Fairfax Connector Route Optimization: Reston - Herndon and Franconia - Springfield

Board Transportation Committee Meeting
October 22, 2019

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Fairfax County Department of Transportation
The Reasons Why

- While ridership trends have shown some improvement, overall ridership is still below prior year levels.

- Shifting demographics and employment have resulted in changing travel patterns and needs.

- Travel patterns have been impacted by many factors.

- Understanding the changing travel environment and adapting the Connector system.
Addressing Trends and Challenges: Transit Development Plan / Route Optimization (5-year cycle)

1. Franconia - Springfield (2018 / 2023)
2. Reston - Herndon (Silver Line Phase 2) (2019 / 2024)
3. Vienna (2020 / 2025)
4. Tysons (2021 / 2026)
5. Huntington (2022 / 2027)
Outreach

Marketing Survey
• Fall 2018: 2,600 responses
• Gathered data on why residents do not ride buses
• Used to determine what measures could be used to attract non-riders and reconnect with lapsed riders

Onboard Survey
• Spring - Summer 2019: 2,550 responses
• Collected information on passengers’ origins, destinations, preferences, and demographic characteristics
• Used for future planning purposes to increase ridership and improve the customer experience
Marketing Survey Finding

Categories of Needs:
- Fast way to travel
- Available when needed
- Goes to desired places
- Gets people to their destinations on time
- Fits into people’s lifestyle
Onboard Survey

Categories of Needs:
• Fast way to travel
• Available when needed
• Goes to desired places
• Gets people to their destinations on time
• Fits into people’s lifestyle

Type of Service That Would encourage You Ride the Bus More

- More frequent service: 50%
- Operate later or earlier in the day: 29%
- Offer express bus service: 25%
- Have stops closer to where you live or where you are: 22%
- Buses that travel into neighborhoods and connect: 18%
- Having a bus-only lane to reduce traffic delays and: 17%
- Increased service into other Virginia Counties, Maryland,: 17%
- Decreasing the amount of stops: 14%
- Being able to pay your fare before getting on the bus: 13%

Total n=2,550
Existing Service Breakdown

- Key transit service elements
  - Coverage
  - Frequency
  - Span of service
  - Travel time

- Public input on key transit elements
  - More frequent service
  - Faster travel times
  - Improved span of service

<table>
<thead>
<tr>
<th>Existing Conditions</th>
<th>Franconia – Springfield</th>
<th>Reston – Herndon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Propensity Population (higher is better)</td>
<td>82,400</td>
<td>76,000</td>
</tr>
<tr>
<td>Frequency Factor (max 2.5; higher is better)</td>
<td>0.69</td>
<td>0.99</td>
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<tr>
<td>Span of Service Factor (max 2.5; higher is better)</td>
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<td>1.90</td>
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<tr>
<td>Travel Time (in minutes; lower is better)</td>
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<td>66</td>
</tr>
<tr>
<td>Key Locations (higher is better)</td>
<td>63</td>
<td>57</td>
</tr>
</tbody>
</table>

Department of Transportation
Service Network Options

Streamline Concept

OR

Maximum Coverage
Planning Process

- Understanding the Issues (Fall 2018)
- Public Outreach (Winter 2018 – 2019)
- System Evaluation (Spring / Summer 2019)
- Alternative Development (Summer / Fall 2019)
- Public Outreach (Fall 2019)
- Selection of Preferred Service Plan (Winter 2019 – Spring 2020)
- Public Outreach (Spring 2020)
- Provide recommendation to the Board of Supervisors (Spring 2020)

We are here
Service Alternatives

Three service alternatives are being studied:

- Alternative 1 – Incremental changes to Transit Development Plan recommendations
- Alternative 2 – Major adjustments to existing routes
- Alternative 3 – Transformation

All alternatives would be developed budget neutral, with no increase (+/-2%) in total revenue hours.

Develop Preferred Service Plan

- May include elements of all alternatives
- Micro-transit options (Alternative Transit Study)
- Transit Development Plan

Department of Transportation
Alternatives Evaluation Process

**Route Analysis**
- Ridership
- On-time performance

**Access and Mobility Assessment**
- Connection to key locations
- Transit propensity
- Origin-destination analysis
- Transit modeling

**Qualitative Assessment**
- Public input
- Customer / community impacts
- Service preferences
- Board member input
Reston – Herndon Route Optimization
Onboard Survey

What would encourage you use the bus more?

Similar finding as both on-line and County wide marketing survey.

- More frequent service
- Operate later or earlier in the day
- Offer express bus service
- Have stops closer to where you live or where you are going
- Having a bus-only lane to reduce traffic delays and allow faster travel
- Buses that travel into neighborhoods and connect passengers to main routes
- Increased service into other Virginia Counties, Maryland, and DC
- Decreasing the amount of stops
- Being able to pay your fare before getting on the bus

Type of Service That Would Make You Ride the Bus More: Reston - Herndon

Silver Line (S) n=944

Department of Transportation
Onboard Survey Respondents

Origin

Destination

Herndon
Reston

Tysons Corner
Washington

Herndon
Reston
Reston – Herndon
Alternative 1: Minor Changes to Transit Development Plan

- Transit Development Plan is adjusted as budget neutral

High benefit:
- Increased service to transit propensity areas
- Improved access to key locations
- Base on existing routes structure

Medium benefit:
- Minor increase in frequency
- Minor improvement in travel time

Limitation:
- Decreased span of service
Reston – Herndon
Alternative 2: Streamline

- Streamlines the existing service to simplify bus routes and improve all day service

High benefits:
- Increased span of service
- Improved access to key locations

Medium benefits:
- Minor increase in service to transit propensity areas
- Minor improvement in travel time
- Similar to the existing route structure

Limitations:
- Decreased frequency and coverage
Reston – Herndon
Alternative 3: Transformation

- Transforms the existing service to improve access and mobility by creating a modified grid system

High benefits:
- Increased service to transit propensity areas
- Significant increase in frequency
- Significant improvement in travel time

Medium benefit:
- Improved access to key locations

Limitations:
- Decreased span of service and coverage
- Significantly different route structure
## Alternative Comparison: Reston – Herndon

<table>
<thead>
<tr>
<th>Criteria</th>
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<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Propensity Population (higher is better)</td>
<td>76,000</td>
<td>93,200</td>
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Alternative Comparison

• Five criteria were used to assess the alternatives
• Three comparison analysis criteria:
  • Transit propensity
  • Travel time
  • Key locations
• Two key criteria:
  • Frequency
  • Span of service
## Alternative Comparison: Reston – Herndon

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<tr>
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<tr>
<td><strong>Existing Service</strong></td>
<td><strong>Alternative 1: Existing Service Plus</strong></td>
<td><strong>Alternative 2: Streamlined Service</strong></td>
</tr>
<tr>
<td>![Key Location Icon]</td>
<td>![Travel Time Icon]</td>
<td>![Transit Propensity Icon]</td>
</tr>
<tr>
<td>Rank: 4 of 4</td>
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Next Steps

1. Public outreach – Introduce the service alternatives
2. Develop preferred service plan Based on evaluation and public input
3. Board Member Input Public outreach – service recommendations
Franconia – Springfield Route Optimization
Onboard Survey

What would make you use the bus more?

Similar finding as both on-line and county wide marketing survey.

Franconia (F)  n=766

Type of Service That Would Make You Ride the Bus More: Franconia-Springfield

- More frequent service
- Operate later or earlier in the day
- Offer express bus service
- Have stops closer to where you live or where you are going
- Having a bus-only lane to reduce traffic delays and allow faster travel
- Buses that travel into neighborhoods and connect passengers to main routes
- Increased service into other Virginia Counties, Maryland, and DC
- Decreasing the amount of stops
- Being able to pay your fare before getting on the bus
Onboard Survey Respondents

Origin

Springfield
Annandale
Lorton

Destination

Tysons Corner
Pentagon
Annandale
Springfield
Franconia – Springfield
Alternative 1: Transit Development Plan with Minor Changes

- Transit Development Plan is adjusted as budget neutral
  - **High benefits:**
    - Increased service to transit propensity areas
    - Increased frequency
    - Improved access to key locations
    - Base on existing route structure
  - **Medium benefit:**
    - Minor improvement in travel time
  - **Limitation:**
    - Decreased span of service
Franconia – Springfield Alternative 2: Streamline

Map E

- Streamlines the existing service to simplify bus routes

High benefits:
- Significant increase in service to transit propensity areas
- Increased frequency
- Significant improvement in travel time
- Improved access to key locations

Medium benefit:
- Similar to existing route structure

Limitation:
- No improvement in span of service
Franconia – Springfield
Alternative 3: Transformation

- Transforms the existing service to improve access and mobility by creating an interconnecting system.

High benefits:
- Increased service to transit propensity areas
- Significant increase in frequency
- Increased span of service
- Improved travel time
- Improved access to key locations

Limitations:
- Area coverage for low production
- Significant different route structure
### Alternative Comparison: Franconia – Springfield

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