CHAPTER 9
COMMUNITY IMPACT ASSESSMENT

9.1 Overview
MVRPC conducts a Community Impact Assessment to address Environmental Justice (EJ) issues in the 2040 LRTP, and ensure that socially disadvantaged population groups do not bear an unreasonable or inequitable share of the costs associated with planning processes and initiatives. As such, MVRPC undertook extensive measures to identify locations where such disadvantaged populations are concentrated in the Region.

The technical analyses — travel time to work; travel time to major facilities such as shopping centers, universities, and hospitals; and transit and regional bikeway accessibility — were performed, and findings indicated that the disadvantaged population groups were largely unaffected by the 2040 LRTP in comparison to the general population.

The following sections of this chapter articulate the efforts and results of MVRPC’s measures towards addressing Environmental Justice (EJ) issues in the 2040 LRTP.

9.2 Background
MVRPC, as a MPO, receives federal funding to support many of its programs and activities, and must address the federal EJ requirements as a condition of receiving those funds.

9.2.1 Principles of Environmental Justice
The U.S. Department of Transportation (U.S. DOT) describes the three basic principles of EJ as:

- Ensuring public involvement of low-income and minority groups in decision making;
- Preventing “disproportionately high and adverse” impacts of decisions on low-income and minority groups; and
- Assuring low-income and minority groups receive proportionate share of benefits.

In general, this means that for any program or activity for which any federal funds will be used, the agency receiving the federal funds must make a meaningful effort to involve low-income and minority populations in the decision-making processes established for the use of federal funds, and evaluate the nature, extent, and incidence of probable favorable and adverse human health or environmental impacts of the program or activity upon minority or low-income populations.

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8 Ohio Department of Transportation (ODOT), Guidance and Best Practices for Incorporating Environmental Justice into Ohio Transportation Planning and Environmental Processes, August, 2002.
9.2.2 Regulatory Framework

Under Title VI of the 1964 Civil Rights Act and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion. Title VI bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on low income and minority groups).

The National Environmental Policy Act of 1969 (NEPA) stressed the importance of providing for, “all Americans a safe, healthful, productive, and aesthetically pleasing surroundings,” and provided a requirement for taking a “systematic, interdisciplinary approach” to aid in considering environmental and community factors in decision-making.

This approach was further emphasized in the Federal-aid Highway Act of 1970: 23 United States Code 109(h). It established a further basis for equitable treatment of communities affected by transportation projects. It requires consideration of the anticipated effects of proposed transportation projects upon residences, businesses, farms, accessibility of public facilities, tax base, and other community resources.

On February 11, 1994, President Clinton, recognizing that the impacts of federal programs and activities may raise questions of fairness to affected groups, signed Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Executive Order requires that each federal agency shall, to the greatest extent allowed by law, administer and implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid “disproportionately high and adverse” effects on minority and low-income populations.

On June 29, 1995, the U.S. Department of Transportation (U.S. DOT) published its draft Order to Address Environmental Justice in Minority Populations and Low-Income Populations in the Federal Register. The report was primarily a reaffirmation of the principles of 1964’s Title VI.

On April 15, 1997, U.S. DOT published the final Order to Address Environmental Justice in Minority Populations and Low-Income Populations (U.S. DOT Order 5610.2). The order complies with the President’s 1994 Executive Order 12898.

On October 1, 1999, a U.S. DOT letter interpreting EJ further clarified that transportation agencies are to ensure that low-income populations and minority populations receive a proportionate share of benefit from federally funded transportation investments.

On August 11, 2000, Executive Order 13166: Improving Access to Services for Persons with Limited English Proficiency, was signed by President Clinton. This executive order stated that individuals who do not speak English well and who have a limited ability to read, write, speak, or understand English are entitled to language assistance under 1964’s Title VI with respect to a particular type of service, benefit, or encounter.

In June 2012, the Federal Highway Administration (FHWA) issued FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 6640.23A)
that require the FHWA to implement the principles of the DOT Order 5610.2(a) and the Executive Order 12898 by incorporating environmental justice principles in all FHWA programs, policies, and activities.

9.3 MVRPC’s Approach to Environmental Justice

Recognizing the importance of incorporating EJ issues into the transportation planning process, MVRPC initiated both quantitative and qualitative approaches to address EJ requirements for the 2040 LRTP.

MVRPC adopted four main approaches during the process of updating its 2040 LRTP to address EJ issues, following the guidelines in Guidance and Best Practices for Incorporating Environmental Justice into Ohio Transportation Planning and Environmental Processes, published by ODOT, and recommendations of the Ohio EJ Task Force. This guidance document presents methods and approaches for ensuring that the interests of minority and low-income populations are considered and the impacts on these populations are identified and addressed within the current transportation decision-making processes. Further, it presents concepts for developing public participation programs that reach target populations. MVRPC’s approach included:

- Defining target populations;
- Identifying target areas;
- Conducting tests for adverse impacts; and
- Taking extra public participation efforts to fully engage diverse population groups.

9.4 Defining Environmental Justice Populations

MVRPC’s analysis groups included racial and ethnic minorities, persons in poverty, persons with disabilities, and the elderly. Further, MVRPC expanded the EJ target population to include other traditionally disadvantaged groups, such as persons of Hispanic origin and households without automobiles.

9.4.1 Data Sources

A variety of data sources exist pertaining to population demographics. Not all sources, however, are of equal quality. MVRPC, therefore, used the 2010 Census and 2008-2012 American Community Survey (ACS) data as primary data sources for analysis of target population groups. For minority, elderly, and Hispanic variables, 2010 Census Summary File 1 (SF1) block level data were aggregated to the traffic analysis zone (TAZ) level using GIS. For the remaining variables (poverty, disability, and zero-car households), 2008-2012 ACS 5-Year Estimate block group data was converted to the TAZ level, using spatial analysis techniques.

9.4.2 Definition of Population Groups

MVRPC defined the target populations as follows:
Minority Population

All persons of races other than Caucasian were considered minorities, including African-American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; some other race alone; and persons of two or more races. It is important to note that the population of Hispanic origin was not counted as a race since the U.S. Census Bureau treats persons of Hispanic origin as an ethnic group, not a race.

Persons in Poverty

Persons in poverty are defined as the sum of the number of persons in families with income below the poverty threshold and the number of unrelated individuals with incomes below the poverty thresholds. The set of poverty thresholds varies by family size and composition and age of householder. MVRPC defined the poverty population based on available ACS data tabulated for total household population plus non-institutionalized group quarters.

Disabled Population

In 2010, the ACS began using a new definition of disabled populations, focusing on the impact conditions have on basic functioning rather than the presence of conditions. Consistent with this new definition, MVRPC defined the disabled population based on available ACS data tabulated for household population 18 years of age and over. A person was considered as having a disability if he/she met any of the following conditions. A brief description of each disability category is as follows:

- Hearing difficulty — deaf or having serious difficulty hearing.
- Vision difficulty — blind or having serious difficulty seeing, even when wearing glasses.
- Cognitive difficulty — because of a physical, mental, or emotional problem, having difficulty remembering, concentrating, or making decisions.
- Ambulatory difficulty — having serious difficulty walking or climbing stairs.
- Self-care difficulty — having difficulty bathing or dressing.
- Independent living difficulty — because of a physical, mental, or emotional problem, having difficulty doing errands alone such as visiting a doctor’s office or shopping.

Elderly Population

The elderly population is defined as all persons 65 years of age and older.

Hispanic Population

Persons who classified themselves in one of the specific Spanish/Hispanic/Latino origin categories listed, such as Mexican, Mexican-American, Puerto Rican, or Cuban, as well as those who indicated that they were of other Spanish/Hispanic/Latino origin. Persons of Hispanic origin may be of any race.

Zero-Car Households

Zero-Car Households are households with no automobiles at home and available for the use of household members.
9.4.3 Limited English Proficiency Population

In SFY 2013, MVRPC completed a Limited English Proficiency (LEP) analysis for the MPO area. The analysis indicates that less than 1 percent of the population 5 years or older (approximately 5,400 individuals) is not proficient in English. Approximately 50 percent of the LEP individuals speak Spanish as their primary language with the remainder speaking other Indo-Euro, Asian Pacific, or other languages. As a result, MVRPC is focusing its outreach efforts on the Spanish speaking population.

Posters, both English and Spanish versions, advertising the public participation meetings are provided to GDRTA hubs, Greene CATS, and Miami County Transit offices. They are also distributed to the Latino Connection, a local Hispanic community-based outreach organization. Public notice newspaper ads are printed in both Spanish and English in La Jornada Latina, a free newspaper distributed throughout the region.

9.5 Identifying Environmental Justice Target Areas

MVRPC identified EJ target areas by examining the concentration of the EJ target populations at the TAZ level using Geographic Information Systems (GIS).

9.5.1 Population Thresholds

The target population thresholds were calculated for each population demographic variable under examination in order to locate the areas of high concentration. The TAZ population (e.g., elderly persons) was aggregated to the county level and a county average percentage for each target population was calculated. Using the county average percentage as a threshold, the areas of high concentration were identified. Target population averages were calculated individually for each county, as opposed to an MPO average, to reflect the unique nature of each county. The county thresholds for each target population are listed in Table 9.1.

- Minority Population — Montgomery County has the highest percentage of minorities in the Region. Over 26% of Montgomery County residents are minorities. On the other hand, only 5.6% of the Miami County residents are minorities.
- People in Poverty — In the Region, Montgomery County has the highest percentage of people in poverty (16.7%), compared to Greene, Miami, and Warren Counties with 13.5%, 12.2%, and 6.3%, respectively.
- Disabled Population — Montgomery County has the highest percentage of disabled population in the Region (18.4%), followed by Miami, Greene, and Warren Counties, at 15.5%, 14.1%, and 11.4%, respectively.
- Elderly Population — A higher percentage of elderly population lives in Miami and Montgomery counties (15.4% and 15.1%, respectively), compared to Greene and Warren Counties (13.6% and 10.8%, respectively).

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9 The full report can be viewed here: http://www.mvrpc.org/sites/default/files/LimitedEnglishProficiencyAnalysis.pdf
• Hispanic Population — A higher percentage of persons of Hispanic descent live in Montgomery and Warren Counties (2.3% each), followed closely by Greene County (2.1%) and Miami County with the least (1.3%).

• Zero-Car Households — Montgomery County has the highest percentage of households without access to cars. Almost one in ten households (9.5%) reported having no cars in the 2008-2012 data.

<table>
<thead>
<tr>
<th>Table 9.1 — Target Population Thresholds</th>
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<tbody>
<tr>
<td><strong>County</strong></td>
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<td><strong>People in Poverty</strong></td>
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<td>Miami</td>
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<td>Montgomery</td>
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<td>Warren</td>
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<tr>
<td><strong>Disabled Population</strong></td>
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<td>Miami</td>
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<td>Montgomery</td>
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<td>Warren</td>
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<tr>
<td><strong>Zero-Car Households</strong></td>
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<td>Greene</td>
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<td>Miami</td>
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<tr>
<td>Montgomery</td>
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<td>Warren</td>
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<td>Warren</td>
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<td><strong>Hispanic Population</strong></td>
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<td>Miami</td>
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<tr>
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<tr>
<td>Warren</td>
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<tr>
<td><strong>Elderly Population</strong></td>
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<td>Miami</td>
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<tr>
<td>Montgomery</td>
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<tr>
<td>Warren</td>
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</tbody>
</table>

Sources: 2010 Census and 2008-2012 American Community Survey

9.5.2 Distribution of Target Areas

Using the county’s threshold for each target population, TAZs were examined and coded as either “Above County Average” or “Below County Average.” It is important to note here that a specific TAZ could be a target area for several EJ population groups.
MVRPC used GIS to produce a series of maps showing the geographic distribution of target areas for each population group in the Region. The maps are shown in Figure 9.1.

- Minority Population Distribution — Minority areas are concentrated around urban areas or cities.
- Distribution of People in Poverty — The distribution of people in poverty revealed a high concentration in the central city areas of Montgomery County. Greene and Miami Counties also showed the highest concentrations in the central city areas, as well as selected rural areas.
- Disabled Population Distribution — The distribution of the disabled population showed no particular pattern. Disabled populations are spread throughout the entire Region.
- Elderly Population Distribution — No strong patterns were identified with the elderly population, aside from a slight but perceptible lack of concentration near urban centers. In general, the elderly population appears to be spread evenly over the Region.
- Hispanic Population Distribution — In contrast with the distribution patterns for the minority population and people in poverty, the Hispanic population in the Region appears to be located away from city centers and closer to rural areas and large employment centers, particularly Wright Patterson Air Force Base.
- Zero-Car Households Distribution — The distribution of households with no cars shows greater concentration patterns in city centers.

### 9.6 Community Impact Analysis

MVRPC conducted various technical analyses for the 2040 LRTP to address EJ issues, recognizing that no single measurement can determine whether disproportionate adverse impacts exist or not. Specifically, MVRPC analyzed: 1) Accessibility to Selected Major Facilities; 2) Home-Based-Work (HBW) Travel Times; and 3) Transit and Regional Bikeway Accessibility. The purpose of these analyses was to determine if target areas are adversely affected by the Plan, compared to non-target areas, for various population groups. The following sections provide information on each analysis’s methodology.

#### 9.6.1 Accessibility to Major Facilities

MVRPC conducted the accessibility analysis by measuring travel time from TAZs to major facilities. The facilities included were major hospitals, shopping centers, and universities located in the Region (see Table 9.2), using three different transportation networks – 2010 Base, 2040 E+C, and 2040 Plan – that were developed based on the congestion management project list as presented in Chapter 5. The locations of major facilities considered in the analysis can be seen in Figure 9.2.

MVRPC calculated the travel time from each TAZ to the closest facility using the Transportation Demand Forecasting Model (TDFM). TAZs were then grouped into target and non-target areas and the average travel time to the closest facility was calculated for the target versus non-target areas.

This process was repeated for all three scenarios: 2010 Base, 2040 E+C, and 2040 Plan. The summary of findings from the analysis is presented below.
# Table 9.2 — Average Travel Time to Major Facilities by EJ Status in Minutes

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2040 - Existing + Committed</th>
<th>2040 - Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>University</td>
<td>Hospital</td>
<td>Shopping Center</td>
</tr>
<tr>
<td>Poverty</td>
<td>6.9</td>
<td>6.5</td>
<td>5.2</td>
</tr>
<tr>
<td>Non-Poverty</td>
<td>13.0</td>
<td>10.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Disabled</td>
<td>8.8</td>
<td>7.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Non-Disabled</td>
<td>11.9</td>
<td>10.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Zero Car</td>
<td>7.1</td>
<td>6.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Non-Zero Car</td>
<td>12.9</td>
<td>10.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Minority</td>
<td>6.8</td>
<td>5.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Non-Minority</td>
<td>12.0</td>
<td>10.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8.1</td>
<td>7.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>11.3</td>
<td>9.5</td>
<td>6.9</td>
</tr>
<tr>
<td>Elderly</td>
<td>11.6</td>
<td>9.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Non-Elderly</td>
<td>9.3</td>
<td>8.1</td>
<td>6.2</td>
</tr>
</tbody>
</table>

Source: MVRPC
Figure 9.1
Environmental Justice: Target Group Populations

- **Poverty Population**
  - Percentage by County
    - Greene County: 13.53%
    - Miami County: 12.16%
    - Montgomery County: 16.73%
    - Warren County: 6.33%

- **Disabled Population**
  - Percentage by County
    - Greene County: 14.13% *
    - Miami County: 15.50% *
    - Montgomery County: 18.44% *
    - Warren County: 11.42% *
    * The Census Bureau collects disability data under the categories of hearing difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.

- **Minority Population**
  - Percentage by County
    - Greene County: 13.56%
    - Miami County: 5.64%
    - Montgomery County: 26.14%
    - Warren County: 9.53%

- **Hispanic Population**
  - Percentage by County
    - Greene County: 2.12%
    - Miami County: 1.31%
    - Montgomery County: 2.28%
    - Warren County: 2.25%

- **Zero-Car Households**
  - Percentage by County
    - Greene County: 4.83%
    - Miami County: 5.17%
    - Montgomery County: 9.51%
    - Warren County: 2.68%

- **Elderly Population**
  - Percentage by County
    - Greene County: 13.61%
    - Miami County: 15.35%
    - Montgomery County: 15.14%
    - Warren County: 10.78%
Figure 9.2
Major Facilities in the Dayton Region

Downtown Dayton

- University
- Hospital
- Shopping Center

Source: MVRPC
May 2016
Accessibility to Hospitals
The analysis indicates that the average travel time to the closest hospital is shorter from the target areas for all target population groups, except for the elderly population. This holds true for all three scenarios.

Accessibility to Shopping Centers
The average travel time to the closest shopping center for target areas is shorter than the travel time from the non-target areas for all target population groups in all three scenarios with the exception of the elderly population.

Accessibility to Universities
The analysis indicates that travel time to universities is shorter for target versus non-target areas in all three scenarios, excepting the elderly population.

The lack of concentration of elderly population near urban centers (where many of the Region's major facilities are located) is likely responsible for the longer travel times for that population revealed by the analysis. This presents a slight change from elderly population concentrations in 2000, and poses a new concern for the Region going forward. Access by the elderly to hospitals and shopping centers is important for their health and independence.

Overall, the accessibility analysis indicates that the average travel time of target versus non-target areas is not adversely affected by the 2040 LRTP projects. In fact, the analysis confirms that Plan projects will maintain or improve travel times to major facilities for all target areas and populations through 2040. In particular, reductions in travel times for the elderly population between 2040 E+C and the 2040 Plan scenarios are nearly identical to travel time reductions for the general population.

9.6.2 Travel Time to Work
MVRPC analyzed travel time to work (HBW Trips) as a second community impact evaluation of the 2040 LRTP. This evaluation identifies whether adverse impacts exist regarding the travel time to work between target areas and non-target areas, with respect to employment locations as a result of the Plan.

The average travel time to work for each TAZ was derived using MVRPC’s TDFM for all three scenarios (2010 Base, 2040 E+C, and 2040 Plan). The average HBW travel time for each TAZ was calculated for target and non-target areas for all population groups. The results of the analysis can be seen in Table 9.3 below.
Table 9.3 — Average Travel Time to Work by EJ Status in Minutes

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2040 - Existing + Committed</th>
<th>2040 - Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Peak</td>
<td>Off-Peak</td>
<td>All</td>
</tr>
<tr>
<td>Poverty</td>
<td>14.4</td>
<td>12.1</td>
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<td>Non-Poverty</td>
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<td>Disabled</td>
<td>15.3</td>
<td>13.0</td>
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<td>Zero Car</td>
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<td>Non-Zero Car</td>
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<tr>
<td>Non-Elderly</td>
<td>15.8</td>
<td>13.5</td>
<td>14.9</td>
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</table>

Source: MVRPC

The differences between the target and non-target areas in the Region, with respect to HBW travel time, are consistent (less for target areas) for all population groups in each scenario, except for the elderly population. A comparison of HBW travel times between the 2040 E+C and 2040 Plan scenarios reveals that implementation of the 2040 LRTP will decrease HBW travel times from all target areas for all population groups during peak hours. Non-peak travel times stay about the same, even showing a few slight increases, perhaps due to altered travel patterns. Where these slight increases occur to target populations, travel times remain shorter for the target populations than for the general population.

The analysis of the average travel time to work in the Region indicates that target areas are favorably situated as compared to non-target areas in terms of travel time to work, aside from the elderly target areas. Further, the analysis shows that all target areas will benefit more than non-target areas as a result of the 2040 LRTP, again excepting areas with a high elderly population. Given that the elderly are less likely to work the more their age affects their mobility, HBW travel times are not likely to be seen as a concern by individuals (unlike, for example, access to shopping centers and hospitals discussed above). It is therefore fair to say that there are no significant adverse impacts on target areas compared to non-target areas.

### 9.6.3 Transit Accessibility Analysis

MVRPC conducted a Transit Accessibility Analysis as a third measure of community impact evaluation of the 2040 LRTP. The analysis was conducted using GIS to identify how much access each target population group has to public transit in the Region. Further, this analysis evaluates
Figure 9.3
Transit Accessibility in Montgomery County

Source: GDRTA, U.S. Census 2010, ACS 2008-2012 and MVRPC

* Express Routes and Local School Routes are not included.

Date: May 2016
how much transit access various target population groups have in comparison to the overall population.

With the exception of limited portions of Greene County (Wright Patterson Air Force Base and Wright State University), Montgomery County is the only County in the MPO area that is served by regularly scheduled fixed transit routes through the Greater Dayton Regional Transit Authority (GDRTA). Therefore, the analysis in this section focuses on Montgomery County (see Figure 9.3). Miami and Greene counties have demand-responsive transit services that are open to the general public.

Due to the close proximity of transit stop locations — less than ¼ mile apart on most routes (with the exception of express routes) — and relatively comprehensive time/location coverage (with the exception of local school routes), bus routes, not bus stops, were used as the basis for the analysis. The analysis utilized the updated 2015 GDRTA transit routes.

Transit route buffers were overlaid on TAZ and census block boundaries to determine the area covered by the buffer with respect to the overall population and target population groups. Using the assumptions that population is evenly spread throughout underlying census blocks and target population proportions are consistent within TAZs, the percentage of the general population and target population groups covered in the buffer was calculated.

The results of the analysis are presented in two charts in Figure 9.3. The first chart shows the percentage of the general population and target population groups within ¼ mile of a transit route. The second chart shows percentages within ½ mile.

The results reveal that 63.6% of the total population of Montgomery County lives within ¼ mile and 83.0% within ½ mile of a transit route. It was also revealed that high percentages of target populations are covered by public transportation. Further, the results show that target population groups, with the exception of the elderly, are better served than the overall population in both the ¼ mile and ½ mile buffer analyses. For example, 76.0% of minorities, 79.8% of persons living in poverty, 69.3% of persons with a disability, 68.6% of persons of Hispanic origin, and 80.9% of zero car households live within ¼ mile of a transit route, compared to 63.6% for the general population in the same area. The elderly population is slightly less served than the general population at 60.4%, but is a much more evenly spread demographic throughout the county.

The transit accessibility analysis indicates that, in general, target population groups have better accessibility to transit compared to the general population, which leads to the conclusion that there are no adverse impacts regarding target populations.

9.6.4 Regional Bikeway Accessibility Analysis

The importance of measuring the accessibility of the Region's bikeways for target population groups has become an important focus as investment in the system has increased over time. Unlike GDRTA’s fixed route transit service, the regional bikeway network extends throughout the MPO Region and continues to grow as new sections are designed and constructed. Only existing regional bikeways — bike paths or bike routes — were included in the analysis.
Bike path facilities are typically grade separated, paved trails intended for non-motorized vehicles; while bike routes are designated portions of the surface roadway network that serve both motorized and non-motorized vehicles. Bike routes are typically identified through signs and/or pavement markings.

Currently there are roughly 250 miles of bikeways in the region with approximately 16.5 miles of bikeways added to the Region since 2012.

As in the transit analysis, regional bikeway buffers were overlaid on TAZ and census block boundaries to determine the area covered by the buffer with respect to overall population and target population groups. Using the assumptions that population is evenly spread throughout underlying census blocks and target population proportions are consistent within TAZs, the percentage of the general population and target population groups covered in the buffer was calculated.

The results of the analysis are presented in two charts in Figure 9.4. The first chart shows the percentage of the general population and target population groups within ¼ mile of a regional bikeway. The second chart shows percentages within ½ mile.

The analysis shows that only 14.4% and 30.3% of the general population live within ¼ and ½ mile of a regional bikeway, respectively. Though only a fraction live within ¼ mile of a regional bikeway, target populations experience slightly higher levels of accessibility to regional bikeways within ¼ mile as the general population. The same is true for target populations within ½ mile of a regional bikeway. All target populations have higher level accessibility rates than the general population. In fact, nearly 40% of both people in poverty and zero-car households are within ½ mile of a regional bikeway, more than any other target population groups or the general population. In addition, 45.5% of the Region’s total employment exists within ½ mile of a regional bikeway.

The Regional bikeway accessibility analysis indicates that, in general, target population groups have comparable or better accessibility to regional bikeway facilities as compared to the general population, which leads to the conclusion that there are no adverse impacts regarding target populations.

9.6.5 Pedestrian Accessibility Analysis

Pedestrian access is important for many members of the target Environmental Justice groups. Minority and Hispanic status often correlate with low-income status, and many people with low incomes are often unable to afford ownership and maintenance of automobiles, have fewer automobiles per household, or own automobiles which are frequently unreliable. Many members of the elderly and disabled populations have physical limitations preventing them from safely owning and operating a motor vehicle. Members of the zero-car group, either by choice or necessity, also are heavily reliant upon non-automobile means of transportation, such as walking, biking, or public transit. Since each transit trip begins and ends as a pedestrian trip, having a continuous network of sidewalks between bus stops and origins/destinations is also an important factor for transit accessibility.
Figure 9.4
Regional Bikeway Accessibility

Percentage of Population within 1/4-Mile of a Regional Bikeway

- Total Employment
- Zero Car
- Poverty
- Disabled
- Elderly
- Hispanic
- Minority
- Total Population

Percentage of Population within 1/2-Mile of a Regional Bikeway

- Total Employment
- Zero Car
- Poverty
- Disabled
- Elderly
- Hispanic
- Minority
- Total Population

Source: GDRTA, U.S. Census 2010, ACS 2008-2012 and MVRPC

May 2016
Figures 9.5 and 9.6 help to show where improvements can be made in the pedestrian network. Gaps in the pedestrian network, particularly those near transit stops and activity centers and those within urbanized areas, offer opportunities and considerations for future projects. Accommodations for pedestrians and transit users can also have the benefits of improving public health, reducing pollution and emissions, and mitigating traffic congestion.

9.7 Environmental Justice and Public Participation
Refer to Chapter 10 — Public Participation and Consultation, for a discussion of additional public participation efforts to reach Environmental Justice populations.
Pedestrian Activity Centers:
- Sports Facilities
- Schools
- Hospitals
- Libraries
- Retail Centers
- Open Spaces

1/4 Mile Buffer
1/2 Mile Buffer
Roadways with sidewalk to pedestrian activity center
Roadways without sidewalk to pedestrian activity center
Limited access roadway

Figure 9.5
Pedestrian Activity Centers by Sidewalk Availability

Source: MVRPC
May 2016
Figure 9.6
Sidewalk Gaps 1/4 Mile From GDRTA Stops

- GDRTA Bus Stop
- Gaps Outside Urbanized Area
- Gaps Within Urbanized Area
- Sidewalk Availability
- Census Designated Urbanized Area

Source: MVRPC
May 2016