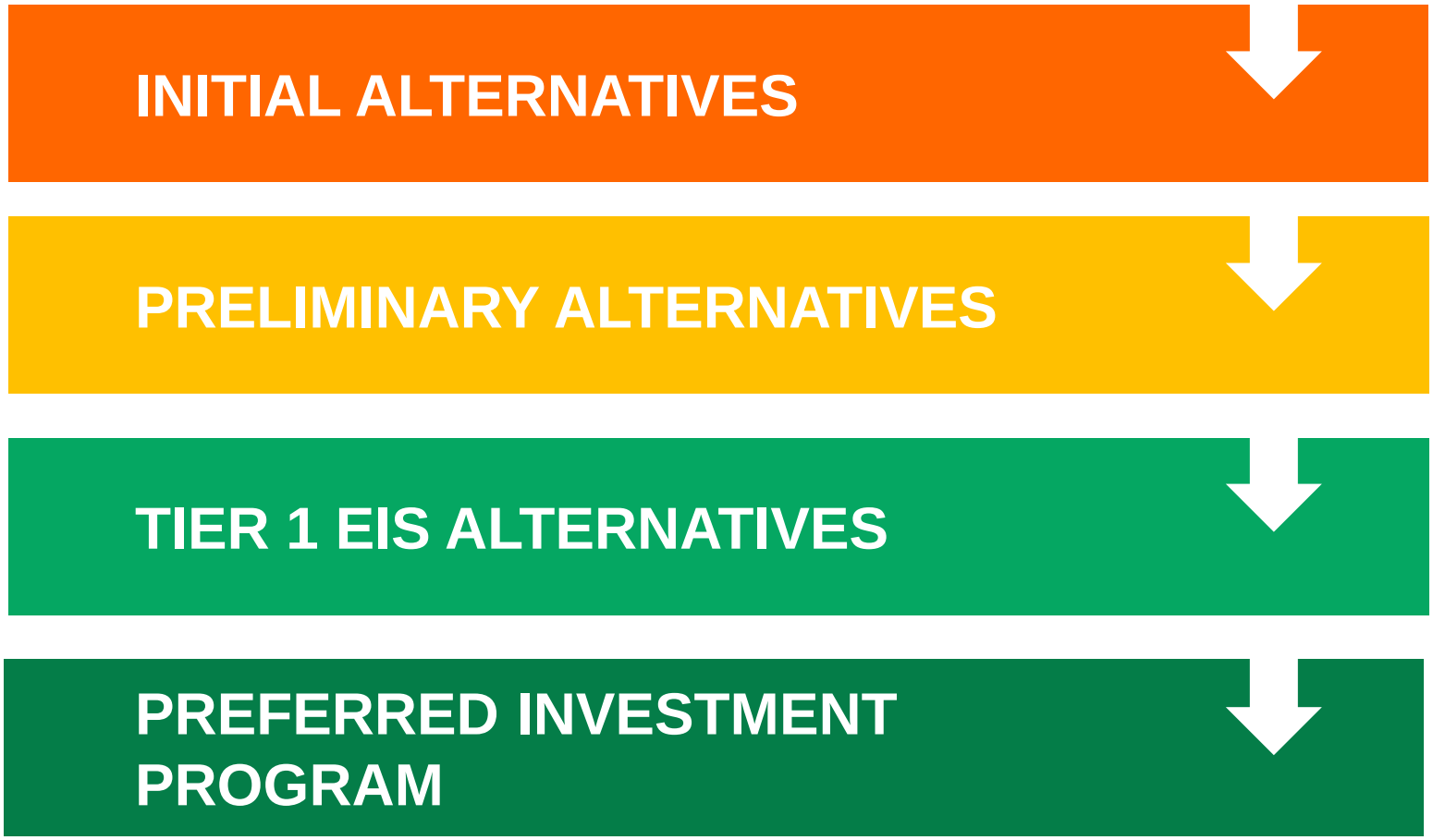
2015 FRA
Rail Program Delivery

NEC Future – Approach to Service Planning

Yoav Hagler

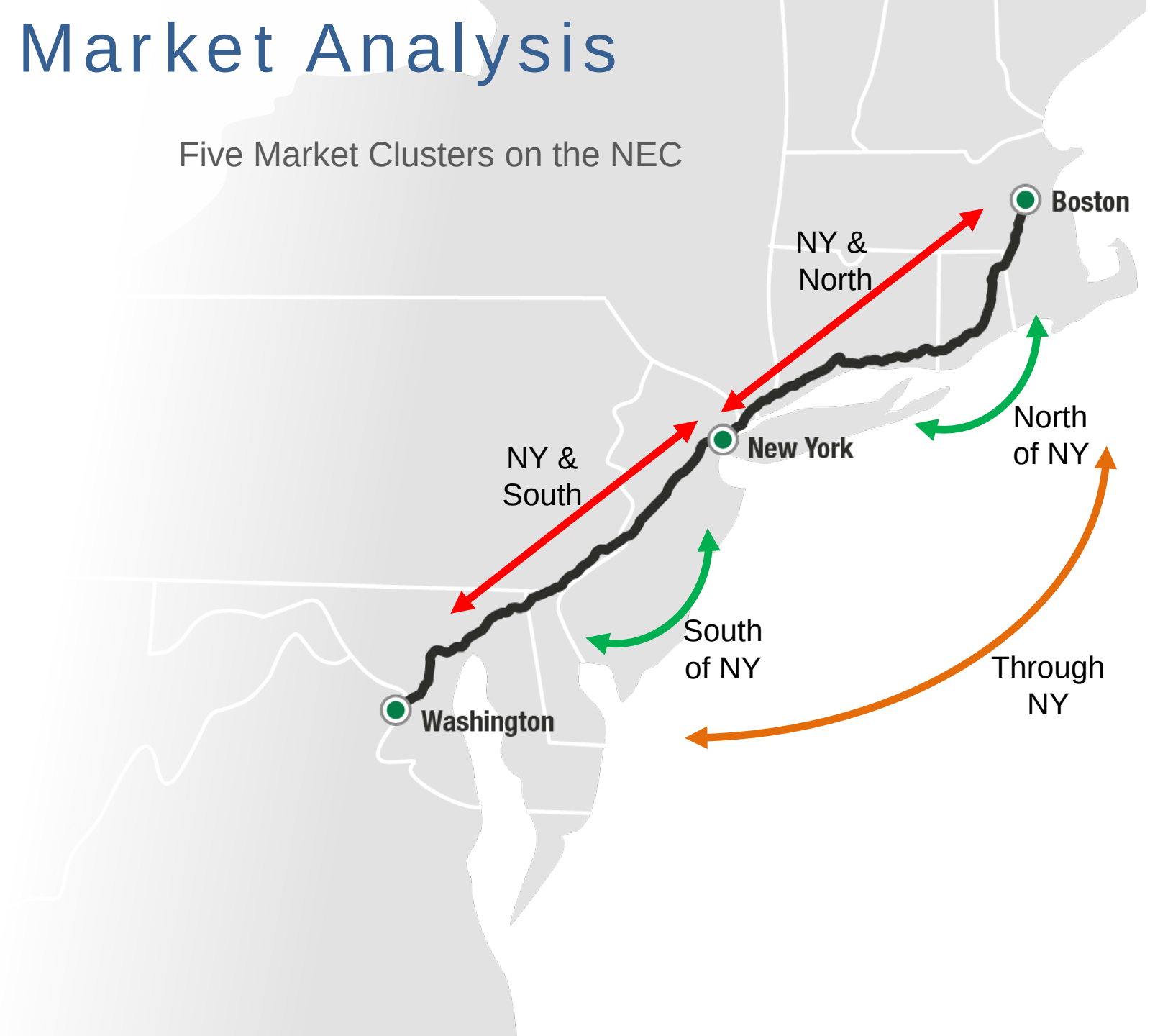
Alternatives Development Process



Market Analysis

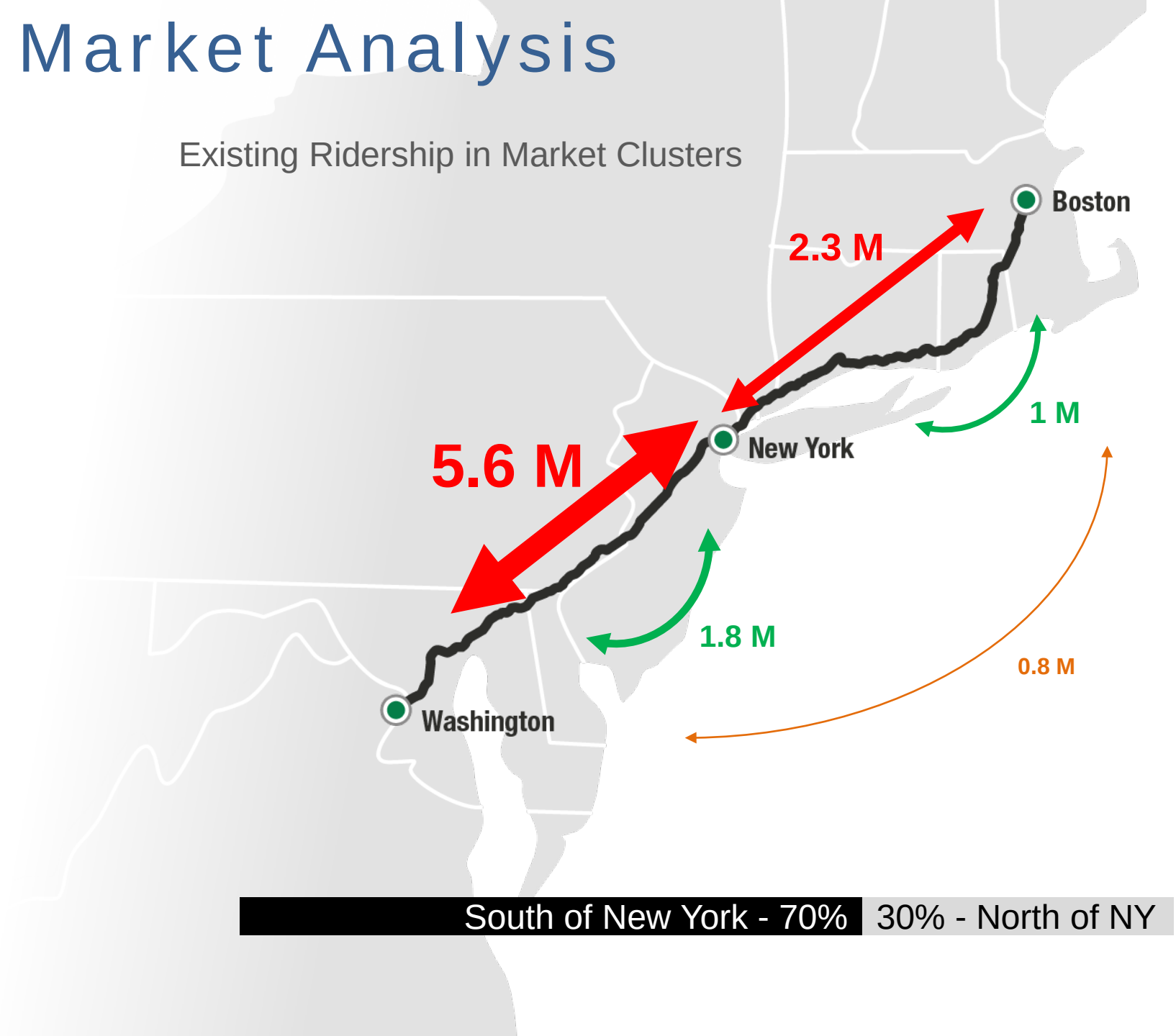
Market Analysis

Five Market Clusters on the NEC



Market Analysis

Existing Ridership in Market Clusters

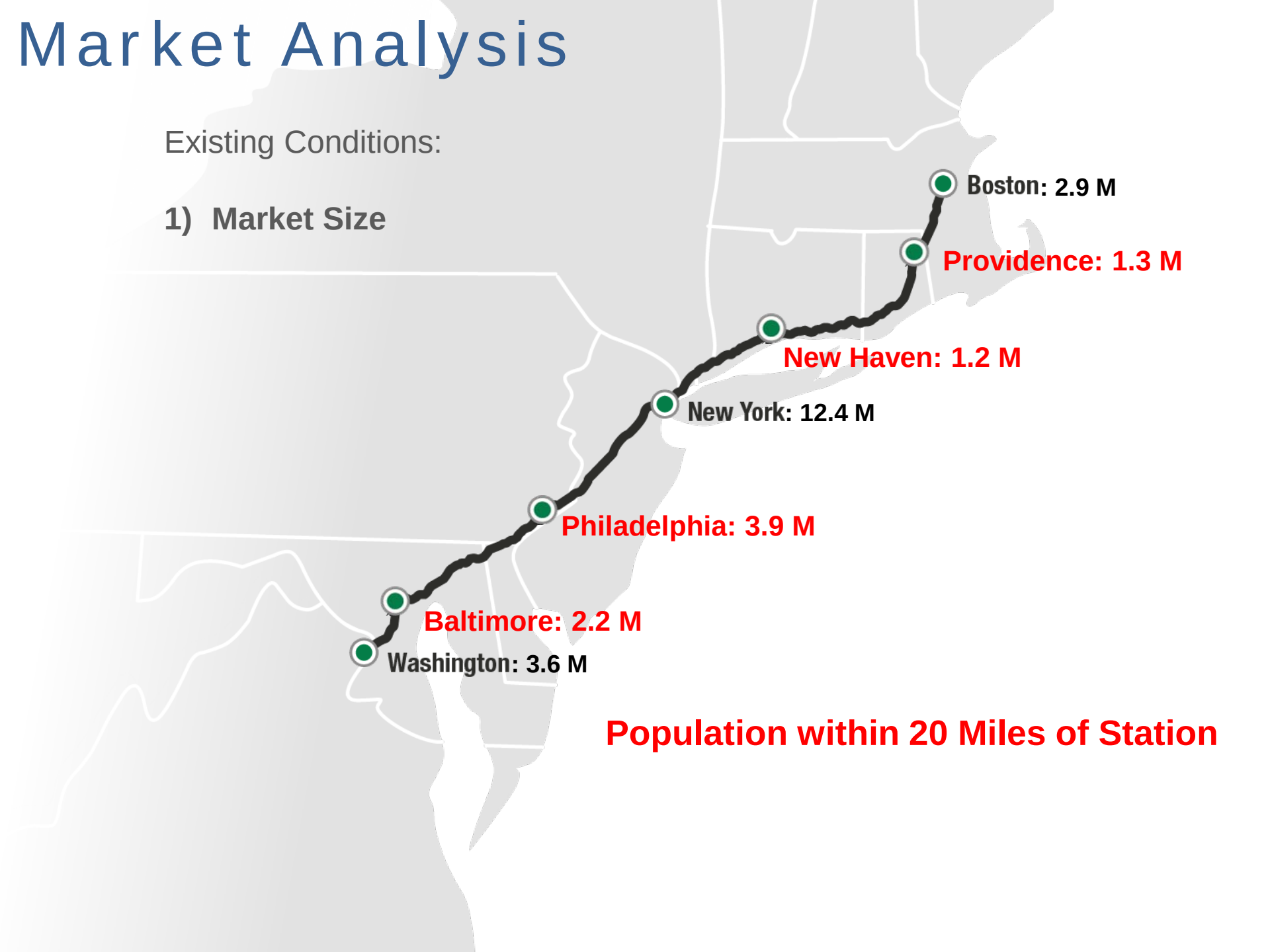


South of New York - 70% | 30% - North of NY

Market Analysis

Existing Conditions:

1) **Market Size**



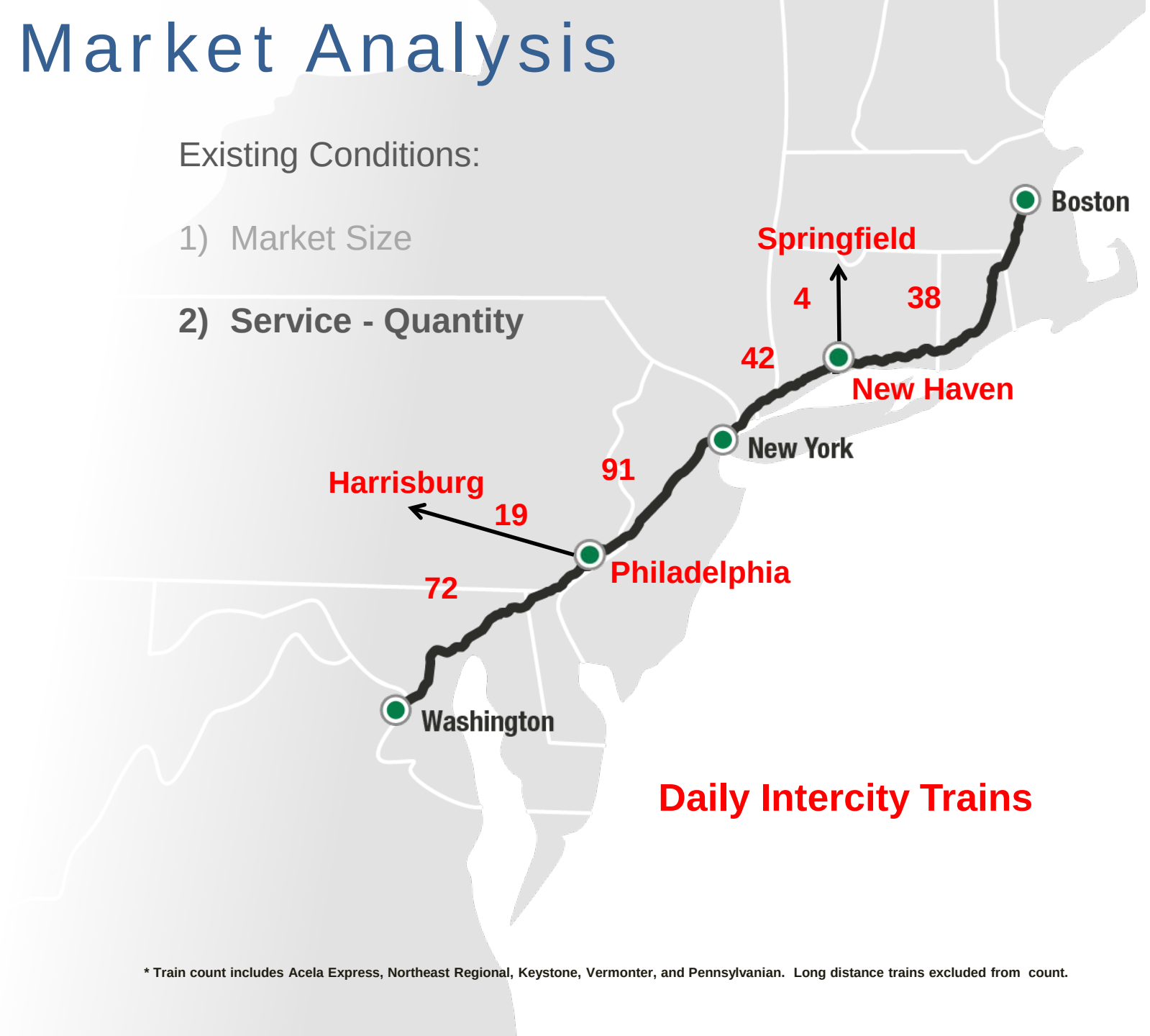
Population within 20 Miles of Station

Market Analysis

Existing Conditions:

1) Market Size

2) **Service - Quantity**



* Train count includes Acela Express, Northeast Regional, Keystone, Vermonter, and Pennsylvanian. Long distance trains excluded from count.

Market Analysis

Existing Conditions:

1) Market Size
2) Service – Quantity
3) **Service – Trip Time**

New York - Boston
Distance: 231 Miles
Trip Time: 3:30
Avg Speed: 66 MPH

New York – Washington
Distance: 226 Miles
Trip Time: 2:45
Avg Speed: 82 MPH

Market Analysis

Alternatives Development:

1) Markets
2) Service – Quantity
3) Service – Quality

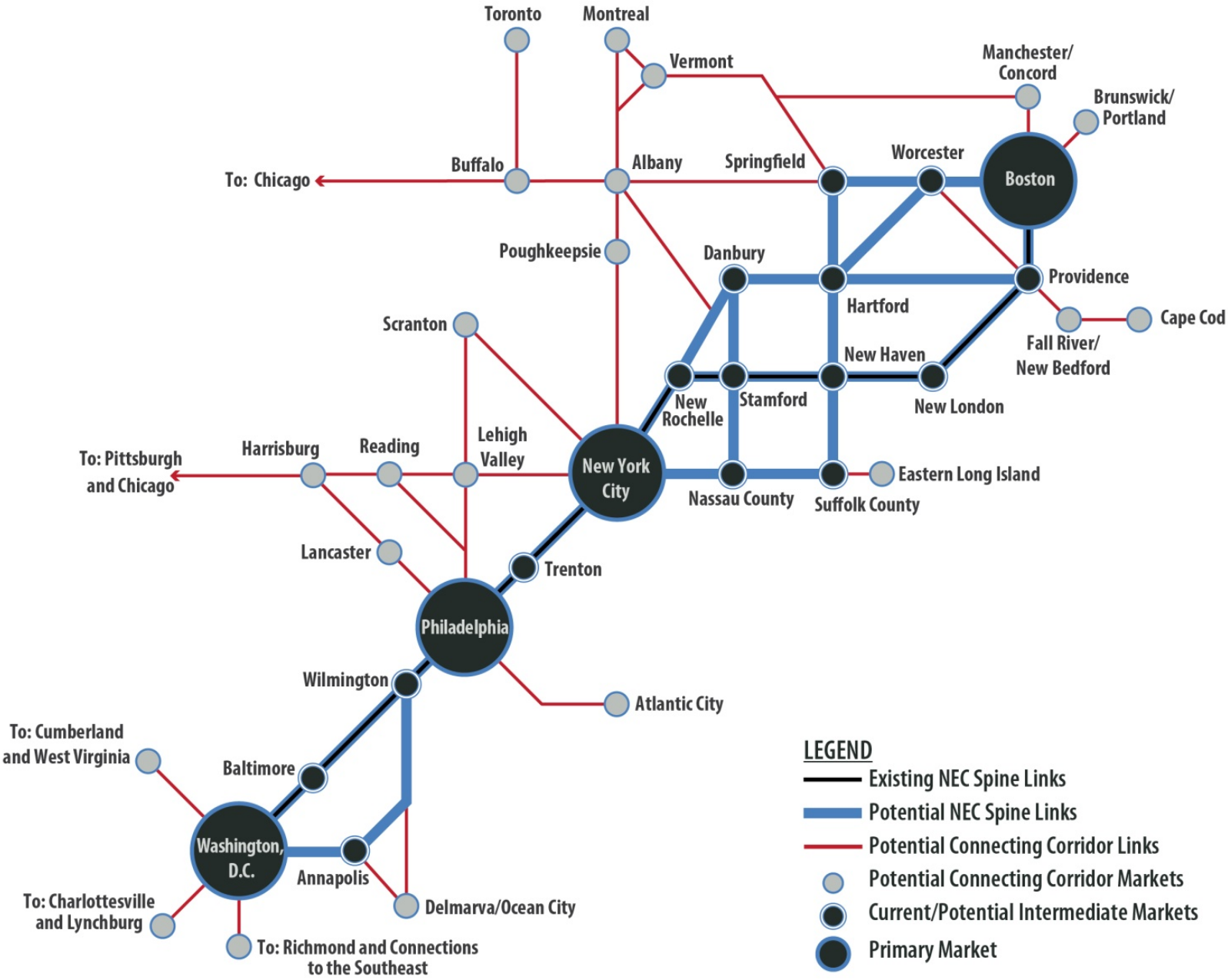
<u>Market Opportunities</u>:

What markets are underserved today?

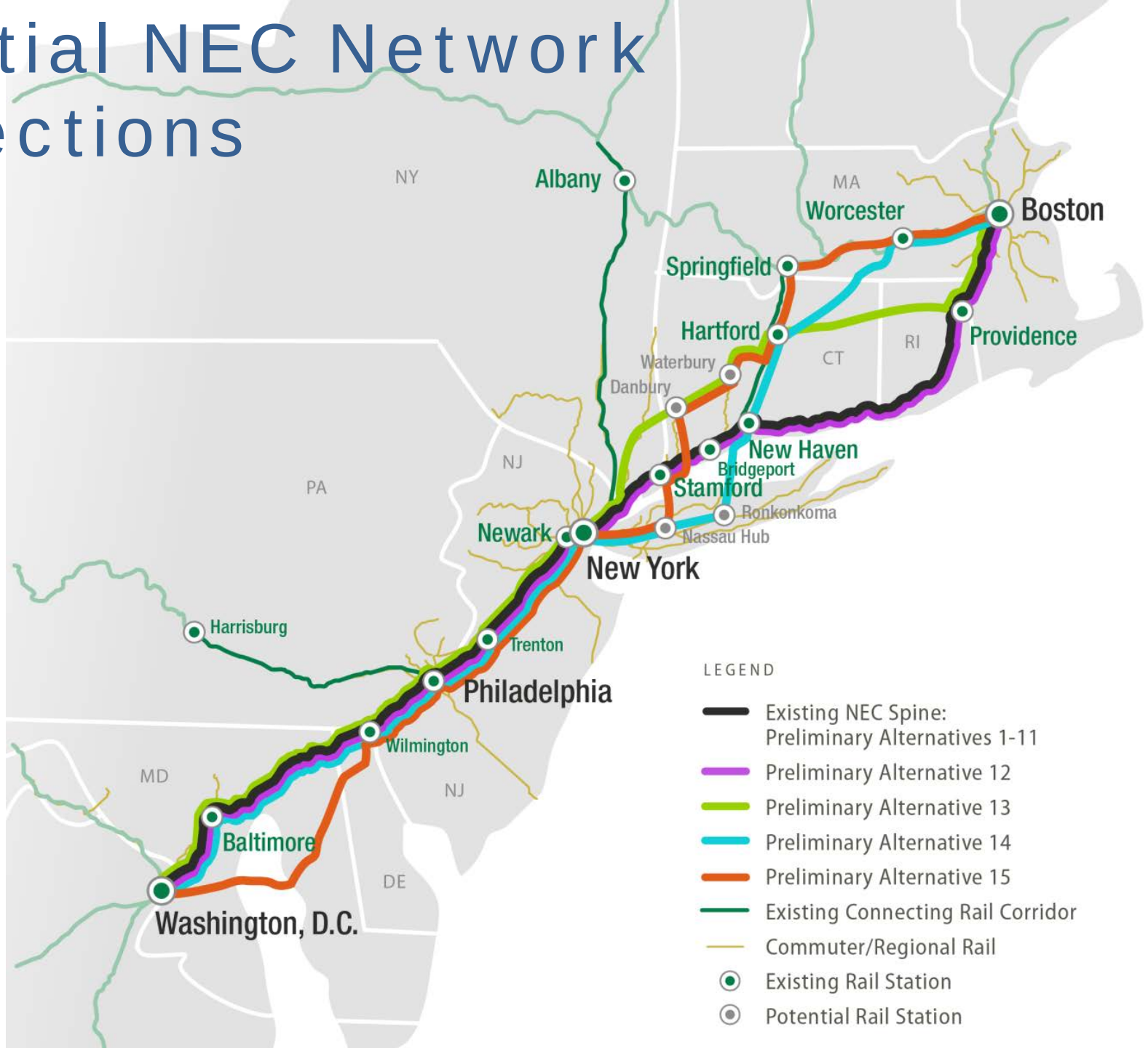
What potential markets are not served at all?

What type of service is appropriate for each market?

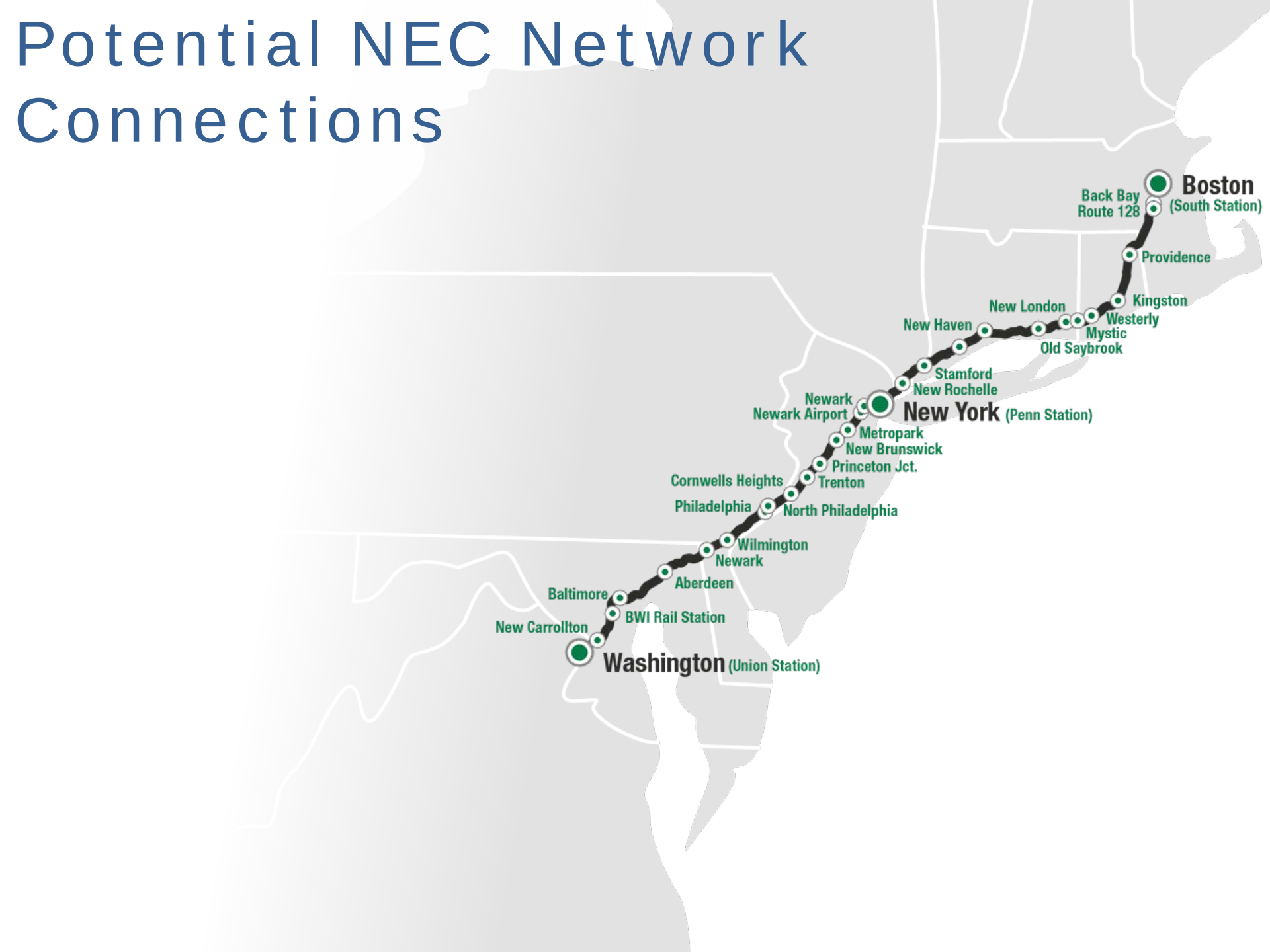
Potential NEC Network Con



Potential NEC Network Connections



Potential NEC Network Connections



Concepts Tested

- ***Metropolitan Service***
- Run-Through Service at Major Stations/Terminals
- Coordinated Endpoint Connections
- Commuter Express Service using new high-speed tracks
- Investment in Station and Rail Infrastructure to Enable High-Quality Passenger Transfers
- Simplified Operations –
  - Fewer stopping patterns
  - Fewer network branches
  - Timed transfers for branch line passengers at main line hub stations
  - Higher service frequencies for spine services
- ***Slot Catalogue***
- ***Pulse Hub Operations***

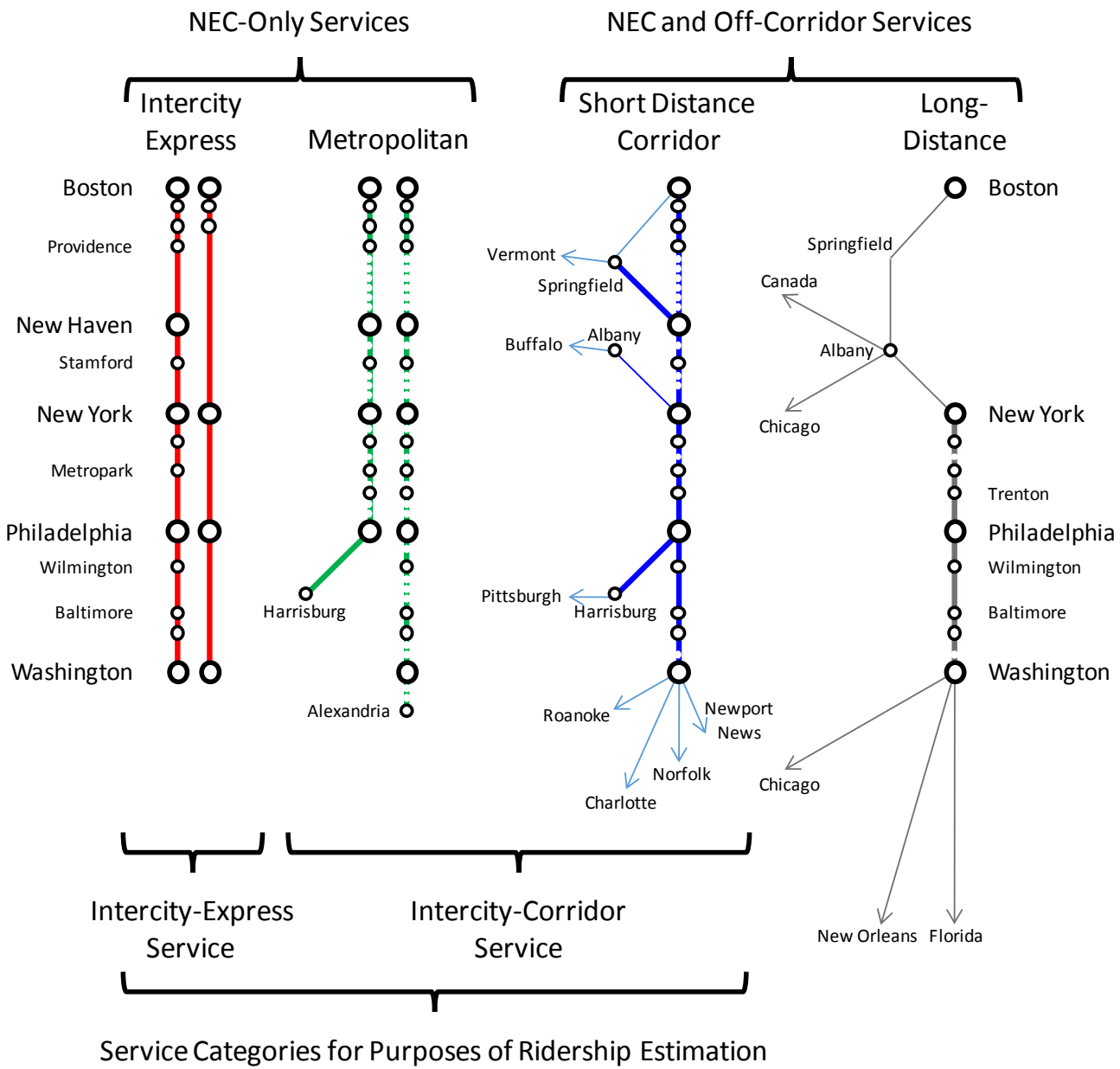
Service Specifications Development

Service Planning Approach

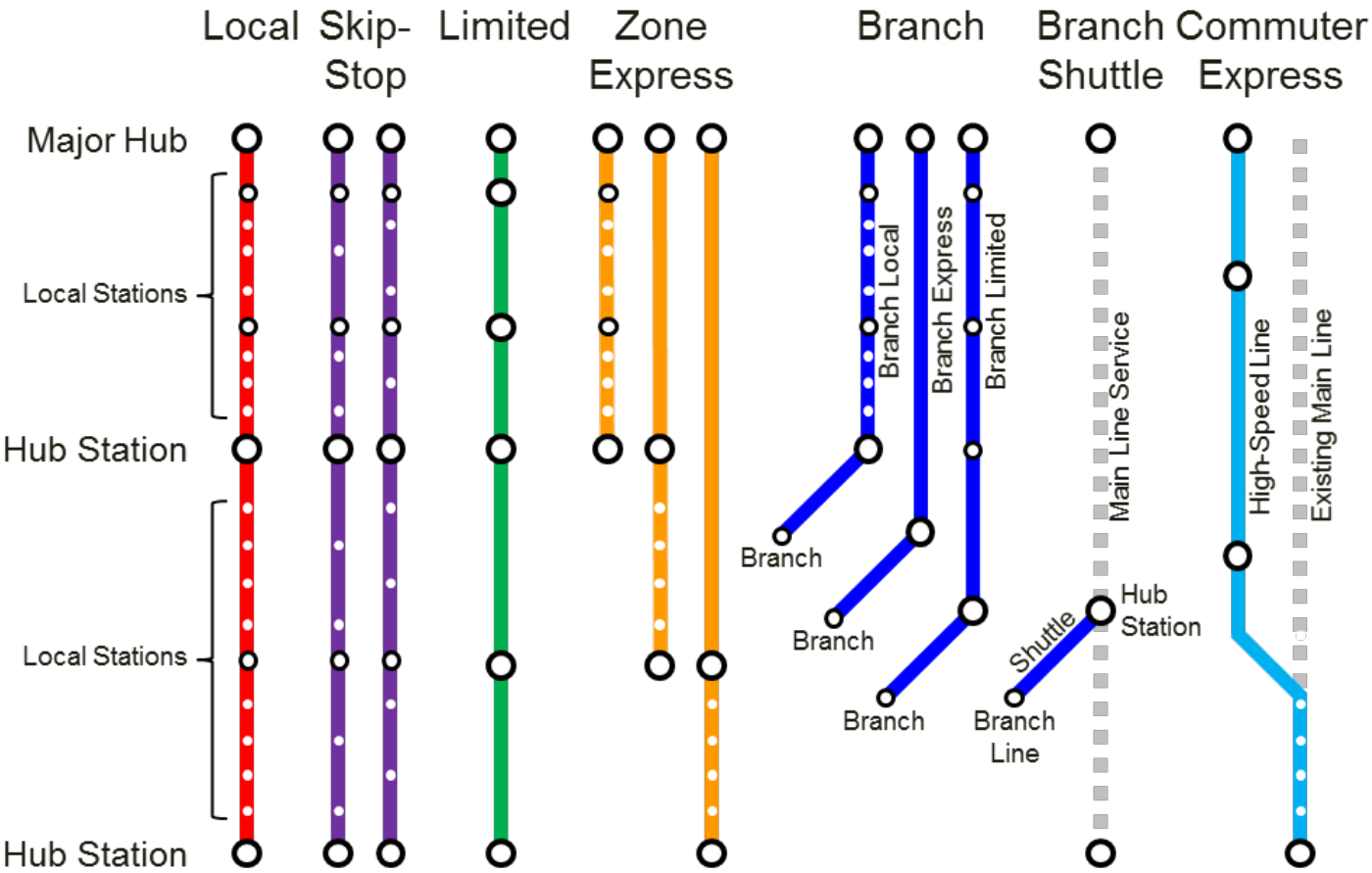
Purpose and Level of Detail

- Input Data – Network and Rolling Stock
- Service Specifications
- Pattern Analysis and Conflict Resolution
- Output Data, Interpretation and Analysis

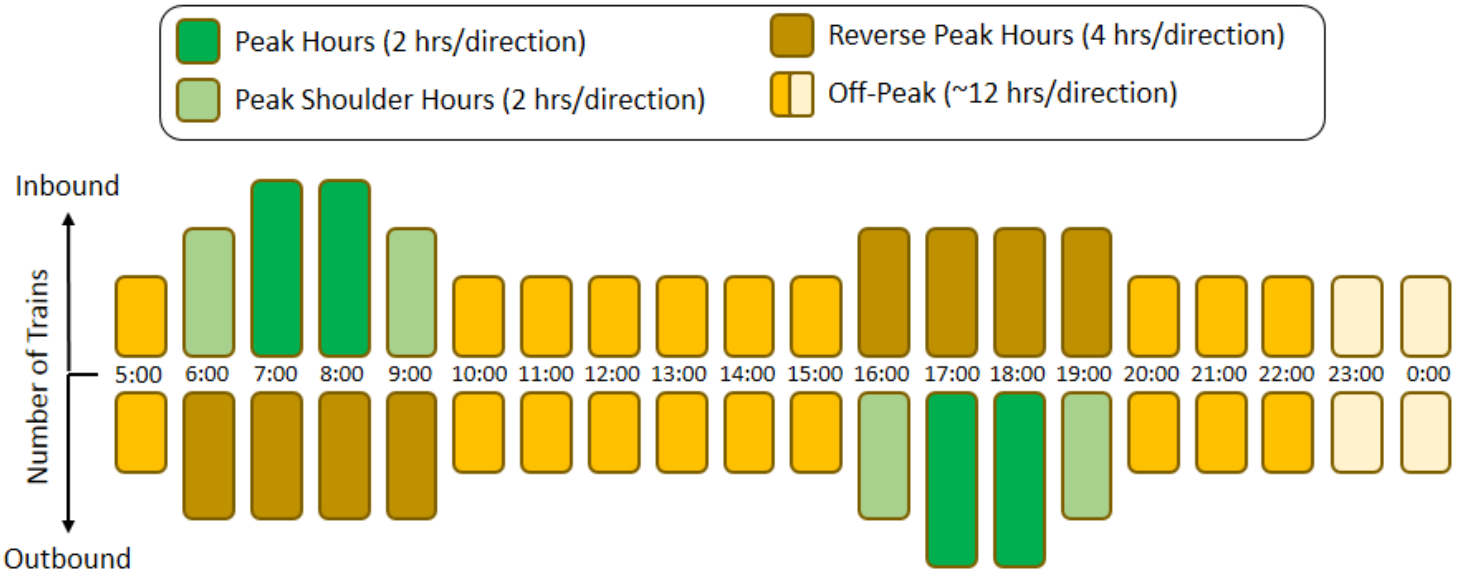
Service Types – Intercity



Service Types – Regional



Service Specification

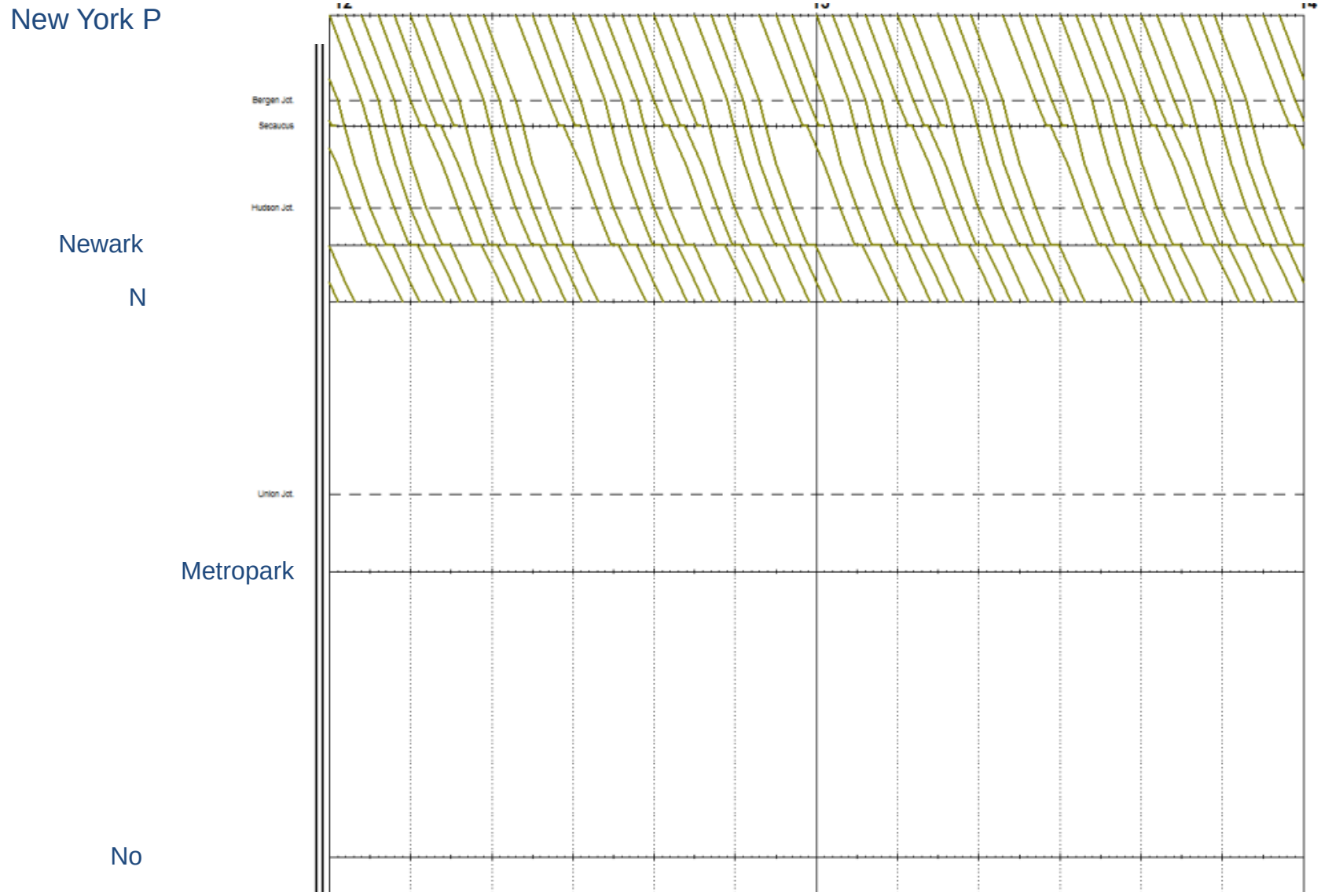


Pattern Analysis and Conflict Resolution

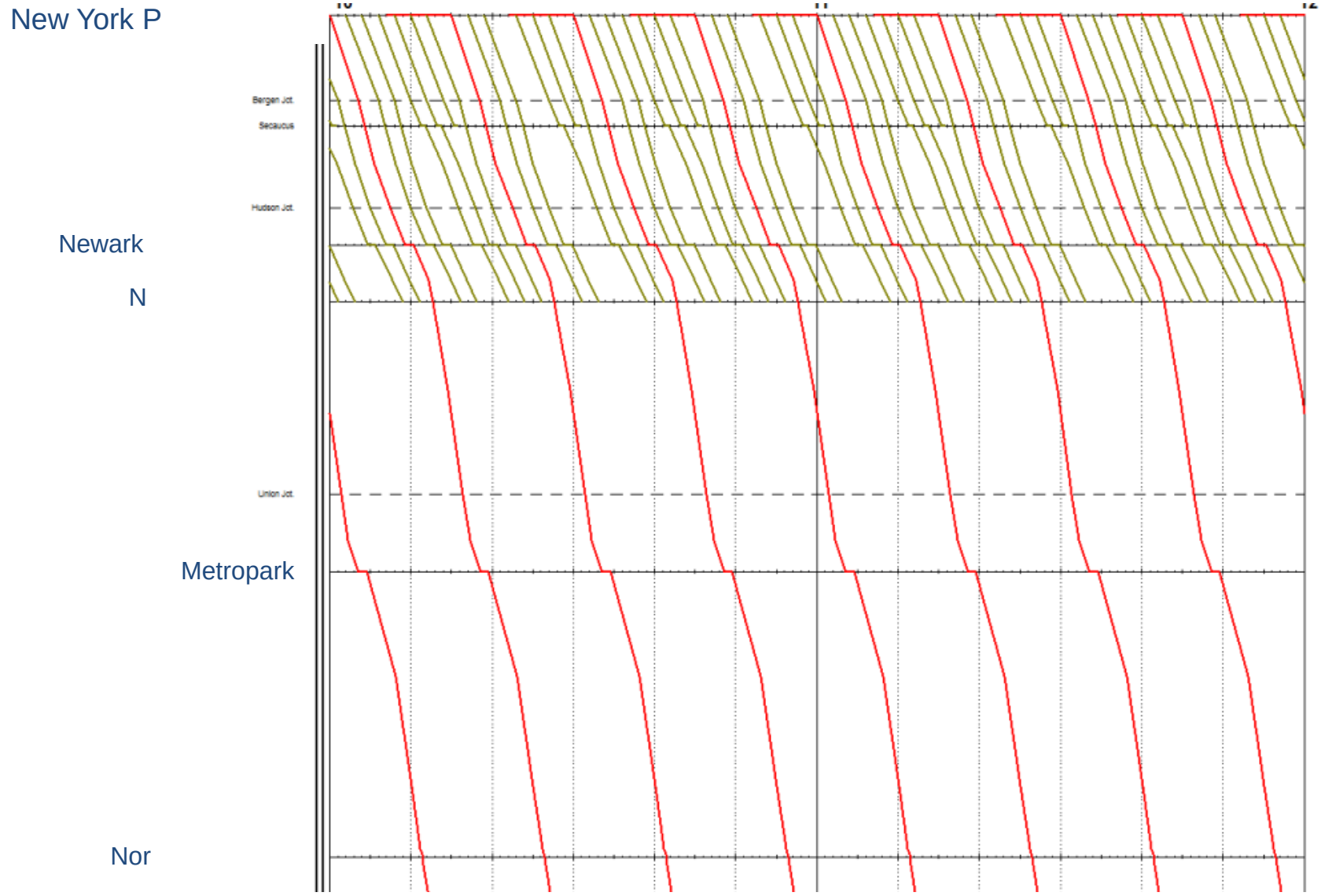
- Clockface schedules, repeating intervals
- Priorities for resolving overtakes and coordinating timed transfers
  1. Express and Metropolitan
  2. Intercity Off-Corridor
  3. Regional Rail
- Track usage by service types
  - Express, Intermediate, Local
- Standard peak hour basis for resolving train movement conflicts

Slot Catalogue

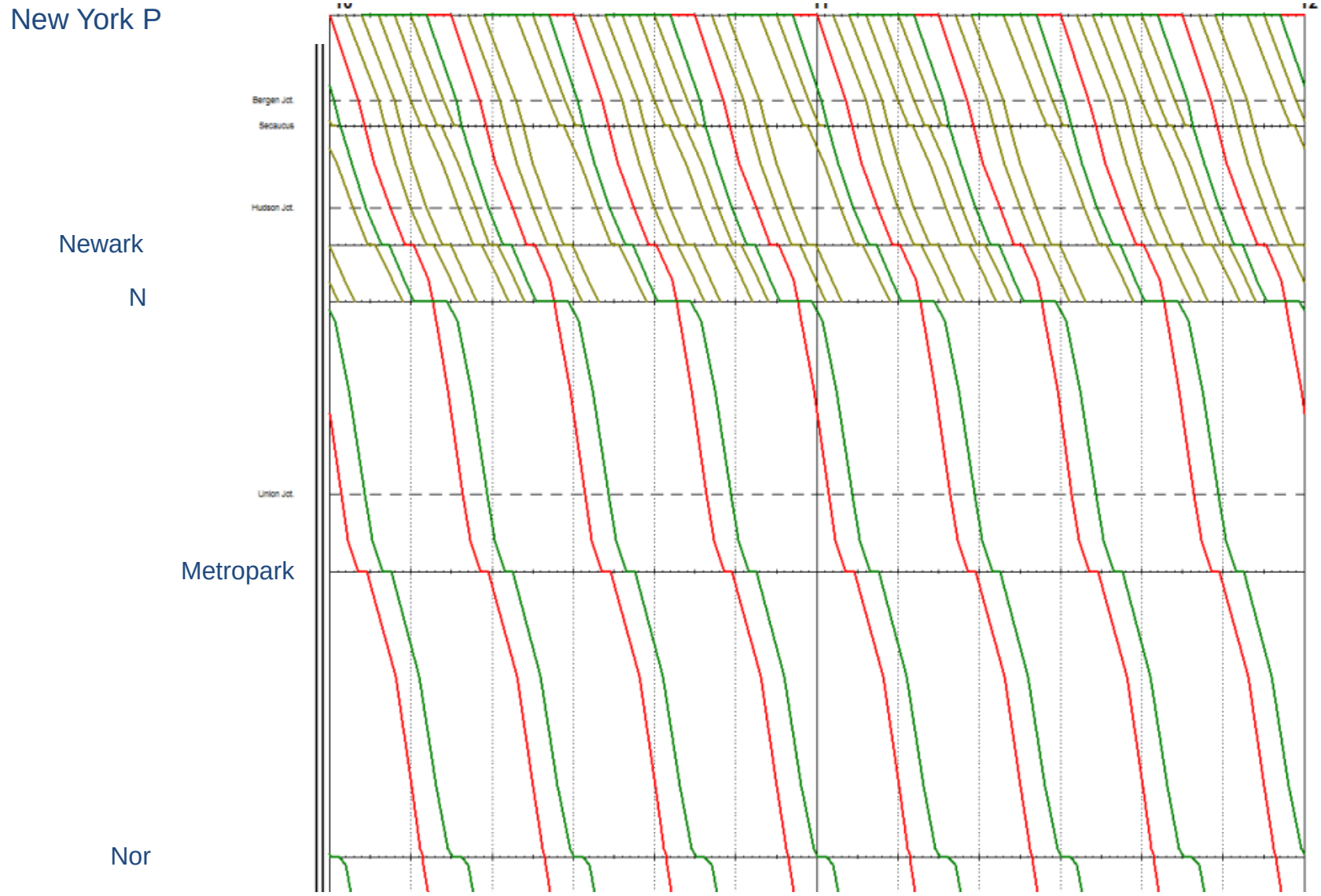
Slot Catalogue – Express Tracks



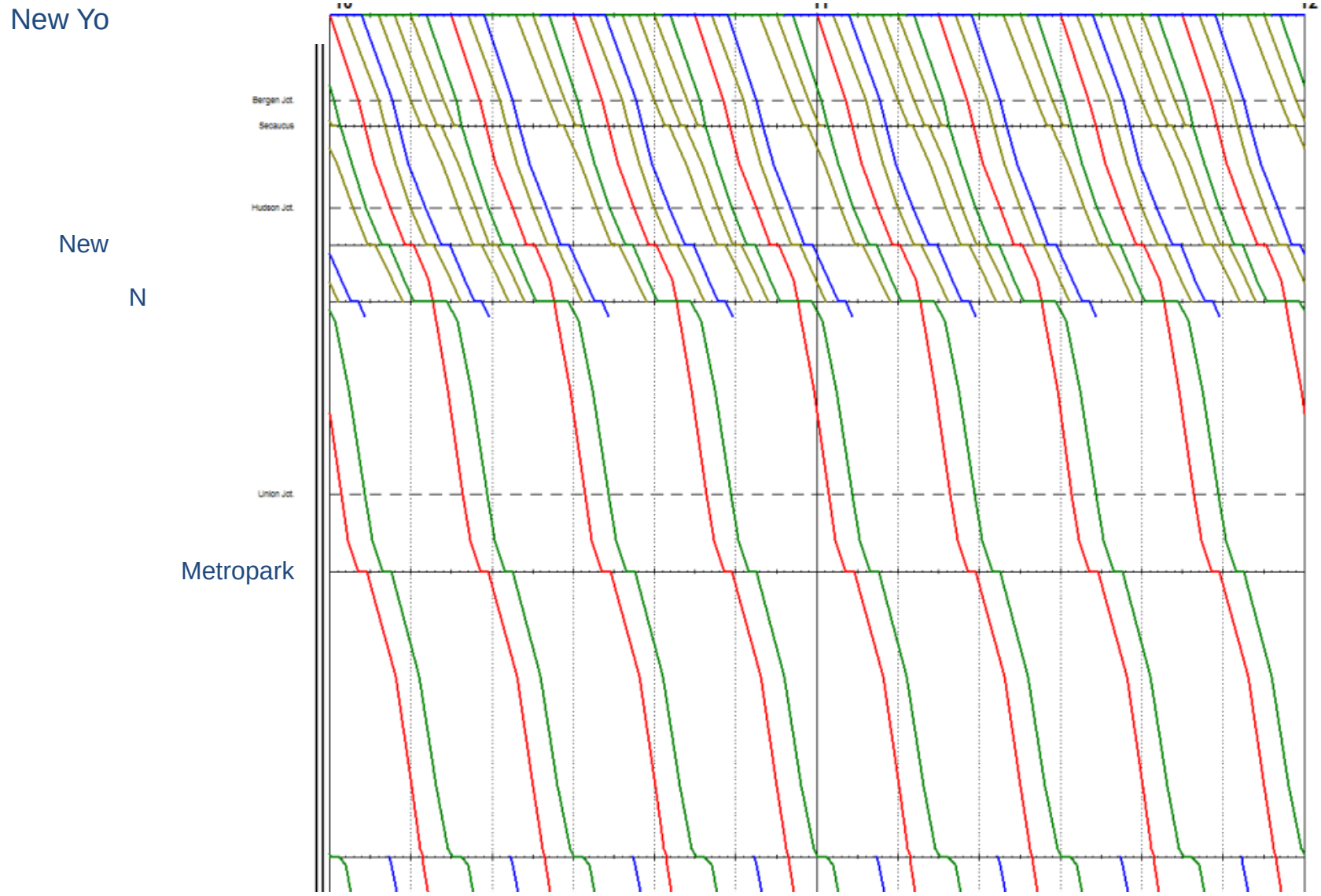
Slot Catalogue – Express Tracks



Slot Catalogue – Express Tracks



Slot Catalogue – Express Tracks



Slot Catalogue – Express Tracks

New York

Newark

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Metropark

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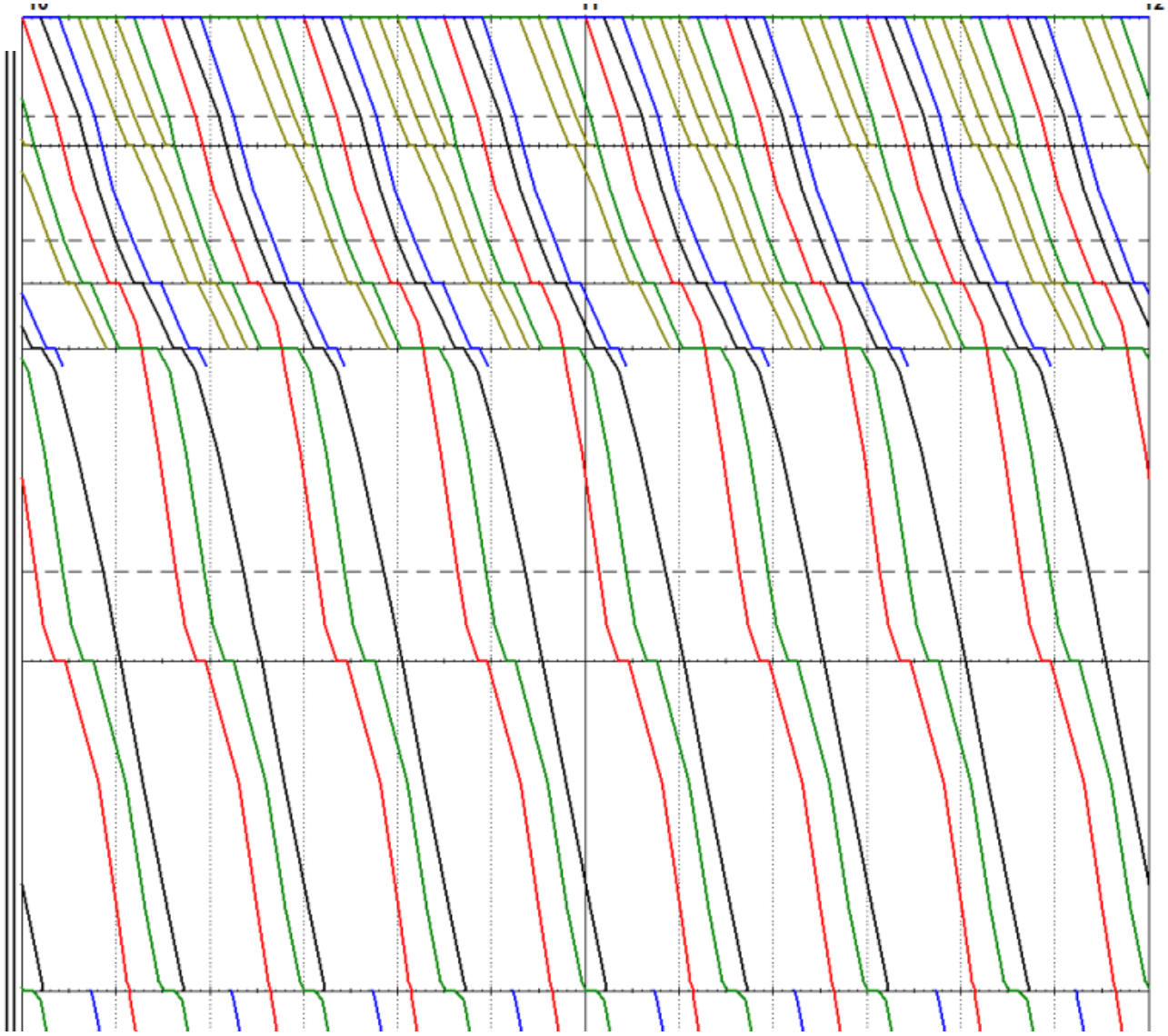
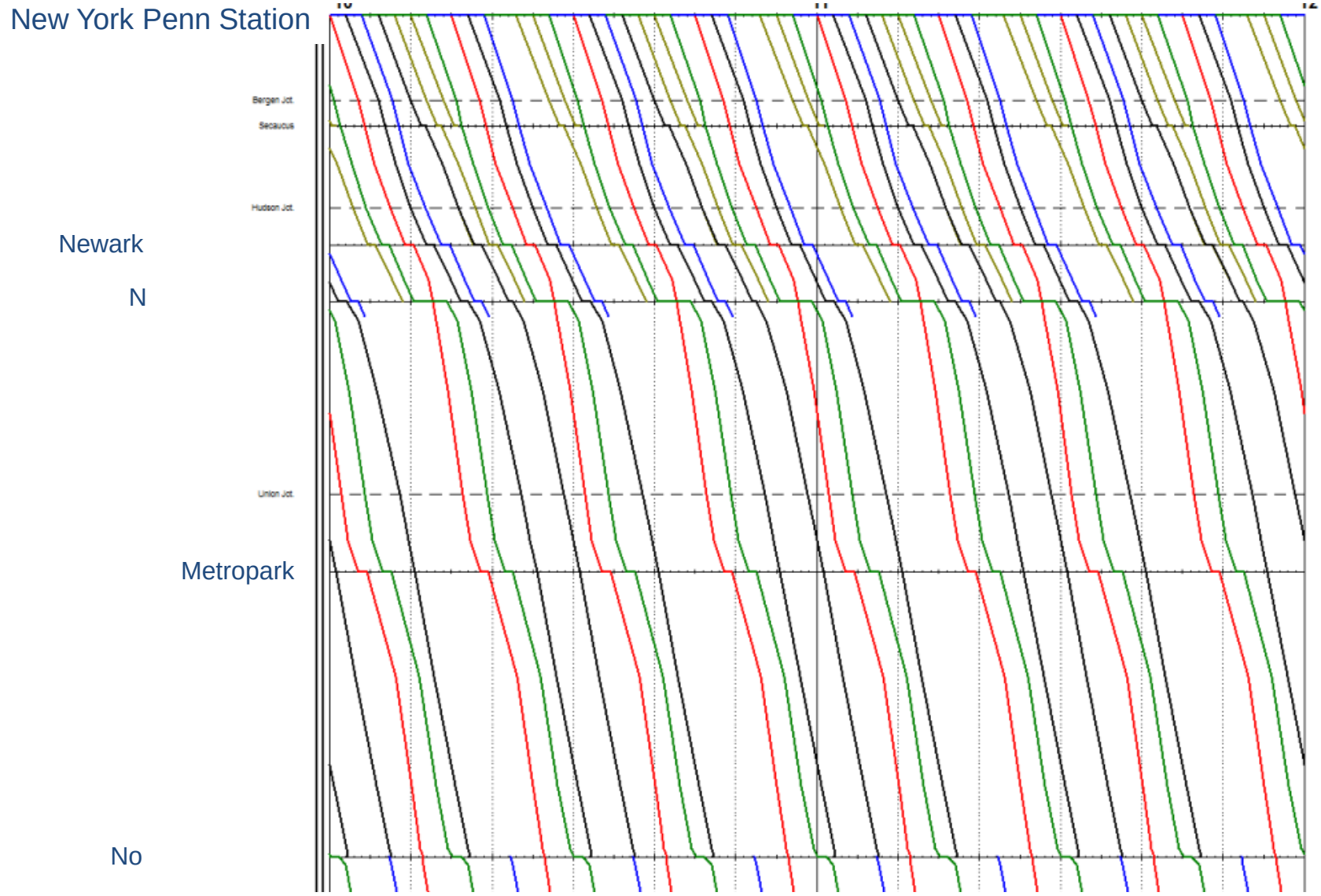


Slot Catalogue – Express Tracks



Slot Catalogue – Express Tracks

New York P

Newark

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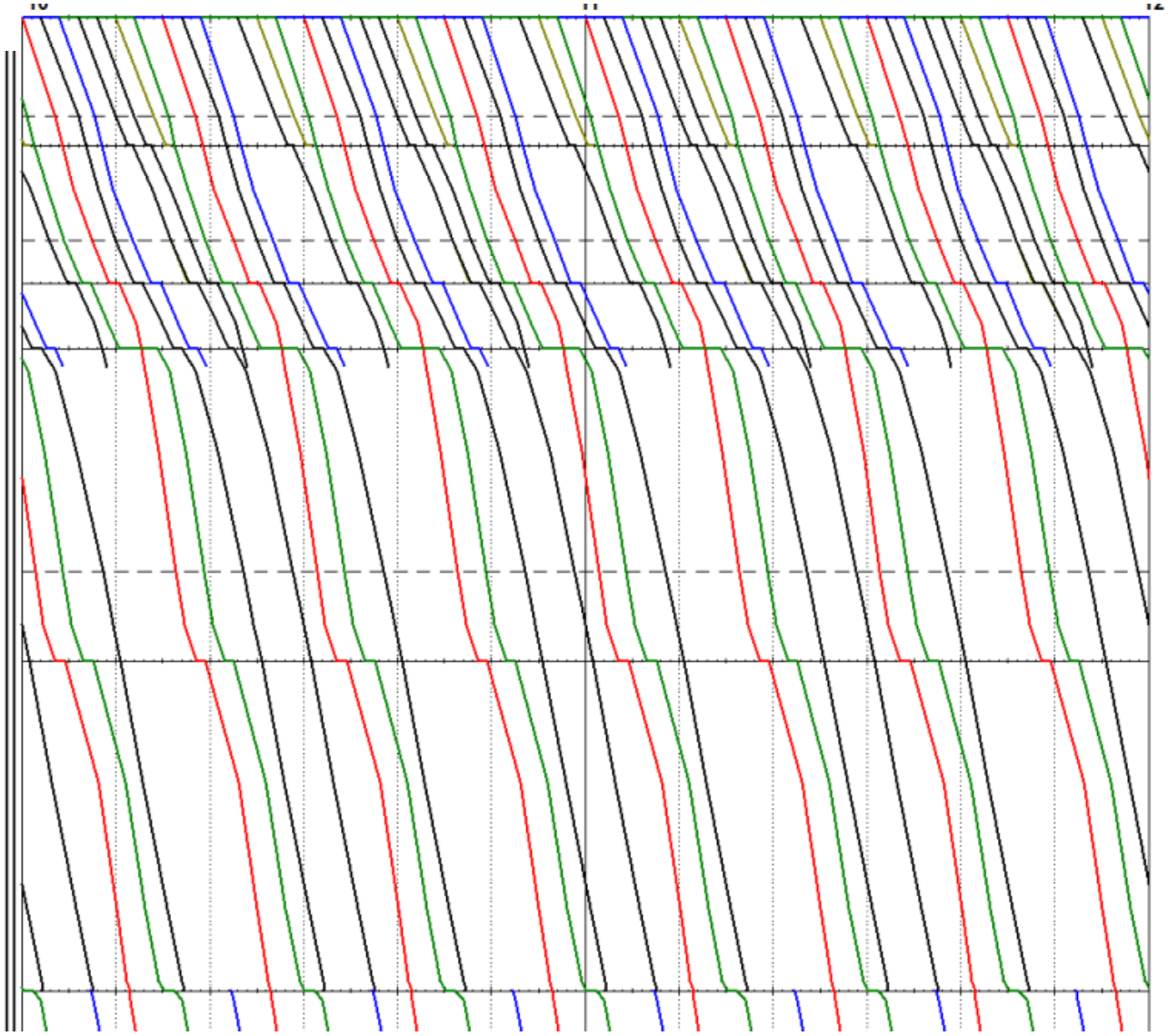
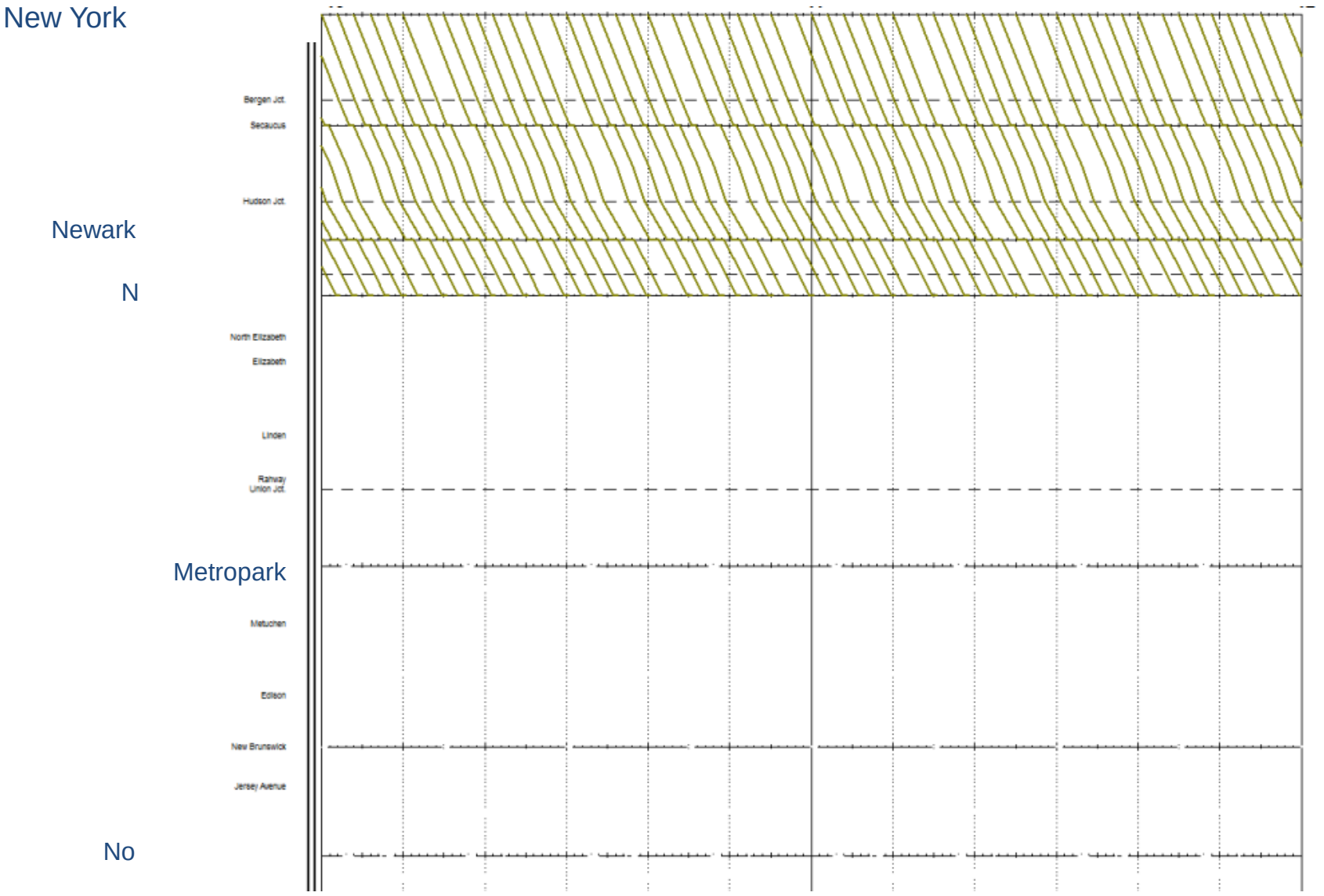
Metropark

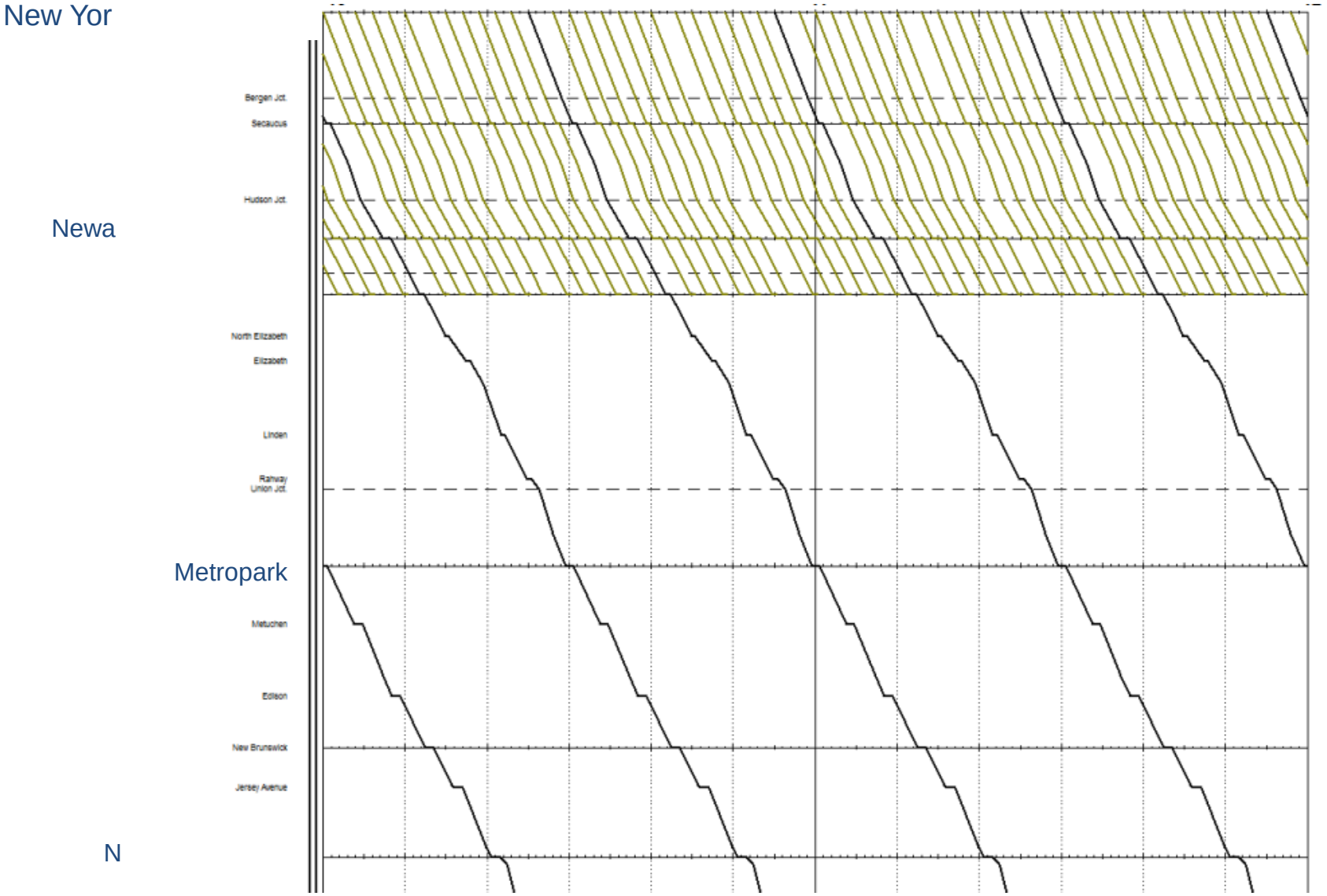
Nor



Slot Catalogue – Local Tracks



Slot Catalogue – Local Tracks



Slot Catalogue – Local Tracks

New York P

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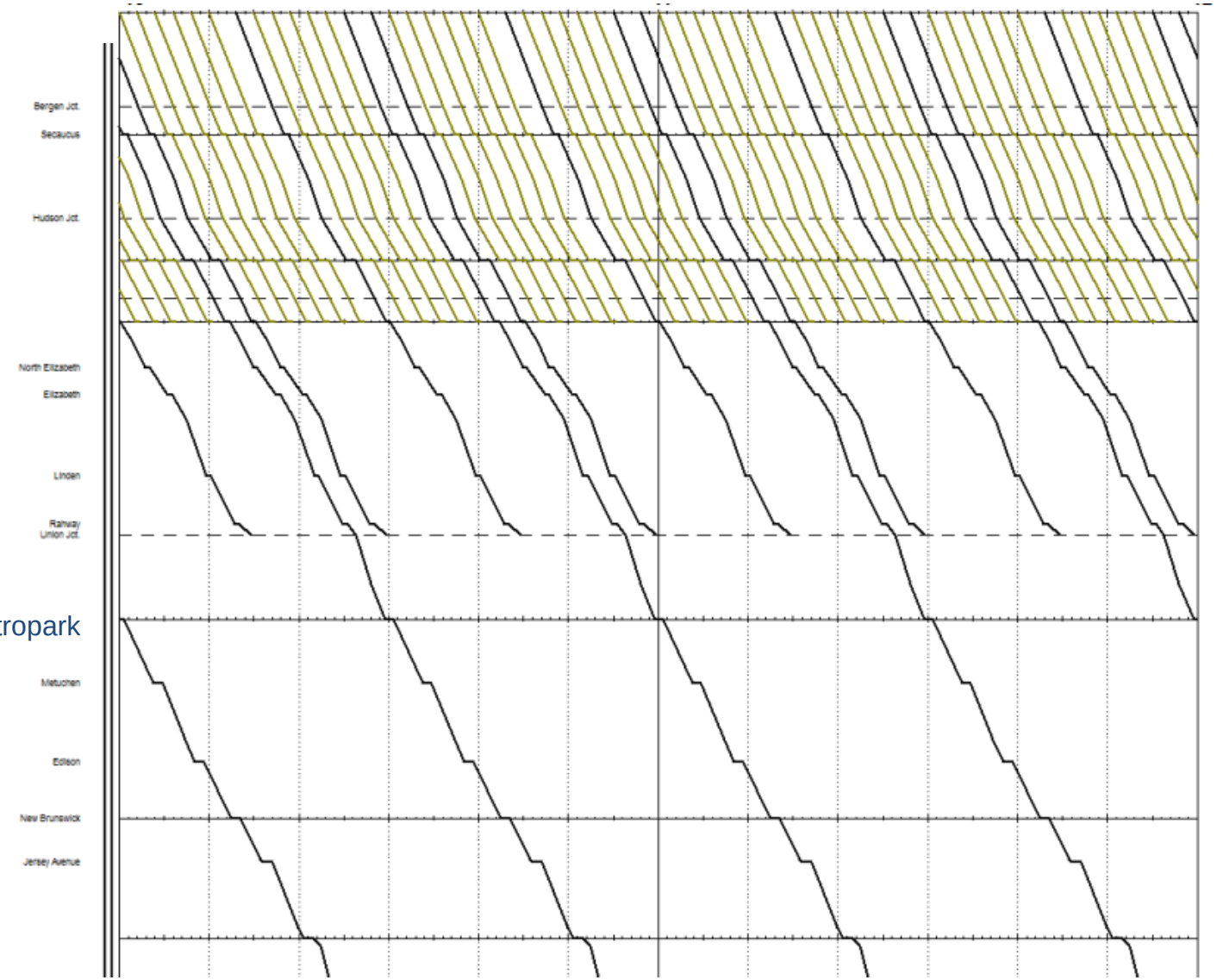
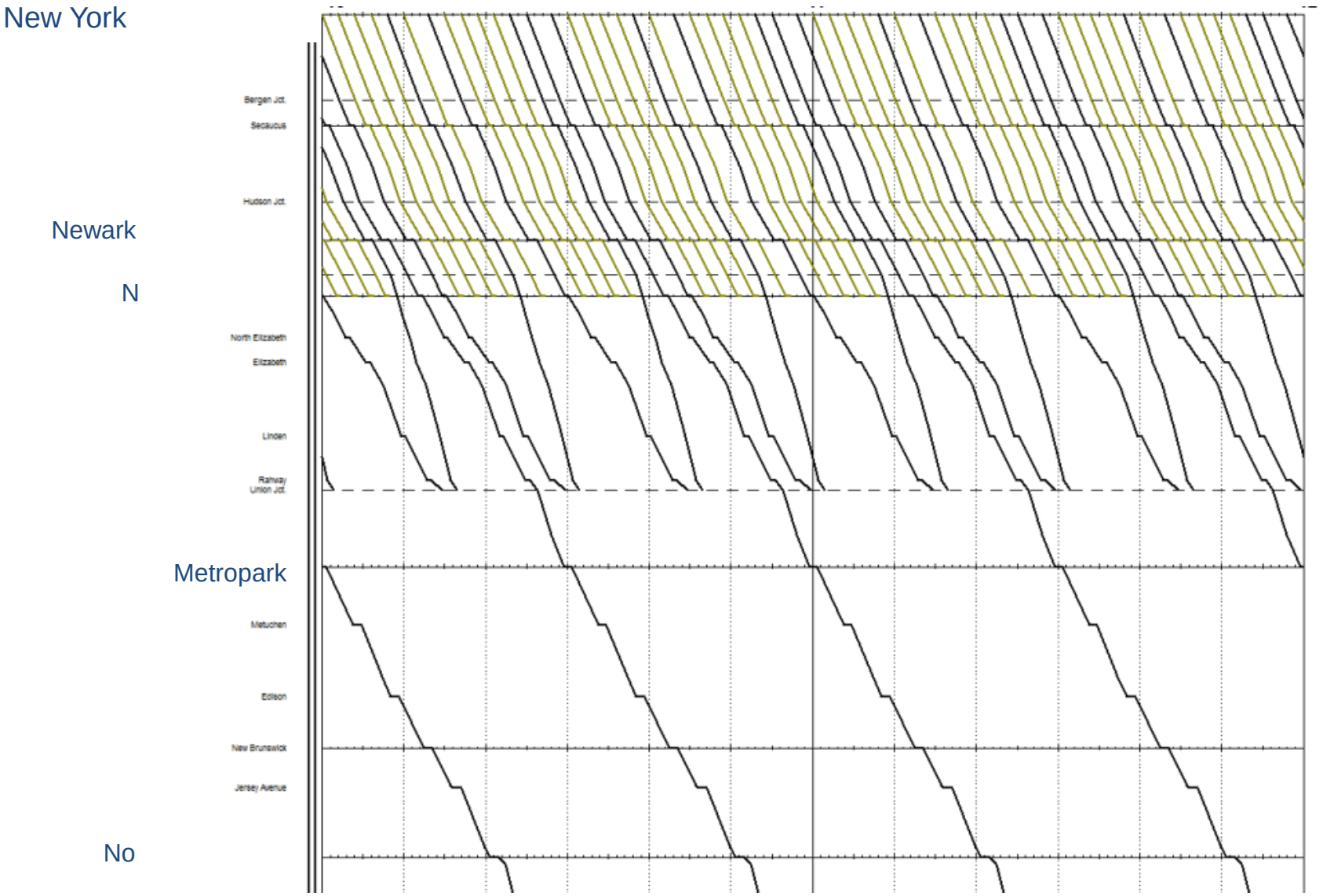
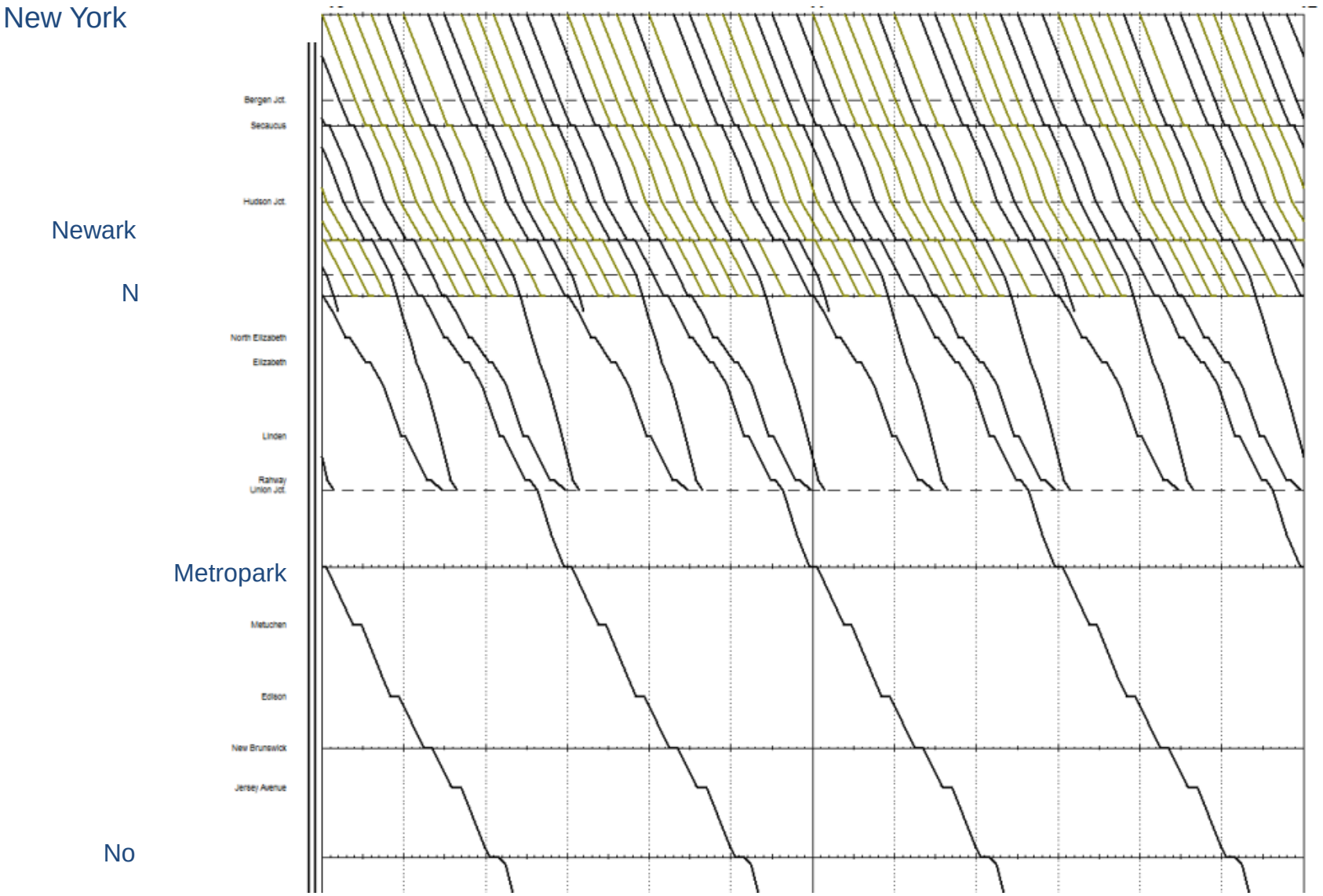


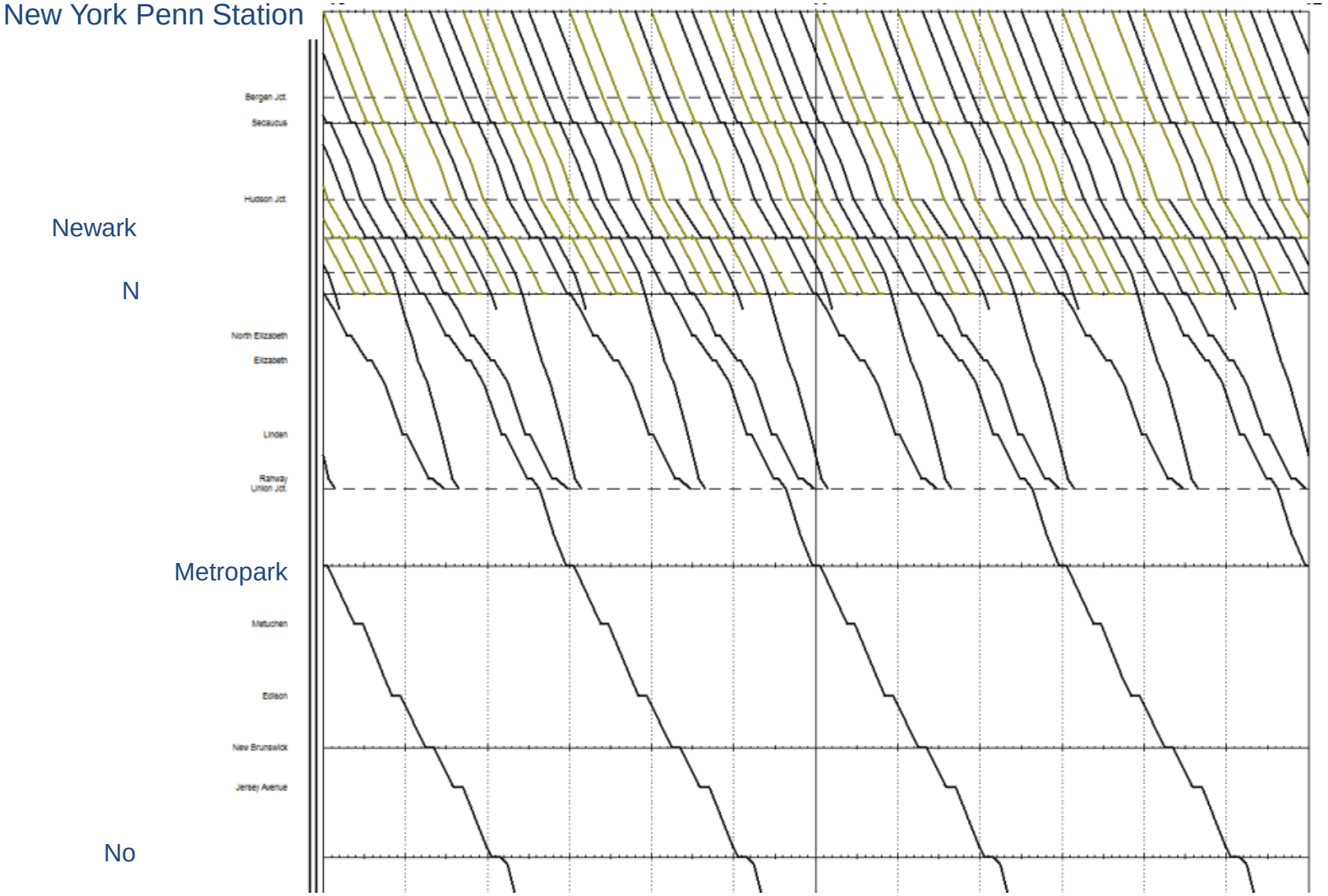
Slot Catalogue – Local Tracks



Slot Catalogue – Local Tracks

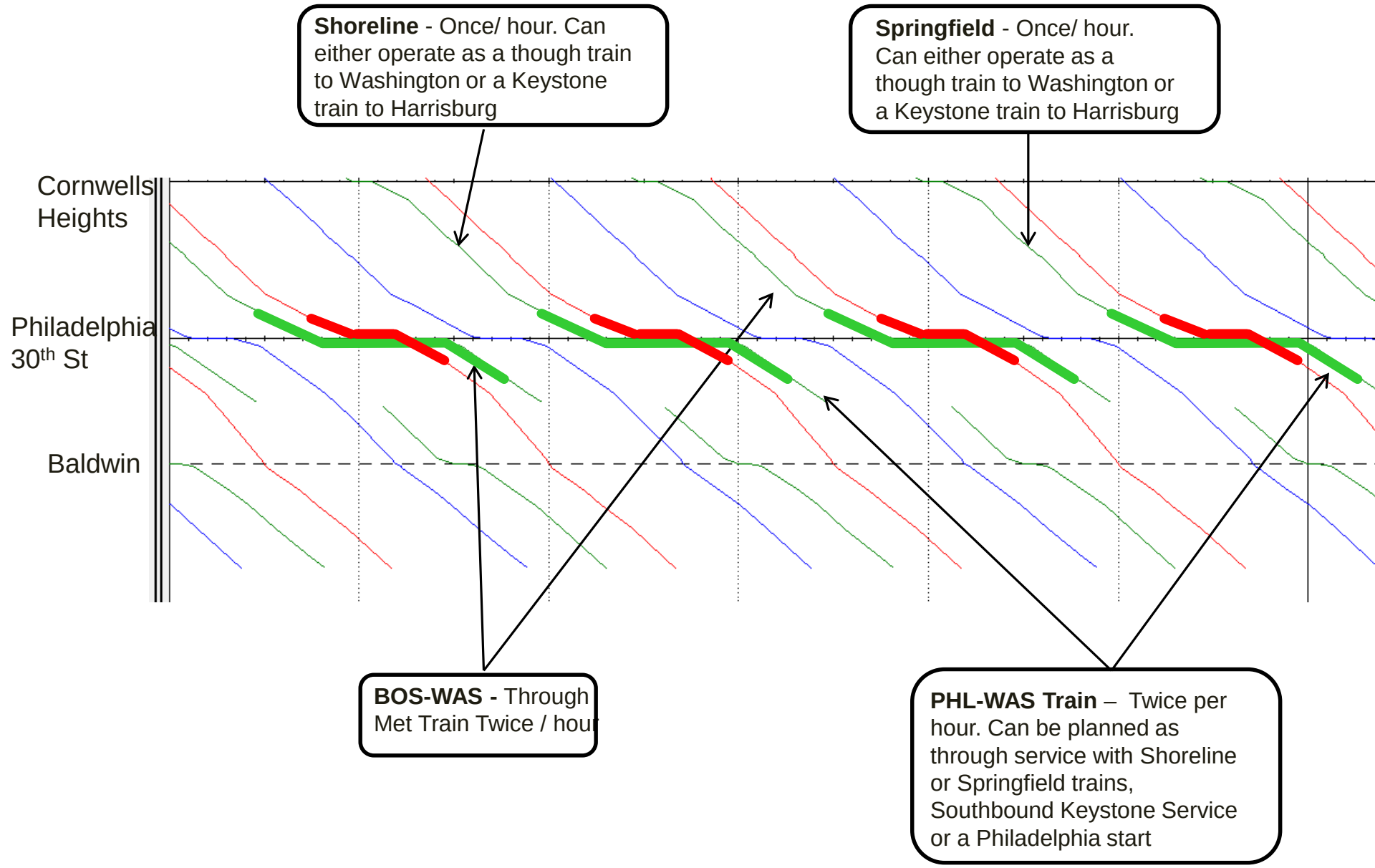


Slot Catalogue – Local Tracks

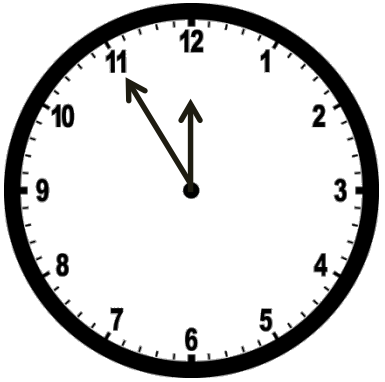


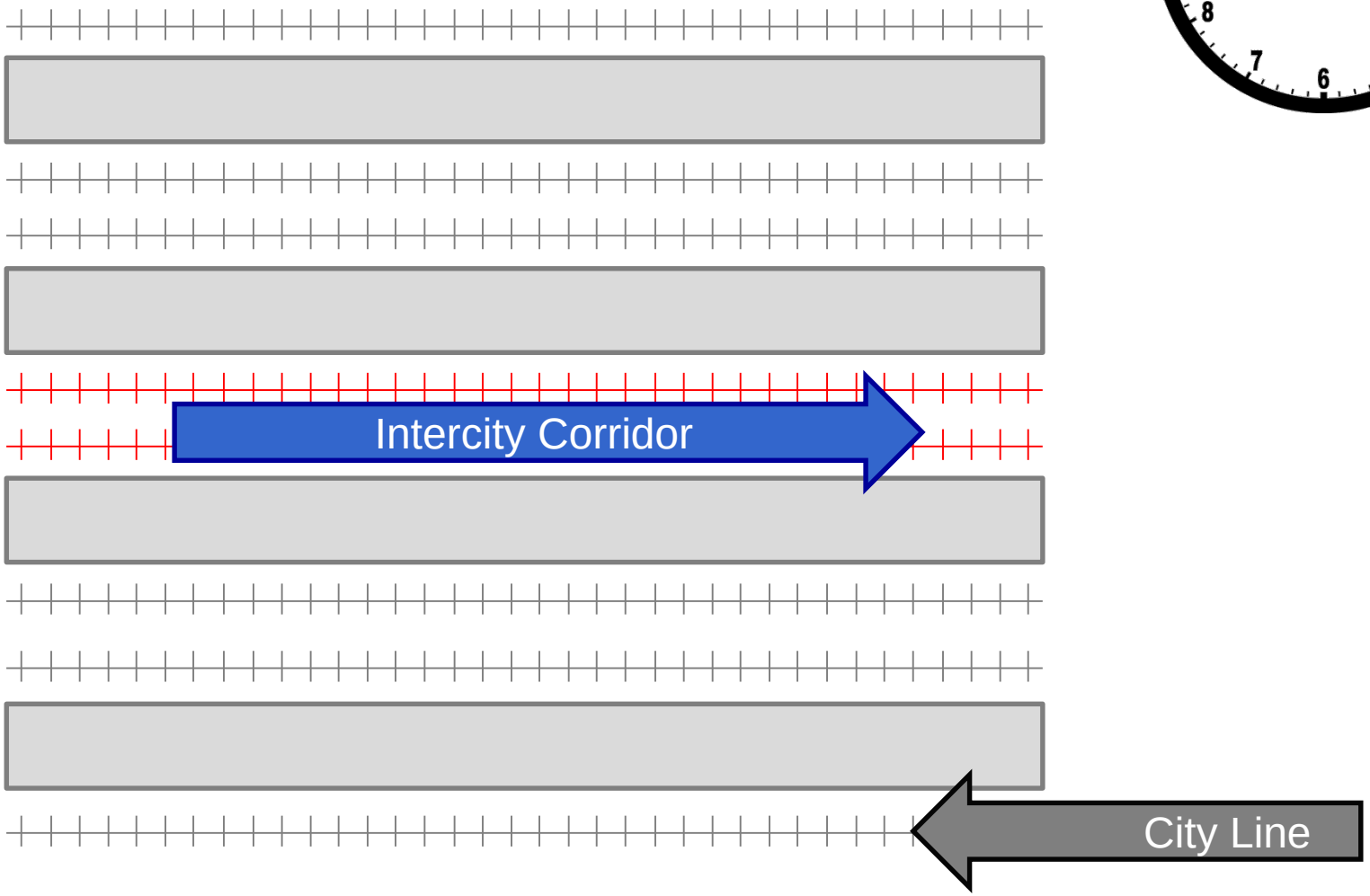
Pulse Hub

Pulse Hub


Shoreline - Once/ hour. Can either operate as a though train to Washington or a Keystone train to Harrisburg
Springfield - Once/ hour. Can either operate as a though train to Washington or a Keystone train to Harrisburg
Cornwells Heights
Philadelphia 30th St
Baldwin
BOS-WAS - Through Met Train Twice / hour
PHL-WAS Train – Twice per hour. Can be planned as through service with Shoreline or Springfield trains, Southbound Keystone Service or a Philadelphia start

Pulse Hub





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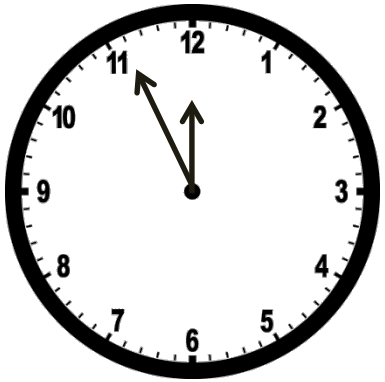

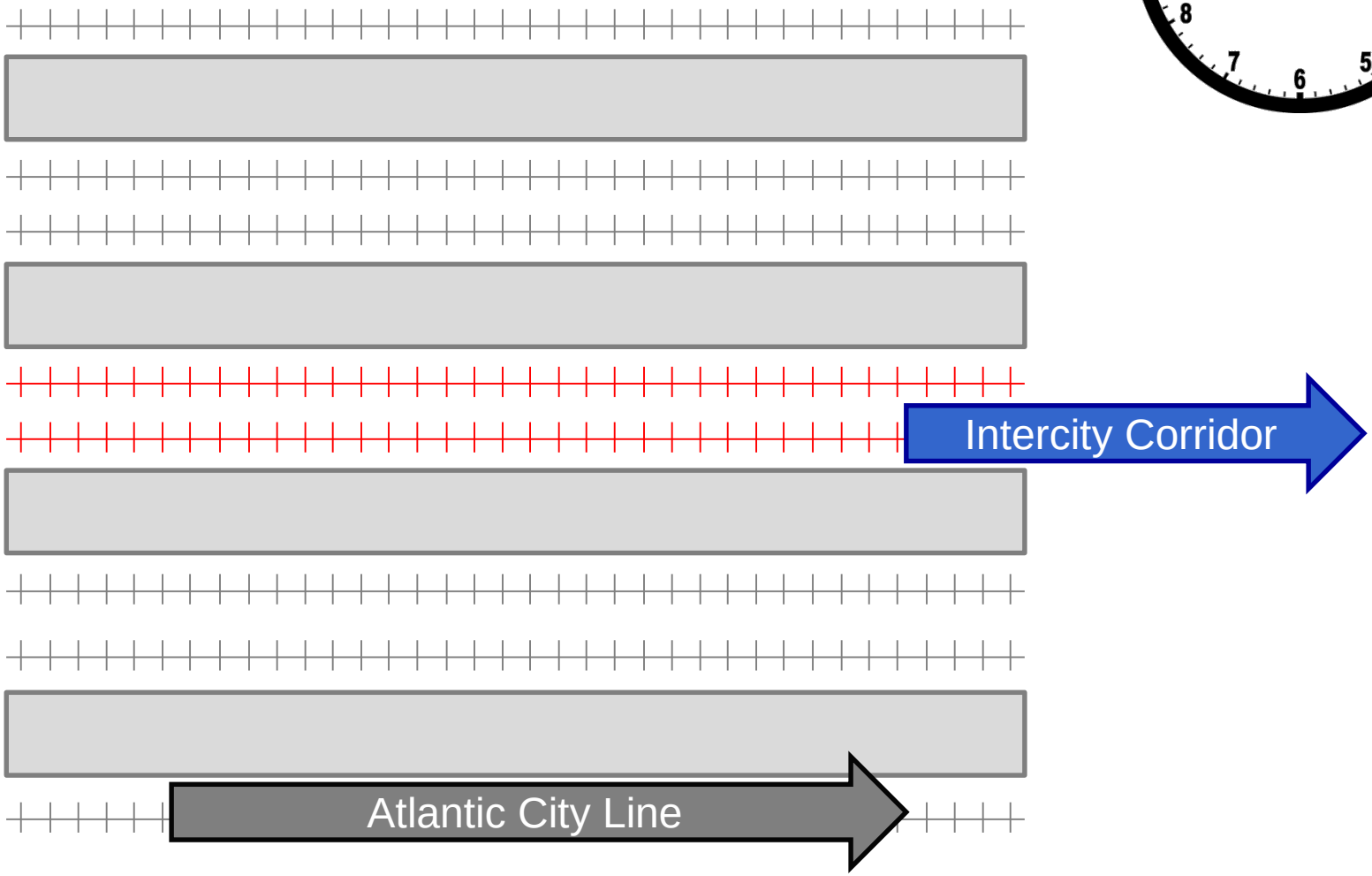

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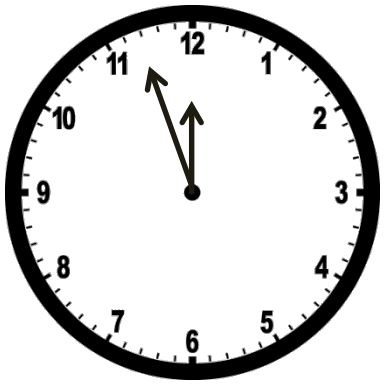

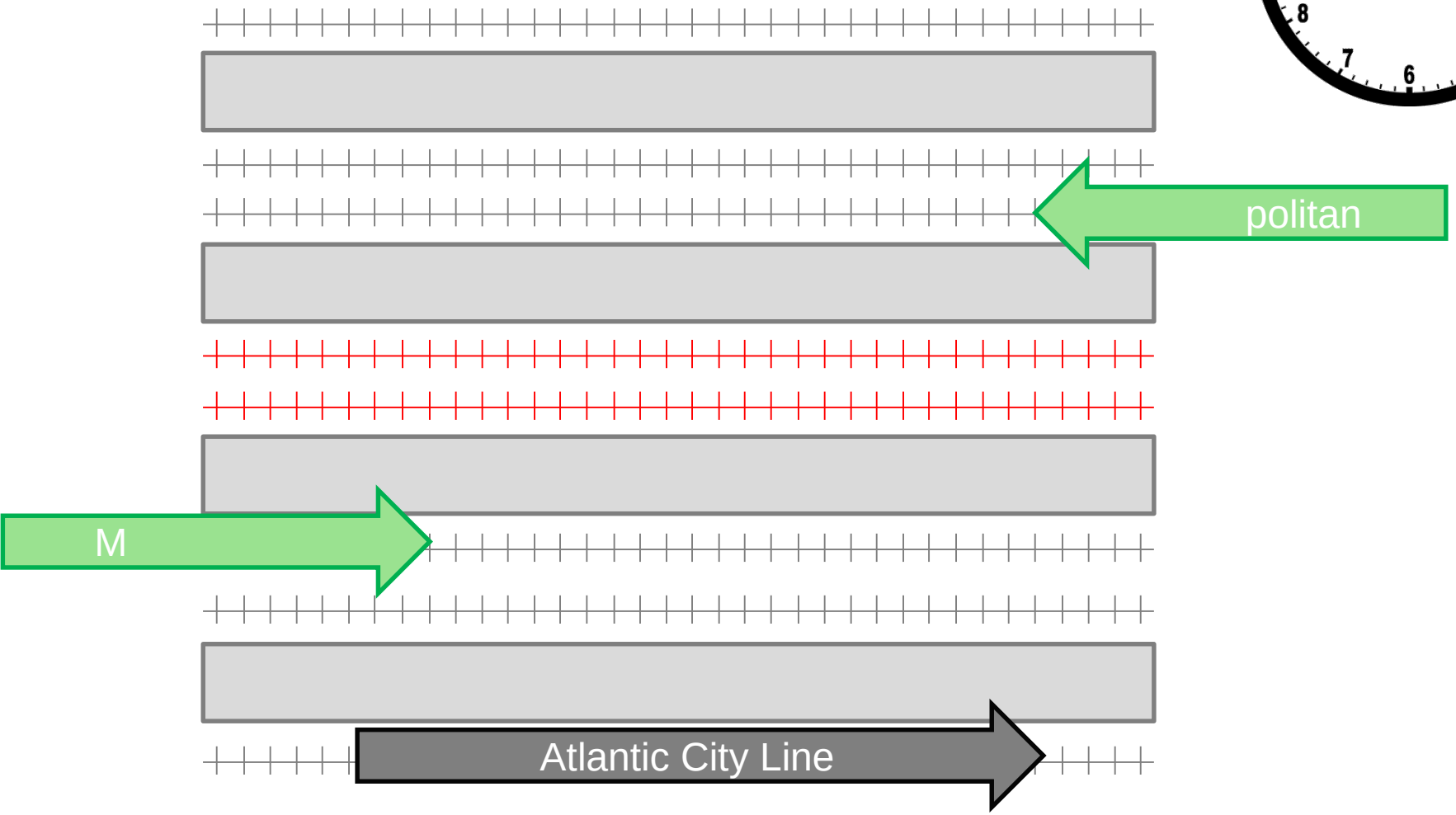

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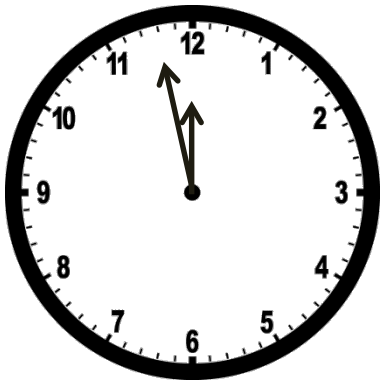

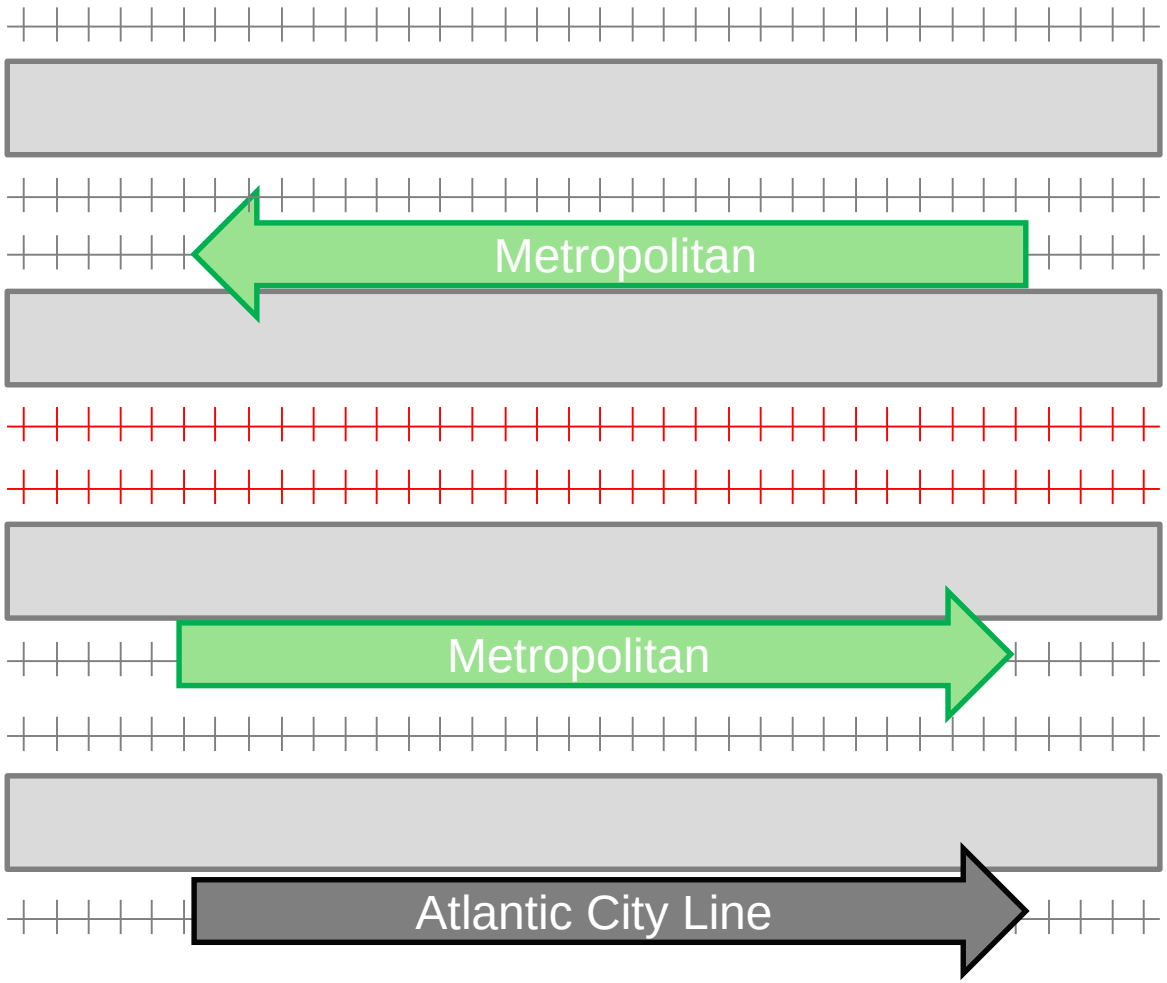

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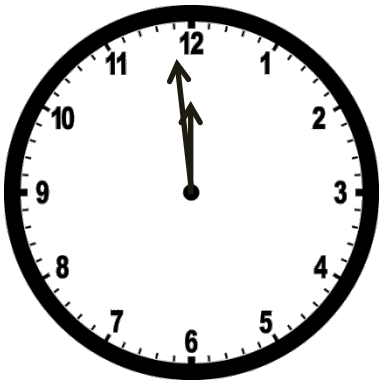

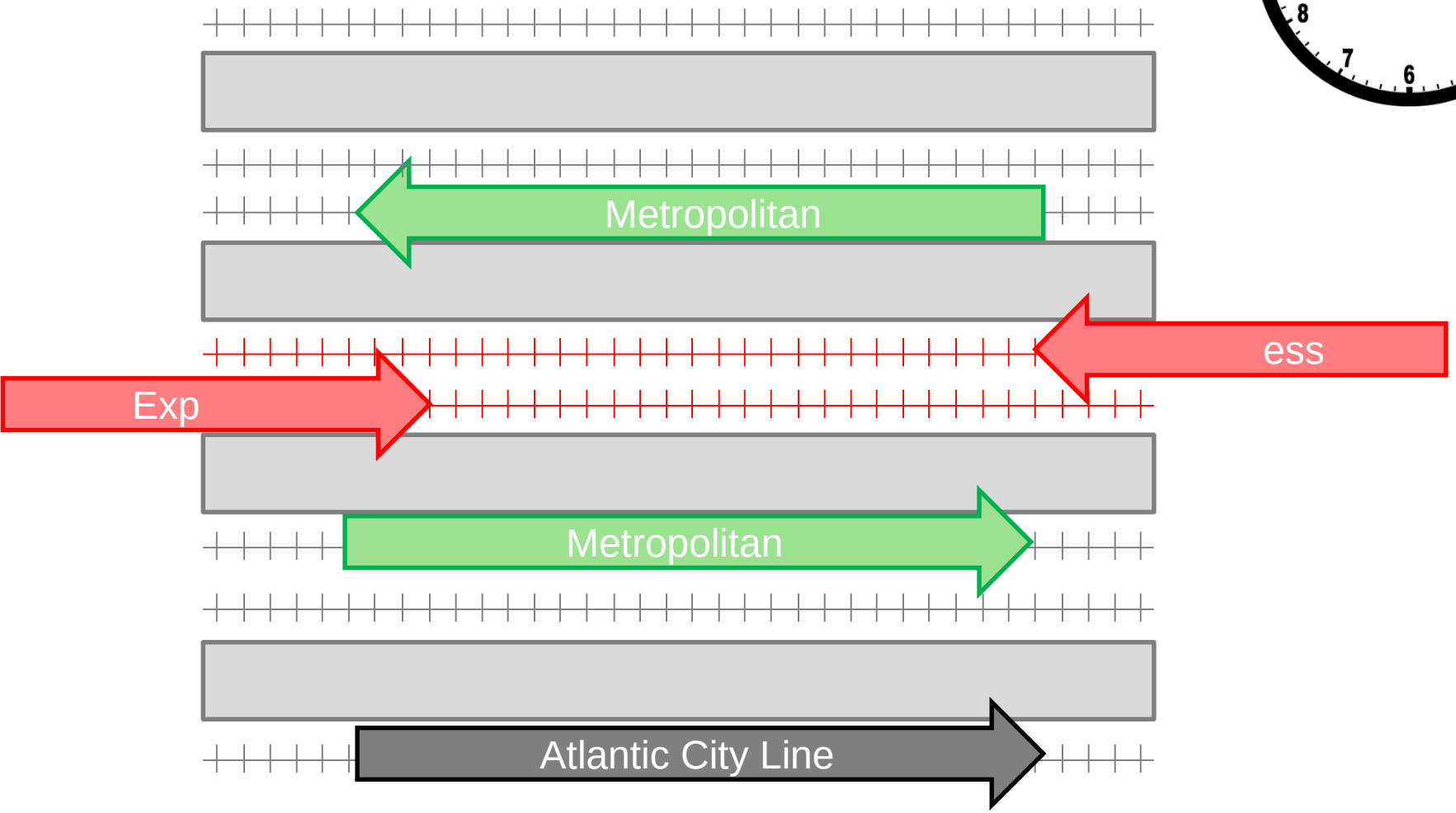

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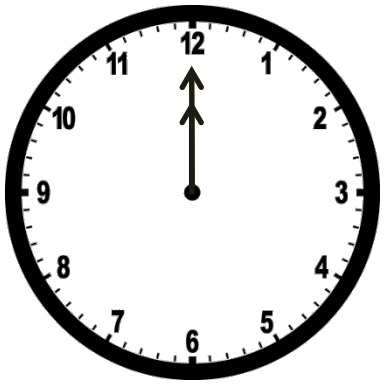
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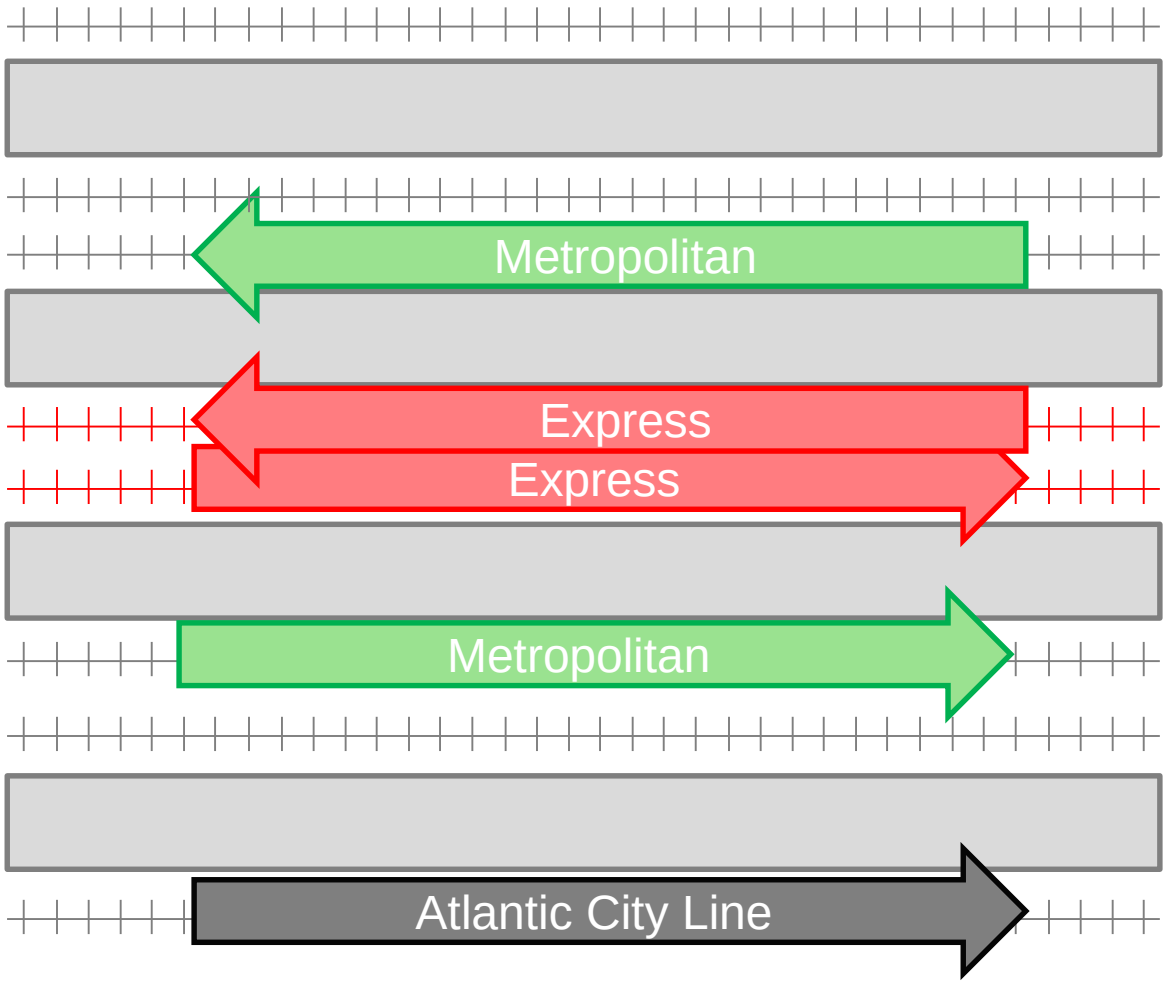
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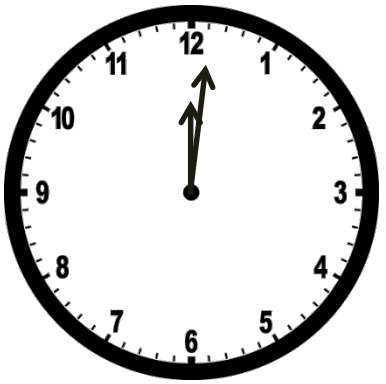
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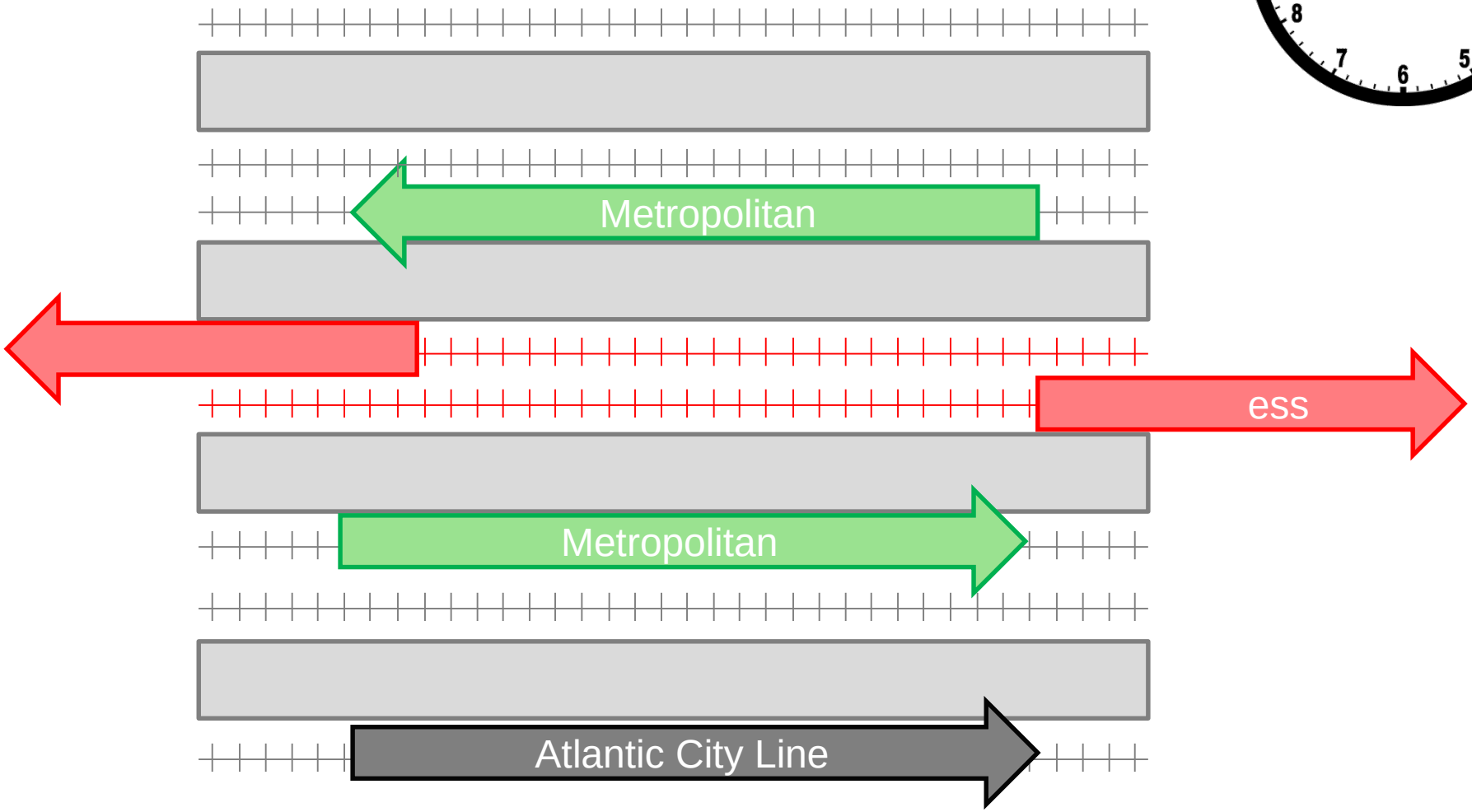
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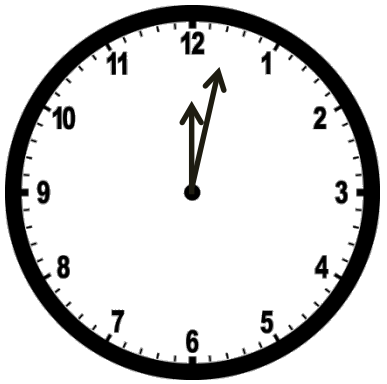
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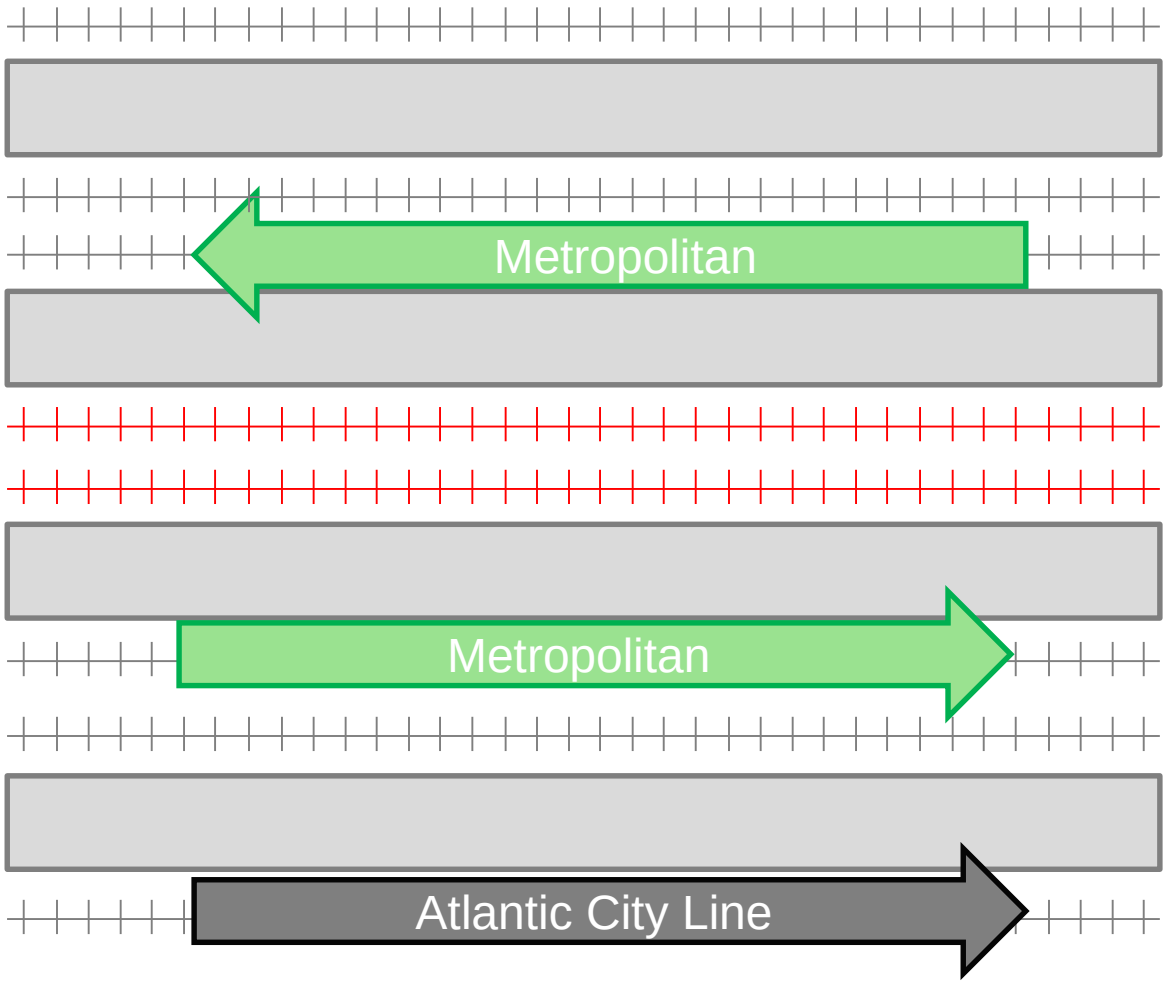
Metropolitan
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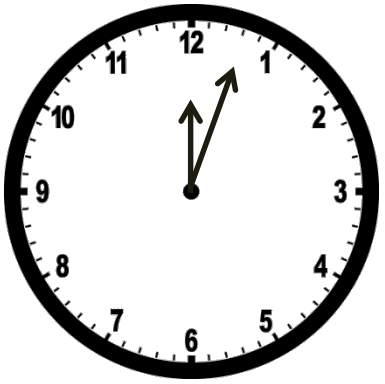
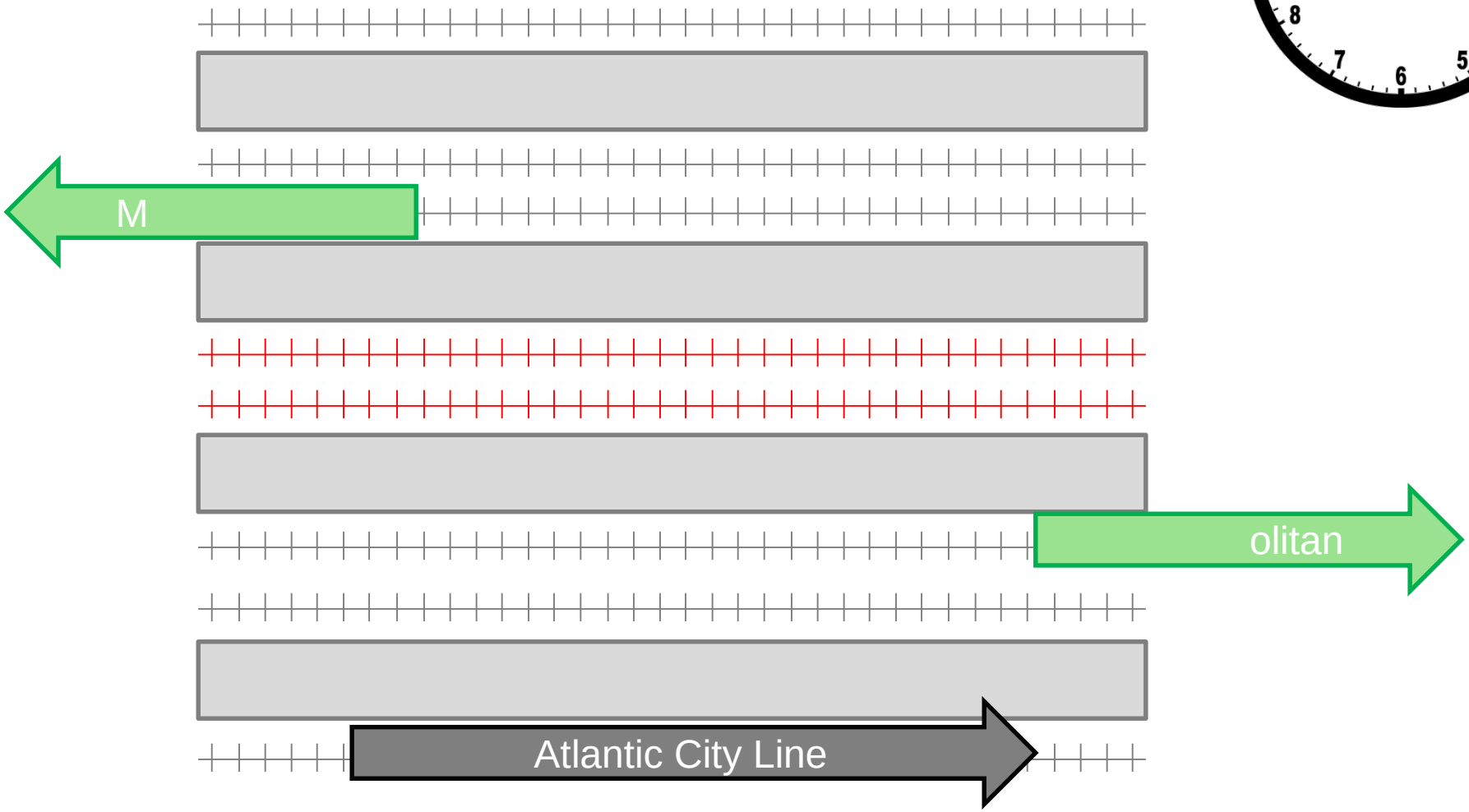
Pulse Hub





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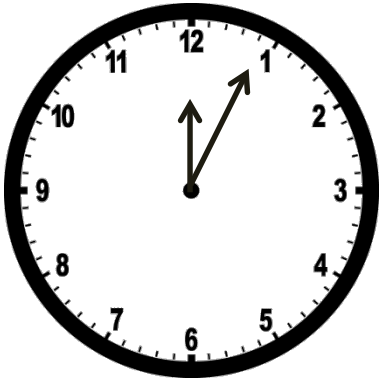

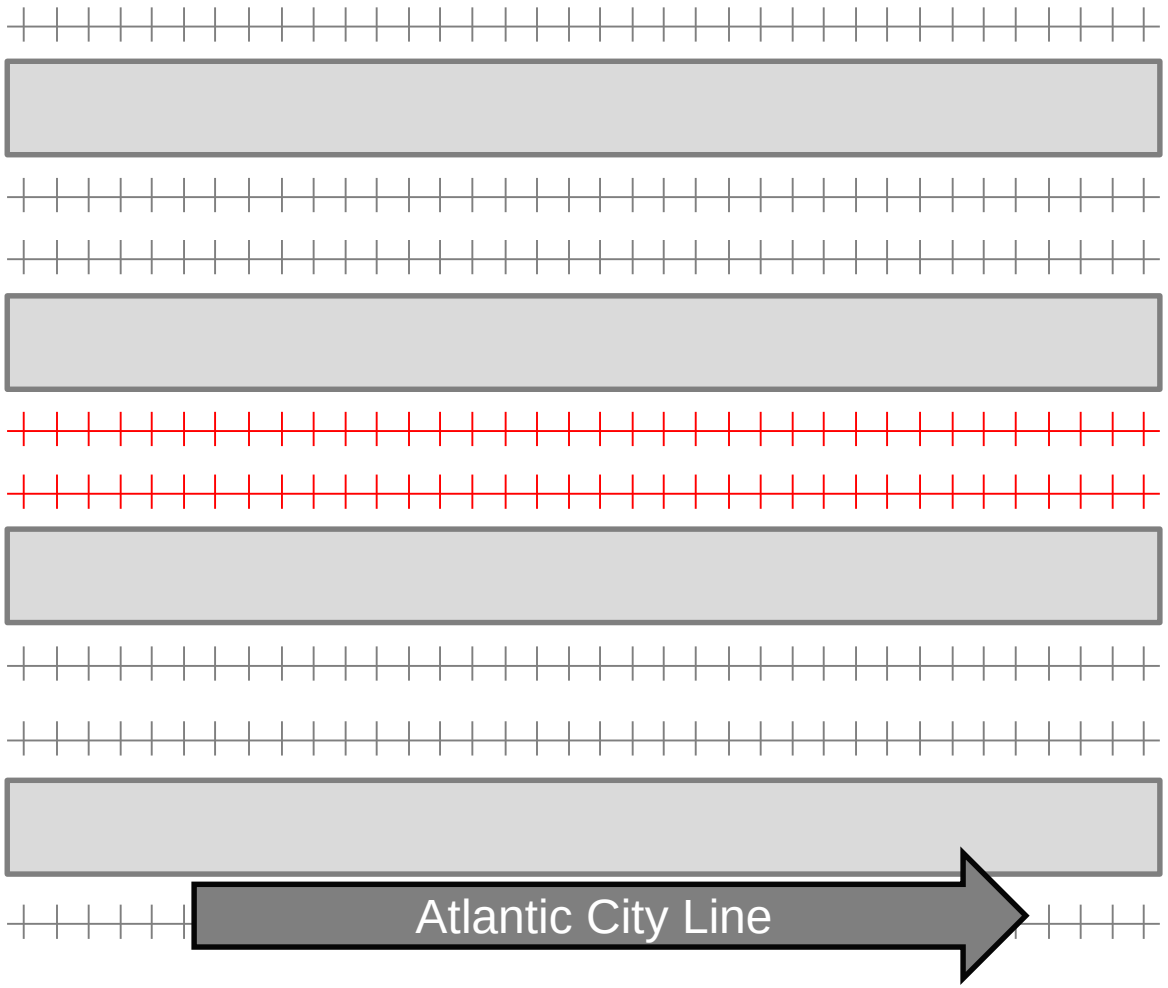

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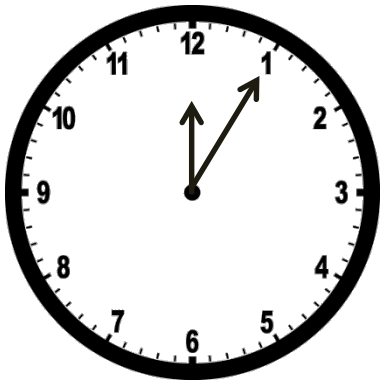

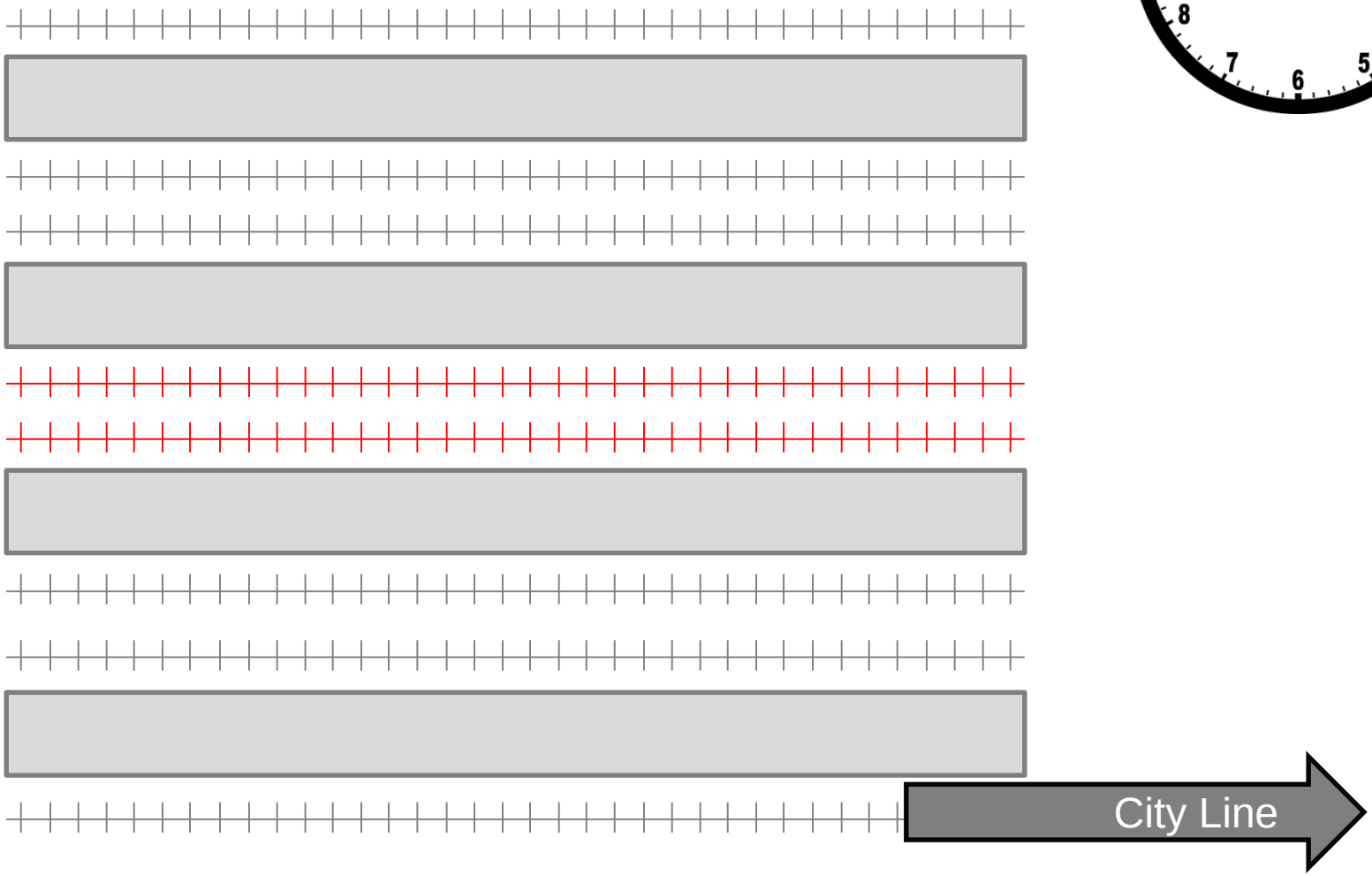

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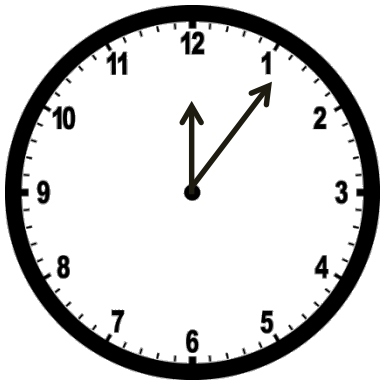
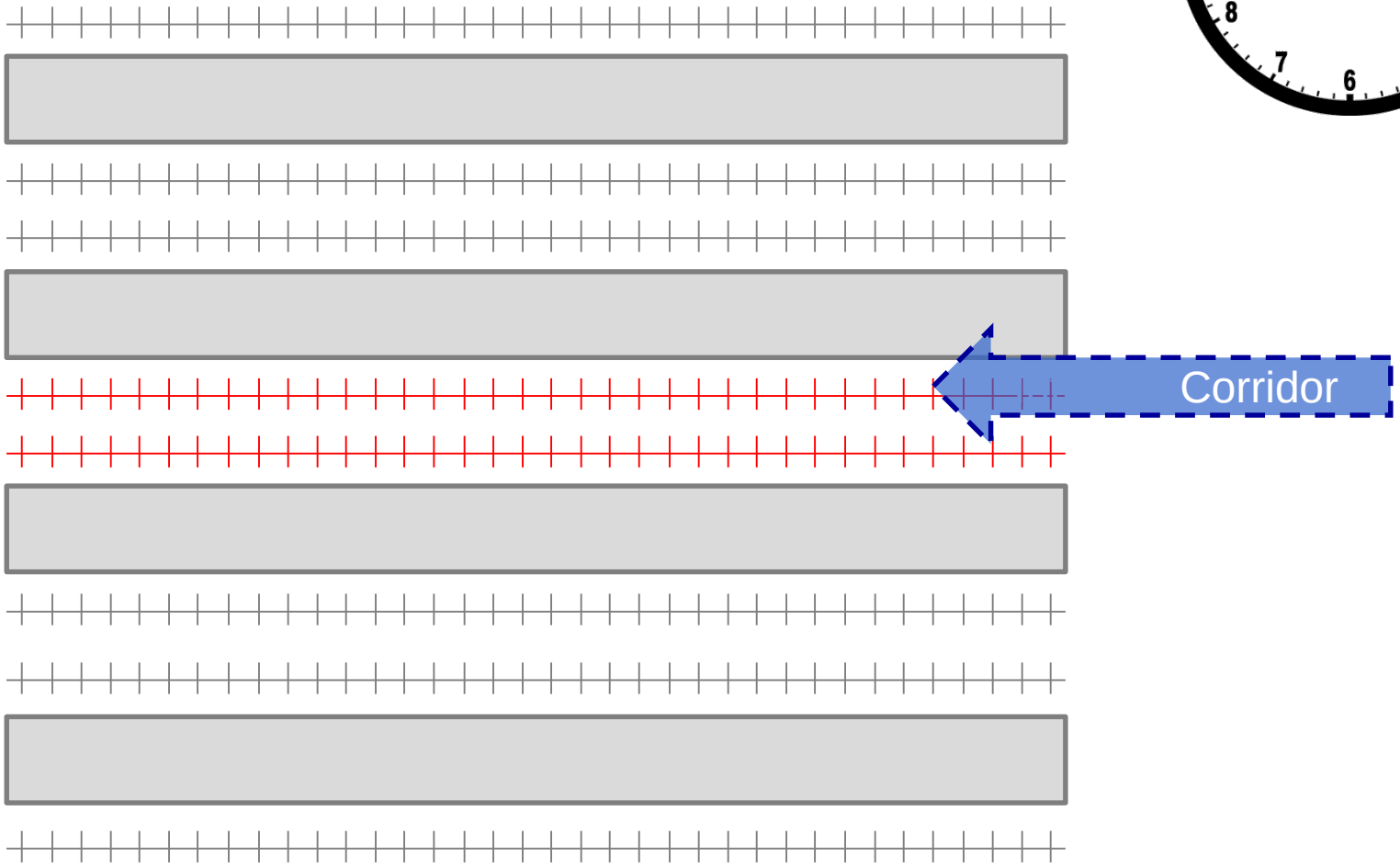
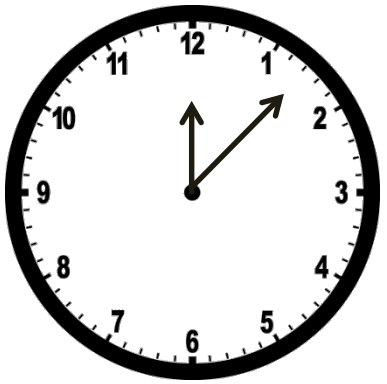
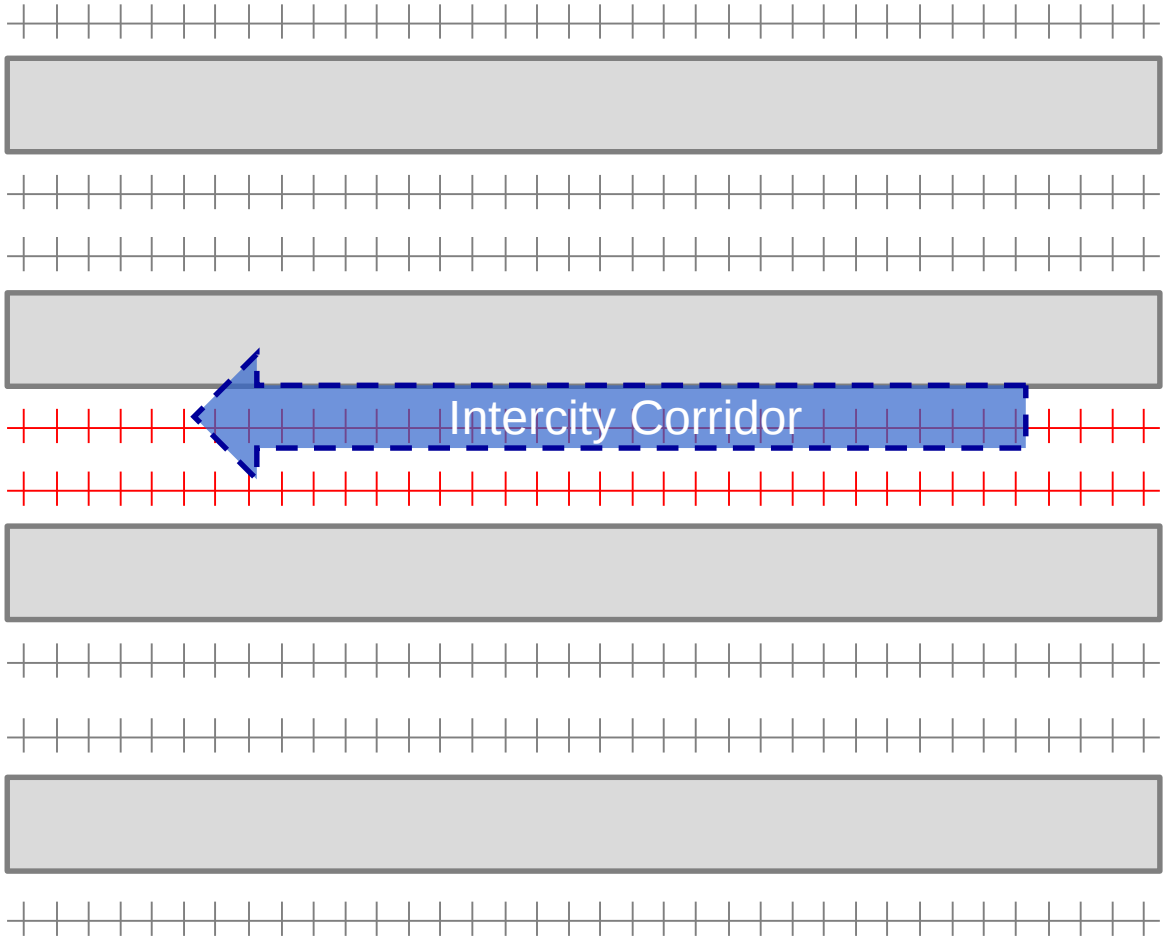




Pulse Hub





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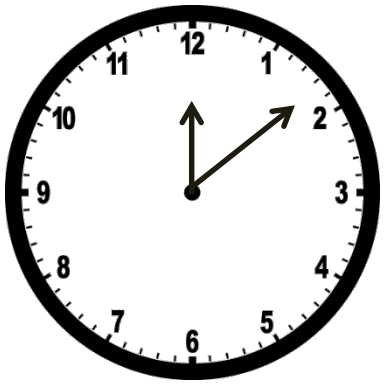

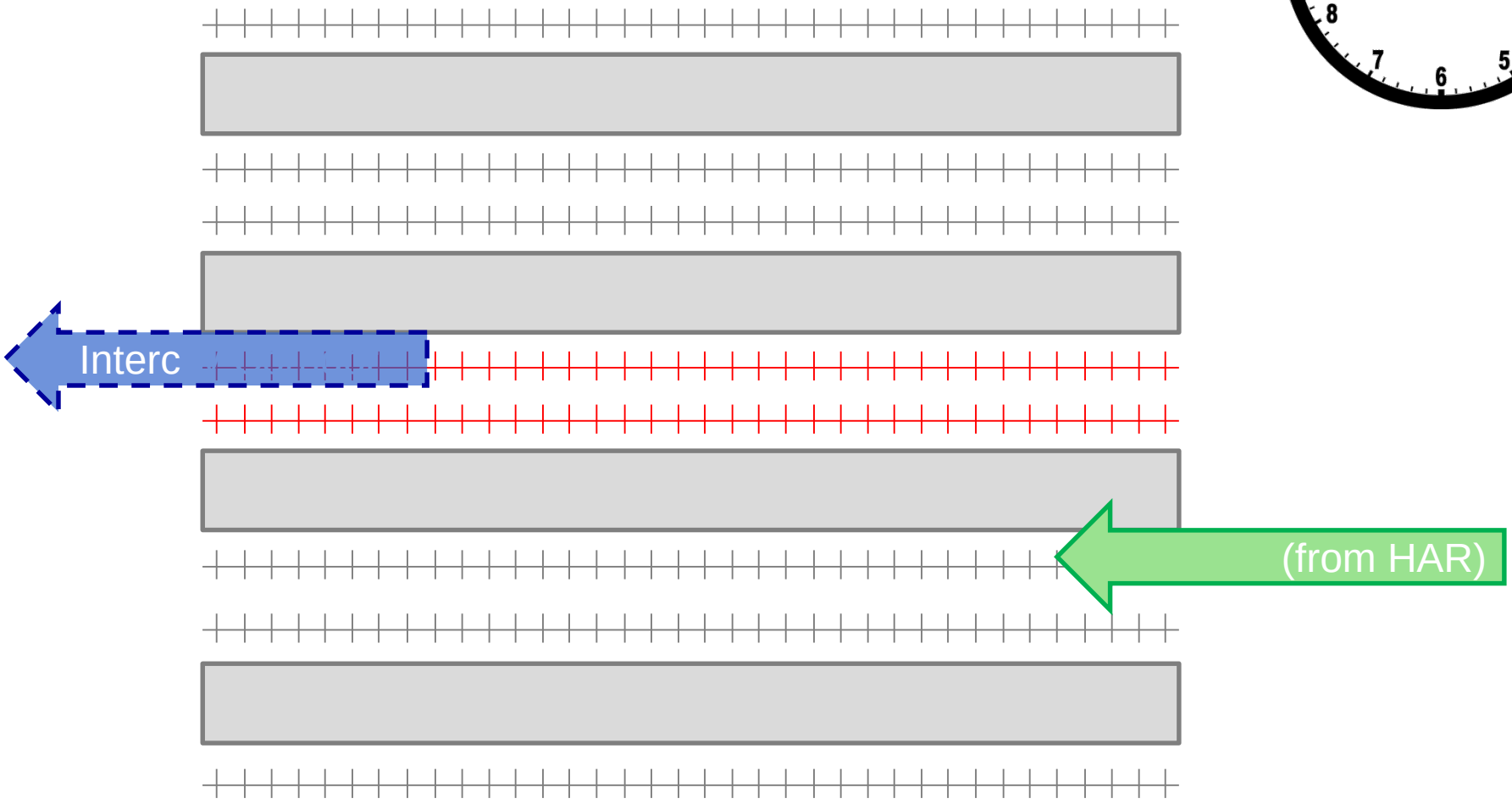

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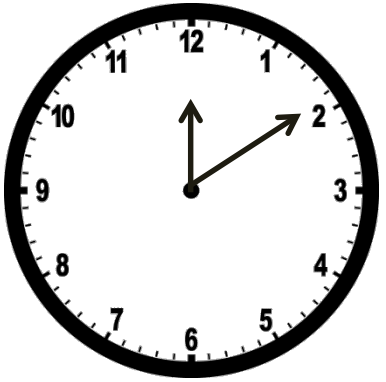

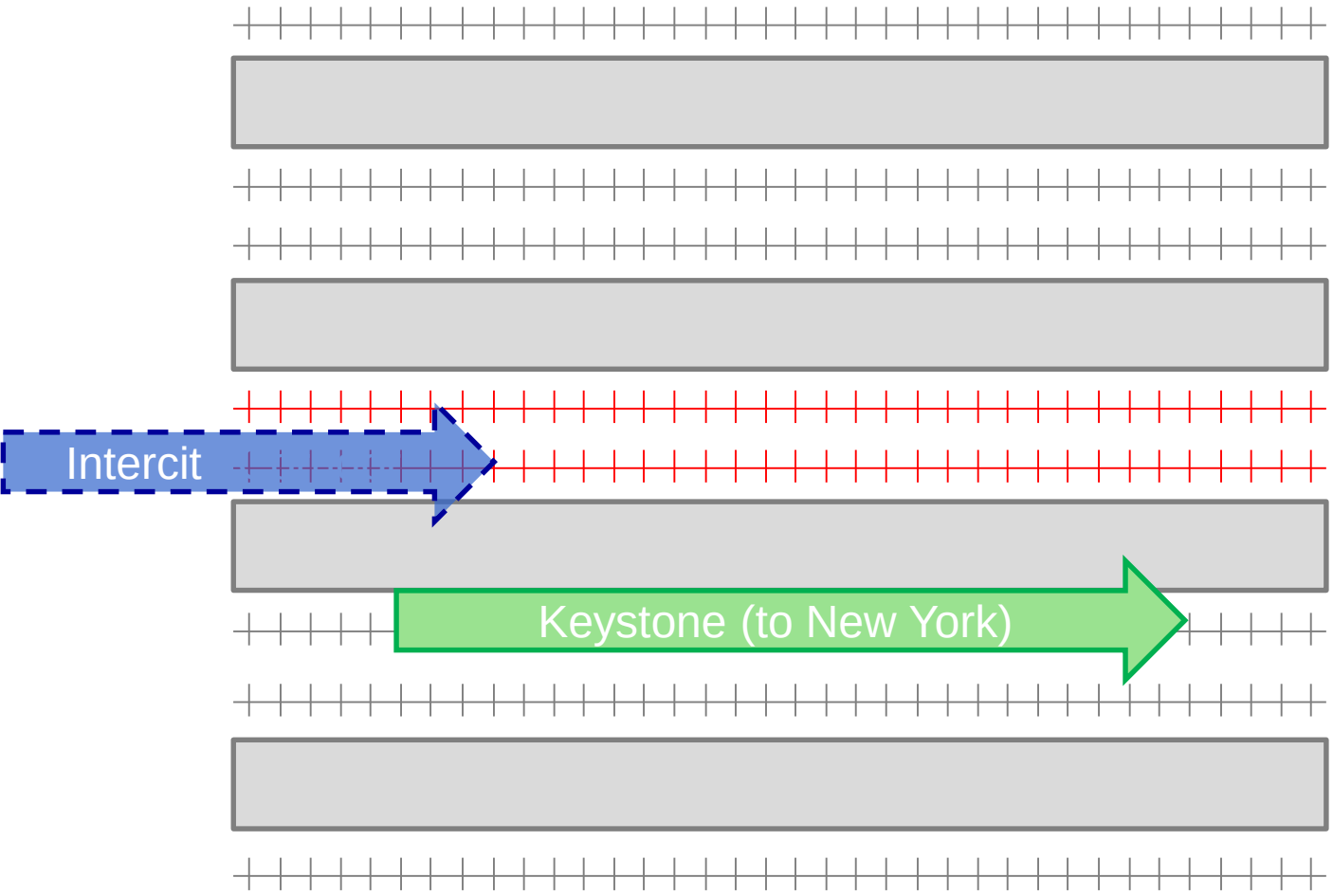

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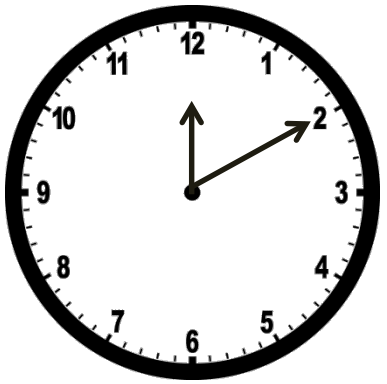

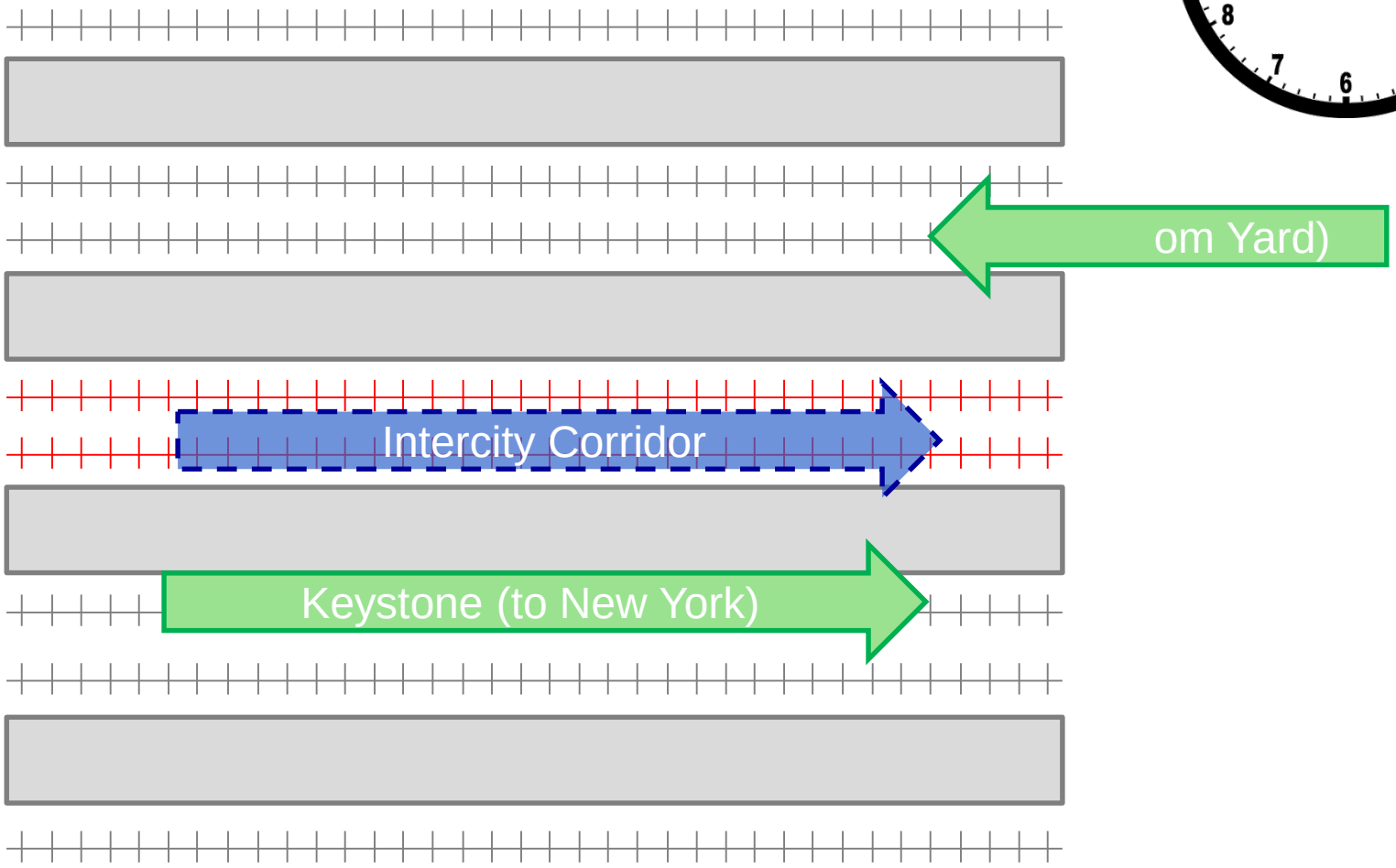

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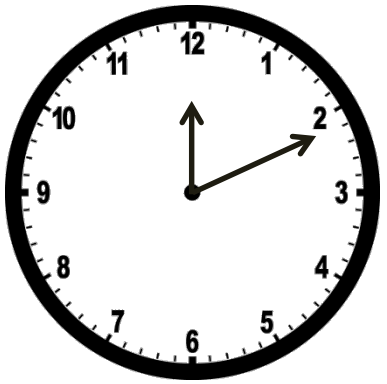

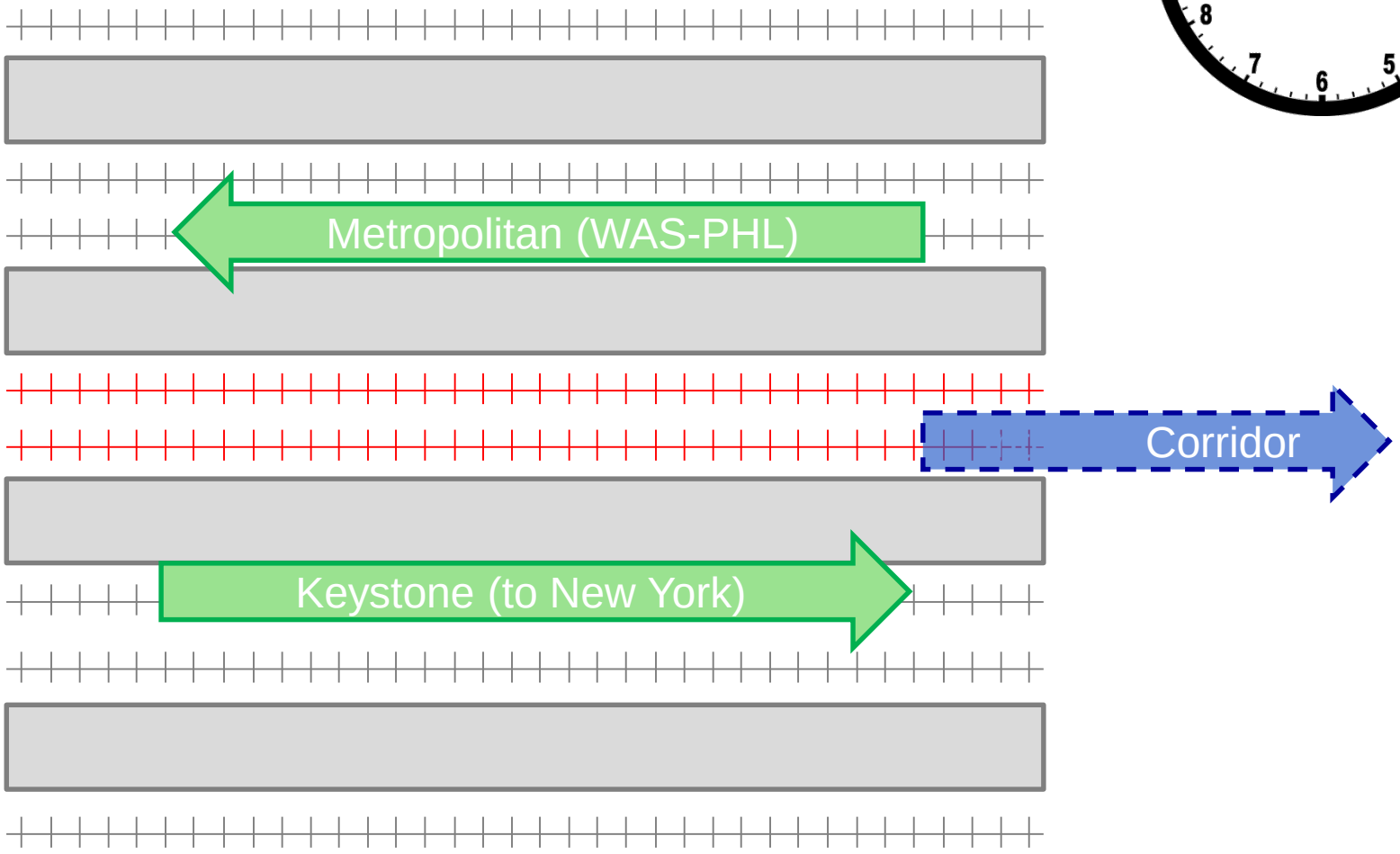

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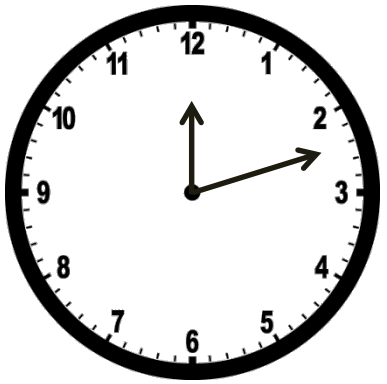

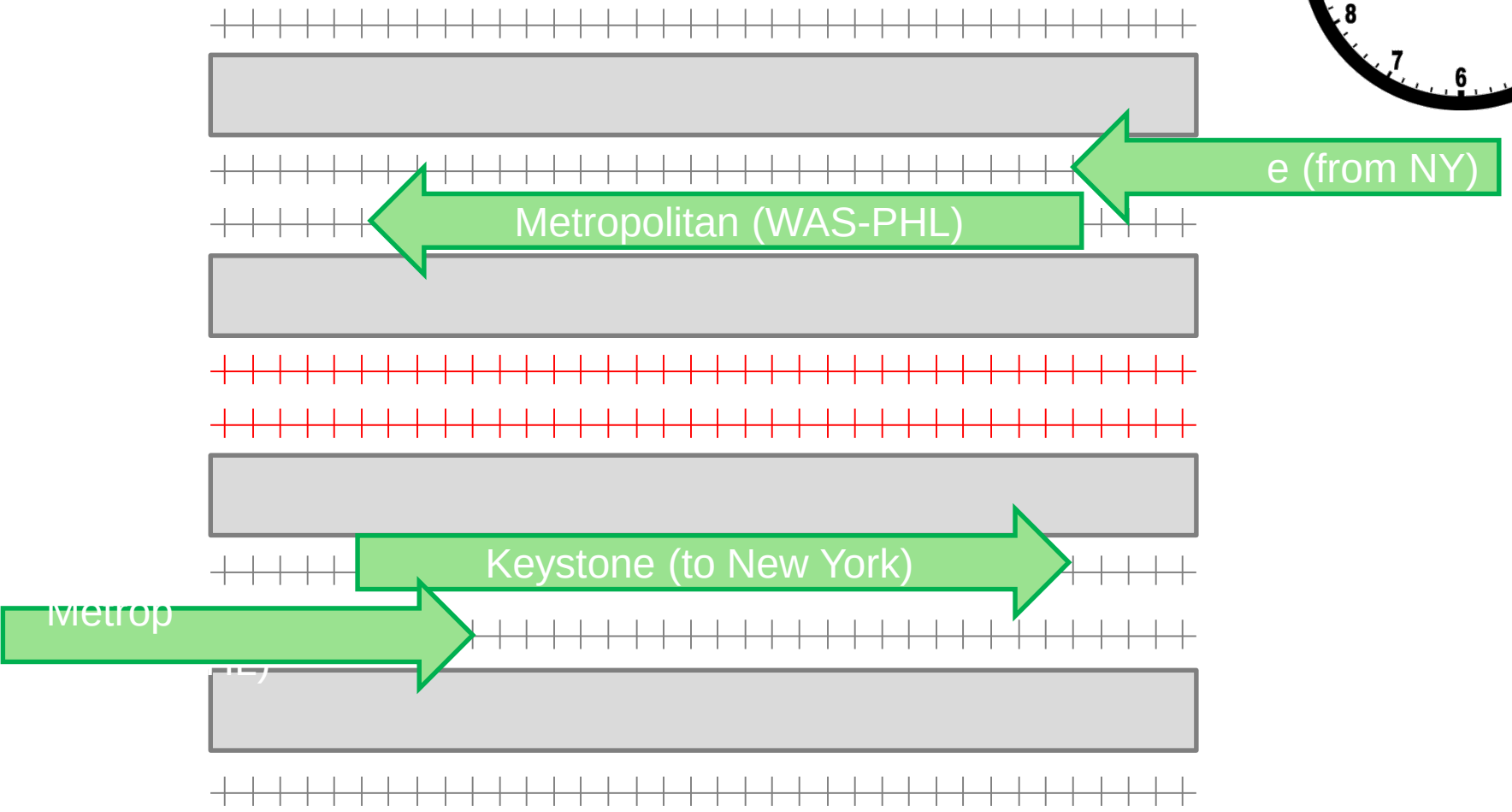

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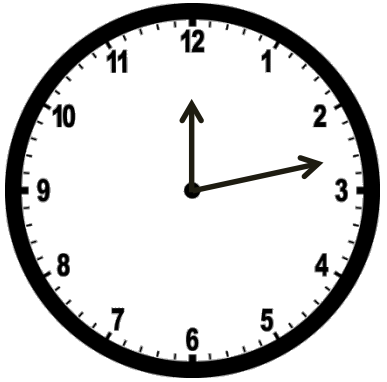
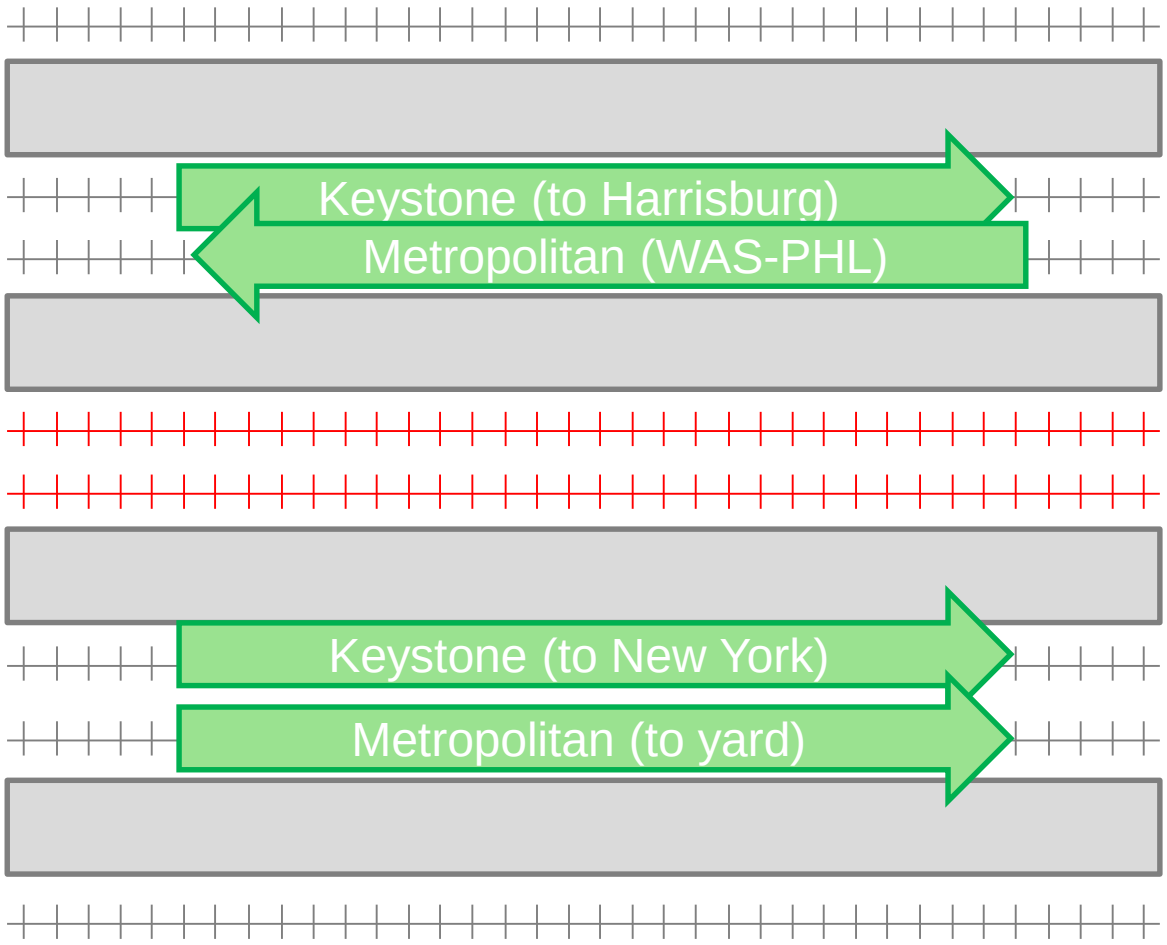
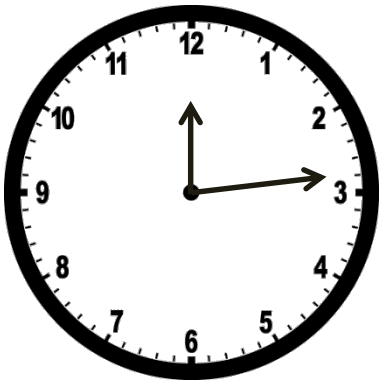
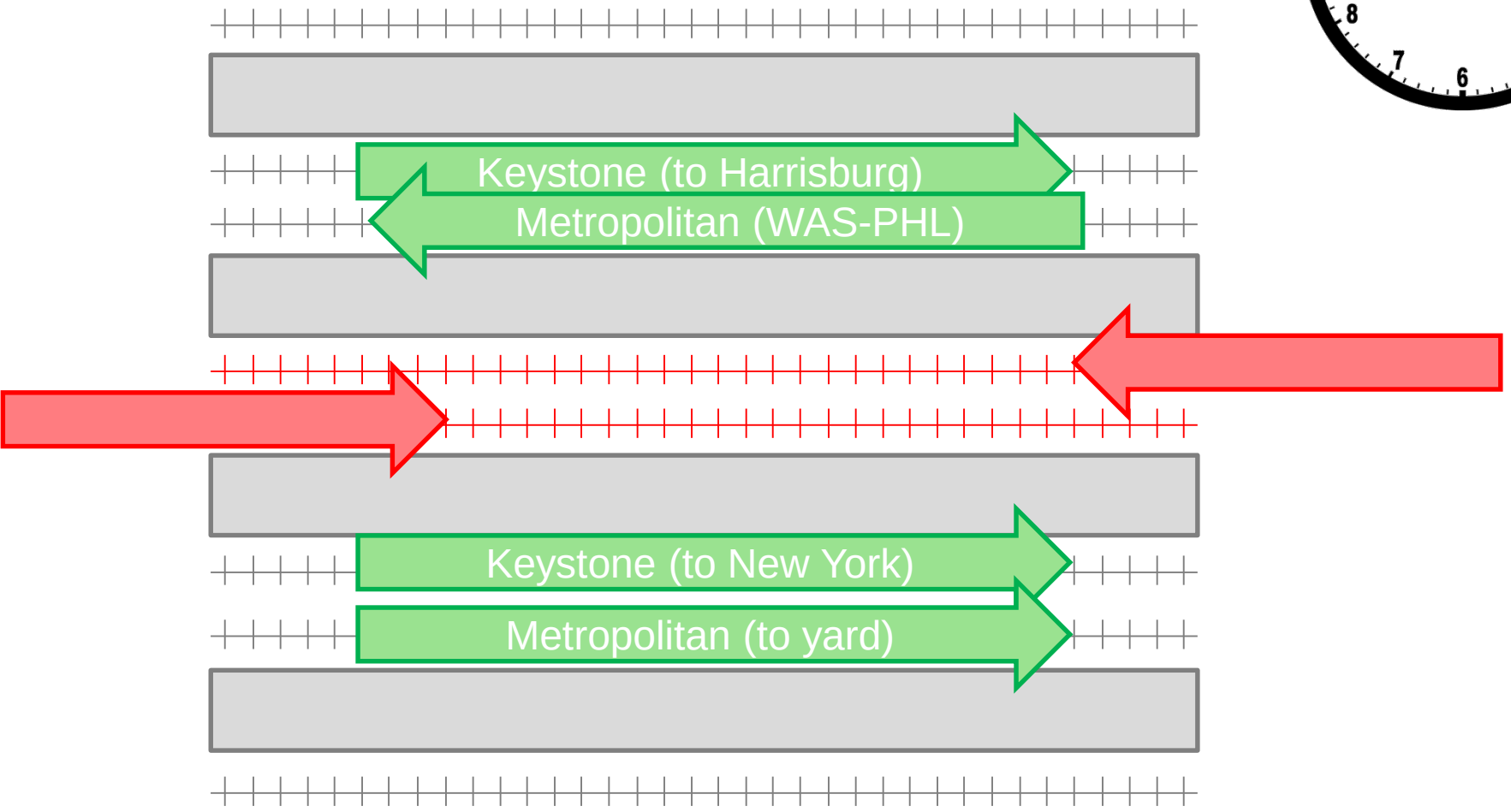



Keystone (to Harrisburg)
Metropolitan (WAS-PHL)
Keystone (to New York)
Metropolitan (to yard)

Pulse Hub

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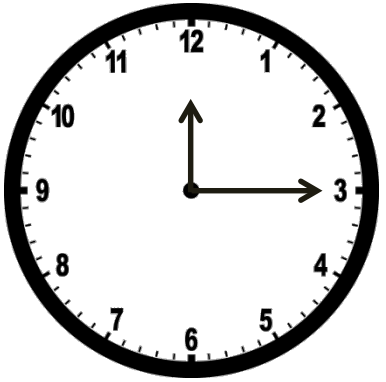
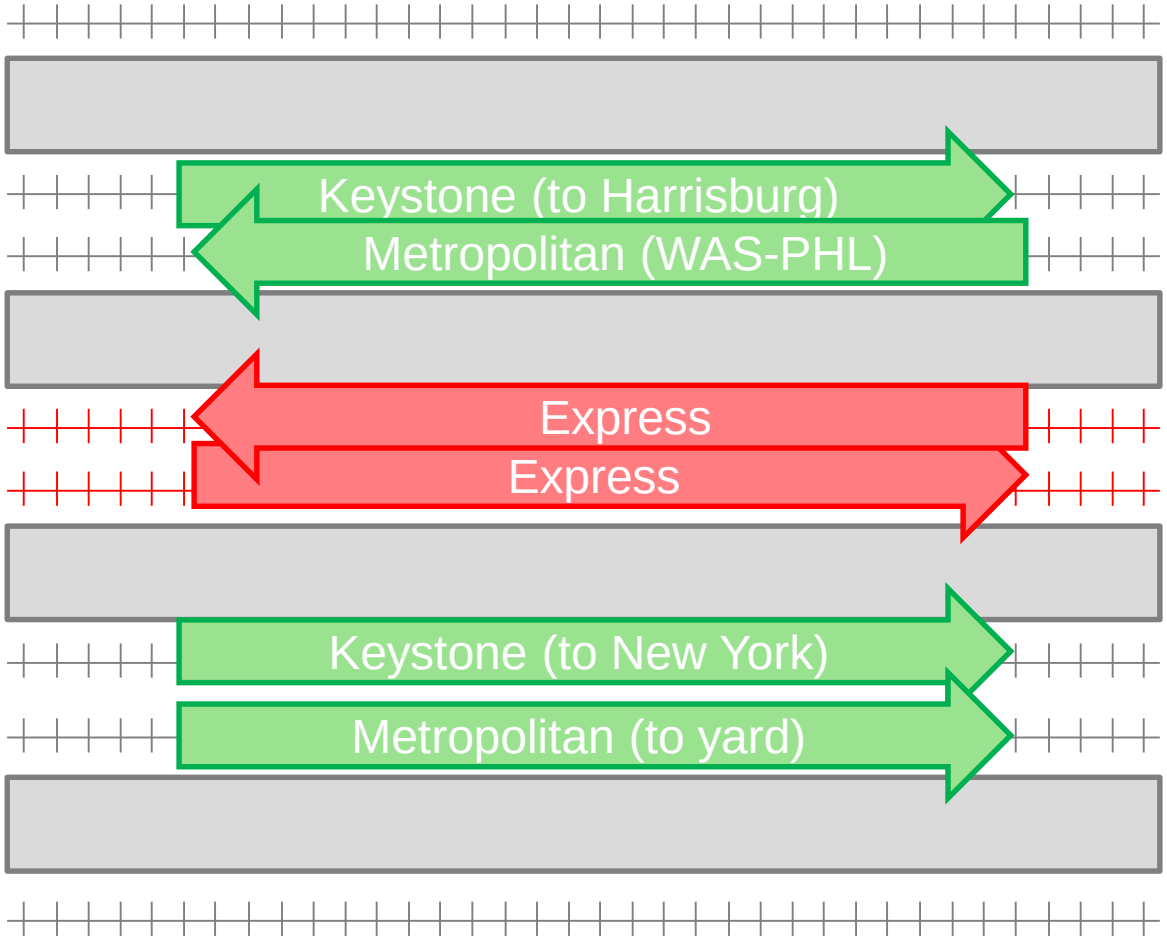
Metropolitan (WAS-PHL)
Keystone (to New York)
Metropolitan (to yard)

Pulse Hub




Keystone (to Harrisburg)
Metropolitan (WAS-PHL)
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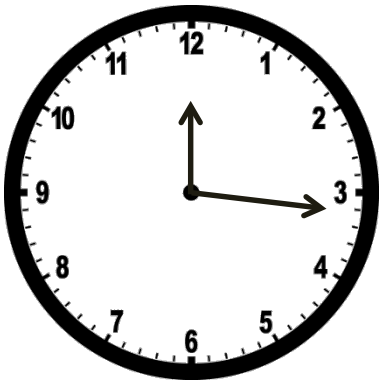
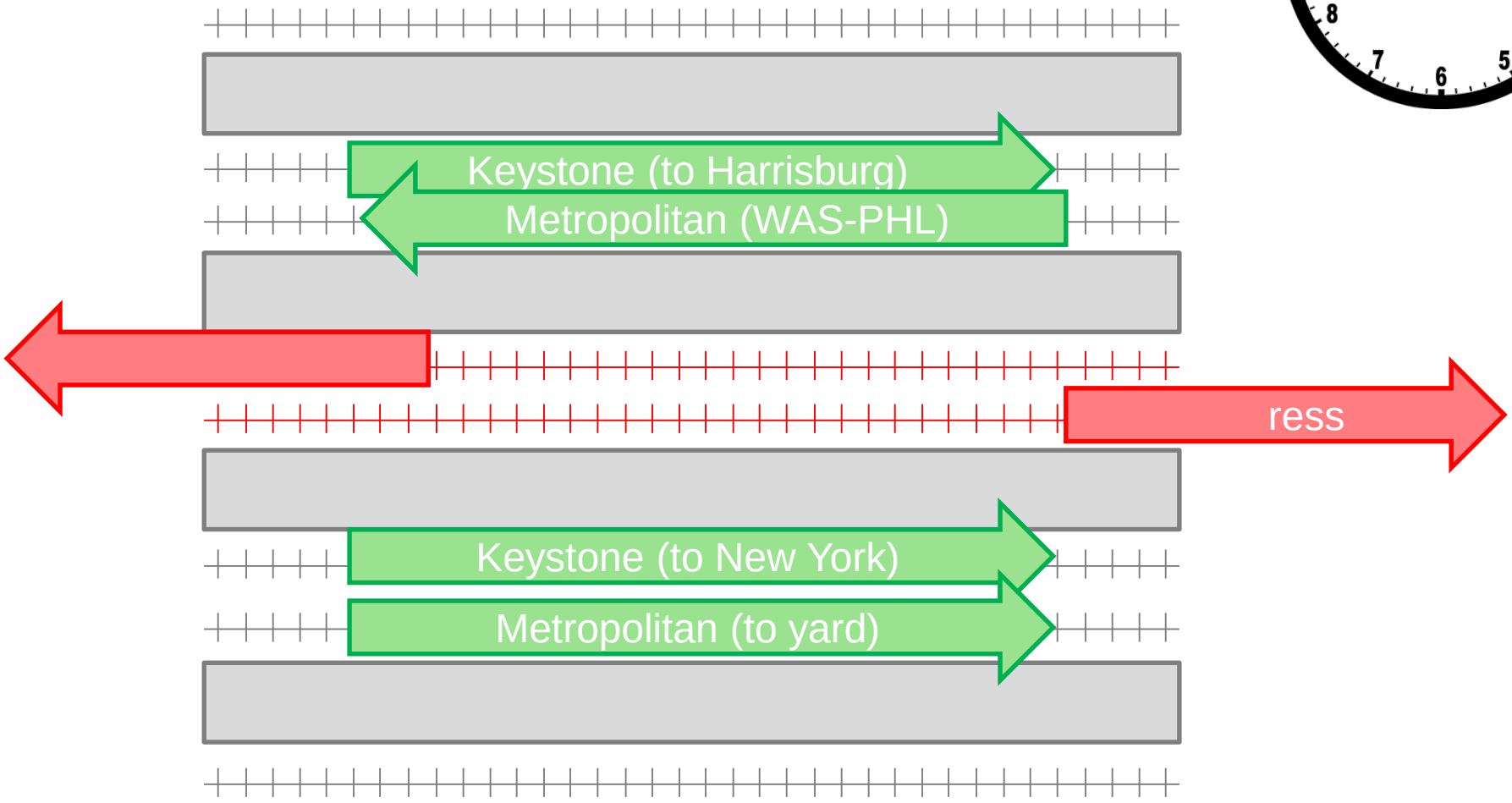
Keystone (to New York)
Metropolitan (to yard)

Pulse Hub




Keystone (to Harrisburg)
Metropolitan (WAS-PHL)
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Keystone (to New York)
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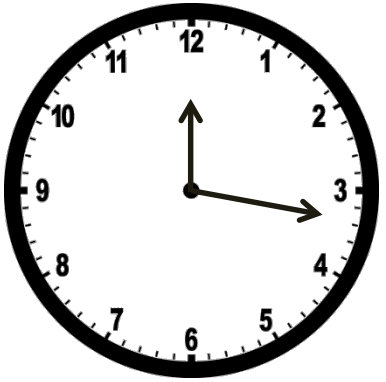
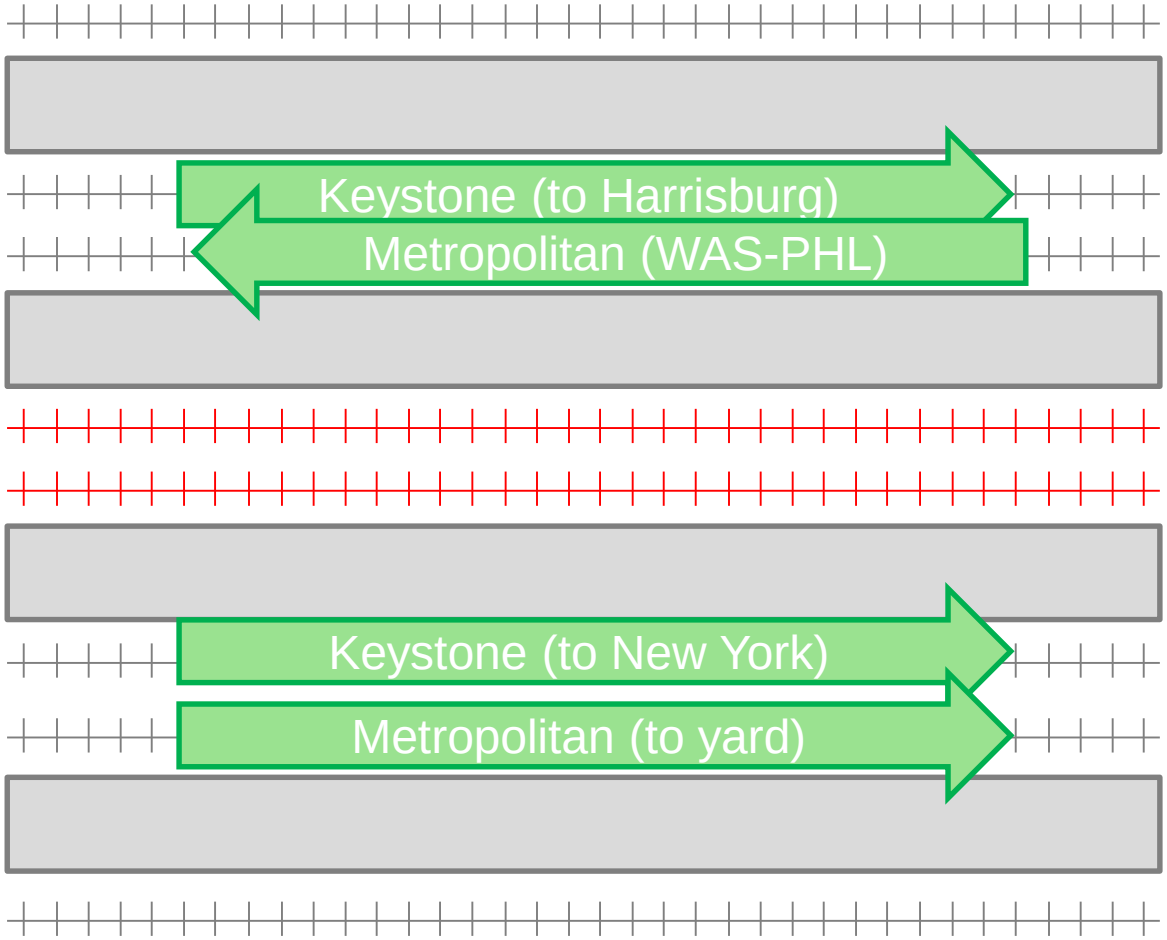
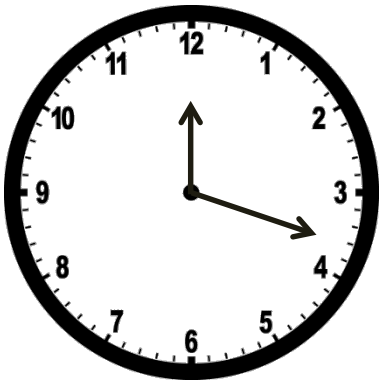



Keystone (to Harrisburg)
Metropolitan (WAS-PHL)
Keystone (to New York)
Metropolitan (to yard)

Pulse Hub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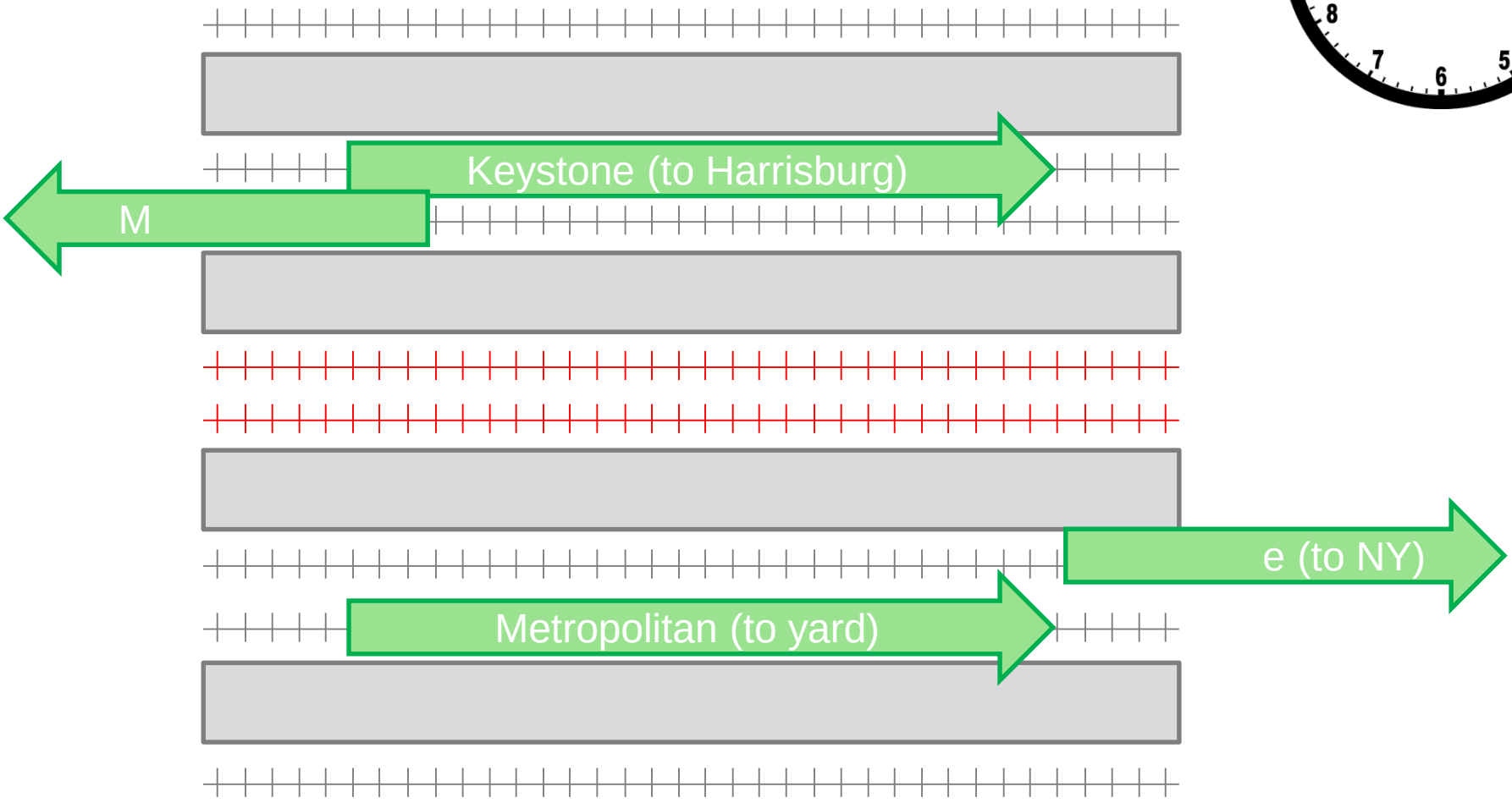
Keystone (to Harrisburg)
M
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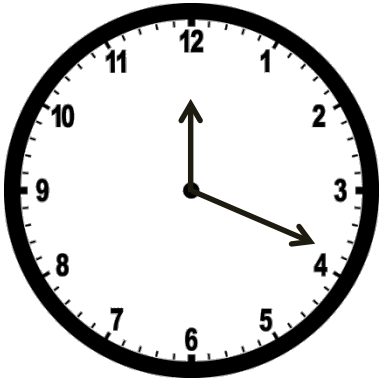
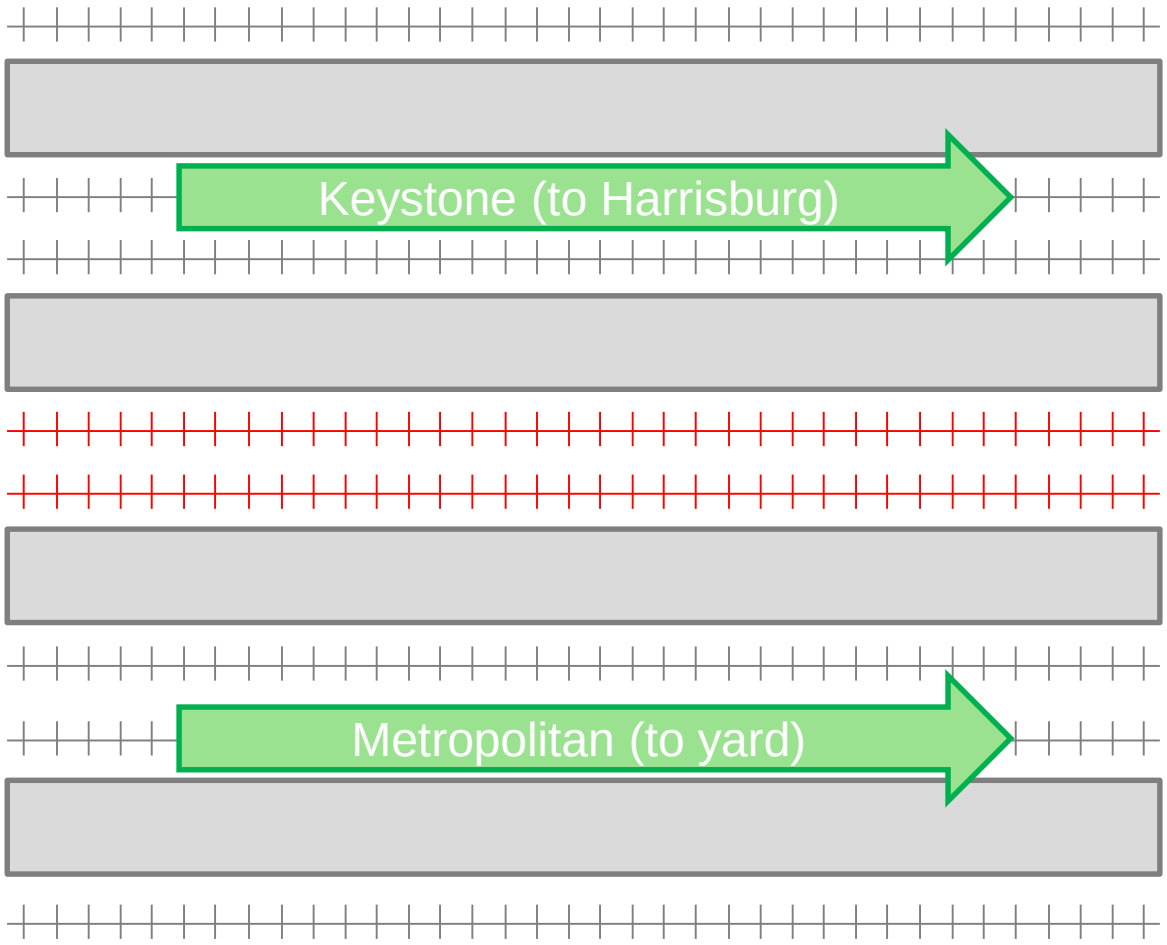
Metropolitan (to yard)

Pulse Hub





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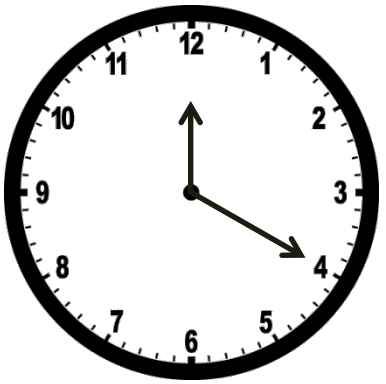

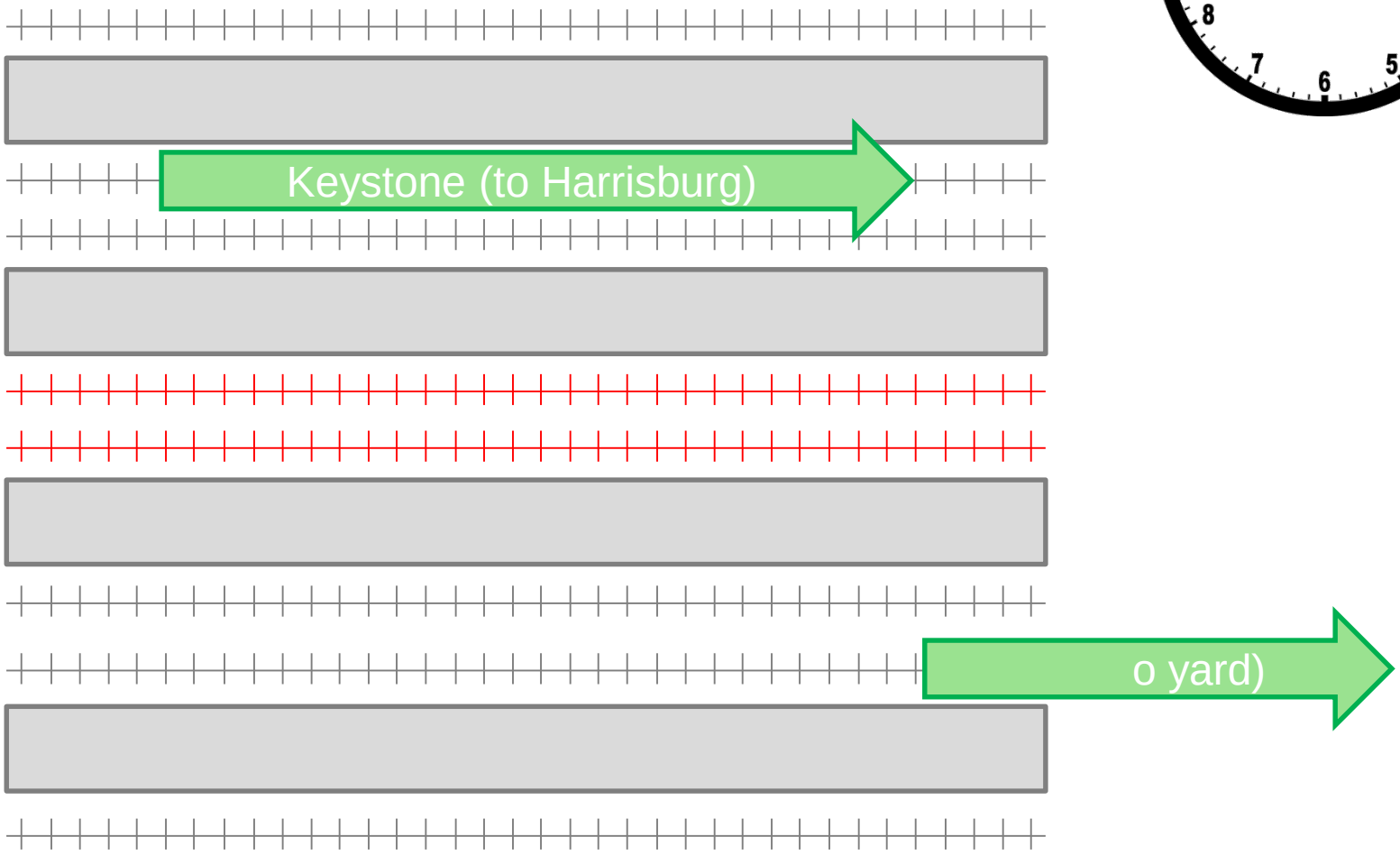

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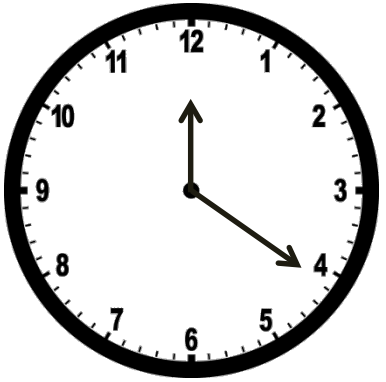

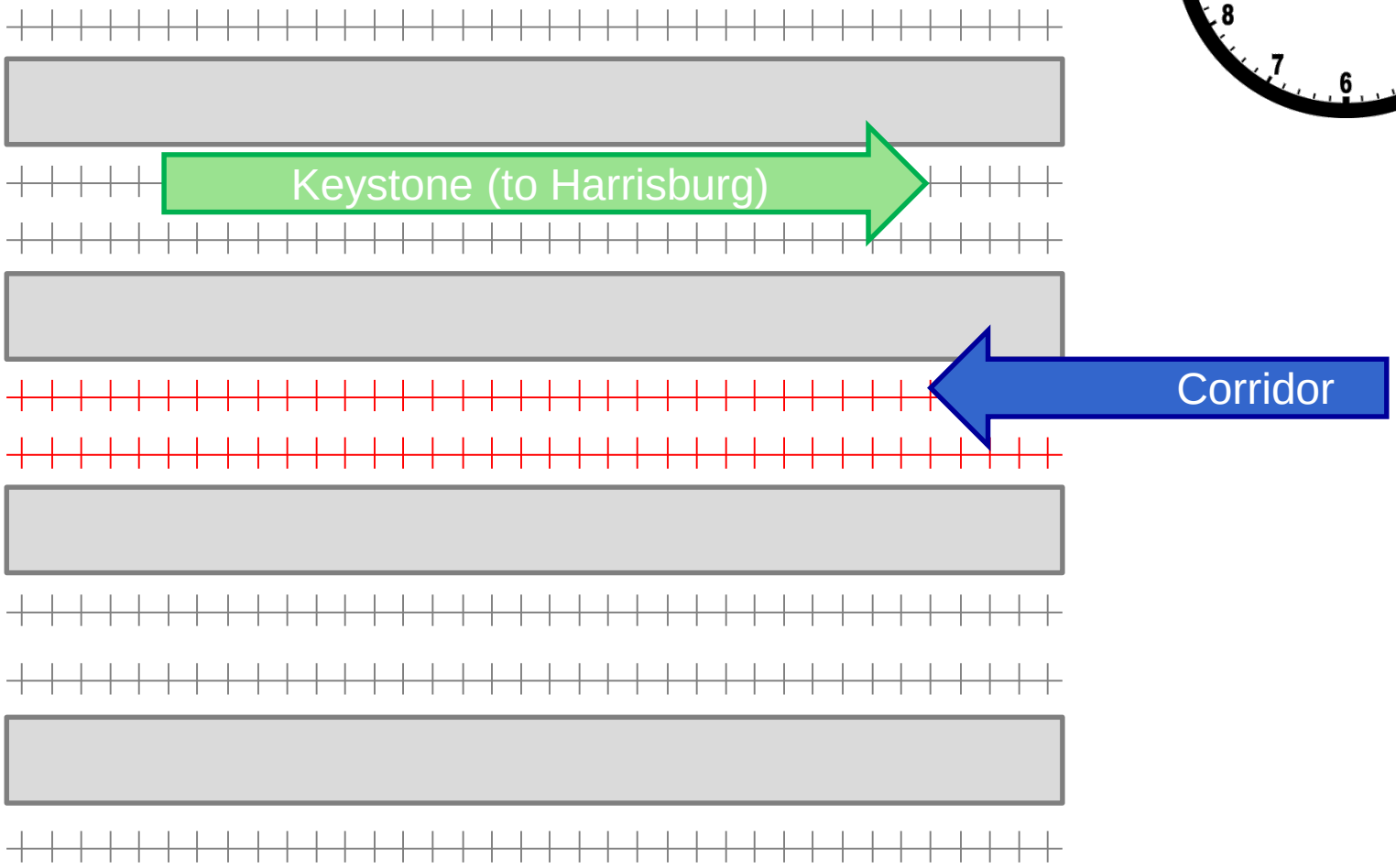

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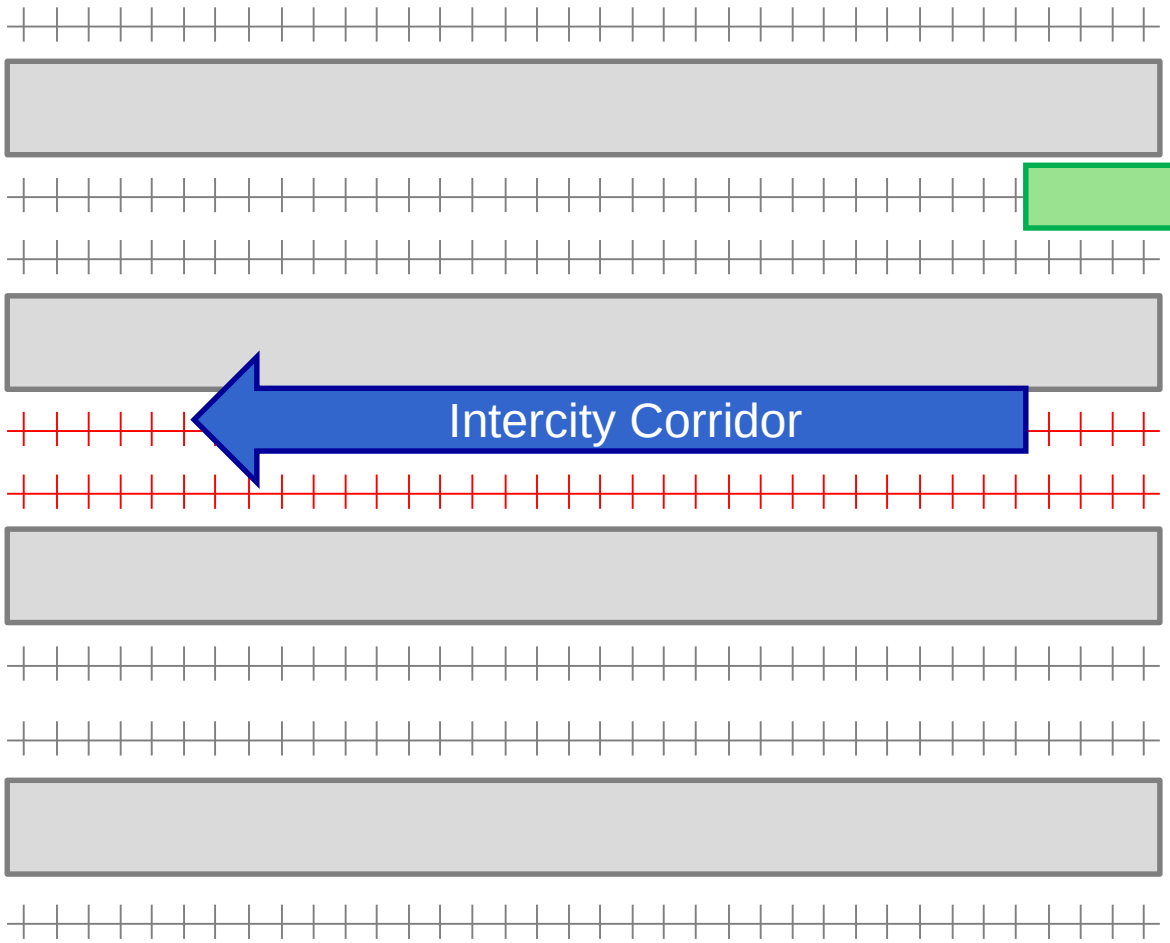

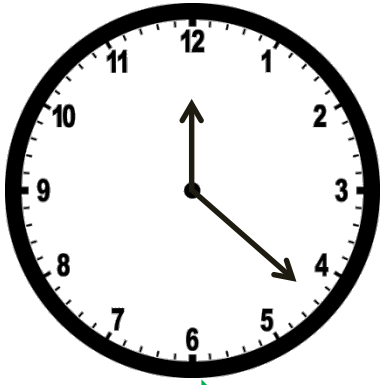

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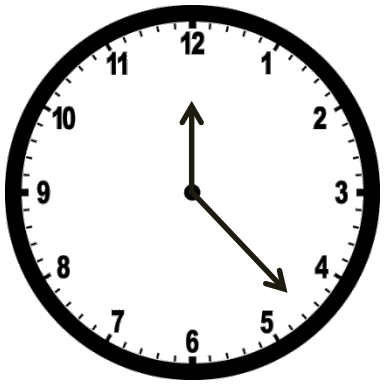

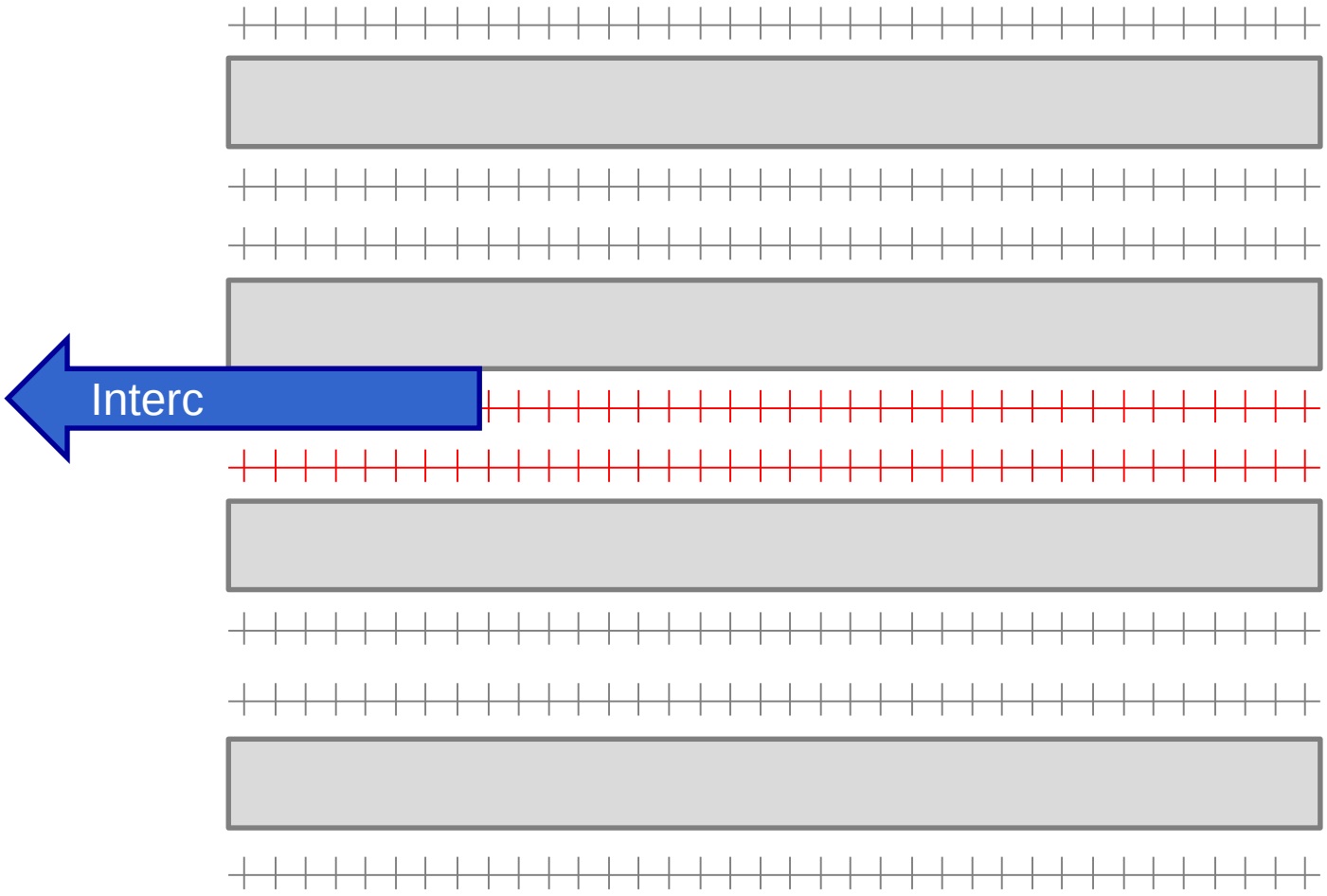

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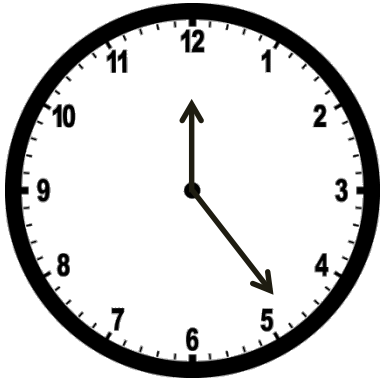

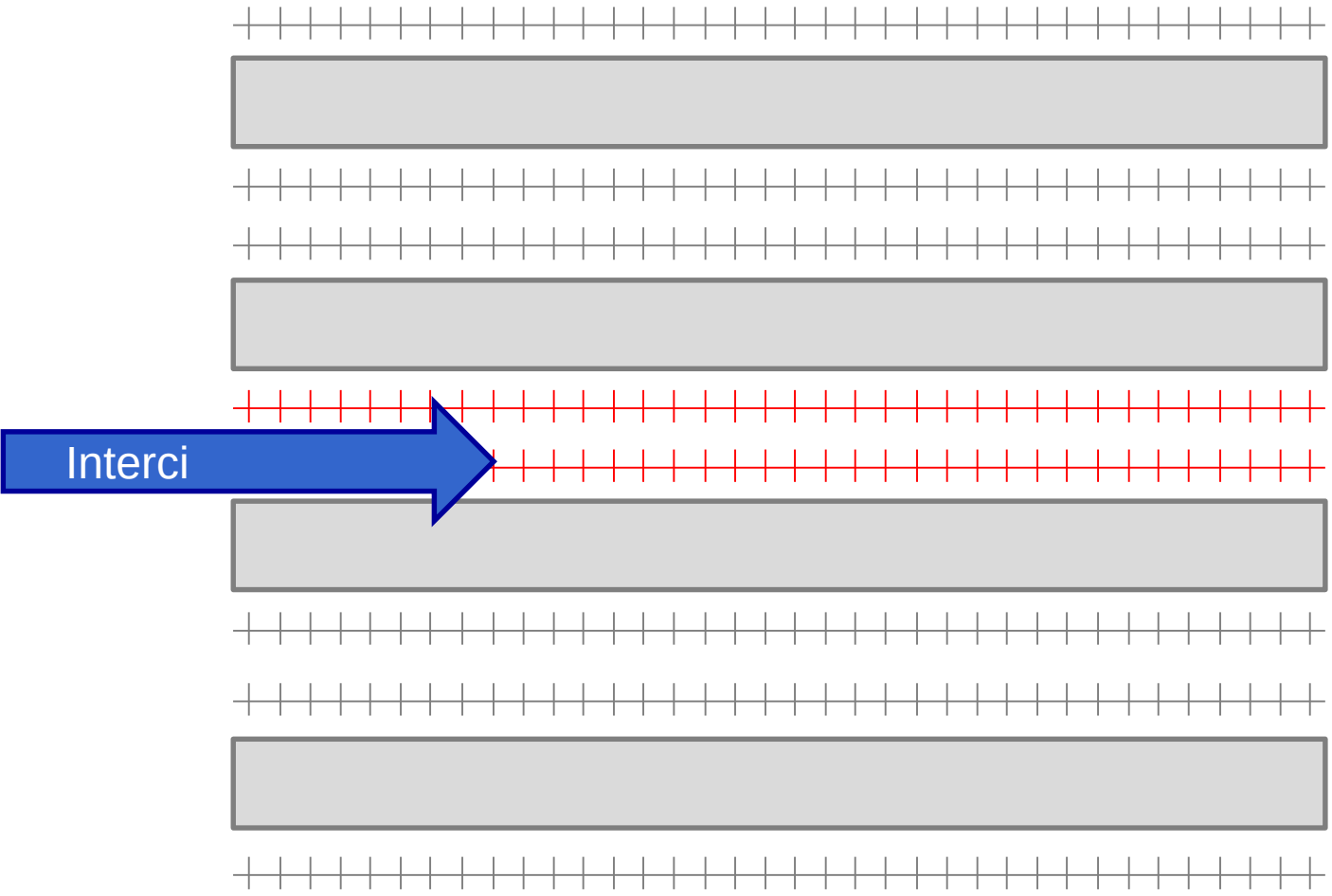

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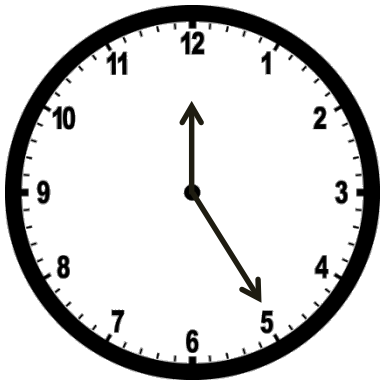

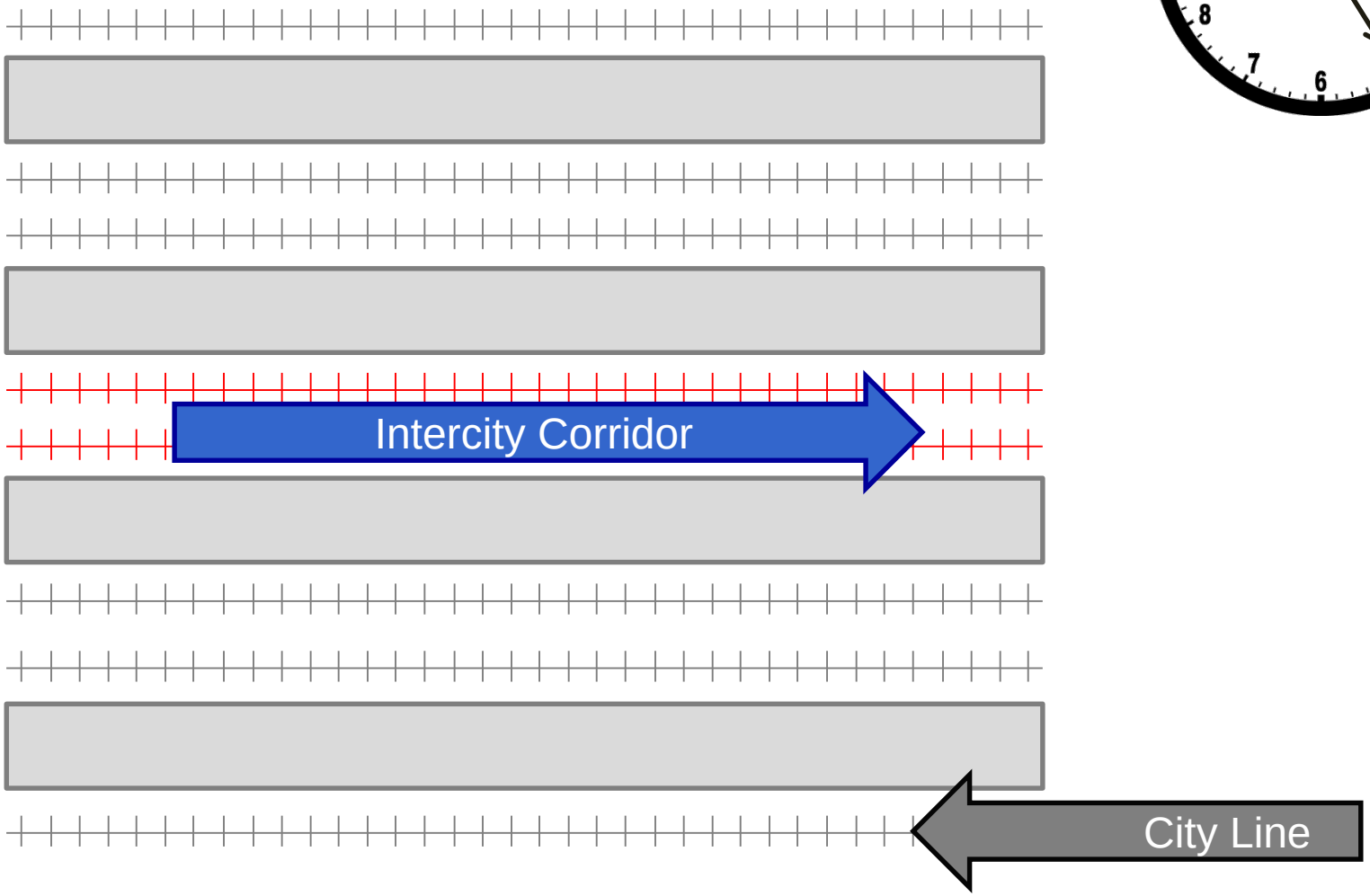

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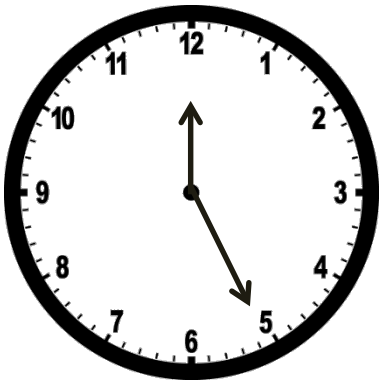

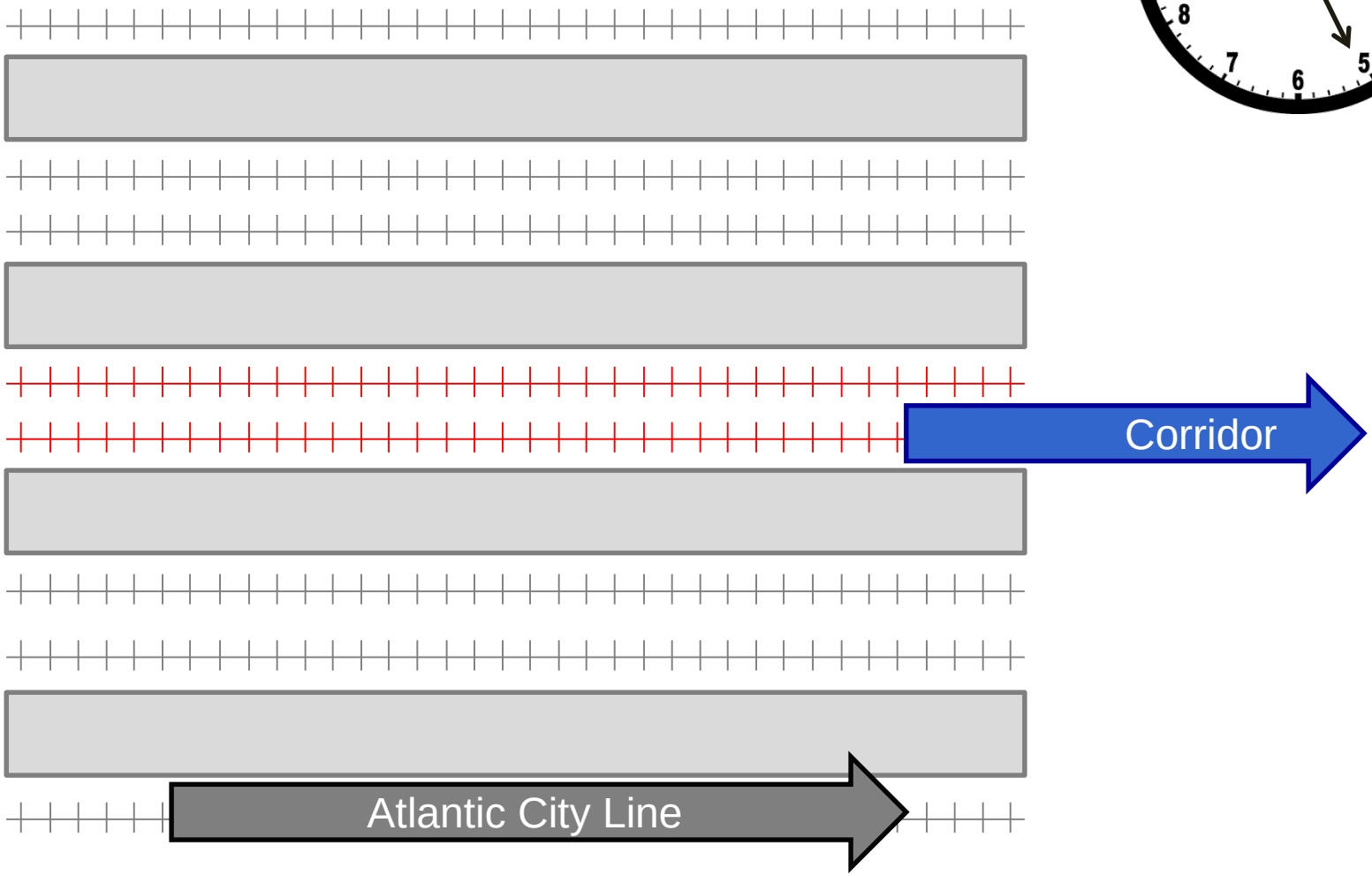

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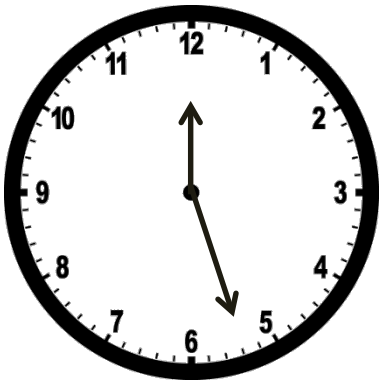

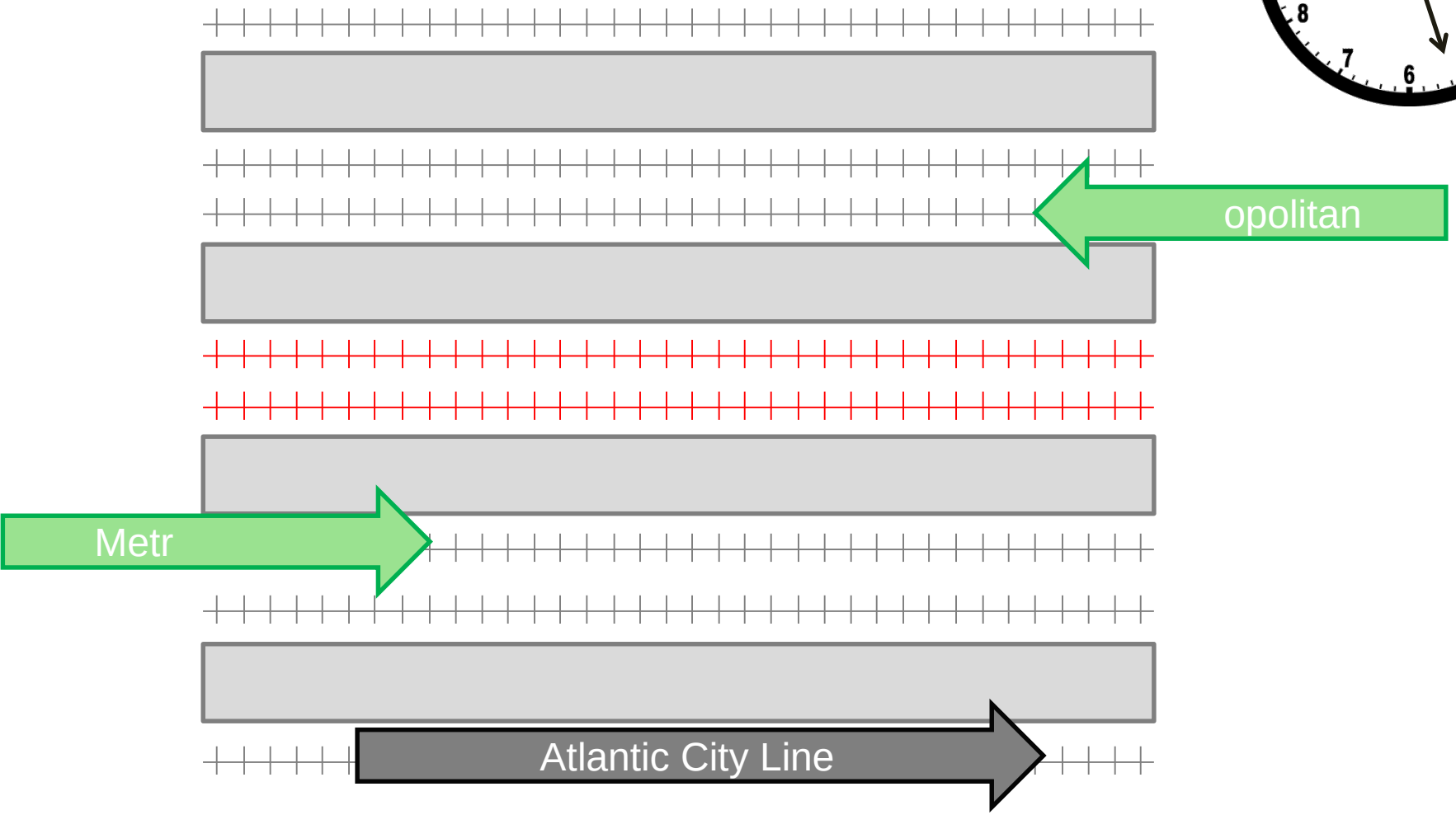

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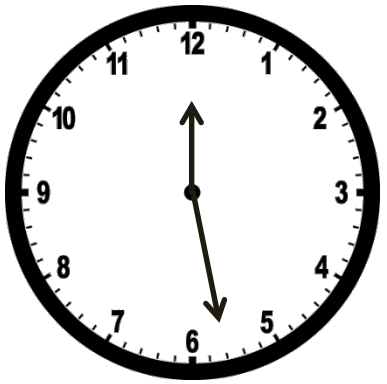

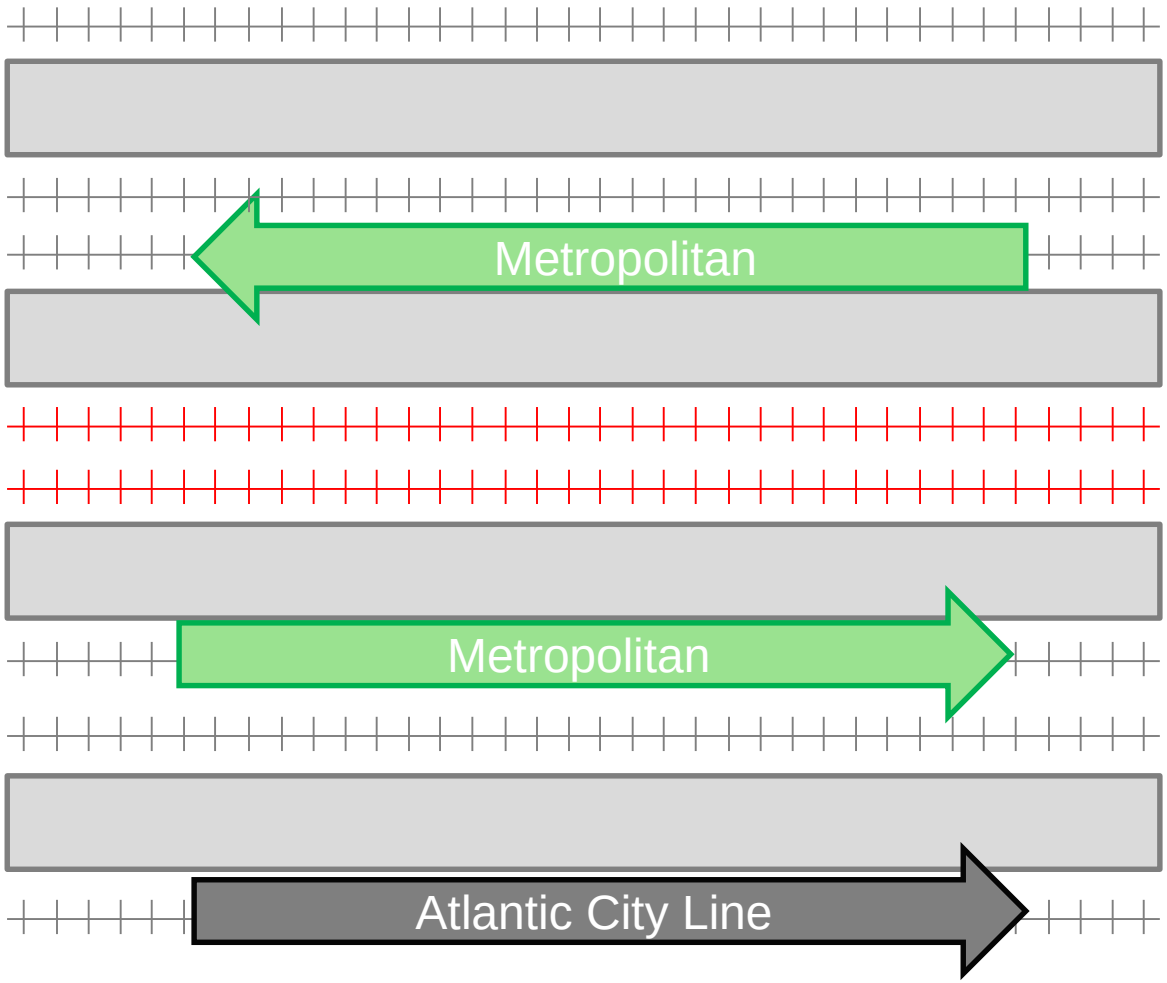

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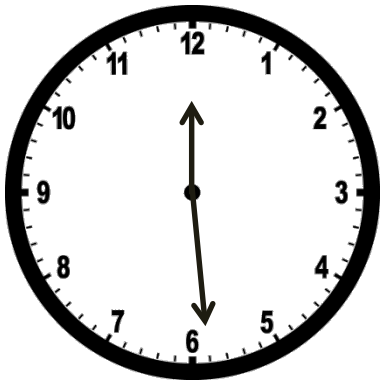
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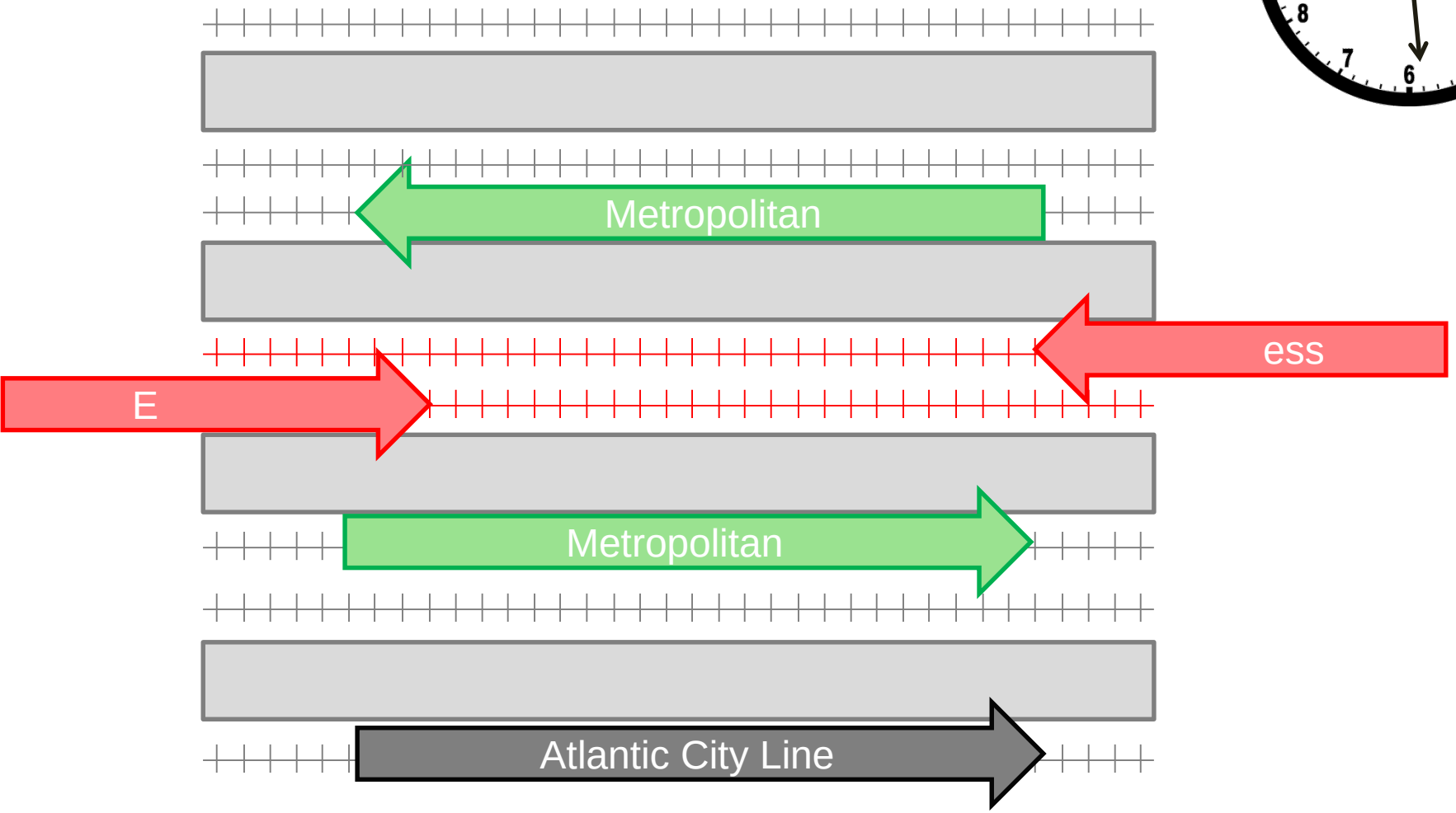
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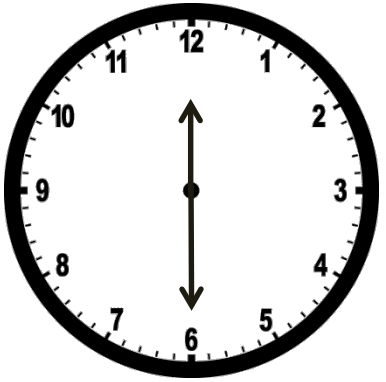
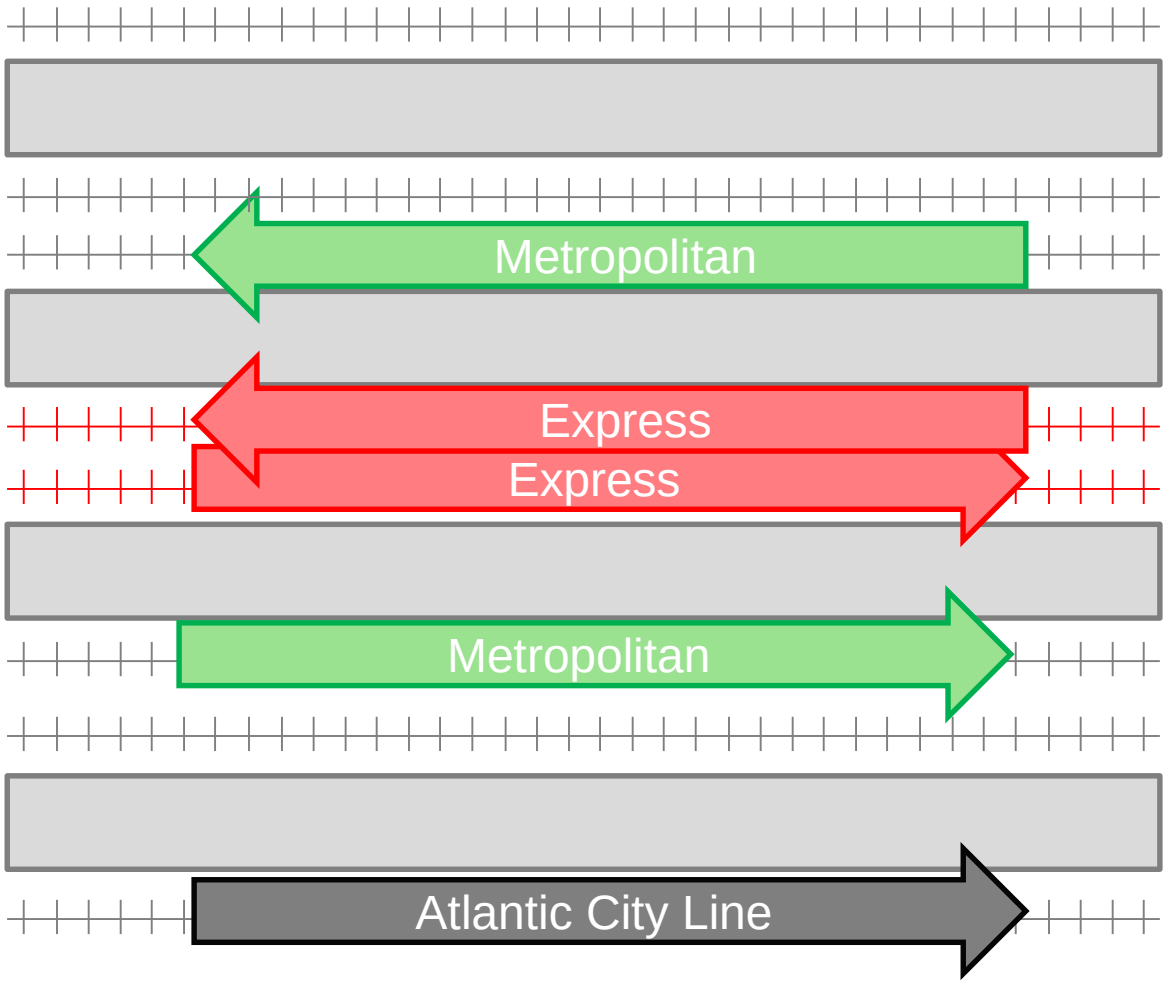
Metropolitan
Atlantic City Line

Pulse Hub




Metropolitan
Express
Express
Metropolitan
Atlantic City Line

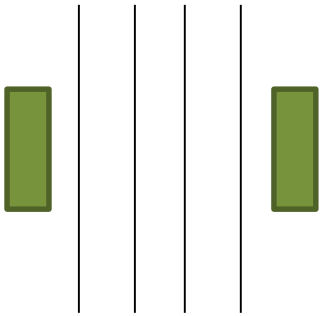
Infrastructure Specification

Examples:

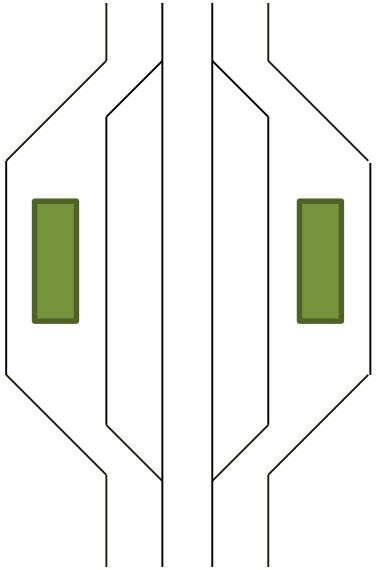
- Number of mainline tracks to support service
- Type of junctions
- Station Configurations
- Rolling stock requirements

How service drives infrastructure:

Existing Configuration



Future Configuration



Name:	Yoav Hagler
Title:	Sr. Technical Specialist – Rail Service Planning
Email:	haglery@pbworld.com
Phone:	973.565.4835
Website:	www.pbworld.com