MD 355 - South Corridor Advisory Committee Meeting # 10

Montgomery County
RAPID TRANSIT
MD 355

Bethesda – Chevy Chase Regional Services Center
Bethesda, Maryland
May 16, 2017
6:30 pm to 8:30 pm

MARYLAND DEPARTMENT OF TRANSPORTATION

MCDOT
Montgomery County Department of Transportation

Welcome

Agenda:

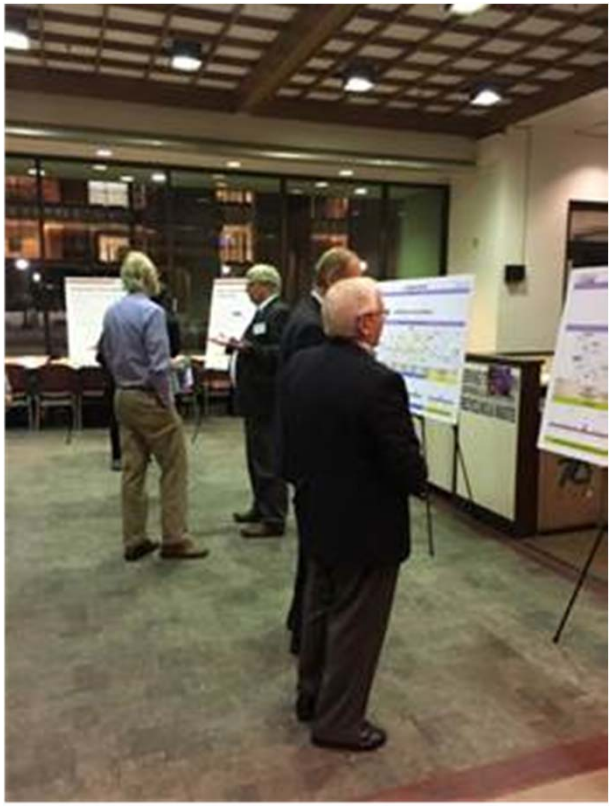
- 2017 Public Open House Summary
- Conceptual Alternatives Report
- Refined Alternatives to Advance to Next Phase
- BRT Station Design
- Next Steps

2017 Public Open House Summary

- Winter 2017 Open Houses
  - February 7th – Germantown
    - Montgomery College (Germantown Campus)
    - Over 60 attendees
  - February 8th – Rockville
    - Montgomery County Executive Office Building
    - Over 60 attendees
  - 41 Comments Received

2017 Public Open House Summary (Cont'd)

- Topics Covered
  - Project Planning Process
  - What is BRT?
  - Conceptual Alternatives
    - 3A – Mostly Median from Clarksburg to Grosvenor (via Observation Drive)
    - 3B – Mostly Median from Clarksburg to Bethesda
    - 4A – Mostly Curb from Clarksburg to Grosvenor
    - 4B – Mostly Curb from Clarksburg to Bethesda
  - Qualitative Results of the Analysis
  - BRT Station Design Concepts



2017 Public Open House Feedback

- Safe accommodation of bike lanes within the roadway
- Competition with parallel Metro service
  - Particularly redundant in the southern portion south of Rockville/Shady Grove
- Lane Repurposing
  - Concerns about impact to traffic
  - Pleased with concepts' attempt to stay within existing roadway
- Sidewalk access to Grosvenor needs improvement
- Adequate coordination between the MD 355 and MD 586 BRT projects
- Corridor should be integrated into the local bus network to provide better door-to-door travel times

2017 Public Open House Feedback (Cont'd)

- Section 1 – Grosvenor to Bethesda
  - Limited opportunities to build BRT infrastructure south of the Beltway without significant impacts
  - Service should continue to Bethesda
  - Consider alternate routing/means to access Bethesda Metro
- Section 7 – Middlebrook Road to Redgrave Place/Clarksburg Outlets
  - Observation Drive may be more beneficial
  - Need to complete construction of unbuilt Observation Drive segments
  - Be mindful of impacts to the Cider Barrel

Questions?

- ✓ **2017 Public Open House Summary**
  - ✓ **Q&A**
- Conceptual Alternatives Report
- Refined Alternatives to Advance to Next Phase
- BRT Station Design
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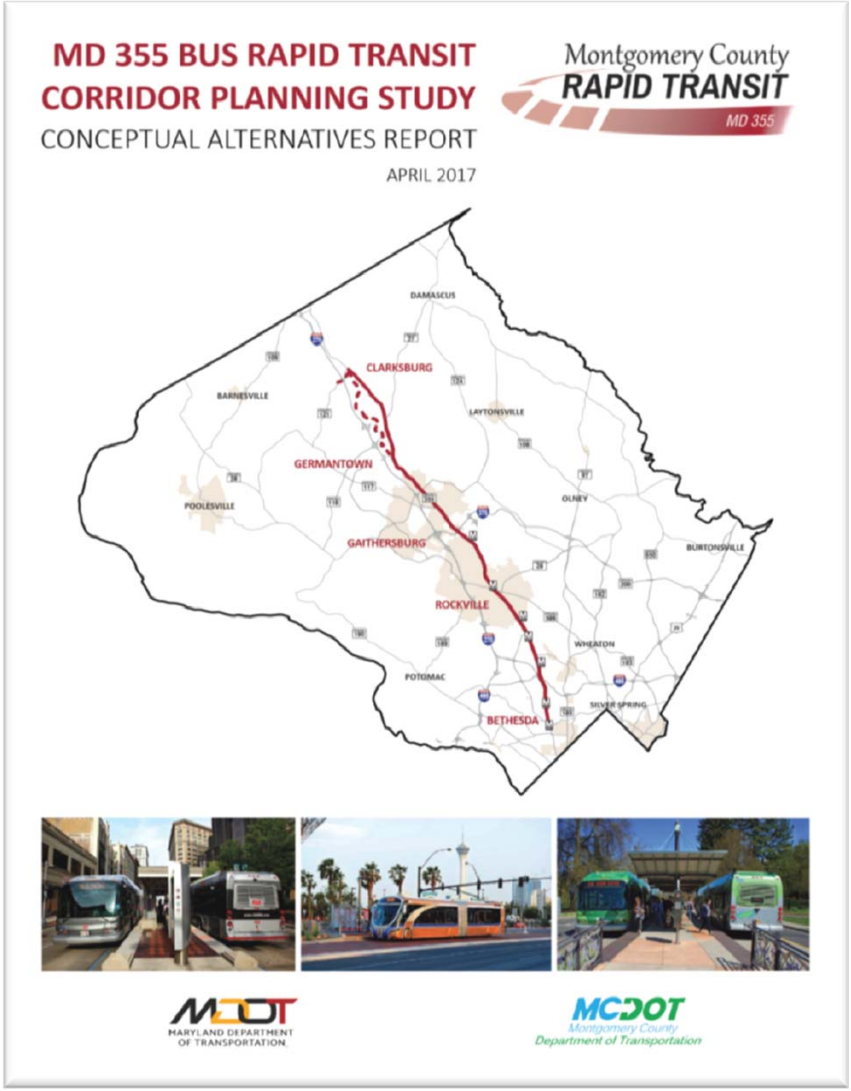
Conceptual Alternatives Report



Information Covered in the CA Report and CAC Meetings

Chapter	Meeting #	Open House/Report
1 – Project Overview	1, 2	2016 Public Open Houses
2 – Draft Preliminary Purpose and Need	3, 5	
3 – Environmental Summary	2	
4 – Conceptual Alternatives	6, 7	2017 Public Open Houses
5 – Transit Ridership and Transportation Analysis	8, 9	
6 – Public Involvement		
7 – Conceptual Alternatives	8, 9	
8 – Alternatives Advancing to Next Phase	10	Conceptual Alternatives Report

Questions?

- ✓ **2017 Public Open House Summary**
- ✓ **Conceptual Alternatives Report**
  - ✓ **Q&A**
- Refined Alternatives to Advance to Next Phase
- BRT Station Design
- Next Steps

Elements of a BRT Alternative

- **Running way** – A designated facility such as a striped/signed lane or exclusive busway in which the vehicle would travel between stations
- **Station locations** - Specific locations where passengers can access the service and the service can support the local land uses (residential, commercial, etc.)
- **Service plan** - The way in which BRT operates including service frequency, hours of service, routing and connecting services

Conceptual Alternatives – Running Way Alternatives Considered

- Alternative 1 No-Build
- Alternative 2 – Transportation System Management (TSM)

} Moving forward to next phase of study

BRT Alternatives

Alternative	Primary Running Way	Northern Limit	Southern Limit
3A	Median	Clarksburg Outlets	Grosvenor Metrorail
3B		Redgrave Pl. (Clarksburg)	Bethesda Metrorail
4A	Curb	Redgrave Pl. (Clarksburg)	Grosvenor Metrorail
4B		Redgrave Pl. (Clarksburg)	Bethesda Metrorail

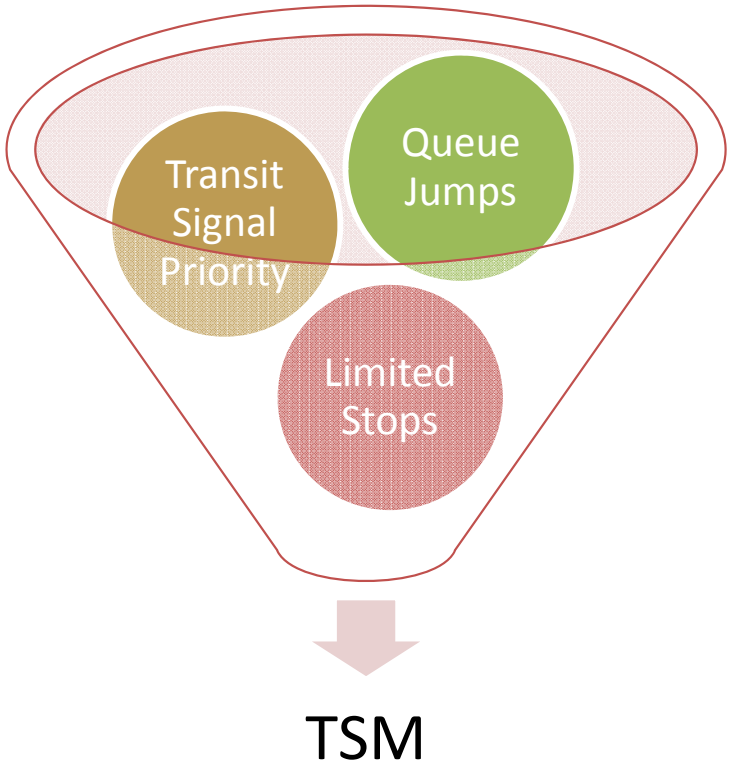
Alternatives Advancing for Detailed Analysis

	Alternative	Primary Running Way	Alignment	Northern Limit	Southern Limit
	1	No-build		N/A	N/A
Refined BRT Alternatives	**2**	TSM	Along MD 355	Clarksburg Outlets	Bethesda Metrorail Station
	3C	Median	Along MD 355 and Observation Drive (Section 7)		
	4C*	Curb	Along MD 355 and Observation Drive (Section 7)		

* The option of routing the BRT in the curb along MD 355 from Redgrave Place to Middlebrook Road (Section 7) may be considered if the widening of MD 355, as envisioned in the County's Master Plan of Highways and Transitways, is pursued as a separate project.

Alternative 2: TSM

- Transportation Systems Management will be defined in the next phase
- Would optimize existing system
- Could include such enhancements as:

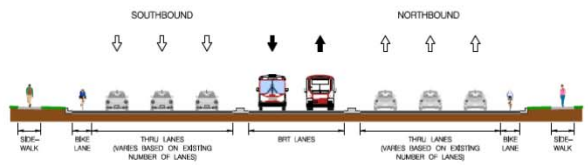


Key Takeaways Used to Refine BRT Alternatives

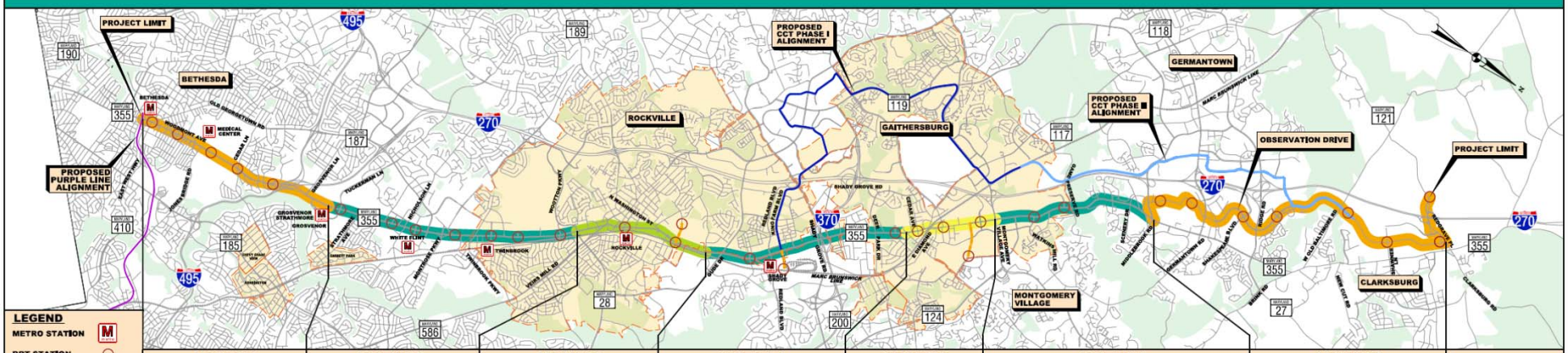
- Median vs. Curb in Sections 2, 4 and 6 will influence running way decisions for Sections 1, 3 and 5
- Median running BRT along MD 355 results in faster travel times
- Curb running BRT along MD 355 results in fewer impacts and lower costs
- Higher ridership along Observation Drive
  - 50% more riders in Section 7 compared with the MD 355 alignment
- Approximately 15 % of total corridor ridership is generated at stations south of Grosvenor Metrorail Station
- Lane repurposing in Section 3 has the greatest overall negative impact on traffic
- Operating in mixed traffic in Section 1 has the least impact on overall person throughput (County to study additional, potential mitigation strategies with lane repurposing conditions)

ALTERNATIVE 3C

SECTION 2, 4 & 6

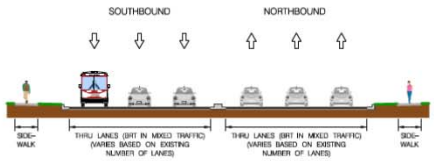


TWO DEDICATED MEDIAN BRT LANES WHERE FEASIBLE



SECTION 1 BETHESDA	SECTION 2 WHITE FLINT / ROCKVILLE	SECTION 3 ROCKVILLE TOWN CENTER	SECTION 4 ROCKVILLE / SHADY GROVE	SECTION 5 GAITHERSBURG	SECTION 6 MONTGOMERY VILLAGE / GERMANTOWN	SECTION 7 GERMANTOWN / CLARKSBURG	SCALE 1"=8,000'
FROM BETHESDA METRO TO TUCKERMAN LN (~3.2 MILES)	FROM TUCKERMAN LN TO DODGE ST (~4.1 MILES)	FROM DODGE ST TO COLLEGE PKWY (~1.8 MILES)	FROM COLLEGE PKWY TO SUMMIT AVE (~3.2 MILES)	FROM SUMMIT AVE TO MD 124 (~1.4 MILES)	FROM MD 124 TO MIDDLEBROOK RD (~3.2 MILES)	FROM MIDDLEBROOK RD TO CLARKSBURG OUTLETS (~6.1 MILES)	

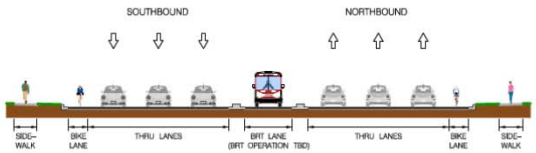
SECTION 1



* OPPORTUNITIES TO IMPLEMENT TSM STRATEGIES (QUEUE JUMPS AND TRANSIT SIGNAL PRIORITY) WILL BE INVESTIGATED IN THE NEXT PHASE

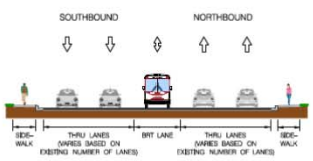
MIXED TRAFFIC / TSM*

SECTION 3



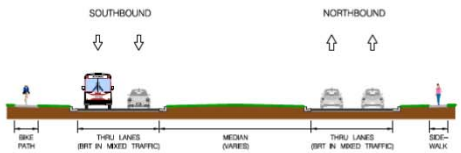
ONE DEDICATED MEDIAN BRT LANE

SECTION 5



LANE REPURPOSING - ONE DEDICATED MEDIAN BI-DIRECTIONAL BRT LANE

SECTION 7



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APPENDIX H - FIGURE 2

Montgomery County RAPID TRANSIT MD 355

ALTERNATIVE 4C

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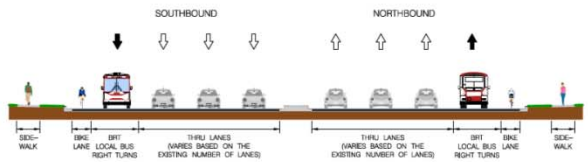
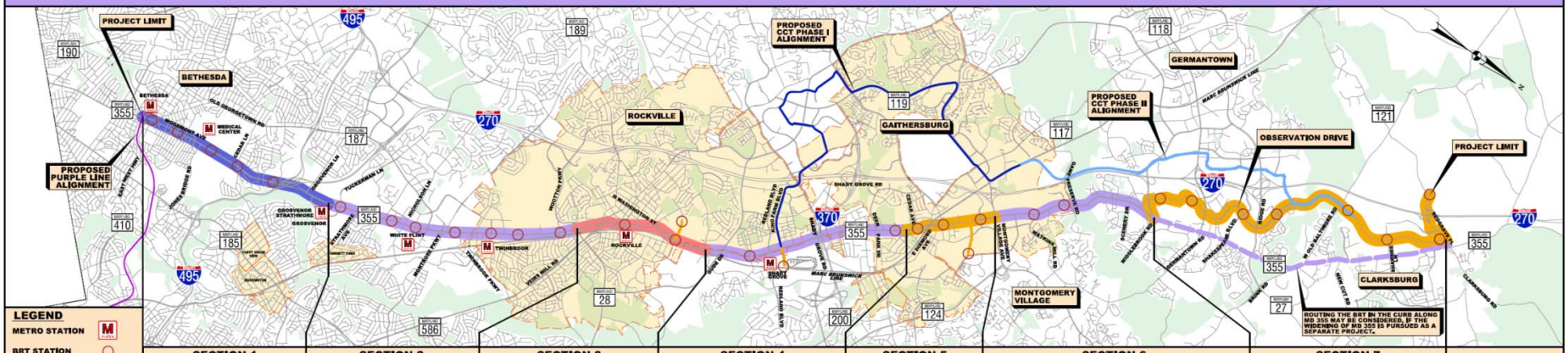
SECTIONS 2, 4 & 6



TWO DEDICATED CURB BRT LANES WHERE FEASIBLE



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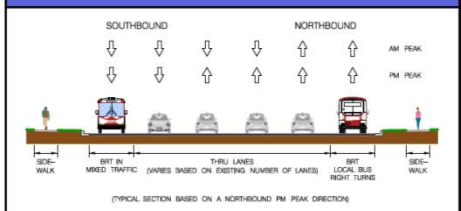
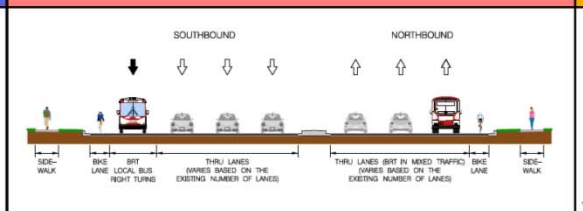


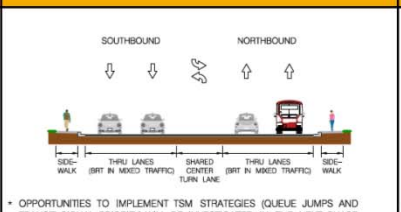
LANE REPURPOSING - CURB BRT LANE

SECTION 3



ONE DEDICATED CURB SOUTHBOUND BRT LANE

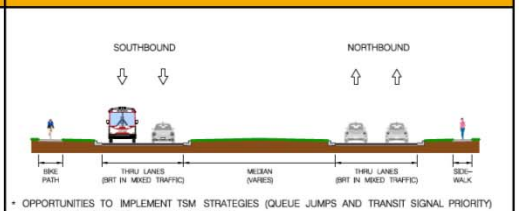
SECTION 5



* OPPORTUNITIES TO IMPLEMENT TSM STRATEGIES (QUEUE JUMPS AND TRANSIT SIGNAL PRIORITY) WILL BE INVESTIGATED IN THE NEXT PHASE

MIXED TRAFFIC / TSM*

SECTION 7



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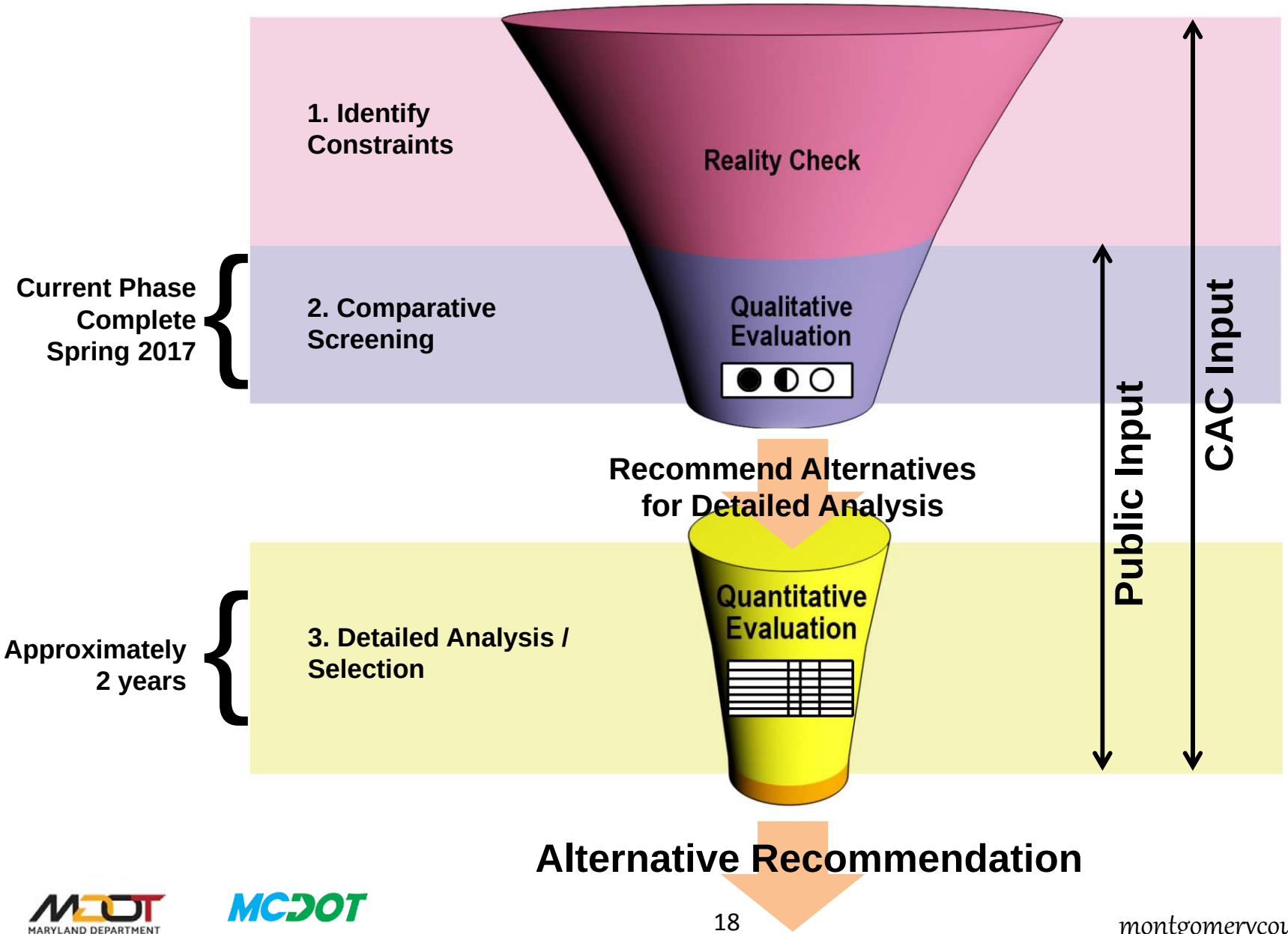
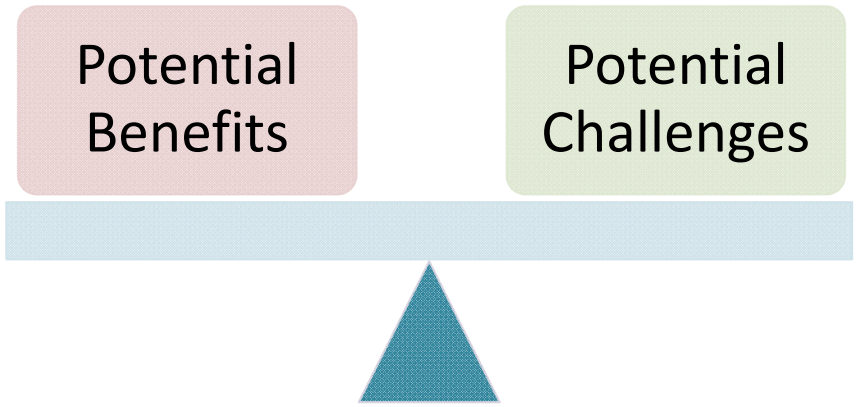
APPENDIX H - FIGURE 3

Alternatives Screening and Selection Process



Analyzing the Refined Alternatives in the Next Phase

- Will be a balancing act
- How do the potential benefits compare to what is required to realize those benefits?
- Can any of these challenges be mitigated and/or contained?
- Is there a "sweet spot"?



Questions?

- ✓ **2017 Public Open House Summary**
- ✓ **Conceptual Alternatives Report**
- ✓ **Refined Alternatives to Advance to Next Phase**
  - ✓ **Q&A**
- BRT Station Design
- Next Steps

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BUS RAPID TRANSIT IN MONTGOMERY COUNTY

MD 355
BRT Station Design

ZGF

ZIMMER GUNSUL FRASCA ARCHITECTS LLP

MCDOT

Montgomery County
Department of Transportation

Station Design - Background

MCDOT is designing stations for the County's future BRT network.

The stations will have **interchangeable, flexible components**, that can be adapted for all corridors.

This work is being done with a grant from the Metropolitan Washington Council of Governments' Transportation/Land-Use Connections Program, in partnership with architecture firm ZGF.

Station Design - Agenda

- Introduction – Design Goals
- Station Design - Best Practice Examples
- MCDOT BRT Stations – Types and Amenities
- Previous Community Input
- Design Opportunities – Local Materials & Sustainability
- The Station Family – Adaptation to Capacity and Context
- Questions & Comments

Station Design - Goals

1. Easy to Find and Use
2. Accessible
3. Safe and Comfortable
4. Adaptable and Context Sensitive
5. Maintainable
6. Good Life-Cycle Investment

Basic Rider Comfort =
User Information
Weather Protection / Rain and Wind
Seating

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Station Design – Best Practices

SCALE, FORM, IMAGE & ENCLOSURE

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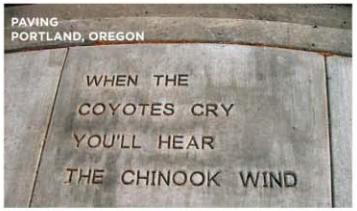
Station Design – Best Practices

MATERIAL

LIGHTING

PUBLIC ART



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Station Design - Types

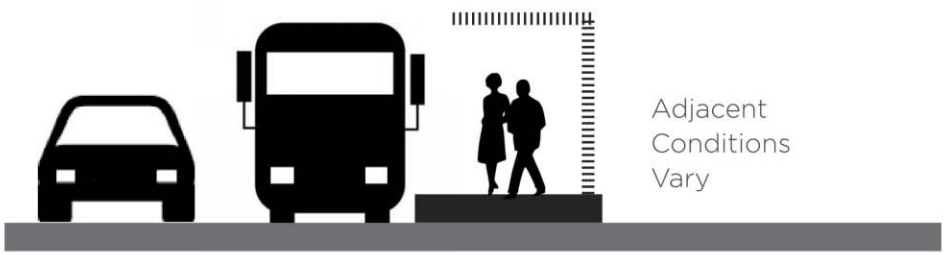
STATION PLATFORM TYPES

There are two station platform types:

- Side-loading - which may be accessed directly from a sidewalk
- Center-loading - which may be located in a roadway median

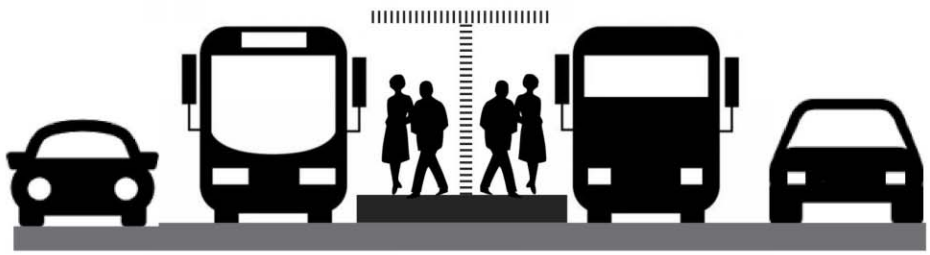
SIDE-LOADING PLATFORMS

SECTION DIAGRAM



CENTER-LOADING PLATFORMS

SECTION DIAGRAM



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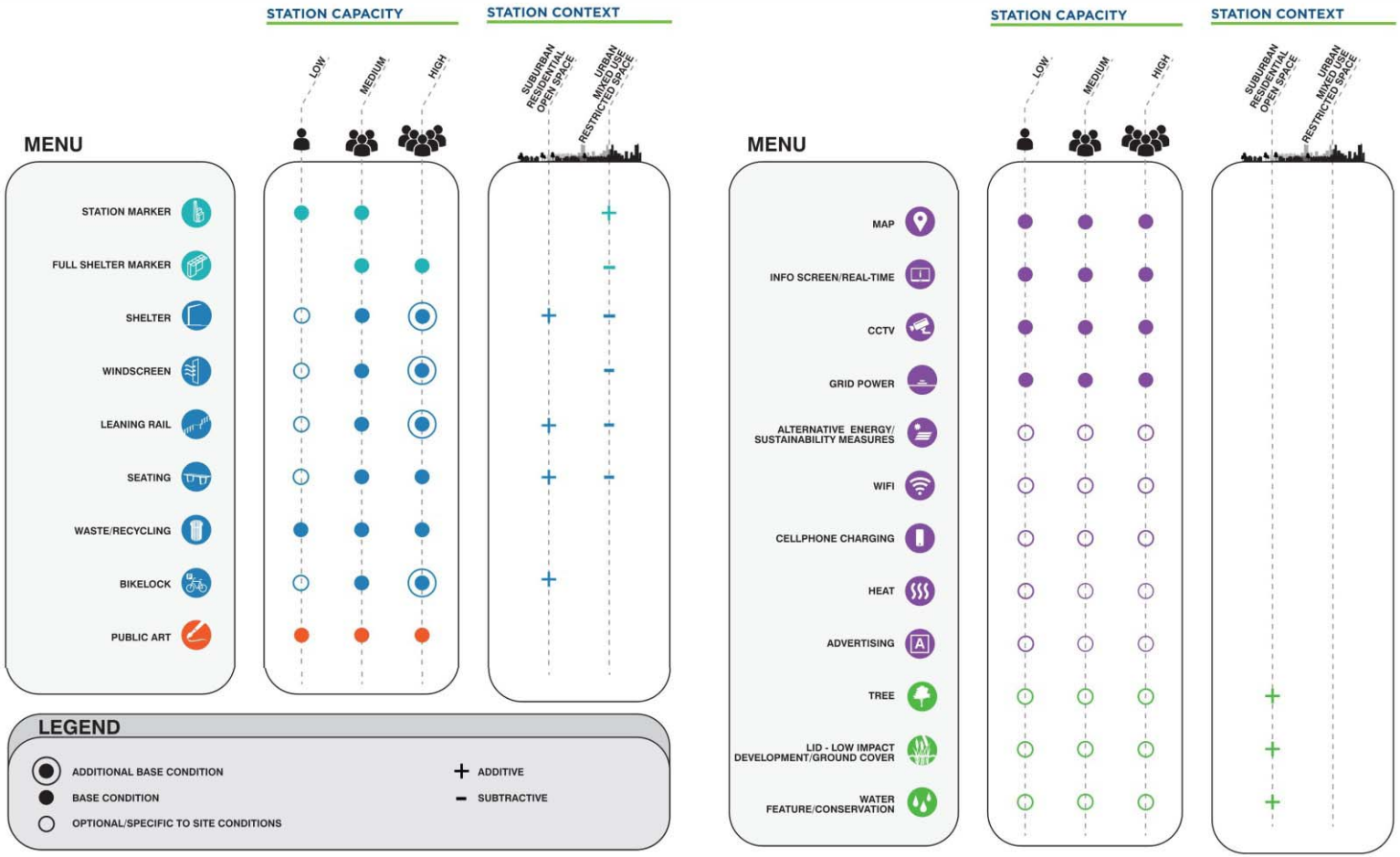
Station Design – Amenities



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Station Design – Community Input

February 7
Open House
Germantown

February 8
Open House
Rockville

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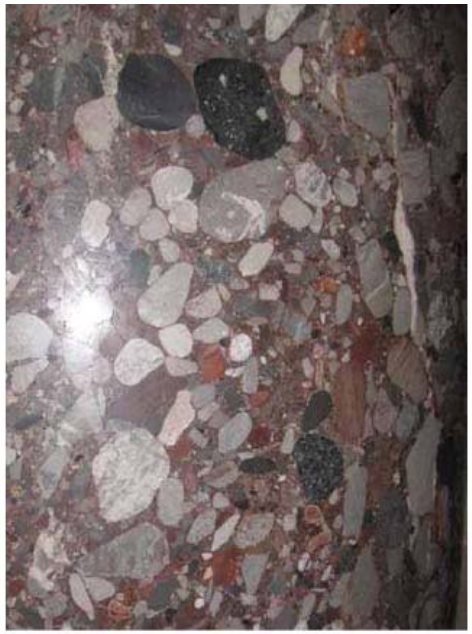
Design Features – Local Materials



Historically Quarried Stone in Montgomery County

Seneca Red Sandstone (far left)
Sykesville Gneiss (left)
Potomac Marble (above)

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Design Features – Sustainability

Energy Production - PV

Stormwater Management & Enhanced Landscape

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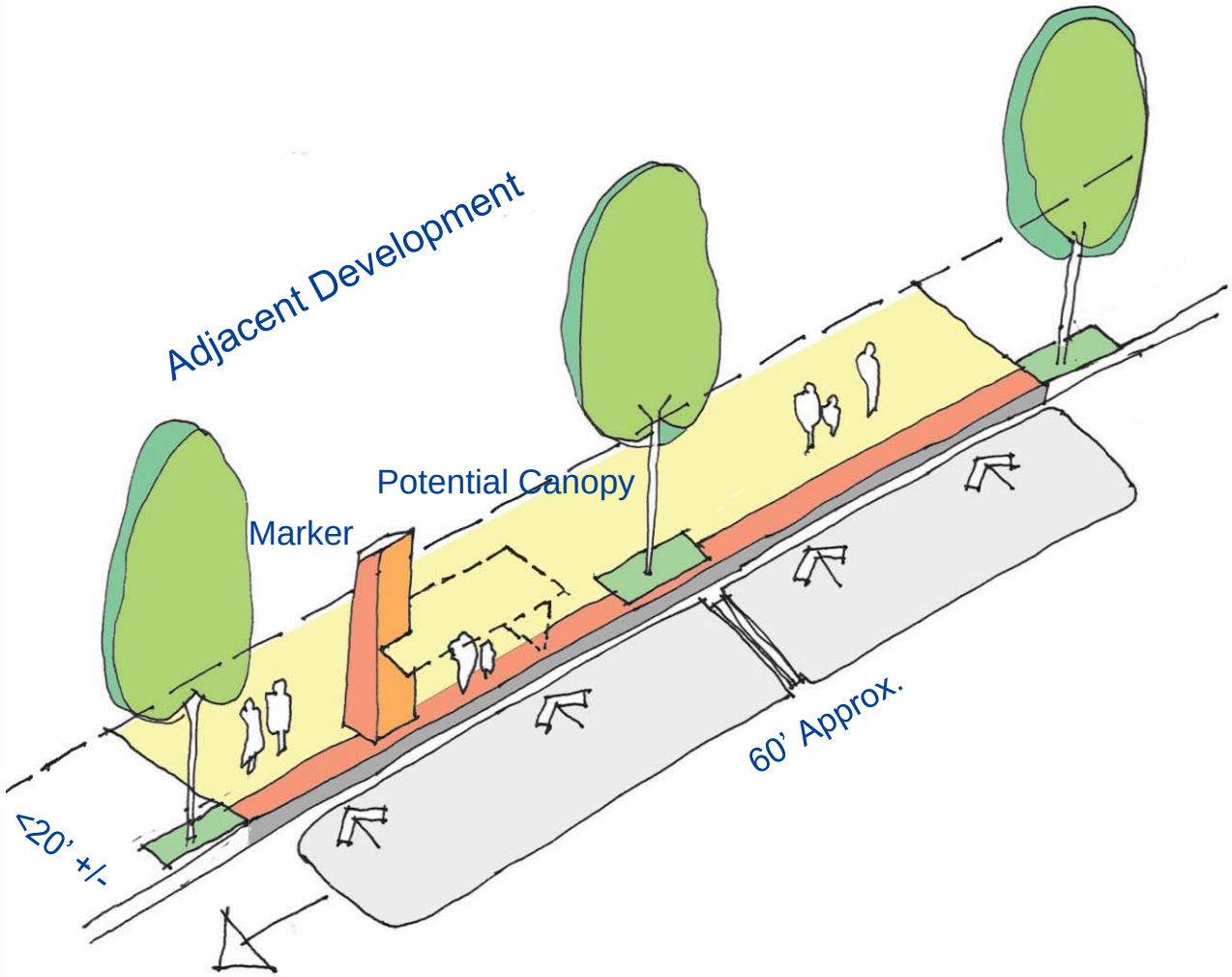
Station Family



Type 1

Urban Streetfront – Shared Sidewalk

1 Marker +
1 Potential Small Canopy

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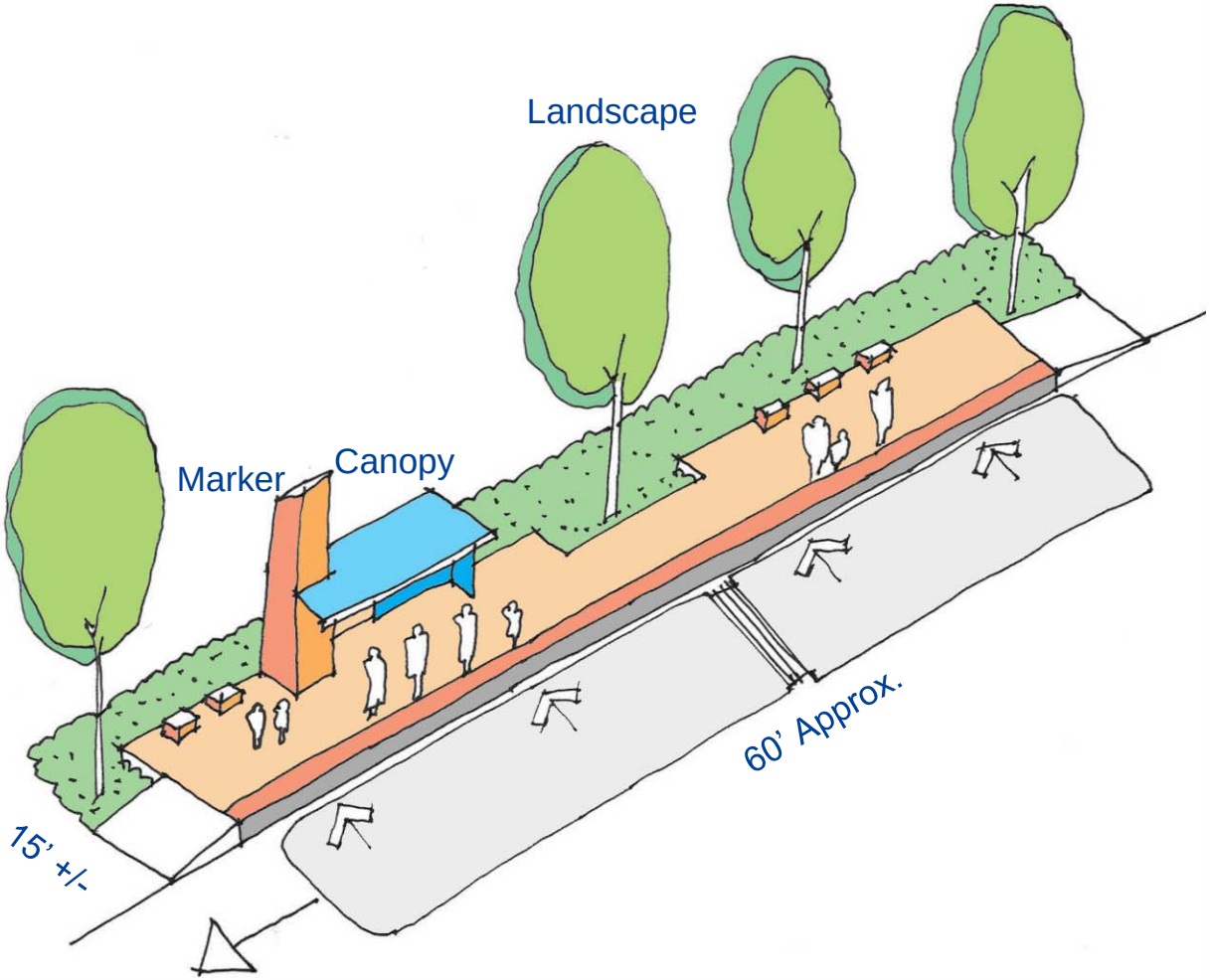
Station Family



Type 2

1 Marker +
1 Small Canopy
& Landscape

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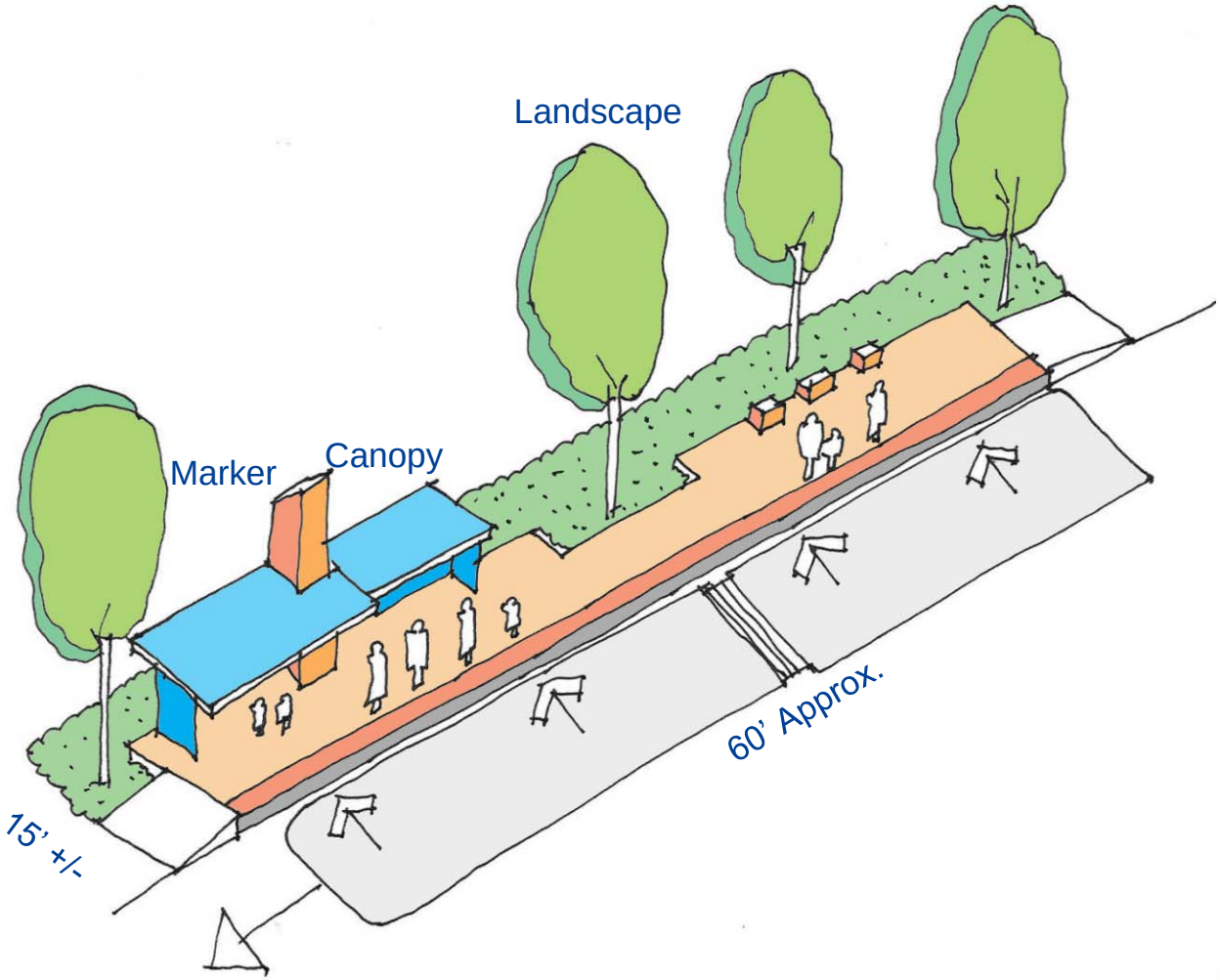
Station Family



Type 3

1 Marker +
1 Large Canopy
& Landscape

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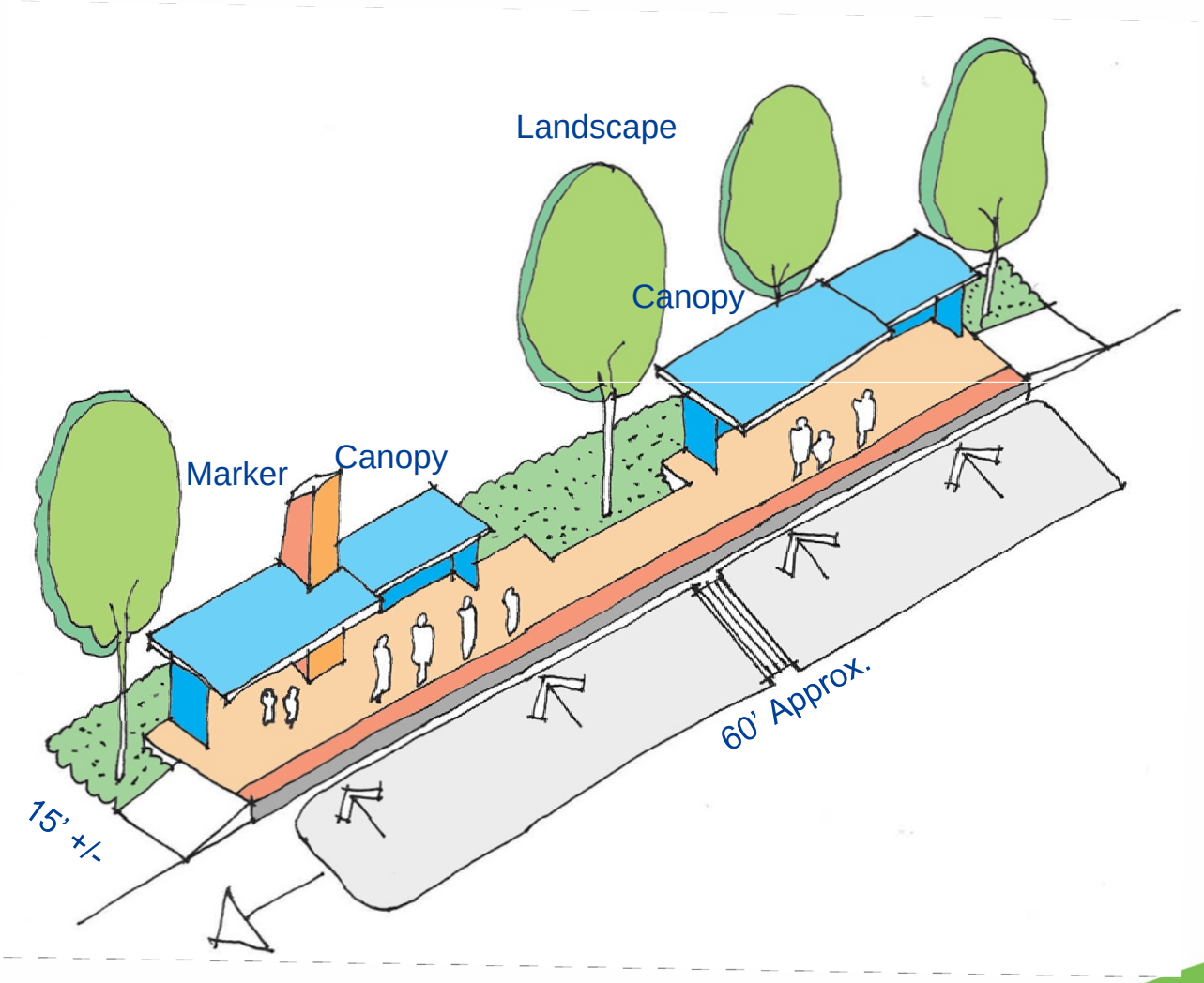
Station Family



Type 4

1 Marker +
2 Large Canopies
& Landscape

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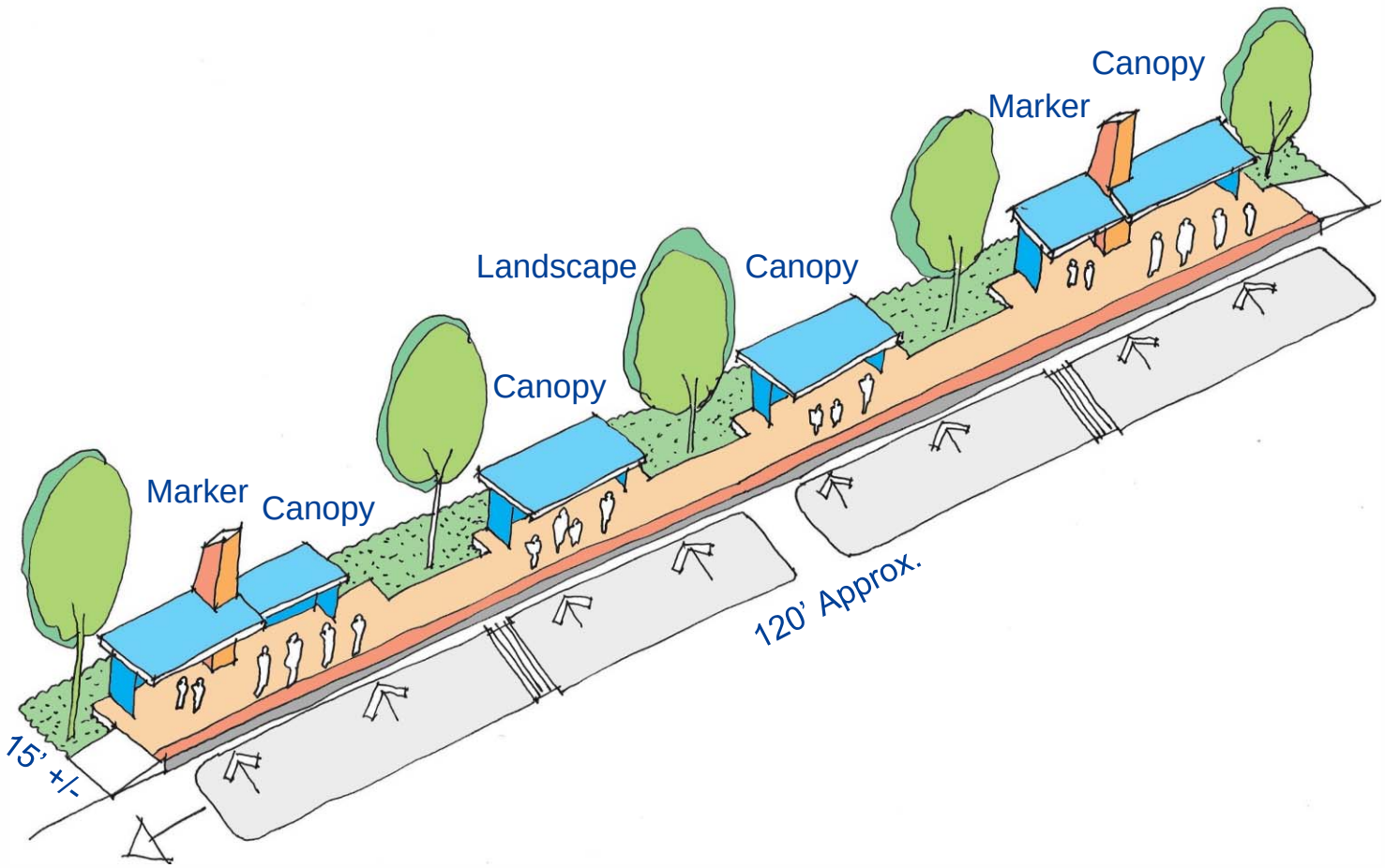
Station Family



Type 5

Double Station – High Capacity

2 Markers + 4 Canopies & Landscape

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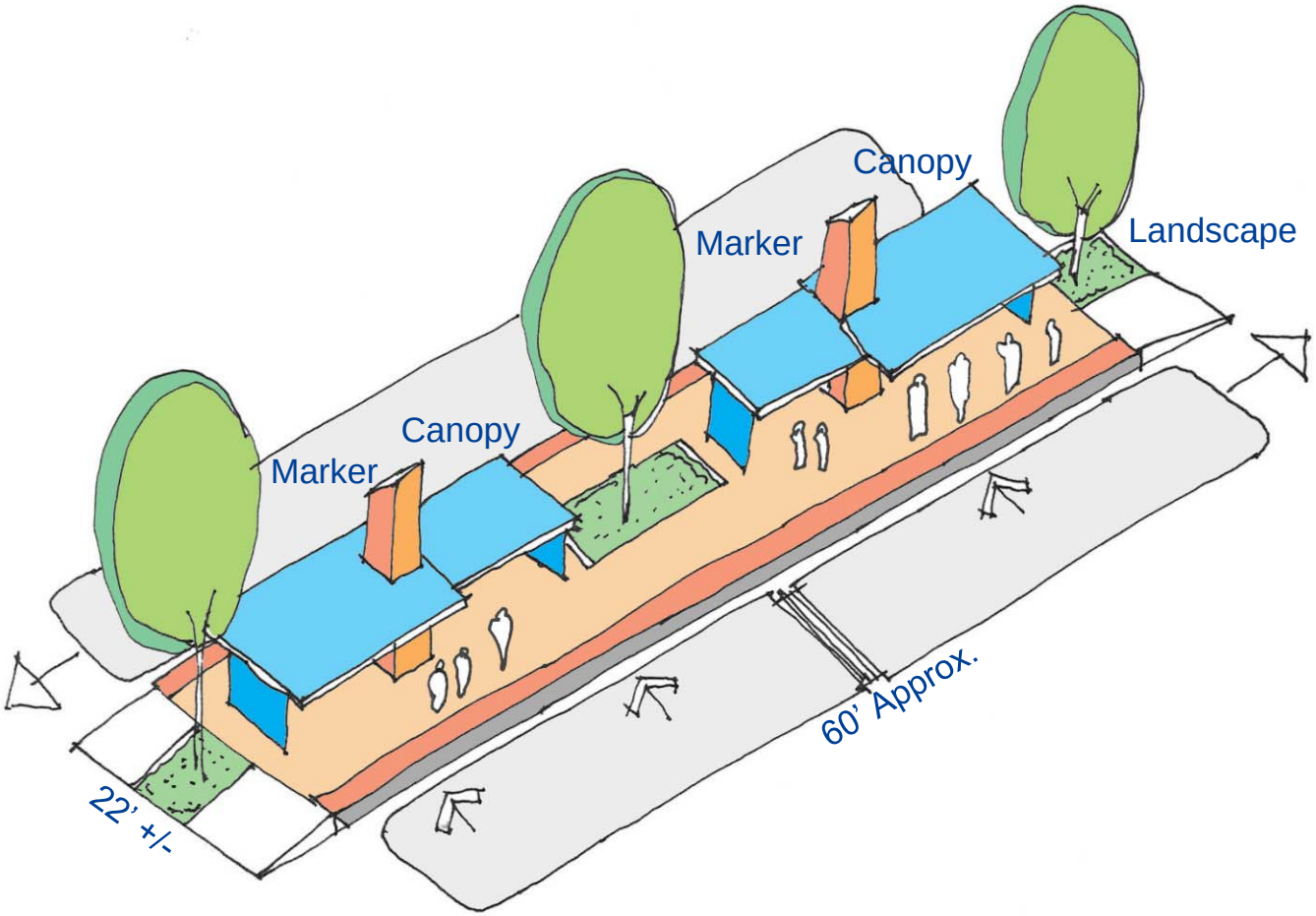
BUS RAPID TRANSIT IN MONTGOMERY COUNTY

Station Family



Type 6

Center Station

2 Markers +
2 Canopies
& Landscape

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BRT Station Design Questions / Comments?

ZGF

ZIMMER GUNSUL FRASCA ARCHITECTS LLP

MCDOT

Montgomery County Department of Transportation

Next Steps

- Next phase to be lead by Montgomery County Department of Transportation.
- MDOT will continue to be a key stakeholder in the project
- Detailed analysis of the refined BRT alternatives as well as No-build and TSM
- CACs will continue to meet

Additional Questions