Chapter 17

Community Impact Assessment
CHAPTER 17

COMMUNITY IMPACT ASSESSMENT

INTRODUCTION
Community impact assessment is a process to evaluate the effects of a transportation action on a community and its quality of life. The assessment process is an integral part of project planning and development that shapes the outcome of a project. Community assessment can be both a quantitative and qualitative measure of items important to people. They may be social or economic impacts or even both. Consideration of such impacts is not only required by law but is simply good planning. This chapter will examine a representative sample of impacts on the community as a whole and identify the impacts on particular social groups where appropriate.

DEFINING ENVIRONMENTAL JUSTICE (EJ)
The concept of Environmental Justice (EJ) is rooted in Title VI of the Civil Rights Act of 1964 which prohibits discriminatory practices in programs and activities receiving federal funds. Transportation planning regulations issued in October 1993 require that metropolitan planning processes be consistent with Title VI. In February 1994, President Clinton signed an executive order which amplified the provisions of Title VI by requiring federal agencies to make “achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority and low income populations.” (Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations)

In compliance with this directive, OKI has incorporated EJ evaluation into its long range planning process. OKI has assembled an Environmental Justice Advisory Committee to develop processes and procedures to more effectively address the needs of various populations in the region. Specific groups in the OKI region identified for Environmental Justice evaluation include minority populations, low income populations, the elderly, disabled and zero car households. The definition (as applicable to 2000 census data) of each EJ population is as follows:

- Minority: persons from every racial category except White Alone plus all Hispanic persons
- Low income: persons below the poverty level
- Elderly: aged 60 or older
- Disabled: non-institutionalized persons aged 5 years and over with any disability
- Zero car households: occupied housing units for which there is no car
**EJ POPULATION CONCENTRATION IDENTIFICATION**

Identification of concentrations of EJ populations within the OKI region was achieved by establishing thresholds based on the averages of regional totals for the various target populations according to 2000 census data (Table 17-1).

<table>
<thead>
<tr>
<th>Population</th>
<th>2000 Total for OKI Region</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority Population</td>
<td>300,718</td>
<td>15.9%</td>
</tr>
<tr>
<td>Population in Poverty</td>
<td>173,901</td>
<td>9.4%</td>
</tr>
<tr>
<td>Elderly (60+ years)</td>
<td>290,037</td>
<td>15.4%</td>
</tr>
<tr>
<td>People with Disabilities</td>
<td>300,274</td>
<td>17.4%</td>
</tr>
<tr>
<td>Zero Car Households</td>
<td>71,694</td>
<td>9.8%</td>
</tr>
</tbody>
</table>

Using a methodology developed by the Ohio Department of Transportation, geographic areas exceeding the threshold values are classified as target zones for impact assessment purposes. The threshold is the regional average for that population.

Data for each EJ population were aggregated by Traffic Analysis Zone (TAZ), the geographic unit used in OKI’s transportation analysis. TAZs in which the percent of each EJ population exceeded its threshold were identified as containing concentrations of that population type. In order to evaluate the effects of the recommended transportation plan against the base conditions, the TAZ data for 2000 and 2030 were used.

Figures 17-1 through 17-5 on the following pages highlight the concentrations of the target populations by TAZ in the OKI region.

**PUBLIC INVOLVEMENT AND EJ COMMUNITIES**

In order to adequately include the target populations in long range transportation planning for the OKI region, particular efforts were made to involve EJ communities in public meetings. These efforts included:

- Posting notices in media geared toward the EJ populations
- Holding meetings in locations in close proximity to the EJ populations’ neighborhoods, served by public transit, and that are ADA accessible
- Enlisting the support and involvement of target population community leadership
- Creating comprehensible presentation materials and manning individual displays with knowledgeable staff in an open-house setting
Figure 17-1
Target Zones for Disabled Population

Legend
Disabled Population in 2000
- TAZ's Above Regional Average
Figure 17-2
Target Zones for Elderly Population

Legend
Elderly Population in 2000
- TAZ’s Above Regional Average

- BUTLER COUNTY
- WARREN COUNTY
- COUNTIES
- HAMILTON
- BOONE COUNTY
- DEARBORN COUNTY
- CLERMONT COUNTY
- KENTON COUNTY
- CAMPBELL COUNTY
Figure 17-3
Target Zones for Persons in Poverty

Legend
Persons in Poverty 2000
- TAZ's Above Regional Average
Figure 17-4
Target Zones for Minority Population

Legend
Minority Population in 2000
- TAZ's Above Regional Average
Figure 17-5

Target Zones for Zero Car Households

Legend

Zero Car Households in 2000

TAZ's Above Regional Average
- Holding meetings during both the day and evening to broaden accessibility

These meetings provided a forum for the public to participate in, review and comment on the proposed regional transportation plan.

Corridor studies, a major subset of the OKI plan, provide additional opportunities for EJ community involvement. Corridor studies permit a more detailed investigation of transportation needs and solutions as well as a vehicle for more comprehensive public involvement for all sectors of the impacted communities. OKI has conducted several corridor studies and currently is actively managing three corridor studies. Public involvement and Environmental Justice have been prominent issues in all of these studies. The projects that advance from the corridor studies to the regional transportation plan are the locally preferred alternatives selected by consensus of the community leaders, elected officials and public at large.

**PROJECT EVALUATION PROCESS**

For transit planning, input received from transit riders, community leaders and planners has a direct impact on the recommended alternatives. Evaluation of the alternatives was done by consensus of the planning committees with full input from the customers and the providers. These collaborative recommendations are incorporated into this long range plan.

In developing the recommended list of highway capacity projects such as widening existing lanes or building new roads for the plan, OKI utilized a project prioritization process. The process assigned numerical scores for 15 criteria. Impact on EJ communities was included as one of the criteria. Projects were evaluated on a planning level to determine whether the impacts on communities were significant and, if so, were they positive or negative.

**COMMUNITY IMPACT ANALYSIS OF THE 2030 REGIONAL TRANSPORTATION PLAN 2004 UPDATE**

Once the components of the regional transportation plan were solidified, OKI used a variety of quantitative performance measures and qualitative evaluation to assess whether components had any adverse or disproportionate impacts on the target populations as well as to ascertain whether benefits were equitably distributed. The measurement methodology employed by OKI to evaluate the impact of transportation planning on the target populations was developed partly from OKI's travel demand forecasting model process and partly using non-modeling techniques. In certain cases, different techniques are required for evaluation of highway and transit modes.
Three scenarios were prepared:

- The base year (2000)
- Baseline future representing conditions in the absence of a plan with only projects in the current FY 2004-2007 Transportation Improvement Program (TIP) and current transit service (2030 Baseline)
- A future plan with a financially constrained set of programs and projects (2030 Plan)

These measures compared the relative treatment of the EJ populations and non-EJ populations:

**Mobility**
- Travel Time
- Percentage of vehicle miles traveled in congestion

**Accessibility**
- Job opportunities within 20 minutes auto travel time
- Job opportunities within 40 minutes transit travel time
- Percentage of population within 40 minutes transit travel time of a college/university

**Reliability**
- Dependable transit service as measured by percent of on-time arrivals

**Safety**
- Transit with minimal risk of accident or injury as measured by reduced accidents

**Equity**
- Supply of transportation infrastructure and services
- Displacement of residents and business
- Social structure
- Expenditures on highway projects
- Expenditures on transit projects

**Other Regional Performance Measures**
- Environmental Impacts
- Financial impacts
- System performance indicators
Mobility

Looking ahead to the year 2030, congestion is expected to increase significantly. Mobility for travelers is expected to decline even with massive investments in both new and expanded highways and improved transit. However, the scenario will be much worse if we do nothing. Proposed improvements will lessen the severity of mobility deficiencies. For example, the average travel time to work by car for the general population is expected to increase from about 21 minutes currently to 28 minutes in 2030 if we do nothing. This amounts to about a 33% increase. Implementation of the plan reduces the time to 27 minutes, which is a 29% increase (Table 17-2).

Minority target zones will continue to enjoy lower travel times on average compared to all populations. The average travel time to work by car for minority target zones is expected to increase from about 16 minutes currently to 18 minutes in 2030 if we do nothing. This amounts to about a 12.5% increase. On average, implementation of the plan has no meaningful impact on work trips to and from minority target zones.

The average travel time to work by car for low income target zones is expected to increase from about 18 minutes currently to 22 minutes in 2030 if we do nothing. This amounts to about a 22% increase. On average, implementation of the plan has no meaningful impact on work trips to and from low income target zones.

Table 17-2
Comparative Travel Times to Work by Auto
(average travel time in minutes)

<table>
<thead>
<tr>
<th>Population Group</th>
<th>2000</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Populations</td>
<td>21.0</td>
<td>27.8</td>
<td>27.1</td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>16.0</td>
<td>17.6</td>
<td>17.5</td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>17.8</td>
<td>22.0</td>
<td>21.5</td>
</tr>
</tbody>
</table>

Auto travel time for non-work activities, which are assumed to occur primarily in the off peak time period, increases slightly for all populations; however, this increase is insignificant (Table 17-3).

Auto travel time to hospitals and universities is shorter for the EJ populations than the total population in the region. Travel times to the nearest shopping center are shorter from minority, elderly and zero car household target zones than the population as a whole and less than a minute longer for low income and disabled target zone populations under all three scenarios (Table 17-3).
Table 17-3
Comparative Non-Work Travel Times by Auto
(off peak period in minutes)

<table>
<thead>
<tr>
<th>Population Group</th>
<th>2000</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Populations</td>
<td>10.2</td>
<td>11.8</td>
<td>11.8</td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>6.6</td>
<td>7.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>7.5</td>
<td>8.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Elderly Target Zones</td>
<td>8.7</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Disabled Target Zones</td>
<td>9.0</td>
<td>10.5</td>
<td>10.4</td>
</tr>
<tr>
<td>Zero Car Household Zones</td>
<td>6.2</td>
<td>6.6</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>University</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Populations</td>
<td>12.0</td>
<td>13.6</td>
<td>13.5</td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>8.8</td>
<td>9.3</td>
<td>9.3</td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>8.7</td>
<td>9.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Elderly Target Zones</td>
<td>10.5</td>
<td>11.7</td>
<td>11.7</td>
</tr>
<tr>
<td>Disabled Target Zones</td>
<td>10.8</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>Zero Car Household Zones</td>
<td>7.8</td>
<td>8.4</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>Shopping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Populations</td>
<td>13.7</td>
<td>15.1</td>
<td>15.0</td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>9.4</td>
<td>9.7</td>
<td>9.7</td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>13.7</td>
<td>14.8</td>
<td>14.7</td>
</tr>
<tr>
<td>Elderly Target Zones</td>
<td>12.5</td>
<td>14.1</td>
<td>14.0</td>
</tr>
<tr>
<td>Disabled Target Zones</td>
<td>14.0</td>
<td>15.5</td>
<td>15.4</td>
</tr>
<tr>
<td>Zero Car Household Zones</td>
<td>11.4</td>
<td>12.0</td>
<td>11.9</td>
</tr>
</tbody>
</table>

**Congestion**

Congestion as measured by traffic volume to roadway capacity ratios (v/c) exceeding 0.85 will increase between 2000 and 2030. In 2000, for the total population in the region 42% of vehicle miles traveled (VMT) during peak travel times were under congested conditions. This is expected to increase to 58% in 2030 without plan implementation and to 57% with plan implementation. For populations residing in minority and low income target zones, the percentages of their peak period trips under congestion were higher than the total population in 2000, but these communities will benefit as well from the congestion-reducing facets of the long range plan (Table 17-4). Under the plan, peak period congestion will increase 10% for the region as a whole, 10% for trips originating in minority target zones and 11% for travelers from low income target zones.

A similar situation exists with daily trip congestion, which is a measure of the average percentage of miles traveled in congestion over the course of an entire...
day. While the percent of VMT under congestion will increase between 2000 and 2030 for all groups, implementation of the long range plan will likewise temper those increases for all groups.

Table 17-4  
Percentage of VMT Under Congestion

<table>
<thead>
<tr>
<th>Peak Period</th>
<th>Population Group</th>
<th>2000</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Populations</td>
<td>42%</td>
<td>58%</td>
<td>57%</td>
<td></td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>63%</td>
<td>72%</td>
<td>73%</td>
<td></td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>50%</td>
<td>60%</td>
<td>61%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Daily</th>
<th>Population Group</th>
<th>2000</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Populations</td>
<td>4%</td>
<td>11%</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Minority Target Zones</td>
<td>8%</td>
<td>21%</td>
<td>18%</td>
<td></td>
</tr>
<tr>
<td>Low Income Target Zones</td>
<td>6%</td>
<td>15%</td>
<td>11%</td>
<td></td>
</tr>
</tbody>
</table>

Accessibility  
Currently, SORTA and TANK provide good overall service from their respective service areas to the Cincinnati Central Business District (CBD). Central city neighborhoods, served by many routes and a large number of buses running at relatively short headways, enjoy very good radial access to the CBD. Suburban locations are served primarily by commuter service comprised of more express service but fewer runs.

Table 17-5 indicates that regional population served by current transit routes will drop between 2000 and 2030 even with recommended transit service expansion. This is due primarily to population decline in the City of Cincinnati. Employment served, on the other hand, will increase substantially. In order to serve more residents, transit must expand into areas not currently being served.

Table 17-5  
Population and Employment Served by Transit

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>998,790</td>
<td>926,881</td>
<td>988,025</td>
</tr>
<tr>
<td>Employment</td>
<td>708,245</td>
<td>823,056</td>
<td>852,207</td>
</tr>
</tbody>
</table>

The major recommendations in this plan – improved service, creation of hubs and light rail service – enhance accessibility for both EJ and non-EJ communities to all areas served by existing transit companies. Improved bus service on existing routes and new routes are recommended to improve accessibility to
areas not currently served well or at all. The new bus and rail service proposed in this plan provides enhanced connectivity. New transit hubs will make transit use easier, more efficient and safer.

The Central Area Streetcar improves mobility for members of the EJ communities. This is a circulator route that connects the Cincinnati and Northern Kentucky riverfront business, restaurant and entertainment areas for visitors and residents alike.

This plan successfully improves accessibility of residents of EJ communities to other parts of the region. Figures 17-6 to 17-10 following show an impressive coverage of fixed-route service to minority, low income, zero car households, elderly, and disabled populations. Not shown is the additional coverage by existing and proposed demand responsive and neighborhood circulators using smaller transit vehicles such as TANK’s Day Tripper, SORTA/BCRTA JobBus, SORTA’s Access, Clermont Area Regional Transit (CART), Warren County Transit and the Butler County Regional Transit Authority (BCRTA).

Public transit improvements, though modest in terms of percent of new dollars spent, provide significant enhancements to the overall accessibility to jobs, retail shopping and universities. Included in this plan’s recommendations are 11 new park-and-rides, 19 new transit centers, 16 new bus routes, 976 new service route miles, 81 new hours of service, 39 miles of right-of-way preservation for future use, and 24 miles of new rail line service.

**Reliability**
All the region’s transit operators provide very reliable service. TANK reports that 2004 on-time arrivals are an excellent 96.4%. SORTA reported a 93% on-time arrival rate for fiscal year 2000.

**Safety**
All the transit operators in the region operate very safe systems. In the year 2003, TANK reported an accident rate of 3.2 accidents per 100,000 miles for demand responsive service and 4.5 accidents per 100,000 miles for fixed-route service. Accident rates for SORTA were not available but are expected to be comparable.

**Equity**

- **Supply of Transportation Infrastructure and Services**
  Evaluation of the supply of roadway infrastructure is difficult. Urbanized areas of the region have a dense network of streets and highways (and high-density development) while some of the outlying areas have roadway systems which are essentially the same as they have been for many
Figure 17-6
Fixed Route Transit Access for Disabled Zones

Legend
- Transit Route
- Disabled Zones

Maps showing transit routes and disabled zones in various counties including Butler, Warren, Clermont, Hamilton, Boone, Dearborn, Kenton, Campbell, and Dearborn counties.
Figure 17-7
Fixed Route Transit Access for Elderly Zones

Legend
- Transit Route
- Elderly Zones
Figure 17-8
Fixed Route Transit Access for Poverty Zones

Legend
- Transit Route
- Poverty Zones

County Boundaries:
- Butler County
- Warren County
- Clermont County
- Hamilton County
- Boone County
- Dearborn County
- Kenton County
- Campbell County

Miles Scale:
0 2 4 8 12 16

North Star Reference
OKI - Ohio, Kentucky, Indiana
Regional Council of Governments
Figure 17-9

Fixed Route Transit Access for Minority Zones

Legend

- Red: Transit Route
- Pink: Minority Zones
Figure 17-10
Fixed Route Transit Access for Zero Car Zones

Legend
- Transit Route
- Zero Car Zones

Miles

0 2 4 6 8 10 12 14 16

Butler County
Warren County
Clermont County
Hamilton County
Boone County
Deerborn County
Kenton County
Campbell County
years. There is no evidence that any one group of citizens is over-served or under-served.

Transit supply and service clearly favor the urbanized areas where density of employment and population make bus service practical. EJ communities are well served as depicted in the Accessibility section above.

- **Displacement**
  Another measure of equity may be the number of families and businesses displaced during the implementation of transportation projects. OKI supports projects that minimize the impacts on all segments of the population and encourages appropriate mitigation measures when such impacts are unavoidable.

- **Social Structure**
  Care must also be taken to avoid not only displacement but also the damage to the social fabric of neighborhoods which can be caused when implementing transportation projects. Erecting physical and psychological barriers, whether intended or not, can destroy the cohesiveness of communities where once neighbors could interact or walk to the corner market and children could walk to school. OKI supports projects that minimize the impacts on quality of life issues such as these. Appropriate mitigation measures should be part of the project when such impacts are unavoidable.

- **Expenditures on Highway Projects**
  A third measure of equity is the dollar value of highway projects by area type. Analysis of the current Transportation Improvement Program (TIP) reveals that expenditures benefiting EJ target zones for capacity expansion type projects is about $735 million versus $33 million for non-EJ target zones. The proposed plan shows expenditures of $4 billion for projects related to EJ target zones and $76 million for non-EJ target zones. Both the TIP and plan scenarios show a large proportion of the dollars spent where congestion is most severe.
Figure 17-11
TIP and Plan Capacity Expansion Expenditures

TIP Capacity Expansion Expenditures

Plan Capacity Expansion Expenditures
• **Expenditures on Transit Projects**
  This plan proposes a modest increase in the share of dollars spent on transit projects. It is a plan that benefits the entire region and the EJ populations as well. The proposed bus service increases with new bus routes and better connectivity along with proposed rail service in the Eastern Corridor and Central Area Streetcar provide an equitable solution to improving the mobility to citizens of the region.

• **Other Regional Performance Measures**
  The table below provides a comparison of additional measures for comparing the existing scenario, 2030 base and the 2030 plan.

<table>
<thead>
<tr>
<th>Measure</th>
<th>2000</th>
<th>2030 Base</th>
<th>2030 Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC emissions (tons per day)</td>
<td>93.8</td>
<td>22.7</td>
<td>22.5</td>
</tr>
<tr>
<td>NOx emissions (tons per day)</td>
<td>174.6</td>
<td>20.5</td>
<td>20.5</td>
</tr>
<tr>
<td>Fuel consumption (gal/day)</td>
<td>2,942,000</td>
<td>3,474,000</td>
<td>2,482,000</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System cost per person per year</td>
<td>$67</td>
<td>$69</td>
<td>$129</td>
</tr>
<tr>
<td><strong>System Performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lane Miles</td>
<td>26,875</td>
<td>27,096</td>
<td>27,398</td>
</tr>
<tr>
<td>Daily vehicle miles of travel</td>
<td>47,042,100</td>
<td>67,469,900</td>
<td>67,677,800</td>
</tr>
<tr>
<td>Daily vehicle hours of travel</td>
<td>1,202,200</td>
<td>1,967,100</td>
<td>1,902,900</td>
</tr>
<tr>
<td>Daily transit ridership</td>
<td>109,700</td>
<td>116,700</td>
<td>124,200</td>
</tr>
<tr>
<td>Avg. peak highway speed (mph)</td>
<td>42</td>
<td>38</td>
<td>40</td>
</tr>
</tbody>
</table>

*Dearborn County not included

**SUMMARY**
This *OKI 2030 Regional Transportation Plan 2004 Update* addresses the transportation needs of the regional population, including target EJ populations. In fact, the improvements recommended directly provide increased transit opportunities to most of the target areas.

Highway spending for both the TIP and the recommended plan is more than equitable as evidenced by the charts above. These projects provide positive impacts for all segments of the population in terms of travel-time savings, emissions reductions, congestion relief and accessibility. Care must be taken to minimize the impacts of projects to neighborhoods.
REFERENCE