



Use of Data Sources, Analytical Techniques, and Public Involvement



MPO Environmental Justice Report

MID-OHIO REGIONAL PLANNING COMMISSION

- Quantitatively assess benefits and burdens of transportation plans with respect to target populations.

Introduction

In the wake of new Federal guidelines on environmental justice that amplify Title VI of the Civil Rights Act, growing attention has been placed on the need to incorporate environmental justice principles into the processes and products of transportation planning. In response to this important challenge, Metropolitan Planning Organizations (MPOs) around the country have begun developing methods to assess the impacts of their transportation plans and planning processes on low-income and minority populations. One such agency is the Mid-Ohio Regional Planning Commission (MORPC), the MPO for the greater Columbus, Ohio, region.

In January 2000, MORPC convened a task force to develop a process with which to assess and ensure compliance of the agency's transportation planning efforts with environmental justice requirements of Title VI. This process ultimately contained four key steps:

- Identify and map locations of low-income and minority populations.
- Identify transportation needs of target populations.
- Document and evaluate the agency's public involvement process.

MORPC's efforts are noteworthy for using analytical techniques and public involvement. The agency effectively used Geographic Information Systems (GIS) mapping to locate low-income and minority populations within the Columbus metropolitan area. This information was incorporated into a travel-demand forecasting model to assess the benefits and burdens of existing and planned transportation system investments on target populations.

MORPC also undertook significant steps to publicize its efforts and involve the public. The task force that developed the review process represented public, private, and nonprofit sectors. In addition, MORPC held an open house to provide opportunities for public comments on the *Draft Environmental Justice Report* following its release in March 2000. The entire draft report was also posted on MORPC's web site, along with minutes from all five Environmental Justice Task Force meetings.

Recent Federal guidelines on environmental justice emphasize the need for MPOs to substantiate self-certification of Title VI compliance. However, procedural and analytical approaches for doing so remain largely unspecified. MORPC's efforts in this regard may serve as a useful model for other MPOs facing the same challenges.

Snapshot of City of Columbus and MORPC Planning Area

Location

- Columbus is the Ohio State Capital
- The Mid-Ohio Regional Planning Commission (MORPC) includes Franklin County, Delaware County, Pataskala (Licking County), Etna Township (Licking County), Violet Township (Fairfield County), and Bloom Township (Fairfield County)

Population: 1,049,666

Minority population:

- City of Columbus — 25.5 percent
- MORPC Region — 17 percent
- Percent of region's minority population living in City of Columbus — 84 percent

Median household income:

- City of Columbus — \$26,651
- MORPC Region — \$31,353

Households below poverty level:

- City of Columbus — 17.2 percent
- MORPC Region — 11.8 percent
- Percent of region's population with incomes below the poverty level and living in the City of Columbus — 63 percent

Source: 1990 U.S. Census Data

The MORPC Region

MORPC's planning area includes Delaware County, Franklin County, and portions of Fairfield and Licking Counties. Columbus, the Ohio State Capital, is located in Franklin County.

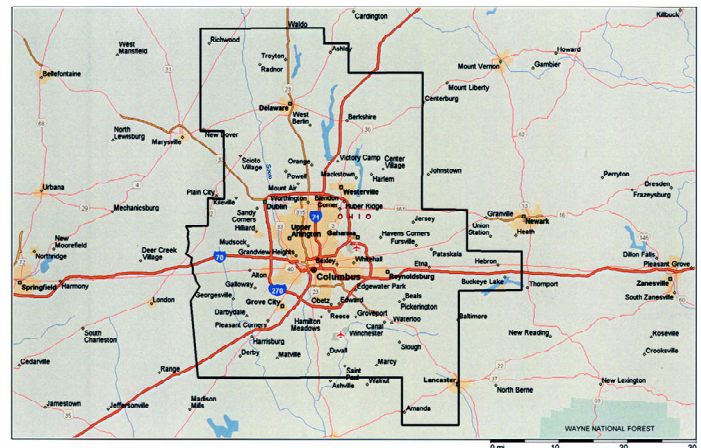
Land development patterns in the Columbus metropolitan area mirror those of other urban centers during the past several decades. Since the 1960s, new development has shifted away from the urban core in favor of outlying areas. New suburban developments, both residential and commercial, have tended to spring up along major freeways and arterials and are heavily oriented toward automobile use.

The Columbus region is growing rapidly. Estimates are that between 1990 and 1995, MORPC's planning area added more than 50,000 households and 70,000 jobs. By 2020, MORPC predicts that the number of households will increase by 150,000 and the number of new jobs by 180,000. According to MORPC's 2020 Regional Transportation Plan, approximately three-quarters of the anticipated residential development and two-thirds of the projected nonresidential development will occur *outside* the I-270 outerbelt.

Data from the 1990 U.S. Census indicate that low-income and minority populations within MORPC's planning area remain concentrated principally in the urban center. Of the nearly 12 percent of the MORPC region's population living below the poverty line, 63 percent of these individuals are located in the City of Columbus. Likewise, while 17 percent of the population within MORPC's planning area is minority, 84 percent of those individuals live in Columbus.

What Happened

In late 1999, MORPC undertook a substantive review of the extent to which its transportation planning activities met the requirements of Title VI



The U.S. Department of Transportation recognizes MORPC as the official transportation-planning agency for the mid-Ohio region.

and environmental justice. The Federal Transit Administration (FTA) and the Federal Highway Administration (FHWA) Administrators issued a joint memorandum on October 7th, 1999, directing regional and division administrators to consider environmental justice requirements in the MPO planning certification review process. The memorandum, however, defined no specific procedural or analytical approaches for

demonstrating compliance. Thus, MORPC, like MPOs around the country, had considerable discretion in developing methods to evaluate its planning programs, policies, and processes.

MORPC's first step was to convene a task force to serve as an advisory group for the project. Members of the task force came from MORPC's Citizen Advisory Committee, Transportation Advisory

Implementing Title VI Requirements in Metropolitan and Statewide Planning

October 7th Memorandum

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued a memorandum, "Implementing Title VI Requirements in Metropolitan and Statewide Planning," October 7, 1999. The memorandum provides clarification for field offices on how to ensure that environmental justice is considered during current and future planning certification reviews. While Title VI and environmental justice have often been raised during project development, the law applies equally to the processes and products of planning. The FTA and FHWA have concluded that an appropriate time to ensure compliance with Title VI in the planning process is during the planning certification reviews conducted for the Transportation Management Areas (TMAs) and through the statewide planning finding rendered at approval of the Statewide Transportation Improvement Program (STIP). TMAs are MPOs for regions with populations of 200,000 or more.

The memorandum recommends several questions be raised during certification reviews to substantiate the basis upon which self-certification of Title VI compliance is made. If it becomes evident that the self-certification was not adequately supported, a corrective action to rectify the deficiency is to be included in the certification report. The entire memorandum is available online: www.fhwa.dot.gov/environment/ejustice/ej-10-7.htm.

During certification reviews, MPOs are asked to address several important questions related to:

- Overall Strategies and Goals
- Service Equity
- Public Involvement

Below are specific questions MPOs should be prepared to address about their Overall Strategies and Goals:

Overall Strategies and Goals

- What strategies and efforts has the planning process developed for ensuring, demonstrating, and substantiating compliance with Title VI?
- What measures have been used to verify that the multimodal system access and mobility performance improvements included in the plan and Transportation Improvement Program (TIP) or STIP and the underlying planning process comply with Title VI?
- Has the planning process developed a demographic profile of the metropolitan planning area or State that identifies the locations of socioeconomic groups, including low-income and minority populations as covered by the Executive Order on Environmental Justice and Title VI provisions?
- Does the planning process identify the needs of low-income and minority populations?
- Does the planning process use demographic information to examine the distributions across these groups of the benefits and burdens of the transportation investments included in the plan and TIP (or STIP)?
- What methods are used to identify imbalances?

Committee, and the Columbus Area Transportation Coordination Program. The 12-member group included representatives from municipal governments within the MORPC planning area, Central Ohio Transit Authority (COTA), Ohio Environmental Protection Agency, and several public interest groups. Two of the twelve task force participants were members of target populations. Other members were selected principally on the basis of their experience working with low-income and minority populations. For example, COTA has worked with the Franklin County Department of Human Services for several years on the issue of access to jobs. As part of this effort, COTA mapped the location of Temporary Assistance to Needy Families (TANF) recipients by census tracts.

The Environmental Justice Task Force met biweekly for three months, beginning in January 2000. During that time, members played a key role in helping MORPC define the target population, identify the needs of the target population, evaluate the agency's existing public involvement process, and develop appropriate measures for gauging the regional burdens and benefits of transportation system investments on the target population.

Three months after the Environmental Justice Task Force's first meeting, MORPC held an Open House on Environmental Justice to formally present the findings of its *Draft Environmental Justice Report* and give citizens an opportunity to ask questions and provide feedback. The open house was held at MORPC's downtown Columbus office, a location accessible by transit during the evening hours when the event was held. MORPC determined that a central location would provide the best access for the greatest numbers of low-income and minority residents. MORPC was confident that these individuals would be comfortable coming to this location because the agency had previously hosted activities directed toward low-income and minority residents, which had been well attended. More than 50 people attended the Open House. The proceedings were also broadcast on Channel 3, a local government-access network.

MORPC's *Draft Environmental Justice Report* contained four principal areas of investigation used to evaluate whether the agency's transportation planning efforts met the letter and spirit of Title VI and the Executive Order on Environmental Justice. The four principal areas of investigation involved:

I. Demographic Profile. Identifying the size and location of low-income and minority population groups is an important first step toward assessing whether or not transportation system investments disproportionately burden or fail to meet the needs of any segment of the population. MORPC first reviewed the racial and ethnic and income-distribution patterns provided by various 1990 U.S. Census data sets. After screening the advantages and disadvantages of various data sets, MORPC decided to use census data sets to prepare a demographic profile of the central city and metropolitan area. Although 10 years old at the time, census data offered the advantage of providing information at the census block group, the smallest geographic unit available. In addition, census block groups correspond roughly to Traffic Analysis Zones (TAZs), the level of geography used in MORPC's travel-

The Participants

The Mid-Ohio Regional Planning Commission established an Environmental Justice Task Force whose members represented:

- Central Ohio Transit Authority (COTA)
- Ohio Environmental Protection Agency
- Neighborhood Empowerment Council
- Transportation Resources, Inc.
- Sierra Club, Ohio Chapter
- Franklin County
- City of Columbus
- City of Delaware
- City of Whitehall
- City of Westerville
- City of Upper Arlington

Project Chronology

January 2000

MORPC convenes Environmental Justice Task Force.

January-March 2000

Environmental Justice Task Force meets every 2 weeks.

March 2000

MORPC releases *Draft Environmental Justice Report*.

March 2000

MORPC hosts Open House on Environmental Justice.

April 2000

MORPC's Policy Committee passes a resolution to include the environmental justice assessment in the MORPC regional transportation plan.

demand forecasting model. This became an important consideration in subsequent phases of the analysis.

Using census data, MORPC then calculated percentages of low-income and minority populations for each TAZ within the planning area. At that point, MORPC chose to establish “threshold” criteria for determining whether or not a particular TAZ should be considered predominantly minority or low-income. To make that determination, MORPC used the regionwide percentages of minority and low-income residents — 17 percent and 11.8 percent, respectively. Any TAZ that met or exceeded this threshold was considered by MORPC as predominantly minority and/or low-income.

Finally, MORPC prepared GIS maps to provide a visual representation of the low-income and minority populations. The maps revealed that TAZs with concentrations of minority or low-income residents higher than the regional averages were located predominantly in the central city. By contrast, areas outside the I-270 outerbelt had very few concentrations of target populations, although this periphery region was, and is expected to remain the principal location of new job growth.

The mapping exercise also assessed the number and location of zero car households and people with

disabilities. The report found that approximately 85 percent of zero car households were concentrated in TAZs with relatively greater numbers of low-income and minority populations. While members of the Environmental Justice Task Force were generally aware of the issue, the maps amplify and illustrate the problem of a potential *spatial mismatch* between employment growth and population. The maps reinforce one of the Report's findings that a principal challenge will be to devise transportation solutions as well as land-use planning strategies capable of addressing this problem.

II. Identify Transportation Needs. In addition to establishing locations of low-income and minority residents, a key element of Title VI compliance in statewide and metropolitan transportation planning is due consideration of the transportation needs of the target populations. For MORPC, documentation of transportation needs was readily available. Numerous reports had already been produced by MORPC, COTA, and a number of other sources. For example, agencies represented on the Environmental Justice Task Force had previously prepared a *Job Access and Reverse Commute Plan*, which examined travel by TANF recipients in Franklin County, studied transit-labor force accessibility of central city residents, and established a regional transportation coordination committee. COTA also maintains a census tract map with overlays showing minority census tracts, transit routes, and major destinations. Staff periodically sample census tracts and conduct analysis comparing population segments with the quality and level of transit service. In 1998 COTA submitted a Title VI report to FTA that documented the results of its route performance monitoring and demonstrated COTA's compliance with Title VI regulations.

MORPC's methodology for identifying the transportation needs of target populations for its *Draft Environmental Justice Report* report drew chiefly upon existing documentation supplemented by feedback provided by members of the Environmental Justice Task Force. The needs identification section focused on shortcomings within the Columbus-area public

transit system because of the heavy reliance on public transportation by low-income and minority residents. MORPC identified several needs suggesting the importance of improving public transportation:

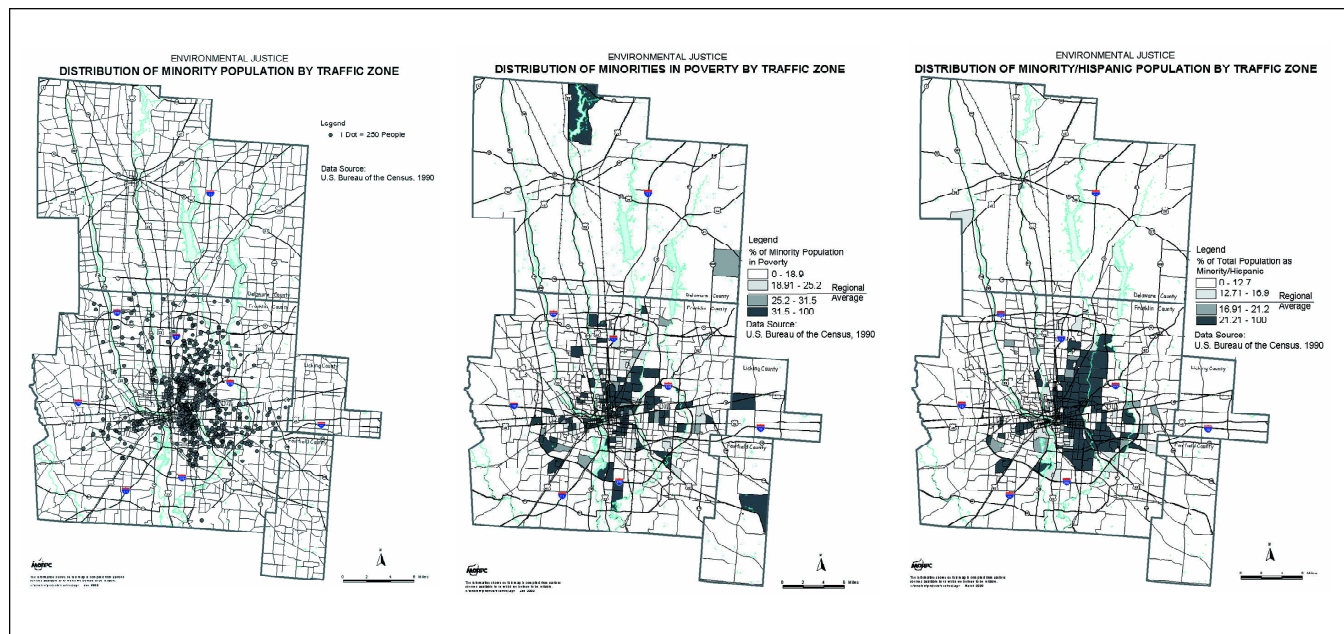
- Greater transit access to emerging employment centers, shopping, and other services located in outlying areas.
- More responsive reverse commute transit service from low-income neighborhoods to employment centers with insufficient or nonexistent service.
- Safer, more easily accessible and user-friendly transit facilities.
- Better transit connections to reduce commute times.
- Transportation systems that cross county lines and adequately serve low-income persons in rural areas.

III. Evaluate Public Involvement Efforts. MORPC institutionalized its commitment to public involvement with adoption of the Public Involvement Process (PIP) in January 1995. The PIP identified a set of procedures



Demographic profile maps were among those displayed at an Open House on Environmental Justice.

to be consistently applied to incorporate public participation in the transportation planning process. Foremost among these was the creation of the Citizen Advisory Committee (CAC), an advisory group that serves as the principal vehicle for public participation in transportation planning activities. The CAC is



Using 1990 Census data sets to prepare demographic profile maps of the central city and target areas, MORPC was able to identify the geographic locations of minority and low income residents.

Target Population Identification and Data

Consistent with the direction of Executive Order 12898, MORPC identified minority and low-income populations to analyze whether the agency’s programs, policies, and other activities had disproportionately high and adverse human health or environmental effects. Other special populations were added for analysis as well, including minority populations in poverty, people with disabilities, and zero car households.

- **Defining Target Population “Thresholds.”** Averages of regional totals for various target populations were calculated. MORPC concluded that using the break point at which areas fall above or below the average for the study area alerts planners to special areas of consideration when analyzing the effects of changes to the transportation system.

Target Population Thresholds Used by MORPC for Demographic Profile and Mapping

Data Set	1990 Totals for Study Area	Threshold (percent of total)
Total population	1,049,656	
Total households	416,400	
Minority population	177,965	17.0 percent
Population below the poverty line*	122,389	11.8 percent
Minority population below the poverty line*	44,835	25.2 percent
Persons with disabilities	60,602	5.8 percent
Zero car households	9,404	2.3 percent

*Based on 1990 poverty guidelines issued by DHHS

- **Distribution of Demographic Data to Traffic Analysis Zones (TAZs).** Census data sets providing information at the most detailed geographic level available — census block groups — were used. Data characteristics of the block groups were applied to population and housing totals of the TAZs through a conversion table in which TAZ boundaries were matched to census block groups on a “best-fit” rule between the two geographies.
- **U.S. Census Data Source.** MORPC relied upon 1990 U.S. Census data, which was available in the geographic detail most consistent with their travel-demand forecasting model, the primary analytical tool used to review the benefits and burdens of their transportation planning efforts. More current administrative records about the residential location of TANF recipients, child care facilities, the locations of business establishments, and emerging and suitable employment opportunities could be drawn upon to deepen the needs assessment. As discussed previously, COTA and the Franklin County Department of Human Services had undertaken elements of such a research effort in the past several years to map the location of TANF recipients by census tract for bus transit planning.
- **National Poverty Guidelines.** To identify low-income households, MORPC drew upon national poverty guidelines issued by the U.S. Department of Health and Human Services (DHHS), which vary by family size. MORPC’s analysis identified \$12,674 as the poverty threshold for a family of four in 1990, and indicated that the threshold had risen to \$16,000 by 1997. The latter figure was taken from the March 10, 1997 Federal Register, part of a package of legislative information that the Ohio Department of Transportation provided to MORPC to use in environmental justice planning.

composed of citizens from all segments of the population including representatives of low-income, minority, and transportation-disadvantaged populations. An effort is made to maintain broad geographic representation covering the municipalities, townships, and counties of the entire MORPC planning area.

MORPC maintains a list of organizations that it refers to when it needs to fill vacancies on the CAC. The PIP specifically commits the CAC to identifying and considering the transportation needs of low-income and minority households.

Implementing Title VI Requirements in Metropolitan and Statewide Planning:

Public Involvement

The October 7th memorandum directs FHWA and FTA staff to explore the MPO's commitment to public involvement:

- Does the public involvement process have an identified strategy for engaging minority and low-income populations in transportation decision making?
- What strategies, if any, have been implemented to reduce participation barriers for such populations?
- Has their effectiveness been evaluated?
- Has public involvement in the planning process been routinely evaluated as required by regulation?
- Have efforts been undertaken to improve performance, especially with regard to low-income and minority populations?
- Have organizations representing low-income and minority populations been consulted as part of this evaluation and have their concerns been considered?
- What efforts have been made to engage low-income and minority populations in the certification review public outreach effort?
- Does the public outreach effort use media (such as print, television, radio) targeted to low-income or minority populations?
- What issues were raised, how are their concerns documented, and how do they reflect on the performance of the planning process in relation to Title VI requirements?
- What mechanisms are in place to ensure that issues and concerns raised by low-income and minority populations are appropriately considered in the decision-making process?
- Is there evidence that these concerns have been appropriately considered?
- Has the MPO or State Department of Transportation made funds available to local organizations that represent low-income and minority populations to facilitate their participation in planning processes?

MORPC's evaluation of its public involvement process identified a range of existing strategies and opportunities for public participation, including public meetings, task forces, a quarterly newsletter, direct mail, press releases, community presentations, and citizen involvement on various committees. The evaluation cautioned that low-income and minority residents typically become involved in regional transportation planning only when issues arise that concern them directly. The report recommended that MORPC do more to publicize its activities among low-income and minority populations and make staff available to give presentations at neighborhood meetings.

IV. Assess the Benefits and Burdens of the Transportation System. The final step MORPC completed in its environmental justice analysis was to examine the agency's planning efforts to determine whether the benefits and burdens of existing and proposed transportation system investments were distributed equitably among target and nontarget populations within the MORPC planning area.

MORPC, like any transportation agency, was quickly confronted with the need to make several important defensible assumptions regarding baseline and future socioeconomic conditions, growth rates, and travel-demand forecasting methods to assess the benefits and burdens.

Central to MORPC's study plan was the agency's use of the travel-demand forecasting model that it had used to prepare its *Vision 2020 Transportation Plan*. This model employed land use and demographic information for each TAZ within the MORPC planning area to forecast existing and future traffic patterns and volumes on the regional transportation network. By expanding the modeling process to take into account the distribution of target versus nontarget populations within each TAZ, MORPC was able to estimate the extent to which low-income and minority populations were equitably served for each measure considered.

Estimating Baseline and Future Target and Nontarget Populations by Zone

MORPC concluded that it was necessary to estimate the target and nontarget population within each TAZ. However, the land use variables of their travel-demand forecasting model considered only total population by TAZ for their baseline (1995) and future years (2015). They needed a method to estimate 1995 and 2020 target populations by zone.

MORPC used a relatively simple and straightforward “constant share” method to estimate poverty and minority populations. In estimating the target populations by traffic zone, it was assumed that the total regional percentage for each population would be the same percentage as the 1990 census. For example, the regional percentage in poverty in 1990 was 12 percent, and it was assumed that this figure would remain constant for the 1995 population and the forecast 2020 population. MORPC decided to use this assumption because the agency had no data available to support an alternative scenario.

The first step was to apply the 1990 target population percentage *in each zone* to the 1995 and 2020 total

population within each zone. However, because higher growth is occurring in zones with lower than average target population percentages, the total regional target population percentages were less than the 1990 percentages. Uncorrected, this would provide a rather misleading projection of the effects of growth.

The next step, therefore, was to add the additional target population to zones throughout the region in order to achieve the same regional percentage as in 1990. This allocation relied upon the 1990 distribution share of the particular targeted population. For example, assume 10,000 additional poverty population is needed to achieve the same 12 percent as in 1990. If, in 1990, one TAZ had 1 percent of the total poverty population, an additional 100 ($10,000 \times .01$) poverty persons were added to the zone. During this process, steps were taken to ensure that the total target population did not exceed the total population of each zone.

A major analytical step in MORPC’s benefits and burdens assessment involved identifying a series of measures with which to compare the respective treatment of *target* and *nontarget* populations in the planning process. During the study process, MORPC distinguished between types of measures and offered the following definitions:

- *Population-based* measures best address the environmental justice definition in that they provide information about members of the target population, regardless of their location. Population-based measures also consider small pockets of target populations within nontarget populations.
- *Geographic-based* measures provide information specific to a geographic area (e.g., TAZ). Some information such as congested vehicle miles of travel can only be reported for an identified geographic area. The data reported within these areas are applicable to *all* of the populations residing in the particular area. Thus, for an environmental justice analysis, identifying the geographic area(s)

of interest is very important. The geographic area(s) should have higher-than-average percentages of the target population and in total account for a large majority of the target population.

- *Visual-based*. In contrast to the measures above, some data cannot be boiled down to comparisons. These can be classified as visual data, which are usually presented in a map form.

MORPC considered *accessibility* measures and *travel* measures and elected to use both types of measures in the study. In the report, an example of an accessibility measure is “number of jobs within 20 minutes.” Travel measures, such as the “average work trip length” or “congested vehicle miles” are based upon an estimated pattern of trip making.

MORPC was careful to note that some measures can be either accessibility measures or travel measures, depending on how they are calculated. For example, average travel time to the central business district, if based on an estimated pattern of trip making, would

be a travel measure. However, if it were calculated based on the average travel times for trips downtown originating throughout the MORPC planning area, it would be an accessibility measure.

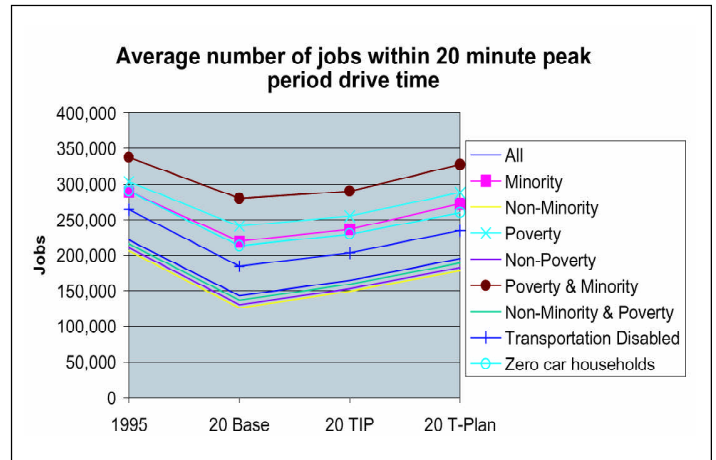
MORPC screened and categorized potential measures for their immediate and future application to environmental justice evaluations. The selected measures included variables such as average number of accessible job opportunities, average number of accessible shopping opportunities, and average travel times for work and shopping trips.

For most measures, estimates were calculated for four different scenarios. The first scenario

Average Number of Job Opportunities Close: How MORPC Calculated the Measure

One of MORPC’s standard variables is the number of jobs by TAZ. This measure estimates the average number of jobs within a specified travel time. Discussion during the task force meetings addressed what the appropriate time threshold should be to define a “close job opportunity.” A time threshold for auto travel was set at 20 minutes. For transit, a doubling of the auto travel time threshold (40 minutes) was selected. This was based upon a discussion concluding that persons with multiple transportation options would not likely ride public transit more than this length of time.

- First, the model was used to estimate peak period auto travel times and peak and off-peak transit travel times from each TAZ to every other TAZ. This is commonly referred to as a travel-time skim.
- Second, for each TAZ based on the skim, the total number of jobs within various travel times was calculated.
- Finally, a weighted average number of jobs was calculated based on the number of each population group within each TAZ.

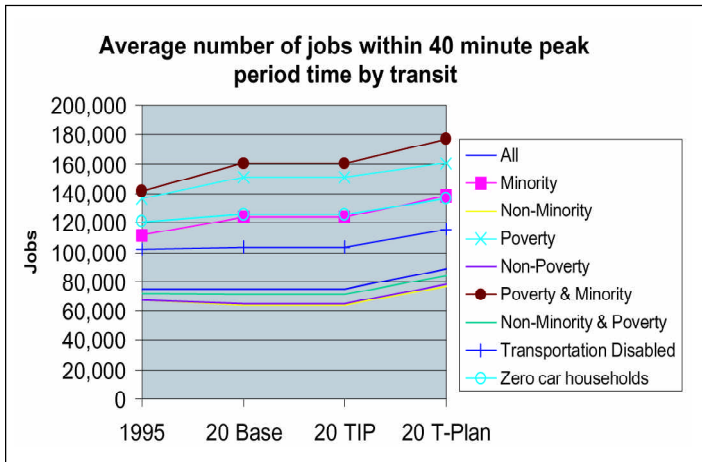


MORPC estimated the average number of jobs within a desired travel time available to various socioeconomic groups.

represented 1995 conditions. The next three represented 2020 conditions under three different sets of transportation system assumptions. The first was that only those projects currently under construction were completed. The second assumed that only projects in the current FY 2000-2003 Transportation Improvement Program (TIP) were constructed. The final scenario assumed all of the projects in the 2020 Plan were constructed.

The modeling process did not reveal significant disparities in the distribution of benefits and burdens of transportation system investments between target and nontarget populations. For each measure considered, MORPC concluded that low-income and minority residents were at least as well served by existing and proposed investments as other segments of the population. In addition, an analysis of the potential for displacement resulting from the construction of major transportation projects during the next 20 years revealed no significant disparities in expected impacts upon target and nontarget populations.

In April 2000, based on the recommendations of its Citizen Advisory and Transportation Advisory Committees, MORPC passed Resolution T-7-00, “Adoption of Environmental Justice Assessment and Recommendations and Inclusion in the MORPC Regional Transportation Plan.” The resolution



Most measures, including transit accessibility, were compared for various transportation investment scenarios.

incorporated the findings and recommendations of the *Draft Environmental Justice Report* into the Transportation Plan and instructed staff to carry out the recommended improvements. In addition, it encouraged member jurisdictions to comply with environmental justice requirements when reviewing, selecting, and submitting projects to MORPC for Federal funding.

Soon after, MORPC began following up on specific recommendations made in the Report. During summer 2000, MORPC began preparing a plan to increase participation of target populations in the transportation planning process. In addition, updates of the Regional Transportation Plan and future versions of the TIP will contain sections on environmental justice that include revised and updated versions of the analysis contained in the *Draft Environmental Justice Report*. Year 2000 census data will be incorporated into this analysis as soon as it becomes available.

MORPC continues to work with transportation providers to ensure that the recommendations outlined in the Report are implemented. For example, MORPC and the region's transit provider COTA have translated analytical research and public involvement activities into proactive initiatives, particularly in the areas of job access. COTA has expanded and

instituted new services and invested and developed plans for transit center/transfer centers at key nodes to support improved access to Empowerment Zones.

Effective Environmental Justice Practices

MORPC's environmental justice review process serves as an example of how one MPO comprehensively evaluated the extent to which its regional planning efforts incorporate the principles of Title VI and the Executive Order on environmental justice. This review process illustrates a number of

Measures Used to Assess Benefits and Burdens of Transportation System Investments

Accessibility Measures

- Average number of accessible job opportunities
- Average number of accessible home-based shopping opportunities
- Average number of accessible nonshopping attractions, such as medical appointments or banking
- Percent of population close to a college
- Percent of population close to a hospital
- Percent of population close to a major retail destination
- Transit accessibility to Columbus CBD

Travel Time Measures

- Average travel time for work trips
- Average travel time for home-based shopping trips
- Average travel time for nonshopping home-based trips
- Average travel time for all home-based trips
- Average travel time to Columbus CBD

Other Measures

- Congested vehicle miles of travel
- Highway investments
- Displacement from highway projects

effective practices for ensuring that environmental justice requirements are fulfilled:

- **Technical Advisory Groups and Public Involvement Techniques.** MORPC engaged the public and transportation service providers in carrying out its environmental justice review process by convening a broad-based task force to advise agency staff. This group not only provided opportunities for public participation in the process, but it also filled certain gaps in the knowledge and expertise of agency staff. In addition, MORPC made efforts to publicize the review process and seek public input by holding an Open House on Environmental Justice, televising the proceedings, and making its *Draft Environmental Justice Report* available on the agency's web site.
- **GIS Mapping of Target Populations.** In identifying and mapping the locations of target populations within the Columbus metropolitan area, MORPC had to balance the need for current data against the need for data that were usable in its travel-demand forecasting model. In the end, MORPC used 1990 census data, a choice that will allow the model to be easily updated once year 2000 census data become available. Although more current administrative records data on employment and establishments could be mapped by exploring a data-sharing partnership with the State's employment office, the analysis was still able to pinpoint the existence of a spatial mismatch between the locations of new job growth in the outerbelt and the residential location of low-income and minority populations.
- **Use of Accessibility and Travel Time Measures from MPO's Travel-Demand Forecasting Model.** In assessing the benefits and burdens of transportation system investments on low-income and minority populations, it makes sense for MPOs to use analytical methods with which they have prior experience. MORPC's use of travel demand forecasting shows how an existing model can be modified and applied to address a different set of



MORPC's outreach program included an Open House on Environmental Justice to present the *Draft Environmental Justice Report* and invite citizens' comments and feedback.

questions. In this case, a model developed to estimate existing and future regional traffic patterns and volumes was modified to predict how well current and proposed transportation investments serve low-income and minority populations.

- **Documenting the Review Process.** MORPC's *Draft Environmental Justice Report* thoroughly documents the methodology developed to carry out the agency's environmental justice review process. This is important because the report identifies a clear set of procedures for assessing future planning efforts from an environmental justice perspective. Although some of these procedures will undoubtedly be modified as refinements to the methodology are introduced, the report represents an important baseline. It also represents a potential learning device for MPOs elsewhere wrestling with the same issues.

Challenges Ahead

Incorporating environmental justice principles into regional transportation planning is an evolving area of practice, and it is only natural that MPOs seeking to address this mandate will encounter certain challenges. Some of the key challenges MORPC faces concern the limitations of the data used by the agency to carry out its analysis.

For example, MORPC's use of 10-year-old 1990 census data to identify the locations of target populations within the agency's planning area raises significant questions about the accuracy of the information. While not inappropriate, using this data places the burden on MORPC to update its analysis once new census data become available.

Equally important, it is often possible to cooperate with the State labor department, which is responsible for keeping and reporting administrative establishment employment and payroll data for the ES-202 program. This data set has confidentiality restrictions that present challenges in precisely pinpointing establishment locations. These limitations can frequently be overcome, however, with proper handling of confidentiality concerns. No other employment data set provides the ability to map emerging employment centers and illuminate the challenges presented by a spatial mismatch between job growth and population in such a timely and comprehensive fashion.

MORPC's use of travel-demand modeling to identify benefits and burdens of transportation system investments also reveals certain data limitations. For instance, the analysis concluded that target populations had access to at least as many jobs as other groups, yet no effort was made to determine what kinds of jobs these were and what percentage of them represented viable employment opportunities for low-income and minority workers. Although this type of information was not readily available to MORPC at the time it was developing its environmental justice methodology, it is important that such data limitations be acknowledged and addressed in future modeling efforts.

Additionally, MORPC's analysis of travel times and accessibility for public transit did not consider frequency of service. All bus lines were assumed to have uniform service, even if lack of evening or weekend service prevented individuals using certain bus routes from accessing jobs or other destinations.

Shortcomings such as these should not obscure the fact that MORPC has gone to great lengths to assess

the benefits and burdens of its transportation planning efforts, investing considerable time and resources in developing a methodology, carrying out the analysis, and documenting the process. Now, however, MORPC faces the additional challenge of holding its findings up to further scrutiny and, finally, incorporating the substance of the environmental justice review process into its transportation planning efforts.

Lessons Learned

- MPO staff may not be intimately familiar with the transportation needs and concerns of low-income and minority populations. MORPC's environmental justice review process benefitted from the knowledge that Environmental Justice Task Force members brought to the table.
- Methods for evaluating equity in transportation planning may be constrained by the absence of timely and appropriate data. MORPC's *Draft*

Implementing Title VI Requirements in Metropolitan and Statewide Planning:

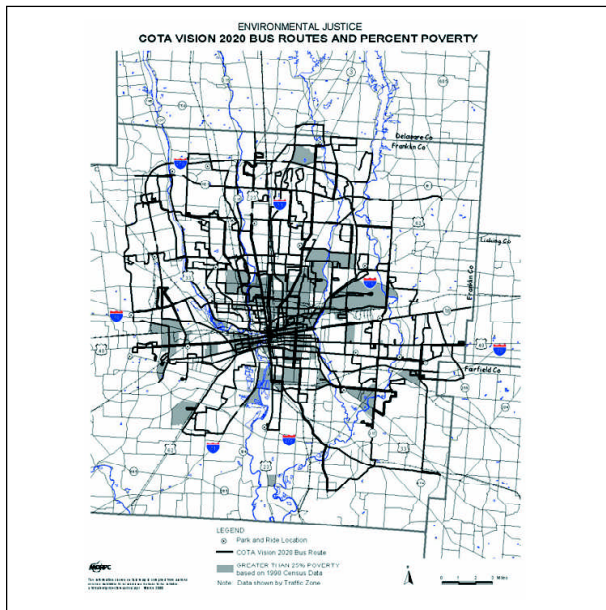
Service Equity

The October 7th memorandum directs FHWA and FTA staff to ask MPO's about their planning and analytical processes related to service equity:

- Does the planning process have an analytical process in place for assessing the regional benefits and burdens of transportation system investments for different socioeconomic groups?
- Does it have a data collection process to support the analysis effort?
- Does this analytical process assess the benefit and impact distributions of the investments included in the plan and TIP (or STIP)?
- How does the planning process respond to the analyses produced and are imbalances identified?

Environmental Justice Report is by necessity a work in progress whose findings and conclusions will need to be reassessed as new data sources become available.

- MORPC's *Draft Environmental Justice Report* is more than a summary of findings from GIS mapping and the application of evaluation measures drawn from a travel-demand forecasting exercise. The report gives an overview of the public-involvement processes, partnerships, and other initiatives undertaken by the MPO and its member agencies such as COTA. In so doing, the overview clarifies how environmental justice requirements are addressed in the overall regional transportation planning process. For example, the report details the role of MORPC's Columbus Area Transportation Coordination Program (CATCP), which was created to assist in providing transportation to employers located in the outlying areas that are not served by public transit. The CATCP planning process provides a forum for addressing complex regional transportation problems and forging workable partnerships to leverage the scarce resource of



The MORPC *Draft Environmental Justice Report* described activities to address minority populations undertaken by COTA, the region's transit agency, in coordination with MORPC.

Evaluating regional planning from an environmental justice perspective can't be a cookbook process. Different cities have different issues and concerns. The process needs to be tailored to local conditions.

— Robert Lawler
Assistant Director of Transportation
Mid-Ohio Regional Planning Commission

individual agencies. The CATCP facilitates a dialogue between private and public transportation providers, human service agencies, planning agencies, citizen groups, and employers.

- Taking a first step in a long journey, MORPC adopted a self-critical perspective about its findings and outlined several next steps to improve both its analyses and outcomes. In addition to exploring other methods and noncensus data sources, MORPC concluded that further public involvement outreach to both general and target communities would better promote an understanding of needs. More consideration was also required as to whether minority and disabled populations had special needs to address. Finally, MORPC concluded that, despite the strategic role of Columbus as a rail and freight hub, the agency's consideration of environmental justice as it relates to rail and truck freight needed to be more comprehensive and required further investigation.
- MORPC recognizes that considering Title VI/ environmental justice issues is more than a one-time exercise or occasional obligation; rather, it is a normal part of its mission to be fully integrated into its transportation planning and programming process. The agency further recognized that establishing and monitoring performance measures such as the ones discussed in this case study will prove beneficial in determining whether the target populations have been treated fairly in transportation programs and activities receiving Federal funds.

Benefits from Environmental Justice in Decision Making

For Low-Income and Minority Populations:

- MORPC's environmental justice review process produced a set of conclusions about the fairness of transportation access and travel in the Mid-Ohio region based largely on a modeling process developed by agency staff. By thoroughly documenting the review process in its *Draft Environmental Justice Report*, MORPC opened itself to the possibility of public scrutiny. Neighborhood groups and other organizations now have the opportunity to review the agency's findings, gauge them against their own experiences, and respond accordingly.
- MORPC's *Draft Environmental Justice Report* provides valuable information on regional demographics, accessibility, travel times, and highway investments for different segments of the population that may be useful in research efforts or other undertakings by neighborhood groups.

For the MPO:

- MORPC staff acquired a greater sensitivity to the demographic profile and spatial patterns of low-income and minority populations. This further clarified an understanding about the zones of employment

growth and residential development as well as possible avenues for additional needed research and resources.

- The MORPC staff became further engaged in a review of the transportation needs and concerns of low-income and minority populations. By working with Environmental Justice Task Force members from a cross section of institutions and agencies, MORPC provided a forum for exploring workable partnerships to discover opportunities as well as improve access for target populations.
- MORPC better understands how its transportation system and transportation plans serve low-income and minority residents. Meaningful efforts to incorporate the findings and recommendations of the report into future planning efforts will strengthen MORPC's support by target populations and better ensure that transportation plans are broadly inclusive. Transportation planning efforts that consider all segments of the population are more likely to enjoy broad-based support. Conversely, projects and planning efforts that ignore the concerns of certain groups may become the subject of vocal opposition.

References

Mid-Ohio Regional Planning Commission, *Draft Environmental Justice Report*, March 23, 2000.

———, *Vision 2020 Transportation Plan*, Spring 1998. Minutes of Environmental Justice Task Force meetings are available on the MORPC web site: www.morpc.org/trans/EnvirJust/envjust.htm

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