Veirs Mill Road
CAC Meeting #7
April 13, 2016
Purpose of Tonight’s Meeting

- Recap Meeting #6

- Continue Review of Alternatives Retained for Detailed Study (3rd of 4 anticipated meetings):
  
  • Bus Service Plans
  • Station Location Discussion
  • Station Prototypes Discussion

- Questions/ Comments
Components of the Alternatives

Runningway (Meetings #5 and 6)

Bus Service Plans (Meeting #7)

Stations (Meeting #7)
Review of Alternatives Retained for Detailed Study

- Anticipate 4 meetings to review Alternatives
  - Meeting #5: January 20th: Start Review of Alternatives
  - Meeting #6: February 17th: Continue Review of Alternatives
  - Meeting #7: April 13th: Bus Service Plans and Station Concepts
  - Meeting #8: Continue Review of Alternatives: Traffic, Ridership, Cost Estimate, Comparison Table - TBD
Alternatives Retained for Detailed Study

- Alternative 1: No-Build
- Alternative 2: Enhanced bus service with queue jumps
- Alternative 3: New BRT service in dedicated curb lanes (where feasible)
- Alternative 5B: New BRT service in one bi-directional median lane or two dedicated median lanes
Alternative 1

- No-Build
- Service: existing bus service
- Runningway: existing lanes in mixed traffic

*This typical section is for an existing four-lane section. The number of lanes in Alternative 1 would match the existing conditions.*
Alternative 2

- Transportation System Management (TSM)
  - Service: Implement WMATA’s proposed Q9 express bus service
  - Runningway: Add queue jumps at select intersections; use existing lanes with mixed traffic otherwise
- Add Transit Signal Priority (TSP) at select locations and optimize signals
- Upgrade existing bus stops

[Diagram of a road with new queue jumps and existing lanes on both westbound and eastbound sides]
Alternative 3

- **Service:** New BRT service
- **Runningway:** Curb-running dedicated lanes where feasible; existing lanes in mixed traffic otherwise
- **Provides additional dedicated lanes** where there would be minimal impacts on existing properties
- **New BRT stations**
- **Provides bike lanes** where feasible
Alternative 5B – Bi-directional

- **Service:** New BRT Service
- **Runningway:** New dedicated BRT lane(s) in median for two-way travel
  - Provide two-way travel in one or two new dedicated lanes
  - One-lane, median-running dedicated lane in both directions – buses pass each other at stations
  - Two dedicated lanes provided where feasible
  - Requires tight BRT operational schedule
- **New BRT stations**
- **Provides bike lanes where feasible**
Alternative 5B

A. East and West Ends of Study Limits

WESTBOUND

EASTBOUND

- RECONSTRUCTED EXISTING Lanes
- NEW BUS LANE
- RECONSTRUCTED EXISTING Lanes

B. Center of Study Limits

WESTBOUND

EASTBOUND

- RECONSTRUCTED EXISTING Lanes
- NEW BUS LANE
- RECONSTRUCTED EXISTING Lanes

- BRT buses would use the median lane(s)
- Local buses would use the curb lanes
What is a Bus Service Plan?

- A bus service plan includes:
  - Bus headways (the timing between consecutive buses)
  - Stations
  - Hours of operation
  - Routes

- The bus service plans for Alternatives 2, 3, and 5B are input into the traffic and transit computer model to predict future bus boardings.
Service Characteristics – Alternative 2

- **Overview**
  - New Express Bus Limited Service
  - 12 stops
  - Existing local service – continue with 43 stops

- **Wheaton Metro station to Rockville Metro station**
  - 12 minute headways (peak)
  - 15 minute headways (off-peak)
  - Span of service: 6 AM to Midnight

- **Rockville Metro Station to Montgomery College**
  - 36 minute headways (peak)
  - 45 minute headways (off-peak)
  - Span of service: 8 AM to 10 PM
Service Characteristics – Alternatives 3 & 5B

- **Overview**
  - New BRT Service
  - 12 stations (curbside and/or median)
  - Existing local service – continue with 43 stops

- **Wheaton Metro station to Rockville Metro station**
  - 6 minute headways (peak)
  - 10 minute headways (off-peak)
  - Span of service: 6 AM to Midnight

- **Rockville Metro Station to Montgomery College**
  - 18 minute headways (peak)
  - 30 minute headways (off-peak)
  - Span of service: 8 AM to 10 PM
BRT Vehicles

- Level floors
- Multiple wide doors for easy boarding and departures
- Comfortable interiors that include space for wheelchairs and bicycle storage
- Typically articulated 60’ vehicles with capacity of 80-100 passengers
Typical BRT Vehicles
Station Locations

- How stations are located:
  1. Placement in Corridor (see map) → Which intersections should have stations?
  2. Placement at Intersections → Where should the station be placed at each intersection (near-side vs. far-side)?

- We want CAC input on where the stations should be placed in the corridor

- Station intersections in the current alternatives are based on previous studies and the *Countywide Transit Corridors Functional Master Plan*
Placement in Corridor

- Should be near high activity centers
  - See chart with existing boardings by bus stop

- General spacing of 0.5-1.0 miles between stations
Existing Ridership

Weekday Boardings for Eastbound Stops on Veirs Mill Rd. Lines
Source: WMATA APC data from Routes Q1, Q2, Q4, Q5, and Q6
Existing Ridership

Weekday Boardings for Westbound Stops on Veirs Mill Rd. Lines

Source: WMATA APC data from Routes Q1, Q2, Q4, Q5, and Q6
Rockville Area Stations

- Rockville Metrorail Station
- MD 28 (First Street)
- Broadwood Drive
- Twinbrook Parkway

City of Rockville

0.9 miles
0.7 miles
0.8 miles
0.7 miles
0.5 miles
Rockville Stations – Current Locations
Rockville Stations – Possible Location Shift
Aspen Hill /Rock Creek Area Stations
Wheaton Area Stations

MD 193 (Connecticut Avenue)

Newport Mill Road

MD 193 (University Boulevard)

Wheaton Metrorail Station
Placement at Intersections

- Near-side vs. Far-side
- Minimize property impacts
- Minimize number of street crossings for passengers
Example #1: Twinbrook Parkway – Far Side

- Twinbrook Parkway WB Local Bus Stop
- Twinbrook Parkway WB BRT Station
- Proposed Retaining Wall
- Drive WB Local Bus Stop
- Twinbrook Parkway EB BRT Station
- Twinbrook Parkway EB Local Bus Stop

Veirs
Twinbrook Boundary
Twinbrook Neighborhood

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Example #2: Parkland Drive – Same Side
Example #3: Broadwood Drive – Opposite Left Turn Lane
Station Prototypes

- 12 stations/enhanced bus stops in each Alternative
- 5 different prototypes
  - Enhanced Bus Stop – curbside stop with more amenities than a traditional bus stop
  - Side Platform – 120’-long curbside station
  - Reduced Side Platform – 60’-long curbside station
  - Split Side Platform – 120’-long median station with loading areas on one side
  - Center Platform – 120’-long median station with loading areas on both sides
## Station Prototypes

<table>
<thead>
<tr>
<th>Location</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
<th>Alternative 5B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montgomery College</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Side</td>
</tr>
<tr>
<td>Rockville Metrorail Station</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Side</td>
</tr>
<tr>
<td>MD 28 (First Street)</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Center</td>
</tr>
<tr>
<td>Broadwood Drive</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>Twinbrook Parkway</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>Aspen Hill Road</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>Parkland Drive</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>Randolph Road</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>MD 193 (Connecticut Avenue)</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Split Side</td>
</tr>
<tr>
<td>Newport Mill Road</td>
<td>Enhanced Bus Stop</td>
<td>Reduced Side</td>
<td>Split Side/Reduced Side</td>
</tr>
<tr>
<td>MD 193 (University Boulevard)</td>
<td>Enhanced Bus Stop</td>
<td>Reduced Side</td>
<td>Reduced Side</td>
</tr>
<tr>
<td>Wheaton Metrorail Station</td>
<td>Enhanced Bus Stop</td>
<td>Side</td>
<td>Side</td>
</tr>
</tbody>
</table>
Station Components

- **Station Elements:**
  - Platform
  - Access/ramps
  - Canopy

- **Station Amenities:**
  - Seating
  - Ticket vending machines
  - Landscaping
  - Trash and recycle receptacles
  - Real-time passenger information
  - Bicycle racks
  - System map
  - Artwork
Station Elements - Platform

Platform Design Criteria - 120’ Side Platform
Station Elements - Platform

Eugene, OR – Center Platform with decorative finish
Station Elements – Access / Ramps
Station Elements – Canopy Coverage

Platform Design Criteria: Canopy Coverage - 120’ Side Platform

option 1:
split canopy coverage

option 2:
central canopy coverage

option 3:
2/3 platform canopy coverage

option 4:
full platform canopy coverage
Station Elements – Canopy Coverage

30% Coverage

Center Station

Houston, Texas

50% Coverage

Othello Station

Seattle, Washington
Station Elements – Canopy Coverage

70% Coverage

- Arena Station, Charlotte, North Carolina

90% Coverage

- Convention Center Station, Portland, Oregon
Station Elements – Canopy Coverage

Charlotte – 70% Canopy

Leon, Mexico – Full Canopy

Eugene – 70% Canopy

Charlotte – Split Canopy 50%
Station Elements - Amenities

Platform Design Criteria: Amenities - 120’ Side Platform

- **option 1:**
  - full platform amenities
  - distributed loading demand

- **option 2:**
  - full platform amenities
  - central loading demand

- **option 3:**
  - split amenities
  - middle & rear-door based loading demand

- **option 4:**
  - split amenities
  - equal loading demand
Station Elements - Amenities

- Seating
- Security
- Lighting
- System Map
- Canopy
- Receptacles
Station Elements - Amenities

Ticket Vending

Surface Treatments

Bicycle Parking

Artwork

Landscaping

Sustainability
Enhanced Bus Stop

- Limited site improvements
- Loading for single bus only
- Fewer site amenities
  - 6”-8” curb loading
  - Bus shelter with limited seating
  - Potential for real time information display
  - System map and information

San Francisco

Kansas City
Enhanced Bus Stop Prototype – Site Plan
Alternative 2 Only

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Enhanced Bus Stop Prototype – Section Alternative 2 Only
Note: Design and location of canopies and windscreen are still to be determined

Enhanced Bus Stop Prototype – Rendering
Alternative 2 Only

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Station Identity

- Signage
- Symbol
- Color
- Form
Side Platform Station - Curbside

- More significant site improvements
  - Side of the road
  - Abuts existing sidewalks

- Loading for one or two buses

- Full site amenities
  - 6”-8” curb loading or 14”-15” “level” loading
  - Large shelter or canopy
  - Real time information display
  - System map and information
  - Seating options
  - Platform furnishings

Los Angeles
Side Platform Prototype – Site Plan
Alternative 3 or 5B
Side Platform Prototype – Section Alternative 3 or 5B

- CANOPY
- WINDSCREEN
- CURB
- BENCH
- DETECTABLE WARNING STRIP

10'-0" PLATFORM

SIDEWALK
THRU LANE
THRU LANE
Note: Design and location of canopies and windscreens are still to be determined.

Side Platform Prototype – Rendering
Alternative 3 or 5B

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Station Technology

MTA Bus Time

TIP: Enter an intersection, bus route or bus stop code, or try one of the examples below:

Routes:
- Bx1
- M15-SBS
- Q58

Stops:
- 200460
- 308215
- 502030

Intersections:
- Main Street & Kissena Bl
Split Side Platform Station – Road Center

- More significant site improvements
  - Center of road
  - Changes road “cross-section”

- Loading for two buses per platform

- Full site amenities
  - 14”-15” ‘level’ loading
  - Large shelter or canopy
  - Real time information display
  - System map and information
  - Seating options
  - Platform furnishings
  - Landscaping opportunities

Alexandria, VA
Split Side Platform Prototype - Site Plan
Alternative 5B Only
Split Side Platform Prototype – Section Alternative 5B Only

- CANOPY
- WINDSCREEN
- BENCH
- DETECTABLE WARNING STRIP
- CURB
- WESTBOUND THRU LANE
- 11'-0" PLATFORM
- WESTBOUND BUS LANE
- EASTBOUND BUS LANE

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Split Side Platform Prototype with Median – Section Alternative 5B Only

- CANOPY
- WINDSCREEN
- TICKET VENDING MACHINE (BEYOND)
- TRASH (BEYOND)
- CURB
- DETECTABLE WARNING STRIP
- BENCH

WESTBOUND BUS LANE | EASTBOUND BUS LANE | 13'-0" PLATFORM | MEDIAN | EASTBOUND THRU LANE
Note: Design and location of canopies and windscreens are still to be determined
Center Platform Station – Road Center

- More significant site improvements
  - Center of road
  - Changes road “cross-section”

- Loading for one bus per side in constrained condition

- Full site amenities
  - 14”-15” ‘level’ loading
  - Large shelter or canopy
  - Real time information display
  - System map and information
  - Seating options
  - Platform furnishings
  - Landscaping opportunities

Eugene, OR
Center Platform Prototype – Site Plan
Alternative 5B Only

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Center Platform Prototype – Section
Alternative 5B Only
Note: Design and location of canopies and windscreens are still to be determined

Center Platform Prototype – Rendering
Alternative 5B Only
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Station Sustainability

- Water
- Transit Connections
- Alternative Modes
- Energy
Conclusion

Meeting #8: TBD

Topic for Meeting #8: Continue review of Alternatives: Traffic, Ridership, Cost Estimate, Comparison Table