

## New Mexico Corrections Department Prison Population Forecasting: *First Quarter Report*

### INTRODUCTION

This is the initial quarterly report on prison population forecasting prepared by the New Mexico Sentencing Commission (NMSC) for the New Mexico Corrections Department (NMCD). Previously, prison population forecasting for the NMCD was performed by JFA Associates, LLC [See “Ten-Year Adult Secure Population Projection (FY2010-2019) (published June 2009)].

Pursuant to its contract with the NMCD, the New Mexico Sentencing Commission will schedule quarterly meetings to review population trends and will prepare a final report, due by June 30, 2010, entitled “Ten-Year Inmate Population Projections (FY 2011-2020)”. The primary purpose of this initial report is to describe the methodology that the NMSC will employ to produce prison population forecasts.

It is important to note at the outset that forecasting is not an attempt to predict the future of the prison population in New Mexico. Rather, forecasting provides the NMCD and policymakers with data regarding future prison populations based upon current policies and procedures. When those policies and procedures are changed, or when external factors change (i.e. numbers of arrests, amendments to sentencing laws, number of felony charges filed in district courts) projections of prison populations may also change. The ensuing discussion will detail how the NMSC will undertake the task of forecasting prison populations in New Mexico.

### TRENDS IN THE US AND NM

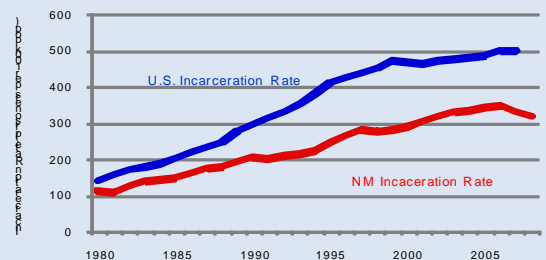
The US Department of Justice shows the national incarceration rate has increased steadily. Between 1980 and 2000, the national rate averaged 7% annual growth, but since 2001 the national rate has averaged 2% annual growth. Chart 1 compares the national incarceration growth rate to New Mexico’s since 1980.<sup>1</sup>

### The New Mexico Scene

During 2007, the prison population declined in 8 states, including New Mexico. Through the first six months of 2008, prison populations continued to decline in 14 states, including New Mexico.

Prison Populations: 1980 to 2007

1



Source: Bureau of Justice Statistics Correctional Surveys

The total NM inmate population on June 30, 2006 reached a high of 6,803 but by May 2008 the population had dipped to 6,361. This represented a 6.6% drop in the prison population over a two year period. At the request of the New Mexico Legislative Finance Committee, NMSC prepared a paper to explain possible reasons for the downturn in the prison population (NMSC, 2008). JFA attributes the decline to two factors: more non-violent and drug offenders were being released than being admitted into prison, and violent offenders were being admitted and released at the same rate. NMSC looked at five additional factors which together may have affected the New Mexico prison population reduction: diversion for technical violators, parole in the community, the first 60-days earned meritorious deduction (EMD) law, felony drug courts, and jail populations.

## Methodology

Since 2003 forecasts of the New Mexico state prison population has been completed by JFA Associates using a computerized simulation model that mimics the flow of offenders through the state's prison system over a ten-year forecast horizon. Forecasts include the total prison population and population by gender.

Simulation models are commonly used by prison systems to forecast potential future growth in order to inform decisions concerning the possible construction of prison facilities. Stochastic simulation models are commonly used that simulate the movement of individuals through the corrections system.

Most commonly, stochastic simulation models work by building models of

possible results by substituting a range of values for any factor that has inherent uncertainty. This not only provides a population forecast, but a range of possible forecasts and how likely the forecast is to take on a certain value. This starts by selecting a range of values that different factors could possibly have and how likely it is that the factor has each value in that range. This is commonly known as the probability distribution. As an example a factor might be the number of individuals admitted to prison for drunk driving. Based on historical trends and possible changes in the law we might expect this value for the number of new admissions to be anywhere between 375 and 475 per year. Then a random value from each factor is selected within its probability distribution, and a population is forecast using these prospective values. By repeating the procedure tens of thousands of times,

with different combinations of values from each factor, a range of values for the population forecast can be obtained. Because some forecast values are likely to present themselves more than others we can determine the likelihood of each forecast. In this way stochastic simulations can provide the most likely values of the prison population, as well as the value and likelihood of the best and worst case population scenarios. Beyond these methods, more cutting edge models could be used. Numerical solutions to differential equation models has been shown to provide accurate populations when the factors affecting the population are particularly complex, as in the criminal justice system.

## Explaining Incarceration Growth

In 2009, the Pew Center on the States reported that for the first time, more than 1 in every 100 adults in the United States was confined behind bars. This year the Pew Center is reporting that the number of people on probation or parole has skyrocketed to more than 5 million. This means that 1 in 45 adults in the United States are being supervised in the community by the criminal justice system. Combined with those in prison and jail, a stunning 1 in every 31 adults, or 3.2 percent of the population, is under some form of correctional control. The Pew Center pronounces that the growth in prison populations and community supervision is the result of state policy choices that sent more people to prison and kept them there longer. Other researchers ascribe rising prisoner populations to more than a single cause.

According to William Spelman (2009) the prison boom of the last 30 years has a remarkably simple explanation: persistently increasing crime rates, sentencing policies that put more offenders behind bars and kept them there longer, and sufficient state revenues to pay for it all. Spelman acknowledges the Pew Center's finding and adds the impact of healthy state coffers on the change in prison populations.<sup>2</sup>

Data sources that have been used to generate New Mexico forecasts have included:

- U.S. Census Bureau demographic trends focused on the "crime-prone age group" of 18-34 year old

males who historically and in FY 2009 made up a majority of admissions to New Mexico facilities.

- Crime trends using federal Uniform Crime Reporting (UCR) reported crime data.
- Correctional Facility admissions by most serious offense (i.e. murder, rape, etc.), gender, length of stay, and type of admission (i.e. new commitment and parole violators).

Table 1 provides a list of factors that may affect prison population forecasts. Factors include those used by New Mexico in its current forecasts and others like court case filings.

**Table 1. Examples of Factors that May Affect the Forecast**

Demographic trends ("crime-prone age group")
Economic trends
Crime trends
Policing and Arrest Trends
Court case filings and trends (i.e. case processing time)
Probation and parole violators
Sentencing practices
Changes in lengths of stay in prison
Legislative or other policy changes (i.e. increased parole terms for sex offenders)

Table 2 provides a comparison of the JFA total population projections and the NMCD actual total population average counts for April 2009 through September 2009. The JFA population forecast is higher each of the six months with a low of 0.4% and a high of

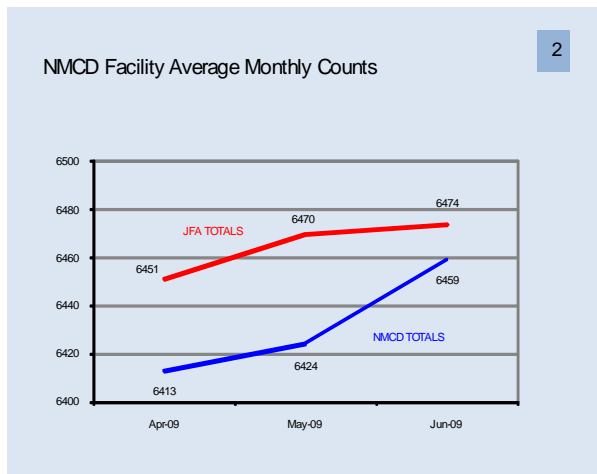
**Table 2. NMCD Total Actual Population Compared to JFA Projections April 2009 - September 2009**

Month	JFA Projections	NMCD Actual Pop.	Diff	% Diff
April-09	6,436	6,413	23	0.4%
May-09	6,493	6,424	69	1.1%
June-09	6,490	6,459	31	0.5%
July-09	6,523	6,429	94	1.4%
August-09	6,522	6,466	56	0.9%
September-09	6,525	6,478	47	0.7%

1.4%. This difference is within the expected national standard range of 2%.

## LOOKING TO THE FUTURE

Chart 2 provides a comparison of the NMCD facility counts provided separately to JFA and the NMSC by NMCD. As indicated by the chart the counts provided



to JFA are higher than the counts provided to NMSC by 15 offenders in June 2009, 46 offenders in May 2009, and 38 offenders in April 2009. While these differences are small to ensure the accuracy of the forecasts we need to verify the counts.

**Table 3. NMCD Male and Female Actual Population Compared to JFA Projections April 2009 - September 2009**

Month	JFA Projections Males	NMCD Actual Males	% Change	JFA Projections Female	NMCD Actual Females	% Change
April-09	5829	5817	-0.21	607	596	-0.36
May-09	5885	5831	-0.92	608	593	-1.06
June-09	5882	5860	-0.37	608	599	-0.48
July-09	5913	5844	-1.17	610	585	-1.44
August-09	5915	5883	-0.54	607	583	-0.86
September-09	5917	5895	-0.37	608	583	-0.72

Table 3 compares the JFA male and female population projections and the NMCD actual male and female population average counts for April 2009 through September 2009. The NMCD actual female population was lower each of the six months by between -0.36% and -1.44% than the JFA forecast. The NMCD actual male population was also lower each of the six months by between -0.21% and -1.17% compared to the JFA forecast. The male and female forecast differences are within the expected national standard range of 2%.

During this contract period we will continue to develop population forecasts using methods similar to those used by JFA and if possible will incorporate other sources of data. We will also review the data currently being used with the goal of improving the quality.

- Continue to explore and develop new sources of data. The current method requires data from various sources that were described earlier. Other data sources including court data and more complete arrest data may be useful.
- Ensure data validity. We intend to review the data we currently use and data from any other sources we may use in the future to ensure data quality and, when appropriate, to improve data quality.
- Consider the creation and use of an Advisory Group in reviewing and improving the forecast. An Advisory Group could be useful in reviewing simulation models and the results of the forecasts.
- Continue producing an annual Corrections report.
- Enhance the forecast by including a forecast by security/housing level. Forecasts could prove more useful with forecasts by security/housing level.

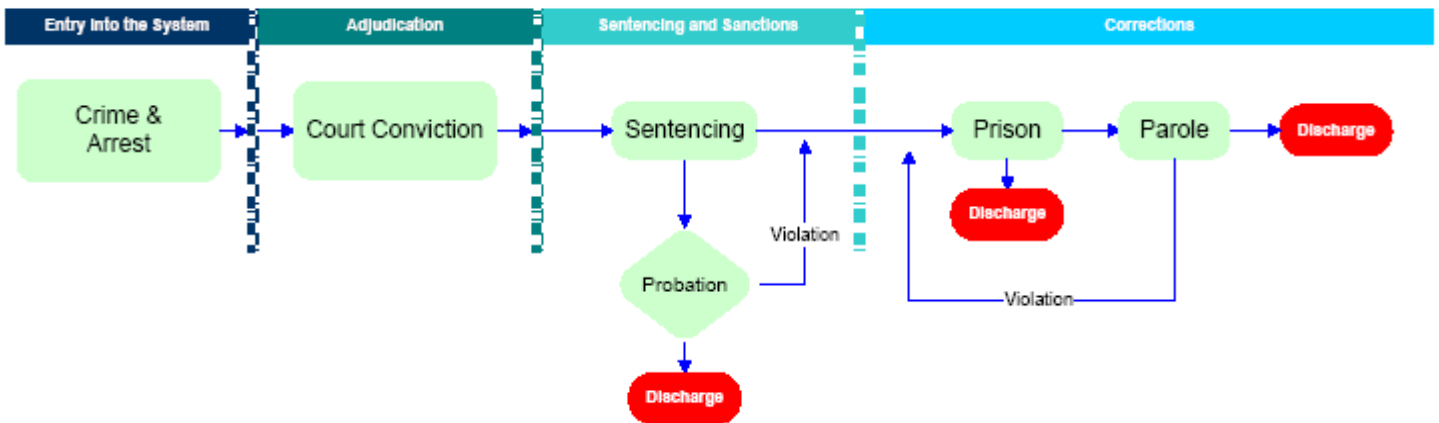
## NOTES

<sup>1</sup>Source: Bureau of Justice Statistics Correctional Surveys (The National Prisoner Statistics Program, Annual Survey of Jails, Annual Probation Survey, and Annual Parole Survey)

<sup>2</sup>NMSC. 2008. Possible Reasons for Decline in New Mexico Corrections Department Inmate Population.

<sup>3</sup>William Spelman. 2009. Crime, cash, and limited options: Explaining the prison boom. *Criminology & Public Policy*. 8: 29-77.

# FLOWCHART



## The Sequence of Events in the NM Criminal Justice System

This flowchart of the events in the New Mexico criminal justice system was prepared by the New Mexico Sentencing Commission. The chart summarizes the most common events in the felony criminal justice systems including entry into the system, adjudication, sentencing and sanctions, and corrections.