

Appendix E.11

Environmental Justice and Demographics

APPENDIX E.11

ENVIRONMENTAL JUSTICE – ERRATA SHEET

	Incorrect Tier 1 Draft EIS Text/Table		Tier 1 Final EIS Text/Table (Volume 2) Page
	Page	Description	
1.	1-3	Environmental Justice data was updated for the Existing NEC and Action Alternatives in the District of Columbia, Baltimore City, Maryland, Prince George’s County, Maryland, and Bucks County, Pennsylvania. During the previous analysis, some Census tracts located within the Affected Environment were inadvertently excluded. The correct Census tracts have been added to the dataset and were used for the analysis. The inclusion of the additional Census tracts in the four counties does not affect the outcome of the analysis.	Data Matrices



Environmental Justice Effects Assessment Methodology

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Submitted by:



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1. Environmental Justice

1.1 INTRODUCTION

This methodology describes how the NEC FUTURE program will address the potential effects of the Tier 1 EIS Alternatives on environmental justice (EJ) populations. EJ populations include minority and low-income persons as further defined in Section 1.3.

This methodology presents the regulatory framework, involved government agencies, and expected outcomes of the Tier 1 EIS process that are relevant to Tier 2 assessments. It also identifies data sources, metrics and methods to be used to document existing conditions and analyze environmental consequences. This methodology is subject to revision as the NEC FUTURE program advances and new information is available.

1.2 REGULATORY FRAMEWORK AND GUIDANCE

The following Executive Orders, U.S. DOT Order, and guidance documents pertain to the assessment of effects on EJ populations.

- ▶ ***Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (1994)*** - requires all federal agencies to “develop an agency-wide environmental justice strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”
- ▶ ***U.S. DOT Order 5610.2 (a) – Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (1997) and Final DOT Environmental Justice Order (2012)***: The U.S. DOT Order requires planning and programming activities that have the potential to have a disproportionately high and adverse effect on human health or the environment to include explicit consideration of the effects on minority populations and low-income populations. The Order also requires meaningful opportunities for public involvement by members of minority populations and low-income populations during the planning and development of programs, policies, and activities as well as access to public information concerning the human health or environmental impacts of programs, policies, and activities.
- ▶ ***Environmental Justice: Guidance Under the National Environmental Policy Act (1997)*** prepared by the Council on Environmental Quality (CEQ) provides guidance for conducting EJ analysis under the National Environmental Policy Act (NEPA) including the suggested elements for public involvement and outreach, development of the EJ analysis methodologies, EJ definitions, EJ criteria, and environmental resource evaluation criteria for the determination of disproportionately high and adverse human health and environmental effects.
- ▶ ***Final Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analyses (1998)*** prepared by the U.S. Environmental Protection Agency (USEPA) presents basic procedures for identifying and describing junctures in the NEPA process where environmental justice issues may be encountered; presents procedures for addressing disproportionately high and adverse effects to evaluate alternative actions; and presents methods for communicating with the affected populations throughout the NEPA process.

- ▶ ***Environmental Justice Policy Guidance for Federal Transit Administration Recipients (2012)*** prepared by the Federal Transit Administration (FTA) provides recommendations on (1) how to fully engage EJ populations in the transportation decision-making process; (2) how to determine whether EJ populations would be subjected to disproportionately high and adverse human health or environmental effects of a public transportation project, policy, or activity; and (3) how to avoid, minimize, or mitigate these effects.

In addition, the following Executive Orders address topics related to the consideration of impacts on EJ populations:

- ▶ ***Executive Order 13166 – Improving Access to Services for Persons with Limited English Proficiency (2000)***: requires each federal agency to ensure that recipients of federal financial assistance provide meaningful access to its programs and activities, including applicants and beneficiaries with limited English proficiency (LEP). LEP applies to individuals who do not speak English as their primary language and who have limited abilities to read, speak, write, or understand English.
- ▶ ***Executive Order 13045 – Protection of Children from Environmental Health Risks and Safety Risks (1997)***: requires federal agencies to minimize environmental health and safety risks to children, and to prioritize the identification and assessment of environmental health and safety risks that may have a disproportionate impact on children.

1.2.1 Regulatory Compliance

The Tier 1 EIS will describe the requirements of Executive Order 12898, the U.S. DOT and FTA orders on environmental justice, and related guidance. The Tier 1 EIS will identify and conduct targeted outreach to EJ populations as well as assess the potential for impacts (both positive and negative) on EJ populations in accordance with the methodology described in Section 1.5 below. In addition, the Tier 1 EIS will describe the additional EJ analysis and outreach that will occur during subsequent Tier 2 evaluations, including compliance with EO 12898, U.S. DOT Order 5610.2(a), and related requirements, such as EO 13166 and EO 13045. During the Tier 1 EIS process, the FRA will identify potential opportunities to streamline subsequent Tier 2 environmental reviews including EJ reviews (see Section 1.7).

Coordination with FTA and USEPA regarding EJ issues will be consistent with the NEC FUTURE Agency Coordination Plan and will support the Statement of Principles (SOP) established between FRA and federal regulatory agencies as part of the CEQ pilot program for the NEC FUTURE program.

In accordance with EO 12898, EO 13166 and U.S. DOT Order 5610.2(a), the FRA will engage in on-going public outreach throughout the Tier 1 EIS process. This will include targeted outreach to low-income and minority populations, including federally recognized Indian tribes. The FRA will follow inclusive public involvement practices, such as holding public meetings in transit-accessible locations, providing notices in minority and ethnic media, placing meeting materials online, and providing informal outreach opportunities in public places. Beyond these basic practices, to assist in understanding and communicating with the varied EJ populations present in the Study Area, the FRA will provide information to and encourage involvement in the program by organizations that represent minority and low-income communities in each state. For example, this may include

targeted mailings to and webinars with these identified organizations at various points in the program. Additional public involvement methods may include presentations to interested organizations and the formation of EJ outreach partnerships with metropolitan planning organizations, state agencies, or other organizations already engaged in outreach to EJ populations. If community issues arise or potential socioeconomic impacts are identified that require more focused engagement of EJ populations, the FRA may also hold community workshops in those locations. Translation and interpretation services as well as translation of meeting and communication materials for persons with limited English proficiency will be offered as necessary. Outreach will be consistent with the NEC FUTURE Public Involvement Plan and EJ Outreach Plan (in development).

1.3 DEFINITIONS

As defined in USEPA's guidance, environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies (USEPA, 1998).

U.S. DOT's Order 5610.2(a) provides the following definitions that apply to the Tier 1 EIS analysis:

- ▶ **Minority Individual:** The U.S. Census Bureau classifies a minority individual as belonging to one of the following groups: American Indian or Alaskan Native, Asian American, Native Hawaiian or Other Pacific Islander, Black (not of Hispanic Origin) and Hispanic or Latino.
- ▶ **Minority Populations:** Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed U.S. DOT program, policy, or activity.
- ▶ **Low-income Individual:** A person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines.¹
- ▶ **Low-income Population:** Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed U.S. DOT program, policy, or activity.
- ▶ **Disproportionately High and Adverse Effect on Minority and Low-income Populations:** An adverse effect that:
 - Is predominately born by a minority population and/or a low-income population, or
 - Will be suffered by the minority populations 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 non-low-income population.

¹ Since the NEC FUTURE Study Area includes multiple states, the Health and Human Services poverty guidelines will be used to ensure consistency across state boundaries. However, as part of Tier 2 analyses, the Federal Highway Administration approach could be considered for more focused study areas.

1.4 RELATED RESOURCES

The FRA will incorporate the effects assessments from other resources in the effects assessment of EJ populations, including public health effects. These related resources are identified in Table 1. Note that the effects assessments for those related resources will be documented within their respective Tier 1 EIS sections.

Table 1: Related Resource Inputs to Environmental Justice Assessment

Resource	Input to Environmental Justice Assessment
Transportation	<ul style="list-style-type: none"> Existing and proposed transportation corridors, facilities, and passenger rail stations and service characteristics, including average fares, to identify locations where an alternative has the potential to change access and mobility or to create isolation
Land Cover	<ul style="list-style-type: none"> Areas with the potential for land use conversion
Parklands and Wild and Scenic Rivers	<ul style="list-style-type: none"> Parklands and wild and scenic rivers within the Affected Environment and/or Context Area that have the potential to be affected by the Tier 1 EIS Alternatives
Visual and Aesthetic Resources	<ul style="list-style-type: none"> Important/particularly sensitive viewsheds or aesthetic characteristics that have the potential to be affected by the Tier 1 EIS Alternatives
Noise and Vibration	<ul style="list-style-type: none"> Areas where noise and vibration thresholds are exceeded by the Tier 1 EIS Alternatives within the Affected Environment
Air Quality	<ul style="list-style-type: none"> Areas within the Affected Environment where air quality emissions would change or increase as a result of a Tier 1 EIS Alternative
Hazardous Waste and Contaminated Material (HWCM) Sites	<ul style="list-style-type: none"> HWCM sites within the Affected Environment and/or Context Area that have the potential to be affected by the Tier 1 EIS Alternatives
Cultural Resources	<ul style="list-style-type: none"> Removal of cultural meeting facilities, places of worship etc., particularly in regards to Native American resources

Source: NEC FUTURE JV, 2014

1.5 METHODOLOGY TO ASSESS EFFECTS

This effects assessment methodology identifies the approach and assumptions for describing existing conditions for environmental justice populations and the environmental consequences of the Tier 1 EIS Alternatives on those populations. It identifies data sources, defines the Affected Environment and Context Area considered for environmental justice, and presents the approach for evaluating potential direct effects.² Indirect effects,³ such as those resulting from induced growth, as a result of the Tier 1 EIS Alternatives will be addressed in a separate methodology (see Indirect Effects Assessment Methodology).

² Direct effects are caused by the action and occur at the same time and place (40 CFR § 1508.8)

³ Indirect effects are those that occur later in time or are further removed in distance (40 CFR § 1508.8)

1.5.1 Existing Conditions

The data sources listed in Table 2 will be used to establish the existing conditions for the environmental justice populations.

Table 2: Data Sources for the Evaluation of Environmental Justice

Resource	Data Source	Data Application
Minority and low-income populations	<ul style="list-style-type: none"> ▪ US Census 2010 	Census tracts within the Affected Environment and Context Area (defined below) will be mapped in GIS to illustrate population characteristics for each census tract.*
	<ul style="list-style-type: none"> ▪ American Community Survey (ACS) 2010 5-year estimates 	Household income data will be obtained at the census tract level. Census tracts within the Affected Environment and Context Area will be mapped in GIS to illustrate population characteristics for each census tract. Limited-English Proficiency data will guide the identification of EJ populations for public outreach purposes.
	<ul style="list-style-type: none"> ▪ National Center for Educational Statistics (NCES) ▪ Government Assisted Housing Programs 	Data will be used to guide the identification of EJ populations.

Source: NEC FUTURE JV, 2014

* Tract-level data will provide the basis for establishing the location of minority populations. While the tract-level data does not provide specific detail for the location of each household, it does provide information regarding the overall presence of minority populations within the entire census tract. Census tracts represent the smallest census unit of geography for which data is available in many counties. Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size varies widely depending on the density of settlement (U.S. Census Bureau, http://www.census.gov/geo/reference/gtc/gtc_ct.html).

The existing conditions for environmental justice will be documented for an established Affected Environment and Context Area.

EJ Populations in the Affected Environment

The Affected Environment is 1-mile wide centered on the Representative Route⁴ for the Tier 1 EIS Alternatives. This 1-mile width is intended to:

- ▶ Encompass and account for the improvements associated with a Representative Route including infrastructure improvements (such as embankments, aerial structures, track improvements), ancillary facilities (such as stations, yards and parking structures), or service changes
- ▶ Encompass the presence of EJ populations within a walkable distance (understanding that average walking distances are between ¼ to ½ mile)⁵ to existing passenger railroad facilities (i.e. stations and parking lots)

⁴ The term “Representative Route” refers to a potential alignment for a Tier 1 EIS Alternative. The Representative Route includes the physical footprint of the improvements associated with the Tier 1 EIS Alternatives. The horizontal and vertical dimensions of the footprint of the Representative Route are based on prototypical cross-sections for these improvements. The Representative Route is used as a proxy for estimating the *potential* effects of a Tier 1 EIS Alternative. The alignment would not actually be selected in Tier 1; the alignment would be determined during subsequent Tier 2 project-level reviews.

For each Tier 1 EIS Alternative, FRA will identify all minority and low-income populations within the Affected Environment using the most current US Census data as noted above. After the review of detailed data, each census tract within the Affected Environment will be classified as either an “**EJ Census Tract**” or a “**Non-EJ Census Tract**.”

The classification of census tracts in the Tier 1 analysis will be based on criteria provided in the CEQ’s 1997 guidance on EJ analysis in NEPA documents. The CEQ’s 1997 guidance recommends finding that a “minority population” is present if:

- ▶ The minority population exceeds 50 percent in the impacted area; or
- ▶ The minority population percentage in the impacted area is “meaningfully greater than the minority population in the general population or other appropriate unit of geographic analysis.”

For both of these thresholds, the CEQ recommends using the *total* minority population (with members of all minority groups summed together).

The CEQ’s 1997 guidance does not provide thresholds for identifying low-income populations. In the absence of specific guidance, the CEQ’s thresholds for minority populations will also be used for identifying low-income populations. Therefore, a census tract will be considered an “EJ census tract” if it meets either of the following criteria:

- ▶ **50-Percent Threshold:** The minority or low-income population in the census tract exceeds 50 percent.
- ▶ **“Meaningfully-Greater” Threshold.** The minority or low-income population percentage in the census tract is “meaningfully greater” than the minority or low-income population percentage in the corresponding county.⁶

For this Tier 1 EIS, a census tract in the Affected Environment will meet the “meaningfully greater” threshold if the percentage of minority or low-income residents is at least 10 percentage points higher than the percentage in the corresponding county. This approach is consistent with thresholds used in both the Baltimore Red Line Final Environmental Impact Statement (FEIS) and California High Speed Rail Tier 1 EIS and appropriate for a Tier 1 level of analysis.

Using these criteria, the Tier 1 analysis will identify EJ census tracts within the Affected Environment for all Tier 1 EIS alternatives. The description of the Affected Environment will include the percent of the total population that can be described as part of the EJ population, the total number of EJ census tracts, and the total EJ population within the Affected Environment. Maps will also be developed in GIS to illustrate EJ and non-EJ census tracts within the Affected Environment.

⁵ One-quarter to one-half mile is widely considered to be the industry standard in defining walking distance to transit. A notable source detailing walking distances includes: Transportation Research, *TCRP Report 95 Transit Oriented Development*. (2007)

⁶ One exception to this approach is Baltimore City which is a not part of a county. Therefore, the minority or low-income population percentage in the census tracts within this portion of the NEC FUTURE Study Area would be compared to the minority and low income population percentage in Baltimore City and not to a county level

It is important to note that the FTA, a cooperating agency for the NEC FUTURE Tier 1 EIS, issued guidance in their August 2012 circular⁷ that broadens the EJ analysis and provides guidance to identify and assess impacts to all EJ populations without screening based on the CEQ thresholds. FRA and FTA agree that it is appropriate to apply the thresholds provided for in the CEQ's 1997 guidance for the NEC FUTURE program due to the geographic scale and scope of the Study Area. For the Tier 1 level of analysis, this threshold methodology is a useful way to compare differences amongst alternatives in terms of their *potential* to cause EJ impacts as well as highlight areas for later, project-level determinations of disproportionality. However, as described in Section 1.7, future Tier 2 evaluations for projects in which FTA is involved, as a funding source or otherwise, will adhere to the broader analysis identified in FTA's EJ Circular.

EJ Populations in the Context Area (outside the Affected Environment)

The Context Area is 5 miles wide, centered on the Representative Route for each of the Tier 1 EIS Alternatives. Within the Context Area, the Tier 1 analysis is intended to identify, at a broad scale, the EJ populations that could be affected should the Representative Route shift. Consistent with the approach used to identify EJ populations for the Affected Environment, EJ populations within the Context Area will be identified based on the 50-percent or meaningfully greater thresholds following the CEQ's 1997 guidance. EJ census tracts within the Context Area will be qualitatively discussed and flagged for future consideration. The general characteristics and relative size and location of EJ populations will be presented for census tracts within the Context Area. This information will be used to supplement the census tract analysis within the Affected Environment.

1.5.2 Environmental Consequences

The Tier 1 EIS will include a quantitative assessment of impacts on EJ populations within the Affected Environment (the one-mile-wide swath). In addition, the Tier 1 EIS will include a qualitative assessment of impacts on EJ populations within the Context Area (the five-mile-wide swath).

For the Tier 1 EIS analysis, the FRA will identify differences among alternatives with regard to the potential for Tier 1 EIS Alternatives to either benefit or adversely affect EJ populations. Potential EJ concerns - e.g., alternatives that have greater impacts on EJ populations - will be 'flagged' for further analysis in Tier 2. Determinations required under EO 12898 and USDOT Order 5610.2(a) regarding disproportionately high and adverse effects will be made in subsequent Tier 2 analyses.

To summarize, the following steps will be undertaken to evaluate the environmental consequences to EJ populations within the Affected Environment:

1. Identify and map "EJ census tracts" and "non-EJ census tracts" within the Affected Environment, based on the CEQ's 1997 thresholds defined in Section 1.5.1.
2. Identify potential effects to EJ populations by:
 - a. Using GIS to identify the locations where each Representative Route crosses through identified EJ census tracts.

⁷ Environmental Justice Policy Guidance for Federal Transit Administration Recipients, Circular 4703.1, effective August 15, 2012. (FTA's EJ Circular)

- b. Conducting a GIS-based analysis of potential effects for resource areas identified in Table 1 that overlap those with identified EJ census tracts. For example, areas of potential land conversions which are also located in EJ census tracts.
 - c. Incorporating non-GIS data for resource areas listed in Table 1 to assess potential effects on EJ populations within the identified EJ census tracts. Non-GIS data such as the findings of the air quality analyses will be reviewed to identify areas, also located in EJ census tracts, where air quality emissions could change or increase.
3. Discuss the potential range of health-related effects identified in the noise and air quality assessments as they would apply to representative EJ populations (see Noise/Vibration and Air Quality methodologies).
 4. Make a qualitative assessment, for each of the Tier 1 EIS Alternatives, to identify areas where there is the potential for benefits or adverse effects on EJ populations for each resource area listed in Table 1.

An example of how resource specific effects will be considered for the Tier 1 EJ analysis is provided below for transportation. A similar approach would be applied to each resource area listed in Table 1.

1. The transportation effects assessment will be reviewed for changes affecting accessibility including:
 - Improved access to passenger rail and/or public transit
 - Location of stations in both EJ and non-EJ census tracts and whether or not they bisect communities
 - Changes in service quality (type of services, frequency, trip times)
 - Changes in fares
2. The potential for benefits or effects on EJ populations will be flagged, for example characterizing the positive mobility improvements (frequency of service, stations service, quality of service, etc.) or the potential to limit access for EJ populations.

For the Context Area, EJ census tracts will be qualitatively discussed with regard to the potential to be affected should there be a shift in a Representative Route.

Temporary construction-related effects to EJ census tracts will be described as to the location, duration and type of activity in the Affected Environment. The NEC FUTURE program overall approach to assessing construction-related effects at the Tier 1 EIS level is further described in a separate Construction Effects Assessment Approach document. Construction methods and activities for the Tier 1 EIS Alternatives will be the basis of this assessment and will be described in Chapter 2.

1.5.3 Mitigation Strategies

A menu of potential mitigation measures will be developed on a programmatic scale for further consideration in Tier 2. Examples of programmatic mitigation measures would include potential

installation of noise barriers and job training programs. Mitigation measures would be determined in consultation with the affected EJ populations during subsequent Tier 2 evaluations.

1.6 TIER 1 EIS OUTCOMES

This Tier 1 EIS environmental justice assessment will:

- ▶ Quantify the total population for each census tract
- ▶ Quantify the percent of the total population that qualifies as an “EJ population,” the total EJ population, and determine the total number of EJ census tracts using CEQ’s 1997 thresholds. .
- ▶ Map EJ census tracts within the Affected Environment.
- ▶ Map EJ census tracts within the Context Area.
- ▶ Identify where potential effects for resource areas identified in **Table 1** may affect EJ populations within the Affected Environment.
- ▶ Identify issues or areas of concern where the Tier 1 EIS Alternatives have the potential to create benefits or adverse effects on EJ populations.
- ▶ Identify a menu of potential mitigation measures that could be further developed in Tier 2, if an alternative is found to have adverse effects on EJ populations.

1.7 APPLICABILITY TO TIER 2 ASSESSMENTS

The Tier 1 EIS will determine areas of concern for EJ that would require more in-depth analysis at Tier 2 level. For Tier 2 projects in which FTA is involved as a funding source or lead federal agency, the identification of EJ populations and associated effects assessment will follow FTA’s EJ Circular. The Tier 2 EJ analysis would include additional data collection and utilize more detailed census information to evaluate effects at the community or neighborhood level. A more detailed impact analysis, including a community cohesion assessment, would be completed to assess localized project effects at the community or neighborhood level during both operations and construction. While the outcomes of the Tier 1 EIS analysis will not produce a specific list of community and neighborhood names, those census tracts having EJ populations could be used as a starting part for EJ outreach and focused community impact assessments.

Additionally, the FRA will identify ways in which agency coordination during the Tier 1 EIS process could create efficiencies and help streamline subsequent Tier 2 reviews and approvals. For example, if a particular portion or element of a Tier 1 EIS Alternative avoids EJ census tracts or any other impact on EJ census tracts, FRA may coordinate with FTA and FRA to determine whether or not those EJ census tracts need further evaluation during the Tier 2 environmental review process.

Application of Effects-Assessment Methodology

11.1 ENVIRONMENTAL JUSTICE: APPLICATION OF EFFECTS ASSESSMENT METHODOLOGY

11.1.1 Variations to Effects-Assessment Methodology

The following variations from the Effects-Assessment Methodology occurred during the process of developing the Tier 1 Draft EIS analysis:

- ▶ The Environmental Justice Methodology was modified to take the minority and low-income populations identified at the census tracts level and aggregate the data to the county and state levels within the Tier 1 Draft EIS.

11.1.2 Data Variations

There were no variations from the identified data sources in the Effects-Assessment Methodology during the development of the Tier 1 Draft EIS analysis.

11.1.3 Criteria for Analysis

Existing Conditions

- ▶ EJ data are presented at the county level within the Tier 1 Draft EIS.
- ▶ All census tracts with EJ populations have been mapped and shown in the Mapping Atlas.
- ▶ Census tracts where the minority or low-income population exceeded 50 percent or the meaningfully greater threshold (10 percentage points higher than the jurisdiction total) were flagged as an EJ census tract. This approach identified concentrations of EJ populations located in the Affected Environment and in the Context Area.
- ▶ Related resource analysis was compiled by overlaying the counties with a majority of census tracts identified as containing EJ populations (greater than 50 percent of tracts within a county) with the identified related resources within the same county by alternative. The data are presented using a presence/absence system in tabular form. To maintain consistency with the related resource data in the respective chapters, the Environmental Consequences for the related resources were maintained as described in their respective methodologies (i.e., they were not adjusted to match the 1-mile Affected Environment for Environmental Justice).

Environmental Consequences – Stations

- ▶ Station areas with potential EJ impacts were identified as part of the Environmental Consequences assessment and have been mapped and shown in Appendix A, Mapping Atlas.

Data Matrices

State	County	Environmental Justice															
		Affected Environment															
		Alternative 3 via CC and PVD (3.1)							Alternative 3 via LI and PVD (3.2)								
Total Population	Minority Population	Low Income Population	EJ Tracts	Total Tracts	% Minority	% Low Income	% EJ Tracts	Total Population	Minority Population	Low Income Population	EJ Tracts	Total Tracts	% Minority	% Low Income	% EJ Tracts		
DC	District of Columbia	57,799	42,353	13,762	18	22	73%	25%	82%	57,799	42,353	13,762	18	22	73%	25%	82%
MD	Anne Arundel County	70,613	31,560	3,369	4	13	45%	5%	31%	70,613	31,560	3,369	4	13	45%	5%	31%
MD	Baltimore city	246,902	179,383	64,551	75	95	73%	28%	79%	246,902	179,383	64,551	75	95	73%	28%	79%
MD	Baltimore County	123,930	36,269	9,881	8	33	29%	9%	24%	123,930	36,269	9,881	8	33	29%	9%	24%
MD	Cecil County	50,912	8,908	4,965	3	9	17%	10%	33%	50,912	8,908	4,965	3	9	17%	10%	33%
MD	Harford County	87,403	33,842	8,084	12	19	39%	9%	63%	87,403	33,842	8,084	12	19	39%	9%	63%
MD	Howard County	7,544	2,453	388	0	1	33%	5%	0%	7,544	2,453	388	0	1	33%	5%	0%
MD	Prince George's County	99,935	86,749	7,662	24	24	87%	8%	100%	99,935	86,749	7,662	24	24	87%	8%	100%
DE	New Castle County	164,891	78,675	26,610	21	44	48%	17%	48%	164,891	78,675	26,610	21	44	48%	17%	48%
PA	Bucks County	91,658	24,886	6,819	10	22	27%	7%	45%	91,658	24,886	6,819	10	22	27%	7%	45%
PA	Delaware County	129,732	56,319	22,310	19	41	43%	17%	46%	129,732	56,319	22,310	19	41	43%	17%	46%
PA	Philadelphia County	677,850	411,981	196,938	109	173	61%	31%	63%	677,850	411,981	196,938	109	173	61%	31%	63%
NJ	Bergen County	4,985	1,636	244	0	1	33%	5%	0%	4,985	1,636	244	0	1	33%	5%	0%
NJ	Burlington County	10,797	4,145	285	1	2	38%	3%	50%	10,797	4,145	285	1	2	38%	3%	50%
NJ	Essex County	68,401	54,571	17,910	22	22	80%	29%	100%	68,401	54,571	17,910	22	22	80%	29%	100%
NJ	Hudson County	152,636	99,655	19,929	30	42	65%	14%	71%	152,636	99,655	19,929	30	42	65%	14%	71%
NJ	Mercer County	111,938	68,891	15,813	18	26	62%	15%	69%	111,938	68,891	15,813	18	26	62%	15%	69%
NJ	Middlesex County	263,785	154,663	23,929	35	53	59%	10%	66%	263,785	154,663	23,929	35	53	59%	10%	66%
NJ	Somerset County	12,130	10,420	1,002	2	2	86%	9%	100%	12,130	10,420	1,002	2	2	86%	9%	100%
NJ	Union County	163,271	118,541	20,837	31	36	73%	13%	86%	163,271	118,541	20,837	31	36	73%	13%	86%
NY	Bronx County	359,034	327,536	100,406	88	94	91%	29%	94%	359,034	327,536	100,406	88	94	91%	29%	94%
NY	Kings County	14,885	4,697	1,921	1	5	32%	14%	20%	30,973	9,072	3,917	2	10	29%	14%	20%
NY	Nassau County	0	0	0	0	0	0%	0%	0%	170,720	42,573	5,231	6	36	25%	3%	17%
NY	New York County	467,122	143,643	42,940	20	92	31%	10%	22%	192,830	77,740	25,491	14	41	40%	14%	34%
NY	Putnam County	10,446	1,537	296	0	2	15%	3%	0%	0	0	0	0	0	0%	0%	0%
NY	Queens County	274,769	169,432	37,573	48	82	62%	14%	59%	684,769	473,948	88,758	142	224	69%	13%	63%
NY	Suffolk County	0	0	0	0	0	0%	0%	0%	266,407	123,824	16,618	24	57	46%	6%	42%
NY	Westchester County	264,612	100,516	19,105	19	57	38%	7%	33%	165,511	72,635	14,050	13	34	44%	9%	38%
CT	Fairfield County	421,229	186,285	45,370	46	98	44%	11%	47%	328,991	159,618	40,457	42	82	49%	13%	51%
CT	Hartford County	247,930	120,689	40,781	43	68	49%	17%	63%	222,326	118,593	39,556	43	62	53%	19%	69%
CT	Middlesex County	26,228	2,229	1,008	0	6	8%	4%	0%	26,228	2,229	1,008	0	6	8%	4%	0%
CT	New Haven County	325,571	104,970	33,236	23	74	32%	11%	31%	291,267	97,639	29,669	22	66	34%	11%	33%
CT	New London County	107,605	28,339	8,376	8	27	26%	8%	30%	107,605	28,339	8,376	8	27	26%	8%	30%
CT	Tolland County	36,724	3,503	1,918	0	8	10%	5%	0%	36,724	3,503	1,918	0	8	10%	5%	0%
CT	Windham County	28,376	1,872	1,791	0	8	7%	7%	0%	28,376	1,872	1,791	0	8	7%	7%	0%
RI	Kent County	48,220	4,284	2,836	0	13	9%	6%	0%	48,220	4,284	2,836	0	13	9%	6%	0%
RI	Providence County	337,470	149,885	57,907	40	75	44%	18%	53%	337,470	149,885	57,907	40	75	44%	18%	53%
RI	Washington County	84,082	6,852	4,270	1	16	8%	5%	6%	84,082	6,852	4,270	1	16	8%	5%	6%
MA	Bristol County	85,206	10,247	5,043	2	15	12%	6%	13%	85,206	10,247	5,043	2	15	12%	6%	13%
MA	Hampden County	0	0	0	0	0	0%	0%	0%	0	0	0	0	0	0%	0%	0%
MA	Middlesex County	0	0	0	0	0	0%	0%	0%	0	0	0	0	0	0%	0%	0%
MA	Norfolk County	58,840	8,578	2,144	0	12	15%	4%	0%	58,840	8,578	2,144	0	12	15%	4%	0%
MA	Suffolk County	231,885	118,517	48,465	41	69	51%	23%	59%	231,885	118,517	48,465	41	69	51%	23%	59%
MA	Worcester County	0	0	0	0	0	0%	0%	0%	0	0	0	0	0	0%	0%	0%
DC	Total	57,799	42,353	13,762	18	22	73%	25%	82%	57,799	42,353	13,762	18	22	73%	25%	82%
MD	Total	687,239	379,164	98,900	126	194	55%	15%	65%	687,239	379,164	98,900	126	194	55%	15%	65%
DE	Total	164,891	78,675	26,610	21	44	48%	17%	48%	164,891	78,675	26,610	21	44	48%	17%	48%
PA	Total	899,240	493,186	226,067	138	236	55%	27%	58%	899,240	493,186	226,067	138	236	55%	27%	58%
NJ	Total	787,943	512,522	99,949	139	184	65%	13%	76%	787,943	512,522	99,949	139	184	65%	13%	76%
NY	Total	1,390,868	747,361	202,241	176	332	54%	15%	53%	1,870,244	1,127,328	254,471	289	496	60%	14%	58%
CT	Total	1,193,663	447,887	132,480	120	289	38%	12%	42%	1,041,517	411,793	122,775	115	259	40%	12%	44%
RI	Total	469,772	161,021	65,013	41	104	34%	15%	39%	469,772	161,021	65,013	41	104	34%	15%	39%
MA	Total	375,931	137,342	55,652	43	96	37%	16%	45%	375,931	137,342	55,652	43	96	37%	16%	45%
Grand Total		6,027,346	2,999,511	920,674	822	1,501	50%	16%	55%	6,354,576	3,343,384	963,199	930	1,635	53%	16%	57%

State	County	Environmental Justice															
		Affected Environment															
		Alternative 3 via LI and WOR (3.3)							Alternative 3 via CC and WOR (3.4)								
Total Population	Minority Population	Low Income Population	EJ Tracts	Total Tracts	% Minority	% Low Income	% EJ Tracts	Total Population	Minority Population	Low Income Population	EJ Tracts	Total Tracts	% Minority	% Low Income	% EJ Tracts		
DC	District of Columbia	57,799	42,353	13,762	18	22	73%	25%	1	57,799	42,353	13,762	18	22	73%	25%	82%
MD	Anne Arundel County	70,613	31,560	3,369	4	13	45%	5%	0	70,613	31,560	3,369	4	13	45%	5%	31%
MD	Baltimore city	246,902	179,383	64,551	75	95	73%	28%	1	246,902	179,383	64,551	75	95	73%	28%	79%
MD	Baltimore County	123,930	36,269	9,881	8	33	29%	9%	0	123,930	36,269	9,881	8	33	29%	9%	24%
MD	Cecil County	50,912	8,908	4,965	3	9	17%	10%	0	50,912	8,908	4,965	3	9	17%	10%	33%
MD	Harford County	87,403	33,842	8,084	12	19	39%	9%	1	87,403	33,842	8,084	12	19	39%	9%	63%
MD	Howard County	7,544	2,453	388	0	1	33%	5%	0	7,544	2,453	388	0	1	33%	5%	0%
MD	Prince George's County	99,935	86,749	7,662	24	24	87%	8%	1	99,935	86,749	7,662	24	24	87%	8%	100%
DE	New Castle County	164,891	78,675	26,610	21	44	48%	17%	0	164,891	78,675	26,610	21	44	48%	17%	48%
PA	Bucks County	91,658	24,886	6,819	10	22	27%	7%	0	91,658	24,886	6,819	10	22	27%	7%	45%
PA	Delaware County	129,732	56,319	22,310	19	41	43%	17%	0	129,732	56,319	22,310	19	41	43%	17%	46%
PA	Philadelphia County	677,850	411,981	196,938	109	173	61%	31%	1	677,850	411,981	196,938	109	173	61%	31%	63%
NJ	Bergen County	4,985	1,636	244	0	1	33%	5%	0	4,985	1,636	244	0	1	33%	5%	0%
NJ	Burlington County	10,797	4,145	285	1	2	38%	3%	1	10,797	4,145	285	1	2	38%	3%	50%
NJ	Essex County	68,401	54,571	17,910	22	22	80%	29%	1	68,401	54,571	17,910	22	22	80%	29%	100%
NJ	Hudson County	152,636	99,655	19,929	30	42	65%	14%	1	152,636	99,655	19,929	30	42	65%	14%	71%
NJ	Mercer County	111,938	68,891	15,813	18	26	62%	15%	1	111,938	68,891	15,813	18	26	62%	15%	69%
NJ	Middlesex County	263,785	154,663	23,929	35	53	59%	10%	1	263,785	154,663	23,929	35	53	59%	10%	66%
NJ	Somerset County	12,130	10,420	1,002	2	2	86%	9%	1	12,130	10,420	1,002	2	2	86%	9%	100%
NJ	Union County	163,271	118,541	20,837	31	36	73%	13%	1	163,271	118,541	20,837	31	36	73%	13%	86%
NY	Bronx County	359,034	327,536	100,406	88	94	91%	29%	1	359,034	327,536	100,406	88	94	91%	29%	94%
NY	Kings County	30,973	9,072	3,917	2	10	29%	14%	0	30,973	9,072	3,917	2	10	29%	14%	20%
NY	Nassau County	170,720	42,573	5,231	6	36	25%	3%	0	170,720	42,573	5,231	6	36	25%	3%	0%
NY	New York County	192,830	77,740	25,491	14	41	40%	14%	0	192,830	77,740	25,491	14	41	40%	14%	22%
NY	Putnam County	0	0	0	0	0	0%	0%	0	10,446	1,537	296	0	2	15%	3%	0%
NY	Queens County	684,769	473,948	88,758	142	224	69%	13%	1	274,769	169,432	37,573	48	82	62%	14%	59%
NY	Suffolk County	266,407	123,824	16,618	24	57	46%	6%	0	0	0	0	0	0	0%	0%	0%
NY	Westchester County	165,511	72,635	14,050	13	34	44%	9%	0	264,612	100,516	19,105	19	57	38%	7%	33%
CT	Fairfield County	328,991	159,618	40,457	42	82	49%	13%	1	421,229	186,285	45,370	46	98	44%	11%	47%
CT	Hartford County	213,720	115,466	38,462	43	59	54%	19%	1	239,324	117,562	39,687	43	65	49%	17%	66%
CT	Middlesex County	26,228	2,229	1,008	0	6	8%	4%	0	26,228	2,229	1,008	0	6	8%	4%	0%
CT	New Haven County	291,267	97,639	29,669	22	66	34%	11%	0	325,571	104,970	33,236	23	74	32%	11%	31%
CT	New London County	107,605	28,339	8,376	8	27	26%	8%	0	107,605	28,339	8,376	8	27	26%	8%	30%
CT	Tolland County	42,440	4,269	2,217	2	9	10%	5%	0	42,440	4,269	2,217	2	9	10%	5%	22%
CT	Windham County	4,317	340	171	0	1	8%	4%	0	4,317	340	171	0	1	8%	4%	0%
RI	Kent County	48,220	4,284	2,836	0	13	9%	6%	0	48,220	4,284	2,836	0	13	9%	6%	0%
RI	Providence County	220,007	129,337	46,940	35	50	59%	23%	1	220,007	129,337	46,940	35	50	59%	23%	70%
RI	Washington County	84,082	6,852	4,270	1	16	8%	5%	0	84,082	6,852	4,270	1	16	8%	5%	6%
MA	Bristol County	79,716	9,996	4,935	2	14	13%	6%	0	79,716	9,996	4,935	2	14	13%	6%	14%
MA	Hampden County	4,319	200	272	0	1	5%	6%	0	4,319	200	272	0	1	5%	6%	0%
MA	Middlesex County	163,359	35,190	8,508	4	34	22%	6%	0	163,359	35,190	8,508	4	34	22%	6%	12%
MA	Norfolk County	83,225	13,828	5,197	2	17	17%	7%	0	83,225	13,828	5,197	2	17	17%	7%	12%
MA	Suffolk County	288,702	138,261	59,847	45	83	48%	24%	1	288,702	138,261	59,847	45	83	48%	24%	54%
MA	Worcester County	202,780	66,527	26,391	24	44	33%	14%	1	202,780	66,527	26,391	24	44	33%	14%	55%
DC	Total	57,799	42,353	13,762	18	22	73%	25%	1	57,799	42,353	13,762	18	22	73%	25%	82%
MD	Total	687,239	379,164	98,900	126	194	55%	15%	1	687,239	379,164	98,900	126	194	55%	15%	65%
DE	Total	164,891	78,675	26,610	21	44	48%	17%	0	164,891	78,675	26,610	21	44	48%	17%	48%
PA	Total	899,240	493,186	226,067	138	236	55%	27%	1	899,240	493,186	226,067	138	236	55%	27%	58%
NJ	Total	787,943	512,522	99,949	139	184	65%	13%	1	787,943	512,522	99,949	139	184	65%	13%	76%
NY	Total	1,870,244	1,127,328	254,471	289	496	60%	14%	1	1,390,868	747,361	202,241	176	332	54%	15%	53%
CT	Total	1,014,568	407,900	120,360	117	250	40%	12%	0	1,166,714	443,994	130,065	122	280	38%	12%	44%
RI	Total	352,309	140,473	54,046	36	79	40%	16%	0	352,309	140,473	54,046	36	79	40%	16%	46%
MA	Total	822,101	264,002	105,150	77	193	32%	14%	0	822,101	264,002	105,150	77	193	32%	14%	40%
Grand Total		6,656,334	3,445,603	999,315	961	1,698	52%	16%	1	6,329,104	3,101,730	956,790	853	1,564	49%	16%	55%

Appendix E.11 – Demographics



Demographics Effects Assessment Methodology

March 6, 2014
Version Final

Submitted by:



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1. Demographics

1.1 INTRODUCTION

This methodology explains how the NEC FUTURE program will establish baseline demographic characteristics and demographic trends within the NEC FUTURE Study Area. The demographic data identified in this methodology is an input to other Tier 1 EIS resource areas such as economic effects, environmental justice, transportation, and indirect effects.

This methodology presents the regulatory framework, involved government agencies, regulatory and other outcomes of the Tier 1 EIS process, and relevance to Tier 2, project-level assessments. It also identifies data sources, metrics and methods to be used to document existing and forecast demographic conditions. This methodology is subject to revision as the NEC FUTURE program advances and new information is available.

1.2 DEFINITION

As defined by the NEC FUTURE program, demographics includes quantifiable characteristics of a defined population, such as age and racial composition, income, employment, auto ownership (relevant to transit dependency) and housing data.

1.3 RELATED RESOURCES

As a source resource area, the demographic assessment does not derive from other resource analyses. Demographics data and analysis is an input to related resources. Table 1 identifies those resources that rely on demographic data for their effects assessments.

Table 1: Demographics Information Used as Inputs to Related Resources

Related Resource	Demographic Information
Economic Effects	<ul style="list-style-type: none"> Data on current and forecast population and economic characteristics (e.g., household income, employment) to evaluate the potential for economic shifts as a result of the Tier 1 EIS Alternatives.
Environmental Justice	<ul style="list-style-type: none"> Data on socio-economic characteristics and racial composition to identify minority and low-income populations.
Indirect Effects	<ul style="list-style-type: none"> Data on current and forecast population and economic characteristics to assess the potential for indirect effects, such as those resulting from induced growth as a result of the Tier 1 EIS Alternatives.
Transportation Effects	<ul style="list-style-type: none"> Data on current and forecast population and economic characteristics as inputs to the travel demand modeling tasks for assessing existing and future transportation conditions under the Tier 1 EIS Alternatives.

Source: NEC FUTURE JV Team, 2013

1.4 REGULATORY FRAMEWORK AND GUIDANCE

Federal Railroad Administration (FRA) *Procedures for Considering Environmental Impacts* (64 *Federal Register* 25454, May 1999) require consideration of potential shifts in demographics and community disruption in an EIS. The NEC FUTURE program will consider these procedures, consistent with a Tier 1 level of assessment, in the evaluation of demographic effects.

1.4.1 Regulatory Compliance

No formal agency approvals are required for the development of demographic baseline data or the assessment of effects for demographics.

1.5 METHODOLOGY TO ASSESS EFFECTS

This methodology identifies the approach and assumptions for describing existing and forecasted demographic conditions and analyses of trends in that data. It identifies data sources, defines the Affected Environment considered for demographics and the approach for documenting baseline existing and forecast demographic conditions. The FRA will consider potential demographic effects in conjunction with other related resources including economic effects, environmental justice, transportation, and indirect effects. The effects assessment methodology for each of these resources is described in separate methodologies (see Economic Effects, Environmental Justice, Transportation, and Indirect Effects Assessment Methodologies).

1.5.1 Existing Conditions

The FRA will establish existing (2010) demographic conditions and forecast future (2040) conditions from data sources described in Table 2. The most recent year in which the Census was conducted is 2010, and the NEC FUTURE program planning horizon is 2040.

The FRA will document existing and forecast demographic conditions for an Affected Environment that includes the entire NEC FUTURE Study Area. The NEC FUTURE Study Area encompasses a broad geographic area stretching 457 miles from Washington, D.C., in the south to Boston, MA, in the north, and covering 50,000 square miles. FRA will compile existing and forecast demographic conditions by Metropolitan Statistical Area (MSA) and other counties or county equivalents (e.g., City of Baltimore) for that portion of each state within the Affected Environment. The demographic characteristics comparison will address the portion of each state within the Affected Environment, the state as a whole, and the Affected Environment as a whole.

The FRA will describe demographic changes between the base year (2010) and NEC FUTURE horizon year (2040) for demographic characteristics presented in Table 3. The FRA will use historic data (1980, 1990, 2000, and 2010) and interim-year forecast data (2020 and 2030) to assess past and projected demographic trends for a subset of demographic characteristics (i.e., population, age, employment, and population density) in 2040. This trend data will highlight, in ten year increments, where growth or decline has or is forecast to occur within these time periods.

Table 2: Data Sources for Establishing Demographic Characteristics

Topic	Data Source	Data Application
Population and Income		
Population	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 population ▪ 1980—2040 historic and forecast population (on a decennial basis)
Minority	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau 	<ul style="list-style-type: none"> ▪ 2010 percent minority population
Low income	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau 	<ul style="list-style-type: none"> ▪ 2010 percent low-income population
Age	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 population by age ▪ 1980—2040 historic and forecast population by age (on a decennial basis)
Population density	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 population density in persons per square mile ▪ 1980—2040 historic and forecast population density in persons per square mile (on a decennial basis)
Median Household Income	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 median household income
Housing Units		
Housing Units	<ul style="list-style-type: none"> ▪ US Department of Commerce, Census Bureau 	<ul style="list-style-type: none"> ▪ 2010 total housing units
Vehicle Availability	<ul style="list-style-type: none"> ▪ Profile of Selected Social Characteristics: 2006-2010 American Community Survey 5-Year Estimates 	<ul style="list-style-type: none"> ▪ 2010 percent housing units with No Vehicle available
Employment		
Employment	<ul style="list-style-type: none"> ▪ Profile of Selected Social Characteristics: 2006-2010 American Community Survey 5-Year Estimates ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 number of jobs ▪ 1980—2040 historic and forecast number of jobs (on a decennial basis)
	<ul style="list-style-type: none"> ▪ Profile of Selected Social Characteristics: 2006-2010 American Community Survey 5-Year Estimates ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 percent population aged 20-64 employed ▪ 2040 forecast percent population aged 20-64 employed
Unemployment	<ul style="list-style-type: none"> ▪ Profile of Selected Social Characteristics: 2006-2010 American Community Survey 5-Year Estimates ▪ Moody's Analytics U.S. County Forecast 	<ul style="list-style-type: none"> ▪ 2010 percent labor force unemployed ▪ 2040 forecast percent labor force unemployed

Source: NEC FUTURE JV, 2013

Table 3: Characteristics Included in Establishing Baseline Demographic Conditions

Demographic Characteristics	2010	2040
Population	✓	✓
Percent minority population	✓	
Percent low-income population	✓	
Population by age ^[1]	✓	✓
Population density (persons per square mile)	✓	✓
Median household income	✓	✓
Total housing units	✓	
Percent housing units with 'no vehicle available'	✓	
Percent of Labor Force Unemployed	✓	✓

^[1] Single age metric to be used in comparisons among states and regions will be selected during effects assessment process.

The FRA will compile trend data by MSAs and other counties or county equivalents for that portion of each state within the Affected Environment. FRA will compare the demographic trends for the portion of each state within the Affected Environment to demographic trends for the state as a whole, for the Affected Environment as a whole, and to the following states and three sub-regions:

- ▶ South Region: Washington, D.C., Maryland, Delaware, and Pennsylvania
- ▶ Central Region: New Jersey and New York
- ▶ North Region: Connecticut, Rhode Island, and Massachusetts

The states included in each sub-region have experienced similar overall growth patterns in recent years; organizing the trend analysis by sub-region helps to highlight similarities and differences across the Affected Environment. In addition, the proposed sub-regions roughly coincide with the organization to be used for the Economic Effects Assessment Methodology (see Economic Effects Assessment Methodology).

Since the Affected Environment is the entire Study Area it is not necessary to establish a broader 5-mile Context Area, as is done for most other resources.

1.5.2 Application of Demographics Data

As described above, demographics data is an input to effects assessments for related resources. For example, in the Economics Effects assessment, FRA will use demographic trend data, along with other economic variables, to analyze the effects of the Tier 1 EIS Alternatives on economic growth factors in various metropolitan areas, sub-regions and states (see Economic Effects Methodology). Current and future demographics data is also an important input to the travel demand forecasting process for the Transportation assessment (see Transportation Effects Assessment Methodology). FRA will also use demographics data to identify low income and minority communities and conduct the Environmental Justice assessment (see Environmental Justice Methodology). FRA will use current and forecast demographic trends to estimate induced growth and the indirect effects¹ of

¹ Indirect Effects are those that occur later in time or are further removed in distance (40 CFR § 1508.8)

that growth. The approach to assessing indirect effects is addressed in a separate methodology (see Indirect Effects Assessment Methodology). *(Note: specifics about the approach to estimating induced growth are subject to further FRA review and discussion with individual states).*

1.6 TIER 1 EIS OUTCOMES

The Tier 1 EIS demographics section will:

- ▶ Document current and forecast demographic conditions and trends for the Affected Environment.
- ▶ Discuss demographic trends (growth rate, changing patterns of population and employment, etc.) of the three sub-regions; compare these sub-regions to one another and the Affected Environment as a whole.

1.7 APPLICABILITY TO TIER 2 ASSESSMENTS

The FRA will use information obtained from the collection of current and forecast demographics data in the Tier 1 EIS to identify areas or municipalities where additional demographic data is required for subsequent Tier 2 level assessments.

Data Matrices

Demographic Data			Socioeconomics				Housing		Households	
County	State	MSA	2010 Percent Minority (Census SF1)	2010 Percent Living Below the Poverty Level (Census ACS)	2010 Median Household Income (Census ACS)	2040 Median Household Income (Moody's)	2010 Housing Units (Census SF1)	2010 Percent Housing Units without Vehicles Available (Census ACS)	2010 Households (CensusSF1)	2040 Households (Moody's)
Fairfield	CT	Bridgeport-Stamford-Norwalk, CT	33.82%	7.96%	\$81,268	\$145,674	361,221	8.46%	331,782	386,620
Hartford	CT	Hartford-West Hartford-East Hartford, CT	33.86%	10.70%	\$62,590	\$141,863	374,249	10.22%	347,625	397,175
Litchfield	CT		8.70%	5.84%	\$69,639	\$171,745	87,550	4.74%	76,688	86,378
Middlesex	CT	Hartford-West Hartford-East Hartford, CT	13.60%	6.11%	\$74,906	\$167,570	74,837	4.54%	66,975	77,005
New Haven	CT	New Haven-Milford, CT	32.48%	10.89%	\$61,114	\$132,715	362,004	10.68%	330,785	376,713
New London	CT	Norwich-New London, CT	21.69%	7.21%	\$65,419	\$155,097	120,994	6.25%	106,590	120,005
Tolland	CT	Hartford-West Hartford-East Hartford, CT	12.51%	6.41%	\$77,175	\$187,432	57,963	2.93%	54,452	64,430
Windham	CT		14.60%	11.42%	\$59,370	\$154,167	49,073	6.66%	44,321	55,870
Kent	DE	Dover, DE	34.76%	12.49%	\$53,183	\$110,933	65,338	6.51%	57,396	82,270
New Castle	DE	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	38.38%	10.25%	\$62,474	\$101,304	217,511	7.88%	198,499	257,980
District of Columbia	DC	Washington-Arlington-Alexandria, DC-VA-MD-WV	65.19%	18.46%	\$58,526	\$139,843	296,719	35.73%	257,317	361,243
Anne Arundel	MD	Baltimore-Towson, MD	27.58%	5.34%	\$83,456	\$161,833	212,562	4.63%	195,999	268,585
Baltimore County	MD	Baltimore-Towson, MD	37.32%	8.13%	\$63,959	\$113,654	335,622	7.64%	315,542	373,460
Calvert	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	20.35%	4.43%	\$90,838	\$263,475	33,780	3.17%	30,313	33,730
Carroll	MD	Baltimore-Towson, MD	8.80%	5.31%	\$81,621	\$194,038	62,406	4.12%	59,412	64,903
Cecil	MD	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	12.62%	9.03%	\$64,886	\$162,410	41,103	4.58%	36,182	48,700
Charles	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	51.62%	5.16%	\$88,825	\$228,640	54,963	3.00%	49,898	65,225
Frederick	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	22.17%	4.79%	\$81,686	\$163,743	90,136	4.21%	83,455	108,175
Harford	MD	Baltimore-Towson, MD	20.76%	5.55%	\$77,010	\$186,493	95,554	4.84%	89,421	110,125
Howard	MD	Baltimore-Towson, MD	40.79%	4.15%	\$103,273	\$189,921	109,282	3.71%	102,271	159,100
Kent	MD		21.85%	12.16%	\$50,141	\$109,658	10,549	5.52%	7,735	9,655
Montgomery	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	50.73%	5.96%	\$93,373	\$145,415	375,905	7.86%	353,177	475,290
Prince George's	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	85.08%	7.93%	\$71,260	\$177,223	328,182	9.27%	301,906	325,930
Queen Anne's	MD	Baltimore-Towson, MD	12.69%	5.49%	\$81,096	\$161,660	20,140	3.31%	17,188	24,983
St. Mary's	MD		23.54%	7.07%	\$80,053	\$243,543	41,282	4.67%	36,253	60,460
Baltimore City	MD	Baltimore-Towson, MD	71.96%	21.29%	\$39,386	\$86,846	296,685	29.18%	238,392	253,123
Barnstable	MA	Barnstable Town, MA	8.60%	7.16%	\$60,317	\$133,598	160,281	4.60%	98,164	114,433
Berkshire	MA	Pittsfield, MA	9.37%	11.57%	\$48,907	\$103,749	68,508	10.50%	55,623	57,830
Bristol	MA	Providence-New Bedford-Fall River, RI-MA	14.40%	11.32%	\$54,955	\$117,872	230,535	9.45%	210,789	244,555
Dukes	MA		13.67%	8.64%	\$62,407	\$204,030	17,188	6.00%	5,530	10,180
Essex	MA	Boston-Cambridge-Quincy, MA-NH	23.97%	10.07%	\$64,153	\$162,663	306,754	10.56%	282,913	316,240
Franklin	MA	Springfield, MA	7.56%	11.28%	\$52,002	\$149,162	33,758	7.36%	30,447	32,490
Hampden	MA	Springfield, MA	32.29%	17.20%	\$47,724	\$124,543	192,175	13.02%	177,725	198,585
Hampshire	MA	Springfield, MA	13.81%	11.73%	\$59,505	\$154,305	62,603	7.37%	58,612	66,355
Middlesex	MA	Boston-Cambridge-Quincy, MA-NH	23.47%	7.61%	\$77,377	\$210,257	612,004	10.74%	572,847	641,383
Nantucket	MA		19.47%	7.16%	\$83,347	\$237,431	11,618	5.24%	3,623	5,575
Norfolk	MA	Boston-Cambridge-Quincy, MA-NH	19.69%	6.19%	\$81,027	\$202,540	270,359	9.26%	255,180	277,183
Plymouth	MA	Boston-Cambridge-Quincy, MA-NH	16.08%	7.04%	\$73,131	\$221,088	200,161	5.84%	178,983	186,283
Suffolk	MA	Boston-Cambridge-Quincy, MA-NH	51.94%	20.62%	\$50,597	\$120,708	315,522	33.88%	283,954	352,220
Worcester	MA	Worcester, MA	19.32%	9.55%	\$64,152	\$190,624	326,788	8.48%	298,162	339,720
Hillsborough	NH	Manchester-Nashua, NH	12.35%	7.24%	\$69,321	\$212,333	166,053	5.56%	153,120	169,983
Rockingham	NH	Boston-Cambridge-Quincy, MA-NH	5.83%	4.73%	\$75,825	\$196,344	126,709	3.15%	114,722	137,280
Strafford	NH	Boston-Cambridge-Quincy, MA-NH	7.25%	11.29%	\$57,809	\$153,808	51,697	7.55%	46,576	61,345
Atlantic	NJ	Atlantic City-Hammonton, NJ	41.41%	11.78%	\$54,766	\$133,751	126,647	13.49%	101,645	117,995
Bergen	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	37.46%	5.82%	\$81,708	\$184,130	352,388	8.04%	333,874	366,388
Burlington	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	29.35%	5.48%	\$76,258	\$169,995	175,615	4.90%	165,284	189,038
Camden	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	39.72%	11.20%	\$60,976	\$144,846	204,943	11.38%	190,670	209,965
Cape May	NJ	Ocean City, NJ	13.10%	9.17%	\$54,292	\$104,068	98,309	9.28%	45,420	44,825
Cumberland	NJ	Vineland-Millville-Bridgeton, NJ	49.69%	15.55%	\$50,651	\$106,631	55,834	11.52%	50,825	62,858
Essex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	66.81%	14.56%	\$55,125	\$113,942	312,954	22.67%	277,426	303,805
Gloucester	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	18.94%	7.13%	\$72,664	\$176,280	109,796	5.66%	102,632	137,060
Hudson	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	69.18%	15.14%	\$55,275	\$139,913	270,335	33.85%	237,726	297,308
Hunterdon	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	12.26%	3.97%	\$100,980	\$215,180	49,487	2.99%	47,182	49,265
Mercer	NJ	Trenton-Ewing, NJ	45.46%	10.11%	\$71,217	\$137,225	143,169	11.56%	129,213	153,758
Middlesex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	50.77%	7.42%	\$77,615	\$168,550	294,800	8.31%	277,398	364,588
Monmouth	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	23.31%	6.27%	\$82,265	\$176,923	258,410	7.87%	232,513	265,315
Morris	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	24.93%	4.03%	\$96,747	\$201,247	189,842	5.09%	178,638	210,043
Ocean	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	14.05%	9.02%	\$59,620	\$121,996	278,052	6.78%	222,396	288,558
Passaic	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	54.68%	15.14%	\$54,944	\$143,681	175,966	16.56%	161,428	176,995
Salem	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	23.22%	10.13%	\$59,441	\$139,134	27,417	8.23%	25,117	27,993
Somerset	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	37.59%	3.55%	\$97,440	\$200,574	123,127	5.16%	114,431	152,693
Sussex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	11.24%	4.80%	\$83,089	\$202,345	62,057	3.56%	55,842	54,283
Union	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	54.65%	9.07%	\$66,791	\$117,837	199,489	11.56%	184,808	227,993
Warren	NJ	Allentown-Bethlehem-Easton, PA-NJ	14.29%	6.79%	\$71,364	\$235,515	44,925	5.19%	41,601	42,100
Albany	NY	Albany-Schenectady-Troy, NY	24.01%	12.57%	\$56,090	\$140,590	137,739	12.35%	124,391	129,910

Demographic Data			Socioeconomics				Housing		Households	
County	State	MSA	2010 Percent Minority (Census SF1)	2010 Percent Living Below the Poverty Level (Census ACS)	2010 Median Household Income (Census ACS)	2040 Median Household Income (Moody's)	2010 Housing Units (Census SF1)	2010 Percent Housing Units without Vehicles Available (Census ACS)	2010 Households (CensusSF1)	2040 Households (Moody's)
Bronx	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	89.08%	28.38%	\$34,264	\$92,776	511,896	58.83%	472,464	539,410
Columbia	NY		11.77%	9.51%	\$55,546	\$139,241	32,775	6.00%	25,686	25,100
Dutchess	NY	Poughkeepsie-Newburgh-Middletown, NY	25.44%	8.40%	\$69,838	\$170,796	118,638	7.26%	106,952	117,348
Greene	NY		12.93%	13.22%	\$46,235	\$130,432	29,210	6.80%	18,502	20,643
Kings	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	64.33%	22.02%	\$43,567	\$106,133	1,000,293	56.45%	903,991	1,069,710
Nassau	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	34.51%	4.95%	\$93,613	\$221,891	468,346	7.22%	442,833	485,005
New York	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	51.98%	17.76%	\$64,971	\$147,435	847,090	77.69%	732,204	815,790
Orange	NY	Poughkeepsie-Newburgh-Middletown, NY	31.80%	11.11%	\$69,523	\$171,775	137,025	9.29%	124,379	146,075
Putnam	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	17.05%	6.97%	\$89,218	\$250,011	38,224	3.45%	34,907	34,983
Queens	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	72.35%	12.99%	\$55,291	\$135,742	835,127	36.34%	774,311	880,470
Rensselaer	NY	Albany-Schenectady-Troy, NY	14.35%	11.72%	\$54,152	\$129,021	71,475	10.27%	63,518	71,435
Richmond	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	35.96%	10.34%	\$71,084	\$193,103	176,656	15.73%	164,279	182,825
Rockland	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	34.66%	11.26%	\$82,534	\$212,651	104,057	9.56%	97,557	123,058
Saratoga	NY	Albany-Schenectady-Troy, NY	7.27%	6.36%	\$65,100	\$186,785	98,656	5.05%	86,658	106,888
Schenectady	NY	Albany-Schenectady-Troy, NY	22.83%	11.13%	\$55,188	\$117,949	68,196	11.17%	58,583	73,470
Schoharie	NY	Albany-Schenectady-Troy, NY	6.13%	11.43%	\$50,864	\$124,050	17,231	6.37%	12,989	13,210
Suffolk	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	28.43%	5.75%	\$84,506	\$209,226	569,985	4.95%	495,289	548,030
Ulster	NY	Kingston, NY	18.30%	11.26%	\$57,584	\$136,059	83,638	7.56%	70,691	76,555
Westchester	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	42.62%	8.24%	\$79,619	\$203,254	370,821	14.18%	345,795	383,260
Adams	PA		9.44%	7.58%	\$56,529	\$90,219	40,820	4.53%	38,331	50,790
Berks	PA	Reading, PA	23.10%	12.42%	\$53,470	\$90,192	164,827	8.58%	153,307	228,733
Bucks	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	13.12%	4.93%	\$74,828	\$172,429	245,956	4.21%	229,552	244,513
Carbon	PA	Allentown-Bethlehem-Easton, PA-NJ	6.25%	10.51%	\$47,744	\$117,142	34,299	6.04%	26,111	32,155
Chester	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	17.90%	6.22%	\$84,741	\$162,693	192,462	4.55%	181,136	231,150
Cumberland	PA	Harrisburg-Carlisle, PA	10.57%	6.51%	\$60,219	\$118,875	99,988	5.77%	93,739	120,250
Dauphin	PA	Harrisburg-Carlisle, PA	30.10%	11.92%	\$52,371	\$117,883	120,406	10.00%	107,808	129,398
Delaware	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	28.90%	9.45%	\$61,876	\$110,342	222,902	10.73%	206,542	213,488
Lancaster	PA	Lancaster, PA	15.11%	9.67%	\$54,765	\$102,567	202,952	9.66%	191,474	261,090
Lebanon	PA	Lebanon, PA	13.15%	8.95%	\$52,356	\$111,996	55,592	7.42%	51,543	62,590
Lehigh	PA	Allentown-Bethlehem-Easton, PA-NJ	28.40%	11.90%	\$53,541	\$124,410	142,613	9.78%	132,879	180,155
Monroe	PA		29.50%	10.37%	\$56,733	\$104,758	80,359	3.80%	59,997	94,685
Montgomery	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	21.01%	5.61%	\$76,380	\$141,497	325,735	5.69%	306,661	345,473
Northampton	PA	Allentown-Bethlehem-Easton, PA-NJ	19.00%	8.76%	\$58,762	\$147,477	120,363	7.42%	111,929	140,225
Perry	PA	Harrisburg-Carlisle, PA	3.35%	9.08%	\$52,659	\$136,654	20,424	4.25%	17,943	19,963
Philadelphia	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	63.13%	25.08%	\$36,251	\$79,100	670,171	33.57%	574,488	675,190
Pike	PA	New York-Northern New Jersey-Long Island, NY-NJ-PA	17.12%	8.68%	\$56,843	\$126,194	38,350	3.79%	22,190	26,030
Schuylkill	PA		6.77%	11.92%	\$42,315	\$75,701	69,323	9.61%	60,347	62,170
York	PA	York-Hanover, PA	13.84%	9.01%	\$57,494	\$130,527	178,671	6.11%	166,600	215,630
Bristol	RI	Providence-New Bedford-Fall River, RI-MA	5.66%	6.51%	\$68,333	\$115,139	20,850	7.11%	19,236	20,203
Kent	RI	Providence-New Bedford-Fall River, RI-MA	8.44%	7.91%	\$61,088	\$114,373	73,701	5.83%	69,109	71,793
Newport	RI	Providence-New Bedford-Fall River, RI-MA	12.13%	7.26%	\$67,239	\$116,316	41,796	7.71%	34,771	36,810
Providence	RI	Providence-New Bedford-Fall River, RI-MA	33.88%	15.42%	\$48,500	\$89,014	264,835	11.88%	238,059	260,933
Washington	RI	Providence-New Bedford-Fall River, RI-MA	7.60%	7.44%	\$70,285	\$125,466	62,206	3.62%	49,130	52,745
Arlington	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	35.96%	6.98%	\$94,880	\$141,330	105,404	11.60%	91,892	159,785
Clarke	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	11.74%	7.30%	\$73,244	\$121,245	6,235	3.40%	5,535	6,150
Fairfax County'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	45.40%	5.11%	\$105,416	\$234,339	407,998	3.75%	381,768	537,615
Fauquier	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	18.09%	5.37%	\$83,877	\$153,909	25,600	2.94%	22,369	27,845
King George	VA		25.36%	7.05%	\$76,241	\$149,629	9,477	4.85%	8,194	15,423
Loudoun	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	37.61%	3.15%	\$115,574	\$231,525	109,442	2.11%	95,330	209,338
Prince William*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	51.33%	5.30%	\$91,098	\$177,031	137,115	3.15%	124,879	262,673
Spotsylvania^	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	28.04%	7.45%	\$76,574	N/A	45,185	3.32%	41,009	0
Stafford	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	32.20%	4.03%	\$93,065	\$243,830	43,978	2.46%	40,183	61,943
Warren	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	11.26%	9.55%	\$60,522	\$104,267	16,034	4.34%	14,160	16,570
Alexandria	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	46.50%	7.79%	\$80,847	\$118,661	72,376	9.94%	63,738	104,290
Falls Church'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	26.27%	4.77%	\$114,409	N/A	5,489	9.86%	4,706	0
Fredericksburg^	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	39.22%	17.56%	\$43,558	\$143,847	10,467	13.02%	9,206	70,548
Manassas*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	52.42%	13.42%	\$75,173	N/A	13,123	7.68%	11,732	0
Manassas Park*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	57.47%	7.27%	\$70,299	N/A	4,904	5.25%	4,206	0
Fairfax City'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	38.63%	5.36%	\$97,900	N/A	8,680	3.98%	8,524	0

(*)Prince William VA (combined in Moody's data)
 (^)Fredericksburg VA (combined in Moody's data)
 (')Fairfax VA (combined in Moody's data)

Demographic Data			Employment									
County	State	MSA	Employment 1980 (Moody's)	Employment 1990 (Moody's)	Employment 2000 (Moody's)	Employment 2010 (Moody's)	Employment 2020 (Moody's)	Employment 2030 (Moody's)	Employment 2040 (Moody's)	2010 Percent of Population Aged 20-64 Employed (Census ACS)	2010 Percent of Labor Force Unemployed (Census ACS)	2040 Percent of Labor Force Unemployed (Moody's)
Fairfield	CT	Bridgeport-Stamford-Norwalk, CT	407,563	440,023	436,370	440,018	481,588	482,065	471,858	93.1%	7.6%	5.1%
Hartford	CT	Hartford-West Hartford-East Hartford, CT	408,513	445,610	417,835	425,778	469,383	478,465	476,118	92.6%	8.1%	6.1%
Litchfield	CT		70,720	97,125	97,338	96,835	106,195	107,293	105,663	94.1%	6.5%	5.1%
Middlesex	CT	Hartford-West Hartford-East Hartford, CT	60,955	80,168	83,603	87,098	95,628	97,875	97,803	94.8%	5.6%	5.0%
New Haven	CT	New Haven-Milford, CT	335,130	415,513	403,598	410,198	453,365	455,460	447,918	92.4%	8.2%	5.7%
New London	CT	Norwich-New London, CT	103,913	123,738	128,698	139,350	151,238	157,735	161,613	90.6%	6.2%	5.9%
Tolland	CT	Hartford-West Hartford-East Hartford, CT	58,130	71,623	74,180	80,540	89,215	92,140	92,845	94.8%	5.8%	4.9%
Windham	CT		37,858	51,578	56,053	58,613	66,635	69,488	70,558	91.7%	9.5%	6.1%
Kent	DE	Dover, DE	41,453	56,380	61,658	68,835	70,760	68,460	67,468	89.3%	7.7%	5.9%
New Castle	DE	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	179,870	230,373	263,815	247,460	277,935	300,208	323,840	93.8%	6.9%	5.4%
District of Columbia	DC	Washington-Arlington-Alexandria, DC-VA-MD-WV	298,680	311,828	291,923	308,673	340,503	332,595	341,533	90.2%	9.4%	6.6%
Anne Arundel	MD	Baltimore-Towson, MD	168,515	222,555	260,145	273,688	314,005	337,758	355,245	92.6%	5.5%	6.0%
Baltimore County	MD	Baltimore-Towson, MD	297,975	363,095	394,240	403,633	445,070	457,625	463,138	94.3%	6.0%	7.1%
Calvert	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	9,633	26,763	39,255	44,370	44,825	42,968	42,540	94.5%	4.4%	4.9%
Carroll	MD	Baltimore-Towson, MD	43,798	65,558	81,665	86,545	92,703	92,655	91,168	96.6%	3.5%	6.0%
Cecil	MD	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	26,825	32,343	44,280	45,850	52,138	56,870	61,953	93.7%	6.9%	6.6%
Charles	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	40,245	52,233	63,368	73,325	78,070	78,695	81,380	92.7%	5.9%	4.9%
Frederick	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	42,170	80,330	106,920	118,593	134,385	140,930	146,243	95.2%	4.8%	4.2%
Harford	MD	Baltimore-Towson, MD	66,325	93,210	116,293	124,715	138,813	144,118	147,100	93.5%	5.4%	6.8%
Howard	MD	Baltimore-Towson, MD	53,890	109,783	141,363	156,338	186,385	208,493	226,183	95.6%	4.1%	4.9%
Kent	MD		7,073	8,820	9,703	10,103	11,210	11,625	11,898	95.8%	5.2%	5.3%
Montgomery	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	320,343	427,248	476,193	492,563	562,725	599,918	630,305	94.4%	5.2%	3.5%
Prince George's	MD	Washington-Arlington-Alexandria, DC-VA-MD-WV	367,930	408,855	414,550	426,500	429,305	408,963	403,460	92.0%	8.3%	5.7%
Queen Anne's	MD	Baltimore-Towson, MD	8,870	17,373	22,065	24,865	28,933	31,345	33,193	95.2%	5.2%	6.5%
St. Mary's	MD		16,555	36,413	43,028	51,683	62,945	72,020	80,005	91.0%	4.6%	4.2%
Baltimore City	MD	Baltimore-Towson, MD	357,588	310,548	264,193	243,208	258,258	251,878	243,295	89.5%	11.5%	10.0%
Barnstable	MA	Barnstable Town, MA	63,553	90,290	109,560	110,485	119,923	123,903	130,400	93.4%	6.2%	6.1%
Berkshire	MA	Pittsfield, MA	74,155	64,958	68,090	66,760	68,085	67,318	66,785	93.0%	7.5%	6.9%
Bristol	MA	Providence-New Bedford-Fall River, RI-MA	203,555	240,940	267,620	259,483	289,370	293,488	297,528	91.7%	8.8%	5.3%
Dukes	MA		4,750	7,148	9,795	10,645	11,795	12,775	13,590	95.7%	5.9%	5.8%
Essex	MA	Boston-Cambridge-Quincy, MA-NH	304,590	326,555	362,528	348,388	367,558	369,735	376,283	93.7%	6.8%	6.9%
Franklin	MA	Springfield, MA	30,605	35,275	38,053	35,840	35,768	34,975	34,358	93.9%	7.0%	5.9%
Hampden	MA	Springfield, MA	198,950	208,028	211,893	202,413	205,213	202,173	201,103	91.2%	9.6%	8.1%
Hampshire	MA	Springfield, MA	65,240	76,103	84,100	82,300	83,723	83,438	83,365	93.7%	7.2%	5.2%
Middlesex	MA	Boston-Cambridge-Quincy, MA-NH	701,790	760,275	803,628	774,498	806,825	800,275	782,573	94.3%	6.0%	5.2%
Nantucket	MA		2,843	4,608	7,180	7,210	7,938	8,443	8,850	97.3%	2.2%	5.4%
Norfolk	MA	Boston-Cambridge-Quincy, MA-NH	295,098	326,838	348,790	338,085	353,303	350,703	347,043	94.3%	6.2%	5.3%
Plymouth	MA	Boston-Cambridge-Quincy, MA-NH	176,190	213,313	244,510	240,755	248,298	241,968	236,085	92.7%	8.1%	6.6%
Suffolk	MA	Boston-Cambridge-Quincy, MA-NH	293,380	328,630	340,343	335,173	364,468	374,938	383,303	91.6%	9.2%	6.1%
Worcester	MA	Worcester, MA	306,693	339,633	377,173	368,588	381,275	381,303	385,763	93.0%	7.5%	7.4%
Hillsborough	NH	Manchester-Nashua, NH	134,700	187,400	208,983	214,230	242,905	259,005	270,405	94.5%	6.1%	4.0%
Rockingham	NH	Boston-Cambridge-Quincy, MA-NH	96,885	133,268	157,155	163,383	185,048	195,428	202,985	94.6%	5.9%	3.9%
Strafford	NH	Boston-Cambridge-Quincy, MA-NH	37,580	53,778	60,683	65,435	76,578	83,298	88,885	94.2%	6.2%	3.7%
Atlantic	NJ	Atlantic City-Hammonton, NJ	96,493	115,213	122,980	119,718	138,835	142,533	146,300	91.5%	8.9%	7.1%
Bergen	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	457,295	428,905	454,243	436,520	480,278	483,743	486,888	94.5%	5.8%	4.8%
Burlington	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	149,498	198,165	214,528	220,583	237,993	246,275	254,275	92.0%	7.3%	6.3%
Camden	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	194,483	239,068	244,443	240,133	259,170	265,468	271,600	91.5%	9.2%	7.6%
Cape May	NJ	Ocean City, NJ	35,843	41,168	51,968	51,325	60,985	68,600	79,140	90.7%	8.3%	8.9%
Cumberland	NJ	Vineland-Millville-Bridgeton, NJ	52,253	60,848	61,743	61,578	67,525	67,563	67,790	89.1%	12.1%	8.5%
Essex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	390,018	371,408	349,565	329,348	348,985	343,110	337,655	90.3%	10.4%	7.3%
Gloucester	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	82,435	113,003	129,970	142,798	162,478	176,008	189,800	92.7%	8.2%	7.0%
Hudson	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	220,465	266,918	283,285	277,255	319,295	332,025	344,448	91.4%	9.1%	6.3%
Hunterdon	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	35,910	57,595	66,355	66,168	68,468	66,703	64,965	94.3%	6.1%	4.6%
Mercer	NJ	Trenton-Ewing, NJ	150,158	163,363	174,305	190,530	207,550	216,965	226,395	92.3%	8.4%	5.7%
Middlesex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	312,125	354,695	388,098	398,428	443,210	470,618	504,790	93.4%	7.1%	5.7%
Monmouth	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	220,720	274,458	308,130	300,433	320,430	325,570	335,100	93.8%	6.8%	5.8%
Morris	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	186,800	239,560	254,328	252,965	270,420	273,245	275,683	94.8%	5.4%	4.7%
Ocean	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	122,508	181,125	223,605	239,613	269,430	286,428	307,788	92.4%	8.2%	6.8%
Passaic	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	192,708	221,650	225,393	216,363	240,180	238,958	238,368	92.9%	7.6%	6.8%
Salem	NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	27,453	29,805	30,330	27,990	30,408	31,333	32,395	91.0%	10.2%	7.9%
Somerset	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	93,088	134,930	161,365	166,685	184,598	196,160	210,443	94.6%	5.7%	4.8%
Sussex	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	41,868	69,140	77,178	75,853	77,873	74,458	71,540	93.3%	7.1%	6.1%
Union	NJ	New York-Northern New Jersey-Long Island, NY-NJ-PA	231,003	257,093	254,450	248,498	272,268	278,960	285,340	92.1%	8.4%	6.5%
Warren	NJ	Allentown-Bethlehem-Easton, PA-NJ	36,715	46,913	54,050	53,798	57,483	56,435	55,340	93.8%	6.7%	6.4%
Albany	NY	Albany-Schenectady-Troy, NY	127,490	153,198	149,788	145,253	147,388	142,575	135,913	94.7%	6.0%	5.4%

Demographic Data			Employment									
County	State	MSA	Employment 1980 (Moody's)	Employment 1990 (Moody's)	Employment 2000 (Moody's)	Employment 2010 (Moody's)	Employment 2020 (Moody's)	Employment 2030 (Moody's)	Employment 2040 (Moody's)	2010 Percent of Population Aged 20-64 Employed (Census ACS)	2010 Percent of Labor Force Unemployed (Census ACS)	2040 Percent of Labor Force Unemployed (Moody's)
Bronx	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	461,148	421,225	451,810	477,595	537,550	543,868	551,525	88.8%	12.1%	7.5%
Columbia	NY		22,558	30,285	30,458	28,398	29,173	28,265	27,108	93.8%	6.6%	4.8%
Dutchess	NY	Poughkeepsie-Newburgh-Middletown, NY	101,793	129,680	134,835	135,105	139,515	137,610	135,128	93.6%	6.9%	5.6%
Greene	NY		16,705	20,003	21,608	21,935	23,208	23,003	22,540	93.3%	6.9%	5.6%
Kings	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	880,065	884,923	976,085	1,009,670	1,134,580	1,166,960	1,198,570	92.0%	8.4%	5.9%
Nassau	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	613,855	672,953	655,540	638,728	656,693	637,190	620,920	94.6%	5.8%	4.8%
New York	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	563,405	733,833	811,843	851,900	919,370	918,598	917,480	92.4%	7.9%	4.5%
Orange	NY	Poughkeepsie-Newburgh-Middletown, NY	100,028	145,990	156,833	161,225	169,973	170,975	171,070	91.3%	6.3%	5.9%
Putnam	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	29,745	46,393	50,833	50,518	53,083	51,878	50,695	95.0%	5.7%	4.0%
Queens	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	746,098	895,290	1,007,710	1,026,320	1,131,770	1,153,240	1,173,160	92.0%	8.5%	4.9%
Rensselaer	NY	Albany-Schenectady-Troy, NY	67,763	78,105	77,988	76,530	79,615	78,838	76,918	93.2%	7.3%	5.8%
Richmond	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	138,898	169,408	206,105	220,918	242,493	245,008	247,388	94.0%	6.2%	5.0%
Rockland	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	113,530	139,518	140,175	145,745	164,358	172,790	180,470	95.2%	5.4%	4.0%
Saratoga	NY	Albany-Schenectady-Troy, NY	68,560	93,125	107,125	109,648	116,753	119,158	119,493	95.0%	4.8%	5.1%
Schenectady	NY	Albany-Schenectady-Troy, NY	66,865	72,313	70,150	69,595	73,730	74,443	73,960	94.0%	6.4%	5.8%
Schoharie	NY	Albany-Schenectady-Troy, NY	10,645	14,350	14,563	14,175	14,448	13,845	13,105	91.6%	9.2%	7.2%
Suffolk	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	596,490	677,698	710,778	724,543	750,685	730,493	714,145	94.7%	5.8%	5.2%
Ulster	NY	Kingston, NY	61,855	81,343	85,450	81,563	85,340	86,663	88,700	94.0%	6.5%	5.2%
Westchester	NY	New York-Northern New Jersey-Long Island, NY-NJ-PA	435,965	454,868	448,303	440,785	478,325	483,825	488,463	94.0%	6.5%	4.1%
Adams	PA		29,638	39,480	47,843	50,648	56,850	58,765	60,160	95.7%	4.9%	5.1%
Berks	PA	Reading, PA	144,403	167,933	186,923	185,975	204,015	211,468	216,270	93.3%	7.8%	8.7%
Bucks	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	205,835	287,438	317,795	314,810	327,123	315,328	300,718	94.4%	5.9%	4.8%
Carbon	PA	Allentown-Bethlehem-Easton, PA-NJ	24,135	24,475	27,498	28,460	32,270	33,605	34,870	91.8%	8.2%	7.7%
Chester	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	136,020	201,188	228,603	248,538	274,543	281,983	284,455	95.3%	5.0%	4.0%
Cumberland	PA	Harrisburg-Carlisle, PA	87,200	105,075	110,200	114,158	124,690	126,278	125,473	95.3%	4.9%	4.9%
Dauphin	PA	Harrisburg-Carlisle, PA	113,470	124,193	126,658	126,963	135,245	132,970	128,818	94.5%	6.1%	5.6%
Delaware	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	238,393	268,598	266,595	256,315	265,678	254,753	241,858	93.2%	7.3%	5.2%
Lancaster	PA	Lancaster, PA	172,300	217,235	243,458	249,265	268,915	279,695	295,668	94.9%	5.7%	5.9%
Lebanon	PA	Lebanon, PA	46,093	58,585	62,105	68,300	70,818	70,368	70,293	94.3%	6.1%	8.2%
Lehigh	PA	Allentown-Bethlehem-Easton, PA-NJ	123,355	145,185	156,503	163,283	190,113	205,168	219,390	93.6%	7.6%	6.6%
Monroe	PA		27,918	46,245	66,318	74,303	88,108	95,143	101,170	91.0%	10.2%	7.3%
Montgomery	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	276,455	362,583	395,775	400,388	425,393	421,100	411,415	95.0%	5.3%	4.4%
Northampton	PA	Allentown-Bethlehem-Easton, PA-NJ	102,100	118,788	132,933	138,120	156,363	164,050	171,133	93.8%	6.6%	6.5%
Perry	PA	Harrisburg-Carlisle, PA	17,448	20,765	22,430	22,258	23,313	22,520	21,473	94.1%	6.2%	5.7%
Philadelphia	PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	725,135	655,835	599,620	574,180	620,195	615,228	604,128	88.5%	12.6%	7.1%
Pike	PA	New York-Northern New Jersey-Long Island, NY-NJ-PA	7,463	12,963	20,370	23,670	25,980	26,388	26,805	91.5%	9.9%	7.1%
Schuylkill	PA		60,798	64,283	65,838	65,873	68,015	64,938	61,915	92.9%	7.6%	7.2%
York	PA	York-Hanover, PA	135,823	178,758	201,950	205,920	217,630	222,423	230,875	94.3%	6.4%	9.1%
Bristol	RI	Providence-New Bedford-Fall River, RI-MA	21,710	24,760	25,855	24,528	25,705	25,525	25,533	94.3%	6.0%	5.1%
Kent	RI	Providence-New Bedford-Fall River, RI-MA	71,293	83,795	89,173	85,398	90,578	89,105	88,685	92.9%	7.8%	5.7%
Newport	RI	Providence-New Bedford-Fall River, RI-MA	36,883	41,308	43,293	40,478	43,023	42,440	42,225	88.7%	5.2%	5.4%
Providence	RI	Providence-New Bedford-Fall River, RI-MA	264,230	287,333	295,685	287,008	312,023	309,790	309,490	91.6%	9.0%	6.4%
Washington	RI	Providence-New Bedford-Fall River, RI-MA	42,833	56,515	66,755	66,163	70,965	70,355	69,810	94.2%	5.9%	5.0%
Arlington	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	76,738	105,660	116,758	127,758	149,753	164,648	181,215	94.0%	3.2%	3.1%
Clarke	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	4,913	6,188	6,758	7,443	7,643	7,395	7,368	95.8%	4.2%	4.1%
Fairfax County'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	330,090	488,910	556,823	615,295	669,290	687,460	719,563	94.2%	4.3%	3.6%
Fauquier	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	16,828	25,700	29,575	34,563	36,118	35,520	35,905	95.7%	4.7%	4.0%
King George	VA		4,810	6,663	8,195	9,683	12,428	14,480	16,548	85.6%	5.6%	5.7%
Loudoun	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	30,995	51,190	98,060	175,685	225,205	261,070	298,148	95.9%	3.8%	3.4%
Prince William*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	87,088	133,753	174,510	241,195	294,265	330,238	369,568	92.2%	4.9%	4.3%
Spotsylvania^	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	92.9%	6.4%	N/A
Stafford	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	15,535	30,998	47,323	65,670	74,685	79,113	84,943	87.0%	5.6%	4.3%
Warren	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	9,530	12,953	16,150	19,060	20,148	19,793	20,045	94.6%	5.9%	5.2%
Alexandria	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	50,978	71,143	79,030	85,410	97,923	105,165	113,990	94.2%	3.9%	4.0%
Falls Church'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	93.1%	6.1%	N/A
Fredericksburg^	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	19,725	39,788	57,435	75,793	83,890	86,395	90,923	88.9%	10.3%	5.0%
Manassas*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	94.0%	6.5%	N/A
Manassas Park*	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	95.7%	4.0%	N/A
Fairfax City'	VA	Washington-Arlington-Alexandria, DC-VA-MD-WV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	94.2%	4.7%	N/A

(*)Prince William VA (combined in Moody's data)
 (^)Fredericksburg VA (combined in Moody's data)
 (')Fairfax VA (combined in Moody's data)