

# Montgomery County **RAPID TRANSIT**

MD 586

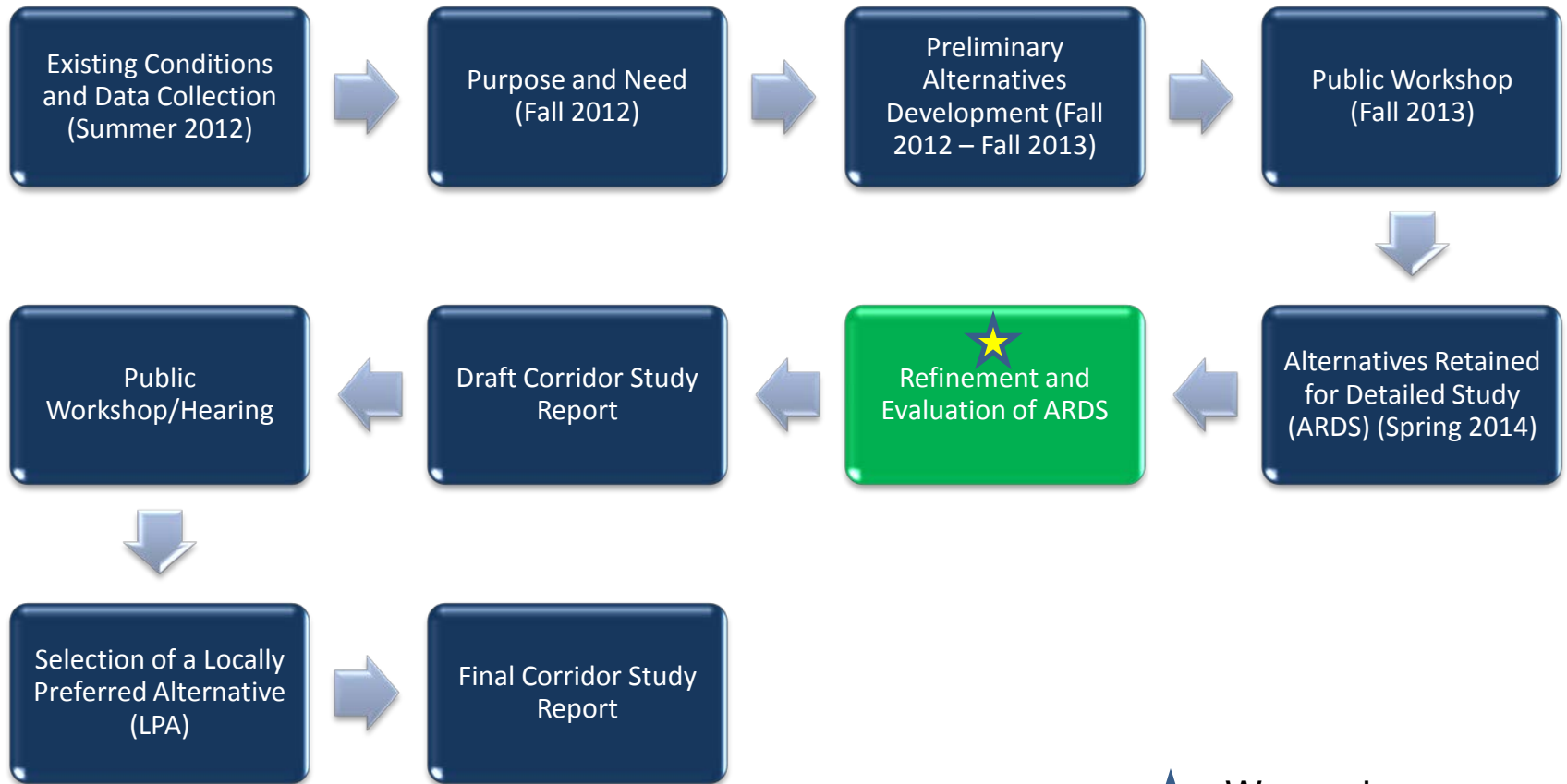
Veirs Mill Road  
CAC Meeting #3  
May 27, 2015



# Purpose of Tonight's Meeting

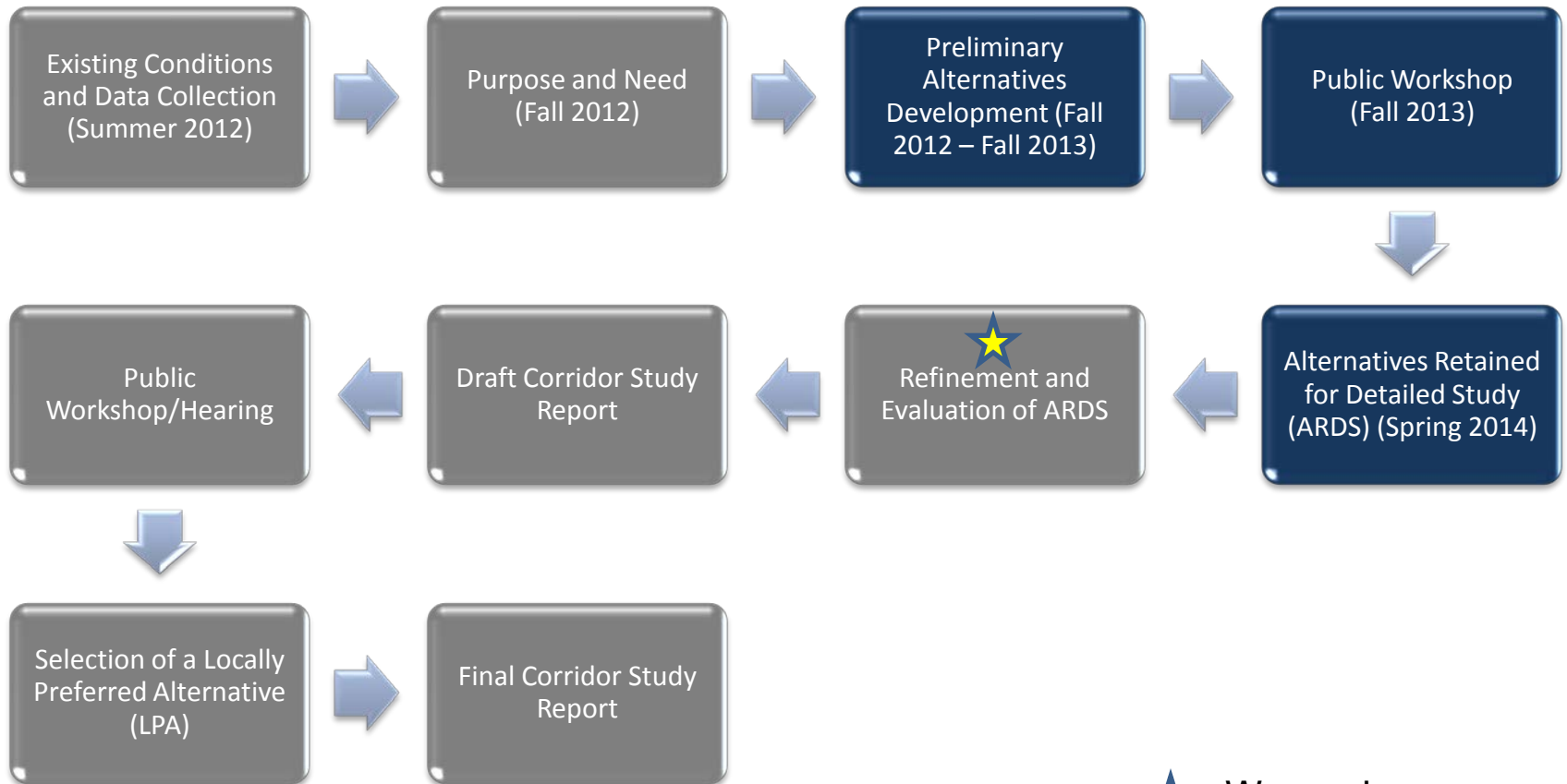
- Review Meeting #2
- Review Basic BRT Menu
- Present Conceptual Alternatives
- Open Discussion

# Transit Project Planning Process



★ We are here

# Transit Project Planning Process



★ We are here

# Purpose of Tonight's Meeting

- Review Meeting #2
- Review Basic BRT Menu
- Present Conceptual Alternatives
- Open Discussion

# BRT Features

Runningway	Service Plan	Stations	Vehicles	Technology
Select one or more from each column				
Mixed traffic	Circulator	Branded stop	Standard	Vehicle guidance
Separate roadway	Limited stops	Branded shelter	Standard with brand	Traffic signal priority
Dedicated lanes: New lanes or repurposing existing lanes	Express	Shared with Local bus	Stylized	Bridgeplates
Median or curb lanes	Combination of route types	Rail-like station	30, 40 and 60 lengths	Real-time Passenger info
Queue jumps/ bypasses	Reconfigured network	Multimodal terminal	Guided/ unguided	Active electronic suspension
Tunnel segments	Minimal brand		CNG	Wi-fi
Shared or semi-exclusive lanes	Family of brands		Hybrid-electric	Vehicle location
Shared HOV or bus-only highway lanes	Complete brand marketing campaign		Advanced propulsion	Pre-payment fare collection

Tonight's meeting

Future CAC meeting

Future studies

# Purpose of Tonight's Meeting

- Review Meeting #2
- Review Basic BRT Menu
- Present Conceptual Alternatives
- Open Discussion

# Conceptual Alternatives Overview

- 6 conceptual alternatives – combination of transit service and runningway alternatives
- Transit Service Alternatives
  - No improvements (maintain existing bus service)
  - Enhanced bus service (WMATA's proposed Q9 route)
    - Fewer stops than the existing service
    - More frequent buses than the existing service
  - New BRT service
- Runningway Alternatives
  - Shared lanes vs. dedicated lanes
  - Existing lanes vs. repurpose lanes vs. additional lanes
  - Median-running vs. curb-running



# Conceptual Alternatives Overview

- Alternative 1: No-Build
- Alternative 2: Enhanced bus service with queue jumps
- Alternative 3: Enhanced bus service in dedicated lanes (where feasible)
- Alternative 4: New BRT service in all dedicated lanes
- Alternative 5A: New BRT service in reversible, dedicated lane
- Alternative 5B: New BRT service in bi-directional or two dedicated median lanes
- Alternative 6: New BRT service in dedicated lanes and mixed traffic

# Proposed Station Locations

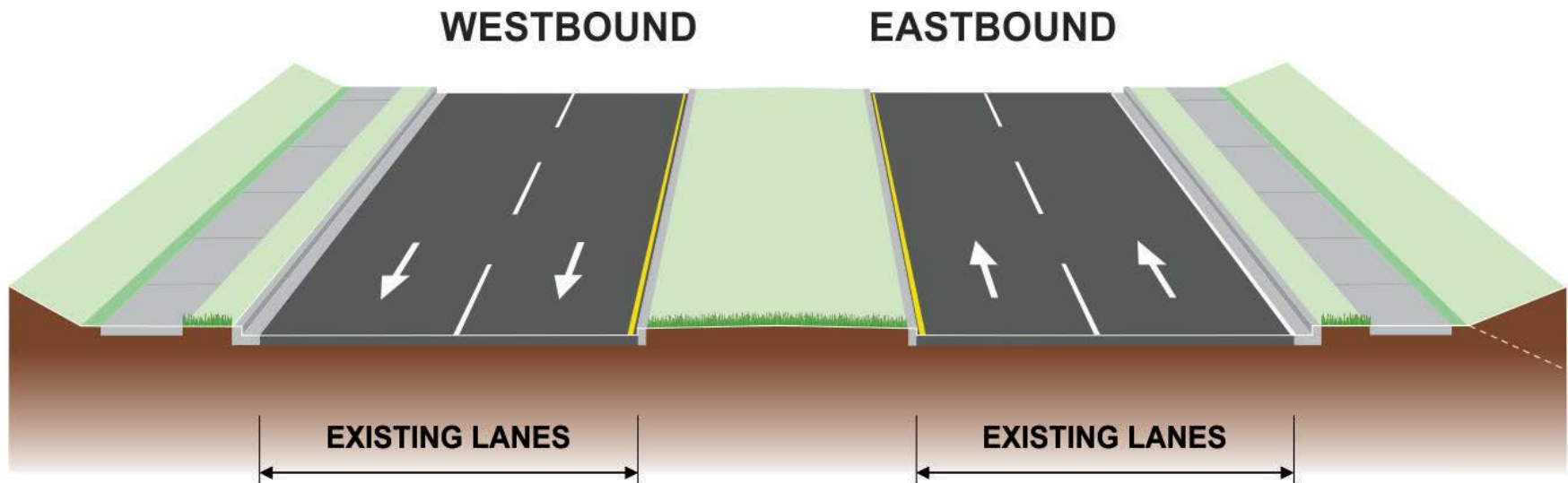
- Rockville Metro Station
- Norbeck Road (MD 28)
- Broadwood Drive
- Twinbrook Parkway
- Aspen Hill Road
- Parkland Drive
- Randolph Road
- Connecticut Avenue (MD 185)
- Newport Mill Road
- University Boulevard (MD 193)
- Wheaton Metro Station

Station locations from the *Countywide Transit Corridors Functional Master Plan*



# 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 1

- Provides a baseline condition to compare the build alternatives
- No-Build is always carried forward as a possible alternative
- Provides dedicated lanes for 11% of the corridor (existing bus only lane along MD 586 EB from MD 185 to MD 193)
- Alternative 1 was ***retained*** for detailed study

## 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) to at select locations
  - Extended green light
  - Early green for buses
- Optimize signal timing



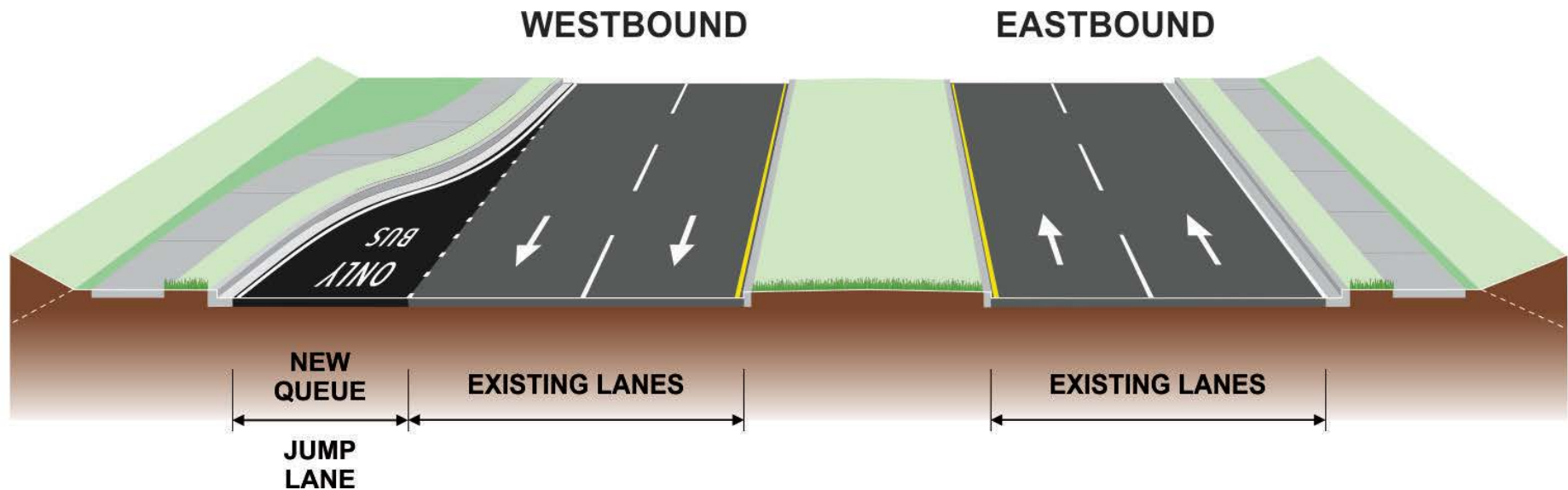


# Alternative 2

- Traffic analysis identified preliminary queue jump locations
  - Intersection delay (2040) greater than 80 seconds
  - Intersection queue length (2040) greater than 250 feet but less than 550 feet
- Preliminary queue jump recommended locations:
  - MD 28 (EB only)
  - Twinbrook Parkway (EB and WB)
  - Aspen Hill Road (WB only)
  - Gridley Road (WB only)
  - Randolph Road (EB and WB)
  - MD 185 (EB and WB)
  - MD 193 (EB only)



# Alternative 2



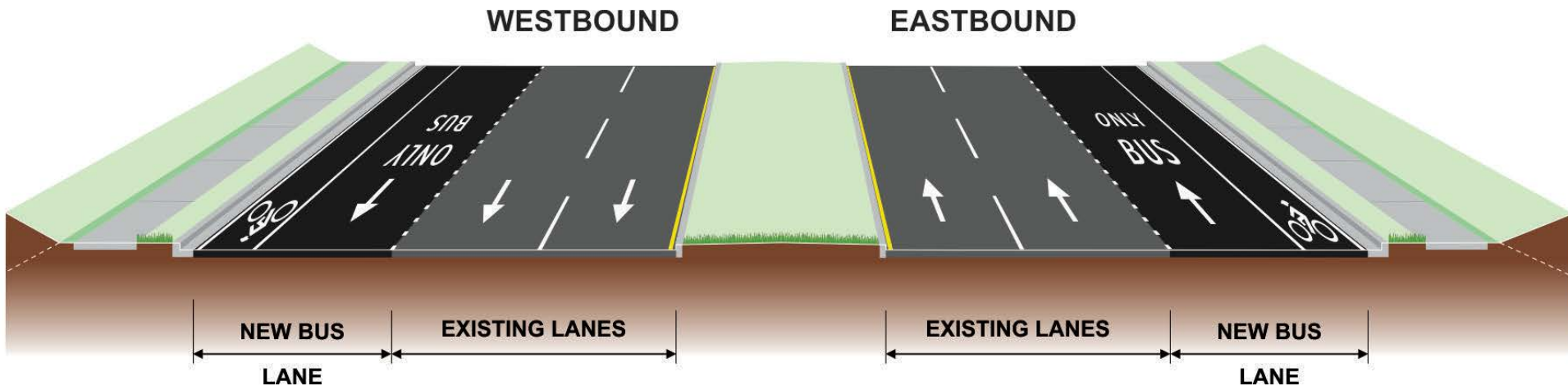


## Alternative 2

- TSM provides low-cost improvements with minimal property impacts
- Alternative 2 provides enhanced bus service (Q9 express bus) while mostly using existing lanes
- Provides dedicated lanes for 24% of the corridor (existing bus only lane along EB from MD 185 to MD 193)
- Alternative 2 was ***retained*** for detailed study

# Alternative 3

- Service: Implement WMATA's proposed Q9 express bus 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



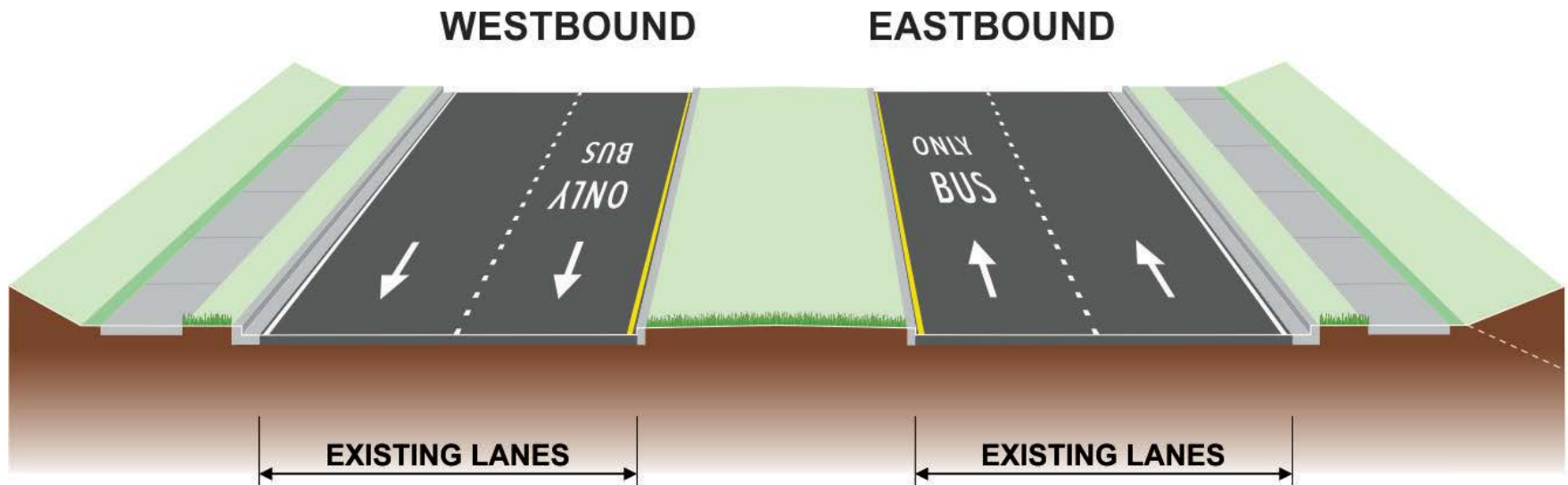
# Alternative 3

- Dedicated lanes provide improved bus service. The limits of the dedicated lanes can be modified to minimize property impacts
- Provides dedicated lanes for 41% of the corridor
- Alternative 3 was ***retained*** for detailed study with the following modification:
  - New BRT service instead of enhanced bus service

# Alternatives 4A, 4B, 4C, and 4D

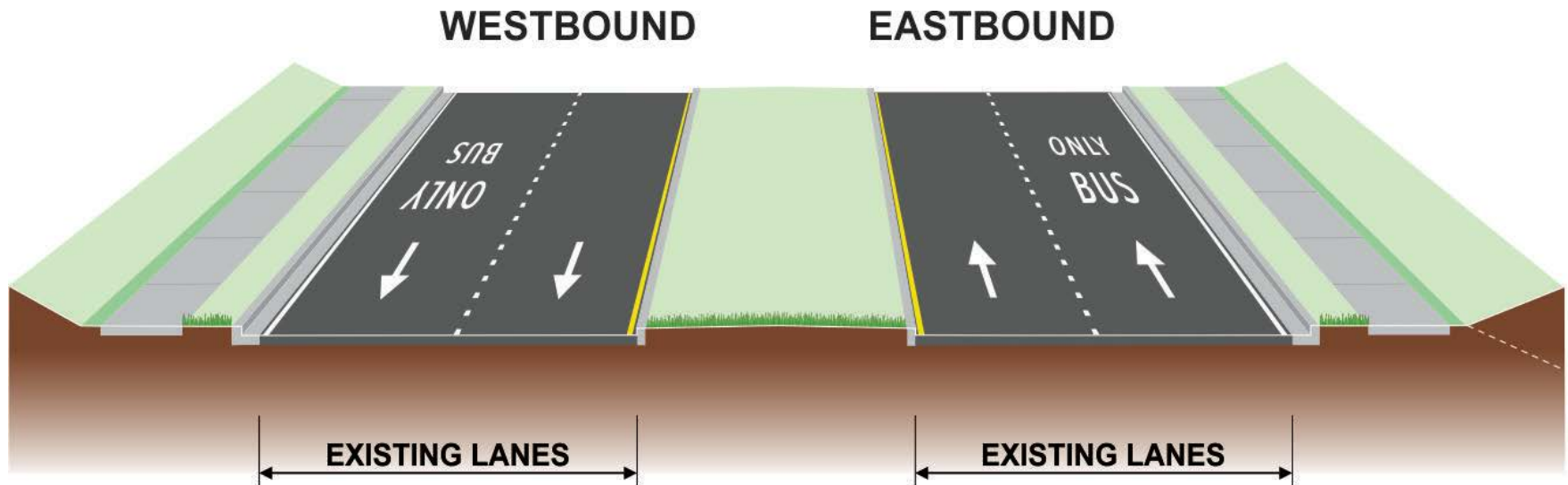
- Service: New BRT service
- Runningway:
  - Provide dedicated lanes by **repurposing existing lanes or shoulders**:
    - Alt. 4A: BRT in median-running lanes
    - Alt. 4B: BRT in curb-running lanes
  - Provide dedicated lanes by **adding lanes**:
    - Alt. 4C: BRT in median-running lanes
    - Alt. 4D: BRT in curb-running lanes

# Alternative 4A – Median Lanes



- BRT buses would use the “Bus Only” lane
- Local buses would use the curb lane

## Alternative 4B – Curb Lanes

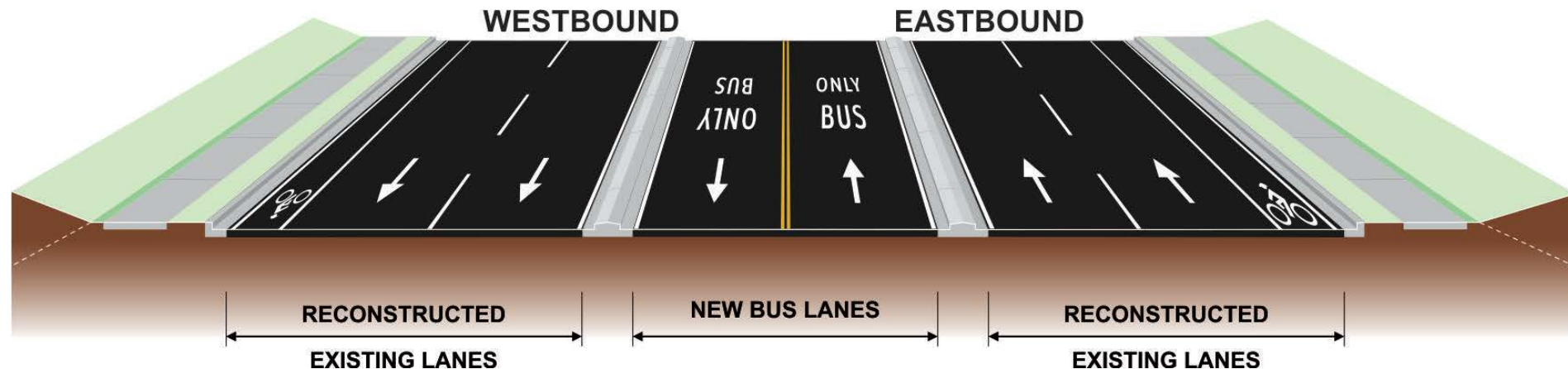


- BRT and local buses would share the curb lane

# Alternatives 4A and 4B

- Provides dedicated lanes for 85% of the corridor
- Preliminary traffic analysis indicated degradation of traffic conditions with these alternatives
- Further analysis needed to determine merit of Alternatives 4A and 4B
  - Person throughput analysis (moving people, not cars)
  - How would traffic re-route if lanes are repurposed along Veirs Mill Road?
- Decision on whether to retain Alternatives 4A and 4B will be made in coming months

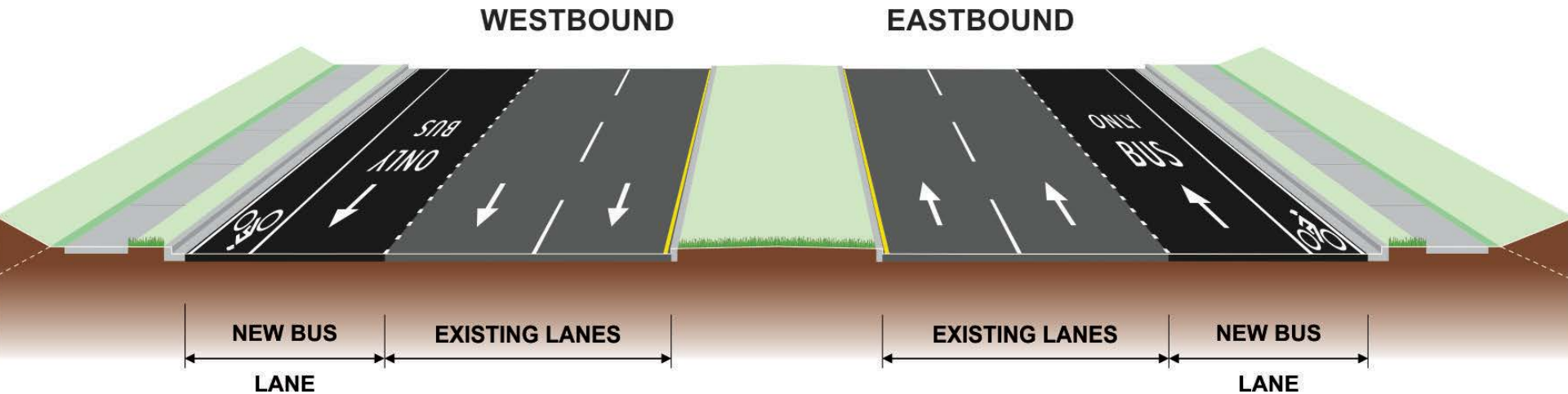
# Alternative 4C



- BRT buses would use the median bus lanes
- Local buses would use the curb lane



# Alternative 4D



- BRT and local buses would share the curb lane

# Alternatives 4C and 4D

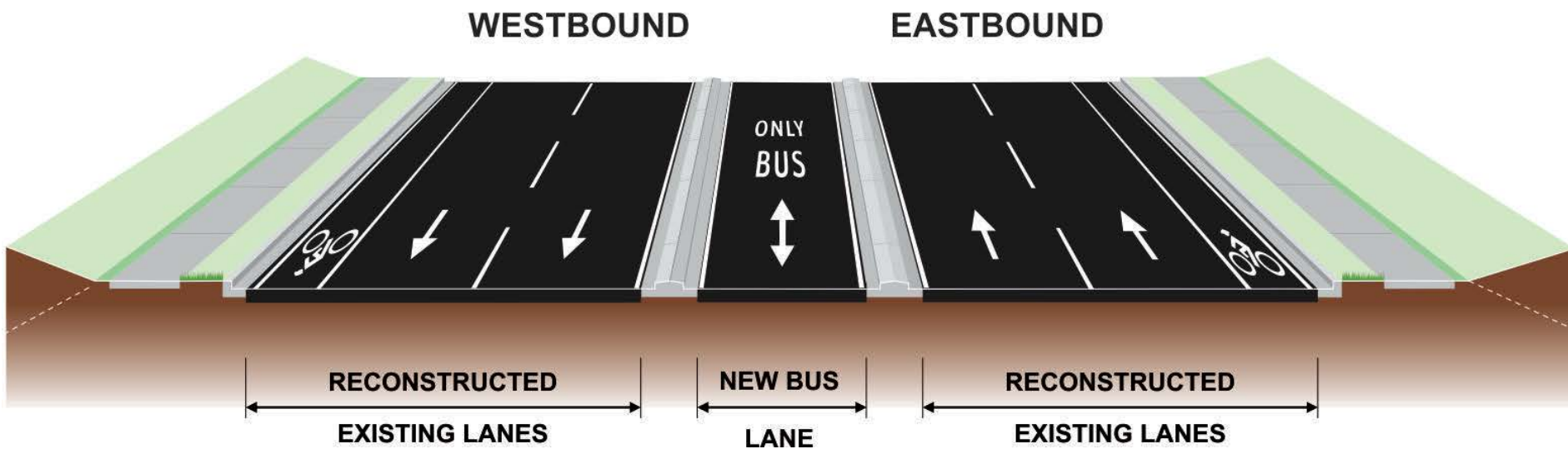
- Highest-level BRT options
- Provide dedicated lanes for 85% of the corridor
- Extensive property impacts due to widening
- Preliminary ridership forecast shows:
  - 9,100 daily BRT boardings for Alt. 4C
  - 6,900 daily BRT boardings for Alt. 4D
- Alternatives 4C and 4D were ***not retained*** due to the property impacts caused by additional lanes

# Alternative 5A - Reversible

- Service: New BRT Service
- Runningway: New dedicated BRT lane in median for one-way travel
  - In peak direction: bus operates in one-way, median-running dedicated lane
  - In non-peak direction: bus operates in mixed traffic



# Alternative 5A



- BRT buses would use the median bus lane and the curb lanes
- Local buses would use the curb lane

# Traffic Peak–Directional Split

- In the AM peak period, there is no real peak direction of travel
  - 51% westbound and 49% eastbound
  - From Aspen Hill Road to MD 97, the peak direction is actually eastbound
- In the PM peak period, the peak direction of travel is EASTBOUND
  - 56% eastbound and 44% westbound



# Alternative 5A

- No apparent peak direction of traffic and bus ridership along Veirs Mill Road; therefore, not desirable for a reversible BRT system
- Provides dedicated lanes for 43% of the corridor
- Alternative 5A was ***not retained*** for detailed study due to the ineffectiveness of a reversible system along a corridor with no peak direction of travel

# Alternative 5B – Bi-directional

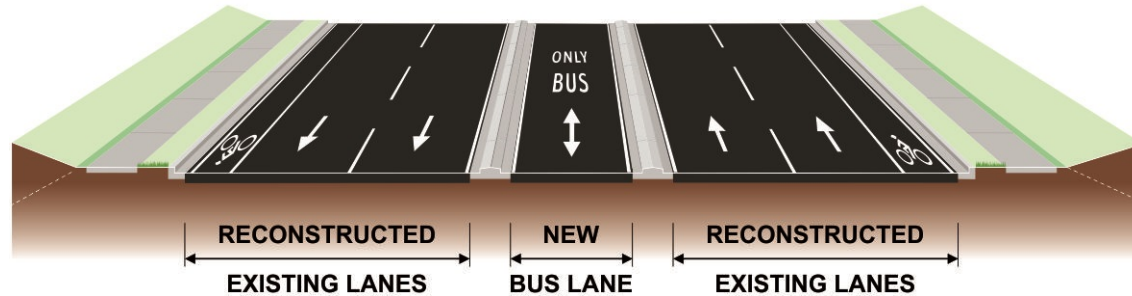
- Service: New BRT Service
- Runningway: New dedicated BRT lane(s) in median for two-way travel
  - Provide two-way travel in one or two new dedicated lanes
  - One-lane, median-running dedicated lane in both directions – buses pass each other at stations
  - Two dedicated lanes provided where feasible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



# Alternative 5B

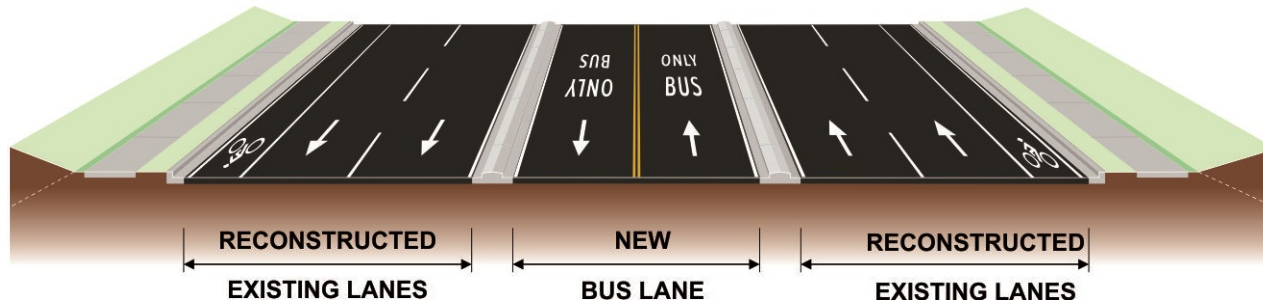
## A. East and West Ends of Study Limits

WESTBOUND EASTBOUND



## B. Center of Study Limits

WESTBOUND EASTBOUND



- BRT buses would use the median lane(s)
- Local buses would use the curb lanes

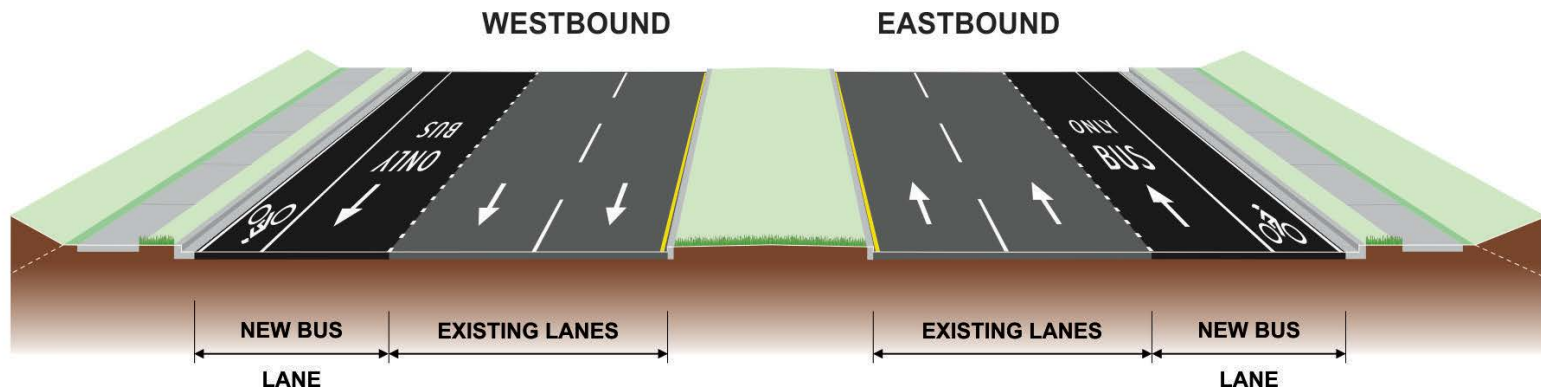


# Alternative 5B

- Provides a high-level BRT service with fewer property impacts than Alternatives 4C and 4D
- Provides dedicated lanes for 85% of the corridor
- Alternative 5B was ***retained*** for detailed study

# Alternative 6

- Service: New BRT Service
- Runningway: Curb-running dedicated lanes where feasible; use existing lanes with mixed traffic otherwise
- Provides additional dedicated lanes where there would be moderate impacts on existing properties

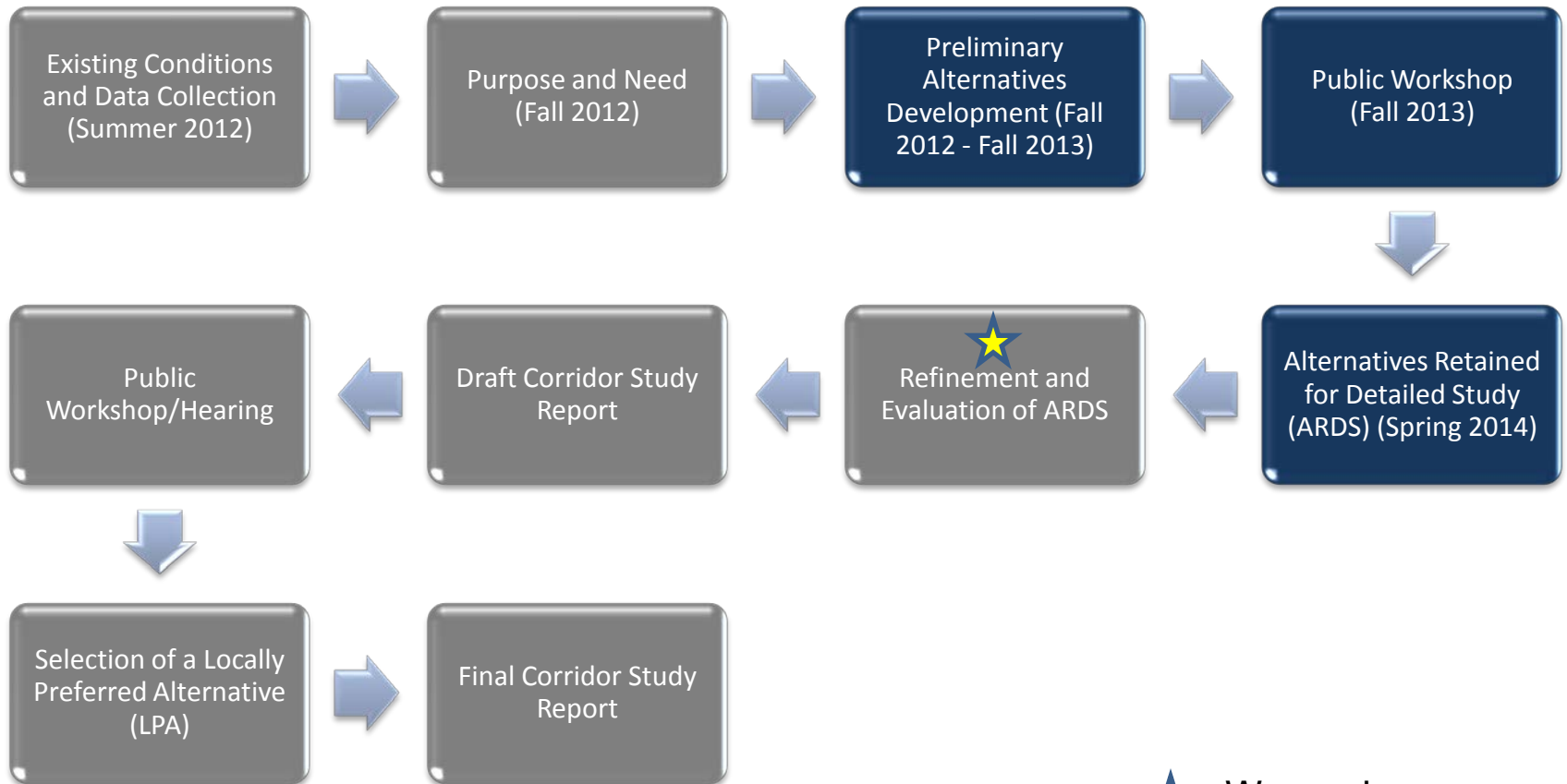


- BRT and local buses would use the curb lane

# Alternative 6

- Provides dedicated lanes for 65% of the corridor
- Very similar to Alternative 3 which was retained
- Alternative 6 was ***not retained*** for detailed study due to the similarities with Alternative 3, which was retained

# Transit Project Planning Process



★ We are here

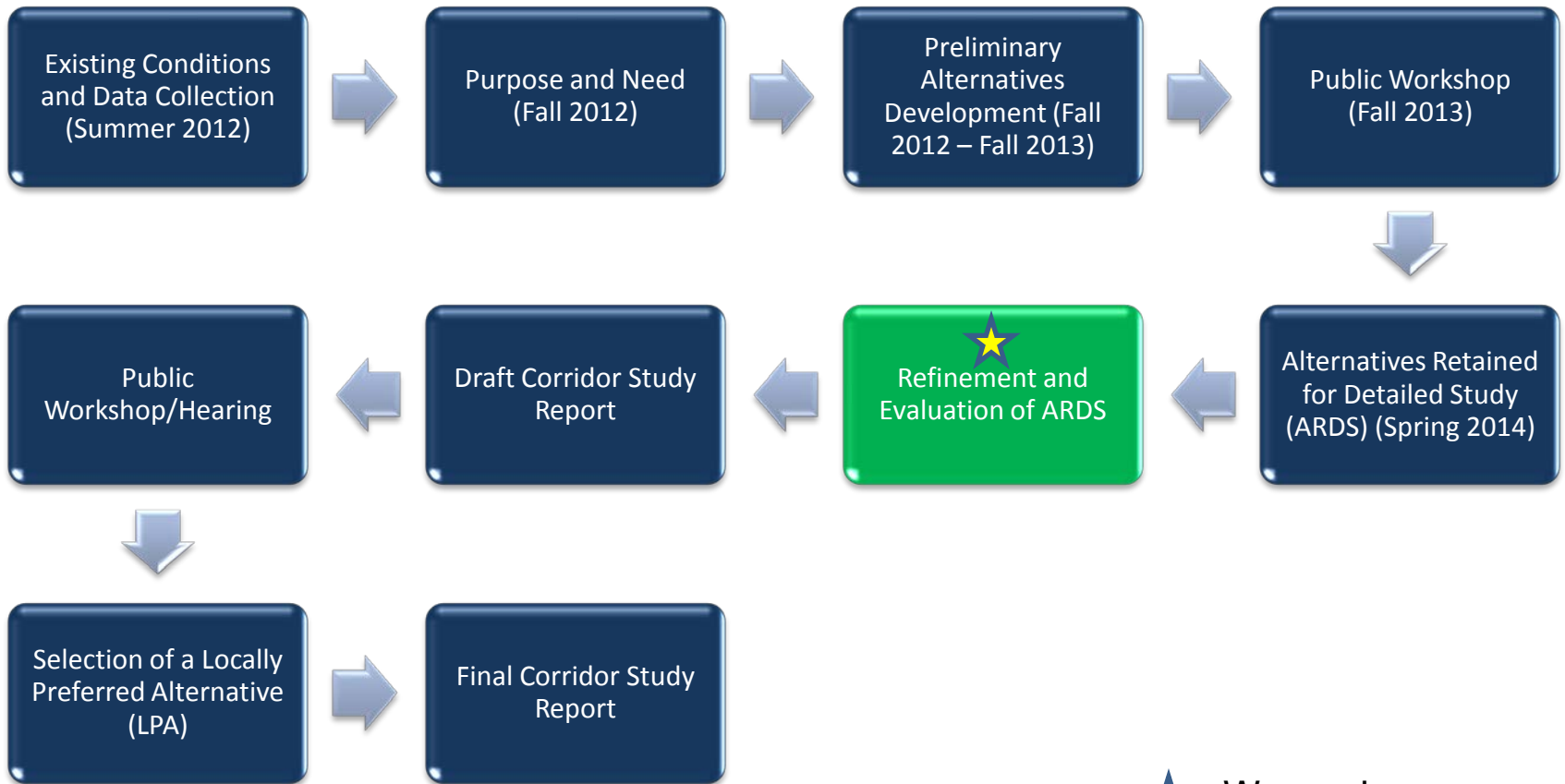
# Alternatives Public Workshop

- Held on November 21, 2013
- Purpose: present the preliminary alternatives and receive feedback from the public
- 97 people attended and 38 comments were received
- General support for the project
- Major concerns were:
  - Pedestrian crossings
  - Cost
  - Property and environmental impacts

# Alternatives Retained for Detailed Study (ARDS)

- These alternatives were ***retained***:
  - Alternative 1: No-Build
  - Alternative 2: Enhanced bus service with queue jumps
  - Alternative 3: New BRT service in dedicated curb lanes and mixed traffic
  - Alternative 5B: New BRT service in bi-directional median lane (or two median lanes where feasible)
  
- A decision has not yet been made on these alternatives and they are ***being studied further***:
  - Alternative 4A: New BRT service in dedicated repurposed median lanes
  - Alternative 4B: New BRT service in dedicated repurposed curb lanes
  
- These alternatives were ***not retained***:
  - Alternative 4C: New BRT service in dedicated additional median lanes
  - Alternative 4D: New BRT service in dedicated additional curb lanes
  - Alternative 5A: New BRT service in dedicated reversible median lane (mixed traffic in off-peak)
  - Alternative 6: New BRT service in dedicated curb lanes and mixed traffic

# Transit Project Planning Process



★ We are here

# Refinement and Evaluation of ARDS

- Detailed engineering
  - Develop alignments
  - Stormwater management analysis
  - Utility investigation
  - Cost estimates
  - Quantify property impacts
- Environmental studies
  - Natural environmental
  - Hazardous materials
  - Community
  - Indirect and cumulative effects
  - Air and noise analysis
- Traffic analysis
- Ridership forecasts





# Conclusion

Meeting #4: September (date TBD)

Topic for Meeting #4: Alternatives Retained for Detailed Study (ARDS)  
Presentation and Discussion

Reference information can be found on the SHA website:

<http://apps.roads.maryland.gov/WebProjectLifeCycle/ProjectDocuments.aspx?projectno=MO2441115>