REPORT TO THE LEGISLATURE
Pursuant to P.A. 64 of 2019
Section 401
Prison Population Projection Report
February 2020

INTRODUCTION

The Michigan prison population decreased by 708 prisoners during calendar year 2019 to a total of 38,053 prisoners at the end of the year (-1.8%). The prison only population has not been this low since the end of December 1994 when the institutional population was growing through 38,145 and the total prisoner population hasn't been this low since mid-1992 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 2019 year-end prison population was 26.2% smaller than the record high of 51,554 prisoners reached in March of 2007 (13,501 prisoners smaller than the peak population).

During 2019, the net operating capacity of the prisons decreased by 445 beds leaving the capacity of the system 96.9% occupied at the end of the year with 1,204 beds available at various security levels across 29 prison facilities.

The population projections issued in March of last year were 98.6% accurate at the end of 2019 (538 projected prisoners higher than the actual prisoner population).

FACTORS DRIVING PRISON POPULATION CHANGE

The prison population exits outpaced the prison population entrances again in 2019 resulting in the 708 prisoner population decline while most key factors declined during 2019.

Parole Board Decisions were down for a 10th consecutive year in 2019. The Parole Board Approval Rate increased slightly, to a high of 72.4%. 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 for a third straight year in 2019.

The prison intake declined again in 2019 since the recent peak in 2013. The 2019 decline occurred across all intake categories. Most of the prison intake decrease was driven by fewer new court commitments, followed by probation violators sent to prison either for probation violations or because of new sentences for crimes committed on probation, and finally parole violators with new sentences. The fewer probation violators sent to prison represented the 6th consecutive year of decline in this intake category and a 54% decline since the peak in 2002. The fewer parole violators with new sentences represented the 11th consecutive year of decline in that category of prison intake and a 57% decline since the 2008 peak.

Prison intake for 2019 declined due to fewer felony court dispositions to prison. The 0.5% drop in the prison commitment rate (from 20.0% in 2018 to 19.5% in 2019) coupled with less felony court dispositions (down 2.3%) contributed to 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 2019 continued the decline since 2013, which was the peak since the most recent prison intake trough in 2011. Prison intake for 2019 marks the lowest prison intake since 1987, and the third consecutive year that prison intake fell below a two decades long range of 8,000 to 11,000 prisoners per year

Shifting from yearly trends to monthly trends shows a slightly different picture. Analysis of the monthly intake trend by gender shows that the male new court commitments are reaching a low not seen since 2000, at which time they rebounded and caused an increase in intake.

Male New Court Commitments
1981-2019

Similarly, if the current rate of decrease continues for the female probation violators, by mid-2021 it will reach a bottom last seen in 2009, at which time female probation violator intake bounced and continued to increase for years.

Female Probation Violators
1981-2019

Again this year, it is a difficult time to make assumptions about prison intake. On the one hand, there are six 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 nearly 450 prisoners.

The prudent course is to assume an increase in prison intake, with male intake increasing at the rates previously seen in 2009 and 2011, and female intake increasing at the rate seen in 2009. This projection update thus assumes the annual prison admissions will experience a 2.7% increase in 2020, a 4.3% increase in 2021, a 5.4% percent increase in 2022, and then stability thereafter.

Paroles

While the parole grant rate was up for 2019, Parole Board Decisions were down and resulted in decreased moves to parole in 2019. 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 resulted in the decreasing Parole Board Decisions, but this impact has largely worked its way through the projection. This projection update assumes a continuation of the annual parole grant rate for 2019 throughout the

remainder of the projection period which yields a slow increase in future moves to parole due to the slight anticipated increase in prison intake.

Parole Revocations

Parole violator technical (PVT) returns to prison decreased for a 3rd consecutive year in 2019. 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 increasing number of paroles can be expected to produce a slow increase in parole revocations a year or two after the parole movements increase.

This projection update thus assumes the number of PVNS returns to stabilize at roughly the 2019 levels throughout the projection period until the increase in parole movements work through the projection.

Implications for the New Prison Population Forecast

Given the above discussion regarding assumptions, it is projected the prison population through 2022 will slow the population decline of 2019, 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 2024. Table 1 (quarterly) and Table 2 (monthly) show the figures corresponding to the projection line in the chart.

Michigan Department of Corrections
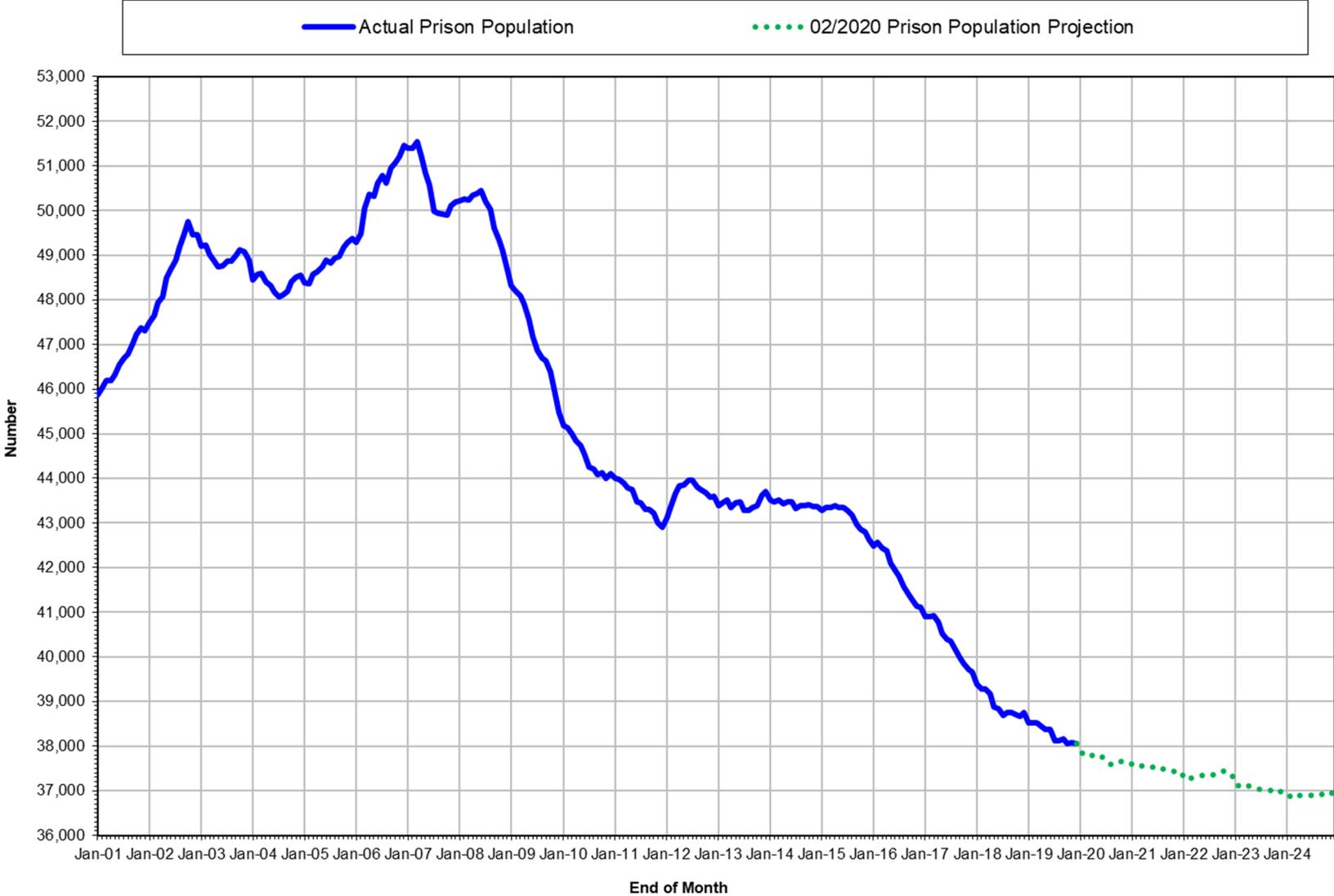## ACTUAL AND PROJECTED PRISON POPULATION

Legend: Actual Prison Population — 02/2020 Prison Population Projection

Y-axis: Number

X-axis: End of Month

Table 1

Prison Population Projection February 2020		
End of Month	Projected Prisoner Population	Yearly Change
Mar-20	37,763	
Jun-20	37,761	
Sep-20	37,589	
Dec-20	37,662	-391
Mar-21	37,546	
Jun-21	37,520	
Sep-21	37,494	
Dec-21	37,451	-211
Mar-22	37,298	
Jun-22	37,354	
Sep-22	37,403	
Dec-22	37,391	-60
Mar-23	37,125	
Jun-23	37,046	
Sep-23	36,994	
Dec-23	36,990	-401
Mar-24	36,848	
Jun-24	36,887	
Sep-24	36,908	
Dec-24	36,964	-26

MDOC Office of Research & Planning 1/22/2020

Table 2		
Prison Population Projection		
February 2020		
End of Month	Projected Prisoner Population	Yearly Change
Jan-20	37,893	
Feb-20	37,786	
Mar-20	37,763	
Apr-20	37,794	
May-20	37,820	
Jun-20	37,761	
Jul-20	37,675	
Aug-20	37,587	
Sep-20	37,589	
Oct-20	37,653	
Nov-20	37,666	
Dec-20	37,662	-391
Jan-21	37,601	
Feb-21	37,520	
Mar-21	37,546	
Apr-21	37,573	
May-21	37,531	
Jun-21	37,520	
Jul-21	37,472	
Aug-21	37,497	
Sep-21	37,494	
Oct-21	37,473	
Nov-21	37,429	
Dec-21	37,451	-211
Jan-22	37,326	
Feb-22	37,230	
Mar-22	37,298	
Apr-22	37,320	
May-22	37,345	
Jun-22	37,354	
Jul-22	37,348	
Aug-22	37,370	
Sep-22	37,403	
Oct-22	37,451	
Nov-22	37,401	
Dec-22	37,391	-60
Jan-23	37,171	
Feb-23	37,097	
Mar-23	37,125	
Apr-23	37,101	
May-23	37,084	
Jun-23	37,046	
Jul-23	37,016	
Aug-23	37,021	
Sep-23	36,994	
Oct-23	37,045	
Nov-23	36,985	
Dec-23	36,990	-401
Jan-24	36,967	
Feb-24	36,844	
Mar-24	36,848	
Apr-24	36,896	
May-24	36,902	
Jun-24	36,887	
Jul-24	36,899	
Aug-24	36,875	
Sep-24	36,908	
Oct-24	36,983	
Nov-24	36,944	
Dec-24	36,964	-26