entities:

- Forest County
- Town of Lincoln
- Town of Nashville
- Mole Lake Chippewa Community
- Potawatomi Community

Funds also would be distributed throughout the affected area on a discretionary basis by the MIB, assuming adequate funds become available.

The state of Wisconsin also could receive revenues from the Project, either in the form of income tax, the net proceeds tax, or from sales taxes on equipment purchased in the state. Although the state is not included within the study area, the potential state revenues resulting directly from the Project are discussed briefly in Chapter III.

Where Will Social Contacts Foster Change?

Social Contacts

Positive social impacts may occur. New job opportunities may enable the region to retain and employ a larger percentage of its young people. Contacts with in-migrants may broaden cultural horizons and lead to more diverse educational opportunities.

On the other hand, interests of retirees and tourists or seasonal residents may conflict with some interests of newcomers. Some portion of the retirees may resist change in their communities. Seasonal residents may experience some competition with in-migrants for housing. Signs of a large construction/mining project may diminish the area's bucolic atmosphere for some tourists. Road congestion near the Project site at shift changes may be disruptive to any residents using these roads.

The potential for social contact is greatest in the places where in-migrants live and shop and in the immediate vicinity of the Project.

Native Americans

Two unique cultures are in the immediate vicinity of the Project site. One is the Mole Lake Chippewa Community, which is located within the boundaries of the town of Nashville. The second is the Forest County Potawatomi Community, which has dispersed property holdings north of the Project site in the town of Lincoln and east in the towns of Blackwell and Wabeno. Thus, both of these tribes have properties in the same towns as the Crandon Project.

Due to their proximity to the Project site, frequent contact between members of these communities and the in-migrant population is likely, and therefore these two Native American communities are included in the study area.

A third unique culture which bears consideration is that of the Menominee tribe, located south of the Project on State Highway 55. Approximately 5,700 tribal members live on or within 90 miles of the reservation, mainly in Keshena and Neopit. Only the far northern border of the Menominee Reservation is within a 45-minute drive of the Project site. Keshena, location of the tribal headquarters, is near the southern border of the reservation. A number of tribal members could qualify for Project employment and it is not unreasonable to expect some Native Americans on the reservation to commute to the Project for work. This would be the primary means of contact between the tribe and the in-migrant population.

Other forms of contact are likely to be minimal. Few in-migrants are likely to pass through the Menominee Reservation because of its distance from the Project site. Distance also should keep contacts in

shopping and recreation areas at a minimum. In-migrants living in the three-county area will share no schools or local governments with the Menominee tribe. For these reasons, the Menominee Reservation was excluded from the study area.

Definition of the Impact Area

Table 8 lists the political entities included in the study area. This is "... the area reasonably expected to be most impacted by the activity."⁶ For analytical purposes, the three-county region--Forest, Langlade, Oneida--offers the best set of boundaries for the local study area.

The three-country geographical study area covered by this report is subdivided into three levels of detail. The first level comprises three targeted areas centered at the Project site, Rhineland, and Antigo, respectively. These areas, including the townships surrounding the three cities, were selected through a determination of probable Crandon Project impacts. While the Project impacts identified by DRI differ in many respects from those forecast by EMC, the general location of the most significant effects is the same in both the DRI analysis and the EMC Forecast of Future Conditions Report.

The second level of geographic detail is the balance of the local study area, including most of the remainder of Forest, Langlade, and Oneida counties. These areas are referred to in the DRI analysis as "balance of county areas within the local study area," or BOC. The significance of these areas is that they are projected to be the residence of some direct Project or secondary employees, although they are projected to sustain fewer impacts than the three targeted areas in the first category.

The third level of detail includes the balance of school districts and counties, which are not projected to be the primary residence of any of the direct Project or secondary employees. The inclusion of these areas is essential because the jurisdictions are indivisible for purposes of enrollment projections and fiscal analysis. Also, unless otherwise indicated, county level data described in this chapter are included as the data were originally reported, i.e., no local study area adjustments have been made to published data.

⁶Section 144.85(5)(a)l.e., Wisconsin Statutes.

TABLE 8. JURISDICTIONS INCLUDED IN THE LOCAL STUDY AREA

	Criteria for Defining the Impact Area				
	Place of Employment	Place of Residency	Shopping Patterns	Distri- bution of Revenues	Social
<u>Counties</u>					
Forest	x	x	x	x	x
Langlade	x	x	x		x
Oneida	x	x	x		x
<u>Cities</u>					
Crandon	x	x			x
Antigo	x	x	x		x
Rhineland	x	x	x		x
<u>Secondary Service Centers and Towns</u>					
Antigo		x			x
Elcho		x			x
Crandon		x			x
Lincoln	x	x		x	x
Nashville	x	x		x	x
Crescent		x			x
Newbold		x			x
Pelican		x			x
Pine Lake		x			x
<u>School Districts</u>					
Crandon		x		x	x
Antigo		x			x
Elcho		x			x
Rhineland		x			x
<u>Reservations</u>					
Mole Lake Chippewa				x	x
Forest County Potawatomi				x	x

II.B HISTORY OF LOCAL STUDY AREA⁷

Fur traders were among the earliest resident settlers of the local study area, arriving in the 1850s. The financial panic of 1857 and the Civil War (1861-1865) checked the exploration and settlement of northern Wisconsin temporarily.

Federal subsidization of a military road from Green Bay to Fort Wilkins in the Upper Peninsula between 1863 and 1870 brought men and money to the region and with the end of the war, a wave of youthful veterans sought economic opportunities in the northern Wisconsin frontier. Virgin pine forests drew timber cruisers, woodsmen, log drivers, teamsters, sawmill operators, dance hall workers, and saloon keepers into places such as Pelican Rapids (Rhineland) and Lily during the 1870s. Between 1860 and 1890 the growth of the Wisconsin pine lumber industry increased dramatically, and Wisconsin became the nation's largest supplier of pine during the last decade of the 19th century, as the state's forest resources were ruthlessly exploited.

The railroads ushered in a new wave of development. Rails replaced log driving streams, as feeder and spur lines branched into the pinery. Once the pine had been slashed, the railroads and the newly available portable sawmill made possible the exploitation of the hardwood and hemlock trees. Hardwood timbering led to yet another wave of economic development in the local study area and encouraged the establishment of a wood products industry in the region.

Rhineland, with about 5,000 inhabitants in 1900, developed the largest wood products industrial base in the area. Rhineland industries by 1905 included sawmills, a paper-making company which used hemlock pulp, a refrigerator-making plant (ice boxes were constructed of wood), a napkin and crepe paper factory, a sawmill machinery factory, and a wooden boatbuilding concern.

After the pine had been harvested, landowners, real estate agents, and local officials encouraged farmers to settle on low-priced cutover lands, often making extravagant claims about the nature of area farming opportunities. As a result, the population of Oneida, Langlade, and Forest counties rose dramatically. Oneida County jumped from 8,875 in 1900 to 13,996 in 1920, with Rhineland representing about one-half the total. Langlade County's population increased from 685 in 1880 to 12,553 by 1900. In 1920 the population of Langlade County reached 21,471. Forest County's population jumped from 1,396 in 1900 to 9,850 20 years later. Unfortunately, most farmers did not become prosperous; after the end of World War I, agricultural prices declined and two decades of agricultural depression followed. Despite the failure of many farms during the 1920s and 1930s, agriculture continues to be an important source of employment in the local study area. Areas suitable

⁷This historical overview is taken from a monograph written for Denver Research Institute by Richard Zeitlin.

for agriculture are concentrated in Langlade and in Oneida counties where dairy farming and potato growing predominate. Today, 70 percent of the seed potatoes grown in Wisconsin are cultivated in Langlade County.

After 1925, Wisconsin moved to deal with the economic problems of its northern counties, and county officials and University of Wisconsin College of Agriculture representatives turned toward reforestation as the basis of future land use policy. The Forest Crop Law (1927) and the granting of authority to restrictively zone the cutover (1929) helped limit the influx of farmers into areas unsuited for agriculture and provided incentives for timber landowners not to abandon their properties. State forests were also established. In 1935 the Wisconsin Isolated Settlers Project evacuated agriculturalists from 9,948 acres in the Crandon area. State subsidies for recreation and county foresters appeared that same year. The federal government helped the state promote and undertake reforestation projects, and in 1933 created the Nicolet National Forest.

The University of Wisconsin College of Agriculture, through the Extension Service, promoted reforestation, scientific forest use and management techniques, and tourism. Pulp wood for papermaking began increasingly to utilize spruce and balsam, and by the late 1930s a scientific breakthrough allowed poplar/aspen to be used for pulp. Poplar remains a vital resource in the cutover, for the species flourished on charred, devastated ex-pine lands. Poplar pulp assured the economic viability of reforestation from a commercial-industrial perspective.

Reforestation led to increases in tourism as recreational opportunities expanded. The Wisconsin Land O'Lakes Association, headquartered in Rhinelander, began promoting the recreational development of the entire northern part of Wisconsin. Tourism became the economic backbone of the area during the 1920s and by 1930, tourism provided larger tax revenues than agriculture.

Depopulation of the cutover during the 1920s was reversed during the 1930s. Some city dwellers who had family ties in the cutover returned, sensing that life in remote rural northern Wisconsin was less bleak than in jobless urban areas.

As a result, the population of the area reached new heights by 1940. Although World War II directed attention away from the northern cutover, the area attracted new waves of recreation enthusiasts during the 1950s.

The period 1940-1950 also witnessed a rise in the number of manufacturing concerns located in the study area. Some were associated with already existing pulp and other woods products industries. Shoes, bowling pins, and gears were manufactured in Antigo. By 1960 about 22 percent of the working population of northern Wisconsin found employment in manufacturing.

A decline in the rail industry began in the 1950s. The CNW, for example, laid off 400 Antigo employees in 1951 as a result of competition from trucking. While some heavy industry remained in the study area during the 1960s, the region did not experience the economic growth that occurred elsewhere during the decade, in spite of some growth in tourism-related businesses.

During the 1960s, the three-county area population grew by only 1,768 persons, an average rate of .3 percent per year. A gradual decline in the number of working age people also began in the 1960s and a sizable reduction in farm population in the study area was also witnessed, particularly in Forest County. In the 1970s, tourism continued. Second homes and home building for retirees (mostly from Great Lakes region cities) furnished some economic activity and further growth of the older population.

II.C SOCIOECONOMIC CHARACTERISTICS OF LOCAL STUDY AREA

This section presents a description of current socioeconomic conditions in the local study area. DRI's projections of socioeconomic conditions with and without the Crandon Project are presented in Chapter III.

II.C.1 Population

The three counties of Forest, Langlade, and Oneida in aggregate lost population between 1950 and 1960 and experienced only moderate growth during the 1960s. During the 1970s, the development of retirement communities and year-round homes for recreation enthusiasts led to an increase in population in the local study area, particularly in the Rhinelander/Oneida County region. Between 1970 and 1984, the total three-county area population grew by 22 percent, exceeding the 8 percent growth evidenced in the state as a whole.

The development of retirement communities and the in-migration of large numbers of retired persons are apparent in the increase in numbers and percentage of persons aged 65 and older between the 1970 and 1980 census years. In 1970 this age group constituted almost 14 percent of the three-county population; by 1980 the proportion increased to almost 16 percent. As shown in Table 9, the proportion in each county of the study area was significantly higher than the state percentage, as was the median age.

The importance of recreation and tourism to the economic base of the study area is shown below in Section II.C.2, and the number of second homes in the area can be determined by Table 17 in Section II.C.3. These measures indirectly gauge the magnitude of temporary surges in population during the summer months, including daily or weekend tourists as well as longer term visitors and part-year residents. Because of the seasonality of their tenure, most of these members of the study area population are omitted from the census and from official population estimates. However, the magnitude of their impact on the area can be estimated by the fact that over one-third of the total housing units in the study area are second homes.

Forest County

The population decline in Forest County during the 1950s was reversed by a 23 percent growth in population between 1970 and 1984. The town of Lincoln provides an example of this historical fluctuation in population. Between 1950 and 1960 the population of Lincoln declined by 19 percent from 396 persons in 1950 to 319 in 1960. The 1970 census recorded 350 residents in the town, an increase of less than 10 percent. However, the 1980 census recorded 577 persons in Lincoln, an increase of almost 65 percent in 10 years. The same trend is evidence in Forest County as a whole. The county's population declined from 9,437 in 1950

TABLE 9. PERCENTAGE OF POPULATION OVER 65 AND MEDIAN AGE, 1970 AND 1980

	1980	1970
<u>Forest County</u>		
Percentage over 65	16.3%	13.8%
Median age	31.0	29.5
<u>Langlade County</u>		
Percentage over 65	16.3%	14.6%
Median age	32.1	30.0
<u>Oneida County</u>		
Percentage over 65	15.1%	13.1%
Median age	33.3	32.3
<u>State of Wisconsin</u>		
Percentage over 65	12.0%	9.9%
Median age	29.4	27.2

Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, Wisconsin.

to 7,542 in 1960 and grew to 7,691 in 1970, 9,044 in 1980, and an estimated 9,465 in 1984.

Langlade County

Langlade County lost population between 1950 (21,975 persons) and 1960 (19,916 persons) and has exhibited minimal growth since 1960. The county's population totalled 19,220 in 1970, 19,978 in 1980, and was estimated at 20,614 in 1984.

The city of Antigo has shown a steady decline in population over the past three decades, from 9,902 residents in 1950 to 8,653 in 1980. Between 1980 and 1984, the population is estimated to have grown to 8,890. In contrast, Elcho shows a trend similar to the smaller towns in Forest County; a loss of over 300 residents between 1950 and 1960 was contrasted with a 21 percent gain between 1970 and 1980. Elcho's population remained essentially unchanged from 1980 to 1984.

Oneida County

During the area's population decline in the 1950s, the only study area jurisdictions to show population increases were the city of Rhinelander and the townships which surround it. While these townships, Crescent, Pelican, Pine Lake, and Newbold, have exhibited a growth in population through 1984, Rhinelander's population has declined since 1960 from 8,790 to 7,985 in 1984. Oneida County as a whole grew from 20,648 residents in 1950 to 22,112 in 1960 and 24,427 in 1970. The county had an average annual growth rate of about 2.5 percent between 1970 and 1980, and by 1984 the population estimate was 32,764.

Table 10 illustrates the relative and absolute change in population in the three-county area between 1950 and 1984. This table shows that the intense in-migration which occurred over the 1970 to 1980 period has slowed somewhat since, with the three-county annual growth rate declining from 1.6 percent over the 1970s to 1.1 percent since 1980. Most notable has been the decline in average annual population growth in Oneida County from 2.5 percent between 1970 to 1980 to 1.2 percent since.

TABLE 10. LOCAL STUDY AREA POPULATION, 1950-1984

	1950	1960	% Change 1950-60	1970	% Change 1960-70	1980	% Change 1970-80	1984 WDA Prelim.	% Change 1980-84
<u>Forest County</u>	9,437	7,542	-20.1	7,691	+ 2.0	9,044	+17.6	9,465	+ 4.7
Crandon (city)	1,922	1,679	-12.6	1,582	- 5.8	1,969	+24.5	2,093	+ 6.3
Crandon (township)	470	324	-31.1	406	+25.3	569	+40.1	632	+11.1
Lincoln	396	319	-19.4	350	+ 9.7	577	+64.9	617	+ 6.9
Nashville	576	539	- 6.4	519	- 3.7	703	+35.5	716	+ 1.8
<u>Langlade County</u>	21,975	19,916	- 9.4	19,220	- 3.5	19,978	+ 3.9	20,614	+ 3.2
Antigo (city)	9,902	9,691	- 2.1	9,005	- 7.1	8,653	- 3.9	8,890	+ 2.7
Antigo (township)	1,699	1,618	- 4.8	1,692	+ 4.6	1,661	+ 1.8	1,744	+ 5.0
Elcho	1,059	833	-21.3	885	+ 6.2	1,078	+21.8	1,076	- 0.19
<u>Oneida County</u>	20,648	22,112	+ 7.1	24,427	+10.5	31,216	+27.8	32,764	+ 5.0
Rhineland (city)	8,774	8,790	+ 0.2	8,218	- 6.5	7,873	- 4.2	7,985	+ 1.4
Crescent	836	1,117	+33.6	1,441	+29.0	1,702	+18.1	1,837	+ 7.9
Newbold	691	949	+37.3	1,234	+30.0	2,171	+75.9	2,428	+11.8
Pelican	1,928	2,415	+25.3	2,576	+ 6.7	3,387	+31.5	3,391	+ 0.12
Pine Lake	1,299	1,617	+24.5	1,853	+14.6	2,656	+43.3	2,806	+ 5.7
Total 3-county area	52,060	49,570	- 4.7	51,338	+ 3.6	60,238	+17.3	62,843	+ 4.3
State of Wisconsin	3,331,615	3,952,839	+18.6	4,417,821	+11.8	4,705,642	+ 6.5	4,774,000	+ 1.5

Source: U.S. Bureau of the Census and Wisconsin Department of Administration.

II.C.2 Economic Base

The three-county area is less industrialized and less affluent than Wisconsin as a whole. Per capita personal income in all three counties is lower than statewide per capita income and the three county unemployment rates are all higher.

Overall, forestry and wood products manufacturing dominate the local study area economy, particularly in Forest and Oneida counties. Agriculture is important primarily in Langlade County. The recreation and tourism industry is also substantial and stimulates activity in retail trade and services. However, these are low wage industries and partially explain the low income levels in the local study area.

Forest County is the least economically diverse of the three counties. With its small population, it has the lowest total income and earnings and the lowest per capita income of the local study area. Manufacturing and government are the largest income producing sectors in Forest County. Since most of the county is heavily forested, most of the manufacturing jobs are in saw mills and wood products plants. Wages in the county tend to be the lowest in the local study area, while unemployment is the highest. Per capita transfer payments in the county are higher than in the other counties and are also higher than the statewide level. The largest categories of transfer payments are retirement benefits, disability payments, government pensions, and health insurance payments--all of which are generally attributable to elderly recipients. A high number of retirees have traditionally migrated to the local study area; however, this trend has been altered in recent years.

Due to a relatively large agricultural base, Langlade County is the most economically balanced county of the local study area. Although manufacturing is the most important economic sector, retail trade, farming, services, and government are also important. Major manufacturing industries in the county include lumber and wood products, food and kindred products, and fabricated metals. Langlade County is one of Wisconsin's top potato producers; vegetable crops accounted for a third of the county's cash receipts from farm marketings. Only dairy products produced more revenue in the county's agricultural sector. Antigo, the Langlade county seat, serves as the county's industrial and trade center and accounts for about three-fourths of the county's total retail and service sales. Antigo is also the location of the county's major employers. Per capita personal income is higher in Langlade County than in Forest County. Both, however, were below the per capita income level in Oneida County and below state and U.S. levels.

Oneida County is the most populous and most economically developed of the three counties. The county surpasses both Forest and Langlade counties in total earnings, average weekly wages, and employment. Nonetheless, Oneida County residents had a lower per capita income than the average Wisconsin resident. The major economic sectors of the

county are manufacturing, services, retail trade, and government. Paper and allied products, machinery (except electrical), printing and publishing, and lumber and wood products are important industrial sectors in the county. The county has abundant recreational resources, and tourism is also an important source of income and employment. Rhinelander is the county seat of Oneida County and the county's only incorporated community. It is the location of the county's major employers and serves as a trade center for surrounding jurisdictions.

Personal Income by Place of Residence

In the three-county area as a whole, personal income in 1982 was derived from net earnings (57 percent), dividends, interest, and rent (20 percent), and transfer payments (23 percent). Forest County, which had the highest percentage of transfer payments, had the lowest percentage of personal income contributed by net earnings (48 percent). For Langlade and Oneida counties, net earnings accounted for about 60 and 57 percent respectively. For the U.S., net earnings represented about 67 percent of total personal income in 1982.

Table 11 compares earnings by place of work to earnings by place of residence. The fact that net earnings in Oneida and Langlade counties by place of work exceeded net earnings by place of residence indicates that those two counties served as a net source of jobs and income for residents of surrounding counties. The relationship was reversed for Forest County, indicating that on balance Forest County residents rely on employment opportunities outside the county.

Table 12 displays effective buying income and retail sales data for the three study area counties. It is important to note that excess retail sales capacity exists, particularly in the trade centers of Antigo and Rhinelander.

Percent Distribution of Earnings by Industry

Manufacturing was the single largest economic sector in 1982 for the three-county area, accounting for 21.4 percent of total earnings (Table 13). Retail trade, services, and government were next in importance, each contributing approximately 14 to 18 percent of total earnings for the three-county area. The combined share of services and retail trade (32.3 percent) reflects the importance of tourism to the economy.

There are differences in distribution of earnings by industry among the three counties. In Forest County, government and manufacturing dominate. Next in importance are services and retail trade. Farming ranks first in Langlade County, followed by manufacturing. Following farming and manufacturing in share of 1982 total earnings was retail trade, services, and government. In Oneida County, manufacturing had the greatest share of 1982 total earnings, followed closely by services, government, and retail trade.

TABLE 11. LOCAL STUDY AREA PERSONAL INCOME, 1970, 1980, 1982¹

	Forest County	Langlade County	Oneida County
<u>Personal Income By Place of Residence (\$ Thousands)</u>			
1970	\$16,876	\$ 52,107	\$ 78,177
1980	49,735	140,086	249,053
1982	58,212	169,341	290,130
Percentage change, 1970-1980	194.7%	186.8%	218.6%
1980-1982	17.0	20.8	16.5
<u>Net Earnings By Place of Residence (\$ Thousands)</u>			
1970	\$11,136	\$ 37,333	\$ 54,506
1980	26,417	87,951	153,490
1982	27,909	102,669	165,635
<u>Net Earnings By Place of Work (\$ Thousands)</u>			
1970	10,820	35,652	55,738
1980	24,874	87,539	166,528
1982	26,374	104,210	181,419
<u>Per Capita Personal Income (\$)</u>			
1970	\$ 2,195	\$ 2,702	\$ 3,180
1980	5,460	6,974	7,924
1982	6,368	8,439	9,185
Percentage change, 1970-1980	148.7%	158.1%	149.2%
1980-1982	16.6	21.0	15.9
Percentage of average			
statewide per capita income 1970	58.2	71.6	84.3
1980	58.4	74.6	84.8
1982	59.4	78.7	85.6
Percentage of average			
U.S. per capita income 1970	55.7	68.5	80.6
1980	57.4	73.4	83.4
1982	57.4	76.0	82.7

¹Figures reported in then current dollars.

Source: U.S. Department of Commerce, Bureau of Economic Analysis. 1984 Regional Economic Information System, Personal Income by Source, Washington, D.C.

TABLE 12. LOCAL STUDY AREA INCOME AND RETAIL SALES, 1982¹
(In Millions of 1982 Dollars)

			Sales for Dominant Classes of Stores		
				Total	As % of Total Retail Sales
	Disposable Personal Income	Total Retail Sales			
Forest County	57.7	18.4	Food	4.4	23.9
			Automobile	3.0	16.3
			Eating and drinking	2.5	13.6
Langlade County	136.8	81.5	Food	23.6	29.0
			Automobile	14.3	17.5
			Eating and drinking	7.6	9.3
Oneida County	256.4	170.8	Food	36.8	21.5
			Automobile	25.6	15.0
			Eating and drinking	18.2	10.7

¹Retail sales are receipts of retail establishments, including repairs or similar services. Receipts of service establishments are not included.

Source: Sales and Marketing Management, "1983 Survey of Buying Power," July 25, 1983.

TABLE 13. LOCAL STUDY AREA EARNINGS BY INDUSTRY, 1980 AND 1982

	1980	Percentage of Total	1982	Percentage of Total
<u>Forest County</u>				
Farming	\$ 1,535	6.2%	\$ 1,752	6.6%
Agricultural services	84	0.3	91	0.3
Mining	0	0.0	0	0.0
Construction	910	3.7	772	2.9
Manufacturing	6,822	27.4	6,502	19.7
Transportation, communi- cation, and utilities	1,665	6.7	1,983	6.0
Wholesale trade	572	2.3	831	2.5
Retail trade	2,226	8.9	2,371	7.2
Finance, insurance, and real estate	474	1.9	809	2.5
Services	4,069	16.4	4,149	12.6
Government	6,244	25.1	7,134	21.7
<u>Langlade County</u>				
Farming	15,601	17.8	21,498	20.6
Agricultural services	430	0.5	--	--
Mining	0	0.0	--	--
Construction	3,418	3.9	4,512	4.3
Manufacturing	18,109	20.7	20,690	19.9
Transportation, communi- cation, and utilities	5,350	6.1	6,685	6.4
Wholesale trade	7,302	8.3	7,544	7.2
Retail trade	12,571	14.4	14,066	13.5
Finance, insurance, and real estate	2,355	2.7	2,527	2.4
Services	11,457	13.1	13,178	12.6
Government	10,946	12.5	13,005	12.5
<u>Oneida County</u>				
Farming	3,765	2.3	4,621	2.5
Agricultural services	--	--	539	0.3
Mining	--	--	2,644	1.5
Construction	12,049	7.2	10,055	5.5
Manufacturing	38,841	23.3	39,557	21.8
Transportation, communi- cation, and utilities	9,769	5.9	11,361	6.3
Wholesale trade	6,390	3.8	7,246	4.0
Retail trade	25,404	15.3	27,584	15.2

TABLE 13. EARNINGS BY INDUSTRY, 1980 AND 1982 (Continued)

	1980	Percentage of Total	1982	Percentage of Total
Finance, insurance, and real estate	7,918	4.8	8,229	4.5
Services	35,951	21.6	39,466	21.7
Government	25,339	15.2	30,117	16.6
<u>Three-County Area</u>				
Farming	20,901	6.1	27,871	8.9
Agricultural services	--	--	--	--
Mining	--	--	--	--
Construction	16,377	4.8	15,339	4.9
Manufacturing	63,772	18.6	66,749	21.4
Transportation, communi- cation, and utilities	16,784	6.0	20,029	6.4
Wholesale trade	14,264	5.1	15,621	5.0
Retail trade	40,201	14.4	44,021	14.1
Finance, insurance, and real estate	10,747	3.9	11,565	3.7
Services	51,477	18.5	56,773	18.2
Government	42,529	15.2	50,256	16.1

Source: U.S. Department of Commerce, Bureau of Economic Analysis, 1984 Regional Economic Information System, Earnings by Industry, Washington, D.C.

Unemployment Rates

Unemployment rates for the local study area counties are typically higher than for Wisconsin. The difference is particularly great for Forest County, where the unemployment rate has been close to double the state average for each year from 1980 to 1984 as shown in Table 14. The differences between the unemployment rates for Langlade and Oneida counties and the state are smaller and the rates for the two counties are within a percentage point of the national rate.

Average Weekly Wages

In 1982 the lowest weekly wage for covered employment in the three-county area (\$178.78) was in Forest County, followed by Langlade County (\$221.23) and Oneida County (\$248.03). The industrial categories with the highest wages in Forest County were wholesale trade (\$270.25), transportation, communication, and utilities (\$238.09), and finance, insurance, and real estate (\$224.14). In Langlade County these three categories ranked below construction (\$312.23) and ahead of manufacturing (\$258.12). In Oneida County, mining, with an average weekly wage of \$645.23, showed the highest wage among industrial categories, followed by manufacturing (\$349.92), transportation, communication and utilities (\$340.51), and wholesale trade (\$316.37). In all three counties, retail trade and services commanded the lowest average weekly wage. Retail trade averaged between \$115.34 in Forest County and \$156.30 in Oneida County. The average salary for services ranges from \$159.97 to \$226.79.

In the first quarter of 1984, the lowest average weekly wage for covered employment in the three-county area (\$191.80) remained in Forest County; this value was 59 percent of the state average weekly wage. In 1984 all three counties' average weekly wages fell below the state average of \$327.61.

Total Covered Employment

Statistics on total covered employment by quarter illustrate both the dominance of Oneida County as the major employment base for the three-county area and the seasonal nature of employment in each county (Tables 15 and 16). "Covered employment" statistics presented here are not the same as the employment figures discussed previously. Covered employment includes only those employees of employers who are subject to the Wisconsin Unemployment Compensation Law.

II.C.3 Housing

Consumer preferences within the local study area have created residential patterns characterized as medium to low density, with recent growth concentrated in the townships surrounding Rhineland. As shown

TABLE 14. UNEMPLOYMENT RATES, 1980-1984

	1980	1981	1982	1983	1984
U.S.	7.1	7.6	9.7	9.6	7.5
Wisconsin	7.1	7.8	10.7	10.4	7.6
Forest County	12.2	12.8	20.5	18.5	14.2
Langlade County	7.7	8.6	9.6	10.1	8.2
Oneida County	8.3	8.2	11.2	10.4	9.2

Sources: U.S. Department of Labor, Bureau of Labor Statistics, 1984.
 Wisconsin Department of Industry, Labor and Human Relations,
Labor Market Information 1984.

TABLE 15. 1982 AVERAGE COVERED EMPLOYMENT AND WAGES BY COUNTY

Industry	Forest County		Langlade County		Oneida County	
	Covered Employment	Average Weekly Wage	Covered Employment	Average Weekly Wage	Covered Employment	Average Weekly Wage
All industries	1,847	\$178.78	5,627	\$221.23	10,500	\$248.03
All government	560	176.31	934	237.95	1,689	249.33
Agriculture, forestry, and fishing	*	*	192	213.75	179	175.23
Mining	0	--	*	*	69	645.28
Construction	38	172.67	185	312.23	472	266.43
Manufacturing	516	197.48	1,347	258.12	1,822	349.92
Transportation, communication, and utilities	109	238.09	269	277.00	431	340.51
Wholesale trade	41	270.25	344	264.16	261	316.37
Retail trade	241	115.34	1,245	155.86	2,518	156.30
Finance, insurance and real estate	54	224.14	145	262.73	425	291.73
Services	291	157.97	965	184.18	2,636	226.76

*Data withheld.

Source: Wisconsin Department of Industry, Labor and Human Relations.

TABLE 16. 1984 FIRST QUARTER AVERAGE COVERED EMPLOYMENT AND WAGES BY COUNTY

Industry	Forest County		Langlade County		Oneida County	
	Covered Employment	Average Weekly Wage	Covered Employment	Average Weekly Wage	Covered Employment	Average Weekly Wage
All industries	1,858	\$191.80	5,438	\$235.12	9,889	\$264.13
All government	581	194.52	918	265.34	1,703	275.55
Agriculture, forestry, and fishing	*	*	166	201.02	156	176.84
Mining	0	--	0	--	21	869.52
Construction	20	112.40	137	305.08	313	244.13
Manufacturing	535	207.99	1,260	274.45	1,596	399.84
Transportation, communication, and utilities	125	255.89	278	256.37	469	322.27
Wholesale trade	37	261.80	345	283.02	280	317.04
Retail trade	226	115.64	1,237	181.41	2,374	157.80
Finance, insurance, and real estate	54	264.97	163	263.46	404	338.57
Services	276	169.91	934	197.87	2,573	245.31

*Data withheld.

Source: Wisconsin Department of Industry, Labor and Human Relations.

in Table 10, from 1970 to 1984 Oneida County's population increased by approximately 8,300 persons, accounting for over 70 percent of the total growth in the three-county area during that period. During the period 1980 to 1984, the growth pattern was similar. Within Oneida County during the 1970 to 1984 period, the townships of Crescent, Newbold, Pelican, and Pine Lake accounted for a combined population growth of 3,358, while Rhinelander's population declined by 805. Similar patterns, although less dramatic, are apparent in the communities surrounding the cities of Crandon and Antigo.

This concentration of growth in communities surrounding historical population centers, combined with the slow growth or population declines in these centers, illustrates the increasingly dispersed nature of housing development in the local study area. As noted in the EMC Report on Current Conditions report, the consumer preferences tend toward large, relatively unimproved lots, a tendency which underlies the trend toward less dense residential development in the local study area.

Table 17 shows the total supply of housing units existing in the local study area at the time of the 1980 census. (A housing unit is defined as the residence of one household, e.g., a house, an apartment, or a mobile home.) In addition to total housing stock, the table nets out second homes which are not considered year-round residences. Finally, the vacancy rate for each community is estimated by comparing occupied units with the year-round housing units available in the local study area.

Table 18 shows the relative condition of the total housing stock at the time of the 1980 census. Housing is determined to be "substandard" if one of the following conditions is met:

1. An owner-occupied unit is valued at less than \$15,500;
2. A renter-occupied unit lacks some or all plumbing facilities;
or
3. A renter-occupied unit with all plumbing facilities has a rent below the median rent for units lacking some or all facilities.⁸

More recent data, developed by the assessor's office of each of the three counties, are reported on the basis of land use type, indicating housing unit data by structure, rather than by dwelling unit. Therefore, these later data do not permit a comparison of the volume and condition of current housing stock with that of 1980. However, data showing residential land currently available for development (without specification as to suitability) are available from the more current data. Table 19 provides an inventory of existing and potential

⁸Wisconsin Department of Local Affairs and Development, Housing Information System Report 101.

TABLE 17. HOUSING SUPPLY IN THE LOCAL STUDY AREA, 1980

	Total Units	Year-round Units	Occupied Units	Vacancy Rate
City of Crandon	869	811	694	14.4%
Town of Crandon	302	183	163	10.9
Lincoln	708	253	187	26.1
Nashville	<u>1,025</u>	<u>610</u>	<u>257</u>	57.9
Total Forest County (LSA)	6,229	3,652	2,792	23.5
City of Antigo	3,498	3,495	3,344	4.3
Town of Antigo	540	540	520	3.7
Elcho	<u>1,313</u>	<u>496</u>	<u>433</u>	12.7
Total Langlade County (LSA)	9,595	7,528	6,901	8.3
Crescent	895	645	556	13.8
Newbold	1,774	1,076	734	31.8
Pelican	1,766	1,390	1,209	13.0
Pine Lake	1,262	964	901	6.5
Rhinelanders	<u>3,184</u>	<u>3,182</u>	<u>3,020</u>	5.1
Total Oneida County (LSA)	<u>17,669</u>	<u>10,812</u>	<u>8,718</u>	19.4
Total, Local Study Area	33,493	21,992	18,411	16.3

Source: 1980 Census of Population and Housing, Wisconsin.

TABLE 18. CONDITION OF HOUSING STOCK IN THE LOCAL STUDY AREA, 1980

	Total Occupied Housing Units	Substandard Units	Percentage Substandard
City of Crandon	694	198	28.5%
Town of Crandon	163	25	15.3
Lincoln	187	27	14.4
Nashville	<u>257</u>	<u>41</u>	16.0
Total Forest County (LSA)	2,792	631	22.6
City of Antigo	3,344	881	26.3
Town of Antigo	520	62	11.9
Elcho	<u>433</u>	<u>90</u>	20.8
Total Langlade County (LSA)	6,901	1,519	22.0
Crescent	556	47	8.5
Newbold	734	65	8.9
Pelican	1,209	153	12.7
Pine Lake	901	75	8.3
Rhinelanders	<u>3,020</u>	<u>735</u>	24.3
Total Oneida County (LSA)	<u>8,718</u>	<u>1,304</u>	15.0
Total, Local Study Area	18,411	3,454	18.8

Source: 1980 Census of Population and Housing, Wisconsin.

TABLE 19. RESIDENTIAL PARCELS WITHIN THE LOCAL STUDY AREA, 1984

	Total Residential Parcels	Improved Parcels	Vacant Parcels	Percentage Improved
City of Crandon	1,300	673	627	52%
Town of Crandon	365	253	102	72
Lincoln	948	604	344	64
Nashville	1,313	826	487	63
City of Antigo	3,091	2,777	314	90
Elcho	1,422	1,109	313	78
Crescent	1,104	803	301	73
Newbold	2,433	1,618	815	67
Pelican	1,737	1,197	540	69
Pine Lake	1,492	1,084	408	73
Rhineland	2,925	2,470	455	85

Source: Assessors' offices--Forest, Langlade, and Oneida counties.

residential land within the local study area, indicating a substantial absorption capacity for new growth within the primary population centers. (A parcel is designated as "improved" if the assessor's office shows taxable improvements in the parcel's valuation.) One significant indication of these data is the potential for future residential construction in Rhinelander, notwithstanding its annexation restrictions. Therefore, as discussed in Chapter III and Appendix A, DRI anticipates that more Crandon Project impact population will reside in and around Rhinelander than does EMC.

II.C.4 Government Structure and Public Finance

Much of the structure of local government in Wisconsin was derived from New England traditions during territorial settlement. The Wisconsin town-county system, reflecting decentralized decision-making and government by town meeting, has its roots there. Originally, towns developed in rural places and provided services in outlying areas. In the local study area there is a continuing tradition of decision-making at the town level, and this decentralized structure is deeply rooted.

Table 20 presents existing per capita and total local government employment in the three study area counties.

Regional Planning Commissions

Technical assistance is often provided to the local jurisdictions by Regional Planning Commissions. These commissions, established by the state legislature in 1976, have been most active in economic development planning concentrating on coordinating local economic development activities. The North Central Regional Planning Commission, located in Wausau, serves the three study area counties.

Mining Related Government Bodies

The state of Wisconsin established the Mining Investment and Local Impact Fund Board in 1977 to:

. . . provide funds to municipalities for costs associated with social, educational, environmental and economic impacts of metalliferous mineral mining incurred prior to, during and after the extraction of metalliferous minerals. (S.70.395(2), 1979 Stats.)

The 11-member board manages funds generated by Wisconsin mining taxes and distributes them to local governments for metallic mining impacts.

The fund is allocated 60 percent of the Wisconsin net proceeds tax on mineral mining. In addition, 20 percent of the occupational tax on iron ore concentrates goes into the fund. The legislature has provided

TABLE 20. LOCAL GOVERNMENT EMPLOYMENT IN STUDY AREA COUNTIES

	Langlade County	Oneida County	Forest County
Total employment	5,391	9,521	1,769
Local government employment	894	1,308	573
Per capita local government employment	23	24	16
Percentage of total employment	16.5%	13.7%	32.3%

Source: North Central Wisconsin Regional Planning Commission, Annual
OEDP, 1984.

an additional \$2 million loan to meet front-end costs in areas anticipating mining development. Loan repayment was planned to begin in 1988.

The board consists of two state agency representatives, five local officials, a Native American representative and three public members. Of these 11, five must live in areas of the state where mining is taking place. The board members serve four-year terms and are appointed by the Governor.

The funds are distributed to local communities both through legislative authorization and through discretionary grants by the board. The direct payments are made to localities where mining is occurring or is proposed. Discretionary payments can also be made to communities in the area surrounding those localities. In 1983 the board began annual permit period payments of \$100,000 (indexed to the gross national product deflator) to Lincoln and Nashville townships and the Forest County Potawatomi and the Sokaogon Chippewa tribes. These payments are to continue through 1986 during the mine permitting process. Following initiation of mine construction, construction period payments are made to the same four municipalities. These can continue for up to three years after concentrate production begins and are paid by the applicant.

Following the construction period payments, "first dollar" payments are made to the same four municipalities and, in addition, Forest County. First dollar payments are \$100,000 (indexed). In addition, Forest County is eligible to receive 20 percent of the net proceeds tax collected or \$250,000, whichever is less. The first dollar payments and the additional sum to Forest County are dependent upon payment of net proceeds tax by the mine, and thus, unlike the permit period and construction period payments, are not guaranteed.

Many of the discretionary funding allocations have been to Local Impact Boards which serve throughout the three-county area. Local Impact Boards serve as the focal point for local residents concerned about mining impacts. The boards have also been active in local planning efforts aimed at adapting to mine-related development.

The North Central Regional Planning Commission has created a regional mining impact committee to coordinate local impact analysis and assess regional impacts.

Local Finance⁹

Local government jurisdictions receive revenue from three sources: property taxes; intergovernmental transfers from the state and federal governments; and fees and service charges. Residents of Wisconsin

⁹This discussion relies on EMC's Forecast of Future Conditions report.

normally pay property taxes to five jurisdictions: state, county, school district, VTAE district, and locality (city, town, or village).

Wisconsin has a system of dual property assessment. Individual properties, except manufacturing and utility properties, are valued by the local assessor; manufacturing and utility properties are valued by the Wisconsin Department of Revenue. In addition, the Department of Revenue annually determines the equalized or full valuation for each taxing jurisdiction.

The full valuation is the market value of all properties in a given jurisdiction. The local assessed valuation is used within a city, village, or town to apportion taxes to individual property owners. Equalized values are used to apportion school district, county, state, and other special district tax levies to cities, villages, and towns within those taxation districts and to distribute state aids to local governments. The state property tax, for example, is set by law at \$0.20 per \$1,000 equalized value. Counties, school districts, and VTAE districts apportion their tax levies to each city, village, and town within the taxation district based on the ratio of that city, village, or town's total full valuation to the district's total full valuation.

General property taxes are the primary source of local tax revenue, accounting for over 93 percent of study area jurisdictions' tax revenue in 1982. General property taxes accounted for 96 percent of tax revenue collected by Wisconsin's counties, cities, villages, and towns in 1982. Other taxes used by study area jurisdictions include special assessments, mobile home taxes, occupational taxes, and forest crop taxes.

Intergovernmental Transfers

Intergovernmental transfers include federal revenue sharing, other federal aids, state shared revenues, highway aids, other state aids, and aids received from other local jurisdictions.

State aids attempt to bring tax effort and necessary expenditures into balance. Aids are special purpose revenues which are earmarked for specific objectives such as transportation or education. There are three categories of state aid: natural resources, transportation, and miscellaneous aids (taxes, aids and shared taxes). Natural resource aids are dedicated to conservation, recreation, and environmental control. Transportation aids are provided to local jurisdictions for highways and airports. Miscellaneous aids constitute the state's share of programs such as public safety, planning and community development.

Transportation, natural resources, and miscellaneous aids are paid to the local jurisdictions on the basis of need, as defined by statute. These aids are also paid to the counties, along with health and social service, education, and general government aids. Distribution of these

aids is made by the respective state agencies, not by the Department of Revenue.

In addition to state aids, state shared revenues also act to bring taxes and expenditures into balance and ensure uniform service delivery across local jurisdictions. State shared revenues are general purpose revenues which the recipient jurisdiction may spend at its discretion. There are several components of the state shared revenue program: per capita payment; utility; and aidable revenues.

The per capita payment is paid to towns, villages, and cities on the basis of resident population. Aidable revenues are paid to both county and local units, based on local purpose revenues (local taxes, fees, interest, and other revenues excluding intergovernmental transfers) and per capita property valuations. The utility payment is a payment in lieu of local property taxes on certain exempted heat, power, and light company property as defined by Wisconsin law (Wisconsin Statutes, §76.02).

Within the local study area, state shared revenues accounted for 56.1 percent of all transfer payments to towns, 69.1 percent of payments to cities, and 10.5 percent to county governments. The largest percentage of transfer payments to area counties (58.9 percent) came from the state in the health and social services aid category.

Fees and Service Charges

Fees and service charges consist of regulation and compliance (from licenses, permits, fines, and noncompliance receipts), service to private parties (for judicial, general government, public safety services, inspection, health, social services, transportation services, leisure activities, education, conservation, and urban development), use of money and property (income from interest, property rental, property sales, sale of tax deeds, refunds, transfers and refunding debt issues), and intergovernmental contracts and sales (income from services performed for other government) (Wisconsin Department of Revenue, 1984).

Analysis by Local Jurisdiction

Revenue and expenditure data used in this analysis have been derived from Resources Provided and Expended, published by the Bureau of Local Financial Assistance of the Wisconsin Department of Revenue (Wisconsin Department of Revenue, 1984). Because of varying accounting practices, the calculation of a net surplus or net deficit may be misleading on an individual jurisdiction level. For instance, some indications of deficits may in actuality be financing from the previous year's surplus.

Counties

The primary source of revenue for the three counties of the local study area has typically been intergovernmental transfers, accounting for 39 percent of the counties' 1982 revenues (Table 21). This was slightly higher than the average for all counties in the state (36 percent). Forest County has depended most heavily on transfers, with intergovernmental revenues in 1982 accounting for 47 percent of its \$3.4 million in revenues. Transfers accounted for about 37 percent of Oneida and Langlade counties' revenues.

Property taxes (net taxes and tax credits) accounted for 29 percent of total revenues in the three counties in 1982. This was higher than the average of 26 percent for counties in the state. Revenue from property taxes accounted for 38 percent of operating revenues for Oneida County, 27 percent for Langlade County, and 21 percent for Forest County.

Fees and services accounted for the remaining 32 percent of the revenues for the three counties. This was below the state average for counties in 1982 (39 percent). The major difference arose from the fact that local study area counties' revenue from services to private parties was only 9 percent, while Wisconsin counties averaged 28 percent. This reflects the rural character of the local study area.

Expenditures in the three counties in 1982 totaled \$19.7 million, indicating a net surplus of \$686,600 or 3.5 percent of total revenues. This was higher than the 0.7 percent surplus recorded for Wisconsin county governments as a whole for 1982. This has been a consistent trend in recent years for the local study area counties. In 1982, Oneida County registered a 6.1 percent surplus, Forest County registered a 4.0 percent surplus, while Langlade County showed a surplus of 2.5 percent.

Cities

The primary source of revenue for the three cities within the local study area has been intergovernmental transfers, accounting for 55 percent of total revenues (Table 22). This was higher than the share of revenues for other cities in the state (46 percent). Transfers were most important to Antigo, accounting for 60 percent of 1982 revenues. Intergovernmental transfers accounted for 58 percent of Crandon's revenues and 50 percent of Rhinelander's.

Taxes, primarily property taxes, were the second major portion of revenues, totaling 28 percent of revenues. Taxes accounted for 31 percent of revenues for all Wisconsin cities. Of the cities within the local study area, Rhinelander received the largest portion of tax revenues (35 percent of total revenues). Antigo and Crandon tax revenues were both 23 percent of total city revenues.

TABLE 21. STUDY AREA COUNTY REVENUES BY SOURCE, 1982 (In thousands)

	Local Property Tax	Other Taxes	Shared State Revenue	State Trans- porta- tion Aids	Health and Social Services Aids	Other State Aids	Federal and Local Aids	Public Services	Use of Money and Property	Other Revenue	Total Operating Revenue	Total Operating Expenditure
Forest	612.8	95.3	141.5	202.2	907.5	115.3	241.9	264.2	158.3	651.6	3,390.6	3,254.6
Langlade	1,936.5	79.3	449.2	414.4	1,292.6	187.5	383.3	728.0	449.3	1,411.4	7,331.5	7,151.0
Oneida	<u>2,815.7</u>	<u>184.0</u>	<u>219.4</u>	<u>340.8</u>	<u>2,354.7</u>	<u>155.9</u>	<u>325.0</u>	<u>762.7</u>	<u>588.3</u>	<u>1,276.2</u>	<u>9,022.7</u>	<u>8,652.6</u>
Total Wisconsin Counties	413,535.6	15,074.4	99,876.4	59,247.9	318,617.3	34,487.7	90,294.0	465,485.7	78,779.5	110,679.8	1,686,078.6	1,673,788.1

Source: Wisconsin Department of Revenue, Resources Provided and Expended, 1982.

TABLE 22. REVENUE BY SOURCE, STUDY AREA CITIES AND TOWNS, 1982 (In thousands)

	Local Property Tax	Other Taxes	Shared State Revenue	State Trans- porta- tion Aids	State Conser- vation Aids	Other State Aids	Federal and Local Aids	Public Services	Use of Money and Property	Other Revenue	Total Operating Revenue	Total Operating Expenditure
<u>Cities</u>												
Crandon	104.1	8.2	179.9	51.3	0.0	20.4	31.0	8.8	64.5	18.4	486.6	451.2
Antigo	748.9	104.9	1,494.3	191.9	35.1	18.5	478.2	131.9	461.8	55.1	3,720.6	3,899.7
Rhineland	<u>1,196.9</u>	<u>76.6</u>	<u>1,323.4</u>	<u>248.9</u>	<u>0.0</u>	<u>26.7</u>	<u>241.6</u>	<u>280.3</u>	<u>113.6</u>	<u>131.3</u>	<u>3,639.3</u>	<u>3,630.1</u>
Total Wisconsin Cities	401,731.9	50,807.4	421,636.5	72,009.0	29,905.2	17,203.5	119,371.4	97,787.3	196,394.2	44,569.8	1,451,416.6	1,426,228.9
<u>Towns</u>												
Crandon	7.0	0.3	27.4	15.6	0.6	0.2	3.1	1.6	0.2	0.4	56.7	75.5
Lincoln	30.0	0.1	22.4	43.5	3.2	19.2	13.4	4.8	1.4	1.5	139.9	127.0
Nashville	34.7	0.6	24.6	34.8	1.4	17.1	11.5	10.1	7.5	3.6	146.4	155.3
Antigo	0.0	0.9	68.8	20.3	0.0	1.3	6.1	0.7	9.5	8.4	116.2	100.2
Elcho	53.1	2.4	40.0	38.9	4.9	4.8	9.1	6.2	6.4	7.2	173.3	174.4
Crescent	41.0	0.2	75.9	31.3	0.9	1.5	6.3	4.6	5.6	4.4	172.2	154.1
Newbold	22.3	0.1	84.5	53.6	14.5	2.3	9.4	8.6	4.2	4.4	204.4	198.6
Pelican	25.7	1.1	150.0	40.6	2.3	2.4	14.1	0.6	8.2	8.5	253.9	210.7
Pine Lake	<u>96.8</u>	<u>1.2</u>	<u>127.6</u>	<u>41.1</u>	<u>3.0</u>	<u>1.8</u>	<u>11.4</u>	<u>0.1</u>	<u>9.0</u>	<u>3.5</u>	<u>295.8</u>	<u>291.6</u>
Total Wisconsin Towns	53,139.5	4,724.3	71,137.8	33,708.2	2,275.2	2,459.3	14,116.3	6,396.7	21,514.0	6,572.0	216,043.7	203,908.5

Source: Wisconsin Department of Revenue, Resources Provided and Expended, 1982.

Fees and services accounted for the remaining revenues (16.2 percent) for the local study area city revenues. This was below the total for Wisconsin cities (23.3 percent).

City expenditures totaled \$7.9 million in 1982. This was \$134,000 more than revenues received. Crandon showed the largest comparative surplus of 7.3 percent of revenues; Rhinelander's surplus was less than 1 percent of revenues, while Antigo showed a deficit of 4.8 percent. Overall, Wisconsin cities showed a 1.7 percent surplus.

Towns

The major source of revenue for town governments in the local study area has been intergovernmental transfers, accounting for 71 percent of all revenues in 1982 (Table 22). Overall, intergovernmental transfers accounted for 57 percent of town revenues in the state. Within the local study area, the relative importance of intergovernmental transfers varied from a high of 83 percent in Antigo to a low of 56 percent in Elcho.

The next largest revenue category for local study area towns was taxes, accounting for 20 percent of revenues (compared to 27 percent statewide). These ranged from a high of 33 percent in Pine Lake to a low of less than 1 percent in Antigo.

Expenditures by towns in the local study area totaled \$1.5 million in 1982. This yielded a net surplus of \$71,000, or 4.6 percent of revenues. Overall, towns in the state showed a net surplus of 5.6 percent. In the past, deficits and surpluses have fluctuated in both the local study area towns and towns in the state, indicating that over time most towns are fiscally balanced.

II.C.5. Public Facilities and Services

The rural nature of the study area is reflected in the provision of public services. Generally, in the study area townships, each individual has a well for water supply and septic tank for wastewater disposal. Elcho is the only study area township which has centralized water and wastewater facilities. The townships also rely on the county sheriff's departments and volunteer fire departments for law enforcement and fire protection. Recreational facilities are operated by the study area counties and cities, but the townships, for the most part, do not operate separate recreational or library facilities. All of the study area counties, cities, and towns are responsible for maintenance of streets and roadways. For the townships which rely on services provided by city and county agencies, road maintenance is the major service function.

State level human services are highly centralized in Wisconsin. One department, the Department of Health and Social Services in Madison,

is responsible for planning, policy development, standard setting, funding and monitoring of most of the community programs in the study area. Specifically, the department has jurisdiction in the areas of mental health, alcohol and drug abuse, developmental disabilities, social services, youth services, day care, senior services and vocational rehabilitation. Only Job Services and domestic violence programs are not within the purview of the Department of Health and Social Services. Job Services is a division of the Department of Industry, Labor and Human Relations. Domestic violence programs are organized under the Governor's Domestic Abuse Council.

There are three major divisions of the Department of Health and Social Services. The Division of Community Services is responsible for mental health, alcohol and drug abuse, developmental disabilities, social services, youth services, day care and senior services. The Division of Health is responsible for health services and facilities. The Division of Vocational Rehabilitation administers vocational rehabilitation programs.

All three divisions of the Department of Health and Social Services have regional offices in Rhineland. The Northern Region office of the Division of Community Services serves 17 counties, including Forest, Langlade, and Oneida. The office is responsible for oversight of plans, budgets and compliance and for the provision of technical assistance to community programs. The Division of Health office serves 16 counties, including Forest, Langlade, and Oneida. It has oversight and technical assistance functions as well as a small staff of sanitarians who provide some environmental health services to the counties. The Division of Vocational Rehabilitation provides direct vocational rehabilitation services to six counties, including the three in the local study area.

Most community-based human services programs are organized on a county basis. Many human services are statutorily mandated county responsibilities. Table 23 summarizes the role of Forest, Langlade, and Oneida counties in the delivery of community-based human services. For nine of the 18 services listed, the local study area counties have prominent fiscal and administrative roles. In five services areas, county involvement is statutorily required.

The organization of human services delivery in the local study area is related to 1974 state legislation establishing the current system of public human services delivery for mental health, including alcohol and drug abuse, and developmental disabilities services. By statute, counties are responsible for these services, although the legislation provides several organizational options. One option is the formation of multicounty human services boards. This is the option adopted in the local study area. Mental health, alcohol and drug abuse and developmental disabilities services are delivered in Forest and Oneida counties by a tri-county human services board, the Human Services Board of Forest, Oneida, and Vilas Counties. In Langlade County, these

TABLE 23. LOCAL STUDY AREA COUNTIES' ROLES IN HUMAN SERVICES DELIVERY

	Statutorily Required County Involvement	Not Statutorily Required, but Tradition of Strong County Involvement	State/ Federal Program-- Little or No County Involvement	Private Sector Program-- Little or No County Involvement
Mental health	X			
Alcohol and drug abuse	X			
Developmental disabilities	X			
Domestic violence				X--some state sup- port
Social services	X			
Youth services	X			
Day care				X--licensed by the state
Seniors services		X		
Vocational rehabilitation			X	
Job Services			X	
Health manpower				X
Emergency medi- cal services		X		
Hospitals				X--licensed by state; some fed- eral and state sub- sidization

TABLE 23. LOCAL STUDY AREA COUNTIES' ROLES IN HUMAN SERVICES DELIVERY (Continued)

	Statutorily Required County Involvement	Not Statutor- ily Required, but Tradition of Strong County Involvement	State/ Federal Program-- Little or No County Involvement	Private Sector Program-- Little or No County Involvement
Nursing homes				X--licensed by state; some fed- eral and state sub- sidization
Public health services		X		
Family planning				X--some federal support
Environmental health	X--some areas, jurisdic- tional con- fusion		X--some areas, jurisdic- tional con- fusion	
School Health		X		

services are also delivered by a tri-county board, the Human Services Board of Langlade, Lincoln, and Marathon Counties.

Mental Health (Oneida, Forest Counties)

Mental health services in Oneida and Forest counties are provided by the Human Services Board of Forest, Oneida, and Vilas Counties both directly and on a contractual basis. There are several private providers in the local study area as well. Northwoods Guidance Center is owned and operated by the Human Services Board of Forest, Oneida, and Vilas Counties. The main office is in Rhinelander with satellite offices in Crandon, Eagle River, and Minocqua. The Crandon office is staffed one day a week. The Northwoods facility, built three years ago, is adequate for current needs. The satellite office in Crandon is located in rented space in a medical clinic. The current average client load is approximately 950 clients per year. About 55 new clients are seen per month. Approximately 16 percent of the clients are from Forest County, 21 percent from Vilas, and 63 percent from Oneida County. There is typically a waiting list at all clinic offices. Funding is obtained from the state (through Community Aids distributions), the three counties, third party payments, and client collections. About 40 percent of the budget comes from client fees. The current annual agency budget is approximately \$300,000.

Northwoods is in need of a full-time Ph.D. psychologist, a case manager, and a clerical staff person. Staffing of the Forest County satellite office one day per week is perceived to be inadequate by Human Services Board staff and other human services providers in Forest County.

The Human Services Board employs a client and community services coordinator who is responsible for coordinating two major program areas: supportive community care and inpatient psychiatric care. Supportive care services include: crisis intervention; respite care program; supportive care for the chronically mentally ill; and a work relationship program. The coordinator is housed in the Human Services Center.

Approximately 500 crisis calls are received each year. The respite care program averages 89 clients and the supportive care program for the chronically mentally ill serves 50 clients. Inpatient clients numbered about 200 in 1982; their average length of institutionalization was 21 days at a cost of \$189 per day.

Alcohol and Drug Abuse (Oneida, Forest Counties)

Alcohol and drug abuse services in Forest and Oneida counties are provided by the Lakeland Council on Alcoholism and Other Drug Abuse and the Human Services Board of Forest, Oneida and Vilas Counties. The Lakeland Council provides outpatient counseling services to substance abusers and their families, crisis intervention services, information

and referral services, and prevention services including a very active education program in the public schools. The council offers services to Oneida, Forest, and Vilas counties. The main office is in Minocqua with satellite offices located in Rhinelander, Eagle River, and Crandon. The office in Rhinelander is staffed full-time. The Crandon office is staffed two days a week, although counseling is only available one day a week. The Minocqua office has five FTE positions. The Rhinelander office has three FTE positions (an office manager/counselor, counselor and secretary). The Crandon office is staffed by a secretary/interventionist who can take appointments one day a week and by a counselor one day a week.

The satellite office in Rhinelander is crowded and inadequate. The Crandon office is adequate for the present level of operation; however, additional space would be required to meet a major increase in service demand. Current annual clientele numbers about 300.

About 60 percent of Lakeland Council's funding comes from a contract with the Human Services Board of Forest, Oneida, and Vilas counties. Other sources of funds include special county and state grants, contracts with other agencies, client fees, and donations.

The Human Services Board of Forest, Oneida, and Vilas Counties also employs a chemical dependency coordinator who is responsible for a halfway house for substance abusers, a 24-hour hotline, medical detoxification services, and inpatient care services. Funding for substance abuse programs offered by the Human Services Board comes from state Community Aids and county funds, special state and federal grants, and client collections.

Mental Health (Langlade County)

In Langlade County, community-based mental health, alcohol and drug abuse, and developmental disabilities services are provided by the Human Services Board of Langlade, Lincoln, and Marathon Counties. Mental health and alcohol and drug abuse services include outpatient counseling at the Langlade Health Care Center. Community support services for the chronically mentally ill are also provided by the Center. Hospitalization, day treatment, and halfway house facilities for the mentally ill and substance abusers from Langlade County are available in Wausau through the parent organization, North Central Health Care Facilities. The Langlade Health Care Center in Antigo is a satellite office of North Central Health Care Facilities which is owned by Marathon County. The Human Services Board of Langlade, Lincoln, and Marathon Counties contracts to North Central to provide services. In addition to the director, the staff consists of four mental health professionals, two substance abuse counselors, a psychiatrist who is available one day per week, and two registered nurses who provide community support services a total of three days per week.

The Langlade Health Care Center is located in a county building with several other human services providers. The building is six years old and in satisfactory condition; however, space for the developmental disabilities programs and office staff is at maximum capacity. Funding is through the Human Services Board of Langlade, Lincoln, and Marathon Counties. Sources are from Community Aids distributions, county appropriations, state and federal grants, insurance, and client collections.

Health Services

The characteristics of health manpower in the study area is typical of many rural areas where it is difficult to attract and retain health care professionals because of isolation from up-to-date health sciences technology, equipment, and support staff. According to standards of the Wisconsin North Central Area Health Planning Association, Forest County is underserved by primary care physicians (e.g., family medicine, general practice, internal medicine, pediatric, and obstetrics-gynecology practitioners), registered nurses, licensed practical nurses, dentists, and optometrists. The federal government has also designated seven townships in Forest County as federal shortage areas for primary care physicians. (A federal shortage area is one in which health manpower does not meet minimum federal standards for personnel per population for classes of health manpower covered by federal legislation.)

No hospitals are located in Forest County. St. Mary's Hospital in Rhinelander and Langlade County Memorial Hospital in Antigo are the closest hospitals providing primary acute care in-patient care (the least specialized level). Secondary care is available at the Wausau Hospital Center, 129 miles from Crandon. Tertiary care (the most specialized level) is available in Marshfield, 140 miles from Crandon.

Oneida County has adequate numbers of primary care physicians and there is also an adequate supply of dentists, optometrists, and registered nurses. However, the number of licensed practical nurses is below standard. The county has no resident psychiatrists and is also currently designated as a federal shortage area.

St. Mary's Hospital in Rhinelander is a 133-bed primary care facility. It is consolidated with Sacred Heart Hospital in Tomahawk, 20 miles from Rhinelander in Lincoln County. Sacred Heart-St. Mary's Hospital, Inc., is a Catholic nonprofit organization. All revenue is from third party payments and patient fees.

Citizens from Oneida County must travel out of the county to receive secondary and tertiary hospital care. Secondary care may be obtained at the Wausau Hospital Center, 93 miles from Rhinelander, and tertiary care may be obtained in Marshfield, 110 miles from Rhinelander.

There are an adequate number of primary care physicians in Langlade County (e.g., family medicine, general practice, internal medicine, pediatric, and obstetrics-gynecology practitioners). However, most physicians are located in Antigo, leaving outlying townships in the county underserved. Nine townships in Langlade County are currently designated as federal health manpower shortage areas. There are two medical clinics in Antigo; one of the clinics has a satellite clinic in Elcho which is regularly staffed by a physician's assistant. In addition to resident physicians, specialists from Wausau and Merrill rotate into the Antigo clinics periodically.

Langlade Memorial Hospital is an 80-bed primary care facility located in Antigo. There are no psychiatric or alcohol and drug rehabilitation beds. It is operated by a Catholic nonprofit organization funded by third party reimbursements and patient fees.

The hospital had about 2,500 in-patients in 1982, which represented a 48 percent occupancy rate.

Education

There are four school districts in the local study area--Antigo, Crandon, Elcho, and Rhinelander. In all four districts enrollment has generally declined from peak mid-1970 figures. School administrators suggest that the districts lack the specialized facilities required by some programs. Specifically, they cite a lack of activity and gymnasium space, handicapped and special education facilities, science and laboratory space and equipment, and industrial and fine arts space.

The age of school buildings and equipment is a major concern common to all the districts. The problem is most acute in the two largest districts, Antigo and Rhinelander, where bond issues for new school construction have failed repeatedly.

Antigo School District. The 1984-85 current enrollment of 3,030 is down nearly 30 percent from the 1975-76 peak of 4,215. Although enrollment in the lower grades has stabilized, enrollment is expected to drop even further. The district has plans to remodel the secondary school in Antigo at a cost of approximately \$2 million. Remodeling was proposed after two bond issues (\$6.5 million in 1974 and \$8 million in 1978) for construction of a new school failed. According to school administrators and some residents, while the curriculum remains strong, the age of the facilities is a deterrent to economic development and has discouraged some families from locating in Antigo.

Crandon School District. Current 1984-1985 enrollment in the Crandon School District is estimated at 996 students, down from over 1,100 ten years ago. The enrollment figures for each school within the district are below capacities, and additional students could be absorbed at each of the schools. The Crandon junior/senior high school requires structural and wiring repairs.

Elcho School District. The Elcho School District's enrollment has declined from a peak of 613 students in 1973-1974 to 450 students in 1984-1985. The decline in the size of entering classes has begun to level off and enrollment is expected to remain stable through the year 2000. Although the Elcho District does not face the immediate need for new facilities, as is the case in Antigo and Rhinelander, deferred maintenance has become a problem, and equipment needs are pressing. Because of its relatively large tax base, the district currently receives no state school aid.

Rhinelander School District. The age of school facilities and the recent failure of bond issues for school construction are prominent issues in the Rhinelander School District. Bond issues for construction of a new K-6 school in Pelican and an addition to West School (K-6) failed to win approval in 1984. Enrollment has been declining in the district to the present level of 3,200. However, the West School is currently at capacity and the Pelican School is inadequate and needs to be replaced. The school board has developed a plan for renting additional space to ease the situation at West School. The bond issue for the construction of new Pelican K-6 school in 1985 failed to win approval.

The following profiles of each jurisdiction provide further discussion of local government services and facilities in the study area.

Forest County

The Forest County detention facility, built in 1909, is inadequate for current needs. The facility is unable to house juveniles, who must be taken to Oneida County. Although Forest County maintains very few recreation facilities, there is an abundance of forest lands and campgrounds owned and maintained by the National Forest Service. Due to the large number of national recreation areas, recreation is perceived to be adequate in the study area.

Forest County is currently unable to maintain adequate snow removal and road maintenance. The highway department is judged to be understaffed and in need of updated equipment and facilities. The county resurfaces an average of three to four miles, or less than 4 percent, of its roadways each year and four of the county's seven graders (with an estimated effective life of 15 years) are currently over 25 years old. In addition, equipment maintenance is conducted in an inadequate shop which is nearly 50 years old.

Crandon

The Crandon Police Department has the lowest ratio of officers to population served (.96/1000) of the three cities in the study area. The Crandon Volunteer Fire Department serves a 158 square mile area, nearly

TABLE 24. PUBLIC SCHOOL CAPACITY AND ENROLLMENT--1984-85 SCHOOL YEAR

School	Capacity	Enrollment
<u>Elementary</u>		
<u>Rhineland</u>		
West	260	216
Pelican	230	167
Central	205	202
Crescent	165	133
Curran	205	89
Newbold	205	167
Pine Lake	345	311
South Park	205	132
Woodboro	123	83
<u>Crandon</u>		
Argonne	130	110
Crandon	375	323
Mole Lake	120	98
<u>Antigo</u>		
Crestwood	200	146
East	200	169
Lily	75	55
North	285	235
Pleasant View	200	153
River Grove	225	201
Spring Valley	200	162
West	325	290
<u>Junior High</u>		
<u>Rhineland</u>		
J.W. Jr. High	700	500
<u>Antigo</u>		
Antigo Jr. High	625	531
<u>Senior High</u>		
Rhineland Senior High School	1,700	1,297
Crandon Junior/Senior High School	520	450
Elcho School (K-12)	650	470
Antigo Senior High School	960	961

half of Forest County. According to department officials, the department is able to serve the area adequately. The department's equipment is in good condition and staffing is adequate; however, the department is housed in the Crandon City Hall and department officials have outlined the need for a separate fire station.

A new well, which should begin operation in 1985, will double the current capacity of Crandon's water supply. According to the city's water department, the system should supply the city for the next ten years. Lake Metonga properties are being considered for city water and sewer; however, the relatively sparse existing development and the lack of land available for further development makes the extension of service unlikely.

The city began operating a new wastewater treatment plant in 1981 after the existing plant failed to meet DNR discharge standards. The \$2 million facility has a capacity of 260,000 gpd, which, if operated at design capacity, would accommodate an additional 1,000 to 2,000 users.

The city of Crandon currently operates a three-year-old, 7.7-acre waste disposal facility. The site is staffed by members of the utility and road staff on a rotating basis. Garbage collection is handled by private collectors.

Recreation facilities are currently adequate in the city, with a new baseball field scheduled to be completed in 1985. City officials have identified a need for a community center although no definitive plans exist at present for construction of the center.

Crandon Township

The Forest County Sheriff's Department provides police services for Crandon Township and the town is served by the city of Crandon's fire department.

The town's water supply consists of individual wells and the settlement pattern is considered too decentralized for the extension of city services. Individual septic tanks also adequately serve the town's decentralized population.

The land used by the town for solid waste disposal is leased to Crandon by private residents. The lessors have brought a suit against the town for alleged contract violations. The town continues to use the facility while awaiting court action.

The town of Crandon relies on the county for major road maintenance and for equipment repairs and residents use the city of Crandon's library facilities.

Lincoln Township

Public safety services in Lincoln are provided by the Forest County Sheriff's Department; however, the town has elected a town constable.

The town has a service contract with the Crandon Fire Department and residents do not believe it is necessary or feasible to establish a town fire department.

The use of individual wells for water and the septic tank system adequately serve the town's needs. The town operates a 3.8-acre waste disposal site.

The town of Lincoln has a total town budget of \$35,000, little more than the estimated \$22,000 (excluding state aids) required to resurface one mile of its 90-mile roadway system. All four pieces of Lincoln's heavy road equipment are in need of replacement.

Nashville

Nashville is served by the Forest County Sheriff's Department and the northern half of the township is served by the Crandon Fire Department. The southern half, along with the towns of Ainsworth and Langlade, is served by the Nashville Volunteer Fire Department. Department officials have indicated needs for equipment including a replacement pumper, and the department is considering the construction of an additional station in Ainsworth.

The individual wells used by the town residents provide an adequate water supply. Only if development on the lake fronts in the southern half of the township increased greatly would a centralized system be necessary.

Similarly, Nashville is likely to construct a central wastewater facility only if development of the lake front properties in the southern half of the township warrants it.

Nashville operates two landfills, one licensed at five acres, the other at 40.5 acres. The five-acre landfill site will soon require upgrading according to township officials. The township is adequately served by the libraries in the cities of Antigo and Crandon.

Langlade County

The county sheriff's department has recently updated radio and dispatch equipment and renovated its facilities. Sheriff's department officials indicate that current staff levels are adequate. A feasibility study for a multipurpose community center building to be located in Antigo is currently under way. The construction project is estimated at \$400,000 with a target completion date of 1987.

Antigo

The Antigo Police Department currently shares office and jail space with the Langlade County Sheriff's Department, although the Antigo fire and police departments have recently considered a combined facility that would meet the requirements of each department. The police department currently has a need for additional storage and vehicle space. The number of officers is adequate for current population levels and the jail is also judged to be adequate.

According to the director of public works, the water system, at a maximum capacity of 2.5 million gpd and an average per capita demand of 123 gpd, could serve up to 20,000 residents, more than double its present population of just under 9,000 people. However, unsafe pollutants have been detected in three of the city's wells.

The landfill currently being used by the city of Antigo is scheduled to be closed and replaced in 1988 with a new, 40-acre facility with the cost of the new site to be financed through user fees.

According to the city's director of public works, the city is unable to meet road maintenance and equipment replacement needs. The department is unable to maintain 5 percent of the city's roads each year and to replace equipment.

The wastewater facility operated by the city was built in 1979 and has a design capacity of 2.47 million gpd. An additional population of some 6,500 people could be handled by the system.

Antigo Township

Police protection in the township of Antigo is provided by the Langlade County Sheriff. In addition, the town has a part-time constable.

Individual wells and septic tanks supply the town's residents with water and wastewater service. Although extension of the city of Antigo's centralized system into the township has been discussed, the current service systems are expected to remain in place.

The town utilizes the city of Antigo's landfill for solid waste disposal and relies on Antigo City and Langlade County library and recreation facilities.

Road maintenance dominates the township budget, and according to town officials, roads are in fair to good condition. The town also has a maintenance contract with Langlade County.

Elcho

The town of Elcho recently eliminated the town constable position and is now served totally by the Langlade County Sheriff's Department. The Elcho Fire Department, with 35 volunteers, has the highest ratio of firefighters to population (27/1000) in the study area. Service is considered excellent, although the town hall facilities are not large enough for the department.

The well used by the township broke down in 1984 and repairs to the old well and the drilling of a new well were begun in 1985. The wells together are capable of producing an average of 100 gallons per minute. An additional 300 users (including the children who attend Elcho School but whose families live outside the water district) could be served by this expansion, especially if the first well is rehabilitated.

The Elcho wastewater plant is currently at capacity and the system needs to be upgraded. As it currently exists, the sewage treatment system's ability to accommodate increased loading is highly questionable. The township is seeking block grant funding to meet upgrading costs. Elcho also operates two landfills, a 40-acre site and a five-acre site. The smaller landfill has been licensed through 1985 after groundwater problems were rectified.

Of the 79 miles of roads maintained by the town of Elcho, only one road, Moccasin Lake Road, is considered to be in poor condition. In general, other roads are considered to be in good condition, with adequate levels of maintenance.

Oneida County

The county sheriff's department has identified the need for an additional five civilian dispatchers for its staff in order to free uniformed officers for patrol duty. According to the chief deputy sheriff, adding the dispatchers is necessary to give the county adequate patrol staff.

Oneida County is the only county in the study area operating a landfill. The 21-acre site, which serves the city of Rhinelander, and Lake Tomahawk, Little Rice Lake, Monico, Pelican, Pine Lake, Woodruff, Three Lakes and Shoepke townships, is adequate to serve those areas of the county through 1991. Parks and recreational facilities maintained by the county include beaches and boat landings, snowmobile trails, ski trails, picnic areas, and six parks covering over 300 acres. These park and recreation facilities adequately serve current county residents' needs.

Rhineland

The city of Rhinelander is served by a police department of 23 officers, or 2.8 officers per 1,000 population. The department has

identified the need for an additional full-time officer during the peak hunting and tourist seasons. Fire department officials have identified that current needs include a new pumper and one additional firefighter. Rhinelander has the lowest ratio of firefighters to population (1.75 per 1,000 persons) in the study area.

There are three active wells and one standby well in Rhinelander. Two of the city's wells intermittently go unsafe, but the system should be able to handle expanded service. The city's wastewater system has a design capacity of 4 million gpd, which would be adequate for 9,000 residents, approximately 1,000 more than the current population. A larger increase in population served (2,500) could make plant modifications or upgrading necessary.

Rhinelanders parks and recreation department maintains five parks totaling 77 acres. In addition to serving the city's population, the parks also meet some of the recreation needs of those in the surrounding townships.

In April the library district will complete renovation of the library and this \$1 million renovation project will triple the existing space.

The city of Rhinelander has also experienced deferred road maintenance problems. Approximately 15 percent of the city's roads are in need of resurfacing with 10 percent requiring curbs and gutters. Recent downtown renovation has included improvements to streets in the central business district.

II.C.6 Transportation

The transportation system in the local study area depends largely on private automobiles, buses and school buses, trucks, and a highway net provided by the state, the counties, and (to some extent) the towns. The Soo Line is the dominant railroad, but carries only freight, no passengers. Rhinelander has the major airport in the local study area.

The major state system highways are U.S. 8¹ connecting Rhinelander, Crandon, and Laona, U.S. 45 between Antigo and Three Lakes, and State Highway 55 connecting Argonne, Crandon, and south to the county line. These roads, while not usually lane separated, are all carrying less than their design capacity according to the Wisconsin Department of Transportation (DOT) planners. However, DOT reports show the highest accident rate in the local study area to exist on State Highway 55 between Crandon and the Langlade County line. Improvements are scheduled for U.S. 45, and long-range planning for improvements on State Highway 55 has been announced. There is some congestion on these routes within the cities, particularly during the summer tourist season. A particular hazard exists for the heavy pedestrian traffic on State Highway 55 in the vicinity of Mole Lake.

The county roads vary greatly in adequacy. Forest County has deferred much maintenance and equipment replacement, with County Highway M, County Highway B, and the stretch of County Highway S between State Highway 55 and U.S. 8 considered marginal. On the other hand, Langlade County Highway A is excellent. Langlade County Highway K (from State Highway 55 to Elcho) is adequate for present traffic.

The railroads have socioeconomic significance in hauling heavy loads of wood products, industrial supplies, and equipment. There are highway-railroad crossings at grade which might become more hazardous if there were unusual increases of use of either mode.

The Rhinelander Oneida County Airport is jet capable and has some landing aids. Republic Airlines served it until 1984. Subsequently it has been served by Midstate Airlines, a commuter airline.

II.C.7 Sociocultural

Two extremely different sociocultural groups exist in the local study area. One is the white majority, making up more than 98 percent of the population. There are too many ways to differentiate subgroups among them to call them homogeneous, but they generally share overriding values of self-reliance, socially and economically. They believe in the importance of independence for the individual and absolute minimal intervention by higher levels of government with the individual or with local government.

The other significant group is the Native Americans, the Forest County Potawatomi, headquartered in Nashville, and the Sokaogon band of Chippewa, with tribal government at Mole Lake. Although they together make up about 2 percent of the population of the study area, their combined enrolled membership could increase if the Crandon Project attracts others to return to the reservations. They have a significance for socioeconomic impact assessment far beyond that indicated by their size; their legal status as sovereign units of government under past treaties with the United States government is still being clarified by court decisions and legislation. However, their presence is important to this analysis because of their increasingly well-defined power for self-government and the major differences between their value systems and that of the majority white population.

The study area's Native Americans' values are too complex to be understood and briefly described by members of the white majority culture (including the authors of this report). However, taking the Chippewa as an example--given their immediate proximity to the Project mine site--certain generalizations can be offered. The traditional Native American value system is dominated by the interdependence of the individual and the bond with the earth and its produce. Their land and its natural environment are the source of supernatural support for them.

In the case of the Chippewa, this sentiment is manifested with Rice Lake and the tribe's dependence on its unsullied existence and on its rice for both spiritual and economic benefits.

On the other hand, the Native Americans are less concerned with economic progress (at least as espoused in the white society) than the majority. Federal government support is relied upon, if not welcomed by all. The issue of maintaining tradition as opposed to adapting to majority society values of economic advancement is a source of conflict in many Native American communities, not just those in the study area.¹⁰

As noted above, the white majority shares general values, but it is not homogeneous: in tradition, in demographic characteristics, in occupation, nor in community self-perception. In reverse order, the Antigo area of Langlade County--south of an east-west line extending both ways through Nova and Deerbrook--is an extension of Midwestern farm country. Some decline in agricultural processing has been countered with entry of metalworking manufacturing, and more industrial diversification is desired. The area is influenced by its settlement before and after the Civil War by North European immigrants who took readily to farming and dairying.

North of the area mentioned, including parts of Langlade, all of Forest County, and most of Oneida County, is North Woods country. The economy has been based on logging and some wood products manufacturing. Recreation has always been an important amenity, and it took on increased economic value with automobile-borne tourism and the resulting small retail and service businesses developing after World War I. The independent streak of the loggers and related trades was reinforced by several thousand Kentucks, families moving north from rural Kentucky because of railroad and timber company land promotions between 1890 and World War I.

Growth dwindled until tourism revived after World War II and was followed by fairly intensive development of homes around the lakes for summer vacation or for retirement, largely of people from Upper Great Lakes region cities. Some tension exists between the long-time residents and the newcomers--particularly the seasonal residents--but the general cultural values described earlier still predominate.

The announcement of the Crandon Project has already had some effects which are embodied in the present sociocultural environment. Some of the newcomers, seasonal residents, and retirees voice displeasure with the proposed Project, slightly aggravating the mild tension between them and the larger permanent white population which

¹⁰Further analysis of the impact of the Crandon Project on the Forest County Potawatomi and the Sokaogon Chippewa communities is included in Chapter V.

generally favors the Project.¹¹ The greater announcement effects appear to be on the Native Americans as some enrolled members return, hoping for jobs, and straining the resources of both Chippewa and Potowatomi reservations.

¹¹Based on EMC surveys, EMC's socioeconomic consultant's work, and DRI interviews.

CHAPTER III

ENVIRONMENTAL CONSEQUENCES OF PROPOSED ACTION

This section provides an analysis and discussion of the potential beneficial and adverse socioeconomic effects of the Crandon Project, from the preconstruction period through construction and operation to the Project's scheduled closure. In addition, an analysis is provided of the potential impacts that could result from an unscheduled closure or temporary suspension of the Project as well as any cumulative impacts that may occur as a result of other industrial developments in the study area. Statewide effects of the Project are noted where pertinent in addition to the analysis of impacts within the local study area.

Two alternative profiles of future socioeconomic conditions in the study area are presented. The without-project (or baseline) scenario depicts conditions that could be expected to prevail if the Crandon Project is not developed. Contrasted to this is the impact scenario which portrays the effects that the Project is expected to have in the local study area and the various jurisdictions. Separate socioeconomic impacts relating to the preconstruction, construction, operation, and closure phases of the Project are noted wherever relevant.

Within the context of uncertainty and the limitations of analysis outlined earlier, DRI has formulated estimates of the direct and secondary economic effects that would be associated with the Project during the construction, operations, and closure phases.

III.A POPULATION

Minor changes in the local study area population have already occurred as a result of EMC preconstruction activity. More substantial population change will occur as nonresident Project work force members relocate to the study area. Changes in population induced by the Crandon Project will be additive to the baseline population growth (or decline) expected to occur in the study area without the Project. These two alternative levels of future population growth (the without-project scenario and the impact scenario) are shown for the entire local study area in Tables 25, 26 and 27 and Figure 3. Projections of each jurisdiction's population under the without-project and the impact scenarios are depicted graphically and in tabular form in Appendix B.

These study area-wide projections show an initial rapid increase in population during the construction period, followed by a sustained growth over the operations period at a population level approximately 1,800 higher than the baseline. At the closure of the project, and during the reclamation period which follows, the area-wide population is expected to drop rather steeply as Project operations workers leave the

FIGURE 3

Population Projection

Local Study Area

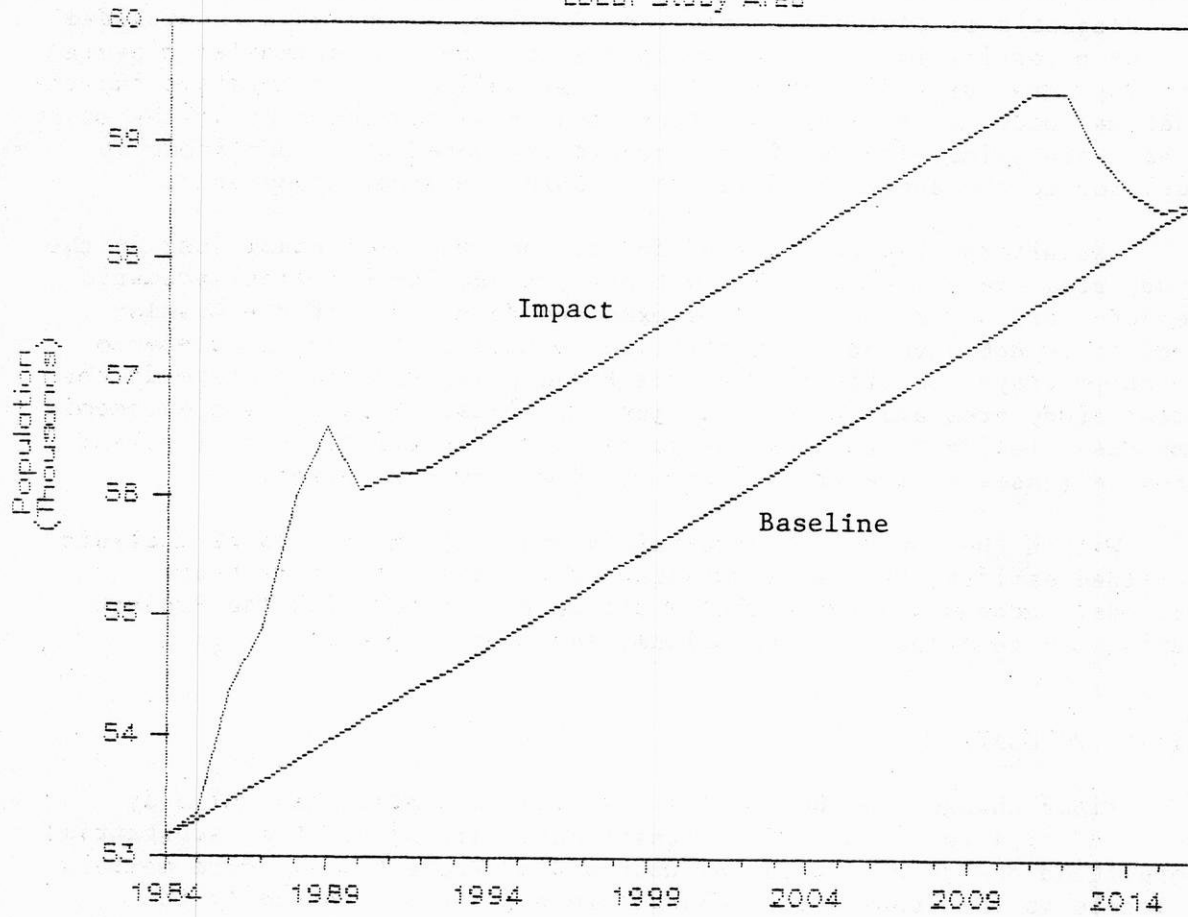


TABLE 25

Population Projections 1984-2016 (Without-Project Scenario)

Local Study Area	
Total	
1984	53146
1985	53303
1986	53460
1987	53618
1988	53777
1989	53936
1990	54096
1991	54257
1992	54418
1993	54580
1994	54742
1995	54906
1996	55070
1997	55234
1998	55400
1999	55566
2000	55732
2001	55900
2002	56068
2003	56236
2004	56406
2005	56576
2006	56747
2007	56918
2008	57091
2009	57264
2010	57437
2011	57612
2012	57787
2013	57963
2014	58139
2015	58317
2016	58495

TABLE 26

Population Projections 1984-2016 (Impact Scenario)

Local Study Area	
Total	
1984	53146
1985	53335
1986	54365
1987	54890
1988	56020
1989	56578
1990	56072
1991	56185
1992	56231
1993	56394
1994	56557
1995	56721
1996	56886
1997	57051
1998	57217
1999	57383
2000	57551
2001	57718
2002	57887
2003	58056
2004	58226
2005	58397
2006	58569
2007	58741
2008	58914
2009	59087
2010	59261
2011	59436
2012	59430
2013	58932
2014	58586
2015	58431
2016	58517

TABLE 27

Population Projections 1985-2016 (Impact Population)

	Local Study Area Total
1985	33
1986	905
1987	1271
1988	2243
1989	2642
1990	1976
1991	1929
1992	1813
1993	1814
1994	1815
1995	1815
1996	1816
1997	1817
1998	1817
1999	1818
2000	1818
2001	1819
2002	1819
2003	1820
2004	1821
2005	1821
2006	1822
2007	1822
2008	1823
2009	1824
2010	1824
2011	1825
2012	1644
2013	970
2014	447
2015	114
2016	22

area and as general economic activity settles back to the baseline trend.

As described in the Introduction and in Appendix A, socioeconomic forecasting is a field dominated by uncertainty. The projection of population and related socioeconomic conditions over a period of decades cannot, therefore, be thought of as a series of predictions independent of the assumptions used. Rather, a projection of this type should be considered a graphical or tabular representation of the unique combination of those assumptions. Therefore, when considering the tables and graphs which accompany this discussion, it must be noted that the lines or numbers portrayed are merely indications of tendencies given certain assumptions and that if any one of the assumptions (e.g., the timing of the Project) changes, the future tendencies will be affected.

Given the sum of these uncertainties, it is understandable that the larger the population being projected, the smaller the effects of changes in assumptions are likely to be. The greatest confidence is at the study area population level and the most tenuous projections are at the individual city and township level. An intermediate degree of confidence surrounds the disaggregation of the total projected study area population (or the aggregation of various individual jurisdiction projections) into three broader geographical areas. These three areas are referred to as the Project area, the Rhinelander area, and the Antigo area. The Project area includes the city and town of Crandon, and Lincoln, Nashville, and Elcho. The Rhinelander area includes Rhinelander, Crescent, Newbold, Pelican, and Pine Lake, and the Antigo area includes the city and town of Antigo.

The distribution of projected population to these three broad "settlement areas" is less subject to variation than the specific jurisdiction projections presented in Appendix B, although this distribution ultimately reflects the judgment of the DRI study team (see also the study area definition contained in Chapter II). Population distribution under the without-project and impact scenarios for the construction, operation, and closure phases of the Project is shown in Tables 28, 29, and 30 and in Figures 4, 5, and 6. It can be seen that these three areas account for more than 75 percent of the impact population expected to in-migrate to the study area; the remaining in-migrants are expected to be dispersed throughout the balance of the area.

FIGURE 4

Area Projections

Project Area

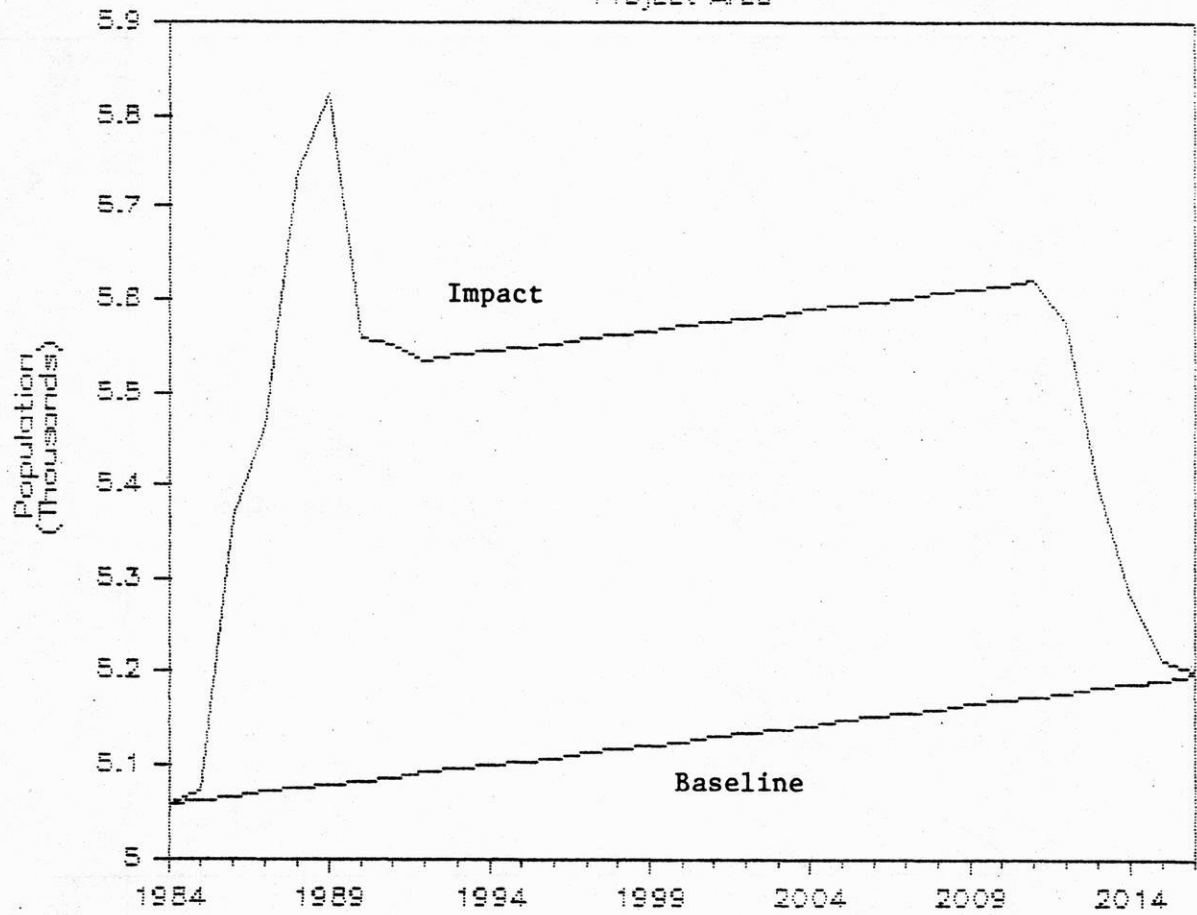


FIGURE 5

Area Projections

Antigo Area

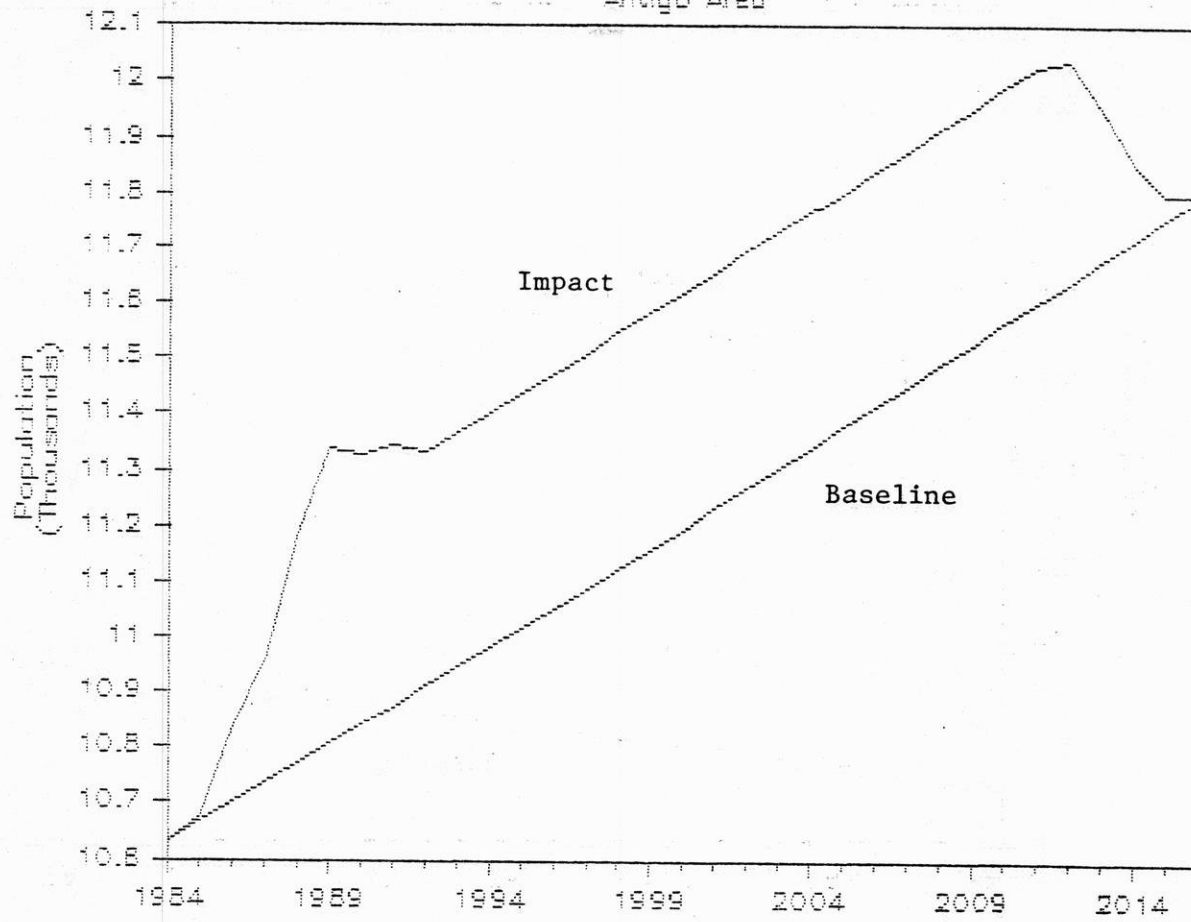


FIGURE 6

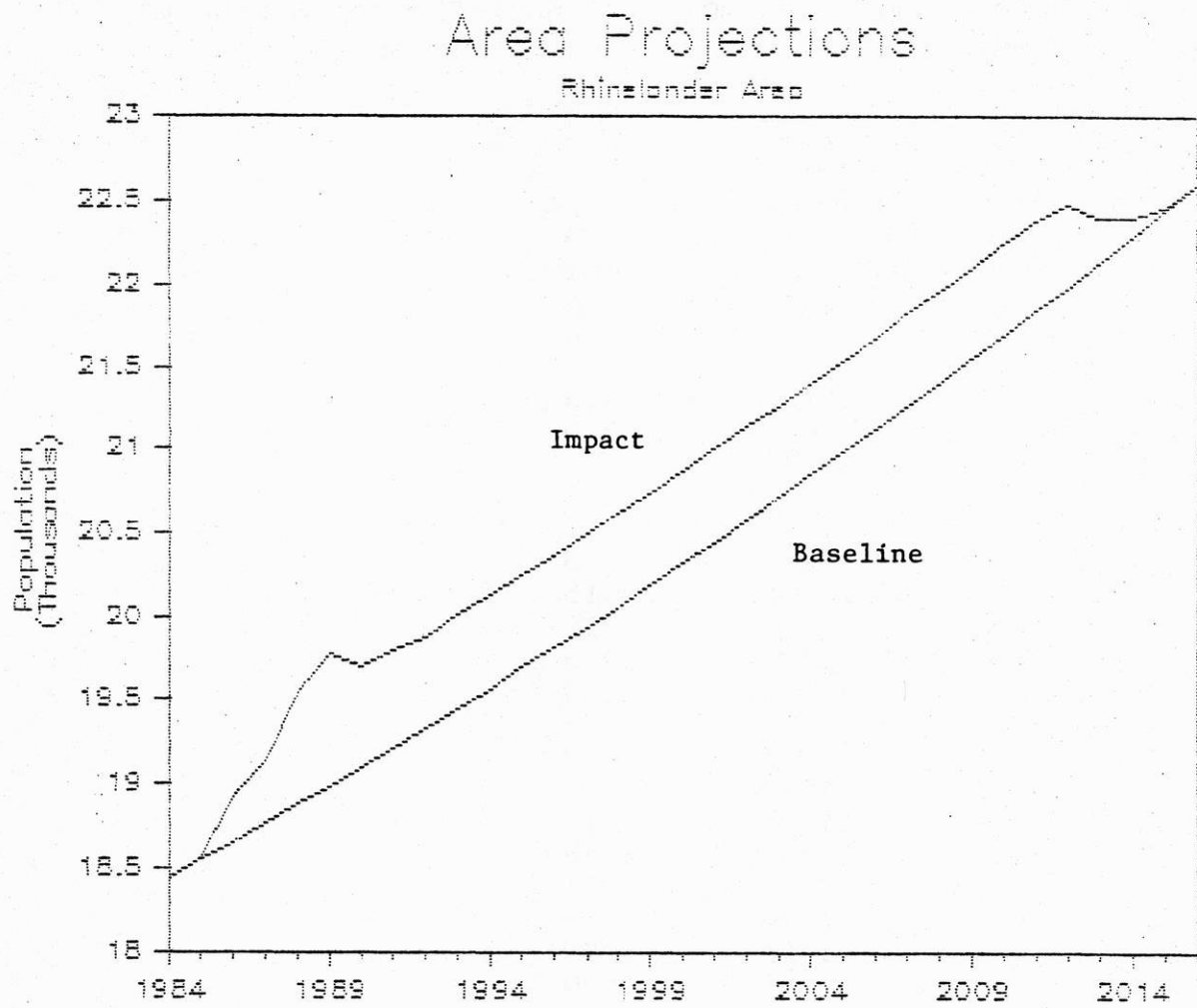


TABLE 28

Population Projections 1985-2016 (Without-Project Scenario)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	5058	10634	18447
1986	5062	10668	18553
1987	5066	10702	18661
1988	5071	10737	18770
1989	5075	10771	18880
1990	5079	10806	18992
1991	5083	10840	19105
1992	5087	10875	19220
1993	5092	10910	19336
1994	5096	10945	19453
1995	5100	10980	19572
1996	5104	11016	19693
1997	5109	11051	19815
1998	5113	11087	19938
1999	5117	11123	20063
2000	5122	11159	20189
2001	5126	11195	20317
2002	5130	11231	20447
2003	5135	11267	20578
2004	5139	11304	20711
2005	5143	11340	20845
2006	5148	11377	20981
2007	5152	11414	21119
2008	5156	11451	21259
2009	5161	11488	21400
2010	5165	11525	21543
2011	5170	11563	21687
2012	5174	11600	21834
2013	5179	11638	21982
2014	5183	11676	22132
2015	5188	11714	22284
2016	5192	11752	22438

TABLE 29

Population Projections 1984-2016 (Impact Scenario)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	5058	10634	18447
1986	5071	10674	18564
1987	5367	10837	18923
1988	5463	10959	19141
1989	5741	11186	19541
1990	5825	11336	19775
1991	5559	11327	19698
1992	5553	11343	19801
1993	5535	11332	19889
1994	5540	11367	20006
1995	5544	11403	20125
1996	5549	11438	20246
1997	5553	11474	20368
1998	5557	11510	20491
1999	5562	11546	20616
2000	5566	11582	20743
2001	5571	11618	20871
2002	5575	11655	21001
2003	5580	11691	21132
2004	5584	11728	21265
2005	5588	11765	21400
2006	5593	11802	21536
2007	5597	11839	21674
2008	5602	11876	21813
2009	5606	11913	21955
2010	5611	11951	22098
2011	5616	11989	22242
2012	5620	12026	22389
2013	5576	12036	22477
2014	5403	11956	22410
2015	5284	11858	22407
2016	5214	11798	22466

TABLE 30

Population Projections 1984-2016 (Impact Population)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	8	6	10
1986	300	135	262
1987	393	223	371
1988	667	415	660
1989	746	530	782
1990	476	487	593
1991	466	468	581
1992	444	422	553
1993	444	422	553
1994	444	422	553
1995	444	422	553
1996	444	423	553
1997	444	423	553
1998	444	423	553
1999	445	423	554
2000	445	423	554
2001	445	424	554
2002	445	424	554
2003	445	424	554
2004	445	424	554
2005	445	425	555
2006	445	425	555
2007	445	425	555
2008	446	425	555
2009	446	426	555
2010	446	426	555
2011	446	426	555
2012	397	398	496
2013	219	280	278
2014	96	144	123
2015	22	46	29
2016	4	9	6

III.B ECONOMIC BASE

The Crandon Project will be the source of new employment, personal income, and increased business activity in the study area during the construction period and for the period that the Project is operational. During the closure phase there will be an obvious decline in Project related employment and secondary economic activity. Within the context of uncertainty and the limitations of analysis outlined earlier, DRI has formulated estimates of the direct and secondary economic effects that would be associated with the Project during the construction, operations, and closure phases.

During the first two years of construction, activities on the surface will be primarily associated with the mine (shaft sinking) and the construction of the surface facilities necessary to support the mine. Permanent facilities constructed during this period will consist of large office-type buildings, storage buildings, and prefabricated buildings. During the last two years of construction the emphasis will change to the construction of major process facilities.

According to EMC's most recent estimates, direct Project employment during years 1 through 4 of the construction phase will average 494, 525, 755, and 654 persons, respectively. It should be noted that these are average annual employment figures and not peak employment.

The extent to which direct Project jobs are filled by existing study area residents as opposed to in-migrants, particularly out-of-state in-migrants, is a matter of obvious importance and interest. Construction of the mine and related surface facilities is anticipated to be performed by two prime contractors and various related subcontractors. EMC has indicated it will encourage prime contractors and all subcontractors to use local labor and services to the maximum extent possible and further that criteria will be developed for subcontract awards which will contain a weighting factor for "local content." In its competitive bidding practice, EMC's aggressive pursuit of these preferential policies and adherence to them by EMC's prime contractors and subcontractors could afford existing study area residents some advantage in securing direct Project employment.

DRI's estimate of the number and type of direct Project construction jobs that will be filled by existing study area residents in fact assumes that employment and management policies similar to those outlined above encouraging "local content" will be diligently pursued. On this basis, DRI has estimated that a range of between 100 and 180 jobs in each year throughout the three and one-half year construction period could be filled by existing study area residents. This estimate represents approximately one-fourth of the construction jobs estimated by EMC to be filled by Project contractors.

The infusion of new wage and salary income in the study area and purchases of supplies, material, services, and equipment by EMC and its

prime contractors and subcontractors during the construction phase will create a certain amount of secondary employment in the study area economy. The following Project facilities, for example, will be built through subcontracts during the construction phase:

Services building	Water treatment plant
Prefabricated buildings	Waste management disposal facility
Coarse ore storage facility	Water pipeline
Road and parking area	Main shaft headframe
Railroad construction	Collar freezing
Site preparation	Shaft sinking
Landscaping	Fencing
Painting	Batch plant
Tankage fabrication	
Water wells	

In addition, the following equipment, material, supplies and services will be purchased during the construction period:

Engineering Equipment

Air conditioners	Boilers	Compressors
Fans	Heaters	Belt conveyors
Dust collectors	Crushers	Screw conveyors
Screens	Cranes	Hoists
Rod-mills	Ball-mills	Agitation
Car-pullers	Belt scales	Thickeners
Pumps - liquid	Locomotives	Loaders
slurry	Drills	Workshop equipment
vacuum		
metering		
horizontal		
vertical		

Mobile Equipment

Loaders	Dozers	Backhoes
Graders	Flatbeds	Compactors
Cranes	Forklifts	Dump trucks

Bulk Materials

Concrete, concrete blocks	Rebar
Aggregates	Structural steel
Steel pipe and fittings	Plastic pipe and fittings
Lumber	Dry wall
Insulation	Paint
Electrical supplies	Architectural supplies

Supplies and Services

Hydraulic cylinder repair	Concrete products
Insulation materials	Ice
Masonry	Crane rental/leasing
Paving	Drilling
Pipe - sewer	Dry wall supplies
Plumbing supplies	Excavation equipment rental
Power activated tools	Fire extinguishers
Pressure washers	Guard rails
Pumps	Heavy equipment repair
Riggers	Aggregates (sand and gravel)
Roof equipment and supplies	Sand blasting
Roofing materials	Slings, wire rope
Scaffolding	Sprinklers
Spraying equipment	Water coolers
Tanks	Truck washing equipment
Toilets - chemical portable	Weatherstripping
Trenchers	

EMC will follow a national competitive bidding policy in the procurement of all supplies, services, and equipment. Qualified study area companies that could benefit from participation in these construction activities (assuming their successful competition with state, regional, and national firms) might include the following:

- Electrical contractors
- Plumbing contractors
- HVAC contractors (heating, ventilating and air-conditioning)
- Painters
- Masons
- Welding contractors
- Structural steel fabricators
- Mobile equipment lease/hire
- Haulage contractors
- Suppliers of building/construction materials, including electrical and plumbing supplies
- General contractors

The magnitude of local study area purchases made during the Project's construction phase combined with the consumer spending of the Project construction work force will induce growth in secondary employment. Tables 33 through 38 and Figures 7 and 8 contain DRI's projections of total employment in the local study area under the without-project and the impact scenarios and also show new Project construction employment by place of residence.

Annual employment during the operations phase of the Project is expected to average 703 persons per year, and DRI has estimated that approximately 45 percent (40 to 50 percent), or 280 to 350, of these

positions could be filled by existing study area residents. Table 31 below summarizes DRI's estimates of the number of existing study area residents who could gain employment at the mine and mill during the operations phase. These estimates are based on an analysis of unemployment and work force composition in the study area and the specific job skills portrayed in Tables 5 and 6 in Chapter I. They are not predictions of Project operations employment patterns, and the percent-hired-locally figure could range between 40 and 50 percent.

The Project will constitute a substantial new source of employment in the study area and at full operational levels will account for about \$13 million in gross annual wage and salary income.

Table 32 shows the projected effect of new employment on disposable personal income and retail sales for each year of the operations phase within the local study area. As shown in the table, the new employment directly and indirectly associated with the Project will account for additional retail sales in the study area of approximately \$5 million per year during a typical year of operations. Comparing this figure with the 1982 retail sales data included in Table 13, it is apparent that the Project will not have an overwhelming impact in this respect, causing a total increase of only 1.3 percent over the 1982 three-county sales. Likewise, given this minimal effect on consumption patterns, the impact of the Project on study area consumer price inflation rates is likely to be negligible.

Estimates of Project expenditures during the operations phase are also currently being revised (reduced) from earlier estimates by EMC due to revisions in certain Project operation plans. EMC's published estimates of the value of annual Project expenditures that could be made in the study area and in the state of Wisconsin are, in DRI's estimation, unrealistically high. At issue is not EMC's intent to preferentially regard, wherever possible, study area and state suppliers, including the two prime contractors for Project construction, but rather the capacity and cost competitiveness of study area and Wisconsin industries engaged in manufacturing, machinery, equipment, processing, and services.¹ Clearly, some portion of EMC's total annual Project operations' purchases will be made in the study area; the actual amount that will be captured locally and in the state will be a function of entrepreneurship and cost competitiveness.

Tables 33 through 38 and Figures 7 and 8 show new employment by place of residence during the operations phase of the Project and

¹Of relevance here are the recent reviews of Wisconsin state and local economic performance by the Wisconsin Strategic Development Commission and the Joint Economic Committee of Congress, which reveal a serious decline in statewide manufacturing. U.S. manufacturing capacity and competitiveness are, in fact, increasingly challenged by imports (see, for example, "How Imports are Reshaping the U.S. Economy" in Business Week, April 1, 1985).

TABLE 31. DRI ESTIMATES OF OPERATIONS EMPLOYEES HIRED LOCALLY
FOR THE CRANDON PROJECT

<u>Educational Requirements¹</u>	<u>Total</u>	<u>No. Hired Locally</u>	<u>% Hired Locally</u>
College	58	11	19
Vocational/Technical	138	47	34
High School	<u>507</u>	<u>266</u>	<u>52</u>
TOTAL	703	324	46

¹Actual degrees or equivalents.

TABLE 32. AVERAGE ANNUAL INCOME AND RETAIL SALES
ASSOCIATED WITH NEW EMPLOYMENT¹

	Number of Employees	Average Wage/ Salary Rate/Hr.	Dispos- able Income (\$000s)	Disposable Income and Fringe + % Spent Locally ² (\$000s)	Retail Pur- chases in Local Study Area (\$000s)	Pur- chases Subject to State Sales Tax (\$000s)
<u>Project Operations Employees</u>						
Administration	86	\$10.75	\$1,294	\$1,509	\$453	\$271
Mine Tech- nical	35	13.50	662	749	232	139
Mine Opera- tions	298	11.00	4,589	5,334	1,606	964
Mine Main- tenance	96	12.50	1,680	1,920	588	353
Mill Opera- tions	63	11.25	992	1,150	347	208
Mill Tech- nical	26	12.75	464	529	162	97
Mill Main- tenance	30	10.50	441	516	154	93
Central Maintenance	<u>69</u>	10.50	<u>1,014</u>	<u>1,187</u>	<u>355</u>	<u>213</u>
TOTALS, Project Operations Employees	703		11,136	12,894	3,897	2,338
<u>Secondary Employees (average of operations phase)</u>						
	357	6.05	<u>3,024</u>	<u>3,916</u>	<u>1,058</u>	<u>635</u>
TOTALS			14,160	16,810	4,955	2,973

¹"New employment" in this table includes Project direct and secondary employment.

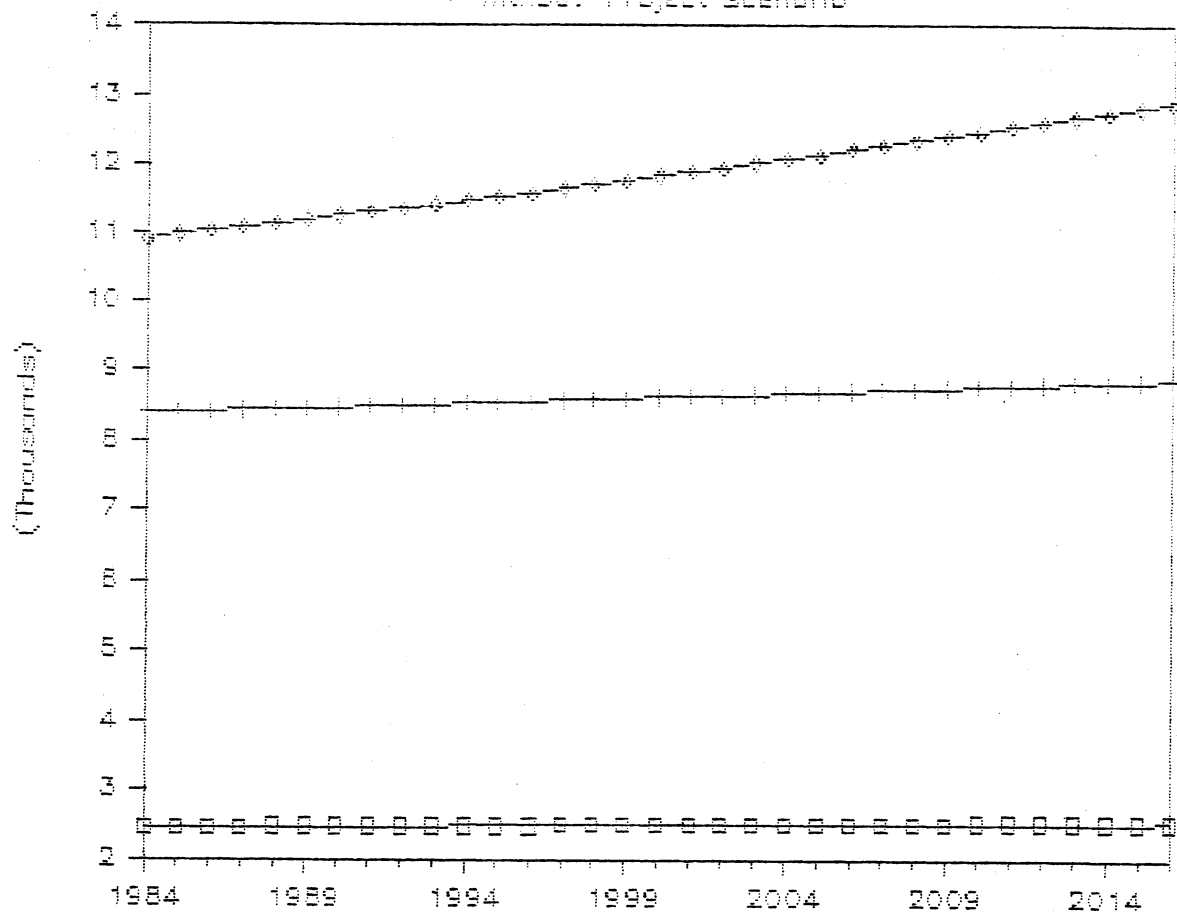
²Fringe benefits spent locally are estimated at approximately \$2,500 per employee per year for health insurance and other locally obtainable benefits.

Source: DRI calculations based on EMC operations employment forecasts and DRI projections of secondary employment. Wage rates obtained from U.S. Census Bureau by EMC.

FIGURE 7

LSA Employment

Without-Project Scenario



□ Forest County

+ Longlade County

◇ Onzida County

TABLE 33

EMPLOYMENT PROJECTION, WITHOUT-PROJECT SCENARIO

	FOREST COUNTY	LANGLADE COUNTY	ONEIDA COUNTY	LSA TOTAL
1984	2455	8402	10911	21768
1985	2457	8416	10965	21838
1986	2459	8429	11020	21909
1987	2461	8443	11076	21981
1988	2463	8457	11132	22053
1989	2465	8471	11190	22126
1990	2467	8486	11247	22200
1991	2470	8500	11305	22275
1992	2472	8514	11364	22350
1993	2474	8529	11423	22426
1994	2476	8543	11483	22503
1995	2478	8558	11544	22580
1996	2480	8573	11605	22658
1997	2482	8587	11666	22736
1998	2484	8602	11728	22814
1999	2487	8617	11790	22893
2000	2489	8632	11852	22972
2001	2491	8647	11914	23052
2002	2493	8661	11977	23131
2003	2495	8676	12040	23212
2004	2497	8691	12104	23292
2005	2499	8706	12167	23373
2006	2502	8721	12232	23455
2007	2504	8736	12296	23536
2008	2506	8751	12361	23619
2009	2508	8767	12427	23702
2010	2510	8782	12493	23785
2011	2513	8797	12559	23869
2012	2515	8812	12626	23953
2013	2517	8828	12694	24039
2014	2519	8843	12762	24125
2015	2521	8859	12831	24211
2016	2524	8874	12899	24297

TABLE 34

New Employment by Place of Residence

Year	LSA Total		
	Co	Op	Sec
0	0	16	3
1	445	22	79
2	473	127	163
3	680	346	312
4	589	552	427
5	8	694	455
6	0	703	424
7	0	703	353
8	0	703	354
9	0	703	354
10	0	703	355
11	0	703	355
12	0	703	355
13	0	703	356
14	0	703	356
15	0	703	356
16	0	703	357
17	0	703	357
18	0	703	358
19	0	703	358
20	0	703	358
21	0	703	359
22	0	703	359
23	0	703	359
24	0	703	360
25	0	703	360
26	0	703	360
27	0	600	361
28	0	250	326
29	0	80	188
30	0	0	70
31	0	0	14
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0

TABLE 35

New Employment by Place of Residence

Year	Grandon City			Grandon Town			Lincoln			Nashville			Forest BOC			Forest Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	5	1
1	36	2	8	9	0	1	44	1	1	53	2	2	36	2	6	178	7	17
2	38	10	16	9	3	2	47	8	2	57	10	3	38	11	11	187	41	34
3	54	26	31	14	7	3	68	22	3	82	28	6	54	29	22	272	112	66
4	47	41	43	12	11	4	59	36	4	71	44	9	47	47	30	235	179	90
5	1	52	46	0	14	5	1	45	5	1	56	9	1	59	32	3	226	96
6	0	53	42	0	14	4	0	46	4	0	56	8	0	60	30	0	228	89
7	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
8	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
9	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
10	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
11	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
12	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
13	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
14	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
15	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
16	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
17	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
18	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
19	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
20	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
21	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
22	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
23	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
24	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
25	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
26	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
27	0	45	36	0	12	4	0	39	4	0	48	7	0	51	25	0	195	76
28	0	19	33	0	5	3	0	16	3	0	20	7	0	21	23	0	81	68
29	0	6	19	0	2	2	0	5	2	0	6	4	0	7	13	0	26	40
30	0	0	7	0	0	1	0	0	1	0	0	1	0	0	5	0	0	15
31	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

New Employment by Place of Residence

TABLE 36

Year	Antigo City			Antigo Town			Elcho			Langlade ROC			Langlade Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	2	1	0	0	0	0	0	0	0	1	0	0	4	1
1	42	3	28	4	0	4	18	1	4	36	2	4	100	6	32
2	45	17	57	5	3	8	19	4	8	38	10	7	106	54	81
3	65	47	109	7	7	16	27	10	16	54	23	14	153	92	155
4	56	75	149	6	11	21	24	17	21	47	44	19	132	146	211
5	1	94	159	0	14	23	0	21	23	1	56	20	2	184	225
6	0	95	149	0	14	21	0	21	21	0	56	19	0	186	210
7	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
8	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
9	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
10	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
11	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
12	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
13	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
14	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
15	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
16	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
17	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
18	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
19	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
20	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
21	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
22	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
23	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
24	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
25	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
26	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
27	0	81	126	0	12	18	0	18	18	0	48	16	0	159	179
28	0	34	114	0	5	16	0	8	16	0	20	15	0	66	161
29	0	11	66	0	2	9	0	2	9	0	6	8	0	21	93
30	0	0	25	0	0	4	0	0	4	0	0	3	0	0	35
31	0	0	5	0	0	1	0	0	1	0	0	1	0	0	7
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 37

New Employment by Place of Residence

110

FIGURE 8

LSA Employment

Impact Scenario

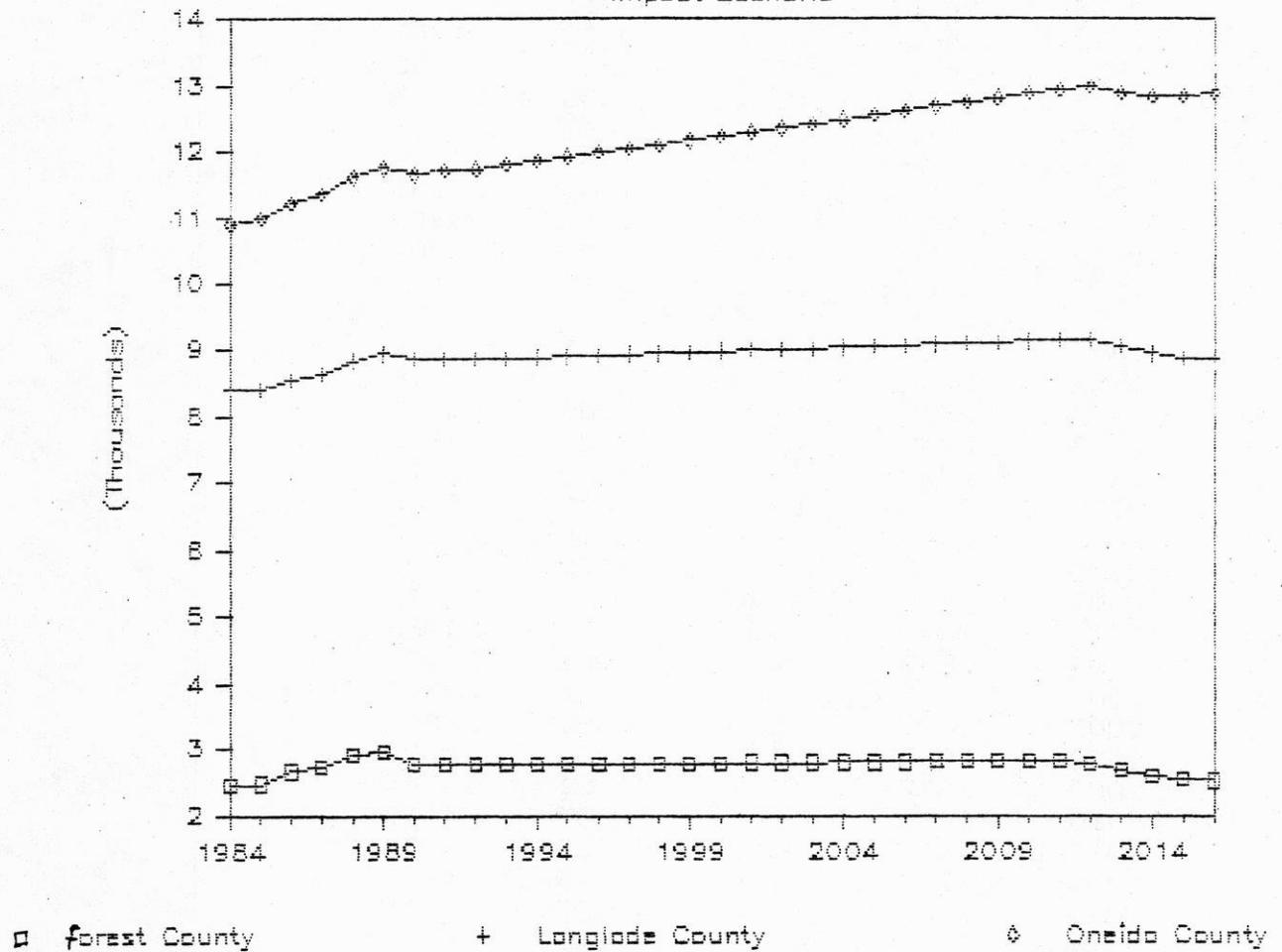


TABLE 38

Employment Projection, Impact Scenario

	Forest County	Langlade County	Oneida County	LSA Total
1984	2455	8402	10911	21768
1985	2463	8421	10972	21857
1986	2661	8575	11219	22455
1987	2726	8664	11353	22743
1988	2913	8857	11621	23391
1989	2970	8962	11763	23694
1990	2792	8897	11669	23358
1991	2787	8896	11719	23402
1992	2774	8876	11757	23407
1993	2777	8890	11816	23483
1994	2779	8905	11876	23560
1995	2781	8920	11937	23638
1996	2783	8935	11998	23716
1997	2785	8950	12059	23794
1998	2788	8965	12121	23873
1999	2790	8980	12183	23952
2000	2792	8995	12245	24032
2001	2794	9010	12308	24111
2002	2797	9025	12370	24192
2003	2799	9040	12434	24272
2004	2801	9055	12497	24353
2005	2803	9070	12561	24434
2006	2805	9085	12626	24516
2007	2808	9100	12690	24598
2008	2810	9116	12756	24681
2009	2812	9131	12821	24764
2010	2814	9146	12887	24848
2011	2817	9162	12954	24932
2012	2785	9150	12979	24914
2013	2667	9055	12893	24615
2014	2585	8958	12851	24393
2015	2536	8894	12851	24281
2016	2526	8881	12903	24311

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include the secondary employment effects that would result from consumer spending by operations employees and EMC's original estimates of annual Project expenditures in the study area.

The baseline and impact scenarios assume that no substantial disturbance will occur among the sectors currently constituting the local study area economic base. Specifically, forestry and wood products manufacturing is expected to dominate the study area economy, with or without the development of the Crandon Project, with recreation and tourism continuing to drive the retail trade and services sectors. The Project's most significant effects on the sectoral employment mix, portrayed by Table 15 (as well as the earning mix shown in Table 13) in Chapter II, will be the rise in importance of the construction sector during Project construction, and of the mining sector during Project operation. While other sectors such as trade and services will show employment and income increases due to the Project as well, it is not expected that their relative importance within the study area economic base will be significantly changed.

The beneficiaries of the secondary development which would accompany increased spending in the study area would be concentrated in the sectors of residential construction, retail trade, FIRE (finance, insurance and real estate), TCPU (transportation, communications, and public utilities), and other services. The benefits accruing to these sectors due to increased demand for goods and services will be offset somewhat, and other sectors could be significantly adversely affected by the prospect for higher wages at the Project. For example, in Forest County, the average weekly wage for service employees in 1984 was \$169.31, and for forest and wood product employees was \$169.91, compared to approximately \$420.00 for EMC's operations employees. This differential would have several effects in the regional economy, with the most significant being the potential for high employee turnover and wage inflation.

Also, the magnitude of the total change in employment in the study area should be kept in perspective to its relative effect on the regional economy. While over a thousand new jobs would be created directly and indirectly by the Project, this represents only slightly more than 4 percent of total employment in the three study area counties. Therefore, and because it is anticipated that most in-migrants will come from the Upper Great Lakes region, it is unreasonable to expect that major shifts in the types and levels of commercial amenities in the form of goods and services would occur in the study area as a result of the Crandon Project. It is possible that, particularly during the construction period, certain strip developments of convenience stores, bars, and other largely transitory businesses will operate to serve the mobile and largely transient labor force typical among construction projects. However, it is unlikely that the Project alone (i.e., without the prospect existing for a number of other new economic activities in the area), and under the assumption that employment will be dispersed

throughout the local area,² will attract a major new shopping center, department store, or other highly visible commercial enterprise.

Among the most positive effects of the Project would be its potential for diminishing unemployment in an area which has recently experienced rates higher than the state and the country (see Section II.C.2). The prospect for adding approximately 1,500 jobs during the peak construction year and more than 1,000 jobs over the sustained operations period is certainly encouraging to those whose employment potential has been curtailed by national and global economic circumstances. However, it must be noted again that many Project-related jobs require training or experience which do not match those of the study area's labor force and will require recruitment from outside the area. Also, for those jobs whose skills requirements match the skills in the study area's labor force, affirmative action on the part of EMC and its contractors will be required for current residents to receive preferential hiring over equally qualified in-migrants.

An associated issue which may arise is that a highly visible project or employer can unwittingly cause a disproportionate attraction of unemployed persons from far outside the vicinity of the project. A notable example in this regard is the Alaskan oil pipeline project, which attracted thousands more workers than were necessary to complete the project. As a result, unemployment rates for the state of Alaska and many of its boroughs increased significantly, notwithstanding the thousands of jobs created by the project.³

It is not suggested that the Crandon Project would cause an attraction of the unemployed at a level approaching that of the Alaskan oil pipeline; however, affirmative steps must be taken to avoid an unintended exaggeration of the Project's employment potential, in light of the large number of unemployed persons throughout the north central U.S.

²If a major residential development is constructed in a currently rural area, and if such a development attracts a significant proportion of the Project's employees, it is possible that such a development might include a range of commercial activities which do not currently exist in the immediate vicinity. However, these activities would almost certainly duplicate existing commercial enterprises existing in other parts of the study area.

³See, for example, Dixon, What Happened to Fairbanks?, 1978. Other similar examples abound, although at lesser magnitudes or for shorter periods. For example, the combined attraction of the Colony and Union shale oil projects resulted in a "tent city" of unemployed construction workers around the town of Parachute, Colorado, in 1981.

III.C HOUSING

According to the housing vacancy data available in 1980 (as shown in Table 17 in Chapter II), the amount of available housing in the local study area appears to be substantial. However, the relatively high volume of housing stock which is considered to be substandard (as defined in Chapter II) indicates that not all available housing will be adequate or appropriate to meet the needs of the in-migration expected under either the without-project or the impact scenario. Further, data for the study area during the period since the 1980 census and for the period from now until the period of peak demand for housing during the Project construction and operations periods are either unavailable or sufficiently tenuous to require caution in projecting future additions to housing supply assuming the complete availability of current stock. Figure 9 on the following page shows total housing needed under the baseline and impact scenarios in terms of potential occupied housing units. This figure portrays a condition where the new housing required in the study area during the Project period is consistent with the total population projections in the study area over that period, assuming relatively constant household size.⁴

During the Project construction phase, there would be a need for approximately 1,000 new housing units for the construction and secondary workers in the local study area. That demand could be filled by some mix of existing housing vacancies--mobile homes, or seasonal conversions--and new construction--single family or multiple family dwellings, new mobile homes, and motels. Because the construction trades will be entering and leaving the area, the construction workers' needs are more for temporary housing than permanent.

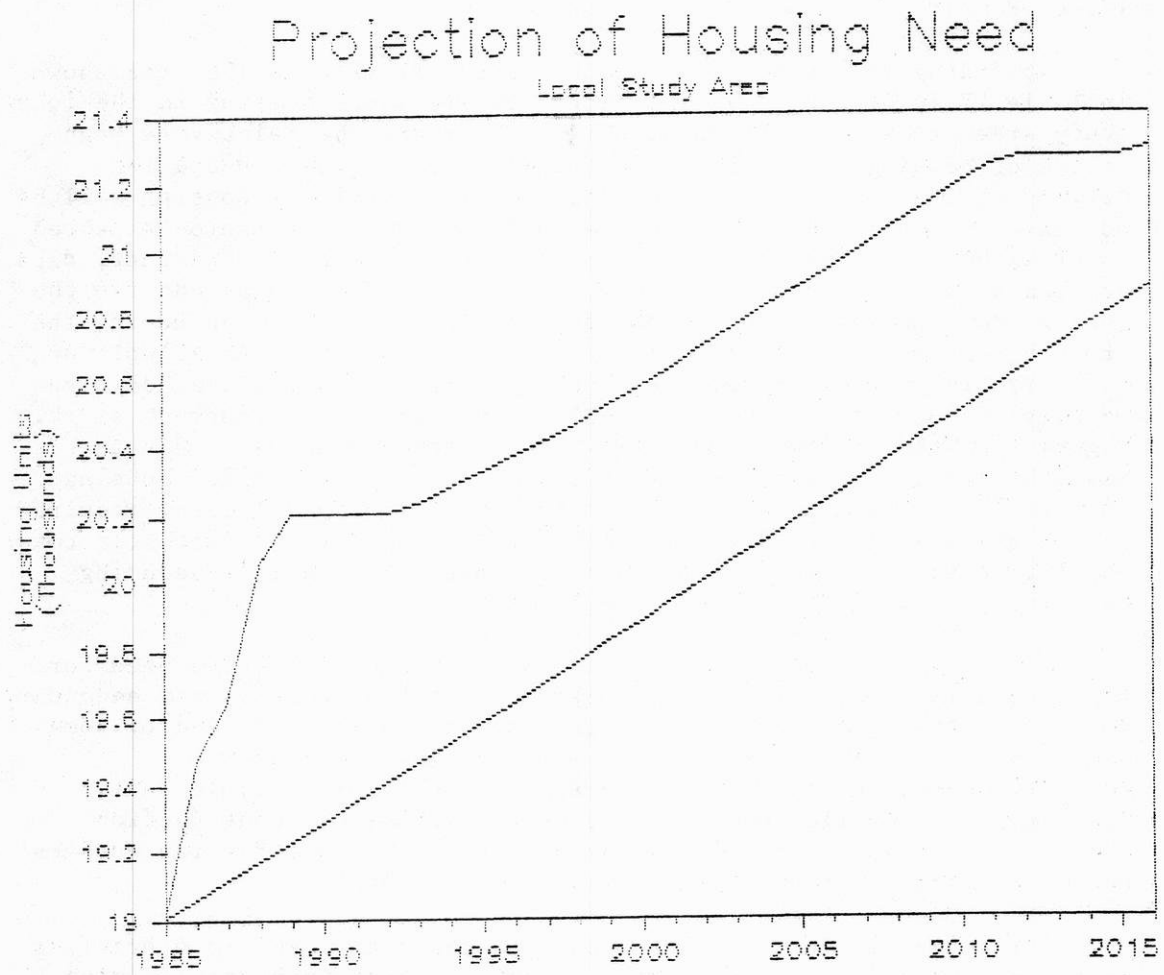
Following the construction phase, as the changeover to operations employees begins, there would be a slight decrease in housing demand to a need for some 800 housing units in the local study area. The operations workers would likely select a somewhat different mix of housing, with emphasis on single family dwellings, either from the existing supply or from new construction.

There would be additional regional impacts associated with the housing construction, including increased activity in real estate sales, mortgage and business lending, and legal counsel, as well as the construction trades and building supply businesses. This increased activity would generate additional needs for labor, supplies, services, and lodging for the construction activities, and increased demands for local government services.

DRI's projections show two periods in which total study area population declines--once following completion of the construction phase

⁴On this point, DRI employs a different average household size factor than that cited by EMC in the Forecast of Future Conditions report. See Appendix A for further discussion of this point.

FIGURE 9



of the Project and once after closure. However, it is assumed that housing stock remains in place (but vacant) during these two periods, and additional new housing is needed only after population rises sufficiently to justify new construction.

In a sense, the flat portions of the housing curve are misleading in that total potential housing stock is portrayed. Clearly, throughout the period, vacancy rates will fluctuate in response to the inconsistencies between supply and demand for housing in the area. Also, supply can be augmented by conversions of second homes to primary residences during periods of high demand, and reconverted to second homes (i.e., withdrawn from "supply") after demand has peaked. Also, it is possible that a significant portion of the housing demand at peak construction employment could be met by temporary housing supply, e.g., mobile homes and trailers.

In general, DRI's projections of housing need indicate: (1) that demand will continue to be greatest in the townships surrounding Rhinelander (under both scenarios); (2) more moderate growth in demand will continue under both scenarios around Antigo; and (3) that the Project would stem a baseline out-migration trend (and associated decline in housing demand) in the Crandon area as well as in Rhinelander.

Following closure of the mine and reclamation of the Project site, demand for housing is likely to decline significantly. However, the specific results of closure, scheduled to occur some 30 years hence, are impossible to divine with any reasonable degree of certainty. It is possible, for example, that demand for second or retirement homes may increase, reducing or eliminating any demand shock due to decreased employment. On the other hand, it is equally likely that the reduction in demand could result in higher vacancy rates for an extended period.

III.D GOVERNMENT STRUCTURE AND PUBLIC FINANCE

The construction and operation of the Crandon Project will not measurably alter the structure and operations of local government in the study area. Members of the new population associated with the Project's work forces are unlikely to ascribe to a value system or philosophy of local governance that will be in sharp contrast to prevailing views in the study area. Reconciliation of diverse values and expressed interests will present some challenge to local elected representatives during the construction period, particularly to the extent that members of the work force in-migrate from communities outside the Great Lakes region. In-migrant work force members during the operations phase are expected to come predominantly from other parts of Wisconsin, Michigan, and Minnesota, and thus the potential for conflicting social and political values or the emergence of widely disparate views on local government responsibility appear unlikely. Some intercommunity competition during the construction period will likely be reflected in

the deliberations and decisions of the Mine Impact Board and in certain committees of the the legislature as these bodies address impact mitigation and appropriation matters.

The assumption of a relatively homogeneous study area population prevailing during the construction and operation periods is especially relevant to the various study area jurisdictions' accommodation of new facility and service requirements. The methodology used to determine incremental public costs under both the without-project and impact scenarios necessarily involves the postulation of "acceptable" standards for public services facilities and other amenities. The tendency of outside observers to impose uniform non-indigenous (i.e., nonrepresentative) standards for certain services in the study area needs to be balanced against the prospect of understating the genuine need for certain improvements as well as expansion of facilities and service systems. The incidence and burden of future taxes in the study area will be greatly influenced by the standards of facility use and service levels associated with the future population.

Three local jurisdictions in which the Project would be developed, the towns of Lincoln and Nashville and Forest County, have adopted mining-related zoning ordinances. In all three cases, mining development is treated as a planned development and is placed in a special use category called Metallic Mineral Mining and Prospecting Planned Development. The three are likewise similar in their requirements for permitting metal mining.

The townships of Lincoln and Nashville have adopted zoning ordinances which adhere closely to the Forest County ordinance. In particular, the Lincoln ordinance takes on much of the language of the county's mining regulation and establishes very similar criteria for permitting. The recently adopted Nashville ordinance (January 1985), while quite similar to the county ordinance, does phrase some permitting criteria differently.

All three ordinances require Community Impact Reports which detail the effects of the project on economic activity, traffic, housing and public services. In addition, they require an analysis of those impacts deemed significant including the impacts of temporary shutdowns and of permanent Project termination. The Community Impact Report does not have to be submitted to those jurisdictions if the information contained in it is repeated in reports to the State Department of Natural Resources. All that is required in this case is a copy of the information provided to the DNR.

Another important link between these jurisdictions and the DNR is the inclusion of DNR permitting criteria in the local ordinances. Forest County and the town of Lincoln have adopted verbatim the DNR criterion that the project show a no net substantial adverse economic impact on the communities in which the project is located. The town of Nashville has taken a somewhat different approach. The Nashville

criteria include an economic balancing test which adds the effects on health, welfare, and safety to the effect on economic prosperity. The ordinance prescribes that a permit be denied unless it is shown that there is no net economic detriment to the town.

Based on conversations with local officials, it appears that the county is less concerned with the broad economic criteria and is concentrating more on its shoreline protection responsibilities. EMC has applied for county permits required under the shoreline and waterway protection provisions of the county ordinance. These permits will be the major focus of the County Zoning Administration and the Zoning Committee.

Each of the three ordinances requires notification of project termination. In addition, annual reports which describe any significant changes in the phasing of the project are required by all three jurisdictions.

Elcho Township has also given attention to mine-related land use planning. The town officials are currently working on a comprehensive plan. The plan is expected to set forth the town's housing policy and may affect the housing supply (particularly mobile homes) available for Project-related in-migrants.

Impacts to Municipalities of Increased Public Costs

DRI has estimated future public costs in study area jurisdictions on the assumption that prevailing baseline standards will be adhered to under both scenarios. Per capita public cost factors encompassing the following facilities and services are shown in Table 39.

- General government
- Water supply (where appropriate)
- Wastewater treatment (where appropriate)
- Fire protection
- Police protection
- Library (where appropriate)
- Recreation (where appropriate)
- Street and road
- Solid waste disposal
- Other/miscellaneous

TABLE 39. PUBLIC COST STANDARDS (1982 Dollars)

	Costs per Capita
Crandon (city)	\$ 296
Crandon (town)	122
Lincoln	330
Nashville	286
Crandon School District (per pupil)	2,271
Forest County	519
Antigo (city)	559
Antigo (town)	110
Elcho	174
Antigo School District (per pupil)	2,743
Elcho School District (per pupil)	2,816
Langlade County	392
Crescent	99
Newbold	110
Pelican	73
Pine Lake	102
Rhinelanders	550
Rhinelanders School District (per pupil)	2,888
Oneida County	324

This assumption regarding prevailing standards has the effect of including deferred maintenance, outdated equipment, and understaffing (where such conditions may exist) as part of the prevailing standard in each jurisdiction since these conditions are "built into" the derived per capita cost factors.⁵ This point needs to be clearly recognized in appraising the following projections of future public costs even though prior experience and the existing body of literature dealing with socioeconomic impacts in rural communities show the most common occurrence is for communities to improve certain discrete facilities and service programs while maintaining prevailing standards for the balance of service programs and facilities.

Tables 40 through 51 at the end of this section show future public costs for each jurisdiction under the without-project and impact scenarios. The cost calculations for the without-project scenarios are far less subject to change than those under the impact scenario. The latter projections are susceptible to wide variation since public outlays for the indicated services and facility programs ultimately will be a function of the actual work force and population distribution that occurs. The public cost projections are therefore the product of a sensitivity analysis of the earlier EMC public cost projections presented in the Forecast of Future Conditions Report. (DRI's cost estimating methodology is described, and its output compared with EMC's, in Appendix A. Projections of each jurisdiction's public facility and service costs are contained in Appendix B.)

The projections of cost differentials between the without-project and impact scenarios show the approximate marginal effect of the Project on governmental entities within the study area, assuming the maintenance of current standards as described above. However, it is unreasonable to assume that all current standards will be maintained over the life of the Project, and particularly during peak impact periods. Given this caveat, the result of the combined analyses of cost differentials shows that total additional costs of approximately \$90 million will result over the life of the Project. During the four years of the construction period, the additional costs will total approximately \$12 million, with a \$4.5 million increment occurring during the third year of construction. Following the construction period, the sustained annual increase in public costs over the operations period is approximately \$3.1 million.

It should be emphasized that this \$90 million figure is not a forecast of additional public outlays or spending. It represents the theoretical cost of maintaining the existing quality of public services and capacity of public facilities, if those costs are met.

⁵It may be argued that this approach could understate the overall fiscal impact of the Crandon Project. The alternative, however, would be to prescribe uniform improvement and service delivery systems for all jurisdictions and thus employ a double standard in the public cost calculations for the without-project and impact scenarios.

It is DRI's experience that, in many cases, much of this cost is absorbed into the existing public system in the form of degraded services and facilities, particularly in the early--and potentially most bothersome--stages of a project.

The exceptions to this general tendency to avoid a portion of these fiscal impacts have been in states or counties with rigorous plant siting laws and authorities, e.g., the Wyoming Industrial Siting Council or the Rio Blanco County, Colorado, Board of County Commissioners. There, in the cases of the Laramie River Generating Station (Wheatland, Wyoming, 1979) or the Deserado Coal Mine (Rangely, Colorado, 1982), permits were contingent on agreements for the use of negotiated combinations of state impact assistance funds, local funds, and project owner contributions to maintain standards and also handle impact mitigation needs.

In addition to these "minimum impact" cost projections, there clearly will be certain facility and service costs which are not subsumed in the standards which prevail now, but which will be necessary to incur, particularly when the Project is exerting its peak impacts--both in terms of new resident population burdening the current government structure throughout the study area, and in terms of increased activity at the Project site. While it would be inequitable to assign these extraordinary costs to the Project alone, the timing or magnitude of the costs is certainly exacerbated by the Project's existence. Examples of the prominent facilities and services needs which will be evidenced during the construction and early operations periods are discussed in Section III.E, below.

Public Revenues Resulting from the Project

Revenues from the Crandon Project will accrue to local jurisdictions and to the state of Wisconsin as a result of direct and induced expenditures and investment activities during the construction and operations phases.

There will be a major increase in the assessed valuation in Lincoln, Nashville, Forest County, and the Crandon School District (includes the towns of Lincoln, Nashville, and Crandon in the local study area) as a result of the construction of the mine and mill facility and there will be varying increases in the assessed valuation and property tax revenue receipts in each of the local study area jurisdictions in which new direct and/or secondary employees and related population choose to reside. These increases in assessed valuation and revenue will result from new residential, commercial, and industrial property improvements associated with the new population being added to the tax base of the various jurisdictions.

State sales tax revenue receipts will increase due to consumer spending made by direct and secondary employees and related household members, and also due to in-state and study area Project expenditures subject to state sales tax.

The state of Wisconsin may also receive corporate income tax revenue (estimated at \$95 million) based on income from Project mining and milling operations. Depending on the corporate organization of the Crandon mine entity, it would or would not be liable for state corporate income taxes.

Finally, the state of Wisconsin, and, to an indeterminable extent, certain local study area jurisdictions, will receive revenue derived from EMC's net proceeds tax payments to the state. This revenue source is described in detail below.

Estimates of the value and time of receipt of these various categories of public revenue are extremely tenuous and in some cases unattainable. With regard to property tax, the construction cost and assessed value of Project facilities have been revised downward since EMC's original published construction cost figure. EMC's earlier references to Project facilities-based property tax revenue in Forest County, Crandon School District, Nashville, and Lincoln will be substantially lower for the entire construction period and for each year during the sustained operating period. Unlike public costs, which can be calculated on an annual basis as a function of population and constant service standards, the assessment of Project facilities during construction will vary markedly each year. In the event of a premature termination of the Project, either during construction (which seems unlikely) or during any given year of the operations phase, certain Project facilities could be temporarily (or permanently) dismantled and thereby removed from property tax exposure. Furthermore, in the event of a suspension of the Project, while the facilities would still be subject to annual assessment and taxation, the reduction of taxable production would diminish net proceeds tax revenue receipts.

The eventual closure of the Crandon Project will, of course, effect a reduction in and eventual removal of the assessed value of Project facilities and property.

Greater uncertainty surrounds the level and timing of residential property tax revenue in the various jurisdictions. As noted earlier in Sections III.A and III.C, the distribution of Project-induced population is more reliable in the context of larger settlement areas than at the specific jurisdiction level. Changes in the assumed residential location of Project-induced population will produce commensurate changes in property tax revenue in affected jurisdictions since new housing supply (and therefore new additions to residential property tax base) is equated in each jurisdiction with new housing need (and this is apt to be overstated), and the types and value of any housing added to the housing stock.

Consumer purchases subject to sales tax can be estimated on the basis of earlier calculations relating to personal income and consumption that were presented in Section III.B above. Total state sales tax revenue from increased personal consumption during the Project operation phase is estimated at \$150,000 per year.

Impact on Tax Rates for Local Jurisdictions

As with other socioeconomic effects of the Project, most of the fiscal impacts will be experienced in the three settlement areas described earlier, i.e., the Project area, the Antigo area, and the Rhinelander area. Proportionately, the greatest impacts will be experienced in the smaller towns immediately adjacent to the Project site--Nashville, Lincoln, and Elcho--and in the city of Crandon, as well as the Crandon and Elcho school districts and Forest County. In Forest County, the Crandon School District, the town of Lincoln, and the town of Nashville, the primary fiscal problem will be the lag between incidence of public costs (particularly during the construction years) and the valuation and assessment of property and the collection of property taxes on the Project-related improvements. It is probable that, without state or other impact assistance, tax rates in these jurisdictions will rise substantially during the first two or three years of construction; however, when the mine and related facilities are completed and become included among the taxable property of these jurisdictions, the significant increase in valuation which would result is likely to cause extended reductions in overall property tax rates for persons living in Lincoln and Nashville.

For persons living in jurisdictions which do not include the Project property, but which experience Project-related impacts, the fiscal situation would be more problematic. As an example, the town of Elcho, located within Langlade County, and the Elcho School District are expected to experience impacts of the Project, but these jurisdictions will not contain Project properties subject to taxation; they must rely instead on increased taxation of other residential, commercial, and manufacturing properties within their borders. While no new capital facilities are projected to be needed in these jurisdictions, a disproportionate growth in public operations and maintenance costs relative to the growth in revenue will very likely cause a short-term rise in the Elcho and Elcho School District tax rates. As with Project-related property, a tax collection lag exists among other types of property as well. When new population arrives in a community, causing pressure on existing public facilities and services, their presence is not felt in property tax revenues until their property is valued and assessed and property taxes are levied and collected. However, unlike jurisdictions in the Project area, no property valuation "windfall" is foreseen for the other settlement areas. This geographical disparity between place of impact and place of tax base is commonly referred to as a "jurisdictional mismatch."

Net Proceeds Tax Estimates--Mining Impact Board

Estimates from the Department of Revenue indicate that over the entire life of the Project, the company would pay \$117 million in net proceeds tax. The Mining Impact Board receives 60 percent of these funds. Substantial changes in anticipated metals prices could vary--both higher or lower--the estimated net proceeds tax, thus, there is considerable uncertainty in their estimation. These estimates assume uninterrupted construction and operations phases and rely on optimistic future forecasts of metals prices along with assumptions about costs of construction and mine/mill operations. The estimate of net proceeds tax payments to the state will not derive from uniform annual payments from year 1 through closure. Net proceeds tax payments will be lagged in the early start-up years and the first payment would begin about the ninth year after the start of construction. Higher deductible costs during the closure phase would probably reduce net proceeds tax revenue payments in the Project's final year.

During the Project construction and first four years of operation, a duration of about eight years, the Mining Impact Fund would receive no net proceeds tax from the Project. These would begin to be paid to the state about the ninth year after construction began. However, the construction phase and early operations phase is the period when there is greatest need for funds to mitigate negative impacts from mining-related activities--due to in-migrating population for construction and operations, and the need for municipalities to provide services to these people and their families. While the applicant is responsible for paying the \$100,000 (indexed) "construction period" payments to the state, which are distributed to the two townships and two tribes, this amount may not be adequate to cover the increased costs of those municipalities resulting from the mine. In addition, several municipalities that would be impacted do not receive construction period payments. The Mining Impact Board, the state body with the authorization to mitigate mining-related impacts, would be anticipated to have only minimal discretionary funds and will be unable to provide required funds to mitigate the anticipated negative impacts.

No ". . . Net Substantial Adverse Economic Impact. . ."

These words are the heart of the complex wording of the socioeconomic impact test required in the Wisconsin statute covering the permitting of a new metal mine.

The full text is:

The proposed mine will not result in a net substantial adverse economic impact in the area reasonably expected to be most impacted by the activity. (Section 144.85(5)(a)1.e. Wisconsin Statutes)

A Financial Impact Test

If the law were written to base the test on "financial impact" (see laymen's view of costs in the following Technical Note), it will be our professional judgment that the permitting test would be met. Our measurements, forecasts, and observations and common sense persuade us that the increased tax base and revenues for some jurisdictions would outweigh the costs in others, and that private sector increase in personal income and retail sales would outweigh the costs to private employers faced with training costs and any other frictional costs of competing for employees with the relatively high-paying Crandon Project. It is explicitly assumed here that there would be largely continuous operation and continuity of property and net proceeds tax revenue for many years, even though there would be an eight-year lag for the net proceeds tax.

But the law does not specify financial impact, it says economic impact.

A Fiscal Impact Test

Fiscal impacts are basically the public sector (only) share of financial impacts. If the law set the test as one of ". . . no net adverse fiscal impact . . .," our professional judgment is that, given the same explicit assumption above, the test would probably be met if the Investment and Local Impact Fund has the resources to overcome local revenue shortfalls. However, among the uncertainties mentioned in the Introduction to this report, the uncertainty about the amount, timing, and allocation of funds from the Investment and Local Impact Fund (Section 70.395, Wisconsin Statutes), particularly the discretionary funds, could be a potential negative impact to jurisdictions not receiving Project-related revenues because of timing or location.

But the law does not specify fiscal impact, it says economic impact.

The Statutory Test, As Written, Is Confusing

In our professional judgment, the test, specifying ". . . economic impact . . ." is confusing. Considering the great uncertainties and the great number of socioeconomic variables to be measured or described in a comparison of economic costs and benefits (see Technical Note), these impacts simply cannot be clearly and credibly described, evaluated, and compared.

We believe this conclusion is supported by EMC's clear statement that they cannot now complete their economic feasibility study to help determine their go-no go construction decision because of uncertainties about the future. And their feasibility study, a combination analysis involving some laymen's costs and benefits, accounting costs and benefits, and economic costs and benefits, involves far fewer variables than the socioeconomic impacts on the entire study area.

Technical Note

This note presents the standard definitions of costs and benefits (laymen's, accounting, and economic) and will elaborate on and offer examples of four categories of economic costs and benefits. It will also identify some of the factors making the statutory test based on ". . . economic impact" unworkable.

The statutory test presumably meant to require that the net effects of the mine seeking the permit to be neutral or positive. If those effects were substantially negative, the permit should not be granted. This would involve the comparison of costs and benefits to determine the net effect or impact.

Three Concepts of Costs and Benefits

There are three distinct concepts of costs (and their corollary benefits). These are clearly differentiated by Paul Samuelson:

1. The man in the street or laymen's concept covers costs that are actual cash payments; the corollary benefits are income in cash or in kind. These are usually compared for decision-making by households and small units of government.
2. The accounting concept is more complex. It separates capital and expense costs, it includes depreciation costs and allocated overhead costs, and it covers benefits from changes in inventory valuations and "good will."
3. The economic concept includes these plus the idea that costs are forgone opportunities. That is, if you spend money on something now, what are you giving up now and in the future

(economic cost)? Or what are you receiving now and in the future that you value (economic benefits)?⁶

The financial impact test hypothesized earlier would involve a combination of laymen's and accounting costs and benefits. The equally hypothetical fiscal impact test would use largely the laymen's concept since it would involve only local government in the area and would omit the benefits and costs to private sector firms using at least some of the accounting concept.

Four Types of Costs and Benefits

Probably the most diligent work on economic cost and benefit identification and comparison has been the cost-benefit and cost-effectiveness study at or in collaboration with the RAND Corporation, the think tank originally established by the U.S. Air Force and now supported by a number of government agencies and foundations. A RAND book by Gene Fisher lists four categories of economic costs and benefits, and goes on to describe them in lengthy and abstract detail.⁷ Fisher's categories are shown below, clarified with examples by DRI:

1. Dollar expenditures (and income); e.g., payments on a home mortgage, payroll checks issued by public or private employers; a payroll or retirement benefit check or the receipt of tax payments or intergovernmental transfers by a local government are benefits.
2. Other costs (and benefits) that can be evaluated in dollars; e.g., the cost of inadequate road maintenance might be estimated from a survey giving data for extra costs to highway users for car repairs or accident costs resulting from undermaintenance (a simpler approach might be to compare the actual maintenance expenditures with the amount needed for adequate maintenance--the difference would be the monetized cost); the dollar value of recreation benefits to a person might be estimated from any income given up to have the time for recreation, or, in some cases, the reduction in health care costs from health improving recreation.

⁶Samuelson's status as expressing the consensus of most economists is probably better attested by the popularity of his elementary economics textbook--the most used, most reprinted text in the Western world--than by his receipt of one of the first Nobel prizes for economics. This explanation of the three concepts is based on that text. Paul A. Samuelson, Economics, Eighth Edition, New York: McGraw-Hill, 1970, pp. 449 ff.

⁷Gene H. Fisher, Cost Considerations in Systems Analysis, New York: American Elsevier, 1971, pp. 41 ff.

3. Other costs (and benefits) that can be quantified, but not in dollars; e.g., using the recreation example again, hours spent in satisfying recreation might measure a benefit, as might a reduction in hours spent getting access to that satisfying recreation. Costs may be quantified in increases in crime rates or auto accident rates--in both cases, monetizing those costs may be difficult and controversial. The value of a human life lost from such violent activities is particularly difficult to reach a standard cost on.
4. Other nonquantifiable costs (and benefits). These may be indicators of the effects of added family or community stress or conflict, but there are no generally accepted measures of such economic costs. However, if some action is apt to contribute to these, such costs should be identified. Similarly, the benefits of more recreational diversity, more varied shopping opportunities, larger library holdings are economic benefits, albeit generally nonquantifiable.

The Practical Difficulties of the Statutory Test

Economic impact or cost-benefit analysis becomes even more complex when the necessary comparison is made between costs (including cash outlays) probably incurred soon, and benefits (including additional tax revenues) which may be received in the future.

In economic analysis, the bird in the hand philosophy is applied: A dollar available now has more utility or value than one or more dollars which may be received in return for it in the future. This is usually handled by comparing the stream of costs (present and future) with the stream of benefits expected (present and future), and by discounting those costs and benefits by some percentage rate reflecting the uncertainty about future events.

The discount rate may be relatively low, i.e., reflecting the current cost of borrowed money, if the event (in this case, the Crandon Project and its consequences) can be counted on to follow a precise schedule. The more uncertainty, the more risk in estimating the future, and a risk premium may boost the discount rate substantially.

The effect of this is that any activity with substantial and definite early costs and only uncertain or distantly future benefits may not show a very favorable comparison of the present value of the benefits (highly discounted) and the present value of the more immediately incurred costs (less discounted).⁸

⁸R. Sugdon and A. Williams, The Principles of Practical Cost-Benefit Analysis, Oxford: Oxford University Press, 1981, particularly pp. 7 ff on time preferences and subsequent explanation of discount rates and risk premiums.

Great uncertainties were described in the Introduction. We have earlier mentioned specific uncertainties making it impossible for EMC to do their simpler accounting-economic analysis of Project feasibility at this time, e.g., the status of the national economy, the international metals and money markets at that uncertain time in the future when the Project might actually go into construction.

The statutory test is also made difficult by the ambiguity and lack of statutory or regulatory interpretation of such imprecise phrases as ". . . substantial adverse . . ." and ". . . the area reasonably expected to be most impacted. . . ." These could be defined; the definitions might vary with the concept actually used for identifying and comparing costs and benefits: laymen's, accounting, or economic.

TABLE 40

Public Facility and Service Costs 1985-2016 (Without-Project Scenario)
(Thousands of 1982 Dollars)

	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1982	4362	612	70	192	202
1985	4379	598	77	204	205
1986	4381	600	77	203	205
1987	4411	606	88	214	216
1988	4413	602	77	203	205
1989	4415	604	77	203	205
1990	4418	605	77	203	205
1991	4420	606	77	203	205
1992	4422	608	77	203	205
1993	4425	609	77	203	205
1994	4445	610	77	203	205
1995	4447	612	77	202	205
1996	4450	613	77	202	205
1997	4452	614	77	202	205
1998	4454	616	77	202	205
1999	4457	617	77	202	205
2000	4459	618	77	202	205
2001	4469	620	77	202	205
2002	4445	621	77	202	205
2003	4447	623	77	202	205
2004	4450	624	77	202	205
2005	4452	625	76	201	205
2006	4446	627	76	201	205
2007	4449	628	76	201	205
2008	4451	629	76	201	205
2009	4444	631	76	212	216
2010	4447	632	76	201	205
2011	4449	634	76	201	205
2012	4451	635	76	201	205
2013	4454	636	76	201	205
2014	4447	638	76	200	205
2015	4450	639	76	200	205
2016	4457	641	76	200	205

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TABLE 41

Public Facility and Service Costs 1985-2016 (Without-Project Scenario)
(Thousands of 1982 Dollars)

	Langlade County	Antigo City	Antigo Town	Elcho
1982	7710	5524	183	189
1985	7737	5290	192	187
1986	7749	5310	192	187
1987	7814	5447	203	198
1988	7826	5466	192	187
1989	7838	5485	192	187
1990	7850	5504	192	187
1991	7862	5524	192	187
1992	7874	5543	192	188
1993	7915	5410	192	188
1994	7927	5467	203	188
1995	7940	5486	192	188
1996	7952	5506	192	188
1997	7964	5377	192	188
1998	7976	5397	192	188
1999	8001	5417	192	188
2000	8014	5437	192	188
2001	8026	5507	192	193
2002	7984	5409	192	188
2003	7996	5430	192	188
2004	7997	5482	192	188
2005	8009	5502	192	188
2006	8034	5523	192	188
2007	8047	5544	192	188
2008	8030	5612	192	188
2009	8042	5596	192	188
2010	8070	5617	192	188
2011	8082	5638	192	188
2012	8095	5659	192	188
2013	8107	5680	197	188
2014	8120	5701	192	188
2015	8132	5692	192	188
2016	8131	5713	192	188

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TABLE 42

Public Facility and Service Costs 1985-2016 (Without-Project Scenario)
(Thousands of 1982 Dollars)

	Oneida County	Crescent	Newbold	Pelican	Pine Lake	Rhinel.
1982	8670	174	244	254	277	4653
1985	8860	184	270	251	289	4500
1986	8331	186	272	254	292	4495
1987	8398	204	290	265	300	4522
1988	8438	191	277	269	302	4517
1989	8478	193	280	272	305	4397
1990	8519	195	282	276	308	4392
1991	8427	198	285	292	311	4387
1992	8468	200	287	288	309	4382
1993	8509	202	290	292	312	4376
1994	8550	213	299	295	324	4386
1995	8592	215	301	299	327	4381
1996	8633	218	304	290	330	4376
1997	8686	220	307	347	333	4370
1998	8728	223	309	367	336	4365
1999	8770	217	306	354	330	4360
2000	8813	220	309	358	333	4355
2001	8865	234	317	363	348	4350
2002	8870	225	315	383	340	4312
2003	8913	228	318	371	343	4307
2004	8956	231	320	375	346	4287
2005	9011	234	323	379	350	4282
2006	9026	236	326	400	353	4285
2007	9070	239	329	388	356	4280
2008	9114	253	343	392	376	4274
2009	9158	245	335	411	363	4269
2010	9193	248	338	415	367	4264
2011	9237	251	342	420	370	4251
2012	9296	254	345	425	374	4246
2013	9341	257	348	437	377	4249
2014	9387	260	351	442	381	4244
2015	9433	274	365	447	396	4239
2016	9478	266	357	452	388	4233

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TABLE 43

Public Facility and Service Costs 1985-2016 (Impact Scenario)

	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1985	4384	599	77	204	205
1986	4555	622	79	229	232
1987	4640	637	91	246	249
1988	4805	658	82	255	260
1989	4858	669	83	258	265
1990	4708	654	81	232	238
1991	4704	654	81	232	237
1992	4694	652	81	231	237
1993	4696	653	81	231	237
1994	4717	655	81	231	237
1995	4719	656	81	231	237
1996	4722	658	80	231	237
1997	4724	659	80	231	237
1998	4727	660	80	231	237
1999	4729	662	80	231	237
2000	4731	663	80	230	237
2001	4742	664	80	230	237
2002	4717	666	80	230	237
2003	4720	667	80	230	237
2004	4722	669	80	230	237
2005	4724	670	80	230	237
2006	4719	671	80	230	237
2007	4721	673	80	230	237
2008	4724	674	80	230	237
2009	4717	676	80	241	248
2010	4720	677	80	229	237
2011	4722	678	80	229	237
2012	4694	676	80	225	233
2013	4586	662	78	212	219
2014	4504	650	77	205	210
2015	4462	643	76	201	206
2016	4459	641	76	200	206

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TABLE 44

Public Facility and Service Costs 1985-2016 (Impact Scenario)

	Langlade County	Antigo City	Antigo Town	Elcho
1985	7741	5293	192	187
1986	7843	5377	193	194
1987	7958	5557	206	207
1988	8087	5671	197	203
1989	8160	5746	199	205
1990	8122	5742	199	200
1991	8125	5752	198	200
1992	8114	5749	198	199
1993	8156	5616	198	199
1994	8168	5673	209	199
1995	8180	5692	198	199
1996	8192	5712	198	199
1997	8205	5583	198	199
1998	8217	5603	198	199
1999	8242	5623	198	199
2000	8255	5694	198	199
2001	8267	5714	198	204
2002	8225	5616	198	199
2003	8258	5637	198	199
2004	8238	5609	198	200
2005	8251	5710	198	200
2006	8276	5730	198	200
2007	8288	5751	198	200
2008	8272	5820	198	200
2009	8284	5804	198	200
2010	8312	5825	198	200
2011	8325	5846	198	200
2012	8318	5853	198	199
2013	8256	5817	201	195
2014	8194	5772	194	192
2015	8154	5714	193	189
2016	8135	5717	192	189

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TABLE 45

Public Facility and Service Costs 1985-2016 (Impact Scenario)

	Oneida County	Crescent	Newbold	Pelican	Pine Lake	Rhinel.
1985	8865	184	270	251	289	4501
1986	8438	180	276	260	297	4540
1987	8548	207	297	274	307	4576
1988	8704	196	289	285	316	4603
1989	8792	199	294	292	321	4486
1990	8753	201	293	293	321	4433
1991	8658	203	296	309	324	4426
1992	8687	205	298	304	321	4418
1993	8729	207	301	308	324	4413
1994	8770	210	309	311	336	4422
1995	8811	220	312	315	339	4417
1996	8853	223	315	306	342	4412
1997	8906	225	317	363	345	4407
1998	8948	228	320	383	348	4402
1999	8990	222	317	371	343	4396
2000	9033	225	320	375	346	4391
2001	9085	239	328	379	360	4386
2002	9090	230	325	399	352	4349
2003	9133	233	328	387	355	4344
2004	9177	236	331	391	359	4323
2005	9231	238	334	395	362	4318
2006	9246	241	337	416	365	4321
2007	9290	244	340	404	369	4316
2008	9334	258	354	408	388	4311
2009	9378	250	346	427	376	4306
2010	9413	253	349	431	379	4301
2011	9458	256	352	436	383	4288
2012	9493	258	354	439	385	4279
2013	9451	260	353	445	384	4271
2014	9435	261	353	445	384	4254
2015	9443	274	366	448	396	4242
2016	9480	266	358	452	388	4234

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TABLE 46

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1985	5	1	0	1	1
1986	174	22	2	26	27
1987	229	31	3	32	34
1988	392	55	5	52	56
1989	442	65	6	55	60
1990	290	49	4	29	33
1991	284	48	4	29	32
1992	272	45	4	28	32
1993	272	45	4	28	32
1994	272	45	4	28	32
1995	272	45	4	28	32
1996	272	45	4	29	32
1997	272	45	4	29	32
1998	272	45	4	29	32
1999	272	45	4	29	32
2000	272	45	4	29	32
2001	272	45	4	29	32
2002	272	45	4	29	32
2003	272	45	4	29	32
2004	272	45	4	29	32
2005	273	45	4	29	32
2006	273	45	4	29	32
2007	273	45	4	29	32
2008	273	45	4	29	32
2009	273	45	4	29	32
2010	273	45	4	29	32
2011	273	45	4	29	32
2012	242	41	3	25	28
2013	132	25	2	11	13
2014	57	12	1	4	5
2015	12	3	0	0	1
2016	2	1	0	0	0

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TABLE 47

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Langlade County	Antigo City	Antigo Town	Elcho
1985	4	3	0	0
1986	24	67	2	6
1987	144	110	3	9
1988	261	205	5	15
1989	322	261	7	18
1990	272	233	7	13
1991	262	223	7	12
1992	240	206	6	11
1993	240	206	6	11
1994	240	206	6	11
1995	240	206	6	11
1996	241	206	6	11
1997	241	206	6	11
1998	241	206	6	11
1999	241	207	6	11
2000	241	207	6	12
2001	241	207	6	12
2002	241	207	6	12
2003	241	207	6	12
2004	241	207	6	12
2005	242	207	6	12
2006	242	207	6	12
2007	242	208	6	12
2008	242	208	6	12
2009	242	208	6	12
2010	242	208	6	12
2011	242	208	6	12
2012	223	194	6	11
2013	148	137	4	7
2014	74	70	2	3
2015	22	22	1	1
2016	4	4	0	0

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TABLE 48

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Oneida County	Crescent	Newbold	Pelican Pine Lake	Rhinel.
1985	4	0	0	0	1
1986	107	2	4	5	45
1987	150	3	7	8	54
1988	266	5	12	16	86
1989	314	6	14	20	89
1990	235	5	11	17	41
1991	231	5	11	17	39
1992	220	5	11	16	36
1993	220	5	11	16	36
1994	220	5	11	16	36
1995	220	5	11	16	36
1996	220	5	11	16	36
1997	220	5	11	16	36
1998	220	5	11	16	36
1999	220	5	11	16	36
2000	220	5	11	16	36
2001	220	5	11	16	36
2002	220	5	11	16	36
2003	220	5	11	16	36
2004	220	5	11	16	36
2005	220	5	11	16	36
2006	220	5	11	16	36
2007	220	5	11	16	36
2008	220	5	11	16	36
2009	220	5	11	16	37
2010	221	5	11	16	37
2011	221	5	11	16	37
2012	197	4	10	14	34
2013	109	3	5	7	22
2014	48	1	2	3	11
2015	11	0	1	1	3
2016	2	0	0	0	1

TABLE 49

School District Costs, Without Project Scenario, 1985-2016
(Thousands of 1982 Dollars)

District:	Crandon	Elcho	Antigo	Rhineland
1985	2163	1305	8543	8599
1986	2131	1285	8429	8515
1987	2099	1265	8312	8426
1988	2080	1251	8243	8387
1989	2053	1234	8144	8317
1990	2052	1232	8150	8354
1991	2055	1232	8172	8407
1992	2051	1229	8166	8433
1993	2065	1236	8231	8533
1994	2078	1243	8293	8631
1995	2077	1241	8299	8670
1996	2075	1239	8297	8703
1997	2069	1233	8282	8722
1998	2062	1227	8264	8738
1999	2046	1216	8210	8717
2000	2012	1195	8082	8615
2001	1979	1174	7959	8519
2002	1938	1148	7801	8386
2003	1906	1128	7681	8292
2004	1873	1107	7559	8195
2005	1856	1096	7499	8165
2006	1840	1085	7441	8137
2007	1824	1074	7384	8110
2008	1810	1065	7335	8092
2009	1801	1058	7310	8100
2010	1790	1050	7272	8094
2011	1781	1044	7245	8101
2012	1775	1039	7226	8116
2013	1770	1035	7214	8141
2014	1776	1037	7248	8217
2015	1812	1057	7402	8431
2016	1844	1074	7542	8631

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TABLE 50

School District Costs, Impact Scenario, 1985-2016
(Thousands of 1982 Dollars)

District:	Crandon	Elcho	Antigo	Rhineland
1985	2175	1307	8552	8610
1986	2486	1345	8652	8793
1987	2587	1347	8664	8819
1988	2936	1394	8891	9084
1989	3050	1399	8955	9141
1990	2772	1351	8861	8975
1991	2762	1348	8857	9016
1992	2725	1336	8790	9012
1993	2739	1343	8856	9112
1994	2753	1350	8919	9210
1995	2752	1348	8924	9249
1996	2749	1345	8923	9282
1997	2743	1340	8909	9301
1998	2737	1335	8891	9318
1999	2721	1324	8837	9296
2000	2687	1302	8709	9195
2001	2654	1282	8586	9099
2002	2613	1256	8429	8966
2003	2582	1236	8309	8872
2004	2549	1215	8187	8775
2005	2532	1204	8128	8745
2006	2516	1193	8070	8718
2007	2500	1182	8014	8691
2008	2486	1173	7965	8673
2009	2478	1167	7940	8681
2010	2467	1159	7902	8675
2011	2458	1152	7875	8682
2012	2377	1137	7809	8635
2013	2103	1075	7609	8432
2014	1922	1066	7446	8346
2015	1845	1065	7463	8462
2016	1850	1076	7554	8637

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TABLE 51

School District Costs, Difference Between Without-Project and Impact Scenarios, 1985-2016
(Thousands of 1982 Dollars)

District:	Crandon	Elcho	Antigo	Rhinolander
1985	13	2	10	11
1986	354	60	223	279
1987	488	82	352	393
1988	857	143	648	697
1989	998	166	811	824
1990	720	119	711	621
1991	707	115	686	609
1992	674	107	624	578
1993	674	107	625	579
1994	674	107	625	579
1995	675	108	626	579
1996	675	108	626	579
1997	675	108	626	579
1998	675	108	626	579
1999	675	108	627	579
2000	675	108	627	580
2001	676	108	627	580
2002	676	108	628	580
2003	676	108	628	580
2004	676	108	628	580
2005	676	108	629	580
2006	676	108	629	581
2007	677	108	629	581
2008	677	108	630	581
2009	677	108	630	581
2010	677	108	630	581
2011	677	108	630	581
2012	603	98	584	519
2013	333	60	394	292
2014	146	29	199	129
2015	33	8	61	30
2016	6	2	12	6

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III.E PUBLIC SERVICES AND FACILITIES

The projections of public costs in Section III.D above reflect the continuation of existing standards for public services and facilities in the various study area jurisdictions under both the without-project and impact scenarios. The unavoidable limitations to this approach in assessing future jurisdiction costs under the impact scenario were also noted earlier. This section provides additional discussion of the most prominent public service and facility requirements and certain non-monetary effects of the Project that may be manifested under the without-project and impact scenarios. As discussed in Section III.D above, the costs associated with the new public facilities and services identified here would be above and beyond the jurisdiction costs shown in Section III.D, although some may be substituted for the outlays required to meet existing standards.

Under the impact scenario, Forest County is the only jurisdiction that will require a new capital facility. The county will require updated facilities for the sheriff's department, particularly a new jail holding facility. This is a deficiency that could likely be tolerated under the without-project scenario, but which will pose approximately \$1 million in additional costs under the impact scenario. The Forest County Sheriff's Department will also require between \$500,000 and \$800,000 per year for additional vehicles and personnel during the construction phase. Similarly, the Rhinelander Fire Department is currently in need of a new pumper, and this \$185,000 improvement would very likely emerge as a priority during the Project construction period. The Rhinelander School District's future costs under the without-project and impact scenarios do not reflect the space utilization problems at the elementary level even though overall capacity is judged to be adequate.

III.E.1 Human Services

The projections of public costs presented in Section III.D above include the increased costs that will be incurred at the county level for statutorily required human services (e.g., mental health, alcohol and drug abuse, social services, youth services), as well as increased costs for certain nonstatutory service and program areas in which the counties have traditionally been involved (e.g., public health, emergency medical services, senior services, school health programs). The average per capita cost factors that have been used to estimate future costs under both the without-project and impact scenarios are, again, derived from prevailing (baseline) standards and levels of expenditures. Any deficiencies or unmet needs reflected in these existing per capita cost factors have, therefore, necessarily been carried forward and reflected in the projections of public costs as well.

The impacts of the Crandon Project on county human services delivery systems, which basically result from a fairly discontinuous growth in study area population, will be felt against a backdrop of reduced federal and state support and increased county funding responsibility. Federal government and state government efforts to cut costs have taken the form of direct budget cuts to programs, the establishment of strict eligibility requirements for services, and strict auditing of local eligibility determinations. For example, eligibility requirements for federal funds to support children in substitute care arrangements are so strict that the Oneida County Social Services Department estimates that only 25 percent of these children are ever eligible for federal funds. Ineligible children become a county expense. At the state level, Wisconsin Department of Health and Social Services rules making certain classes of nursing homes ineligible for state funds transfers the responsibility for these clients back onto the county supportive home care case load and budget with no additional funds passed on to the counties.

In addition to cutting costs, the federal government and state government have increased the demands on county human services agencies through laws and administrative rules which require that services be provided. For example, in 1984 Wisconsin counties were mandated to provide an increased number of dispositional alternatives under the state juvenile code, while state funding to counties for juvenile delinquency services was limited.

This recent trend toward increasing county participation in human services funding has been reflected in sharp increases in the social services budgets of Forest, Langlade, and Oneida counties. For example, Forest County social services expenditures increased 86.5 percent between 1982 and 1983, and there was an increase in the Langlade County share of the social services budget of 110 percent between 1981 and 1982. The total cost of statutorily required social services programs to Oneida County increased 134 percent from 1980 to 1983. A continuation of this trend will present a major fiscal and administrative challenge to Forest, Langlade, and Oneida counties.

The following overview of human service impacts of the Crandon Project is not inclusive of all human service requirements, but identifies some of the prominent program and service needs which are reflected in the costs portrayed in Section III.D. These service areas of concern include mental health, alcohol and drug abuse, social services, youth services, emergency medical services, and public health services.

Mental Health

Under the impact scenario, the Northwoods Guidance Center in Rhineland and its satellite office in Crandon will require a full-time Ph.D. psychologist, a case manager, and clerical staff support. The office in Crandon will need to be staffed two to three times per week,

particularly during the construction period. Neither Oneida nor Forest counties have a resident psychiatrist and they are currently designated as federal health manpower shortage areas for psychiatric care. While the provision of psychiatric services is not a county obligation, this deficiency in psychiatric services needs to be recognized.

Alcohol and Drug Abuse

The Lakeland Council on Alcoholism and Other Drug Abuse is a private, nonprofit organization, and the council's needs for increased professional staff, improved facilities, and support staff are only partially reflected in the public cost calculations presented earlier. About 60 percent of the council's annual revenue is obtained from the Human Services Board of Forest, Oneida, and Vilas Counties, and while the cost for continuing the contract relationship between Lakeland and the two counties is included in the earlier public cost projections, a portion of the balance of Lakeland's operating budget will constitute an important private impact of the Crandon Project.

Social Services

The Forest County Department of Social Services will require two additional social workers and the Langlade County Department of Social Services will require one additional social worker and additional facility space under the impact scenario. The Oneida County Social Services Department will require additional funds for institutional care and will require two new social workers, two social service aides, and one additional support staff member under the impact scenario.

Public Health Services

The Oneida County Nursing Service will require two additional nurses and one full-time counselor and increased funding for its maternal-child health program under the impact scenario.

Environmental Health

The projections of public costs presented in Section III.D do not include the potential future costs to Forest, Oneida, and Langlade counties of the counties' assumption of increased sanitation and inspection responsibilities.

There are ten state agencies that have jurisdiction over inspections and licensing relating to water supplies, sewage, solid waste, recreational facilities, campgrounds, mobile home parks, swimming pools, hotels and motels, and restaurants and bars.

The Division of Health, Department of Health and Social Services, has a regional office in Rhinelander which is responsible for 16 counties, including Forest, Langlade, and Oneida. Although the state is planning to add personnel in the regional office, it is also encouraging

counties to become involved in environmental sanitation. Oneida, Forest, and Langlade counties are currently underserved in the area of environmental health, and the population growth associated with the Crandon Project may occasion further costs to the counties beyond those projected in Section III.D if environmental health becomes an area of health service delivery where the counties will have to assume increased administrative and fiscal responsibility.

III.E.2 Transportation

DRI has not replicated the traffic volume forecast developed by EMC for the study area's major highway system. A separate transportation model was used by EMC to estimate traffic volumes on a portion of the system of rural federal, state, and county highways within the local study area. The resulting traffic volumes were used to assess potential congestion levels and roadway improvements attributable to the incremental Project traffic. Growth in highway traffic as projected by EMC is consistent with DRI's projections of population and employment growth under both the without-project and impact scenarios.

Forest County's road department, however, will need approximately \$1 million per year for two to three years during the construction period for equipment and about \$300,000 per year for additional personnel. Approximately \$500,000 will be required to rebuild the stub of County Highway S from State Highway 55 to U.S. Highway 8, unless the Wisconsin Department of Transportation incorporates that stub into the state highway system without first requiring it to be brought up to state standards.

Other prospective effects of the Project are less certain. An influx of business-related visitors (i.e., sales people and entrepreneurs) during the construction period may lead to increased airline service in and out of Rhinelander. County and town roads which are of marginal quality may be totally inadequate when faced with even a small increase in traffic; if such increase is Project-related, this would probably be considered a Project-related impact under a "straw that broke the camel's back" rule. Refined allocation of the costs among different sources is difficult. Another potential traffic problem would arise from traffic back-ups behind stopped school buses loading or unloading children. This problem would probably occur only if Project shift changes conflicted with school bus schedules.

One Project effect is apt to be heavier traffic on State Highway 55 through Mole Lake, particularly at shift start or change time. This will bring more people to the vicinity of the Sokaogon Chippewa commercial enterprises, and may increase their volume of business. On the other hand, it will present an increased safety hazard if the custom of walking on the highway, particularly in the winter, continues.

A unique transportation problem under the impact scenario could also emerge from rail transport of any toxic, inflammable, or otherwise hazardous material.

III.F SOCIOCULTURAL IMPACTS

Sociocultural change is an inevitable outcome of the Crandon Project. New job opportunities could emerge for existing residents in the study area and may occasion the retention of young residents and new entrants to the work force who might otherwise leave. The magnitude of this beneficial impact of the Project is difficult to project. DRI has estimated that between 40 and 50 percent of the total operations work force could be filled by local residents; however, the number of positions available to new entrants to the work force would be small.

The attraction of higher paid jobs during the construction period and the early operations phase of the Project could result in higher public service (and private sector) employee turnover rates in the study area. High turnover rates will also be associated with the Project operations work force, particularly in the early years of the operations phase, and this will contribute to higher transience in the study area labor force.

The Project is likely to create a slight shift in the area's occupational structure. Along with the predominance of mining and construction activities, trade and other services are expected to increase in relative importance. The importance of existing retail trade centers in the study area--Rhinelander, Antigo, and ultimately Crandon--would also increase.

Of concern to many of the employers interviewed by DRI is the potential for wage inflation and loss of employees to the Project. According to 1984 study area employment data and EMC wage estimates, large wage differentials are likely to exist between Project and nonproject jobs. Although significant wage inflation may be dampened due to the large supply of unemployed and underemployed in the study area, the loss of some skilled workers to Project jobs will occur. This turnover, coupled with expected turnover of Project jobs, could be disruptive for study area employers, and for public agencies serving the dependents of work force families.

The absolute level and rate of population growth induced by the Project would be the major determinants of social change in the study area. The current sense of community familiarity and a prevailing atmosphere of informality may be transformed somewhat, not because of the aggregate size of the new study area population, but because of a potential new demographic composition. The study area has had, for example, a relatively homogeneous population for decades. The three counties' racial composition, according to the 1980 census, was nearly 99 percent white and approximately one percent Native American. The

result is a fairly well-defined social order characterized by a great degree of informality, albeit with a few intergovernmental conflicts among jurisdictions, among the traditional residents in the study area communities. Integration of newcomers into the community could be difficult, at least initially, if these in-migrants are from points outside the Upper Great Lakes area.⁹ Even at higher than expected levels of in-migration, however, they will not be numerous enough to affect the entire study area unless they concentrate in a few small communities, particularly during construction peaks.

As the Crandon Project is developed and development-related growth occurs, the quality of public education could be enhanced due to the increased assessed value and school taxes which would be paid by the Project to the Crandon School District, and through mine impact funds assuming these are apportioned to other school districts. In the early years of the Project, the Antigo junior/senior high school will clearly need refurbishing, and Rhinelander School District elementary schools will also exceed capacity, and these jurisdictions will benefit very little from existing taxes related to the Project. Increases in school age population, projected for all four districts, may foster increased truancy and discipline problems, particularly during the construction period.

An EMC-sponsored survey of 778 people in the study area revealed that permanent residents, seasonal residents, and visitors view the Project differently. While most visitors stated that the Project would have little impact on their plans to visit the area, seasonal residents were more likely to suggest that there was potential for negative effects. Permanent residents generally expect the Crandon Project to have positive effects on their communities, particularly with respect to employment opportunities, wages and increased opportunities for trade and services.

Public meetings involving study area residents have exhibited a discernible difference in attitude between seasonal residents and the permanent residents. The seasonal residents focus, for the most part, on the Project's potential disruption of the rural character of the area and the potential for environmental damage. Although permanent residents were also concerned with natural environmental issues, the EMC survey revealed that these residents were more favorably disposed to the Project's potential economic benefits.

Clearly the most significant sociocultural effects of the Crandon Project will be associated with the Native American communities. With existing tensions between the white majority and the Native Americans rather high according to 1984 election year rhetoric, this can lead to potential problems. Perceived threats to the Native Americans'

⁹As noted earlier, nearly all in-migrant Project employees are expected to come from Michigan, Minnesota, or other parts of Wisconsin.

well-being or threats of discrimination against them, whether real or imagined, may lead to heightened tension or conflict.

III.G CUMULATIVE IMPACTS

DRI's analysis of development trends in the region of the Crandon Project revealed no industrial development, either planned or impending, that would be the source of impacts cumulative to the impacts of the Crandon Project itself.

Whether or not EMC's permit to mine the Crandon Project is granted, and whether or not the DNR decision is litigated, other future cumulative impacts could result from the precedent that the entire permitting process will have been established. This includes the "testing" of the EIS process and all of the environmental planning and regulatory processes associated with it for a medium-sized mine. Future permit applicants could potentially benefit from EMC's experience, as well as DNR, other state agencies, and the groups, persons, and institutions affected by the Crandon Project.

Even if permitting or tax legislation is changed in the future, this process will offer baseline information on Wisconsin's mine permitting process and this may expedite future mine permit applications.

CHAPTER IV

ALTERNATIVES TO THE PROPOSED ACTION

Many of the adverse impacts of the Crandon Project may be subject to mitigation. The term mitigation is defined in the National Environmental Policy Act and includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

Responsibility for mitigation activities, programs, or policies can be assumed voluntarily or under special legislative provisions. The responsible parties in the context of the Crandon Project include, but are not necessarily limited to, EMC, the state of Wisconsin and its instrumentalities, local civic organizations and governmental units, or some consortium of these various parties.

It is obviously not possible to anticipate all the beneficial or adverse consequences the Project will have on the local study area environment or the range of mitigation strategies; successful impact mitigation has proven elsewhere to be the outcome of a gradual and continual adaptation and cooperation by the various interested parties.

The following discussion identifies what may be the most disruptive or potentially most troublesome impacts that could be manifested during the construction period, during a temporary suspension or premature termination of the Project, during the period of Project operations, and during the closure phase. Sample policy and programmatic strategies and responsibilities are identified that could mitigate the impacts identified. The discussion is not inclusive of all impacts or assignments of mitigation responsibility throughout the life of the Project, nor is it intended to accentuate the Project's adverse socioeconomic effects. The discussion is intended to serve as an organizing device for ongoing public evaluation of impact mitigation requirements and possibilities.

IV.A CONSTRUCTION PHASE

During the construction period the most significant adverse impact of the Project could be a discontinuous demand for housing and public services and front-end financing problems confronting local governments. Three parties--EMC, the Mining Impact Board, and local government--could individually or collectively mitigate the identified impact by a variety of measures. However, the MIB is expected to have insufficient funds at

this time, and thus needs a funding source to effectively mitigate any adverse impacts. For example, public front-end financing can be accommodated by direct cash payments as well as by bond or loan guarantees.

The front-end financing of public capital and service needs by the cash prepayment of property tax obligations and of state mineral severance taxes analogous to the net proceeds tax is a mitigation measure which has been implemented with some success in a number of states. It is, however, an option which is costly to a project sponsor as it constitutes, in effect, an interest-free loan to the taxing jurisdiction. Also, the company is further harmed by its inability to deduct such payments from federal income tax liability until a local property tax obligation arises (i.e., after the project construction has occurred, the property is assessed, and the tax levied).

It should be noted, moreover, that the option of prepayment of local property tax obligations is not now specifically authorized by state statute. If tax prepayment is selected as a mitigation measure, before any such payment of funds by EMC and before their use by affected local jurisdictions, the rights and obligations of the parties should be recognized and defined by state statute.

In some circumstances, project sponsors have found more cost-effective than cash prepayments the option of direct construction of facilities to be dedicated to public use. Clearly, a preconstruction mitigation plan for the Crandon Project would require negotiation and agreement among the interested parties.

DRI has observed in similar large-scale construction projects the effect of disproportionate in-migration associated with public announcements of employment opportunities. The Colony Shale Oil Project in Colorado and the Alaskan Oil Pipeline Project are examples of resource development projects in which job announcements by contractors resulted in the paradox of increasing unemployment occurring simultaneously with dramatically increasing employment opportunities. To avoid this situation, it is imperative that employment announcements, particularly by companies which have no direct connection with the Project permitting process, be carefully targeted in terms of both geography and skill levels.

EMC, the Mine Impact Board, local government, and private organizations could ease any transitional conflict associated with in-migrant construction workers, their families, and existing residents through sponsorship of adult and youth athletic programs and grants and loans to ensure the availability of indoor recreation and library resources and a minimization of drug and alcohol abuse.

The Mine Impact Board could be a predictable source of judicious financial assistance administered with the benefit of explicit criteria and sound intelligence on relative or competing community needs. This

type of intelligence can best be obtained with local government and EMC's joint participation in or sponsorship of a formal but simple monitoring program that would periodically identify the origin and residential locations of all Project-induced population. Work force surveys or school enrollment surveys are two proven mechanisms whereby a systematic yet relatively convenient measure of population, demographic, and economic change in various study area jurisdictions can be obtained.

IV.B TEMPORARY SUSPENSION OR PREMATURE CLOSURE

Suspension of the Project for a year or more, or the unscheduled termination of the Project during construction or operations would have a disruptive effect on personal and business income and public finance in the study area. In addition to the conspicuous outcome of idled or unemployed EMC work force members, unretired public debt, both revenue bonded and general obligation debt, could become onerous. Out-migration and business failure and layoffs of secondary public and private employees would also exacerbate the effects of an unscheduled shutdown of the Project.

Mitigation solutions in this regard are illusive. The Mine Impact Board would be an immediate and logical source for financial assistance; however, the point at which termination occurred in the Project's life would have an obvious bearing on the Fund's level of reserves.¹ EMC's mitigation responsibility related to an unscheduled termination of the Project could take a preventive form by maximizing local study area resident employment at the beginning of the Project through aggressive recruitment, training, and employment practices. More ambitiously, EMC could dedicate funds to purchase any outstanding bonds or notes incurred to finance public improvements, the demand for which was significantly tied to Project-induced growth. Local government jurisdictions could mitigate the fiscal effects of a suspension of the Project by structuring the amortization of any debt over the shortest possible time frame.

IV.C OPERATIONS PHASE

While the sustained operation of the Crandon Project is expected to have a predominantly positive economic effect on the study area as a whole, a work force dominated by in-migrants and the failure of the study area economy to capture a sizable portion of EMC Project expenditures would be a detracting feature of the Project, particularly for many unemployed or underemployed residents of the study area and the state. Mitigation strategies on the part of the state of Wisconsin

¹Declining revenues from the net proceeds tax would in fact be an early signal of diminishing profitability and potential closure of the Project.

could include diligent research and analysis designed to identify industrial sectors and specific companies that could realize the new business potential fostered by the Project. EMC's employment policies will again be important determinants of the beneficial or adverse economic impacts of the Project in the study area and the state.

IV.D CLOSURE PHASE

The scheduled date of closure of the Crandon Project is sufficiently distant to enable the state of Wisconsin (Department of Development) and the various jurisdictions to identify complementary economic development opportunities for residents, communities, and businesses in the study area in order to minimize the effects of a loss of study area jobs and millions of dollars in wage and salary income. However, the likelihood of substitute industry is unknown. EMC may also voluntarily pursue a strategy (one with certain tax advantages) of establishing a nonprofit "Crandon Development Foundation" and endowing it over the early years of the Project. This educational and development foundation could be the source of economic and business development grants and loans during the latter years of the Project, inviting applicants for assistance on the basis of their compatibility to economic diversification needs. The mission of such a tax exempt foundation (which need not be supported by EMC alone) would be the provision of "seed" money to stimulate economic diversification in the study area and the state.

IV.E INTERGOVERNMENTAL COOPERATION

Intergovernmental cooperation can encourage more efficient use of mitigation resources and can be encouraged by any organization able to make funds available on a discretionary basis, e.g., the Mine Impact Board.

There appears to be increasing use of jointly supported facilities and activities for human services. Since state agencies and counties are facing serious reductions in federal funds, these joint ventures should continue and be supported.

The Mine Impact Board is potentially the most important entity for fostering intergovernmental cooperation if it has funding prior to revenue flow from the net proceeds tax to use both for jurisdiction-specific and multijurisdiction needs, i.e., during the construction period.

The North Central Wisconsin Regional Planning Commission has served some of the larger jurisdictions with planning assistance, e.g., downtown redevelopment. It has also offered seminars on growth management. The smaller jurisdictions may find the Commission helpful as a supplier of consulting services or even as an advisor in

determining the type of planning services that are needed for a particular community.

Finally, the North Central Mining Impact Planning Committee and local mining impact committees and the county commissioners' organizations will continue to be important sources of assistance.

CHAPTER V

ANALYSIS OF NATIVE AMERICAN COMMUNITIES IN PROXIMITY TO THE CRANDON PROJECT

This chapter presents the DRI's assessment of the baseline conditions and the socioeconomic consequences of the Crandon Project on the Forest County Potawatomi and the Sokaogon Chippewa Native American communities in northern Wisconsin.

V.A FOREST COUNTY POTAWATOMI

The Forest County Potawatomi community is located near the proposed site for the EMC Crandon mine, mill, and associated facilities. This section of Chapter V describes current socioeconomic conditions in the Potawatomi community as well as future conditions with and without the Project. The topics discussed include history, population, economic conditions, housing, tribal government and finance, community services and facilities, sociocultural characteristics, and impact mitigation alternatives.

Much of the information in this report is based on two DRI surveys of Potawatomi tribal members conducted in December 1984.

V.A.1 General Geographic Description

Forest County Potawatomi tribal lands consist of scattered holdings totaling about 11,786 acres in Blackwell, Lincoln, and Wabeno townships within southeastern Forest County. The community is accessed by State Highway 32 and by roads maintained by the towns. The Potawatomi lands were once a rich hardwood forest area which was subsequently logged out. Thus, most of the tribal lands now consist of second-growth forest vegetation. There are also scattered lakes on the tribal lands. The land is suitable for timber production, but not for agriculture.

Tribal lands are sparsely developed and houses and trailers are scattered. There are two main concentrations of residences: those located in the Stone Lake area (now called Lake Lucerne) near Crandon in Lincoln Township, and those located in Wabeno Township. The two communities are about 20 miles apart. The greater proportion of residences are located in the Stone Lake area as is the tribal hall which contains tribal government offices. The differentiation between the Stone Lake community and Wabeno community is significant socially as well as residentially.

The scattered, isolated nature of the Potawatomi land holdings results from the fact that lands were purchased for the tribe by the U.S. government under a policy intended to stimulate assimilation. In

1914, cutover lands were purchased from four lumber companies with a Congressional appropriation of \$150,000. At that time each person over 18 was allotted 40 acres in staggered sections; however, title to the land was held in trust for the tribe. Although it was intended that the Potawatomi become farmers, the land was unsuitable for this type of development. Cutting timber and tribal employment have been the main sources of employment since the reservation was established.

V.A.2 History¹

According to the traditions of all three tribes, the Potawatomi, Chippewa, and Ottawa were originally one people. All three tribes speak the Algonquian language, and the close similarity of their cultures supports the thesis that their separation occurred within the last 300 years. The name Potawatomi means "People of the place of the fire." Tradition says that long before historic contact, the Potawatomi, Chippewa, and Ottawa kept a perpetual fire. The Potawatomi were the "youngest brother," so that when the two older Chippewa and Ottawa brothers went off to war, the youngest brother was left to keep the fire.

Although archaeological and historical evidence is scant, the traditional histories of the Potawatomi, Chippewa, and Ottawa claim a migration from the eastern seaboard and a splitting of a single people into the three divisions known today. The splitting occurred at the Straits of Mackinac, with the group which later became known as the Potawatomi moving southward into Michigan.

Some of the Wisconsin Potawatomi fled north to the heavily forested areas of Wisconsin rather than be moved west. There they became nomads, occupying public land or territories cut over by lumber companies.

In addition to the Forest County Potawatomi, there are currently some 20 groups who are identified as Potawatomi or who are descended from a Potawatomi group of the 19th Century. They are located in Canada, Oklahoma, Kansas, Michigan, and northeastern Wisconsin. In the United States, there are four federal reservation groups: the Citizen's Band reservation in Oklahoma, the Prairie Band reservation in Kansas, the Hannahville community in Michigan, and the Forest County community in Wisconsin. The western bands are referred to as the "prairie bands." Those of Wisconsin and Michigan are called the "forest bands."

¹This historical overview is taken from a monograph written for the Denver Research Institute by Richard Zeitlin.

V.A.3 Population

Current Conditions

Membership in the Forest County Potawatomi Tribe consists of all persons of one-fourth degree or more Potawatomi Indian blood born to any member of the community, those whose names were on the 1934 census of Wisconsin Potawatomis and who were residing on tribal lands as of 1937 and their descendants, and all those persons enrolled as members of the Forest County Potawatomi Tribe under the 1937 constitution prior to 1982, the effective date of the latest constitution. Table 52 presents information on enrolled members and population living on and adjacent to tribal lands.

Age, Sex, and Education Characteristics of the Resident Population.

The age and sex distribution of this population as shown in Table 53 illustrates that 52 percent of the population is male and 48 percent female. As Table 54 illustrates, the Forest County Potawatomi population has a larger percentage of persons aged 20 and under than either the total American Indian population or the white population. Conversely, they generally have a smaller percentage of persons over 20 than either of the comparison groups.

The Forest County Potawatomi school-aged population, defined as ages five through eighteen, enumerated by the DRI household survey was 146 persons. Seventy were male and 76 were female. Of these, 114, or 78.1 percent, were listed as students. The 5-, 6-, and 18-year-olds had the smallest percentage of the school-aged population listed as students.

The years of school completed by those surveyed who were 25 years of age or older is compared to that of American Indians and the total U.S. population in Table 55. The Forest County Potawatomi have fewer high school graduates and college graduates than both of the other groups. In part, this finding may reflect certain deficiencies in the Crandon School District, where 64 percent of the residences surveyed were located.

Births and Deaths. Vital statistics for the Forest County Potawatomi, which are based on very small numbers and subject to a high degree of random variation, are presented in Table 56.

The data show that Indian mothers tend to have children at earlier ages, thus increasing the growth potential of the population. That the Potawatomi share this characteristic is suggested by the fact that 12 percent of the births between 1978 and 1982 within townships where the Potawatomi reside were to Indian mothers although the Potawatomi are only about 4 percent of the population.

TABLE 52. CHARACTERISTICS OF ENROLLED MEMBERS FOREST COUNTY POTAWATOMI

Year	Total Enrolled Members	No. Living on and Adjacent to Community	No. Living Within Community
1980	600	316	265
1982	NA	399	255
1984	683	466	333
1985	710		

Source: U.S. Department of Interior, Bureau of Indian Affairs. Report of the Labor Force, 1980, 1982, 1984. Personal communication, Ms. Noskoviak, Bureau of Indian Affairs, Ashland, Wisconsin, 3/19/85.

TABLE 53. FOREST COUNTY POTAWATOMI HOUSEHOLD SURVEY:
AGE AND SEX DISTRIBUTION

Age	Male	Female	Total
Under 10	57	50	107
10-19	43	50	93
20-29	37	39	76
30-39	28	20	48
40-49	18	13	31
50-59	14	14	28
60-69	8	2	10
70-79	2	3	5
Over 80	0	0	0

Source: Potawatomi Household Survey, December 1984.

TABLE 54. AGE DISTRIBUTION OF POTAWATOMI, AMERICAN INDIAN,
AND WHITE POPULATIONS

Age	Forest County Potawatomi	American Indians and Alaska Natives, 1980	Whites, 1980
Under 10	26.9%	20.3%	13.6%
10-19	23.4	22.5	16.7
20-29	19.1	19.7	17.6
30-39	12.1	14.0	14.1
40-49	7.8	9.1	10.2
50-59	7.0	6.9	10.8
60-69	2.5	4.4	8.9
70-79	1.3	2.3	5.5
Over 80	0	0.9	2.5

Source: Potawatomi Household Survey, December 1984. U.S. Bureau of the
Census, General Social and Economic Characteristics, U.S.
Summary, 1980.

TABLE 55. YEARS OF SCHOOL COMPLETED, PERSONS 25 AND OVER

Years of School	Forest County Potawatomi	American Indians and Alaska Natives, 1980	Total U.S. Pop- ulation, 1980
8 years or less	23.4%	21.9%	18.3%
1 to 3 years high school	40.9	17.1	15.3
4 years high school/GED	22.6	39.7	34.6
1 to 3 years college	11.7	14.5	15.7
4+ years college	1.5	6.8	16.2

Source: Potawatomi Household Survey, December 1984. U.S. Bureau of the Census.

TABLE 56. LIVE BIRTHS BY AGE OF MOTHER, DEATHS BY AGE, CAUSE OF DEATH
FOR ALL WISCONSIN RESIDENTS AND WISCONSIN INDIANS: 1978-1982

Births ¹			Deaths ²					
Age of Mother	Five Year Average		Age at Death	Five Year Average		Leading Causes	Five Year Average	
	All Races	Indians		All Races	Indians		All Races	Indians
Under			Under			Heart		
20	12.1	25.2	1	1.9	4.4	disease	40.7	33.4
20-24	33.6	39.4	1-14	0.9	3.2	Cancer	21.3	14.3
25-29	34.1	22.0	15-34	4.0	13.7	Accidents	4.6	13.5
30-34	15.8	9.3	35-54	7.6	16.4	Stroke	8.8	6.4
35-44	4.3	4.1	55-64	12.7	16.1	Suicide	1.4	3.1
						Homicide	0.4	1.3
			65-74	22.8	21.1	Cong.		
			75+	50.3	25.0	Anomalies & Peri- natal	1.6	2.1
						Influ- enza & Pneu- monia	2.7	3.4
						All Other Causes	18.4	22.5

¹Per 100 live births.

²Per 100 deaths.

Source: Personal communication, Fred Kranz, Center for Health Statistics,
Wisconsin Department of Health and Social Services, 3/20/85.

Deaths occur for Wisconsin Indians at younger ages than for the Wisconsin population as a whole. Contributing factors could be inadequate health care, sanitation and housing conditions.

Migration. Information from the Potawatomi household survey indicates that there is substantial back and forth migration to the Forest County Potawatomi community. Ninety-five respondents in the survey gave migration histories. Eighty-five of these (89.5 percent) had lived off the reservation at some time. About one-third lived in Forest, Langlade, or Oneida counties, another third lived in rural areas outside the local study area, and one-third lived in cities of over 50,000. By far the majority of people who had lived off tribal lands lived in Wisconsin or adjacent states. The average length of time that was spent living off the reservation was about 7 years.

Sixty-four percent were employed while they lived off the reservation, working in factories, as laborers, in the forestry industry, or serving in the military. The average length of their last job off the reservation was 3.1 years. Most returned to the Forest County Potawatomi community because they liked the reservation environment or they wanted to return to their homeland. Personal reasons such as health, family responsibilities, or retirement were the second most common reason given. Only 7.8 percent said they returned because there was no work where they had lived.

Without-Project Scenario

Economic and housing conditions are major constraints to growth of the Forest County Potawatomi population. Unemployment is extremely high in Forest County, and those tribal members who are employed work primarily for tribal government. Tribal jobs, however, are financed by state and federal government funds which are subject to changes in allocations. Housing conditions on and near tribal lands are also typically crowded and substandard.

Impact Scenario

Anticipation of jobs at the Crandon Project could increase the migration rate of the Forest County Potawatomi before construction starts. Once the Project begins, migration of both former residents and tribal members who have never lived on tribal lands may occur as these people seek Project-related jobs. In addition, some Potawatomi who would otherwise migrate out of the local study area may choose to remain.

Results from the DRI household survey provide some information on potential in-migrants. Respondents were asked if they had any relatives who were now living off tribal lands who might return to seek employment at the Project. Thirty-eight such individuals were identified. All of them were in their working years, between the ages of 16 and 64. Twenty-five of the potential returners were male and 13 were female.

The majority lived in Wisconsin, employed in the construction trades and as laborers. An average of 2.68 family members per worker is associated with each potential migrant, and there is thus a potential for as many as 140 persons to return to the Forest County Potawatomi community if Project employment is secured.

The DRI mail-out survey of 69 off-reservation tribal members also provided information on Project-induced migration. Twenty-seven respondents under this survey said they would seek Project employment. With an average of 2.77 family members and assuming all returned to Forest County, there is an identified potential for 75 additional people as return migrants.

A major constraint to population growth on tribal lands will be the lack of adequate housing. Many returning tribal members will have to seek housing off tribal lands. Other Project-induced population growth in the study area will also affect the Potawatomi as competition for housing, goods, and services in communities adjacent to tribal lands occurs.

V.A.4 Economic Profile

Current Conditions

Employment. The DRI Potawatomi Household Survey obtained information on 178 persons aged 16 and above who were in the labor force. Fifty-seven were employed and 121 (68 percent) were unemployed. Of those unemployed, 79.4 percent reported that they wanted to work. The occupations of the 57 individuals who were employed are shown in Table 57.

The data indicate that the tribe is by far the major source of employment. The most frequently occurring occupational classifications are management related, administrative support (i.e., clerical), and service (i.e., a community health representative for the tribe). The higher rates of employment in forestry occupations and the agriculture industry reflect the fact that timber harvesting is a significant part of the Forest County economic base. However, the low percentage of jobs in manufacturing indicates that the Potawatomi are not integrated into the work force at local sawmills and wood products plants.

One-fourth of the currently employed Potawatomi worked less than 35 hours a week and three-fourths worked over 35 hours or full time. A little over one-third had jobs of limited duration. The average length of time that these individuals expected their jobs to last was 8.8 months. About 4 percent had seasonal jobs, such as timber harvesting, and the remainder had no foreseeable termination point for their job. The significant number of persons with limited term jobs is indicative of the temporary nature of many government programs and grants that the tribal economy is dependent upon.

TABLE 57. 1984 OCCUPATION OF EMPLOYED POTAWATOMI

Occupation	Forest County Potawatomi
Managerial & Professional	17.5%
Technical, Sales, and Administrative Support	29.8
Service	17.5
Farm, Forestry, Fishing	12.3
Precision Production, Craft and Repair	14.0
Operatives and Laborers	8.8

Source: Potawatomi Household Survey, 1984.

Information on job skills, vocational training, and trade licensing/certification was given by 174 respondents to the household survey. Table 58 summarizes this information. Most people have job skills that are categorized as operatives and laborers. Some predominant occupations within this category were machine operators (9), welders (8), truck drivers (12), and heavy equipment operators (14).

Seventy-five individuals (43 percent) had vocational training in one or more occupations. The average length of training was 10.6 months. Predominant types of training were in the areas of precision production (i.e., 11 auto mechanics), operatives and laborers (i.e., 7 welders), and technical, sales, and administrative support occupations (i.e., 10 office/secretarial). Thirty-one people (17.8 percent of 174 respondents) were licensed or certified in one or more trades. Again, the most frequently occurring occupational classifications were operatives and laborers. Forty people have belonged to a union at some time, and one-fourth of the unions listed were for skilled trades.

Income. Eighty-eight of 98 households under the DRI survey reported their family cash income as shown in Table 59. The sources of family income are shown in Table 60. Families also relied to a certain extent on the land for subsistence. The Potawatomi have unlimited hunting and fishing rights on their tribal lands. Thirty-five families relied on hunting and fishing for subsistence "somewhat" or "a lot." This is over 30 percent of the families. Twenty-five families, or 26 percent, relied on growing a garden, ricing, and/or picking wild plants for subsistence somewhat or a lot.

Reservation Businesses and Tribal Economic Development Activities. Several tribal enterprises have been initiated in the recent past. Profits from the enterprises are used to support employment of tribal members and to provide capital for other economic development activities.

Cigarette Sales. The Forest County Potawatomi sell discount cigarettes to the general public. Since 1982, Native American tribes in Wisconsin have been able to receive a rebate on taxes for cigarettes, thus making it possible to sell cigarettes at discounted prices. This program on the Forest County Potawatomi reservation is self-sustaining and employs three persons full time. Cigarettes are marketed both at the tribal hall near Crandon and in Wabeno. The business has a volume of about \$100,000 per year.

Bingo. The tribe started a bingo operation in 1983. It is a self-sustaining business that employs one full-time person. Bingo operation revenues average about \$300 per week.

Forest County Potawatomi Excavating and Construction Company. In 1982, the Forest County Potawatomi received a land claims settlement.

TABLE 58. POTAWATOMI JOB SKILLS, VOCATIONAL TRAINING, TRADE
LICENSURE/CERTIFICATION BY OCCUPATIONAL CATEGORY

Occupational Category	Job Skills		Vocational Training		Trades Licensed/ Certified	
	No.	%	No.	%	No.	%
Managerial and Professional	7	2.7	7	6.2	3	7.9
Technical, Sales & Admini- strative Support	67	25.7	22	19.5	3	7.9
Service	23	8.8	15	13.3	8	21.1
Farm, Forestry, Fishing	25	9.6	7	6.2	2	5.3
Precision Production, Craft and Repair	44	16.9	36	31.9	9	23.7
Operatives and Laborers	95	36.4	26	23.0	13	34.2

Source: Potawatomi Household Survey, December 1984.

TABLE 59. POTAWATOMI FAMILY CASH INCOME

Amount	Number	Percent		
Under \$3,000	11	12.5	} 62.5	} 83.0
\$3,000-5,999	21	23.9		
\$6,000-8,999	23	26.1		
\$9,000-11,999	18	20.5		
\$12,000-14,999	5	5.7		
\$15,000-17,999	3	3.4		
\$18,000-20,999	2	2.3		
\$21,000-23,999	2	2.3		
\$24,000-26,999	2	2.3		
\$27,000+	1	1.1		

Source: Potawatomi Household Survey, December 1984.

TABLE 60. SOURCES OF POTAWATOMI FAMILY INCOME

Source	Responses	Percent of 90 Cases
Wages	37	41.4%
Social Security	12	13.3
Rental Income	1	1.1
Pension, Retirement	6	6.7
Relief of Needy Indian Persons	29	32.2
Aid to Families with Dependent Children	42	46.7
Disability Payments	4	4.4
Unemployment Compensation	5	5.6
Other	4	4.4

Source: Potawatomi Household Survey, December 1984.

Twenty percent, or \$194,000, was set aside for tribal economic development. With a portion of this money, excavation equipment was purchased in 1984. This enterprise is now in the initial stages of organization.

Without-Project Scenario

There are several constraints to the future growth of the Potawatomi economy. Forest County, where tribal lands are located, is one of the poorest counties in the state. It is not economically diversified, its economy depending primarily on forest products and government jobs. Wages are low and unemployment is high in the county. Potawatomi economic growth without the Crandon Project will be minimal. Reductions in federal and state assistance will also adversely affect the economic future of the tribe.

Impact Scenario

The survey of Potawatomi households provided information on 174 individuals who reside on or near tribal lands in the local study area. Mail-out surveys to enrolled tribal members who lived outside the local study area were completed by 69 individuals. Twenty-six respondents to the mail-out survey said they would seek Project employment and 20 said they were undecided.

A comparison of the Potawatomi's self-reported labor force characteristics with Project construction work force requirements revealed the following.

Because many Forest County Potawatomi living in the local study area do not have a high school diploma or GED, this minimum educational requirement may prevent tribal members with job experience and training from being employed during both the construction and operation phases. The recently formed Forest County Potawatomi Excavating and Construction Company, however, could realize business opportunities during the construction phase of the Project. The firm should be able to bid with minority status, and it has journeymen heavy equipment operators and qualified diesel engine mechanics.

Level of Potawatomis' Interest in Exxon Employment and Training. The 174 respondents to the DRI household survey were asked if they had heard about the Crandon Project. Although almost all had heard about the Project, 44 percent felt they knew nothing about it. Fifty-six percent felt they knew "some" or "a lot" about it. Ninety-two (53 percent) of the respondents said they would apply for a job at the Project, 43 (25 percent) said they didn't know whether or not they would apply, and 39 (22 percent) said they would not apply for work at the Crandon Project. The type of work that respondents were interested in is shown in Table 61. The most conspicuous finding is the small percentage of persons who are interested in working underground. This finding is also true of respondents to the mail-out survey. Of the 174

TABLE 61. TYPE OF CRANDON PROJECT EMPLOYMENT OF INTEREST TO POTAWATOMI

Employment Category	Number of Responses	Percent
Construction	33	19.4%
Underground Mining	7	4.12
Millwork	31	18.2
Administration	30	17.6
Maintenance	27	15.9
Transportation	31	18.2
Other	11	6.5

Source: Potawatomi Household Survey, December 1984.

Potawatomi who responded to the household survey, 130 said they would be interested in training if Exxon were to provide it. Table 62 indicates the types of training that respondents professed an interest in.

Major constraints to integrating the Potawatomi into the Crandon Project work force are lack of education, experience, and transportation. As noted earlier, 64 percent of the persons aged 25 and over who live on or adjacent to tribal lands have less than a high school education. In addition, most people have unskilled and semi-skilled job experience and training in occupations as laborers, precision craftsmen, and administrative support personnel. A very small proportion of respondents to the household survey were licensed or certified in a trade. Tribal members who reside outside of the local study area and were surveyed by mail may have a competitive advantage over the resident group. Their education levels were higher and they were more frequently licensed or certified in a trade. Motivational and personal problems may also be constraints to successful Potawatomi employment at the Project.

Without aggressive measures to integrate Forest County Potawatomi into the Project work force, the possibility that the tribe will benefit economically from the Project is decreased significantly. The gap in economic status between the Potawatomi and the white population in the local study area may in fact widen, and, if only a few Potawatomi secure Project jobs, economic differences, jealousies and factionalism may increase within the tribe.

V.A.5 Housing

Current Conditions

There are currently 77 homes on tribal lands, of which 76 were enumerated by the Potawatomi household survey. In all, the survey obtained data on 92 residences on and adjacent to tribal lands. Thirty-eight percent of the residences were single family units, 59.8 percent were mobile homes, and 2 percent were classified as apartments. The average number of rooms per residence was 5.3.

There was an average of 4.12 persons per household. In the United States as a whole, the average number of persons per household in 1980 was 2.74, and in Wisconsin this figure was 2.77. Of the Potawatomi houses surveyed, 16.7 percent were occupied by two or more families. Directors of the various housing programs state that overcrowding and the poor state of repair are the most serious housing problems for the Forest County Potawatomi.

Without-Project Scenario

Housing occupied by Forest County Potawatomi both on tribal lands and in the immediate vicinity is substandard. Although limited funds

TABLE 62. TYPE OF TRAINING DESIRED BY POTAWATOMI MEMBERS:
NUMBER AND PERCENT OF SURVEY RESPONDENTS

Managerial and Professional Occupations - 9.1%

Management - 12
Engineering - 2
Public Relations - 1

Technical, Sales, Administrative Support Occupations - 26.8%

Office work/secretarial - 17
Administration - 4
Clerical - 7
Bookkeeping - 1
Computer operator - 2
Computer programmer - 6
Drafting - 3
Surveying - 4

Service Occupations - 10.4%

Security - 1
Janitorial - 3
Safety Control - 1
Medical work - 1
Maintenance - 11

Precision Production, Craft and Repair Occupations - 16.5%

Mechanic - 7
Ironwork - 3
Drilling - 1
Carpenter - 5
Underground Mining - 1
Electrician - 1
Machinist - 9

Operatives and Laborers - 37.2%

Millwork - 10
Heavy equipment operator - 22
Construction - 13
Truck Driving - 11
Welding - 3
Sampler - 2

Source: Potawatomi Household Survey, December 1984.

are available for improvement, upgrading the housing stock has been an arduous process. Limited family incomes and the unwillingness of lending institutions to mortgage homes on tribally owned land are factors that contribute to the substandard condition of the housing stock and constrain the ability to acquire new and/or adequate housing. Added difficulties occur because of the isolation of housing units spread over an 11,000-acre area of tribal lands and poor access roads. The most likely prospect is that the housing stock will continue to be substandard.

Impact Scenario

The development of the Crandon Project will substantially worsen the housing situation of the Forest County Potawatomi. Housing is currently overcrowded and substandard. Based on the household survey, only 16 of 92 Potawatomi residences would have adequate room to accommodate a person or family who returned for Project-related employment. Thirty-one residences could with great difficulty accommodate some additional people, and 45 (49 percent) would have no room for additional people. The possibility of upgrading and adding to the present housing stock is constrained by low family incomes, unwillingness of lending institutions to provide funds for housing on tribal land, and reductions in federal funds for housing on American Indian reservations.

V.A.6 Tribal Government and Finance

Current Conditions

Structure and Function of Tribal Government. The constitution and bylaws of the Forest County Potawatomi community were first approved by the Secretary of the Interior on February 6, 1937. The current constitution was adopted on June 5, 1982. It provides that the governing body of the Forest County Potawatomi shall be the General Council, which is composed of all qualified voters of the community. Qualified voters are persons who are enrolled members of the community and 18 years of age or older. The General Council meets quarterly. It elects a six-member Executive Council which meets monthly and is responsible for conducting the day-to-day affairs of the tribe.

Figure 10 is an organizational chart of the Forest County Potawatomi government. The committee structure is an important aspect of tribal government. The Executive Council appoints committee members who serve on a volunteer basis except for expense reimbursements. The Mining Impact Board has been a particularly active and important committee during the environmental assessment and permit application process for the proposed Crandon Project.

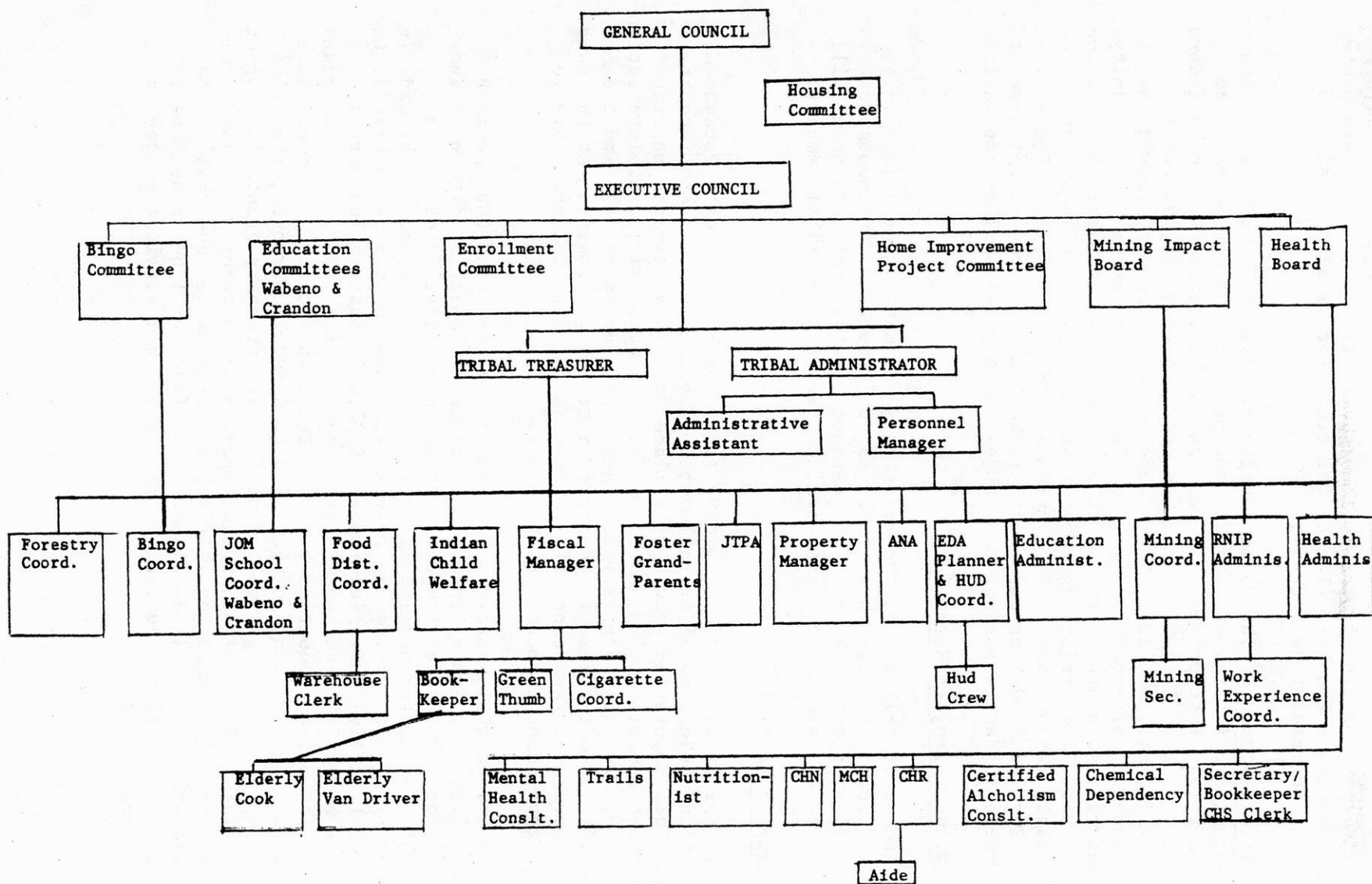


FIGURE 10
ORGANIZATIONAL CHART OF FOREST COUNTY POTAWATOMI GOVERNMENT

The tribal administrator is the elected tribal chairman and member of the Executive Council. The tribal treasurer is also an elected member of the Executive Council.

Tribal Finance. The major sources of revenue for the Forest County Potawatomi are federal and state grant programs and money generated through tribal enterprises. By far the most important source is federal and state funds. In 1984, the tribe received about \$1,000,000 in revenues from all sources. These funds were expended to provide health, education and welfare, housing, and planning services to the community. The federal and state grants which provide the major portion of revenue for the Potawatomi tribal government are clearly not a secure or predictable revenue base. The Bureau of Indian Affairs and Indian Health Service funds for education and health are more secure; however, even these funds are subject to changes in Congressional appropriations.

Without-Project Scenario

The heavy reliance of the tribe on government funds is problematical. Because these funds do not provide a continuous or secure funding base, there is no guarantee that tribal government will be able to sustain its current level of services to tribal members.

Impact Scenario

If the Crandon Project is developed, the Forest County Potawatomi population could grow as tribal members seeking work migrate into the area. This population growth will place additional demands on tribal government administration and services. The complexities of interaction with Exxon Minerals Corporation, other local jurisdictions, and the state will also increase the demands on tribal government. At the same time, there is no assurance of an increase in resources available to tribal government to meet these demands.

The tribe will, however, continue to receive \$100,000 mandated payments from the Mining Investment and Local Impact Fund to plan and prepare for the Crandon Project. By statute, these funds are to be available during the permitting period, the final payment being made in January 1986. If permits are granted and construction is initiated, the tribe will receive inflation-indexed \$100,000 construction period payments annually throughout Project construction and up to three years after concentrate production begins. The tribe would then be eligible for first dollar payments of \$100,000 (indexed). Moreover, the tribe can apply to the Mining Impact Fund for discretionary grants for impact needs. The \$100,000 payments will provide support for a minimum level of planning and preparation. Tribal authorities believe that if the mine and mill complex is developed these funds will be inadequate to meet the increased demand for administration and services placed on tribal government.

V.A.7 Law Enforcement

Current Conditions and Without-Project Scenario

Law enforcement services for the Forest County Potawatomi are provided by the Forest County Sheriff's Department. The department is eligible to receive \$7,500 per year from the state to assist with law enforcement activities on tribal lands. There has been a history of poor relationships between the Potawatomi Tribe and Forest County law enforcement officials. Of those interviewed during the household survey, 46.3 percent rated law enforcement services as bad or very bad, 16.8 percent were neutral, and 32.6 percent rated law enforcement as good or very good. Only 4.2 percent had no opinion. There is a high level of awareness of law enforcement services among the Potawatomi and significant negative evaluations. Law enforcement appears to be an area of tension in Indian and white relationships in Forest County that needs to be addressed. Perhaps an agreement currently being negotiated between the sheriff's department and the Potawatomi community will bring progress in this direction.

Impact Scenario

Law enforcement relations is an area where increasing problems could occur. Increasing population in the study area and an increasing tribal population may create more demand for services. Tensions between Indians and whites may also increase. If the Potawatomi are not integrated into the Project work force and their economic situation deteriorates in relation to that of the surrounding communities, resentment on their part could certainly occur.

V.A.8 Education

Current Conditions and Without-Project Scenario

Forest County Potawatomi students attend public schools predominantly in the Crandon and Wabeno school districts. In the household survey, 60 residences were located within the Crandon School District and 31 within the Wabeno District. Some Potawatomi who do not live on tribal lands attend school in the Laona and Rhinelander districts.

The educational issue is the treatment of Potawatomi students in the Crandon School District. Relationships between Potawatomi and teachers and school officials have been strained for years. In the household survey, 27 percent of the Potawatomi living in the Crandon School District rated education services as good or very good, 11.7 percent were neutral, and 42 percent rated education as bad or very bad. Twenty percent had no opinion. The Wabeno School District enjoys much better relationships between the Potawatomi and the school system.

After a series of complaints in the late 1970s, Potawatomi parents filed a grievance against the Crandon School District in 1980. The complaint alleged verbal abuse, harassment, and other discriminatory behavior on the part of school district personnel. Parents were also concerned that the dropout rate was disproportionately high. As a result of the complaint, the Wisconsin Department of Public Instruction audited the Crandon School District. It was found that discrimination against Indian children had occurred and recommendations were made to address the problems.

Whether or not the Crandon School District will address this problem is unknown. It has a history of unwillingness to provide special services to Native American children. The low educational levels of the Forest County Potawatomi adversely affect their ability to be employed and gain economic self-sufficiency. It will be a major constraint to integration into the Project work force if the mine and mill complex is developed. Immediate action to improve the elementary and secondary education of Potawatomi children is needed currently and in the future, either with or without the Crandon Project.

Impact Scenario

Education services deserve special attention. If action is not taken to address educational problems, the situation may be further exacerbated by strains placed on the school district by increasing enrollments associated with the Project. Under impact conditions, school officials will have little time to devote to the problems of Indian children, who will become even more of a minority.

V.A.9 Sociocultural Profile

Current Conditions

The aboriginal life of the Potawatomi was based on a seasonal economy that involved annual migrations. Potawatomi families still rely on natural resources for part of their subsistence. Some tribal members in their 30s recall migrating annually from Forest County to pick wild plants in the summer. Over one-third of the families contacted by the household survey reported that they relied on hunting and fishing for food "somewhat" or "a lot." Over one-fourth relied on growing a garden, ricing, or picking wild plants for food.

There are several traditional religions which are also still observed. The Medicine Dance Society is the oldest and aboriginally was the most important religion among the Potawatomi. Its primary purpose was to cure the sick through the use of plant medicines and the powers of its priests. The use of wild plants for medicinal purposes continues to this day.

Other features of aboriginal belief systems remain quite strong. Specifically, the earth, air, water, plants, and animals all are believed to have spiritual qualities and are sacred in prayers. It is believed that people should have great respect for these resources and not abuse them. Air and water should not be polluted, according to the teachings of the elders. These beliefs are very much a part of contemporary Potawatomi religion.

Burial grounds are also sacred to the Potawatomi. The American Indian Study Committee of the Wisconsin State Legislature is coordinating an effort by all the state's tribes to map burial grounds and set guidelines for their preservation. The Forest County Potawatomi are in the process of mapping their burial grounds. Some elders have expressed concern that mining at the Crandon Project may disturb burial sites which are on aboriginal lands ceded to the United States by treaty. There is also concern among the Potawatomi elders that their unique cultural heritage might be lost if large-scale developments, such as the proposed Crandon Project, occur in Forest County.

Relations with Non-Indians. Relations between Native Americans and non-Indians in northern Wisconsin and in the local study area have historically been strained. These tensions are due to such factors as competition for scarce resources (land, natural resources, revenues), misunderstanding of the tribes' rights to self-government, and lack of appreciation for the culture and lifestyle of Native American people. There have also been problems with law enforcement and economic integration. Some Potawatomi have stated that they have stopped applying for jobs in Crandon because they have little chance of being hired due to prejudice, and not many are employed in the woods products manufacturing plants.

The 1983 Federal Court of Appeals Voight decision recognized the continued existence of rights reserved by the neighboring Chippewa in Wisconsin to hunt, fish, and gather in their aboriginal territory according to treaties signed with the United States government. This decision has created serious tension in Indian-white relationships in northern Wisconsin. Although specific to the Chippewa, the Voigt decision has prompted a series of citizen responses which are in essence directed against all Indians in the state.

Discrimination against the Potawatomi is a significant social problem. It affects their ability to gain an education and integrate into the economic and social life of the local study area.

Without-Project Scenario

Unless a concerted effort is made to improve Indian and non-Indian relationships in the local study area, the Potawatomi will continue to be a socially and economically disadvantaged minority within Forest County. In this case, social tensions may very well increase in the

future as the Potawatomi experience the frustration associated with disadvantaged status.

Impact Scenario

One hundred and seventy-four respondents to the DRI household survey gave their opinions on the effects of the Crandon Project on various aspects of tribal life. These responses are summarized in Table 63. In all cases, except "the effect on young people," about 25 percent of the respondents said they did not know what the effects of the Project would be on various aspects of Potawatomi community life. With regard to the general optimism of those who rated the likely effects of the Project as "good" or "very good," their responses are predicated on the belief and assumption that employment opportunities will indeed be realized and will benefit individual and tribal well-being.

One hundred and seventy-four respondents to the household survey also gave their opinions on the effects of the Crandon Project on the natural environment. Table 64 summarizes these attitudes and the perceived effect of the Project on specific aspects of the environment.

The overwhelming sentiment that the Project will have a negative effect on the environment is noteworthy. With the exception of historical places, over 60 percent of the respondents rated the effects on all aspects of the environment as "bad" or "very bad." The degradation of the environment would negatively affect Potawatomi religious beliefs and ceremonies because of the belief in the spirituality of the earth, air, water, plants, and animals.

The Potawatomi view the development of the Crandon Project as a prospective employment opportunity that could improve certain aspects of Potawatomi community life. However, in terms of educational attainment, job skills, and job experience, the Potawatomi are not on a par with non-Indians in the local study area. Thus, they are not in a favorable position to compete for Project employment. If economic improvement is not attained by the Potawatomi and the economic gap between Indians and non-Indians widens, social tensions within the Potawatomi community as well as between non-Indians and Potawatomi will likely increase. If there is degradation of the environment, traditional cultural beliefs and practices would clearly be disrupted.

V.A.10 Closure

Closing the mine and mill will impact the Potawatomi, although the description of those impacts in more than qualitative terms would be speculative. To the extent that Potawatomi had been employed directly with the mine, employment would end. While unemployment compensation would be available to those formerly employed to make the transition somewhat easier, the benefits would be temporary. Overall employment would be reduced, including some of the indirect employment, as economic

TABLE 63. POTAWATOMI RATINGS OF EFFECTS OF CRANDON PROJECT ON THE
POTAWATOMI COMMUNITY

Aspects of Potawatomi Life	Rating: Percent					
	Very Good	Good	Neutral	Bad	Very Bad	Don't Know
Family Relationships	12.3%	34.5%	22.2%	4.7%	1.2%	25.1%
Young People	14.7	47.6	14.1	8.2	2.4	12.9
Elderly	2.9	18.7	22.2	23.4	7.0	25.7
Tribal Unity	4.1	31.2	22.9	9.4	7.6	24.7
Tribal Economics	8.2	42.9	17.6	6.5	2.9	21.8
Religious Beliefs and Ceremonies	2.9	21.1	31.0	8.2	5.8	31.0
Reservation Lifestyle	5.9	32.0	25.4	10.7	4.7	21.3
Relationships with Non-Indians	3.7	26.4	25.2	11.0	8.0	25.8

Source: Potawatomi Household Survey, December 1984.

TABLE 64. POTAWATOMI RATINGS OF EFFECTS OF CRANDON PROJECT ON THE ENVIRONMENT

Aspects of the Environ- ment	Rating: Percent					
	Very Good	Good	Neutral	Bad	Very Bad	Don't Know
Land	-	7.1%	14.1%	28.2%	32.4%	18.2%
Water	0.6	5.3	11.2	35.9	34.1	12.9
Air	-	4.7	16.5	31.8	29.4	17.6
Plants	-	5.3	14.7	30.6	32.9	16.5
Animals	-	5.9	15.3	30.0	33.5	15.3
Historical Places	1.2	5.9	18.8	22.9	31.2	20.0

Source: Potawatomi Household Survey, December 1984

activity would be reduced because of fewer people, reduced expenditure, and less need for services.

Business activities of the Potawatomi, such as the cigarette sales, bingo games, and construction, as well as any others developed or enhanced during the Project, would probably be impacted by lower sales. Following Project closure, or when the stream of net proceeds taxes would stop, the tribe would no longer receive the \$100,000 indexed, annual first dollar payments from the Mining Investment and Local Impact Fund Board (MIB). The tribe would, however, be eligible for funds from MIB through its discretionary grant program if sufficient funds were available.

The impacts of Project closure on population and housing are difficult to predict and depend on a number of variables. A reduction in population could occur through migration of the newly unemployed to other areas to look for jobs. If that occurred, it would reduce overcrowding in housing.

Project closure and reduction of the regional population may reduce the overall amount of contacts between the Native Americans and whites and reduce cultural conflicts.

V.A.11 Mitigation Alternatives

Summary of Project Impacts on Forest County Potawatomi Community

The Forest County Potawatomi could experience population growth as a result of the Crandon Project. There is a potential for tribal members to migrate to the area in anticipation of jobs. Population growth will increase competition for housing and community services and facilities, both on tribal lands and in surrounding communities.

Some Potawatomi have job skills that meet various Project work force requirements during both the construction and the operations phases of the mine and mill. There is also an interest in Project employment and training. However, there are major constraints to their integration into the work force indicating that only a small number of Potawatomi could possibly be hired.

Educational levels of the Forest County Potawatomi are low, with many not having completed high school. Because Project jobs require a minimum of a high school education, some Potawatomi with appropriate job skills may not be hired. The work experience of the Forest County Potawatomi population is mainly in semi-skilled and unskilled jobs. Effective integration into the Project work force will require a commitment for job training and placement at all levels of skill. The work experiences of Potawatomi also tend to be of short duration because of the seasonal nature of jobs in timber production as well as the temporary nature of tribal jobs which depend on government grants.

Unemployment levels are very high, and the deficiencies in work experience imply that special supportive measures will be necessary if the Potawatomi are to be integrated into the Project work force to any significant degree.

Those Potawatomi living on tribal lands reside in houses and trailers spread in small clusters over a large geographic area. Over one-fourth of the residences do not have a vehicle available. The lack of transportation to the work site would be another major constraint to Project employment.

If the prospective economic benefits of the Crandon Project do not reach the Potawatomi, they may become relatively more economically disadvantaged, increasing social tension between Indians and non-Indians in the local study area. If only a small number of tribal members obtain Project employment, jealousies and factionalism may increase within the tribe.

Many of the residences on Potawatomi tribal lands are substandard and overcrowded. The possibility of upgrading and adding to the present housing stock is constrained by low family incomes, unwillingness of lending institutions to provide funds for housing on tribal lands, and reductions in federal funds for housing on American Indian reservations. Increased demand for housing created by Project-induced population growth will substantially worsen the housing situation on tribal lands.

The Crandon Project will place increasing administrative demands on tribal government as interactions with EMC, other local jurisdictions, the state, and federal government increase. Because the tribe is small, identifying and training sufficient manpower to meet these demands will present a problem. Tribal government also provides a number of health, human services, education, and housing services to the Potawatomi population. Population growth associated with the Project will increase the demand for these services. However, most tribal programs are funded by federal and state grants which do not provide a continuous or secure funding base. It is likely that tribal government will not be able to sustain its current level of services, let alone meet increased demands associated with population growth related to the Project.

Relationships between Indians and non-Indians in the local study area have historically been strained. If economic improvement is not attained by the Potawatomi and the economic gap between Indians and non-Indians widens, social tensions between Potawatomi and non-Indians may very well increase.

Mitigation Alternatives

The formation of mitigation alternatives should be a dynamic process involving the participation of representatives from EMC, local, state, and federal government, and the Forest County Potawatomi

community. Together they should identify and prioritize community needs, develop suggested strategies for addressing these needs, and then assign responsibilities for initiation and implementation of mitigation procedures. The Potawatomi Mining Impact Committee could serve as the facilitator for such a forum.

The other essential element of a mitigation plan is the development of a monitoring system. Monitoring of actual project impacts, such as residential location of the work force or school enrollments, allows comparison to projected impacts. In areas where impacts differ from those anticipated, mitigation measures can be adjusted accordingly. Monitoring should also involve evaluation of the effectiveness of mitigation measures which have been put in place.

Suggested Mitigation Actions by EMC. Steps that could be taken by EMC to ensure that employment and business opportunities for the Potawatomi are created and accessible include the following:

- In conjunction with the tribe, establish employment objectives dealing with the number of Potawatomi that could be hired and the types of jobs that could be filled;
- Consider waiving certain educational requirements for experienced applicants without a high school or equivalent degree;
- In conjunction with the tribe, develop training objectives;
- Provide employee counseling to assure successful Potawatomi employment;
- Implement an orientation program for new employees that is sensitive to the needs of Potawatomi.
- Establish a supervisory training program to inform supervisors of the special needs and aptitudes of Potawatomi employees;
- Support Potawatomi tribal enterprises through bidding preference, waiving of performance bonds, joint ventures, and assuring that invitations to bid are of a realistic size and nature;
- Establish a monitoring system covering the Project work force.

Suggested Governmental Actions. Federal, state, and local governments have particular responsibility to address existing deficiencies in education, community services and facilities, housing, and the reduction of social tension. Some suggested mitigation efforts include the following:

- Federal and state government should provide technical assistance to the Potawatomi in such areas as grantsmanship, planning, and community development;
- Local and state governments should cooperate in the Project monitoring effort.

Initiatives by the Forest County Potawatomi. There are a number of actions which the tribe must undertake if mitigation is to be successful. Some suggested actions include the following:

- An employment coordinator should identify jobs and training opportunities with EMC and serve as a link to the Potawatomi work force.
- The tribe should make a formal commitment to cooperate with other units of local government to identify mutual concerns and needs in relation to the Crandon Project.
- A tribal public relations effort should be established to inform EMC and others in the local study area of the Potawatomi's special aptitudes and needs and to develop an appreciation for Potawatomi lifestyle and culture.
- A transportation plan and program should be developed to minimize commuting problems of Potawatomi employees.

V.B. SOKAOGON CHIPPEWA

The site of the Exxon Mineral Company's discovery of a body of mineral-bearing ore in Forest County lies less than two miles from the eastern border of the Mole Lake Sokaogon Chippewa Reservation. This section describes the essential characteristics of the residents of the Mole Lake Reservation, summarizes expected impacts of the Crandon Project on the population, and, on the assumption that the mine is permitted, suggests certain measures which could mitigate adverse consequences of mine development and operation.

V.B.1 Mole Lake Sokaogon Chippewa Reservation

The Mole Lake Chippewa Reservation consists of 1,694 contiguous acres, located in the township of Nashville in Forest County. The region's topography is that of low rolling hills composed of glacial till; the area is dotted with lakes. Generally, the surface may be described as cut-over forest land containing second and third growth birch, Norway and white pine, and spruce. The soil is a sandy loam just rich enough for the growing of gardens, but not rich enough for agriculture on a larger scale. The reservation lies within the Wolf River watershed.

The dominant physical feature is Rice Lake, a 208-acre body of water located entirely within the eastern third of the reservation. The major tributary to Rice Lake is Swamp Creek, which enters the reservation on its eastern border and whose course takes it just north of Exxon's ore discovery. Rice Lake is considered one of the best wild rice producing lakes in Wisconsin, and it is a vital part of the economic and social life of reservation residents. The reservation on its southwestern side adjoins Bishop Lake.

State Highway 55 bisects the reservation along its eastern edge and connects with Crandon eight miles to the north and Lilly ten miles to the south. County Road M runs along the reservation's southern boundary, linking Highway 55 with Jennings and Pelican Lake to the west. The majority of homes on the reservation are scattered on either side of Highway 55, with a few residences also lying along interior reservation roads.

V.B.2 History

The Chippewa Indians form a portion of an extensive series of diverse cultural groups which have inhabited the Great Lakes region, beginning with the Boreal Archaic culture 5,000 years ago. The Mound Builders followed from 1000 to 500 B.C., and then the Hopewell culture lasted until 700 A.D. Chippewa origins can be traced to a legendary group of Algonquian-speaking Indians who lived along the Atlantic coast near the mouth of the St. Lawrence River, and who migrated to the shores of Lake Huron near Sault Ste. Marie. There they split into three groups, each becoming a distinct tribe--the Ottawa, the Potawatomi, and the Chippewa, also known as the Ojibwa.

The Ojibwa hunting culture began in the conifer forests adjacent to the glacial lakes about A.D. 1200. Estimates of the aboriginal Chippewa population range from 4,500 to 50,000; an estimate of 25,000-30,000 seems to have been most probable. Depending on the season, the Chippewa lived in villages numbering between 30 and 300 people. Their culture was based primarily on hunting. In the winter, families tended to disperse in order to use the hunt to greatest advantage. They regrouped to gather maple sap and greens in the spring, and then berries and wild rice in the summer and nuts and tubers in the fall.

The Chippewa did not experience direct white contact until about 1610. This came through fur trading with the French. By the 1690s, trade between the Chippewa and the French was flourishing, and they began moving away from the area around Sault Ste. Marie. Over the next 100 years they extended their range over hundreds of thousands of square miles, from the northern shores of Lake Ontario in the east to the Turtle Mountains in North Dakota in the west, and to Norway House in central Manitoba in the north. The relationship between the Chippewa and the French was quite compatible and was based on traders' supplying

the Indians with manufactured products in exchange for furs. "The French," writes historian Zeitlin, "successfully allied the Chippewa to their North American imperial system."

By 1822, most of the beaver had been exterminated in Chippewa country, and the Hudson's Bay Company had gained control of fur trading in the region. In Canada, the Chippewa had become thoroughly dependent on the Hudson's Bay Company; they had lost many of their aboriginal skills by taking up fur trading. Meanwhile, in the United States the Chippewa steadily lost their sovereignty through a series of treaties with the federal government. In 1819, the United States government took their lead-rich land in southern Michigan by the Treaty of Saginaw. Through the Treaty of Fond du Lac in 1826, the United States secured mineral rights from the Chippewa in return for an annual payment. In 1833, the Chippewa were removed from northern Illinois and in 1837 Minnesota and Wisconsin Chippewa made their first land cession by the Treaty of St. Peters.

The Chippewa in 1842 ceded the southern Lake Superior shore in Wisconsin and Michigan, and in 1854 they ceded lands and were reserved territory at Keweenaw and Ontonagon in Michigan, Fond du Lac and Grand Portage in Minnesota, and Bad River (Odanah), Lac Court Oreilles, and Red Cliff in Wisconsin. By the 1870s, the Chippewa of both Canada and the United States had entered the reservation era, from which they have never emerged. "The policies of both Canada and the United States," writes Vecsey, "were aimed at changing Ojibwa (Chippewa) culture from hunting to farming, from pagan to Christian, from sovereign to subject, through coercive education and concentrated control."

Today the Chippewa constitute the third largest North American Indian people, numbering 50,000 in Canada and 30,000 in the United States. There are 16 bands in the United States (including the Mole Lake Chippewa), and 67 in Canada. Four distinct units of Chippewa exist. The Northern Chippewa, or Saulteaux, live north of Lake Superior and east of Lake Winnipeg in Ontario and eastern Manitoba. The Plains Chippewa, or Bungees, live west of Lake Winnipeg in Manitoba, eastern Saskatchewan and northeastern North Dakota. The Southeastern Chippewa live around Lake Huron in Michigan and southwest Ontario, and the Southwest Chippewa live in northern Wisconsin and Michigan and southern Ontario and Minnesota.

The Mole Lake Chippewa are part of the Southwest Chippewa and constitute one of the older resident communities in the Grandon area. The Southwest Chippewa are thought to have begun their migration into Wisconsin from the great focal center of Chippewa culture at Chequamegon on the shore of Lake Superior. This occurred after the revival of the fur trade with the British about 1765, after its disruption during the French and Indian War of 1755-1763. They prospered during this period by trading with the British. By the late 1770s, the Lac du Flambeau Chippewa were sending off splinter groups into the upper Wisconsin River area, and also into the upper Wolf River area in the direction of Green

Bay. By 1837 the Pelican Lake "Suk-a-aug-un-ing" had settlements at Post Lake, Pickerel Lake, "Metawanga" Lake, and Rice Lake in the upper Wolf River.

Zeitlin describes the period of Wisconsin Chippewa land cessation:

Starting in the 1830s great changes began to affect the Chippewa. By the terms of the treaties of 1837, 1842 and 1854 with American officials, the Chippewa ceded all or parts of their Wisconsin territory in Douglas, Bayfield, Ashland, Iron, Vilas, Oneida, Forest, Langlade, Lincoln, Price, Sawyer, Washburn, Burnett, Polk, Rusk, Taylor, Marathon, Shawano, Portage, Wood, Eau Clair, Chippewa, Dunn, and St. Croix counties. By 1854 most Wisconsin Chippewa were clustered in four reservations: Bad River, Red Cliff, Lac Court d'Orilles, and Lac du Flambeau.

The Sokaogon Chippewa are said to have numbered 200 individuals in 1848. Although names of Sokaogon representatives appear in the 1854 treaty under the heading of Lac du Flambeau members, both groups have long maintained a separate identity. They are the "People of the Post in the Lake," both to themselves and to others. In 1855, Sokaogon Chief Me-ge-zee, also called "The Eagle," complained to federal officials that his band had no right of location on any reservation. When asked what land he would like, the old man described an area that included Post Lake, Crane Lake, Lake Metonga, Little Rice Lake, and Pelican Lake. Government officials were said to have given the Chief a map and patent for a 12-mile square reservation, including the land now proposed for mining by EMC. The map was apparently lost. Though the Sokaogon steadfastly held to the claim that a reservation was promised, the government never established one. For an extensive period, the Sokaogons' identity as a separate band virtually was ignored by the United States.

For 80 years the Sokaogon continued to occupy their traditional territory. Although they had no title to the land, they remained committed to it and they survived and endured. Four generations later, under terms of the Indian Reorganization Act (1934), the United States complied with its earlier promise and established the reservation at Mole Lake. Membership in the Sokaogon Chippewa is now determined by direct blood relationship to anyone on the 1937 tribal role.

V.B.3 Existing Socioeconomic Conditions

This section provides a profile of the current characteristics of the Mole Lake Sokaogon Chippewa. Several different data sources have been utilized. The most important were the Chippewa themselves. In March 1985, DRI conducted key informant interviews with 21 officials and employees of the tribal government in order to obtain as much factual information as possible on the tribe and its needs and concerns. To supplement these interviews, a questionnaire was administered to all

willing adult tribal members currently residing on the reservation. Administration of the questionnaire was accomplished by tribal members trained by the author with the approval of the Tribal Council. The Bureau of Indian Affairs, Great Lakes Agency, also provided factual data on the tribe. In addition, data were utilized from the COACT report.

Population

Total membership of the Mole Lake Sokaogon Chippewa is 1,093, including 271 tribal members currently residing on the reservation, 72 individuals living within a 50-mile radius of the reservation, and 750 members living elsewhere. This figure does not include 30 babies born to tribal members living on or adjacent to the reservation during the years 1983 and 1984, for whom application for membership is pending. The number of tribal members in residence on the reservation in 1977 was 193, an increase of 51 percent in seven years. Tribal authorities report 62 families living on the reservation and 33 adjacent, and a mean family size of 4.4 for reservation residents and 2.2 for adjacent residents.

Thirty-five percent of the tribal members living on or adjacent to the reservation are under 16 years of age, and less than 3 percent are 65 and over. Twenty-two percent are age 16 to 24, and 16 percent are between 25 and 34 years. Thirteen percent are between 45 and 64. Females are underrepresented in all age groups except those under 16, in which females outnumber males by 62 percent. See Table 65.

Education

Mole Lake reservation children attend public schools in the Crandon School District. Children in kindergarten through the sixth grade attend Mole Lake Elementary School located on the reservation at the junction of Highway 55 and County Road M. Children in grades 7 through 12 attend Crandon schools. Tribal authorities report that a total of 77 children were enrolled in the two schools in grades kindergarten through 12 in 1984. An additional number were enrolled in Head Start. Six children attended Flandreau Indian School in Flandreau, South Dakota, and an additional ten tribal members were enrolled in either trade school or college on at least a part-time basis. The Crandon School District receives aid from the federal government for each child living on the reservation attending the district schools; additional federal funding is also provided to the tribe for assisting students in higher education and for the employment of a home-school coordinator.

There is considerable dissatisfaction among tribal members with their children's education experiences in the Crandon schools, especially the high school. They report a noticeable reduction of interest and performance as soon as the students transfer from Mole Lake Elementary School to Crandon. The dropout rate for tribal children is disproportionately high and the graduation rate is low. There are charges of discrimination, and of insensitivity to Native Americans.

TABLE 65. AGES OF SOKAOGON TRIBAL MEMBERS LIVING ON OR ADJACENT TO THE
MOLE LAKE RESERVATION IN 1984

Age	Males	Females	Total
Under 16	46	74	120
16-24	39	36	75
25-34	31	25	56
35-44	25	11	36
45-64	27	19	46
65 and over	<u>6</u>	<u>4</u>	<u>10</u>
Total	174	169	343

The Crandon School District has been investigated by the Wisconsin Department of Public Instruction, and many of the charges have been substantiated.

Employment and Income

There is a potential labor force of 160 individuals living on or adjacent to the reservation. A survey of reservation residents shows 31 percent of the adults lack either a high school diploma or a GED. Another 31 percent report having a GED; 8 percent possess a high school diploma; and 31 percent report they have attended college. These figures vary somewhat with those presented in a report on the tribe in 1980, differing mainly in the proportion of individuals with a GED and who have attended college. See Table 66.

The survey conducted in connection with this report shows that 31 percent of those surveyed have had some occupational training, and 69 percent have had none. The survey further showed that of those who had training, only one individual was licensed or certified in an occupation. Occupations reported in the survey include secretary, teacher's aid, truck driver, welder, mechanic, television and radio tower repair, and cook. Table 67 provides survey-based data on the work/skill experiences of the Mole Lake Reservation labor force.

The majority of reservation residents are employed in tribal government and tribally sponsored enterprises. Tribal government is the largest employer, providing full- or part-time work for more than a dozen persons. Tribal-sponsored bingo is the second largest employer with 12 jobs. The tribally owned store and a construction company (which the tribe partially owns) also provide an undetermined number of jobs. The Bluegrass Festival is a significant source of work for a short period during the summer. Some business establishments located on the reservation are totally or partially owned by tribal members, and these also afford employment to reservation residents.

Tribal Economic Development

The Sokaogon Chippewa are engaged in a number of enterprises intended to provide employment to members and promote tribal self-sufficiency.

Bluegrass Festival. The Bluegrass Festival is one of the most successful tribal activities. For the past nine summers, the tribe has sponsored a music festival featuring many leading bluegrass music groups. In 1984, the event drew from 30,000 to 45,000 patrons from across the nation and Canada. In addition to ticket sales, the tribe sells permits to persons who wish to operate concession stands. In 1984, 100 such stands were in operation, including 25 run by nontribal members. Among other purposes, the profits have been used as seed money to start other tribal enterprises, for the establishment of an emergency medical fund and for the purchase of land for the reservation.

TABLE 66. EDUCATIONAL ATTAINMENT OF SOKAOGON CHIPPEWA LABOR FORCE
MEMBERS IN 1980 AND 1985

Years of Education	Percent 1980	Percent 1985
1-6	4	1
7-8	4	10
Some high school	23	28
GED	31	10
High school diploma	8	27
Some college	27	15
B.A. degree	4	2

Source: DRI Survey and COACT, 1980: 159 for 1980 figures.

TABLE 67. SKILLS AND WORK EXPERIENCE OF SOKAOGON CHIPPEWA LABOR FORCE

Work Experience	Percent
Mining	1
Heavy equipment operation	13
Mechanical	10
Carpentry	10
Welding	4
Electrical	2
Electronics	2
Administration	8
Plumbing	3
Sheet metal	2
Painting	1
Forestry	25
Health	7
Food preparation	4
Education	3
Accounting and bookkeeping	4
Clerical	5
Minor experience and housewives	40

Source: COACT, 1980:156

Bingo. The Sokaogon Chippewa also operate a bingo game. The game is very popular in the region, with participants coming from as far as 50 miles or more. Patrons are bused in from large cities as far away as Milwaukee. In addition to providing employment for about a dozen tribal members, bingo profits are used as seed money for other tribal enterprises.

Wild Rice. The care and harvesting of wild rice from Rice Lake is a highly important religious, social, and economic activity to the Sokaogon Chippewa. The growing and harvesting of the wild rice has deep religious and social meaning, and the plant also has economic value. The Sokaogon consume much of the rice themselves; it constitutes a vital part of their diet. In addition, they sell part of their production. In 1984, freshly harvested rice sold for approximately \$1.10 per pound at Mole Lake.

Grocery Store. The tribe owns and operates the Mole Lake Grocery Store. The store, in addition to its convenience and the four jobs it creates, represents efforts by the tribe to provide for more of its members' needs and to keep resources on the reservation. The store has been in operation for less than a year and has yet to show a profit.

Other Enterprises. The tribe owns a 51 percent interest in Sokaogon Limited, a construction company with plans to secure its first contracts in the spring of 1985.

The Mole Hole (a tavern located on Highway 55 across from tribal headquarters), a gas station, the Arrowhead Cafe, and the Arrowhead Indian Development Corporation are private enterprises located on the reservation with at least partial ownership by tribal members.

Sources of Tribal Revenues and Expenditures

The Sokaogon Chippewa receive funds from a variety of governmental sources for the operation of tribal government and to provide essential services for members. The Bureau of Indian Affairs provides a Core Management Grant, which provides for an accountant, a bookkeeper trainee, and a secretary. The BIA also provides funds for a tribal judicial program and for a secretary under the tribal enrollment program. It also funds grants for higher education and a home-school coordinator under the Johnson O'Malley program. During 1984, the tribe also received funds from the Indian Health Service for health management, two community health representatives, a community health nurse and for the operation of an alcohol and drug counseling program. The tribe also currently has grants for the improvement of housing on the reservation. Overhead is taken from each contract for the operation of tribal offices and for salaries of the tribal chairman and secretary. A food commodities distribution program is available for qualified tribal members, as are funds under AFDC and RNIP, a program of relief for needy Indian people sponsored by the State of Wisconsin.

Sources of Family Income

Published information on the family income of tribal members is not available. However, family income is quite low because of the high rates of unemployment on the reservation and because of the seasonal nature of the few jobs that exist. Though tribal leaders declined to have reservation residents questioned on total family income, the DRI survey did reveal that only 17 percent of the families surveyed received income from wages and salary. Forty-eight percent reported receiving RNIP funds and 26 percent AFDC. Nine percent reported receiving Social Security benefits and 4 percent disability payments.

Sokaogon Chippewa Health

Frequency data on the incidence of disease among the Sokaogon Chippewa are not available. Community health officials report, however, that hypertension, diabetes, and heart disease, along with respiratory illnesses, are found most frequently among tribal members. They report a great deal of hypertension among young people. Cancer rates are thought to be relatively low. The death rate among the Sokaogon is low, primarily because of the relatively low number of elderly persons in the population. The rate of immunization among Sokaogon children has grown from 33 percent in 1984 to 92 percent in 1985.

Alcohol abuse and alcoholism are probably the most serious health problems among the Sokaogon. Problems connected with alcohol are thought to touch 50 percent or more of the adult population and many young people. Some experimentation with other drugs by both adults and youth is reported, but this is not considered to be nearly as serious a problem as alcohol. Health officials report depression to be the most common form of mental illness among the Sokaogon.

Health care is available to all Sokaogon who are in need. Maternal, child health, and well baby programs are all available on the reservation. A community health nurse is available for screening health problems, and serious cases are then referred to local physicians and the regional health care system. Payment of health care costs is through Medicare, AFDC, RNIP, and other aid programs.

Community Services and Facilities

Tribal government is a major focal point of life on the Mole Lake Reservation. It is the major distributor of services to tribal members, and it functions as a clearinghouse for the distribution of all funds and services intended for the tribe as a whole. This includes most of the jobs which reservation residents hold, as well as welfare payments, housing, medical care, and food commodities distribution. Tribal government also functions as the major advocate for tribal member welfare, and for the protection of reservation lands and Sokaogon tribal

rights and privileges. Sokaogon tribal members are, of course, free to obtain needed services off the reservation whenever they wish.

Mole Lake Reservation Housing

The Bureau of Indian Affairs reports that there are 64 homes located on the Mole Lake Reservation. The U.S. Department of Housing and Urban Development has provided funds for the construction of 34 modern homes on the reservation. The homes are located along Highway 55, north of the tribal offices and are rented to tribal members at a price commensurate to the occupant's income. In addition there are 30 privately owned homes on the reservation. Fifteen are trailer homes and 15 are of conventional construction; all are of generally lower quality than the HUD homes. The tribe has secured funding from HUD for the construction of an additional 40 modern homes. There is presently considerable unmet demand for housing on the reservation. Tribal authorities receive several calls a week from members as far away as Chicago, Milwaukee, and Los Angeles requesting housing of any kind.

Automobile and truck traffic on Highway 55 is a continuous hazard to the residents of the Mole Lake Chippewa Reservation. Four pedestrians have been struck and killed along the roadway between the Arrowhead Cafe and Mole Lake Elementary School since 1962 and three others have been seriously injured. In 1976, a sidewalk was constructed from the trading post north to the bridge over Swamp Creek. The sidewalk is utilized by large numbers of pedestrians when the weather is good, but when it snows, it is piled high and generally impassible. The sidewalk was constructed prior to the development of the housing project north of the Swamp Creek Bridge.

Mole Lake Chippewa Reservation Land Use

All 1,694 acres of the Mole Lake Chippewa Reservation are tribally owned. Rice Lake is 208 acres; another 286 acres consist of swampland and upland brush; the remainder is low-grade timber land. In addition to the wild rice Rice Lake produces yearly, its waters also produce fish and serve as a habitat for several species of birds. The Sokaogon fish and hunt on the lake, and hunt and collect numerous plant foods and herbs from the reservation's swamp and forest lands. They also hunt, fish, and collect plant foods from lands adjoining the reservation. A prime collecting area, especially good for wild raspberries and medicinal herbs, is found in the area south of Swamp Creek to the east of the reservation.

The Sokaogon Chippewa continue to exhibit a remarkable dependence upon and affinity for utilization of wild food sources. Fifty-six percent of the families in the DRI survey reported they rely "a great deal" on hunting and fishing for food, while another 30 percent indicated they rely "somewhat." Only 4 percent said they did not rely on hunting and fishing for food. The survey also revealed that 61 percent of the families said they rely "a great deal" on ricing and

picking wild plants for food. Another 30 percent said they relied "somewhat," and none said they "never" relied on ricing and wild plants for food.

Government Structure

The Mole Lake Chippewa Reservation was established June 30, 1939, by proclamation of the Assistant Secretary of the Interior. It is governed by a chairman, vice-chairman, secretary, and treasurer, each of whom serves a two-year term. Two councilmen are elected for terms of one year. The two councilmen, together with the elected officials, serve as the Tribal Council. Regular tribal council meetings are held on the third Monday of each month and as needed. A sergeant-at-arms is present at all tribal council meetings. Between 175 and 220 members vote in a typical tribal election. Any tribal member eighteen years or older is eligible to vote and can vote by absentee ballot. Table 68 shows a current list of Tribal Council members and their duties.

A number of permanent committees serve the Tribal Council. Notices of committee openings are posted, and members are chosen by the Tribal Council from a list of interested parties. Committee members elect their own committee officers. There are permanent committees on health, education, housing, forestry, treaty rights, mining impact (Crandon mine), Bluegrass Festival, and nuclear waste. The relatively small tribal population and complex government results in a wide participatory democracy, with a large proportion of members directly involved in tribal government.

Reservation government articulates with local government on matters of education and law enforcement. Forest County provides law enforcement services for the reservation. Since Forest County does not keep separate statistics for the reservation, crime rates are not available. Tribal authorities report no murders or suicides in recent years, however. Tribal leaders are currently involved in negotiation with the state of Wisconsin concerning tribal member hunting rights on ceded lands. The fact that the courts have held that tribal members do have special hunting rights on ceded lands is a source of resentment and controversy in the local white community.

Sociocultural Characteristics

Traditional Chippewa culture involved an efficient system for the utilization of resources of the forests, lakes, and rivers in the Upper Great Lakes region. Birch bark was used to construct dwellings and canoes; hides were worked into clothing and blankets, and animals, fish, and plants were used for food. This way of life did not encourage a highly structured society or a large population. The Chippewas' most important social subdivision was the permanent summer village of perhaps a dozen families. During the summer, families worked within a radius of about 100 miles of the village; during the winter the villages tended to break up into family units.

TABLE 68. LIST OF CURRENT SOKAOGON CHIPPEWA TRIBAL COUNCIL MEMBERS
AND THEIR DUTIES

Officer	Duties
Chairman Arlyn Ackley	Head of tribal government. Presides over Tribal Council meetings.
Vice-Chairman Archie McGeshick, Sr.	Assists the Chairman.
Secretary Emanuel Poler	Handles tribal correspondence, keeps record of minutes of all Tribal Council meetings. Duties as asked.
Treasurer George Poler, Jr.	Accepts and disburses tribal receipts. Preserves and safeguards tribal funds.
Tribal Council Member Garland McGeshick	Serves on the Tribal Council.
Tribal Council Member Roger McGeshick	Serves on the Tribal Council.

Sometimes marriages were arranged, but more often a young man took the initiative himself to court a maiden. Marriage involved a man simply moving his belongings in with his wife's parents. Later they would build a lodge of their own. Religion involved a belief in a pantheon of spirits, one of whom was seen as the supreme being and giver of life. The supreme being was believed to delegate responsibility to subordinate deities, to whom the Chippewa directed their supplications. In all, their culture was an effective and satisfying system of survival and changed little from generation to generation.

Only bits and pieces of traditional Chippewa culture remain with the Sokaogon. They have been heavily westernized in many respects. They drive automobiles, and most live in modern homes with television and other conveniences. Many have spent years away from the reservation and have lived in large cities. Yet, despite extensive contact with Western culture and the adoption of many of its elements, the lifestyles of the Mole Lake Chippewa differ significantly from those of contemporary whites. The culture of modern Sokaogon Chippewa is unique in a number of significant ways. It is the product of both the Chippewa heritage and also of several hundred years of contact with Western society. Further, it is important to understand that modern Sokaogon culture is also a product of the tribe's special history: it did not have a legal home or official governmental recognition for four generations. There are members of the tribe still living who can remember when the tribe had no home.

The Sokaogon have a deep and enduring love for the land bounded by the reservation and also the adjoining forests and lakes. They view the land with a religious respect and refer to it as their "Mother," the one from which all things originate and to which all things eventually return. The land is viewed as the source of life, and when it is destroyed, man destroys himself. To the Sokaogon the land is the repository of the bones of their ancestors and the womb of generations yet unborn. Moreover, they view the land in different temporal terms than whites. Western culture tends to view time in discrete segments. There is the "present," the "past" and the "future"; each is somehow separate. The Sokaogon do not consistently make these same temporal separations. To them, the past, present, and future tend to be linked more as one. They view time more holistically. The present, the past, and the future are not mentally separated; in the same breath they speak of their ancestors and future generations, and also of their unbreakable ties to the environment.

The Sokaogon view the environment more from a spiritual perspective than a scientific-empirical one. This deep caring about the land and the area around Rice Lake is not new to the Sokaogon. "The People of the Post in the Lake" stayed in the area for four generations, from 1854 to 1939, when they had been forgotten by the government.

Accounts of their sojourn during this period have no doubt been passed on from one generation to another, and have had the effect of intensifying their commitment to their homeland once they received title. The process has reinforced the deep feeling of belonging in a particular area.

Nowhere is the Sokaogon devotion to the land more evident than in their beliefs attached to Rice Lake. Rice Lake and the bounty it yields lie at the heart of their identity as a people. Considerable religious ceremony is associated with the lake and the growth and harvesting of the rice. The rice and the lake are the major palpable links between themselves, Mother Earth, their ancestors, and future generations. The disturbance of those links would seriously harm their sense of community and identity as a people and probably would be psychologically damaging. To a lesser degree, the same may be said for harm to other elements in the environment, including trees and other plants, wild animals, water resources, and the earth itself.

Many reservation residents have had the opportunity to join white culture. They have explicitly rejected it, finding it inherently dissatisfying. Therefore anything which might enhance the thrust of white culture into their lives will not be welcomed.

V.B.4 Sokaogon Chippewa Attitudes Toward the Crandon Project

Residents of the Mole Lake Chippewa Reservation were surveyed regarding their attitudes toward the Crandon Project. Generally, the results reveal a pronounced negative attitude toward the Project and no desire to work there. Table 69 provides a summary of findings for five relevant questions in the survey.

Reservation residents were also asked, "What things should Exxon, DNR, and the federal government do to protect the environment and tribal culture from the effects of the Crandon mine?" Forty-eight percent either gave responses which indicated a sense of helplessness or no answer. Thirty-nine percent indicated that the best thing for the environment would be never to develop the mine. Nine percent indicated the rice beds in Rice Lake should be preserved, and 4 percent indicated they hoped environmental standards would not be lowered for Exxon's benefit.

Residents were also asked, "What would tribal members do if we suffered bad pollution from the Crandon mine?" Forty percent indicated they would move away. Twenty-five percent indicated they did not know what they would do. Fifteen percent suggested they would simply suffer, but 10 percent indicated that a lawsuit against Exxon would be pursued. Five percent felt the reservation had already become polluted, and 5 percent said further development of the mine should be stopped.

TABLE 69. SURVEY RESULTS OF SOKAOGON CHIPPEWA ATTITUDES
TOWARD THE CRANDON PROJECT

Question	% Yes	% No	% Don't Know
Do you think the Crandon Project is a good thing for the reservation and the Sokaogon Chippewa?	9	65	26
Do you think Sokaogon Chippewa tribe members will work at the mine?	9	48	43
Do you think you will want to work at the mine?	4	70	26
Do you think your spouse will want to work at the mine?	17	42	41
If Exxon offered training to Sokaogon Chippewa tribe members, would you be interested?	32	41	27

On the whole, survey results support the findings from key informant interviews, namely, that the Sokaogon Chippewa are generally opposed to the Crandon Project and feel a sense of helplessness at its prospect. Significant numbers say they would move if the mine were to severely pollute the area. The majority expressed no desire to work at the mine or receive training for mine employment.

V.B.5 Preconstruction Impact of the Crandon Project

The discovery of the zinc and copper ore body near the eastern border of the reservation has already had considerable impact on the Sokaogon Chippewa. Tribal authorities report that a number of tribal members have returned to the reservation in anticipation of jobs. Figures on exact numbers who have returned are not available, but a recent estimate places the number at around 50 individuals.

The return of tribal members to the reservation has put additional strains on already limited reservation housing, forcing a number of families to share living quarters. Their return to the reservation in anticipation of jobs has also increased the demand on tribal health care delivery systems. It is felt that any further increase in demand for reservation medical services could result in decreased quality of care. Current care quality is already jeopardized by possible cuts in the tribal health care budget.

The area east of the reservation and south of Swamp Creek traditionally has been a good location for the collection of wild plant foods and medicinal plants. Much of this resource already has been lost because tribal members feel unwelcome on mine-controlled property.

Tribal authorities report an increase in hostility and racism in tribal members' relations with the local white community. Many local whites, they contend, blame the Sokaogon's opposition to the mine for construction delay. Tribal authorities allege that tribal members have been physically abused on occasion because of their sentiments toward the Crandon Project.

Many reservation residents have also experienced some degree of psychological distress in their attempts to cope with the possibility of development of a large mining operation so near their homes. This distress centers on the perception of possible negative consequences to Rice Lake and the impact the Project will have on traditional lifestyles and customs.

V.B.6 Impact of Crandon Project Construction

The construction phase of the Crandon Project will bring changes to the Mole Lake Chippewa reservation and its inhabitants. The influx of construction workers and their families into the local area, with a

focus on the locations just east of the reservation, would be disruptive. Once construction of Project facilities begins, additional tribal members are expected to migrate to the reservation in search of jobs. There is no way of predicting the exact number, but tribal authorities feel it could be substantial, conceivably involving over 100 individuals. The influx of a group this large into the small population base would affect many aspects of reservation life. The shortage of housing on the reservation would be exacerbated, and off-reservation housing would be expensive and in short supply. More families would be forced to share homes than at the present time.

The construction phase of the Project probably would offer minimal opportunity for employment of the Mole Lake reservation residents. Tribal members' lack of relevant work experience, education, and skills will be a major constraint. The Sokaogons' reluctance to work underground will be another. The fact that the majority of Mole Lake reservation residents have indicated that they do not desire employment at the mine suggests that the mine will not be enthusiastically viewed as a source of employment, even though approximately one-third of the tribal members surveyed did indicate they would be interested in job training if it were offered.

Increased congestion and more crowded housing conditions may have health consequences for reservation inhabitants. Perhaps the most serious of these would be an increase in the abuse of alcohol. It is felt that this will lead to greater family disruption and to a rise in the many health problems associated with alcohol abuse. There also would be a greater likelihood of serious accidents involving pedestrians and automobile and truck traffic on Highway 55 because traffic to and from the Elcho and Antigo areas would pass through Mole Lake.

Since the majority of domestic wells on the reservation are shallow, there is concern among tribal authorities that drinking water quality, which is already unsatisfactory south of the Swamp Creek bridge, may become more contaminated if the mine affects the groundwater. However, EMC would be responsible for replacing water service capability lost due to mining.

Increased demand may be experienced at the grocery store. The tribe's bingo operation also would probably have increased business due to greater numbers of people in the area. The tribe's construction company expects to bid on construction work related to the Project, and other tribal enterprises may be developed on the reservation during the construction phase of the Project.

There will be increased enrollment in the Crandon High School due to the in-migrant population during construction. The effect of more students on the Native Americans could be to increase discriminatory impacts, which reduce the effectiveness of the education and contribute to a high dropout rate of Native Americans. These impacts could

continue throughout operations as well unless special efforts were made by the school system.

Initiation of construction by EMC would trigger the \$100,000 (indexed) construction period payments to the tribe from the Investment and Local Impact Fund. These would continue annually for as long as construction was in progress to a point three years after mining began. Total duration could be six or seven years, based on current estimates of construction time.

Social life on the reservation would be impacted by the overall population growth induced by the Project and by the increased levels of traffic, noise, dust, and human activity in proximity to the reservation. An increase in internal dissension between tribal members is also expected, particularly among those members who may work at the mine and face a certain degree of ostracism on the part of their neighbors. Social life may exhibit a greater dependency on the "money economy" and more conspicuous displays of wealth. Young Sokaogon women, who outnumber their male counterparts by more than 50 percent, may form relationships with white men, or possibly leave the tribe.

The large numbers of white workers and their families in the area could make the Sokaogon even more of a minority. Racism might become more pronounced rather than diluted, and increased pressure on the land will bring further loss of wild animal and plant food resources. Traditional customs and the Sokaogons' sense of community may be threatened. Increased crowding on the land and more intense utilization of resources by newcomers in the vicinity of the reservation could degrade the reservation environment and homeland of the Sokaogon.

V.B.7 Impact of Crandon Project Operations

Several constraints limit the number of jobs that could be secured by reservation residents during the operation phase of the Project. As previously noted, most Sokaogon have indicated that they do not desire to work underground, and lack of education and experience may limit their participation in other jobs in the absence of an effective training program. Those positions most likely to be filled by Mole Lake reservation residents are clerical, warehouse, maintenance and mill laborers.

The tribe's bingo enterprise will likely increase in popularity and, if the tribe's construction company is successful in obtaining sustained Project-related work, it could become an important economic enterprise.

Increased traffic along Highway 55, noise, and increased human activity in the area will be an adverse impact on reservation residents. There will be increased crowding in reservation housing to the extent that returning tribal members secure Project-related employment.

During operations, the Chippewa would be eligible for first dollar payments (\$100,000 indexed) annually from the Investment and Local Impact Fund. These would begin when the mine would become profitable and a net proceeds tax would be paid to the state. The first payment to the Sokaogon Chippewa Tribe would probably be made several years after the construction period payments had ended. The Chippewa also would be eligible to receive discretionary grants from the Investment and Local Impact Fund to mitigate negative impacts of mining.

V.B.8 Closure

Closing the mine and mill will impact the Chippewa, although the description of those impacts in more than qualitative terms would be speculative. To the extent that Chippewas had been employed directly with the mine, employment would end. While unemployment compensation would be available to those formerly employed to make the transition somewhat easier, the benefits would be temporary. Overall employment would be reduced, including some of the indirect employment, as economic activity would be reduced because of fewer people, reduced expenditure, and less need for services.

Following closure of the mine and mill and its reclamation, there would be less vehicular traffic, reduced noise, dust, and congestion in the vicinity of the reservation. Fewer vehicles would be using Highway 55 through the reservation, and the potential for pedestrian-vehicle accidents would be reduced. Removal of the mine headframe would remove the tall, manmade structure from local visibility, returning the area to its former natural esthetics.

Business activities of the Chippewa, such as the cigarette sales, bingo games, grocery store, and excavating, as well as any others developed during the Project, would probably be impacted by lower sales. Following Project closure, or when the stream of net proceeds taxes would stop, the tribe would no longer receive the \$100,000 indexed, annual first dollar payments from the Mining Investment and Local Impact Fund Board (MIB). The tribe would, however, be eligible for funds from MIB through its discretionary grant program if sufficient funds were available.

The impacts of Project closure on population and housing are difficult to predict and depend on a number of variables. A reduction in population could occur through migration of the newly employed to other areas to look for jobs. If that occurred, it would reduce overcrowding in housing. The Chippewa are somewhat mobile and some have already moved to the reservation seeking employment. If housing conditions improve during the Project, there could be less incentive for unemployed tribal members to leave the reservation.

Project closure and reduction of the regional population may reduce the overall amount of contacts between the Native Americans and whites and reduce cultural conflicts.

V.B.9 Mitigation

Tribal authorities are adamant in their belief that adequate mitigation of the adverse consequences of the Crandon Project on the Sokaogon Chippewa is impossible. If the project is developed, the Sokaogon believe they would have to endure new and aggravating problems as a price for extremely minimal prospective economic gain.

Exxon Minerals Company could implement a recruitment and job training program which would increase Chippewa representation on the Crandon Project work force. EMC should also consider waiving some educational job requirements to encourage Sokaogon participation in applying for jobs. EMC's training program would need to provide for the following:

- Specialists in Native American education at Nicolet College should assist in recruiting and placing job applicants.
- Training should be realized through apprenticeships.
- Training should be provided locally.
- Training should be on the job, as opposed to in a classroom.

The Mole Lake Reservation is a small area which could be degraded if development activity reaches its border. A buffer zone needs to be established around the reservation either through land use regulation or purchase of adjoining lands. Zoning would be the preferred mitigation alternative to the tribe, with a one-quarter mile wide buffer being zoned around the reservation.

The presence of Project work force members near the reservation may lead to increases in violations of tribal lands and treaty rights. Exxon Minerals Company should alert Project employees and contractors of the need to respect Sokaogon land and treaty rights.

Exxon Minerals Company should, to the extent allowed by law, grant the Sokaogons' newly formed construction company, Sokaogon Limited, preferential treatment in bidding for contracts for which the company is qualified.

The Sokaogons' most realistic prospect for benefiting from the Crandon Project economically is through the development of enterprises which provide services to the mine, its workers, and their families. Seed money in the form of loans or grants to the tribe from the State

and/or Exxon Minerals Company for economically promising enterprises should be given consideration.

Mine exploration and development have led to the loss of lands formerly used for the collection of plants used for food and medicine. Exxon Minerals Company should consider allowing collection of food and medicinal plants by the Sokaogon on those lands it controls wherever safety permits.

Project initiation would increase in-migrant population and the number of school-aged children in the Crandon school system. The effects of more school children would increase discriminatory impacts against the Native Americans and contribute to continuing the high school dropout rate. Efforts should be made by the Crandon school system to reduce perceived discrimination against Native American students.

V.B.10 Selected Quotes from Sokaogon Chippewa Survey

The following quotations were obtained from key informant interviews with members of the Sokaogon Chippewa, Mole Lake, Wisconsin, March 1985.

"If the mine issue would never have come up, the population on the reservation would be about 190."

"I don't want them taking that metal to kill my brothers down in South America."

"If the mine pollutes the land, they [Sokaogon] will be spiritually polluted, like blood spilled onto the ground."

"We don't want the mine to disturb the dead who have gone back to Mother Earth. They are raping our own mother."

"Money is meaningless to us if we don't have our spiritual purity."

"Common sense tells us we are not being protected."

"White people think, 'What the hell does he know, he's just an Indian.'"

"We have a deposit of mineral on the reservation. If we wanted a mine, we could have our own mine."

"I don't see any advantage to the mine at all for the Sokaogon Chippewa tribe. It will bring heartache and grief."

"It [the mine] will put us against each other."

"I don't think Indians will get jobs [at the mine], even [those] from Crandon. They will go outside for help."

"We have problems with people coming back to the reservation, taking jobs when they don't have enough now."

"[They] say there will be jobs for our people. I know better. There are a lot of people in Upper Michigan out of work. They will be quick to hire them, not us."

"Exxon doesn't recognize our cemeteries are sacred to us."

"Everybody wants to come back here to die and be buried here. [It is] terrible to be buried in Milwaukee."

"I am a loyal citizen; I always voted. If the United States Government should need the ore, yes. If not, it should stay there."

"I lived in a mining community and we lived by the whistle."

"If they build the mine, then no way to prevent pollution of Swamp Creek and Wolf River."

"I am not willing to accept it [the mine] as an asset to the community until I am convinced they can control its consequences."

"I can't see any advantages to it [the mine]."

"If the Indian doesn't say no, who will? Who is going to care about the land? The white man has shown that he doesn't. He just gets up and leaves."

"I have lived here most of my life. The land, trees, rice, rocks and people are special to me. I can't see being without them. I think if the mine were to start up, they would be lost. The mine will ruin everything. Everything is so closely tied together. I can't imagine anything good coming out of the mine."

"Thirty years or 15 years from now, if I am compensated for loss of [the] wild rice, what about my daughter or granddaughter? They won't be compensated. They won't have no wild rice."

"There is worse prejudice of white to Indian here than white to black in the big city."

"Generally, the schools are not supportive and encouraging of Indian students. Most Indians have negative experience with school."

"Secondary benefits from the mine will go to Rhinelander and Antigo."

"I don't think the corporation [Exxon] is looking to use us as minority labor force. They will import them from other areas."

"We are asking Exxon to understand that the minerals are in litigation."

"They say no boomtown, but I don't believe it."

"Wild rice is a very sensitive product. It has been a food product for so long. That is why the people came here."

"The treaties were for the depth of the plow. Those minerals belong to the Chippewa."

"The corporation [Exxon] doesn't have an incentive to involve us."

"We are seeing a lot of hostility from the white community for criticism of the mine--'If it wasn't for you goddamn Indians at Mole Lake, we'd have money in our pocket; we'd be businessmen.'"

"I can be free on the reservation and free when I die here."

"Our religion is the earth, water and the sun. When you burn a Bible, you can buy a new one."

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Roberta Shepherd, Town Clerk, Crandon, telephone, 9-19-84.

Paul Shuman, Langlade County Highway Department, Antigo, telephone, 11-2-84.

John Skavlem, Department of Revenue, State of Wisconsin, Madison, telephone, 4-5-84.

Louis Smith, Superintendent of Operations, Rhinelander Post Office, personal, 7-18-84.

Mike Sohasky, Extension Officer, Langlade County Forestry Department, Antigo, telephone, 10-4-84.

Frank Sonderman, Public Relations, Exxon Minerals Company, personal, 7-25-84.

Jack D. Sorensen, Realtor, Century 21, GWIDT-Day Realty, Rhinelander, personal, 7-18-84.

Elaine Statezny, Librarian, Crandon, telephone, 9-25-84.

Walter Steiner, Town Chairman, Town of Pelican, telephone, 8-20-84.

Ed Sturzl, President, Laona State Bank, Laona, personal, 7-19-84.

John Suffron, ex-Copper Range Company, White Pine, Michigan, telephone, 3-4-84.

Joe Sveda, Assistant Director, Antigo School District, Antigo, personal, 7-25-84.

Perry Taylor, Postmaster, Rhinelander, personal, 7-18-84.

Blaine Townsend, Personnel, Exxon Minerals Company, Rhinelander, personal, 7-24-84.

Pat Travis, Director, Mining Impact Center (Nicolet College and Technical Institute in Rhinelander), personal, 2-14-84 and 7-18-84.

John Vanney, Zoning Administrator, Oneida County, Rhinelander, telephone, 9-25-84.

Tom Vollmar, Chairman, Nashville Mining Impact Committee, personal, 2-14-84.

E.H. Voss, Rhinelander Job Service, personal, 7-19-84.

Paul Walter, Antigo Housing Authority, Antigo, personal, 7-24-84.

Harold Walti, Town Clerk, Town of Crescent, personal, 7-25-84.

Dr. Charles Wetzel, Elcho Mine Impact Board, Elcho, telephone, 4-8-85.

James Willis, Senior Vice-President, First National Bank, Rhinelander, personal, 7-18-84.

Charles Wittrock, Town Clerk, Town of Pine Lake, personal, 7-24-84.

Russell Wood, ex-Copper Range Company, Evergreen, Colorado, telephone, 3-8-84.

Rollie Yokum, President, Yokum Realty, Crandon, personal, 7-18-84.

Conrad Zander, Town Chairman, Town of Schoepke, telephone, 10-31-84.

Dave Zwicky, Director of Parks and Recreation, Antigo, telephone, 2-6-85.

Three contractors or construction project managers with recent project experience within 10 miles of the Crandon Project site who preferred not to be identified, 9-5-84, 9-8-84, and 10-8-84.

APPENDIX A
SENSITIVITY ANALYSIS METHODOLOGY

APPENDIX A

SENSITIVITY ANALYSIS METHODOLOGY

INTRODUCTION

The approach used by DRI to project the economic and demographic effects of the Crandon Project does not purport to be a "model" of the level of complexity and ostensible precision of the model used to develop the projections described in EMC's "Forecast of Future Conditions" (referred to in this Appendix as the FOFC). Instead, the technique described here is a sensitivity tool, using a simplified economic base theory approach to approximate the economic and demographic conditions which would result from development and operation of the Project. While EMC's input/output (I/O) methodology projects changes in the level of transactions in the local study area and the resulting changes in income and employment, the economic base approach forecasts changes in local trade and service employment directly from changes in Project employment.

Central to economic base analysis is the hypothesis that changes in employment within a region among industries which are characterized as "basic" or export-oriented (i.e., whose product is destined for intermediate or final use outside the region) result in changes in "nonbasic" or local trade and service employment within the region. For the purposes of this report, Crandon Project employment, including construction work forces hired by Project contractors and subcontractors as well as permanent operations employment, constitutes the exogenous basic employment driving the economic base analysis. The nonbasic employment resulting from development of the mine and mill facilities is characterized as secondary in this report. Secondary employment includes both traditional nonbasic employment and indirect basic employment resulting from nonlabor Project expenditures made within the local study area.

The relationship between basic and nonbasic employment is expressed mathematically as a nonbasic/basic employment multiplier. Prior DRI research, particularly a retrospective analysis of power plant employment effects,¹ supports the selection of a constant multiplier of .5 for construction employment throughout the construction period and an operations employment multiplier beginning at .5 in 1985 and increasing by one percent per year throughout the operations period. The multiplier effect is lagged equally over a three-year period, smoothing the year-to-year fluctuations in projected employment changes.

The combination of direct and secondary employment projections yields a forecast of changes in employment demand over the projection

¹Denver Research Institute, Socioeconomic Impacts of Power Plants, Palo Alto: Electric Power Research Institute, 1982.

period within the local study area. The in-migration or out-migration effects which would accompany these changes in demand depend on the determinants of local labor supply (i.e., resident labor force). Resident labor force is determined by two factors: size of the working age population and participation rates of those of working age. The level of analysis here assumes that resident labor force participation rates remain constant over the projection period, that the labor force expands and contracts in direct response to changes in labor demand, and that levels of unemployment remain constant over the projection period.

To project household and population effects, employment projections must be reduced by an employment/household factor. A unique factor is applied to each type of employment (Project construction, Project operations, and secondary) to derive projections of households headed by each (see Tables B-29 through B-32 in Appendix B). Finally, a family size factor is applied to each type of household to determine projections of in-migrant population for each (see Tables B-11 through B-15 in Appendix B).

As described in the Introduction, a model's uncertainties are not inherently self-correcting or self-canceling; rather, they are cumulative. As an example, an error in forecasting a project's level of local spending will result in a vulnerable estimate of the project's secondary employment effects; any subsequent error in input assumption is likely to be random, and therefore could not be expected to diminish the initial vulnerability. The projections of employment, households, and population which result from the process described here are, of course, order of magnitude approximations; any implication of greater precision is unintended. In our judgment, the approach used in this analysis is consistent with the level of confidence in the input assumptions and data available. Also, the data, assumptions, and method are "transparent," allowing for accessibility and critique.

Notwithstanding the differences in design and complexity between the EMC and DRI approaches, their similarities in the range of assumptions used to develop population projections allow for comparisons of results using different values for key assumptions. The output of the DRI sensitivity analysis incorporates our best estimates regarding updated information, employment multipliers, residential location decisions, and other key assumptions. In most cases, our assumptions are substantially similar to those used in the FOFC. Where assumptions differ, DRI uses more recent data or assumptions considered to be superior to those used by EMC. For example, the FOFC uses direct employment projections which were superseded in 1984 by updated EMC work force projections. It can be noted in the figures at the end of this Appendix that a significant effect of the later projections as compared with the earlier is the dramatic reduction in peak impact during the third year of construction.

In many cases DRI has accepted EMC assumptions which appear to be reasonable, but which are essentially unverifiable or could be replaced

with equally valid alternative assumptions. To permit greater comparability of results, DRI has avoided substituting its judgment for that of EMC wherever possible.

The following are the significant assumptions and input parameters used in preparing the sensitivity output which is compared graphically with that of EMC's model by the figures at the end of this Appendix.

Baseline Population Assumptions²

DRI has accepted as reasonable the annual rates of growth projected in the FOFC under the without-project or baseline scenario between 1984 and 2011 for each of our jurisdictions of analysis. (However, DRI rejects as speculative and unsupported the conclusion that, between 2011 and 2016, extensive in-migration will occur--from unspecified locations--associated with the replacement employment due to retirements among the "baby boom" generation.) The rates of growth are applied to each jurisdiction's 1984 population estimates provided by the Wisconsin Department of Administration, Division of Demographic Services.

Baseline School-Age Population and Enrollment

Because the overall growth rates of the EMC model are identical with those of the DRI model, DRI has accepted EMC's projections of the proportion of population which is between the ages of 5 and 18 for both the baseline and impact projections (RPC, Stern Memorandum, March 24, 1984). To the projections of population in each jurisdiction in the local study area are applied the EMC proportions to derive estimates of the school-age population. The school-age population in each school district is estimated by DRI from these projections by adding to the population of jurisdictions entirely within each district a percentage of those jurisdictions which are only partly included. Table A-1 presents a list of school districts and the corresponding jurisdictions included in the DRI analysis.

To account for private school enrollment and for nonenrollments of 16-, 17-, and 18-year-olds, public school enrollment projections were derived by reducing school-age population by 10 percent.

Baseline Employment

Employment by place of residence under the without-project scenario was projected for each county in the local study area by applying a marginal employment/population ratio to each increment of population in each county in the area. The ratio for each year was derived from EMC's

²The term "baseline" refers to a trend-line projection under the without-project scenario.

TABLE A-1. JURISDICTION POPULATION INCLUDED IN SCHOOL DISTRICTS

School District	Included Jurisdictions
Crandon	City of Crandon (All) Crandon Township (All) Lincoln Township (All) Nashville Township (All) Balance of Forest County (20.9%)
Antigo	City of Antigo (All) Antigo Township (All) Balance of Langlade County (68.2%)
Elcho	Elcho Township (All) Balance of Langlade County (23%)
Rhinelanders	City of Rhinelanders (All) Crescent Township (All) Newbold Township (40%) Pelican Township (All) Pine Lake Township (All)

projections of population and total employment under the without-project scenario. Total employment in each county in the local study area was benchmarked in 1984 from annual averages provided by the Wisconsin Department of Industry, Labor, and Human Relations and reduced by the local study area adjustment factors for Forest County (.923), Langlade County (.977), and Oneida County (.763).

Baseline Housing

The approach used by DRI in projecting housing need assumes constant household size over the baseline, or without-project, period. This assumption is based on the uncertainties with respect to new household formations, retirement-related in-migration, and employment-related in-migration over the 30-year horizon of the projection. By contrast, EMC projects housing supply through the assumption that average household size in the local study area will continue to decline as it has in the past; EMC's estimated household size of 3.0 in 1980 is projected to decline to 2.25 in 2016. This assumption incorporates the conclusions that retirement-related in-migration will continue at a constant rate throughout the period and that the combination of retirement-related in-migration and new household formations in the study area will continue to have a diminishing effect on average household size. As a result, EMC estimates of housing supply increases over the period are considerably higher than those of DRI.

DRI's projection of new households in the local study area under the impact scenario assumes the household size by employment of head of household (construction, operations, and secondary) described earlier in this Appendix. The housing projections also incorporate the assumption that each new household formed within the study area results in the need for an additional housing unit. This assumption implies that both replacement and vacancy rates remain constant and that any conversion of second homes to primary residence is offset by replacement construction. However, the projections assume a "ratcheting" effect of housing supply--i.e., supply remains constant after out-migration of population until total demand exceeds the previous maximum.

Baseline Public Costs

To allow for comparability with EMC output, the DRI analysis assumes that current standards (regardless of their perceived adequacy or possible changes discussed in Chapter III) prevail throughout the baseline period. The analysis incorporates the per capita average costs used in the EMC analysis, applied to the baseline population projections derived as described above. The baseline projections also include minor capital costs (i.e., less than \$15,000) described in the "Forecast of Future Conditions (Data Summary)." Finally, the DRI analysis

incorporates the thresholds described in the FOFC for changes in service levels for the affected jurisdictions.

Impact Employment

1. Direct Project ("Basic") Employment

Total operations and construction employment projections (as revised in 1984) were provided by EMC. The analysis uses annual average (or FTE) employment figures, rather than peak year projections, to calculate the ensuing effects of that employment. The direct employment demand is reduced by a local-hire estimate of 24 percent for the construction work force and 46 percent for the permanent operations work force; these estimates were derived as described in Chapter I. Application of the local-hire factors is somewhat lower than would be expected because to qualify as a "local hire" for analysis purposes a person must not only be qualified to fill a particular job on the Project, but also must be unemployed at the time the job is filled. The latter condition is necessary to avoid undercounting due to the "backfilling" of jobs in the local study area (i.e., the replacement hiring in nonproject basic jobs and in secondary jobs to replace workers employed directly at the Crandon Project).

The DRI projection of the effects of the Crandon Project assumes that construction begins early in 1986 (to enable comparisons with EMC projections) and follows the 42-month schedule forecast in the latest EMC work force estimates.

2. Secondary Employment

The indirect and induced employment effects of the Project assume a constant secondary/direct employment multiplier of .5 for the construction work force, and a multiplier of .5 increasing by one percent per year for the Project's operations work force. Each multiplier is lagged equally over a three-year period (as are EMC's), but is otherwise "frictionless" in that the methodology assumes that changes in productivity are offset by changes in real wages. It is assumed that labor force participation, unemployment, and multiple job holding rates (except as they are implied within the local-hire analysis) remain constant over the projection period.³

³The DRI approach differs considerably from that of EMC with respect to unemployment. The EMC model attempts a year-by-year forecast of unemployment and projects in-migration or out-migration as a result of unemployment varying outside a specified range (7 percent to 13 percent). Because of the inherent unpredictability of rates of unemployment (an uncertainty which grows geometrically over time), DRI has not attempted to emulate EMC's effort at precision.

Residential Distribution of Impact Work Force

To determine the likely residential distribution of the construction, operations, and secondary employees resulting from the Crandon Project, DRI first analyzed the distribution implied in the FOFC, as reported in the RPC Vance memorandum dated February 29, 1984, and as revised in a subsequent letter from B.J. Hanson of EMC, dated November 21, 1984. The distributions derived by the EMC methodology, which can be characterized as a modified gravity model, were further modified by DRI to develop the following percentage distributions of the three types of employees shown in Table A-2.

These distributions differ somewhat from those of EMC (see Table A-3). Unlike EMC's changing distributions, DRI's percentage distributions are assumed to remain constant over the projection period for each of the employment types in each community. Also, EMC projects that, despite the distribution of almost half the direct Project work force to Oneida County, secondary employment in the Rhinelander area will be displaced early in the operations period of the Project by employment in the Antigo and Crandon areas. Also, EMC projects that the city of Rhinelander will be able to accommodate only a minimal amount of new employment during the construction period, and none at all during the operations period. While DRI agrees with the conclusion that expansion opportunities within the existing city limits are limited, some in-fill and increased housing density will accommodate additional population within the city, even without annexation.

Impact Households

The projection of new households to be formed within the local study area over the Project period is calculated by applying the following EMC-based employment/household factors:

Construction:	1.215 workers per household
Operations:	1.177 workers per household
Secondary:	1.302 workers per household

The resulting projections of households are reported by employment of head of household. (See Appendix B.)

Impact Population

The total, aggregate population characteristics (as used by EMC) of each type of family are shown below. (DRI uses the simplifying assumption that each family creates a household.)

Construction:	2.278 persons per family
Operations:	3.286 persons per family
Secondary:	3.52 persons per family

TABLE A-2. DRI RESIDENTIAL DISTRIBUTION OF DIRECT PROJECT WORK FORCE

Jurisdiction	Construction	Operations	Secondary
City of Crandon	8.0%	7.5%	10.0%
Town of Crandon	2.0	2.0	1.0
Town of Lincoln	10.0	6.5	1.0
Town of Nashville	12.0	8.0	2.0
Balance of Forest Co.	<u>8.0</u>	<u>8.5</u>	<u>7.0</u>
Forest County	40.0	32.5	21.0
City of Antigo	9.5	13.5	35.0
Town of Antigo	1.0	2.0	5.0
Town of Elcho	4.0	3.0	5.0
Balance of Langlade Co.	<u>8.0</u>	<u>8.0</u>	<u>4.5</u>
Langlade County	22.5	26.5	49.5
Town of Crescent	2.0	2.5	3.0
Town of Newbold	4.5	6.0	4.0
Town of Pelican	8.0	14.5	7.0
Town of Pine Lake	5.0	7.0	6.0
City of Rhineland	10.0	3.0	5.0
Balance of Oneida Co.	<u>8.0</u>	<u>8.0</u>	<u>4.5</u>
Oneida County	37.5	41.0	29.5

TABLE A-3. EMC RESIDENTIAL DISTRIBUTION OF PROJECT WORK FORCE

	1985	1990	2000	2010
City of Crandon	6.1%	7.6%	7.7%	7.6%
Town of Crandon	2.1	1.9	1.9	1.9
Town of Lincoln	<u>9.4</u>	<u>6.1</u>	<u>6.0</u>	<u>6.2</u>
Forest County	36.6	31.2	31.2	31.2
City of Antigo	10.0	13.1	12.7	13.1
Town of Antigo	1.3	1.8	1.7	1.7
Town of Elcho	<u>3.8</u>	<u>2.9</u>	<u>2.9</u>	<u>2.8</u>
Langlade County	22.8	25.7	25.9	25.6
Town of Crescent	2.5	5.2	5.2	5.3
Town of Newbold	3.3	5.7	5.7	5.8
Town of Pelican	6.7	14.6	14.8	14.7
Town of Pine Lake	3.6	7.2	7.2	7.2
City of Rhineland	<u>14.2</u>	<u>3.1</u>	<u>2.9</u>	<u>3.2</u>
Oneida County	30.6	43.1	42.9	43.2

As shown in the population figures in Appendix B, the proportional impact of the Project varies significantly from community to community in the local study area. Although the scale of the graphics in these figures is somewhat misleading, it has been selected to illustrate the effect of Project-related in-migration on growth in each jurisdiction. The greater the distance between the baseline and the impact scenario population on the graphs, the greater is the proportional impact of the Project on the growth of a community. For example, Figure B-9 shows that the Project will have a very significant role in causing growth in Elcho, although the absolute increase in population during the operations period is less than 100 persons. By contrast, Figure B-13 shows that the relative effect of the Project on the town of Pelican is much smaller, while the absolute population increase during the operations period is approximately 200 persons. Clearly, attention must also be paid to the absolute impact of the Project on the community (as reflected in the scale of each graph) as well as its relative impact.

The school-age population projections are derived by applying the following household-based factors:

Construction:	.789 children per worker
Operations:	1.479 children per worker
Secondary:	1.7 children per worker

Public school enrollment is determined by district as described above.

COMPARISONS BETWEEN DRI AND EMC PROJECTIONS

Figures A-1 through A-15 at the end of this Appendix show the comparisons between DRI's and EMC's projections of population. The primary distinction between the two sets of projections is in DRI's use of the later EMC employment estimates. The later estimates include lower work force estimates for both the construction and operation periods, as well as a shortened construction period. The population effect of these differences is offset somewhat by DRI's assumption of a lower local-hire proportion than EMC.

As shown in Figure A-1, DRI's projection of total study area population shows a lower population than EMC's through the construction period and most of the operations period, but during the latter years of the operations period, the DRI projection slightly exceeds that of EMC. This cannot be explained by the lower local-hire proportions; also, a comparison of the two secondary employment multipliers indicates that DRI's is as low as or lower than that of EMC.

After reviewing the technical description and output of the EMC modeling activity, it appears that the differences are due to a combination of two factors. First, the EMC baseline projection shows a

higher growth rate during the early years of the period, followed by a flatter rate until the last years of the period, when the baby boom retirement phenomenon occurs. DRI makes the simplifying assumption that the baseline growth rate is constant over the period. The second factor appears to be somewhat related to the first. EMC assumes productivity increases throughout the projection period in each of the economic sectors projected by the I/O model. For example, in the agricultural sector, real productivity as measured by constant-dollar output per employee increases by 120.9 percent over the period from 1980 to 2016 (EMC, Economic Analysis Methodology--Socioeconomic Assessment). In the mining sector, the increase in productivity, while less remarkable, is approximately 22.4 percent over the same period. The implication of this modeling assumption is that, unless total output increases each year by at least an equal amount assuming real wages remain constant, the productivity gains will result in reduced employment. This appears to be the case for the baseline period, where early rates of increase in employment, and therefore in population, are significantly decreased over the projection period (with the end years exception).

Over the impact period, the effect of this modeled increase in productivity appears to create a particular anomaly in direct Project employment. In its first report of the residential distribution of the direct operations employees⁴, the total work force portrayed in all places of residence in the later years sums to 611, or approximately 22 percent less than the 780 shown as total operations workers in the FOFC. It is possible that the similarity between the reduction in work force and increase in modeled productivity is merely a coincidence, but it appears equally likely that the lower employment figure results from the operation of the model.

A second difference between the DRI and EMC output, discussed earlier, is in the distribution of the construction, operations, and secondary employees among the jurisdictions of primary impact. This difference results in relatively greater or smaller impact in each of the jurisdictions selected for primary analysis than is projected by EMC.

The combination of differences in annual baseline growth rates, productivity and direct Project work force assumptions, and distribution of employee households results in the differences between DRI's and EMC's population projections for the communities of primary impact, as portrayed in Figures A-1 through A-15. These differences are similar to those shown in employment and household projections. Also, because the projections of school-age population and public costs rely primarily on population as a driving factor, the DRI and EMC projections of these socioeconomic variables show differences which are consistent with those shown for population. The comparisons between the two sets of projections of public costs are shown in Figures A-18 through A-32.

⁴RPC, Vance Memorandum, February 29, 1984.

FIGURE A-1

Comparison of EMC and DRI Projections

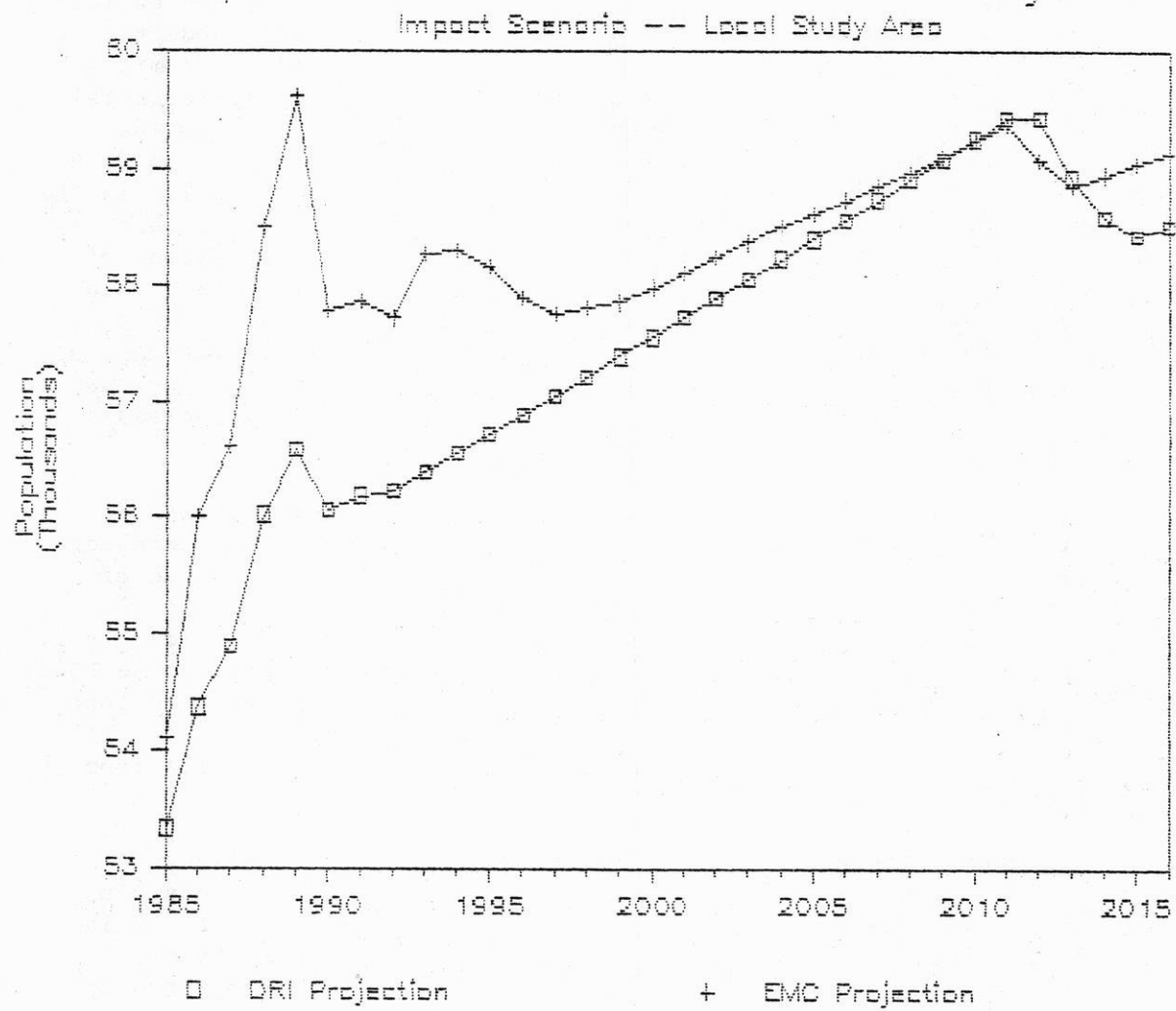


FIGURE A-2

Comparison of EMC and DRI Projections

Impact Scenario -- City of Grandon

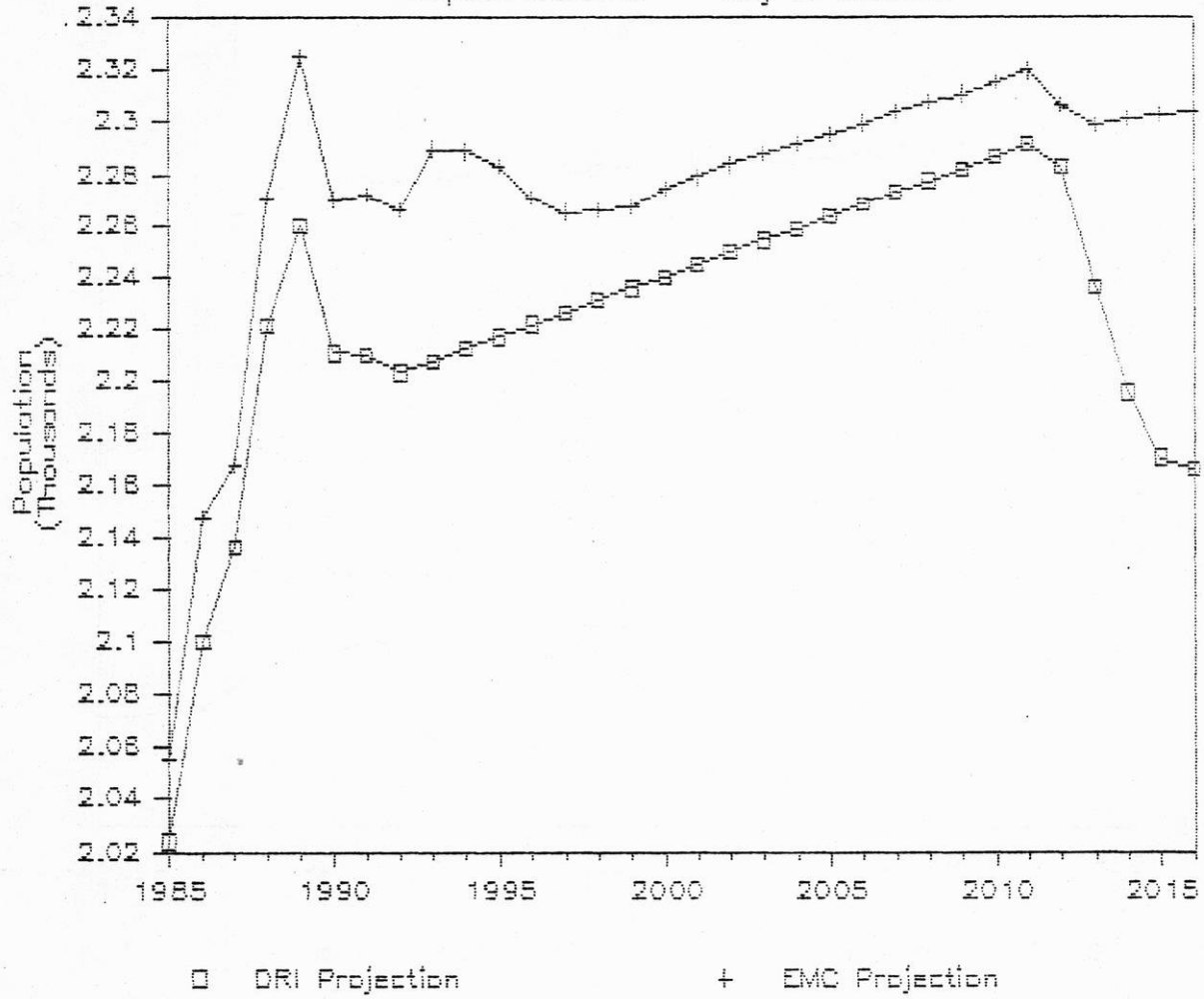


FIGURE A-3

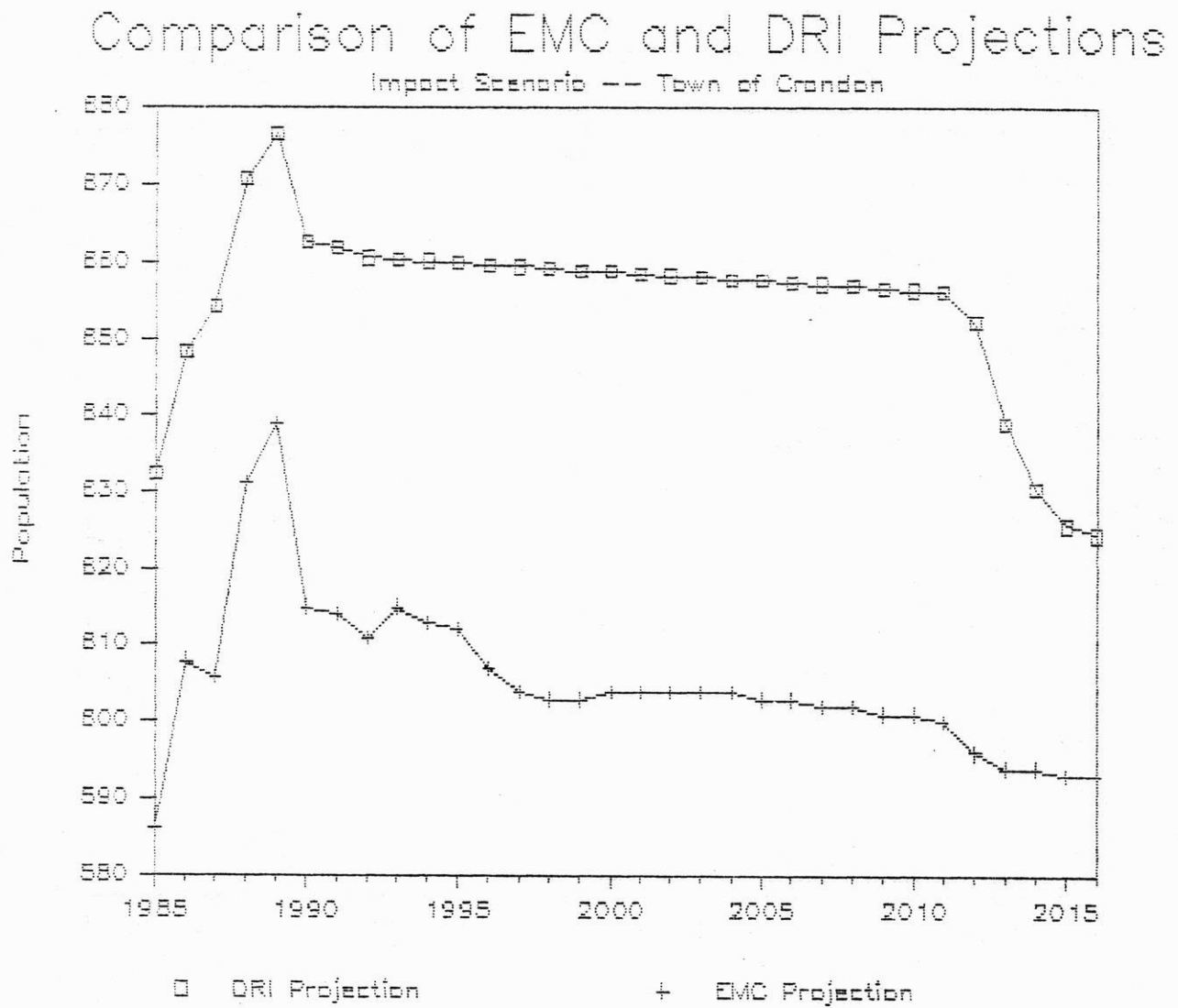


FIGURE A-4

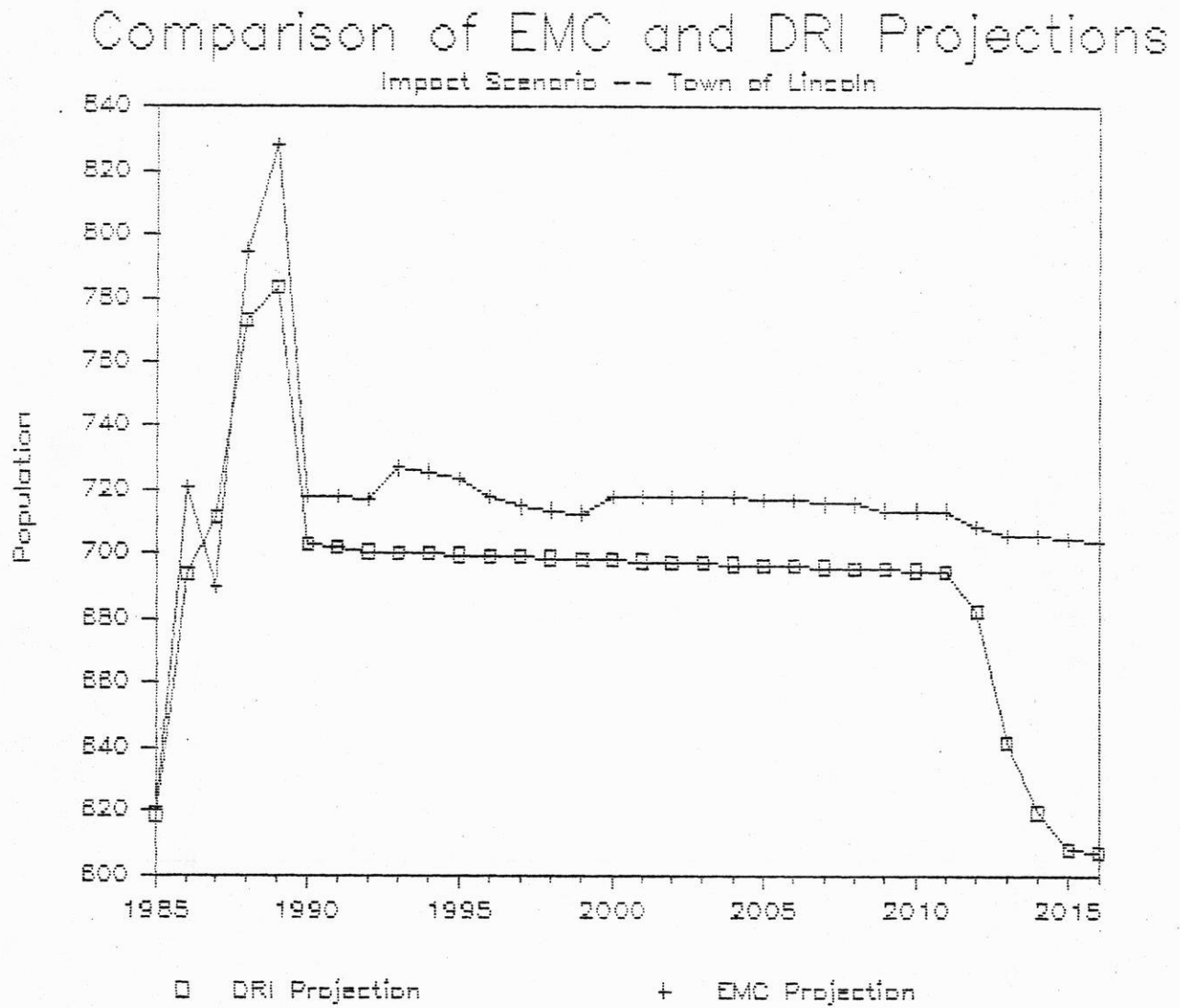


FIGURE A-5

Comparison of DRI and EMC Projections

Impact Scenario -- Town of Nashville

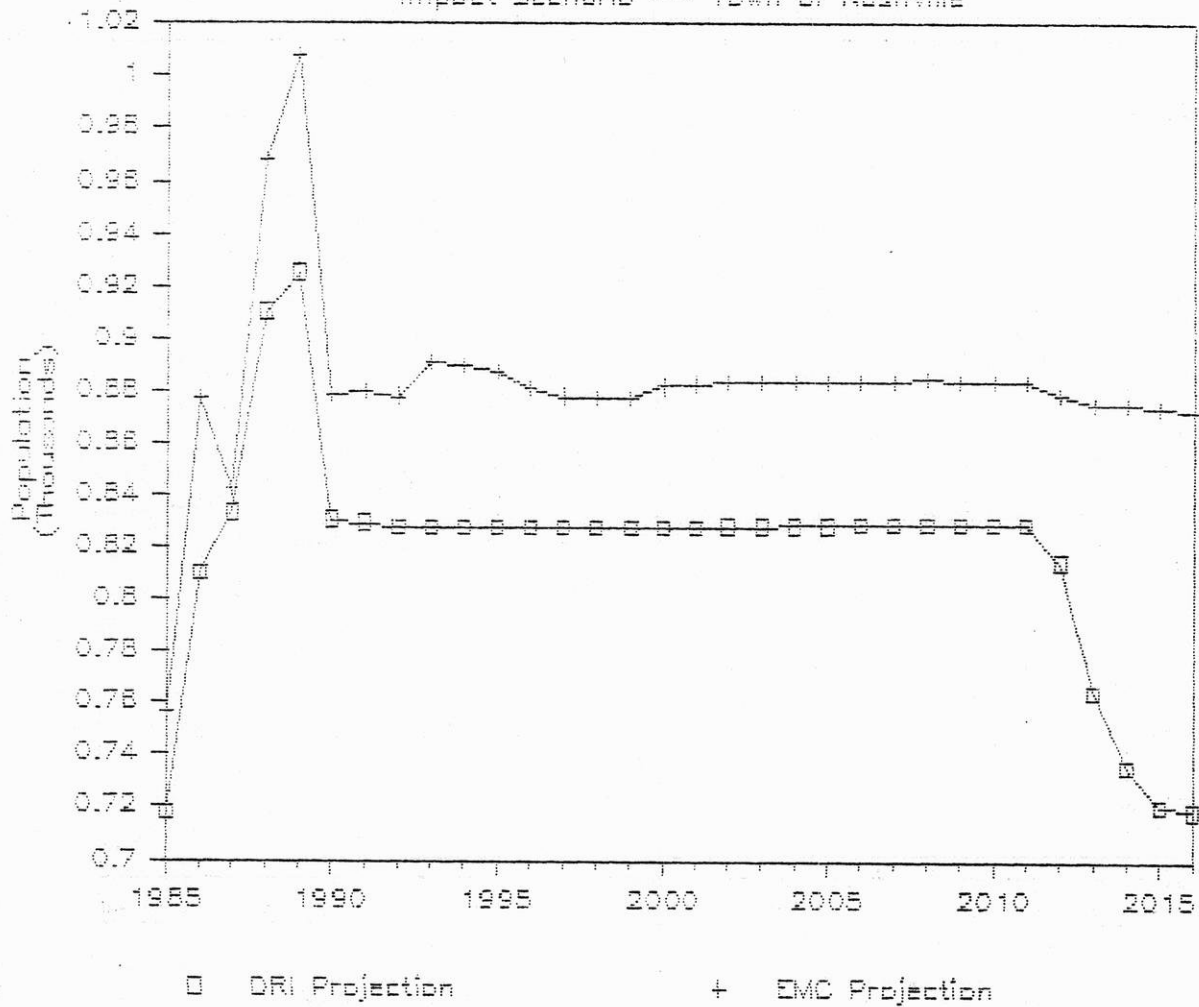


FIGURE A-6

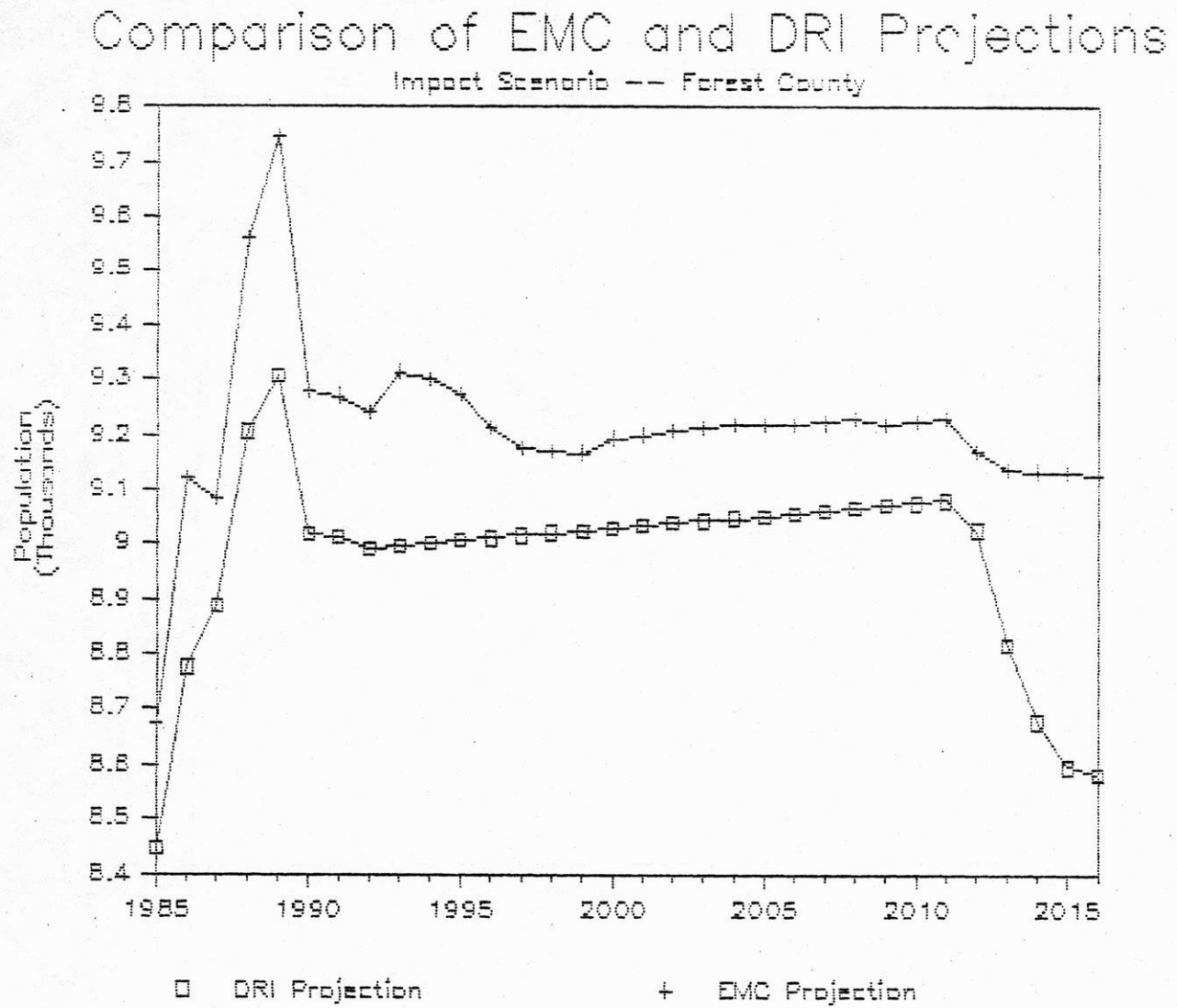


FIGURE A-7

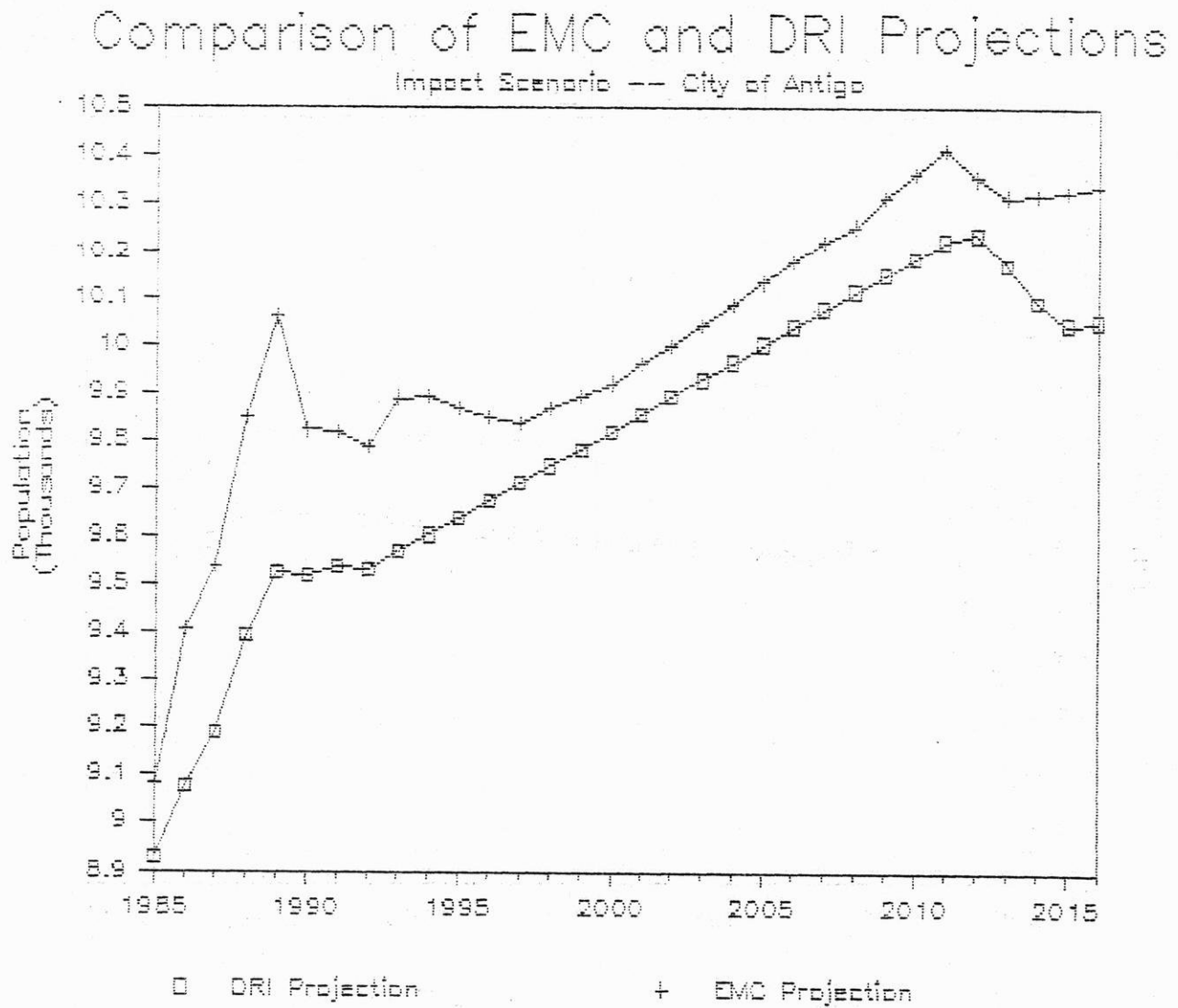


FIGURE A-8

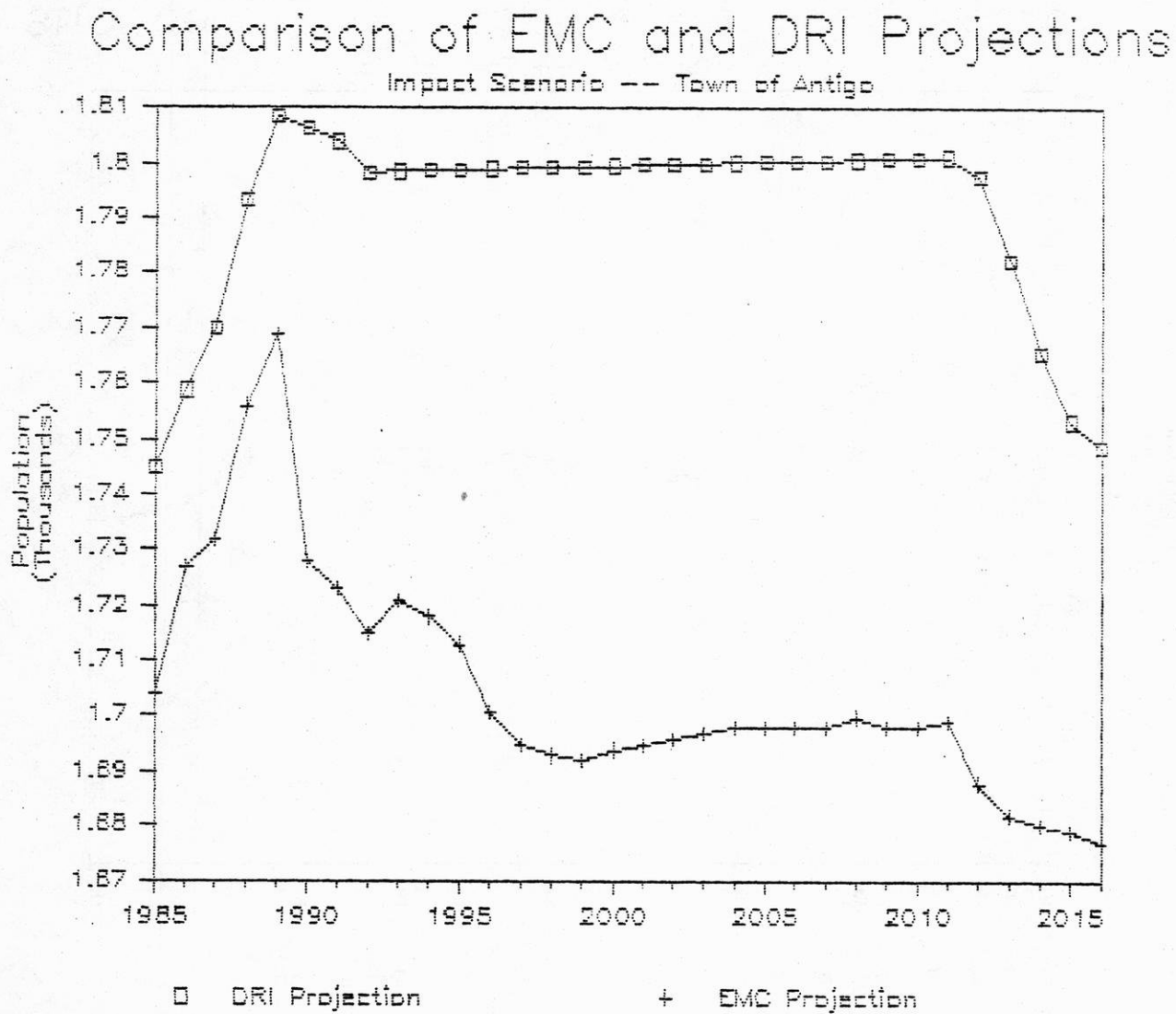


FIGURE A-9

Comparison of EMC and DRI Projections

Impact Scenario -- Town of Elcho

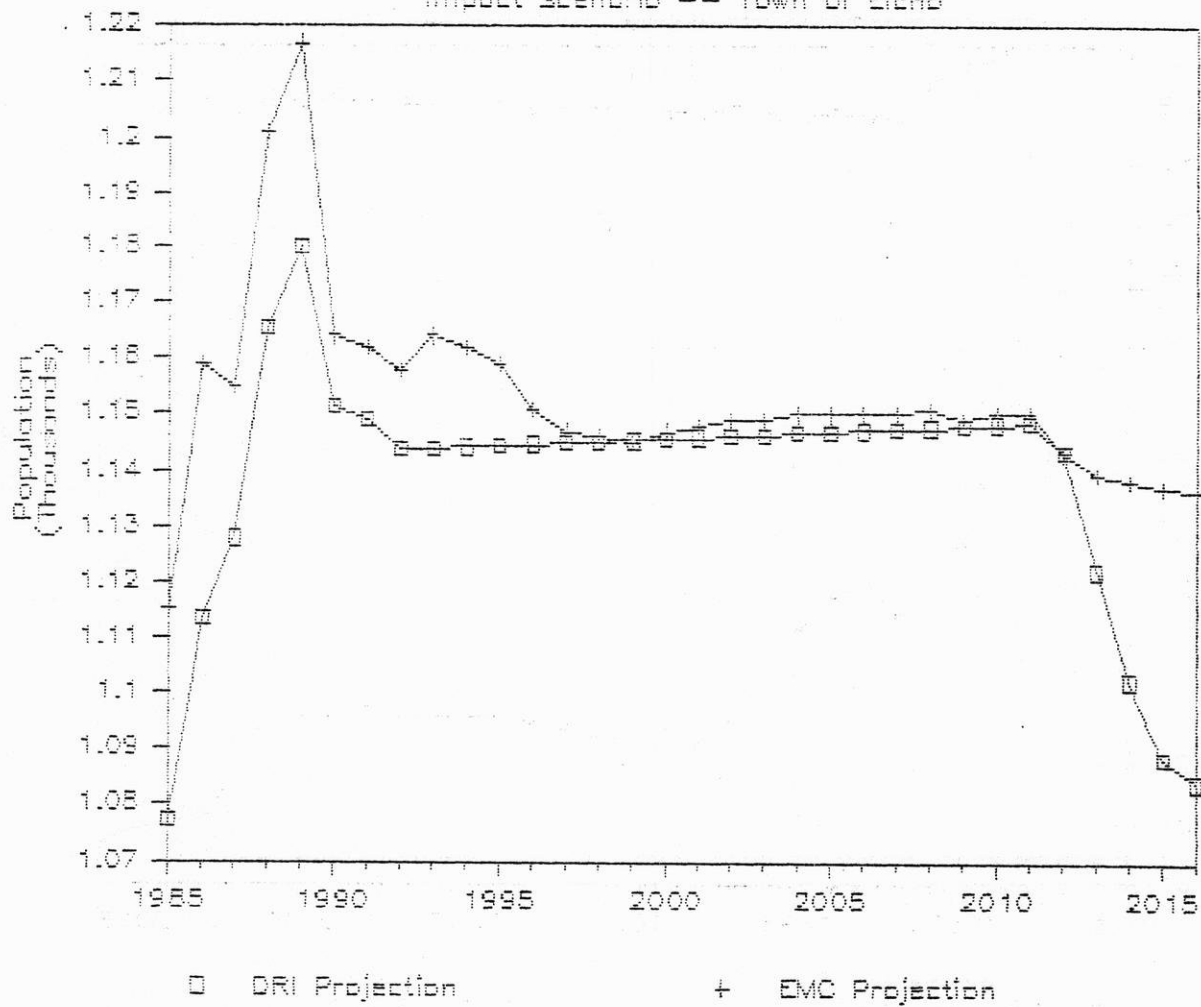


FIGURE A-10

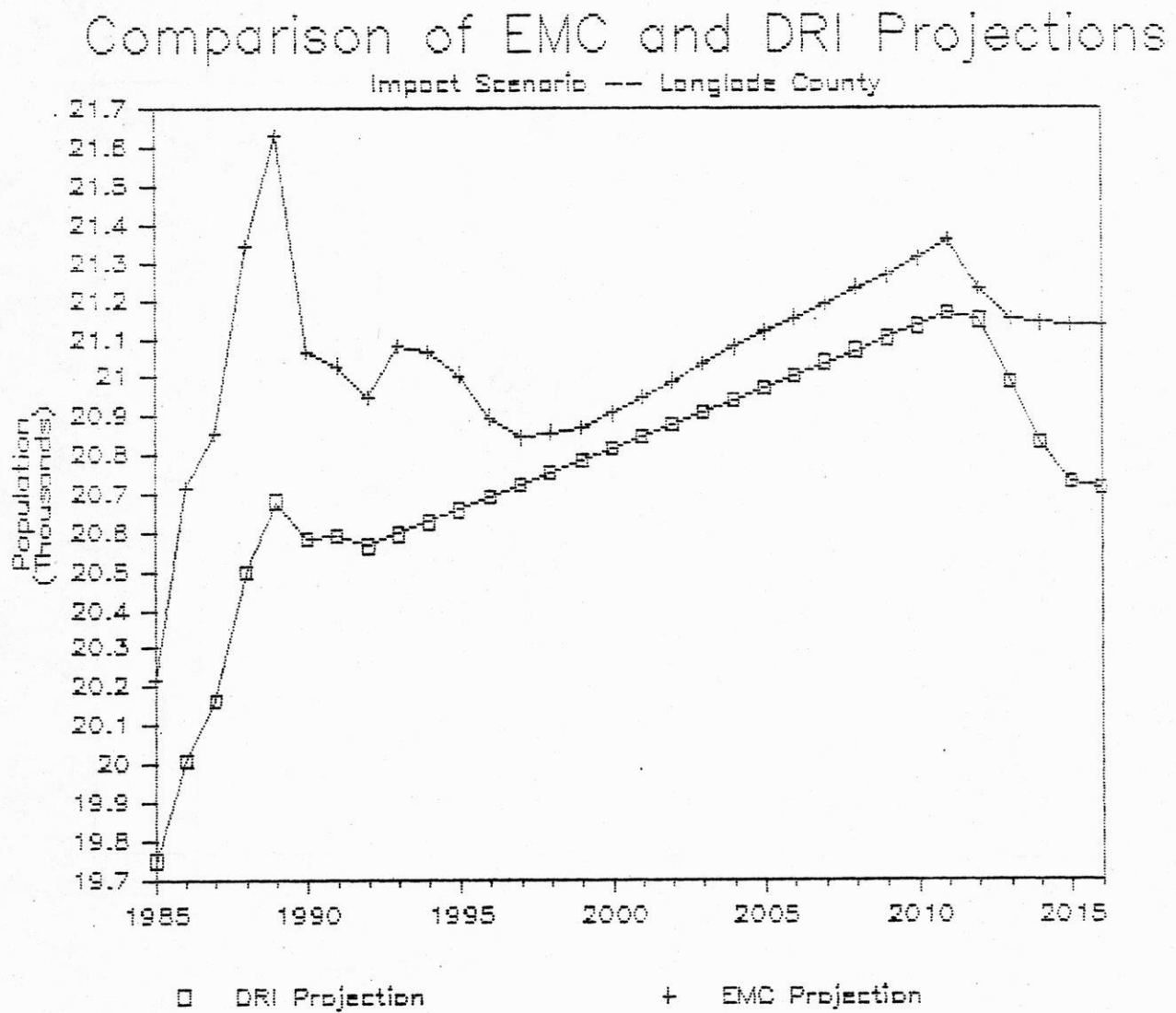


FIGURE A-11

Comparison of EMC and DRI Projections

Impact Scenario -- Town of Crescent

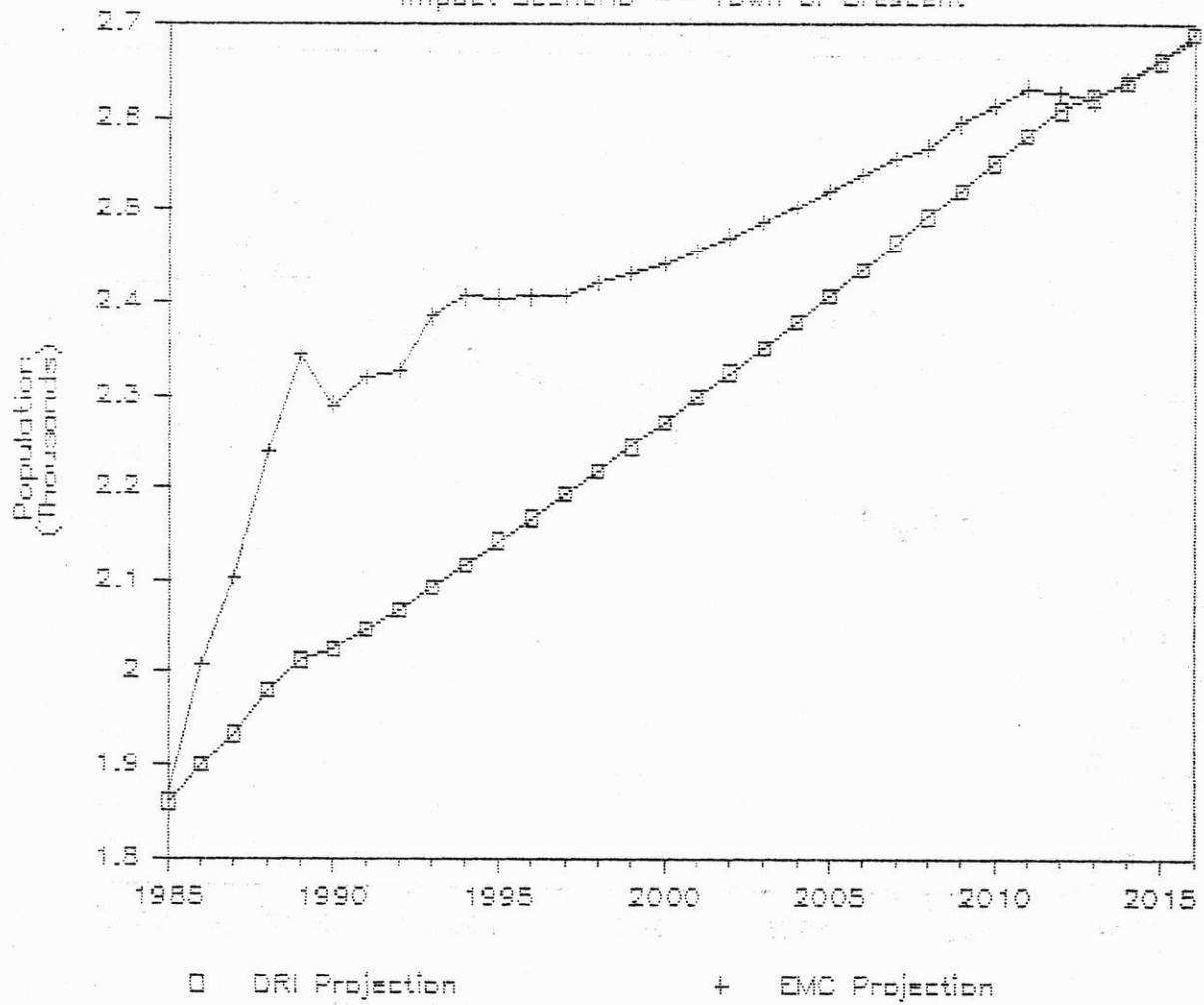


FIGURE A-12

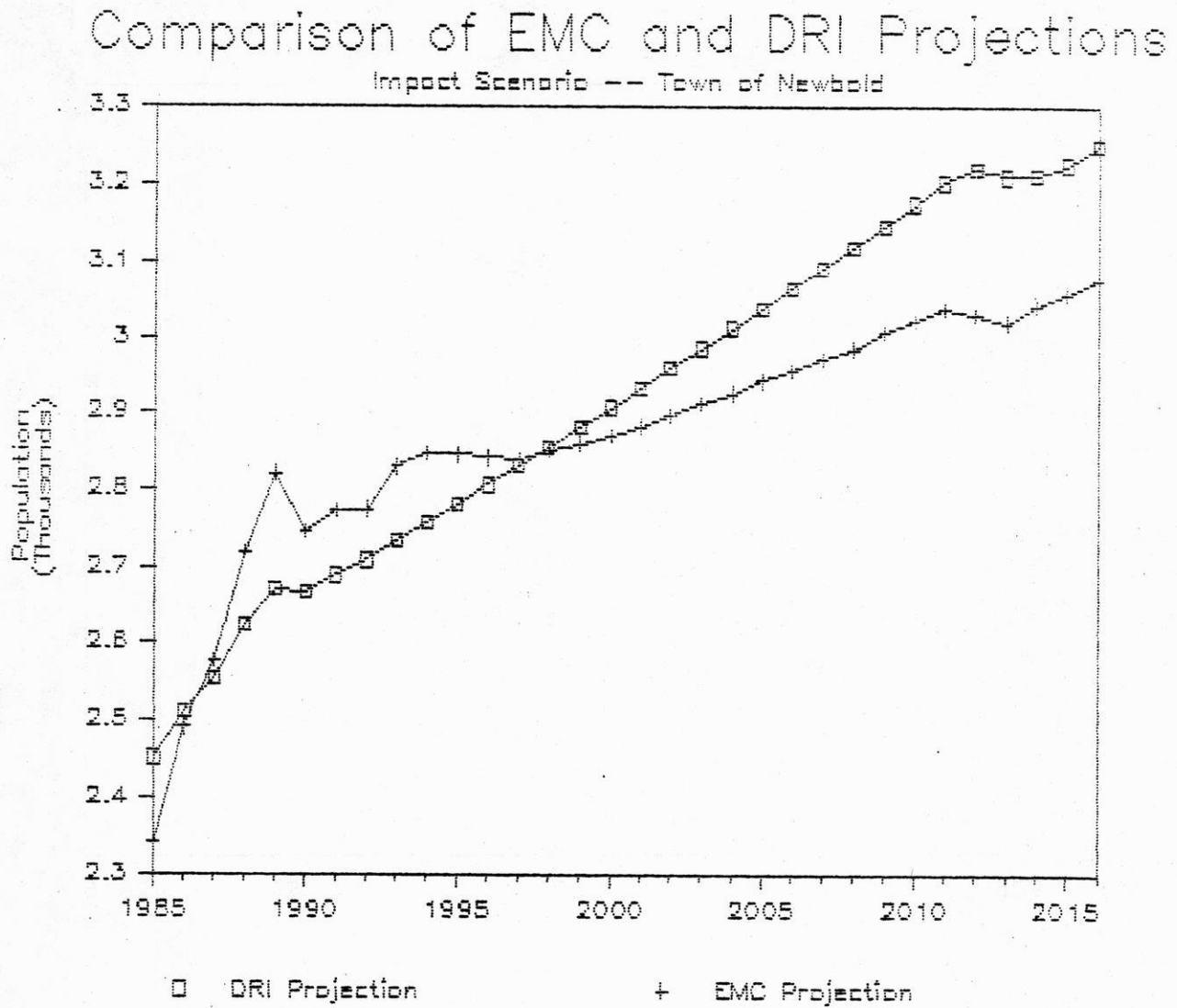


FIGURE A-13

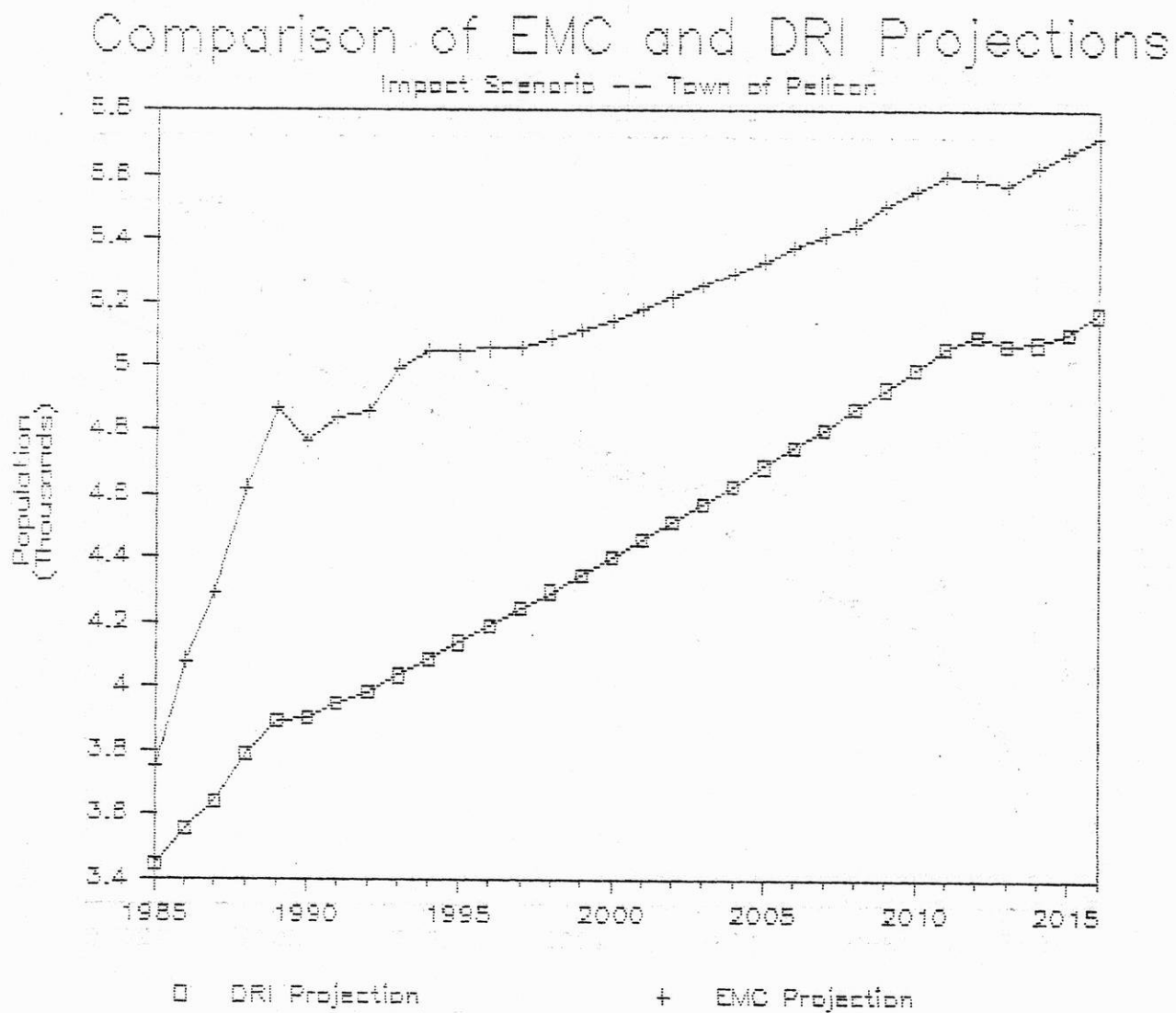


FIGURE A-14

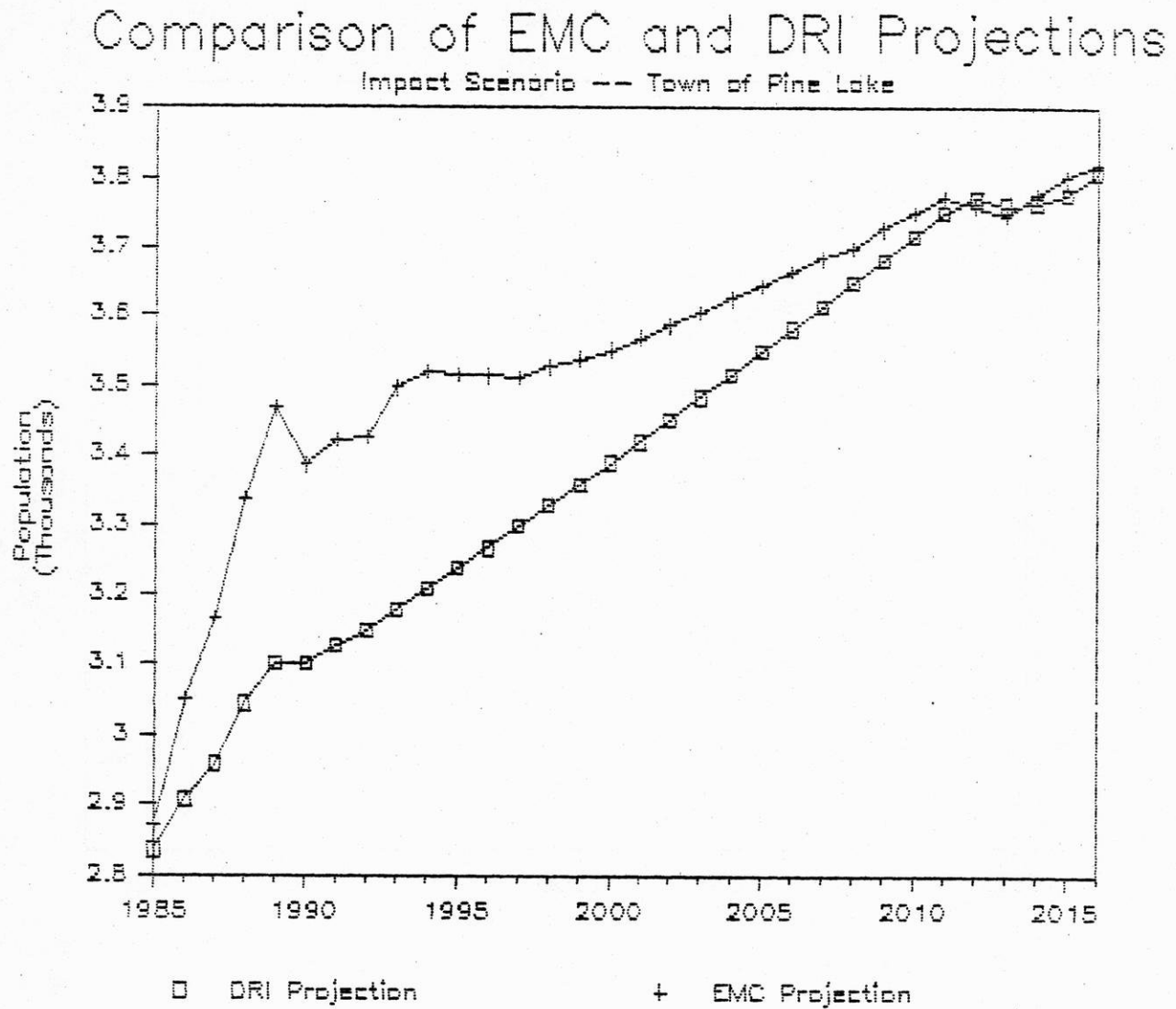


FIGURE A-15

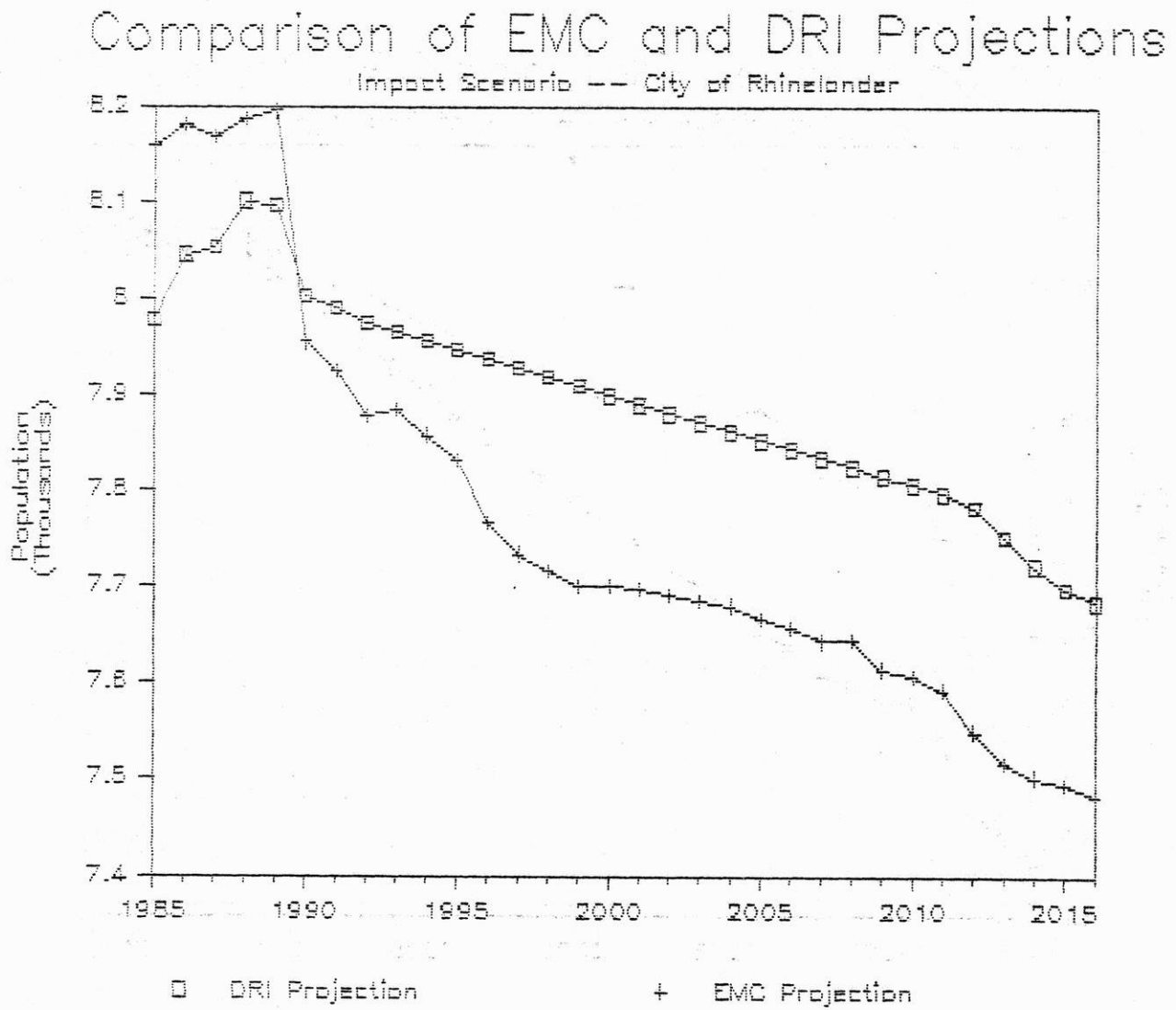


FIGURE A-16

Comparison of EMC and DRI Projections

Impact Scenario -- Onside County

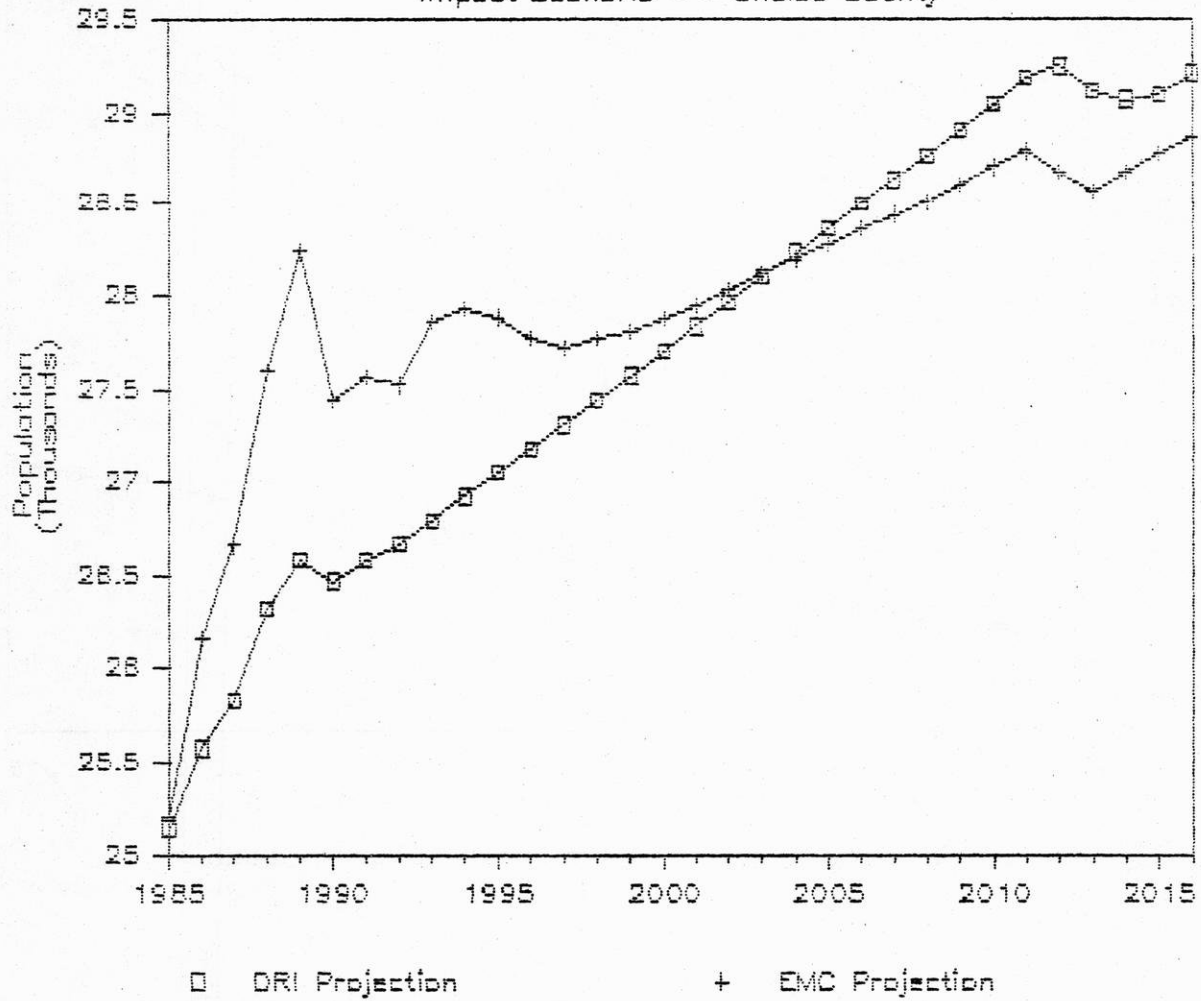


FIGURE A-17

Comparison of DRI and EMC Projections

LSA Housing Need, Baseline

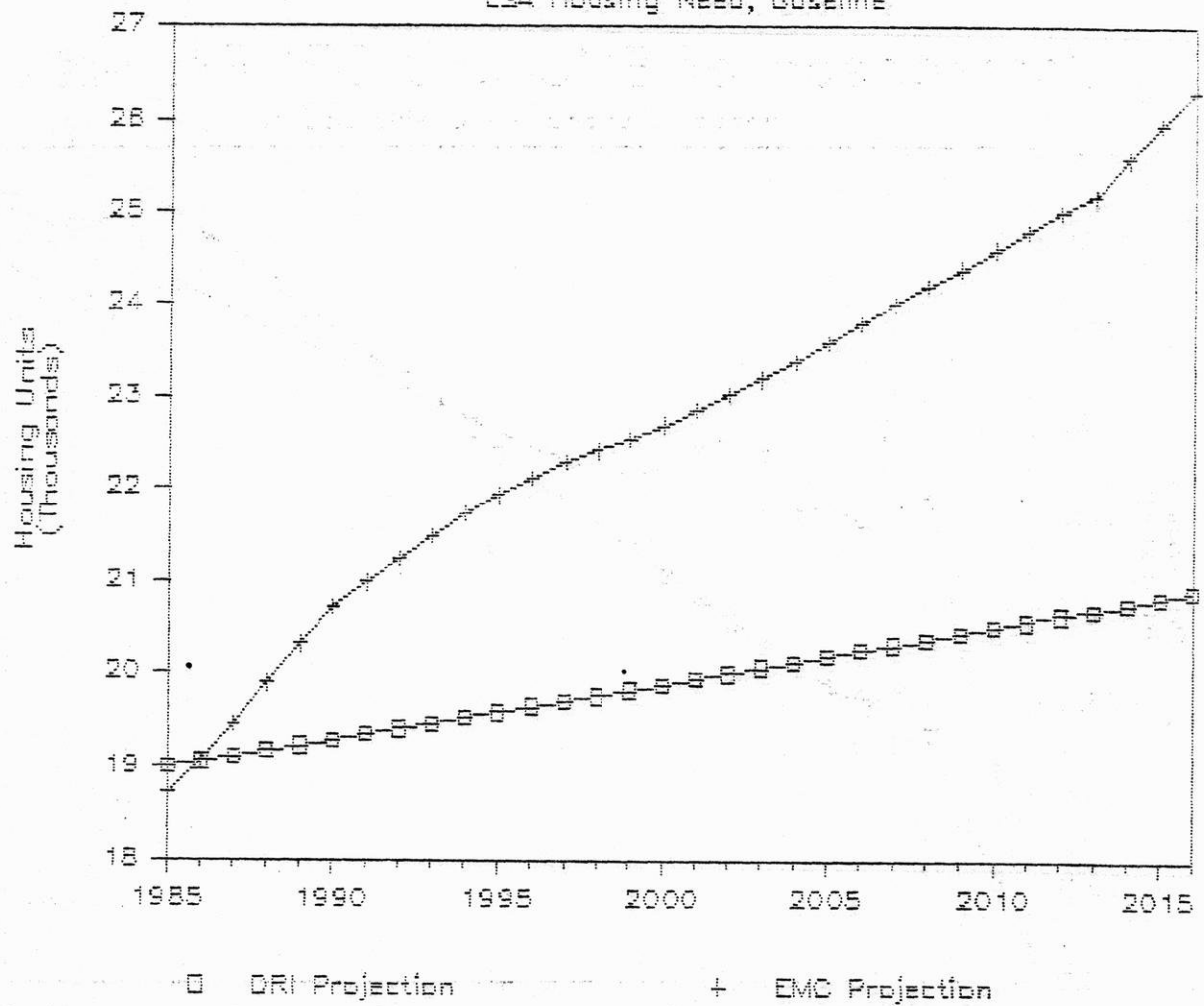


FIGURE A-18

Comparison of DRI and EMC Projections

LSA Housing Need, Impact Scenario

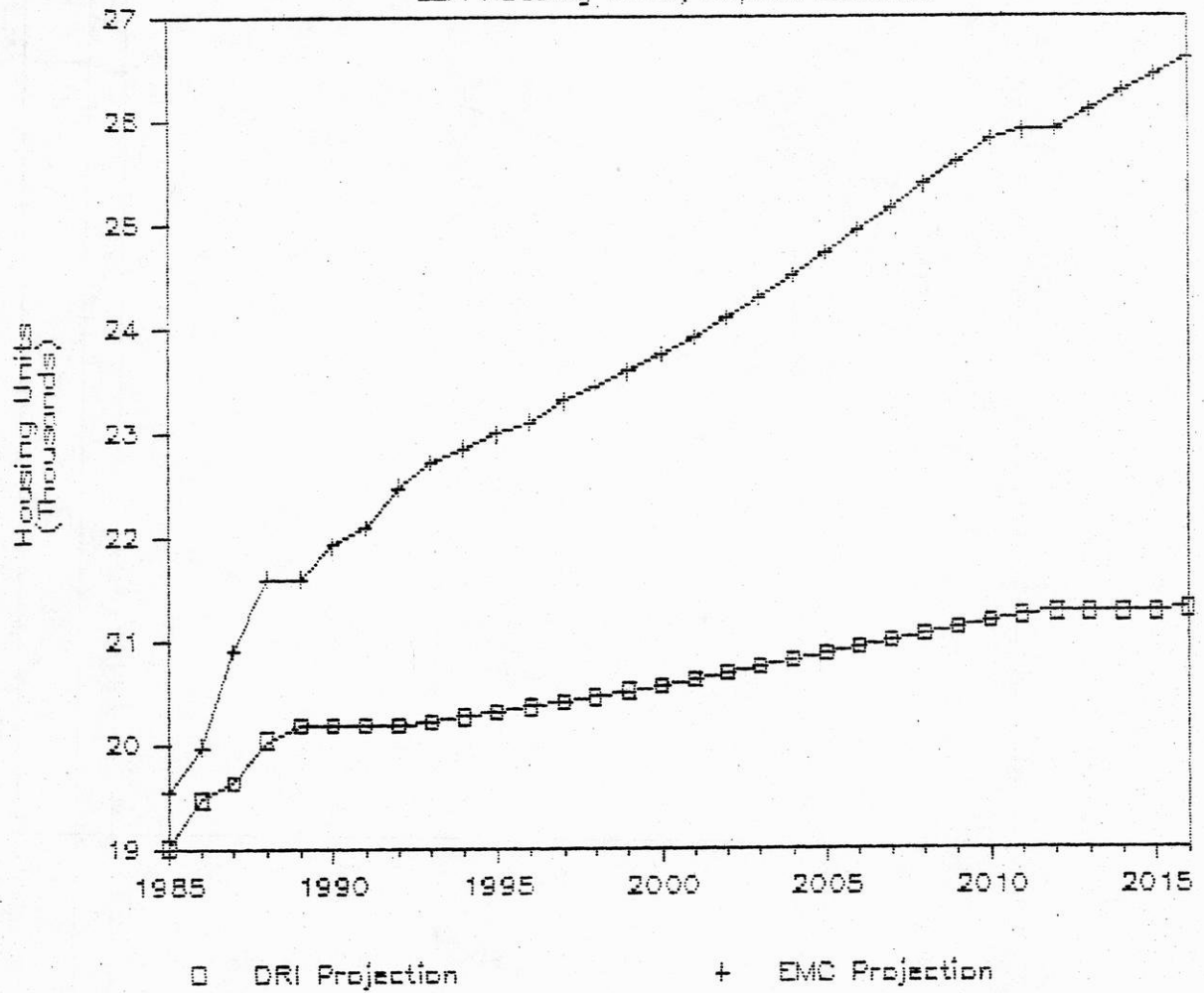


FIGURE A-19

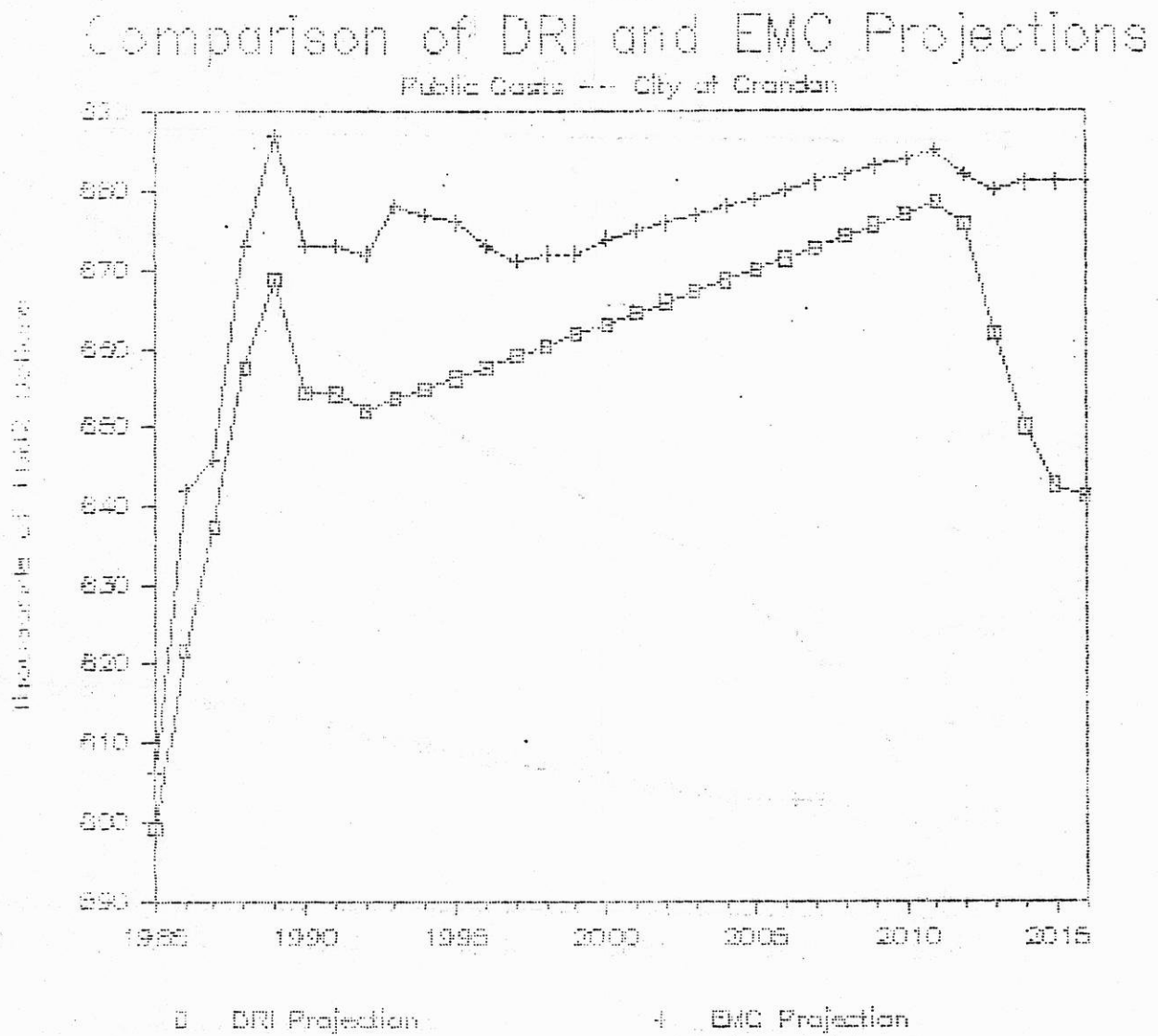


FIGURE A-20

Comparison of DRI and EMC Projections

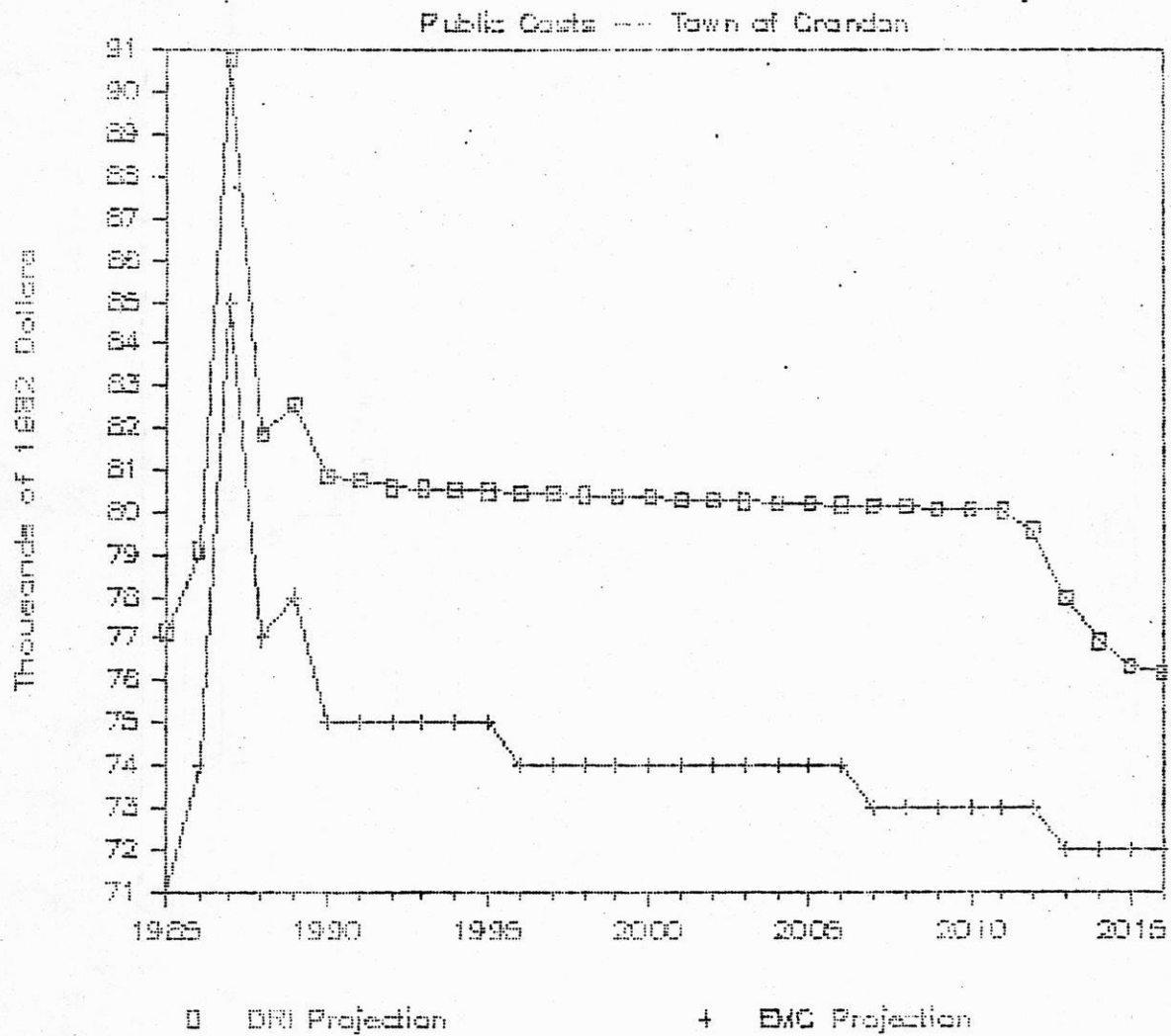


FIGURE A-21

Comparison of DRI and EMC Projections

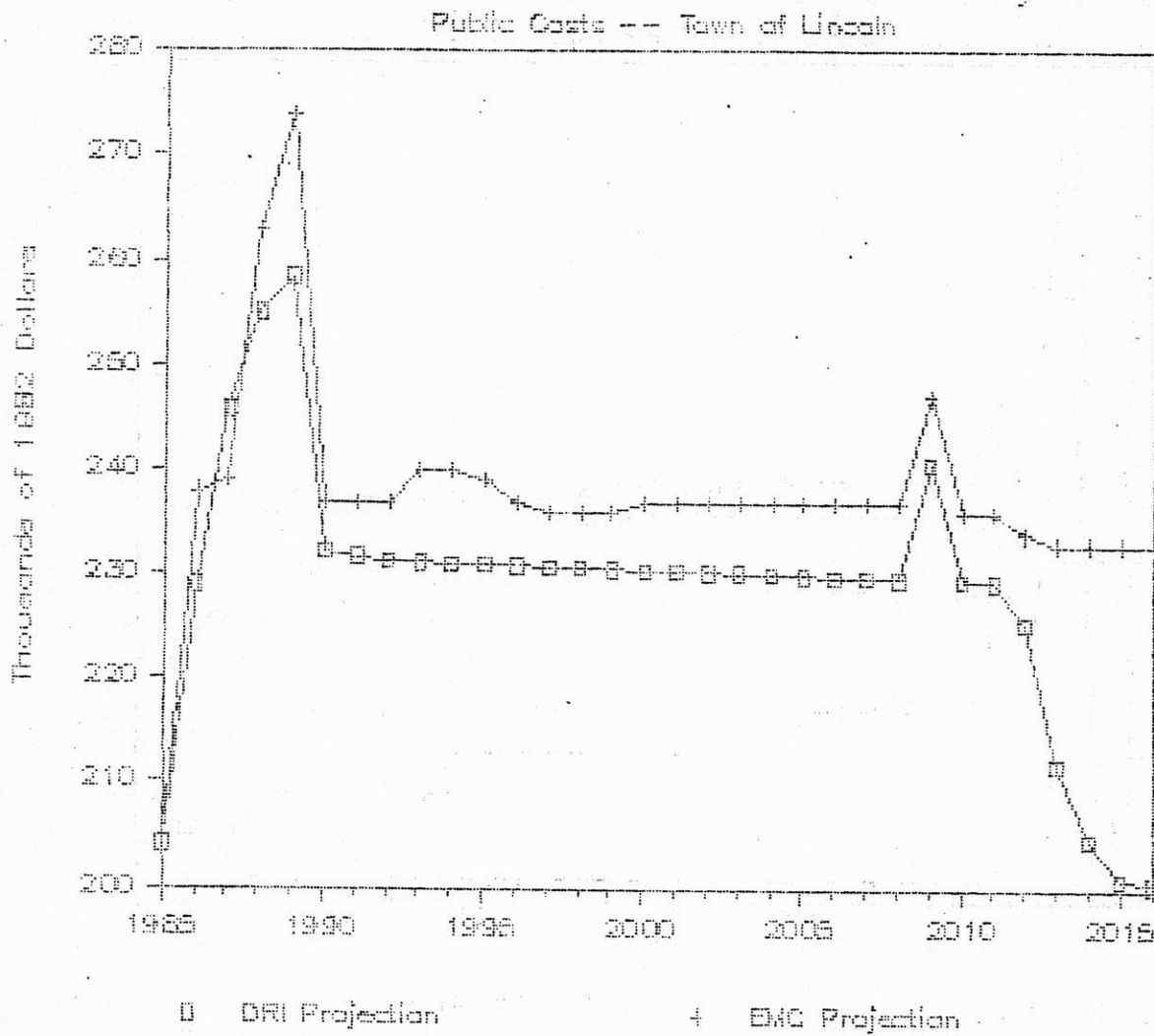


FIGURE A-22

Comparison of DRI and EMC Projections

Public Costs --- Town of Nashville

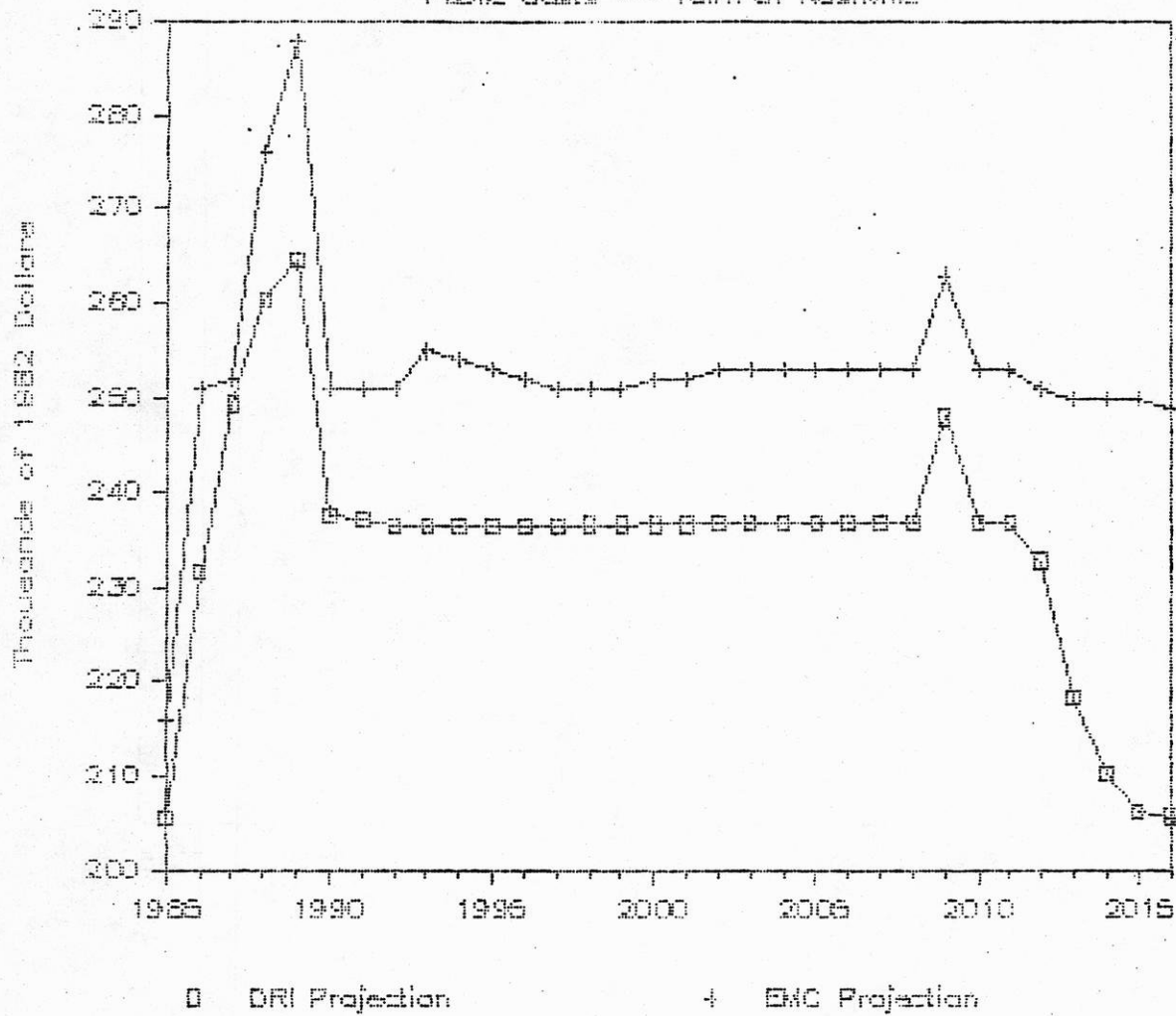


FIGURE A-23

Comparison of DRI and EMC Projections

Public Costs -- Forest County

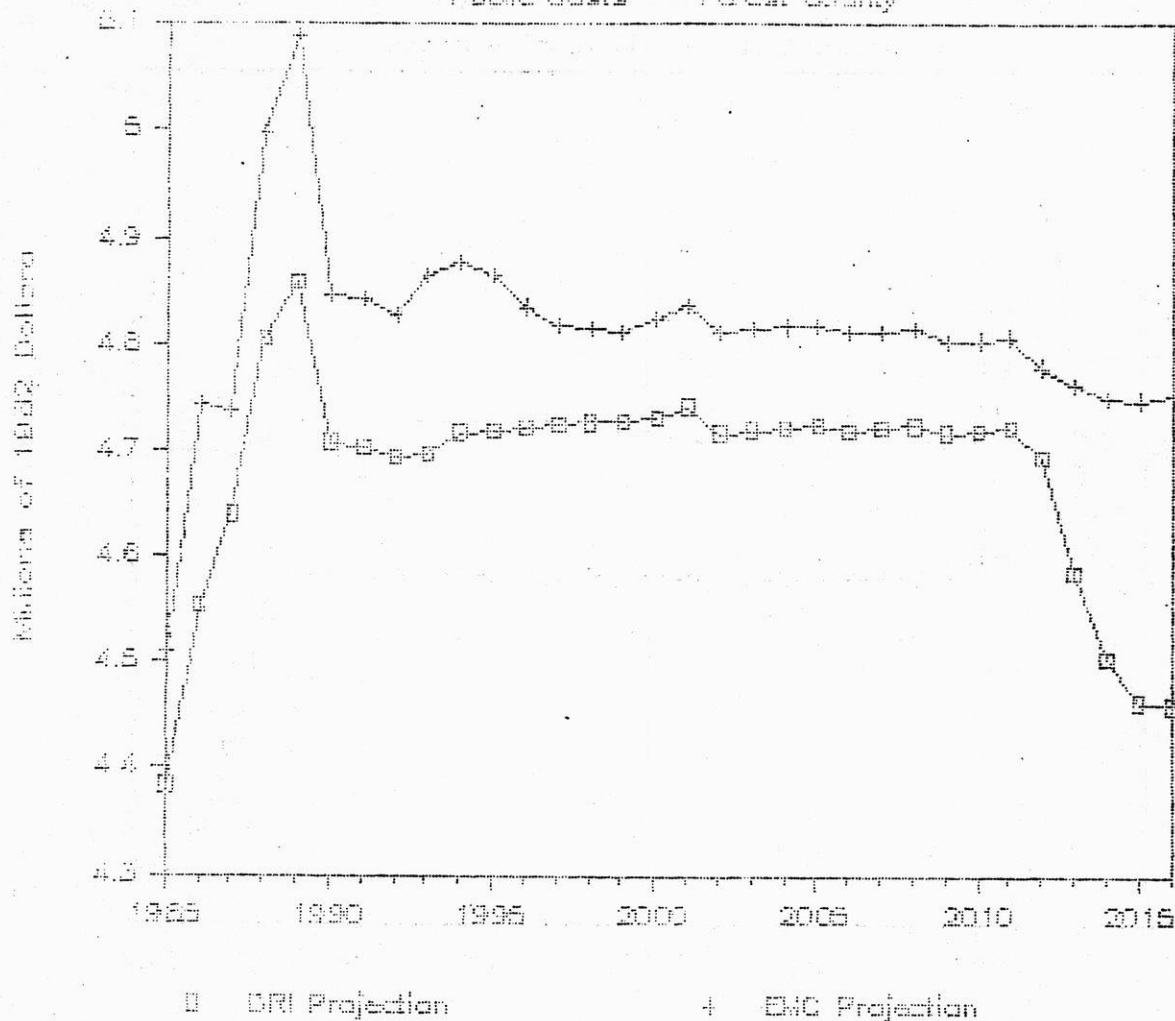


FIGURE A-24

Comparison of DRI and EMC Projections

Public Costs --- City of Antiga

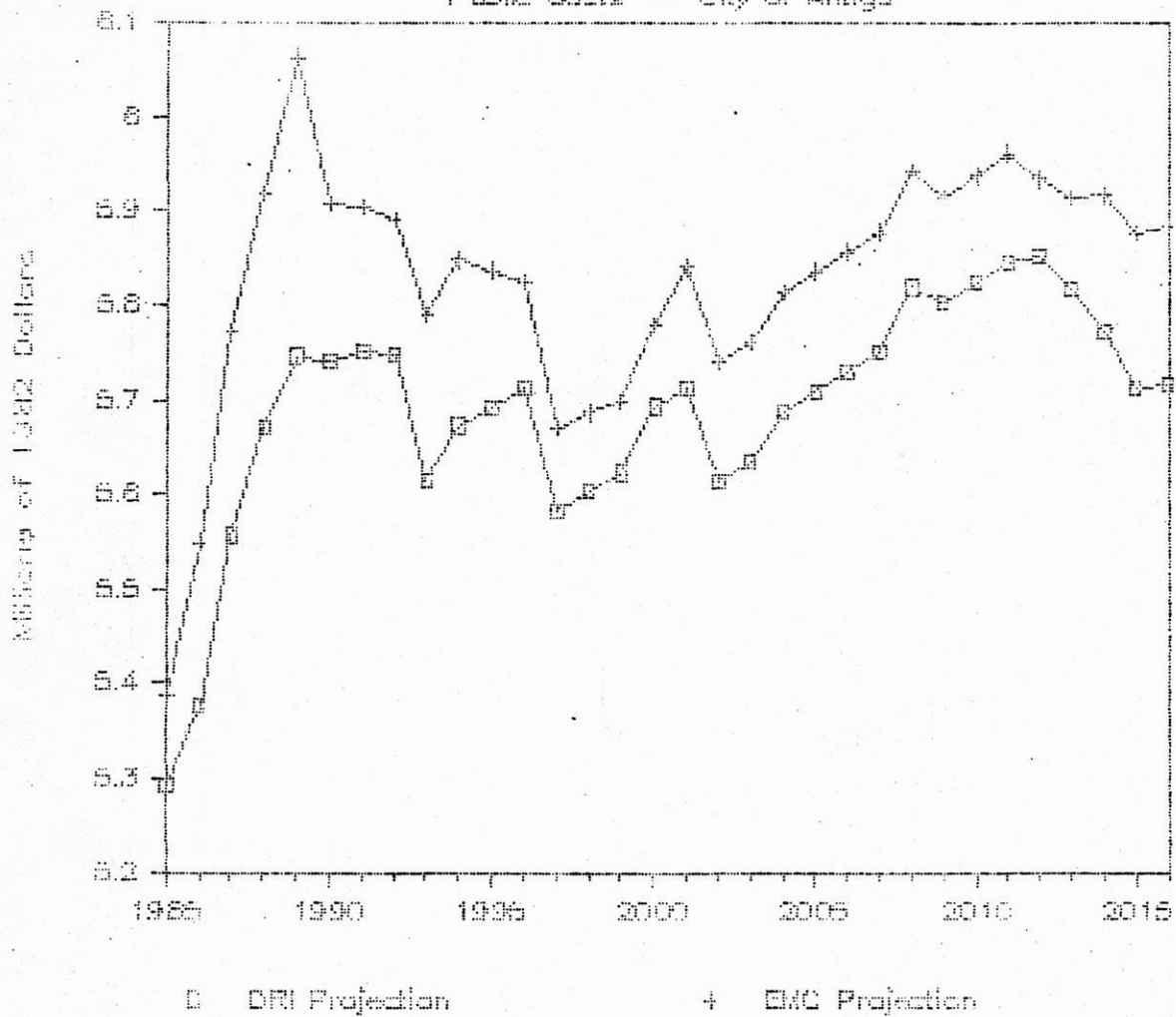


FIGURE A-25

Comparison of DRI and EMC Projections

Public Costs -- Town of Antiga

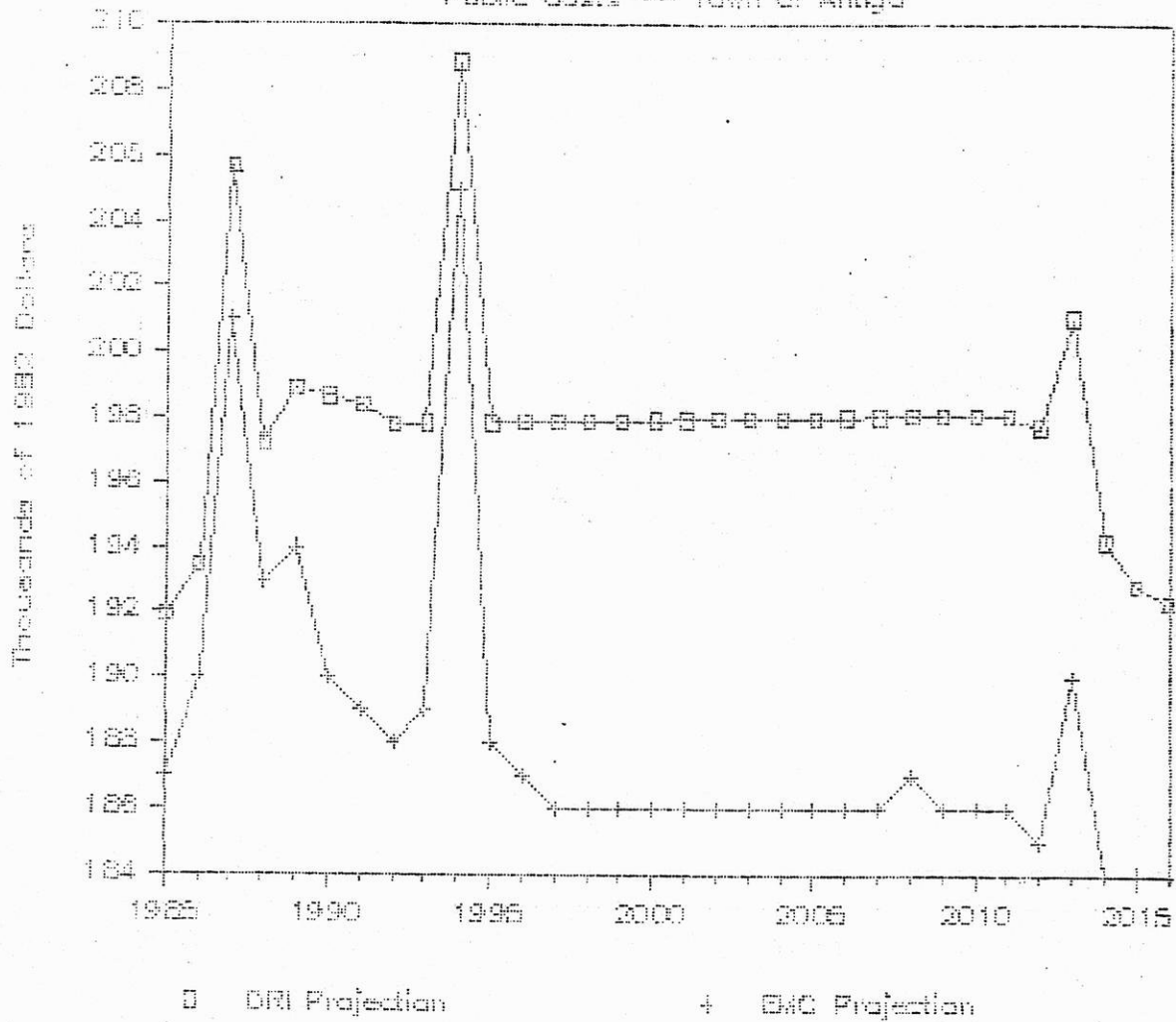


FIGURE A-26

Comparison of DRI and EMC Projections

Public Costs -- Town of Elcho

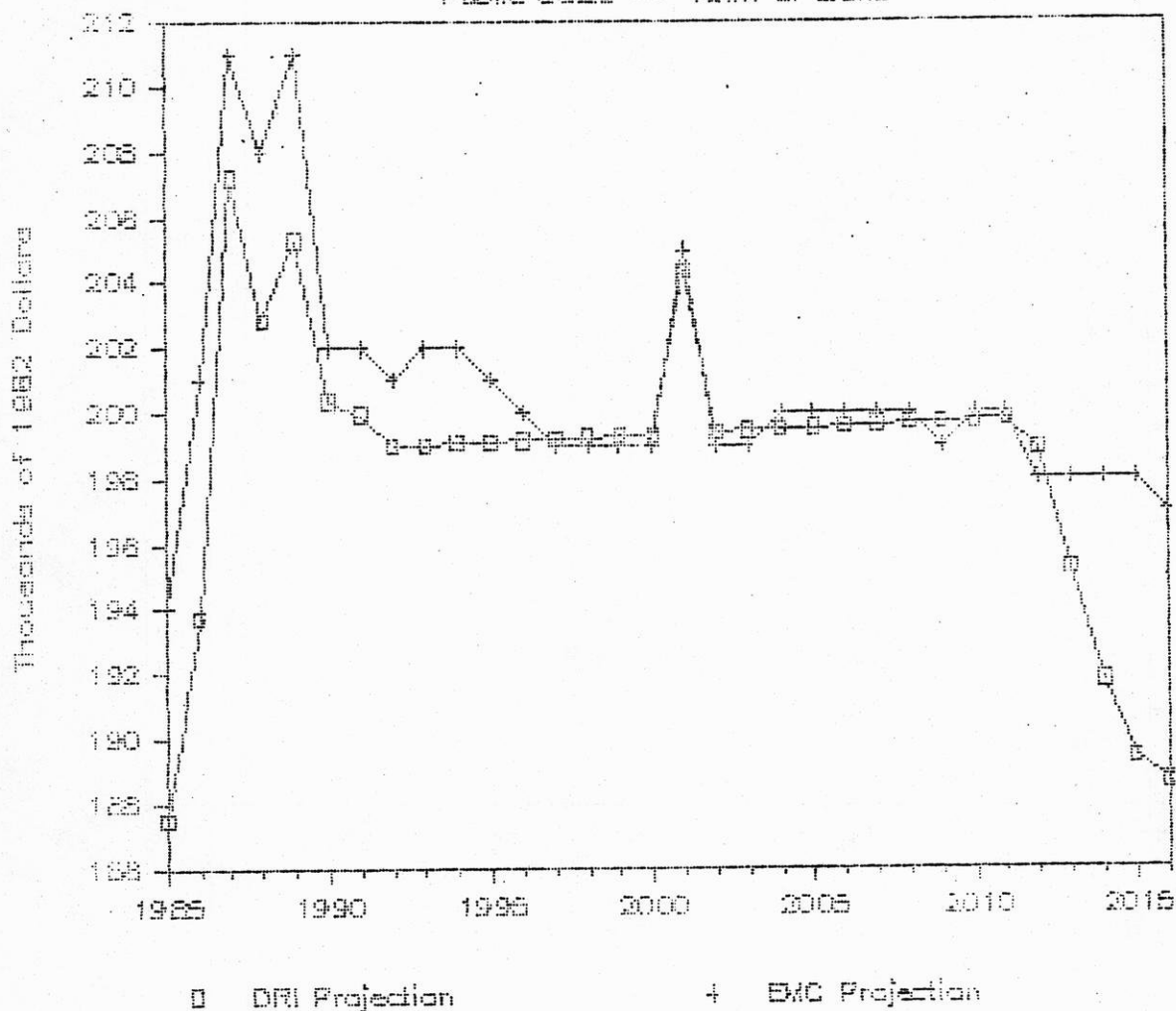


FIGURE A-27

Comparison of DRI and EMC Projections

Public Costs --- Longlake County

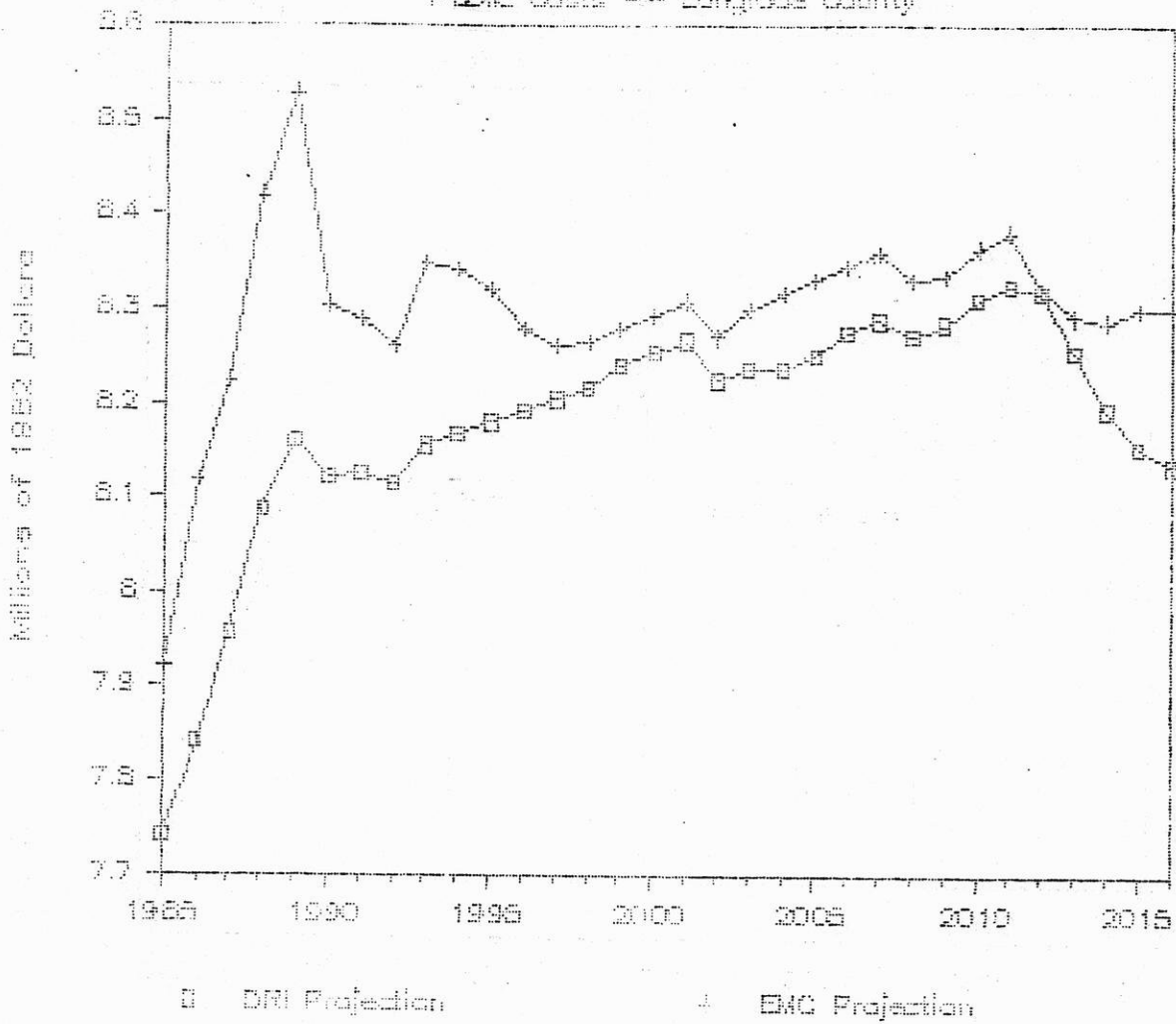


FIGURE A-28

Comparison of DRI and EMC Projections

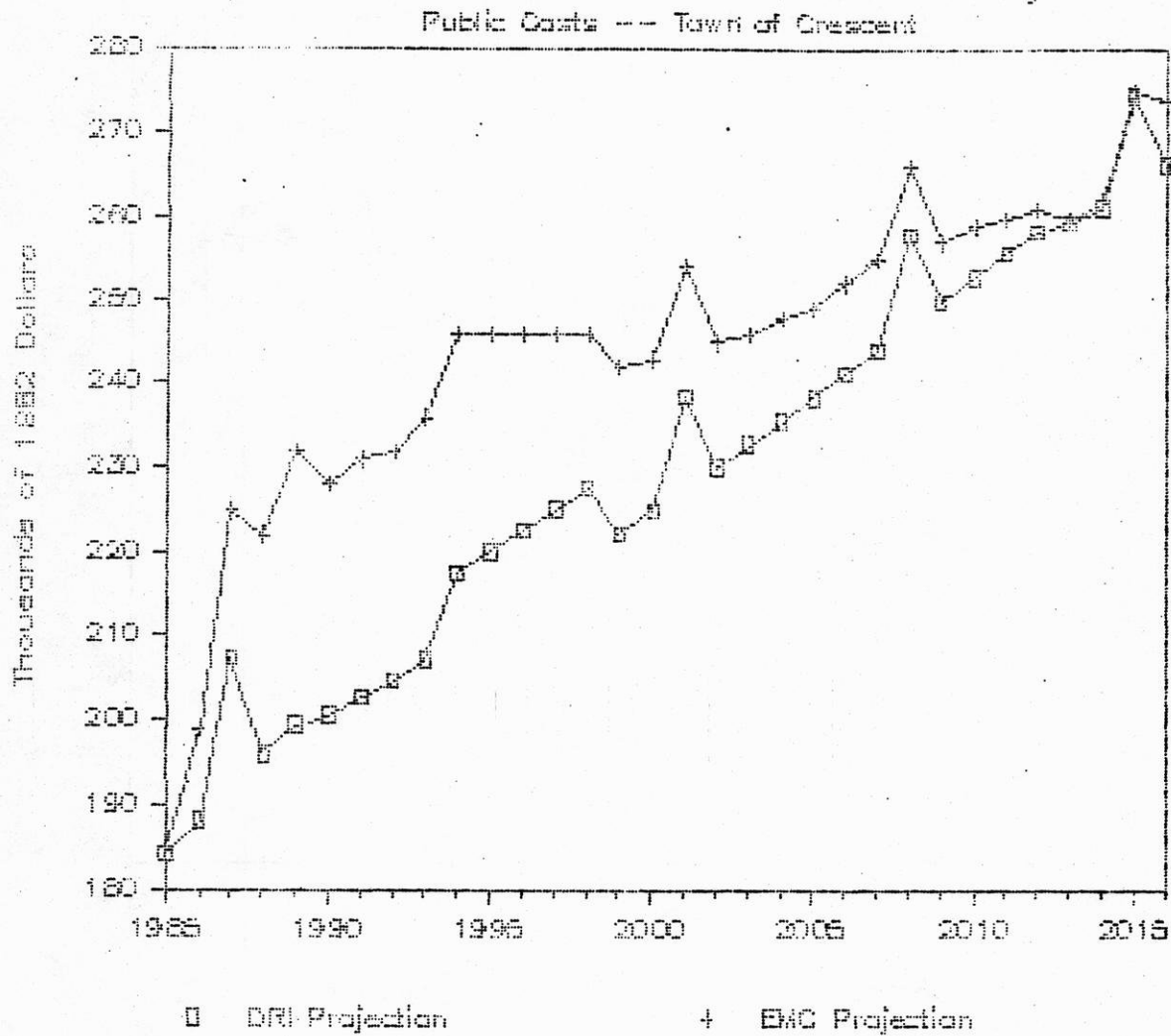


FIGURE A-29

Comparison of DRI and EMC Projections

Public Costs -- Town of Newbold

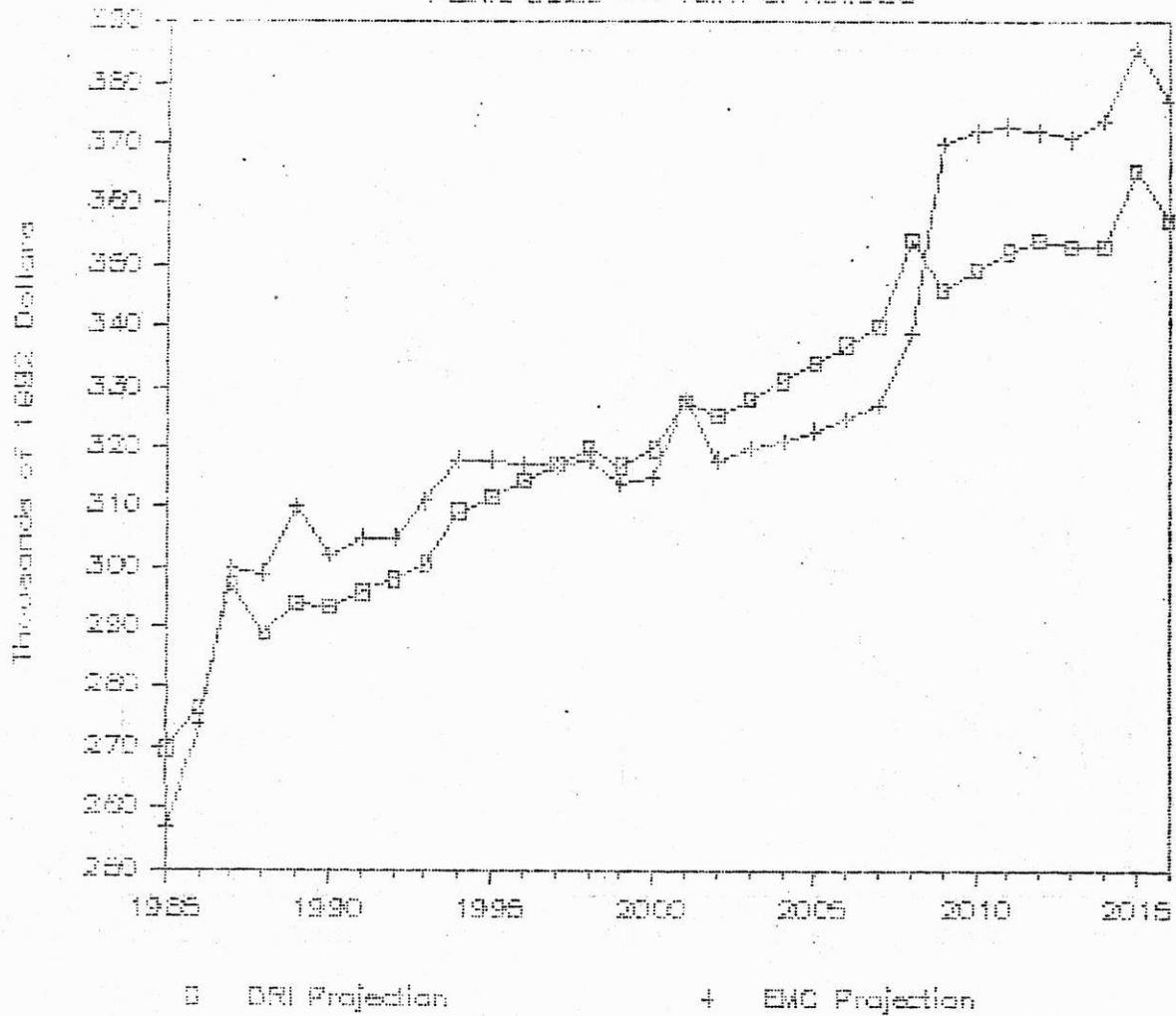


FIGURE A-30

Comparison of DRI and EMC Projections

Public Costs -- Town of Pelican

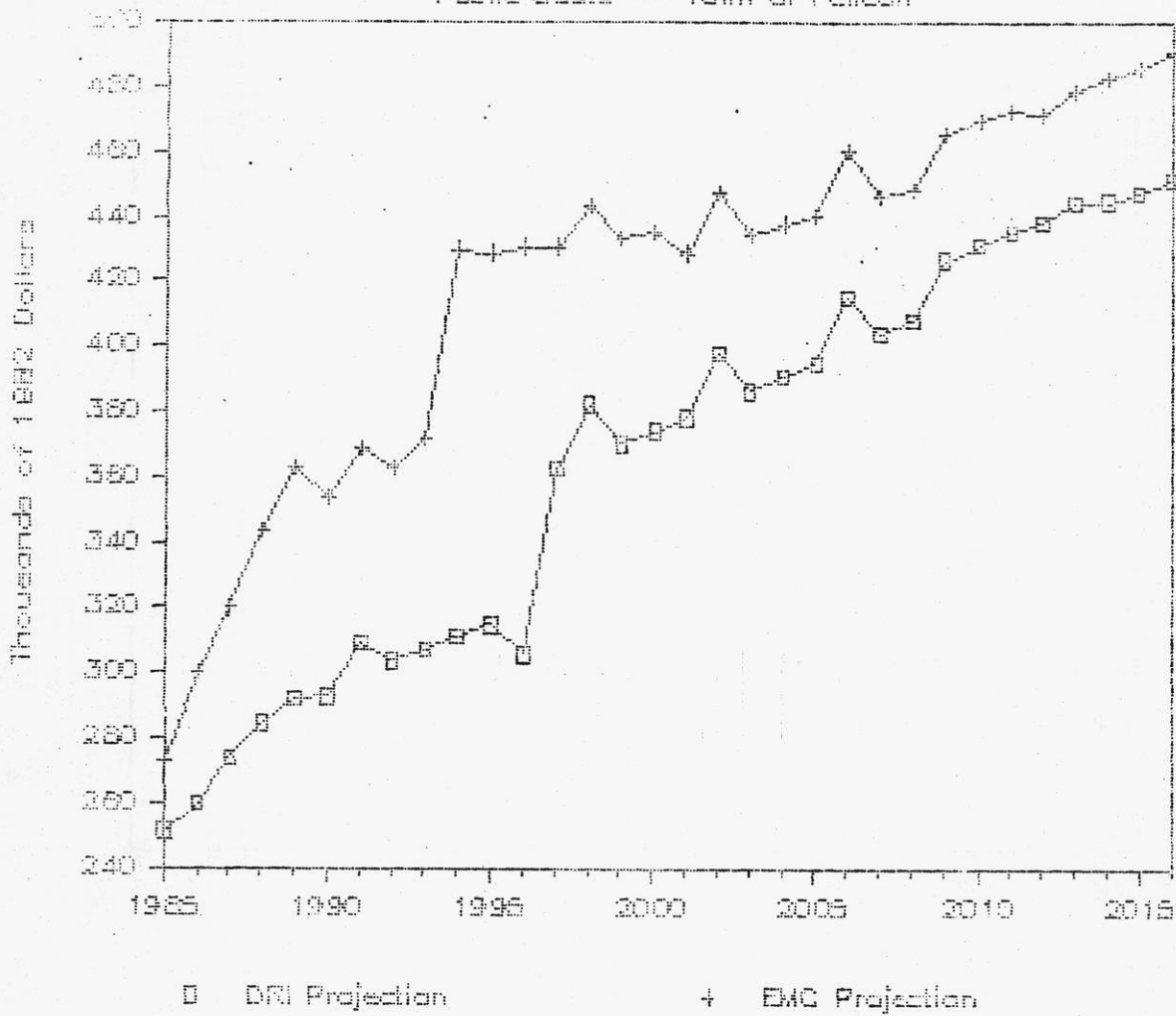


FIGURE A-31

Comparison of DRI and EMC Projections

Public Costs --- Town of Pine Lake

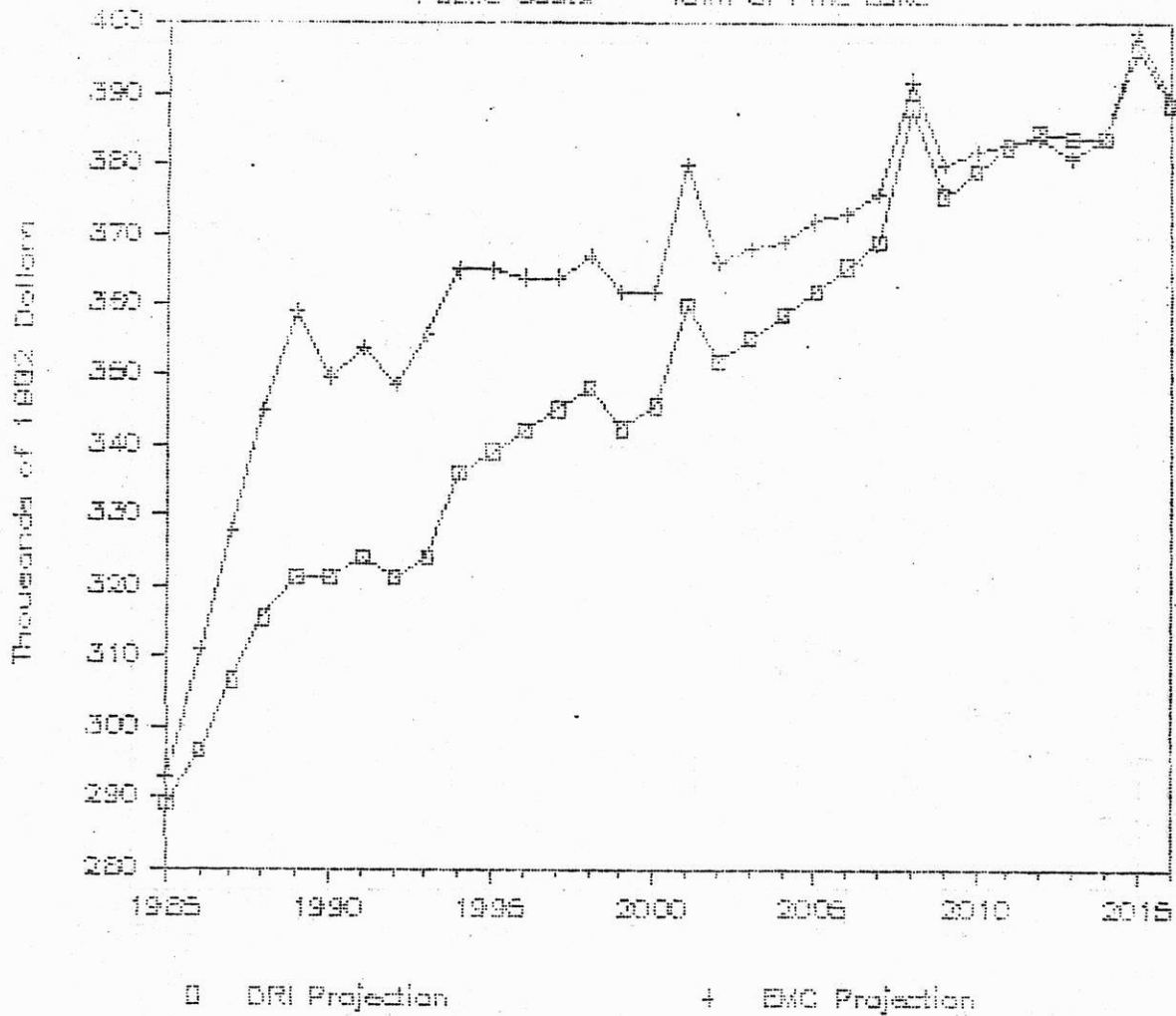


FIGURE A-32

Comparison of DRI and EMC Projections

Public Costs — City of Rhineland

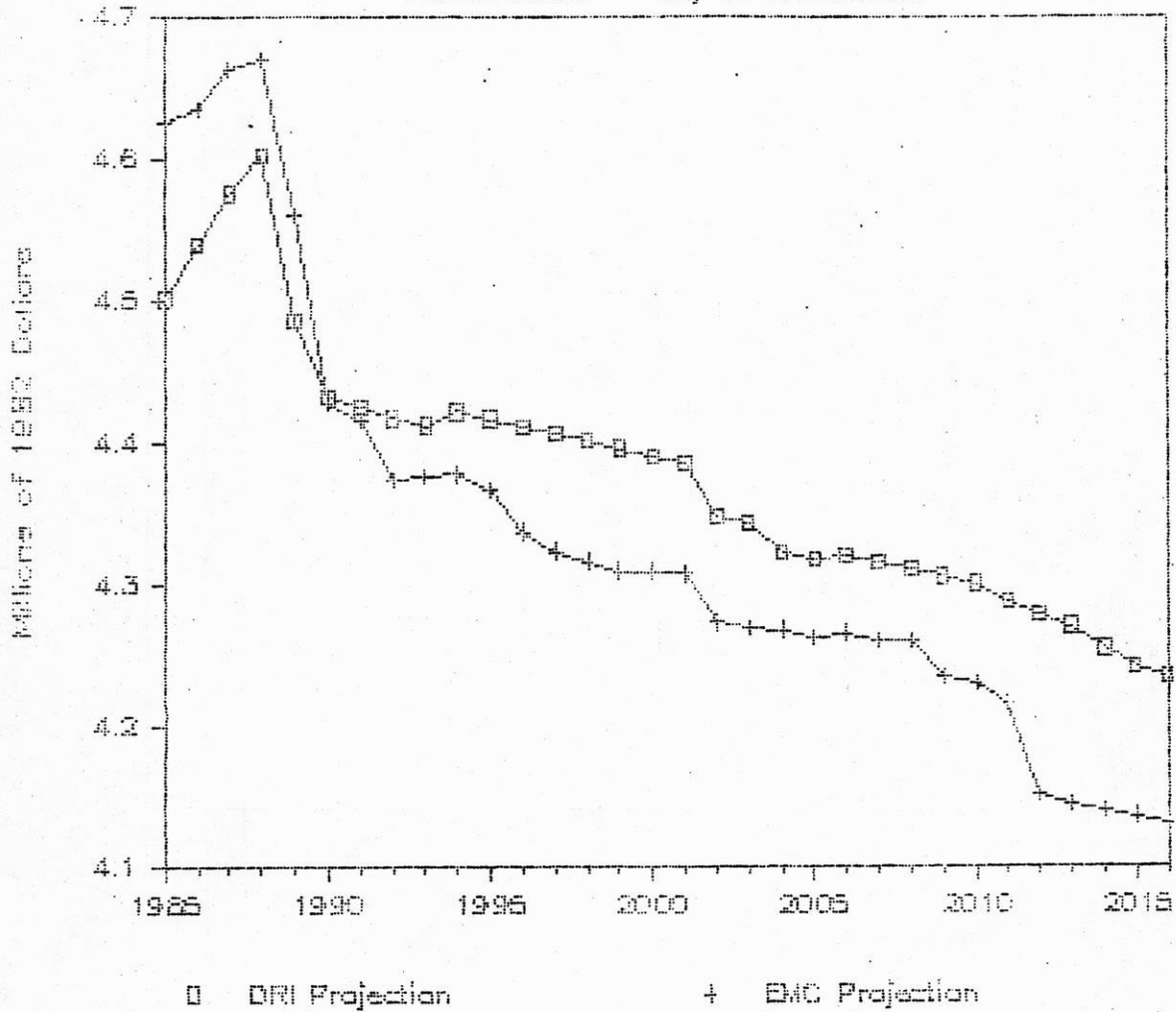
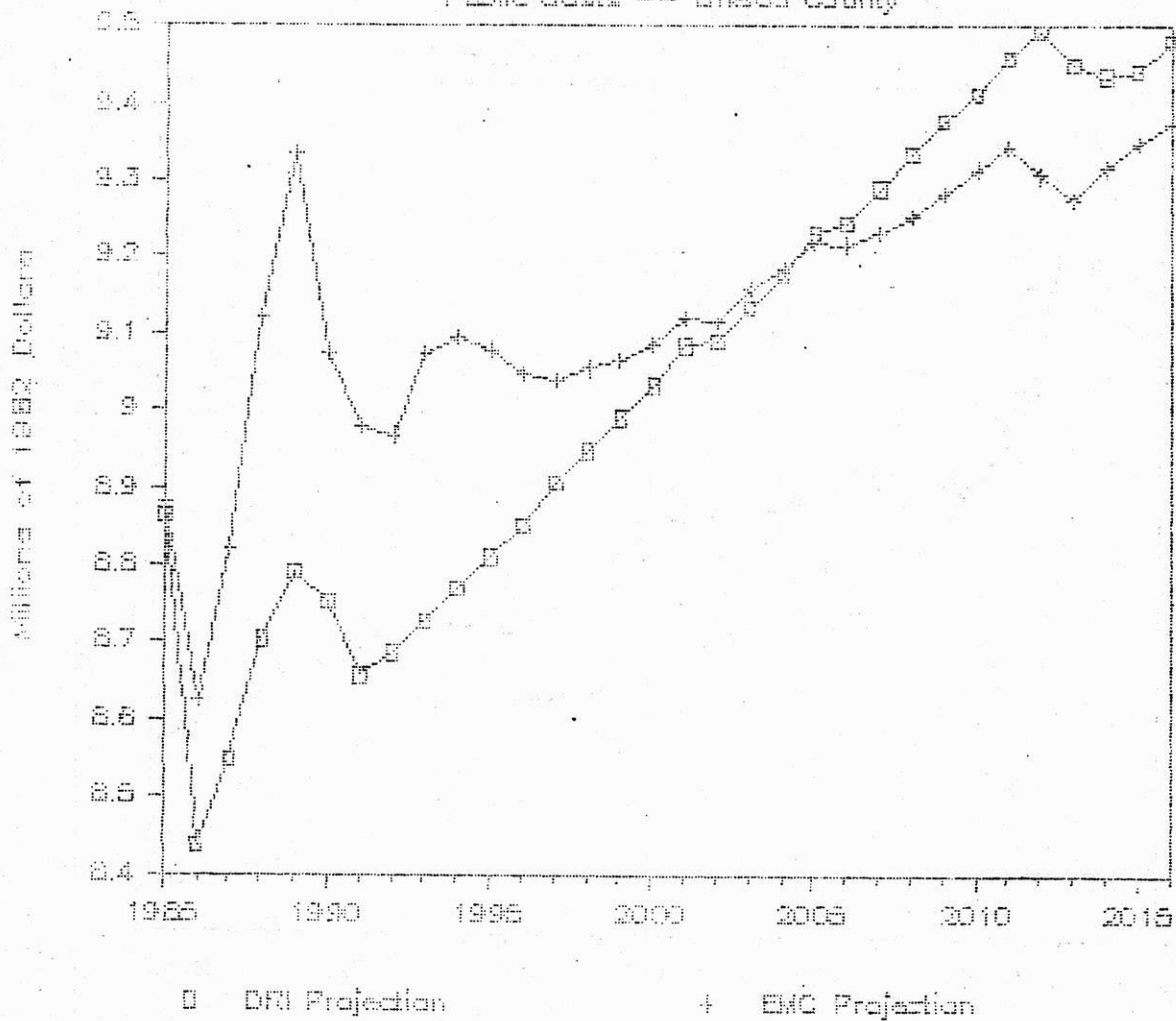


FIGURE A-33

Comparison of DRI and EMC Projections

Public Costs — Onondaga County



APPENDIX B
DRI DATA SUMMARY

FIGURE B-1

Population Projection

Local Study Area

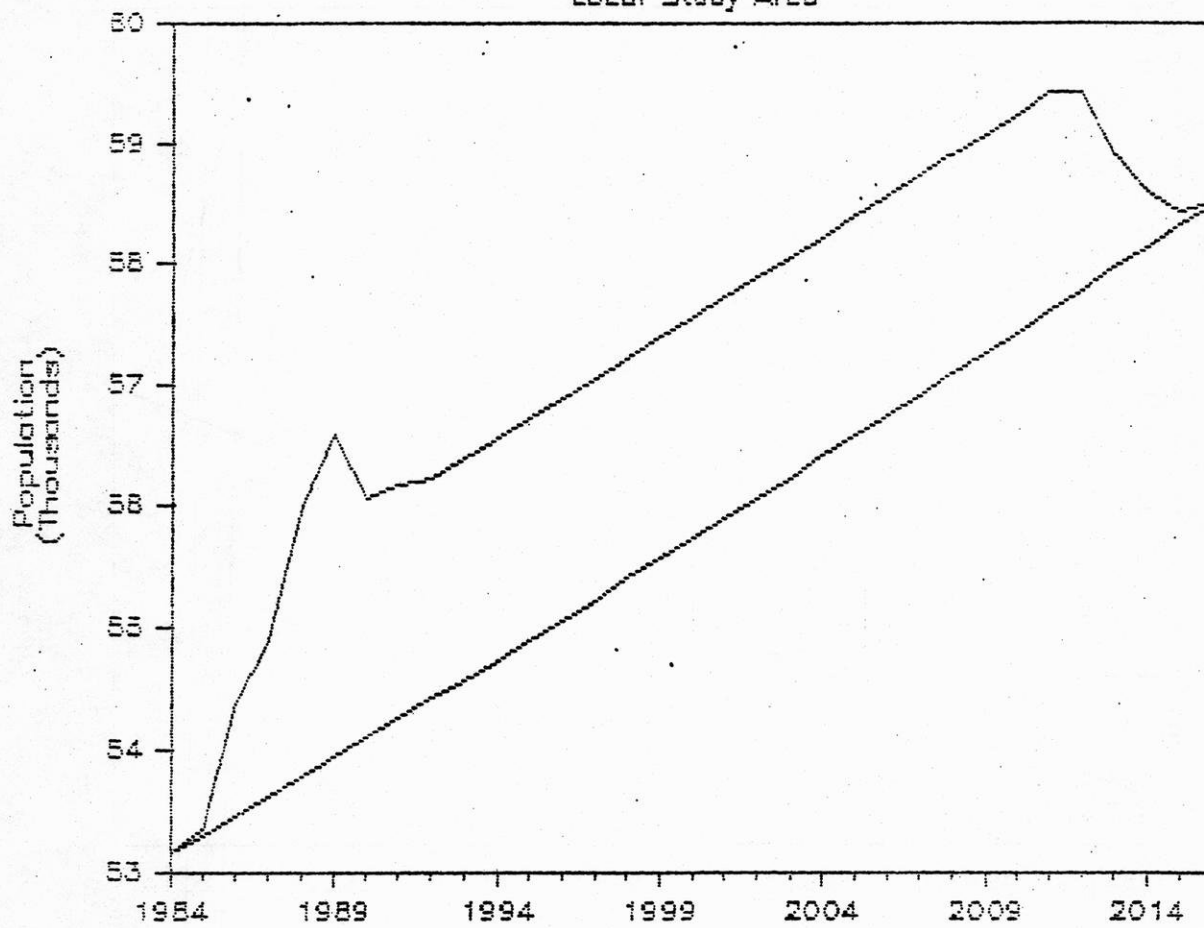


FIGURE B-2

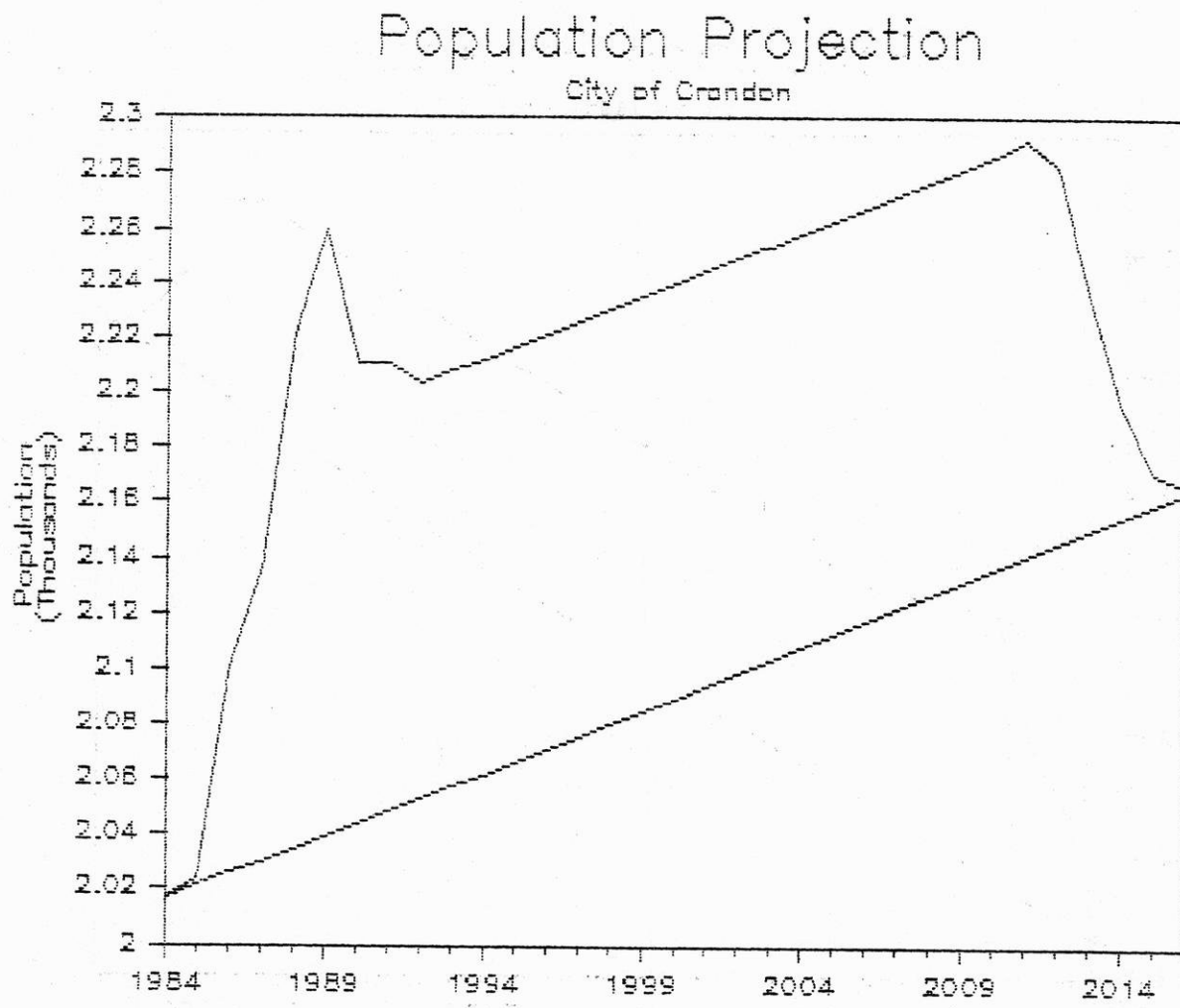


FIGURE B-3

Population Projection

Town of Crandon

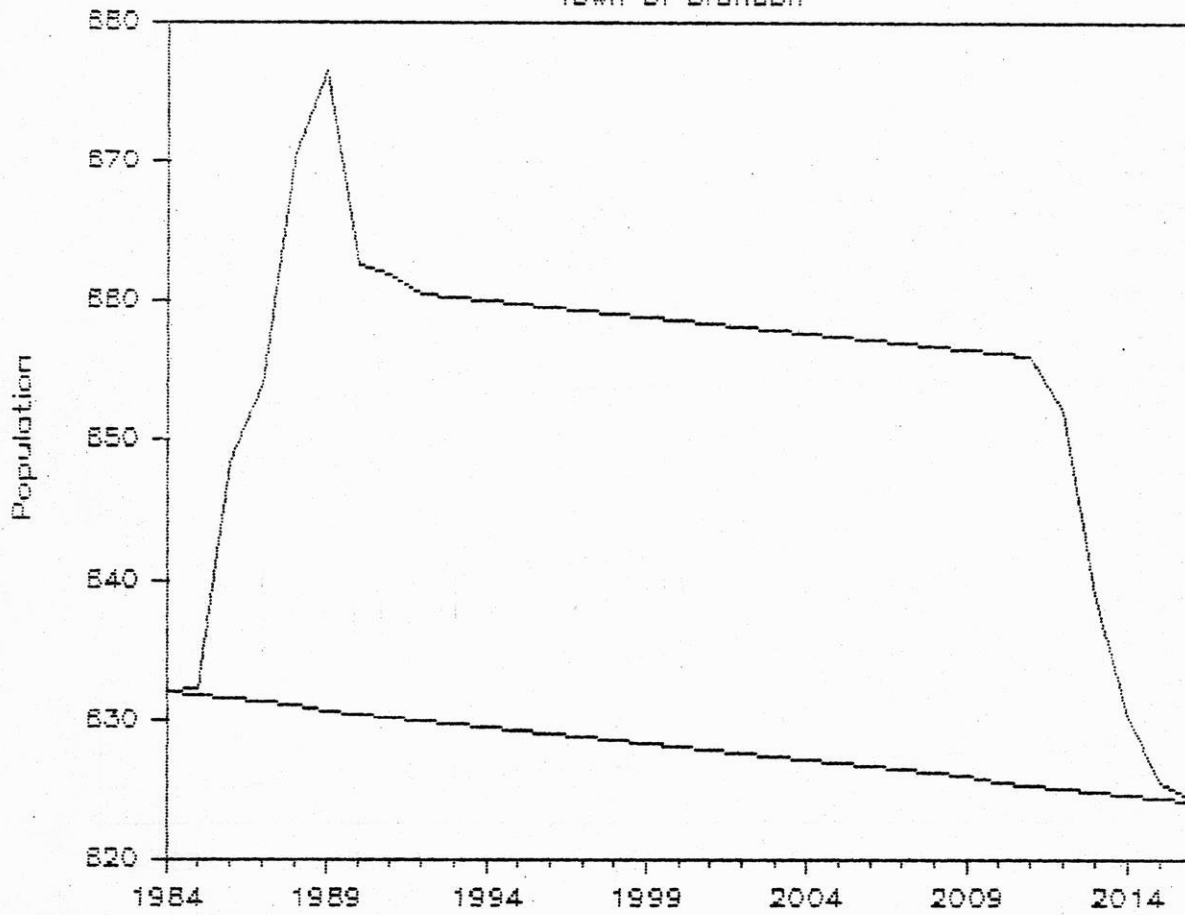


FIGURE B-4

Population Projection

Town of Lincoln

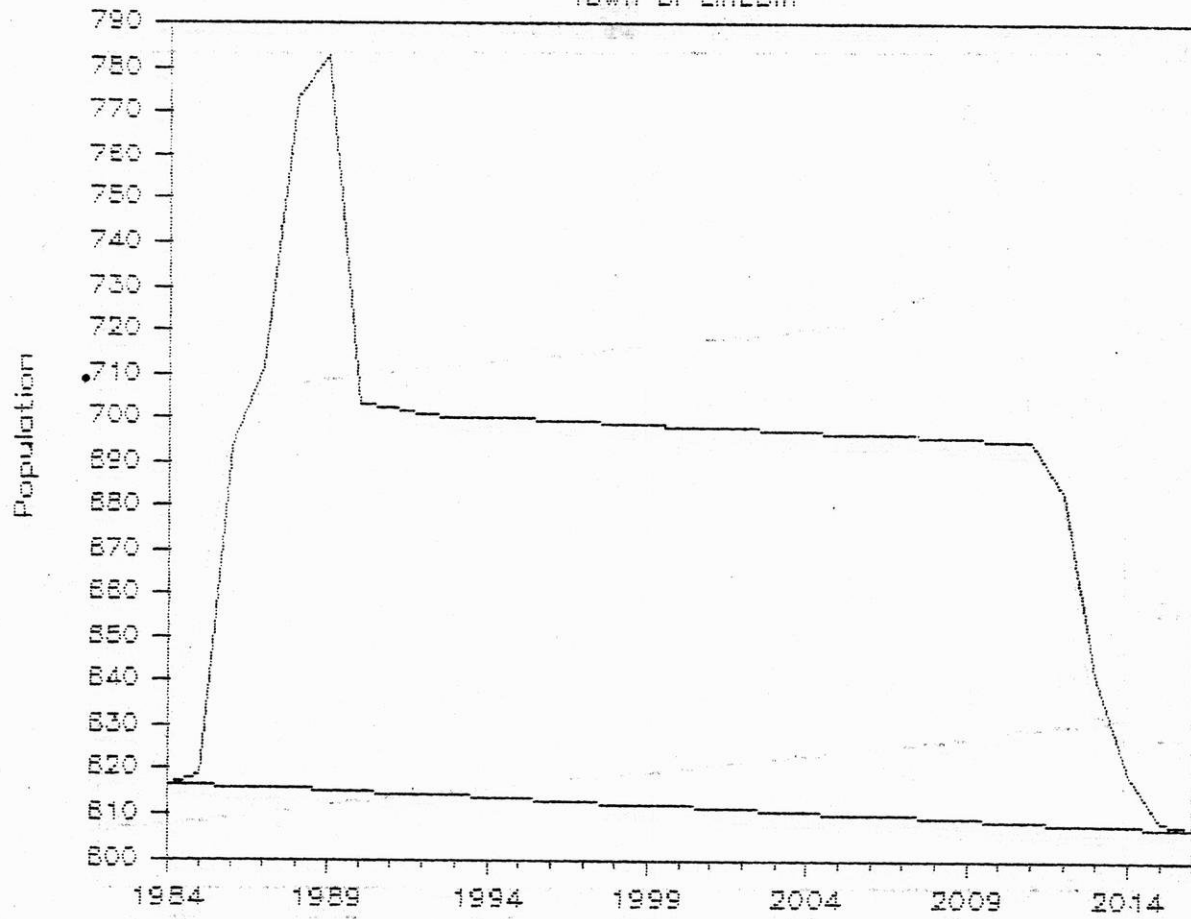


FIGURE B-5

Population Projection

Town of Nashville

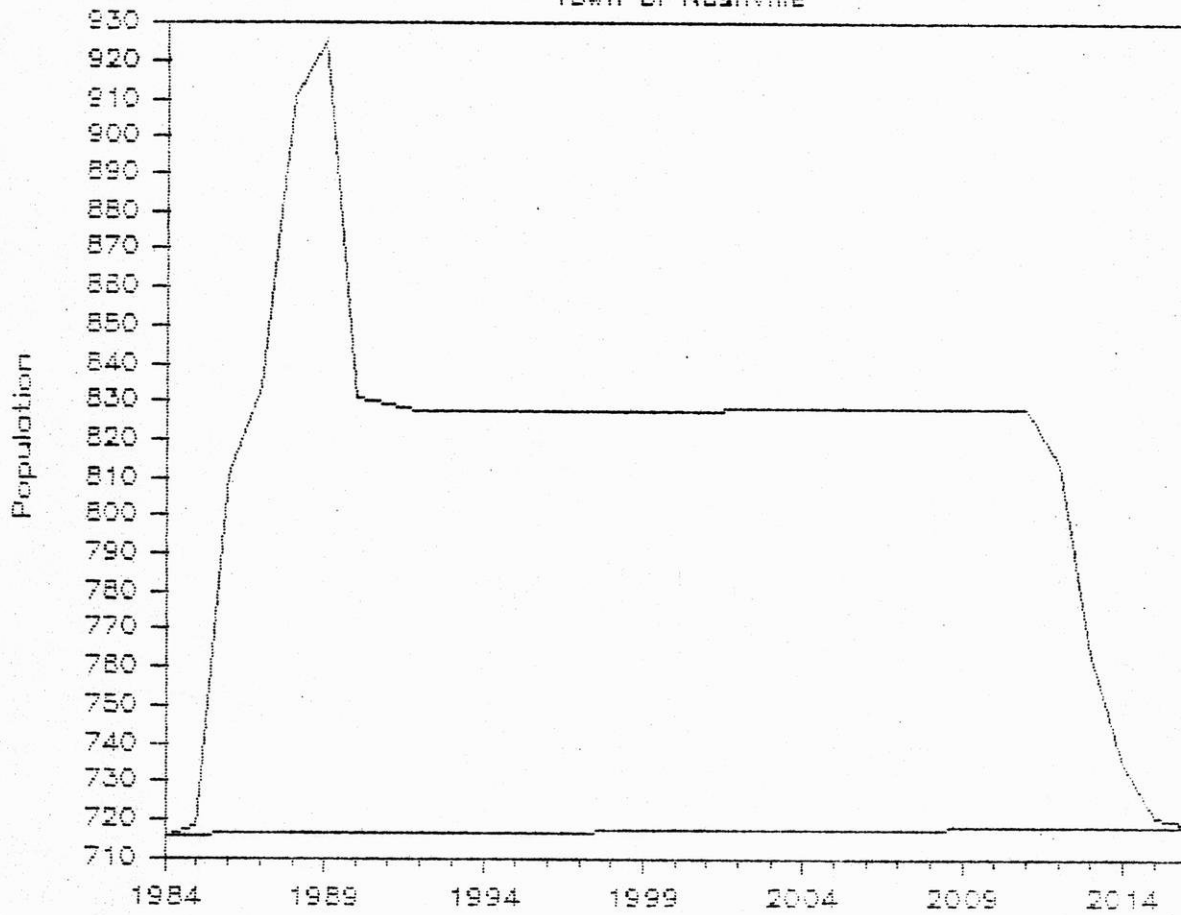


FIGURE B-6

Population Projection Forest County

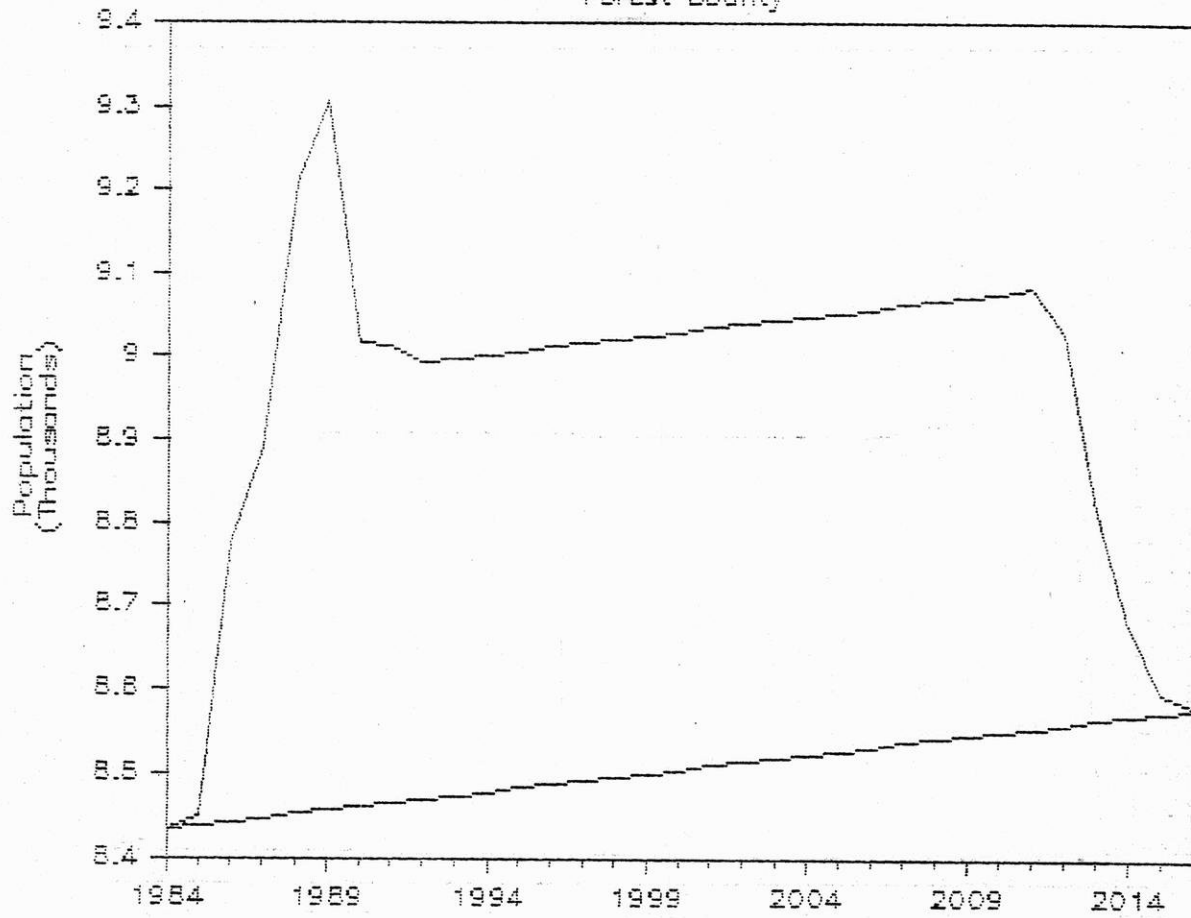


FIGURE B-7

Population Projection

City of Antigo

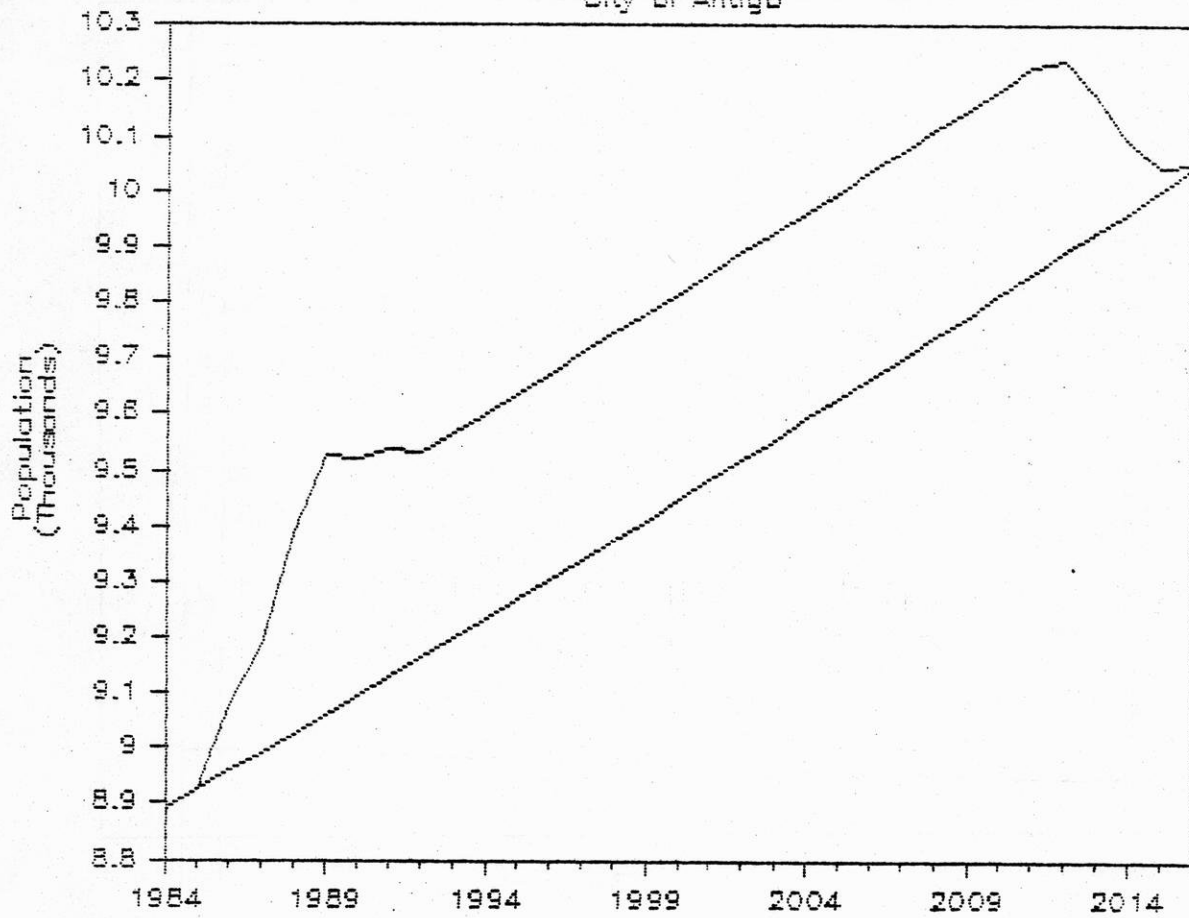


FIGURE B-8

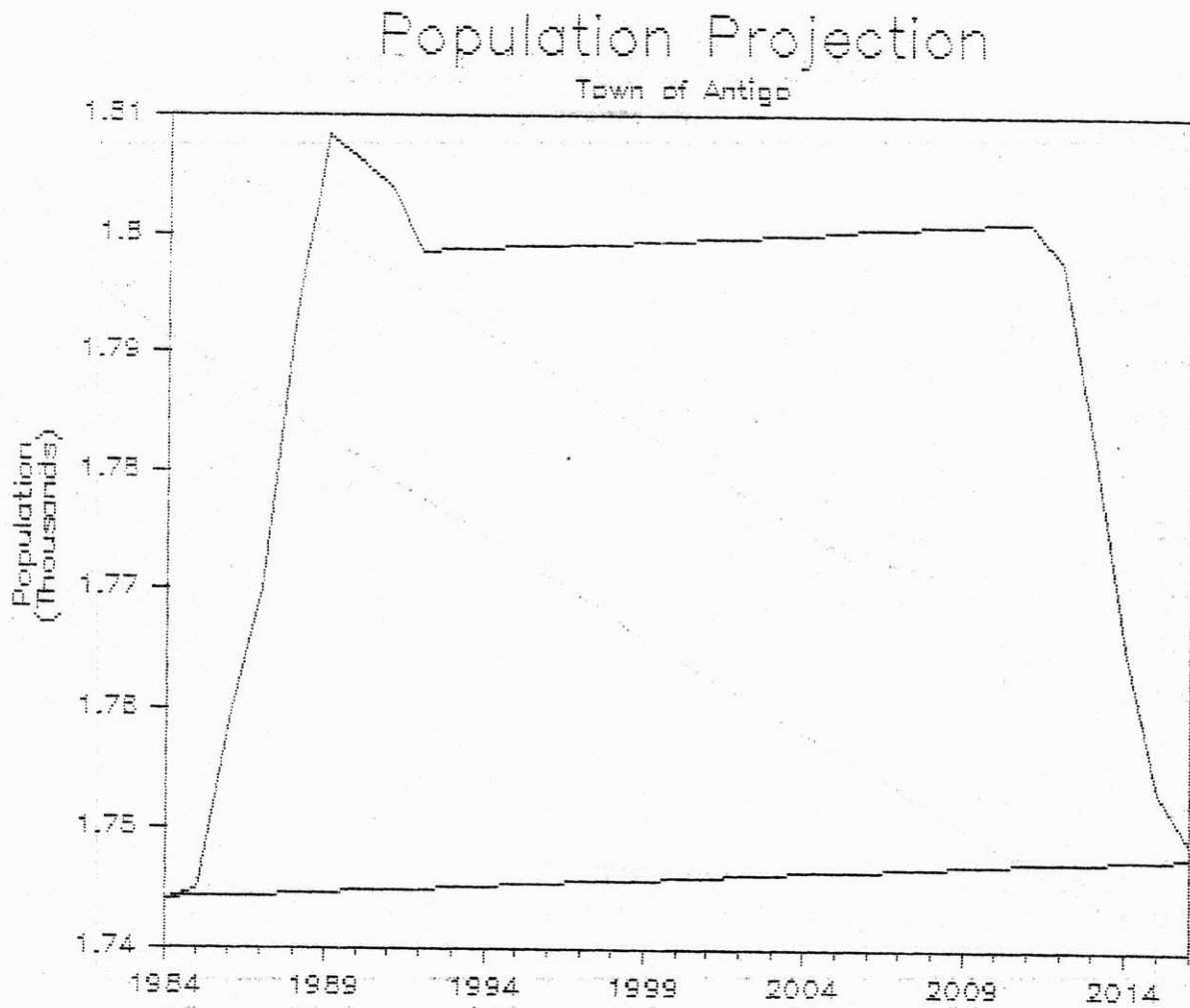


FIGURE B-9

Population Projection

Town of Elcho

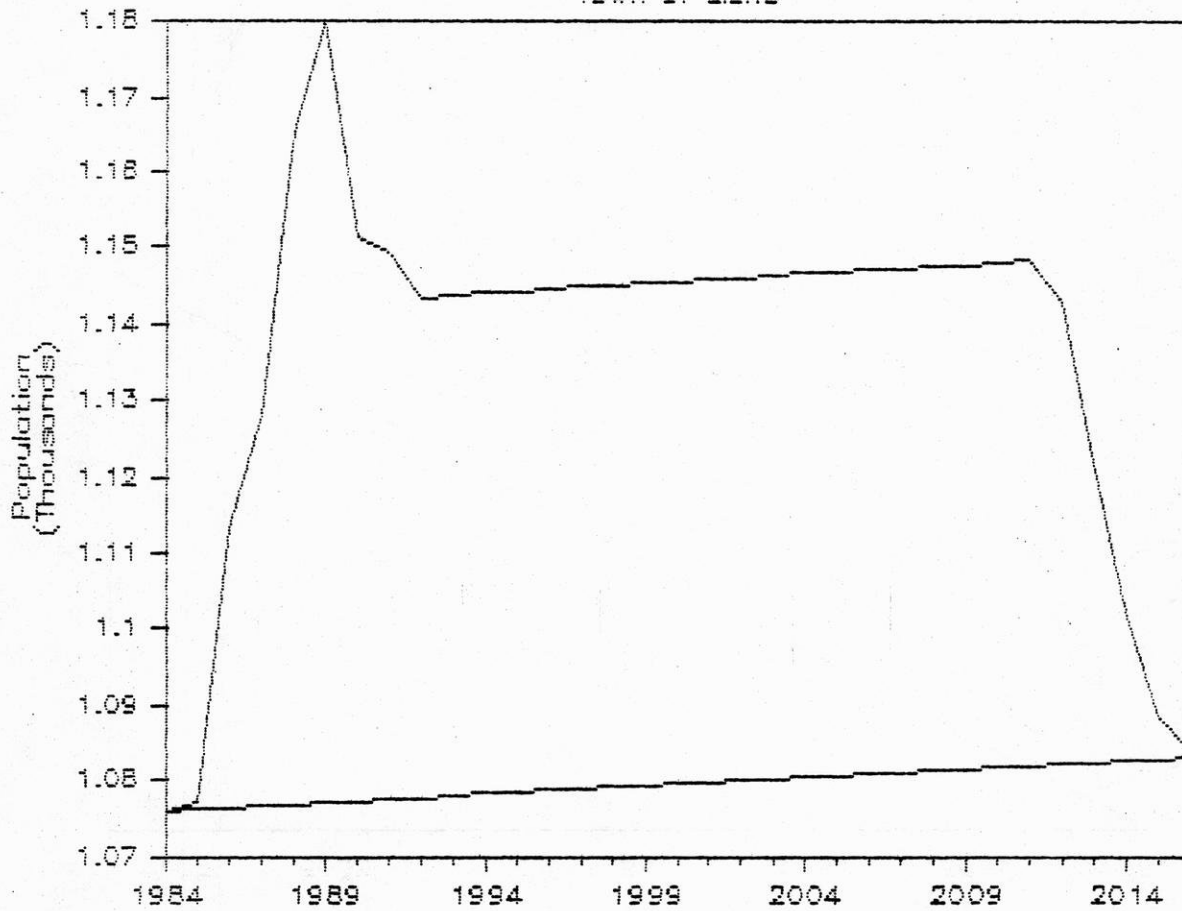


FIGURE B-10

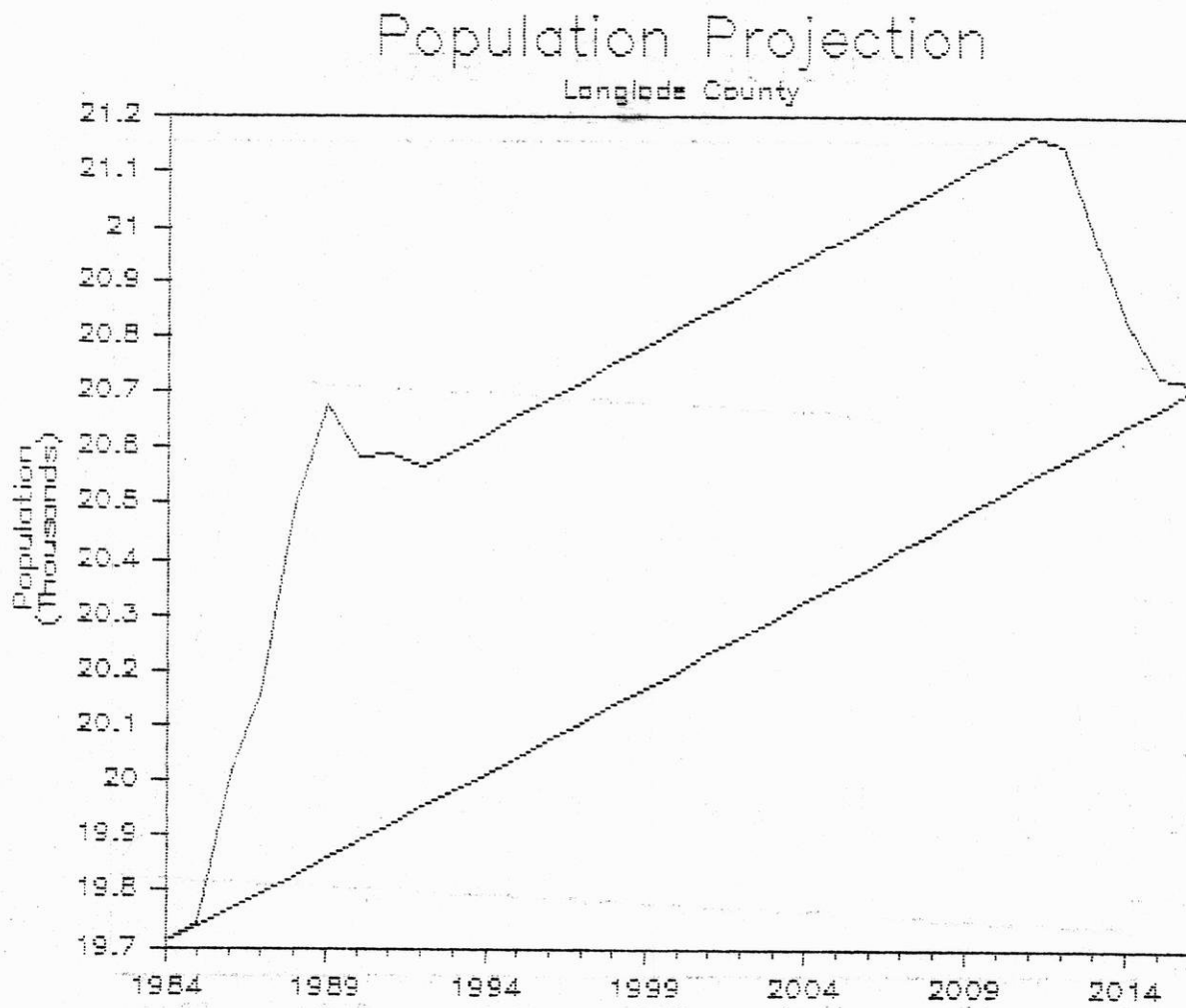


FIGURE B-11

Population Projection

Town of Crescent

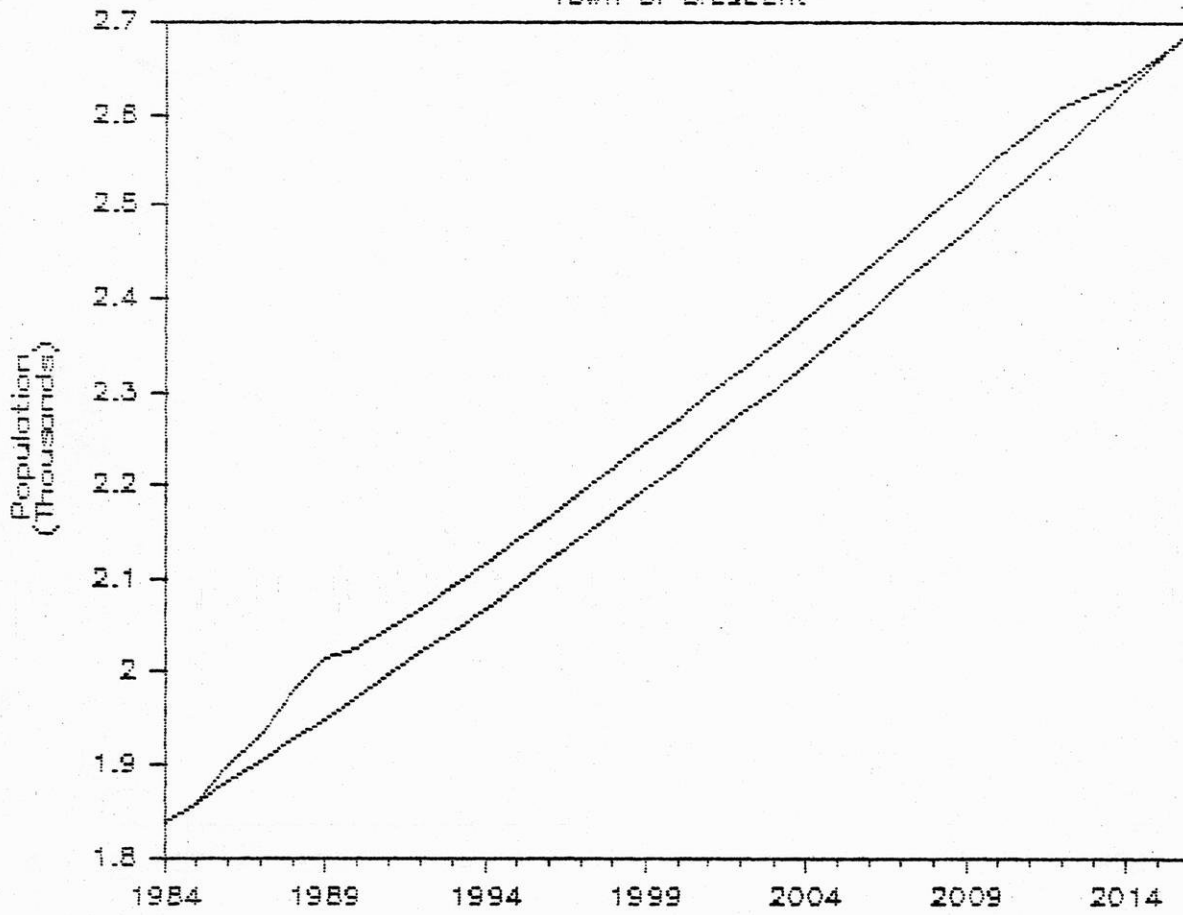


FIGURE B-12

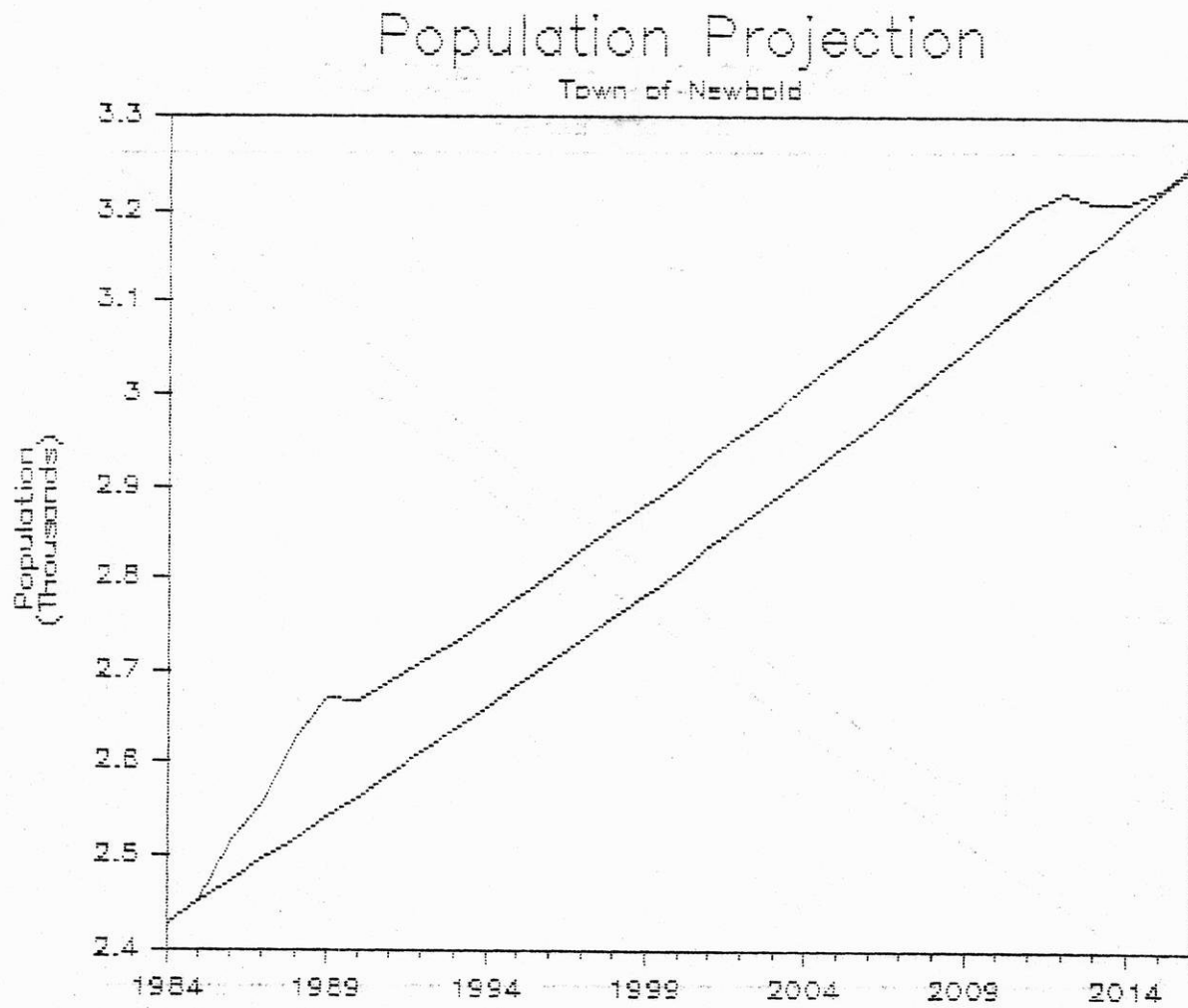


FIGURE B-13

Population Projection

Town of Pelican

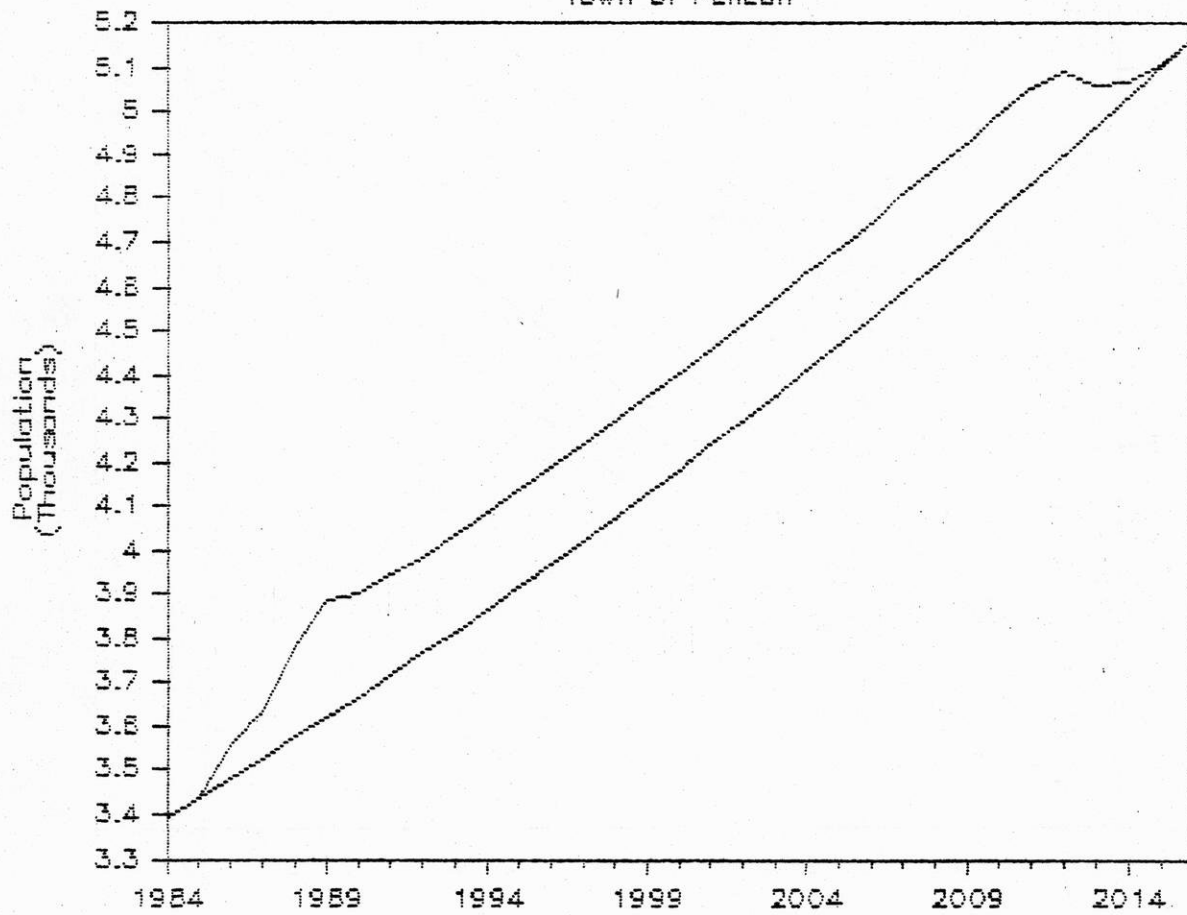


FIGURE B-14

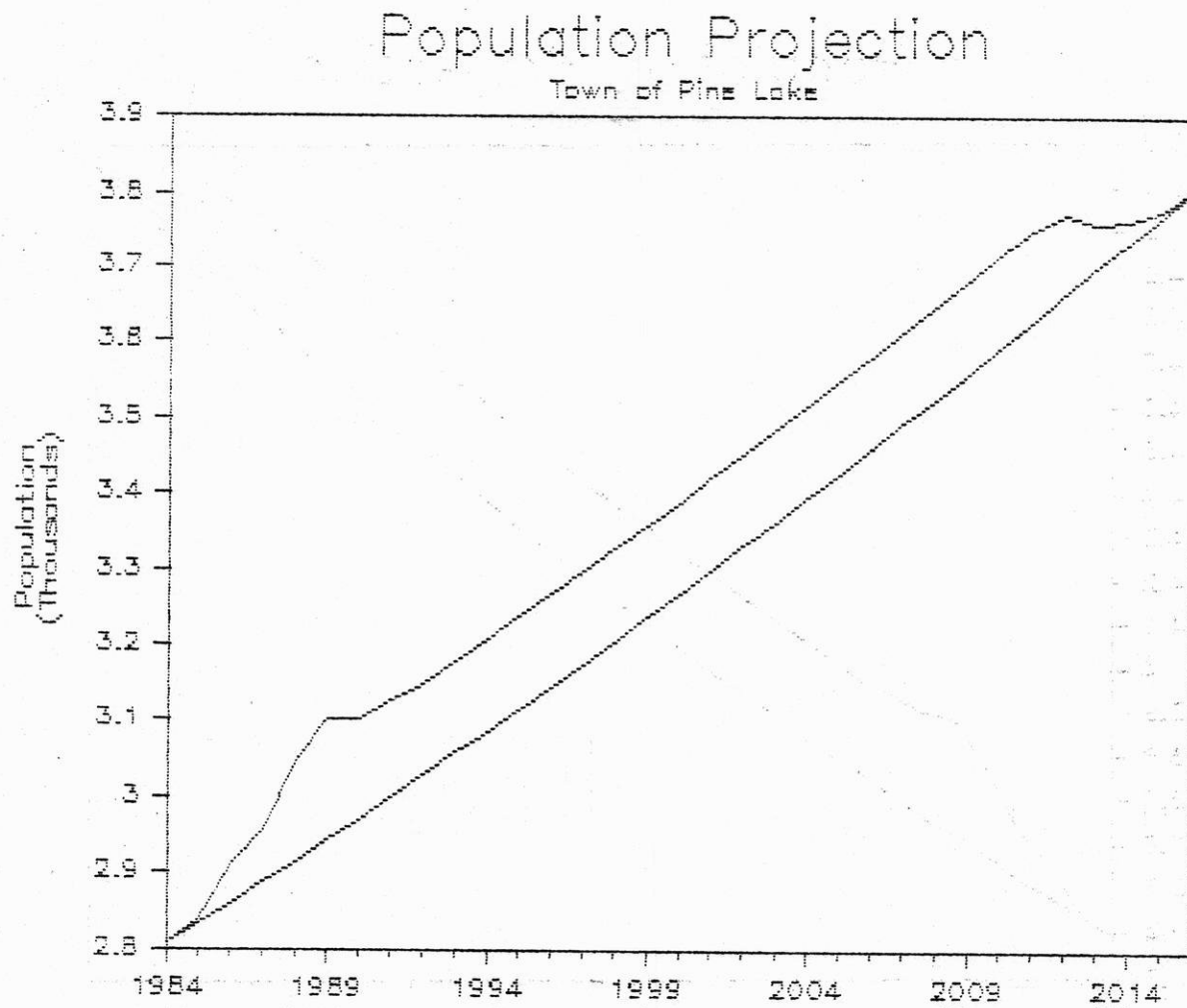


FIGURE B-15

Population Projection

City of Rhineland

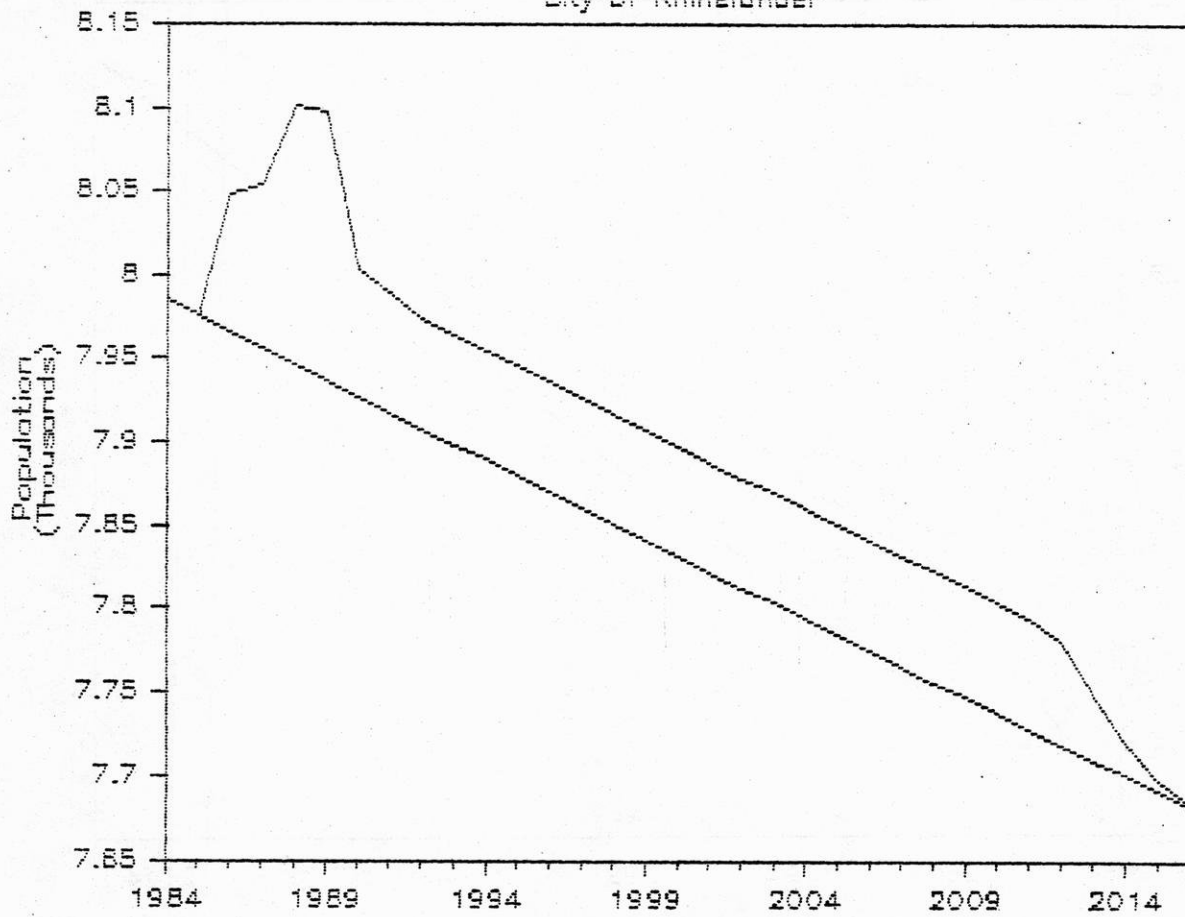


FIGURE B-16

Population Projection

Oneida County

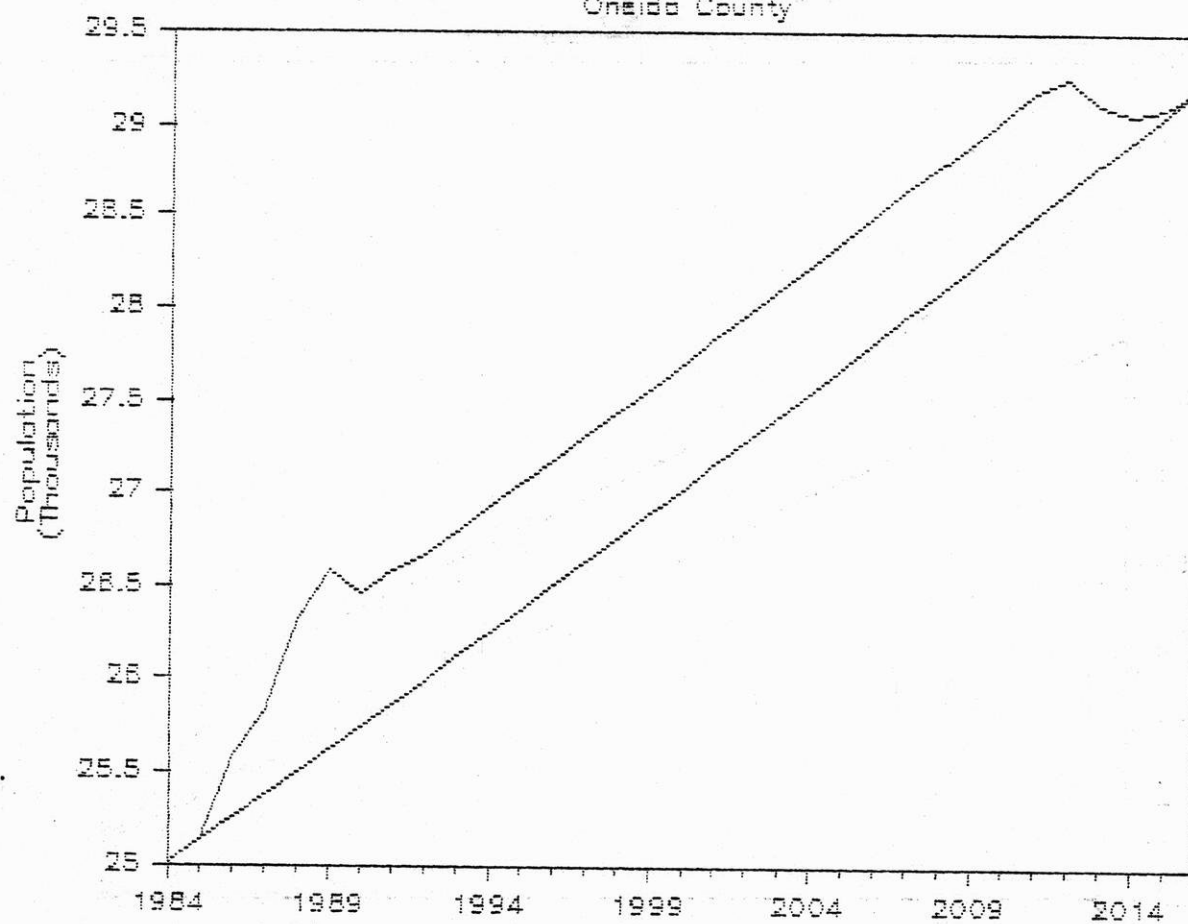


FIGURE B-17
Area Projections
Project Area

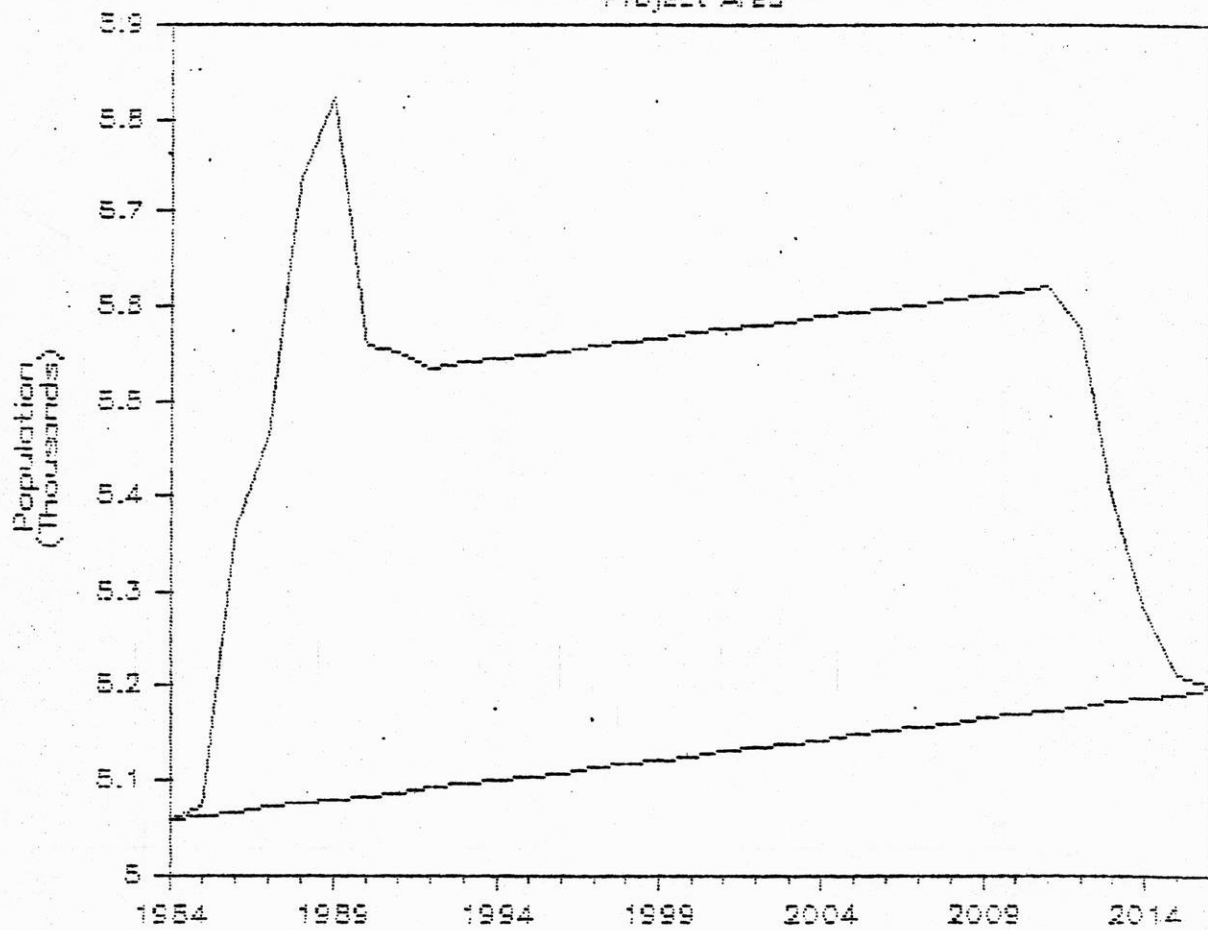


FIGURE B-18
Area Projections
Antigo Area

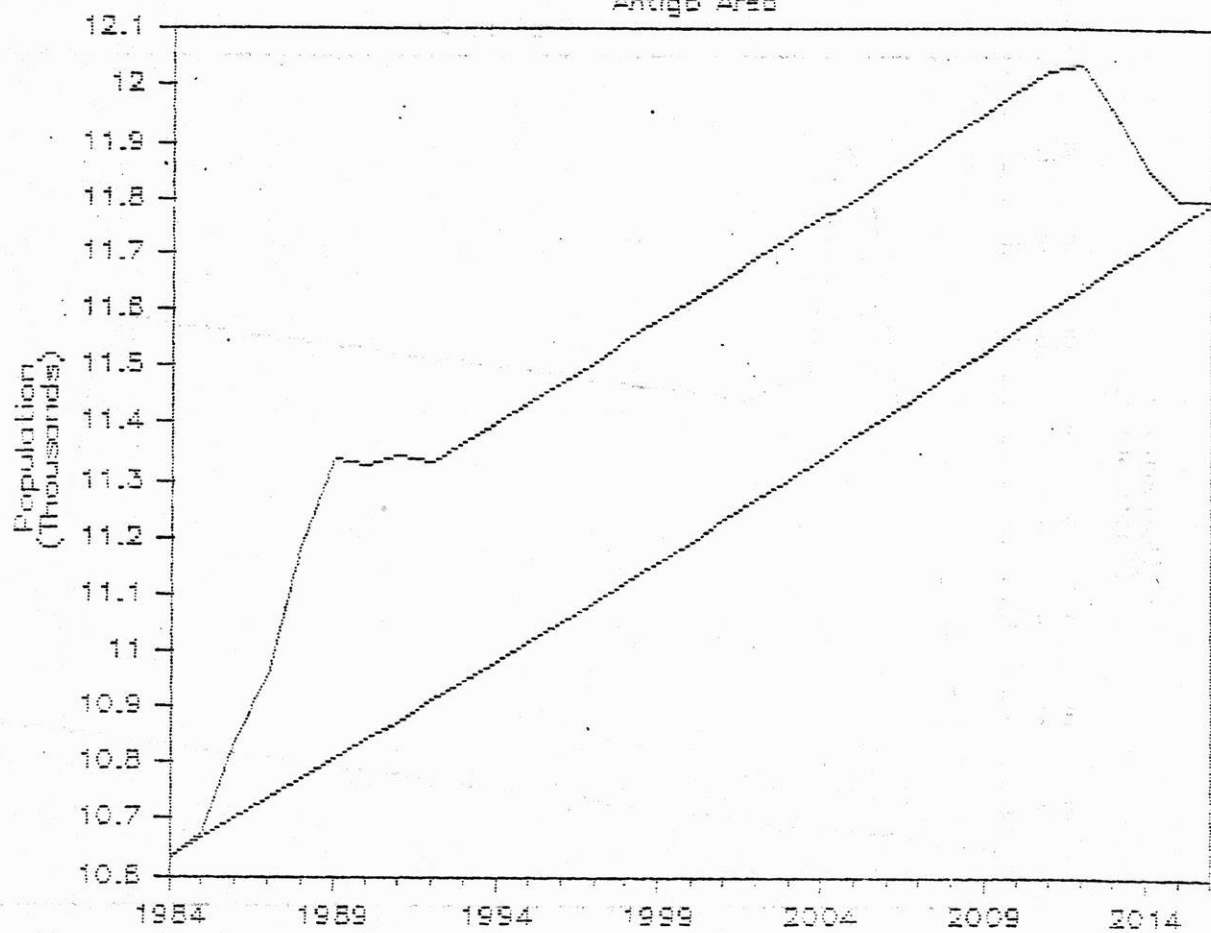


FIGURE B-19

Area Projections

Rhineland Area

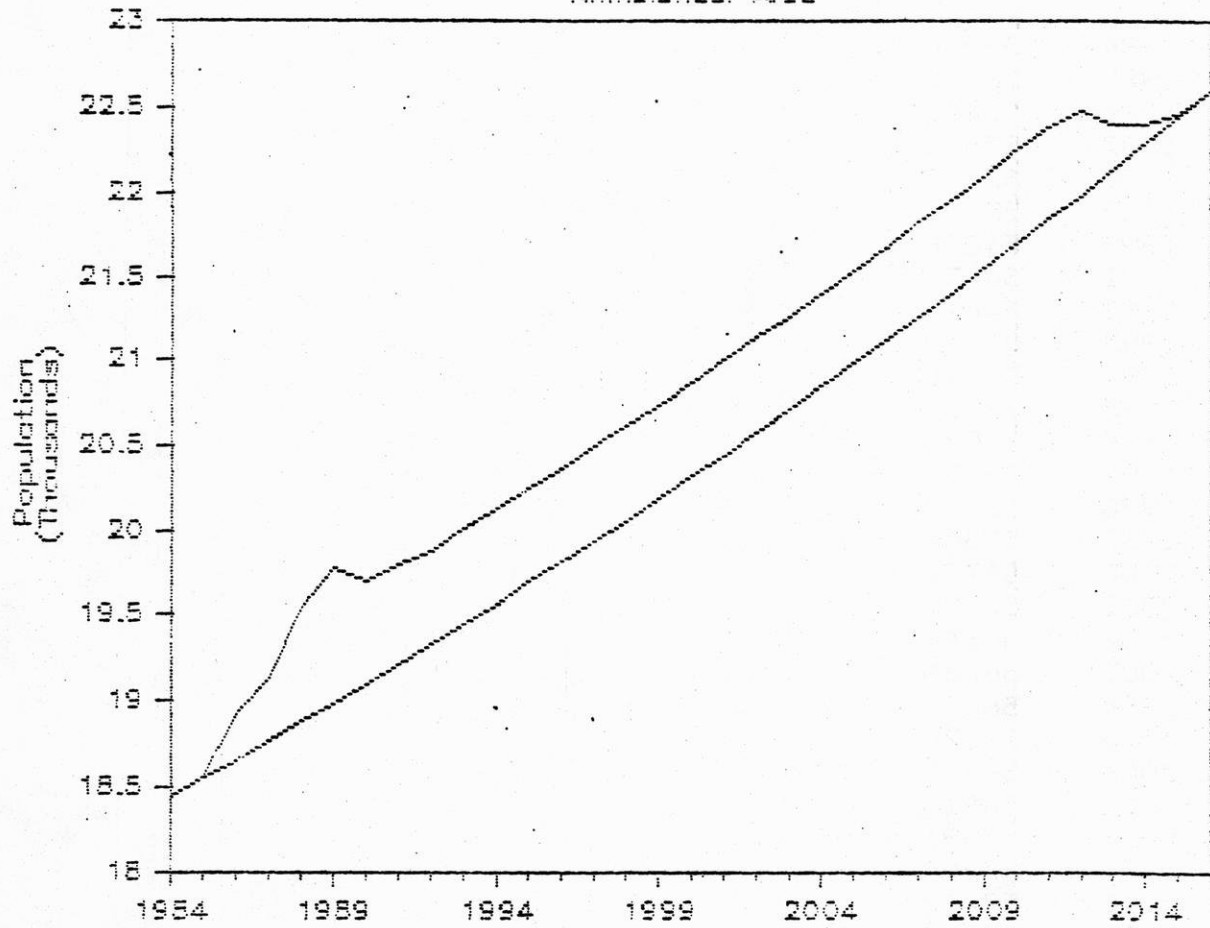


TABLE B-1

Population Projections 1984-2016 (Without-Project Scenario)

Local Study Area
Total

1984	53146
1985	53303
1986	53460
1987	53618
1988	53777
1989	53936
1990	54096
1991	54257
1992	54418
1993	54580
1994	54742
1995	54906
1996	55070
1997	55234
1998	55400
1999	55566
2000	55732
2001	55900
2002	56068
2003	56236
2004	56406
2005	56576
2006	56747
2007	56918
2008	57091
2009	57264
2010	57437
2011	57612
2012	57787
2013	57963
2014	58139
2015	58317
2016	58495

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TABLE B-2

Population Projections 1984-2016 (Without-Project Scenario)

	Crandon City	Crandon Town	Lincoln	Nashville	BOC	Forest County
1984	2017	632	617	716	4451	8433
1985	2021	632	617	716	4452	8437
1986	2026	632	616	716	4452	8442
1987	2030	631	616	716	4453	8446
1988	2035	631	616	716	4453	8451
1989	2039	631	615	716	4454	8455
1990	2044	631	615	716	4454	8460
1991	2048	630	615	717	4455	8464
1992	2053	630	614	717	4455	8469
1993	2057	630	614	717	4456	8473
1994	2062	630	614	717	4456	8478
1995	2066	629	614	717	4456	8482
1996	2071	629	613	717	4457	8487
1997	2075	629	613	717	4457	8492
1998	2080	629	613	717	4458	8496
1999	2085	628	612	717	4458	8501
2000	2089	628	612	717	4459	8505
2001	2094	628	612	717	4459	8510
2002	2098	628	611	717	4459	8514
2003	2103	627	611	717	4460	8519
2004	2108	627	611	717	4460	8523
2005	2112	627	610	718	4461	8528
2006	2117	627	610	718	4461	8532
2007	2122	626	610	718	4461	8537
2008	2126	626	609	718	4462	8541
2009	2131	626	609	718	4462	8546
2010	2136	626	609	718	4462	8550
2011	2140	625	608	718	4463	8555
2012	2145	625	608	718	4463	8560
2013	2150	625	608	718	4463	8564
2014	2155	625	608	718	4464	8569
2015	2159	624	607	718	4464	8573
2016	2164	624	607	718	4464	8578

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TABLE B-3

Population Projections 1984-2016 (Without-Project Scenario)

	Antigo City	Antigo Town	Elcho	BOC	Langlade County
1984	8890	1744	1076	7997	19707
1985	8924	1744	1076	7993	19737
1986	8958	1744	1076	7989	19768
1987	8992	1744	1077	7985	19799
1988	9027	1744	1077	7981	19829
1989	9061	1745	1077	7977	19860
1990	9096	1745	1077	7973	19891
1991	9130	1745	1078	7969	19921
1992	9165	1745	1078	7964	19952
1993	9200	1745	1078	7960	19983
1994	9235	1745	1078	7955	20014
1995	9271	1745	1078	7951	20045
1996	9306	1745	1079	7946	20076
1997	9341	1746	1079	7941	20107
1998	9377	1746	1079	7936	20138
1999	9413	1746	1079	7931	20169
2000	9449	1746	1080	7926	20200
2001	9485	1746	1080	7921	20232
2002	9521	1746	1080	7916	20263
2003	9557	1746	1080	7910	20294
2004	9594	1746	1080	7905	20326
2005	9631	1746	1081	7899	20357
2006	9667	1747	1081	7894	20388
2007	9704	1747	1081	7888	20420
2008	9741	1747	1081	7882	20452
2009	9778	1747	1081	7876	20483
2010	9816	1747	1082	7870	20515
2011	9853	1747	1082	7864	20547
2012	9891	1747	1082	7858	20578
2013	9929	1747	1082	7852	20610
2014	9967	1747	1083	7845	20642
2015	10005	1748	1083	7839	20674
2016	10043	1748	1083	7832	20706

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TABLE B-4

Population Projections 1984-2016 (Without-Project Scenario)

	Crescent	Newbold	Pelican	Pine Lake	Rhinelndr	BOC	Oneida County
1984	1837	2428	3391	2806	7985	6559	25006
1985	1859	2450	3436	2833	7975	6574	25128
1986	1881	2473	3481	2860	7966	6589	25250
1987	1904	2495	3527	2887	7956	6603	25373
1988	1927	2518	3574	2915	7947	6616	25497
1989	1950	2541	3621	2943	7937	6628	25621
1990	1973	2564	3669	2971	7927	6640	25745
1991	1997	2588	3718	3000	7918	6651	25871
1992	2021	2612	3767	3028	7908	6661	25997
1993	2045	2635	3817	3057	7899	6670	26123
1994	2070	2660	3867	3087	7889	6678	26251
1995	2094	2684	3918	3116	7880	6686	26378
1996	2119	2709	3970	3146	7870	6692	26507
1997	2145	2733	4023	3176	7861	6698	26636
1998	2171	2758	4076	3207	7851	6703	26766
1999	2197	2784	4130	3237	7842	6707	26896
2000	2223	2809	4184	3268	7832	6710	27027
2001	2250	2835	4240	3300	7823	6712	27158
2002	2277	2861	4296	3331	7813	6713	27291
2003	2304	2887	4353	3363	7804	6713	27424
2004	2332	2913	4410	3395	7795	6712	27557
2005	2359	2940	4469	3428	7785	6710	27691
2006	2388	2967	4528	3461	7776	6707	27826
2007	2416	2994	4588	3494	7766	6703	27962
2008	2445	3021	4648	3527	7757	6698	28098
2009	2475	3049	4710	3561	7748	6692	28235
2010	2504	3077	4772	3595	7738	6685	28372
2011	2534	3105	4835	3630	7729	6676	28510
2012	2565	3134	4899	3665	7720	6667	28649
2013	2596	3162	4964	3700	7710	6657	28788
2014	2627	3191	5030	3735	7701	6645	28929
2015	2658	3220	5096	3771	7692	6632	29069
2016	2690	3250	5164	3807	7683	6618	29211

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TABLE B-5

Population Projections 1985-2016 (Without-Project Scenario)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	5058	10634	18447
1986	5062	10668	18553
1987	5066	10702	18661
1988	5071	10737	18770
1989	5075	10771	18880
1990	5079	10806	18992
1991	5083	10840	19105
1992	5087	10875	19220
1993	5092	10910	19336
1994	5096	10945	19453
1995	5100	10980	19572
1996	5104	11016	19693
1997	5109	11051	19815
1998	5113	11087	19938
1999	5117	11123	20063
2000	5122	11159	20189
2001	5126	11195	20317
2002	5130	11231	20447
2003	5135	11267	20578
2004	5139	11304	20711
2005	5143	11340	20845
2006	5148	11377	20981
2007	5152	11414	21119
2008	5156	11451	21259
2009	5161	11488	21400
2010	5165	11525	21543
2011	5170	11563	21687
2012	5174	11600	21834
2013	5179	11638	21982
2014	5183	11676	22132
2015	5188	11714	22284
2016	5192	11752	22438

TABLE B-6

Population Projections 1984-2016 (Impact Scenario)

	Local Study Area Total
1984	53146
1985	53335
1986	54365
1987	54890
1988	56020
1989	56578
1990	56072
1991	56185
1992	56231
1993	56394
1994	56557
1995	56721
1996	56886
1997	57051
1998	57217
1999	57383
2000	57551
2001	57718
2002	57887
2003	58056
2004	58226
2005	58397
2006	58569
2007	58741
2008	58914
2009	59087
2010	59261
2011	59436
2012	59430
2013	58932
2014	58586
2015	58431
2016	58517

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TABLE B-7

Population Projections 1984-2016 (Impact Scenario)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	5058	10634	18447
1986	5071	10674	18564
1987	5367	10837	18923
1988	5463	10959	19141
1989	5741	11186	19541
1990	5825	11336	19775
1991	5559	11327	19698
1992	5553	11343	19801
1993	5535	11332	19889
1994	5540	11367	20006
1995	5544	11403	20125
1996	5549	11438	20246
1997	5553	11474	20368
1998	5557	11510	20491
1999	5562	11546	20616
2000	5566	11582	20743
2001	5571	11618	20871
2002	5575	11655	21001
2003	5580	11691	21132
2004	5584	11728	21265
2005	5588	11765	21400
2006	5593	11802	21536
2007	5597	11839	21674
2008	5602	11876	21813
2009	5606	11913	21955
2010	5611	11951	22098
2011	5616	11989	22242
2012	5620	12026	22389
2013	5576	12036	22477
2014	5403	11956	22410
2015	5284	11858	22407
2016	5214	11798	22466

TABLE B-8

Population Projections 1984-2016 (Impact Scenario)

	Crandon City	Crandon Town	Lincoln	Nashville	BOC	Forest County
1984	2017	632	617	716	4451	8433
1985	2024	632	619	718	4454	8448
1986	2101	648	694	810	4523	8776
1987	2136	654	712	833	4553	8888
1988	2221	671	773	910	4631	9206
1989	2260	677	783	925	4663	9308
1990	2211	663	703	831	4611	9018
1991	2210	662	702	829	4608	9012
1992	2203	661	701	827	4601	8992
1993	2208	660	700	827	4601	8997
1994	2212	660	700	827	4602	9002
1995	2217	660	700	828	4602	9006
1996	2222	660	700	828	4603	9011
1997	2226	659	699	828	4603	9016
1998	2231	659	699	828	4604	9020
1999	2235	659	699	828	4604	9025
2000	2240	659	698	828	4605	9030
2001	2245	658	698	828	4605	9034
2002	2249	658	698	828	4605	9039
2003	2254	658	697	828	4606	9043
2004	2259	658	697	828	4606	9048
2005	2263	657	697	828	4607	9053
2006	2268	657	696	828	4607	9057
2007	2273	657	696	829	4608	9062
2008	2278	657	696	829	4608	9067
2009	2282	656	696	829	4608	9071
2010	2287	656	695	829	4609	9076
2011	2292	656	695	829	4609	9081
2012	2283	652	683	814	4594	9026
2013	2236	639	642	764	4538	8818
2014	2196	631	620	736	4497	8679
2015	2171	626	608	721	4472	8597
2016	2166	624	607	719	4466	8582

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TABLE B-9

Population Projections 1984-2016 (Impact Scenario)

	Antigo City	Antigo Town	Elcho	BOC	Langlade County
1984	8890	1744	1076	7997	19707
1985	8929	1745	1077	7996	19747
1986	9078	1759	1114	8057	20008
1987	9189	1770	1128	8078	20165
1988	9393	1793	1166	8143	20495
1989	9528	1808	1180	8164	20680
1990	9521	1806	1152	8105	20584
1991	9539	1804	1149	8099	20591
1992	9533	1798	1144	8089	20565
1993	9569	1799	1144	8085	20596
1994	9604	1799	1144	8080	20627
1995	9639	1799	1144	8076	20658
1996	9675	1799	1145	8071	20690
1997	9711	1799	1145	8066	20721
1998	9746	1799	1145	8061	20752
1999	9782	1799	1145	8056	20784
2000	9819	1800	1146	8051	20815
2001	9855	1800	1146	8046	20847
2002	9891	1800	1146	8041	20878
2003	9928	1800	1146	8036	20910
2004	9965	1800	1147	8030	20942
2005	10001	1800	1147	8025	20973
2006	10038	1800	1147	8019	21005
2007	10075	1801	1147	8013	21037
2008	10113	1801	1148	8008	21069
2009	10150	1801	1148	8002	21101
2010	10188	1801	1148	7996	21133
2011	10225	1801	1148	7990	21165
2012	10239	1798	1143	7969	21149
2013	10173	1783	1122	7911	20989
2014	10093	1766	1102	7871	20831
2015	10045	1753	1089	7844	20730
2016	10051	1749	1084	7833	20717

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Disk: Crandon8

TABLE B-10

Population Projections 1984-2016 (Impact Scenario)

	Crescent	Newbold	Pelican	Pine Lake	Rhinelndr	B0C	Oneida County
1984	1837	2428	3391	2806	7985	6559	25006
1985	1860	2452	3440	2835	7976	6577	25141
1986	1901	2513	3555	2907	8047	6657	25580
1987	1933	2555	3641	2958	8054	6695	25837
1988	1980	2626	3788	3045	8103	6778	26319
1989	2014	2671	3889	3102	8098	6816	26590
1990	2026	2668	3899	3102	8002	6772	26470
1991	2049	2690	3946	3128	7989	6781	26582
1992	2069	2709	3987	3150	7974	6786	26674
1993	2093	2733	4037	3179	7965	6795	26801
1994	2118	2757	4087	3208	7955	6803	26929
1995	2143	2781	4138	3238	7946	6811	27057
1996	2168	2806	4190	3267	7936	6817	27185
1997	2193	2831	4243	3298	7927	6823	27314
1998	2219	2856	4296	3328	7917	6828	27444
1999	2245	2881	4350	3359	7908	6832	27575
2000	2271	2907	4405	3390	7898	6835	27706
2001	2298	2932	4460	3421	7889	6837	27838
2002	2325	2958	4516	3453	7880	6838	27970
2003	2352	2985	4573	3485	7870	6838	28103
2004	2380	3011	4631	3517	7861	6837	28237
2005	2408	3038	4689	3550	7851	6835	28371
2006	2436	3065	4748	3583	7842	6832	28506
2007	2465	3092	4808	3616	7833	6828	28642
2008	2494	3119	4869	3649	7823	6823	28778
2009	2523	3147	4930	3683	7814	6817	28915
2010	2553	3175	4993	3717	7805	6810	29053
2011	2583	3203	5056	3752	7795	6802	29191
2012	2609	3221	5094	3774	7781	6778	29256
2013	2622	3210	5065	3762	7750	6716	29125
2014	2639	3212	5071	3763	7721	6670	29077
2015	2662	3225	5104	3778	7698	6637	29103
2016	2691	3251	5165	3808	7684	6619	29218

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File: TOTPOP2

Disk: Crandon8

TABLE B-11

Population Projections 1985-2016 (Impact Population)

Local Study Area Total	
1985	33
1986	905
1987	1271
1988	2243
1989	2642
1990	1976
1991	1929
1992	1813
1993	1814
1994	1815
1995	1815
1996	1816
1997	1817
1998	1817
1999	1818
2000	1818
2001	1819
2002	1819
2003	1820
2004	1821
2005	1821
2006	1822
2007	1822
2008	1823
2009	1824
2010	1824
2011	1825
2012	1644
2013	970
2014	447
2015	114
2016	22

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Disk: Crandon8

TABLE B-12

Population Projections 1984-2016 (Impact Population)
Area Projections

	Project Area	Antigo Area	Rhineland Area
1985	8	6	10
1986	300	135	262
1987	393	223	371
1988	667	415	660
1989	746	530	782
1990	476	487	593
1991	466	468	581
1992	444	422	553
1993	444	422	553
1994	444	422	553
1995	444	422	553
1996	444	423	553
1997	444	423	553
1998	444	423	553
1999	445	423	554
2000	445	423	554
2001	445	424	554
2002	445	424	554
2003	445	424	554
2004	445	424	554
2005	445	425	555
2006	445	425	555
2007	445	425	555
2008	446	425	555
2009	446	426	555
2010	446	426	555
2011	446	426	555
2012	397	398	496
2013	219	280	278
2014	96	144	123
2015	22	46	29
2016	4	9	6

TABLE B-13

Population Projections 1985-2016 (Impact Population)

	Crandon City	Crandon Town	Lincoln	Nashville	BOC	Forest County
1985	3	1	2	2	3	10
1986	75	17	78	94	71	334
1987	106	23	96	117	100	442
1988	187	40	157	194	177	755
1989	220	46	168	209	209	852
1990	167	32	88	114	157	558
1991	162	32	87	113	154	548
1992	150	31	86	111	146	523
1993	150	31	86	111	146	524
1994	150	31	86	111	146	524
1995	151	31	86	111	146	524
1996	151	31	86	111	146	524
1997	151	31	86	111	146	524
1998	151	31	86	111	146	524
1999	151	31	86	111	146	524
2000	151	31	86	111	146	524
2001	151	31	86	111	146	525
2002	151	31	86	111	146	525
2003	151	31	86	111	146	525
2004	151	31	86	111	146	525
2005	151	31	86	111	146	525
2006	151	31	86	111	146	525
2007	151	31	86	111	146	525
2008	151	31	86	111	146	525
2009	151	31	86	111	146	526
2010	151	31	86	111	146	526
2011	151	31	86	111	146	526
2012	138	27	75	96	131	467
2013	86	14	34	46	74	254
2014	41	6	12	17	33	110
2015	11	1	1	2	8	24
2016	2	0	0	0	2	5

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File: TOTPOP2

Disk: Crandon8

TABLE B-14

Population Projections 1985-2016 (Impact Population)

	Antigo City	Antigo Town	Elcho	BOC	Langlade County
1985	5	1	1	2	10
1986	120	15	37	68	240
1987	197	26	51	92	366
1988	367	49	89	162	666
1989	467	64	103	187	820
1990	425	62	74	132	693
1991	408	59	72	130	669
1992	368	53	66	125	612
1993	368	54	66	125	613
1994	369	54	66	125	613
1995	369	54	66	125	613
1996	369	54	66	125	614
1997	369	54	66	125	614
1998	369	54	66	125	614
1999	370	54	66	125	615
2000	370	54	66	125	615
2001	370	54	66	125	615
2002	370	54	66	125	615
2003	370	54	66	125	616
2004	371	54	66	125	616
2005	371	54	66	125	616
2006	371	54	66	125	617
2007	371	54	66	125	617
2008	371	54	66	125	617
2009	372	54	66	125	617
2010	372	54	66	125	618
2011	372	54	66	126	618
2012	348	50	61	111	570
2013	245	35	40	59	378
2014	126	18	20	25	189
2015	40	6	6	5	56
2016	8	1	1	1	11

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File: TOTPOP2

Disk: Crandon8

TABLE B-15

Population Projections 1985-2016 (Impact Population)

	Crescent	Newbold	Pelican	Pine Lake	Rhine	Indr	BOC	Oneida County
1985	1	2	4	2	1	2		13
1986	20	41	74	47	81	68		330
1987	29	59	114	71	98	92		463
1988	53	108	214	129	156	162		822
1989	65	130	268	159	161	187		969
1990	53	104	230	131	75	132		725
1991	52	102	228	128	72	130		712
1992	48	97	220	121	66	125		678
1993	48	97	220	121	66	125		678
1994	48	97	220	121	66	125		678
1995	48	97	220	121	66	125		678
1996	48	97	220	121	66	125		678
1997	48	97	220	121	66	125		678
1998	48	97	220	121	66	125		679
1999	48	98	220	121	66	125		679
2000	48	98	220	121	66	125		679
2001	48	98	220	122	66	125		679
2002	48	98	220	122	66	125		679
2003	48	98	220	122	66	125		680
2004	48	98	220	122	66	125		680
2005	48	98	220	122	66	125		680
2006	48	98	221	122	66	125		680
2007	48	98	221	122	66	125		680
2008	48	98	221	122	66	125		680
2009	49	98	221	122	66	125		681
2010	49	98	221	122	66	125		681
2011	49	98	221	122	66	126		681
2012	44	87	194	109	61	111		607
2013	27	48	101	63	40	59		337
2014	13	21	42	28	20	25		148
2015	3	5	8	7	6	5		34
2016	1	1	2	1	1	1		7

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File: TOTPOP2

Disk: Crandon8

TABLE B-16

School-Age Population and Public School Enrollment Projections (Without-Project Scenario)

Crandon School District			Elcho School District			Antigo School District			Rhineland School District		
School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment	
1984	1027	996	1984	560	450	1984	3365	3030	1984	3554	3198
1985	1002	952	1985	545	464	1985	3287	2958	1985	3483	3135
1986	988	939	1986	537	456	1986	3243	2919	1986	3449	3104
1987	973	924	1987	528	449	1987	3198	2878	1987	3413	3072
1988	964	916	1988	523	444	1988	3171	2854	1988	3397	3058
1989	951	904	1989	515	438	1989	3133	2820	1989	3369	3032
1990	951	903	1990	515	437	1990	3136	2822	1990	3384	3045
1991	952	905	1991	515	438	1991	3144	2829	1991	3406	3065
1992	951	903	1992	513	436	1992	3142	2828	1992	3416	3074
1993	957	909	1993	516	439	1993	3167	2850	1993	3457	3111
1994	963	915	1994	519	441	1994	3191	2872	1994	3496	3147
1995	963	915	1995	518	441	1995	3193	2874	1995	3512	3161
1996	962	914	1996	517	440	1996	3192	2873	1996	3525	3173
1997	959	911	1997	515	438	1997	3187	2868	1997	3533	3180
1998	956	908	1998	513	436	1998	3180	2862	1998	3540	3186
1999	948	901	1999	508	432	1999	3159	2843	1999	3531	3178
2000	932	886	2000	499	424	2000	3109	2798	2000	3490	3141
2001	917	871	2001	490	417	2001	3062	2756	2001	3451	3106
2002	898	853	2002	480	408	2002	3001	2701	2002	3397	3057
2003	883	839	2003	471	400	2003	2955	2660	2003	3359	3023
2004	868	825	2004	463	393	2004	2908	2617	2004	3319	2988
2005	860	817	2005	458	389	2005	2885	2597	2005	3307	2977
2006	853	810	2006	453	385	2006	2863	2577	2006	3296	2967
2007	845	803	2007	449	381	2007	2841	2557	2007	3285	2957
2008	839	797	2008	445	378	2008	2822	2540	2008	3278	2950
2009	835	793	2009	442	376	2009	2813	2531	2009	3281	2953
2010	830	788	2010	439	373	2010	2798	2518	2010	3279	2951
2011	826	784	2011	436	371	2011	2787	2509	2011	3281	2953
2012	823	781	2012	434	369	2012	2780	2502	2012	3288	2959
2013	820	779	2013	432	367	2013	2776	2498	2013	3298	2968
2014	823	782	2014	433	368	2014	2788	2510	2014	3328	2995
2015	840	798	2015	441	375	2015	2848	2563	2015	3415	3074
2016	855	812	2016	449	381	2016	2902	2612	2016	3496	3147

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File: SCHOOL1

Disk: Crandon8

TABLE B-17

School-Age Population and Public School Enrollment Projections (Impact Scenario)

Crandon School District			Elcho School District			Antigo School District			Rhineland School District		
School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment		School-Age Population	Public School Enrollment	
1985	1008	958	1985	546	464	1985	3290	2961	1985	3407	3139
1986	1152	1095	1986	562	478	1986	3329	2996	1986	3562	3206
1987	1129	1132	1987	563	478	1987	3333	3000	1987	3572	3215
1988	1361	1293	1988	583	495	1988	3421	3079	1988	3680	3312
1989	1414	1343	1989	585	497	1989	3445	3101	1989	3703	3333
1990	1285	1221	1990	564	480	1990	3409	3068	1990	3635	3272
1991	1280	1216	1991	563	479	1991	3408	3067	1991	3652	3287
1992	1263	1200	1992	558	475	1992	3382	3044	1992	3650	3285
1993	1270	1206	1993	561	477	1993	3407	3067	1993	3691	3322
1994	1276	1212	1994	564	479	1994	3431	3088	1994	3731	3358
1995	1276	1212	1995	563	479	1995	3433	3090	1995	3747	3372
1996	1274	1211	1996	562	478	1996	3433	3090	1996	3760	3384
1997	1272	1208	1997	560	476	1997	3427	3085	1997	3768	3391
1998	1269	1205	1998	558	474	1998	3421	3079	1998	3774	3397
1999	1261	1198	1999	553	470	1999	3400	3060	1999	3766	3389
2000	1245	1183	2000	544	462	2000	3350	3015	2000	3725	3352
2001	1230	1169	2001	535	455	2001	3303	2973	2001	3686	3317
2002	1211	1151	2002	525	446	2002	3243	2919	2002	3632	3269
2003	1197	1137	2003	516	439	2003	3197	2877	2003	3594	3234
2004	1182	1123	2004	508	432	2004	3150	2835	2004	3555	3199
2005	1174	1115	2005	503	428	2005	3127	2814	2005	3542	3188
2006	1166	1108	2006	498	424	2006	3105	2794	2006	3531	3178
2007	1159	1101	2007	494	420	2007	3083	2775	2007	3520	3168
2008	1152	1095	2008	490	416	2008	3064	2758	2008	3513	3162
2009	1149	1091	2009	487	414	2009	3055	2749	2009	3517	3165
2010	1143	1086	2010	484	411	2010	3040	2736	2010	3514	3163
2011	1140	1083	2011	481	409	2011	3030	2727	2011	3517	3165
2012	1102	1047	2012	475	404	2012	3005	2704	2012	3498	3148
2013	975	926	2013	458	389	2013	2927	2635	2013	3416	3074
2014	891	846	2014	445	378	2014	2865	2578	2014	3381	3043
2015	855	812	2015	445	378	2015	2871	2584	2015	3428	3085
2016	858	815	2016	449	382	2016	2906	2616	2016	3499	3149

01-Apr-85

File: SCHOOL1

Disk: Crandon8

TABLE B-18

School-Age Population and Public School Enrollment Projections (Difference Between Future-Without and Impact Scenarios)

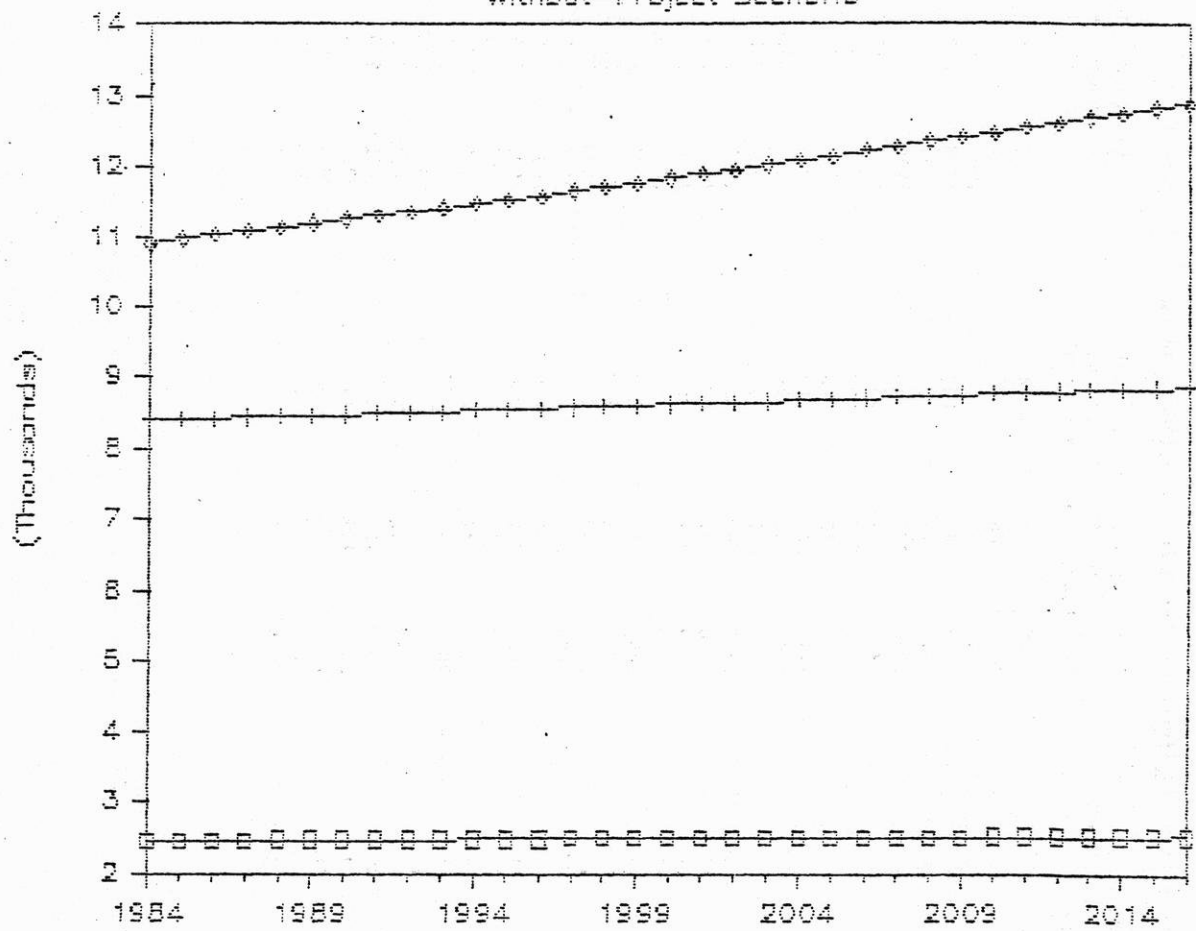
Crandon School District			Elcho School District			Antigo School District			Rhineland School District		
Year	School-Age Population	Public School Enrollment	Year	School-Age Population	Public School Enrollment	Year	School-Age Population	Public School Enrollment	Year	School-Age Population	Public School Enrollment
1985	6	6	1985	1	1	1985	4	4	1985	4	4
1986	164	156	1986	25	24	1986	86	82	1986	113	107
1987	226	215	1987	34	33	1987	135	129	1987	159	151
1988	397	377	1988	60	57	1988	249	237	1988	282	268
1989	462	439	1989	69	66	1989	312	296	1989	334	317
1990	334	317	1990	50	47	1990	273	260	1990	251	239
1991	328	311	1991	48	46	1991	264	251	1991	247	234
1992	312	297	1992	45	43	1992	240	228	1992	234	223
1993	312	297	1993	45	43	1993	240	228	1993	234	223
1994	313	297	1994	45	43	1994	241	229	1994	234	223
1995	313	297	1995	45	43	1995	241	229	1995	234	223
1996	313	297	1996	45	43	1996	241	229	1996	235	223
1997	313	297	1997	45	43	1997	241	229	1997	235	223
1998	313	297	1998	45	43	1998	241	229	1998	235	223
1999	313	297	1999	45	43	1999	241	229	1999	235	223
2000	313	297	2000	45	43	2000	241	229	2000	235	223
2001	313	297	2001	45	43	2001	241	229	2001	235	223
2002	313	298	2002	45	43	2002	241	229	2002	235	223
2003	313	298	2003	45	43	2003	242	230	2003	235	223
2004	313	298	2004	45	43	2004	242	230	2004	235	223
2005	313	298	2005	45	43	2005	242	230	2005	235	223
2006	313	298	2006	45	43	2006	242	230	2006	235	223
2007	314	298	2007	45	43	2007	242	230	2007	235	223
2008	314	298	2008	45	43	2008	242	230	2008	235	224
2009	314	298	2009	45	43	2009	242	230	2009	235	224
2010	314	298	2010	45	43	2010	242	230	2010	235	224
2011	314	298	2011	45	43	2011	243	230	2011	235	224
2012	279	265	2012	41	39	2012	225	213	2012	210	200
2013	154	147	2013	25	24	2013	152	144	2013	118	112
2014	68	64	2014	12	11	2014	76	73	2014	52	50
2015	15	14	2015	3	3	2015	23	22	2015	12	12
2016	3	3	2016	1	1	2016	5	4	2016	2	2

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FIGURE B-20

LSA Employment

Without-Project Scenario



Forest County

+ Longlade County

◇ Oneida County

TABLE B-19

Employment Projection, Without-Project Scenario

	Forest County	Langlade County	Oneida County	LSA Total
1984	2455	8402	10911	21768
1985	2457	8416	10965	21838
1986	2459	8429	11020	21909
1987	2461	8443	11076	21981
1988	2463	8457	11132	22053
1989	2465	8471	11190	22126
1990	2467	8486	11247	22200
1991	2470	8500	11305	22275
1992	2472	8514	11364	22350
1993	2474	8529	11423	22426
1994	2476	8543	11483	22503
1995	2478	8558	11544	22580
1996	2480	8573	11605	22658
1997	2482	8587	11666	22736
1998	2484	8602	11728	22814
1999	2487	8617	11790	22893
2000	2489	8632	11852	22972
2001	2491	8647	11914	23052
2002	2493	8661	11977	23131
2003	2495	8676	12040	23212
2004	2497	8691	12104	23292
2005	2499	8706	12167	23373
2006	2502	8721	12232	23455
2007	2504	8736	12296	23536
2008	2506	8751	12361	23619
2009	2508	8767	12427	23702
2010	2510	8782	12493	23785
2011	2513	8797	12559	23869
2012	2515	8812	12626	23953
2013	2517	8828	12694	24039
2014	2519	8843	12762	24125
2015	2521	8859	12831	24211
2016	2524	8874	12899	24297

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 File: BASEPOP1
 Disk: Crandon 1

TABLE B-20

New Employment by Place of Residence

Year	LSA Total		
	Co	Op	Sec
0	0	16	3
1	445	22	79
2	473	127	163
3	680	346	312
4	589	552	427
5	8	694	455
6	0	703	424
7	0	703	353
8	0	703	354
9	0	703	354
10	0	703	355
11	0	703	355
12	0	703	355
13	0	703	356
14	0	703	356
15	0	703	356
16	0	703	357
17	0	703	357
18	0	703	358
19	0	703	358
20	0	703	358
21	0	703	359
22	0	703	359
23	0	703	359
24	0	703	360
25	0	703	360
26	0	703	360
27	0	600	361
28	0	250	326
29	0	80	188
30	0	0	70
31	0	0	14
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0

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File: BNBCALC1

Disk: Crandon2

TABLE B-21

New Employment by Place of Residence

Year	Crandon City			Crandon Town			Lincoln			Nashville			Forest BOC			Forest Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	5	1
1	36	2	8	9	0	1	44	1	1	53	2	2	36	2	6	178	7	17
2	38	10	16	9	3	2	47	8	2	57	10	3	38	11	11	189	41	34
3	54	26	31	14	7	3	68	22	3	82	23	6	54	29	22	272	112	66
4	47	41	43	12	11	4	59	36	4	71	44	9	47	47	30	235	179	90
5	1	52	46	0	14	5	1	45	5	1	56	9	1	59	32	3	226	96
6	0	53	42	0	14	4	0	46	4	0	56	8	0	60	30	0	228	89
7	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
8	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
9	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
10	0	53	35	0	14	4	0	46	4	0	56	7	0	60	25	0	228	74
11	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
12	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
13	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
14	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
15	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
16	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
17	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
18	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
19	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
20	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
21	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
22	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
23	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	75
24	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
25	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
26	0	53	36	0	14	4	0	46	4	0	56	7	0	60	25	0	228	76
27	0	45	36	0	12	4	0	39	4	0	48	7	0	51	25	0	195	76
28	0	19	33	0	5	3	0	16	3	0	20	7	0	21	23	0	81	68
29	0	6	19	0	2	2	0	5	2	0	6	4	0	7	13	0	26	40
30	0	0	7	0	0	1	0	0	1	0	0	1	0	0	5	0	0	15
31	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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16-Mar-85
 File: BNOCALC1
 Disk: Crandon2

TABLE B-22

New Employment by Place of Residence

Year	Antigo City			Antigo Town			Elcho			Langlade BOC			Langlade Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	2	1	0	0	0	0	0	0	0	1	0	0	4	1
1	42	3	28	4	0	4	18	1	4	36	2	4	100	6	39
2	45	17	57	5	3	8	19	4	8	38	10	7	106	34	81
3	65	47	109	7	7	16	27	10	16	54	28	14	153	92	155
4	56	75	149	6	11	21	24	17	21	47	44	19	132	146	211
5	1	94	159	0	14	23	0	21	23	1	56	20	2	184	225
6	0	95	149	0	14	21	0	21	21	0	56	19	0	186	210
7	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
8	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
9	0	95	124	0	14	18	0	21	18	0	56	16	0	186	175
10	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
11	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
12	0	95	124	0	14	18	0	21	18	0	56	16	0	186	176
13	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
14	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
15	0	95	125	0	14	18	0	21	18	0	56	16	0	186	176
16	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
17	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
18	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
19	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
20	0	95	125	0	14	18	0	21	18	0	56	16	0	186	177
21	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
22	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
23	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
24	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
25	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
26	0	95	126	0	14	18	0	21	18	0	56	16	0	186	178
27	0	81	126	0	12	18	0	18	18	0	43	16	0	159	179
28	0	34	114	0	5	16	0	8	16	0	20	15	0	66	161
29	0	11	66	0	2	9	0	2	9	0	6	8	0	21	93
30	0	0	25	0	0	4	0	0	4	0	0	3	0	0	35
31	0	0	5	0	0	1	0	0	1	0	0	1	0	0	7
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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16-Mar-85
 File: BNDCALC1
 Disk: Crandon2

TABLE B-23

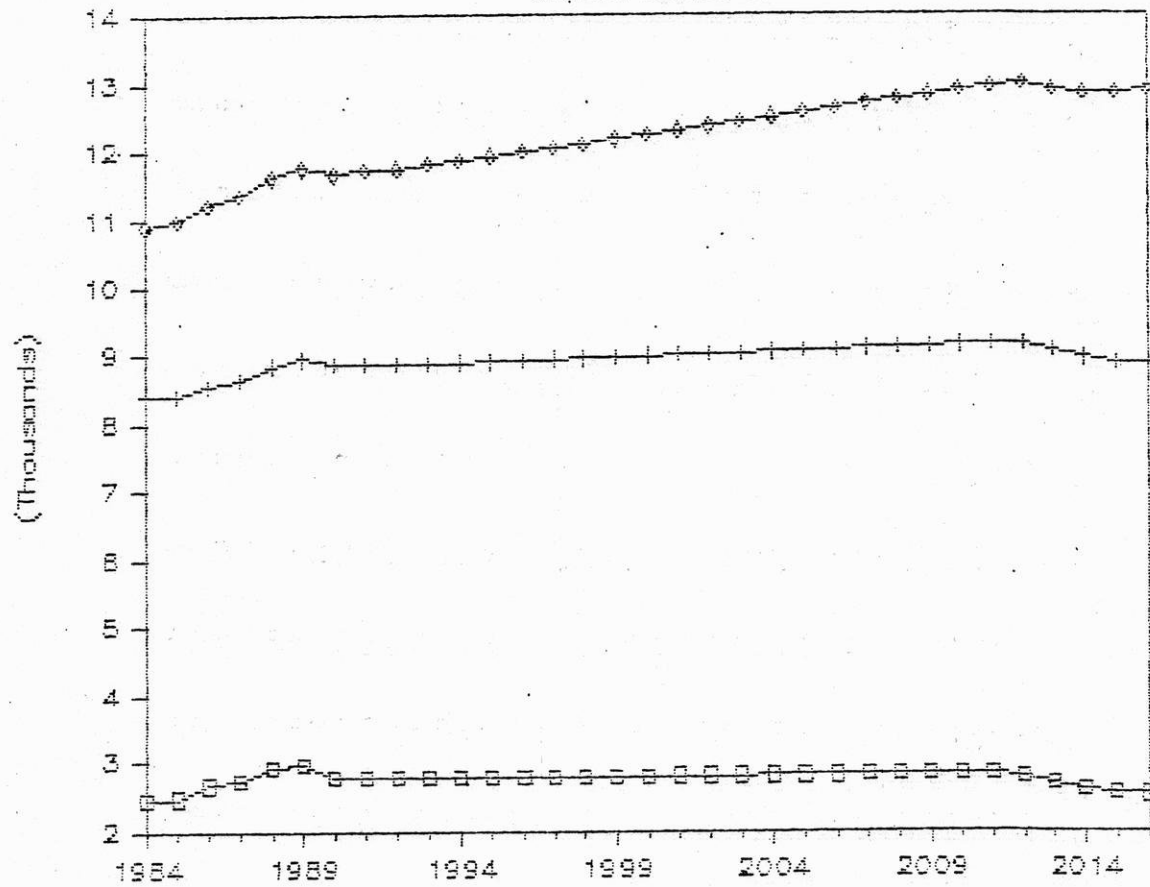
New Employment by Place of Residence

Year	Crescent			Newbold			Pelican			Pine Lake			Rhinelander			Oneida BOC			Oneida Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	0	0	0	1	0	0	2	0	0	1	0	0	0	0	0	1	0	0	7	1
1	9	1	2	20	1	3	36	3	6	22	2	5	44	1	4	36	2	4	167	9	23
2	9	3	5	21	8	7	38	18	11	24	9	10	47	4	8	38	10	7	177	52	43
3	14	9	9	31	21	12	54	50	22	34	24	19	68	10	16	54	28	14	255	142	92
4	12	14	13	26	33	17	47	80	30	29	39	26	59	17	21	47	44	19	221	226	126
5	0	17	14	0	42	18	1	101	32	0	49	27	1	21	23	1	56	20	3	285	134
6	0	18	13	0	42	17	0	102	30	0	49	25	0	21	21	0	56	19	0	288	125
7	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	104
8	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	104
9	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
10	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
11	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
12	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
13	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
14	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
15	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
16	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
17	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
18	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	105
19	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	106
20	0	18	11	0	42	14	0	102	25	0	49	21	0	21	18	0	56	16	0	288	106
21	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
22	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
23	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
24	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
25	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
26	0	18	11	0	42	14	0	102	25	0	49	22	0	21	18	0	56	16	0	288	106
27	0	15	11	0	36	14	0	87	25	0	42	22	0	18	18	0	48	16	0	246	106
28	0	6	10	0	15	13	0	36	23	0	18	20	0	8	16	0	20	15	0	103	96
29	0	2	6	0	5	8	0	12	13	0	6	11	0	2	9	0	6	8	0	33	56
30	0	0	2	0	0	3	0	0	5	0	0	4	0	0	4	0	0	3	0	0	21
31	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	4
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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FIGURE B-21

LSA Employment Impact Scenario



◊ Forest County

+ Longlade County

◊ Onaida County

TABLE B-24

Employment Projection, Impact Scenario

	Forest County	Langlade County	Oneida County	LSA Total
1984	2455	8402	10911	21768
1985	2463	8421	10972	21857
1986	2661	8575	11219	22455
1987	2726	8664	11353	22743
1988	2913	8857	11621	23391
1989	2970	8962	11763	23694
1990	2792	8897	11669	23358
1991	2787	8896	11719	23402
1992	2774	8876	11757	23407
1993	2777	8890	11816	23483
1994	2779	8905	11876	23560
1995	2781	8920	11937	23638
1996	2783	8935	11998	23716
1997	2785	8950	12059	23794
1998	2788	8965	12121	23873
1999	2790	8980	12183	23952
2000	2792	8995	12245	24032
2001	2794	9010	12308	24111
2002	2797	9025	12370	24192
2003	2799	9040	12434	24272
2004	2801	9055	12497	24353
2005	2803	9070	12561	24434
2006	2805	9085	12626	24516
2007	2808	9100	12690	24598
2008	2810	9116	12756	24681
2009	2812	9131	12821	24764
2010	2814	9146	12887	24848
2011	2817	9162	12954	24932
2012	2785	9150	12979	24914
2013	2667	9055	12893	24615
2014	2585	8958	12851	24393
2015	2536	8894	12851	24281
2016	2526	8881	12903	24311

26-Mar-85

File: BNBCALC1

Disk: Crandon2

FIGURE B-22

Housing Supply Projections

Local Study Area

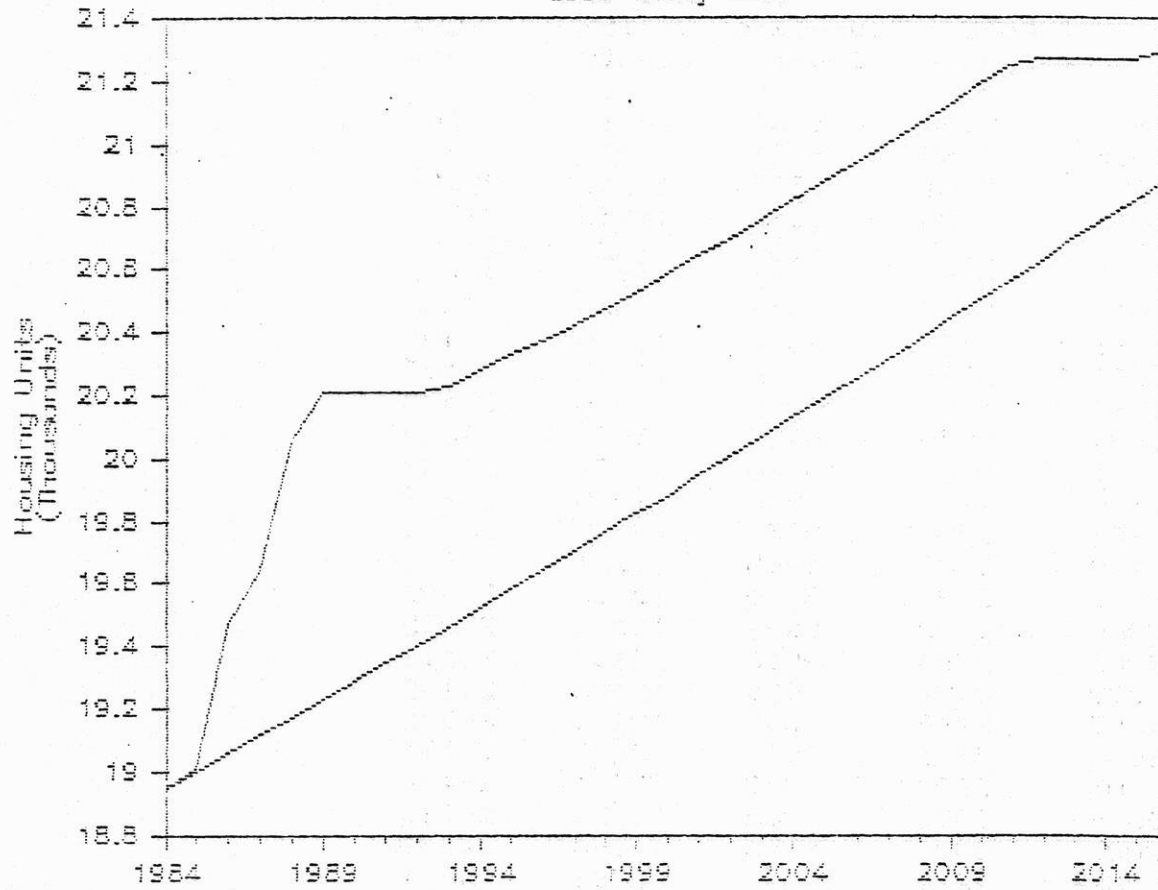


TABLE B-25

Housing Unit Projections 1984-2016
Without-Project Scenario

	Local Study Area Total	Size, Average Household
1984	18944	2.81
1985	19001	2.81
1986	19058	2.81
1987	19116	2.80
1988	19173	2.80
1989	19231	2.80
1990	19289	2.80
1991	19347	2.80
1992	19406	2.80
1993	19465	2.80
1994	19524	2.80
1995	19583	2.80
1996	19642	2.80
1997	19702	2.80
1998	19762	2.80
1999	19822	2.80
2000	19883	2.80
2001	19943	2.80
2002	20004	2.80
2003	20066	2.80
2004	20127	2.80
2005	20189	2.80
2006	20251	2.80
2007	20313	2.80
2008	20376	2.80
2009	20438	2.80
2010	20502	2.80
2011	20565	2.80
2012	20628	2.80
2013	20692	2.80
2014	20756	2.80
2015	20821	2.80
2016	20885	2.80

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-26

Housing Unit Projections 1984-2016 (Without-Project Scenario)

	Crandon City	Crandon Town	Lincoln	Nashville	BOC	Forest County
1984	711	181	200	262	1489	2820
1985	713	181	200	262	1489	2822
1986	714	181	200	262	1489	2823
1987	716	181	200	262	1489	2825
1988	717	181	200	262	1489	2826
1989	719	181	200	262	1490	2828
1990	720	181	200	262	1490	2829
1991	722	181	200	262	1490	2831
1992	724	181	200	262	1490	2832
1993	725	181	200	262	1490	2834
1994	727	181	200	262	1490	2835
1995	728	181	200	262	1490	2837
1996	730	181	200	262	1491	2838
1997	732	181	200	262	1491	2840
1998	733	181	200	262	1491	2841
1999	735	181	200	262	1491	2843
2000	736	181	200	262	1491	2845
2001	738	181	200	262	1491	2846
2002	740	181	200	262	1491	2848
2003	741	181	200	262	1492	2849
2004	743	181	200	262	1492	2851
2005	745	181	200	262	1492	2852
2006	746	181	200	262	1492	2854
2007	748	181	200	262	1492	2855
2008	749	181	200	262	1492	2857
2009	751	181	200	262	1492	2858
2010	753	181	200	263	1492	2860
2011	754	181	200	263	1493	2861
2012	756	181	200	263	1493	2863
2013	758	181	200	263	1493	2864
2014	759	181	200	263	1493	2866
2015	761	181	200	263	1493	2867
2016	763	181	200	263	1493	2869

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-27

Housing Unit Projections 1984-2016 (Without-Project Scenario)

	Antigo City	Antigo Town	Elcho	BOC	Langlade County
1984	3435	546	432	2829	6971
1985	3448	546	432	2829	6982
1986	3461	546	432	2829	6993
1987	3475	546	432	2829	7003
1988	3488	546	432	2829	7014
1989	3501	546	433	2829	7025
1990	3515	546	433	2829	7036
1991	3528	546	433	2829	7047
1992	3541	546	433	2829	7058
1993	3555	546	433	2829	7069
1994	3568	546	433	2829	7080
1995	3582	546	433	2829	7091
1996	3596	546	433	2829	7101
1997	3610	546	433	2829	7112
1998	3623	547	433	2829	7123
1999	3637	547	433	2829	7134
2000	3651	547	434	2829	7145
2001	3665	547	434	2829	7157
2002	3679	547	434	2829	7168
2003	3693	547	434	2829	7179
2004	3707	547	434	2829	7190
2005	3721	547	434	2829	7201
2006	3735	547	434	2829	7212
2007	3750	547	434	2829	7223
2008	3764	547	434	2829	7234
2009	3778	547	434	2829	7246
2010	3793	547	434	2829	7257
2011	3807	547	435	2829	7268
2012	3822	547	435	2829	7279
2013	3836	547	435	2829	7290
2014	3851	547	435	2829	7302
2015	3866	547	435	2829	7313
2016	3881	547	435	2829	7324

03-Apr-85
File: HOUSING1
Disk: Crandon11

TABLE B-28

Housing Unit Projections 1984-2016 (Without-Project Scenario)

	Crescent	Newbold	Pelican	Pine Lake	Rhinelldr	BOC	Oneida County
1984	600	821	1211	952	3063	2401	9153
1985	607	828	1227	961	3063	2406	9198
1986	615	836	1243	970	3063	2412	9242
1987	622	844	1259	979	3063	2417	9287
1988	629	851	1276	989	3063	2422	9333
1989	637	859	1293	998	3063	2426	9378
1990	645	867	1310	1008	3063	2430	9424
1991	652	875	1327	1018	3063	2434	9470
1992	660	883	1345	1027	3063	2438	9516
1993	668	891	1363	1037	3063	2441	9562
1994	676	899	1381	1047	3063	2444	9609
1995	684	907	1399	1057	3063	2447	9655
1996	692	916	1417	1067	3063	2450	9702
1997	701	924	1436	1077	3063	2452	9750
1998	709	933	1455	1088	3063	2453	9797
1999	718	941	1474	1098	3063	2455	9845
2000	726	950	1494	1109	3063	2456	9893
2001	735	958	1514	1119	3063	2457	9941
2002	744	967	1534	1130	3063	2457	9989
2003	753	976	1554	1141	3063	2457	10038
2004	762	985	1575	1152	3063	2457	10087
2005	771	994	1595	1163	3063	2457	10136
2006	780	1003	1616	1174	3063	2457	10185
2007	789	1012	1638	1185	3063	2457	10235
2008	799	1021	1660	1197	3063	2457	10285
2009	808	1031	1681	1208	3063	2457	10335
2010	818	1040	1704	1220	3063	2457	10385
2011	828	1050	1726	1231	3063	2457	10436
2012	838	1059	1749	1243	3063	2457	10486
2013	848	1069	1772	1255	3063	2457	10537
2014	858	1079	1796	1267	3063	2457	10589
2015	868	1089	1819	1279	3063	2457	10640
2016	879	1099	1843	1291	3063	2457	10692

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-29

New Households in Local Study Area (Impact Scenario)

Year	LSA Total		
	Co	Op	Sec
0	0	9	1
1	366	12	37
2	389	68	75
3	559	186	144
4	484	296	197
5	7	373	210
6	0	377	196
7	0	377	163
8	0	377	163
9	0	377	163
10	0	377	163
11	0	377	164
12	0	377	164
13	0	377	164
14	0	377	164
15	0	377	164
16	0	377	164
17	0	377	165
18	0	377	165
19	0	377	165
20	0	377	165
21	0	377	165
22	0	377	165
23	0	377	166
24	0	377	166
25	0	377	166
26	0	377	166
27	0	322	166
28	0	134	150
29	0	43	87
30	0	0	32
31	0	0	6
32	0	0	0
33	0	0	0
34	0	0	0
35	0	0	0

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16-Mar-85
 File: BNRCALC1
 Disk: Crandon2

TABLE B-30

New Households in Local Study Area (Impact Scenario)
(Reported by Employment of Head of Household)

Year	Crandon City			Crandon Town			Lincoln			Nashville			Forest BOC			Forest Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	3	0
1	29	1	4	7	0	0	37	1	0	44	1	1	29	1	3	146	4	8
2	31	5	8	8	1	1	39	4	1	47	5	2	31	6	5	156	22	16
3	45	14	14	11	4	1	56	12	1	67	15	3	45	16	10	224	60	30
4	39	22	20	10	6	2	48	19	2	58	24	4	39	25	14	194	96	41
5	1	28	21	0	7	2	1	24	2	1	30	4	1	32	15	3	121	44
6	0	28	20	0	8	2	0	25	2	0	30	4	0	32	14	0	123	41
7	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
8	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
9	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
10	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
11	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
12	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
13	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
14	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
15	0	28	16	0	8	2	0	25	2	0	30	3	0	32	11	0	123	34
16	0	28	16	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
17	0	28	16	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
18	0	28	16	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
19	0	28	16	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
20	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
21	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
22	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
23	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
24	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
25	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
26	0	28	17	0	8	2	0	25	2	0	30	3	0	32	12	0	123	35
27	0	24	17	0	6	2	0	21	2	0	26	3	0	27	12	0	105	35
28	0	10	15	0	3	2	0	9	2	0	11	3	0	11	11	0	44	32
29	0	3	9	0	1	1	0	3	1	0	3	2	0	4	6	0	14	18
30	0	0	3	0	0	0	0	0	0	0	0	1	0	0	2	0	0	7
31	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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16-Mar-85
File: BNBCALC1
Disk: Crandon2

TABLE B-31

New Households in Local Study Area (Impact Scenario)
(Reported by Employment of Head of Household)

Year	Antigo City			Antigo Town			Elcho			Langlade BOC			Langlade Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	1	0	0	0	0	0	0	0	0	1	0	0	2	1
1	35	2	13	4	0	2	15	0	2	29	1	2	82	3	18
2	37	2	26	4	1	4	16	2	4	31	5	3	88	18	37
3	53	25	50	6	4	7	22	6	7	45	15	6	126	49	71
4	46	40	69	5	6	10	19	9	10	39	24	9	109	79	97
5	1	50	73	0	7	10	0	11	10	1	30	9	2	99	104
6	0	51	68	0	8	10	0	11	10	0	30	9	0	100	97
7	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
8	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
9	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
10	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
11	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
12	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
13	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
14	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
15	0	51	57	0	8	8	0	11	8	0	30	7	0	100	81
16	0	51	58	0	8	8	0	11	8	0	30	7	0	100	81
17	0	51	58	0	8	8	0	11	8	0	30	7	0	100	81
18	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
19	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
20	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
21	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
22	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
23	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
24	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
25	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
26	0	51	58	0	8	8	0	11	8	0	30	7	0	100	82
27	0	43	58	0	6	8	0	10	8	0	26	7	0	85	82
28	0	18	53	0	3	8	0	4	8	0	11	7	0	36	74
29	0	6	30	0	1	4	0	1	4	0	3	4	0	11	43
30	0	0	11	0	0	2	0	0	2	0	0	1	0	0	16
31	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

B-55

16-Mar-85
File: BNBCALC1
Disk: Crandon2

TABLE B-32

New Households in Local Study Area (Impact Scenario)
(Reported by Employment of Head of Household)

Year	Crescent			Newbold			Pelican			Pine Lake			Rhinelander			Oneida BOC			Oneida Co		
	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec	Co	Op	Sec
0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	4	0
1	7	0	1	16	1	1	29	2	3	18	1	2	37	0	2	29	1	2	137	5	11
2	8	2	2	18	4	3	31	10	5	19	5	5	39	2	4	31	5	3	146	28	22
3	11	5	4	25	11	6	45	27	10	28	13	9	56	6	7	45	15	6	210	76	42
4	10	7	6	22	18	8	39	43	14	24	21	12	48	9	10	39	24	9	182	121	50
5	0	9	6	0	22	8	1	54	15	0	26	13	1	11	10	1	30	9	3	153	62
6	0	9	6	0	23	8	0	55	14	0	26	12	0	11	10	0	30	9	0	155	58
7	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
8	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
9	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
10	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
11	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
12	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
13	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
14	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
15	0	9	5	0	23	7	0	55	11	0	26	10	0	11	8	0	30	7	0	155	48
16	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
17	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
18	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
19	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
20	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
21	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
22	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
23	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
24	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
25	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
26	0	9	5	0	23	7	0	55	12	0	26	10	0	11	8	0	30	7	0	155	49
27	0	8	5	0	19	7	0	47	12	0	23	10	0	10	8	0	26	7	0	132	49
28	0	3	5	0	8	6	0	19	11	0	9	9	0	4	8	0	11	7	0	55	44
29	0	1	3	0	3	3	0	6	6	0	3	5	0	1	4	0	3	4	0	18	26
30	0	0	1	0	0	1	0	0	2	0	0	2	0	0	2	0	0	0	0	0	2
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

16-Mar-85
File: BNBCALC1
Disk: Crandon2

TABLE B-33

Housing Unit Projections 1984-2016 (Impact Scenario)

	Local Study Area Total	Size, Average Household
1984	18944	2.81
1985	19011	2.81
1986	19473	2.79
1987	19648	2.79
1988	20062	2.79
1989	20209	2.80
1990	20209	2.77
1991	20209	2.78
1992	20209	2.78
1993	20234	2.79
1994	20281	2.79
1995	20328	2.79
1996	20375	2.79
1997	20422	2.79
1998	20469	2.80
1999	20523	2.80
2000	20582	2.80
2001	20641	2.80
2002	20701	2.80
2003	20761	2.80
2004	20821	2.80
2005	20881	2.80
2006	20942	2.80
2007	21003	2.80
2008	21064	2.80
2009	21125	2.80
2010	21187	2.80
2011	21249	2.80
2012	21277	2.79
2013	21277	2.77
2014	21277	2.75
2015	21277	2.75
2016	21304	2.75

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-34

Housing Unit Projections 1984-2016 (Impact Scenario)

	Crandon City	Crandon Town	Lincoln	Nashville	B0C	Forest County
1984	711	181	200	262	1489	2820
1985	713	181	201	263	1490	2825
1986	748	189	238	307	1522	2981
1987	759	191	244	315	1531	3018
1988	790	197	269	347	1560	3141
1989	799	199	270	348	1567	3159
1990	799	199	270	348	1567	3159
1991	799	199	270	348	1567	3159
1992	799	199	270	348	1567	3159
1993	799	199	270	348	1567	3159
1994	799	199	270	348	1567	3159
1995	799	199	270	348	1567	3159
1996	799	199	270	348	1567	3159
1997	799	199	270	348	1567	3159
1998	799	199	270	348	1567	3159
1999	799	199	270	348	1567	3159
2000	799	199	270	348	1567	3159
2001	799	199	270	348	1567	3159
2002	799	199	270	348	1567	3159
2003	799	199	270	348	1567	3159
2004	799	199	270	348	1567	3159
2005	799	199	270	348	1567	3159
2006	799	199	270	348	1567	3159
2007	799	199	270	348	1567	3159
2008	799	199	270	348	1567	3159
2009	799	199	270	348	1567	3159
2010	799	199	270	348	1567	3159
2011	799	199	270	348	1567	3159
2012	799	199	270	348	1567	3159
2013	799	199	270	348	1567	3159
2014	799	199	270	348	1567	3159
2015	799	199	270	348	1567	3159
2016	799	199	270	348	1567	3159

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-35

Housing Unit Projections 1984-2016 (Impact Scenario)

	Antigo City	Antigo Town	Elcho	BOC	Langlade County
1984	3435	546	432	2829	6971
1985	3450	546	433	2830	6985
1986	3511	552	449	2861	7096
1987	3547	555	454	2869	7146
1988	3616	563	468	2895	7260
1989	3656	567	471	2900	7310
1990	3656	567	471	2900	7310
1991	3656	567	471	2900	7310
1992	3656	567	471	2900	7310
1993	3663	567	471	2900	7310
1994	3677	567	471	2900	7310
1995	3690	567	471	2900	7310
1996	3704	567	471	2900	7310
1997	3718	567	471	2900	7310
1998	3732	567	471	2900	7310
1999	3746	567	471	2900	7316
2000	3759	567	471	2900	7327
2001	3773	567	471	2900	7338
2002	3788	567	471	2900	7349
2003	3802	567	471	2900	7360
2004	3816	567	471	2900	7371
2005	3830	567	471	2900	7383
2006	3844	567	471	2900	7394
2007	3859	567	471	2900	7405
2008	3873	567	471	2900	7416
2009	3887	567	471	2900	7428
2010	3902	567	471	2900	7439
2011	3916	567	471	2900	7450
2012	3924	567	471	2900	7450
2013	3924	567	471	2900	7450
2014	3924	567	471	2900	7450
2015	3924	567	471	2900	7450
2016	3924	567	471	2900	7450

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File: HOUSING1

Disk: Crandon11

TABLE B-36

Housing Unit Projections 1984-2016 (Impact Scenario)

	Crescent	Newbold	Pelican	Pine Lake	Rhinelldr	BOC	Oneida County
1984	600	821	1211	952	3063	2401	9153
1985	608	829	1228	962	3063	2407	9201
1986	623	855	1276	991	3102	2444	9395
1987	634	868	1306	1008	3108	2457	9483
1988	650	893	1358	1038	3132	2488	9661
1989	660	907	1388	1055	3132	2498	9739
1990	660	907	1388	1055	3132	2498	9739
1991	668	907	1396	1056	3132	2498	9739
1992	674	912	1411	1063	3132	2498	9739
1993	682	920	1429	1073	3132	2498	9765
1994	690	928	1447	1083	3132	2498	9811
1995	699	937	1465	1093	3132	2498	9858
1996	707	945	1484	1103	3132	2498	9905
1997	715	953	1502	1114	3132	2498	9953
1998	723	962	1521	1124	3132	2498	10000
1999	732	970	1541	1134	3132	2498	10048
2000	741	979	1560	1145	3132	2498	10096
2001	749	988	1580	1156	3132	2498	10144
2002	758	996	1600	1166	3132	2498	10193
2003	767	1005	1620	1177	3132	2498	10241
2004	776	1014	1641	1188	3132	2498	10290
2005	785	1023	1662	1199	3132	2498	10339
2006	794	1032	1683	1210	3132	2498	10389
2007	804	1041	1704	1222	3132	2498	10438
2008	813	1051	1726	1233	3132	2498	10488
2009	823	1060	1748	1244	3132	2498	10538
2010	833	1070	1770	1256	3132	2498	10589
2011	842	1079	1793	1268	3132	2498	10639
2012	851	1085	1807	1276	3132	2498	10668
2013	856	1085	1807	1276	3132	2498	10668
2014	862	1085	1808	1276	3132	2498	10668
2015	869	1090	1822	1281	3132	2498	10668
2016	879	1099	1844	1292	3132	2498	10694

03-Apr-85

File: HOUSING1

Disk: Crandon11

TABLE B-37

Public Facility and Service Costs 1985-2016 (Without-Project Scenario)
(Thousands of 1982 Dollars)

	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1982	4362	612	70	192	202
1985	4379	598	77	204	205
1986	4381	600	77	203	205
1987	4411	606	88	214	216
1988	4413	602	77	203	205
1989	4415	604	77	203	205
1990	4418	605	77	203	205
1991	4420	606	77	203	205
1992	4422	608	77	203	205
1993	4425	609	77	203	205
1994	4445	610	77	203	205
1995	4447	612	77	202	205
1996	4450	613	77	202	205
1997	4452	614	77	202	205
1998	4454	616	77	202	205
1999	4457	617	77	202	205
2000	4459	618	77	202	205
2001	4469	620	77	202	205
2002	4445	621	77	202	205
2003	4447	623	77	202	205
2004	4450	624	77	202	205
2005	4452	625	76	201	205
2006	4446	627	76	201	205
2007	4449	628	76	201	205
2008	4451	629	76	201	205
2009	4444	631	76	212	216
2010	4447	632	76	201	205
2011	4449	634	76	201	205
2012	4451	635	76	201	205
2013	4454	636	76	201	205
2014	4447	639	76	200	205
2015	4450	639	76	200	205
2016	4457	641	76	200	205

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File: PUBCOST3

Disk: Crandon10

TABLE B-38

Public Facility and Service Costs 1985-2016 (Without-Project Scenario)
(Thousands of 1982 Dollars)

	Langlade County	Antigo City	Antigo Town	Elcho
1982	7710	5524	103	109
1985	7737	5290	192	187
1986	7749	5310	192	187
1987	7814	5447	203	198
1988	7826	5466	192	187
1989	7838	5485	192	187
1990	7850	5504	192	187
1991	7862	5524	192	187
1992	7874	5543	192	188
1993	7915	5410	192	188
1994	7927	5467	203	188
1995	7940	5486	192	188
1996	7952	5506	192	188
1997	7964	5377	192	188
1998	7976	5397	192	188
1999	8001	5417	192	188
2000	8014	5487	192	188
2001	8026	5507	192	193
2002	7984	5409	192	188
2003	7996	5430	192	188
2004	7997	5482	192	188
2005	8009	5502	192	188
2006	8034	5523	192	188
2007	8047	5544	192	188
2008	8030	5612	192	188
2009	8042	5596	192	188
2010	8070	5617	192	188
2011	8082	5638	192	188
2012	8095	5659	192	188
2013	8107	5680	197	188
2014	8120	5701	192	188
2015	8132	5692	192	188
2016	8131	5713	192	188

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File: PUBCOST3
Disk: Crandon10

TABLE B-39

Public Facility and Service Costs 1985-2016 (Without Project Scenario)
(Thousands of 1982 Dollars)

	Oneida County	Crescent	Newbold	Pelican	Pine Lake	Rhinel.
1982	8670	174	244	254	277	4653
1985	8860	184	270	251	289	4500
1986	8331	186	272	254	292	4495
1987	8398	204	290	265	300	4522
1988	8438	191	277	269	302	4517
1989	8478	193	280	272	305	4597
1990	8519	195	282	276	308	4392
1991	8427	198	285	292	311	4387
1992	8468	200	287	288	309	4382
1993	8509	202	290	292	312	4376
1994	8550	213	299	295	324	4386
1995	8592	215	301	299	327	4381
1996	8633	218	304	290	330	4376
1997	8686	220	307	347	333	4370
1998	8728	223	309	367	336	4365
1999	8770	217	306	354	330	4360
2000	8813	220	309	358	333	4355
2001	8865	234	317	363	348	4350
2002	8870	225	315	383	340	4312
2003	8913	228	318	371	343	4307
2004	8956	231	320	375	346	4287
2005	9011	234	323	379	350	4282
2006	9026	236	326	400	353	4285
2007	9070	239	329	388	356	4280
2008	9114	253	343	392	376	4274
2009	9158	245	335	411	363	4269
2010	9193	248	338	415	367	4264
2011	9237	251	342	420	370	4251
2012	9296	254	345	425	374	4246
2013	9341	257	348	437	377	4249
2014	9387	260	351	442	381	4244
2015	9433	274	365	447	396	4239
2016	9478	266	357	452	388	4233

27-Mar-85
File: PUBCOST3
Disk: Crandon10

TABLE B-40

Public Facility and Service Costs 1985-2016 (Impact Scenario)

	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1985	4384	599	77	204	205
1986	4555	622	79	229	232
1987	4640	637	91	246	249
1988	4805	658	82	255	260
1989	4853	669	83	258	265
1990	4703	654	81	232	238
1991	4704	654	81	232	237
1992	4694	652	81	231	237
1993	4696	653	81	231	237
1994	4717	655	81	231	237
1995	4719	656	81	231	237
1996	4722	658	80	231	237
1997	4724	659	80	231	237
1998	4727	660	80	231	237
1999	4729	662	80	231	237
2000	4731	663	80	230	237
2001	4742	664	80	230	237
2002	4717	666	80	230	237
2003	4720	667	80	230	237
2004	4722	669	80	230	237
2005	4724	670	80	230	237
2006	4717	671	80	230	237
2007	4721	673	80	230	237
2008	4724	674	80	230	237
2009	4717	676	80	241	248
2010	4720	677	80	229	237
2011	4722	678	80	229	237
2012	4694	676	80	225	233
2013	4586	662	78	212	219
2014	4504	650	77	205	210
2015	4462	643	76	201	206
2016	4459	641	76	200	206

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Public Facility and Service Costs 1985-2016 (Impact Scenario)

TABLE B-41

	Langlade County	Antigo City	Antigo Town	Elcho
1985	7741	5293	192	187
1986	7843	5377	193	194
1987	7958	5557	206	207
1988	8087	5671	197	203
1989	8160	5746	199	205
1990	8122	5742	199	200
1991	8125	5752	198	200
1992	8114	5749	198	199
1993	8156	5616	198	199
1994	8168	5673	209	199
1995	8180	5692	198	199
1996	8192	5712	198	199
1997	8205	5583	198	199
1998	8217	5603	198	199
1999	8242	5623	198	199
2000	8255	5694	198	199
2001	8267	5714	198	204
2002	8225	5616	198	199
2003	8238	5637	198	199
2004	8238	5689	198	200
2005	8251	5710	198	200
2006	8276	5730	198	200
2007	8288	5751	198	200
2008	8272	5820	198	200
2009	8284	5804	198	200
2010	8312	5825	198	200
2011	8325	5846	198	200
2012	8318	5853	198	199
2013	8256	5817	201	195
2014	8194	5772	194	192
2015	8154	5714	193	189
2016	8135	5717	192	189

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TABLE B-42

Public Facility and Service Costs 1905-2016 (Impact Scenario)

	Oneida County	Crescent	Newbold	Pelican	Pine Lake	Rhinel.
1905	0865	184	270	251	289	4501
1906	0438	188	276	260	297	4540
1907	0548	207	297	274	307	4576
1908	0704	196	289	285	316	4603
1909	0792	199	294	292	321	4486
1990	0753	201	293	293	321	4433
1991	0458	203	296	309	324	4426
1992	0687	205	298	304	321	4418
1993	0729	207	301	308	324	4413
1994	0770	218	309	311	336	4422
1995	0811	220	312	315	339	4417
1996	0853	223	315	306	342	4412
1997	0906	225	317	363	345	4407
1998	0948	228	320	383	348	4402
1999	0990	222	317	371	343	4396
2000	9033	225	320	375	346	4391
2001	9085	239	328	379	360	4386
2002	9090	230	325	399	352	4349
2003	9133	233	328	387	355	4344
2004	9177	236	331	391	359	4323
2005	9231	238	334	395	362	4318
2006	9246	241	337	416	365	4321
2007	9290	244	340	404	369	4316
2008	9334	258	354	408	388	4311
2009	9378	250	346	427	376	4306
2010	9413	253	349	431	379	4301
2011	9458	256	352	436	383	4288
2012	9493	258	354	439	385	4279
2013	9451	260	353	445	384	4271
2014	9435	261	353	445	384	4254
2015	9443	274	366	448	396	4242
2016	9480	266	358	452	388	4234

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TABLE B-43

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Forest County	Crandon City	Crandon Town	Lincoln	Nashville
1985	5	1	0	1	1
1986	174	22	2	26	27
1987	229	31	3	32	34
1988	392	55	5	52	56
1989	442	65	6	55	60
1990	290	49	4	29	33
1991	284	48	4	29	32
1992	272	45	4	28	32
1993	272	45	4	28	32
1994	272	45	4	28	32
1995	272	45	4	28	32
1996	272	45	4	29	32
1997	272	45	4	29	32
1998	272	45	4	29	32
1999	272	45	4	29	32
2000	272	45	4	29	32
2001	272	45	4	29	32
2002	272	45	4	29	32
2003	272	45	4	29	32
2004	272	45	4	29	32
2005	273	45	4	29	32
2006	273	45	4	29	32
2007	273	45	4	29	32
2008	273	45	4	29	32
2009	273	45	4	29	32
2010	273	45	4	29	32
2011	273	45	4	29	32
2012	242	41	3	25	28
2013	132	25	2	11	13
2014	57	12	1	4	5
2015	12	3	0	0	1
2016	2	1	0	0	0

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TABLE B-44

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Langlade County	Antigo City	Antigo Town	Elcho
1985	4	3	0	0
1986	94	67	2	6
1987	144	110	3	9
1988	261	205	5	15
1989	322	261	7	18
1990	272	238	7	13
1991	262	228	7	12
1992	240	206	6	11
1993	240	206	6	11
1994	240	206	6	11
1995	240	206	6	11
1996	241	206	6	11
1997	241	206	6	11
1998	241	206	6	11
1999	241	207	6	11
2000	241	207	6	12
2001	241	207	6	12
2002	241	207	6	12
2003	241	207	6	12
2004	241	207	6	12
2005	242	207	6	12
2006	242	207	6	12
2007	242	208	6	12
2008	242	208	6	12
2009	242	208	6	12
2010	242	208	6	12
2011	242	208	6	12
2012	223	194	6	11
2013	140	137	4	7
2014	74	70	2	3
2015	22	22	1	1
2016	4	4	0	0

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TABLE B-45

Public Facility and Services Costs (Difference Between Baseline and Impact Scenarios)

Year	Oneida County	Crescent	Newbold	Pelican	Pine Lake	Rhinel.
1985	4	0	0	0	0	1
1986	107	2	4	5	5	45
1987	150	3	7	8	7	54
1988	266	5	12	16	13	86
1989	314	6	14	20	16	89
1990	235	5	11	17	13	41
1991	231	5	11	17	13	39
1992	220	5	11	16	12	36
1993	220	5	11	16	12	36
1994	220	5	11	16	12	36
1995	220	5	11	16	12	36
1996	220	5	11	16	12	36
1997	220	5	11	16	12	36
1998	220	5	11	16	12	36
1999	220	5	11	16	12	36
2000	220	5	11	16	12	36
2001	220	5	11	16	12	36
2002	220	5	11	16	12	36
2003	220	5	11	16	12	36
2004	220	5	11	16	12	36
2005	220	5	11	16	12	36
2006	220	5	11	16	12	36
2007	220	5	11	16	12	36
2008	220	5	11	16	12	36
2009	220	5	11	16	12	37
2010	221	5	11	16	12	37
2011	221	5	11	16	12	37
2012	197	4	10	14	11	34
2013	109	3	5	7	6	22
2014	48	1	2	3	3	11
2015	11	0	1	1	1	3
2016	2	0	0	0	0	1

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TABLE B-46

School District Costs, Without Project Scenario, 1985-2016
(Thousands of 1982 Dollars)

District:	Crandon	Elcho	Antigo	Rhineland
1985	2163	1305	8543	8592
1986	2131	1285	8429	8515
1987	2099	1265	8312	8426
1988	2080	1251	8243	8397
1989	2053	1234	8144	8317
1990	2052	1232	8150	8354
1991	2055	1232	8172	8407
1992	2051	1229	8166	8433
1993	2065	1236	8231	8533
1994	2078	1243	8293	8631
1995	2077	1241	8299	8670
1996	2075	1238	8297	8703
1997	2069	1233	8282	8722
1998	2062	1227	8264	8738
1999	2046	1216	8210	8717
2000	2012	1195	8082	8615
2001	1979	1174	7959	8519
2002	1938	1148	7801	8386
2003	1906	1128	7681	8292
2004	1873	1107	7559	8195
2005	1856	1096	7499	8165
2006	1840	1085	7441	8137
2007	1824	1074	7384	8110
2008	1810	1065	7335	8092
2009	1801	1058	7310	8100
2010	1790	1050	7272	8094
2011	1781	1044	7245	8101
2012	1775	1039	7226	8116
2013	1770	1035	7214	8141
2014	1776	1037	7248	8217
2015	1812	1057	7402	8431
2016	1844	1074	7542	8631

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TABLE B-47

School District Costs, Impact Scenario, 1985-2016
(Thousands of 1982 Dollars)

District:	Crandon	Elcho	Antigo	Rhineland
1985	2175	1307	8552	8610
1986	2406	1345	8652	8793
1987	2587	1347	8664	8819
1988	2936	1394	8891	9084
1989	3050	1399	8955	9141
1990	2772	1351	8861	8975
1991	2762	1348	8857	9016
1992	2725	1336	8790	9012
1993	2739	1343	8856	9112
1994	2753	1350	8919	9210
1995	2752	1348	8924	9249
1996	2749	1345	8923	9282
1997	2743	1340	8909	9301
1998	2737	1335	8891	9318
1999	2721	1324	8837	9296
2000	2687	1302	8709	9195
2001	2654	1282	8586	9099
2002	2613	1256	8429	8966
2003	2582	1236	8309	8872
2004	2549	1215	8187	8775
2005	2532	1204	8128	8745
2006	2516	1193	8070	8718
2007	2500	1182	8014	8691
2008	2486	1173	7965	8673
2009	2478	1167	7940	8681
2010	2467	1159	7902	8675
2011	2458	1152	7875	8682
2012	2377	1137	7809	8635
2013	2103	1095	7609	8432
2014	1922	1066	7446	8346
2015	1845	1065	7463	8462
2016	1850	1076	7554	8637

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TABLE B-48

School District Costs, Difference Between Without-Project and Impact Scenarios, 1985-2016
(Thousands of 1982 Dollars)

District:	<u>Crandon</u>	<u>Elcho</u>	<u>Antigo</u>	<u>Rhineland</u>
1985	13	2	10	11
1986	354	60	223	279
1987	488	82	352	393
1988	857	143	648	697
1989	998	166	811	824
1990	720	119	711	621
1991	707	115	686	609
1992	674	107	624	578
1993	674	107	625	579
1994	674	107	625	579
1995	675	108	626	579
1996	675	108	626	579
1997	675	108	626	579
1998	675	108	626	579
1999	675	108	627	579
2000	675	108	627	580
2001	676	108	627	580
2002	676	108	628	580
2003	676	108	628	580
2004	676	108	628	580
2005	676	108	629	580
2006	676	108	629	581
2007	677	108	629	581
2008	677	108	630	581
2009	677	108	630	581
2010	677	108	630	581
2011	677	108	630	581
2012	603	98	584	519
2013	333	60	394	292
2014	146	29	199	129
2015	33	8	61	30
2016	6	2	12	6

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File: SCHOOL1

Disk: Crandon8

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