LOWER MONTAUK BRANCH RAIL STUDY

Public Meeting
May 16, 2017
LOWER MONTAUK BRANCH RAIL STUDY

- 8.5 miles long
- Runs between LIRR stations:
  - Long Island City
  - Jamaica
- Now used for rail freight only
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Corridor Overview

• Was original LIRR “Mainline”
• Had 6 stations west of Jamaica
• Service to stations between Jamaica and LI City dropped in 1998
• All service dropped in 2012
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Introduction

• Sponsored by Council Member Elizabeth Crowley
• Goal: Determine feasibility of re-introducing passenger rail service on Lower Montauk Branch while accommodating rail freight
• This study: initial feasibility/“test of concept”
• Future studies would be necessary to advance concept:
  • Environmental Review
  • Detailed Rail Planning and Engineering Studies
  • Funding and Financing Assessments
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Planning Process

• **Corridor Background**: Lower Montauk Branch characteristics, demographic profiles of the surrounding areas, etc.

• **Develop and Evaluate Passenger Service Concepts**:
  
  • Rail modes • *Potential ridership*
  
  • Station sites • *Capital and operating costs*
  
  • Service plans • *Regulatory issues*

• **Financial-Economic Issues**: Potential funding, support for corridor growth

• **Recommendations**: Feasibility, potential next steps
Freight Activity
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Freight Activity in the Region

- Reopening of Wheelspur Yard
- May 2017: PANYNJ announces Tier II EIS and design funding for Cross Harbor Freight Study
  - Will evaluate enhanced rail car float and tunnel
  - Would lead to increased freight activity along Lower Montauk corridor
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Rail Operations

- Single track
- Waste Management Facility - 2 grade crossings closed 9AM-3PM daily
- Continuous freight movement at Fresh Pond Yard
- 2,500 annual train movements at Maspeth Yard
- Pinch Points - limited space in ROW
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Challenges for Freight and Passenger Operations

• Time-Space Issues: Along a confined 2-track corridor
  • Concurrent freight-passenger services require FRA-compliant vehicles
  • Freight-Passenger frequencies impact both operations
  • Need to accommodate existing freight and possible growth
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Challenges for Freight and Passenger Operations

• Space Issues:
  • Both passenger and freight operations need additional yard and track infrastructure
  • Numerous narrow ROW locations
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Challenges for Freight and Passenger Operations

- Existing At-Grade Crossings:
  - 11 at-grade crossings
  - Mixture of public and private roadways
  - Safety and cross-road traffic delays issues for expanded operations
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Challenges for Freight and Passenger Operations

- Federal Railroad Administration Safety Regulations:
  - Limits jointly operating lighter and heavier rail equipment on same or adjacent tracks
- Adding passenger trains to Lower Montauk requires one of two solutions:
  - Meet FRA crashworthiness guidelines – added passenger rail vehicles must be deemed safe to jointly operate with freight equipment
  - Separate lighter and heavier trains:
    - Temporal separation: operate at different times of the day
    - Physical separation: never operate on same tracks, and provide much greater physical track separation when operating on adjacent tracks
Rail Vehicle Screening
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Passenger Rail Vehicle Types

• Electric Multiple Unit (EMU) Regional
  • Self-propelled cars, no locomotive, FRA compliant
  • Third rail powered
  • High capacity, fast acceleration, pollution-free operation

• Diesel Locomotive with cars
  • Pushing or pulling locomotive with separate cars
  • No need for electrification, FRA compliant
  • High capacity, slower acceleration, air and noise pollution
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Passenger Rail Vehicle Types

- Diesel Multiple Unit (DMU) Regional
  - Self-propelled cars, no locomotive
  - No need for electrification, FRA compliant options
  - Smaller vehicles, reasonable acceleration, air-noise issue

- Electric Light Rail / Modern Streetcar
  - Self-propelled
  - Electrical powered – catenary
  - Small vehicle, good acceleration, pollution-free operation
  - Extensive FRA compliance issues
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Passenger Rail Vehicle Needs

- Diesel multiple units (DMU)
- FRA compliant options available
- Flexible consist possible
- Cost-effective:
  - Limited crew
  - Avoids corridor electrification
- Drawbacks:
  - Slightly slower acceleration / deceleration than Light Rail vehicle
  - Diesel engine: emissions, noise, life-cycle maintenance
  - Greater sensitivity to petroleum price fluctuations than electric vehicles

Denton Texas DMU (FRA Compliant)
Credit: Denton County Transportation Authority
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Passenger Rail Vehicle: Preliminary Recommendation

• Diesel multiple units (DMU) recommended for concept development:
  • Self-propelled cars
  • Avoid cost of electrification
  • Less environmental impacts than tradition diesel locomotives:
    • Lower sound levels than regular diesel (35 mph @ 50 ft. distance)
    • DMU=59 dBA, locomotive=64 dBA (FTA Noise and Vibration Manual calculator)
  • Passenger experience similar for all vehicle types, as all vehicle types have:
    • Multiple doors
    • Relatively similar acceleration/deceleration characteristics
Right-of-Way Overview
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ROW Overview

- 5 adjacent rail yards
- At-grade, overhead, undergrade crossings
- Narrow ROW with many adjacent buildings, roadway
- Several 1-track segments

Near Waste Management Truck-to-Rail Facility
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ROW Overview

Rail Crossings

- **At-grade**
- **Overhead**
- **Undergrade**

Milepost

Potential Station

At-grade crossings may impact service frequency- heavy industrial and shipping activities in the corridor.
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ROW Overview

Rail Crossings

- At-grade
- Overhead
- Undergrade

6 Milepost

Potential Station

Frequent overhead and underground crossings may constrain expansion
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ROW Restrictions: Increase Construction Complexity and Costs

Single track

Adjacent buildings

Major at-grade crossing

Adjacent walls

6 Milepost

Potential Station
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ROW Restrictions: Increase Construction Complexity and Costs

Other restrictions
• Retaining walls
• Retained fills
• Rail yards

Rail bridges

Elevated viaduct

ROW through Forest Park

6 Milepost

Potential Station

nyc.gov/dot
Passenger Service Types
Rail Transit Mode

- **Mode** of passenger rail service depends on vehicle type and technology
- Modes to be considered include:
  - Regional rail service
    - Electric multiple unit
    - Diesel multiple unit
    - Diesel locomotive
    - Electric locomotive
    - Dual mode locomotive
  - Light rail transit service
    - Electric light rail/modern streetcar
    - Diesel multiple unit
- Preliminary recommendation: DMU
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Rail Transit Service Level/Types

• **Level** of service is defined by:
  o Frequency of service
  o Span of service throughout the day
  o Directional focus of service (inbound/outbound)

• Level of service provided: a range of service types:
  o Peak period/peak direction focus (similar to *commuter express bus services*)
  o “Hybrid” service (similar to *limited reverse peak services provided by MTA Long Island Rail Road and MTA Metro-North Railroad*)
  o Frequent bi-directional, all day service (similar to *MTA New York City Subway*)

More Frequent Service
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Rail Transit Service Level/Types

- Considerations when evaluating modes:
  - Frequency of service
  - Station spacing
  - Availability of compatible infrastructure
  - Environmental sensitivities
  - FRA compliance
  - Support transit-oriented development
  - Capital and annual operating costs
  - Concurrent operations with freight service

Segment in Forest Park
PRO: Higher service levels increases overall transit connectivity options:
  o Transit-oriented development
  o Improved accessibility
  o Improved mobility
  o Less reliance on automobiles

CON: Higher service levels can mean:
  o Higher annual operating costs and subsidies
  o Higher initial capital costs
  o Increased interference with rail freight operations
Potential “Test of Concept” Service Model

- Potential “Test of Concept” Service Model Under Development
  - Connect to existing network
  - Frequency consistent with other NYC rail transit service
  - Potential to attract ridership, enhance mobility
- Peak service frequency and other factors (route length, # stops, etc.) will determine fleet size
  - Assuming an approximate 68 minute “cycle time”, then:
    - 6 minute peak frequency = 15 “trainsets”
    - 15 minute peak frequency = 6 “trainsets”
- Less frequent service concepts can be tested as well to evaluate effect on the corridor
Ridership Projection Methodology
Future Ridership

Projecting Potential Ridership

- Utilizing the Regional Transit Forecasting Model (RTFM) Model
  - The MTA’s standard model used in the Tri-State region by agencies
- Will be vehicle-neutral – driven by service frequency
- Limited connections to subway between Jamaica and LIC stations
- Likely projection year - 2025
Potential Stations
Potential Stations

- Potential stations are necessary to develop a “Test of Concept” service model, as they help outline:
  - Service and operating plan
  - Ridership
  - Capital costs
  - Operating costs/subsidy
  - Station siting requirements
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### Potential Stations

- Long Island City (existing)
- Greenpoint Avenue
- Penny Bridge (former station)
- Haberman (former station)
- Grand Avenue/Flushing Avenue
- Fresh Pond/Metropolitan Avenue (former station)
- Metro Mall
- Glendale (former station)
- 80th Street
- Woodhaven Boulevard
- Richmond Hill (former station)
- Jamaica (existing)
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Potential Stations

Station Spacing:

- Potential Lower Montauk Branch = approximately 1 mile
- LIRR Main Line = approximately 1.5 miles north of the Lower Montauk Branch (Forest Hills and Kew Gardens are approximately 1 mile apart)
- LIRR Main Line (Nassau County) = approximately 1-2 miles
- Queens Boulevard Subway Line = approximately 0.5 mile
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Stations Concept: Constrained Setting

- Limited space within ROW for platforms, station amenities
- Use former stations where viable and physically possible
- Access platforms from street or via stairways, overpasses and elevators
- Often difficult to access stations from surrounding area
- ADA compliance:
  - 3’ wide access path, maximum of 1” rise per 12” inches of length
  - Horizontal gap from train to platform not to exceed 3 inches
  - Vertical gap from train to platform not to exceed 5/8 of an inch
- Could construct some platforms from adjacent yards

Site of Former Haberman Station
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Stations Concept – 80th Street

- Primarily low- to moderate-density residential area with some commercial
- 80th Street overpass with stairs down to track-level street access
- ADA ramp and/or elevator access required

Stairs to/from 80th St. Overpass
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Stations Concept – 80th Street

- 200 ft. platforms within existing Right-Of-Way
- Difficult at grade access from 80th and 81st street
- Difficult access from one platform to the other -> overpass required
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Station Concept with FRA-Mandated Physical Separation

Existing Track Centers Using FRA-Compliant Passenger Train Sets

Increased Track Separation and Crash Wall required with Non-Compliant Passenger Train Sets
Next Steps
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Schedule

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Next Steps

Future Action Items:

• Refine Mode and Station Concepts
• Develop Capital Cost Estimate
• Develop Operations Cost Estimate
• Ridership Modeling
• Projecting future growth scenarios in corridor
• Further define the future freight rail activity/growth
THANK YOU

Questions?