REPORT TO THE LEGISLATURE
Pursuant to P.A. 84 of 2015
Article V, Section 401
Prison Population Projection Report
February 2016

INTRODUCTION

The Michigan prison population decreased by 731 inmates during calendar year 2015, to a total of 42,628 prisoners at the end of the year (-1.7%). The prison population is lower than the contemporary low mark at the end of 2011 and is 3 prisoners lower than the August 1998 end of month prison population.

The 2015 year end prison population was 17.3% smaller than the record high of 51,554 inmates that was reached in March of 2007 (8,926 inmates smaller than the peak population).

The population projections issued in February of last year were 98.1% accurate at the end of 2015 (819 prisoners higher than actual population).

Based on the latest available data, decreases in felony court dispositions and prison admissions were responsible for more than half of the prison population decline in 2015.

During 2015, the net operating capacity of the prisons was increased by a net 57 beds, leaving the capacity of the system 97.0% occupied at the end of the year, with 1,300 beds available across both the 32 prison facilities and the 14 county jails that are currently housing MDOC prisoners in leased beds.

FACTORS DRIVING PRISON POPULATION CHANGE

The decline in the size of the prison population during 2015 was primarily due to a decrease in felony court dispositions (down by 2.9% from 2014), which resulted in a corresponding decrease in prison admissions with new sentences (down by 4.6% from 2014).

The prison intake declined for the third year in 2015 with declines 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 7th consecutive year of decline in that category of intake.

Prison intake for 2015 declined due to fewer felony court dispositions and a small decrease in the prison commitment rate among the likely 47,000+ felony court dispositions for the year.

Another factor in the prison population decline was slightly more discharges on the maximum sentence (either without parole, or after parole and return to prison for technical violations) in 2015.

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 usual key factors that drive prison population (which include - for the most part - prison intake, paroles, and parole revocations).

Prison Intake

Through November (the latest available data), felony court dispositions were on a pace to decrease again in 2015 compared to 2014. The prison commitment rate was on a pace to decline slightly in 2015. The combined declines resulted in a decrease of 4.6% for prison intake in 2015 compared to 2014. Prison intake thus finished 2015 down for the third consecutive year to the lowest level in two decades.

The decrease in prison admissions for 2015 was unexpected by the forecast in the last projection, however it would not take much of a shift for the intake trend to reverse direction again.

The prudent course is to assume that upward spikes in prison admissions are unlikely given the recent yearly declines, but the new baseline projection should continue to incorporate the possibility of somewhat higher prison intake going forward. This projection update thus assumes that annual prison admissions for 2016 are comparable to 2015 followed by slight yearly increases for the next two years of the projection bringing the yearly admissions back to roughly the 2013 level.

Paroles

Moves to parole in calendar year 2015 were comparable to 2014 and are expected to maintain stability going forward because of the comparative equilibrium that has been in evidence during recent years, with release and return trends varying only within a narrow range from year to year. The small expected increases in new prison admissions also promote general stability in the trends.

Consequently, this baseline projection update assumes that the annual number of moves to parole will be roughly the same each year throughout the projection. If not, then any change could arguably go either way because of the twin factors that most directly influence moves to parole –

namely, the number of parole decisions and the parole approval rate, neither of which is expected to change appreciably.

Parole Violator Technical Returns to Prison (parole revocations)

Parole violator technical (PVT) returns to prison in 2015 increased compared to 2014. This increase was mitigated by a further decrease in parole violators returned with new sentences.

It is assumed that the number of PVT returns will continue to moderate throughout the baseline projection thanks to further refinements to prisoner reentry practices, but the overall stability of the corrections system that has occurred during recent years is likely to continue regardless, as further moderation in the number of PVT returns will be offset by the gradual increase in prison admissions with new sentences.

Implications for the New Prison Population Forecast

Given the above discussion regarding assumptions, it is expected that the size of the prison population through 2016 will slow the decline of the last half of 2015 and then increase very gradually throughout the baseline projection because of the prudent supposition that prison admissions will slowly increase as well. This small and gradual change could easily occur because of either a modest rebound in felony court dispositions or a continuation of the trend toward slight increases in the prison commitment rate.

Again, keep in mind that this is a baseline projection that 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 2020. Table 1 (quarterly) and Table 2 (monthly) show the figures corresponding to the projection line in the chart.

Michigan Department of Corrections
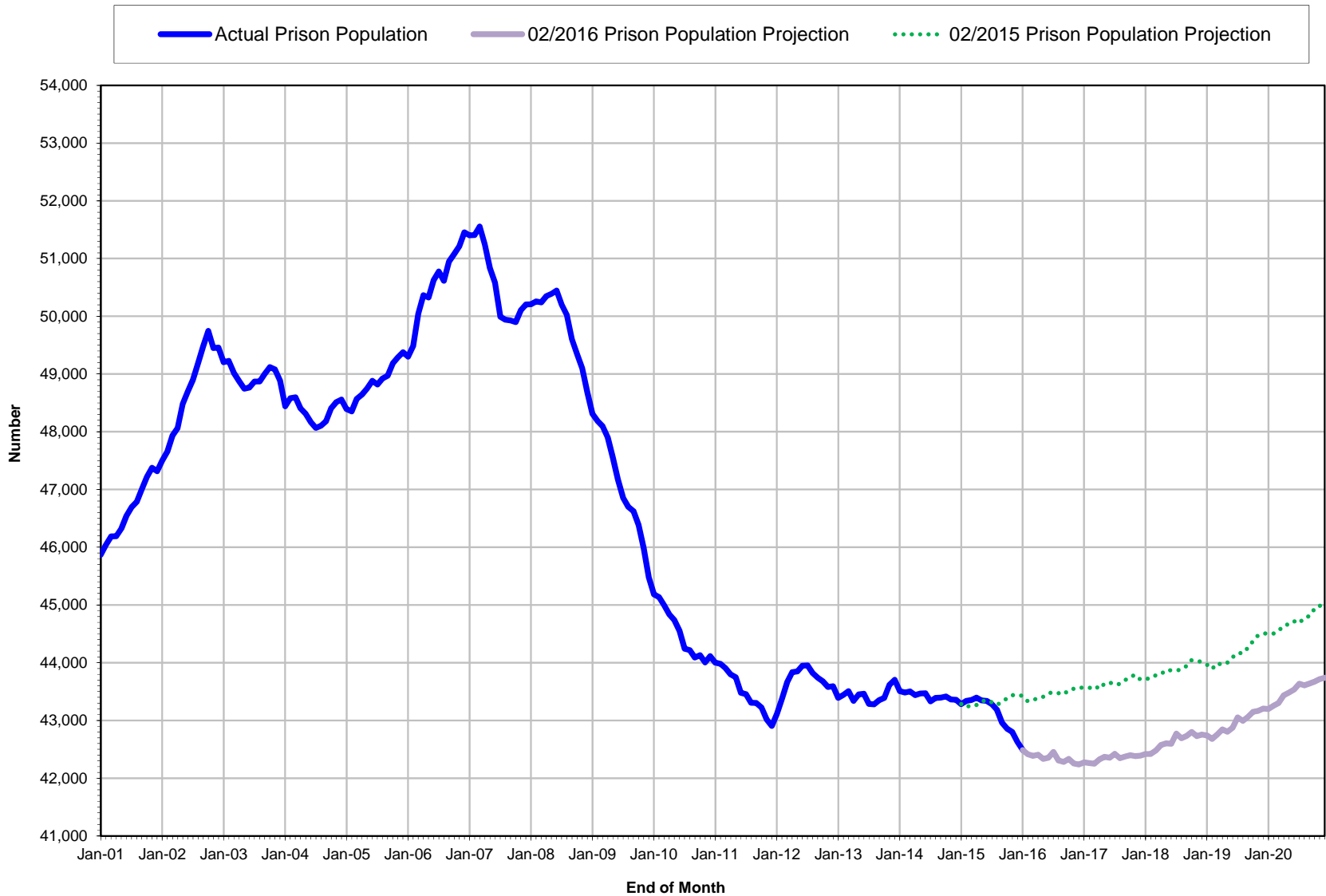## ACTUAL AND PROJECTED PRISON POPULATION

Legend:
- **Actual Prison Population**
- 02/2016 Prison Population Projection
- 02/2015 Prison Population Projection

Number (y-axis): 41,000 to 54,000

End of Month (x-axis): Jan-01 to Jan-20

Table 1		
Prison Population Projection		
February, 2016		
End of Month	Projected Prisoner Population	Yearly Change
Mar-16	42,387	
Jun-16	42,353	
Sep-16	42,284	
Dec-16	42,239	-389
Mar-17	42,252	
Jun-17	42,353	
Sep-17	42,374	
Dec-17	42,392	153
Mar-18	42,479	
Jun-18	42,596	
Sep-18	42,733	
Dec-18	42,757	365
Mar-19	42,758	
Jun-19	42,873	
Sep-19	43,060	
Dec-19	43,207	450
Mar-20	43,302	
Jun-20	43,535	
Sep-20	43,639	
Dec-20	43,741	534

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Table 2

Prison Population Projection
February, 2016

End of Month	Projected Prisoner Population	Yearly Change
Jan-16	42,487	
Feb-16	42,416	
Mar-16	42,387	
Apr-16	42,408	
May-16	42,335	
Jun-16	42,353	
Jul-16	42,456	
Aug-16	42,306	
Sep-16	42,284	
Oct-16	42,333	
Nov-16	42,256	
Dec-16	42,239	-389
Jan-17	42,275	
Feb-17	42,263	
Mar-17	42,252	
Apr-17	42,328	
May-17	42,370	
Jun-17	42,353	
Jul-17	42,423	
Aug-17	42,348	
Sep-17	42,374	
Oct-17	42,400	
Nov-17	42,383	
Dec-17	42,392	153
Jan-18	42,419	
Feb-18	42,419	
Mar-18	42,479	
Apr-18	42,577	
May-18	42,603	
Jun-18	42,596	
Jul-18	42,774	
Aug-18	42,693	
Sep-18	42,733	
Oct-18	42,799	
Nov-18	42,727	
Dec-18	42,757	365
Jan-19	42,739	
Feb-19	42,679	
Mar-19	42,758	
Apr-19	42,846	
May-19	42,803	
Jun-19	42,873	
Jul-19	43,053	
Aug-19	42,994	
Sep-19	43,060	
Oct-19	43,149	
Nov-19	43,168	
Dec-19	43,207	450
Jan-20	43,197	
Feb-20	43,254	
Mar-20	43,302	
Apr-20	43,436	
May-20	43,482	
Jun-20	43,535	
Jul-20	43,638	
Aug-20	43,609	
Sep-20	43,639	
Oct-20	43,671	
Nov-20	43,716	
Dec-20	43,741	534

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