REPORT TO THE LEGISLATURE
Pursuant to P.A. 107 of 2017
Article V, Section 401
Prison Population Projection Report
February 2018

INTRODUCTION

The Michigan prison population decreased by 1,456 prisoners during calendar year 2017 to a total of 39,666 prisoners at the end of the year (-3.5%). The prison only population has not been this low since the end of October 1996 when the institutional population was growing through 39,756 and the total prisoner population hasn't been this low since 1993-1994 when Michigan had prisoners reacclimating to society while serving sentence in halfway houses (Community Residential Programs – CRP – eliminated in 1998 by Truth in Sentencing statutes).

The 2017 year-end prison population was 23.1% smaller than the record high of 51,554 prisoners reached in March of 2007 (11,888 prisoners smaller than the peak population).

During 2017, the net operating capacity of the prisons decreased by 1,402 beds leaving the capacity of the system 96.7% occupied at the end of the year with 1,373 beds available across 31 prison facilities.

The population projections issued in February of last year were 98.4% accurate at the end of 2017 (633 projected prisoners higher than the actual prisoner population).

FACTORS DRIVING PRISON POPULATION CHANGE

The prison population exits outpaced the prison population entrances in 2017 resulting in the 1,456 prisoner population decline while most key factors declined during 2017.

Parole Board Decisions were down slightly again in 2017 but this was countered by another slight increase in the Parole Board Approval Rate for 2017. The decline in Parole Board Decisions is the natural result of the multi-year decline in prison intake and the need for less parole rehearings as prisoner treatment needs are met in preparation for their first Parole Board hearing yielding higher first hearing parole grant rates. Movements to parole declined in 2017 compared to 2016 but were still in the range of the last five years.

The prison intake declined again in 2017 since the recent peak in 2013. The 2017 decline occurred across all intake categories. Most of the prison intake decrease was driven by fewer new court commitments of offenders, followed by fewer probation violators sent to prison either for probation violations or because of new sentences for crimes committed on probation, and by fewer parole violators with new sentences. The fewer probation violators sent to prison represent the 4th consecutive decline in this intake category and nearly a 50% decline since the peak in 2002. The fewer parole violators with new sentences represented the 9th consecutive year of decline in that category of prison intake and nearly a 50% decline since the 2008 peak.

Prison intake for 2017 declined due to fewer felony court dispositions to prison. The 1.3 percentage point drop in the prison commitment rate (from 21.0% in 2016 to 19.7% in 2017) coupled with slightly less felony court dispositions (down 1.4%) contributed in the prison intake decline.

PRISON POPULATION PROJECTION METHODOLOGY

Michigan's prison population projections are generated by a computerized simulation model, developed originally by the National Council on Crime and Delinquency (NCCD). It was then adapted for Michigan by research and planning staff in the Michigan Department of Corrections. The computerized simulation model mimics the movement of prisoners through the Corrections system and uses past practice and prior year trends to predict future patterns.

The projection model itself is simply an automated shell into which numerous probability distribution arrays must be fed (after creation outside the model by extensive statistical analyses), regarding how and when prisoners move through the various points in the corrections process (e.g., intake at reception, time to each subsequent parole hearing, likelihood of parole at each hearing, timing of release to parole, chances of return as a violator, and discharge from sentence). These arrays are broken down by the various population subgroups with particular characteristics (i.e., offense, sentence length, etc.).

Michigan's projection model incorporates finer resolution than the original NCCD model. For example, Michigan's model has up to 50 distinct maximum-term groups, each of which can have up to six minimum-term pairings. This level of detail allows particular attention to relatively short sentences of 2 years or less, which have the most influence on 3 to 5 year projection accuracy.

The projection model does not forecast the annual number of prison admissions; but once entered as values, the model does disaggregate admissions randomly based on past distributions. Then, the projection model simulates the flow of the existing prison population and new intake through the system, including feedback loops for parole violators with and without new sentences.

The source of the raw data for the projection is downloads from the MDOC data systems and the data are analyzed via the Statistical Package for the Social Sciences (SPSS). Once the projection model shell is populated with probability distribution arrays, numerous iterations of the model are run, "fine tuning" against two or more years of historical, actual trace vectors for purposes of validating the rebuilt data.

After a successful result is obtained (which must track past trends accurately, and must correspond to short-term expectations for the future informed by considerable independent analysis of recent trends), then the projections are issued by the Department.

Multiple projection runs can be combined – especially in times of particular uncertainty – to generate a confidence interval based on the monthly minimums and maximums for all of the runs, with the expectation that future population will more assuredly fall within the confidence interval. The model can also be used for "what if" analyses, such as simulating the impact of proposed legislative sunset provisions or modifications to sentencing laws.

Exceptions to the model's track record of better than 99% short-term projection accuracy have sometimes occurred over the years, when criminal justice practices and trends deviated from the past or showed unstable or uncharacteristic patterns – in which case the problem has generally been inadequate history against which to validate and fine-tune the results.

Long-term projections are generally considered less reliable because of the difficulty associated with predicting multi-year prison intake volume as well as changes in laws and policies that may affect the underlying statistical distributions which drive the model. That is why the projections are updated at least once each year – to adjust for any new laws, policies, court rulings, operational practices or trends.

NEW PRISON POPULATION PROJECTION ASSUMPTIONS

The prison population projections in this report are a baseline forecast that assumes no new legislative or policy initiatives. Therefore, the assumptions underlying these projections pertain to the key factors that drive prison population, prison intake, paroles, and parole revocations.

Prison Intake

The decrease in prison intake for 2017 continued the decline since 2013, which was the peak since the most recent prison intake trough in 2011. Prison intake for 2017 marks the lowest prison intake since 1988 and a break out of two decades with prison intake maintaining a range of 8,000 to 11,000 prisoners per year in that timespan.

Shifting from yearly trends to monthly trends a slightly different picture appears. From late 2013 through 2016 the monthly trend was downward similar to the yearly trend. However, the monthly trend breaks its downward slope since 2013 to a flat trend through all of 2017.

Again this year, it is a difficult time to make assumptions about prison intake. On the one hand, there are four consecutive years of intake decline from the 2013 level. A trend is apparent and trends are hard to argue against. In addition, felony court dispositions were at their lowest level in over a decade and the prison commitment rate for felony dispositions has been in a tight 3% range between 19% and 22% over this period.

On the other hand, the prison intake is lower than it has been in two decades. The last three times the prison intake hit a "bottom", the prison intake rose for at least two consecutive years. In addition, a mere one percentage point increase in the prison commitment rate can raise the prison intake by 500 prisoners.

The prudent course is to assume that prison intake will remain at the 2017 level. While not as aggressive as assuming a further intake decline, steady intake also protects against drastically under-projecting should the prison intake "bounce" and increase. This projection update thus assumes the annual prison admissions for 2018 through the remainder of the projection period are comparable to the 2017 level.

Paroles

The parole grant rate increased another percentage point in 2017 however the Parole Board Decisions were down for 2017 resulting in decreased moves to parole in 2017. Assuming the parole grant rate continues at the 2017 level throughout the projection period results in a slow decline in future moves to parole. The model is showing the future impact on parole movements that result from the combination of declining intake over the last few years, declining returns to prison over the last few years for parole violations, as well as the need for less Parole Board rehearings as prisoners receive treatment programs in preparation for their first parole hearing. This projection update thus assumes the annual parole grant rate for 2018 through the remainder of the projection period is comparable to the 2017 level.

Parole Revocations

Parole violator technical (PVT) returns to prison in 2017 decreased compared to 2016. This decrease was enhanced by another decrease in parole violators returned with new sentences (PVNS). Parole revocations are related to the number of paroles that occur. The slowly declining number of paroles can be expected to produce a slow decrease in parole revocations. This projection update thus assumes the number of PVT returns and PVNS returns to slowly reduce and moderate in the later years of the projection period as the moves to parole slow down.

Implications for the New Prison Population Forecast

Given the above discussion regarding assumptions, it is projected the prison population through 2022 will continue but slow the population decline of 2016 and 2017.

Again, keep in mind this baseline projection makes no assumptions about future changes in criminal justice statutes, policies or practices that would further affect the size of the prison population.

It should be remembered that the prison population projection is not expected to be precisely on-target from one month to the next, but rather will be expected to see the actual population alternately curving under and over the projection line periodically during the course of time, to even out the month-to-month fluctuations in favor of the longer-term trend.

PRISON POPULATION PROJECTIONS

The following chart summarizes the revised and extended baseline prison population projections through calendar year 2022. Table 1 (quarterly) and Table 2 (monthly) show the figures corresponding to the projection line in the chart.

Michigan Department of Corrections
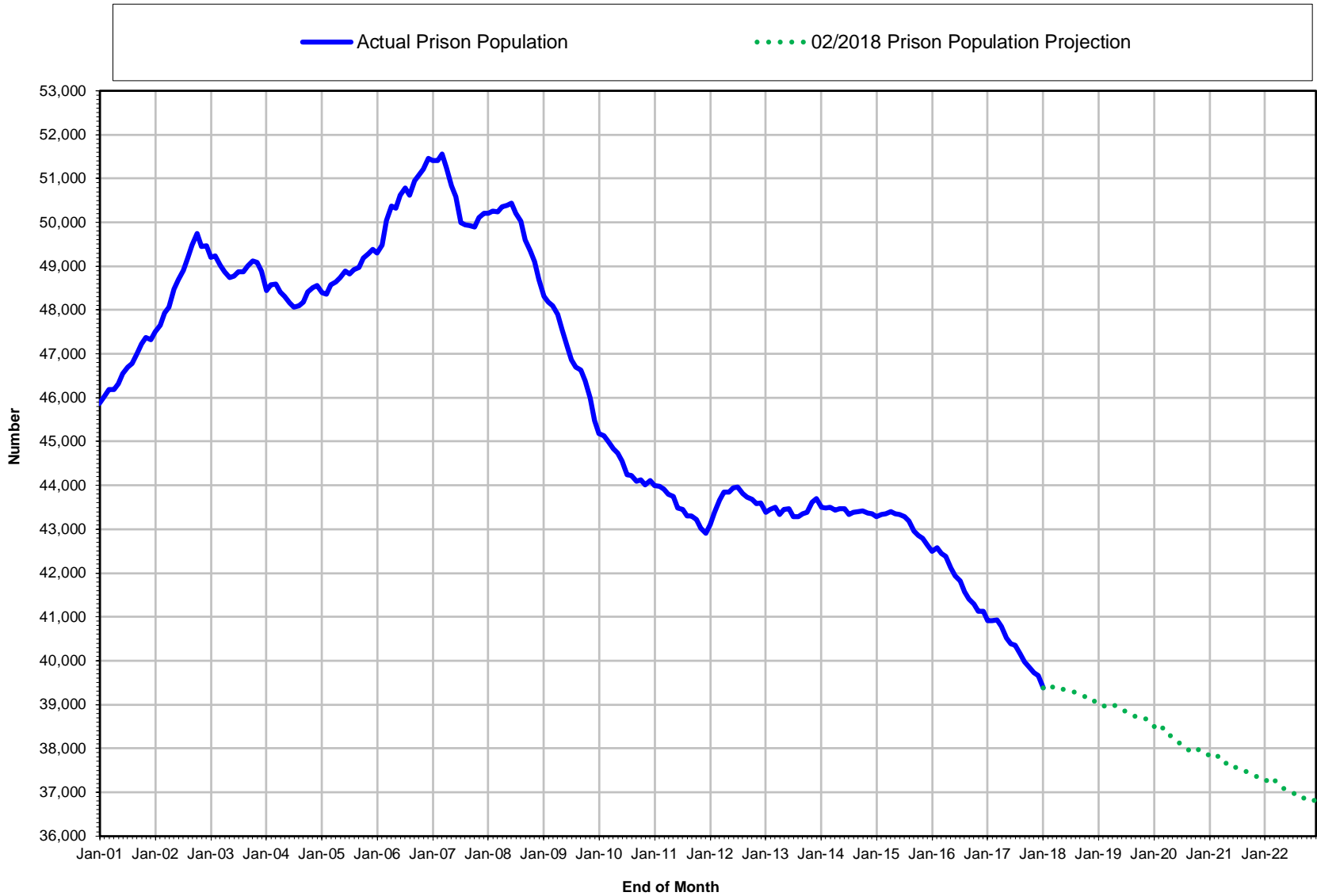## ACTUAL AND PROJECTED PRISON POPULATION

Legend:
- Actual Prison Population
- 02/2018 Prison Population Projection

Y-axis: Number

X-axis: End of Month (Jan-01 through Jan-22)

Table 1		
Prison Population Projection		
February 2018		
End of Month	Projected Prisoner Population	Yearly Change
Mar-18	39,394	
Jun-18	39,353	
Sep-18	39,210	
Dec-18	39,082	-584
Mar-19	39,024	
Jun-19	38,922	
Sep-19	38,724	
Dec-19	38,580	-502
Mar-20	38,466	
Jun-20	38,161	
Sep-20	37,918	
Dec-20	37,870	-710
Mar-21	37,826	
Jun-21	37,631	
Sep-21	37,465	
Dec-21	37,306	-564
Mar-22	37,279	
Jun-22	37,045	
Sep-22	36,853	
Dec-22	36,776	-530

MDOC Office of Research & Planning 2/25/2018

	Table 2	
	Prison Population Projection	
	February 2018	
End of Month	Projected Prisoner Population	Yearly Change
Jan-18	39,380	
Feb-18	39,319	
Mar-18	39,394	
Apr-18	39,416	
May-18	39,345	
Jun-18	39,353	
Jul-18	39,293	
Aug-18	39,283	
Sep-18	39,210	
Oct-18	39,177	
Nov-18	39,183	
Dec-18	39,082	-584
Jan-19	39,016	
Feb-19	38,949	
Mar-19	39,024	
Apr-19	39,001	
May-19	38,955	
Jun-19	38,922	
Jul-19	38,817	
Aug-19	38,791	
Sep-19	38,724	
Oct-19	38,722	
Nov-19	38,697	
Dec-19	38,580	-502
Jan-20	38,510	
Feb-20	38,392	
Mar-20	38,466	
Apr-20	38,344	
May-20	38,244	
Jun-20	38,161	
Jul-20	38,076	
Aug-20	38,015	
Sep-20	37,918	
Oct-20	37,986	
Nov-20	37,958	
Dec-20	37,870	-710
Jan-21	37,845	
Feb-21	37,761	
Mar-21	37,826	
Apr-21	37,714	
May-21	37,621	
Jun-21	37,631	
Jul-21	37,532	
Aug-21	37,524	
Sep-21	37,465	
Oct-21	37,405	
Nov-21	37,364	
Dec-21	37,306	-564
Jan-22	37,310	
Feb-22	37,191	
Mar-22	37,279	
Apr-22	37,186	
May-22	37,084	
Jun-22	37,045	
Jul-22	36,981	
Aug-22	36,959	
Sep-22	36,853	
Oct-22	36,875	
Nov-22	36,868	
Dec-22	36,776	-530