



# Montgomery County Transit Authority

Review of Transit Finance – Revised 2015 RTS Cost Estimate



With Contributions From  
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Montgomery County Government

July 15, 2015

# Purpose

- Revise RTS Cost Estimate for capital, operating, and maintenance costs for the first four RTS corridors:
  - MD 355 North
  - MD 355 South
  - US 29
  - Veirs Mill Road
- Develop a preliminary RTS/CCT multiyear phasing and capital cost schedule
- System parameters are intended to represent a high-quality RTS system, compliant with the Approved CTCFMP.
- This is a preliminary draft cost estimate and may be revised during the Transit Task Force finance evaluation process



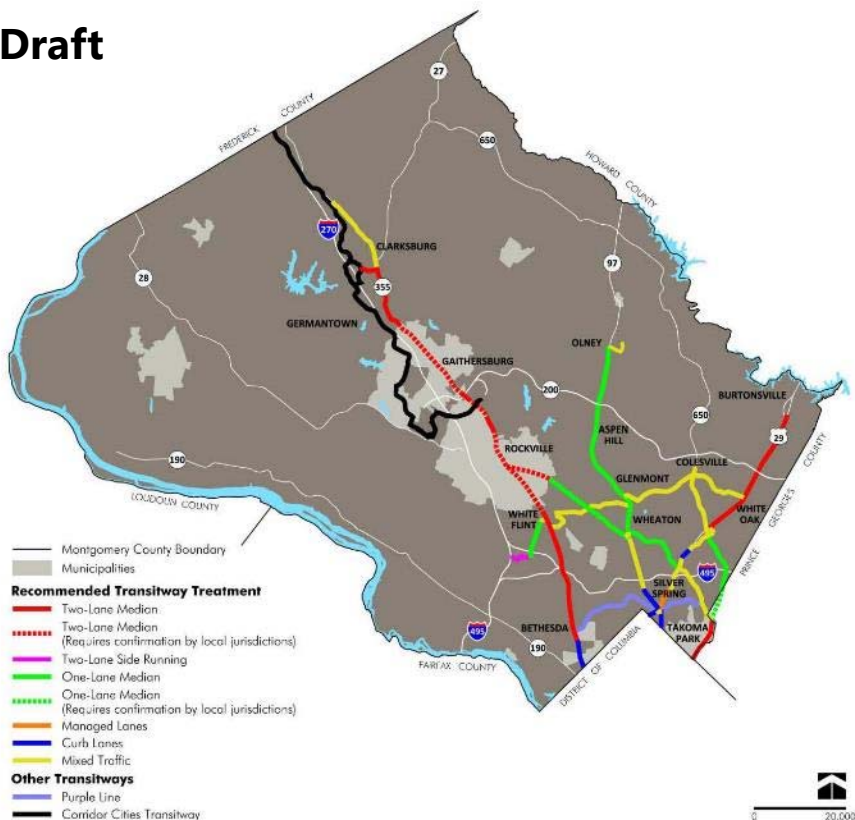
# Updates since 2013 RTS Cost Estimate



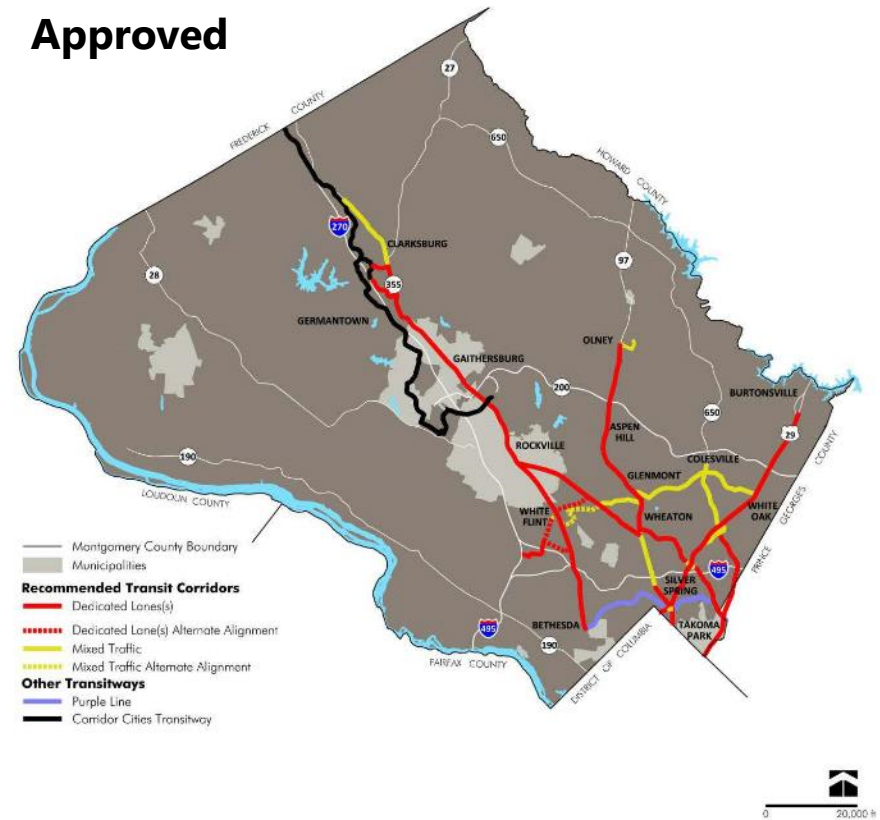
# Critical 2015 Cost Estimate Changes

- 2013 Cost Estimate based on Planning Board **Draft** Countywide Transit Corridors Functional Master Plan (CTCFMP)
- Approved CTCFMP changed RTS system attributes

**Draft**



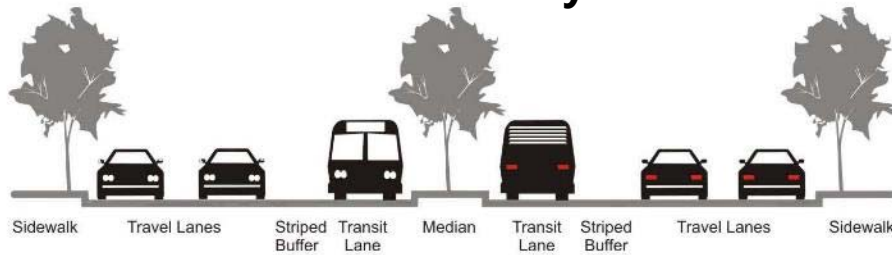
**Approved**



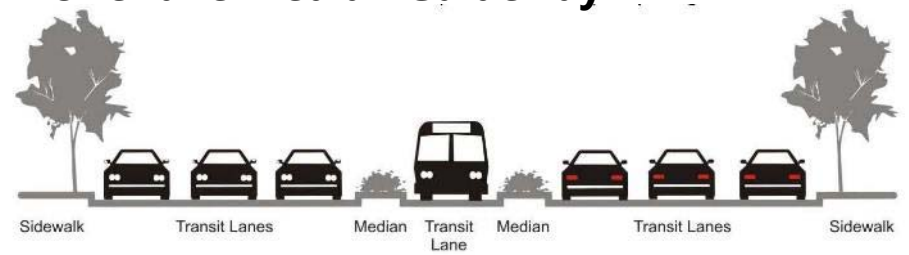
# Critical Changes for 2015 Cost Estimate

- RTS guideway selection is a major cost component
- Four Major Guideway Types:

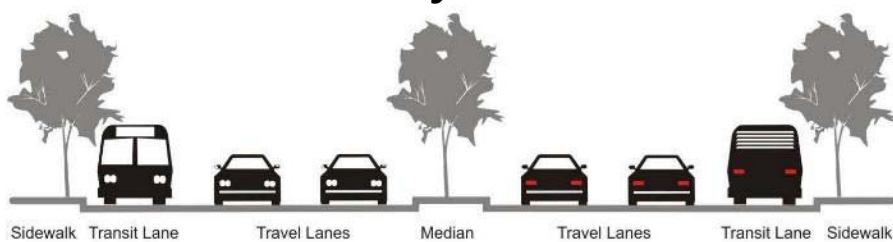
## Two-lane Median Guideway



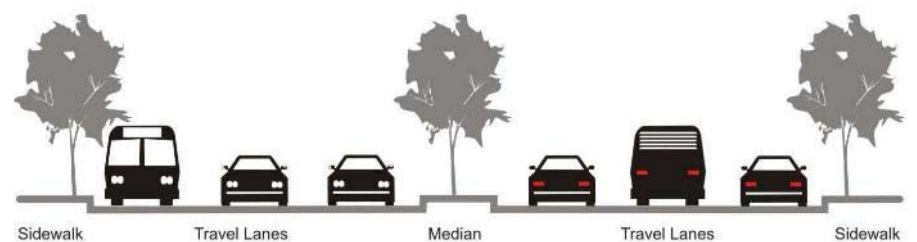
## One-lane Median Guideway



## Curb Lane Guideway



## Mixed Traffic



# Critical Changes for 2015 Cost Estimate

- Unit costs adjusted to 2015 values
- One-lane median guideway on MD 355 North
- Combination of one-lane median guideway and curb lanes on MD 355 South, from I-495 to Bethesda Metro Station
- Mixture of two-lane median guideway and mixed traffic operation on portions of Veirs Mill Road
- MD 355 South corridor ends at Bethesda Metro instead of Friendship Heights

# Critical 2015 Cost Estimate Changes

- Assume most corridors will maintain existing number of traffic lanes
- All land acquisition costs in downtown Bethesda and US 29, south of New Hampshire Blvd., are eliminated
- CTCFMP right-of-way recommendations on MD 355 North and US 29 were reduced in selected locations
- Several major bridge reconstruction projects eliminated
- Total number of buses was reduced from 153 to 88, reflecting initial service frequency



# 2015 Cost Estimate Methodology





# Cost Estimate Update Methodology

- Approved Countywide Transit Corridors Functional Master Plan (CTCFMP) is the basis for system configuration
- VHB developed 2015 unit capital costs for:
  - RTS guideways
  - RTS stations (platform, fare collection, canopy, etc.)
  - Roadway widening
  - Intersection reconstruction
  - Drainage
  - Traffic signals
  - Bridges
  - Retaining walls
  - Above-ground utilities
  - Numerous other construction elements
  - Buses

# Cost Estimate Update Methodology

- VHB reviewed Approved CTCFMP for guidance to quantify corridor attributes (i.e., miles of guideway, number of stations, etc.)
- MCDOT refined and updated land acquisition cost estimates to 2015 dollars
- VHB developed bus quantities from Approved CTCFMP operational program
- RTS maintenance facility cost estimate is based on total number of buses to maintain
- Maintenance of Traffic, Mobilization, and Soft Costs calculated as a percentage of capital costs
- Contingency applied to capital costs for construction

# 2015 Capital Cost Estimate Summary





# 2015 Capital Cost Estimate Summary

Corridor	Physical Construction Costs (\$ million)	Bus Costs (\$ million)	Land Acquisition (ROW) Cost (\$ million)	MOT, Mobilization, and Soft Costs (\$ million)	Total Cost
<b><u>RTS Corridors</u></b>					
MD 355 North	\$328.5	\$36.0	\$79.1	\$176.0	\$619.6
MD 355 South	\$242.1	\$21.6	\$29.9	\$129.2	\$422.8
US 29	\$108.4	\$31.2	\$0.2	\$60.0	\$199.9
Veirs Mill Rd	\$164.1	\$16.8	\$16.7	\$87.9	\$285.5
Maint. Facility	\$57.0	n/a	n/a	\$18.6	\$75.6
<b>Total</b>	<b>\$900.1</b>	<b>\$105.6</b>	<b>\$125.9</b>	<b>\$471.7</b>	<b>\$1,603.4</b>

# 2013 vs. 2015 Overall Cost Estimate Comparison

Corridor	2013 Cost Total (\$ million)	2013 Cost/Mile (\$ million)	2015 Cost Total (\$ million)	2015 Cost/Mile (\$ million)
<b><u>RTS Corridors</u></b>				
MD 355 North	\$595.1	\$42.1	\$619.6	\$43.9
MD 355 South	\$544.7	\$58.3	\$422.8	\$55.1
US 29	\$326.9	\$29.7	\$199.9	\$18.1
Veirs Mill Rd	\$277.9	\$45.1	\$285.5	\$46.3
Maint. Facility	\$92.9	n/a	\$75.6	n/a
<b>Total</b>	<b>\$1,837.5</b>	<b>\$47.1</b>	<b>\$1,603.4</b>	<b>\$41.1</b>
CCT (Phase 1)	\$545.0 (2012)	\$59.9	\$600.0	\$65.9

# 2015 Operations & Maintenance Cost Estimate Summary





# 2015 Annual Operations & Maintenance (O&M) Cost Estimate

Corridor	Corridor Length (miles)	Number of Buses	Total Annual O&M Cost (\$ million)	Average Cost/Mile (\$ million)	Average Cost/Bus (\$ million)
<b><u>RTS Corridors</u></b>					
MD 355 North	14.13	30	\$17.8	\$1.260	\$0.593
MD 355 South	7.67	18	\$11.0	\$1.434	\$0.611
US 29	11.02	26	\$14.7	\$1.334	\$0.565
Veirs Mill Rd	6.16	14	\$8.1	\$1.315	\$0.579
<b>Total</b>	<b>38.98</b>	<b>88</b>	<b>\$51.6</b>		
CCT	9.10	18	\$11.8	\$1.297	\$0.656

- Table contains cost data only; no farebox recovery or other revenue is accounted for in this data

# Phasing and Capital Cost Schedule



# RTS Phasing & Capital Cost Schedule

PRELIMINARY DRAFT - SUBJECT TO REVISION

MONTGOMERY COUNTY RAPID TRANSIT SYSTEM PHASING & CAPITAL COST SCHEDULE (Current Dollars in \$M)														
	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	TOTAL
CCT	27.6	6.9												34.5
	30.0	60.0	170.0	170.0	170.0									600.0
Subtotal	57.6	66.9	170.0	170.0	170.0	-	-	-	-	-	-	-	-	634.5
RTS Maintenance Fac.		10.3	2.6											12.8
			2.3	5.7	27.4	27.4								62.7
Subtotal	-	10.3	4.9	5.7	27.4	27.4								75.6
Veirs Mill Road	11.1	11.1	5.5											27.7
		8.4	8.4	18.1	106.9	106.9								248.6
Subtotal	11.1	19.4	13.9	18.1	106.9	106.9	-	-	-	-	-	-	-	276.3
MD355 South	2.5	6.2	17.4	17.4	10.9									54.5
				14.9	14.9	26.4	156.1	156.1						368.3
Subtotal	2.5	6.2	17.4	32.4	25.8	26.4	156.1	156.1	-	-	-	-	-	422.8
US 29	2.0	8.8	8.8	4.9										24.4
				0.2	14.0	80.7	80.7							175.6
Subtotal	2.0	8.8	8.8	5.1	14.0	80.7	80.7	-	-	-	-	-	-	200.0
MD355 North	2.5	3.0	3.5	3.5	22.9	23.6	14.8							73.9
						39.5	39.5	36.4	215.1	215.1				545.7
Subtotal	2.5	3.0	3.5	3.5	22.9	63.2	54.3	36.4	215.1	215.1	-	-	-	619.6
<b>Total Current Dollars</b>	<b>75.6</b>	<b>114.5</b>	<b>218.5</b>	<b>234.8</b>	<b>367.0</b>	<b>304.5</b>	<b>291.0</b>	<b>192.5</b>	<b>215.1</b>	<b>215.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2,228.7</b>

## NOTES:

Revised 7/14/2015

- This a draft RTS multiyear phasing and capital cost program summary and may requires further revisions.
- Design-Build procurement method is assumed for all corridors.
- The Final Design/Mobilization period is assumed to include final design associated with Design-Build delivery process and mobilization for construction.
- All costs, except for CCT, are based on revised 2015 CTCFMP Cost Estimate, in 2015 dollars.
- The 2012 Maryland Transit Administration capital cost estimate for the CCT was escalated to 2015 to provide the basis for CCT costs in this summary.
- Escalation is not applied to this capital cost program

- Concept Planning/Prelim. Eng./30% Design
- Procurement
- ROW
- Final Design/Mobilization
- Construction
- Operation