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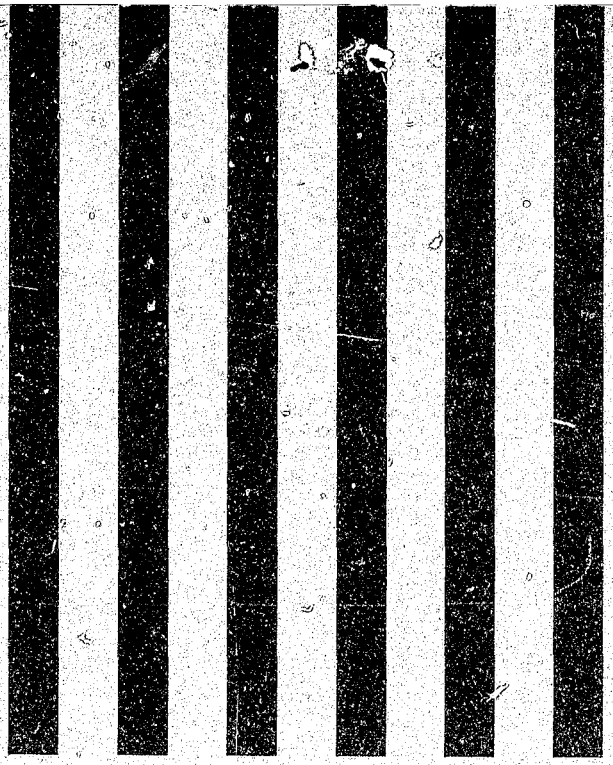

MINNESOTA 2010

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A PROJECTION OF ARRESTS & CONVICTIONS IN MINNESOTA

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MINNESOTA 2010

A PROJECTION OF ARRESTS AND CONVICTIONS

Stephen Coleman, PhD
and
Kathryn Guthrie

Criminal Justice
Statistical Analysis Center
1986

Minnesota State Planning Agency
550 Cedar
St. Paul, MN 55101
(612) 296-7819

NCJRS

JUL 7 1987

ACQUISITIONS

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FOREWORD

We are experiencing a renewed interest in crime and criminal justice. Nationally, there is a Federal initiative to combat the drug dilemma and associated criminal justice issues.

Prison and jail overcrowding is a national concern. Many states are in a position of having to release serious offenders because there is no room to hold them in existing correctional facilities.

In Minnesota, we are becoming more concerned about increases in violent crime, the use of drugs, the number of youth gangs, and child abuse. Almost daily the media carries reports on violent crime in our communities.

However, we need to keep crime in Minnesota in perspective. Minnesota has one of the lower crime rates in proportion to the size of our population. Only 10 other states report lower crime rates. Our prison incarceration rates are among the lowest in the country.

We are often considered a model in the area of criminal justice. Our new prison in Oak Park Heights has received international recognition. We have been a leader in establishing sentencing guidelines. Our procedure is being replicated at the federal level and in other states. We have a statewide training effort underway to fight child sexual abuse. Our state provides programs in crime prevention and victims' compensation. Recently, the state began a new anti-drug enforcement and education program.

To deal with the complex problem of crime in Minnesota, it is important to expand our understanding of the issues and to redouble our efforts to control crime. We must form a partnership at every level of government, including community and neighborhood participation. Our partnership must extend across the races. The State Planning Agency is committed to helping to form such partnerships and to involve minority and neighborhood advocates in the legislative and policy process. The challenge is before us.

Lani Kawamura
Director
State Planning Agency

COMMENTARY

Congratulations to you and your staff for an outstanding report. I am distressed by the set of circumstances delineated in the report, *A Projection of Arrests and Convictions in Minnesota Through 2010,* but I concur with my staff that your offices' presentation of the data will be helpful in addressing the problem of violent random street crime.

Now begins the difficult tasks of developing a reasonable and effective response to the problem.

Victor L. Propes
Executive Director
Council on Black Minnesotans

I wish to make several comments in relation to the *Projection of Arrests and Convictions in Minnesota Through 2010.*

Firstly, on behalf of the Minnesota Indian Affairs Council, I would express a note of appreciation for the work the Planning Agency has done in this area. It's clear your agency is genuinely concerned with the growing crime problem among American Indians, and my review of the literature concludes that you seek to address the need for alternative programming rather than emphasizing a stronger law enforcement policy. I believe such an approach will result in dramatic decreases in the number of felony arrests throughout the specified time frame.

Because the projections in your report suggest a significant increase in violent crime committed by Indians, the Council is naturally concerned with such a provocative statement. My review of your literature and other reports require that I agree in some aspects of *"Projections."* However, I maintain discriminatory practices occur within the field of criminal justice which tend to result in selective law enforcement and vigorous prosecution of American Indians. . . .

"Projections" clearly casts a negative image upon American Indians, perhaps unwarranted given my comments. In any event, the issues raised by the report ought to be presented to state policy-makers and it ought to serve as a challenge to basic principles set forth in the constitution. Again, I suggest Indians become involved in crime through lack of social and economic opportunities.

Roger Head
Executive Director
Indian Affairs Council

Note: This letter appears in its entirety in the appendix.

CONTENTS

II

DISPLAYS

EXECUTIVE SUMMARY

Two strong demographic trends are expected to occur in Minnesota over the next 25 years: (1) the passage of the "echo boom" — the children of the baby boom generation — through the crime-prone ages, which are roughly from age 15 to 25; and (2) the steady growth of the Black and American Indian populations. The projected changes in the population can have an effect on the criminal justice system independently of whatever changes are made to the system by policy and practice. However, the magnitude of projected changes can be modified by policies aimed at reducing the crime rate. The projections tell us what may happen if nothing is done to ameliorate the underlying social conditions that foster crime in our society.

The relative magnitude and direction of projected trends are more significant than specific numerical values reported in the projection. As with all projections into the future, the numbers cited here are subject to error. Factors that may influence the reliability of the projections include possible changes in future rates of birth, death, migration, and criminality in the population, as well as changes in the law, social and economic policies, and the practices of the criminal justice system.

Findings

Statewide only a small increase in annual arrests (+12% or 15,000 arrests) is likely by 2010 as a direct result of changes in the population; and most of this increase will take place after the year 2000. (All changes are computed in relation to the averages from 1982 to 1984.) The implication of this finding is that if there is a large increase or decrease in crime or arrests statewide, it is most likely not the result of demographic changes, but may instead reflect changing police practices or changing criminality in the population.

Statewide felony convictions, as linked to population characteristics, will likely remain at current levels through the year 2000, but convictions may then increase somewhat by 2010 for a net increase of about 15% (1,060 annual convictions).

The number of persons convicted of felony crimes and sentenced to prison each year may go up about 28% (320 commitments) by 2010, but the increase would be mostly after the year 2000. The number of persons convicted of felonies and sentenced to county jails annually may go up about 12% (420) by the year 2010.

Sherburne, Chisago, Wright, and Isanti counties all have young, rapidly growing populations that may bring large percentage increases of 60% or more in arrests and felony convictions. Hennepin County and Minneapolis may also see large increases in arrests and felony convictions (+50%), which are correlated initially with increases in the White population and later with the growth of the Black and American Indian populations. St. Paul, however, is not likely to have any significant increase in arrests and convictions; its demographics are different from Minneapolis.

Arrest and conviction rates among the races vary greatly. Whites are responsible for the great majority of crime in Minnesota. **However, arrest rates and felony conviction rates among Blacks and American Indians are substantially greater than those of Whites for certain types of crimes.** In 1983 Whites were the predominate offenders in most felony crimes, especially in damage to property, certain types of sex crimes (e.g. child sexual abuse), and narcotics. Blacks and Indians were involved in 54% (224/422) of robbery prosecutions and 42% (39/94) of homicide prosecutions. The high rate of convictions of minorities for violent crimes is a principal reason for the disproportionate number of minorities in the state's prisons — currently, 29% of adult inmates (696 of 2,403).

The ratio of Black to White felony convictions among 18-year-old males in 1984 was over 7 to 1; the comparable Indian to White ratio was 6 to 1. In a single year about 10% of Black and American Indian males, age 18, are convicted of felonies. These ratios are even greater for violent crimes, such as robbery. On the average, a Black male in the 18-to-39 age bracket is about 60 times more likely to be convicted of robbery in a year than a White male in that age range; on the average, an American Indian male in those ages is about 24 times more likely to be convicted of robbery than a White male. Juvenile arrest statistics show similar differences across the races.

Policy Implications

The differences among the races in crime rates are a measure of how far our society has yet to go in bringing minorities into the mainstream. If these projected trends toward more crime and a criminal justice system increasingly populated by minorities are to be averted, policy makers and citizens must work to bring down the high rates of serious crime, and most especially, the exceptionally high rates of violent crime among young Black and American Indian men. One does not have to look into the future to recognize that this is a concern that can and should be dealt with now.

The complex relationships among age, race, and crime vary by crime type, which suggests that policies must be tailored to specific crimes and their groups of perpetrators.

Counties with large projected increases need to be monitored, and contingency plans to deal with significant changes may be desirable.

The state is not likely to need any major prison construction, barring significant changes in policy by the Legislature or Sentencing Guidelines Commission. Nevertheless, the Department of Corrections projects that state prison populations may reach capacity in three to five years.

Significant jail construction has resulted in adequate jail space in almost all counties. Hennepin County, however, is likely to have the greatest space problems.

Given the projected increase of minority offenders in the criminal justice system, concerns of fairness in arrest, prosecution, and sentencing will need to be monitored and addressed.

A long-term perspective is needed on the problem of reducing crime. Policies that improve family life, reduce child abuse, and better economic conditions, education, and job opportunities will reduce the incentive for young persons to go into crime in years to come.

The effect of sentencing on crime must also be considered in crime-reducing strategies. This is the subject of a study now in progress at the Criminal Justice Statistical Analysis Center, State Planning Agency.

1

INTRODUCTION

Purpose of This Study

The purpose of this study is to project to the year 2010 criminal justice trends that may result from changes in the state's population. Prepared by the Criminal Justice Statistical Analysis Center, Minnesota State Planning Agency, this analysis reflects a primary function of the Center and of the State Planning Agency: the analysis and interpretation of trends for policy makers.

Trend analysis and forecasting can be important tools for decision makers. The criminal justice projections provided here are long-term. Short-term forecasting is more precise because it does not involve as many unknowns as long-term projections. Short- and long-term projections are similar to near- and farsightedness. Both are needed for 20/20 vision.

These forecasts are meant to be used as a guide, rather than as perfect measures of future occurrences. Many factors, such as changes in public policy, will affect the specific statistics included in this report. Our intent is that this study will encourage policy makers to develop programs directed at the reduction of crime, thereby making these forecasts obsolete.

A look into the future is also important because it requires an evaluation of the present and past. Forecasting uses current and historical data to project the time to come. Forecasting magnifies the trends of the past and present. If there are problems with our current situation, forecasting can determine if they are likely to escalate. For the first time, this analysis presents current arrest and conviction rates for specific subgroups in the population. This focuses the issue to a degree not possible before.

The heart of our projection is to use demographic trend information to establish a projection baseline for the future of criminal justice in Minnesota. Not only is it possible to make sound demographic projections to the end of this century and beyond, but we also know that a strong link exists between population demographics and crime.

Age, Sex, and Race

Clearly, the size of the population is a primary factor in determining number of crimes committed and the number of offenders that enter the criminal justice system. Furthermore, it has been observed for centuries that most criminals are young men. In recent years this observation has been demonstrated to hold in a large number of studies. Most of these studies relate crime or arrest rates with the number of persons in "crime-prone" years, as for example, 15 to 29. (See Anderson (1976, 1977), Fox (1978a, 1978b), Gladstone (1979), President's Commission (1967), Washington State (1980).) Changes in the age distribution then can be used as a second factor for predicting changes in the criminal population and subsequent criminal statistics. The sex ratio in a population at various ages is a third demographic factor that can be used in crime projection (e.g. Gladstone (1979)).

The demographic analysis identifies the effects of the "echo boom," who are the children of the "baby boom." Although the number of juveniles in the crime-prone years has been decreasing recently, and with it the number of juvenile arrests, this situation will reverse in the 1990's. This crime-prone group is of central importance to this study.

In Minnesota the Census reports that minorities are 3% of the population. Yet minorities account for a much greater proportion of arrests, convictions, and new commitments to state penal institutions. According to the Department of Corrections, 31% (766/2,485) of the adult prisoners in Minnesota prisons in 1985 were Black or American Indian; among juveniles in state institutions the minority proportion was 27% (45/165) in 1985.

Among Minnesota's minority groups, it is the Blacks and American Indians who are most disproportionately represented in the criminal justice system. To incorporate these two minority groups into the projection, we have developed separate population projections for these two groups in Hennepin and Ramsey Counties, and for the cities of Minneapolis and St. Paul. (Minority populations in other parts of the state are too small for projections to be made.) This is the first time that population projections for these two minority groups have been available, and the projections may be useful to policy makers in a variety of contexts. These projections are made by age and sex as well.

Our inclusion of minority races in the projection does not mean that persons of minority races are inherently more criminal than the White population. The great majority of crime in Minnesota is caused by Whites — in 1983 about 80% of 9,783 felony prosecutions were of Whites, 14% Blacks, and 5% American Indians. Our method of projecting the future relies on factors which correlate strongly with crime; race is one of these factors, as are sex, age, and geographical location. But our projection is not an explanation of the root causes of crime, which are largely unknown.

By including minorities in this study we hope to identify further the nat-

ure and scope of the crime problem as it affects the minority communities, in the belief that the first step to solving a problem is to identify it. Persons of a minority race are also much more likely to be victims of certain crimes. An indication of the problem is given by comparing the number of homicides among Whites with that of minorities in Minneapolis in 1984. According to data from the State Health Department, there were five homicides among 99 deaths of Whites in the ages 18 to 31. Among Blacks and American Indians there were 6 homicides among 24 deaths in that age group. These figures echo the national data that show that murder is the leading cause of death among young Black males.

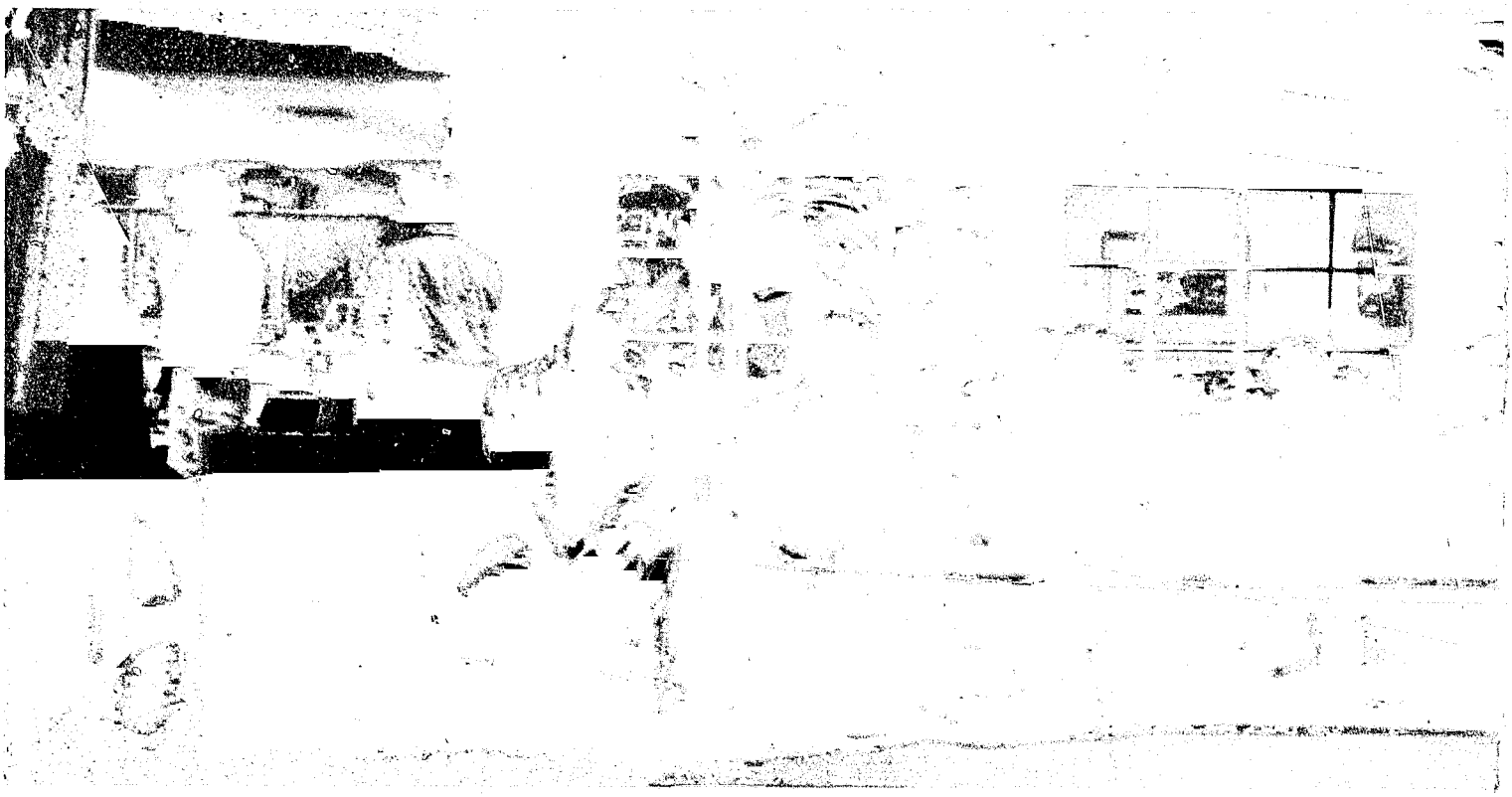
The complexity of the relation between race and crime becomes more apparent as one examines the data. As we show, the relationships among age, race, and crime vary by crime type and are not the same for Whites, Blacks, and American Indians. The very complexity of the patterns suggests that simple explanations of crime will not be found and that, perhaps, policies must be tailored to specific crimes and their groups of perpetrators, who may have different motives.

The reader is strongly encouraged to read the authors' "Firm Convictions" report, which complements this study in important respects. That report gives a more comprehensive description of the prosecution of serious crime than here, and it discusses significant disparities in how minorities are prosecuted and sentenced in Minnesota in comparison to Whites. For the most part our research traces racial disparity to causes other than discrimination. For example, persons convicted of a crime where a gun was used are more likely to go to prison. This is especially true if the crime was committed in Hennepin County as opposed to the many rural counties. This primarily reflects the differences in prosecution and sentencing among the counties, not racial discrimination. Because more minorities live in Hennepin County than any other county, and because they are involved in many of the gun crimes, they are overrepresented in prison.

The Impact of Economics and Policy

Some have argued that economic conditions can also be used as a basis for prediction, and if used might eliminate any predictive power of the racial factor. In practice, there is no comprehensive data on the social or economic status of persons in the criminal justice system, whereas the state has accurate data on the age, race, and sex of criminal defendants in its criminal history files.

Having restricted the projection to those factors for which (1) data is available and (2) which correlate strongly with criminal statistics, we



must caution the reader that the projections are limited to trends that may result from changes in the population. Our view is that population factors can be considered on their own merits as predictors of future criminal justice activity. Nevertheless, ongoing policy initiatives and changes in practices by criminal justice personnel will inevitably have an impact on the future. Recent criminal justice trends resulting from changes in discretionary practices have been discussed in a separate report, "Firm Convictions," (Coleman and Guthrie, 1985). Changes in the underlying rates at which persons commit crimes will also affect the projections.

Because no one knows what policy changes may occur in future years, there is no way to include them in this projection. If, for example, a future change in policy results in a greater proportion of felony defendants going to prison, the effect of demographic change will still be felt on the prison population, although the specific numerical forecast made here will be off target because of the policy change. Because of the potential impact of policy changes on the forecasts, one ought to look more at the directions and strength of trends reported in this forecast than at the specific numbers.

Data Sources

The projections are based on statistics from three state databases: demographic (Census), arrest, and felony statistics. We discuss them in turn.

Demographic Database. The State Demographer (whose offices are also part of the State Planning Agency) has made projections of the population for each county by age interval and sex. The population projections are made for each five years up to 2010. The Demographer's projections are derived from 1980 Census data together with projected rates of birth, death, and (county) migration. (See the attached technical Appendix for more detail.)

This demographic data received several refinements for use in this project. First, the cohort age intervals, which were in 5-year increments, were interpolated so that juveniles (ages 10 to 17) can be distinguished from adults — a necessary division for studying the impact on the criminal justice system. Next, the age distributions of Blacks and Indians were developed and projected for select counties and cities where they are a significant proportion of the population. The minority projections were done with the advice of the State Demographer, but they are not official forecasts of the Demographer. The minority forecasts are the responsibility of the authors.

Arrest Statistics. Minnesota has a strong and successful record of implementation of Uniform Crime Re-

porting (UCR). All jurisdictions report incident and arrest data to the Department of Public Safety, Bureau of Criminal Apprehension.

Felony Defendant Database. Minnesota is one of the few states to have complete and accurate computerized data on the prosecution of felony cases. This data describes the processing of all felony defendants in the state from arrest to disposition, and includes such information as county of arrest, age, sex, race, crime charged, and type of disposition or sentence for each defendant. This database is maintained by the Bureau of Criminal Apprehension and is part of their criminal history file. Prior to receipt of this data by the State Planning Agency, information that might identify any specific defendant was removed.

Report Organization

Separate projections were made for each of the three databases described previously — demographic, arrest, and felony court. Each data set and its accompanying forecast are discussed in a separate chapter. Each chapter begins with background information which provides a context for the conclusions and major findings, and concludes with state, county, and city projections.

The report consists of two volumes. This volume describes and analyzes the major trends. The second volume, entitled "County and Twin City Projections in Criminal Justice," contains detailed projections of arrest and felony convictions in the state for each county and for Minneapolis and St. Paul.

★★★★★

A child is a person who is going to carry on what you have started. He is going to sit where you are sitting, and when you are gone, attend to those things which you think are important. You may adopt all the policies you please, but how they are carried out depends on him.

He will assume control of your cities, states and nations. He is going to move in and take over your churches, schools, universities and corporations ... the fate of humanity is in his hands.

Abraham Lincoln

★★★★★

2

MINNESOTA'S DEMOGRAPHIC FUTURE

Method and Limitations

Minnesota's future population will be determined by a combination of factors: the current population, the birth rate, the death rate, and the migration of people. To project the future population one must also project future birth and death rates, as well as changes in migration patterns. The usual method, which we have followed, is to base future projections on current rates, modifying them slightly to take into account anticipated changes. A detailed discussion of our methods and assumptions follows in the Appendix.

The number of crimes that occur annually depends more on the number of persons in certain subgroups in the population than on the size of the whole population. Most criminals are males, in their late teens or early twenties, and persons of minority races are overrepresented. It is the sizes of these population groups that most concern us in forecasting crime. The sizes of these groups also vary markedly from one city or county to another in Minnesota, which means that one must take a local approach to forecasting.

Because the number of children born each year is known, this number gives us a very accurate estimate of the number of young adults — the high crime rate population — 15 to 25 years into the future. The main uncertainty in the forecast, so far as it involves persons already born, is in the prediction of future residence or migration patterns. This is more a problem for city or county forecasts than it is for a state forecast, however, because local population is more affected by migration than is the state population as a whole.

Another concern is that Black migration estimates have been high because of possible undercounting in the 1970 census. Therefore we assume that migration rates will decrease in the future. This assumption mainly affects Hennepin County. Migration estimates, as with all other estimates, have been made in the conservative direction. Refer to the section on migration patterns later in this chapter for further discussion.

Boom — Bust — Echo Boom

The conventional view of the major demographic changes in the last half of the 20th century is baby boom — baby bust — echo boom. Over the last few years many schools have been closed as the baby-boom cohorts passed out of school age and were replaced by a much smaller population of children in most areas of the state. Looking ahead, however, demographers point out that the baby-boom generation is now at an age to have children of their own, which will cause a second or echo boom. The second wave will be smaller than the original baby boom, however, because the average family size has declined from the past generation.

From this sequence of broad population changes one might expect a decline in crime rates as the baby boom passes out of the crime-prone years. This seems to have happened already. In Minnesota the crime rate for reported index crimes (murder, rape, robbery, aggravated assault, burglary, larceny, and arson) reached a peak in 1980 — at 480 crimes per 10,000 population (Bureau of Criminal Apprehension, 1984, p 52). The crime index has since declined to 390 in 1984, the level it was in 1974.

The echo boom will not be the only demographic trend affecting Minnesota's future crime rate. Blacks and American Indians, the two minority races that we consider in the analysis, have population growth rates that do not fit the boom — bust — echo boom model. (There is too little data on Asian Americans to project their population growth in Minnesota.)

A recent report by the State Demographer (Office of the State Demographer, 1983) gave these facts about Minnesota's American Indian population based on the 1980 Census. From 1970 to 1980 the Indian population grew by 50%, from 23,000 to 35,000. The birth rate substantially exceeded the death rate — by 24.9 per 1000 among Indians versus 7.9 per 1000 among Whites. More than half of the American Indian population was under 21 in 1980, compared to a median age of 29 for the state population as a whole.

Migration Patterns

The Black population has a growth pattern similar to that of Minnesota's American Indian population but a different migration pattern. The state's Black population increased from 35,000 in 1970 to 53,000 in 1980. Net migration of Blacks into Minnesota is very strong, and it substantially adds to the size and growth rate of Minnesota's Black population. For example, from 1970 to 1980 the net migration of Black males into Hennepin County among 25-to-29 year olds (who were 15-19 in 1970) was estimated to be 111 per 100 (in 1970). That is, the number of Blacks moving into Hennepin County in this age group exceeded the number already here.

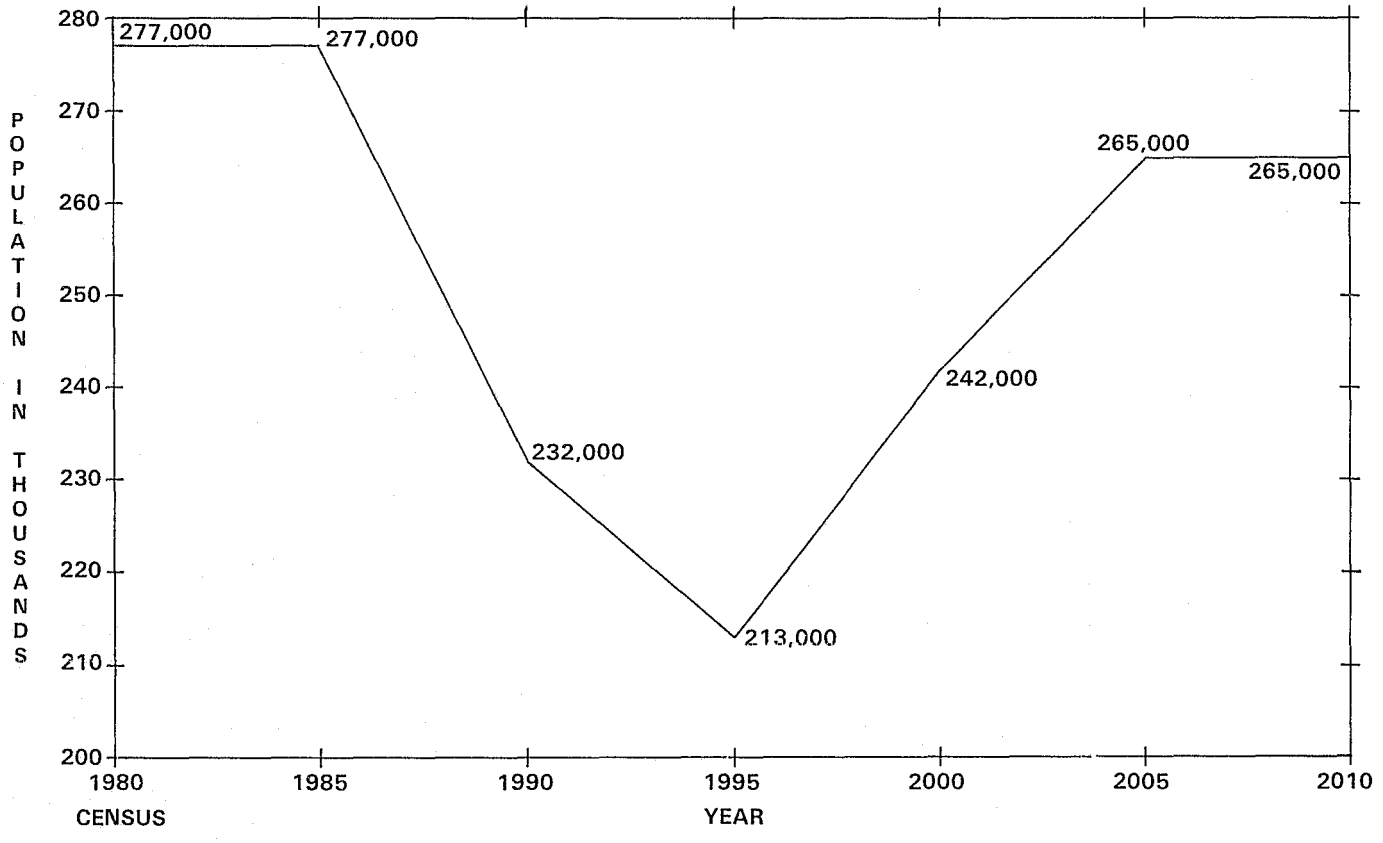
In constructing the projections, we assume that Black migration into Minnesota will not remain at such a high level indefinitely but will slow

by 25% in the 1980's and by an additional 10% in each succeeding decade. There is no strong empirical data on which to project future changes in migration rates, but a reduction in the future rate is also indicated by the likelihood that young Black men were undercounted in the 1970 Census, which would tend to inflate the past estimate of the migration rate. An additional correction was made for Hennepin County to reduce the projected future migration rates of Black males in the 25-34 age group to the level of Black females of those ages. If this is not done, the model leads to a projection that Black males will eventually outnumber Black females by about 5,000 — which seems a most unlikely eventuality.

Birth Rates

Black birth rates (or fertility rates) are slightly less than those of American Indians in Minnesota but much higher than for Whites. The fertility rate for Black women ages 15 to 19 is 132 per 1,000; this compares to the rate among Indian women of 143 per 1,000. By contrast the White rate for this age group is only about one-fourth the minority rate, at 32 per 1,000. In the 25-to-29 year old age group — which are the ages of highest birth rates for all races — the birth rates (per 1,000) are 189 for Blacks, 251 for American Indians, and 119 for Whites. In this projection, birth rates are assumed to be constant throughout the forecast period.

Display 1. **State Population Projections**
The crime-prone population, males 18 to 24 years old, is expected to fall to its lowest level in 1995.



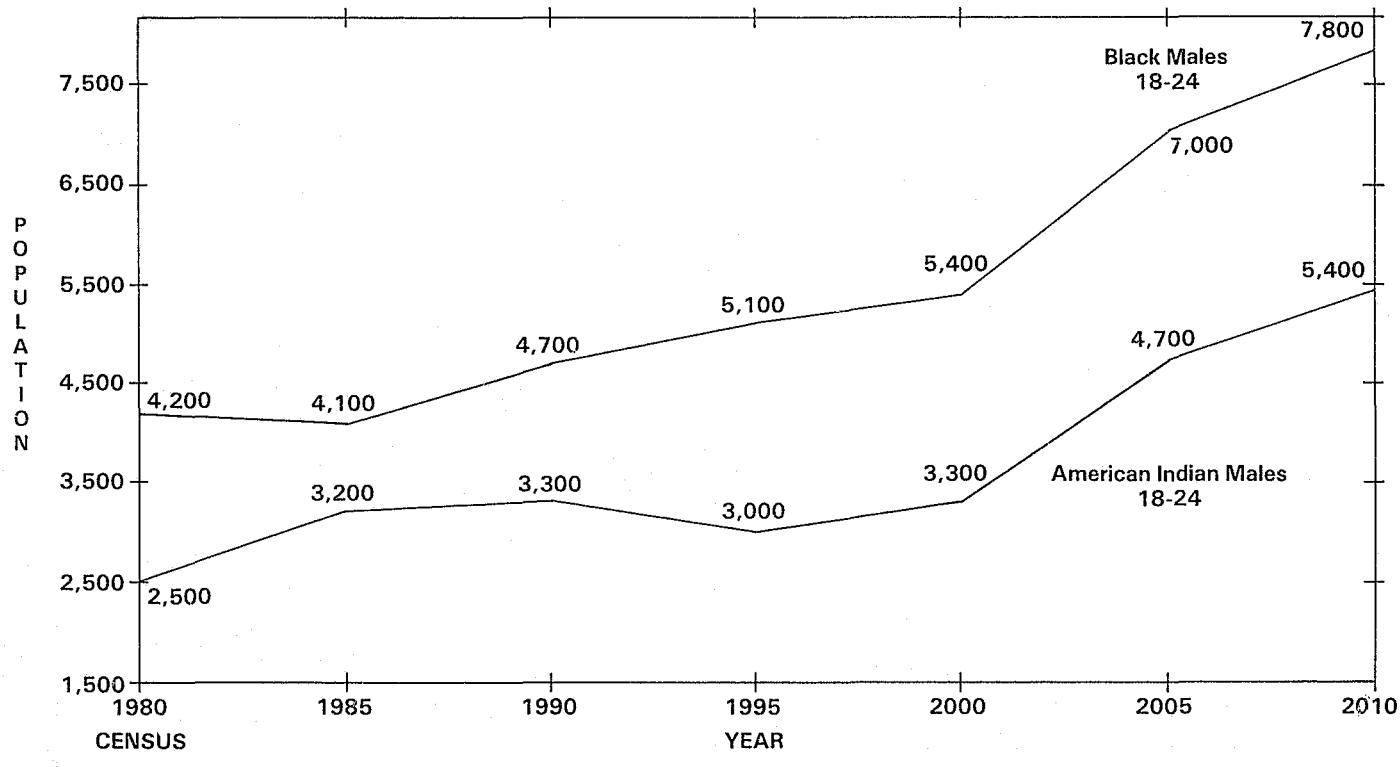
State Population Projections

The state population of males in the 18-to-24 age bracket was 277,000 at the 1980 Census. The size of this crime-prone group is projected to fall to 213,000 by 1995 and then to increase to 265,000 in 2005 (the echo boom) and remain at about that level through 2010. (See Display 1.)

Over the period from 1980 to 2010, Minnesota's population of Black males, 18-to-24 years old, is expected to grow from 4,200 to 7,800. The increase in this age group for American Indians will be from 2,500 to about 5,400. (See Display 2.) In other words, the Blacks in this age group may increase in numbers by 86%, and the American Indians by 116%, from 1980 to 2010. The number of White males in this age group may decrease by 24% from 1980 to 1995 — from 270,000 to 205,000 — then increase by 23% from 1995 to 2010 (up to 252,000) for a net decrease of 7% statewide.

Display 2. **State Minority Projection**

Black and American Indian males, 18 to 24 years old, are expected to increase steadily through the year 2010.



Population Change Uneven Among Counties

From now until 2010 some Minnesota counties will grow at a fast rate while others will decline in population. A sample of counties at both ends of the growth spectrum is shown in Display 3. High growth rate counties include Sherburne, Chisago, Isanti, and Wright -- all just north of the metropolitan area. From 1980 to 2010, the number of males between 15 and 19 in Sherburne county is expected to increase by about 68%; the number of males between 20 and 24 may increase 104%. The comparable statistics for the state populations of 15-to-19 and 20-to-24 year olds are projected changes of −26% and −13%. Among counties with sharply decreasing populations in the crime-prone age brackets are Pipestone, Lake, and Yellow Medicine. For Lake County a decline of 56% in the number of 15-to-19 year olds is projected, along with a drop of 48% in the 20-to-24 year old group of males.

The state is projected to have a decrease of 26% in the 15-to-19 year old male group, and a decrease of 13% in the 20-to-24 bracket. Hennepin and Ramsey counties will lose numbers in these categories at a faster rate than the state average. (See Display 3.)

Display 3. **County Population Projections**
Counties with large changes projected in crime prone age groups.

	Males 15-19		Males 20-24	
	Population 1980	Change 1980-2010	Population 1980	Change 1980-2010
Sherburne	1,589	+68%	1,598	+104%
Wright	2,968	59%	2,268	92%
Chisago	1,291	56%	918	96%
Isanti	1,248	50%	856	96%
.				
.				
State	202,000	−26%	195,000	−13%
.				
.				
Hennepin	41,705	−36%	49,951	−36%
Ramsey	21,757	−41%	25,209	−40%
.				
.				
.				
Pipestone	632	−46%	452	−24%
Yellow Medicine	732	−48%	570	−34%
Lake	642	−56%	551	−48%

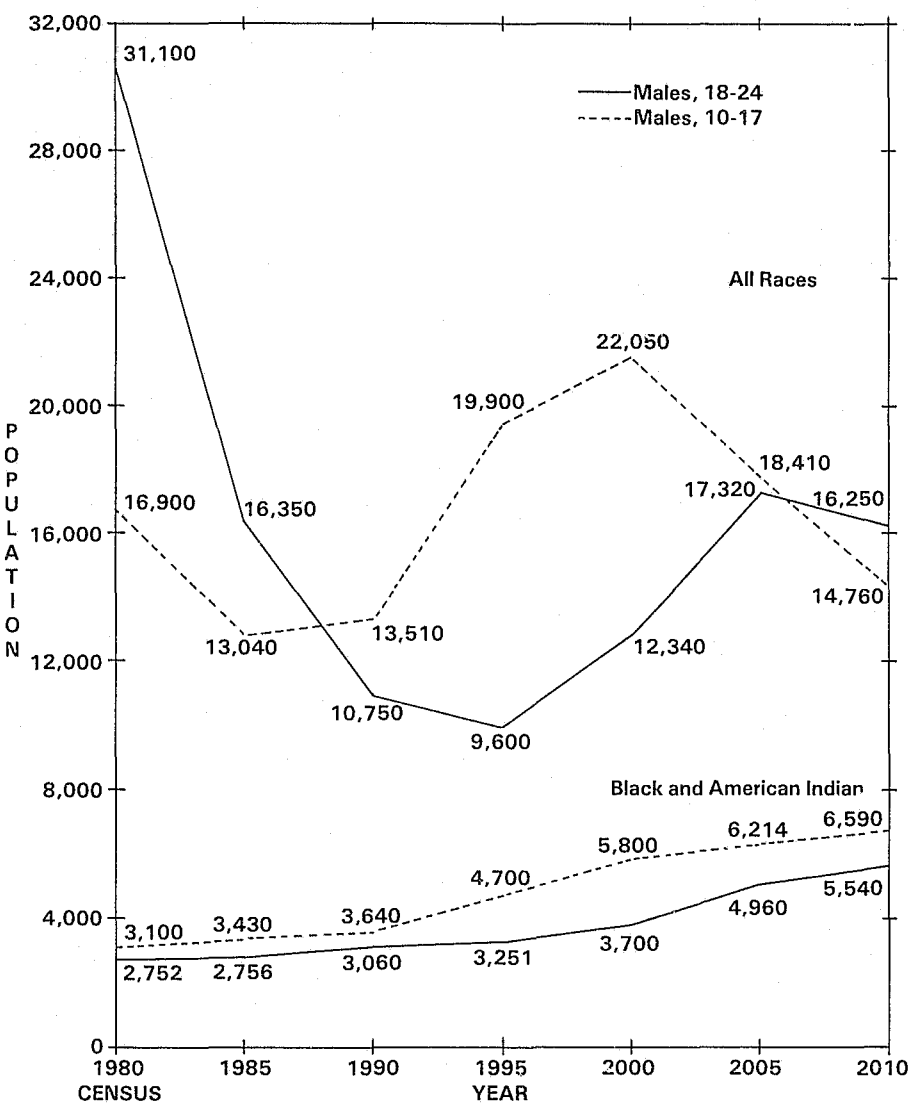
Source: "Minnesota Population Projections 1980-2010," State Demographer, State Planning Agency, May 1983.

Minority Population Growth Affects Twin Cities

Because of the concentration of Blacks and American Indians in the Twin Cities, especially in Minneapolis, the cities will have different patterns of population change than Hennepin and Ramsey Counties. Moreover, as we describe later, the higher crime rates in these two minority groups may have a particularly strong impact on the cities as the minorities become a greater proportion of the cities' population over the next 25 years.

The population of male juveniles (10-17) in Minneapolis has already reached its minimum level in 1985 (at about 13,000) and will increase until about the year 2000, when the number may peak at about 22,000; after that the echo boom will age and the juvenile population will again decline. (See Display 4.) The population of young male adults (18-24) in Minneapolis will continue to decrease until 1995, when the echo boom reaches adulthood, causing this crime-prone age group to increase in size again. Because of migration patterns that in the past have differentially affected juveniles and young adults in Minneapolis, the adult population echo boom will not be as large as the juvenile echo boom.

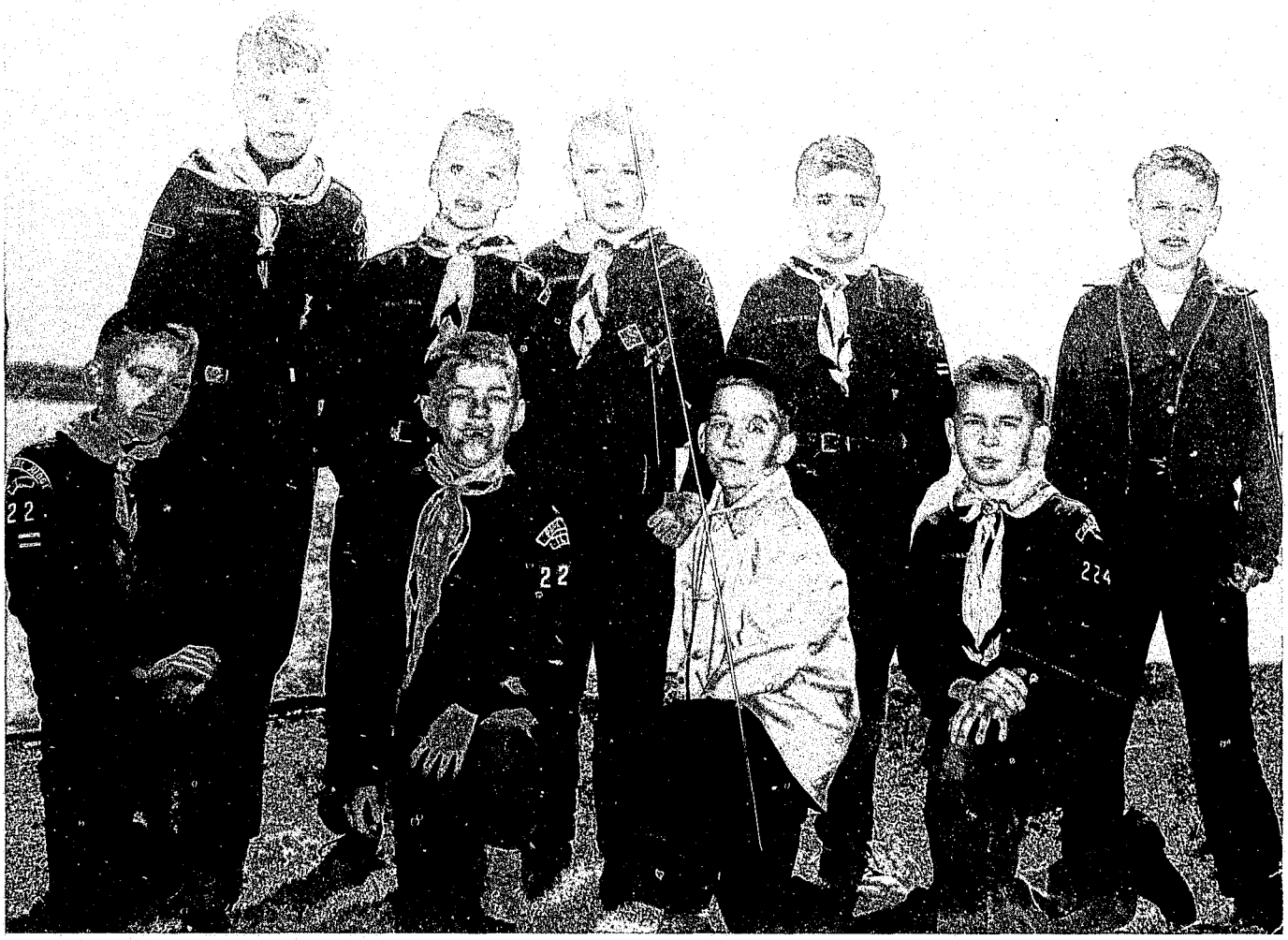
Display 4. **Minneapolis Male Population Projection**
Juveniles are projected to increase, while adults will decrease through the year 1995. A steady increase in minorities is projected.



The Black and American Indian populations in Minneapolis are likely to have a steady increase in size throughout the forecast period. Black juvenile males (10-17) are projected to increase from 2,300 in 1980 to 4,800 in 2010; Indian male juveniles, from 800 in 1980 to about 1,700 in 2010. As a percentage of the entire juvenile (10-17) population in Minneapolis, these two minority races may increase from 19% in 1980 to 45% in 2010. The minority proportion will, however, hold fairly steady — at about 25% — from 1985 to 2000 as a result of the echo boom in the White population.

The Black and American Indian population of St. Paul will also increase over the forecast period, but at a slower rate and in smaller numbers, than in Minneapolis. In general, Ramsey County and St. Paul will have a much more even population in the crime-prone age brackets over the next 25 years than will Hennepin County and Minneapolis.

The recent influx of immigrants from Southeast Asia to the Twin Cities will undoubtedly have an impact on the demographic projection. But at this time we have too little information on these groups to construct separate projections for them. Traditionally, groups of Asian ancestry have had low crime rates. Persons of Asian descent have been included in the "White" category in this analysis.



3

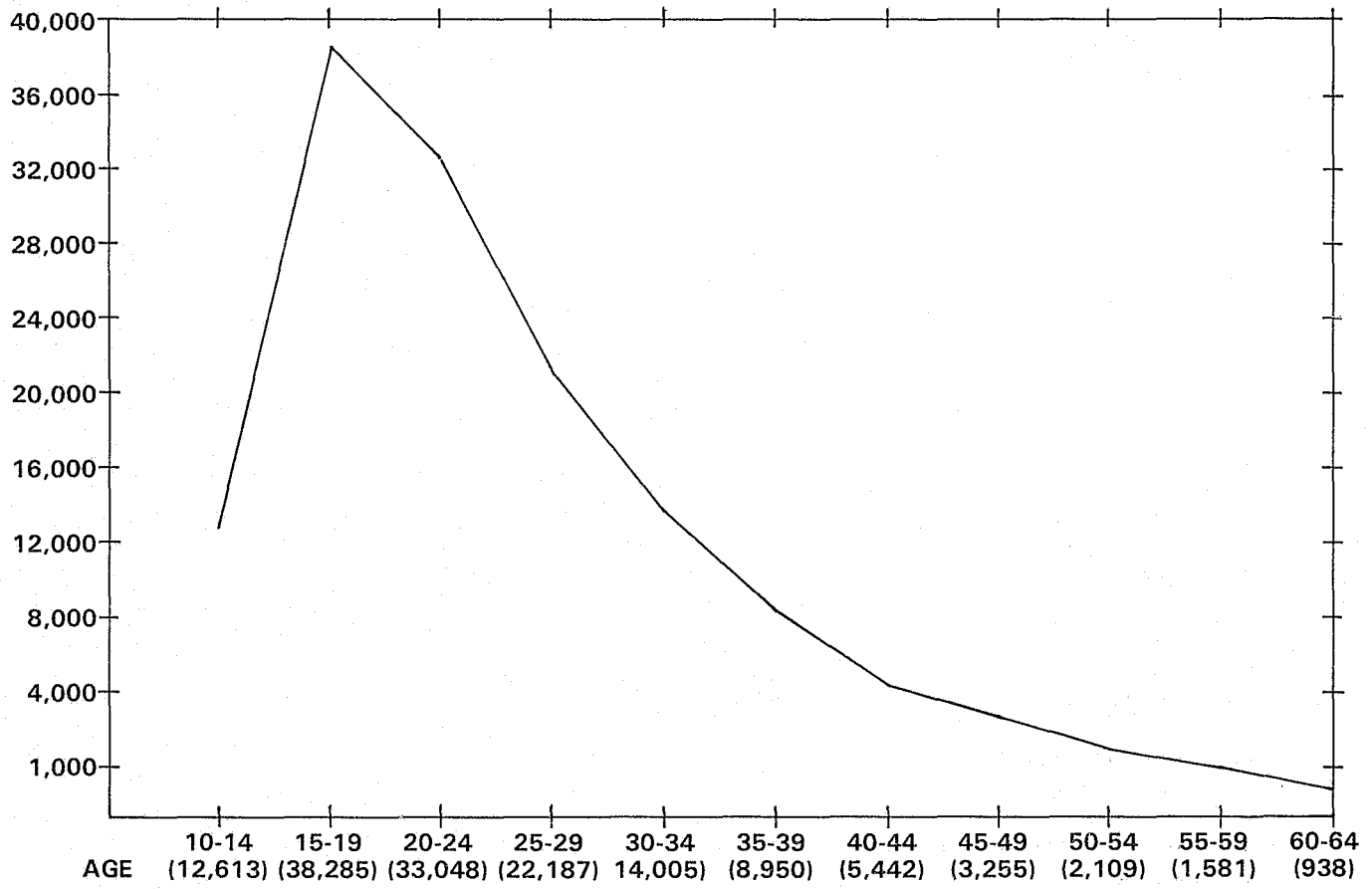
ARREST PROJECTIONS

An arrest is the entry point to the criminal justice system for most criminals. Arrests concern us for two reasons: The number of arrests is a reflection of the crime rate, and, secondly, the number of arrests is an indicator of the demands on the police and courts for services. We project arrests instead of crimes committed because we do not know who commits a crime unless an offender is arrested; the demographic information needed to make demographic-based projections of criminal incidents is not available. Generally, however, crime moves in the same direction as changes in arrests and convictions.

The relation between arrests and crime is complex. It is widely believed that only about half of all crimes are reported to law enforcement, and of those that are reported, only a fraction are solved by an arrest. The clearance rate varies with the type of crime. According to statistics of the Bureau of Criminal Apprehension, of reported burglaries, only 12% are solved at arrest in Minnesota. For robberies the clearance rate is 23%. The reported clearance rate for drunken driving (DWI) is 99%, but this is high because drunken driving only comes to the attention of the police at the time of an arrest. Across all types of crimes in Minnesota, about 41% of reported crimes are cleared by an arrest. The number of police, their effectiveness, and their arrest policies also have an effect on the number of arrests in any locality.

Here we project the number of ar-

Display 5. **Age at Arrest**
The number of Minnesota arrests in 1985 peaked at age 18.



Source: "Minnesota Crime Information," Bureau of Criminal Apprehension, St. Paul, MN, 1986.

rests for specific types of crimes as well as for all crime types combined. Where the projection is that arrest numbers will be changing, one must anticipate that the change in numbers of crimes committed will be magnified several times over. An expected increase in the number of burglaries of, say 1,000, would cause us to expect an increase in reported burglaries of, perhaps, 8,000 with that many again going unreported. We will not use arrests to try to project future crime rates, however, because of the many uncertainties that intervene between crime and arrest.

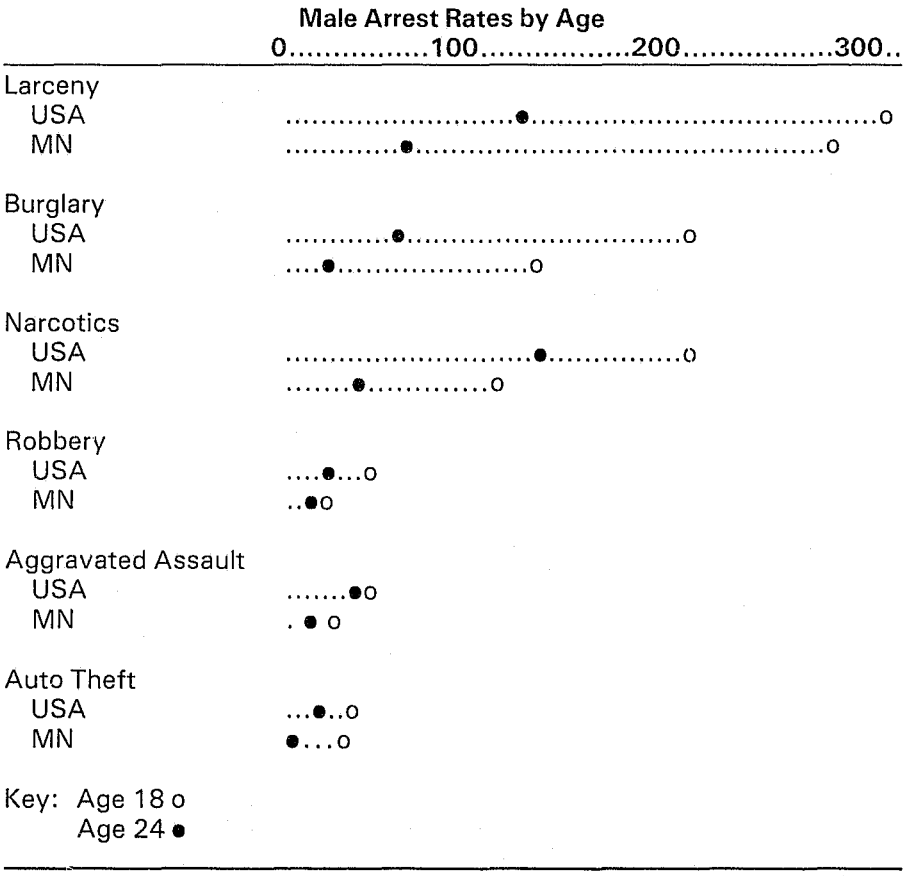
The impact of arrests on the judicial system also changes depending on whether the person arrested is a juvenile or an adult. Different practices and laws govern the handling of juveniles and adults. Generally, one can say that arrests will have an immediate impact on police booking and detention facilities, and will reduce officers' time in the field. Many of the persons arrested are released without any further court action (we do not know the exact number).

The arrest forecasts made here are a guide to anticipated changes in crime and in demands for police and court services, although much depends on local practices, which are beyond our scope to consider. We do not use arrest data to make projections of court activity, but instead we make separate projections for the numbers of persons prosecuted for felonies; felonies and gross misdemeanors are the only crimes for which adequate state data exists to project court activity.

Display 6. **Arrest Rates for 18 and 24-Year-Old Males**
Arrest rates (per 10,000 population in 1980) vary sharply by crime and age, while Minnesota rates are lower than national averages.

	USA*		Minnesota	
	18	24	18	24
Murder	4.5	4.4	1.4	2.1
Rape	8.6	8.4	3.4	5.2
Robbery	62	30	15	5.5
Aggravated Assault	59	56	18	17
Burglary	215	72	131	22
Larceny	310	125	300	74
Auto Theft	54	19	50	8.9
Narcotics	208	132	120	54

*Based on reported arrests from agencies covering 75% of the national population. Source of national statistics, "Age-Specific Arrest Rates, 1965-1983," FBI, 1984.



The Demographics of Arrests

The number of arrests has a strong relation to the size of a population and to the age structure of the population. Most arrests are of older juveniles or of young adults. (See Display 5.) Males and persons of minority races are highly overrepresented in relation to their proportion of the general population. Age-specific arrest rates for 18- and 24-year-old males in the nation and in Minnesota are compared in Display 6.

Crimes that show a marked relation to age include robbery, burglary, larceny (theft), auto theft, and narcotics. In each of these crimes the arrest rate drops sharply from 18 to 24. For burglary, in Minnesota the

18-year-olds' rate is 131 arrests per 10,000 (18-year-old males), compared to 22 arrests per 10,000 among 24-year-old males. Crimes that do not vary as greatly with age include murder, rape, and aggravated assault. (Aggravated assaults are those that cause serious bodily harm.) Arrest rates are lower in Minnesota than nationally (FBI, 1984).

Because of the way that arrest data is collected, one cannot provide age-specific arrest rates for minorities beyond the adult-juvenile breakdown. Lumping all adults together as we have done obscures the age-specific relationship because most of the crimes are committed by young adults rather rather than older adults. Therefore, the arrest rates cited in Displays 7,8,9, for adult Whites, Blacks, and American Indians, clearly understate the arrest rates among young adults, which must be considerably higher. The estimation problem is not as severe for juveniles. The juvenile arrest rate is based on the population in the relatively narrow 10-to-17 year age bracket, which covers most juvenile crime, and so it more accurately depicts the arrest rate for the crime-prone years.

White arrests far outnumber minority arrests, but arrest rates among Blacks and American Indians in Minnesota are much greater for certain types of crimes than are the rates for the White population (Displays 7,8,9). For example, White juvenile males have a robbery arrest rate of 5 per 10,000. Among Black juvenile males, the robbery arrest rate is estimated to be 246 per 10,000 population; and among American Indians juveniles it is 80. It is almost 50 times more likely for a Black juvenile to be arrested for robbery than a White juvenile; for an Indian juvenile the chance of a robbery arrest is about 16 times greater than for a White juvenile. Generally, rates for Indians are lower than those of Blacks for the violent crimes, burglary, and larceny, but higher for auto theft.

Juvenile and Adult Arrest Rates By Race in 1980

White males account for the great majority of arrests in Minnesota; Black and American Indian males, however, have higher arrest rates for the sizes of their populations.

Display 7. White Males

	Juveniles*		Adults	
	Total Arrests	Rate	Total Arrests	Rate
Murder	10	0.35	48	0.35
Rape	26	0.92	185	1.35
Robbery	139	5	300	2
Aggravated Assault	276	10	907	7
Burglary	2,632	93	2,004	15
Larceny	7,106	250	6,630	48
Auto Theft	1,097	39	708	5
Narcotics	1,256	44	3,300	24

*Juvenile population for ages 10-17, which is 282,715. Adult population is 1,372,155.

Rates are per 10,000 population.

Display 8. Black Males

	Juveniles*		Adults	
	Total Arrests	Rate	Total Arrests	Rate
Murder	3	**	16	9
Rape	13	30	53	31
Robbery	107	246	153	90
Aggravated Assault	63	145	192	113
Burglary	253	583	199	118
Larceny	771	1,780	823	486
Auto Theft	100	230	85	50
Narcotics	44	101	250	148

*Black Juvenile population for ages 10-17, which is 4,340. Adult population is 16,920.

**Too few for reliable estimate.

Rates are per 10,000 population.

Racial Bias at Arrest

An important issue is whether the relatively high rates of minority arrests stem from high minority crime rates or are a result of the police concentrating their arrests on the minority communities. In a study of this issue at the national level, Hindelang (1981) compared FBI arrest statistics with the reports of crime victims, as recorded through the National Crime Survey conducted by the Bureau of the Census. The comparisons show a close relation between what victims say and what arrest records show in regard to the age, race, and sex of criminals. FBI arrest data and victim survey data both show, for example, that about

Display 9. **American Indian Males**

	Juveniles*		Adults	
	Total Arrests	Rate	Total Arrests	Rate
Murder	2	**	11	12
Rape	1	**	17	18
Robbery	29	80	48	52
Aggravated Assault	25	69	89	97
Burglary	157	434	124	135
Larceny	264	729	372	404
Auto Theft	110	304	65	71
Narcotics	22	61	74	80

*American Indian Juvenile population for ages 10-17, which is 3,620. Adult population is 9,210.

**Too few for reliable estimate.

Rates are per 10,000 population.

one-fifth of robberies were accounted for by Black juveniles, who are only 2 percent of the general population.

Hindelang's analysis of national survey data shows that the incidence of crimes against persons by young (18-to-20 year old), Black males is exceedingly high, with a rate of 8,500 such offenses per 10,000 in that subgroup per year. The fact that homicide is the leading cause of death among young Black male adults also confirms the high incidence of violent crime in this subgroup.

The question of bias in arrest statistics has also been studied through the self-reporting of crimes committed. The self-reporting method of measuring crimes has many difficulties, depending as it does on peoples' willingness to admit to crimes as well as on their memories. Past sociological research has produced conflicting results. Elliott and Ageton (1980) analyzed self-reported juvenile crime as recorded by the National Youth Survey. They report significantly more crimes committed by Black youth than by White youth, and they relate the lack of that finding in other self-reporting studies to methodological problems. They analyzed the race differences in relation to social class, as well, and report that although lower class correlates with more crime, it affects Blacks and Whites alike. They also observed that the Black/White ratio increases with the seriousness of crimes against persons.

Roger Benjamin and Choong Nam Kim (1978) studied the involvement of American Indians in Minnesota's criminal justice system. One of their conclusions was that Indians receive more unfavorable treatment, especially at arrest and in northern counties, than other races.

The possibility that Whites are not being arrested for the crimes they commit, whereas minorities are — which might explain the disparity among the races — is partly refuted by the following example. In 1984, 361 Whites were arrested for robbery in Minnesota (adults and juveniles). If Whites were arrested at the same rate as Blacks, there would be 50 times more arrests, or about 18,000 White robbery arrests. But in 1984 Minnesota had only about 3,000 reported robberies.

As data in the next chapter shows, the differences between the races follow through to felony convictions. From our reading of the statistical evidence, arrest differences do not stem from large numbers of unfounded arrests of minorities or from systematic underarresting of Whites. This is not to say, however, that no discrimination occurs in minority arrests.

The Arrest Projection Method and Limitations

Our method of projecting arrests is simple. We compute the age-specific arrest rates for various subgroups in the population. Then we project the sizes of these subgroups at five-year intervals from 1985 to 2010. Next we multiply the arrest rate by the projected size of each subgroup, which gives an arrest projection for each subgroup:

future arrests =
current arrest rate ×
future population

Finally, we add up the arrest projections for each subgroup to obtain the total arrests projected in any year. (More detail is provided in the Appendix.) We have done this for every county in the state and also for Minneapolis and St. Paul. The Minneapolis, St. Paul, Hennepin and Ramsey County forecasts incorporate separate projections by race.

The state projection is the total of the projections of the 87 counties. Arrests by the State Highway Patrol cannot be assigned to any county and so cannot be forecast with the same demographic methods. Therefore, we exclude Highway Patrol arrests from the state arrest projections.

Because the number of arrests varies randomly from one year to another in any locality, we have smoothed out the current arrest rate estimates by averaging the number

of arrests in each county over three years, from 1982 to 1984. The result is a modified or smoothed 1983 arrest total, which is then compared to the 1983 population estimate to calculate a base arrest rate for 1983. Thus the arrest projections are actually forecasts of the average over three years, with the middle year at the projection year. The smoothing out of year-to-year fluctuations has its greatest effect in areas of small population, which tend to have high percentage changes from one year to the next, and for crimes of low frequency, such as the violent crimes. Smoothing also averages out recent trends which are not related to demographic changes, but which may stem from changes in police practices. Averaging has the effect of discounting the likelihood that recent trends in practices will continue on unabated into the more distant future.

We report arrest forecasts separately for adults and juveniles because of the different impact of these two groups on the criminal justice system, and because the two groups have different patterns of criminality.

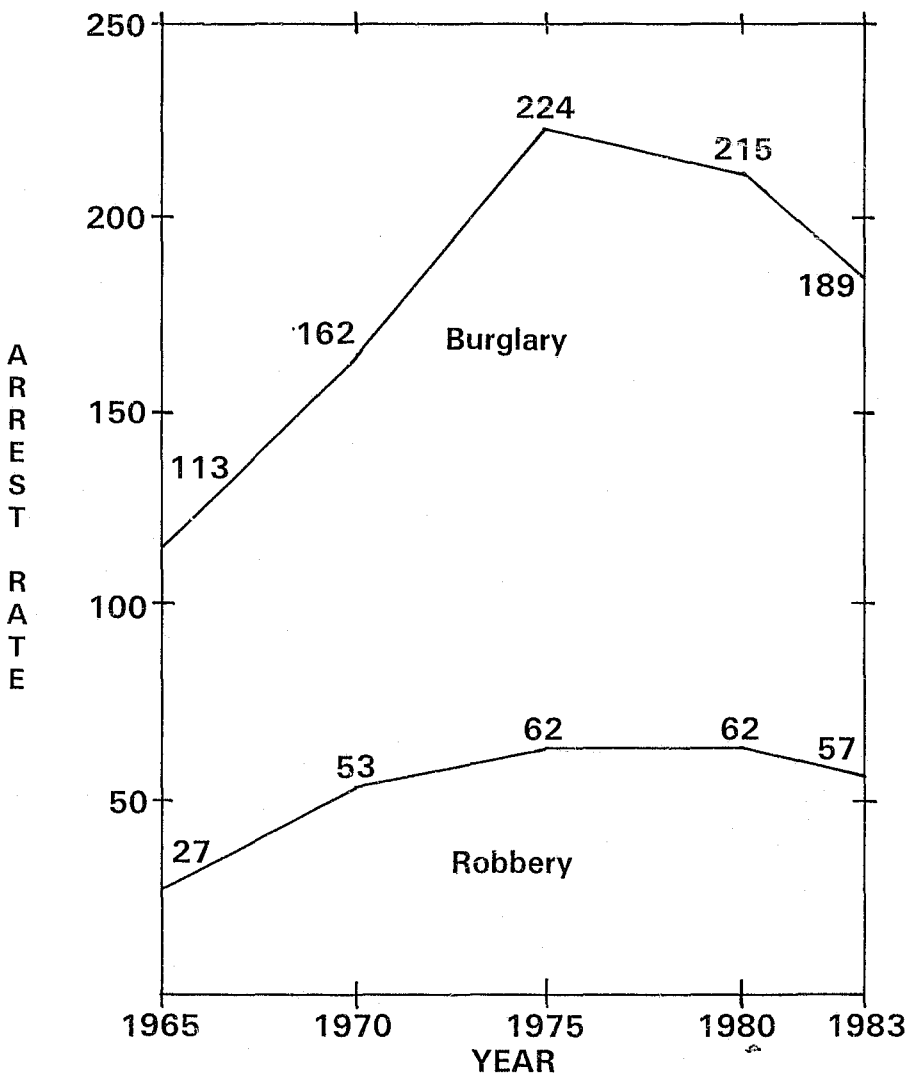
Several types of crimes are broken out in the projection for each county. These include the violent crimes (murder, rape, robbery, and aggravated assault combined), burglary, and larceny; total arrests are projected separately. (See Volume II for complete state and county projections.) The specific crimes identified in the projection are not always the most common, but are generally regarded as among the most serious and best reported.

Our projection of future arrests in Minnesota is based on an assumption that the age-specific arrest rates among groups within the population will not change very much. For example, if the arrest rate of 18-year-olds is now 20 per 10,000 and the number of 18-year-olds in the population increases by 100%, then we would project an increase of arrests by 100% within this age group.

Unfortunately, this is not a solid assumption. Past experience has shown that age-specific arrest rates can change substantially over time. National arrest statistics (FBI, 1984) over the period from 1965 to 1983 show that the arrest rate of male 18-year-olds for robbery was as low as 27 per 10,000 in 1965, then increased to 62 in 1970, before decreasing to 57 in 1983 (Display 10). Burglary shows a similar pattern. Thus the arrest rate over the past two decades increased at a faster rate than the increase in the population which resulted from the baby boom.

The national arrest rates in 1983 are the lowest among the previous eight years or more, which suggests that the aging of the baby boom cohorts

Display 10. **Historical Arrest Rates in the United States**
Arrest rates for 18-year-old males (per 10,000) peaked in about 1975.



Source: "Age-specific Arrest Rates," FBI, 1984.

has somewhat reduced the underlying rate of criminality in the population. Because we expect the population of young adults and teenagers to increase again (the echo boom), it seems likely that the decline in age-specific arrest rates will cease. In fact, our method of forecasting will most likely be conservative, in that, judging from past experience, the echo boom may raise the age-specific arrest rates to a higher level than they currently are. Our best guess is that, if we are in error, arrest totals will be higher than our projections in those areas experiencing the most rapid population growth among the crime-prone age groups.

Changes in arrest totals from 1982 to 1985 suggest that projections for some crimes may be more accurate than for others. (Statistics for 1985 became available just as this study was nearing completion.) Recent arrest totals for the "Part I" crimes (the violent crimes, burglary, larceny, auto theft, and arson) show little year-to-year change; total Part I arrests went from about 33,300 in 1982 to 31,500 in 1983; 32,300 in 1984; and 34,300 in 1985. Over the same period, DWI arrests increased from 22,000 in 1982 to 35,400 in 1985; simple assaults increased from 5,400 to 8,900; and narcotics arrests went from 4,100 to 5,700. These dramatic increases were likely the result of changes in law enforcement arrest policies.

We have no way to predict whether these policy changes will persist or be superseded by other shifts that will affect arrests for particular crime types. We expect that the projections made here for the Part I crimes of burglary and larceny (which are the great majority of Part I arrests) will be more accurate than the projection of total arrests.

Accuracy Tested

Arrest data for 1985 became available after the 1985 projection was made, and it provides a test of the prediction method. Strictly speaking, we should compare a three-year average, 1984 to 1986, with the projection for 1985. But a direct comparison shows that actual arrests in 1985 were 12% over the state projection — at 137,000 instead of the predicted 122,000. Arrests for violent crimes were up 23% over the predicted level, but burglary arrests were 2% below prediction, and larceny arrests were only 3% above prediction. Comparing the number of reported crimes in 1983 with 1985, one finds that reported crimes were up 8%, which is less of a change than in the arrest totals. Arrests for certain types of crimes have increased faster than population demographics would suggest. If these higher arrest rates continue for several years, one can assume there has been a fundamental change in arrest practices or crime rates, and the projections should be raised accordingly.

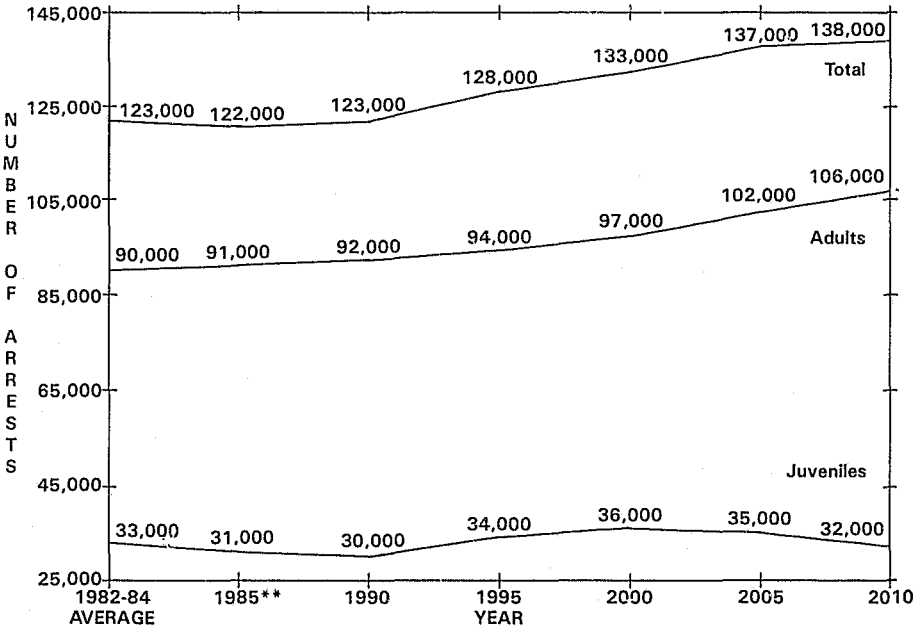
State Arrests Likely to Increase 12%

Over the three years from 1982 to 1984, Minnesota averaged about 123,000 arrests, excluding those by the Highway Patrol. Highway Patrol arrests, mainly for drunken driving (DWI), accounted for another 8,000 arrests. The projection is that state arrests may hold at about the same level until 1990, after which arrests are likely to increase steadily through 2010, in so far as arrests stem from changes in the population (See Display 11.) By 2010 the state total may be about 138,000, which would be an increase of 12% over the 1982-84 average (excluding Highway Patrol arrests.)

Examining the separate arrest projections for juveniles and adults (Display 11), one observes that juvenile arrests may decline slightly up to the year 1990, but then increase from 1990 through 2000 —

Display 11. State Arrest Projection

Slow but steady increases for adult and total arrests are expected until the year 2010, while juvenile arrests vary.



*Excludes Highway Patrol with about 8,000 arrests in 1983. Columns may not sum to total because of roundoff.

**Actual arrests for 1985 were: juvenile 35,500; adult 102,000; total 137,500.

the echo boom — before decreasing a second time. Juvenile arrests will peak in about 2000. Adult arrests, by contrast, may have a slow but steady increase over the entire forecast period.

The state arrest projections also vary by type of crime, depending first on how prevalent the crime is among juveniles (or adults), and second upon the incidence of the crime among the rapidly growing minority population. Violent crime arrests are projected to increase at a much faster rate than burglary arrests. By 2010 violent crime arrests may be up 35% (1,000+) over the 1982-84 average, compared to a modest 5% increase (250 arrests) forecast for burglary. Refer to the report supplement containing county and state forecasts.

County Arrest Projections

A small number of counties in Minnesota may experience substantial increases in arrests between 1982-84 (average) and 2010 as a result of population growth. These counties include Sherburne (+92% arrests), Chisago (+80%), Isanti (+75%), and Wright (+68%). (See Displays 12 and 13.) Another nine counties are predicted to have arrest increases in the 20% to 50% range; this group includes Hennepin County (+25%) because of a projected arrest increase of 38% in Minneapolis.

The forecast identifies 12 counties that are most likely to have a decline in arrests exceeding 20% between 1983 and 2010. This group includes several small rural counties in southern and western Minnesota, as well as St. Louis, Lake, and Ramsey (but not St. Paul).

The counties where the greatest changes in arrests are expected may also be the first to see a significant increase in arrests. Sherburne, Chisago, and Isanti are projected to have arrest increases of 20% or more as soon as 1990, whereas the increases may be later to arrive in other counties.

The county projections ought to be the most accurate for the counties where the increases will be the greatest and appear the earliest. A projected increase for 1990 implies that many of the teenagers and young adults who will add to the arrests then are already born and residing there. Where the forecast increase is later, there is a greater chance that a change in birthrate, migration, criminality, laws, or arrest practices might put the forecast in error.

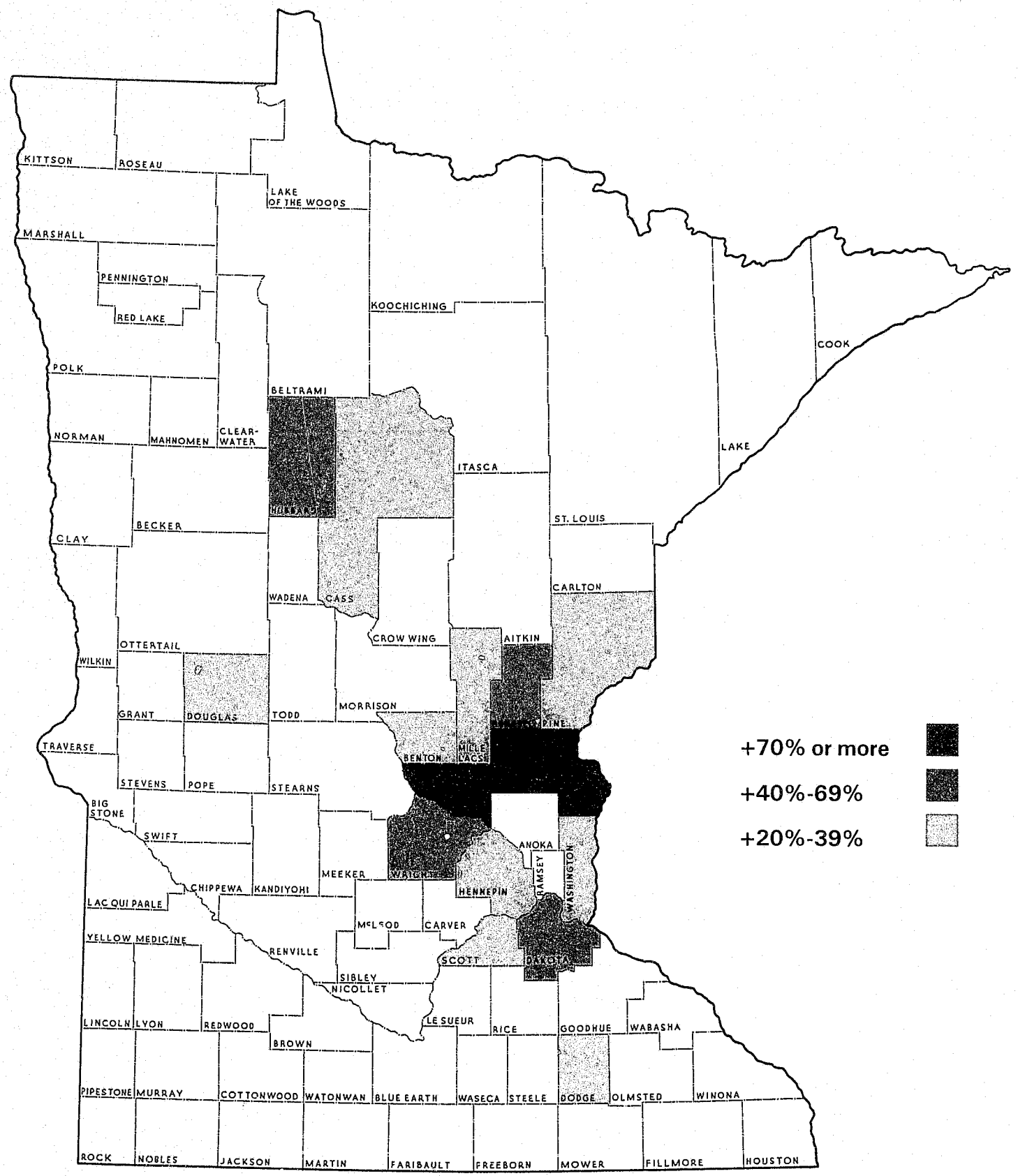
Display 12. County Arrest Projection

Counties where a change in total arrests exceeding 20% is projected to occur between 1982-1984 and 2010.

	Annual Arrests		Percent	Year When +20%
	1982-84	2010	Change	Change Reached
Sherburne	720	1,390	+92%	1990
Chisago	330	600	80	1990
Isanti	280	490	75	1990
Wright	1,260	2,120	68	1995
Kanabec	290	420	44	2000
Hubbard	70	100	42	1995
Dakota	6,700	9,450	41	2000
Minneapolis*	26,240	36,170	38	2000
Douglas	390	510	31	2005
Pine	120	160	31	2005
Cass	420	540	29	2005
Dodge	320	400	27	2005
Hennepin	44,730	55,760	25	2005
Benton	210	260	24	2005
Washington	2,610	3,180	22	2010
Mille Lacs	530	640	22	2010
Scott	1,970	2,380	21	2010
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
St. Louis	5,610	4,460	−20	2005
Stevens	240	190	−20	2010
Watonwan	155	123	−21	2010
Big Stone	72	56	−22	2010
Traverse	54	42	−22	2010
Pipestone	170	130	−23	2005
Kittson	79	60	−24	2010
Jackson	40	30	−24	2010
Faribault	160	120	−26	2005
Yellow Medicine	90	60	−32	1995
Lake	135	90	−33	1990

*Separate projections were made for Minneapolis and St. Paul.

Display 13. **Counties with Arrest Increases by 2010**



Minneapolis Arrests Projected to Increase

We have made separate arrest projections for Minneapolis and St. Paul. Only Minneapolis is predicted to have a significant increase in arrests, however, so the discussion is limited to that city.

In the forecast we treat arrestees as if they were all persons who reside in Minneapolis. This is a necessary approach because we do not have information on the place of residence of persons arrested. It is obvious, however, that some portion of crimes committed in Minneapolis were committed by persons from other localities, just as Minneapolis residents must sometimes victimize those in other jurisdictions.

The displacement of crimes should not unduly bias the projections. Past research on crime in Minneapolis has shown that most crime is committed by persons who live within a short distance of their victim. Frisbee, et al (1977, p 86) reported that "55% of residential burglary suspects chose a target within 1/2 mile of their home," while not more than 31% lived more than one mile from their victim. For commercial burglary, 60% of suspects lived within one mile (p 112). For street robbery, only 5% came from outside the city (p 162). In stranger assaults, half of the suspects lived within one mile of the place of attack (p 183).

The division of Black arrests in Hennepin County between Minneapolis and the suburbs closely matches the division of Black population. In 1984, 89% of Blacks arrested in Hennepin County were arrested in Minneapolis; this compares with 86% of the county's Black population residing in Minneapolis (in the 1980 Census). So there does not seem to be a large net displacement of arrests (or crime) by Blacks from the city to the suburbs or vice versa.

Among Whites the division of Hennepin County arrests is 48% in Minneapolis and 52% in the suburbs. For violent crimes 64% of county arrests are in Minneapolis. These figures depart from the White population breakdown between Minneapolis and the suburbs, which is 37% and 63%. Thus it seems that either Minneapolis' White residents commit more crimes per capita than those in the suburbs or that suburban criminals are attracted to the city. If the "extra" White arrests in Minneapolis are truly a displacement from the suburbs, then the Minneapolis forecast will overestimate the contribution of Whites to crime in future years, because the crime-prone population (by age) in suburban Hennepin County will likely be increasing more slowly or decreasing more rapidly than that group in Minneapolis.

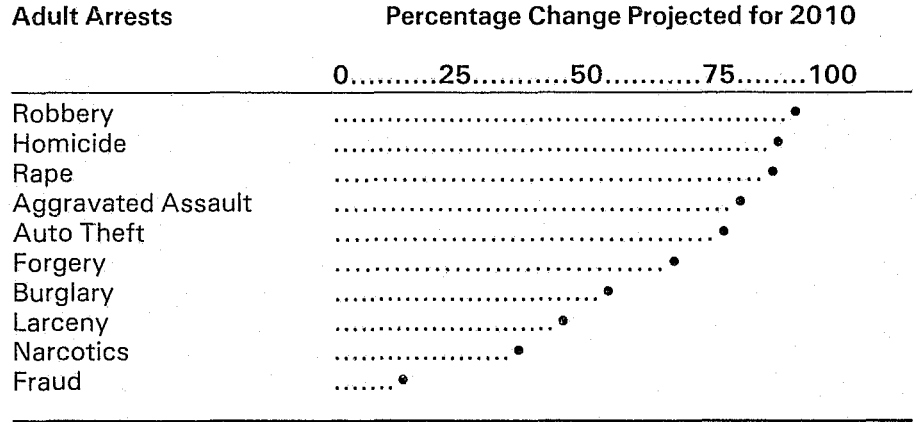
When we calculate arrest rates by race, the fact that almost all minorities reside in Minneapolis, rather than in suburban Hennepin County, and that there is little net displacement of arrests, means that the arrest rates will be a true attribute of the city's population. In computing White arrest rates, the possible inclusion of White suburban residents will tend to raise the arrest rate estimates above what might be attributed solely to Minneapolis residents.

The growing minority population in Minneapolis may have a profound

Display 14. **Minneapolis Arrest Projections**
Arrests for violent crimes are projected to increase at the greatest rate.

	Juveniles		Adults	
Crime Type	**Maximum %**	**Year**	**Maximum %**	**Year**
Violent Crimes	+63%	2000	+84%	2010
Homicide	*	*	86	2010
Rape	*	*	84	2010
Robbery	67	2010	95	2010
Aggravated Assault	64	2000	77	2010
Burglary	57	1995	57	2010
Larceny	60	1995	49	2010
Auto Theft	59	2000	76	2010
Fraud	*	*	17	2010
Forgery	53	2000	74	2010
Narcotics	52	2000	39	2010

*Too few for a reliable estimate.



influence on future crime and arrests in the city. The impact may be greatest on certain types of crimes, namely, those most likely to be committed by persons of minority races. Overall, across all races, we project arrests for violent crimes to increase 63% for juveniles and 84% for adults between 1983 and 2010 as a result of population changes. The predicted increases for burglary arrests are 57% for juveniles and 57% for adults. (See Display 14.) The projected rates of increase are much greater among Blacks and American Indians, however, than among the White population (see Display 15).

For violent crimes the projection is a 29% decrease in White arrests, compared to projected increases of 135% among Blacks and 123% among American Indians. Burglary arrests are forecast to increase among Whites by 13% up to the year 2000, but then decrease by 29% in 2010 compared to the 1983 baseline. Burglary arrests among Blacks are projected to increase by 121% by the year 2010, and among American Indians by 115%. Across all crime types, White arrests are expected to decrease by 28%, while Black arrests are increasing 137% and Indian arrests are increasing 122%. The net result is a projected 38% increase in total arrests.

As a percentage of total arrests in Minneapolis, arrests of minorities may increase steadily from 1983 through 2010. In 1983 about 40% of arrests were of minorities — 67% among the violent crime arrests. These proportions are projected to increase to as much as 69% of total arrests and 86% of violent crime arrests by 2010. (See Display 16.)

Display 15. **Minneapolis Arrest Projections by Race**

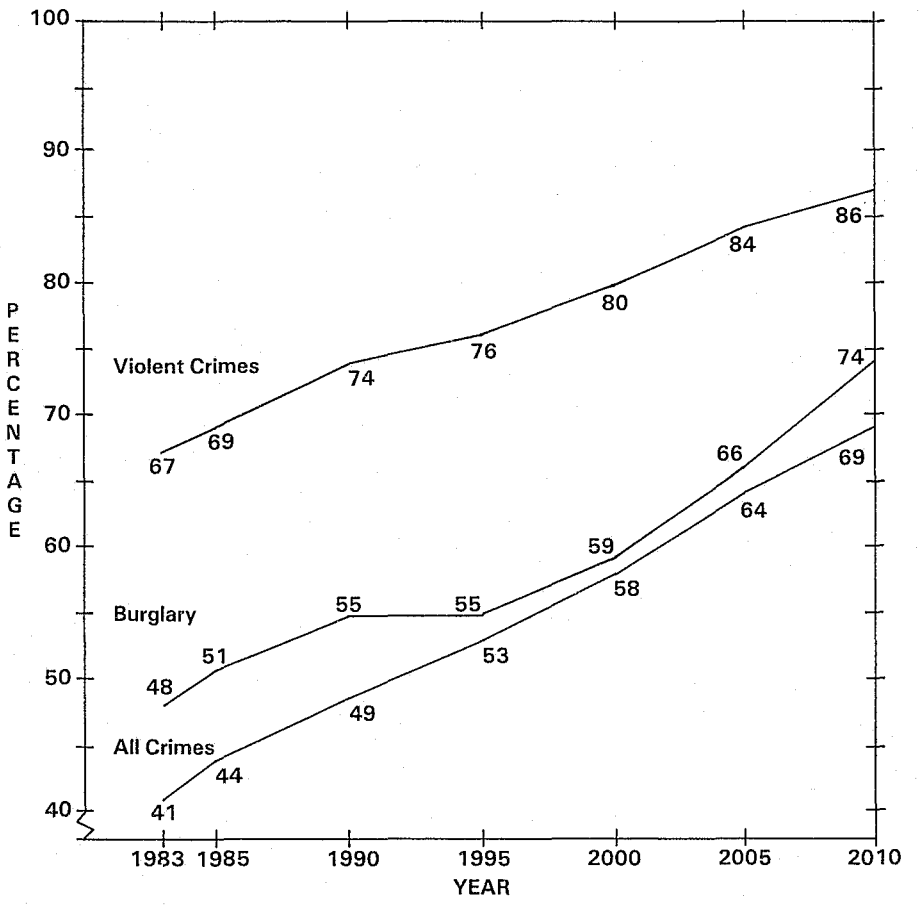
Maximum percentage changes in arrests vary by crime type and race.

	White*		Black		American Indian	
	Max.	Year	Max.	Year	Max.	Year
Burglary	+13%	2000	+121%	2010	+115%	2010
	−29%	2010				
Violent Crimes	−29%	2010	+135%	2010	+123%	2010
All Crimes	−28%	2010	+137%	2010	+122%	2010

*Other minority races are included with Whites.

Display 16. **Proportion of Minority to Total Arrests in Minneapolis**

The proportion of Blacks and American Indians among those arrested in Minneapolis is expected to increase through 2010.



4

FELONY CONVICTION PROJECTION

Future trends in the prosecution of felony crimes will have a strong impact on the criminal justice system, especially on correctional facilities. A felony is the most serious type of crime; it is one for which a prison term of more than one year is possible. Only persons convicted of felonies can be sentenced to a state prison in Minnesota. Over 100 crimes are classified as felonies, including most homicides, sexual assaults, aggravated assaults (but not simple assaults where no serious injury was done), robberies, and burglaries. Theft is a felony if the value of the goods stolen exceeds $250 (formerly $150).

In 1984 Minnesota had about 9,400 felony prosecutions, of which about 7,400 led to a conviction and sentence. (By our definition a felony case is the prosecution of all crimes charged at an arrest for a single criminal incident; a defendant prosecuted more than once for separate criminal incidents will be counted each time.) Most felons in Minnesota are young, White males. The most common outcome of a felony conviction was a period of jail incarceration, usually as a condition of a stayed prison sentence. In 1984 almost 4,000 cases ended with a jail term, compared with 1,200 cases that ended with a prison sentence. Nearly half of the state's jail capacity for the long-term confinement of sentenced prisoners is taken up by those defendants sentenced in felony cases. (See Coleman and Guthrie, 1985, for a detailed analysis of felony case processing and its impact on the state's jails and prisons.)

Data on felony cases is extracted from the state's computerized criminal history files. It includes information on the defendant's age, sex, race, the location of the arrest and prosecution, the various crimes charged, and their dispositions.

If there is more than one crime involved in a felony case, the case is classified according to the most serious crime charged at arrest. We classify case outcomes according to the most serious disposition given the defendant for any of the crimes charged, ranking a prison or jail term that has to be served ahead of any stayed sentence.

Current Felony Convictions are Age-Specific

As with arrests, the number of felony convictions depends on population size and the age-structure of the population. Again, minorities are highly overrepresented in violent crimes against persons in relation to their proportion in the general population. In 1983, 42% (39/94) of homicide cases and 54% (224/422) of robbery cases involved prosecutions against Blacks or American Indians. Whites predominated in other kinds of crimes, especially in damage to property, certain sex crimes (e.g. child sexual abuse), and narcotics. Women are the majority (58%) in fraud cases (bad checks).

Little historical data exists to show how stable current felony conviction rates are, although recently the number has been increasing. National data is not available for comparison.

Information on the race of felony defendants in Minnesota is more extensive than was the race information used for the arrest forecasts. Therefore we are able to make a more detailed calculation of age-adjusted felony conviction rates by race than was possible for the arrest data. Race projections face another difficulty, however, in that the minority population in Minnesota is too small to forecast accurately the numbers of Blacks or American Indians at each year of age. The conviction rates of minority populations made for this analysis are restricted to two age-intervals: 18-to-24, and 25 or older. The first of these intervals covers the most crime-prone years. (Juveniles, under 18, cannot be prosecuted for felonies unless referenced to adult court. Because of the small number of such cases — fewer than 100 per year — we do not include them in the projection.) For this analysis, we treat the population within an age interval as if it is uniformly spread over the ages 18-24, or 25-65.

The relation of felony conviction rates in Minnesota in 1983 to age and race is shown in Display 17. For the general population of males between 18 and 39 the average felony conviction rate is 69 per 10,000 population; from age 18 to 30, however, the rate drops from 190 to 35. (These estimates are calculated by fitting a second-degree polynomial curve to the numbers of felony convictions at each age in the 18-39 interval; the R-squared value, or strength of relation, is .97, which is very strong — 1 is perfect.)

Across races the felony conviction rate varies markedly. For 18-year-old White males the rate is 160 per 10,000, compared to about 1,180 for Blacks, and 1,030 for American Indians males of the same age. (A rate per 10,000 is used for comparison across races and to avoid using decimals, even though there are not 10,000 minorities in that age bracket in Minnesota.) This means that about 10% of Black and American Indian males, age 18, were convicted of felonies in 1983. The differences persist at age 30: when the White conviction rate is 35, the Black rate is 670 and the American Indian's is 320. The ratio of minority convictions to White convictions among males increases between ages 18 and 30, because the White conviction rate drops off more sharply with age. At age 18 a Black male is about seven times more likely to be convicted of a felony than a White male; for Indians the ratio is six to one. At age 30, however, the Black:White ratio is 17:1; and the Indian:White ratio is 9:1.

The conviction rates differ from one crime to another, and different patterns in the age-rate relationship exist across the races. (See Displays 18 to 21.) Sexual assault has a moderate relation to age for Whites and Blacks, but no relation to age exists among Indians, whereas burglary has a strong age dependence across all races (judging from the R-squared value "R sq" shown in the tables). Robbery shows a stronger

Display 17. **Felony Conviction Rates by Age and Race**

The rate of felony convictions in 1983 (per 10,000 population) decreases rapidly with age but remains higher for Blacks and American Indians than for other races.

Age	White	Black	American Indian	All Races
18	160	1,180	1,030	190
30	35	600	320	35
18-39	61	670	460	69
Rsq	.96	.77	.91	.97
Std err	9	180	91	6
Shape	curve	line	curve	curve
Direction	down	down	down	down

Notes: The relationship between conviction rate and age is determined from the better of a straight line or second-degree polynomial curve fitting of arrest to age over the ages of 18 to 39.

Rsq means R squared, or explained variation, a measure of strength of relationship between age and conviction rate (1 is a perfect relationship).

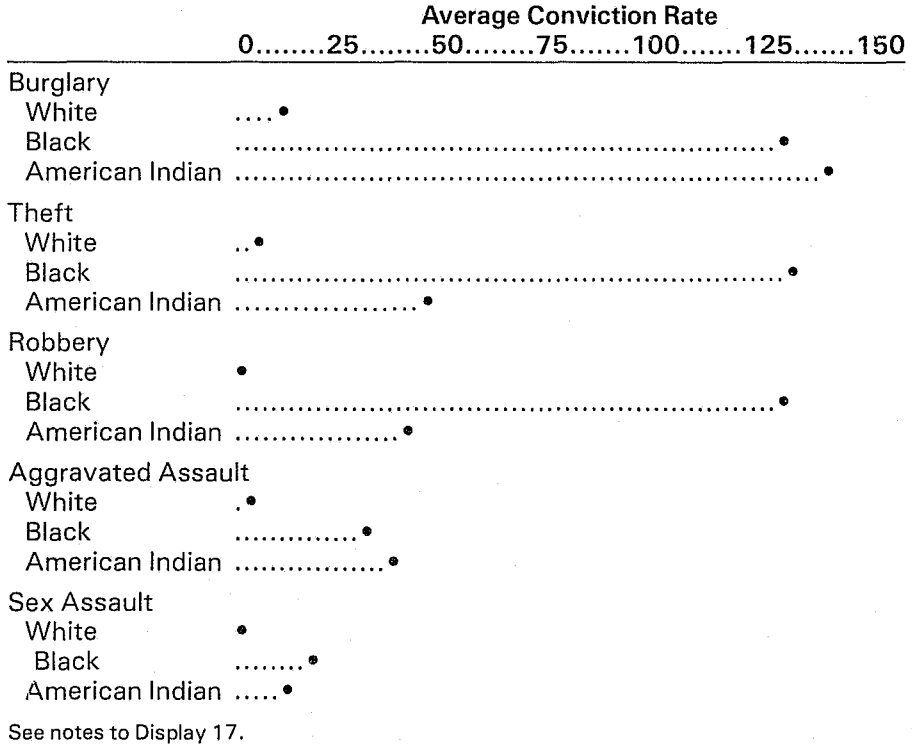
Std err is the standard error (±) in the difference between the estimated conviction rates on the regression curve or line in comparison with the observed conviction rates; it is a measure of how much variation in conviction rates is not explained by age (within a single calendar year).

Shape can be either a curve or a line. A line indicates that there is a straight line relationship between age and race. A curve indicates that convictions decrease more rapidly with age than a straight line.

Direction "down" indicates convictions decrease with age. "Up-down" indicates convictions first increase with age and then decrease.

Display 18. **Felony Conviction Rates by Age and Race**

Conviction rates (per 10,000 population) in 1983 vary strongly across crime and race for males between the ages of 18 and 39.



See notes to Display 17.

Felony Conviction Rates by Crime and Race

Conviction rates for males (per 10,000 population) in 1983 vary by crime, race, and age (18 to 39 years old). The crimes are ranked by estimated strength (Rsq) of relation between conviction rate and age.

Display 19. White Males

Crime at Arrest	Average Rate	Peak Rate	Rsq	Pattern
Burglary	15.6	72	.94	curve down
Robbery	2.0	6	.92	curve down
Theft	8.8	28	.87	curve down
Aggravated Assault	3.7	8	.69	line down
Sex Assault	1.5	2	.35	line down

See notes to Display 17.

Display 20. Black Males

Crime at Arrest	Average Rate	Peak Rate	Rsq	Pattern
Burglary	127	516	.83	curve down
Robbery	127	396	.64	line down
Theft	131	295	.42	curve down
Sex Assault	33	80	.31	up-down
Aggravated Assault	38	107	.21	up-down

See notes to Display 17.

Display 21. American Indian Males

Crime at Arrest	Average Rate	Peak Rate	Rsq	Pattern
Burglary	139	580	.72	curve down
Robbery	49	160	.29	up-down
Aggravated Assault	48	140	.11	line down
Theft	50	121	.06	line down
Sex assault	16	53	ns none	

See notes to Display 17.

age dependence among Whites than among Blacks or American Indians.

The difference in conviction rates across races is especially marked for robbery. The average robbery conviction rate among White males between 18 and 39 is about 2 per 10,000, which compares with 127 for Blacks, and 49 for Indians. The peak or highest rate for a single year's cohort among Whites over this age range is about 6 per 10,000; for Blacks the peak is about 400; for Indians about 160. On the average, a Black male adult is about 60 times more likely to be convicted of robbery in a single year than a White male adult.

For most crimes the conviction rate decreases sharply with age from 18 or 19 on, but for several crimes the peak comes at an older age. Among Blacks, the highest conviction rates occur at the mid to late 20's for sexual assaults and aggravated assaults. Among American Indians this "up-down" pattern in the relation of conviction rate to age occurs for robbery. The differences across races in the relationships between conviction rate and age suggest that underlying differences may exist across races in the types of offenders and their motivation for committing that type of crime.

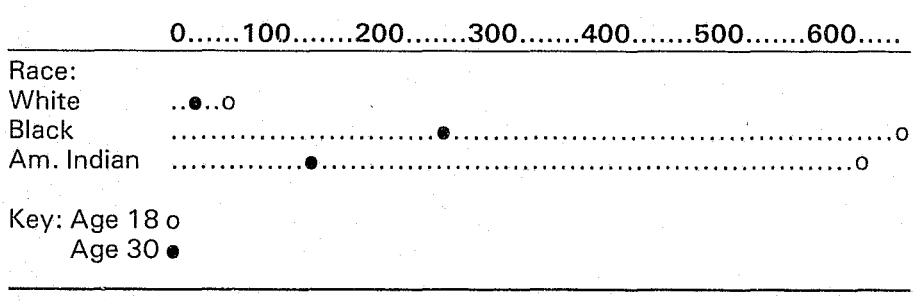
Incarcerations in jail for felony crime convictions are also highly related to age, race, and sex. (See Display 22.) Using 1983 data, we have computed that the jail incarceration rates of 18-to-39 year old males per 10,000 population by race are: White 32, Black 330, American Indian 250. That is, the rate at which Black men are sent to jail for felonies, relative to their proportion in the state's population, is about 10 times that of Whites; for Indians it is about 8 times that of Whites. For 18-year-old males the jail incarceration rates in felony convictions, by race, are: White 92, Black 640, American Indian 620. Jail incarceration rates drop sharply in comparison to population size at older ages. (Prison commitments also show a similar pattern, but because of the small numbers, we have not estimated the relationships.)

Display 22. **Jail Incarceration Rates by Age and Race**

Jail incarceration rates (per 10,000 population) for felony case convictions in 1983 of males decrease sharply over the 18 to 39 year age range but remain higher for Blacks and American Indians than other races.

Age	White	Black	American Indian	All Races
18	92	640	620	109
30	15	270	150	15
18-39	32	330	250	36
R sq	.96	.77	.88	. 97
std err	5.9	96	66	6.0
shape	curve	line	curve	curve

See notes to Display 17.



Projection Method and Limitations

The method of projections felony convictions is the same as for arrest projections and follows the formula

future convictions =
present conviction rate ×
future population

The projections are made at the county level, because felony cases involve the county-level functions of prosecution, public defense, district courts, and jails. A state-level forecast is made by adding up all of the county forecasts. About 3% of cases (210) cannot be identified with a specific county and, therefore, are not included in the projection.

We also make separate projections for Minneapolis and St. Paul by computing a conviction rate based on cases where the initial arrest was by the Minneapolis or St. Paul Police Department. The city projections are based on the assumption that there is no great flow or displacement of crime into or out of the cities. That this is a reasonable assumption is shown by comparing the origin of felony cases with the population distribution in Hennepin County. In 1984, 42% of Hennepin County's felony case convictions among Whites originated with arrests in Minneapolis. This proportion is close to the proportion of Hennepin County's White population residing in Minneapolis (37%). Among Blacks convicted in Hennepin County felony cases, 75% were arrested in Minneapolis, compared to the 86% of the county's Black population that resides in Minneapolis.

We have also made projections of the approximate numbers of felony convicts who will be sentenced to terms in jails or prisons. (Jail terms are always for terms of one year or less; prison sentences exceed one year.) We calculate these projections from the average proportion of those convicted in a county who received jail or prison sentences in 1982 to 1984. That is, we assume that these proportions will stay the same in the future. Recent trends show, however, that the proportion going to jail is subject to fairly rapid change; lately the trend has been for increasing proportions to go to jail (Coleman and Guthrie, 1985). Note that the number of convicts sentenced to incarceration is only one component of jail and prison population. So our projection is not a projection of jail and prison populations.

Other limitations specific to the felony projections include the lack of historical data to indicate the stability of the conviction rates (discussed earlier). Additionally, the felony forecast by race is limited to two age intervals (18-to-24 and 25 years and older) because the numbers are too small to project accurately for each year of age.

Due to the complexity of the data, it was also necessary to restrict cases with multiple offense and sentence information to only the most serious of each. To do otherwise would not only be extremely difficult but would also tend to inflate the projections. In every situation such as this the decision rule was to take a conservative direction.

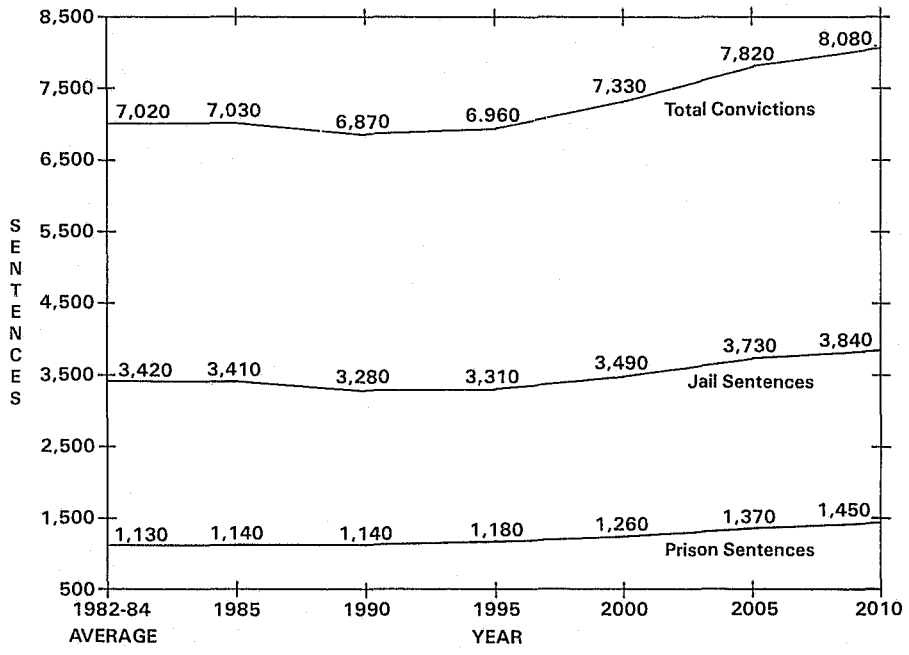
State Projection

The projection for the state as a whole is that the number of felony convictions may stay about the same from 1985 through 2000, in so far as the number is affected by population changes. The same applies to the number of persons sentenced to jail or prison terms. After 2000, however, we anticipate an increase in all categories. The net result may be that, as a result of demographic changes in the population, total felony case convictions may be up 15% in 2010 compared to 1982-84 averages — from 7,020 in 1982-84 to 8,080 in 2010. At current incarceration rates, this net increase in felony convictions would cause a 12% increase in the number of felony convicts sent to jail and a 28% increase in prison commitments. (See Display 23.) The majority of the increase is expected to occur after 2000. From 1982-84 to 2000 the percentage increases in felony convictions, jail terms, and prison commitments are 4%, 2%, and 12%, respectively. These projected changes as a result of population increases are so small, however, that they might not be observed in the midst of the routine fluctuations in prison and jail commitments that occur yearly for other reasons.

Prisons may be more affected by the demographic changes than jails because the increase is likely to predominate in violent crimes, which are more likely to result in a prison sentence. Convictions for violent crimes are projected to increase 33% by 2010. The reason for the disproportionate increase in projected violent crime convictions is the expected increase in the adult minority population that may be particularly noticeable after 2000.

Display 23. **State Felony Conviction Projections**

Slow but steady increase in convictions is expected from 1990 to 2010 along with increases in jail and prison incarcerations.



Notes: Concurrent jail and prison sentences were not included. About 210 cases or 3% are not included in the baseline or projection because they cannot be identified with any county; these cases fall according to sentence: 60 no incarceration, 90 jail, 60 prison.

County and City Projections

Substantial changes in felony cases are likely to occur in certain counties as a result of population increases. Large percentage increases are projected in the same counties where large arrest increases were projected. Counties that may see increases exceeding 50% are Sherburne (+90%), Chisago (+78%), Wright (+71%), Isanti (+65%), and Hennepin (+49%). (See Displays 24 and 25.) Most of the increase in Hennepin County is predicted to occur after 2000; a much smaller increase of 16% is forecast through 2000. The rapid change from 2000 to 2010 assumes the continued growth of the Black and American Indian minority populations, as built into the projection model.

Felony cases that originate in Minneapolis may increase 53% by 2010, whereas St. Paul will probably not see any substantial change (i.e., exceeding 20%). The number of minorities is smaller in St. Paul than in Minneapolis and is growing more slowly. In addition, the echo boom among Whites will be stronger in Minneapolis than in St. Paul. These differences account for the differences in the projections between the two cities. (Compare also the population projections for Minneapolis and St. Paul by age, race, and sex that are included in the Appendix.)

Even though the big increase in felony cases predicted for Hennepin County after 2000 may seem too remote to take seriously, one must recall that most of the adults who will be convicted of felonies in 2010 are born already, or soon will be. It is most unlikely that the birth rates of Blacks and American Indians will change so dramatically in the next several years as to upset that component of the forecast. On the other hand, the migration rates of Blacks into Hennepin county are an important factor in the long-range forecast, and one can anticipate more

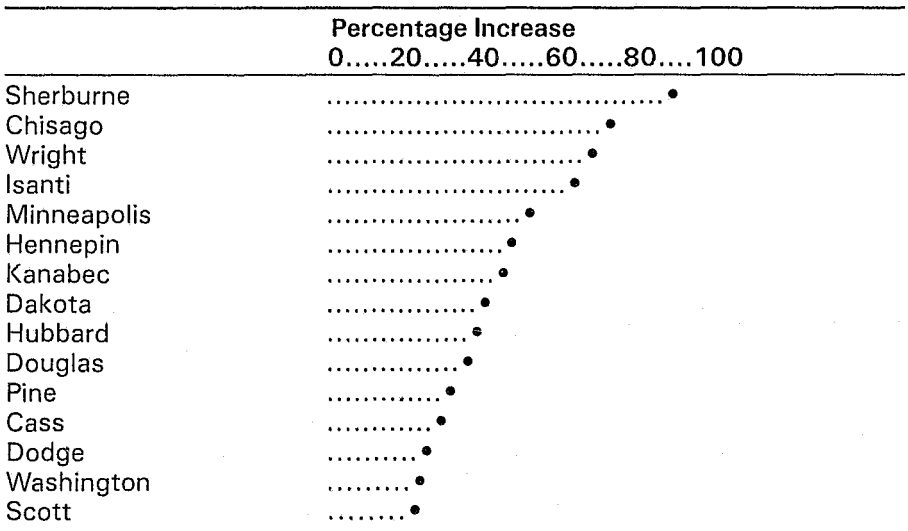
Display 24. County Felony Conviction Projections

Counties where a change in total felony convictions exceeding 20% is projected to occur between 1982-84 and 2010.

	Felony Convictions		Percent	Year When ± 20%
	1982-84	2010	Change	Change Reached
Sherburne	40	76	+90%	1990
Chisago	49	87	78	1990
Wright	69	118	71	1995
Isanti	40	66	65	1990
Minneapolis	874	1,341	53	2005
Hennepin	1,576	2,342	49	2005
Kanabec	25	36	44	2000
Dakota	361	504	40	2000
Hubbard	23	32	39	2000
Douglas	37	46	37	2005
Pine	31	40	29	2005
Cass	40	51	28	2005
Dodge	26	33	27	2005
Washington	186	232	25	2005
Scott	112	139	24	2005
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
St. Louis	425	339	−20	2010
Blue Earth	97	81	−25	1995

Notes: Counties with fewer than 20 felony case convictions per year were not ranked. Change is calculated as the difference between the average number of felony convictions over the three years 1982 to 1984 and the year 2010.

Display 25. Counties Exceeding 20% Increase in Felony Convictions



Notes: Counties with fewer than 20 felony case convictions per year were not ranked. Change is calculated as the difference between the average number of felony convictions over the period 1982 to 1984 and the forecast years.

possibility of change in this component. Nevertheless, it would be foolish to hope that favorable changes in demographic factors will forestall the crime problems that are projected to accelerate after 2000. Instead, policy makers and citizens ought to work on reducing the relatively high crime rates, especially for violent crimes, of minority youth and young adults.

Among counties with 20 or more felony case convictions per year, only two can expect decreases that will exceed 20% in the future: St.Louis (−20%) and Blue Earth (−25%).

The impact on the jails and prisons may be especially strong in those counties where the number of those given jail time is expected to increase substantially. The greatest increase in numbers may be in Hennepin County. By 2010, Hennepin County might expect an increase in jail incarcerations of 340 (+43%) and annual prison commitments of 260 (+73%). Most of this increase is expected to occur between 2000 and 2010. Although the lateness of this increase makes these forecasts for Hennepin County more prone to error, the magnitude of the expected changes is large enough to be a concern even if a margin of error is allowed.

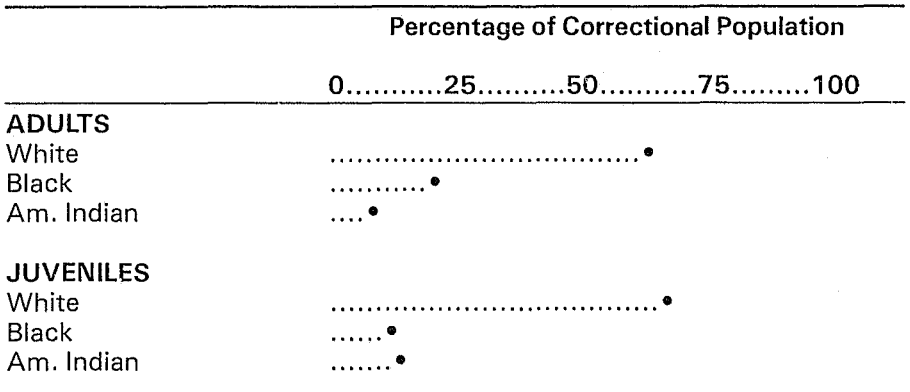
Other counties where the increase in jail incarcerations may exceed 20 include Dakota (48), Washington (25), and Chisago (20). Counties that may send an additional 10 or more convicts to prison each year include Ramsey (32), and Dakota (15). St. Louis is the only county where a decrease of more than 20 jail incarcerations or 10 prison commitments is likely to take place by 2010: The projection is a yearly decrease of 42 to jail and 16 to prison. (The jail reduction would affect the Northeast Regional Correctional Facility.)

The projected increase in the numbers of persons incarcerated in Hennepin County would also mean a shift to a correctional system increasingly populated by persons of minority races. From 1982 to 1984, the proportion of minorities among those sent to jail in Hennepin County for felony convictions was 40%. Minorities were 52% of persons sentenced to prison from Hennepin County. For the violent crimes (murder, sexual assault, robbery, and aggravated assault) the minority proportions among those sentenced to jail or prison were 52% and 59%, respectively.

The minority proportion of felony convicts sentenced to jail in Hennepin County will likely increase as a result of the demographic patterns previously described. Our projection is that the minority share may increase steadily from the 40% in recent years to 50% by 1990, perhaps reaching 70% or more by 2010. Because smaller numbers are sentenced to prisons than to jails, and because of the longer duration of prison sentences, prison population forecasts are difficult to make. Nevertheless, it is quite evident that the state prisons must also anticipate that a rising proportion of their inmates will be of minority races (currently about 31%, Display 26). Although Hennepin County may have the greatest impact on the state prisons of any county, other counties with significant minority populations are expected to add to this trend. (See also Coleman and Guthrie, 1985, for more discussion on the sentencing of minorities in Minnesota and the factors that cause disparities in the prosecution and sentencing of persons of different races.)

Display 26. Population of State-level Correctional Facilities 1985

Given the size of the minority population, they are overrepresented in Minnesota correctional facilities.



Source: Minnesota Department of Corrections

Summary of Felony Projections

As with the arrest forecasts, the state probably can expect only a small increase in felony case convictions over the next 15 years, so far as an increase can be attributed to demographic changes. Nevertheless, significant percentage increases are forecast for Hennepin County and several counties to the north of the Twin Cities. One must also recognize that certain problems are likely to emerge as a result of the possible shift toward a greater proportion of minorities in the criminal justice system, especially in prison. Hennepin County (and Minneapolis) may have to deal with rising rates of serious and violent crime as well as a shift to a minority-populated justice system at the level of felony crimes. The high rate of involvement of young men of minority races in violent crimes against persons is not, however, a problem that can be left to the future but a current problem that calls for our immediate attention.

5

APPENDIX

Commentary

I wish to make several comments in relation to the *Projection of Arrests and Convictions in Minnesota Through 2010.*

Firstly, on behalf of the Minnesota Indian Affairs Council, I would express a note of appreciation for the work the Planning Agency has done in this area. It's clear your agency is genuinely concerned with the growing crime problem among American Indians, and my review of the literature concludes that you seek to address the need for alternative programming rather than emphasizing a stronger law enforcement policy. I believe such an approach will result in dramatic decreases in the number of felony arrests thrughout the specified time frame.

Because the projections in your report suggest a significant increase in violent crime committed by Indians, the Council is naturally concerned with such a provocative statement. My review of your literature and other reports require that I agree in some aspects of *"Projections."* However, I maintain discriminatory practices occur within the field of criminal justice which tend to result in selective law enforcement and vigorous prosecution of American Indians.

Also, I believe *"Projections"* discounts the notion of poverty as having a role in the perpetration of crime. When viewed from this perspective, the American Indian population compares dramatically less well-off than the general population in Minnesota. For instance, the 1980 census tells us that 7.0% of all families in Minnesota were below poverty guidelines, whereas 28.0% of all Indian families were below poverty. The percentage of families in poverty was higher for Indians living in the central cities — 37.0%. These figures translate to a fact that more than half of Indian households on reservations and central cities had incomes below $10,000 in 1979! In terms of median income, American Indian household income was $10,820, while total state median income was $17,761.

Unemployment figures also show dismal disparity between Indians and the general population of Minnesota. Overall, the civilian labor force unemployment rate in 1979 was 5.4%, while the rate was 20.6% for American Indians.

I raise this issue because it supports my argument that poverty indeed shares a role in criminal involvement. I believe that where you have a disproportionate level of poverty, a higher level of crime will also occur.

Although *"Projections"* is based upon population, it does not seem to recognize American Indians in the crime prone age range number higher than the general population. In other words, it's widely accepted crime occurs most often among youth between 15 to 25 years. My contention is that American Indians proportionally have greater numbers in that age grouping. Therefore, it seems reasonable to conclude Indians have higher rates of crime in some classifications. Yes, this statement concurs with *"Projections;"* however, I caution against accepting it without having a clear understanding of other factors associated with the commission of felonies.

I think it's on this point that I would attempt to persuade the authors of the study to examine in greater detail the factors which many people believe contribute to criminal involvement. My single criticism of the report is that it makes leading statements like poverty and discrimination may play a part in crime, however too little documentation exists to substantiate the theory.

I would also encourage the authors to emphasize raw numbers versus in proportion to. I say this because the total statewide population of American Indians seems to be too small to accurately forecast using rates per 100,000 or even 10,000. At best, the readers should be made aware that the Indian population is at 34 thousand. So then, while rates may be higher in some instances, the actual number of arrests and conviction is relatively small. Also, I might suggest where the report states Indians are 6:1 in terms of likelihood for committing crimes, a statement like; because the population of Indians is small, the likelihood of someone in the general population experiencing victimization by Indians is extremely limited.

Finally, *"Projections"* does not discuss the changing economic forecasts for American Indian communities and reservations. Fundamentally, I believe a crime committed by an Indian person is largely the result of an alcoholic episode and an attempt to gain economic status. Therefore, policy-makers ought to be giving thought to developing programs which tend to upgrade the social and economic status of Indian people. In addition, Indians ought to be provided the same economic opportunities as non-Indians, e.g., Indian reservation governments should be allowed to develop their economies without unnecessary state restriction.

In the future, I would encourage any authors of crime studies to broaden the categories of crime. *"Projections"* seems to limit itself to violent crimes and racial minorities. I contend other serious crimes are committed, largely by whites. For instance, sports book-making, bid-rigging, embezzlement, DWI where lives are lost or seriously hurt.

"Projections" clearly casts a negative image upon American Indians, perhaps unwarranted given my comments. In any event, the issues raised by the report ought to be presented to state policy-makers and it ought to serve as a challenge to basic principles set forth in the constitution. Again, I suggest Indians become involved in crime through lack of social and economic opportunities.

Roger Head
Executive Director
Indian Affairs Council

Technical Notes on the Projection Method

The projection method was developed by the Office of the State Demographer, State Planning Agency. County and state population projections are published by the State Demographer in "Minnesota Population Projections 1980-2010," State Demography Office, State Planning Agency, St. Paul MN, 1983. With the assistance of the Demographer's Office. we have adapted the projection method to forecast populations by racial groups for Hennepin and Ramsey Counties and for Minneapolis and St. Paul. (The published forecasts of the Demographer did not make separate forecasts by race.) The racial groups for which we make projections here are Blacks, American Indians, and "Others," which includes Whites and persons of other races but mainly represents Whites.

The method used to make all of the population projections is called the cohort-component model. It uses actual and estimated values of mortality, fertility, and migration rates as the basis for the projections. The projection of a future population in a geographic area is the result of taking the current population, subtracting the numbers expected to die over the forecast interval, and adding the numbers projected to be born in the area as well as the projected net migration in or out. Mortality rates, fertility (or birth) rates, and migration rates may all vary by age, sex, race, and location. The rates may or may not be the same in the future as they have been in the recent past. Thus, the success of the population projection depends on how well we can project changes in the various rates. For minority races in Minnesota, projections are especially difficult because of the small sizes of the minority groups and possible unreliability of past Census data and vital statistics.

In order to find 1980 survival (mortality) rates, life tables were prepared for American Indians and Blacks in Minnesota using death statistics from 1978 to 1981. Future increases in the survival rates were assumed to be the same for minorities as for the whole population. It was also assumed that survival rates did not vary by location in the state. Fertility rates for the different races were projected to continue at 1980 rates, and to vary by race and county.

Migration rates from 1970 to 1980 for each race were calculated using the forward survival net migration method. Migration rates were figured for each age-sex-race group. (There were 19 age groups in five-year intervals up to 85+.) Migration is estimated by comparing the actual 1980 population with that expected on the basis of survival rates applied to the 1970 population, taking into account the number born during the decade for the youngest cohort. If the 1980 figure is higher (or lower) than expected from births and deaths, the difference must represent the net migration into (or out of) the area.

For the projections, the 1970-1980 migration rates for Blacks (which are very high) were reduced 25% in the 1980's and 10% in each of the two subsequent decades. In addition, the Black male migration rate into Hennepin County was lowered to the female rate for the age groups 25 to 34. Without this limitation, the number of adult Black males would, by the model, exceed the number of females by about 5,000 — surely an unlikely eventuality. It is believed that the high migration of Black males into Hennepin County is an anomaly of the 1970's; it may represent, in part, an undercounting of young Black males in the 1970 Census. White population migration rates (which include persons of races other than Black or Indian) were reduced by 20%, 10%, and 10% in each decade, respectively. Indian migration rates were reduced more in the first decade (by 75%) to compensate for the fact that Indian migration from 1970 to 1980 was probably greatly overestimated as a result of Census problems in enumerating the Indian population. In subsequent decades the Indian migration rate was reduced by 10%, as with the other races.

In addition, modifications were made in the youngest age groups for Blacks and Indians. Migration rates for these age groups were often found to be out of line with those of older groups. Rates for older groups were substituted in such anomalous cases. Migration rates below 5 per 100 for the 1970-1980 decade were reduced to zero in all subsequent decades.

In Hennepin, Ramsey, Minneapolis, and St. Paul the fertility rates of Whites were lowered to 0.91 of the rate of the general population, which is ordinarily the rate used for a county projection. The reason for this approximate adjustment is to compensate for the fact that the Black and Indian populations are projected separately, and they have a much higher fertility rate than the general population.

All of the population projections were first calculated in five-year age intervals. Then the age groups were combined and reaggregated to produce projections for the age groups of interest to this study, namely 10-17 (the juvenile population), 18-24 (the crime-prone adult years), and 25+. Beer's Ordinary Interpolation Formula was used to divide the 15-19 age group into 15-17 and 18-19 before reaggregating into the final age categories.

The projections for minorities should be considered more risky than for Whites in Minnesota. Census data is less reliable for minorities, and trend data seems to be less consistent. Vital statistics are also prone to errors in the recording of racial information, as are criminal justice statistics. Projections for single-year age cohorts may also be subject to more error than projec-

tions for aggregated age groups, which is one reason our projections are limited to one juvenile and two adult cohorts.

The migration rates pose the greatest uncertainty among the various components of the population projection. The two main components of migration that affect the criminal justice forecasts are (1) the large flow of Whites into and out of Minneapolis and Hennepin County from other counties, at different ages; and (2) the high net migration of Blacks into Minneapolis and Hennepin County from other states. For example, if all of the migration rates for Hennepin County were cut in half in the future, from our previous projection, the result would be a substantial change in the population of Hennepin County. The number of Black adults would be about 18,000 lower by 2010 than in the projection used here, and the number of Whites would be about 130,000 higher. Such a dramatic change in population would not, however, have a great affect on crime patterns, because the White and Black population changes would tend to offset one another. For the state as a whole, the Hennepin County White migration does not much affect state crime forecasts; it involves a displacement to other counties. A reduction in Black migration into Minnesota would, of course, lower the state arrest and conviction rates, but the effect would be observed mainly in Hennepin County.

With all the difficulties in projecting minority populations in mind, we are still convinced that such forecasts will inform policy makers and planners on important social issues to affect Minnesota. The population projections for Hennepin County, Minneapolis, Ramsey County, and St. Paul follow.

Display 27.

HENNEPIN COUNTY POPULATION PROJECTIONS BY RACE, AGE AND SEX

Age	Sex	Year 1980	1985	1990	1995	2000	2005	2010
				Black				
10-17	Male	2,648	3,180	3,633	4,662	5,845	6,587	7,346
	Female	2,685	3,060	3,436	4,379	5,491	6,195	6,913
18-24	Male	2,404	2,455	2,932	3,373	3,983	5,252	6,098
	Female	2,573	2,640	2,956	3,287	3,839	5,040	5,857
25+	Male	7,858	10,551	13,450	16,683	20,425	24,318	29,264
	Female	7,425	10,218	13,338	16,658	20,357	24,190	29,113
				American Indian				
10-17	Male	983	963	1,019	1,311	1,537	1,605	1,646
	Female	1,043	970	1,045	1,271	1,455	1,523	1,561
18-24	Male	761	819	843	816	1,035	1,250	1,354
	Female	909	981	902	885	1,035	1,246	1,351
25+	Male	1,905	2,420	2,968	3,528	4,021	4,544	5,251
	Female	2,270	2,871	3,548	4,137	4,658	5,229	5,935

Display 28.

MINNEAPOLIS POPULATION PROJECTIONS BY RACE, AGE AND SEX

Age	Sex	Year 1980	1985	1990	1995	2000	2005	2010
				Black				
10-17	Male	2,293	2,601	2,738	3,379	4,168	4,534	4,844
	Female	2,309	2,541	2,672	3,266	4,035	4,385	4,688
18-24	Male	2,138	2,085	2,354	2,540	2,788	3,638	4,116
	Female	2,302	2,241	2,334	2,538	2,734	3,573	4,039
25+	Male	6,555	8,800	11,179	13,624	16,238	18,717	21,787
	Female	6,444	8,549	10,747	12,839	15,102	17,218	19,993
				American Indian				
10-17	Male	810	828	901	1,321	1,628	1,680	1,750
	Female	896	837	907	1,276	1,542	1,595	1,660
18-24	Male	614	671	706	711	914	1,321	1,421
	Female	795	837	781	754	954	1,317	1,417
25+	Male	1,599	2,007	2,453	2,910	3,347	3,818	4,610
	Female	1,945	2,477	3,052	3,565	4,013	4,515	5,301

Display 29.

RAMSEY COUNTY POPULATION PROJECTIONS BY RACE, AGE AND SEX

Age	Sex	Year 1980	1985	1990	1995	2000	2005	2010
				Black				
10-17	Male	1,232	1,351	1,309	1,580	1,848	1,898	1,965
	Female	1,200	1,276	1,280	1,514	1,752	1,803	1,868
18-24	Male	1,045	1,074	1,187	1,216	1,242	1,605	1,691
	Female	1,098	1,098	1,084	1,158	1,186	1,499	1,581
25+	Male	3,203	3,803	4,338	5,135	5,865	6,472	7,341
	Female	3,624	4,344	5,113	5,786	6,533	7,185	8,071
				American Indian				
10-17	Male	306	301	270	312	370	377	367
	Female	292	251	237	293	348	355	346
18-24	Male	231	251	267	241	239	300	325
	Female	262	266	236	204	223	286	310
25+	Male	513	644	780	930	1,059	1,162	1,303
	Female	647	834	1,033	1,206	1,341	1,460	1,619

Display 30.

ST. PAUL POPULATION PROJECTIONS BY RACE, AGE AND SEX

Age	Sex	Year 1980	1985	1990	1995	2000	2005	2010
				Black				
10-17	Male	1,116	1,239	1,147	1,341	1,589	1,636	1,698
	Female	1,088	1,185	1,151	1,326	1,548	1,597	1,654
18-24	Male	928	933	1,072	1,072	1,042	1,352	1,431
	Female	998	965	1,008	1,059	1,045	1,319	1,397
25+	Male	2,831	3,279	3,702	4,197	4,713	5,098	5,703
	Female	3,318	3,896	4,432	4,937	5,513	5,984	6,644
				American Indian				
10-17	Male	251	258	235	264	310	318	313
	Female	248	212	208	252	291	299	295
18-24	Male	192	205	223	210	204	252	273
	Female	216	223	201	174	197	240	260
25+	Male	431	539	650	773	886	976	1,094
	Female	556	709	872	1,019	1,130	1,239	1,371

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