New York City Office of Technology and Innovation

Artificial Intelligence Governance

Audit Highlights

Objective

To assess New York City's progress in establishing an appropriate governance structure over the development and use of artificial intelligence (AI) tools and systems. The audit covered the period from January 2019 through November 2022.

About the Program

AI-powered tools have an increasingly vital role in industry operations, including agriculture, health care and medicine, manufacturing, transportation, and government, enabling entities to operate more intelligently, more productively, and more competitively. Yet even as AI generates value, it is also giving rise to a host of unwanted, and sometimes serious, consequences.

New York City (NYC or City) and some of its agencies have been using AI to aid their operations. For example, the NYC Police Department (NYPD) uses AI to power its facial recognition technologies, which help the police identify unknown individuals, and the Administration for Children's Services (ACS) uses AI to predict children who are most likely to experience future harm in order to prioritize cases for quality assurance review. To ensure transparency in the use of AI and similar tools, NYC has enacted laws and policies to require the reporting of such technology use.

AI tools and systems pose unique challenges in accountability as their inputs and operations are not always visible. The U.S. Government Accountability Office (GAO) noted that a lack of transparency reduces effective oversight in identifying errors, misuse, and bias. Therefore, it is essential to establish governance structures over AI to ensure that its use is transparent and accurate and does not generate harmful, unintended consequences. Without adequate governance and oversight over the use of AI, misguided, outdated, or inaccurate outcomes can occur and may lead to unfair or ineffective outcomes for those who live, work, or visit NYC.

Key Findings

NYC does not have an effective AI governance framework. While agencies are required to report certain types of AI use on an annual basis, there are no rules or guidance on the actual use of AI. Consequently, City agencies developed their own, divergent approaches. We sampled four City agencies: NYPD, ACS, Department of Education (DOE), and Department of Buildings (DOB). Based on our survey results, we found ad hoc and incomplete approaches to AI governance, which do not ensure that the City's use of AI is transparent, accurate, and unbiased and avoids disparate impacts.

Some agencies have identified key risks and created processes to address those risks. Other agencies have not created any AI-specific policies or taken other steps toward effective AI governance. For example, ACS has taken specific steps to address possible bias in its Severe Harm Predictive Model by eliminating certain types of racial and ethnic data and testing the model's output against benchmarks. However, DOE does not require any steps to determine whether the AI tools available to its schools have been evaluated to address potential bias. Some agencies perform certain activities that partially address components of AI governance, such as identifying appropriate use, intended outcomes, data governance, and potential impacts, but do so because of laws created to address issues not specific to AI. Further, the NYPD created impact and use policies for its surveillance tools in compliance with the NYC Public Oversight of Surveillance Technology Act. The impact and use policy of its facial recognition technology acknowledges the potential bias of facial recognition, particularly against groups other than

white males. It further states that NYPD only uses facial recognition technology that has been evaluated by the National Institute of Standards and Technology (NIST). However, NYPD did not review NIST's evaluation of the facial recognition technology it used, nor did it establish what level of accuracy would be acceptable. NYPD officials explained that any potential match is reviewed by multiple individuals to help mitigate potential accuracy and bias issues.

Furthermore, NYC's initial governance requirements of algorithmic tools, which include AI, were not fully met. The Mayor's Office of Operation's Algorithms Management and Policy Officer (AMPO) was required by Executive Order 50 of 2019 to establish a reporting framework of algorithmic tools, policies, and protocols to guide the City and its agencies in the fair and responsible use of such tools, a process for individuals to learn about the City's use of these tools, a complaint resolution process for those impacted by such use, and a public education strategy. AMPO created a reporting framework for agencies to report, published reported tools, and held several public engagement sessions to engage the public. However, in January 2022, AMPO was discontinued by Executive Order 3, which removed those requirements and placed the responsibility of algorithmic and AI management within the NYC Office of Technology and Innovation (OTI). At that time, AMPO had not established policies and protocols to guide the City and its agencies in the fair and responsible use of such tools or a means for the City to resolve complaints made by individuals regarding algorithmic impacts. In addition, we identified instances where agency tools were not reported or included in the public listing of tools.

Key Recommendations

- Use relevant AI governance frameworks to assess the risks of AI used by City agencies.
- Review past AMPO policies to identify areas that need to be strengthened by OTI.
- Implement policies to create an effective AI governance structure.
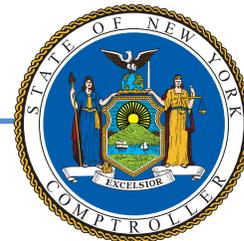
Office of the New York State Comptroller
Division of State Government Accountability

February 16, 2023

Matthew C. Fraser
Chief Technology Officer and Commissioner
New York City Office of Technology and Innovation
2 MetroTech Center
Brooklyn, NY 11201

Dear Mr. Fraser:

The Office of the State Comptroller is committed to helping State agencies, public authorities, and local government agencies manage their resources efficiently and effectively. By so doing, it provides accountability for the tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities, and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

Following is a report of our audit entitled *Artificial Intelligence Governance*. This audit was performed pursuant to the State Comptroller's authority under Article V, Section 1 of the State Constitution and Article III of the General Municipal Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

Division of State Government Accountability

Contents

Glossary of Terms

Term	Description	Identifier
OTI	New York City Office of Technology and Innovation	*Auditee*
ACS	New York City Administration for Children's Services	*Agency*
ADS	Automated decision systems – computerized implementations of algorithms, including those derived from machine learning or other data processing or AI techniques, which are used to make or assist in making decisions	*Key Term*
AI	Artificial intelligence	*Key Term*
Algorithmic tool	Any technology or computerized process that is derived from machine learning, AI, predictive analytics, or similar methods of data analysis and used to make decisions about and implement policies that materially impact the rights, liberties, benefits, safety, or interests of the public, including their access to services and resources for which they may be eligible	*Key Term*
AMPO	Algorithm Management and Policy Officer	*Key Position*
DOB	New York City Department of Buildings	*Agency*
DOE	New York City Department of Education	*Agency*
EO 50 (2019)	Mayor's Executive Order 50 of 2019, which created AMPO and its responsibilities	*Executive Order*
EO 3 (2022)	Mayor's Executive Order 3 of 2022, which discontinued AMPO and moved algorithmic guidance to OTI	*Executive Order*
FRT	Facial recognition tool	*Key Term*
GAO	U.S. Government Accountability Office	*Federal Agency*
LL35	NYC Local Law 35 of 2022, which established reporting requirements for algorithmic tools, including AI	*Law*
NIST	National Institute of Standards and Technology	*Key Term*
NYPD	New York City Police Department	*Agency*
Operations	Mayor's Office of Operation, which oversaw AMPO	*Agency*

Background

What Is Artificial Intelligence?

Artificial intelligence (AI) – that is, the ability for a machine to perform human cognitive functions, such as perceiving, evaluating, learning, and making conclusions based on external data – has transformed how we live, work, and play. AI is the technology behind video games, cell phone virtual assistants, robotic vacuums, and smart homes. With their ability to process and analyze massive amounts of data, AI-powered tools have an increasingly vital role in industry operations, including agriculture, health care and medicine, manufacturing, transportation, and government, enabling entities to operate more intelligently, more productively, and more competitively.

Although the use of AI in business is developing, the potential is enormous. Yet even as AI generates consumer benefits and business value, it is also giving rise to a host of unwanted, and sometimes serious, consequences. While AI is developed by humans, tailored to meet a specific need, it generally makes decisions or recommendations autonomously – collecting data, assimilating it, and using all of it to inform its output. While the benefits of AI can be astounding, the U.S. Government Accountability Office (GAO) warns of AI's inherent predisposition to bias, which could sway the value of its output: bias from the algorithm itself and the human bias that factored into the AI during its development. Furthermore, the fact that AI input and operations are not always visible poses unique challenges in accountability. The GAO noted that a lack of transparency reduces effective oversight in identifying errors, misuse, and bias. Therefore, it is essential to establish governance structures over AI to ensure that its use is transparent and accurate and that it does not generate harmful, unintended consequences.

> **Elements of AI Governance**
>
> *Establish clear goals, values, responsibilities*
>
> *Define appropriate use and outcomes*
>
> *Test for accuracy and bias in inputs and outputs*
>
> *Engage stakeholders*
>
> *Ongoing oversight to ensure accuracy and relevancy*

Although New York City (NYC or City) has not established an AI governance framework, the Mayor's Office of the Chief Technology Officer developed an AI Strategy. Issued in 2021, it lays out next steps needed to make the most of AI while protecting people from harm and ensuring its responsible application. The AI Strategy emphasizes an "AI ecosystem" approach to account for the full range of NYC stakeholders working in, training for, building, buying, using, governing, and impacted by AI: "Within City government, this approach should include both a Citywide component as well as plans at the level of individual agencies or key domain areas like health, education, and transportation." Its approach is grounded in the framework of "digital rights," which include privacy, accountability, trust, transparency, and fairness and non-discrimination, among others.

Without adequate governance and ongoing oversight over the use of AI, misguided, outdated, or inaccurate outcomes can occur and may lead to unfair or ineffective outcomes for those who live, work, or visit NYC. For example, the National Institute of Standards and Technology (NIST) studied the accuracy of facial recognition tools

and discovered significant concerns for some tools regarding the likelihood of false-positive results among Asian and African-American individuals. A key concern noted by NIST is that algorithms perform differently within the context of how they are used.

Responsibility for NYC's AI Governance

In May 2018, the City established a task force to provide the Mayor and the Speaker of the NYC Council with recommendations for government use of automated decision systems (ADS),[1] including AI tools. The ADS Task Force report, issued in November 2019, contained recommendations regarding how the City should use and manage ADS, how information about ADS is retained, and what happens when the public asks about, or has a concern with, a specific ADS.

In response to the Task Force's recommendations, the former Mayor issued Executive Order 50 of 2019 (EO 50), which: established the position of Algorithms Management and Policy Officer (AMPO) within the Mayor's Office of Operations (Operations), reporting to the Director of Operations; directed that personnel and resources be provided to support AMPO's work; and tasked AMPO with guiding the City in the development, responsible use, and assessment of algorithmic tools[2] and systems, including AI, and engaging and educating the public on issues related to the use of these tools and systems. In addition, AMPO was responsible for creating a protocol for resolving complaints related to suspected or actual harm in connection with agency use of such tools. In addition, instead of using the term ADS, EO 50 used the term "algorithms" – defined as a "sequence of instructions or rules or other problem-solving operation used to cause a technical tool or system to execute a set of actions."

Within two years, however, in January 2022, NYC's current Mayor issued Executive Order 3 (EO 3), which rescinded EO 50, discontinued the position of AMPO and its associated requirements, and instead created the NYC Office of Technology and Innovation (OTI) to guide the City and its agencies in the development, responsible use, and assessment of algorithmic tools and systems (including AI). OTI is also required to engage and educate the public on issues related to the City's use of these and other related technologies.

Local Law 35 of 2022 (LL35), enacted on January 15, 2022, requires similar reporting requirements that were revoked by EO 3. LL35 requires NYC agencies to report annually to the Mayor's Office (or designee) on every algorithmic tool that the agency has used one or more times during the prior calendar year. Such disclosure includes, among other information, the commercial name and a brief description of

---

1   As defined in Local Law 49 of 2018.

2   In its guidance to agencies on identifying and reporting algorithmic tools, AMPO further categorized tools built on machine learning or AI as Level 1 priority tools for reporting purposes.

such algorithmic tool,[3] the purpose of the tool, and the type of data collected and analyzed by the tool. The Mayor's Office (or designee) is required to compile the information disclosed by agencies and submit a report to the Mayor and the Speaker of the NYC Council every year.

---

3   As defined in LL35, "algorithmic tool" means "any technology or computerized process that is derived from machine learning, artificial intelligence, predictive analytics, or other similar methods of data analysis, that is used to make or assist in making decisions about and implementing policies that materially impact the rights, liberties, benefits, safety or interests of the public, including their access to available city services and resources for which they may be eligible."

Audit Findings and Recommendations

NYC does not have an effective AI governance framework. While agencies are required to report certain types of AI use on an annual basis, there are no rules or guidance on the actual use of AI and, as a result, City agencies have developed their own, divergent approaches. These ad hoc and incomplete approaches to AI governance do not ensure that the City's use of AI is transparent, accurate, and unbiased and avoids disparate impacts.

To assess the progress made in establishing AI governance, we selected a sample of four City agencies that have used or allowed the use of AI:

- NYC Administration for Children's Services (ACS)
- NYC Department of Buildings (DOB)
- NYC Police Department (NYPD)
- NYC Department of Education (DOE)

Some agencies have identified key risks and created processes to address those risks. Other agencies have not created any AI-specific policies or taken other steps toward effective AI governance. For example, ACS has taken specific steps to address possible bias in its own AI tool by eliminating certain types of racial and ethnic data and testing the model's output against benchmarks. DOE, on the other hand, does not require any steps to determine whether the AI tools available to its schools have been evaluated to address potential bias.

Further, some agencies perform certain activities that partially address components of AI governance, such as identifying appropriate use, intended outcomes, data governance, and potential impacts, but do so only because of laws created to address issues not specific to AI. For example, NYPD created impact and use policies for its surveillance tools in compliance with the NYC Public Oversight of Surveillance Technology Act. The impact and use policy of its facial recognition technology acknowledges potential bias of facial recognition, particularly against groups other than white males. It further states that NYPD only uses facial recognition technology that has been evaluated by NIST. However, NYPD did not review the results of NIST's evaluation of the facial recognition technology used by NYPD, nor did it establish what level of accuracy would be acceptable. NYPD officials explained that any potential match is reviewed by multiple individuals to help mitigate potential accuracy and bias issues.[4]

An effective AI governance framework would include efforts to address transparency (e.g., explaining how the tools are used and how they work), identify values and goals, ensure data quality, commit to stakeholder engagement, and monitor accuracy, bias, and acceptable use. While NYC has established requirements for reporting algorithmic tools (which would include AI tools that meet certain requirements such as material impact), there are no laws, rules, or guidance specific to AI use and oversight. Furthermore, EO 50 and LL35 addressed efforts to identify and report algorithmic tool use, including AI use; however, the reporting process

---

4   Using a person to review recommendations or decisions made by AI is a form of human supervision.

under EO 50 did not identify all AI tools used by agencies. Rather, AMPO instructed agencies to only report tools that had been in routine use and excluded tools in development or pilot phases or used infrequently. Further, we found that one agency, the NYC Department of Probation (DOP), reported tools to AMPO, but these tools were not reported publicly. Operations officials explained that they provided guidance to DOP that some tools may not have met the reporting requirements.

We also note that many of the requirements of AMPO were not completed by January 2022, when the position was discontinued and OTI was established in its place. While OTI has created guidance and has begun to reach out to agencies to assist in reporting algorithmic tools in compliance with LL35, many of the requirements of EO 50 were not explicitly carried over to this unit, such as establishing formal policies and principles to guide the City on fair and responsible use of algorithmic tools and creating a protocol for resolving complaints related to suspected or actual harm in connection with agency use of such tools.

NYC AI Governance

Identifying and Reporting on Algorithmic and AI Tools

As required under EO 50, AMPO had implemented a framework that included criteria to help identify and prioritize algorithmic tools and systems that support agency decision making. However, AMPO only required agencies to report on a subset of its algorithmic tools, specifically those considered "in use," in which the outputs or outcomes of such a tool are directly or indirectly included in a discrete and identifiable instance of agency decision making. Tools "in production" are those that have been developed to a point that they may reliably support agency decision making, including regular or routine use, infrequent or irregular use of at least once in a 12-month period, and pilots of limited scope or scale. Such tools were not considered to meet the identification criteria in AMPO's framework and therefore were not required to be reported. Furthermore, tools in development were also not required to be reported. This likely reduced the number of tools an agency would be expected to report. According to AMPO's Identification and Prioritization Framework, a tool had to meet three identification criteria to be considered an "algorithmic tool" for purposes of EO 50: (1) the system must have been derived from data analysis approaches, or routinely performed data analysis to operate; (2) the system must have been actively used to support agency decision making; and (3) the outputs or outcomes derived from the outputs of the system must have had a material public effect.

In response to these findings, Operations officials acknowledged that LL35 will effectively replace EO 50's reporting requirements. We noted that LL35 requires tools to be reported if they have only been "used" once.

In addition to identification criteria, AMPO set forth criteria for agencies to utilize in determining which tools should be considered "Level 1" and therefore be reported to AMPO. A Level 1 tool must have met all of the above identification criteria in addition

to at least one of the following prioritization criteria: (1) the data analysis from which the system was derived, or that the system performed, was considered a form of AI and/or a category of algorithm including those used for optimization and matching or (2) the system/tool collected or analyzed identifying information as defined in NYC Administrative Code Section 23-1201 (including, but not limited to, name, gender, race, and eligibility for City services). Both "in-use" and "Level 1" criteria limit the number of tools agencies would report. Tools that are in development or piloted or those that use non-identifying information (according to NYC Administrative Code Section 23-1201) would not have been reported to AMPO or publicly.

The reporting framework also relied on agencies accurately reporting all applicable tools and systems. There is a risk that agencies did not report on all applicable tools, and no mechanism existed to identify unreported tools. For example, DOE utilized Teach to One 360, which uses AI (e.g., machine learning) to identify students' problem areas and strengths and creates a personalized daily lesson or "playlist" for students. The use of this tool was not reported to AMPO by DOE.

AMPO published its 2020 Summary of Agency Compliance Report (2020 Report), detailing Level 1 agency-reported tools. This report provided the public with relevant information on agency tools and documented agency compliance with EO 50. However, not every tool reported by agencies was included in the report. We found that agencies reported a total of 23 tools to AMPO in 2020; however, AMPO only included 16 tools in its 2020 Report. For example, DOP reported the use of six tools to AMPO; however, the 2020 Report did not include any of the DOP-reported tools. According to Operations officials, AMPO provided agencies with assistance in determining which tools fit the criteria for being reported, but ultimately the agencies had the final say on whether their algorithmic tools should be included in the report. In response to this finding, Operations officials responded that, based on AMPO's guidance, the agencies reconsidered and made a determination not to report such tools. AMPO's 2020 procedures state that agency liaisons should be instructed to consult with their general counsels to determine if a secondary certification is required for any newly submitted materials or modified versions of the originally submitted materials; however, we found that AMPO did not receive a new certification from DOP indicating that DOP agreed to the reporting of zero algorithmic tools.

Operations officials acknowledged asking the agencies to make the final determination about a given system's inclusion but provided agencies with advisory opinions to help interpret AMPO guidance in the applied context of an agency's systems. In the DOP example cited, AMPO's opinion was that the tools reported may not meet the identification and prioritization criteria and the agency made the determination to accept that opinion and consider the previously reported tools to no longer qualify for reporting. When asked, Operations officials did not provide a specific reason why the tools reported did not meet the identification and prioritization criteria. They confirmed that a follow-up recertification was not requested, but stated that this situation reflects imperfect procedures in the very first year of compliance reporting and a natural progression in incrementally building a mature compliance process, rather than a systemic oversight or negligence.

While EO 3 revoked AMPO's reporting responsibilities before the 2022 Report was published, OTI officials indicated that they are working to publish the report on the algorithmic tools that had been reported to AMPO during the 2021 calendar year.

General Policies of the City's Use of Algorithmic and AI Tools

EO 50 requirements included establishing governing principles to guide agencies in balancing the ethical and innovative uses of data facilitated through the use of algorithmic tools and systems in agency decision making to ensure they provide the greatest benefit for New Yorkers and the City. In addition, EO 50 requirements included developing and implementing policies and protocols to guide the City and its agencies in the fair and responsible use of such tools and systems, considering the unique mission, purpose, and operational needs of each agency.

We found that some requirements were met, but not all requirements were completed. AMPO issued a collection of policies, protocols, best practice recommendations, and guidance (Policies) in September 2020 and updated the Policies in September 2021. AMPO's Policies described several governing principles: transparency, fairness, innovation, and responsible data governance. While the governing principles were identified and defined, the Policies did not include guidance or practical examples of how agencies could put these principles into practice, with the exception of transparency, as evidenced by the reporting framework. The Policies also did not address how the City might monitor agencies to ensure these principles are followed. Without additional procedures to put those principles into practice and ensure the principles are followed, there is no assurance that agencies consistently use fairness, innovation, and/or responsible data governance in their use of algorithmic tools to support decision making. Rather, AMPO only created specific guidance on the identification and reporting of algorithmic tools that were in use by NYC agencies. The guidance does not address how agencies can use such tools fairly and responsibly – especially in the context of AMPO's expressed principles.

Operations officials stated that their expectation in developing these principles was that, as policy continued to be developed over a period of years, such policy would be developed with those principles in mind. Further, they anticipated that these principles would be adapted by agencies during the course of their introduction of new tools. Explicit policy around introducing new tools had not yet been developed at the time of the audit.

Another EO 50 requirement was the creation of a framework for assessment of algorithmic tools, considering the complexity, benefits, impacts, and other relevant characteristics of algorithmic tools, including the potential risk of harm to any individual or group arising from the tool's use. No framework was created. As a result, agencies were not instructed to conduct any risk assessments or evaluation of the impact of the algorithmic tool's use. As each NYC agency has a unique mission, mandate, and purpose, they each use AI and algorithmic tools differently

and for different purposes. For example, NYPD uses facial recognition technology to compare images obtained during investigations with lawfully possessed arrest photos in order to enhance law enforcement's ability to investigate criminal activity. ACS, on the other hand, developed a predictive model to determine which open child protection investigation cases involve children with the highest likelihood to experience future severe harm in the subsequent 18 months. The model is used to support the selection of cases for quality assurance review. The City and its agencies had no requirement for determining whether the algorithmic tools in use by various agencies were functioning as intended, providing a benefit, and not generating harmful, unintended consequences. The City also did not have any procedures in place for monitoring whether algorithmic tools were being used fairly and responsibly and in accordance with AMPO's governing principles. In response to these findings, Operations officials commented that AMPO prioritized completing the reporting framework first and additional requirements would be subsequently addressed.

Public Education and Engagement on NYC's Use of Algorithmic and AI Tools

EO 50 also required:

- Planning and implementing a public engagement and education strategy related to the City's use of algorithmic tools and systems.

- Creating and maintaining a public-facing platform that provides a mechanism for receiving public comments and questions, explains how members of the public can be connected with relevant resources, and in accordance with relevant legal, privacy, and cybersecurity considerations, makes available certain information about such tools and systems.

- Establishing and implementing a citywide protocol for receiving requests for information from individual members of the public who have been affected by an agency's use of an algorithmic tool or system, and for directing them to the appropriate agency and other resources, including but not limited to the agency liaison.

- Establishing and implementing a citywide protocol for receiving, investigating, and addressing any complaints from individuals regarding any suspected or actual harm experienced in connection with an agency's use of algorithmic tools and systems, and advising agencies on any further actions that may be appropriate under the circumstances.

- Establishing an Advisory Committee of external expertise within 120 days of the effective date of the Order. The Advisory Committee was required to meet at least twice a year and hold at least one of those meetings publicly, advise AMPO on protocols and best practices for agency use of algorithmic tools, discuss with AMPO topical issues related to algorithmic tools, and serve as a channel for collecting and communicating public commentary.

Not all of EO 50's requirements relevant to educating and engaging the public in the City's use of algorithmic tools were completed. While AMPO had a "Contact Us" form

on its website, allowing individuals to submit messages, AMPO did not establish or implement protocols for addressing and investigating complaints or inquiries specific to algorithmic tool uses. The majority of messages sent to the "Contact Us" section were related to potential employment opportunities; no messages were related to specific algorithmic tools or their impacts. AMPO held a series of public events to educate and engage the public on algorithmic tools. In addition, we found that an Advisory Committee of external experts to assist AMPO was not formed. While Operations officials explained that the COVID-19 pandemic and change of mayoral administration made appointing an Advisory Committee challenging, we note that the Advisory Committee was to be established by mid-March 2020. Furthermore, protocols for managing requests for information or investigating complaints regarding impact by an agency's use of an algorithmic tool were not developed. Such a process would have facilitated agencies to learn of potential disparate impacts of their tools.

As explained by officials and discussed in its December 2020 biennial progress report, AMPO's work had primarily focused on developing the annual agency compliance reporting process, and unmet requirements would be addressed on an ongoing basis. As of January 2022, when the requirements of EO 50 were revoked, the following were still in development:

- Policies surrounding the "fair and responsible use of algorithmic tools"
- Framework for agencies to use in the assessment of algorithmic tools, considering their complexity, benefits, impact, and any potential risk of harm to any individual or group arising from their use, and any other relevant characteristics
- Citywide protocol for receiving requests for information from individual members of the public
- Citywide protocol for receiving, investigating, and addressing any complaints from individuals regarding any suspected or actual harm experienced in connection with an agency's use of algorithmic tools and systems
- Establishment of an Advisory Committee to assist AMPO

In response to our findings, Operations officials highlighted that, within AMPO's first three months of operation, the City was impacted by the COVID-19 pandemic. Furthermore, their response noted achievements that AMPO accomplished based on its prioritization of resources, which are discussed earlier in this report. Operations officials also stated that it is unreasonable to expect that AMPO could have developed and issued the full set of policies and procedures envisioned by EO 50 in 18 months, particularly where policies and procedures were meant to be iterative, informed by past experiences and allowing for further sophistication in this developing policy area. We note that, while the COVID-19 pandemic may have affected AMPO's work, EO 50 was in effect for 25 months rather than 18 months. Furthermore, the City did not provide any documentation including time frames to show when the additional policies would be developed.

Operations officials explained that AMPO operated using a decentralized model and did not have oversight authority over agencies. As AMPO was limited in its ability to ensure whether agency reporting was complete or accurate (as no oversight function was designed), there was a risk that not all algorithmic tools would be reported – as we noted in our previous examples.

The use of algorithmic tools, such as AI, to support agency decision making comes with significant risks, and the lack of a governance structure over these systems amplifies these risks. As many of the requirements of EO 50 were not completed, specifically related to how agencies use these tools, these risks are unaddressed, leaving City agencies to develop their own ad hoc approaches. In addition, because not all algorithmic tools were reported publicly, the public would not be aware of which tools City agencies are using. Furthermore, no citywide protocol exists to receive, investigate, and monitor complaints resulting from algorithmic tool use. Agencies that currently use algorithmic tools may be unaware of adverse outcomes impacting the public as there is no direct complaint mechanism. Furthermore, as no Advisory Committee was formed, no public meetings were held specifically addressing the City's use of algorithmic tools and serving as another opportunity to interact with the public.

As EO 3 revoked EO 50 and its associated requirements, NYC does not have rules or guidance regarding the use of algorithmic tools, including AI. While LL35 requires reporting on tools in use, EO 3 requires OTI to "guide the City and its agencies in the development, responsible use and assessment of algorithmic and related technical tools and systems and engage and educate the public on issues related to City use of these and other related technologies." Also, EO 3 does not explicitly continue the requirements from EO 50, such as establishing policies and principles to guide the City on fair and responsible use of algorithmic tools and creating a protocol for resolving complaints related to suspected or actual harm in connection with agency use of such tools. OTI has not yet implemented such policies, and in the absence thereof, agencies have created and will continue to create ad hoc and inconsistent practices over their AI use.

As of November 2022, OTI was in the process of transitioning AMPO's work, establishing positions and job descriptions, and meeting with agencies' liaisons, and had developed guidance to comply with LL35 requirements.

AI Governance at Sampled NYC Agencies

In order to assess NYC's progress in establishing appropriate AI governance structures over the development and use of AI tools and systems, we selected a sample of four City agencies that have used or allowed the use of AI – ACS, DOB, NYPD, and DOE – to determine how they are governing their use and development of AI tools and systems.

- ACS is responsible for protecting and promoting the safety and well-being of NYC's children and strengthening their families by providing child welfare, juvenile justice, and child care services. Specifically, ACS investigates

allegations of child abuse or neglect. It uses the Severe Harm Predictive Model (SHM) to prioritize child abuse and neglect cases for quality assurance reviews.

- NYPD is responsible for policing the City's 8.5 million residents. Its functions include public safety, law enforcement, traffic management, counterterrorism, and emergency response. It employs facial recognition, which uses AI, to aid its crime-fighting functions.

- DOE provides primary and secondary education to approximately 1 million students, from early childhood to grade 12, across the City's five boroughs. DOE schools used applications that may rely on AI techniques. For instance, Teach to One 360 from New Classrooms (Teach to One 360) uses algorithms and machine learning to identify students' problem areas and strengths, and creates a personalized daily lesson or "playlist" for each student; Feedback Studio from Turnitin (Turnitin) uses natural language processing to perform grammar checks on work submitted by students; and TeachFX, from TeachFX, uses voice AI technology to analyze the classroom discourse patterns to aid in teacher professional development.

- DOB is responsible for regulating the safe and lawful use of more than 1 million buildings and construction sites in NYC. Its responsibilities include enforcing the Façade Inspection & Safety Program, which requires owners of properties higher than six stories to have exterior walls and appurtenances inspected by DOB-approved qualified professionals, referred to as a Qualified Exterior Wall Inspector (QEWI), every five years. DOB officials explained that, as an agency, DOB does not use AI. DOB allows the use of AI to supplement, but not replace, the work of QEWIs to identify façade defects. In response to the audit findings, DOB officials indicated they do not believe they are responsible for overseeing the use of AI by façade inspectors.

To formulate our survey questions, we reviewed AI governance frameworks to identify key practices to help ensure accountability and responsible AI use. Our questions covered selected key practices to assess the state of AI governance in NYC. To assist the agencies in answering some survey questions, we identified a key tool or system to focus agency responses. In selecting the tool, we considered its underlying technology and use by the agency. However, we did not specify an AI tool for DOE because DOE officials did not provide us with sufficient access to the knowledgeable personnel who would be able to explain the purpose and function of the selected tools. Therefore, we did not ask certain questions to DOE, as noted.

Each sampled agency has either used, allowed, or tested AI within their programs. The AI governance at these agencies varies significantly. Some agencies have identified key risks and created processes to address those risks. Other agencies have not created any AI-specific policies or taken other steps toward effective AI governance. The main reason for the lack of consistency among agency policies and procedures is the lack of citywide guidance or requirements.

Our survey questions posed to the sampled agencies and their responses are presented below, by topic.

General AI Policies and Procedures

We asked the sampled agencies:

- *Have you defined AI, and if not why?*
- *Have you established and documented policies and procedures surrounding the development and use of AI systems and tools?*
- *Who authorizes the use of these AI systems and tools?*
- *Have you developed an AI-specific risk management plan to identify, analyze, and mitigate known and unknown risks associated with each AI system or tool?*

None of the sampled agencies had established a specific definition of AI; rather, they used the City's definition of ADS and algorithmic tools, which includes AI. Nor did the sampled agencies establish or document specific policies surrounding their development and use of AI systems and tools or develop a formal risk management plan to identify, analyze, and mitigate risks associated with their AI systems or tools.

- DOE and DOB officials stated that they did not have any AI systems or tools in development or in use so they do not need to have such policies and procedures, but would create AI policies and procedures if the need arises. They also said that all policies and procedures related to the development and use of AI systems and tools will need to comply with any potential OTI mandates.

- NYPD does not have any general policy over the use of AI. However, NYPD created a use and impact policy regarding its use of facial recognition – the tools we selected to aid responses to our survey. NYPD is required to create such policies for all its surveillance tools regardless of whether it uses AI. These policies address some aspects of AI governance such as identifying appropriate use, intended outcomes, data governance, and potential impact, but not all the unique risks of AI. Furthermore, in response to our preliminary findings, NYPD officials stated that they develop "specifically tailored policies and procedures for the use of a technology based on the capabilities, specifications and proposed use of the tool; not simply because the tool may incorporate AI."

- ACS does not have a formalized policy specific to AI development and use. However, ACS officials have considered the unique risks that AI use presents. We reviewed presentations on their AI use, draft predictive analytic guidelines that support their internal AI development, and evidence of accuracy and bias testing. In response to our preliminary findings, ACS officials stated that these guidelines were their policies and procedures, but did not provide us with evidence that these guidelines are required to be followed in the same way that formal policies would be. We note that ACS officials plan to draft a formalized policy to ensure adherence to their guidelines.

In regard to who authorizes AI, ACS and NYPD identified a specific, high-ranking position. DOB and DOE officials indicated they did not believe they had any use cases at the time of the audit where authorization would be warranted.

ACS officials indicated that their Commissioner authorizes the use of AI, and the Deputy Commissioner for Policy Planning and Measurement and the Associate Commissioner for the Office of Research and Analytics are responsible for the design, implementation, use, and monitoring of AI tools and systems. NYPD officials explained that the NYPD Commissioner would authorize all tools, including AI use, but no single person or office was responsible for the design, implementation, use, and monitoring of AI tools and systems. DOB officials indicated which division would be involved in the design, implementation, use, and monitoring of AI tools and systems.

Inventory of AI Systems and Tools

We asked the sampled agencies:

- *What systems or tools do you currently use that are considered AI? Do you maintain an inventory of the AI systems and tools (including those in development) and the data sources used by each AI system or tool?*

None of the sampled agencies maintain an inventory of AI systems and tools. In addition, with the exception of ACS, the sampled agencies did not maintain an inventory of the data sources used by all its AI tools and systems.

- DOB was unaware of whether AI was used to supplement any façade inspection and DOB does not require QEWIs to report whether AI was used in a façade inspection.

- DOE officials stated that DOE tracks the inventory of software applications without reference to AI. Specifically, DOE centrally reviews software applications that use student data to ensure such use complies with the Family Educational Rights and Privacy Act (FERPA) and New York State Education Law §2-d, which both address student data. We identified three applications (TurnitIn, TeachFX, and Teach to One 360) that have AI capabilities that were used by at least five DOE schools and two districts, but none had gone through this process. Furthermore, these tools were not included in DOE's 2020 submission to AMPO.

- While ACS did not maintain a formal inventory of its AI systems and tools, ACS officials stated they consider the AMPO submissions of their only two tools to be their inventory of AI system and tools. Furthermore, as ACS developed its example tool in-house, the data used is its own ACS case data. Officials expressed understanding of the data elements and its sources.

- While NYPD publicly posts impact and use policies for its surveillance tools, it does not maintain an inventory of its AI systems and tools. Furthermore, NYPD had used two different facial recognition tools (FRTs) during the audit scope. NYPD officials stated that NYPD used the FRT provided by DataWorks Plus (DataWorks Plus) during the audit scope and that NYPD tried Clearview AI for a trial period of 90 days, which ended in March 2019. However, we found that NYPD employees were still requesting and receiving access to Clearview AI more than six months after the trial period. NYPD officials explained they

are aware of the data used by DataWorks Plus as the matches are performed against NYPD's own repository of arrest photos. However, NYPD is unaware of the data used to develop the algorithms used by DataWorks Plus.

AI Documentation of Intended Use and Outcomes

We asked the sampled agencies:

- *Do you have documentation, such as technical and non-technical specifications, regarding the use and intended outcomes for each AI system and tool?*

None of the sampled agencies have formal policies or procedures to document the intended use and outcomes of AI use. Of the sampled agencies, only ACS maintained detailed documentation of its AI applications. ACS provided us with technical specifications for its example tool – SHM, which it uses to prioritize cases to be selected for review for quality assurance. The specifications included such details as the data sources used in the construction of the analytic data set and details of model testing and performance. The technical documentation also details the data categories used by the model, which excludes specific race and ethnicity labels. In addition, the documentation includes bias testing results for race and ethnicity. However, the documentation that ACS provided did not indicate how often the SHM was revised, updated, or tested. ACS officials indicated they will keep formal logs of performance evaluations and model updates in the future.

However, some existing laws, regulations, and rules require agencies to document how certain types of technologies or data are used which may incidentally be AI or be used by an AI tool. For example, NYPD's impact and use policy generally identifies what is considered acceptable use and acceptable outcomes. However, it lacks certain details that would be needed to assess whether the application has met either (such as accuracy targets). While NYPD did not provide technical specifications for its FRT,[5] its impact and use policy stated that the algorithm was designed to provide possible matches to the image of an unidentified person (a probe image) from NYPD's photo repository, which contains arrests and parole photographs. In addition, NYPD officials who use the FRT explained that they may adjust the photo, including brightening or darkening the imaging or compensating for incomplete facial features (e.g., side or profile photos).

Similarly, to meet compliance with New York State Education Law §2-d, DOE maintains a public listing of vendors that use applicable student data. Each vendor completes a questionnaire covering how protected information would be used, how data will be protected, and how protected information will be handled after it is no longer used. However, DOE should first review the vendor's use of this protected information; our three sampled tools were not reviewed by DOE and were not listed.

---

5   NYPD's access to the DataWorks Plus FRT is facilitated through a portal provided by the U.S. Office of National Drug Control Policy's New York/New Jersey High Intensity Drug Trafficking Areas (HIDTA) program. Upon request of technical and non-technical documentation, NYPD did not provide agreements between HIDTA and DataWorks Plus or indicated that no agreements, contracts, or memorandum of understanding existed with NYPD and DataWorks Plus.

DOB does not use AI itself and has allowed the use of AI to supplement façade inspections. In response to our findings, DOB indicated it did not believe it is responsible for overseeing the use of AI by façade inspectors. As a result, DOB itself does not know or maintain documentation for AI tools that façade inspectors may use.

Monitoring of Agency Use of AI

We asked the sampled agencies:

- *How do you monitor each AI system(s)/tool(s) to ensure it is meeting its intended objectives?*
- *Have you determined the objectives of each AI system or tool in use?*
- *What policies have you developed to ensure that the AI system or tool use conforms to your agency's stated values and principles?*
- *Have your AI systems or tools ever been audited or reviewed? Are they required to be and, if so, by whom?*

With the exception of AI tools used in NYPD surveillance, we found that the sampled agencies do not have formal policies to ensure that the AI system or tool use conforms to the agencies' stated values and principles and there were no audits of the sampled agencies' AI tools and systems. However, two of these agencies (NYPD and ACS) identified procedures for ensuring the AI system or tool was used appropriately.

NYPD officials referenced the NYC Public Oversight of Surveillance Technology (POST) Act and stated that any AI system or tools that can be classified as surveillance tools must confirm to the Act requirements. The POST Act requires NYPD to create impact and use policies that detail how such technology is used. NYPD officials added that the NYC Department of Investigation's (DOI) Office of the Inspector General for the NYPD (OIG-NYPD) is also required to annually audit NYPD's compliance with the POST Act. In November 2022, after our fieldwork with NYPD concluded, DOI's OIG-NYPD issued its results, stating that while NYPD largely complied with the POST Act in issuing impact and use statements, the statements were not sufficient enough to allow for a full audit by DOI's OIG-NYPD of all its surveillance tools (some, but not all, use AI). NYPD also stated that it has a robust disciplinary system to investigate complaints, including the misuse of technology (as well as technologies that use AI). In addition, NYPD officials stated that Integrity Control Officers ensure the appropriate use of FRT, but did not provide any documentation to support this, including specific actions or the frequency.

ACS officials stated that the SHM was tested using historical data and static criteria to determine its effectiveness whenever there were any upgrades or revisions. However, they did not provide documentation to support all revisions and evaluations of the model. ACS produces quarterly internal reports on the use of the SHM in its quality assurance program so that ACS can track the impact on case reviews, coaching, and practice.

DOB did not monitor the QEWIs' use of AI. DOE did not centrally monitor the use of the three identified AI applications that the schools and school districts use and did not make the relevant users of the identified tools available to the audit team. We could not ask specific questions to those users about how they monitor use.

Monitoring of Accuracy and Bias

We asked the sampled agencies:

- *How are you testing to ensure that there is no bias or inaccuracies in the AI system or tool output, and how frequently are you testing?*

ACS provided support that it takes steps to address bias and accuracy in its AI. DOB has not created any guidance, rules, or other policies regarding the accuracy of the AI façade inspection technology that inspectors are allowed to use. DOE did not make the relevant users of the identified tools available to the audit team. We could not ask specific questions to determine whether DOE takes any specific steps to address biases or inaccuracies in its AI systems of tools.

While NYPD officials explained that their FRT, DataWorks Plus, has been evaluated by NIST, we note that a NIST evaluation does not, on its own, determine whether the performance is acceptable. Rather, it determines the false-positive and -negative rates across different types of testing (such as matches to passport photos or photos taken in less-controlled conditions). NYPD also could not provide any evidence that it had reviewed the NIST results and determined whether the results were acceptable. In their responses to our findings, NYPD officials explained that they rely on humans to make decisions as to whether matches are appropriate and made available to the requesting detectives. They indicated that facial recognition investigators are trained to use the FRT software. However, we found that the training materials do not support that the staff who use the facial recognition technology received training in addressing bias and inaccuracies in the FRT.

NYPD also produces monthly performance statistics on the number of searches (input) and the number and percentage of possible matches, no match, and image rejected (output). While this information reflects the productivity of the unit and the number of matches made, it does not reflect whether the matches are accurate and whether matches are made in an unbiased manner. In a June 2019 op-ed piece in the *New York Times* on the benefit of FRTs, the NYPD Commissioner at that time provided statistical information about the number of arrests emanating from the number of facial recognition matches. NYPD officials were unaware of where the information was obtained. However, officials stated that an arrest is not made from possible matches alone, but requires further investigation to determine probable cause. They also expressed the difficulty in identifying a useful data point to provide feedback to whether a match was accurate. Therefore, whether an arrest is made or not made does reflect whether the FRT made an accurate match.

DOB officials responded that they do not have policies or procedures in place as they do not have any AI systems or tools in development or in use. As discussed,

DOB allows façade inspectors to use AI during their façade inspections. DOB had performed a limited test of AI compared to traditional façade inspections approaches at a grammar school in Brooklyn. While the methodology and scope were limited, the results noted areas of concern, including AI performance and data quality. DOB has not created any guidance, rules, or other policies regarding the accuracy of the AI that façade inspectors are allowed to use.

As discussed, ACS provided support that it takes steps to address bias and accuracy in its AI. ACS shared tests where they examined race and ethnicity outcomes in the SHM's output. ACS officials further compared the SHM's results to that of experienced caseworkers and determined the SHM was better at identifying risk, producing fewer false-positive results, and was more equitable across race/ethnicity. ACS officials stated that the model is tested whenever it is updated. However, ACS did not indicate how often the models are revised, updated, or tested. In response to our request for documentation to support revisions and evaluations of the model, ACS officials informed us they did not maintain logs of performance evaluations and model updates but stated that they will do so in the future.

Stakeholder Engagement

We asked the sampled agencies:

- *What policies and/or practices do you have in place for involving stakeholders in the development and life cycle of AI tools or systems?*

None of the sampled agencies have formal policies or procedures to ensure stakeholder involvement in the design, operation, and use of AI systems and tools. Only ACS routinely engaged with stakeholders. ACS officials stated that stakeholders were involved in the development and life cycle of the SHM. They have an external advisory group of stakeholders impacted by the child welfare system such as data scientists, legal advocates, individuals involved in the NYC child welfare system, and contract providers that review the model during development and whenever it is revised. When we asked how the public or those impacted by the AI tool or system were engaged in the development and life cycle of the tool, ACS officials stated that no score produced with a predictive model is ever used in making a determinative decision regarding services for a family or child involved with ACS, so there would be no basis for a complaint related to the use of a predictive model on an individual case.

In response to this question, DOB officials stated they did not engage with stakeholders because they did not have any AI systems or tools in development or in use. Officials added that, because of its infancy, DOB has yet to codify policy and procedures surrounding the use of AI technology with regard to façade inspections. At such time, they would seek guidance and direction from OTI.

NYPD's facial recognition impact and use policies were open for public comment for 45 days starting in January 2021. In addition, NYPD officials stated that they engaged stakeholders in public Twitter feeds and public meetings. In response to

our request for the agendas and minutes of the meetings in which they discussed facial recognition technology, NYPD officials provided us with links to various social media postings, including eight listening meetings with the public on police reform. When we reviewed the video transcript of seven meetings (one was not available), we found two sessions where members of the public raised questions about facial recognition technology.

New York State Education Law §2-d gives parents the right to access certain information about agreements DOE has entered into with outside entities (such as vendors) that are permitted to receive or to access identifiable student information from DOE. DOE provided us with links to public-facing portals where parents could access such information. The portal provides responses to questions entities are required to answer about their privacy and data security practices. As DOE had not evaluated whether the three sampled tools should be listed on this portal, these tools were not on the list of data agreements for parents. In addition, since DOE did not provide us with access to those knowledgeable about the use of specific tools, it is unclear whether DOE involved stakeholders.

Recommendations

1. Use relevant AI governance frameworks to assess the risks of AI used by City agencies.

2. Review past AMPO policies to identify areas that need to be strengthened by OTI.

3. Implement policies to create an effective AI governance structure.

Audit Scope, Objective, and Methodology

The objective of our audit was to assess the City's progress in establishing an appropriate governance structure over the development and use of AI tools and systems. The audit covered the period from January 2019 through November 2022.

To accomplish our objective and assess the relevant internal controls related to the City's progress in establishing an appropriate governance structure over the development and use of AI tools and systems, we reviewed AMPO's policies and procedures, agency submissions to AMPO, correspondences between AMPO and agency liaisons, and AMPO's 2020 Agency Compliance Report. We also interviewed key personnel from the Mayor's Office, AMPO, and OTI to determine their compliance with EO 50 and EO 3. As EO 3 discontinued the role and requirements of AMPO, the responsibility to guide the City and its agencies in the development, responsible use, and assessment of algorithmic and related technical tools (such as AI) moved to OTI. In addition to evaluating citywide governance structures over AI tools and systems, we conducted a survey to determine how four sampled City agencies are governing the use of AI tools and systems. We selected our judgmental sample from all City agencies based on whether the agency had an implemented AI tool, or allowed those who it oversees to use AI, and whether the agency also met the criterion of providing services that have significant impact on the City. A judgmental sample cannot be projected to the population. To formulate our survey questions, we reviewed the GAO's AI Accountability Framework and other AI governance frameworks to identify key practices to help ensure accountability and responsible AI use. We engaged a consultant that provided technical assistance. We administered an initial set of survey questions, via interviews with agency officials, in order to gain an understanding of each agency's current AI governance structures. Subsequently, we provided a written questionnaire in which we asked agencies to use an example tool which we identified to answer more specific questions. In selecting the tool, we considered its underlying technology and use by the agency. We also requested and reviewed supporting documentation regarding agency responses. We determined the data used in this audit was sufficiently reliable for our use in accomplishing our audit objective.

Statutory Requirements

Authority

The audit was performed pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article III of the General Municipal Law.

We conducted our audit in accordance with generally accepted government auditing standards. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained during our audit provides a reasonable basis for our findings and conclusions based on our audit objective.

As is our practice, we notified officials from the Mayor's Office of Operations, OTI, and the sampled agencies at the outset of the audit that we would be requesting a representation letter in which their management provides assurances, to the best of their knowledge, concerning the relevance, accuracy, and competence of the evidence provided to the auditors during the course of the audit. The representation letter is intended to confirm oral representations made to the auditors and to reduce the likelihood of misunderstandings. In this letter, agency officials assert that, to the best of their knowledge, all relevant financial and programmatic records and related data have been provided to the auditors. Officials further affirm either that their entity has complied with all laws, rules, and regulations applicable to their operations that would have a significant effect on the operating practices being audited, or that any exceptions have been disclosed to the auditors. Although NYPD provided a representation letter, the Mayor's Office of Operations, OTI, and the other sampled agencies have not. As a result, we lack assurance from these agencies that all relevant information was provided to us during the audit.

Reporting Requirements

We provided draft copies of this report to OTI, DOE, ACS, NYPD, and DOB officials for their review and formal comments. OTI, ACS, NYPD, and DOB officials provided comments, which were considered in preparing this final report and are included in their entirety at the end of it. DOE officials declined to provide a response as no recommendations had been directed to DOE. However, they indicated DOE will continue to collaborate with the process OTI sets for City agencies.

Within 180 days after the final release of this report, we request that the Chief Technology Officer and Commissioner of Office of Technology and Innovation report to the State Comptroller, advising what steps were taken to implement the recommendations contained in this report, and if the recommendations were not implemented, the reasons why.

Agency Comments

January 13, 2023

Kenrick Sifontes
Audit Director
Office of the State Comptroller
Division of State Government Accountability
59 Maiden Lane - 21st Floor
New York, NY 10038

Director Sifontes,

The Office of Technology and Innovation (OTI) thanks the New York State Office of the Comptroller for the opportunity to respond to the NYS OSC Draft Audit Report dated December 2022 on New York City's Artificial Intelligence Governance (2021-N-10).

OTI acknowledges the efforts of the Office of the State Comptroller (OSC) in its audit of artificial intelligence (AI) governance in New York City. As the City's lead agency for policy matters related to information technology, OTI fully understands the increasingly important role that AI plays in New York City's technology landscape, and we welcome this opportunity to discuss and reflect on the City's work to date. While much of this audit focused on the work of the prior administration and a different government structure, this administration's recent consolidation of technology agencies and entities under the OTI umbrella puts the City in a strong position to approach AI in a more centralized, coordinated way. OTI has already started to advance this important work in our first year. We look forward to even more progress in the coming months and years ahead.

<u>Introduction</u>

AI has become embedded in the daily business of organizations across sectors and provides efficient and innovative solutions to a wide range of problems. Indeed, it increasingly impacts mundane aspects of our daily lives: it enables our phones and computers to run the way we expect, simplifies tasks at work or in school, and allows us to access and explore new information for business or entertainment.

OSC's Audit Report describes AI as "the ability for a machine to perform human cognitive functions, such as perceiving, reasoning, learning, and making conclusions based on external data." In contrast, because a wide variety of complex technologies and approaches may be considered AI, for many practical purposes, OTI defines AI as "an umbrella term without precise boundaries, that encompasses a range of technologies and techniques of varying sophistication that are used to, among other tasks, make predictions, inferences, recommendations, rankings, or other decisions with data, and that includes topics such as machine learning, deep learning, supervised learning, unsupervised learning,

1

reinforcement learning, statistical inference, statistical regression, statistical classification, ranking, clustering, and expert systems." The term "AI" can include, for example, such diverse tools as:

- Machine learning algorithms, such as those that recommend viewing options on streaming platforms, that predict consumer demand for goods and services, or that create a risk assessment model for criminal justice outcomes;
- Computer vision technologies, such as those that match identities based on biometric data, that enable image searching on popular search engines, that enable enforcement of cash-free tolling, or that count pedestrians in a public space;
- Natural language processing applications, such as those that auto-populate search results, provide predictive text in messaging apps, or support chatbots or machine translation.

These powerful technologies offer myriad opportunities to improve government operations and service delivery. Prudent use of AI can help the City better serve the public in terms of operational efficiency, social equity, environmental sustainability, and more. But use of AI tools can pose a range of risks for individuals and communities – whether due to misuse, flawed design, or lack of appropriate governance, among other factors. Further, the complexity of many AI applications, and the fact that their mechanics are not always visible pose unique transparency and accountability challenges – which are particularly pronounced for governments working in service to the public.

The concept of AI governance seeks to address these issues. As organizations across sectors seek to develop AI governance frameworks, they must do so in a way that is responsive to social and technical realities on the ground – including how these evolve over time. For New York City, this means accounting for the local context, reflecting the diversity of agency missions, potential use cases, and the City's population.

OTI agrees with the Audit Report that the City has a duty to appropriately govern its use of technology, including AI and algorithmic tools[1], to help ensure that it is used responsibly, meaning that its use is consistent with principles and requirements for privacy, security, transparency, accountability, fairness, and non-discrimination. We remain committed to advancing this important work.

With the issuance of Executive Order 3 (EO 3) in January of 2022, Mayor Adams consolidated the City's technology, privacy and innovation teams into a newly-created Office of Technology and Innovation, led by the citywide Chief Technology Officer.[2] The consolidation gives OTI new insight into existing citywide agency technology and new authority to set citywide policies and practices. This new structure and authority provide a strong grounding for the City to advance its work on AI governance. Under this structure, the agency has started to build a new centralized team to take on this work, established new tools and structures for annual citywide algorithmic tools reporting, evaluated prior efforts by the City, and begun work on a new AI action plan.

---

[1] Although frequently used together, the terms "artificial intelligence" and "algorithmic tool" are not synonymous. Many, though not all algorithmic tools are derived from or are applications of AI. And based on particular contexts or regulations, not all applications of AI may be considered algorithmic tools. See Local Law 35 for additional details on the definition of "algorithmic tool" and associated reporting requirements.

[2] Executive Order 3 of 2022 is available at https://www.nyc.gov/office-of-the-mayor/news/003-002/executive-order-3.

2

Office of Technology & Innovation

This new action plan will build on prior City efforts to support productive AI use within agencies, ensure appropriate governance, and foster greater awareness and participation among residents. Phased implementation will begin in 2023 and early work is expected to emphasize agency capacity building and opportunities to establish and share best practices and guidance.

The City's new work will benefit from substantial progress made to date. Indeed, while in many ways the field of AI governance is still in early development, New York City has been pioneering efforts to develop practical and meaningful measures in this emerging policy area alongside other governments across the globe.

Between 2020 and 2021, the City worked with stakeholders across sectors to outline a framework for identifying algorithmic tools, developed policies for this novel governance framework, identified over 90 liaisons across New York City government and embedded algorithmic transparency and accountability responsibilities at the agency level, built and implemented a comprehensive compliance reporting process, and published the City's first-ever directory of algorithmic tools. As of January 2023, the City has nearly completed its third year of public reporting of algorithmic tools (many of which are applications of AI). During this time, the City additionally participated in a range of public events to engage New Yorkers and share information about the City's work and it established an online portal for public questions about algorithmic tools.

In 2021, the City embarked on a broad-based effort to better understand the opportunities and challenges that AI presents for the City and its residents, including those related to governance of City AI tools. After engaging over fifty stakeholders across the local AI ecosystem - from government, industry, academia, and civil society – the City published both an "AI Primer," a central resource intended to provide NYC decision-makers with an accurate and shared understanding of the technology and the issues it presents, and a broader strategy document identifying key areas of opportunity for future City work.[3]

While the City's efforts have been significant, OTI agrees that there is more work to be done to further mature the City's approach to AI governance and bring agency efforts into greater alignment. Below we use the opportunity of this response to clarify points made in the Audit Report and outline where the City is focusing efforts going forward. Additionally, following this response are appended responses and clarifications from agencies sampled in the audit.

Responses to Audit Findings

In this section, OTI responds to broad themes that emerge across the subsections of findings. Additional responses to specific findings prepared by sampled agencies are appended.

1. General

---

[3] The AI Primer can be found at https://www1.nyc.gov/assets/cto/downloads/ai-strategy/nyc_ai_primer.pdf, and the broader strategy document is available at https://www1.nyc.gov/assets/cto/downloads/ai-strategy/nyc_ai_strategy.pdf.

3

Office of Technology & Innovation

OSC's Report concludes that New York City does not have an effective AI governance framework and that the lack of rules or guidance has resulted in agencies developing their own diverging approaches, which OSC considers to be ad hoc and incomplete. OTI agrees with OSC's observation that currently the City has not adopted a formalized, central AI governance framework. However, OTI believes that the various efforts in place represent important foundations for AI governance. For example, the inventory of algorithmic tools that will result from compliance with Local Law 35 not only helps to begin unifying definitions and interpretations of terms like "AI" and "algorithm," it also routinizes transparency, a core tenet of governance, through processes that are consistent from year to year and from one agency to the next, and through the eventual public reporting. Additionally, individual agency efforts described in OSC's report are strong examples of awareness of the potential impact of AI and the care and attention these solutions need for fair and responsible use. And indeed, some of the practical governance solutions developed by individual agencies may be productively leveraged or adapted elsewhere in City government.

Under its general authority from Executive Order 3 as the City's lead information technology agency, OTI is committed to creating more alignment in agency approaches to AI governance and, as noted above, intends to emphasize this work in early 2023 by developing more centralized guidance and resources for agencies and facilitating information sharing.

2. Subsection: NYC AI Governance

This section of OSC's Report summarizes findings related to the revoked Executive Order 50 of 2019 and the Algorithms Management and Policy Officer created by that order. While OTI does not agree with all the findings in the report, we do agree with OSC's statement that OTI is "in the process of transitioning AMPO's work." As mentioned previously in this response, under the authority of EO 3, OTI will have greater insight into and oversight over agency technology, including AI and algorithmic tools, and will continue to advance work around governance of these tools, including evaluation of previous efforts.

3. Subsection: AI Governance at Sampled Agencies

Sub-subsections: General AI Policies and Procedures, AI Documentation of Intended Use and Outcomes, Monitoring of Agency Use of AI, Monitoring of Accuracy and Bias, Stakeholder Engagement

These sections generalize that agencies lack overarching policies and procedures covering these topics that are specifically dedicated to AI. The Report does acknowledge that some AI applications are incidentally governed by other policies and procedures, but not ones that are targeted towards AI tools, in particular. For example, the NYPD documents the use and outcomes of its facial recognition tool as a function of being subject to the NYC Public Oversight Surveillance Technology (POST) Act.

OTI agrees with the generalized theme that agencies lack a set of overarching policies that are specific to AI. We note that implementing such policies against a complex web of regulatory requirements is quite challenging and takes time to develop and enact. Any meaningful AI-specific policies must acknowledge, account for, and most importantly not conflict with other regulatory frameworks that exist (many of which are established by law) that have any governance over the tools and systems that would also be subject to AI-specific governance. OTI supports OSC's recommendation to implement policies to create

4

an effective AI governance structure, but maintains that to be effective, an AI governance framework must consider these interactions with other governance frameworks, and identify and account for instances where an AI-specific policy may either conflict with or duplicate requirements from other frameworks. OTI is committed to better understanding these regulatory interactions, both generally and in areas that could more specifically support agencies.

Moreover, OTI notes that there are components of a governance framework, such as those that relate to information privacy and cybersecurity, that are effective when applied across all of an agency's technology tools, rather than being specifically implemented just for those tools that are considered AI. In these examples, all City technology, including applications of AI, is subject to rigorous measures set forth in law and in policy by the respective responsible entities.

Generally, OTI posits here that effective AI governance must consist of both AI-specific and non-AI-specific policy. As OTI looks to next steps in effective AI governance, it will evaluate the appropriate focus of policy and account for meaningful governance measures already in place.

Sub-subsection: Inventory of AI Systems and Tools

In its findings, OSC points to the fact that none of the agencies sampled maintains an inventory of AI systems and tools and that only one maintains an inventory of data sources used by those tools. OTI agrees that a robust understanding of an agency's inventory of technology is critical for both daily operations and general accountability. OTI also agrees with the overall notion that, because of the particular set of risk factors that AI systems and tools may pose, such tools may warrant specialized attention for agency decision-makers and managers. However, OTI considers the development of an AI inventory to be a task in progress, one that is complicated by an ever-evolving landscape of technologies that may be considered AI and the patchwork of pre-existing regulations that govern agency technology inventorying.

To the first point, any successful effort to inventory AI would be contingent on providing agency personnel with a definition or set of criteria to be used to identify such systems; that definition or set of criteria must reflect the wide array of applications that may fall under the umbrella of AI while establishing boundaries to aid in deciding which tools may or may not be included, and while adapting to broader changes in what users and developers in both the private and public sector consider to be AI. As an example, optical character recognition (OCR) is an application that converts images of text into machine-readable text. OCR is typically considered an AI approach. But OCR is also widely implemented in quotidian times and places, including within standard office software, such as Adobe Reader, that opens and edits PDF files. As the scope of what to consider AI for inventorying purposes widens to include mundane, widespread applications, the burden for producing such an inventory increases. For this reason, many initial efforts in cataloging algorithmic or AI driven applications intentionally narrow the scope to exclude such applications. OTI is committed to providing resources to agencies to help construct meaningful and pragmatic definitions and explanations for identifying AI that balances these competing forces.

At the same time that agencies must grapple with challenging definitions, agency technologies are already subject to a complex set of inventorying regulations. For example, the New York City Comptroller's Directive 1 requires agencies to provide an inventory of their technology applications yearly. Local Law 35, discussed in OSC's Report and mentioned above, requires the annual reporting of algorithmic tools. And the City's POST Act requires impact statements for the NYPD's applications of

5

Office of Technology & Innovation

surveillance technology, resulting in a de facto inventory of such applications. Efforts to compile an inventory of AI applications for agencies must account for the varying definitions and criteria for inclusion across these other inventorying frameworks.

Response to Audit Recommendations

While OTI has addressed the subject of OSC's recommendations throughout this response, we provide the following direct responses to these recommendations as follows.

Recommendation 1: Use relevant AI governance frameworks to assess the risks of AI used by City agencies.

OTI agrees that applications of AI pose risks, as discussed above, and appreciates the many efforts across sectors to assemble risk assessment and risk management frameworks for AI. OTI agrees that such frameworks provide a helpful reference for considering issues of risk within New York City. At the same time, OTI believes that reviewing existing frameworks is just the starting point, and additional work is needed to understand how risk management frameworks can be meaningfully applied for agencies, which in turn depends on broader, more holistic work related to AI governance.

Recommendation 2: Review past AMPO policies to identify areas that need to be strengthened by OTI.

As discussed above, EO 3 empowered OTI to oversee the development of policies and practices related to AI and algorithmic tools. OTI has been undertaking a review of past City work, including the range of AMPO efforts detailed above, as part of moving into its new role. As the City continues work on its next steps for AI governance, OTI agrees that previous policies are an important source of information, and we anticipate ongoing reflection on this and other current City work. Next steps are expected to be outlined in the City's AI action plan.

Recommendation 3: Implement policies to create an effective AI governance structure.

As noted above, OTI believes that an effective AI governance structure is one that acknowledges the diversity of AI use cases and the challenges of a complex web of existing regulation and policy. OTI is committed to continuing to position the City as a leader in local AI governance. As noted above, the City has begun work on an AI action plan, which will outline concrete steps that support AI use within agencies, help ensure appropriate governance, and foster greater awareness and participation among residents. Implementation of this plan is slated to begin in 2023, with early work expected to emphasize agency capacity building, and opportunities to establish and share best practices and guidance resources.

6

NYC OTI

Office of Technology & Innovation

Conclusions

As detailed above, the City has made significant efforts toward establishing a foundation for AI governance in recent years. We acknowledge that there are areas where improved or additional measures will be needed and remain committed to continuing this important work. As we work to advance these efforts, we look forward to engaging further with OSC and other stakeholders in government and across sectors. Indeed, in this emerging field of practice, ongoing exchange will be a critical tool for informed and effective work.

Sincerely,

Matthew C. Fraser
Chief Technology Officer and Commissioner

7

Appendices

8

Appendix A: Administration for Children's Services Response

9

January 6, 2023

Kenrick Sifontes
Audit Director
Office of the State Comptroller
Division of State Government Accountability
59 Maiden Lane - 21st Floor
New York, NY 10038

RE: Audit Report 2021-N-10, New York City Office of Technology and
Innovation - *AI Governance*

Dear Mr. Sifontes:

The City of New York (NYC) Administration for Children's Services (ACS) is
in receipt of the draft report concerning AI governance at the NYC Office of
Technology and Innovation from the State of New York Office of the State
Comptroller (OSC). Thank you for the opportunity to review and provide a
response. This correspondence constitutes ACS' response to relevant findings as
ACS was one of four city agencies selected.

ACS appreciates the OSC's acknowledgment of the agency's comprehensive AI
guidelines for the development and implementation of its analytic models. These
guidelines are in fact required to be followed closely by the small group within
the agency that manages analytic modeling, and the guidelines are in the process
of being adopted as formal ACS policy. ACS has followed the standards set by
the Automated Decision System (ADS) Task Force established by the previous
administration, standards to which we contributed. The standards can be
reviewed here: Automated Decision Systems Task Force (nyc.gov) These
guidelines cover a range of principles related to fairness, accountability, and
transparency. Furthermore, ACS maintains an inventory of its AI analytic tools,
clearly outlining the specific uses and interpretations of each model. ACS agrees
that there are risks associated with building AI applications, as documented by
OSC as well as OTI, and has put several measures in place to mitigate these
risks. Rigorous testing of models and compiling of performance metrics enable
ACS to identify that its models perform the same irrespective of race or
ethnicity.

In the section of this OSC draft report regarding "General Policies of the City's
Use of Algorithmic and AI Tools," the auditors do not explicitly critique the
ACS approach, but they imply some insufficient consideration of potential risks.
In fact, ACS is fully aware of potential risks and has established structures for
the use of AI specifically designed to mitigate those risks. Our primary focus in
the development and implementation of analytic modeling is to ensure that each

Jess Dannhauser
Commissioner

150 William Street
New York, NY 10038

model is functioning as intended, and ACS has implemented measures to evaluate and mitigate any potential harm. In addition, these analytic tools are utilized by quality assurance teams and managers for informational purposes and are neither available to nor intended for case-level decision-making by direct service staff.

As noted in the report, ACS is establishing a formal AI policy and formally documenting our performance monitoring and model updates as a means of ensuring long-term sustainability and effective governance. The comptroller's report includes a description of ACS's governance structure for artificial intelligence. ACS has a governance structure for AI that includes an external advisory committee made up of local stakeholders and data science experts, and an internal oversight committee. This is not an *ad hoc* structure; it has been in place for more than five years.

There are several key measures that ACS adheres to when developing and planning for the implementation of its AI analytic models. These measures include:

1. AI Principles: The outlining of objectives, principles, and processes for implementing and managing AI systems.
2. Model Documentation of Intended Use and Outcomes: ACS has documented the intended use and expected outcomes of each AI system. This documentation includes details on the specific data inputs and outputs of the system, as well as any assumptions or limitations.
3. Monitoring of Use of AI: ACS has processes in place to monitor the use of AI within the organization. This includes regular reviews to ensure that AI systems are being used appropriately and ethically.
4. Monitoring of Accuracy and Bias: ACS performs rigorous testing to monitor the accuracy and bias of AI systems. This includes testing the systems using a diverse set of data inputs and evaluating the results for potential biases.
5. Stakeholder Engagement: ACS engages stakeholders (internal and external), to ensure that AI systems are developed and used in a transparent and accountable manner. This includes gathering input from stakeholders during the development process, as well as regular reporting on the use and results of AI systems.

In accordance with Executive Order 50 and Local Law 35, ACS compiles and submits an inventory of all artificial intelligence systems and tools that have been utilized each year. Documents containing technical specifications, including a list of data sources, testing metrics, and feature engineering methodologies, have been prepared for each tool and are available for review by stakeholders.

OSC's recommendations regarding ACS are that 1) the agency should establish a formal AI policy, and 2) ACS should formally document performance monitoring and analytic model updates. These are legitimate recommendations for long-term sustainability and proper internal governance of AI and are being or have been addressed by ACS.

Thank you for the opportunity to comment on the Draft Audit Report. We look forward to continuing our work in this area with the support of our City and State colleagues.

Sincerely yours.

Jennifer Fiellman
Assistant Commissioner

Office of Technology & Innovation

Appendix B: Department of Buildings Response

13

NYC Buildings

Kazimir Vilenchik, P.E
Acting Commissioner

280 Broadway
7th Floor
New York, NY 10007
www.nyc.gov/buildings

+1 212 393-2001 tel
+1 212 566 3785 fax

December 27, 2022

Ms. Tina Kim
Deputy Comptroller
Office of the New York State Comptroller
Division of State Government Accountability
110 State Street, 11th Floor
Albany, NY 12236

**Re: AI Governance at the New York City Department of
Buildings (DOB)**

Dear Ms. Kim:

Thank you for giving us the opportunity to respond to the above
referenced draft audit report. The Department appreciates the time
and effort that you and your staff dedicated to performing this audit.
We appreciate the opportunity to address your audit findings and
concerns and will use it as a guide to further improve our policies
and procedures.

The Department of Buildings is actively researching new ways
to introduce elements of artificial intelligence (AI) to the
extent allowed by the New York City Building Codes. Although
the Department has not formally established a framework for
the use of AI in its daily operations, we believe that current
and forward-looking plans represent a strong foundation for
implementation of AI and its governance. The Department
holds firmly that when AI becomes a fully integrated
component of the Department's operations, it will enhance the
accuracy, safety, and security of the processes it is utilized in
throughout its technical lifecycle.   Additionally, the
Department will require that AI usage not only be traceable
(to enable analysis and adequately address responses to
inquiries), but also not pose unreasonable safety risks.

DOB allows for the use of the technology by Qualified Exterior Wall
Inspectors ("QEWI") and not the means or methodology by which
they perform their inspections. In the case of FISP, the QEWI must
design an inspection program for the specific building to be
inspected, which must include, but not be limited to, the methods
to be employed in the examination. (Please reference RCNY 103-04
section (c)(2)(iii)). This may or may not include AI. DOB has yet to

1

NYC Buildings

codify the policy and procedures surrounding the use of AI technology with regards to defined goals and objectives, due to its early stages.

Finally, as an agency hosted on OTI's CityNet, the Department of Buildings is required to deploy OTI/DoITT/NYC3 policies and procedures. All AI policies and procedures surrounding the development and use of AI systems and tools will need to comply with the requirements set forth by OTI.

Thank you, once again, for giving us the opportunity to respond to this draft audit report. We look forward to receiving your final version.

Sincerely,

Kazimir Vilenchik, P.E.
Department of Buildings

cc: Mark Sanabria, Department of Buildings
       Jhony Constant, Department of Buildings
       Kerry Castro, Department of Buildings

2

NYC OTI
Office of Technology & Innovation

Appendix C: New York City Police Department Response

16

THE POLICE COMMISSIONER
CITY OF NEW YORK

January 10, 2023

Thomas P. DiNapoli
New York State Comptroller
Office of the New York State Comptroller
110 State Street
Albany, NY 12236

Tina Kim
Deputy Comptroller
Office of the New York State Comptroller
Division of State Government Accountability
59 Maiden Lane - 21st Floor
New York, NY 10038

Kenrick Sifontes
Audit Director
Office of the State Comptroller
Division of State Government Accountability
59 Maiden Lane - 21st Floor
New York, NY 10038

Dear Comptroller DiNapoli, Deputy Comptroller Kim, and Director Sifontes:

The New York City Police Department ("NYPD" or "the Department") hereby submits its comments to the Office of the State Comptroller ("OSC") Report 2021-N-10 titled "New York City Office of Technology and Innovation, Artificial Intelligence Governance" ("the Report"). These comments are submitted in conjunction with the New York City ("NYC") Office of Technology and Innovation ("OTI") response to the Report.

The NYPD thanks the OSC for their work in assessing both New York City's progress in establishing a governance structure covering the development and use of technologies incorporating artificial intelligence ("AI"), and for including the NYPD as a sampled NYC agency in the audit. As OTI stated in their response to the Report, the Department also appreciates the vital role technology plays in the lives of New Yorkers. Although there are concerns regarding the audit process and the characterization of the Department's use of AI technologies contained in the Report, the NYPD agrees that all technologies, including AI technologies, must be utilized in a trustworthy and responsible manner.

Defining AI is no trivial matter and the details of any particular definition of AI have a strong impact on the scope of relevant technologies and any related policies and regulations. The Executive Office of the President, National Science and Technology Council Committee on Technology has acknowledged

that no definition of AI is universally accepted by all relevant stakeholders,[1] and the NYC AI Strategy describes the term AI as largely a "marketing term".[2] That is why at the start of the audit process, the NYPD requested details regarding what definition of AI the auditors were using to guide the audit scope. However, the auditors would not provide a definition of AI and instead asked how the Department defines the term. It was a surprise to see the OSC auditors include an uncited definition of AI in the Report, and discredit the Department's acknowledgment of the complexity and complications of defining the term as merely having failed to establish a definition.

After the discussion of AI generally, OSC auditors identified facial recognition technology ("FRT") as an example of an AI technology, and inquired into matters relating to the Department's utilization of the tool. To be clear, FRT is a software used by the Department to aid in the identification of unknown persons including persons experiencing memory loss, unidentified deceased persons and suspects in criminal investigations.

As a preliminary matter, the Report describes use of FRT as aiding the Department's "surveillance … functions" implying the Department is surreptitiously identifying the general public. This could not be farther from the truth. The NYPD is incapable of performing real-time facial recognition and does not use FRT as a surveillance tool. FRT was included in the Public Oversight of Surveillance Technology Act ("POST Act") because it met the statute's broad definition of "surveillance technology" as it is a software capable of processing biometric data, i.e., an image of a face.[3] For FRT to be used during the course of an investigation, an NYPD investigator must first obtain a still image depicting the face of an unknown individual, then submit the image for facial recognition analysis in accordance with NYPD facial recognition policy. FRT used by the Department can only analyze one image at a time. It is well settled that common understanding of the term "surveillance" encompasses active observation and describing FRT as a surveillance tool is disingenuous and incredibly misleading.

It was troubling that the Report found that the NYPD had not reviewed Face Recognition Vendor Test ("FVRT") evaluation reports published by the National Institute of Standards and Technology ("NIST"). Department personnel directed the auditors to where they could find the evaluation reports and even assisted the auditors when they had difficulties discerning the FVRT evaluation report findings as it related to the FRT algorithm used by the Department. It was surprising to read that the auditors did not find these assistances as sufficient proof that the NYPD had reviewed the FVRT evaluation reports.

The Report further describes concerns regarding specific findings in the NIST FVRT evaluation reports relating to the accuracy of FRT results among some groups. However, the Report did not indicate that the FRT algorithm used by the Department was one of the algorithms of concern, despite having the information that would allow the auditors to review those results. The Department incorporates specially trained facial recognition investigators at all critical stages of the FRT process, and Department policy prohibits identification of a possible match candidate alone from establishing probable cause to arrest or to obtain a search warrant. Further, the Report states that the NYPD is unaware of the data used to develop the FRT algorithm it uses. Although both the FRT algorithms and the training data used in its development is proprietary to the vendor, the Department is aware that the FRT algorithm was developed using training data that consisted of images depicting faces.

---

[1] *Preparing for the Future of Artificial Intelligence*, EXECUTIVE OFFICE OF THE PRESIDENT NATIONAL SCIENCE AND TECHNOLOGY COUNCIL COMMITTEE ON TECHNOLOGY (Oct., 2016) https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf (last visited Dec. 23, 2022).
[2] *The New York City Artificial Intelligence Strategy*, MAYOR'S OFFICE OF THE CHIEF TECHNOLOGY OFFICER (Oct. 13, 2021) https://www1.nyc.gov/assets/cto/downloads/ai-strategy/nyc_ai_strategy.pdf (last visited Dec. 23, 2022).
[3] NYC Administrative Code § 14-188(a).

Comment 4

Comment 5

Comment 6

Comment 7

Finally, the Report asserts the Department did not provide auditors documentation supporting that NYPD Integrity Control Officers ("ICOs") are responsible for inspecting Department equipment, including FRT, for misuse or misappropriation. However, the auditors were provided with a copy of NYPD Patrol Guide § 202-29,[4] which enumerates the duties and responsibilities ICOs are expected to perform on October 21, 2022.

Transparency and responsibility are – and will continue to be – baked into the NYPD's use of technology, including AI technologies. The Department thanks both OSC for its work in this audit process and OTI for its work in this developing field. The NYPD commits to continuously improving use of AI technologies.

<div style="text-align:right">

Regards,

Keechant L. Sewell
Police Commissioner
New York City Police Department

</div>

Cc: Matthew Fraser
       Chief Technology Officer
       NYC Office of Technology & Innovation

Comment 8

---

[4] *Command Integrity Control Office,* NYPD PATROL GUIDE (Feb. 16, 2022), https://www.nyc.gov/assets/nypd/downloads/pdf/public_information/public-pguide1.pdf (last visited Dec. 23, 2022).

State Comptroller's Comments

1. According to OTI, until it establishes a suitable definition of AI, other governance steps, such as creating inventories or evaluating overlapping policies (e.g., information privacy), cannot take place. However, as OTI responded that the definition of AI lacks precise boundaries, it is unclear when OTI would be satisfied with a definition. Furthermore, other government AI and algorithm frameworks could serve as starting points.

2. While Directive 1 requires applications to be reported, it does not require agencies to specify if the application uses AI.

3. As no citywide AI governance framework exists, each agency had to develop their own policies specific to their own needs.

4. All sampled agencies were asked how AI is defined as it is usually an initial step for AI governance. Without an established definition, it is unclear how the appropriate applications would be identified and governed. For the purposes of AI governance, NYPD officials may have understood the concepts of AI, but it was not defined by the NYPD. We provided NYPD officials with the definition of AI used and relevant background in September 2022. Furthermore, we used this definition only to identify AI uses such as NYPD's facial recognition technology; such technology is widely cited as AI.

5. A clarification was made to the report.

6. NYPD officials could not support that they reviewed the results of the NIST evaluations regarding the technology used by their vendor, DataWorks Plus. There are many versions of NIST evaluations; some versions may be more applicable to the NYPD's use than others (such as "wild images"). Officials could not identify which NIST evaluation had been reviewed or when. Furthermore, officials could not name all of the technologies used by their vendor and which had been tested by NIST.

7. NYPD officials could not support that they reviewed the NIST evaluations of the technology they use and whether the performance would be acceptable. Furthermore, as NIST studies concluded, the context in which such technology is used can greatly affect performance.

8. The report noted that NYPD did not support (such as the specific actions taken) that its Integrity Control Officers have reviewed the use of facial recognition technology under the NYPD patrol guide.

Contributors to Report

Executive Team

Andrea C. Miller - *Executive Deputy Comptroller*
Tina Kim - *Deputy Comptroller*
Ken Shulman - *Assistant Comptroller*

Audit Team

Kenrick Sifontes - *Audit Director*
David Schaeffer - *Audit Manager*
Saviya Crick, CPA - *Audit Supervisor*
Joseph Gillooly - *Audit Supervisor*
Hardat Singh, CPA - *Examiner-in-Charge*
Allison Dillon - *Senior Examiner*
Vance Green - *Senior Examiner*
Daniel Zimmerman - *Project Assistant*
Mary McCoy - *Supervising Editor*