

CHAPTER X

COMMUNITY IMPACT ASSESSMENT

A. OVERVIEW

MVRPC conducted a Community Impact Assessment to address Environmental Justice (EJ) issues in the 2030 LRTP, to 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 2030 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 2030 LRTP update.

B. BACKGROUND¹

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

1. *Principles of Environmental Justice*

The US Department of Transportation (US DOT) describes the three basic principles of EJ as to:

- Ensure public involvement of low-income and minority groups in decision making,
- Prevent “disproportionately high and adverse” impacts of decisions on low-income and minority groups, and
- Assure 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 the 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.

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

¹ Ohio Department of Transportation (ODOT), *Guidance and Best Practices for Incorporating Environmental Justice into Ohio Transportation Planning and Environmental Processes*, August, 2002.

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 US Department of Transportation (US 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, US DOT published the final *Order to Address Environmental Justice in Minority Populations and Low-Income Populations (US DOT Order 5610.2)*. The order complies with the President’s 1994 Executive Order 12898.

In December 1998, the Federal Highway Administration (FHWA) issued *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 6640.23)* that require the FHWA to implement the principles of the DOT Order 5610.2 and the Executive Order 12898 by incorporating environmental justice principles in all FHWA programs, policies, and activities.

On October 1, 1999, a US 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 May 25-26, 2000, US DOT released its NPRM (Notification of Proposed Rule Making). These proposed new federal rules for TEA-21, and specifically *23 CFR Parts 1410 and 1420*, included interpretations and actions needed to comply with EJ. The proposed rules expanded EJ to require MPOs, local governments, and states to include the handicapped and elderly in the analysis. The proposed rules also require documentation of the analysis and mitigation actions considered and implemented. The same rules, regarding EJ compliance, are applicable under the 2005 Transportation Act — SAFETEA-LU.

C. 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 2030 LRTP.

MVRPC adopted four main approaches during the process of updating its 2030 LRTP to address EJ, 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.

D. 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.

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 2000 Census data as a primary data source for analysis of target population groups. Two sources of Census data were used. For minority, elderly, and Hispanic variables, 2000 Census Summary File 1 block level data were aggregated to the traffic analysis zone (TAZ) level using GIS. For the remaining variables (poverty, disability, and zero-car households), 2000 Census Transportation Planning Package (CTPP) TAZ level data were used directly.

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 US Census Bureau treats persons of Hispanic origin as an ethnic group, not a race.

Persons in Poverty

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.

Disabled Population

MVRPC defined disabled population based on CTPP data tabulated for Persons 16 Years of Age and Over. This data was used since the segment of population that is 16 and older carries greater pertinence to transportation matters. A person was considered as having a disability if he/she met any of the following

conditions: (1) the person was sixteen years old or over and had a response of “yes” to a sensory, physical, mental, self-care, or going outside the home disability or (2) the person was 16 to 64 years old and had a response of “yes” to employment disability. A brief description of each disability category is as follows:

- Sensory Disability — Blindness, deafness, or a severe vision or hearing impairment.
- Physical Disability — A long-lasting condition that substantially limits one or more physical activities such as walking, climbing stairs, reaching, lifting, or carrying.
- Mental Disability — A condition lasting six months or more that made it difficult for the individual to perform certain activities such as, learning, remembering, or concentrating.
- Self-Care Disability — A condition lasting six months or more that made it difficult for the individual to perform certain activities such as, dressing, bathing, or getting around inside the home.
- Going Outside the Home Disability — A condition lasting six months or more that made it difficult for the individual to go outside the home alone to shop or visit a doctor.
- Employment Disability — A condition lasting six months or more that made it difficult for the individual to work at a job or business.

Elderly Population

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

Households with no automobiles at home and available for the use of household members.

E. 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).

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 10.1.

Table 10.1 — 2000 Target Population Thresholds

Data Set	County	Total	Threshold
Minority Population	Greene	15,911	10.80%
	Miami	4,174	4.20%
	Montgomery	130,978	23.40%
	Warren	8,464	5.30%
People in Poverty	Greene	10,937	7.40%
	Miami	5,912	5.98%
	Montgomery	54,650	9.77%
	Warren	5,822	3.68%
Disabled Population	Greene	20,875	17.90%
	Miami	15,500	20.30%
	Montgomery	102,901	23.60%
	Warren	21,939	18.40%
Elderly Population	Greene	17,492	11.80%
	Miami	13,096	13.20%
	Montgomery	76,697	13.70%
	Warren	14,858	9.40%
Hispanic Population	Greene	1,813	1.20%
	Miami	721	0.70%
	Montgomery	7,096	1.30%
	Warren	1,633	1.00%
Zero-Car Households	Greene	2,838	5.13%
	Miami	1,891	4.91%
	Montgomery	22,257	9.71%
	Warren	1,925	3.44%

Source: 2000 Census

- **Minority Population** — Montgomery County has the highest percentage of minorities in the Region. Nearly 24% of Montgomery County residents are minorities. On the other hand, only 4.2% of the Miami County residents are minorities.
- **People in Poverty** — In the Region, Montgomery County has the highest percentage of people in poverty (9.8%), compared to Greene, Miami, and Warren Counties (7.4%, 6.0%, and 3.7%, respectively).
- **Disabled Population** — Montgomery County has the highest percentage of disabled population in the Region (23.6%), followed by Miami, Warren, and Greene Counties, at 20.3%, 18.4%, and 17.9%, respectively.
- **Elderly Population** — A higher percentage of elderly population lives in Montgomery and Miami counties (13.7% and 13.2%, respectively), compared to Greene and Warren Counties (11.8% and 9.4%, respectively).
- **Hispanic Population** — Higher percentages of persons of Hispanic descent live in Montgomery and Greene counties (1.3% and 1.2%, respectively), followed by Warren and Miami counties (1.0% and 0.7%, respectively).
- **Zero-Car Households** — Montgomery County has the highest percentage of households without access to cars. Almost one in ten households (9.7%) reported having no cars in 2000.

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 included in Appendix F.

- ***Minority Population Distribution*** — Minority areas are concentrated around urban areas or cities (see Appendix F, Figure F.1).
- ***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 (see Appendix F, Figure F.2).
- ***Disabled Population Distribution*** — The distribution of disabled population showed no particular pattern. Disabled populations are spread throughout the entire Region (see Appendix F, Figure F.3).
- ***Elderly Population Distribution*** — No specific patterns were identified with elderly population. The elderly population appears to be spread evenly over the MPO Region (see Appendix F, Figure F.4).
- ***Hispanic Population Distribution*** — In contrast with the distribution patterns of minority population and people in poverty, the Hispanic population in the MPO Region appears to be located away from city centers and closer to rural areas and large employment centers, particularly Wright Patterson Air Force Base (see Appendix F, Figure F.5).
- ***Zero-Car Households Distribution*** — The distribution of households with no cars shows greater concentration patterns in city centers (see Appendix F, Figure F.6).

F. COMMUNITY IMPACT ANALYSIS

MVRPC conducted various technical analyses for the 2030 LRTP to address EJ, 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' methodology.

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 Figure 10.1), using three different transportation networks – 2005 Base, 2030 E+C, and 2030 Plan – that were developed based on the congestion management project list as presented in Chapter V.

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: 2005 Base, 2030 E+C, and 2030 Plan. The summary of findings from the analysis is presented below. Charts detailing results from the analysis for each population group is included in Appendix F, Figures F.1 to F.6.

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. 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.

Accessibility to Universities

The analysis indicates that travel time to universities is shorter for target versus non-target areas in all three scenarios.

Overall, the accessibility analysis indicates that the average travel time of target versus non-target areas was not adversely affected by the 2030 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 2030.

2. *Travel Time to Work*

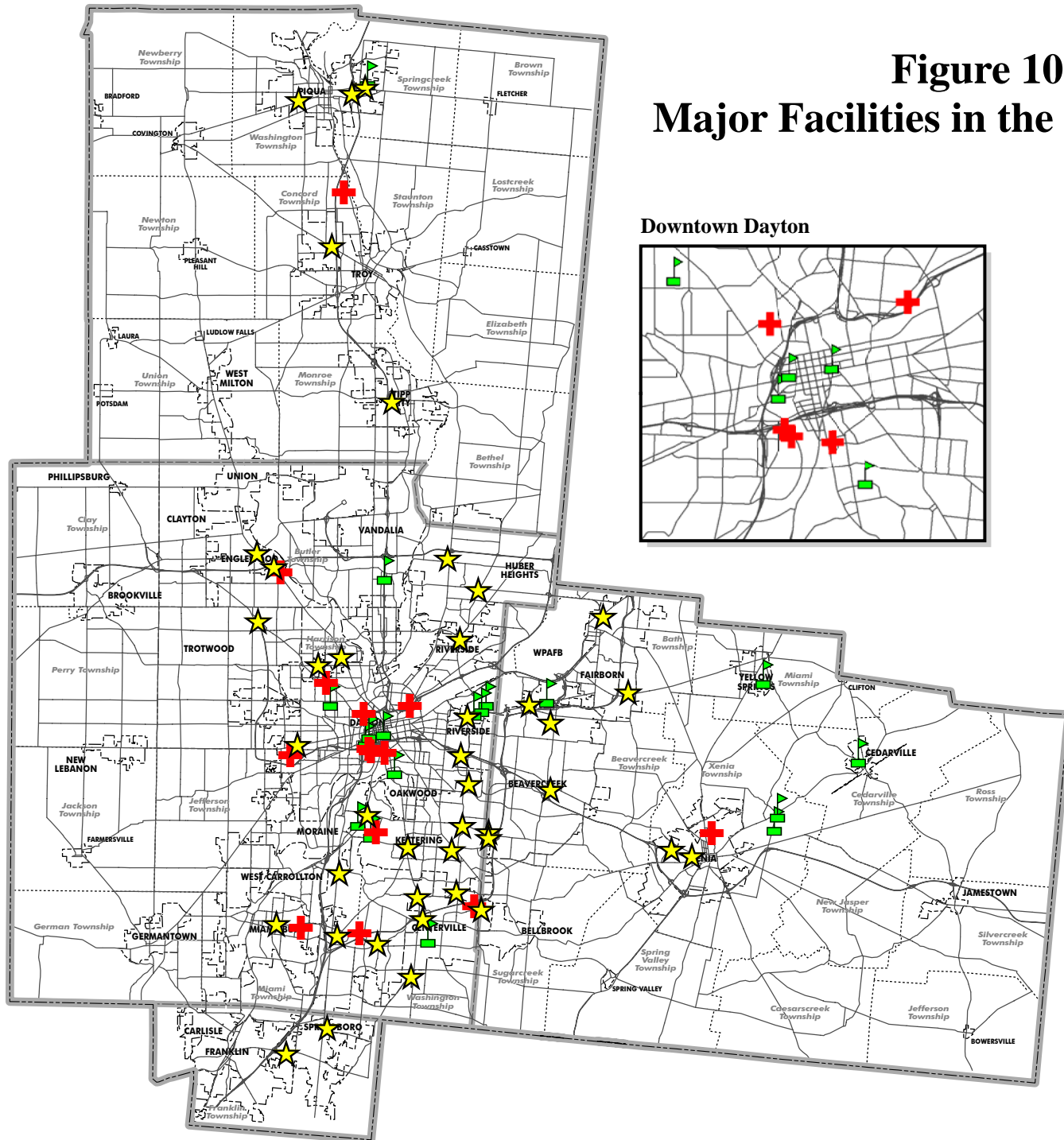
MVRPC analyzed travel time to work (HBW Trips) as a second community impact evaluation of the 2030 LRTP. This evaluation identifies whether adverse impacts exist regarding the travel time to work between target areas and non-target areas, with respect to employment locations as a result of the Plan.




The average travel time to work for each TAZ was derived using MVRPC's TDFM for all three scenarios (2005 Base, 2030 E+C, and 2030 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 Appendix F summarized by population group.

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. A comparison of HBW travel times between the 2030 E+C and 2030 Plan scenarios reveals that implementation of the 2030 LRTP will decrease HBW travel times from all target areas for all population groups.

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. Further, the analysis shows that all target areas will benefit more than non-target areas as a result of the 2030 LRTP. It is therefore fair to say that there are no significant adverse impacts on target areas compared to non-target areas.

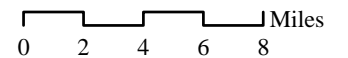
Figure 10.1 Major Facilities in the Dayton Region



-  University
-  Hospital
-  Shopping Center

Source: MVRPC

May 2008



3. Transit Accessibility Analysis

MVRPC conducted a Transit Accessibility Analysis as a third measure of community impact evaluation of the 2030 LRTP. The analysis was conducted using GIS to identify how much access each target population group has to the public transit available in the Region. Further, this analysis evaluates 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 10.2). 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 GDRTA transit routes from January, 2007.

Transit route buffers were overlaid over TAZ boundaries to determine the area covered by the buffer with respect to overall population and target population groups. Using the assumption that population is evenly spread throughout the underlying areas, 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 10.2. 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 63.7% of the total population of Montgomery County lives within ¼ mile and 82.6% 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 in the ¼ mile buffer analysis and the disabled in the ½ mile buffer analysis, are better served than the overall population. For example, 80.3% of minorities, 76.4% of persons living in poverty, 65.1% of persons with a disability, 70.1% of persons of Hispanic origin, and 79.1% of zero car households live within ¼ mile of a transit route, compared to 63.7% for the general population in the same area.

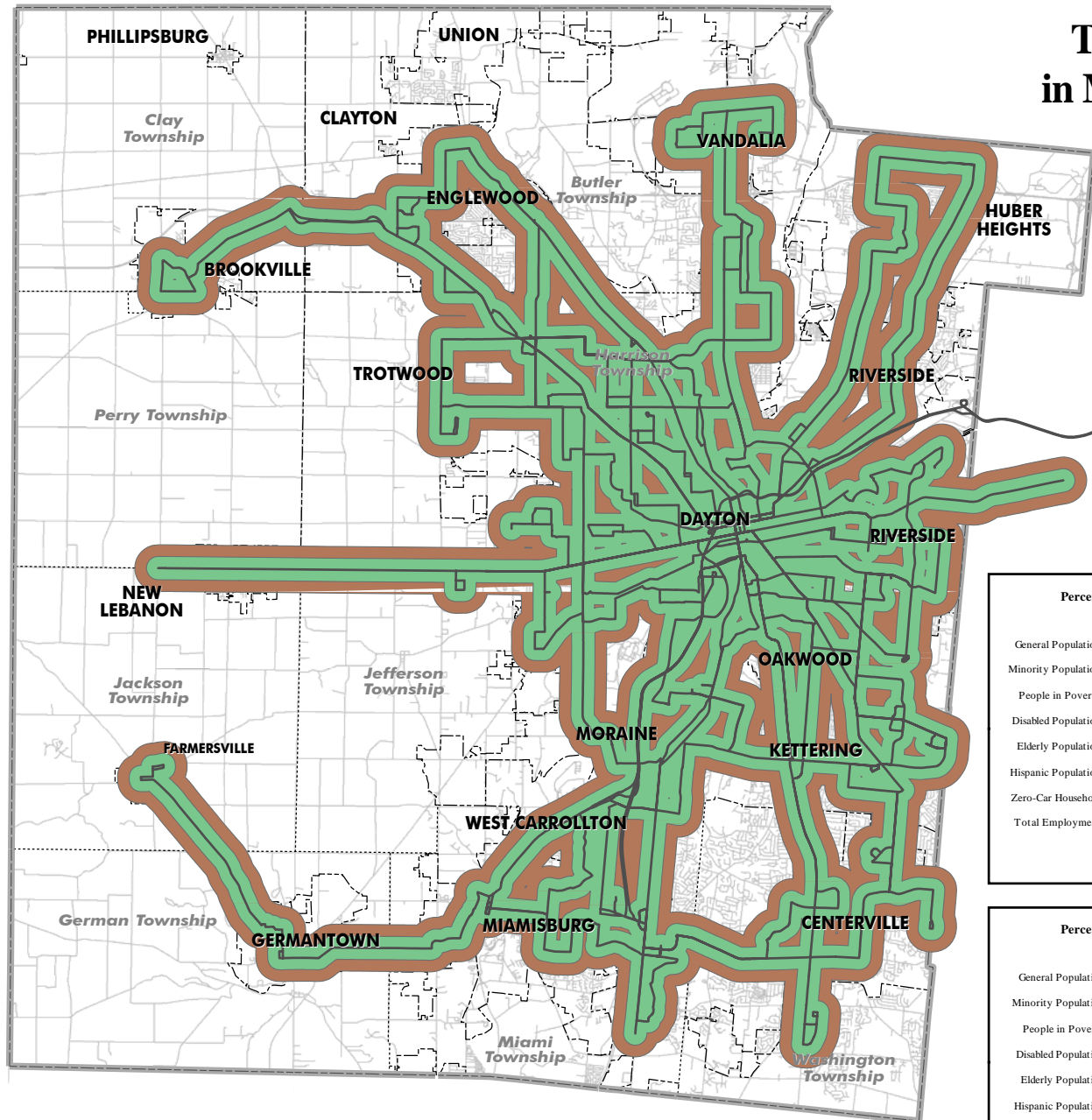
The transit accessibility analysis indicates that, in general, target population groups have better accessibility to transit compared to the general population, which leads to the conclusion that there are no adverse impacts regarding target populations.

4. Regional Bikeway Accessibility Analysis

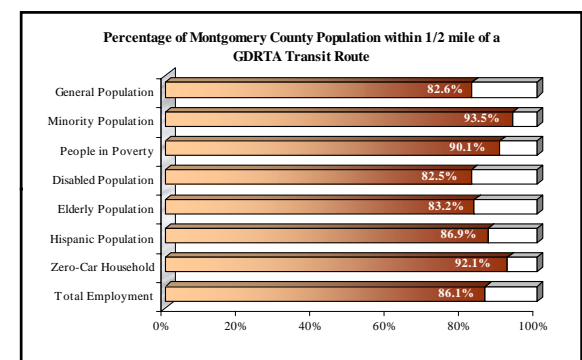
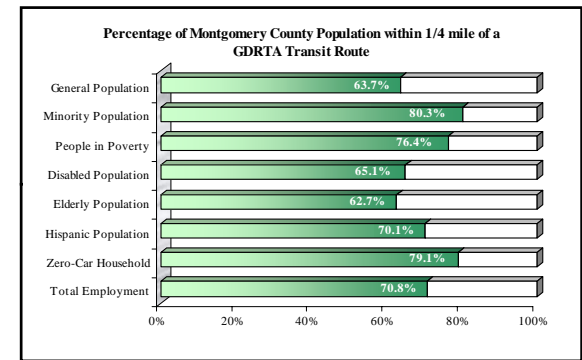
The importance of measuring the accessibility of the Region's bikeways for target population groups has become an important focus as investment in the system has increased over time. Unlike GDRTA's fixed route transit service, the regional bikeway network extends throughout the MPO Region and continues to grow as new sections are constructed or designated. 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.

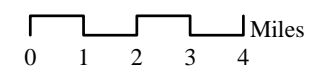
Figure 10.2 Transit Accessibility in Montgomery County



- GDRTA Transit Routes**
- GDRTA Transit Routes
 - Quarter-mile Buffer
 - Half-mile Buffer
- Boundary**
- City
 - Township
 - County



Source: Census 2000
May 2008



As in the transit analysis, regional bikeway buffers were overlaid over TAZ boundaries to determine the area covered by the buffer with respect to overall population and target population groups. Using the assumption that population is evenly spread throughout the underlying areas, 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 10.3. 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 12.0% and 23.5% 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 similar levels of accessibility to regional bikeways within ¼ mile as the general population. Other than the Hispanic population — at 0.1% fewer people — a higher percentage of target populations live within ½ mile of a regional bikeway than the general population. In fact, over 35% of both people in poverty and zero-car households are within ½ mile of a regional bikeway, more than any other target population group or the general population. Of the remaining target population groups, approximately 23% live within ½ mile of the regional bikeway network. In addition, almost 40% 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.

G. ENVIRONMENTAL JUSTICE AND PUBLIC PARTICIPATION

Refer to Chapter XI — Public Participation and Consultation, for a discussion of additional public participation efforts to reach Environmental Justice populations.

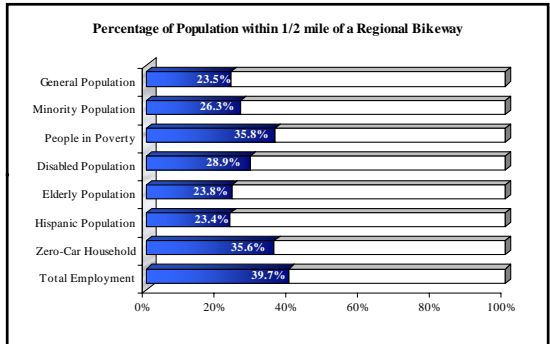
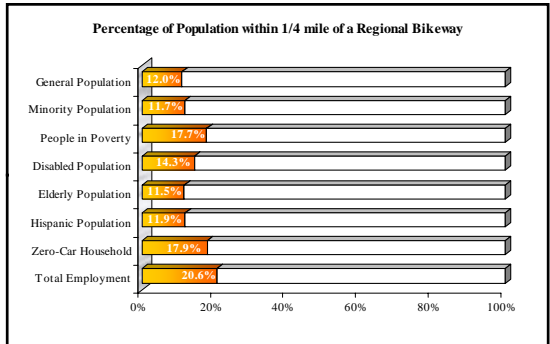
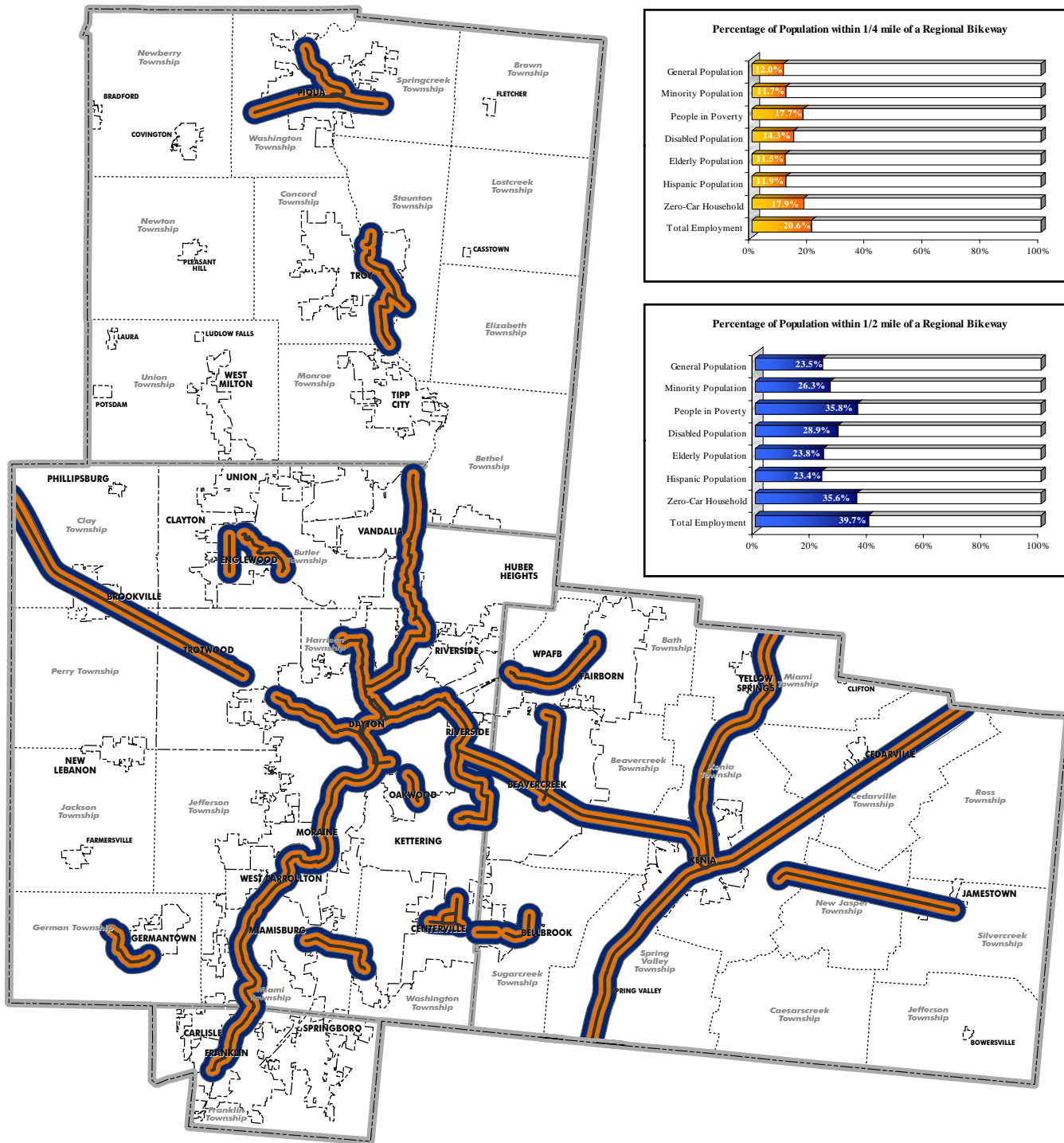








Figure 10.3
Regional Bikeway
Accessibility

- Regional Bikeways**
-  Regional Bikeways
 -  Quarter-mile Buffer
 -  Half-mile Buffer
- Boundary**
-  City
 -  Township
 -  County

Source: Census 2000
May 2008

