



NEW YORK CITY COMPTROLLER
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The Need for Better AIMS

NYC's Infrastructure Report Fails to Identify True Costs of Capital Projects

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New York City's annual infrastructure survey report estimated in 2020 that the maintenance costs of the Riverside Park Bridge W. 79th Street Traffic Circle would be \$76 million. When the project went to bid just a few months later, the actual cost was almost double that, at \$149.9 million.

The Riverside Park Bridge project was no aberration. The City's infrastructure survey process consistently fails to accurately identify the costs of keeping our infrastructure working. The City's Asset Inventory Management System (AIMS), managed by the Office of Management and Budget (OMB), is intended to provide an annual condition assessment of the City's capital infrastructure.¹ Unfortunately, the AIMS report is insufficient and unreliable.

The report does not accurately identify the true costs of maintaining the structural integrity of the major infrastructure assets of New York City. The report excludes assets that are subsurface, underwater, leased to public benefit corporations, or valued under \$10 million. Inspections are limited to visual surface reviews, with no process for taking corrective actions to address

signs of deterioration. There does not appear to be a correlation between the cost estimates in the AIMS report and the actual costs once projects take place.

As a result, the City does not have a good, comprehensive assessment of the conditions of its infrastructure assets, such as the pipes that deliver clean drinking water or the increasingly overwhelmed sewers that carry rainwater away, the city's roads and bridges, parks, or libraries. Nor does it have a good estimate of the cost to bring that infrastructure to a state of good repair, or a clear set of most urgent priorities.

The AIMS process must be overhauled to create a comprehensive, accurate inventory of infrastructure needs to better inform the City's capital planning and spending decisions.

The City Council should amend the New York City Charter to mandate a thorough, accurate, and useful citywide infrastructure assessment process to ensure that the City's short- and long-term infrastructure spending priorities enable a safe, thriving, equitable, and resilient New York City.

Best Practices of Infrastructure Assessments

Maintaining high-quality infrastructure is among government's most basic and important responsibilities. Cities must collect comprehensive and accurate information about the condition of critical assets and use it to inform spending and maintenance decisions. An effective asset management strategy can guide cities through the process of identifying maintenance needs, creating long-term cost estimates, and keeping critical infrastructure in a state of good repair. Failing to do so can lead to a state of deferred maintenance, allowing assets to fall into poor condition. Making repairs to infrastructure in a timely manner saves cities money in the long-term, as emergency repairs often carry higher costs than timely maintenance. A proactive asset management strategy can also improve municipal bond performance and lower the cost of borrowing through bonds.²

Despite many longstanding challenges to proper upkeep of our vast infrastructure networks, an effective approach to infrastructure needs assessments should incorporate the following best practices:

- **Tie capital infrastructure assessments to capital planning.** The Government Finance Officers Association (GFOA) and Municipal Finance Officers' Association (MFOA) both recommend that governments establish a capital planning process that accounts for the investments necessary to maintain capital assets.³ MFOA, specifically calls for the development of 10-year plans that document current asset performance, identify proposed levels of service for asset improvements, incorporate an accompanying financial strategy to implement the plans, and are reviewed annually.⁴ The MTA recently updated its infrastructure assessment process and created a centralized capital planning group, MTA's centralized capital planning group compiles the asset condition data from agency inspections to prioritize budget needs across the MTA.
- **Prioritize maintenance of existing infrastructure to prevent more costly repairs down the road.** While there are many reasons to build new infrastructure, such as new

affordable housing to resilient flood protection infrastructure to combat the housing and climate crises, it is important to keep existing infrastructure in good shape. Deferred maintenance can not only lead to unsafe infrastructure conditions, it is also costly. One analysis of roadway maintenance demonstrates that the cost of fixing a roadway when it has deteriorated to “serious” condition costs four times more than investing in maintenance when it is in “fair” condition.⁵

- **Maintain detailed inventory of capital assets.** NYCHA’s Physical Needs Assessment includes a forecast of when assets will become inoperable based on deterioration and useful life. NYCHA includes small-scale and lower-cost sub-assets like doors, that make up with larger mechanical, electrical, or structural systems, allowing NYCHA to establish the full scope of infrastructure maintenance, repair, and replacement needs.⁶
- **Adopt inspection protocols tailored to specific asset classes.** Existing professional and regulatory inspection standards, such as those established by the Federal Highway Administration, Federal Transit Administration, and the American Society of Civil Engineers, should inform adopted inspection guidance. Compliance with federal guidelines is required for some infrastructure types (such as bridges⁷ and subway systems⁸). When no federal or industry standard exists for particular asset types, cities have also created their own protocols. For instance, because NYC’s waterfront infrastructure spans many jurisdictions and diverse asset types, the NYC Economic Development Corporation (NYCEDC) created the Waterfront Facilities Maintenance Management System Inspection Guidelines Manual to standardize the protocols for waterfront inspection.⁹ The guidelines define inspection requirements, standardize the condition rating system, and identify a concrete set of recommended actions depending on the inspection findings.
- **Use innovative technology to assess the physical condition of infrastructure.** While infrastructure assessments typically rely on on-site inspectors to conduct evaluations, several public agencies responsible for managing infrastructure across the country have deployed remote monitoring technology to collect data about the condition of their assets.¹⁰ Emerging technologies including remote sensors (such as light detection and ranging, or LiDAR), and drones can access hard-to-reach assets in a more time- and cost-efficient way to supplement traditional manual inspections.
- **Validate inspection findings conducted by external consultants.** Asset owners to commonly procure contractors to conduct infrastructure inspections. Because consultants may utilize different methods of inspection or use different judgment when rating asset conditions, it is important to institute processes to verify consultant work. For instance, NYC Housing Authority (NYCHA) and School Construction Authority (SCA) employ in-house teams dedicated to quality assurance and control. SCA’s Building Condition Assessment Survey¹¹ (BCAS), a capital planning tool to prioritize investments and repairs for the City’s public schools, deploys a team (comprising an architect, mechanical engineer, and electrical engineer) to resurvey a portion of the buildings to validate the consultant’s findings and ensure standardization across the SCA portfolio.

Proposed Infrastructure Needs Assessment Framework

Because the AIMS report is riddled with deficiencies, it does not provide a reliable assessment of infrastructure conditions or estimate of costs needed to maintain City assets. An effective infrastructure needs assessment process should amend the City Charter to:

- **Define purpose of the infrastructure needs assessment as a tool to inform the City's 10-year capital strategy.** The City Charter currently mandates that the City conduct an infrastructure needs assessment, but does not articulate its purpose. It is therefore no surprise that the AIMS report has no clear utility. To ensure a state of good repair and effective capital planning, the Comptroller's Office recommends that the Charter be amended to make explicitly clear the purpose of the infrastructure assessment is to inform the City's 10-year capital strategy, which OMB updates every two years.
- **Require the City to maintain an accurate and comprehensive citywide asset inventory.** Under the current process, OMB relies on agencies to update their asset inventories, but disparate processes for maintaining asset inventories across agencies result in many gaps. For instance, although the AIMS survey process is designed to include all assets in a four-year cycle by inspecting 25% annually, several non-City owned assets were incorrectly included in the capital inventory while other City assets were never added or had not been surveyed in years, including several (such a parks administration building in Flushing Meadows Corona Park and a building that is part of the Hunts Point Produce Market campus) that have not been surveyed in 30 years and some (such as an education building at the Bronx Zoo) found to have never been surveyed at all.¹² The City Charter should be amended to require agencies to maintain and regularly update a comprehensive asset inventory that will provide the baseline for comprehensive asset inspections. The inventory should be required to include pertinent details about the function, location, structural dependencies, estimated useful life, and most recent condition assessment of each asset. Individual assets should be itemized and assessed, but denoted when they are part of a campus or larger facility. This foundational information should be made public in a machine-readable format. That document should also include an appropriate citywide inspection schedule to ensure that the City properly updates the inventory on a timely basis.
- **Require the City to develop a standard protocol for agencies to conduct asset condition inspections.** The AIMS report does not include any written policies or procedures to govern the survey process. In practice, the surveying processes have varied by surveyor, resulting in many inconsistencies and unreported issues.¹³ For these assessments of infrastructure to be effective, the Charter should be amended to require the City to create central guidance for agencies to use in carrying out inspections. The guidance, which can be codified through the Administrative Code or Rules of the City of New York, should

provide direction on the inspection scope, rating categories, and schedule that align with the goal of using this process to conduct 10-year capital planning. As recommended in the accompanying AIMS audit, the inspection process should be led by agencies, which have the most familiarity with their assets, rather than the NYC Office of Management and Budget (OMB). Because different asset types have varied maintenance needs and replacement timelines, inspections schedules should be informed by an asset's useful life: new assets may not need inspection for the first few years; assets with potential structural issues to monitor would require more frequent follow-up inspections; and assets with useful lives of less than 10 years should assume full replacement costs and need not be inspected. When the inspections identify potential concerns or structural deficiencies, the protocol should trigger certain requirements, such as conducting more detailed engineering inspections or enacting emergency make-safe measures.

- **Require OMB to estimate costs for all identified infrastructure needs.** The estimated needs identified in the AIMS report are not predictive of planned project costs. For instance, the Riverside Bridge Park project cost \$74 million more than the estimate provided by AIMS.¹⁴ The City must have a full view into the true needs—including realistic costs—to understand what it will take to maintain a state of good repair and how to prioritize future spending. Even if not all new needs can be fulfilled immediately, the infrastructure assessment process should provide an accurate estimation of total needs so that the City can make informed planning and budgeting decisions.
- **Require the 10-year capital strategy to address costs identified the infrastructure assessment in the subsequent decade, prioritizing the most critical needs.** Infrastructure needs assessments are only useful tools if the City takes follow-up actions to address the identified deficiencies. The 10-year capital strategy should serve as a vehicle to execute on the identified infrastructure repair and maintenance costs needed for the next decade. While the prioritization of new capital needs can be left to the discretion of the agencies, factors for consideration include: the level of deterioration (particularly any asset conditions that jeopardize public safety), the criticality of an asset to an agency function or mission, and federal requirements that may apply to certain types of assets.¹ The prioritization process should take a holistic all-facility approach so the resulting capital projects are efficiently scoped and budgeted to bundles repairs, maintenance, and replacements for assets or and sub-assets with structural dependencies or geographic proximity. For instance, if a significant rehabilitation project is planned for a building, the agency should review any repairs that alone may not rise to the top but can be efficiently completed as part of a larger major construction project.

¹ For instance, NYCHA assets are subject to HUD National Standards for Physical Inspection of Real Estate; bridges and tunnels are regulated under FHWA; and transit infrastructure is regulated under FTA.

Conclusion

Maintaining the critical infrastructure that serves New Yorkers requires a clear understanding of current asset conditions and maintenance costs. Without it, the City imperils the safety of New Yorkers and risks wasting taxpayer money. Deferred maintenance from delays in identifying or addressing repairs leads to inflated rehabilitation costs. Over the past five years, the City spent over \$150 million on emergency procurements to address structural deficiencies in its infrastructure—deficiencies that came about due to a failure to maintain a state of good repair.¹⁵ The City should not wait until infrastructure conditions have deteriorated so significantly that it must use emergency procurements to address these issues, which increases safety risks and costs for New Yorkers.¹⁶ Instead, the City must mitigate infrastructure emergencies through proactive infrastructure maintenance. An overhauled, refocused version of AIMS can provide an accurate picture of the condition of the City’s infrastructure and inform capital planning priorities.

Endnotes

¹ An asset is defined as a fixed system or component of infrastructure of the City. Examples of assets can include public schools and libraries, streets and sewers, and even light fixtures and faucets of public buildings, but only those above a certain threshold are covered by the AIMS Report. The City Charter requires the City to keep a “capital plant,” which is an inventory of City assets that has a replacement cost of at least \$10 million and a useful life of at least 10 years.

² Vicari, E. (2016, December 22). Could infrastructure asset management improve your municipal bond performance? *HRG*. <https://hrg-inc.com/could-infrastructure-asset-management-improve-your-municipal-bond-performance/>.

³ Government Finance Officers Association. (2017, October). *Best Practices: Capital Asset Management*. <https://www.gfoa.org/materials/capital-asset-management>.

⁴ Municipal Finance Officers' Association. (2019). *Best Practices in Asset Management* [PowerPoint]. (2019). https://www.mfoa.on.ca/mfoa/main/pdfs/2019_MFOA_AC_Tues_A.pdf.

⁵ Kahn, M. E. and Levinson, D. M. (2011, February). *Fix It First, Expand It Second, Reward It Third: A New Strategy for America’s Highways*. The Hamilton Project. https://www.hamiltonproject.org/wp-content/uploads/2023/01/Final_KAHNDiscussPaper_Feb2011.pdf.

⁶ O’Hanlon, P. and Moore, S. E. (2023). *New York City Housing Authority 2023 Physical Needs Assessment Final Report*. Prepared for New York City Housing Authority. [2023-PNA-Report-Physical-Needs-Assessment-NYCHA.pdf](https://www.nycha.org/2023-PNA-Report-Physical-Needs-Assessment-NYCHA.pdf).

⁷ Federal Highway Administration. (2022). *Bridge Inspector’s Reference Manual (BIRM), (2022 NBIS)*. <https://www.fhwa.dot.gov/bridge/nbis/pubs/nhi23024.pdf>.

⁸ Federal Transit Administration. (2018, March). *TAM Facility Performance Measure Reporting Guidebook: Condition Assessment Calculation*. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/regulations-and-guidance/asset-management/60361/tam-facility-performance-measure-reporting-guidebook-v1-2.pdf>.

⁹ New York City Economic Development Corporation. (2016, May). *Waterfront Facilities Maintenance Management System Inspection Guidelines Manual*. [edc.nyc/sites/default/files/2019-10/NYCEDC-WFMMS-Inspection-Guidelines-Manual.pdf](https://www.nyc.gov/sites/default/files/2019-10/NYCEDC-WFMMS-Inspection-Guidelines-Manual.pdf).

¹⁰ National Academies of Sciences, Engineering, and Medicine. 2022. *Highway Infrastructure Inspection Practices for the Digital Age*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26592>.

¹¹ New York City School Construction Authority. (n.d.). *BCAS 2022-2023: Index of Inspection Reports*. <https://survey.nycsca.org/bcas/>.

¹² Office of the New York City Comptroller. (2024, March 15). *Audit Report on the Compliance of the Mayor's Office of Management and Budget's Asset Information Management System Reports with City Charter Requirements*.

¹³ *ibid*

¹⁴ *ibid*

¹⁵ Data on emergency procurements from the Office of the NYC Comptroller

¹⁶ Office of the NYC Comptroller. (2023). *Rethinking Emergency Procurements*. <https://comptroller.nyc.gov/reports/rethinking-emergency-procurements/>