



DEIS

Factor	No Build	LRA*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Project Features						
Length (miles)	-	<u>11.4</u>	+2.3	+2.5	+2.4	+2.4
Travel time (minutes)	-	<u>25:35</u>	+6:07	+6:59	+6:03	+5:53
Stations, Vehicles, etc.	-	17 Stations, <u>16</u> Vehicles (Total Fleet), 8 Park and Ride Lots, <u>5,110</u> Park and Ride Spaces, 1 Maintenance Facility.				
Transportation						
Bus Route Connections	-	<u>60</u>	+2	+2	+1	+1
Pedestrian & Bicycle Connections	-	<u>33</u>	+9	+9	+5	+5
Pedestrian & Bicycle at-grade crossings	-	<u>41</u>	+13	+17	+7	+13
Parking Spaces Impacted	-	<u>400</u>	+175	+175	+95	+15
Land Use and Zoning						
	<i>Not consistent with local planning efforts</i>	<i>Consistent with local planning efforts</i>	<i>Consistent with local planning efforts</i>	<i>MOST consistent with local planning efforts</i>	<i>Consistent with local planning efforts</i>	<i>Consistent with local planning efforts</i>
Socio-Economic and Demographic Conditions						
Population served (2040)		<u>30,400</u>	+4,300	+4,300	+5,300	+5,300
Employment served (2040)		<u>66,800</u>	+4,800	+4,800	+4,800	+4,800
Socio-Economic Indicators (%)		<i>Minority, <u>51%</u>, Below Poverty <u>32%</u>, Zero-Car Households <u>22%</u>, LEP <u>18%</u></i>				
Neighborhoods and Community Resources						
	<i>No Impact</i>	<i>Impacts to Community Resources (CR)</i>	<i>Impacts to Community Cohesion (CC)</i>	<i>Impacts to Community Cohesion (CC)</i>	<i>No Impact</i>	<i>No Impact</i>
Visual and Aesthetic Considerations						
	<i>Low-High</i>	<i>Low-High</i>	<i>Moderate-High</i>	<i>Moderate-High</i>	<i>Moderate</i>	<i>Moderate</i>
Cultural, Historic, and Archaeological Resources						
Historic Properties Potentially Affected		<i>TBD</i>				
Archeological Sites requiring further investigation	-	<u>7</u>	-	-	-	-
Public Parkland and Recreational Areas						
Parklands (acres)	-	<u>11.6</u>	+4.1	+1.6	+2.1	+1.0
Recreational trails (at-grade crossings)	-	<u>0</u>	-	-	-	-

*LRA consists of common alignment segments that are outside the various alternatives. Underlining indicates data that is subject to change due to alignment refinement.

Factor	No Build	LRA*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Natural Resources						
Biotic Resources Total (acres)	-	<u>230</u>	+20	+23	+25	+25
Bottomland	-	0	+3	+1	+1	+1
Alluvial	-	3	+1	+1	+1	-
Mesic Mixed	-	66	+6	+9	+8	+5
Maintained/Disturbed	-	<u>161</u>	+10	+12	+15	+19
Protected Species	-	0	-	-	-	-
Water Resources						
Stream Impacts (linear feet)	-	<u>1,693</u>	+434	+434	+587	+519
Riparian Zone 1 (sq. ft.) (acres)	-	<u>122,036 (2.8)</u>	+13,100 (0.3)	+13,103 (0.3)	+15,434 (0.4)	+11,500 (0.3)
Riparian Zone 2 (sq. ft.) (acres)	-	<u>95,250 (2.2)</u>	+7,956 (0.2)	+8,054 (0.2)	+9,525 (0.2)	+12,130 (0.3)
Wetland Impacts (#/acres)	-	<u>2 (0.09)</u>	3 (0.07)	3 (0.07)	2 (0.07)	2 (0.12)
Pond Impacts (#/acres)	-	<u>0 (0.0)</u>	1 (0.02)	1 (0.02)	2 (0.07)	1 (0.01)
Floodplain Impacts (100-Year) (acres)	-	<u>5.7</u>	+1.4	+0.3	+0.6	+0.6
Floodway Impacts (acres)	-	<u>0.7</u>	-	-	-	-
Air Quality						
<i>All modeled concentrations are below the National Ambient Air Quality Standards (NAAQS)</i>						
Noise and Vibration						
Noise Impacts	-	<u>5</u>	+1	+1	+1	+1
Vibration Impacts	-	<u>25</u>	+8	+4	+4	+2
Hazardous, Contaminated, and Regulated Materials						
High Risk Sites	-	<u>37</u>	-	-	-	-
Medium Risk Sites	-	<u>76</u>	-	-	+1	+1
Acquisitions, Relocations, and Displacements						
Full Acquisitions and Displacements	-	<u>45</u>	+3	+5	+3	+2
Partial Acquisitions	-	<u>105</u>	+8	+10	+18	+14
Other Displacements	-	<u>13</u>	-	-	-	-

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Factor	Ridership		Incremental additional ridership by alternative			
	No Build	Low Ridership alternatives*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Transportation Light Rail Transit Ridership (2040 weekday)	-	<u>23,560</u>	<u>+340</u>	=	<u>+720</u>	<u>+730</u>

* “Low Ridership alternatives” consists of the combination of alternatives that have the lowest projected ridership – common segments and the C1A, NHC 1, and Duke Eye Care Center Station alternatives.

Factor	Energy Use		Incremental reduced energy use by alternative			
	No Build	High Energy Use alternatives*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Energy Use Reduction in Annual Energy Use (billions, BTU)	<u>137,049</u>	<u>136,978</u>	<u>-18</u>	=	<u>-19</u>	<u>-17</u>

* “High Energy Use alternatives” consists of the combination of alternatives that have the highest projected energy use – common segments and the C1A, NHC 1, and Duke Eye Care Center Station alternatives.

Factor	Capital Costs		Incremental additional capital costs by alternative			
	No Build	Low Capital Cost alternatives*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Capital Cost Light Rail Capital Costs (2015 \$) (millions)	-	<u>\$1,522</u>	<u>+\$41.0</u>	<u>+\$36.0</u>	=	<u>+\$7.6</u>

* “Low Capital Cost alternatives” consists of the combination of alternatives that have the lowest projected capital costs – common segments and the C2, NHC LPA, and either Duke/VA Medical Centers Station alternatives.

Factor	Operating costs		Incremental additional operating costs by alternative			
	No Build	Low Operating Cost alternatives*	C1 Alt.	C1A Alt.	C2 Alt.	C2A Alt.
Operating Cost Annual Light Rail Operating and Maintenance Costs (2014 \$) (thousands)	--	<u>\$16,846</u>	=	<u>+\$82.1</u>	<u>+\$56.9</u>	<u>+\$56.9</u>

* “Low Operating Cost alternatives” consists of the combination of alternatives that have the lowest projected operating costs – common segments and the C1, NHC LPA, and either Duke/VA Medical Centers station alternatives.

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