

A. INTRODUCTION

This appendix was prepared in support of Chapter 18, “Environmental Justice.” It provides additional details on the methodologies used in the evaluation conducted for the Second Avenue Subway, as well as more detailed information on the populations inhabiting the three study areas defined in Chapter 18.

On February 11, 1994, President Clinton issued Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” This Executive Order is designed to ensure that each federal agency “shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

Executive Order 12898 also requires federal agencies to work to ensure greater public participation in the decision-making process. To this end, the Second Avenue Subway project has an extensive public participation and community outreach program, described in Chapter 4 (“Public Outreach and Review Process”) of this FEIS.

The environmental justice evaluation conducted for this project (included in Chapter 18) analyzes the Second Avenue Subway’s potential impacts in terms of their effects on minority and low-income populations, to determine whether it has any disproportionately high and adverse impacts on those populations.

B. METHODOLOGY

The analysis conducted in Chapter 18 follows the guidance and methodologies recommended in the federal Council on Environmental Quality’s *Environmental Justice Guidance under the National Environmental Protection Act*, December 1997, the U.S. Department of Transportation’s *Final Order on Environmental Justice*, April 1997. These are described below, followed by a discussion of the methodology used to identify population characteristics in the project study area.

CEQ GUIDANCE

The federal Council on Environmental Quality (CEQ), which has oversight of the federal government’s compliance with Executive Order 12898 and the National Environmental Policy Act (NEPA), developed its guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. Federal agencies are permitted to supplement this guidance with more specific procedures tailored to their particular programs or activities, as the U.S. Department of Transportation (USDOT) has done.

The CEQ's document provides guidance on consideration of Environmental Justice in each phase of NEPA (i.e., scoping, analysis of impacts, issuance of a Record of Decision). During the NEPA evaluation of impact, the guidance document sets forth the following steps:

- Collect demographic information on the population in the area that may be affected by the project, using the U.S. Census.
- In determining the area for data collection—i.e., the area where the population may be affected by the project—recognize that impacts within minority populations, low-income populations, or Native American tribes may be different from impacts on the general population due to a community's distinct cultural practices (for example, a particular population may be dependent on subsistence fishing, where the larger population is not). Where a proposed action would not cause any adverse environmental impacts, and therefore would not cause any disproportionately high and adverse human health or environmental effects, no specific demographic analysis may be warranted.
- Low-income population in an affected area should be identified with the statistical poverty thresholds from the Bureau of the Census's Current Population Reports. Low-income populations can include a group of individuals living in close proximity to each other or a set of different individuals that experience common conditions of environmental exposure or effect.
- Minority population consists of individuals who are members of the following population groups: Native American or Alaskan Native, Asian or Pacific Islander, Black and not of Hispanic origin, and Hispanic. Minority populations can include a group of individuals living in close proximity to each other or a set of different individuals that experience common conditions of environmental exposure or effect. Minority populations should be identified where either 1) the minority population of the affected area exceeds 50 percent; or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. The selection of the appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, a census tract, or other similar unit that is to be chosen so as to not artificially dilute or inflate the affected minority population. A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds.
- When determining whether human health effects are disproportionately high and adverse, agencies are to consider the following three factors, to the extent practicable:
 - 1) Whether the health effects (measured in risks and rates) are significant or above generally accepted norms;
 - 2) Whether the risk or rate of hazard exposure by a minority population, low-income population, or Native American tribe to an environmental hazard is significant and appreciably exceeds or is likely to appreciably exceed the risk or rate to the general population or other appropriate comparison group; and
 - 3) Whether health effects occur in a minority population, low-income population, or Native American tribe affected by cumulative or multiple adverse exposures from environmental hazards.

- When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following three factors, to the extent practicable:
 - 1) Whether there would be an impact on the natural or physical environment that significantly and adversely affects a minority population, low-income population, or Native American tribe;
 - 2) Whether environmental effects are significant and are or may be having an adverse impact on minority populations, low-income populations, or Native American tribes that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group; and
 - 3) Whether the environmental effects would occur in a minority population, low-income population, or Native American tribe affected by cumulative or multiple adverse exposures from environmental hazards.
- When a potential disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Native American tribe has been identified, agencies should analyze how environmental and health effects are distributed within the affected community.
- Any disproportionately high and adverse effects on such populations should be one of the factors the federal agency considers in making its finding on the project and issuing a Record of Decision.

USDOT'S FINAL ORDER ON ENVIRONMENTAL JUSTICE

The USDOT's Final Order on Environmental Justice establishes the procedures for the USDOT to use in complying with Executive Order 12898. The order applies to all of USDOT's operating administrations, including the Federal Transit Administration (FTA). The order sets forth USDOT's policies related to Environmental Justice. As set forth in the order, FTA must take the following steps:

- Determine whether programs, policies, and activities for which FTA is responsible will have an adverse impact on minority and low-income populations and whether that adverse impact will be disproportionately high. For this analysis, the following guidance is provided:
 - Low-income means a person whose median household income is at or below the Department of Health and Human Services' poverty guidelines. Minority means a person who is Black, Hispanic, Asian American, or Native American and Alaskan Native.
 - Adverse effects include the totality of significant individual and cumulative human health or environmental effects.
 - Disproportionately high and adverse effects on minority and low-income populations are adverse effects that are predominantly borne by a minority population and/or low-income population or will be suffered by the minority and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the non-minority or non-low-income population.
 - In making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancement measures that will be taken and all offsetting benefits to the affected minority and low-income populations

may be taken into account, as well as the design, comparative impacts, and relevant number of similar existing system elements in non-minority and non-low-income areas.

- FTA must ensure that any programs, policies, or activities that will have a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if:
 - 1) Further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable. In determining whether a mitigation measure or an alternative is practicable, the social, economic (including costs), and environmental effects of avoiding or mitigating the adverse effects will be taken into account.
 - 2) A substantial need for the program, policy, or activity exists, based on the overall public interest, and alternatives that would have less adverse effects on protected populations that would still satisfy that need would either have other adverse social, economic, environmental, or human health impacts that are more severe, or would involve increased costs of extraordinary magnitude.

METHODOLOGY USED FOR THIS ASSESSMENT: COMPILING POPULATION CHARACTERISTICS FOR STUDY AREAS AND IDENTIFYING POPULATIONS OF CONCERN FOR ENVIRONMENTAL JUSTICE

The process used to assess environmental justice for the Second Avenue Subway was based on the guidance documents described above. It consisted of four steps:

- 1) Identify Study Areas;
- 2) Compile Population Characteristics and Identify Locations with Populations of Concern for Environmental Justice;
- 3) Identify Adverse Effects on Populations of Concern; and
- 4) Evaluate Project's Overall Effects.

The detailed methodology used for Step 2—compiling population characteristics and identifying populations of concern—is described below. Please see Chapter 18 for a discussion of Steps 1, 3, and 4 and for the environmental justice analysis.

To compile population and income characteristics in the study areas and identify any populations of concern for environmental justice, data from the U.S. Census of Population and Housing were used.

For each of the study areas, population characteristics were compiled from the 2000 *U.S. Census of Population and Housing* using the same definitions of population characteristics as those of the U.S. Census Bureau. The following information was collected for each census tract in the study areas, and then aggregated for the two study areas.

For any census tracts that fall only partially within the ½-mile study area boundaries, in considering the number of residents who are located within the study area, the total population in those tracts was adjusted proportionally. Census tracts that are located at least 75 percent within the study area were fully included in the study area, while census tracts that fall less than 25 percent within the study area were not included. Population for the remaining census tracts—tracts where 25 to 74 percent of the tract falls within the ½ mile study area—was included proportionally. For example, if 63 percent of the area of a given census tract is located in the study area, then 63 percent of its population was included. This adjustment allowed an estimate

of the total number of residents and households within the study area, but did not affect the consideration of population characteristics for each census tract, since the percent of the population that is low-income or minority was not affected. There was one exception to this practice: Census Tract 317.01, a very large census tract in Lower Manhattan that includes all of Battery Park City was included proportionally within the study areas, although less than 25 percent of the tract falls within the study area boundaries. This tract is much larger than other Manhattan study areas, so that even a small portion of the tract houses a large population. Adding this tract proportionally allowed that population to be included.

In addition to the individual census tract information, the census data for the Second Avenue corridor study area was organized in six neighborhood zones, roughly corresponding to the neighborhood zones presented in Chapter 6, “Social and Economic Conditions.” A few minor adjustments to study area boundaries were made to avoid splitting census tracts between neighborhood zones: the southern boundary of the East Midtown neighborhood zone is located on 34th Street east of Third Avenue, and on 35th Street west of Third Avenue, and the southern boundary of the Gramercy Park/Union Square neighborhood zone is located mostly on 9th Street. Further, the western boundaries of both the East Harlem and East Village/Lower East Side/Chinatown zones were extended slightly to incorporate census tracts that fell predominantly within the ½-mile radius.

Population characteristics were compiled from the 2000 *U.S. Census of Population and Housing*. The definitions used in the analysis of population characteristics are those of the U.S. Census Bureau. These include the following:

- *Data on racial characteristics:* The population in the Second Avenue study area was characterized using the following racial categories provided in the 2000 Census: White, Black, Asian, and “Other.” “Other” includes residents of American Indian, Alaska Native, Native Hawaiian and Other Pacific Islander descent, as well as those respondents who did not identify with any listed racial groups (White, Black, Asian), or who indicated that they are of more than one race defined by the census. Respondents providing write-in entries such as multiracial, mixed, interracial, or a Hispanic/Latino group (for example, Mexican, Puerto Rican, or Cuban) in the “Some other race” write-in space were also included in this category in the Census.
- *Data on ethnic characteristics:* In addition to racial characteristics, the 2000 Census also includes information on Hispanic origin, which is considered to be an ethnic rather than racial characteristic. According to the Census Bureau, “Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person’s parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.” The U.S. Census Bureau defines persons of Hispanic origin as those respondents who classified themselves in one of the specific Hispanic origin categories in the census questionnaire, such as “Mexican,” “Cuban” or “Puerto Rican,” as well as those who indicated that they were of “Other Spanish/Hispanic/Latino” origin. These respondents include those whose origins are from Spain, the Spanish-speaking countries of Central and South American or the Dominican Republic, or who are persons of Hispanic origin who identify themselves generally as Spanish, Spanish-American, Hispanic or Latino.
- *Total percentage of minority population:* Because Hispanic residents may be of any race, people who characterized themselves as White, Black, Asian, and Other in the 2000 Census may be Hispanic as well. To adjust for the double-counting that therefore occurs and

determine the total number of minority residents in each census tract, the number of Black, Asian, Other, and Hispanic Whites (i.e., all residents of each census tract except those who are White and not Hispanic) were tallied.

- *Low-income population:* The percent of households living below poverty level was used to determine the low-income population in a given census tract. For households, the U.S. Census Bureau defines a household as all people who occupy one housing unit. Accordingly, a household may include both related family members and any unrelated people who share a housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roommates, are each counted as one household. People living in group housing (such as homeless shelters or dormitories) are not considered to be part of a household. In defining poverty level, the U.S. Census Bureau considers a variety of factors including family size, number of children, and the age of the householder. The U.S. Census Bureau does not adjust income thresholds for regional or local variations in the cost of living. To determine a person's poverty status, total family income over a 12-month period is compared against the poverty threshold appropriate for that person's family size and composition. Since poverty status is defined at the family level and not the household level, the poverty status of a household is determined by the poverty status of the householder. Households are classified as poor when the total income in a 12-month period is below the appropriate poverty threshold.
- As another measure of low-income status, the median household income was also gathered for census tract. To aggregate these income data at the neighborhood zone level, the weighted average of each census tract's median household income was calculated. Those numbers were used to represent as closely as possible the median household income for the neighborhood zone.

As noted above, the CEQ guidance on determining populations of concern indicates that a census tract may have a population of concern if it has a minority population greater than 50 percent or if its minority population is "meaningfully greater" than that of a reference area. For this project, Manhattan was used as the reference area, since it is the county in which the project is located. As described above, a census tract was considered to have a minority population if more than 50 percent of that tract's population was minority. In addition, each tract's racial and ethnic characteristics were evaluated, to identify any other tracts where more than 50 percent is not minority, but where the proportion of a particular racial or ethnic group is meaningfully greater than for Manhattan as a whole. A census tract was considered to be low-income if more than 20 percent of its households are living below the poverty level. In Manhattan, approximately 17 percent of the households live below the poverty level. *