

THE SOCIAL IMPACT OF RESERVOIR CONSTRUCTION ON A
RURAL COMMUNITY: A SYNTHESIS OF A TEN YEAR RESEARCH PROJECT

TED L. NAPIER
THE OHIO STATE UNIVERSITY

W. RICHARD GOE
THE OHIO STATE UNIVERSITY

MICHAEL V. CARTER
THE OHIO STATE UNIVERSITY

THE DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY, THE OHIO
AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER AND THE OHIO STATE
UNIVERSITY, 2120 FYFFE ROAD, COLUMBUS, OHIO 43210

ABSTRACT

THE PURPOSE OF THIS PAPER IS TO PRESENT A SYNTHESIS OF RESEARCH FINDINGS DERIVED FROM A LONGITUDINAL MONITORING OF A RESERVOIR AFFECTED COMMUNITY GROUP LOCATED IN THE URBAN FRINGE OF A MAJOR METROPOLITAN COMMUNITY IN CENTRAL OHIO. DATA WERE COLLECTED AT THREE TIME PERIODS TO ASSESS THE SOCIAL IMPACTS OF EXOGENEOUS CHANGE FORCES ON LOCAL PEOPLE. DATA WERE COLLECTED OVER A TEN YEAR PERIOD USING STANDARDIZED MEASUREMENT DEVICES TO ENSURE COMPARABILITY OF THE INFORMATION COLLECTED. THE RESEARCH FINDINGS DEMONSTRATE THAT EXTENSIVE MODIFICATION OF SOCIAL AND PHYSICAL ENVIRONMENTS DID NOT RESULT IN THE DESTRUCTION OF THE SOCIAL FABRIC OF THE AFFECTED GROUP. OBSERVATIONS OVER TIME SUGGEST THAT THE AFFECTED GROUP HAS ACCOMMODATED MANY OF THE CHANGES INTRODUCED IN THE COMMUNITY AND HAS ACCEPTED THE LAKE PROJECT. IT IS HIGHLY LIKELY THAT FUTURE ASSESSMENTS OF THE AFFECTED GROUP WILL REVEAL EVEN HIGHER LEVELS OF ADJUSTMENT TO THE CHANGES PRODUCED BY THE PROJECT.

INTRODUCTION

WATER RESOURCES DEVELOPMENT HAS BEEN A MAJOR CONCERN FOR MANY YEARS BECAUSE FUTURE GROWTH OF POPULATION CENTERS AND THE MAINTENANCE OF LIFESTYLES WITHIN THEM ARE DEPENDENT ON AVAILABLE WATER. WITHOUT ADEQUATE WATER SUPPLIES COMMUNITY GROUPS CANNOT EXPECT TO SURVIVE BECAUSE INDUSTRIAL, COMMERCIAL AND RESIDENTIAL CONSUMERS REQUIRE LARGE VOLUMES OF WATER EACH DAY. IF THE DEMAND FOR HIGH QUALITY WATER IS NOT MET, MAJOR SHIFTS IN COMMUNITY FUNCTIONS WILL BE REQUIRED. CONSUMERS OF LARGE QUANTITIES OF WATER, FOR EXAMPLE, WILL BE FORCED TO REDUCE CONSUMPTION. INDUSTRIAL USERS MAY BE REQUIRED TO REDUCE PRODUCTION TO CONFORM TO THE RESTRICTIONS PLACED ON THEM BY LIMITED WATER SUPPLIES. SUCH PRODUCTION RESTRICTIONS MAY MAKE THE FIRM INEFFICIENT AND RESULT IN RELOCATION. HOUSEHOLDS MAY BE REQUIRED TO RESTRICT WATER CONSUMPTION TO THE POINT THAT RESIDENTS ELECT TO MIGRATE TO AREAS WHICH ARE NOT CONSTRAINED BY LIMITED WATER SUPPLIES. IN ESSENCE, IT IS ARGUED THAT EXISTING WATER SUPPLIES SIGNIFICANTLY AFFECT COMMUNITY FUNCTIONS.

GIVEN THE IMPORTANCE OF WATER TO LARGE URBAN COMMUNITIES, IT SHOULD NOT BE SURPRISING THAT METROPOLITAN LEADERS ARE CONSTANTLY ASSESSING PRESENT AND FUTURE DEMANDS FOR WATER AND ARE ENGAGED IN PLANNING PROGRAMS TO ENSURE THAT PROJECTED WATER NEEDS ARE SATISFIED. ONE OF THE MOST COMMON METHODS USED TO EXPAND EXISTING WATER SUPPLIES IS THE CONSTRUCTION OF RESERVIORS. PRACTICALLY EVERY GEOGRAPHIC REGION OF THE UNITED STATES EXPERIENCES PERIODIC RAINFALL THAT EXCEEDS LOCAL CONSUMPTION REQUIREMENTS. THE EXCESS WATER CAN BE CAPTURED FOR FUTURE USE AND ONE OF THE MOST EFFICIENT METHODS OF DOING SO IS THE CONSTRUCTION OF WATER IMPOUNDMENTS.

WHILE THERE ARE MANY BENEFITS ASSOCIATED WITH LAKE PROJECTS WHICH ACCRUE TO REGIONAL GROUPS (SEE U.S. ARMY CORPS OF ENGINEERS REPORTS FOR DOCUMENTATION OF THIS ASSERTION), THERE ARE MANY COSTS THAT ARE INTERNALIZED SOLELY BY INDIVIDUALS WHO LIVE CLOSE TO THE LAKE PROJECT. SUCH A CONDITION RAISES SERIOUS QUESTIONS ABOUT THE EQUITY OF REGIONAL DEVELOPMENT AT THE EXPENSE OF PEOPLE WHO LIVE IN CLOSE PROXIMITY TO THE CONSTRUCTION SITE. THE PURPOSE OF THIS PAPER IS TO PRESENT A SYNTHESIS OF THE FINDINGS DERIVED FROM A LONGITUDINAL STUDY DESIGNED TO ASSESS THE RESPONSE OF LOCAL PEOPLE TO EXOGENEOUS CHANGE FORCES. THE FIRST DATA SET WAS COLLECTED IN 1970, THE SECOND IN 1974 AND THE THIRD IN 1980. NUMEROUS FACTORS WERE EXAMINED DURING THE CONDUCT OF THE STUDY AND PUBLISHED AS SEPARATE REPORTS. THE MOST SIGNIFICANT FINDINGS FROM EACH OF THE STUDIES WILL BE PRESENTED AND AN ATTEMPT WILL BE MADE TO INTEGRATE THE CONCLUSIONS DRAWN FROM EACH RESEARCH STUDY. THE FINDINGS ARE DISCUSSED IN THE CONTEXT OF APPLIED WATER RESOURCES DEVELOPMENT PROGRAMS.

THE RESEARCH SITUATION

THE STUDY COMMUNITY IS GEOGRAPHICALLY SITUATED ABOUT TEN MILES NORTH OF COLUMBUS, OHIO AND WAS ISOLATED FROM THE SOCIO-ECONOMIC EXPANSION WHICH HAS CHARACTERIZED THE REGION FOR DECADES. SUBSEQUENTLY, THE STUDY GROUP REMAINED BASICALLY STABLE IN TERMS OF POPULATION SIZE FOR MANY YEARS. THE COMMUNITY, HOWEVER, WAS DESTINED TO CHANGE QUICKLY AND THE IRONY OF THE SITUATION IS THAT THE FUTURE OF THE STUDY GROUP WAS BASICALLY DECIDED BY PEOPLE WHO HAD LITTLE OR NO ASSOCIATION WITH LOCAL RESIDENTS. THE IMPETUS FOR CHANGE EMERGED FROM URBAN GROUPS LOCATED NEARBY WHO RECOGNIZED THAT WATER WOULD POSE A

SERIOUS PROBLEM IN THE FUTURE. DURING THE 1960'S LEADERS OF ADJACENT URBAN COMMUNITIES BECAME CONCERNED ABOUT THE ABILITY OF EXISTING WATER SUPPLIES TO MEET FUTURE DEMANDS. POLITICAL ACTIVITY WAS INITIATED TO SECURE ADDITIONAL WATER SOURCES AND THESE ACTIONS WERE REWARDED BY COMMITMENTS ON THE PART OF THE FEDERAL GOVERNMENT TO PROVIDE ECONOMIC RESOURCES TO CONSTRUCT A LARGE RESERVOIR CLOSE TO THE METROPOLITAN AREA.

SEVERAL ENGINEERING FEASIBILITY STUDIES HAD BEEN CONDUCTED BY THE CORPS DURING THE 1950'S AND 1960'S WHICH DEMONSTRATED THAT THE STUDY AREA WAS APPROPRIATE AS A DEVELOPMENT SITE. THERE WERE MANY FACTORS OTHER THAN THE ENGINEERING CONSIDERATIONS WHICH INFLUENCED THE DECISION-MAKERS TO SELECT THE PRESENT LOCATION FOR THE LAKE. THE FIRST FACTOR EXAMINED WAS THE AVAILABILITY OF A WATER SOURCE. THIS REQUIREMENT WAS EASILY SATISFIED BECAUSE A PORTION OF THE COMMUNITY WAS LOCATED WITHIN A DEEP VALLEY CONTAINING A STREAM WITH ADEQUATE WATER FLOW TO SUSTAIN A LARGE IMPOUNDMENT. FURTHERMORE THE WATER IN THE STREAM WAS HIGH QUALITY WHICH ENHANCED ITS UTILITY AS A WATER SOURCE. A SECOND FACTOR AFFECTING THE DECISION WAS THE EXISTING LAND USE PATTERNS IN THE STUDY AREA. MOST OF THE LAND TO BE SECURED FOR THE LAKE BASIN WAS OWNED BY MARGINAL FARMERS OR RURAL RESIDENTS WHO LEFT THE LAND FALLOW. THUS, THE LAND NEEDED FOR THE LAKE PROJECT COULD BE PURCHASED AT VERY LOW PRICES AND THE NUMBER OF PEOPLE TO BE DISPLACED WOULD BE QUITE SMALL. ANOTHER FACTOR THAT CONTRIBUTED TO THE LOCATION DECISION WAS THE PROXIMITY OF THE PROJCT SITE TO THE GROUPS WHICH NEEDED THE WATER. TRANSPORTATION COSTS OF THE WATER FROM THE PROPOSED SITE TO THE URBAN CONSUMERS WOULD NOT BE PROHIBITIVE. GIVEN THESE FAVORABLE CONDITIONS, THE SITE WAS SELECTED FOR DEVELOPMENT AND THE

LAND PROCUREMENT AND THE CONSTRUCTION PHASES OF THE PROJECT WERE INITIATED IN 1970.

SOON AFTER THE FIRST LANDHOLDINGS WERE ACQUIRED BY THE GOVERNMENT, TIMBER CREWS BEGAN TO CLEAR AWAY THE STANDING TREES. LARGE EARTH MOVERS QUICKLY BEGAN TO RESTRUCTURE THE LANDSCAPE AND BUILDINGS WERE LEVELED AND BURNED. IN A VERY SHORT PERIOD OF TIME, LITTLE REMAINED OF THE HOMES AND FARMS WHICH HAD OCCUPIED THE AREA BEING CLEARED FOR THE LAKE BASIN. A LARGE EARTHEN DAM WAS CONSTRUCTED ACROSS THE VALLEY AND LANDSCAPED WITH ROCK AND GRASSES. BY 1974 THE CONSTRUCTION PHASE WAS BASICALLY COMPLETED AND THE LAKE WATER BEGAN TO COVER THE SCARS WROUGHT ON THE LAND BY MAN AND MACHINE. THE UGLINESS OF THE CONSTRUCTION WAS QUICKLY REPLACED BY A BEAUTIFUL LAKE. THE PHYSICAL ENVIRONMENT HAD BEEN CHANGED DRASTICALLY BUT THE OUTCOME IS ALSO VERY ATTRACTIVE TO THOSE WHO APPRECIATE LAKE SCENES (NAPIER AND GOE;1984).

THE PHYSICAL ENVIRONMENT WAS NOT THE ONLY THING TO BE CHANGED BY THE RESERVIOR CONSTRUCTION. APPROXIMATELY 90 FAMILIES WERE DISPLACED DURING THE LAND ACQUISITION PHASE OF THE PROJECT AND MANY OF THESE PEOPLE MOVED JUST BEYOND THE PROJECT BOUNDARIES AND BUILT NEW HOUSES. GIVEN THE FACT THAT MANY OF THE DISPLACED PEOPLE WERE ABLE TO STAY IN THE RESTRUCTURED COMMUNITY PROBABLY AIDED IN THE ADJUSTMENT OF LOCAL PEOPLE TO THE CHANGES INTRODUCED BY THE LAKE PROJECT. THIS TYPE OF RESETTLEMENT PATTERN MADE IT POSSIBLE TO MAINTAIN MANY OF THE ESTABLISHED INTERACTION PATTERNS WHICH HAD BEEN DEVELOPED IN THE PRE-PROJECT COMMUNITY. THE MAINTENANCE OF ESTABLISHED FRIENDSHIP SYSTEMS APPARENTLY MADE THE TRANSITION EASIER FOR LOCAL PEOPLE BECAUSE THESE RELATIONSHIPS SERVED TO PROVIDE MUTUAL SUPPORT FOR AFFECTED

PEOPLE DURING TIMES OF STRESS (NAPIER,1971; NAPIER,1972). THESE OBSERVATIONS SUGGEST THAT THE METHODS USED TO IMPLEMENT LAKE PROJECTS ARE QUITE IMPORTANT IN DETERMINING HOW THE DEVELOPMENT ACTION WILL BE ACCEPTED BY DIRECTLY AFFECTED PEOPLE. ADDITIONAL SUPPORT FOR THIS CONCLUSION WAS PROVIDED BY RESEARCH CONDUCTED IN NEW ENGLAND BY ADLER AND JANSEN (1978). THEIR RESEARCH FINDINGS INDICATED THAT RELOCATION OF COMMUNITY GROUPS EN MASSE SERVED TO REDUCE THE STRESS OF THE DISPLACEMENT. THE DISPLACED GROUP IN NEW ENGLAND WAS ABLE TO MAINTAIN ESTABLISHED INTERACTION PATTERNS AND SUBSEQUENTLY ACCEPTED THE DISRUPTION ASSOCIATED WITH THE PROJECT.

ANOTHER COST WHICH LOCAL PEOPLE HAD TO ASSUME WAS DISRUPTION OF THE TRANSPORTATION SYSTEM WITHIN THE COMMUNITY. SEVERAL MILES OF HIGHWAY WHICH HAD TRAVERSED THE VALLEY PRIOR TO THE INTRODUCTION OF THE LAKE PROJECT WERE ABANDONED AND NEW ROADS WERE CONSTRUCTED ON BOTH SIDES OF THE LAKE. THE REORGANIZATION OF THE LOCAL HIGHWAY SYSTEM RESULTED IN THE DISRUPTION OF SOME ESTABLISHED BEHAVIORAL AND INTERACTION PATTERNS. INTRA-COMMUNITY TRAVEL PATTERNS WERE DISRUPTED BECAUSE ROADS WHICH ONCE CONNECTED PARTS OF THE COMMUNITY WERE NO LONGER IN EXISTENCE. INTRA-COMMUNITY VISITS WHICH REQUIRED JUST A FEW MINUTES OF TIME AND LITTLE TRAVEL PRIOR TO THE INTRODUCTION OF THE LAKE PROJECT SUDDENLY REQUIRED THE COMMITMENT OF CONSIDERABLE TIME AND EFFORT. LOCAL RESIDENTS WERE SUDDENLY REQUIRED TO TRAVEL SEVERAL MILES TO VISIT A NEIGHBOR WHOSE HOUSE CAN BE SEEN ACROSS THE LAKE.

INMIGRATION HAS ALSO BROUGHT ABOUT CONSIDERABLE CHANGE IN LOCAL HOUSING PATTERNS. SOON AFTER THE ANNOUNCEMENT WAS MADE THAT A RESERVIOR WAS BEING CONSTRUCTED, A LARGE NUMBER OF NONRESIDENTS WERE ATTRACTED TO THE COMMUNITY SEEKING A PLACE TO LIVE. LOCAL PEOPLE

DISPLACED FROM THE BASIN AREA AND NONRESIDENTS SEEKING PERMANENT HOMESITES IN THE COMMUNITY BEGAN TO ACQUIRE LAND AND TO BUILD HOUSES. UNFORTUNATELY LITTLE LONG-RANGE PLANNING WAS USED IN THE SITING OF THE NEW HOMES. STRIP DEVELOPMENT WHICH HAS OCCURRED AROUND THE LAKE IS CERTAIN TO POSE SERIOUS PROBLEMS FOR THE COMMUNITY GROUP IN THE FUTURE WHEN PUBLIC SERVICES SUCH AS CENTRAL SEWER AND WATER SYSTEMS ARE REQUIRED (NAPIER, BRYANT AND MCCLASKIE,1983; NAPIER, CARTER AND BRYANT,1982a;1982b). SINCE THE LAKE WATER IS A SIGNIFICANT COMPONENT OF THE WATER SUPPLY OF SEVERAL COMMUNITIES IN CENTRAL OHIO, LOCAL RESIDENTS WILL SOON BE REQUIRED TO IMPLEMENT POLLUTION CONTROL PROGRAMS TO ENSURE MAINTENANCE OF WATER QUALITY IN THE RESERVOIR. THE UNPLANNED SETTLEMENT PATTERN USED IN THE SITING OF NEW RESIDENCES AROUND THE LAKE WILL MAKE THE PROVISION OF THESE SERVICES VERY COSTLY TO CONSTRUCT AND TO MAINTAIN.

THE MAGNITUDE OF THE POPULATION EXPANSION WHICH OCCURRED IN THE STUDY COMMUNITY WAS SUBSTANTIAL. THE POPULATION OF THE STUDY GROUP INCREASED ABOUT 71 PERCENT BETWEEN 1970 AND 1980. POPULATION ESTIMATES MADE DURING THE FIRST DATA COLLECTION PERIOD (1970) REVEALED THE STUDY GROUP WAS COMPOSED OF APPROXIMATELY 350 FAMILIES. SIMILAR ESTIMATES MADE IN 1980 SHOWED THE GROUP HAD GROWN TO 600 FAMILIES. LOCAL PEOPLE REPORT CONCERN ABOUT THE RAPID GROWTH OF THE COMMUNITY AND ARE QUICK TO BLAME "OUTSIDERS" FOR THE CHANGES WHICH HAVE OCCURRED IN THE COMMUNITY. WHILE IT IS TRUE THAT MANY OF THE CHANGES INTRODUCED IN THE COMMUNITY ARE THE RESULT OF OUTSIDE INFLUENCE, LOCAL PEOPLE SHOULD ALSO LOOK WITHIN THEIR OWN REFERENCE GROUP FOR PEOPLE WHO HAVE CONTRIBUTED SUBSTANTIALLY TO THE POPULATION GROWTH OF THE AREA. LOCAL LAND OWNERS HAVE CONTRIBUTED EXTENSIVELY TO THE INCREASES IN

POPULATION BECAUSE THEY HAVE BEEN QUITE ACTIVE IN MARKETING THEIR LAND FOR RESIDENTIAL HOUSING. CORN AND SOYBEAN FIELDS SURROUNDING THE FEDERAL LAND ARE SWIFTLY BEING CONVERTED TO HOMESITES. LOCAL FARMERS WERE QUICK TO RECOGNIZE THAT FARM LAND RETURNED MUCH HIGHER PROFITS TO THE OWNER IN THE FORM OF HOUSING DEVELOPMENTS THAN IN AGRICULTURAL CROPS.

ONE OF THE MOST DISRUPTIVE INFLUENCES IN THE AFFECTED COMMUNITY HAS BEEN THE LARGE NUMBER OF RECREATIONISTS WHO ARE ATTRACTED TO THE LAKE BY THE LEISURE ACTIVITIES AVAILABLE AT THE SITE. THE LAKE IS APPROXIMATELY 13 MILES LONG WITH 46 MILES OF SHORELINE. THERE ARE MANY INLETS WHICH OFFER EXCELLENT SPORT FISHING IN THE SPRING AND FALL WHICH ATTRACT MANY ANGLERS FROM NEARBY URBAN COMMUNITIES. THE LAKE HAS ALSO BECOME EXTREMELY POPULAR WITH POWER BOAT OPERATORS BECAUSE IT DOES NOT HAVE A MOTOR LIMIT AS DO OTHER LAKES IN THE REGION. THE LACK OF RESTRICTIONS ON MOTOR SIZE MEANS THAT OPERATORS OF LARGE POWER BOATS TEND TO BE FREQUENT USERS OF THE FACILITY. NOISE LEVELS ARE FREQUENTLY QUITE HIGH DURING THE HEIGHT OF THE BOATING SEASON. ONE OF THE MOST COMMON CONCERNS OF LOCAL PEOPLE IS THE DISRUPTION OF THE TRANQUILITY OF THE RURAL SETTING BY POWER BOATS AND RECREATIONISTS (NAPIER, CARTER AND BRYANT, 1982). SINCE THERE ARE NO PERMANENT DOCKING FACILITIES AT THE LAKE, VISITORS MUST TRAILER THEIR BOATS TO THE SITE EACH TIME THEY ARE USED. LOCAL USE OF THE ROAD SYSTEM IS AFFECTED BY THE RECREATION TRAFFIC DURING MORNING AND EVENING HOURS. THE PROBLEM IS PARTICULARLY SIGNIFICANT DURING THE SPRING AND FALL WHEN FARMERS ARE ACTIVE IN THEIR FIELDS AND MUST MOVE FARM EQUIPMENT OR TRANSPORT GRAIN TO MARKET.

RECREATIONISTS DISRUPT LOCAL LIFESTYLES IN MANY WAYS OTHER

THAN THOSE ALREADY DISCUSSED. THE NOISE AND TRAFFIC PROBLEMS CAN PROBABLY BE TOLERATED MUCH EASIER THAN THE LITTER, CRIME, AND DEMANDS MADE ON THE SERVICE INFRASTRUCTURE OF THE COMMUNITY WHICH ARE DIRECTLY RELATED TO THE RECREATIONAL USE OF THE LAKE FACILITY. LOCAL PEOPLE INDICATE THAT THEY NO LONGER FEEL SAFE WALKING ALONE IN THE COMMUNITY DUE TO THE PRESENCE OF "OUTSIDERS". WHILE PERSONAL ASSAULT OF LOCAL RESIDENTS HAS BEEN VERY RARE, LOCAL PEOPLE PERCEIVE A THREAT FROM NONRESIDENT USERS OF THE LAKE. FEAR, WHETHER REAL OR IMAGINED, AFFECTS PEOPLE'S BEHAVIOR AND MUST BE DEFINED AS A COST EVEN THOUGH THE FEARS ARE NEVER REALIZED. A VERY COMMON PROBLEM CREATED BY VISITORS TO THE LAKE IS LITTER. MANY LOCAL PEOPLE REPORT LITTER OF THEIR PROPERTY AND THE FEDERAL LAND BY RECREATIONISTS (NAPIER AND BRYANT,1977; NAPIER, CARTER, AND BRYANT,1982a;1982b). WALKS ALONG THE LAKESHORE QUICKLY DEMONSTRATE THE CARELESS ORIENTATION OF THE LAKE VISITORS. BEVERAGE BOTTLES OF ALL SHAPES AND SIZES, EMPTY BAIT CONTAINERS, PICNIC DEBRIS, AND MANY OTHER DISCARDED OBJECTS ARE QUITE COMMONLY LEFT IN THE AREA EVEN THOUGH GARBAGE CONTAINERS ARE CONVENIENTLY PLACED THROUGHOUT THE PARK. THE AESTHETIC QUALITY OF THE RECREATION EXPERIENCE SUFFERS TREMENDOUSLY FROM THE LITTER DISCARDED BY VISITORS WHO CARE LITTLE FOR THE ENVIRONMENT. UNFORTUNATELY, LOCAL PEOPLE ARE THE GROUP MOST ADVERSLY AFFECTED BY THE GARBAGE LEFT IN THE COMMUNITY.

THE CONSTRUCTION OF THE LAKE RESULTED IN THE PARTITIONING OF THE COMMUNITY WHICH CREATED PROBLEMS FOR LOCAL PEOPLE. SEVERAL ROADS CONNECTING THE VARIOUS SEGMENTS OF THE COMMUNITY WERE ABANDONED. A CONSEQUENCE OF THIS ACTION, IN ADDITION TO THE PARTIAL FRAGMENTATION OF THE INTERACTION PATTERNS OF THE COMMUNITY GROUP, HAS BEEN LONGER BUS RIDES FOR SCHOOL AGE CHILDREN. THE PARTITIONING OF THE COMMUNITY

ALSO CREATED PROBLEMS FOR THE CONTROL AGENCY RESPONSIBLE FOR PUBLIC SAFETY BECAUSE IT MADE PATROLLING THE COMMUNITY MUCH MORE DIFFICULT. SEVERAL LOCAL PEOPLE REPORT THAT THEY ARE LESS CONFIDENT IN THEIR POLICE PROTECTION NOW THAN BEFORE THE PROJECT WAS CONSTRUCTED. THEIR ASSESSMENT OF THE QUALITATIVE ASPECTS OF THE PROTECTION RECEIVED IS PROBABLY CORRECT BUT IT SHOULD BE OBSERVED IN DEFENSE OF THE POLICE THAT THEY ARE NOW REQUIRED TO PATROL AN AREA THAT IS IN MANY WAYS MORE DIFFICULT TO EFFECTIVELY COVER THAN BEFORE THE PROJECT WAS BUILT. POLICE RESOURCES ARE LIMITED BUT THE DEMANDS MADE ON THOSE RESOURCES ARE MUCH GREATER DUE TO THE TRANSIENT NATURE OF THE POPULATION ATTRACTED TO THE LAKE FACILITIES. ADDITIONAL ECONOMIC RESOURCES TO PAY FOR EXPANDED POLICE AND OTHER SAFETY PERSONNEL WOULD RESOLVE THE PROBLEM BUT SUCH MONIES ARE PROBLEMATIC IN RESERVOIR AFFECTED COMMUNITIES. THE REASON THE TAX BASES ARE REDUCED IS THAT FEDERAL LAND CANNOT BE TAXED UNDER INTERGOVERNMENTAL AGREEMENTS. COMMUNITY GROUPS WHICH HAVE A LARGE PORTION OF THEIR GEOGRAPHIC AREA IN FEDERAL OR STATE OWNERSHIP WILL ALWAYS HAVE PROBLEMS PROVIDING ADEQUATE PUBLIC SERVICES WITHOUT LARGE INCREMENTS IN LOCAL TAXES.

WHILE THERE HAVE BEEN MANY NEGATIVE THINGS WHICH HAVE AFFECTED LOCAL PEOPLE, THERE HAVE BEEN MANY POSITIVE THINGS WHICH CAN BE ATTRIBUTED TO THE LAKE PROJECT. THE MOST OBVIOUS BENEFIT HAS BEEN THE ADDITIONAL RECREATION FACILITIES WHICH HAVE BEEN CREATED. LOCAL PEOPLE NOW HAVE MORE FISHING, BOATING, HIKING, PICNICKING, CAMPING, HORSEBACK RIDING, SWIMMING, WILDLIFE OBSERVATION, AND WATER-BASED HUNTING OPPORTUNITIES THAN EVER BEFORE. CERTAIN WILDLIFE SPECIES, SUCH AS DUCKS AND GEESE, ARE MORE COMMONLY OBSERVED NOW THAN AT ANY PRIOR PERIOD IN RECENT HISTORY. THE GROWTH OF THE DEER HERD, FOR EXAMPLE,

HAS BEEN SO RAPID IT MAY SOON POSE A THREAT TO LOCAL FARMERS AND PROPERTY OWNERS WHEN THE DEER BEGIN TO CONSUME AGRICULTURAL CROPS AND PRIZED LANDSCAPE PLANTS. THE SUCCESS OF THE PARK FACILITY IN PROVIDING GOOD HABITAT HAS RESULTED IN THE EXPANSION OF THIS SPECIES TO THE POINT THAT MEASURES MAY HAVE TO BE TAKEN TO KEEP THE HERD IN PROPER BALANCE WITH THE AVAILABLE LAND AREA OF THE PARK. OTHER SPECIES OF WILDLIFE HAVE BENEFITTED TREMENDOUSLY BY THE CONSTRUCTION OF THE LAKE, SUCH AS MANY SPECIES OF FISH. THE EXPANSION OF WILDLIFE HAS CONTRIBUTED TO THE WELLBEING OF LOCAL PEOPLE VIA EXPANDED OPPORTUNITIES FOR HUNTING, FISHING, AND WILDLIFE OBSERVATION. A NEW SWIMMING BEACH HAS BEEN CONSTRUCTED AND HORSEBACK RIDING TRAILS HAVE BEEN DEVELOPED. THESE FACILITIES ARE AVAILABLE TO LOCAL PEOPLE. PICNICKING AREAS AND WALKING TRAILS HAVE BEEN ADDED TO THE MENU OF OUTDOOR RECREATION OPPORTUNITIES AVAILABLE TO LOCAL PEOPLE. ANYONE INTERESTED IN OUTDOOR ACTIVITIES SHOULD PERCEIVE THESE FACILITIES AS BEING VERY BENEFICIAL.

THE BENEFITS OF THE PROJECT EXTEND BEYOND THE RECREATIONAL FACILITIES ASSOCIATED WITH THE RESERVOIR. FOR EXAMPLE, MANY OF THE PRE-PROJECT ROADS IN THE LOCAL COMMUNITY WERE IN DIRE NEED OF REPAIR. THE MAJOR TRANSPORTATION ARTERIES WERE ADEQUATE BUT RATHER NARROW AND WINDING. ONE OF THE FIRST BENEFITS OF THE LAKE PROJECT WAS THE REPLACEMENT OF THE OLD HIGHWAY SYSTEM WITH NEW ROADS. THERE WAS A SHORT PERIOD OF TIME WHEN CONSTRUCTION WAS UNDERWAY THAT LOCAL TRAVEL WAS QUITE DIFFICULT BUT THIS TIME WAS SHORT-LIVED. THE ROADS WHICH WERE BUILT DURING THE CONSTRUCTION PHASE OF THE PROJECT ARE FAR SUPERIOR TO THOSE ABANDONED. AS OF THIS WRITING, THE ROADS HAVE NOT BEGUN TO DETERIORATE AS THEY HAVE IN OTHER RESERVOIR AFFECTED

COMMUNITIES (DWYER, ET AL. 1981). OTHER PUBLIC FACILITIES WERE ALSO UP-GRADED (NAPIER,1971). TELEPHONE, GAS, AND ELECTRIC LINES WERE REPLACED WHICH IMPROVED SERVICE TO LOCAL PEOPLE.

INMIGRATION CAN AND DOES HAVE SOME NEGATIVE CONSEQUENCES WHEN THE INMIGRATION TAKES PLACE QUICKLY AND IS LARGE IN TERMS OF MAGNITUDE BUT IT CAN ALSO HAVE POSITIVE IMPACTS. THE POSITIVE IMPACTS ARE PRIMARILY DUE TO THE ESTABLISHMENT OF NEW FRIENDSHIPS AND THE INTRODUCTION OF NEW IDEAS AND NEW PERCEPTIONS OF REALITY WHICH TEND TO INTRODUCE NEW EXPERIENCES INTO A GROUP. THE INMIGRATION OF YOUNG PEOPLE IS OFTEN VERY IMPORTANT TO RURAL AREAS BECAUSE THE COMMUNITIES TEND TO BE OLDER. COMMUNITIES THAT ARE IN THE PROCESS OF DECLINE CAN USE INMIGRANTS TO INVIGORATE THE LOCAL SOCIAL MILIEU. SUCH WAS THE CASE IN THE STUDY COMMUNITY. THE LOCAL GROUP WAS STAGNANT IN TERMS OF SOCIAL CHANGE AND WAS IN THE PROCESS OF BECOMING OLDER SINCE THERE HAD BEEN LITTLE POPULATION CHANGE OVER THE LAST 20 TO 30 YEARS. THE INMIGRANTS TENDED TO BE YOUNGER THAN THE RESIDENT POPULATION WHICH HAD A POSITIVE IMPACT ON THE VITALITY OF THE COMMUNITY AND ASSURED THE CONTINUED EXISTENCE OF THE GROUP FOR AT LEAST ONE MORE GENERATION.

RESEARCH FINDINGS: A SYNTHESIS

FINDINGS OF THE FIRST STUDY

A LONGITUDINAL RESEARCH STUDY WAS INITIATED IN 1970 TO ASSESS THE SOCIAL IMPACTS OF WATER RESOURCE DEVELOPMENT ON RURAL PEOPLE. THE FIRST STUDY CONSISTED OF A MULTIPLE GROUP COMPARISON OF RESERVOIR AFFECTED GROUPS COMPARED WITH CONTROL GROUPS WHICH HAD NOT EXPERIENCED ANY TYPE OF EXOGENEOUS DEVELOPMENT STIMULI (NAPIER,1971; NAPIER,1972). THE EXPERIMENTAL GROUPS WHICH HAD BEEN DISRUPTED OR WERE IN THE INITIAL STAGES OF DISRUPTION WERE MATCHED WITH NONAFFECTED BASE GROUPS

THAT WERE SIMILAR ON MANY SOCIO-DEMOGRAPHIC CHARACTERISTICS. A THEORETICAL PERSPECTIVE DERIVED FROM CONFRONTATION THEORY (BERTRAND,1966) AND ALIENATION MODELS (BLAUNER,1964; CRESSEY,1949; MEIR AND BELL,1959; NETTLER,1967; SEEMAN,1959; SROLE,1956) WAS DEVELOPED WHICH BASICALLY POSITED THAT THE AFFECTED GROUPS WOULD BE SIGNIFICANTLY DIFFERENT FROM NONAFFECTED GROUPS. THE THEORETICAL HYPOTHESES ASSERTED THAT THE RESERVOIR AFFECTED GROUPS WOULD BE SIGNIFICANTLY MORE ALIENATED FROM THE MODIFIED SOCIAL MILIEU THAN NONAFFECTED GROUPS. DATA WERE COLLECTED FROM FOUR AFFECTED GROUPS IN VARIOUS STAGES OF LAKE CONSTRUCTION AND FROM TWO CONTROL GROUPS. THE FINDINGS DEMONSTRATED THAT THE INTRODUCTION OF LAKE PROJECTS INTO RELATIVELY COHESIVE RURAL COMMUNITY GROUPS DID NOT RESULT IN THE DESTRUCTION OF THE AFFECTED COMMUNITY GROUPS (NAPIER,1971; NAPIER,1972). THESE FINDINGS WERE VERY SURPRISING GIVEN THE LOGIC ADVANCED IN THE THEORY AND THE VERBAL CRITICISMS OF THE DEVELOPMENT AGENCY BY AFFECTED PEOPLE. THE STUDY FINDINGS DEMONSTRATED THAT AFFECTED GROUPS WERE VERY POSITIVE TOWARD THEIR RESPECTIVE COMMUNITIES EVEN THOUGH THEY WERE QUITE NEGATIVE TOWARD THE LAKE PROJECT AND THE DEVELOPMENT AGENCY. THE STUDY RESPONDENTS NOTED IN OPEN-ENDED QUESTIONS THAT THEY BELIEVED THEIR COMMUNITY WOULD BE DESTROYED IN THE FUTURE BY THE LAKE PROJECT. MAJOR CONCERNS EXPRESSED BY LOCAL PEOPLE WERE DIRECTED TOWARD THE LAKE PROJECT AND THE CORPS RATHER THAN THE COMMUNITY.

SEPARATE ANALYSIS OF THE 1970 DATA FOR THE STUDY COMMUNITY WHICH WAS SUBSEQUENTLY TO BE TRACED OVER TEN YEARS DEMONSTRATED THAT THE RESPONDENTS WERE NOT SIGNIFICANTLY DIFFERENT FROM THE CONTROL GROUP TO WHICH IT WAS COMPARED. THE RESPONDENTS WERE BASICALLY WELL

INTEGRATED EVEN DURING THE LAND PROCUREMENT PHASE IN WHICH THE DATA WERE COLLECTED. THE FINDINGS BASICALLY INDICATE THAT RESERVOIR DEVELOPMENT DID NOT HAVE ADVERSE EFFECTS ON THE SOCIAL FABRIC OF THE AFFECTED GROUP (NAPIER,1971; NAPIER,1972; NAPIER,1975). THESE FINDINGS WERE CONTRARY TO OTHER RESEARCH STUDIES CONDUCTED DURING THE SAME TIME PERIOD (BARRESI AND LINDQUIST,1969; BURDGE AND LUDTKE,1970; DRUCKER, ET AL. ,1974; JOHNSON AND BURDGE,1974; LUDTKE AND BURDGE,1970). THE ONLY STUDY WHICH TENDED TO CONFIRM THESE FINDINGS WAS CONDUCTED BY SMITH, ET AL. (1971) IN WHICH THE RESEARCHERS OBSERVED THAT SMALL TOWN RESIDENTS IN OREGON WERE VERY OPTIMISTIC ABOUT THE FUTURE OF THEIR COMMUNITY EVEN THOUGH THEY HAD EXPERIENCED VERY NEGATIVE OUTCOMES FROM LAKE CONSTRUCTION IN THE SHORT-RUN. THE RESEARCHERS BASICALLY CONCLUDED THAT WATER RESOURCES DEVELOPMENT WAS PERCEIVED BY LOCAL PEOPLE AS HAVING POTENTIAL OF CONTRIBUTING TO THE WELLBEING OF THE AFFECTED GROUP.

IN ESSENCE, THE FIRST STUDY INDICATED THAT WATER RESOURCES DEVELOPMENT DID NOT RESULT IN THE DETERIORATION OF THE SOCIAL RELATIONSHIPS IN THE AFFECTED GROUP. FRAGMENTATION OF THE SOCIAL ORDER DID NOT MATERIALIZE AS EXPECTED. THE COMMONLY ESPOUSED POSITION THAT THE INTRODUCTION OF EXTENSIVE CHANGE STIMULI INTO COHESIVE GROUPS VIA USE OF EMINENT DOMAIN NORMS WILL RESULT IN SOCIAL DISORGANIZATION AND ALIENATION WAS REFUTED.

FINDINGS FROM THE SECOND PHASE
OF THE LONGITUDINAL STUDY

USING THE INFORMATION GATHERED IN 1970 AS BASE DATA FOR COMPARATIVE PURPOSES, SIMILAR DATA WERE COLLECTED IN 1974 AFTER THE CONSTRUCTION PHASE OF THE LAKE PROJECT HAD BEEN COMPLETED.

STANDARDIZED MEASURES WERE USED TO ENSURE VALID COMPARISONS OF THE DATA. ADDITIONAL INFORMATION CONCERNING THE RESPONDENTS' PERCEPTIONS OF THE LAKE PROJECT AND THE DEVELOPMENT AGENCY WERE ALSO COLLECTED. THE THEORETICAL POSITION USED TO BUILD HYPOTHESES WAS DEVELOPED FROM FUNCTIONAL THEORY (BOSKOFF,1964; PARSONS,1960) AND FROM THE CONFRONTATION PERSPECTIVE DEVELOPED BY BERTRAND (1966). THE THEORY BASICALLY ASSERTS THAT INITIAL SOCIAL DISRUPTION OF THE COMMUNITY BY RESERVOIR CONSTRUCTION WILL PRODUCE THE GREATEST STRESS FOR DIRECTLY AFFECTED PEOPLE. THE MODEL ARGUES THAT ADAPTATION AND ACCOMMODATION WILL OCCUR OVER TIME AND RESULT IN THE GRADUAL ACCEPTANCE OF THE CHANGES INTRODUCED TO THE AFFECTED GROUP.

THE THEORETICAL PERSPECTIVE WAS TESTED USING THE DATA COLLECTED IN 1970 AND 1974. ANALYSIS OF VARIANCE WAS USED TO DETERMINE IF THERE WERE SIGNIFICANT DIFFERENCES BETWEEN THE OBSERVATIONS MADE IN 1970 AND IN 1974. THE FINDINGS FOR THE SECOND STUDY TENDED TO CONFIRM THOSE GENERATED IN THE FIRST. THE DATA ANALYSES OF THE COMMUNITY RELATED VARIABLES REVEALED SEVERAL SIGNIFICANT DIFFERENCES OVER TIME BUT THE RESEARCH EXPECTATIONS WERE NOT REALIZED. THE FINDINGS REVEALED THAT THE RESTRUCTURED GROUP WAS MORE COMMITTED TO THE COMMUNITY THAN BEFORE THE PROJECT WAS IMPLEMENTED. WHILE THE RESTRUCTURED GROUP WAS DESIROUS OF MORE STABILITY THAN THE 1970 GROUP, THEY REMAINED FAVORABLE TOWARD SOCIAL CHANGE. THE RESTRUCTURED GROUP EXHIBITED HIGHER LEVELS OF COMMUNITY INTEGRATION THAN THE 1970 GROUP. THE RESTUCTURED GROUP WAS ALSO MORE SATISFIED WITH EXISTING SERVICES THAN WERE THE MEMBERS OF THE 1970 GROUP. THE LATTER FINDING PROBABLY REFLECTS THE IMPROVEMENTS MADE IN THE PHYSICAL FACILITIES DURING THE CONSTRUCTION PHASE OF THE PROJECT. COMPARISONS MADE OVER-TIME ALSO

REVEALED THAT THE RESTRUCTURED GROUP WAS MORE FAMILISTIC THAN THE 1970 GROUP WHICH PROBABLY WAS THE RESULT OF THE EXTERNAL THREAT TO THE MAINTENANCE OF FAMILY TIES BY THE RESERVOIR CONSTRUCTION. LASTELY, THE FINDINGS REVEALED THAT THE RESTRUCTURED GROUP WAS MORE IDENTIFIED THAN THE 1970 STUDY GROUP. IT WAS SUGGESTED THAT THE THREAT POSED BY EXTERNAL CHANGE FORCES RESULTED IN THE EMERGENCE OF CLOSER SOCIAL TIES IN THE AFFECTED GROUP (NAPIER AND WRIGHT,1976).

DATA CONCERNING THE ATTITUDES OF LOCAL PEOPLE TOWARD THE LAKE PROJECT WERE ALSO COLLECTED IN 1974 AND WERE ANALYZED ON A CROSS-SECTIONAL BASIS USING CORRELATION AND REGRESSION ANALYSIS. THE THEORETICAL PERSPECTIVE NOTED ABOVE WHICH WAS USED TO DEVELOP HYPOTHESES CONCERNING THE VARIOUS ASPECTS OF THE COMMUNITY WAS ELABORATED TO BE RELEVANT TO THE ANALYSIS OF ATTITUDES TOWARD THE LAKE PROJECT. THE MODEL BASICALLY ASSERTS THAT INDIVIDUALS WHO WERE MOST INTEGRATED INTO THE SOCIAL MILIEU OF THE LOCAL COMMUNITY, WHO HAD INTERNALIZED THE GREATEST COSTS (BOTH SOCIAL AND ECONOMIC) ASSOCIATED WITH THE PROJECT, WHO FAVORED SOCIAL STABILITY, AND PERCEIVED THE ACTION BY THE DEVELOPMENT AGENCY TO HAVE BEEN UNJUST WOULD BE MORE NEGATIVE TOWARD THE PROJECT. THE MODEL WAS SHOWN TO BE VERY PREDICTIVE OF THE EXPLAINED VARIANCE IN ATTITUDES TOWARD THE LAKE PROJECT. TWO VARIABLES (ATTITUDES TOWARD LAND ACQUISITION AND ATTITUDES TOWARD SOCIAL CHANGE) EXPLAINED APPROXIMATELY 72 PERCENT OF THE VARIANCE IN THE DEPENDENT VARIABLE (NAPIER AND WRIGHT,1976).

IN ESSENCE, THE FINDINGS OF THE 1974 STUDY REVEALED THAT THE RESERVOIR AFFECTED GROUP WAS NOT DESTROYED BY THE DEVELOPMENT PROGRAM. IN FACT, THE FINDINGS STRONGLY SUGGEST THAT THE SOCIAL CONSEQUENCES OF THE PROJECT WERE QUITE DESIRABLE IF ONE DEFINES GREATER COHESIVENESS

AS BEING A POSITIVE OUTCOME. THE FINDINGS REVEALED THAT THE AFFECTED GROUP MEMBERS EXHIBITED STRONGER PERSONAL COMMITMENTS TO OTHER RESIDENTS AFTER THE DEVELOPMENT PROGRAM WAS IMPLEMENTED THAN BEFORE THE PROJECT WAS INTRODUCED. THE INCONSISTENCIES OF THE COMMUNITY RELATED FINDINGS WITH THE ADJUSTMENT MODEL WERE EXPLAINED IN THE CONTEXT OF CONFLICT THEORY WHICH CONTENDS THAT THREATS BY OUTSIDE FORCES TO ANY GROUP THAT SHARES A COMMON IDENTITY WILL RESULT IN AN INCREASE IN COHESION TO RESIST THE EXTERNAL INTERVENTION IN THE GROUP (NAPIER AND WRIGHT,1976; NAPIER AND MOODY,1977).

THE REGRESSION FINDINGS OF THE SECOND STUDY ALSO CONFIRMED A GENERAL OBSERVATION MADE FROM THE OPEN-ENDED QUESTIONS INCLUDED IN THE FIRST STUDY CONCERNING THE ROLE IMPLEMENTION STRATEGIES PLAY IN THE FORMATION OF PERCEPTIONS ABOUT THE PROJECT. LOCAL PEOPLE REPORTED IN THE FIRST STUDY THAT THEY WERE VERY CONCERNED ABOUT THE STRATEGIES USED TO IMPLEMENT THE LAKE PROJECT. LOCAL PEOPLE REPORTED THAT THEY WERE NOT: PROPERLY INFORMED ABOUT THE PROJECT; ADEQUATELY COMPENSATED FOR PROPERTIES TAKEN BY THE STATE; TREATED FAIRLY BY THE CORPS REPRESENTATIVES; SUPPORTIVE OF THE USE OF EMINENT DOMAIN LAWS TO SECURE PRIVATE PROPERTIES FOR THE DEVELOPMENT OF A LAKE; AND WERE CAUSED FINANCIAL HARDSHIP DUE TO THE PROJECT. THESE COMMENTS WERE USED TO DEVELOP A MEASURE OF ATTITUDES TOWARD THE IMPLEMENTATION STRATEGIES EMPLOYED BY THE CORPS AND THIS VARIABLE WAS SHOWN TO BE THE BEST PREDICTOR OF ATTITUDES TOWARD THE PROJECT. THIS VARIABLE ALONE EXPLAINED ALMOST 66 PERCENT OF THE VARIANCE IN THE DEPENDENT VARIABLE (NAPIER AND WRIGHT,1976).

IN SUM, THE FINDINGS OF THE 1974 STUDY CONFIRMED SEVERAL OBSERVATIONS MADE IN THE 1970 STUDY. THE RESEARCH FINDINGS THROUGH THE

SECOND STUDY INDICATED THAT THE COMMUNITY WAS NOT DESTROYED BY LAKE CONSTRUCTION AND THAT THE TECHNIQUES USED TO IMPLEMENT THE PROJECT WERE THE MOST IMPORTANT FACTOR IN PREDICTING LOCAL PEOPLE'S RESPONSE TO THE PROJECT. THE FINDINGS BRING INTO QUESTION THE COMMONLY HELD POSITION THAT WATER RESOURCES DEVELOPMENT WILL RESULT IN THE DESTRUCTION OF THE AFFECTED GROUP (BURDGE AND LUDTKE,1970; DONNERMEYER,AND KORSCHING,1976; DONNERMEYER, ET AL. 1974; JOHNSON AND BURDGE,1974; JOHNSON, ET AL. 1976; LUDTKE AND BURDGE,1970; SMITH,1970).

FINDINGS FROM THE THIRD PHASE OF THE LONGITUDINAL PROJECT

THE LAST PHASE OF THE RESEARCH STUDY WAS CONDUCTED IN 1980 WHEN DATA FROM APPROXIMATELY HALF OF THE FAMILIES IN THE RESTRUCTURED COMMUNITY WERE USED TO ASSESS ATTITUDES TOWARD THE LAKE PROJECT AND ITS IMPACT ON THE AFFECTED GROUP. INFORMATION COLLECTED FOR THE TWO PREVIOUS STUDIES WAS COMPARED WITH THE 1980 DATA TO EVALUATE ATTITUDE CHANGES. SEVERAL FACTORS WERE EXAMINED AND THE FINDINGS DEMONSTRATED THAT THE AFFECTED GROUP DID NOT EXHIBIT NEGATIVE ORIENTATIONS TOWARD THE CHANGED COMMUNITY AND THE MODIFIED INTERACTION PATTERNS WITHIN THE GROUP.

ONE OF THE FIRST FACTORS EXAMINED IN THE 1980 STUDY WAS HOW LOCAL PEOPLE PERCEIVED THE LAKE PROJECT COMPARED TO OTHER DEVELOPMENT OPTIONS WHICH COULD HAVE BEEN IMPLEMENTED. THE STUDY GROUP WAS ASKED TO EVALUATE THE LAKE PROJECT IN THE CONTEXT OF USING THE RESOURCES EMPLOYED TO BUILD THE LAKE FOR ALTERNATIVE DEVELOPMENT PROGRAMS. A "VESTED INTERESTS" MODEL (BRYANT AND NAPIER, 1981; NAPIER, CARTER AND BRYANT,1982b; NAPIER AND MAST,1981; NAPIER AND MAURER,1978) WAS

DERIVED FROM SELECTED COMPONENTS OF SOCIAL EXCHANGE THEORY (EKEH,1974; SIMPSON,1972; TURNER,1978) AND USED TO EXPLAIN THE VARIANCE IN RESPONSES TO THIS ISSUE. THE MODEL BASICALLY ARGUES THAT ASSESSMENTS OF PLANNED CHANGE PROGRAMS ARE GOVERNED BY PERCEPTIONS OF PERSONAL BENEFITS AND COSTS ASSOCIATED WITH THE SPECIFIC PROJECT BEING EVALUATED. THE THEORETICAL PERSPECTIVE ASSERTS THAT INDIVIDUALS WHO RECEIVE THE GREATEST BENEFITS AND INTERNALIZE THE FEWEST COSTS AS A DIRECT RESULT OF THE PROJECT BEING ASSESSED WILL EXHIBIT THE MOST POSITIVE ORIENTATIONS TOWARD USING PUBLIC RESOURCES FOR IMPLEMENTATION OF THE DEVELOPMENT PROGRAM RELATIVE TO OTHER ACTION OPTIONS.

THE FINDINGS REVEALED THAT LOCAL RESIDENTS PERCEIVED THE LAKE PROJECT TO BE THE BEST USE OF THE DEVELOPMENT RESOURCES FOR EIGHT OF THE NINE OPTIONS ASSESSED. THE NINE OPTIONS EVALUATED WERE: INDUSTRIAL PARKS, MAINTAINING THE LAND IN FORESTS AND FARMS, IMPROVEMENT OF PUBLIC SERVICES, PURCHASE OF LAND FOR A STATE OR NATIONAL PARK AT THE SAME SITE, DEVELOPMENT OF WATER WELLS, PROVISION OF AID TO SMALL BUSINESSES IN CENTRAL OHIO, PROVISION OF AID TO POOR PEOPLE IN CENTRAL OHIO, CONSTRUCTION OF SEVERAL SMALL IMPOUNDMENTS THROUGHOUT THE AFFECTED VALLEY, AND THE PROVISION OF AID TO LOCAL PEOPLE FOR CONSTRUCTION OF PRIVATE RECREATION FACILITIES. THE ONLY ALTERNATIVE FAVORED MORE THAN THE LAKE PROJECT WAS MAINTAINING THE LAKE IN FORESTS AND FARMS BUT EVEN THIS OPTION WAS ONLY SLIGHTLY PREFERRED. THE DESCRIPTIVE DATA STRONGLY SUGGEST THAT THE LAKE PROJECT WAS PERCEIVED QUITE FAVORABLY COMPARED TO OTHER OPTIONS.

A COMPOSITE INDEX WAS CONSTRUCTED FROM THE RESPONSES TO THE VARIOUS DEVELOPMENT OPTIONS AND EXAMINED VIA MULTIVARIATE ANALYSIS. THESE FINDINGS DEMONSTRATED THAT THE "VESTED INTERESTS" PERSPECTIVE

WAS USEFUL AS A PREDICTIVE MODEL. COSTS AND BENEFITS WERE SHOWN TO BE THE BEST EXPLANATORY VARIABLES. INDIVIDUALS WHO HAD RECEIVED THE GREATEST BENEFITS AND INTERNALIZED THE FEWEST COSTS TENDED TO PREFER THE LAKE PROJECT OVER OTHER DEVELOPMENT OPTIONS. THE FINDINGS CLEARLY DEMONSTRATED THAT EXPERIENCES WITH THE OUTCOMES OF THE LAKE PROJECT AFFECTED HOW THE PROJECT WAS PERCEIVED. THE STUDY GROUP APPEARED TO HAVE BEEN STRONGLY INFLUENCED BY UTILITARIAN ORIENTATIONS (NAPIER, CARTER AND BRYANT, 1982b).

ANOTHER STUDY USING THE 1980 DATA WAS FOCUSED ON THE ASSESSMENT OF ATTITUDE CHANGE OVER TIME. INFORMATION FROM THE TWO PREVIOUS STUDIES WERE USED AS REFERENCE POINTS AND COMPARED WITH THE 1980 DATA. THE THEORETICAL PERSPECTIVE EMPLOYED IN THE STUDY WAS CONSTRUCTED FROM SELECTED COMPONENTS OF FUNCTIONAL THEORY. THE MODEL BASICALLY POSITS THAT OVER TIME LOCAL PEOPLE WILL BEGIN TO ACCOMMODATE CHANGES INTRODUCED INTO THE GROUP AND WILL EVENTUALLY ACCEPT THE LAKE PROJECT. THE THREE COMMUNITY RELATED VARIABLES USED TO TEST THE MERITS OF THIS PERSPECTIVE WERE: COMMUNITY IDENTIFICATION, COMMUNITY INTEGRATION, AND COMMITMENT TO CHANGE.

ANALYSIS OF VARIANCE STATISTICS REVEALED THAT LOCAL PEOPLE BECAME MORE IDENTIFIED IN 1974 BUT REVERTED TO THE 1970 LEVEL BY 1980. ALL THREE STUDY GROUPS EXHIBITED RELATIVELY HIGH LEVELS OF IDENTIFICATION WITH OTHER GROUP MEMBERS AT EACH TIME PERIOD. COMMUNITY INTEGRATION WAS SHOWN NOT TO HAVE CHANGED SIGNIFICANTLY DURING THE TEN YEAR STUDY PERIOD. THE STUDY GROUPS REMAINED HIGHLY INTEGRATED AT EACH TIME PERIOD. THE DATA FOR COMMITMENT TO CHANGE, HOWEVER, REVEALED THAT THE STUDY GROUPS BECAME PROGRESSIVELY LESS FAVORABLE TOWARD SOCIAL CHANGE. THESE FINDINGS STRONGLY SUGGEST THAT THE LAKE PROJECT

DID NOT ADVERSLY AFFECT INTERPERSONAL RELATIONSHIPS WITHIN THE STUDY GROUP BUT THE RAPIDITY OF CHANGE GENERATED A DESIRE FOR GREATER STABILITY IN THE COMMUNITY.

DATA FOCUSED ON ATTITUDES TOWARD THE LAKE PROJECT AND THE DEVELOPMENT AGENCY WERE COLLECTED IN 1974 AND AGAIN IN 1980. THE ADJUSTMENT MODEL NOTED ABOVE WAS USED AS THE THEORETICAL PERSPECTIVE FOR TESTING. IT WAS EXPECTED THAT ATTITUDES TOWARD THE STIMULI FOR CHANGE WOULD BECOME MORE FAVORABLE AS ACCOMMODATION OCCURRED. THE FINDINGS REVEALED SIGNIFICANT DIFFERENCES OVER TIME FOR BOTH VARIABLES. WHILE THE ATTITUDES REMAINED SLIGHTLY NEGATIVE IN 1980, THEY WERE SIGNIFICANTLY LESS NEGATIVE THAN IN 1974. IT WAS CONCLUDED THAT ADJUSTMENT WAS TAKING PLACE AND THAT THE THEORETICAL PERSPECTIVE HAD MERIT FOR UNDERSTANDING ASSESSMENTS OF RESERVOIR IMPACTS. THE 1980 DATA SET WAS DISAGGREGATED INTO LONG-TERM AND SHORT-TERM RESIDENTS TO DETERMINE IF LENGTH OF RESIDENCE HAD ANY AFFECT ON THE ANALYSES. THE FINDINGS FROM THE ANALYSIS OF VARIANCE REVEALED THAT THE TWO GROUPS WERE NOT SIGNIFICANTLY DIFFERENT ON FOUR OF THE VARIABLES EXAMINED. ATTITUDES TOWARD THE LAKE PROJECT WERE SIGNIFICANTLY DIFFERENT WITH LONG-TERM RESIDENTS EXHIBITING MORE NEGATIVE ATTITUDES. IT WAS CONCLUDED THAT AGGREGATION OF THE TOTAL SAMPLE FOR ANALYSIS PURPOSES WAS APPROPRIATE SINCE THE ATTITUDES OF RECENT IMMIGRANTS WERE SIMILAR TO THOSE OF LONG-TERM RESIDENTS (NAPIER, BRYANT AND MCCLASKIE,1983).

ANOTHER STUDY USING THE 1980 DATA WAS FOCUSED ON PERCEPTIONS OF LOCAL PEOPLE TOWARD THE EXTENT AND DIRECTION OF CHANGE. THE RESPONDENTS WERE ASKED TO ASSESS HOW EXTENSIVE THE CHANGES HAD BEEN IN THE COMMUNITY AND TO EVALUATE THE DIRECTION OF THE CHANGES. THE ISSUES EXAMINED WERE CHANGES IN: COMMUNITY RELATIONSHIPS, COMMUNITY SERVICES,

CONFORMITY TO LAWS, QUALITY OF THE ENVIRONMENT, FEELINGS OF SAFETY, PROPERTY VALUES, AND ACCESS TO SHOPPING. THE "VESTED INTERESTS" MODEL WAS ONCE MORE USED AS THE THEORETICAL PERSPECTIVE FOR TESTING. THE FINDINGS DEMONSTRATED THAT LOCAL PEOPLE DID NOT PERCEIVE THAT ANY OF THE VARIABLES HAD CHANGED GREATLY AND THAT THE DIRECTION OF THE CHANGES WAS SLIGHTLY NEGATIVE. THE ONLY EXCEPTION TO THE GENERAL TRENDS WAS THE FINDINGS FOR PROPERTY VALUES. THE RESPONDENTS BELIEVED THAT PROPERTY VALUES HAD CHANGED CONSIDERABLY AND THAT THE DIRECTION OF THE CHANGES HAD BEEN POSITIVE. THE EXPECTATIONS OF SEVERE ADVERSE CONSEQUENCES REPORTED BY THE RESPONDENTS DURING THE INITIAL DISRUPTION OF THE COMMUNITY IN 1970 (NAPIER, 1971) WERE APPARENTLY NOT REALIZED EVEN THOUGH THERE HAD BEEN MANY CHANGES INTRODUCED TO THE GROUP.

COMPOSITE INDICES WERE CONSTRUCTED FROM THE RESPONSES TO THE EXTENT AND THE DIRECTION OF CHANGE QUESTIONS AND EXAMINED IN THE CONTEXT OF THE "VESTED INTERESTS" PERSPECTIVE. THE FINDINGS REVEALED THE THEORETICAL MODEL WAS QUITE USEFUL IN EXPLAINING THE VARIANCE IN THE DEPENDENT VARIABLES EXAMINED. INDIVIDUALS WHO HAD BENEFITTED FROM THE PROJECT TENDED TO PERCEIVE THE EXTENT OF CHANGE AS BEING SLIGHT AND TO ASSESS THE CONSEQUENCES OF THE CHANGES AS BEING POSITIVE. CONVERSLY, INDIVIDUALS WHO WERE FORCED TO INTERNALIZE COSTS PERCEIVED THE CHANGES AS BEING EXTENSIVE AND NEGATIVE (NAPIER, CARTER AND BRYANT, 1982b).

THE DATA WERE DISAGGREGATED INTO LONG-TERM AND SHORT-TERM RESIDENT GROUPS TO ASCERTAIN IF THE COMBINING OF THE SAMPLE AFFECTED THE ANALYSES. THE REGRESSION MODELS FOR THE TOTAL GROUP AND THE SUBSAMPLES WERE DIFFERENT FOR THE EXTENT OF CHANGE INDEX BUT VERY SIMILAR FOR THE DIRECTION OF CHANGE INDEX. THE ANALYSES DEMONSTRATED

THAT THE "VESTED INTERESTS" THEORY WAS QUITE USEFUL FOR UNDERSTANDING THE EXTENT OF CHANGE FOR LONG-TERM RESIDENTS BUT NOT FOR SHORT-TERM RESIDENTS. THE THEORY WAS SHOWN TO BE QUITE APPROPRIATE FOR BOTH SUBSAMPLES IN TERMS OF DIRECTION OF CHANGE. THE INADEQUACY OF THE MODEL FOR SHORT-TERM RESIDENTS WAS EXPLAINED IN THE CONTEXT OF THE GROUP NOT HAVING ENOUGH EXPERIENCE WITH THE CHANGES WHICH HAD OCCURRED DURING THE LIFE OF THE PROJECT. RECENT IMMIGRANTS WERE APPARENTLY NOT KNOWLEDGEABLE OF THE SITUATION IN THE COMMUNITY PRIOR TO THE INTRODUCTION OF THE PROJECT AND WERE NOT ABLE TO ASSESS THE EXTENT OF CHANGE VERY WELL. THE SUBSAMPLE ANALYSES FOR THE EXTENT OF CHANGE VARIABLE INDICATED THAT THE MODEL FOR THE TOTAL SAMPLE MODEL TENDED TO UNDER ESTIMATE THE UTILITY OF THE THEORY DUE TO THE RANDOM VARIANCE INTRODUCED BY THE IMMIGRANT GROUP (NAPIER, CARTER AND BRYANT, 1982b).

DATA FOCUSED ON THE ATTITUDES OF LOCAL PEOPLE TOWARD THE ALTERNATIVE USES MADE OF THE RESERVOIR WERE COLLECTED IN 1974 AND 1980. THESE DATA WERE USED TO ASSESS RESIDENT REACTIONS TO THE VARIOUS DISRUPTIONS ASSOCIATED WITH EACH USE. THE PURPOSES OF THE STUDY WERE TO DETERMINE: 1) THE LEVEL OF SUPPORT FOR AND/OR OPPOSITION TO EACH USE AMONG LOCAL PEOPLE; 2) IF THERE HAD BEEN SIGNIFICANT CHANGES IN THE PERCEPTIONS HELD ABOUT THE ALTERNATIVE USES MADE OF THE LAKE; AND 3) THE FACTORS THAT ARE SIGNIFICANT IN PREDICTING THE ATTITUDES HELD BY LOCAL PEOPLE. THE FOUR USES EXAMINED WERE: FLOOD CONTROL, WATER SUPPLY, FISH AND WILDLIFE CONSERVATION, AND RECREATION.

THE THEORETICAL MODEL USED TO ASSESS CHANGES IN ATTITUDES OVER TIME WAS FORMULATED FROM THE ADAPTATION COMPONENT OF FUNCTIONAL THEORY. THE LOGIC OF THE MODEL IS THAT LOCAL PEOPLE WILL BECOME ADJUSTED TO THE CHANGES INTRODUCED INTO THEIR LIVES BY THE SPECIFIC

USES BEING ASSESSED AND WILL BECOME MORE POSITIVE TOWARD THEM. THE MODEL ARGUES, HOWEVER, THAT THE MOST DISRUPTIVE USES WILL BE THE LEAST FAVORED. THE THEORY USED TO BUILD HYPOTHESES ABOUT THE FACTORS ASSOCIATED WITH EACH USE WAS CONSTRUCTED FROM THE UTILITARIAN COMPONENTS OF SOCIAL EXCHANGE THEORY AND THE "VESTED INTERESTS" MODEL NOTED ABOVE. IT IS ARGUED IN THE MODEL THAT INDIVIDUALS WHO PERCEIVE THEY HAVE BENEFITTED FROM A SPECIFIC USE OR USES WILL TEND TO HOLD FAVORABLE ATTITUDES TOWARD THE LAKE BEING USED FOR THOSE PURPOSES. THEREFORE, IT WAS EXPECTED THAT MEASURES OF PERSONAL BENEFITS AND COSTS WOULD BE PREDICTIVE OF THE ATTITUDES HELD BY LOCAL PEOPLE TOWARD USES MADE OF THE LAKE.

THE FINDINGS OF THE STUDY REVEALED THAT THE LOCAL POPULACE BECAME SIGNIFICANTLY MORE FAVORABLE TOWARD THREE OF THE FOUR MAJOR USES OF THE PROJECT BETWEEN 1974 AND 1980. THE ONLY USE WHICH WAS NOT SIGNIFICANTLY DIFFERENT WAS FISH AND WILDLIFE CONSERVATION WHICH WAS HIGHLY FAVORED IN 1974 AND MAINTAINED ITS HIGH RANKING IN 1980. EXAMINATION OF THE DESCRIPTIVE DATA FOR THE TWO TIME PERIODS DEMONSTRATED THAT THE STUDY GROUP WAS POSITIVE TOWARD ALL OF THE USES EXCEPT RECREATION IN 1974 AND ALL USES IN 1980. THE GREATEST INCREASE IN POSITIVE ATTITUDES OCCURRED IN PERCEPTIONS OF RECREATION USES.

MULTIVARIATE ANALYSIS OF THE DATA DEMONSTRATED THAT THE "VESTED INTERESTS" MODEL WAS USEFUL IN PREDICTING PERCEPTIONS OF USES FOR THE TOTAL SAMPLE AND LONG-TERM RESIDENTS BUT NOT FOR THE SHORT-TERM RESIDENTS. COSTS AND BENEFITS ASSOCIATED WITH THE LAKE PROJECT WERE SHOWN TO BE SIGNIFICANTLY CORRELATED WITH PERCEPTIONS HELD ABOUT THE VARIOUS USES OF THE PROJECT. INDIVIDUALS WHO HAD INTERNALIZED MORE COSTS AND RECEIVED FEWER BENEFITS FROM THE LAKE

PROJECT TENDED TO BE LESS POSITIVE TOWARD THE VARIOUS USES ASSESSED THAN PEOPLE WHO HAD RECEIVED MORE BENEFITS AND FEWER COSTS. THE COLLAPSE OF THE THEORETICAL PERSPECTIVE AMONG THE SHORT-TERM RESIDENTS WAS EXPLAINED IN THE CONTEXT OF THE LACK OF EXPERIENCE WITH MANY OF THE COSTS WHICH THE LONG-TERM RESIDENTS WERE REQUIRED TO ASSUME. THE FINDINGS STRONGLY SUGGEST THAT THE FOUR USES EVALUATED DID NOT PRODUCE SEVERE ADVERSE CONSEQUENCES FOR THE STUDY GROUP. THIS WAS QUITE SURPRISING SINCE THE GREATEST DISRUPTION OF THE COMMUNITY GROUP WAS CAUSED BY THE RECREATION COMPONENT OF THE PROJECT. THE FINDINGS ALSO SHOW THAT THE STUDY GROUP IS BECOMING MORE POSITIVE OVER TIME AND IT IS HIGHLY LIKELY THAT THE GROUP WILL SOON PERCEIVE THE PROJECT AS BEING A POSITIVE ADDITION TO THE COMMUNITY. THIS CONCLUSION APPLIES TO THE LONG-TERM RESIDENTS AS WELL AS THE MORE RECENT INMIGRANTS (NAPIER AND GOE, 1984).

CONCLUSIONS

THE FINDINGS OF THE LONGITUDINAL STUDY CLEARLY DEMONSTRATE THAT THE EXTENSIVE SOCIO-ENVIRONMENTAL CHANGES INTRODUCED INTO THE RURAL COMMUNITY GROUP BY RESERVOIR CONSTRUCTION DID NOT RESULT IN THE DESTRUCTION OF THE LOCAL SOCIAL MILIEU. THE FINDINGS CONSISTENTLY REVEALED THAT THE STUDY POPULATION ACCOMMODATED THE CHANGES. THE STUDY GROUP WAS SHOWN TO BE QUITE RESILIENT AND ADAPTIVE EVEN WHEN THE CHANGES PRODUCED SOME CONDITIONS WHICH WOULD BE DEFINED AS BEING NEGATIVE.

THE ASSESSMENT OF ATTITUDES TOWARD SELECTED ASPECTS OF THE COMMUNITY REVEALED THAT LOCAL PEOPLE MAINTAINED THEIR COMMITMENT TO OTHER COMMUNITY MEMBERS AND EXHIBITED PRIDE IN COMMUNITY MEMBERSHIP THROUGHOUT THE STUDY. THE LACK OF ALIENATION AND FRAGMENTATION OF

LOCAL RELATIONSHIPS SUGGESTS THAT GENERAL ASSERTIONS MADE THAT LAKE DEVELOPMENT WILL RESULT IN SEVERE ADVERSE SOCIAL CONSEQUENCES FOR DIRECTLY AFFECTED GROUPS ARE OVERSTATED. THE FINDINGS INDICATE THAT SOCIAL RELATIONSHIPS WITHIN THE GROUP WERE ACTUALLY BETTER AFTER THE PROJECT WAS IMPLEMENTED IF ONE DEFINES CLOSER SOCIAL TIES AS BEING POSITIVE.

THE FINDINGS CLEARLY SHOW THAT ASSESSMENTS MADE ABOUT RESERVOIR PROJECTS ARE MADE IN THE CONTEXT OF UTILITARIAN ORIENTATIONS. IF LOCAL PEOPLE ARE FORCED TO INTERNALIZE COSTS AND RECEIVE FEW BENEFITS, THEY TEND TO VIEW THE STIMULUS FOR CHANGE NEGATIVELY. CONVERSELY, IF THE PROJECT PRODUCES PERSONAL BENEFITS AND FEW COSTS, THE RESPONSE OF LOCAL PEOPLE TENDS TO BE POSITIVE TOWARD THE STIMULUS FOR CHANGE. THIS CONCLUSION SUGGESTS THAT EFFORTS TO MAXIMIZE LOCAL ACCEPTANCE OF RESERVOIRS MUST INCLUDE MECHANISMS TO INCREASE BENEFITS FOR LOCAL PEOPLE WHILE SIMULTANEOUSLY REDUCING COSTS ASSOCIATED WITH THEM. TO ACCOMPLISH THIS OBJECTIVE REQUIRES INFORMATION ABOUT THE TYPES OF COSTS AND BENEFITS ASSOCIATED WITH LAKE PROJECTS. NAPIER, CARTER AND BRYANT (1982b) DISCOVERED THAT LITTER OF PRIVATE PROPERTY, TRAFFIC NOISE, HIGHER TAXES FOR LOCAL GOVERNMENT, LOSS OF A RURAL WAY-OF-LIFE, FEAR FOR SAFETY AND TRESPASS OF PRIVATE PROPERTY WERE THE MOST IMPORTANT NEGATIVE OUTCOMES OF THE LAKE PROJECT. THE MOST FREQUENTLY MENTIONED POSITIVE CONSEQUENCES WERE INCREASED PROPERTY VALUES, EXPANDED RECREATION FACILITIES, MORE BEAUTIFUL AREA, FLOOD PROTECTION, AND BETTER ROADS. THESE FINDINGS SUGGEST THAT LOCAL ACCEPTANCE OF LAKE PROJECTS COULD BE INCREASED BY INCORPORATING PROVISIONS IN THE PROJECT TO REDUCE THESE COSTS WHILE SIMULTANEOUSLY INCREASEING THE POSITIVE CONSEQUENCES, THE

IMPLEMENTATION OF THESE RECOMMENDATIONS WOULD NOT BE ECONOMICALLY COSTLY AND ARE CONSISTENT WITH EXISTING POLICIES GOVERNING EMINENT DOMAIN PROCEEDINGS.

A VERY IMPORTANT CONCLUSION DERIVED FROM THE LONGITUDINAL MONITORING OF THE AFFECTED GROUP HAS BEEN THE AWARENESS THAT ANTICIPATED SOCIAL CONSEQUENCES OF THE PROJECT WERE NOT REALIZED. WHILE THE AFFECTED GROUP IN 1970 BELIEVED THE COMMUNITY WOULD BE DESTROYED BY THE LAKE PROJECT (NAPIER,1971), THE EVIDENCE COLLECTED TO DATE DOES NOT SUPPORT SUCH ASSERTIONS. IN FACT, THE DATA SUGGEST THE CHANGES IN THE COMMUNITY HAVE BEEN ACCOMMODATED QUITE WELL. IT IS HIGHLY LIKELY THAT FUTURE ASSESSMENTS WILL SHOW THE LAKE PROJECT TO BE HIGHLY VALUED IN THE COMMUNITY. THE FACT LOCAL PEOPLE WERE SO NEGATIVE ABOUT THE DEVELOPMENT EFFORT BEFORE THEY HAD ACTUAL EXPERIENCES WITH THE CONSEQUENCES OF THE PROJECT SUGGESTS THAT FUTURE SOCIAL IMPACT STUDIES SHOULD RELY MORE HEAVILY ON EX POST FACTO EVALUATIONS. THE STUDY GROUP'S INITIAL FEARS WERE NOT REALIZED. HAD THE ANALYSIS OF THE IMPACTS BEEN TERMINATED WITH A SYNTHESIS OF RESPONSES TO OPEN-ENDED QUESTIONS, THE CONCLUSIONS DRAWN FROM THE FIRST STUDY WOULD HAVE BEEN GREATLY DIFFERENT AND THE SUBSEQUENT STUDIES WOULD NOT HAVE BEEN UNDERTAKEN. FUTURE EVALUATIONS OF EXOGENOUS CHANGE FORCES SHOULD FOCUS MORE ATTENTION ON ACTUAL RATHER THAN ANTICIPATED OUTCOMES IF WE ARE TO GAIN UNDERSTANDING OF THE SOCIAL PROCESSES ASSOCIATED WITH ADJUSTMENT TO PLANNED CHANGE PROGRAMS.

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