Go Bus: A Job Access Link

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Background

- Go Bus Route 25 launched at April 2008, 4.8 mile
- Go Bus Route 28 launched at October 2009, 12.1 mile
GO 28 service changed in September 2012. The University Branch was eliminated, reducing the number of stops to 20. Headways are now 30 minutes all day.

<table>
<thead>
<tr>
<th>Route</th>
<th>Average Weekday Ridership (9AM-3PM)</th>
<th>Number of Stops</th>
<th>AM/PM Peak</th>
<th>Midday Service</th>
<th>Evening Service</th>
<th>Locations Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>GO 25</td>
<td>460</td>
<td>11</td>
<td>15 min</td>
<td>No service</td>
<td>No service</td>
<td>Newark, Irvington, Maplewood</td>
</tr>
<tr>
<td>25</td>
<td>7194</td>
<td>67</td>
<td>3-15 min</td>
<td>5-10 min</td>
<td>15-30 min</td>
<td></td>
</tr>
<tr>
<td>GO 28*</td>
<td>1763</td>
<td>25</td>
<td>15-20 min</td>
<td>15-20 min</td>
<td>15-20 min</td>
<td>Bloomfield, Newark</td>
</tr>
<tr>
<td>11</td>
<td>1862</td>
<td>73</td>
<td>10-30 min</td>
<td>20-40 min</td>
<td>20-60 min</td>
<td>Wayne, Little Falls, Cedar Grove, Verona, Montclair, Glen Ridge, Bloomfield, Newark</td>
</tr>
<tr>
<td>28</td>
<td>1666</td>
<td>55</td>
<td>20-30 min</td>
<td>30-50 min</td>
<td>50-80 min</td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>2501</td>
<td>82</td>
<td>20-30 min</td>
<td>20-30 min</td>
<td>60-120 min</td>
<td>Paterson, Clifton, Bloomfield, Newark</td>
</tr>
</tbody>
</table>
Research Approach

- Conduct and analyze an onboard survey at the GO Bus corridors.
- Design and perform focus groups and a stated preference survey.
- Identify and understand travel pattern shifts.
- Highlight the impact of various transit attributes on ridership and customer satisfaction.
- Provide data to support GO Bus business planning activities and marketing programs.
Research Team

- Project Manager: Paul Thomas, (NJDOT)
  Janice Pepper (NJ TRANSIT)
  Lyndsey Scofield (NJ TRANSIT)

- Principle Investigator: Rongfang (Rachel) Liu (NJIT)
  Zhaodong (Tony) Huang (NJIT)
  Liu (Willow) Lv (NJIT)
  Fangzhuo Yang (NJIT)

- Subcontractor: Resource Systems Group (RSG), Inc.
Key Factors for Transit Service

• **External Factors**
  – *Social Economic Factors*
    • Employment
    • Income levels & auto ownership
  – *Spatial Factors*
  – *Public Finance*

• **Internal Factors**
  – Pricing Factors
  – Service Quantity Factors
  – Service Quality Factors
On Board Survey

• Two different Questionnaires:
  – The questionnaires contain 27 questions for local bus and 29 for GO Bus.

• Four aspects
  – awareness and use of GO Bus;
  – travel patterns;
  – satisfaction with the bus service;
  – and socio-economic and demographic information.
On Board Survey Steps

• **Training**
  – Graduate students from NJIT

• **Pretest**
  – 50 questionnaires
  – Make sure no error, business reply work

• **Survey**
  – Corridor 25: GO 25 and Route 25
  – Corridor 28: GO 28, Routes 11, 28, and 72.
  – 6 AM - 3 PM on April 16, 17 and 18, 2012.
  – The approximate ridership: 15,400.
Of the 15,428 total riders during the survey period, 5,438 questionnaires were distributed and 2,925 surveys were returned. Overall response rate is 19%.
Stated Preference Survey

- Subcontractor: Resource Systems Group (RSG), Inc.
  - focus groups survey
  - Maximum Difference Scaling (MaxDiff) survey.
SP Survey Design

- GO Bus customers who shifted from driving alone or carpooling
- GO Bus customers who shifted from rail modes (commuter rail or light rail, including bus to rail)
- GO Bus customers who started making the trip because of GO Bus
- GO Bus customers who use GO Bus for 1/3-2/3 of their total weekly bus trips
- GO Bus customers who use GO Bus for at least 75% of their trips and at least 3-4 days per week
- GO Bus customers whose origin/destination was one of the stops eliminated from the GO 28 route
- Local bus customers who do not use GO Bus but travel within the GO Bus service area

- Customers who primarily use GO Bus
- Customers who primarily use local bus 11, 25, 28, or 72 and travel within a GO Bus service area.

- SP survey held on February 27th and 28th, 2013 at NJ TRANSIT
- 66 people completed the survey, and produced usable data.
Findings

- Gender

[Diagram showing gender distribution for Go Bus and Local Bus with percentages: Female 50% and Male 50% for Go Bus, Female 61% and Male 39% for Local Bus]
Occupation

Go Bus
- Service & Retail: 38%
- Manager/Professional: 15%
- Technical/Skilled: 7%
- Student: 11%
- Homemaker/Domestic: 2%
- Retired: 1%
- Other: 2%

Local Bus
- Service & Retail: 33%
- Manager/Professional: 13%
- Technical/Skilled: 7%
- Student: 19%
- Homemaker/Domestic: 4%
- Retired: 3%
- Other: 21%
Trip Purposes

- 64% GO 28 customers were traveling to or from the airport for work.
GO 28 Stops

- The most common alight station for go28 is Newark Airport

<table>
<thead>
<tr>
<th>go28 Bus Stop Name</th>
<th>Board Count</th>
<th>Alight Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomfield Train Station</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Watsessing Park/Bloomfield Municipal Center</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Grove St.</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>11th/12th Streets/Columbus Hospital</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Clifton Ave.</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Summer Ave.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Market Street/Prudential Center</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Lincoln Park/Newark Symphony Hall</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Newark Airport</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
## Trip Frequencies

### Frequency of Routes Used

<table>
<thead>
<tr>
<th>Route</th>
<th>Frequency of Routes Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>go25</td>
<td>15% 14% 8% 9% 14% 41%</td>
</tr>
<tr>
<td>go28</td>
<td>36% 8% 5% 3% 11% 38%</td>
</tr>
<tr>
<td>Route 25</td>
<td>23% 18% 3% 11% 14% 32%</td>
</tr>
<tr>
<td>Route 28</td>
<td>15% 5% 14% 12% 6% 48%</td>
</tr>
<tr>
<td>Route 11</td>
<td>23% 9% 15% 6% 3% 44%</td>
</tr>
<tr>
<td>Route 72</td>
<td>18% 2% 14% 11% 11% 45%</td>
</tr>
</tbody>
</table>

- 5 or more days/week
- 3-4 days/week
- 1-2 days/week
- 1-3 days/month
- Less than 1 day/month
- Never

**NJIT**

New Jersey Institute of Technology
Begin Trip Time

- 12:00 AM - 5:59 AM: 11%
- 6:00 AM - 9:59 AM: 70%
- 10:00 AM - 2:59 PM: 8%
- 3:00 PM - 6:59 PM: 9%
- 7:00 PM - 11:59 PM: 3%

Bar chart showing the distribution of Begin Trip Time with percentages for different time slots.
Ticket types

Ticket Type

- Monthly: 66%
- One-way/Cash: 54%
- College Student Monthly: 32%
- Student Ticket: 0%
- Reduced Fare: 2%
- 10-Trip: 3%
- Other: 5%

Go Bus
Local Bus
Access mode

![Pie charts showing access modes for Go Bus and Local Bus.](image)
Mode Shift

- Rider captivity

![Graph showing Rider Captivity with different modes of transportation and their respective percentages.](Image)
Mode Shift

Travel Before Go Bus

- Another Bus: 63%
- Drove Alone: 11%
- Carpoled: 2%
- Light Rail: 5%
- Train: 5%
- Started making trip because of Go Bus: 7%
- Did not make this trip: 2%
- Other: 2%
Customer Satisfaction

Willingness to Recommend

<table>
<thead>
<tr>
<th></th>
<th>Go Bus</th>
<th>Local Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Unlikely</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Somewhat Unlikely</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>Do not know</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>Somewhat Likely</td>
<td>17%</td>
<td>30%</td>
</tr>
<tr>
<td>Very Likely</td>
<td>68%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Customer Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Go Bus</th>
<th>Local Bus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition of Shelter</td>
<td>7.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Weekday Peak Bus</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Frequency</td>
<td>7.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Weekday Off-Peak Bus</td>
<td>7.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information about the Bus</td>
<td>7.8</td>
<td>6.2</td>
</tr>
<tr>
<td>On-time Performance</td>
<td>8.3</td>
<td>6.5</td>
</tr>
<tr>
<td>Trip Time</td>
<td>8.4</td>
<td>6.7</td>
</tr>
<tr>
<td>Overall Satisfaction</td>
<td>6.7</td>
<td></td>
</tr>
</tbody>
</table>
Mode Shift Reason

Reasons for Using Go Bus

*Multiple responses allowed

- Convenience
- Fewer Stops
- Faster Service
- Frequency of Service
- Cost of Gasoline
- Cost of Parking
- Improved Bus Shelters

- Go 25
- Go 26
 Ranked Improvements

• Time Saving (fewer stops, faster service, frequency of service)
• information about the bus
• on-time performance

- go bus makes fewer stops than the regular bus route.
- Using go bus takes 10 minutes less travel time than the local bus.
- Buses arrive every 10 mins in the peak and every 20 mins all day.
- Buses arrive every 15 mins in the peak and every 30 mins all day.
- go bus has deluxe seats, hand holds, baggage racks, lighting.
- go bus has convenient transfers to other NJ TRANSIT modes.
- Using go bus takes 5 minutes less travel time than the local bus.
- Real-time information via digital signs at the bus stop.
- go bus system schedules and routes are clearly posted at stops.
- Real-time information via smart phone app or text.
- go bus gets preferential priority signal.
- go bus costs the same as a regular bus for the same trip.
- go bus stop is within walking distance of your home.
- go bus stops are branded and made more visible using signage.
- go bus stop is within walking distance of your workplace.
- Fare payment sped up by allowing riders exit out rear only.
- Buses arrive every 20 mins in the peak and every 60 mins all day.
- go bus stops have enhanced lighting for safety & security.
- go bus is very clean, quiet, and comfortable.
- go bus stops are branded and made more visible using signage.
- go bus stop is within walking distance of your workplace.
- Fare payment sped up by allowing riders exit out rear only.
- Bus is identifiable with a well-known name, “go bus.”
- go bus stops have nicer shelters than regular bus routes.
- A regular bus costs 25 cents less than the go bus.
- Fare payment for go bus is available by tapping your cell phone.
- go bus drivers have a unique uniform that is easily identifiable.
Travel Time Saving

Average In-Bus Travel Time by Route

- go25: 22 minutes
- go28: 19 minutes
- Route 25: 19 minutes
- Route 28: 30 minutes
- Route 11: 34 minutes
- Route 72: 45 minutes
- All routes: 25 minutes
Awareness

Awareness of GO Bus

Go Bus
- 55%
- 19%
- 8%
- 6%
- 4%
- 7%
- 7%
- 6%
- 2%

Local Bus
- 77%
- 8%
- 5%
- 5%
- 3%
- 2%
- 2%
- 5%

- Saw Bus Shelter / GO Bus Running
- Word of Mouth
- NJ TRANSIT Website
- Posters / Ads
- Brochure
- Employer
- Newspaper
- Other
Ridership Trends

<table>
<thead>
<tr>
<th>Market Area</th>
<th>Q2FY08 Weekday Ridership</th>
<th>Q2FY13 Weekday Ridership</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomfield Ave Corridor (11, 28, 29, 72, GO 28)</td>
<td>15,446</td>
<td>16,821</td>
<td>9%</td>
</tr>
<tr>
<td>Springfield Ave Corridor (25, GO 25)</td>
<td>13,447</td>
<td>13,810</td>
<td>3%</td>
</tr>
<tr>
<td>Essex/Union/West Hudson Local Bus Market</td>
<td>190,495</td>
<td>185,875</td>
<td>-2%</td>
</tr>
</tbody>
</table>

A. Ridership Trends, GO 28 and GO 25

**Median Weekday Ridership, 2007-2012**

- **GO 28 Launched**
- **Systemwide Fare Increase**
- **GO 25 Launched**
- **Major GO 28 Service Changes**
Summary

GO bus as an enhanced bus service provides better commuter services

• **Strengths**
  - **Travel Time Savings**
    Survey finding: 16 mins for GO 25; 20 mins for GO 28
  - **Ridership increase**
    ridership grew 9% in Bloomfield Ave Corridor and 3% in Springfield Ave Corridor; VS
    2% decline in weekday ridership and 9% decline in total ridership and Essex/Union/West Hudson market.
Opportunities

– a potential for reducing congestion on selected Interstate Bus routes

  There is a key “trans-Hudson link” (25% GO bus transfer to PATH).

– Potential of extending evening service for GO 25

  GO 25 evening peak service terminates too early for those commuting from New York, as the last bus leaves Newark Penn Station at 6:05 pm.
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