

WORKFORCE DATA IN ACTION

How the NYC Comptroller's Office Leverages
Payroll Insights to Drive Workforce Management

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NYC's Need for Real-Time Workforce Insights

At the peak of the COVID-19 pandemic, increased attention turned to government staffing challenges, both in NYC and nationally, as critical vacancies led to declining service delivery and ballooning overtime costs. Nationwide trends like the “Great Resignation,” local policy changes like the return to office for City employees, and delays in delivery of key services, such as processing food stamp applications, led to questions about whether the City had the staff it needs.

Many of these issues were highlighted [by the 5BORO Institute](#) in a 2023 report, and Work for America later examined [these trends nationally](#).

The NYC Comptroller’s office sought to assess these staffing shortages locally – asking whether any particular shortages were linked to a decline in service delivery and agency performance. They quickly realized that there was no straightforward way to analyze these issues, since there was no accessible, up-to-date data set tracking staffing across city agencies and roles.

The team needed an efficient, timely way to answer two key questions:

1.
For each of NYC’s 80 agencies, and for the City overall, how does actual agency headcount align with the budgeted headcount?

2.
And, how do changes in agency headcount relate to service delivery?

The Comptroller’s team developed the NYC Agency Staffing Dashboard Dashboard as a first step toward monitoring these questions internally. After using the Dashboard internally for a few months, the Comptroller’s team decided to make the Dashboard publicly available.

About the NYC Comptroller’s Office

The New York City Comptroller’s office works to promote the financial health, integrity, and effectiveness of New York City government, in order to strengthen trust, secure a thriving future for all New Yorkers, and build a more just, equitable, and resilient city.

Led by an independently-elected citywide official, the Comptroller’s office provides checks and balances needed to hold City government accountable for budgeting wisely, investing responsibly, operating efficiently, acting fairly, living up to its obligations and promises, and paying attention to the long-term challenges we face together.



**In New York City, Comptroller
Brad Lander's NYC Agency
Staffing Dashboard incorporates
multiple data sources into an
interactive tool, allowing
unprecedented insight into NYC's
public sector workforce.**

When public agencies are understaffed, it becomes harder for them to deliver the essential services communities rely on. By integrating and presenting real-time data on staffing levels and vacancies, the Dashboard empowers city leaders to identify issues and take action. The [Agency Staffing Dashboard](#), especially in combination with the Comptroller's [NYC Government Performance Dashboard](#), also allows City leaders and the public to explore how changes in staffing levels correlate with the quality of public services.

This case study explores how the NYC Comptroller's Office developed the Dashboard, how data can help prevent declines in service delivery for constituents, and what other local governments can learn about how to make the best use of the data they have to get actionable insights.

About the NYC Agency Staffing Dashboard

The NYC Agency Staffing Dashboard provides data on the number of actual full-time City employees versus the number of full-time positions that City agencies are authorized to hire.

“The Dashboard makes it much easier for us and others to visualize trends and changes.”

The Dashboard includes data from 80 City agencies.
As of November 30, the Dashboard was tracking:

300,299 authorized positions

286,159 actual employees

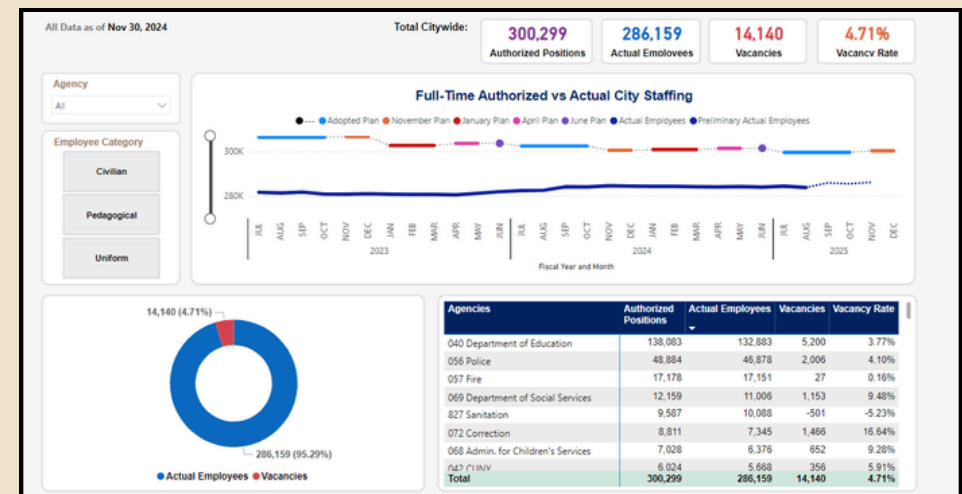
14,140 vacancies

4.71% citywide vacancy rate

What does the Dashboard do?

The Dashboard allows users to filter by time frame, agency, and role type. The Dashboard, which is updated monthly, includes data dating back to 2017.

The Dashboard can be found [here](#).



Empowering Users with Workforce Insights

The Comptroller's office uses headcount data to monitor the effects of citywide policies on staffing levels, which informs their recommendations for improving public agency performance and feedback on the City's budget. For example, the Comptroller's office identified links between high staffing turnover at the City's Department of Housing Preservation and Development (HPD) and significant delays in affordable housing production. Based on this finding, the Comptroller's office made numerous [recommendations](#) to HPD on staff development and training, both to prevent additional attrition and also to begin filling the knowledge gap caused by the increased departures.

The Dashboard allows City employees outside of the Comptroller's office to access headcount data. It can be time and resource intensive for agencies to analyze their own headcount data, so some City agency employees have reported that the Dashboard has provided them unprecedented and timely access to data that would be hard to get from within their own agencies.

This reflects a broader need to address data access and use in the public sector, and also highlights how valuable user-friendly and widely accessible tools like the dashboard are.

The Dashboard can be used by agency leaders seeking to identify staffing trends – for example, if an agency identifies a net decrease in its actual employees, they can take action before this turns into a negative impact on service delivery.

Finally, releasing vacancy data through the Dashboard is essential to the Comptroller's role as a public accountability mechanism. For instance, a recent [City & State analysis](#) of the Dashboard revealed that the City's vacancy rate decreased not due to increased hiring, but because authorized positions were cut to reduce the budget.

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Looking at staffing is a way to find out if a government is adequately drawing candidates into their workforce. How does that look different across the agencies? How can an agency market itself better?

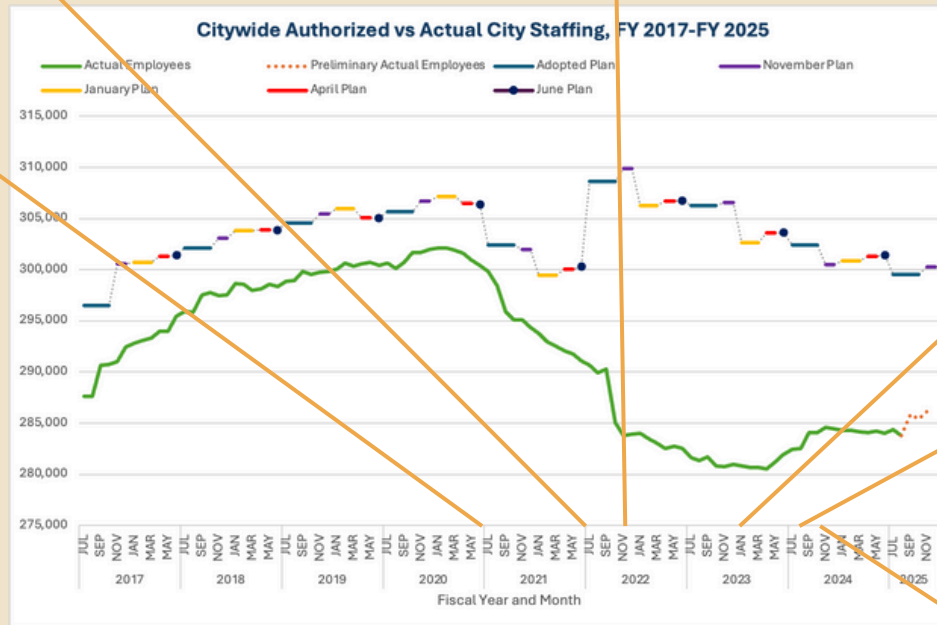
The NYC Agency Staffing Dashboard in Action

MID-2021: Despite an increase in authorized positions in mid-2021, due to federal aid and new initiatives, actual staffing levels continued to drop, particularly after the City's return-to-office and vaccine mandates.

NOVEMBER 2021: By November 2021, the gap between authorized positions and actual employees widened significantly, leading to a higher vacancy rate.

EARLY 2023: In 2023, the City's full-time workforce grew due to new collective bargaining agreements, wage increases, hybrid work options, and hiring halls to address 23,000 vacancies.

2020: The Dashboard shows a steady decline in both authorized positions and actual employees starting around the beginning of the pandemic in early 2020, as the City reduced vacant positions and faced workforce departures.



2023: In September 2023, the city's vacancy rate was 4.6%, the first time it's dropped below 5 percent since July FY 2022.

The Dashboard offers clear, visual insight into public sector workforce trends in NYC.

Source: [Watching the Workforce – Introducing the Comptroller's NYC Agency Staffing Dashboard](#)

Notes: The dates in the graph align with New York City's fiscal year (July–June), while the dates in the call-out boxes align with the calendar year. Authorized position data comes from financial plans released by the City several times a year (January Plan; April Plan; June Plan; November Plan), and is assigned to each month until an updated plan is released.

LATE 2023: Growth stalled with a hiring freeze in October 2023, but this corresponded with a reduction in authorized head count, so it didn't result in an increased vacancy rate.

Dashboard Development

The Comptroller's team had **three key goals** for the Dashboard:

1

Create a One-Stop Shop for Citywide Vacancy Data

This involved combining actual headcount data (traditionally released by the NYC Office of Management and Budget (OMB) but also held by the City's Financial Information Services Agency (FISA) payroll office with authorized headcount data (managed by OMB and released in financial plans approximately quarterly).

2

Update the Data Regularly

The Dashboard is updated monthly with new headcount data. It is updated approximately quarterly with authorized position data, following the release of each financial plan.

3

Design a User-Centered Experience

The Dashboard is built in Microsoft Power BI, with maximum attention to usability, filters, and controls. It also translates the data into plain language, written for non-technical, non-finance expert audiences

Dashboard Development

The Comptroller's team addressed a number of data issues in the process of developing the Dashboard.

ISSUE

Data Formats

Authorized headcount data and actual headcount data live in different sources, with different structures.

Furthermore, the City's financial plans are released periodically as separate reports. Comparing changes across plans requires re-formatting and merging into one file.

SOLUTION

A data-savvy team member developed a data structure that would allow for the authorized headcount and actual headcount data to be merged, then built a program to automate some of the data transformation and cleaning.

The automation also made it feasible and less time-intensive to update the Dashboard. For the first time, the team had authorized headcount from separate financial plans in a format that allowed them to compare authorized headcount changes over time.

Dashboard Development

The Comptroller's team addressed a number of data issues in the process of developing the Dashboard.

ISSUE

Delayed Data

The actual agency headcount data that was available to the Comptroller's office came from the Office of Management and Budget (OMB), in the form of public reports that are released periodically. The reports reflect data from several months prior.

This delayed data was not useful for the Comptroller's goal of timely insight into ongoing staffing changes.

SOLUTION

The Comptroller's team worked with FISA and OMB to obtain **preliminary headcount data based on payroll information**. Although this data is technically preliminary and may be adjusted when the final headcount information is released, it is highly accurate and available quickly.

This allows the Comptroller's team to incorporate headcount data in the first week of each month for the previous month – a significantly improved turnaround time while maintaining a very high level of accuracy.

Dashboard Development

The Comptroller's team addressed a number of data issues in the process of developing the Dashboard.

ISSUE

Unavailable Data

Some data that would have ideally been included in the Dashboard does not exist in the structure needed.

For example, the Dashboard can't drill down into specific job types or functions within each agency, because the data is not consistently available across agencies within the existing data sets.

*Further discussion of data limitations in the next section.

SOLUTION

The team prioritized using timely data that would include all City agencies.

The Comptroller's team continues to identify opportunities to include additional data and plans to expand the Dashboard over time.

Development Timeline: Approximately 4 months.

Technical Skills and Tools: The Dashboard was developed in Power BI, and required a team member with expertise in Microsoft Excel and Python.

Dashboard Maintenance: Maintaining the Dashboard requires about 2 hours per month, primarily for data cleaning and validation.

Understanding Vacancy Rates

The Dashboard tracks New York City's vacancy rate by comparing current headcount (from preliminary payroll data) to authorized hires (from financial plans). With nearly 300,000 NYC employees, some turnover is expected, so a 0% vacancy rate isn't the goal. Instead, the rate helps benchmark, identify trends, and compare across agencies.

A sudden rise in vacancy rate might mean employees are leaving, or that an agency hasn't yet filled newly authorized positions. To give a clearer picture, the Dashboard shows vacancy rates alongside both authorized and actual headcounts.

Additionally, "authorized hires" can be misleading. Even if roles are approved in a financial plan, agencies may lack the budget to fill them, inflating vacancy rates.

Vacancy rates only tell part of what's going on with an agency's staffing. This metric can't provide insight on how agencies are working to fill positions, applicant qualifications, or if authorized positions are appropriate for service needs.

The Comptroller's team identified a few other limitations with the data currently available:

- It tracks only full-time staff, excluding part-time and contract workers.
- It shows total employee numbers but not turnover ("churn") rates.
- It doesn't allow job type comparisons across agencies due to differing titles and roles.

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Part of the Dashboard's potential is in the data we **don't have.**

What's Next for the Dashboard?

The Comptroller's Office has plans to further develop the Dashboard.

They plan to incorporate churn data (new hires and separations) to make the tool more actionable, particularly for agency staff and oversight bodies. And, they would like to layer in spending on salaries and overtime to highlight correlations between headcount and overtime, for example.

BIG PICTURE

Public Sector Staffing Data Challenges

The Comptroller team's experience building the Dashboard reflects common challenges local governments face trying to gather workforce data insights:

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Government is not using all the tech that's out there.

1 Fragmented & Siloed Data

Before the Dashboard's creation, key staffing data remained fragmented, making it difficult to compare headcount to authorized positions. Many governments face similar issues, and many are still working with paper systems.

2 Lack of Standardization

Public sector agencies often use different titles and organizational structures, complicating efforts to compare staffing data across agencies or benchmark performance. This lack of standardization hampers the development of a holistic understanding of workforce dynamics.

3 Data Limitations

The Dashboard currently includes only full-time employees, excluding part-time and contracted workers who play important roles in many agencies. Additionally, it doesn't track churn—how many people leave and join within specific periods—making it harder to understand retention issues.

BIG PICTURE

Public Sector Staffing Data Challenges

These challenges highlight the need for a broader effort to improve public sector hiring data. Without standardized, integrated data systems, governments will continue to struggle to assess workforce needs accurately and proactively address gaps.

BIG PICTURE

Takeaways for Local Governments

The NYC Comptroller's Office Staffing Dashboard offers valuable lessons for other governments aiming to get useful information from their staffing data:

1

Leverage Existing Data Sources for Targeted Insights

Instead of overhauling data collection, focus on underutilized data points from current systems. Analyzing trends from HR, payroll, and timekeeping systems can reveal staffing issues without needing new tools.

2

Use Preliminary Data Effectively

For identifying trends, timely preliminary data—like payroll data with strong controls—is more useful than fully validated data that's delayed by six months.

3

Collaborate for Efficiency

Encourage departments to share data and insights. Some may have developed analytics solutions or gathered detailed workforce information that benefits the whole organization. Real-time data tools require ongoing maintenance, so centralization can have important efficiencies.

Conclusion

For any government looking to gain insight into staffing trends and their impact on services, the first step is to determine key metrics and the best data sources. Existing data sets with information about staff, such as payroll or timekeeping records, can be a useful place to start for locations with limited resources to do new data collection. **Going forward, generative AI can also enable more governments to transform their existing data sets into actionable staffing insights.**

The NYC Agency Staffing Dashboard demonstrates that real-time staffing and vacancy data can improve decision-making and transparency for both agencies and the public. Governments that lack the resources to produce a Dashboard can still learn from the principles that underlie this work. Other governments can apply NYC's approach to using existing data to enhance public sector operations.



Public Servant Spotlight

Kieran Persaud

Assistant Director for Budget Oversight

Kieran joined the Comptroller's team in 2022, and came up with the idea for the Dashboard based on his experience in a previous role at the Metropolitan Transportation Authority (MTA), where he worked with staffing data and helped to develop an internal overtime dashboard that provided key insights.

Kieran proposed building something similar for the Comptroller's office, and spearheaded the development using his technical skills, including Python and PowerBI. Kieran now manages the Agency Staffing Dashboard, in addition to a variety of other analytical projects that measure the impacts of state and city policies, under-budgeting of city funds for expenditures, and re-estimates of city costs.

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At my high school, students took an oath to “not leave my city any less but rather greater than I found it.” I’d like to think that my work in public service reflects my commitment to that promise.



About Work for America

Work for America aims to make public service a more desirable and stable career path that uplifts families, communities and our country. Our strategy improves critical local services and restores trust in government by building a network of practitioners, developing recruitment and hiring solutions, and driving a national movement to mobilize Americans into government jobs.



About The 5BORO Institute

The 5BORO Institute is an innovative, action-oriented think tank advancing creative solutions to strengthen NYC. We exist to help solve NYC's most challenging problems. We believe our city must remain vibrant, dynamic, and diverse – a home for New Yorkers to thrive in and a destination for trailblazers, immigrants, and visionaries. We partner with policymakers, the private sector, academia, and community leaders to bring best practices to government and tackle complex issues with innovative thinking and actionable plans.



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