Guiding Principle	Theme	Metric	Business as Usual	Concept A	Concept B	Data Source	Methodology
Convenient	Transit Reliability	Bus travel time variability	Less than 2.7 minutes	Less than 1 minute	Less than 2.6 minutes	• Simulations from the VISSIM travel time model	• Ran 12 simulations of bus travel time from end-to-end for each alternative • Removed fastest and slowest simulations to minimize effect of outliers • Assessed variability in minutes from the average travel time
	Transit Service	Service frequency (number of buses per hour serving the corridor)	6 buses per hour peak; 2 buses per hour midday (DASH 30) 3 buses per hour all day (29K,N) 5 buses per hour all day (28A)	6 buses per hour peak; 4 buses per hour midday (DASH 30) 3 buses per hour all day (29K,N) 5 buses per hour all day (28A)	6 buses per hour peak; 4 buses per hour midday (DASH 30) 3 buses per hour all day (29K,N) 5 buses per hour all day (28A)	• Existing bus service plans • Future bus service as outlined in the Alexandria Transit Vision Plan	• Compared existing bus service plans to future bus service as outlined in the Alexandria Transit Vision Plan
Efficient	Travel Time	Transit Travel Time (2030, PM)	25.2 minutes (EB) 22.3 minutes (WB)	16.0 minutes (EB) 15.6 minutes (WB)	15.9 minutes (EB) 16.8 minutes (WB)	• Simulations from the VISSIM travel time model	• Ran 12 simulations of bus travel time from end-to-end for each alternative • Averaged simulation runs to arrive at average speed and time to traverse corridor
		Vehicular Travel Time (2030, PM)	19.6 minutes (EB) 14.8 minutes (WB)	15.5 minutes (EB) 14.2 minutes (WB)	15.6 minutes (EB) 16.2 minutes (WB)	• Simulations from the VISSIM travel time model	• Ran 12 simulations of passenger car travel time from end-to-end for each alternative • Averaged simulation runs to arrive at average speed and time to traverse corridor
Equitable	Serving Low-Income and Zero-Car Households	Additional low-income population and low-income households within 30 minutes by transit of activity centers (Landmark/West End and Alexandria Commons) and the entire corridor	CORRIDORWIDE Baseline TO LANDMARK Low-income Pop: 9,616 Zero-car HH: 3,933 FROM LANDMARK Low-income Pop: 9,748 Zero-car HH: 4,068 TO ALEX. COMMONS Low-income Pop: 5,241 Zero-car HH: 2,797 FROM ALEX. COMMONS Low-income Pop: 5,123 Zero-car HH: 2,822	CORRIDORWIDE From Duke St (30 Min) Low Income Population: +12% vs. No Build Zero-car HH: +14% vs. No Build To Duke St. (30 Min) Low Income Population: +11% vs. No Build Zero-car HH: +13% vs. No Build TO LANDMARK Low-income Pop: 9,818 (+2%) Zero-car HH: 4,027 (+2%)	CORRIDORWIDE From Duke St (30 Min) Low Income Population: +9% vs. No Build Zero-car HH: +11% vs. No Build To Duke St. (30 Min) Low Income Population: +8% vs. No Build Zero-car HH: +9% vs. No Build TO LANDMARK Low-income Pop: 9,782 (+2%) Zero-car HH: 4,009 (+2%)	• U.S. Census data on low-income population and zero-car households • Existing transit network • Proposed routes and stops serving Duke Street • Average transit travel time from VISSIM travel time model simulations	• Input new stops and travel times into Remix software • Remix calculated travel times including walk times to stops • Remix overlaid travel time isochrone map* onto U.S. Census data to calculate additional populations served ** An isochrone map shows the areas you can reach within a certain travel time*

Guiding Principle	Theme	Metric	Business as Usual	Concept A	Concept B	Data Source	Methodology
				FROM LANDMARK Low-income Pop: 9,872 (+1%) Zero-car HH: 4,131 (+2%) TO ALEX. COMMONS Low-income Pop: 6,179 (+18%) Zero-car HH: 3,398 (+21%) FROM ALEX. COMMONS Low-income Pop: 6,271 (+22%) Zero-car HH: 3,395 (+20%)	FROM LANDMARK Low-income Pop: 9,820 (+1%) Zero-car HH: 4,113(+1%) TO ALEX. COMMONS Low-income Pop: 5,921 (+13%) Zero-car HH: 3,156 (+13%) FROM ALEX. COMMONS Low-income Pop: 5,761 (+12%) Zero-car HH: 3,116 (+10%)		
Safe	Pedestrian Safety	New pedestrian refuge islands	Baseline	28 pedestrian refuge islands. 46% - 56% pedestrian crash reduction per location.	10 pedestrian refuge islands. 46% - 56% pedestrian crash reduction per location.	• Concept plans	• Counted the number of pedestrian refuge islands provided in each concept. Cited potential reduction in pedestrian crashes based on Federal Highway Administration (FHWA) crash statistics.
	Intersection Safety	Reduction in left-turn angle crashes	74 left-turn crashes at signalized intersections	70% reduction	10% reduction	• Concept plans • Data on crashes on Duke Street between 2016 and 2020 • The Virginia State Preferred CMF List (CMF ID 339)	• Applied crash mitigation factor (CMF) to existing crash numbers/locations based on proposed location of protected left turns
		Reduction in overall crashes at intersections	489 crashes at signalized intersections	15% reduction	5% reduction	• Concept plans • Data on crashes on Duke Street between 2016 and 2020 • The Virginia State Preferred CMF List (CMF ID 8800)	• Applied crash mitigation factor (CMF) to existing crash numbers/locations based on proposed location of pedestrian refuge islands *Note: pedestrian refuge islands are shown to have a 25.8 percent decrease in all crash types and all severities at the location of implementation*
Vibrant	Improved Access to Activity Centers	Additional population and jobs within 30 minutes by transit of activity centers (Landmark/West End and Alexandria Commons) and the entire corridor	CORRIDORWIDE Baseline TO LANDMARK Population: 81,490 Jobs: 22,506 FROM LANDMARK Population: 85,512	CORRIDORWIDE From Along Duke St (30 Min) Population: +13% vs. No Build +16% Jobs vs. No Build To Duke St. (30 Min)	CORRIDORWIDE From Along Duke St (30 Min) Population: +10% vs. No Build +12% Jobs vs. No Build To Duke St. (30 Min)	• U.S. Census data on population and jobs • Existing transit network • Proposed routes and stops serving Duke Street • Average transit travel time from VISSIM travel time model simulations	• Input new stops and travel times into Remix software • Remix calculated travel times including walk times to stops • Remix overlaid travel time isochrone map* onto U.S. Census data to calculate additional population and jobs served

Guiding Principle	Theme	Metric	Business as Usual	Concept A	Concept B	Data Source	Methodology
			Jobs: 22,947 TO ALEX. COMMONS Population: 58,228 Jobs: 38,358 FROM ALEX. COMMONS Population: 56,927 Jobs: 37,044	Population: +12% vs. No Build Job: +17% vs. No Build TO LANDMARK Population: 83,209(+2%) Jobs: 23,276(+3%) FROM LANDMARK Population: 86,600(+1%) Jobs: 24,274 (+6%) TO ALEX. COMMONS Population: 65,734(+13%) Jobs: 42,891(+12%) FROM ALEX. COMMONS Population: 66,007 (+16%) Jobs: 41,224 (11%)	Population: +9% vs. No Build Job: +13% vs. No Build TO LANDMARK Population: 82,905(+2%) Jobs: 23,141(+3%) FROM LANDMARK Population: 86,144(+1%) Jobs: 24,079(+5%) TO ALEX. COMMONS Population: 62,998(+8%) Jobs: 41,513(+8%) FROM ALEX. COMMONS Population: 61,290(+8%) Jobs: 39,183(+6%)		** An isochrone map shows the areas you can reach within a certain travel time*
Sustainable	Alternative Modes/ Travel Options	Change in ridership	2,820	5,940	5,770	• 2022 GTFS data for DASH, WMATA, and other transit providers in the region • Observed transit counts for DASH and WMATA in 2022 • American Community Survey data for Virginia, Maryland, and District of Columbia • Socioeconomic data from the Metropolitan Washington Council of Governments (MWCOG or COG), including Round 9.2 forecasts for population and employment • Auto travel times and distance data for existing and future years, based on the regional model by COG/Transportation Planning Board (TPB) • Transportation analysis zone from the COG/TPB	• Calculated using the Simplified Trips-on-Project Software (STOPS) model developed by the Federal Transit Administration

Guiding Principle	Theme	Metric	Business as Usual	Concept A	Concept B	Data Source	Methodology
						• BRT build alternative specifications (station locations, frequency/headway, and run time) and future year transit routes in the corridor.	
Impacts	Right-of-Way	Number of parcels potentially touched	Baseline	10-19	12-21	• Concept plans	• Overlaid concept plans on existing property lines from GIS
	Parking	Number of commercial parking spaces touched	Baseline	Approx. 120	Approx. 65	• Concept plans	• Overlaid concept plans on existing commercial parking spaces based on aerial photographs
	Cost	Estimated capital costs	n/a	$90-$100 million	$70-$80 million	• Concept plans	• Calculated quantities and established unit prices based on VDOT pricing for applicable design elements at this stage of design • Lump sum percentage assumed for elements not quantified at this stage of design • Contingency percentage applied consistent with Federal Transit Agency VDOT recommendations for projects at conceptual stage