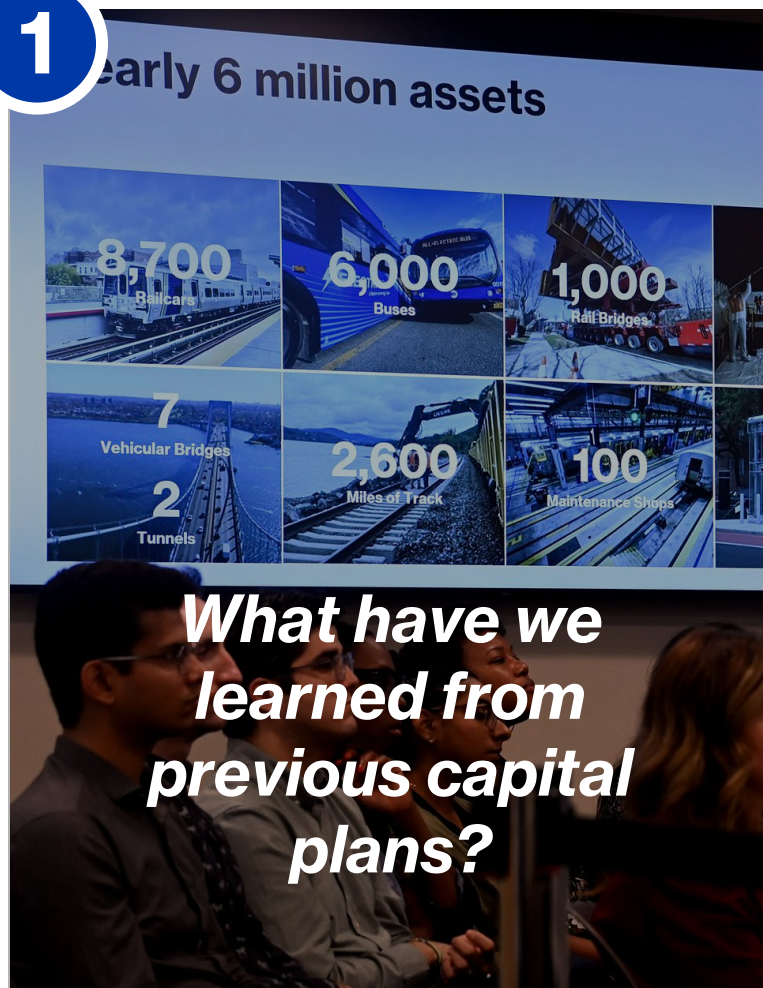
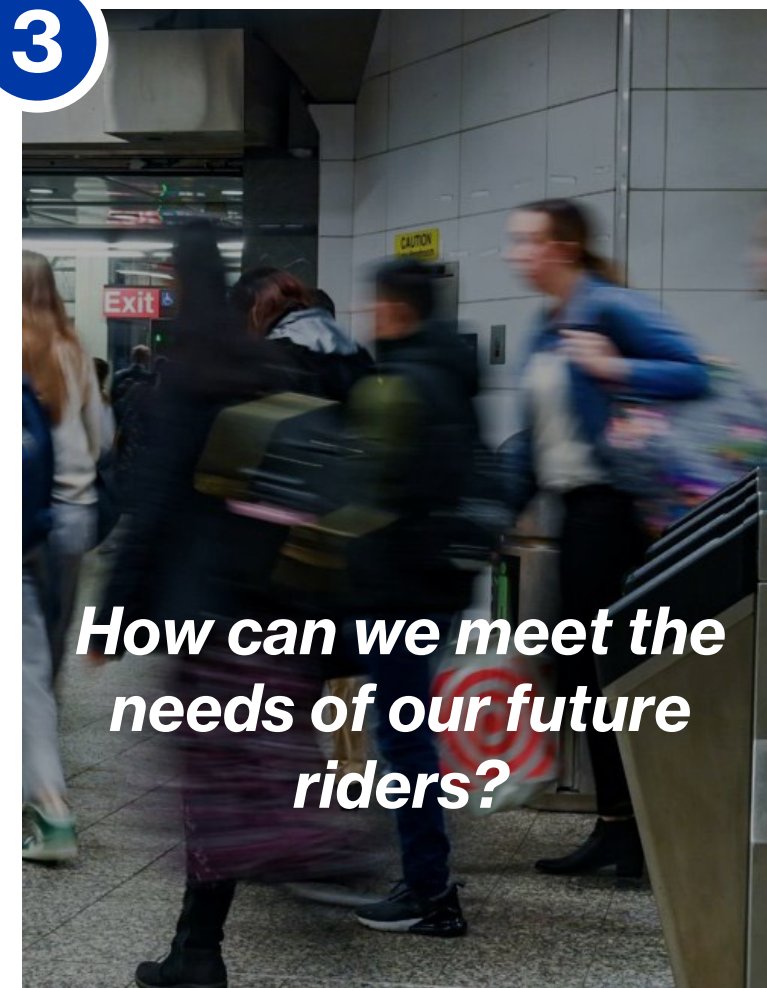




Eliminating Bottlenecks: Speeding Up Your Ride

We are Starting to Plan for 2050

1**2****3**

Focused Reports to Support 2050 Planning

Delivering Excellent Service



Signal Modernization



Shops and Yards



Improve the Customer Experience



Stations of the Future



Station Systems & Technology



Strengthen & Expand Service



Sustainability & Energy



Regional Mobility & Expansion Projects



We're looking to make service faster & more reliable

Our first deep dive is **focused on subway bottlenecks**

- **We're already getting started** with improvements at Nostrand Av 2 3 4 5 and DeKalb Av B D N Q R
- **This report kicks off a study of additional similar projects** in advance of the next 20-Year Needs Assessment



Bottlenecks are part of our 120+ year-old system

- **Some subway delays are not caused by anything broken** – but by the layout of our infrastructure
- **These bottleneck delays affect reliability**, creating uneven waiting times on platforms and travel times on trains



We studied four common types of bottlenecks

Interlockings	Terminals	Track Geometry	Legacy Signal Capacity
			
• Layout of tracks and switches that contributes to delays • F M Swap, Nostrand Av 2 3 4 5 improvement	• Layouts of terminal stations that constrain line capacity • Studying potential improvements at Coney Island D F N Q	• Sharp curves and switches that slow trains down and constrain capacity • Part of DeKalb Av B D N Q improvement	• Old fixed-block signaling system can limit capacity • Rollout of CBTC across the system lifts capacity

We are looking across the entire system

- In total, we examined over 70 locations — with **25 identified as strongest candidates for further study**
- Some of these locations directly complement work in progress at Nostrand Av & DeKalb Av
- Complementary work is **crucial to realize full reliability benefits of major investments**



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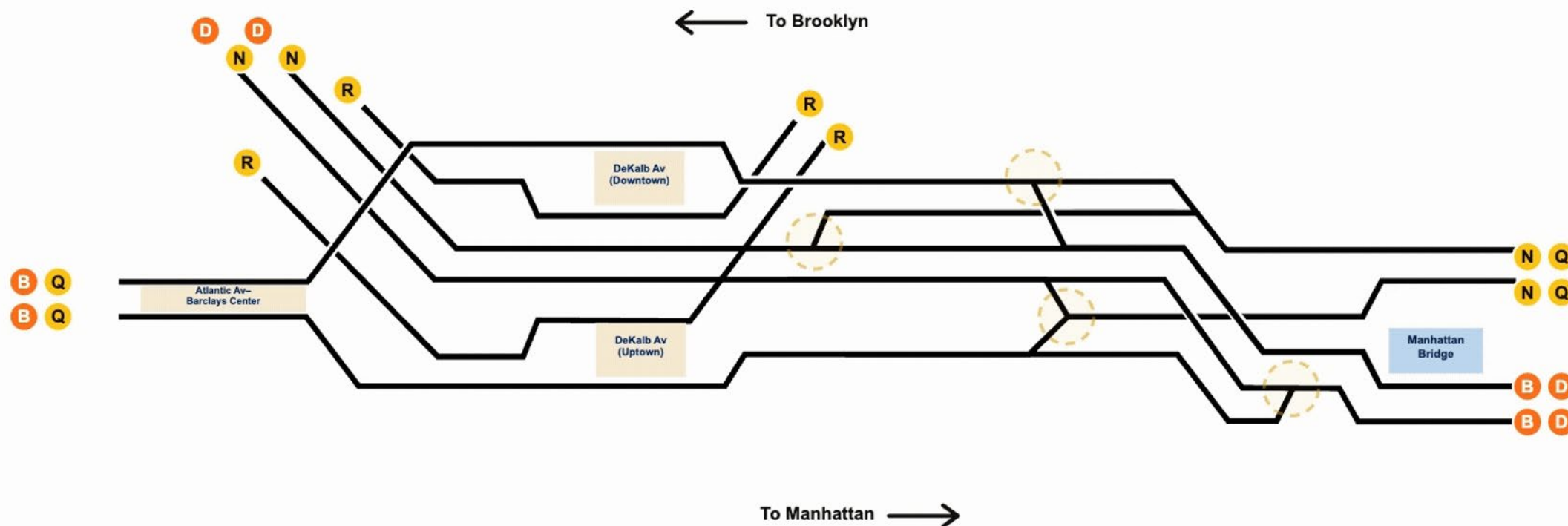
DeKalb Av is a busy, complex junction

18 switches allow **300,000 daily riders** to pass through on **5 routes**

B D trains travel from the 6 Av line to the Brighton and 4 Av lines, respectively

N Q trains come from the Broadway line and split, merging with the **B D**

R trains travel through the area without merging



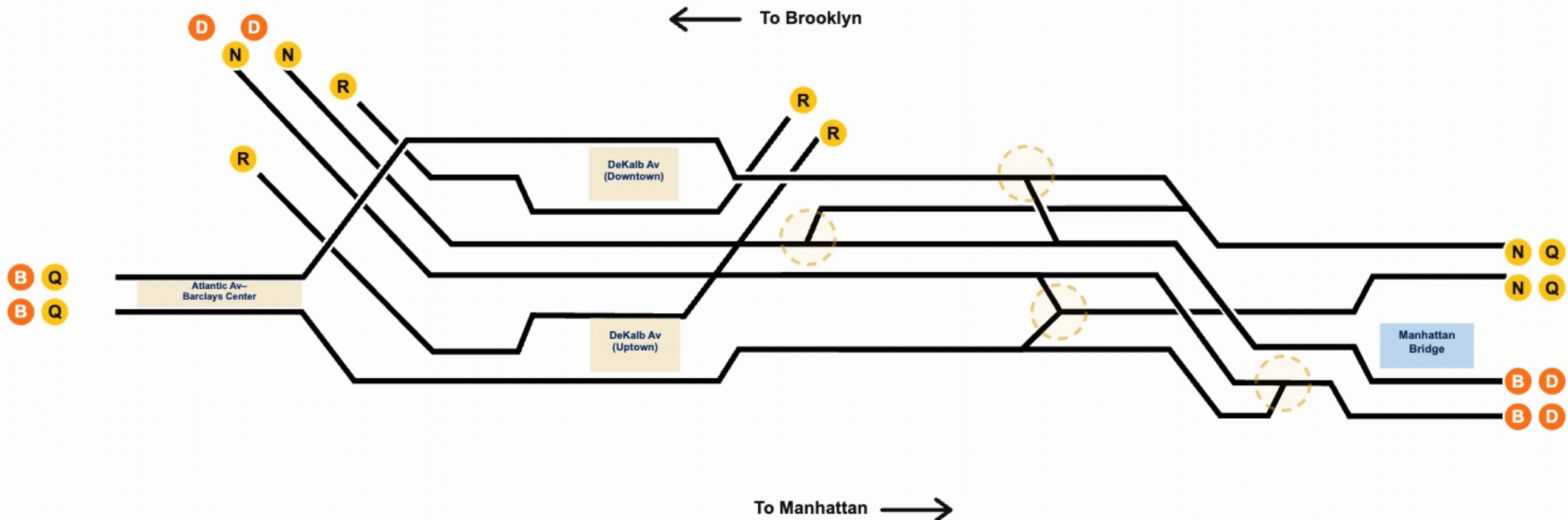
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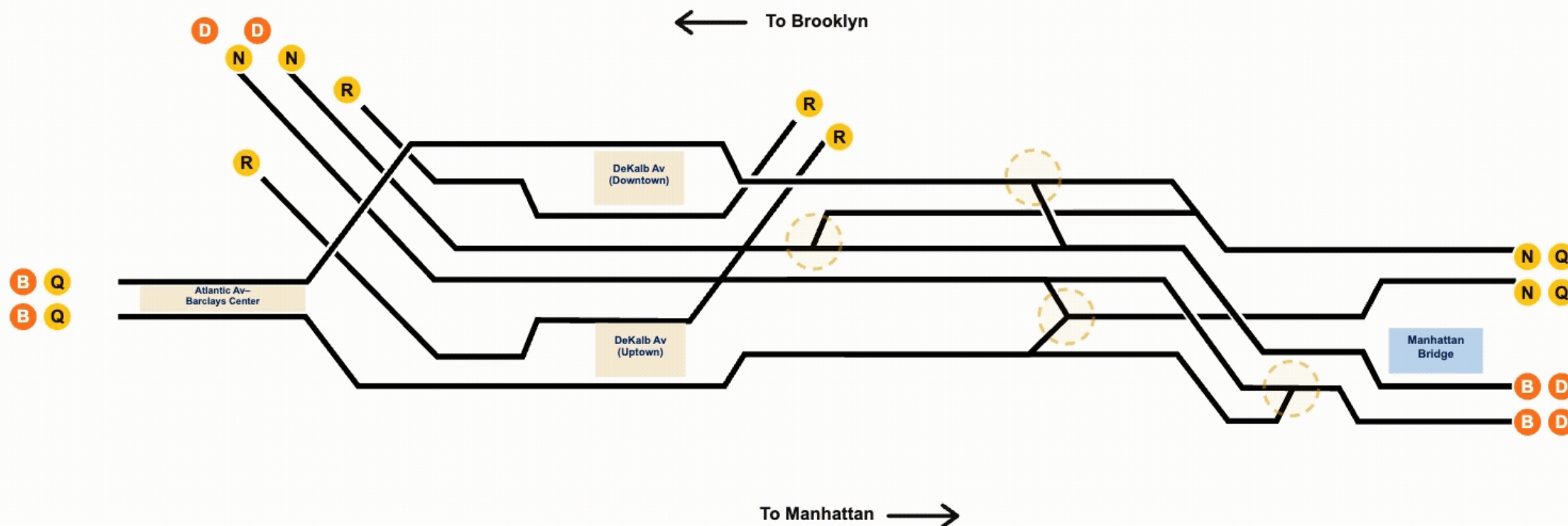
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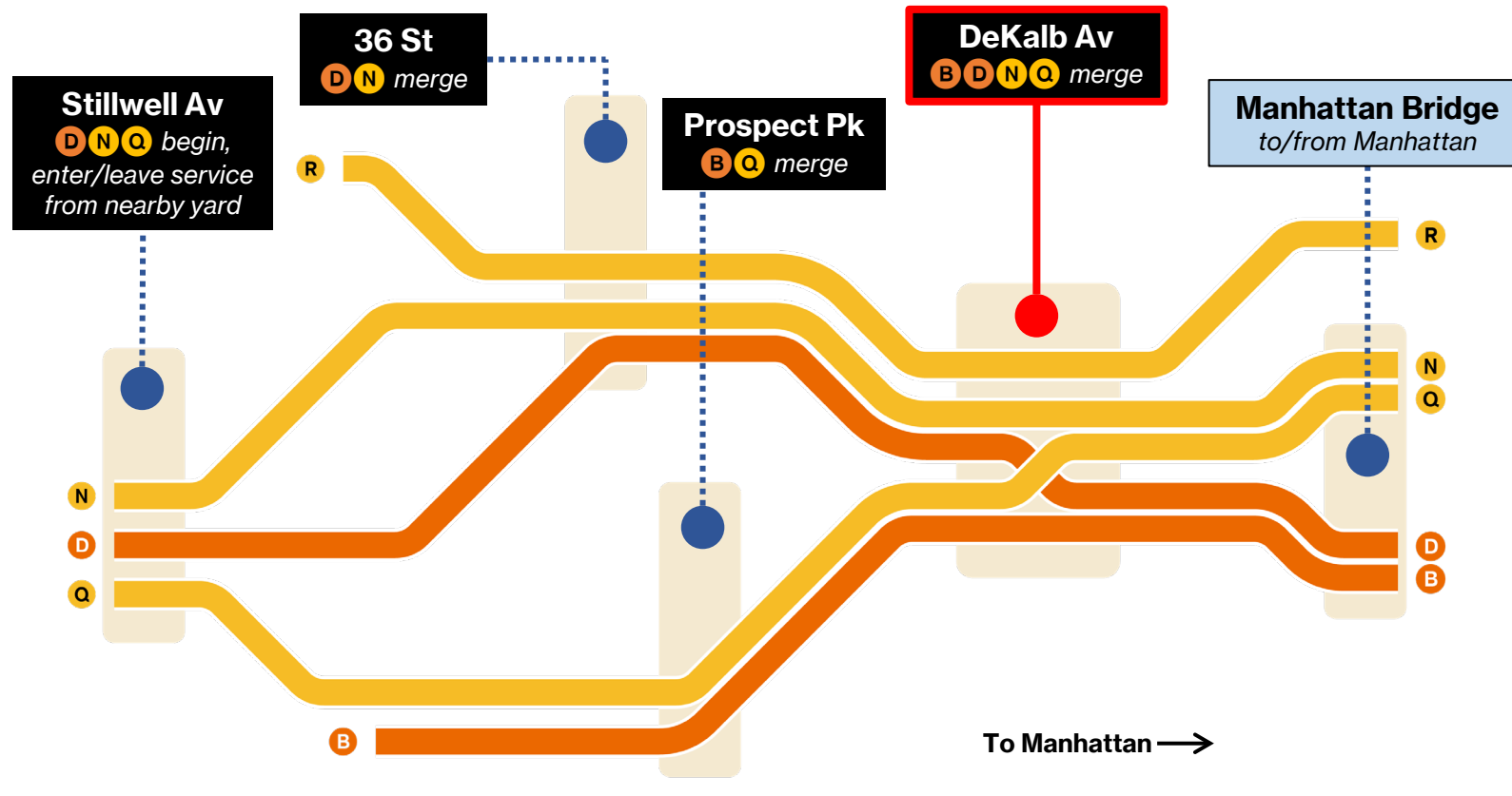
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Other bottlenecks affect service *before* DeKalb

B D N Q R service in Brooklyn

Grouped lines indicate shared tracks



- Problems at DeKalb often begin at other merges along the **B D N Q** lines in South Brooklyn
- Delays on one line can affect all four

This approach is also key for Nostrand Junction

- Several of our other top 25 locations are on the **2 3 4 5** lines
- **Addressing these will help us get the most out of changes at Nostrand Junction**



Shaping our plan for 2050

- Building off this initial screen, we will conduct **additional analysis on priority locations**, including:
 - Design of potential improvements
 - Cost estimating
 - Operational benefits analysis
- **Our vision for 2050 will include fewer bottlenecks and better service**
- This and future planning reports can be found at future.mta.info

