



## Subway Guideline Revisions

**Sarah Wyss**, Acting Chief, Operations Planning

### **Issue**

The MTA Board-approved Rapid Transit Loading Guidelines, which provide the basis for scheduling subway service, require technical modifications to remain consistent with current New York City Subway operations and practices. The Guidelines provide for passenger load targets in both peak and off-peak periods; these targets increase during peak hours as trains are scheduled to run more often but remain unchanged during off-peak hours regardless of scheduled frequency.

The recently introduced R211 B Division cars have fewer seats per car than older B Division car classes while also offering improved circulation and better arrangements for standing and leaning. As a result, the current Loading Guidelines, which refer to specific numbers of seats per car, must be modified to refer only to the total numbers of passengers per car, while keeping the Guideline loads by time of day unchanged. These changes would be applied during both the peak and off-peak periods and are shown in the tables in the Staff Summary and on pages H-22 through H-24A of the Guidelines.

In addition, the Guidelines need to be clarified on pages H-22 through H-24A to reflect current, long-standing practices, namely to specify that services scheduled together on the same schedule with separate route designations, including but not limited to the (6)<6>, (7)<7>, (F)<F>, (N)(W) and (J)(Z), should be treated as single routes in the Guidelines and that the Guidelines apply except when operationally infeasible.

These Guideline revisions will not lead to changes in current subway service frequencies.

### **Recommendation**

Adopt the following revisions to the tables on pages H22 to H24A of the Rapid Transit Loading Guidelines:

1. Clarify that Guideline passenger loads are those specified by frequency and time of day, without reference to the number of seats per car.
2. Clarify the Guidelines to specify that services on the same schedule with separate route designations are treated the same as single routes with branches for policy headways and loads.
3. Clarify the Guidelines to specify that they apply except when operationally infeasible.

### **Impact on Funding**

These revisions should have no impact on scheduled service and no ongoing impact on funding.

### **Implementation Date**

Implementation will take effect immediately.

# Staff Summary

<b>Subject</b>	Subway Guideline Revisions
<b>Department</b>	Operations Planning
<b>Department Head Name</b>	Sarah Wyss
<b>Department Head Signature</b>	
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<b>Date</b>	July 14, 2025
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<b>Contract Manager Name</b>	N/A
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Board Action					
Order	To	Date	Approval	Info	Other
1	President		X		
2	NYCT/MTA Bus Committee			X	
3	Board			X	
4					

Internal Approvals			
Order	Approval	Order	Approval
		4	Chief Cust. Officer
7	President	3	General Counsel
6	Co-CFO	2	Sr. Dir., External Relations
5	SVP, Subways	1	Acting Chief, OP

## Purpose

The purpose of this staff summary is to inform the Board of technical clarifications to the Rapid Transit Loading and Frequency Guidelines to remain consistent with current New York City Subway operations and practices. The Guidelines provide for passenger load targets in both peak and off-peak periods; these targets increase during peak hours as trains are scheduled to run more often but remain unchanged during off-peak hours regardless of scheduled frequency.

The recently introduced R211 B Division cars have fewer seats per car than older B Division car classes while also offering improved circulation and better standing and leaning provisions. As a result, the current Loading Guidelines, which refer to specific numbers of seats per car, must be modified to refer only to the total numbers of passengers per car, while keeping the Guideline loads by time of day unchanged.

These technical clarifications will be applied to both the A Division and B Division.

The Guidelines also need to be clarified to specify that services with separate route designations (numbers, letters or graphical shapes) but scheduled together on the same timetable, including but not limited to the (6)<6>, (7)<7>, (F)<F>, (N)(W) and (J)(Z), should be treated as single routes with branches for policy headways and loads. This is the current, long-standing practice.

The Guidelines also require a technical clarification to note that they apply except when operationally infeasible. This is the current, long-standing practice.

These Guideline revisions will not lead to changes in subway train frequencies.

# Staff Summary

## Discussion

The MTA Board adopted the Rapid Transit Loading and Frequency Guidelines for NYCT subway operations in 1988. Since their adoption, the Guidelines have been updated twice, in 1991 and 2010.

### ***Guideline Loads***

The Guidelines distinguish between Peak and Off-Peak service, with the Peak Guidelines providing for higher average passenger loads per train than the Off-Peak Guidelines.

Both Peak and Off-Peak Guidelines are currently based, in part, on calculations derived from the number of seats in a car.

- **Peak Guideline Loads** – When trains are scheduled to run every four minutes or less during peak periods, the Peak Guidelines currently call for maximum loads based on all seats occupied and passengers standing at a density of three square feet per standee, which is roughly the same square footage that a seated passenger occupies. This works out to 110 riders per car on the A Division and 145 to 175 riders per car on the B Division, depending on car length. Peak Guidelines call for lower loads per car when trains run less often than every four minutes; these are detailed in the tables in the Guidelines.
- **Off-Peak Guideline Loads** – The Off-Peak Guidelines currently provide for a train to carry no more than an average of 125% of a seated load outside of the rush hours. From a practical standpoint, this means that all seats in a car are occupied plus there are standees equivalent to a quarter of the number of seats in the car.

The delivery of new R211 subway cars on the B Division and plans for similar new cars on the A Division in the coming years have triggered a need to revisit the Guideline loads. Prior to the R211's, the most recently delivered B Division cars (R143, R160, and R179) have an average of 42 seats per car, translating into an Off-Peak Guideline load of 53 passengers per car. The new R211's have an average of 30 seats per car, while also offering improved circulation and better standing and leaning provisions.

To reflect the reduction in seats in the new car designs while keeping peak and off-peak Guideline loads effectively the same as they have historically been, the peak and off-peak loads are proposed to be expressed without any reference to the number of seats per car. Instead, the Guidelines would refer only to the total numbers of passengers per car, which would keep the Guideline loads by time of day unchanged regardless of car class seating configurations. The number of passengers per car shown in the tables would be calculated as percentages of the maximum rush hour guideline load rounded to the nearest five riders,<sup>1</sup> rather than linked to the number of seats in a car.

Without this change, retaining the existing Guidelines could lead to unnecessary, formula-driven exceedances of guideline loads. For instance, applying the current 125% of a seated load Off-Peak Guideline to the R211 would yield an Off-Peak load of 37 passengers per car, which is a 30%

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<sup>1</sup> Rounding the number of riders to the nearest five reflects the precision with which passenger loads can be measured; the margin of error in such measurements is plus or minus five riders.

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reduction from that of the R143, R160, and R179 B Division cars. The implication of this is that B Division lines that currently carry off-peak loads within or at Guidelines, including the (A)(C)(D)(E)(F)(G)(L)(N)(Q)(R), would, if converted to R211's, end up with loads above the 125% of seated load Guideline level, even if ridership has not changed.

The current Off-Peak Guideline loads represent 46% of the maximum Peak Guideline load<sup>2</sup> on the A Division and 37% of the maximum Peak Guideline load on the prior B Division cars. Applying these percentages would result in off-peak loads per car remaining the same for A Division cars and increasing slightly due to rounding for R143 and later B Division cars.<sup>3</sup> The proposed changes are shown in Attachment A and the proposed Guidelines themselves are shown in Attachment C.

Peak Guideline loads would be determined in the same way as recommended for the Off-Peak Guideline loads, based on the current percentage of the maximum Peak Guideline loads for A and B Division cars, rounded to the nearest five riders. The peak Guideline loads, shown in Attachment B, do not change for either Division with this technical change. The proposed Guidelines themselves are shown in Attachment C.

## ***Policy Headways and Multiple Routes on the Same Timetable***

The Rapid Transit Frequency Guidelines establish Policy Headways that serve as the maximum headways that should be scheduled at various hours of the day and days of the week. Headways can be shorter than the policy headways, based on passenger loads or other policy considerations, but MTA policy is to ensure reasonably frequent subway service (defined as 10- to 12-minute headways) at all times of day, except the overnight period, when policy headways are 20 minutes.

There is an exception to the maximum Policy Headways. If through service on a subway line splits to serve more than one branch, and average passenger loads are within Loading Guideline levels, then the headway on each branch may be greater than the Policy Headway as long as the combined service is consistent with the Policy Headway at the peak load point on the line. Current examples of branching services include but are not limited to the Dyre Avenue and White Plains Road branches of the (5) line and the Ozone Park-Lefferts Blvd and Rockaways branches of the (A) line. Shuttle trains that connect to branched services can also have longer-than-policy headways, as is the case with the (S) Rockaway Park Shuttle, which connects with Far Rockaway branch (A) trains.

Current, long-standing practice is to treat in the same manner as branching services any combined services with separate route designations that are scheduled together on the same timetable, like the (6) express/<6> local or the (J)(Z) skip-stop. The Guidelines need to be updated with a technical clarification stating that Policy Headways apply to the combined services in cases where trains with separate route designations share the same schedules and have their timetables and work programs developed as an integrated whole, including but not limited to the (6)<6>, (7)<7>, (F)<F>, (N)(W) and (J)(Z).

<sup>2</sup> When trains are scheduled to run every four minutes or less.

<sup>3</sup> The B Division also includes older B Division cars (R46, R68, and R68A classes), which are all slated to be replaced by R211's or later car classes. They have a different seating configuration than other B Division cars. Since all these cars are slated to be replaced, their Peak and Off-Peak Guideline loads should be maintained at their current levels. These are shown in Attachments A, B, and C as a reference.

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## ***Operational Feasibility***

Since their adoption, the Guidelines are meant to be applied except when operationally infeasible. The introduction to the original 1988 Board approved Guidelines states, “Another important factor is physical limitations due to equipment and signals.” Additional constraints, including but not limited to maintenance and construction work in the subway, may make it operationally infeasible to apply the loading guidelines or policy headways. These technical revisions clarify this long-standing operational infeasibility concept in the Policy Headway and Loading Guideline sections of the Guidelines.

## **Recommendation**

Modify the tables on pages H22 to H24A of the Rapid Transit Loading and Frequency Guidelines as follows:

1. Clarify that Guideline loads are those specified, without reference to the number of seats per car.
2. Clarify the Guidelines to specify that services on the same schedules with separate route designations are treated the same as single routes with branches for policy headways and loads.
3. Clarify the Guidelines to specify that they do not apply when operationally infeasible.

All of the proposed technical changes are shown in Attachment C. Since the Guideline loads would now be expressed as a percentage of the maximum load, references to standees and number of seats are no longer necessary in the Loading Guidelines and have been removed.

## **Alternatives**

1. *Do nothing.* Keeping the Guidelines unchanged will lead to situations in which off-peak trains equipped with R211 and later car classes will be more likely to carry loads that exceed Guideline levels, even if ridership is unchanged. Keeping the Guidelines unchanged would not be consistent with current, long-standing practices regarding multiple routes on the same timetable and operational infeasibility.
2. *Adopt the Guideline change for guideline loads only.* Moving forward with the Guideline load definition change only would allow for clarification of guideline loads as R211’s and future car classes enter service but would not be consistent with current, long-standing practices regarding multiple routes on the same timetable and operational infeasibility.
3. *Adopt the Guideline change for multiple routes on the same timetable and operational infeasibility only.* Moving forward with the multiple routes and operational infeasibility technical Guideline changes only would allow for consistency with current, long-standing practices but will lead to situations in which off-peak trains equipped with R211 and later car classes will be more likely to carry loads that exceed 125% of a seated load, even if ridership is unchanged.

## **Impact on Funding**

# Staff Summary

No schedules are expected to change as a result of this Guideline modification. Thus, there should be no ongoing operating cost impact.

## **Implementation Date**

Implementation will take effect immediately.

# Staff Summary

## ATTACHMENT A – Proposed Off-Peak Loading Guidelines

<b>Car Type</b>	<b>Current and Proposed Peak Max Guideline Load/Car</b>	<b>Current Off-Peak Guideline Load/Car</b>	<b>Proposed Off-Peak Load/Car (Rounded to Nearest 5)</b>	<b>Current Off-Peak / Peak Ratio</b>
A Division - 51'4" Cars	110	50	50	46%
B Division - 60'6" Cars	145	53	55	37%
B Division - 75' Cars	175	90	90	51%

# Staff Summary

## ATTACHMENT B - Proposed Peak Loading Guidelines

### **A Division – 51'4" Cars (Proposed Changes)**

<b>Headway (minutes)</b>	<b>Peak Max Guideline Load/Car</b>	<b>Current Peak Guideline Load/Car</b>	<b>Current % of Max Load*</b>	<b>Proposed Load/Car Based on Ratio</b>	<b>Proposed Rounded to Nearest Five</b>
2	110	110	100%	110	110
2.5	110	110	100%	110	110
3	110	110	100%	110	110
4	110	110	100%	110	110
5	110	105	95%	105	105
6	110	100	91%	100	100
7.5	110	95	86%	95	95
10	110	90	82%	90	90

### **B Division - 60'6" Cars (Proposed Changes)**

<b>Headway (minutes)</b>	<b>Peak Max Guideline Load/Car</b>	<b>Current Peak Guideline Load/Car</b>	<b>Current % of Max Load*</b>	<b>Proposed Load/Car Based on Ratio</b>	<b>Proposed Rounded to Nearest Five</b>
2	145	145	100%	145	145
2.5	145	145	100%	145	145
3	145	145	100%	145	145
4	145	145	100%	145	145
5	145	135	93%	135	135
6	145	125	86%	125	125
7.5	145	115	79%	115	115
10	145	115	79%	115	115

### **B Division – 75' Cars (Proposed Change)**

<b>Headway (minutes)</b>	<b>Peak Max Guideline Load/Car</b>	<b>Current Peak Guideline Load/Car</b>	<b>Current % of Max Load*</b>	<b>Proposed Load/Car Based on Ratio</b>	<b>Proposed Rounded to Nearest Five</b>
2	175	175	100%	175	175
2.5	175	175	100%	175	175
3	175	175	100%	175	175
4	175	175	100%	175	175
5	175	165	94%	165	165
6	175	155	89%	155	155
7.5	175	145	83%	145	145
10	175	140	80%	140	140



# Staff Summary

## **ATTACHMENT C - Proposed Changes in Guideline Language**

Replace Pages H-22 through H-24 of the Guidelines with the following pages.

# Staff Summary

## Rapid Transit Loading Guidelines "A" Division Car

### Weekday Peak (7 – 9:30 AM; 4 – 6:30 PM)

Headway (minutes)	Load/ Car	Cars/ Train	Trips per ½ Hour	Riders per ½ Hour
2	110	10	15	16,500
2.5	110	10	12	13,200
3	110	10	10	11,000
4	110	10	7.5	8,250
5	105	10	6	6,300
6	100	10	5	5,000
7.5	95	10	4	3,800
10*	90	10	3	2,700

### Midday (10:30 AM – 3 PM) and Saturday

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
2	50	10	30	15,000
2.5	50	10	24	12,000
3	50	10	20	10,000
4	50	10	15	7,500
5	50	10	12	6,000
6	50	10	10	5,000
7.5	50	10	8	4,000
8.5	50	10	7	3,500
10*	50	10	6	3,000

### Evening (8 PM – 12 Midnight) and Sunday

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
2	50	10	30	15,000
2.5	50	10	24	12,000
3	50	10	20	10,000
4	50	10	15	7,500
5	50	10	12	6,000
6	50	10	10	5,000
7.5	50	10	8	4,000
8.5	50	10	7	3,500
10	50	10	6	3,000
12*	50	10	5	2,500

### Owl (1 – 5 AM)

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
20*	50	10	3	1,500

# Staff Summary

These headways do not apply when operationally infeasible due to, but not limited to, such reasons as track, signal, and/or fleet capacity limitations, speed restrictions, planned and unplanned maintenance and inspection work, and/or capital construction in the subway.

Headways marked with an asterisk (\*) are the policy headways. Multiple routes or branched routes on the same schedule (including but not limited to the (6)<6>, (7)<7>, or branches of the (5)) are treated as single routes in these guidelines.

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## Rapid Transit Loading Guidelines 60'6" "B" Division Car

### Weekday Peak (7 – 9:30 AM; 4 – 6:30 PM)

Headway (minutes)	Load/ Car	Cars/ Train	Trips per ½ Hour	Riders per ½ Hour
2	145	10	15	21,750
2.5	145	10	12	17,400
3	145	10	10	14,500
4	145	10	7.5	10,875
5	135	10	6	8,100
6	125	10	5	6,250
7.5	115	10	4	4,600
7.5	115	8	4	3,680
10*	115	10	3	3,450
10*	115	8	3	2,760

### Midday (10:30 AM – 3 PM) and Saturday

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
2	55	10	30	16,500
2.5	55	10	24	13,200
3	55	10	20	11,000
4	55	10	15	8,250
5	55	10	12	6,600
6	55	10	10	5,500
7.5	55	10	8	4,400
8.5	55	10	7	3,850
10*	55	10	6	3,300
10*	55	8	6	2,640

### Evening (8 PM – 12 Midnight) and Sunday

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
2	55	10	30	16,500
2.5	55	10	24	13,200
3	55	10	20	11,000
4	55	10	15	8,250
5	55	10	12	6,600
6	55	10	10	5,500
7.5	55	10	8	4,400
8.5	55	10	7	3,850
10	55	10	6	3,300
12*	55	10	5	2,750
12*	55	8	5	2,200

### Owl (1 – 5 AM)

Headway (minutes)	Load/ Car	Cars/ Train	Trips per Hour	Riders per Hour
20*	55	10	3	1,650

# Staff Summary

These headways do not apply when operationally infeasible due to, but not limited to, such reasons as track, signal, and/or fleet capacity limitations, speed restrictions, planned and unplanned maintenance and inspection work, and/or capital construction in the subway.

Headways marked with an asterisk (\*) are the policy headways. Multiple routes or branched routes on the same schedule (including but not limited to the (J)(Z), (N)(W), or branches of the (A) and (E)) are treated as single routes in these guidelines.

# Staff Summary

## Rapid Transit Loading Guidelines

### 75' "B" Division Car

#### Weekday Peak (7 – 9:30 AM; 4 – 6:30 PM)

Headway (minutes)	Load/Car	Cars/Train	Trips per $\frac{1}{2}$ Hour	Riders per $\frac{1}{2}$ Hour
2	175	8	15	21,000
2.5	175	8	12	16,800
3	175	8	10	14,000
4	175	8	7.5	10,500
5	165	8	6	7,920
6	155	8	5	6,200
7.5	145	8	4	4,640
10*	140	8	3	3,360

#### Midday (10:30 AM – 3 PM) and Saturday

Headway (minutes)	Load/Car	Cars/Train	Trips per Hour	Riders per Hour
2	90	8	30	21,600
2.5	90	8	24	17,280
3	90	8	20	14,400
4	90	8	15	10,800
5	90	8	12	8,640
6	90	8	10	7,200
7.5	90	8	8	5,760
8.5	90	8	7	5,040
10*	90	8	6	4,320

#### Evening (8 PM – 12 Midnight) and Sunday

Headway (minutes)	Load/Car	Cars/Train	Trips per Hour	Riders per Hour
2	90	8	30	21,600
2.5	90	8	24	17,280
3	90	8	20	14,400
4	90	8	15	10,800
5	90	8	12	8,640
6	90	8	10	7,200
7.5	90	8	8	5,760
8.5	90	8	7	5,040
10	90	8	6	4,320
12*	90	8	5	3,600

#### Owl (1 – 5 AM)

Headway (minutes)	Load/Car	Cars/Train	Trips per Hour	Riders per Hour
20*	90	8	3	2,160

# Staff Summary

These headways do not apply when operationally infeasible due to, but not limited to, such reasons as track, signal, and/or fleet capacity limitations, speed restrictions, planned and unplanned maintenance and inspection work, and/or capital construction in the subway.

Headways marked with an asterisk (\*) are the policy headways. Multiple routes or branched routes on the same schedule (including but not limited to the (N)(W) or branches of the (A) and (E)) are treated as single routes in these guidelines.