



Metropolitan Transportation Authority: Subway Station Conditions

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Highlights

- Nearly all of the New York City subway system's 468 stations were built before 1940. Nearly two-thirds are at least 90 years old.
- In 1999, New York City Transit (NYCT) had planned to fully renovate all 468 subway stations by 2022, but that goal will not be achieved.
- A 2012 survey by NYCT found that only 118 of New York City's subway stations (25 percent) had at least 90 percent of both their structural and architectural components in good repair.
- The survey found a total of 4,172 structural defects, or 27 percent of all structural components (4 percent of components displayed serious defects).
- NYCT reported that in 94 stations at least half of the structural components were in need of repair.
- The stations in Brooklyn and Queens had the largest share of structural components with defects (one-third).
- Platform edges, which are important to rider safety, had the largest percentage of defects (43 percent) of any structural component.
- The survey also found that 83 stations, including some high-profile stations, had at least 25 percent of their architectural components in disrepair.
- The tile or other finishing on more than one-third of all subway station platform walls and floors was in need of repair.
- More than one-quarter of station components needed to be painted.
- Of the almost 400 elevators and escalators maintained by NYCT, nearly one in five is beyond its useful life.
- More than half of the elevators operating beyond their useful lives are located at six deep stations in Upper Manhattan.

The New York City subway system includes 468 passenger stations, which are used by 5.5 million riders each weekday. The system is operated by New York City Transit (NYCT), the largest subsidiary of the Metropolitan Transportation Authority.

Over the past 32 years, NYCT has renovated 241 subway stations at a cost of \$4.5 billion as part of its station rehabilitation programs. Under these programs, each station was fully renovated to a state of good repair, including structural and architectural components. Once the work was completed, however, NYCT moved on to the next station for rehabilitation without committing the resources to maintain the renovated stations.

NYCT changed its approach to station renovation beginning with the 2010-2014 capital program. Rather than fully renovating stations, it is now focused on repairing the most deteriorated structural components. NYCT believes that this approach is a more effective use of its limited resources.

NYCT reports that it is making progress addressing structural defects, but as noted in this report, much more remains to be done. NYCT estimates that it will need to invest more than \$5 billion over the next 20 years for subway station repairs.

Every five years, NYCT examines the structural and architectural condition of all of the City's subway stations. The survey, which takes more than a year to complete, rates components on a scale of 1.0 to 5.0. Those rated less than 3.0 are considered by NYCT to be free of defects and in a "state of good repair." Components rated 3.0 or higher are worn or damaged.

The 2012 survey represents NYCT's latest data on subway station conditions. Using NYCT's standards, the survey found that only 51 subway stations (11 percent) were free of both structural and architectural defects, and only 67 more had most (at least 90 percent) of their components in good repair.

The survey found 4,172 structural defects system-wide (27 percent) and 411 stations (88 percent) with at least one structural defect. Only 57 stations (12 percent) were free of structural defects, but another 70 stations had most of their components in good repair. The survey also found that 94 stations had at least half of their components in disrepair, with an average of 16 defective components per station.

NYCT reports that the percentage of structural components with defects declined from 32 percent in 2007 to 27 percent in 2012, and that the percentage of serious defects (those rated 4.0 or worse) declined from 5 percent to 4 percent. NYCT estimates that the percentage of components with defects will decline to 21 percent after the completion of work planned during the current capital program. This forecast, however, does not account for any new deterioration since 2012, which will not be identified until the next survey is completed in 2017.

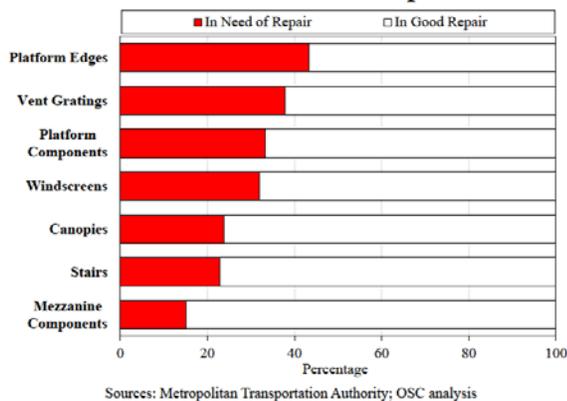
Among the four boroughs served by NYCT, the stations in Brooklyn and Queens had the largest share of structural components with defects (one-third). Only 1 of the 81 stations in Queens was free of defects, although 13 others had most of their components in good repair. In Brooklyn, 28 percent of the stations had at least 90 percent of their components in good repair.

In the Bronx, 26 of 70 stations (37 percent) had at least 90 percent of their structural components in good repair. Manhattan had the lowest percentage of components with defects (22 percent), but only 40 of the borough's 146 stations (27 percent) had at least 90 percent of their components in good repair.

The figure below shows that platform edges, which are important to rider safety because they close the gap between the platform and the train, had the largest percentage of defects (43 percent) of any structural component. While 33 percent of platform edges showed a moderate level of deterioration, 10 percent exhibited serious defects.

One-third of other platform components (such as ceilings, floors and columns) were structurally deficient, while similar components at the mezzanine level (i.e., the area between the platform and the street level) were in better condition.

Status of Structural Components

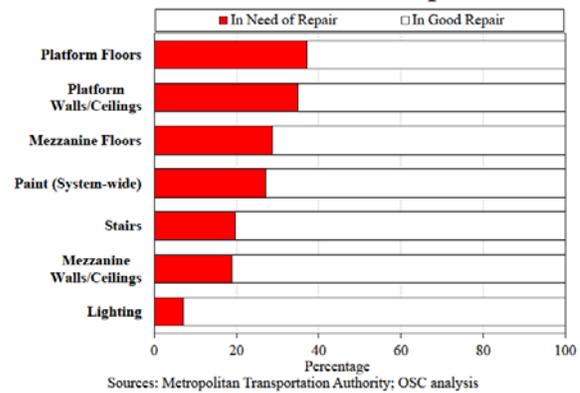


While the condition of structural components is important to rider safety, the condition of architectural components (e.g., tiles) affects how passengers perceive the overall condition of the transit system.

The 2012 survey found that 2,722 architectural components (13 percent) were in need of repair and 2,031 components (27 percent) needed to be painted.

In 2012, the architectural components at 141 stations met NYCT's standards for good repair. However, 83 other stations had at least 25 percent of their architectural components in disrepair, including Rockefeller Center in Manhattan and Borough Hall in Brooklyn. As shown in the figure below, the tile or other finishing on more than one-third of the walls and floors on station platforms did not meet the agency's standards. (The survey did not consider routine maintenance or cleanliness.)

Status of Architectural Components



Elevators and escalators help make the system accessible to passengers with impaired mobility. (Currently, only 82 subway stations comply with the federal Americans with Disabilities Act.) Escalators and elevators are not part of the station conditions report, but NYCT tracks service outages and the overall condition of escalators and elevators.

NYCT operates and maintains 176 escalators and 217 passenger elevators throughout the subway system. NYCT reported 2,646 elevator outages (an average of more than 12 per elevator) and 6,354 escalator outages (more than 30 per escalator) during the second quarter of 2014. NYCT reports that elevators were available 96 percent of the time and escalators 95 percent of the time, but an average elevator outage lasted seven hours and the average escalator outage was three hours. (These estimates exclude five escalators and two elevators that were closed for long-term capital repairs.)

In 1999, NYCT had planned to replace all outdated elevators and escalators by 2001, but that target date has been pushed back to 2019 for elevators and 2024 for escalators. Currently, 38 elevators (18 percent) and 34 escalators (19 percent) are beyond their useful lives and are in need of replacement. More than half of the elevators that need replacement serve deep underground stations in Upper Manhattan that are as much as 180 feet below street level.