Bus Rapid Transit in New Jersey

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Overview of NJ TRANSIT

- NJ TRANSIT is the largest statewide transit agency in the country
- Ranks second in terms of passenger miles
- Provides nearly 223 million passenger trips each year
- Operates a fleet of 2,027 buses, 711 trains and 45 light rail vehicles
  - Serves 236 bus routes, 11 rail lines and 3 light rail lines statewide
Levels of BRT

Features of BRT

Rapid bus and BRT systems typically include some or all of the following features:

- Dedicated running ways
- Priority for buses
- Frequent service
- Vehicles with level boarding and other amenities
- Off-board fare collection
- Greater distance between stops
- More substantial stations
- Unique branding

Features of BRT-Funding

- High level BRT meets FTA definition for New Starts Funding:
  - Majority of route is on Dedicated running ways
  - Frequent service all day and during peak periods
  - Meets other criteria for “premium” transit
  - More like a fixed guideway such as LRT

- Low Level BRT meets FTA definition for Small Starts Funding
  - Portion of route, but less than 50% has dedicated running way
  - A few features of BRT, less than a new start

- Rapid Bus can use Small Start Funding
  - Can have some or no dedicated running ways, uses signal and other priority treatments, longer distance between stops, branding

Existing Bus Priority Treatments in NJ

- Express Bus Lane (XBL) between NJ Turnpike to Lincoln Tunnel on I-495
- Route 9 Shoulder Lanes in Middlesex County
- Dedicated Transit Lanes on Urban Arterials - Broad Street and near Penn Station in Downtown Newark
- Queue Jump on Rt. 22 Mountainside
- HOV Lane NJ Turnpike Exits 11-14
- GO Bus 28 with Signal Priority
Ridership on Existing Bus Priority Facilities in New Jersey

- Peak Hour Ridership on existing facilities has wide range

- Most connected with Express Bus system to NYC or NJ Urban Core

<table>
<thead>
<tr>
<th>Facility</th>
<th>Pk. Hour Riders</th>
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<tbody>
<tr>
<td>Tpk HOV</td>
<td>6000</td>
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<tr>
<td>Rt. 22 QJ</td>
<td>600</td>
</tr>
<tr>
<td>Rt. 9</td>
<td>3000</td>
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<tr>
<td>XBL</td>
<td>24700</td>
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Ridership on Existing LRT Facilities in New Jersey

- Peak Hour Max Load Ridership on existing facilities has modest range
- Most connected with Rapid Transit or Rail system to NYC or Philadelphia

![Bar chart showing ridership in different locations]

- River: 450
- HBLR: 2350
- Newark: 1500
AM Peak XBL into Port Authority

- Contra-Flow Bus lane only available in AM Peak Period
- Established 1970, 2.5 miles long, plus lane in Lincoln Tunnel.
- Highest volume BRT facility in North America
eXpress Bus Lane (XBL) carries 650 buses in peak one hour, about 1400 buses in 3 hour peak period. 25,000 riders in one direction AM peak hour to Midtown Manhattan.

No PM direction outbound. Traffic Volumes too high to convert inbound or outbound lane for Buses Only

Lack of PM lane is resulting in overcapacity conditions at PABT in evening. Buses block gates, levels. Results in poor on-time performance, long lines for some passengers

Options for moving passengers to alternative modes, locations in PM are starting to be examined. Other operational options also being examined
Route 9- Shoulder Lane BRT

- Implemented December, 2006
- Approximately 3 miles long. Shoulder widened to support buses. Right Turning vehicles allowed.
- Shoulders allow buses AM Peak Period northbound, PM Peak Period Southbound for about 2-3 hours.
- Ridership of about 6,000 in AM Peak Period on 130 buses, with 70 buses in peak hour. Express routes serve PABT, Lower Manhattan, Jersey City/Newark
- Buses now save 5-8 minutes, initial time savings of 4 minutes.
- Pedestrian improvements, bus pullouts, new shelters.
Elements of Phase I Route 9 Bus Shoulder / Other BRT attributes

- Access to park & ride spaces when feasible
- Bus shoulder picks back up after intersection
- Added pull-off space at bus stops for buses to allow other buses to remain in shoulder lane
- Safe well lit pedestrian crossings with signalization
Route 9- Other Issues

- Bus Lane shut down for several weeks by Local Prosecutor because of accident between empty school bus and Academy commuter bus. (Video received wide airplay on NY Local News)
- NJDOT never put in legal ordinance restricting shoulder to buses/right turn vehicles. This has now been rectified. Bus lane now “legal” allows buses to use shoulder, sets conditions, speed etc. Lanes re-opened in March.
- Need for expanded parking spaces, better parking management. Capacity of PABT limits expansion to Midtown Manhattan.
- NJT investigating extension of Shoulder Bus Lanes, other Priority treatments further south into Monmouth County and other BRT elements in stages
Focus group Respondents indicated that using shoulder lanes going towards NYC, Newark, Jersey City saved them 8.9 minutes.

Time saved using shoulder going away from NYC, Newark, Jersey City was 11.3 minutes.

Close to three quarters of people were satisfied with the increased performance of the routes that operates on the Route 9 shoulder.
BRT Characteristics – Ability to Bypass Congestion

Queue Jumping
GO 25 and GO 28

GO 25 and GO 28 are NJ TRANSIT’s first enhanced bus routes, featuring some BRT elements
  – Unique Branding of Buses and Shelters
  – Traffic Signal Priority
  – Fewer Stops
  – Enhanced Interiors (deluxe seats, baggage racks, individual lights above seats, etc)
  – Board in Front, Exit in Back
  – Extended Hours (GO 28)

GO 25 operates between Irvington Terminal and Newark Penn Station during peak hours

GO 28 operates between Bloomfield Train Station and Newark Airport all day
GO 25 and GO 28
Color-Coded Buses and Stations

BRT buses and stations have their own distinctive color scheme to clearly identify the service.
GO 25 and GO 28 are not considered BRT, but have BRT elements, more like Rapid Bus
- Designed to speed up bus service to Downtown Newark, serve Newark Airport employment center with direct service.
- Low Cost implementation started in 2009
- First Local Bus Urban Application of BRT like service

Study under way with NJDOT research funding to document benefits, impacts

Surveys of GO Bus riders suggest about 12% of riders are new diverted from auto.

GO Bus riders perceive travel time savings much greater then actual 3-7 minutes time savings
NEW BRT Project Proposals in NJ

- Route 9 Middlesex/Monmouth Counties possible extension of existing Bus Shoulder Lane, queue jumps, enhanced stations
- Routes 42/55 in South Jersey
- Bergen and Union County BRT Studies
- Route 1 Princeton Area- Suburban BRT, study and new bus route
In 2010, NJ TRANSIT initiated an Alternatives Analysis for transit improvements in southern New Jersey in the vicinity of Routes 55/42/676

- One of the most congested areas in South Jersey

Determined that the costs, physical impacts, and potential ridership would not support an investment in commuter or light rail along this corridor

Bus Rapid Transit was identified as the most likely solution for the corridor

Alternatives Analysis completed; Starting Environmental Impact work in mid-2013
South Jersey BRT

- Proposed BRT routes will mainly serve Park and Ride facilities along the Route 42 and Route 55 corridors.
- Routes will serve Downtown Camden as well as Center City, Philadelphia.
- Provides entirely new service, especially in Center City as it does not follow existing bus routes.
The Bergen County Department of Planning & Economic Development and NJ TRANSIT have jointly initiated a study to look at how BRT can be used to improve the quality and attractiveness of public transit within Bergen County.

Nearly 60% of county residents work within Bergen County while most transit services remain NYC-oriented.

Currently in the process of identifying possible destination and routes.
Bergen County BRT: Potential Service Areas

Potential BRT Routes

North-South Routes
- Route 17
- Garden State Parkway
- Kinderkamack Rd
- Maywood Ave/Forest Ave
- Fairview Ave/Rochelle Ave
- Paramus Rd
- Saddle River Rd
- Terrace Ave/Hackensack St
- Summit/Prospect Ave
- Boulevard/Valley Rd/Monroe St
- Queen Anne Road/Teaneck Rd
- River Road (Edgewater)

East-West Routes
- Broad Ave
- Route 4
- Route 208
- Route 46
- Route 3
- Route 120

Key Trip Generators
- Meadowlands Sports Complex
- Downtown Hackensack

Discussion Points
- Routes
- Origins/Destinations
- Connectivity
- Importance
- Intra- vs. Inter-county
Route 1 BRT

- Feasibility Study completed in 2007. Identified Core BRT system over 20 miles to serve suburban employment center with “Many to Few” Travel Pattern
  - Unique Branding of Buses and Shelters
  - Separate BRT Right Of Way, with some mixed segments
  - Up to 12 new bus routes, many express
  - BRT “Stations”, regional park rides outside the region
  - Connections to Commuter Rail, other transit

- Plan modified to focus on shorter term implementation of key segments, features, to lower costs and time to actually have some improvements

- Designed to support growth, relieve congestion in a suburban environment
Near Term Concept Plan

- Draft Service Plan:
  - Upgrade of service on existing routes
  - Six new routes, which can be implemented incrementally as funding can be made available

- Upgrade of Existing Routes:
  - Frequency increased on 600, 603/613 and 605
  - 603/613 extended to connect Trenton and Lawrence to Carnegie Center and Princeton Junction Station
Route One BRT

Near Term Infrastructure and equipment investments:

Additional buses.

Defined station stops, including:

- BRT station and bus lanes at Princeton Junction Station (coordinate with West Windsor Princeton Junction Redevelopment Plan)
- BRT station at Quaker Bridge Mall (coordinate with Mall expansion project)
- Enhanced Bus Park & Ride (South Brunswick Township)
- Improving Access to Princeton Hospital-Proposed Princeton - Plainsboro Route 655
- Bus maintenance facilities.
First totally new NJT route in over 6 years

Used existing NJT bus capacity for equipment. NJT is CMAQ grantee, with funding from NJTPA and DVRPC, covering 58% of costs.

Private Sector (Princeton U., Princeton Health Care contributed 18% of operating costs for three years. Balance (2%) from TMA, county

NJT committed to fund 50% of operating costs for long term after evaluation of ridership, revenue during 3 year period. Serves relocated Princeton Hospital in suburban Plainsboro.
Route 655: Percentage of 3-Year Operating Cost Funding

- Fares: 23.2%
- DVRPC CMAQ: 27.9%
- NJTPA CMAQ: 29.7%
- Princeton U: 9.1%
- Princeton HealthCare: 9.1%
- Middlesex County: 0.5%
- Greater Mercer TMA: 0.5%
Conclusions About BRT in NJ

- BRT or BRT like services have been implemented to serve a variety of land use patterns and transit markets:
  - High Volume Suburban to Urban Commuter Bus Corridors (Route 9, XBL)
  - Mid-Size Urban Centers with traditional Local Bus (GO 25, GO 28)
  - Suburban Job Centers (Route 1) for Many to Few Travel Patterns

- New Services Continue Pattern of Implementation on an Incremental basis in different type of areas
  - Multiple projects such as Bergen BRT, South Jersey, Route 1, Extension of Route 9, Extensions of GO Bus show flexibility of BRT or BRT type elements to improve transit given limited funding.

- BRT can carry peak hour volumes similar to LRT