

5.0 Environmental Justice

5.1 Introduction

This technical memorandum identifies and assesses the potential effects of the proposed alternatives on Environmental Justice communities in the study corridor.

Environmental Justice (EJ) is defined by Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse impacts on minority and low-income communities.

The United States Department of Transportation (DOT) is committed to the principles of EJ, which include:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decisionmaking process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

United States Department of Transportation Order 5680.1 defines a disproportionately high and adverse effect on minority and low-income populations as an impact that “(1) is predominately borne by a minority and/or low-income population, or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or low-income population.”

A minority person is defined by the U.S. Census as someone identified as: (1) Black; (2) Hispanic; (3) Asian; (4) American Indian and Alaskan Native; or (5) Native Hawaiian or Other Pacific Islander. A low-income population is defined as any readily identifiable group of persons whose median household income is at or below the Department of Health and Human Services’ poverty guidelines for the 2000 U.S. Census. The federal definition of poverty level varies by the number of related children under 18 years and overall family size. According to the 2000 U.S. Census, the poverty line for a family of four in 2000 was \$17,603.

Furthermore, Executive Order 12898 directs agencies to utilize existing law to ensure that they provide opportunities for community input in the NEPA process, including input on potential effects and mitigation measures. The public involvement program, which includes a discussion of outreach to

minority populations within the corridor, is incorporated in Chapter 6 of Volume I.

5.2 Methodology

In 2011, the Federal Transit Administration (FTA) set forth new guidance on incorporating Environmental Justice principles into public transportation decisions in its Circular FTA C 4703.1. The FTA notes three fundamental steps to perform an Environmental Justice analysis:

- Determine whether there are any EJ populations potentially affected by the activity;
- Consider the potential effects of the activity on the EJ populations; and
- Determine whether any disproportionately high and adverse human health or environmental effects can be avoided, minimized or mitigated, and whether there are off-setting benefits from the activity.

This Environmental Justice analysis utilizes FTA’s three-step process.

In accordance with Executive Order 12898 and Council of Environmental Quality (CEQ) guidelines, the threshold standards for identifying minority or low-income populations are as follows:

- The minority or low-income population of the affected geographic unit exceeds 50 percent; or
- The minority or low-income population percentage of the affected area is meaningfully greater than the minority or low-income population percentage in the general population or other appropriate unit of geographic analysis. In this case, 10 percent greater.

In accordance with FTA guidance regarding assessment of local planning activities, this assessment utilized small area Census data at the block group level to identify potential environmental justice populations. This assessment relies on the 2010 U.S. Census Bureau data for identifying minority groups and 2000 data for identifying low-income populations. For purposes of this analysis, the corridor was designated as the area within a ¼-mile from either side of the centerline of the proposed transit alignment.

Individual Census block group data for the Census block groups within the project study corridor were compared to county data to identify whether any of the block groups have large concentrations of minority or low-income populations as identified above. It should be noted that Census block boundaries changed between 2000 and 2010. There were more Census blocks in the study area in 2010 than in 2000.

5.3 Existing Conditions

Table 5-1 lists the percentages of minority and low-income residents in the study corridor to use in identifying minority and low-income populations and provides corresponding percentages for the entire jurisdictions of Arlington County and Fairfax County for reference and comparison.

Table 5-1: Minority and Low-Income Populations in Study Corridor, Arlington County, and Fairfax County

Population Type	Study Corridor	Arlington County	Fairfax County
Total Population in 2010	39,617	207,627	1,081,726
Minority Population in 2010 (% of Total Population)	22,669 (57%)	74,666 (36%)	491,104 (45%)
Population for whom low-income is determined in 2000	33,938	185,295	958,484
Low-Income Population in 2000 (% of Population for whom low-income is determined*)	3,857 (11%)	14,371 (8%)	43,396 (5%)

*The population for whom poverty is determined is determined by the U.S. Census Bureau. For the 2000 U.S. Census Bureau, poverty status was determined for all people except for unrelated individuals under 15 years old, and people in institutional group quarters, college dormitories, military barracks, and living situations without conventional housing.

Source: U.S. Census Bureau, 2000 and 2010 Census Data

In 2010, approximately 57 percent of the study corridor population was considered minority group and in 2000, 11 percent of the study corridor population was considered low-income. According to the established threshold standards noted above, for the purposes of this project, environmental justice populations were determined to include those areas where either:

- At least 50 percent or more of the population of the Census block group identified as a minority or low-income; or
- The percentage of minority or low-income population of a Census block group was at least 10 percent higher than the study corridor percentage for the county. In this instance, the threshold for low-income populations was 18 percent in the Arlington County portion of the study corridor and 15 percent in the Fairfax County portion of the study corridor. The thresholds for minority populations were 46 percent in the Arlington County portion of the study corridor and 50 percent in for the Fairfax County portion of the study corridor.

By following the methodology outlined above, 28 block groups were found to meet the thresholds for high concentration of minority populations in 2010 and 5 block groups met the thresholds for high concentration of low-income populations in 2000. These areas are identified in Tables 5-2 and 5-3 and shown in Figures 5-1 and 5-2.

In 2010, most block groups in the study corridor met the thresholds for high concentrations of minority populations. In 2000, large concentrations of low-income populations were primarily located in neighborhoods, in which high concentrations of minority populations also occur, include Penrose/Foxcroft Heights/Pentagon, Columbia Heights, Columbia Heights West, and Baileys Crossroads.

5.4 Environmental Consequence

5.4.1 No Build Alternative

No disproportionate adverse effects on minority and/or low-income populations in the study corridor were identified under the No Build Alternative. However, these communities would not benefit from the improved mobility and accessibility that would be provided with the implementation of the Columbia Pike Transit Initiative.

The realignment of Columbia Pike is assumed to occur under the No Build Alternative, contingent upon negotiations between the DOD and Arlington County. Any potential effects on minority or low-income populations as a result of the potential realignment would be documented in a separate environmental evaluation by the project sponsor.

Without implementation of the Columbia Pike Transit Initiative, minority and low-income populations these communities would not see as great a benefit in terms of mobility and accessibility.

5.4.2 TSM 1 Alternative

No disproportionate adverse effects on identified minority and/or low-income populations were identified under the TSM 1 Alternative. Service changes and stop consolidation is proposed as part of the TSM 1 Alternative along the corridor. Those service changes would result in improved mobility, transit reliability, and accessibility along the corridor. Under the TSM 1 Alternative, service for Metrobus 16G, which serves the Columbia Heights West neighborhood, an area with high concentrations of low-income and minority populations, would be rerouted to better serve Skyline and the local ART 41 service would be increased to offset the rerouting of the Metrobus 16G. The proposed changes to the transit network under the TSM 1 Alternative would result in travel time and travel cost savings that would support livability in the corridor and would be consistent with each county's efforts to reduce households' dependency on personal vehicles. The proposed service changes are shown in Figures 5-3 and 5-4. No changes to the current fare structure are proposed.

Should the land swap with DOD occur and Columbia Pike be realigned, the TSM 1 Alternative would follow the realignment; there would be no disproportionate adverse effects on identified minority and/or low-income populations as a result of this alternative operating along the realignment.

Figure 5-1: Environmental Justice Populations - Minority Populations (2010)

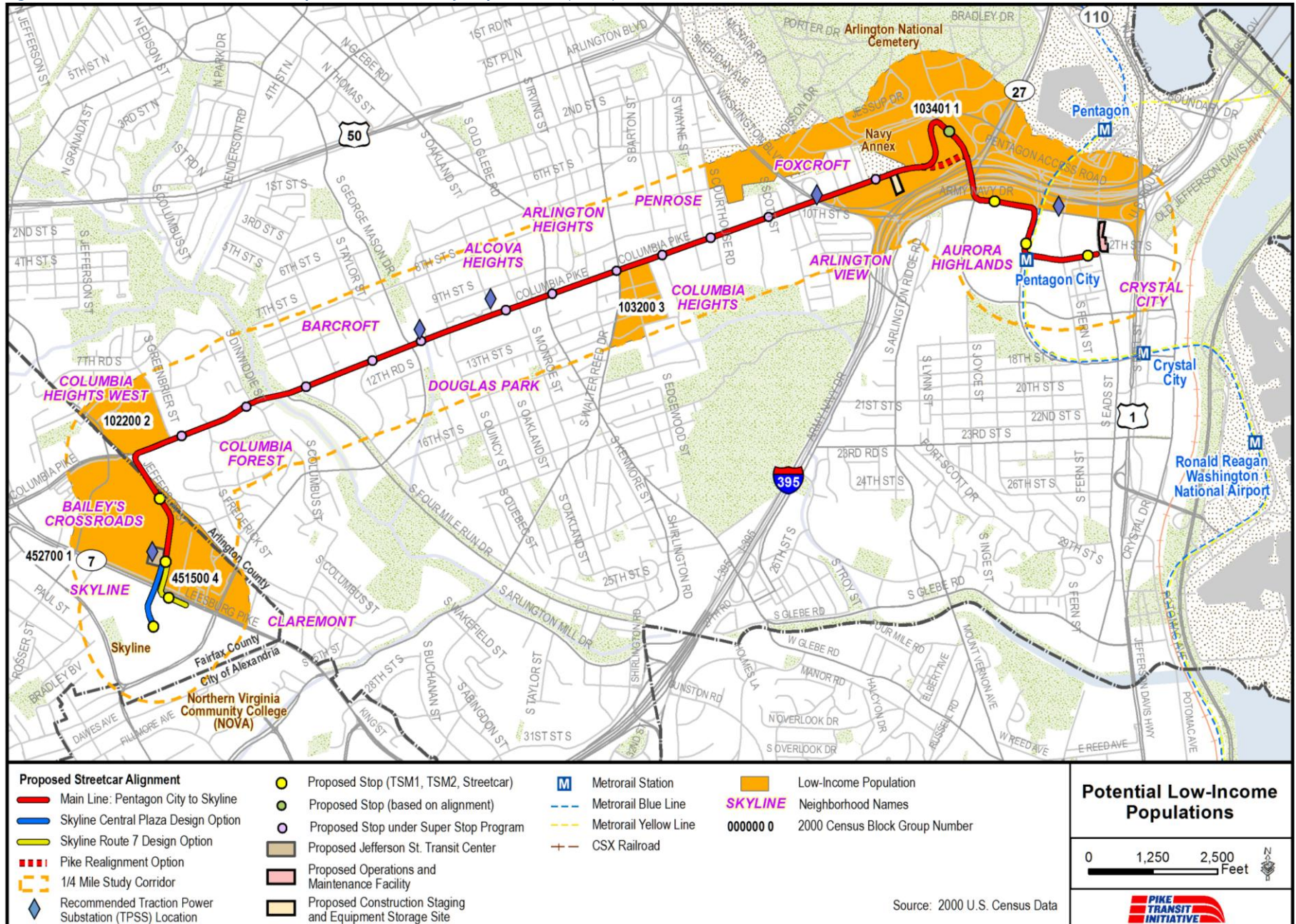


Figure 5-2: Environmental Justice Populations - Low-Income Populations (2000)

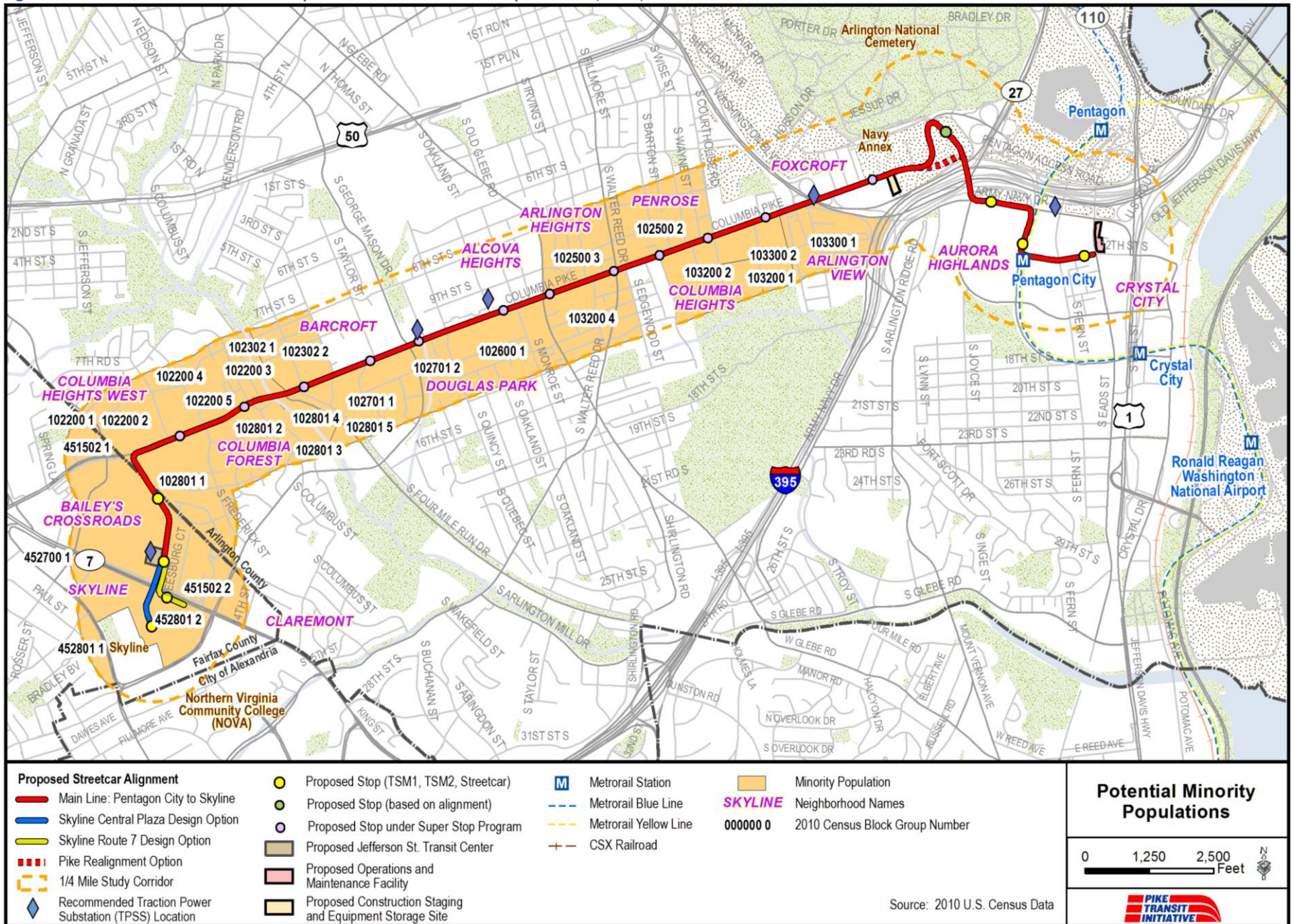


Table 5-2: Environmental Justice Populations - Minority Populations (2010)

Tract	Block Group	Percent in Study Corridor	Neighborhood	Population 2010	Minority Population	Percent of Minority Population	Environmental Justice Population ¹	
Arlington County								
103402	1	31%	Crystal City	289	89	31%		
103402	5	16%		142	40	28%		
103503	1	100%		2,085	758	36%		
102200	5	100%	Aurora Highlands/Pentagon City	2,285	2,027	89%	X	
102801	2	100%		861	659	77%	X	
103501	3	3%		23	9	39%		
103502	1	100%		2,179	708	32%		
103502	2	28%		327	137	42%		
103503	2	21%		421	150	36%		
103501	1	57%		Arlington Ridge	605	163	27%	
103501	2	85%			1,243	529	43%	
103401	1	13%	Penrose	86	18	21%		
102500	2	72%		1,283	657	51%	X	
102500	1	100%	Penrose/Foxcroft Heights	1,498	665	44%		
103300	1	58%	Arlington View	563	456	81%	X	
103300	2	74%	Columbia Heights	933	513	55%	X	
103200	1	100%		1,303	889	68%	X	
103200	2	80%		1,153	567	49%	X	
103200	3	24%		212	45	21%		
102500	3	62%	Arlington Heights	547	280	51%	X	
102302	4	67%	Alcova Heights	878	321	37%		
102600	1	66%	Douglas Park	1,439	959	67%	X	
102701	1	87%		2,226	1,834	82%	X	
102701	2	50%		407	341	84%	X	
103200	4	62%		1,031	536	52%	X	
102302	1	34%	Barcroft	226	143	63%	X	
102302	2	67%		660	526	80%	X	
102302	3	66%		616	213	35%		
102200	1	11%	Columbia Forest West	125	100	80%	X	
102200	2	100%		1,779	1,499	84%	X	
102200	3	31%		212	107	50%	X	
102200	4	46%		794	687	87%	X	
102801	3	53%	Columbia Forest	481	263	55%	X	
102801	1	97%		1,967	1,315	67%	X	
102801	4	100%		801	490	61%	X	
102801	5	23%		237	119	50%	X	

102801	6	0.1%	Claremont	1	1	67%	X
Fairfax County							
451502	1	5%	Baileys Crossroad	99	57	57%	X
451502	2	78%		1,718	1,116	65%	X
452700	1	0.2%		3	3	83%	X
452801	2	94%	Skyline	1,838	976	53%	X
452801	3	100%		682	288	42%	
452801	4	100%		1,016	451	44%	
452802	1	95%		1,199	464	39%	
452802	2	60%	1,011	444	44%		
200102	3	0.5%	Dowden Terrace	5	2	39%	
452801	1	6%		88	45	52%	X
200106	1	10%	Dawes Ave/NOVA	39	12	30%	

¹ Thresholds for minority population concentrations in Arlington County is 46 percent and 50 percent in Fairfax County.
Source: U.S. Census Bureau, Census 2010

Table 5-3: Environmental Justice Populations - Low Income Populations (2000)

Tract	Block Group	Percent of Block Group within the Study corridor	Neighborhood	Population for whom Low-Income is determined	Low-Income Population	Percent of Low-Income Population	Environmental Justice Population ¹
Arlington County							
103402	1	31%	Crystal City	368	14	4%	
103402	5	14%		69	3	5%	
103500	2	74%	Aurora Highlands/Pentagon City/Crystal City	2,797	330	12%	
103500	1	35%	Arlington Ridge	1,231	161	13%	
103401	1	21%	Penrose/Foxcroft Heights/Pentagon	134	24	18%	X
102500	1	100%	Penrose/Foxcroft Heights	1,603	137	9%	
102500	2	71%	Penrose	1,204	51	4%	
103300	1	67%	Arlington View	814	78	10%	
103200	1	20%	Columbia Heights	886	67	8%	
103200	2	44%		398	15	4%	
103200	3	52%		442	81	18%	X
102500	3	63%	Arlington Heights	541	39	7%	
102300	1	6%	Alcova Heights	62	7	11%	
102300	2	100%		931	28	3%	
102600	1	66%	Douglas Park	1,250	85	7%	
102700	1	72%		2,737	391	14%	
103200	4	82%	Barcroft	367	48	13%	
102300	3	66%		1,327	229	17%	
102300	4	12%		183	13	7%	
102200	1	43%	Columbia Forest West	2,098	316	15%	
102200	2	69%		1,869	420	22%	X

Tract	Block Group	Percent of Block Group within the Study corridor	Neighborhood	Population for whom Low-Income is determined	Low-Income Population	Percent of Low-Income Population	Environmental Justice Population ¹
102800	1	58%	Columbia Forest	1,691	53	3%	
102800	4	98%		3,434	418	12%	
102800	3	0%	Claremont	1	0	13%	
Fairfax County							
451500	3	5%	Baileys Crossroads	108	13	12%	
451500	4	79%		1,742	396	23%	X
452700	1	0%		3	1	22%	X
452800	2	100%	Skyline	1,401	133	9%	
452800	3	79%		2,110	246	12%	
452800	4	94%		1,991	52	3%	
452800	1	6%	Dowden Terrace	98	4	4%	
200102	1	1%		3	0	2%	
200101	5	13%	Dawes Avenue/NOVA	47	3	6%	

¹ Thresholds for low-income population concentrations in Arlington County is 18 percent and 15 percent in Fairfax County.
Source: U.S. Census Bureau, Census 2000

Figure 5-3: Transit Operations: Change from No Build - Minority Populations (2010)

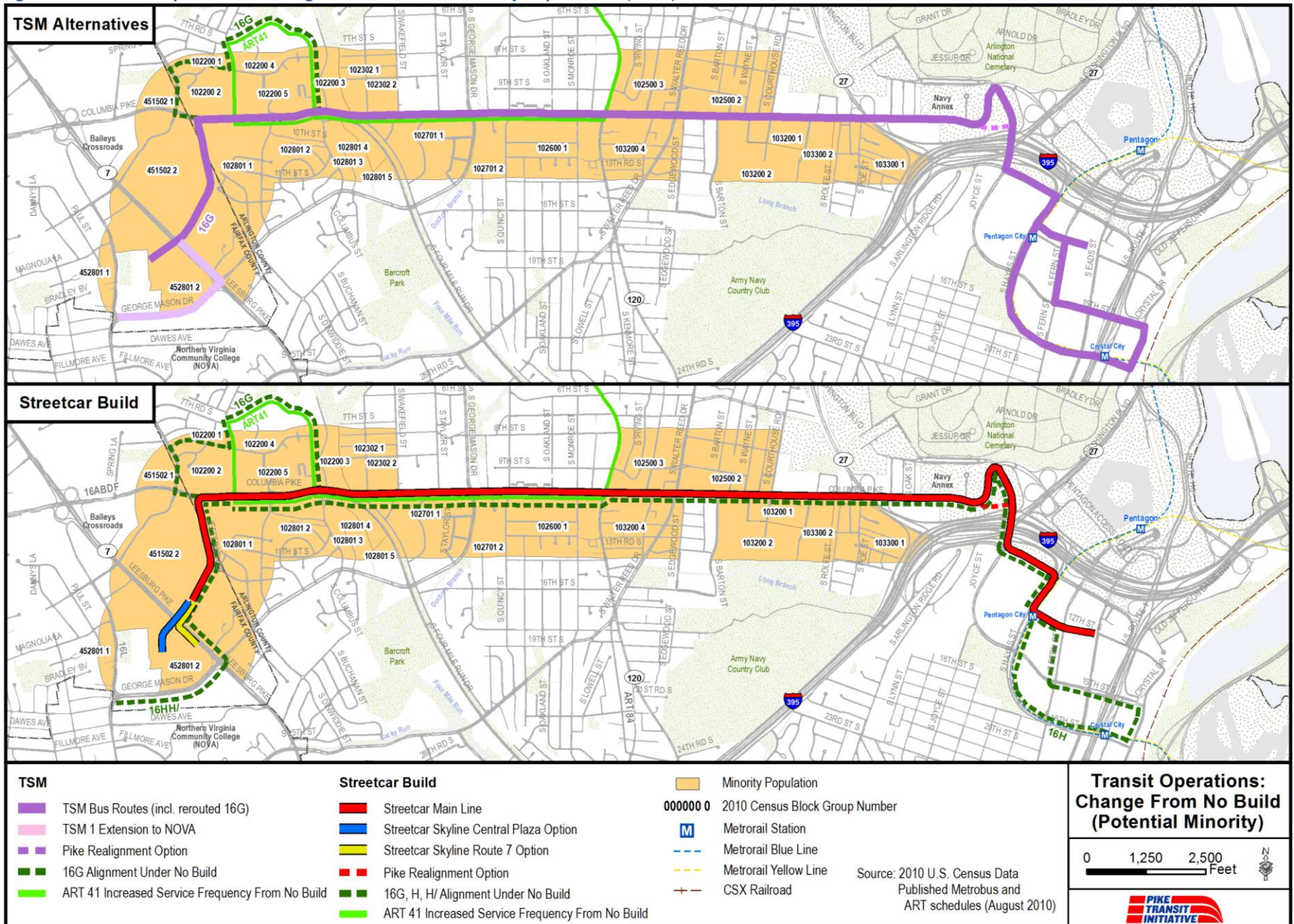
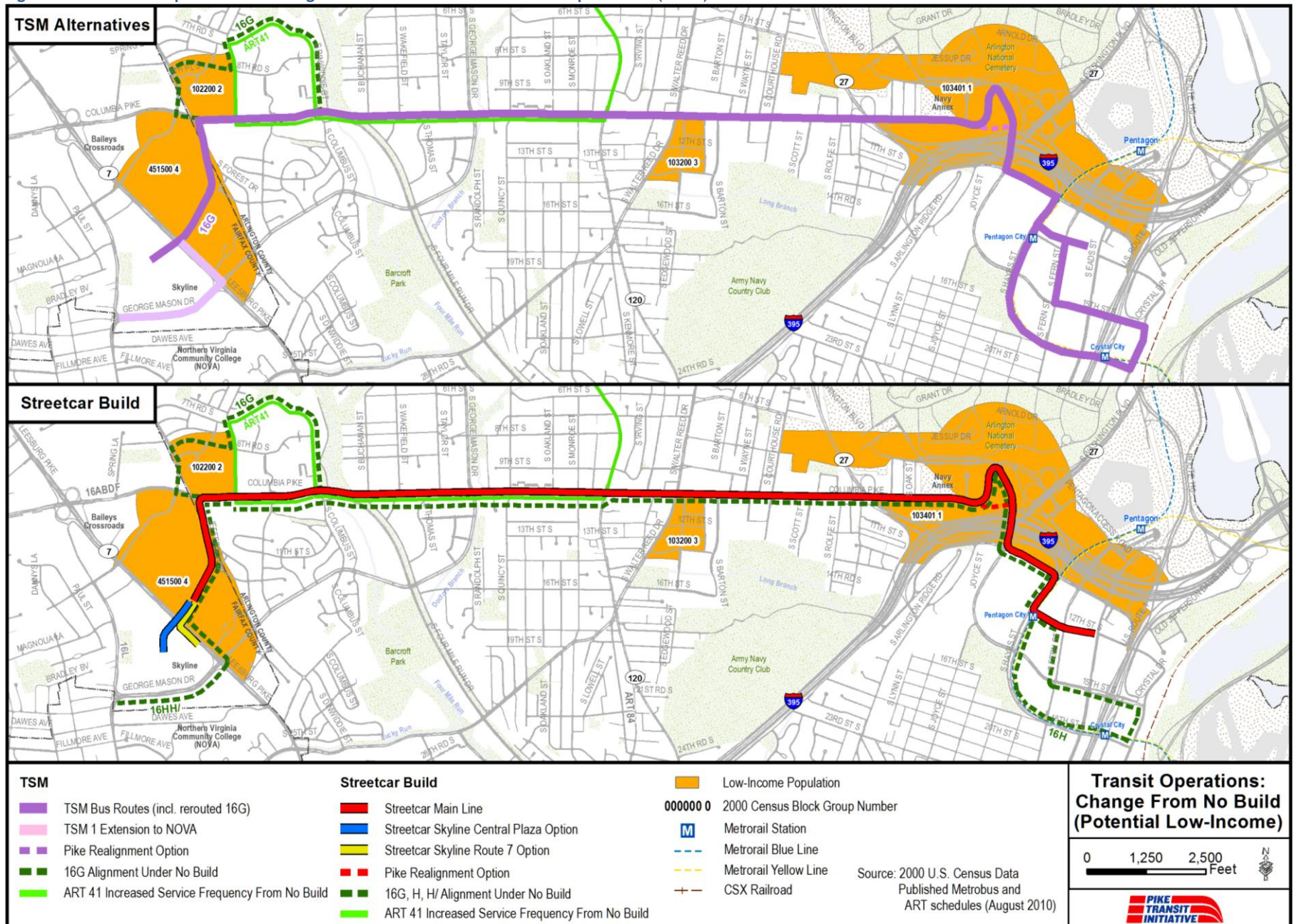


Figure 5-4: Transit Operations: Change from No Build - Low-Income Populations (2000)



5.4.3 TSM 2 Alternative

No disproportionate adverse effects on minority and/or low-income populations are anticipated under the TSM 2 Alternative. As described for the TSM 1, service changes and stop consolidation is proposed as part of the TSM 2 Alternative, but those changes would result in improved mobility, transit reliability, and accessibility along the corridor. Specifically, in the Columbia Heights West neighborhood, which contains high concentrations of low-income and minority populations, the Metrobus 16G service would be rerouted to better serve Skyline and services provided by the local ART 41 service would be increased to offset the rerouting of the Metrobus 16G.

The proposed changes to the transit network under the TSM 2 Alternative would result in travel time and travel cost savings that would support livability in the corridor and would be consistent with each county's efforts to reduce households' dependency on personal vehicles. The proposed service changes are shown in **Figures 5-3 and 5-4**. These travel time and cost savings are not likely to encourage redevelopment and generate property premium impacts.

No changes to the current fare structure are proposed. No changes to the current fare structure are proposed. In addition to the proposed service changes, the TSM 2 Alternative proposes a new transit facility along Jefferson Street within the Bailey's Crossroads shopping center, within the Bailey's Crossroads neighborhood, an area where there are high concentrations of low-income and minority populations. The proposed transit facility would provide parking for transit users and bus bays. The displacement of commercial parking (315 spaces) in this location would not result in an adverse disproportionate effect because there is adequate parking at the shopping center to accommodate shoppers. Right-of-way (ROW) impacts associated with the TSM 2 Alternative would not be disproportionately concentrated within identified minority and/or low-income populations.

Should the land swap with DOD occur and Columbia Pike be realigned, the TSM 2 Alternative would follow the realignment; however there would be no disproportionate adverse effects on identified minority and/or low-income populations as a result of this alternative operating along the realignment.

5.4.4 Streetcar Build Alternative

No disproportionate adverse effects on minority and/or low-income populations would occur under the Streetcar Build Alternative. Overall, the low-income and minority populations in the study corridor would benefit The Columbia Heights West neighborhood, which is served by Metrobus 16G, contains high concentrations of low-income and minority populations. Metrobus 16G is planned to be rerouted; however, services provided by local ART 41 would be increased to offset the loss of the Metrobus 16G in the Columbia Heights West neighborhood. The proposed changes to the transit network under the Streetcar Build Alternative would result in travel time and travel cost savings that would support livability in the corridor and would be consistent with each county's efforts to reduce households' dependency on personal vehicles. The proposed service changes are shown in **Figures 5-3 and**

5-4. These travel time and cost savings encourage redevelopment and generate property premium impacts; however housing affordability is expected to be maintained through local housing policy.

In addition to service changes associated with the Streetcar Build Alternative, several physical improvements are proposed as part of this alternative. As described for the TSM 2 Alternative, a new transit facility is proposed along Jefferson Street within the Bailey's Crossroads shopping center, within the Bailey's Crossroads neighborhood, which is an area with high concentrations of low-income and minority populations. The transit facility would provide parking for transit users and transit vehicles. A TPSS would also be located within the transit facility. The displacement of commercial parking (315 spaces) in this location does not result in an adverse effect because there is adequate parking at the shopping center to accommodate shoppers. ROW impacts associated with the Streetcar Build Alternative would not be disproportionately concentrated within identified minority and/or low-income populations.

Jefferson Street would also be regraded as part of the Streetcar Build Alternative to accommodate streetcar operations. While most of the effects associated with the regrading would be temporary and only last during construction activities, one effect of the regrading would be the closure of a driveway access point off of Jefferson Street to the Wildwood Apartments within the Columbia Forest neighborhood, an area with high concentrations of minority populations. The closing would be necessary due to inconsistent elevations between the proposed roadway and existing driveway. Access to this apartment building would be maintained off of Columbia Pike. On-street parking would also be displaced along Jefferson Street and would result in a minor effect on parking within this area. However, parking losses would be mitigated where practicable and feasible, along the transit alignment. Identification of replacement parking would be identified during subsequent design phases.

Should the land swap with DOD occur and Columbia Pike be realigned, the Streetcar Build Alternative would follow the realignment; however there would be no disproportionate adverse effects on identified minority and/or low-income populations as a result of this alternative operating along the realignment.

5.5 Public Outreach Activities

As part of the Columbia Pike Transit Initiative, a robust public involvement program has been implemented. Public involvement activities include regularly updating the project website, with Spanish translation available; presenting at a Latino Roundtable discussion; and posting notifications/flyers of upcoming public meetings through and along the corridor. As requested, the project team has also met with a variety of neighborhood associations and stakeholders along the corridor. Input from these meetings has been critical in the planning and development of the project. The project team will continue outreach to the communities along the Columbia Pike corridor throughout the planning and design of the project.

5.6 Avoidance, Minimization, or Mitigation of Disproportionately High and Adverse Effects

As previously mentioned no disproportionate adverse impacts to low-income or minority populations were identified. Expanding the ART 41 service to the Columbia Heights West neighborhood is proposed to minimize the effects of the rerouting of the Metrobus 16G service. The temporary effects of the regrading of Jefferson Street on the Columbia Forest neighborhood would be minimized through open communications with residents of the abutting residential buildings to develop construction hours and tools to reduce inconveniences to the community. More detail is provided in Section 3.16, Construction Impacts and Potential Permits, on how effects of the regrading and construction activities related to the Four Mile Run Bridge would be handled should the Streetcar Build Alternative be selected as the LPA.

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