REPORT TO THE LEGISLATURE
Pursuant to P.A. 268 of 2016
Article V, Section 401
Prison Population Projection Report
March 2017

INTRODUCTION

The Michigan prison population decreased by 1,506 prisoners during calendar year 2016 to a total of 41,122 prisoners at the end of the year (-3.5%). The prison population has not been this low since the end of May 1997 when the population was growing through 41,148.

The 2016 year-end prison population was 20.2% smaller than the record high of 51,554 prisoners reached in March of 2007 (10,432 prisoners smaller than the peak population).

During 2016, the net operating capacity of the prisons decreased by 1,555 beds leaving the capacity of the system 96.9% occupied at the end of the year with 1,319 beds available across 31 prison facilities.

The population projections issued in February of last year were 97.3% accurate at the end of 2016 (1,117 projected prisoners higher than the actual prisoner population).

FACTORS DRIVING PRISON POPULATION CHANGE

The two biggest contributors to the prison population decline in 2016 were more movements to parole and less prison intake.

More movements to parole were the largest contributor and the result of a small increase in the parole grant rate combined with late year 2015 parole grant decisions that moved to parole in 2016. While there was a slight decline in the number of Parole Board decisions in 2016, the slightly higher grant rate resulted in nearly the same number of parole grant decisions as 2015.

The prison intake declined again in 2016 since the recent peak in 2013. The 2016 decline occurred across all intake categories. Most of the prison intake decrease was driven by fewer new court commitments of offenders, followed by probation violators sent to prison either for probation violations or because of new sentences for crimes committed on probation, and to a lesser extent by parole violators with new sentences to prison. The fewer parole violators with new sentences represented the 8th consecutive year of decline in that category of prison intake.

Prison intake for 2016 declined due to fewer felony court dispositions to prison. The one percentage point drop in the prison commitment rate (from 21.4% in 2015 to 20.4% in 2016) coupled with a barely changed number of felony court dispositions (down 0.3%) resulted 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 2016 continued the decline since 2013, which was the peak since the most recent prison intake trough in 2011. Prison intake for 2016 marks the lowest prison intake in two decades with prison intake maintaining a range of 8,000 to 11,000 prisoners per year in that timespan.

This is a difficult time to make assumptions about prison intake. On the one hand, there are three 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 2016 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 2017 through the remainder of the projection period are comparable to the 2016 level.

Paroles

The parole grant rate increased in 2016 resulting in increased moves to parole in 2016. Assuming the parole grant rate continues at the 2016 level throughout the projection period results in a steady 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 as well as declining returns to prison for parole violations. This projection update thus assumes the annual parole grant rate for 2017 through the remainder of the projection period is comparable to the 2016 level.

Parole Revocations

Parole violator technical (PVT) returns to prison in 2016 increased compared to 2015. This increase was mitigated by another decrease in parole violators returned with new sentences (PVNS). Parole revocations are related to the number of paroles that occur. The increased number of paroles can be expected to produce an increase in parole revocations.

This projection update thus assumes the number of PVT returns will again increase in 2017, but then reduce and moderate in the later years of the projection period as the moves to parole slow down. PVNS returns are expected to stabilize at roughly the 2016 level throughout the projection period.

Implications for the New Prison Population Forecast

Given the above discussion regarding assumptions, it is projected the prison population through 2017 and 2018 will slow the population decline of 2016 and then remain fairly stable throughout the remaining projection period.

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 2021. Table 1 (quarterly) and Table 2 (monthly) show the figures corresponding to the projection line in the chart.

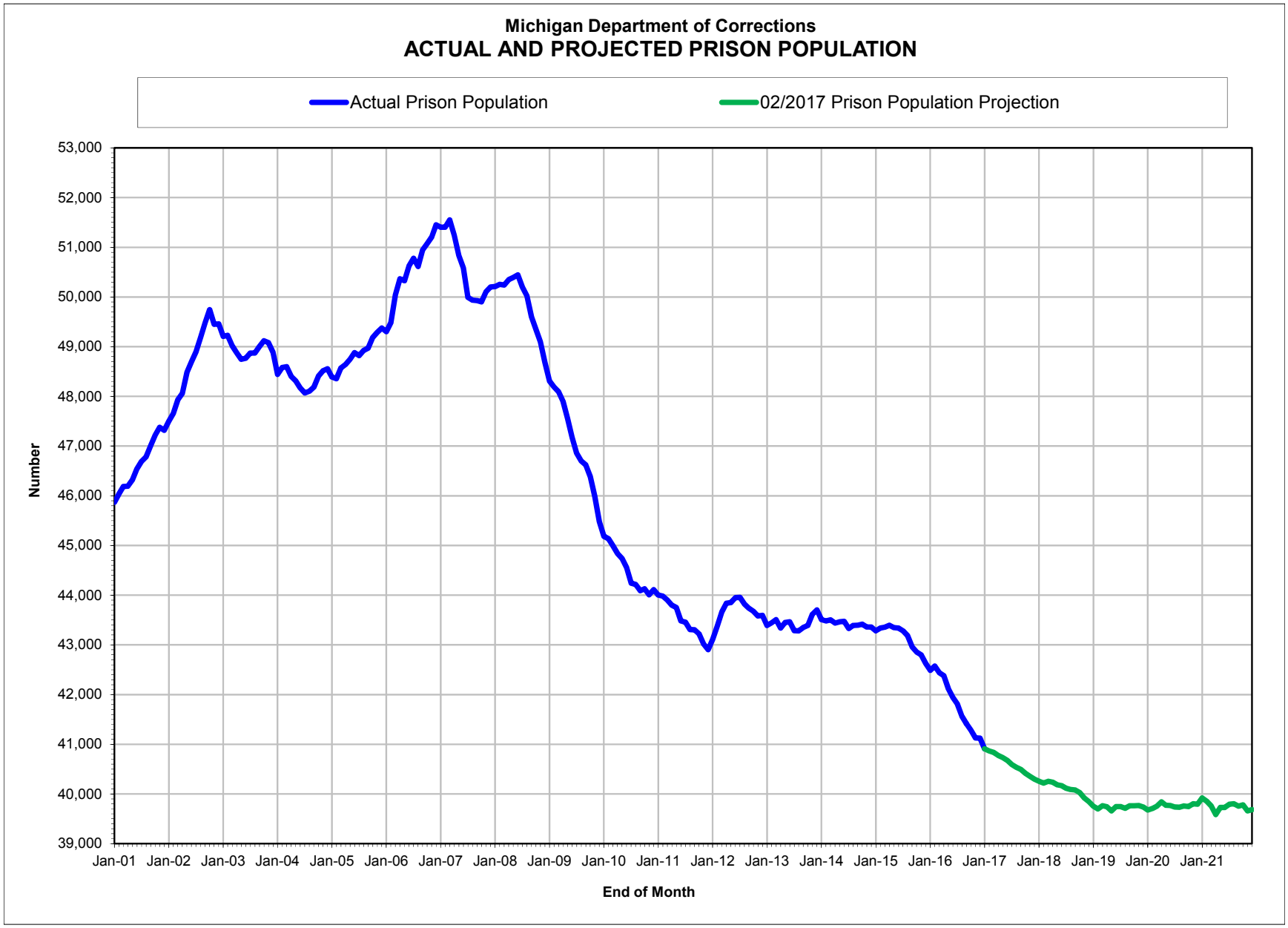
Michigan Department of Corrections
ACTUAL AND PROJECTED PRISON POPULATION
Actual Prison Population
02/2017 Prison Population Projection
Number
53,000
52,000
51,000
50,000
49,000
48,000
47,000
46,000
45,000
44,000
43,000
42,000
41,000
40,000
39,000
Jan-01 Jan-02 Jan-03 Jan-04 Jan-05 Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12 Jan-13 Jan-14 Jan-15 Jan-16 Jan-17 Jan-18 Jan-19 Jan-20 Jan-21
End of Month

Table 1

Prison Population Projection

February 2017

End of Month	Projected Prisoner Population	Yearly Change
Mar-17	40,836	
Jun-17	40,677	
Sep-17	40,494	
Dec-17	40,299	-823
Mar-18	40,254	
Jun-18	40,169	
Sep-18	40,082	
Dec-18	39,845	-454
Mar-19	39,764	
Jun-19	39,745	
Sep-19	39,764	
Dec-19	39,739	-106
Mar-20	39,755	
Jun-20	39,770	
Sep-20	39,759	
Dec-20	39,793	54
Mar-21	39,761	
Jun-21	39,731	
Sep-21	39,753	
Dec-21	39,685	-108

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Table 2

Prison Population Projection

February 2017

End of Month	Projected Prisoner Population	Yearly Change
Jan-17	40,909	
Feb-17	40,867	
Mar-17	40,836	
Apr-17	40,777	
May-17	40,731	
Jun-17	40,677	
Jul-17	40,595	
Aug-17	40,535	
Sep-17	40,494	
Oct-17	40,415	
Nov-17	40,356	
Dec-17	40,299	-823
Jan-18	40,254	
Feb-18	40,219	
Mar-18	40,254	
Apr-18	40,236	
May-18	40,184	
Jun-18	40,169	
Jul-18	40,117	
Aug-18	40,091	
Sep-18	40,082	
Oct-18	40,030	
Nov-18	39,919	
Dec-18	39,845	-454
Jan-19	39,753	
Feb-19	39,698	
Mar-19	39,764	
Apr-19	39,744	
May-19	39,661	
Jun-19	39,745	
Jul-19	39,747	
Aug-19	39,711	
Sep-19	39,764	
Oct-19	39,763	
Nov-19	39,767	
Dec-19	39,739	-106
Jan-20	39,675	
Feb-20	39,708	
Mar-20	39,755	
Apr-20	39,843	
May-20	39,771	
Jun-20	39,770	
Jul-20	39,739	
Aug-20	39,733	
Sep-20	39,759	
Oct-20	39,746	
Nov-20	39,805	
Dec-20	39,793	54
Jan-21	39,921	
Feb-21	39,855	
Mar-21	39,761	
Apr-21	39,585	
May-21	39,729	
Jun-21	39,731	
Jul-21	39,793	
Aug-21	39,805	
Sep-21	39,753	
Oct-21	39,779	
Nov-21	39,661	
Dec-21	39,685	-108

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