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# Jail Population Forecast Terms and Conditions Report

New York City Department of Correction

July 15, 2025

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## Executive Summary

**Terms and Conditions:** As a condition of the funds in unit of appropriation 003 of the Department of Correction (the Department, or DOC) and unit of appropriation 001 of the Office of the Criminal Justice Coordinator (MOCJ), DOC and MOCJ shall submit a 2-year forecast or relevant plausible policy impact models, given the makeup of the actual observed jail population and related trends. Such forecast or impact models shall include the methodology of such forecast or impact models. In addition, such forecast or impact models shall also include the projected impact of proactive policy strategies, as practicable, such as Alternatives to Incarceration, Supervised Release, and Electronic Monitoring programs on the jail population across the period. The first report shall be submitted on or before January 15, 2025 and shall cover the period beginning July 1, 2024 and ending December 31, 2024. The second report shall be submitted on or before July 15, 2025 and shall cover the period beginning January 1, 2025 and ending June 30, 2025.

**Forecasting Methodology:** The Department's Operations Research team updated the modeling framework presented in its January 2025 report to account for the recent population increase in "state-ready" individuals. The Department of Corrections and Community Supervision (DOCCS) suspended the transfer of state-ready individuals to DOCCS facilities following a wildcat strike earlier this year. This resulted in a 727% increase in "state-ready" individuals in the Department's custody during the reporting period. In early May 2025, DOCCS resumed transfers in a limited capacity, but the "state-ready" population remains inflated and will likely remain so for the foreseeable future or until DOCCS increases the number of transfers to their custody. The updated model incorporates more relevant data in order to better forecast jail population for a 2-year period. It has further been updated to utilize a Prophet[1] time series forecasting model to estimate admission rate into the jail and a Bayesian survival model[4] to forecast the amount of time that incarcerated individuals remain in DOC custody.

**Baseline Population Projection:** Given the historic trends and patterns in admissions and length of stay data through 06/30/2025, DOC anticipates a net increase in jail population in the next two years, reaching an estimated 8,800 in June 2027. This forecast assumes that the trends and patterns in arrests, admissions, and court processing time continue their current trajectories, and does not account for changes in policies, or other unforeseen events. Systems like New York City jails are complex and volatile, and there is significant uncertainty that must be accepted as a result. Rigorous back-testing was used to calculate prediction intervals to aid in visualizing this uncertainty in the resulting forecast.

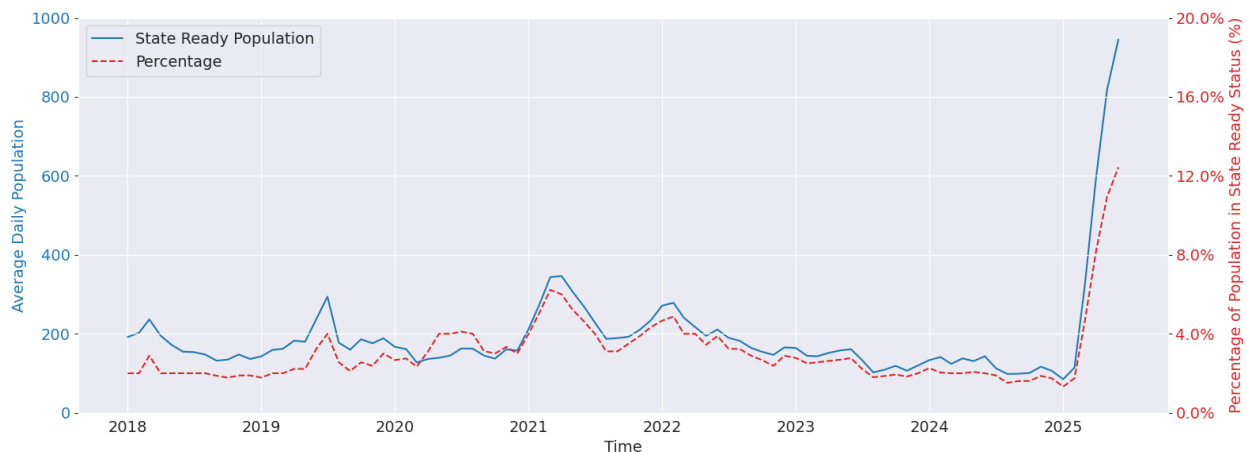
## Forecasting Methodology

### 1 Background

In January 2025, The NYC Department of Correction's (DOC's) Operations Research team released a report on its first Discrete-Event Simulation to forecast jail population. In this framework, two main components that drive population were estimated separately: 1) daily number of new admission and 2) how long an individual would stay incarcerated.

A key limitation of this framework lay in its estimation of length of stay (LOS), which the Department defines as the duration of one's stay from admission to discharge. Because aggregate LOS statistics update only upon an individual's discharge, this variable becomes less reflective of the system when an event significantly delays discharges for large segments of the incarcerated population. A notable example of this occurred during the DOCCS wildcat strike. The wildcat strike caused substantial delays in transferring sentenced individuals to state custody, leading to a significant increase in the "state-ready" population, as Figure 1 illustrates. Performance evaluations of the initial framework revealed forecast inaccuracies during this period, primarily because the model could not account for these delays due to the unavailability of LOS data for "state-ready" individuals.

To better capture short-term fluctuations within the criminal justice system, the Operations Research team updated the jail population forecasting framework. The new framework still derives population projections from two core components: admissions and length of stay. However, the modeling methods for estimating each component have now been updated. A Prophet time series forecasting model is used to estimate daily new admissions, and a Bayesian survival model is used to estimate the duration an individual will stay incarcerated.

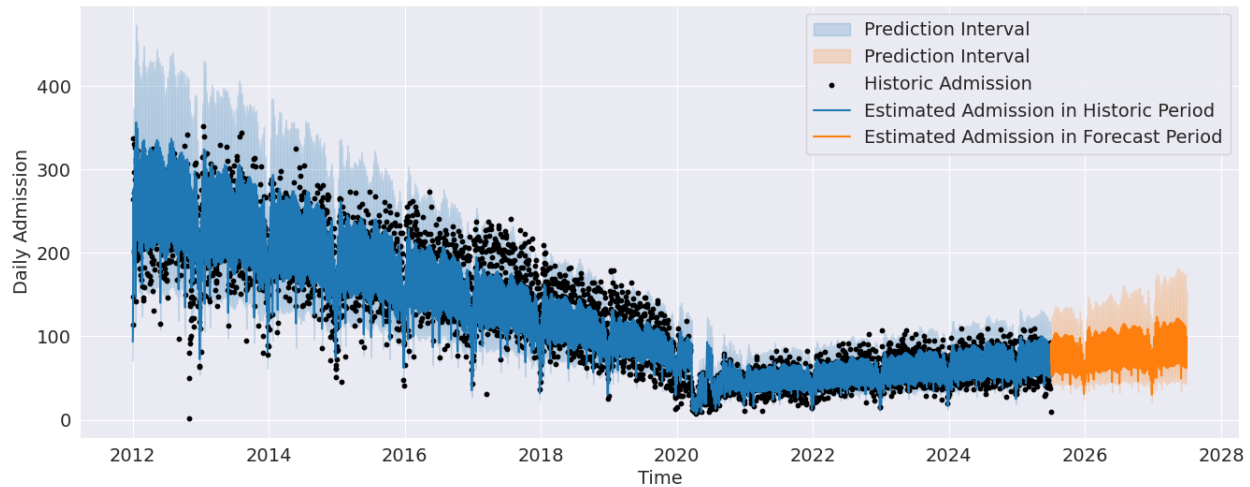


**FIGURE 1.** Average daily population in “state-ready” status and its percentage over total population from January 2018 to July 2025. “State-ready” individuals are the ones that have been assigned a valid declaration date and are awaiting transfer.

### 2 Forecasting Daily Admission

The Prophet[1] model was trained on historic admissions data and then used to predict how many individuals will be admitted to Rikers each day over the next two years. The model is a forecasting

tool that identifies recurring patterns such as differences between weekdays and weekends, seasonal fluctuations throughout the year, and the impact of holidays on admission rates. More importantly, as events like COVID-19 fundamentally changed the arrests patterns and court operations, the model provides flexibility to treat different operational periods separately and make more accurate predictions by recognizing any outdated pre-pandemic patterns and keeping underlying seasonal trends in criminal justice activities consistent. Figure 2 shows how the Prophet model learns and captures the major patterns in historic admission data and makes predictions based on the data.



**FIGURE 2.** Daily number of admissions from 01/01/2012 to 06/30/2025 and anticipated daily number of admissions from 07/01/2025 to 06/30/2027. The model learns from historic admission data (2012-2025, in black) and captures the major trends and patterns (in blue). Based on the knowledge, the model predicts daily admission in the next two years (in orange).

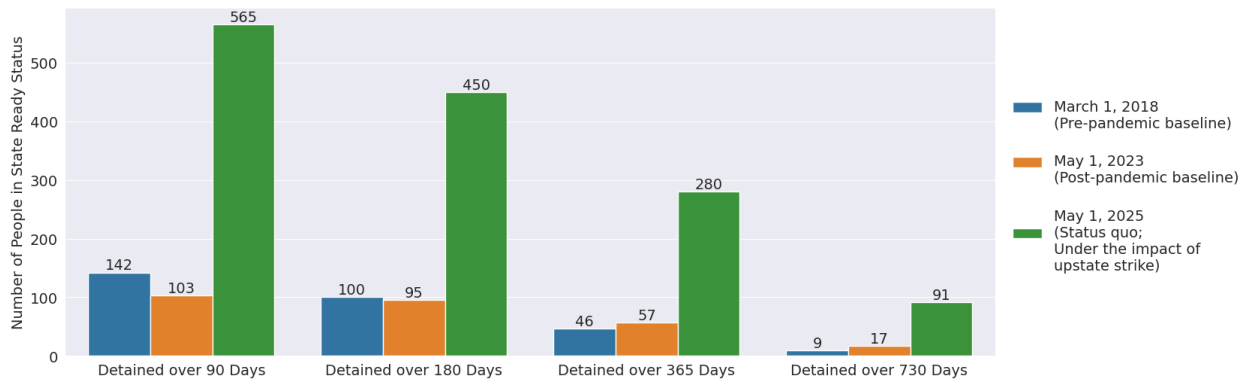
### 3 Forecasting Length of Stay

A Bayesian survival model[4] was used to predict how long individuals remain in custody. This model addresses a crucial question for population forecasting: "What are the chances an individual will still be in custody after 30, 90, or 180 days?" It learns the complex patterns of stay durations from all individuals in custody over the past four years, critically including those who are still in custody, not just those who have been discharged.

Understanding the complete distribution of length of stay and how it changes over time is vital for accurate population projections, as these shifts reflect evolving interactions within the criminal justice system. A clear illustration of this is the impact of the DOCCS wildcat strike earlier this year. Even without complete data for individuals who had not yet been transferred in May, by looking at the distributive properties of stay duration, we could detect a significant increase in "state-ready" individuals over various ranges, compared to periods when the DOCCS transfer process was functioning normally (Figure 3).

This Bayesian survival model was also used because its design better suits the data. While the previous approach can only learn from the length of stay of discharged individuals, a Bayesian survival model can also learn from individuals who are still in custody, treating their ongoing incarceration as valuable information and capturing any short-term fluctuations in the system. The

use of all available data produces more reliable predictions about the length of stay patterns across different security levels, detainee statuses, and demographic groups.



**FIGURE 3.** Number of "state-ready" individuals detained over 90, 180, 365, and 730 days on three historic dates (03/01/2018, 05/01/2023, and 05/01/2025).

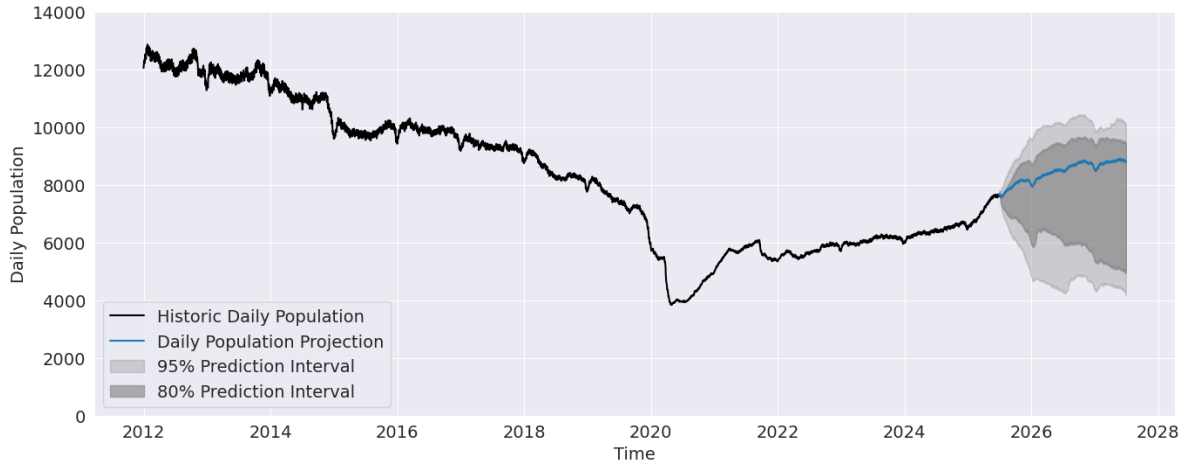
### Baseline 2-Year Forecast

New York City jails are inherently dynamic, with populations constantly fluctuating due to factors like crime and arrest rates, policy changes, and court decisions. While the population of incarcerated individuals dropped significantly from 2012 through 2020, it has been steadily trending upwards since then. This recent increase is primarily the result of rising admission rates and an extended average length of stay for individuals in custody.

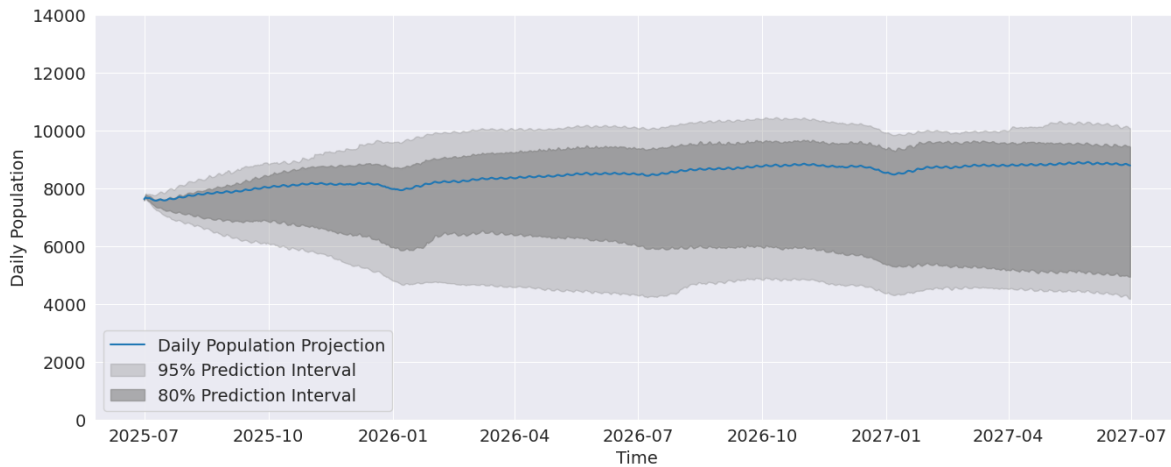
New York’s bail reform legislation, for instance, aimed to focus pretrial detainment on those with the most serious charges. However, the time required to resolve criminal cases tends to scale with their severity, contributing to longer stays[3][5]. Moreover, since the DOCCS wildcat strike in February and March of this year, admission rates have continued to increase while the discharge rate significantly dropped due to a pause in DOCCS state-ready transfers. Although DOCCS resumed transfers in May, transfers are occurring at a significantly reduced rate compared to before the strike. This has led to a rapid increase in the jail population. Specifically, individuals who became "state-ready" in March 2025 took, on average, 102 days to be transferred, a stark increase compared to an average of just 12 days in 2024.

For the next 2 years, the forecast results suggest admission and discharge rates will both see a slight increase with similar growth rates. However, the discharge rate starts with a lower value as DOC is in the process of resuming transfers to DOCCS. Since the Department resumed these transfers to some degree at the end of May, we anticipate that the rate of population growth will begin to slow down. As shown in Figure 4, the anticipated population will be approximately 8,786 by July 2027.

It is important to note that this forecast assumes that the major patterns in admission rates and case processing time will continue as observed, and it does not account for any new policy changes or unforeseen events. The inherent uncertainty around these projections is rigorously estimated by measuring the prediction errors collected by a series of back-tested forecasts from 2018 to 2025.



(a) Including historic context



(b) Zoomed - forecasting period only

FIGURE 4. Population Baseline Forecast

## Back-Testing Results

The Department used a series of back-tests to quantify uncertainty for its final forecast. The process of back-testing involved training the component models on historical data up to a past date, getting predictions over the subsequent 2-year period, and then calculating the prediction errors between actual population and estimated population during each period. These recorded errors were used to estimate the prediction interval for each time step in the baseline forecast, as shown in Figure 4. A sample of the back-testing runs is shown in Figure 5. It is worth noting that 2020-2022 were problematic periods for time series forecasting as a whole. The COVID-19 pandemic proved to be a very disruptive event that resulted in large forecast errors across domains[2].

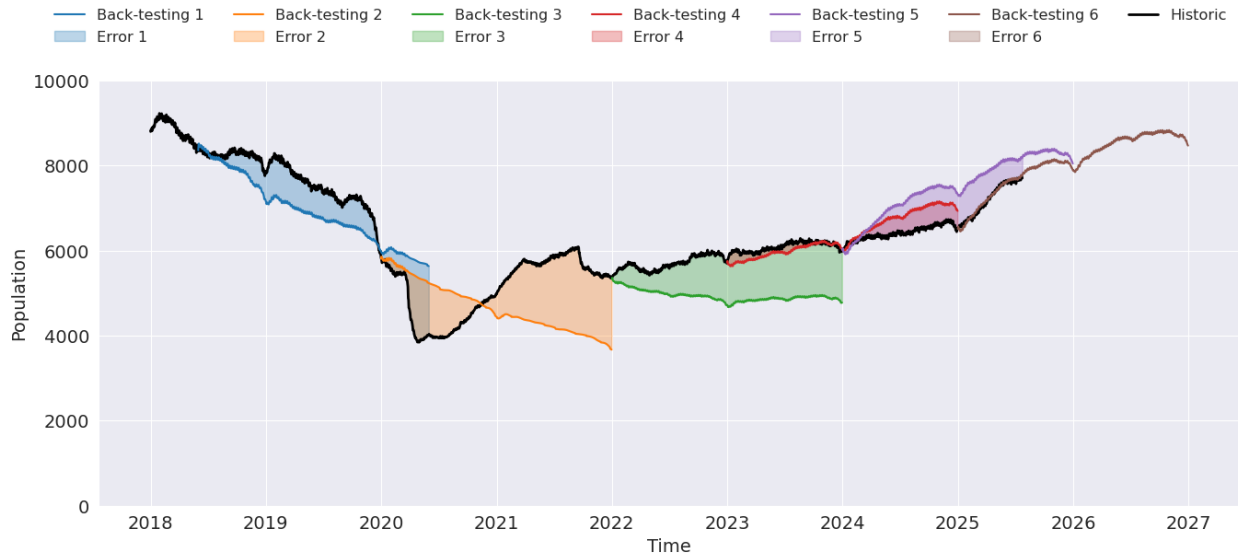


FIGURE 5. Some sample back-testing results from 2018 to 2025.

## References

- [1] Sean J. Taylor and Benjamin Letham. “Forecasting at Scale”. In: *The American Statistician* 72.1 (2018), pp. 37–45. URL: <https://doi.org/10.1080/00031305.2017.1380080>.
- [2] John O’Trakoun. “Business forecasting during the pandemic”. In: *Business Economics* (2022). URL: <https://link.springer.com/article/10.1057/s11369-022-00267-2>.
- [3] Brad Lander. *Ensuring Timely Trials*. URL: <https://comptroller.nyc.gov/wp-content/uploads/documents/Ensuring-Timely-Trials.pdf>. (accessed: 12.24.2024).
- [4] Austin Rochford, George Ho, and @fonnesbeck. *Bayesian Parametric Survival Analysis*. URL: [https://www.pymc.io/projects/examples/en/latest/survival\\_analysis/bayes\\_param\\_survival.html#bayesian-parametric-survival-analysis](https://www.pymc.io/projects/examples/en/latest/survival_analysis/bayes_param_survival.html#bayesian-parametric-survival-analysis). (accessed: 06.01.2025).
- [5] Joanna Weill et al. *Felony Case Delay in New York City: Lessons from a Pilot Project in Brooklyn*. URL: [https://www.innovatingjustice.org/sites/default/files/media/document/2021/Case\\_Delay\\_Policy\\_Brief\\_3.29.2021.pdf](https://www.innovatingjustice.org/sites/default/files/media/document/2021/Case_Delay_Policy_Brief_3.29.2021.pdf). (accessed: 12.24.2024).

# Jail Population Update

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*MOCJ Terms and Conditions Report July 2025, Covering through June 2025*

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## **Introduction: Jail Population Dynamics & Good Governance Efficiencies**

This report examines the composition of the jail population, highlighting key groups currently in jail and how shifts in case processing influence the number of incarcerated individuals waiting for their case outcome. This report demonstrates the building blocks for proactive policies related to people and processes contributing to the jail population. Good governance, in this context, involves optimizing resources effectively to minimize crime harm to the public, while also reducing inefficient costs and negative public health/public safety impacts.

## **Key Findings**

### **Recent Trends in the NYC Jail Population:**

- **Population Growth:** The jail population has risen over the past two years, driven by an increase in individuals designated with a mental health classification across all charge types.
- **Stabilization:** Despite the overall population growth, case processing times have begun to decrease over the past two years, and certain key subgroups have stabilized, including long-term detainees and those facing murder charges.

### **Looking Ahead: Good Governance Opportunities for Efficiencies:**

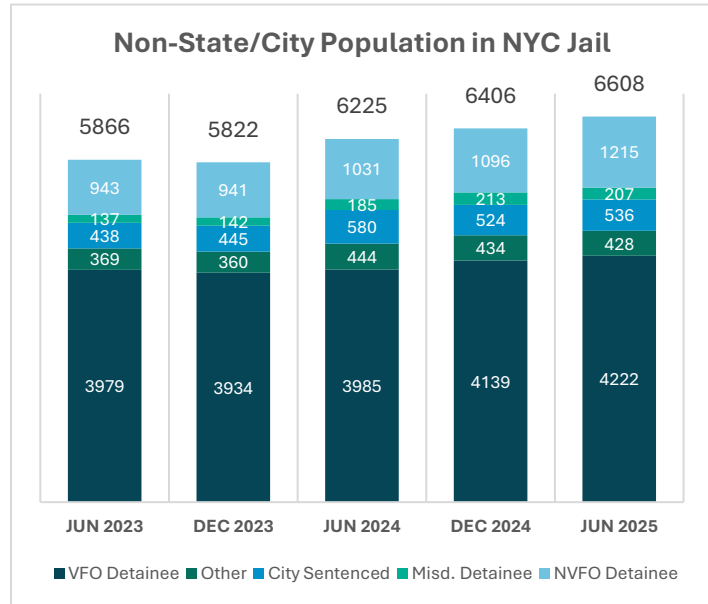
- **Subpopulations with Acute Needs and Other Key Subpopulations:** A significant portion of the jail population has specific, high-needs profiles. These individuals often require tailored interventions, which can be more effectively addressed through proactive case processing or integrated responses. Most of this population will return to community fairly soon, and so a public health/public safety integrated response regarding addressing behavioral health needs is necessary.
- **Case Processing Efficiencies:** Even minor improvements in case processing times can result in meaningful reductions in the jail population.

Note: For current reporting period, due to an influx of cases held by NYC jails temporarily during the suspension of transfers to state prison, each chart includes a note indicating whether or not state ready population is included or excluded. As the focus of the report is tracking changes in relevant trends in case processing, crime, and decision-making among the city jail population, the state prison population (held as a temporary stop-gap) is removed from historical and current analyses to reveal underlying practice/population changes, but the total including state prison is also noted. As such, discharge length of stay analyses are suspended during this time. (See Footnote 1 for additional information on state transfers.).

As of 7/21/2025, the state ready population<sup>1</sup> is **1,036**. This current total represents **+4** change from last month and a **+856** change from last year.

### Recent Trends in the NYC Current Jail Population

**Current City Jail Population:** By the end of June 2025, the NYC jail population was 6,680 without the state ready population (7,650 including the state ready population). This non-state total is a 13% increase from June 2023, and a 6% increase from June 2024. Of this population, 85% are held pretrial, 8% are city sentenced, and other categories make up the remaining 6%. The population, without state ready, is 93% men and 7% women. The largest increase in total beds used was among non-violent felonies. Among VFOs,<sup>2</sup> the population had been flat for two years, with a slight recent uptick.



Data Source: MOCJ Analysis of DOC Snapshot Data.  
 Note: State ready population excluded from all years to reveal underlying city jail population trends.

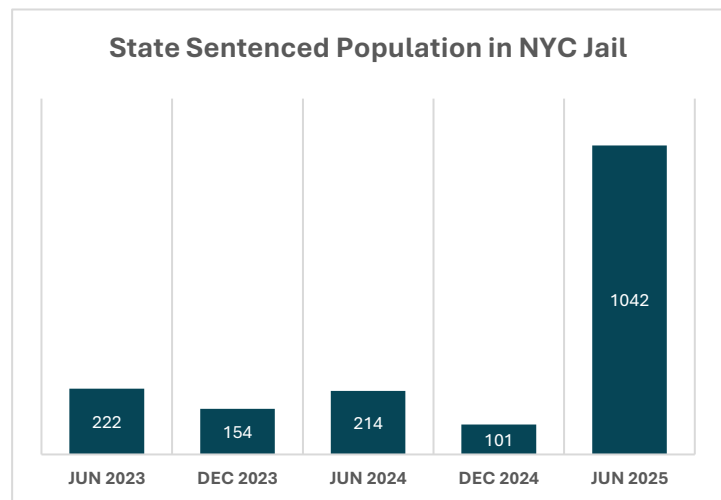
State Population +387% (828 beds)

VFO Detainee +6% (237 beds)

NVF Detainee +18% (184 beds)

Misd. Detainee +12% (22 beds)

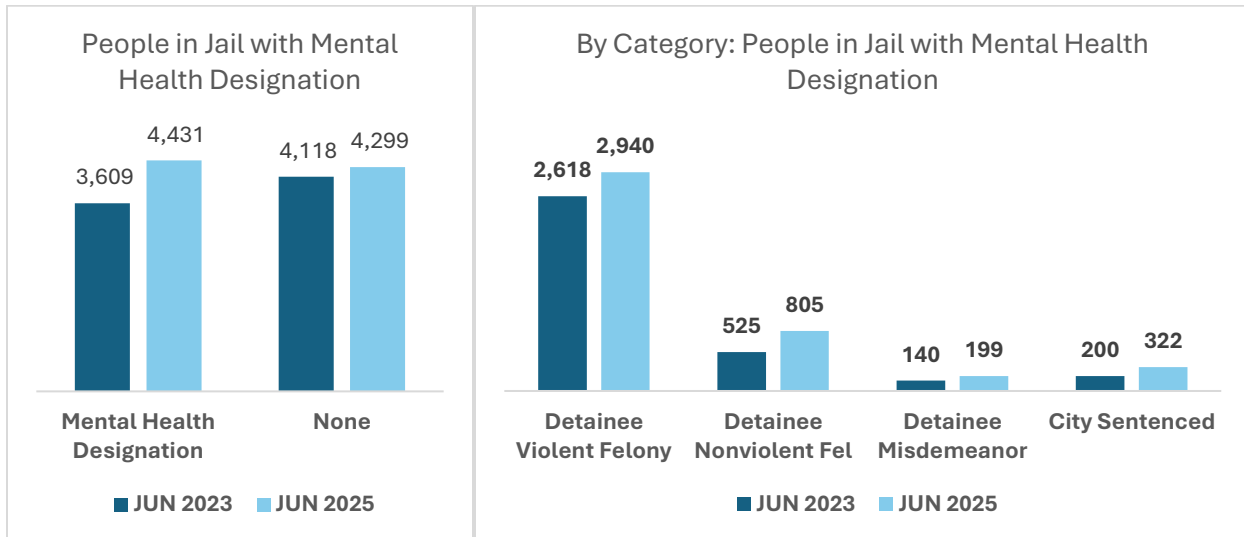
City Sentenced -8% (44 beds)



<sup>1</sup> To reduce and stabilize the state-ready population at Rikers, the following plan has been established: During the week of 7/21/25, DOCCS will transfer 110 state-ready individuals from DOC custody. In the week of 7/28/25, DOCCS will transfer an additional 225 individuals. Beginning the week of 8/4/25, and continuing weekly thereafter, DOCCS will transfer 135 state-ready individuals per week until the existing backlog is resolved.

<sup>2</sup> Identification of VFOs based on a combination of the NY Penal Law and the DCJS VFO Processing Annual Report VFO table to identify the “VFO like” A-I and A-II felonies, so as to include Murder.

**Increase in Brad H Population:** The recent increase in the jail population has been driven by people with a Brad H Mental Health designation.<sup>3</sup> This population has increased across all charge severities, and the city sentenced population.



Data Source: MOCJ Analysis of DOC Admissions and Discharges. Note: State ready population excluded from all years to reveal underlying city jail population trends.

**Increased Admissions to Discharge Ratio:** The ratio of admissions to discharges has increased over the last six months. In 2025 through June, 184 more people were admitted to jail per month than discharged, resulting in a net population increase of 1,104 individuals. On average, each borough saw 37 more admissions than discharges per month in 2025.

	2024	2025 (Jan-Jun)
<b>Average Monthly Admissions</b>	1,989	2,055
<b>Average Monthly Discharges</b>	1,947	1,871
<b>Net Monthly Change</b>	+ 42 Beds per month	+184 Beds per month
<b>Net Beds Per Borough Per Month</b>	+ 8 Beds	+37 Beds
<b>Net Total Year Jail Pop Change</b>	+ 504 Beds	+1,104

Data Source: MOCJ Analysis of DOC Admissions and Discharges. Note: State ready population included given inclusion of discharge data.

<sup>3</sup> This designation refers to anyone who during a single incarceration stay has engaged with the mental health system at least 3 times, has been prescribed certain classes of medication, or has otherwise been assessed by the Health Authority as needing further mental health treatment. Correctional Health Services (CHS) also notes that there has been an increase in the percentage of people enrolled in mental health services (53% in August 2023 to 57% in June 2025) over that time. The increase in this population could be due to a variety of factors that may or may not be related to crime and arrest trends, such as access to council or bail payment, and court and individual decision-making.

**Non-State Sentenced Long Stayer Population:** The number of long-term detainees increased by about 100 over the last year, after a decline between 2022 and 2023 (this number remains up from early 2020).

	Jan 2020	Jun 2021	Jun 2022	Jun 2023	Jun 2024	Jun 2025
People in Jail for 1+ Year	926	1,446	1,356	1,226	1,312	1,419
1-2 yrs	703	837	809	746	842	900
2-3 yrs	165	404	325	296	271	334
3+ yrs	58	205	222	184	199	185

Data Source: MOCJ Analysis of DOC Census. Note: State ready population excluded from all years to reveal underlying city jail population trends.

**Steadying of Murder Case Population:** The number of people in jail awaiting case processing on murder charges has stayed relatively flat over the past two years (this number remains up from early 2020).

	Jan 2020	Jun 2021	Jun 2022	Jun 2023	Jun 2024	Jun 2025
Murder	543	796	916	945	932	905
Attempted Murder	306	482	585	597	561	608

Data Source: MOCJ Analysis of DOC Census. Note: State ready population excluded from all years to reveal underlying city jail population trends.

**Jail Use:** City jail (as opposed to a long-term state prison) is primarily a temporary holding facility while court parties work towards the disposition of a case. As such, most people detained in the Rikers Island city jail (as with any other city jail) return to the community. Those in jail for long periods of time for the most serious charges are usually eventually transferred to state prison, while the majority of people return back into the community. This pattern has stayed consistent over the past decade.

## Looking Ahead: Good Governance Opportunities for Efficiencies

**Subpopulations with Acute Needs and Other Key Populations:** Several key populations are identifiable in the jail population. These populations warrant strategic responses to optimize public safety while preventing inefficient use of jail. These strategic populations provide opportunity for optimizing proactive policy scenarios to reduce inefficiencies while increasing public safety. These groups are not mutually exclusive, so people may fall into more than one category.

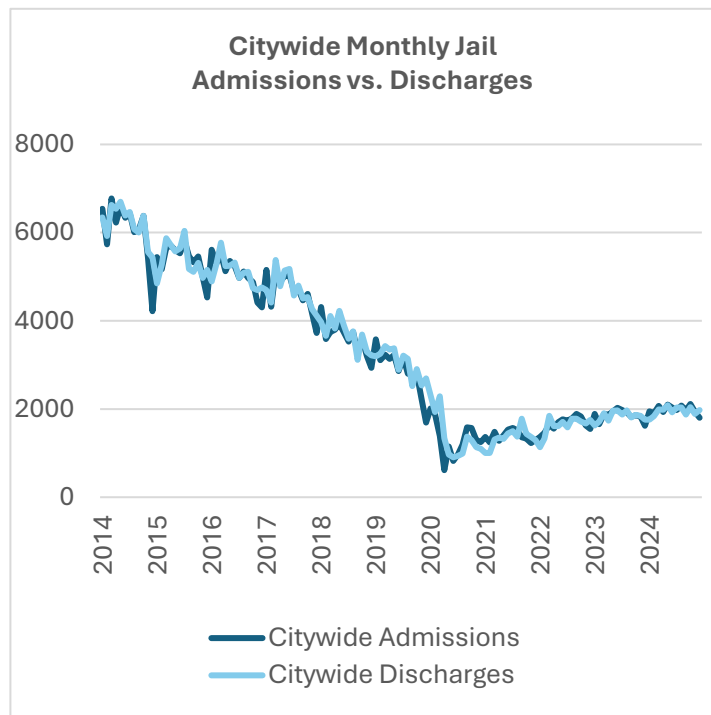
Population	# of Beds	Notes
<b>Serious Mental Illness</b>	1,400	<ul style="list-style-type: none"> <li>Approximately 21% of the jail population has a serious mental health condition. (CHS Patient Profile, June 2025)</li> </ul>
<b>Homeless</b>	1,700	<ul style="list-style-type: none"> <li>Approximately 26% of the jail population is homeless or likely homeless. (CHS, June 2025)</li> </ul>
<b>Substance: Alcohol Use Disorder</b>	1,900	<ul style="list-style-type: none"> <li>Approximately 29% of the jail population is experiencing alcohol use disorder. (CHS, June 2025)</li> </ul>
<b>Substance: Opioid Use Disorder</b>	1,600	<ul style="list-style-type: none"> <li>Approximately 24% of the jail population is experiencing opioid use disorder. (CHS, June 2025)</li> </ul>
<b>Recently Persistent Low-Charge Recidivists</b>	1,150	<ul style="list-style-type: none"> <li>Older adults with a recent persistent pattern of primarily low-level crime, and no A/B felonies.</li> <li>Fewer than 20% of this group are prison-bound.</li> <li>Most require reentry services for safe reintegration.</li> <li>Charges commonly include petit larceny, as well as assault and burglary often tied to shoplifting gone wrong.</li> <li>Almost all have past drug-related offenses.</li> <li>While most are rearrested again at some point over the next year after returning to the community, most of their rearrests are for low-level offenses, the most common being petit larceny.</li> </ul>
<b>Long Stayers w/ No Recent Persistent Pattern</b>	650	<ul style="list-style-type: none"> <li>Out of 1,460 long-term detainees, about 650 do not have a recent persistent pattern or any other active pending criminal case.</li> <li>This group has been detained for an average of 837 days.</li> </ul>
<b>No Recent Court Activity Young Adults</b>	350	<ul style="list-style-type: none"> <li>There are about 350 young adults under 25 who do not have a recent persistent pattern of crime.</li> <li>They have been in jail on average for 356 days.</li> <li>Most are not prison bound and have no other recent jail admissions or SC cases.</li> <li>More than 9 in 10 are not rearrested for a serious violent crime in the year following release.</li> </ul>

Data Source: MOCJ Analysis of DOC/OCA Data (except where otherwise indicated). Numbers are rounded. Note: CHS data includes state ready population. For all others, state ready population excluded from all years to reveal underlying city jail population trends.

**Case Processing and Jail Population Relationship:** Small reductions in case processing times (though logistically challenging) would have a large impact on the jail population. Any changes in case processing times would impact either the length of adjournments, or the number of adjournments.

- **Time Between Adjournments:** Currently there are an average of 46 days between adjournments for the 1+ year Rikers population, up from 40 days in 2018 (note that differences in case types drives some of this change). Every 1 day reduced on average between adjournments for these long-stayers would reduce the jail population by 63 beds (holding case types and number of adjournments constant). As such, reducing each adjournment length by 7 days on average would eliminate about 441 jail beds.
- **Number of Adjournments:** Currently there is an average of about 17 adjournments per person for the 1+ year Rikers population. Reducing this by 1 adjournment for this population would eliminate 195 beds. Reducing the number of adjournments by 1 for the 60+ day population would eliminate about 850 beds, a much higher number because there are so many people who stay for between 60 days and 1 year.

- **Admissions vs. Discharge Matching:** Similarly, jails can maintain a static number of people with cases pending decision as long as the pace of processing to discharge matches with the pace of admissions. Jails can maintain a steady population if **admissions and discharges remain balanced**. Historically, these rates have closely tracked each other, with **small monthly shifts** determining whether the population rises, falls, or stays the same. Even slight imbalances matter—**just eight more admissions than discharges per borough per month** (out of ~2,000 admissions/discharges citywide) can **increase the need for 500+ beds**, as seen in 2024.



Data Source: MOCJ Analysis of DOC Admissions & Discharges.  
Note: State ready population included.

	2018	2019 (Jan-Jun)	2022	2023	2024
Average Monthly Admissions	3,616	3,189	1,660	1,859	1,989
Average Monthly Discharges	3,687	3,258	1,628	1,837	1,947
Net	-71 Beds per month	-69 Beds per month	+30 Beds per month	+ 22 Beds per month	+ 42 Beds per month
Net Beds Per Borough Per Month	- 14 Beds	-14 Beds	+ 6 Beds	+ 4 Beds	+ 8 Beds
Total Year Jail Pop Change	-852 Beds	-828 Beds	+ 360 Beds	+264 Beds	+ 504 Beds

Data Source: MOCJ Analysis of DOC Admissions & Discharges. Note: State ready population included.

## Public Health, Public Safety, and Inefficiencies

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**Time to Final Disposition:** Court parties have many actions to take before the ultimate disposition of a case. Stakeholders are working toward consolidating actions and reducing the number of actions that must occur on a court date to realize efficiencies and maximize productivity of each court appearance.

**Clear Needs Unresolved:** Many individuals in need of services reenter the community with unresolved mental health and behavioral health issues that were contributing factors to their arrest. It is worth noting, however, that offending for many of these individuals rises and falls over time as people are stabilized and destabilized, or for other reasons. Following release, this group's arrest frequency tends to decrease over time.

**Destabilization of Short-Stay Individuals:** People who will soon pay bail or have their cases dismissed often spend just enough time in jail to lose jobs, housing, or childcare arrangements.

**Long-Stayers:** Individuals ultimately sentenced to state prison often spend years in jail, interacting with individuals arrested for less serious charges instead of serving time in facilities better suited to their long-term incarceration.

**Threat Response Intensity:** Individuals experiencing heightened nervous system threat responses often have these responses intensified in jail.