

4. ENVIRONMENTAL JUSTICE ANALYSIS

4.1 Background/Environmental Justice Definition

An EJ analysis focuses on identifying and addressing disproportionately high and adverse human health or environmental effects of the agency's programs, policies, and activities on minority populations and/or low-income populations to the greatest extent practicable and permitted by law.

Since the 2009 FSEIS was approved, the FHWA memorandum *Guidance on Environmental Justice and NEPA* (Guidance), dated December 16, 2011, has been issued. This Guidance advises on the process to address EJ during NEPA review. As described in greater detail below, this analysis has been prepared to meet the federal requirements defined by EO 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994, and FHWA Order 6640.23A, effective June 14, 2012.

4.1.1 Environmental Justice Populations

Minority and/or low-income populations are protected by EJ policies and guidance. For the purposes of EJ, FHWA defines minority populations as: Black, African American or of African descent, of Hispanic or Latino origin, Asian American, American Indian, Alaskan Native, Native Hawaiian, or Pacific Islander. To identify low-income populations, the United States Department of Transportation (USDOT) and FHWA use the Department of Health and Human Services (HHS) poverty guidelines.

4.1.2 Regulatory Context

The EJ analysis followed the procedures recommended in the FHWA NEPA Guidance memorandum as summarized below.

Executive Order 12898

EO 12898 – *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* – directs federal agencies to “achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental effects including the interrelated social and economic effects of their programs, policies, and activities on minority populations and low-income populations in the United States.”

FHWA Order 6640.23A

FHWA Order 6640.23A specifically details the FHWA's responsibilities in complying with EO 12898 as well as Title VI of the Civil Rights Act of 1964 (Title VI). Under Title VI, FHWA managers and staff must administer programs in a manner to ensure that no person is excluded from participating in, denied the benefits of, or subjected to discrimination under any program or activity of FHWA because of race, color, or national

origin. Under EO 12898, FHWA must administer their programs to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of FHWA programs, policies, and activities on minority populations and/or low-income populations. When determining whether an action will have a disproportionately high and adverse effect, FHWA will consider mitigation and enhancement measures. In determining whether a mitigation measure or alternative is “practicable,” the social economic (including costs), and environmental effects of avoiding of mitigating the adverse effects will be considered.

FHWA Guidance on Environmental Justice and NEPA

The information contained in FHWA memorandum *Guidance on Environmental Justice and NEPA* (Guidance) dated December 16, 2011 advises on the process to address EJ during NEPA review, including documentation requirements. The Guidance defines the process for identifying minority populations and low-income populations, documenting public participation, and identifying disproportionately high and adverse effects. The Guidance directs the agency to use localized census tract data and other relevant information sources to list any readily identifiable groups or clusters of minority and/or low-income persons in the EJ study area. Small clusters or dispersed populations should not be overlooked. The Guidance also directs FHWA to include a discussion of major proactive efforts to ensure public participation, the view of the affected population(s), and steps being taken to resolve any controversy that exists. Lastly, the Guidance provides a step-by-step procedure for summarizing beneficial and adverse effects, comparing impacts on the minority and non-minority populations and low-income and higher-income populations, and the consideration of mitigation measures if necessary.

4.2 Methodology and Data Sources

In conformance with EO 12898, FHWA Order 6640.23A, and FHWA Guidance memorandum, American Community Survey¹ (ACS) data was used to determine if there are any readily identifiable groups of minorities and/or low-income persons who live in the study area. The 2014-2018 5-Year Estimates were used for this analysis. This dataset provides the most recent and reliable data at the census tract and block group level.

The assessment involved four basic steps:

1. Identify the study area to be considered for EJ screening;
2. Compile race, ethnicity, and poverty status data for the study area to identify any minority and/or low-income populations;

¹ *The American Community Survey (ACS) is an ongoing survey conducted by the Census Bureau between the decennial census. “It is a nationwide, continuous survey designed to provide communities with reliable and timely social, economic, housing, and demographic data every year.” (ACS Information Guide: https://www.census.gov/content/dam/Census/programs-surveys/acs/about/ACS_Information_Guide.pdf)*

3. Evaluate if benefits and/or adverse effects on minority and/or low-income populations exist as a result of the Project; and
4. If adverse effects exist, identify and address whether there are any disproportionately high and adverse effects on minority and/or low-income populations after adverse effects have been mitigated. This includes comparing adverse effects on the minority and/or low-income population with adverse effects on the non-minority and/or higher-income populations within the study area to determine if there is a disproportionately high and adverse effect.

4.3 Minority Populations

The FHWA EJ Order defines minority populations as: Black, African American or of African descent, of Hispanic or Latino origin, Asian-American, American Indian, Alaskan Native, Native Hawaiian, or Pacific Islander. This is used in conjunction with the Title VI statute of the Civil Rights Act of 1964 which prohibits discrimination based upon race, color, and national origin.

Each census tract within the Project study area has at least one minority population that exceeds the City average for that population (Table 4-1: Race and Ethnicity). Based on the 2018 5-Year ACS Estimates and combined with local knowledge and the results of outreach and engagement efforts, there is a minority population in Census Tract 10. The City of Burlington is 17.1% minority, while Census Tract 10 is 18.1% minority. The residential portion of Census Tract 10 that is within the Project study area comprises much of the Maple and King Street Neighborhood.

The combination of recent census data, local knowledge, and the results of the outreach and engagement effort, it has been determined that the Maple and King Street Neighborhood consists of a minority population that will require an environmental justice analysis for this project. The minority population within the Maple and King Street Neighborhood is comprised of Black or African American, American Indian and Alaska Native, and Hispanic or Latino residents.

Figure 4-1: Census Tracts

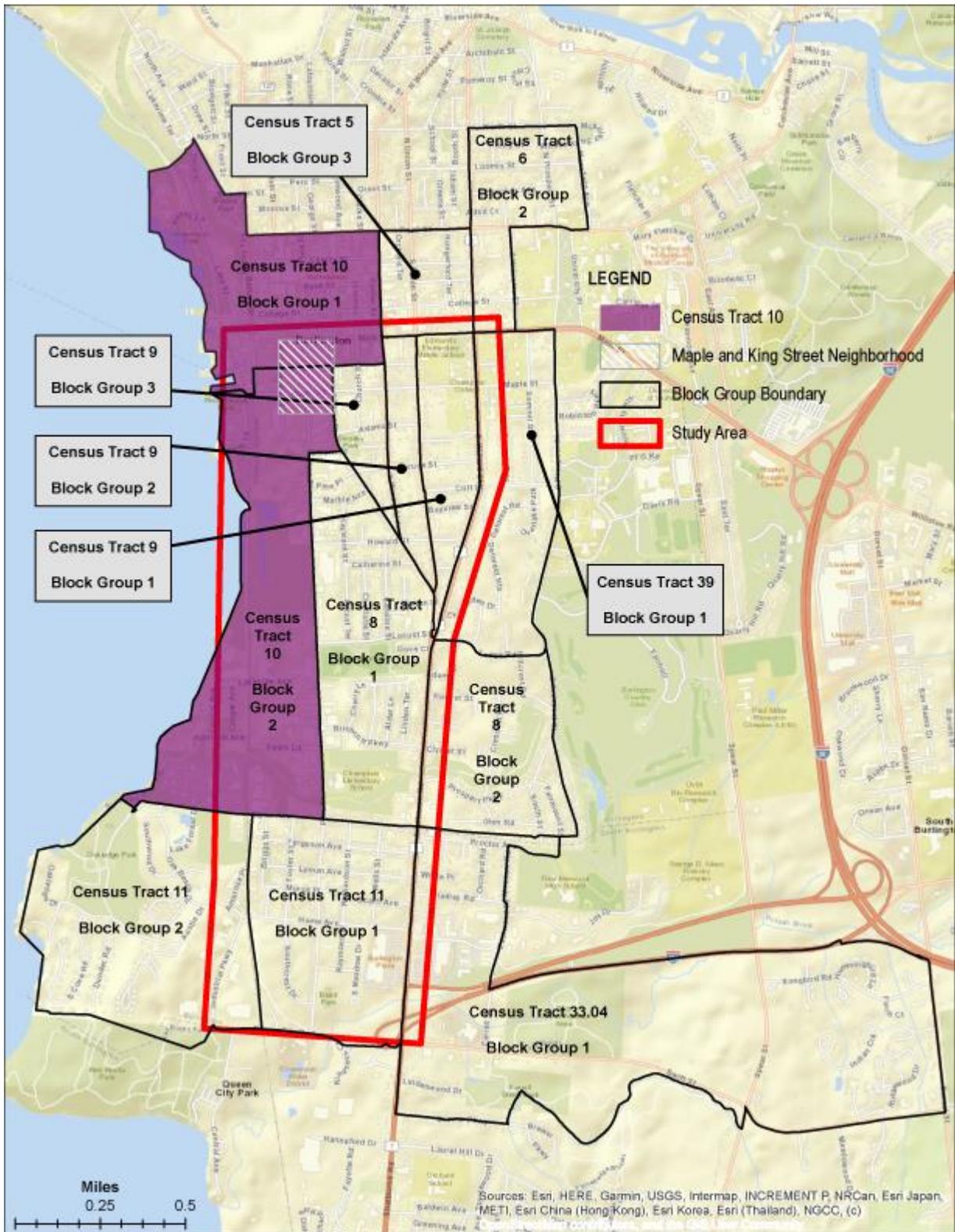


Table 4-1: Race and Ethnicity

Data for the City of Burlington has been used as the threshold; shaded cells indicate values higher than the threshold value.

Geography	TOTAL MINORITY*	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino
Census Tract 5	12.8%	7.5%	0.0%	1.8%	0.2%	0.0%	1.7%	2.7%
<i>Block Group 3</i>	10.8%	4.0%	0.0%	1.9%	0.4%	0.0%	3.2%	3.0%
Census Tract 6	14.6%	5.2%	0.1%	4.6%	0.0%	0.5%	1.6%	3.1%
<i>Block Group 2</i>	10.7%	0.0%	0.2%	8.5%	0.0%	0.0%	0.9%	1.3%
Census Tract 8	16.6%	2.9%	0.4%	10.7%	0.0%	0.4%	1.1%	1.6%
<i>Block Group 1</i>	19.8%	3.8%	0.0%	12.5%	0.0%	0.5%	1.4%	2.1%
<i>Block Group 2</i>	6.8%	0.0%	1.7%	5.1%	0.0%	0.0%	0.0%	0.0%
Census Tract 9	10.9%	1.2%	0.0%	4.3%	0.0%	0.1%	4.5%	1.4%
<i>Block Group 1</i>	13.2%	1.6%	0.0%	2.3%	0.0%	0.3%	6.6%	2.8%
<i>Block Group 2</i>	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.0%
<i>Block Group 3</i>	15.6%	1.6%	0.0%	10.3%	0.0%	0.0%	3.6%	1.0%
Census Tract 10	18.1%	8.8%	1.5%	1.8%	0.0%	0.0%	2.0%	4.1%
<i>Block Group 1</i>	19.1%	7.4%	0.6%	2.4%	0.0%	0.0%	2.7%	6.0%
<i>Block Group 2</i>	16.7%	10.8%	2.8%	1.0%	0.0%	0.0%	1.0%	1.3%
Census Tract 11	13.7%	3.4%	1.5%	2.1%	0.0%	0.9%	4.2%	2.1%
<i>Block Group 1</i>	17.1%	5.5%	2.4%	0.8%	0.0%	0.0%	5.9%	3.3%
<i>Block Group 2</i>	8.0%	0.0%	0.0%	4.4%	0.0%	2.4%	1.2%	0.0%
Census Tract 33.04	12.4%	1.3%	1.0%	5.4%	0.0%	0.6%	2.5%	2.2%
<i>Block Group 1</i>	19.9%	1.0%	2.8%	11.6%	0.0%	1.1%	2.6%	1.9%
Census Tract 39	12.1%	1.7%	0.1%	4.8%	0.1%	0.5%	2.1%	3.8%
<i>Block Group 1</i>	8.4%	2.0%	0.0%	0.3%	0.3%	0.5%	1.2%	6.1%
Burlington City	17.1%	5.3%	0.3%	6.4%	0.0%	0.3%	2.7%	2.8%
Chittenden County	11.2%	2.5%	0.3%	4.2%	0.0%	0.6%	2.0%	2.3%
<i>Source: US Census Bureau, American Community Survey 2018 5-Year Estimates (Tables B02001 and B03002)</i>								
* Total Minority: Sum of each of the protected races (Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Pacific Islander, Some Other Race, Two or More Races) and White Alone Hispanic or Latino.								

4.4 Low-Income Populations

To identify low-income populations, the USDOT and the FHWA use the Department of Health and Human Services (HHS) poverty guidelines. Based on these guidelines, none of the Project study area census tracts meet the criteria for low-income populations. Therefore, the EJ analysis did not address low-income populations for this project (Table 4-2).

Table 4-2: Median Income by Household Size

Geography	Median Household Income	Household Size						
		1 Person	2 People	3 People	4 People	5 People	6 People	7+ People
Census Tract 5	\$28,854	\$15,889	\$36,473	-	-	\$41,250	-	-
Census Tract 6	\$42,718	\$25,580	\$44,500	-	\$70,476	\$71,210	-	-
Census Tract 8	\$70,216	\$44,444	\$73,214	\$126,806	\$108,750	\$134,844	-	-
Census Tract 9	\$42,202	\$23,523	\$64,715	-	\$83,832	-	-	-
Census Tract 10	\$35,833	\$19,457	\$78,450	\$139,438	-	-	-	-
Census Tract 11	\$95,128	\$65,677	\$99,271	\$93,750	\$116,563	\$250,000+	-	-
Census Tract 33.04	\$69,974	\$42,167	\$81,641	\$84,000	\$141,500	-	-	-
Census Tract 39	\$61,000	\$38,750	\$110,156	-	\$82,917	-	-	-
Burlington City	\$50,324	\$27,255	\$63,780	\$70,192	\$64,767	\$72,242	\$63,155	\$89,524
Chittenden County	\$69,896	\$36,686	\$78,884	\$91,539	\$110,571	\$111,696	\$88,092	\$89,940
2018 HHS Poverty Guidelines	n/a	\$12,140	\$16,460	\$20,780	\$25,100	\$29,420	\$33,740	\$38,060*

Source: US Census Bureau, American Community Survey 2018 5-Year Estimates (Table B19019)

* For households with more than 7 people, add \$4,320 for each additional person.

4.5 Public Involvement

The public involvement activities for the EJ analysis have been guided by EO 12898, FHWA Order 6640.23A and the December 2011 FHWA EJ *Memorandum*. The primary goal of the public outreach activities described below was to inform the affected community about the Project and seek input on related transportation and environmental issues. The Maple and King Street Neighborhood, located in Census Tract 10, was the only EJ population within the Project study area based on the 2013-2017 ACS 5-year estimates. However, as the LS DSEIS was in preparation, the updated 2018 ACS 5-year estimates revealed another Asian minority community adjacent to Pine Street between Kilburn Street and Flynn Avenue. It has been determined that the project will have a minimal effect to this community. There will be additional outreach to this community once the LS DSEIS is released.

The City, FHWA, and VTrans conducted a targeted public outreach meeting on September 26, 2019. To ensure meaningful engagement of the minority community, the meeting announcement was translated into Bhutanese-Nepali, Swahili, Somali (Mai-Mai), Burmese, and French. Flyers were mailed directly to residents and City staff went door-to-door distributing flyers. The targeted public outreach meeting was hosted at City Hall, a well-known public landmark that is ADA accessible and within walking distance (i.e. two blocks or approximately 0.3 mile) of the Maple and King Street Neighborhood. The public outreach meeting materials including the PowerPoint presentation is attached in Appendix 6.



Photo 4-1: September 26, 2019 Public Outreach Meeting, Contois Auditorium, City Hall



Photo 4-2: September 26, 2019 Public Outreach Meeting, Contois Auditorium, City Hall



Photo 4-3: September 26, 2019 Public Outreach Meeting, Contois Auditorium, City Hall



Photo 4-5: September 26, 2019 Public Outreach Meeting, Contois Auditorium, City Hall



Photo 4-4: September 26, 2019 Public Outreach Meeting, Contois Auditorium, City Hall

To help serve the identified environmental justice community, meeting announcements were supplied in multiple languages and interpreter services were made available at the targeted public outreach meeting in the languages identified as being predominant in the minority community. The targeted public outreach meeting allowed the attendees to review displays depicting the proposed Project, view a Project overview presentation provided by the City’s design consultant, and submit verbal and/or written comments. Approximately sixty people participated in this meeting, twenty-one provided verbal comments, and nine written comment cards were received at the meeting. Several people both spoke and submitted written comments. Attendees were not asked to identify themselves by race or ethnicity, therefore this information is not available.

Written comments were also accepted via mail and a specific project email address until October 10, 2019. The comments received and responses from the Project design team are presented in tabular form in Appendix 7. The Project team including City, FHWA, VTrans’ and the design consultant’s personnel were available at the informational open houses before and after the presentation to discuss the Project with attendees as needed.

In addition to the September 26, 2019 public outreach meeting and in response to a comment received at that meeting, the project team hosted an open house at the King Street Center on October 7, 2019 to proactively seek input from Maple and King Street Neighborhood residents and community leaders.

The neighborhood gathering at the King Street Center was useful for promoting dialogue with citizens, stakeholders, and the Project team. City staff and design consultants shared exhibits like those shown to the attendees of the September 26, 2019 public outreach meeting. These included project plans, typical sections and rendering of the proposed Project. Attendees were greeted when entering or leaving the King Street Center on October 7, 2019 and asked if they were aware of the proposed Project, if they were interested in learning more about the proposed Project and if they had any specific questions or concerns that they would like considered by the Project team.



Photo 4-6: October 7, 2019 Open House at King Street Youth Center

Attendees asked questions regarding the following:

- Increase in traffic volumes in the neighborhood;
- Pedestrian safety throughout the Project corridor;

- Effectiveness of curb extensions;
- Community impacts during construction.

Although comment forms were made available at the gathering, no written comments were received at that time. Attendees were encouraged to take a comment form and submit written comments to the City, FHWA, or VTrans. Approximately twenty people participated in this open house. Organizers did not ask participants about race or ethnicity so this information is not available.

During the public comment period following the September 2019 public meeting, approximately 100 comments were received (including verbal comments at the public meeting, comment cards submitted at the public meeting, emailed comments, and mailed letters/comments). The general consensus of the comments related to environmental justice in the Maple and King Street Neighborhood detailed issues including:

- Need for bicycle and pedestrian safety
- Better and wider sidewalks for pedestrian safety and ADA accessibility
- Improved safety measures for families and children crossing the road
- Worksite safety
- Communication about construction impacts and timing

These were the main issues identified from comments from the September 2019 public meeting.

4.6 Project Benefits and Adverse Effects

The proposed design for Pine Street within the Maple and King Street Neighborhood will address community concerns as provided through the public involvement process and provide needed improved operations within the community. Proposed Pine Street improvements within the Maple and King Street Neighborhood will consist of cold planing and resurfacing the existing pavement, drainage improvements, reconstruction of sidewalks and new signals and new curbing. Between Maple Street and Main Street, the design will feature a two-foot shoulder and 11-foot shared lane in the southbound direction while the northbound direction will consist of an 11-foot shared lane, a four-foot painted parking lane buffer and a seven-foot parking lane. All work will take place within existing right of way except for temporary easements necessary to complete the work. Additional details of these proposed project benefits are described in Chapter 7 Environmental Consequences and Mitigation.

Mobility, including vehicular traffic and bicycle and pedestrian circulation, and traffic safety will be improved. On-road bicycle accommodations will be provided on Pine Street

from Main Street through King and Maple Street to Lakeside Avenue. In addition to the on-road bicycle accommodations, a shared use path will begin at Kilburn Street and extend to where the proposed project turns right onto Lakeside Avenue. This shared use path will accommodate pedestrians, bicyclists, and non-vehicular movement. Sidewalks on both sides of Pine Street are currently in disrepair but will be rebuilt with this proposed project. This will ensure ADA compliance and improve accessibility and safer pedestrian movement in and around the community for those who use these sidewalks.

Traffic signals will be located at three (3) key area intersections of Pine/Maple Street, Pine/King Street and Pine/Main Street to achieve improved intersection and traffic flow operation. The existing signal at Pine/Main Street will be upgraded and new signals will be installed at Pine/Maple Street and Pine/King Street. These traffic signals will operate in a coordinated network to promote smoother north/south traffic progression along Pine Street. Additionally, curb extensions to calm vehicular traffic movements to and from Maple Street and King Street will also be installed to promote through traffic to remain on Pine Street rather than utilizing residential streets. As more traffic is induced to stay on Pine Street because of signalization and improved traffic flow, it is anticipated this will redistribute traffic congestion currently experienced at Maple Street and King Street. The project balances the traffic flow so that the volumes on Maple Street and King Street are approximately equal in the sections between Battery Street and Pine Street. The improved traffic flow operation will reduce the high concentration of turn movements at Pine Street and Maple Street and redistribute some of the volume to/from King Street and the rest of Main Street. This redistribution of traffic volumes will enable the critical movement intersection of Pine and Maple Street to function more efficiently. Level of Service (LOS) will improve throughout the Maple and King Street Neighborhood, which means that even though the number of vehicles using Pine Street will increase, vehicles will move more freely through the neighborhood. It is anticipated there will be temporary construction impacts to implement these project improvements. These construction-related activities, will be distributed throughout the entirety of the project area and will be mitigated to the maximum extent feasible. A Public Involvement Plan will help mitigate temporary construction impacts by informing the community of anticipated impacts and project timelines.

4.7 Project Impacts

It is anticipated the Selected Alternative for this project will increase traffic volumes by approximately 1,400 vehicles per day (vpd) (approximately 9%) on Pine Street north of Lakeside Avenue, including in the Maple and King Street Neighborhood, when compared with the No-Build alternative. While the Project is expected to have a limited footprint and construction impacts in the Maple and King Street Neighborhood, the impacts of the increased traffic within the Maple and King Street Neighborhood was evaluated for adverse effects through an environmental justice analysis. The proposed project was evaluated in terms of traffic volume and flow, pedestrian and vehicular movement, and area congestion. It was determined that the Project will result in improved traffic operations and decreased congestion on Pine Street in the Maple and King Street Neighborhood due to newly installed coordinated traffic signals which will provide smoother traffic flow, improved

intersection operation, and decreased delay. It is anticipated these upgrades will address the adverse effects resulting from the increase in traffic volumes. Newly installed sidewalks and on-road bicycle accommodations will provide ADA compliance and improved accessibility, bicycle, and pedestrian safety. The EJ analysis detailed how anticipated adverse effects to minority populations will be addressed to achieve improved accessibility and safety, pedestrian and vehicular mobility, improved traffic operations, and decreased overall congestion on Pine Street in the Maple and King Street Neighborhood. Additional adverse effects are anticipated to be borne by all neighborhoods within the Project Area. It is not anticipated that any adverse effects will rise to the level of disproportionately high and adverse but will also be mitigated to provide operational benefits to the community as highlighted above. Project impacts are summarized for the Maple and King Street Neighborhood as well as all other neighborhoods within the Project Area in Table 4-3 below.

Table 4-3: Summary of Project Impacts by Neighborhood

Affected Environment*	Neighborhoods							
	Maple and King Street	Calahan (South) Park	Birchcliff Parkway	Lakeside	Flynn Avenue/ Home Avenue	South Meadows	Oakledge	Austin Drive
Land Use and Socioeconomics	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None
Traffic Volumes	Negative	Negative	Positive	Negative	Positive	Positive	Neutral / None	Neutral / None
Mobility <i>(Traffic Operations and Bicycle and Pedestrian Access)</i>	Positive	Neutral / None	Positive	Neutral / None	Positive	Negative	Neutral / None	Neutral / None
Traffic Safety	Positive	Positive	Positive	Neutral / None	Positive	Positive	Neutral / None	Neutral / None
Air Quality	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None
Noise Environment	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None
Historic and Archaeological Resources	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None	Neutral / None
Construction Impacts	Negative	Negative	Neutral / None	Negative	Negative	Negative	Neutral / None	Neutral / None

* Mitigation Measures have been incorporated into this matrix.

4.8 Disproportionately High and Adverse Effects

A review of project improvements, adverse effects, and mitigation measures, described above determine the adverse effects of the Project will not cause disproportionately high and adverse effects on any minority populations in the Maple and King Street Neighborhood in accordance with the provisions of EO 12898 and FHWA Order 6640.23A.

4.9 Conclusion

The EJ analysis completed for this Project determined that there is a minority population in the Maple and King Street Neighborhood, but that no low-income populations exist within the Study Area. The most recent ACS dataset (2014-2018 5-year estimates) were used to determine demographics. The ACS provides the most reliable source of demographic data for the area. The ACS data was bolstered by local knowledge and public outreach. The combination of ACS data, local knowledge, and public comments were used to determine the location of minority population used for the EJ analysis.

Though it was found that there are adverse effects on the Maple and King Street Neighborhood as a result of this project, the neighborhood will also experience project benefits and adverse effects will be mitigated. Since adverse effects will be mitigated and are shared throughout the project area, the EJ analysis concluded that the Project will not cause disproportionately high and adverse effects on any minority populations in the Maple and King Street Neighborhood in accordance with the provisions of EO 12898 and FHWA Order 6640.23A.