

# a matter of fairness

mitigating impacts, eliminating disparity, and  
ensuring equitable access

ROCOG's  
Transportation  
Infrastructure  
Environmental  
Justice  
Protocol

2016 Revision

Revised and updated April 8, 2016

Rochester-Olmsted  
Council of Governments

**A Matter of Fairness**

ROCOG Environmental Justice Protocol

Revised and updated April 8, 2016

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## Introduction

The title for this document is taken from the remarks of Ms. Jacquelyn Grimshaw, of the Center for Neighborhood Technology in Chicago, who was a panelist on the subject of environmental justice at the 2002 Annual Conference of the Transportation Research Board. Most of this document discusses the details of how ROCOG will quantify the extent to which ROCOG area transportation infrastructure providers are accomplishing the simple goal that Ms. Grimshaw set forth: to make our transportation decisions in such a way as to treat all people well and equitably. As she said, "... it is simply a matter of fairness."

Executive Order 12898, promulgated by President Clinton in 1994, directs federal agencies and recipients of federal funding to address "environmental justice" in the use of federal funding, ensuring that the impacts of funding decisions are equitably distributed across the neighborhoods in an urban area independent of income and race. To meet federal standards of environmental justice, funded agencies must identify and address, as appropriate, "... disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects ..."<sup>1</sup> of infrastructure investment on environmental justice neighborhoods. The Executive Order is attached as Appendix A.

In implementing environmental justice requirements in transportation programs, the U.S. Department of Transportation (USDOT) has issued an order, revised in May 2012, establishing policies and procedures for its own compliance with Executive Order 12898 (see Appendix B). In August 2012, the Federal Transit Administration provided the most recent policy guidance (FTA C 4703.1, hereafter referred to as the FTA Circular<sup>2</sup>) related to environmental justice for FTA grant recipients, including ROCOG.

Because ROCOG receives federal transportation planning funds and is involved in planning and programming of transit services and highway, pedestrian, and bicycle infrastructure construction projects that rely on federal funding, ROCOG is required to develop plans and programs in accordance with USDOT rules for environmental justice. Implementing agencies within the ROCOG area must also follow ROCOG environmental justice procedures for projects and programs relying on federal funding. In addition, ROCOG is subject to applicable provisions of the National Environmental Policy Act of 1969 and the Civil Rights Acts of 1964 and 1968, which also establish requirements for environmental justice. ROCOG area communities are also covered by Minnesota's Human Rights law (MS Chapter 363A), which forbids discrimination on the basis of "race, color, creed, religion, national origin, sex, marital status, disability, status with regard to public assistance, sexual orientation, and age." Finally, through the 21<sup>st</sup> Century Partnership Community Strategic Plan for Diversity and other community efforts, ROCOG area communities have made a commitment to creating "a community that welcomes diversity, and that provides a safe, non-discriminating environment with respect and opportunity for all." This commitment entails a commitment to fairly distributing the benefits and impacts of investments in transportation infrastructure and services.

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<sup>1</sup> US DOT Order 5610.2(a), page 3. See [https://www.fhwa.dot.gov/environment/environmental\\_justice/ej\\_at\\_dot/orders/order\\_56102a/dot56102a.pdf](https://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/dot56102a.pdf)

<sup>2</sup> See [http://www.fta.dot.gov/legislation\\_law/12349\\_14740.html](http://www.fta.dot.gov/legislation_law/12349_14740.html)

**The US Environmental Protection Agency defines environmental justice in this way:**

*Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.*<sup>3</sup>

Further definitions of environmental justice address not only eliminating disparities in the share of negative impacts of decisions (in ROCOG's case, decisions about transportation systems), but also eliminating disparities in the distribution of program benefits. For ROCOG, environmental justice entails both approaches. The FTA Circular encourages MPOs to address environmental justice in this way.

ROCOG is committed to adhering to principles of environmental justice in its planning and programming. ROCOG's adopted policies dealing with disadvantaged communities, citizen participation, and equitable access in transportation investment decisions reflect environmental justice principles. The purpose of this Protocol is to document the techniques ROCOG area transportation agencies will rely on to analyze and report the environmental justice aspects of implementing ROCOG plans and programs.

**The concept of environmental "injustice" depends on three factors:**

- the existence of concentrations of disadvantaged populations in identifiable geographic areas;
- the presence of transportation system benefits, adverse impacts, or inadequate access; and
- the distribution of those transportation characteristics such that disadvantaged populations experience a lower share of benefits or a higher share of adverse impacts, or disproportionately experience inadequate access.

Analyzing environmental justice depends on properly identifying neighborhoods with disadvantaged populations, identifying benefits and impacts of transportation investments, determining if there is disproportionate impact or benefit, and identifying gaps in access.

This document updates the environmental justice approach and procedures presented in the 2002 Protocol. ROCOG will use the most current Census data<sup>4</sup>, current real property data from local sources, and current land use information on locations of special populations (group homes, housing with high concentrations of disabled individuals, and so on) as its basis for identifying the locations of neighborhoods with environmental justice populations. Data from these sources will be aggregated in blocks, clusters of Census blocks with similar characteristics, or block groups (depending on their dimensions) for the purposes of defining neighborhoods. When road

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<sup>3</sup> From the U.S. Environmental Protection Agency Environmental Justice site at <http://www.epa.gov/environmentaljustice/>.

<sup>4</sup> The most current data will include the decennial Census data as well as the most recent available five-year American Community Survey data, which is released annually.

authorities use this Protocol to analyze projects, the neighborhood will depend on the influence area of the project.

### Access Gaps

In addition to providing a procedure for updating the data, this document broadens the environmental justice analysis by identifying concentrations of households and individuals with significant access limitations. Access limitations affecting households and individuals are the product of combinations of circumstances reflecting

- the individual (such as youth, disability, and off-peak hours of employment);
- the household (such as vehicle ownership, income, and the number of workers per vehicle);
- the neighborhood (distance from jobs, groceries, schools, parks, and so on); and
- infrastructure (for example, the condition and adequacy of roads; presence or absence and condition of sidewalks, bicycle facilities, and curb-cuts; and the distance from, timing, and frequency of transit service).

An equitable transportation system invests in strategies to reduce or eliminate inadequate access, reflecting the mix of these circumstances. Seen in this way, we can examine transportation systems in a way similar to the way we examine schools from the “no child left behind” perspective. Just as some school populations experience an achievement gap, so some individuals and households experience an access gap. And, just as some income, language, and minority groups are disproportionately represented among children left behind, so too with transportation. Finally, just as some schools do better or less well at addressing achievement gaps, so some neighborhoods and infrastructure systems do better or less well at addressing access gaps.

### ROCOG Commitments

Four groups will be analyzed for inequitably distributed benefits and impacts and access limitations, including racial and ethnic minorities, immigrants and refugees, persons with disabilities

#### **environmental justice and access gap populations**

- 1 minority race & Hispanic/Latino ethnicity
- 2 immigrants and refugees/limited English proficiency
- 3 persons with disabilities
- 4 persons of low income
- 5 *children (access gaps only)*

(many of whom are elderly), and low income persons.<sup>5</sup> A fifth group, children, will be analyzed solely in terms of access limitations. This approach is consistent with the intent of the Civil Rights Act of 1964 and Executive Order 12898, as well as with the FTA Circular.

ROCOG is committed to

- avoiding or mitigating adverse impacts wherever practical;

<sup>5</sup> Other groups included in the lists applying to public accommodations and public services covered by Minnesota Statutes Chapter 363A.02 (the Human Rights Act) are not addressed as neighborhood populations in this environmental justice policy because those groups are not identifiable as concentrations in neighborhoods. We have not considered elderly status as a factor in transportation services except when it is associated with low income or disability.

- involving representatives of affected populations in identifying issues regarding the distribution of benefits and impacts and gaps in access;
- involving affected residents in developing plans, programs, projects, and mitigation measures;
- ensuring that adverse impacts that cannot be mitigated are not concentrated in environmental justice neighborhoods; and
- distributing transportation system investments equitably to all neighborhoods and communities in the ROCOG area on the basis of need, without regard to race, income, national origin, age, or other attributes.

### *Summary of Steps in Environmental Justice Analysis*

To implement its environmental justice commitments, ROCOG has approved the following standard procedures for identifying environmental justice concerns at the project, program, and plan levels.

1. First, identify neighborhoods with significant **environmental justice populations**.
2. Second, identify areas where there are significant concentrations of households or individuals with **inadequate access**.<sup>6</sup>
3. Third, identify the geographic distribution of benefits and adverse impacts from transportation infrastructure investments. Benefits from transportation investments include improved access and mode choice, reduced cost of access (in travel time, fares, operating expenses, and so on), reduced congestion and delay, elimination or reduction of hazards, enhanced development opportunity and property value, and enhanced aesthetic values (as in the case of landscaped boulevards and medians, for example). Adverse impacts of investing or withholding investments in transportation can include poor or worsened access to employment, amenities, and neighborhood and community support facilities; damage to or elimination of environmental, historic, or aesthetic amenities in the neighborhood; increases in noise and vibration; deterioration of air and water quality; decreased convenience or increased travel time; and reduced property values.
4. Final Steps by Process
  - For **Long Range Transportation Planning and Corridor Studies**:
    - identify measures to correct access deficiencies;
    - evaluate the measures developed to correct other system deficiencies (condition, safety, capacity, and so on) to ensure that benefits are equitably distributed;
    - evaluate the distribution of any anticipated adverse impacts; and
    - ensure that mitigation measures are feasible.
  - For the **Transportation Improvement Program**:
    - evaluate the priority and timing of projects to ensure that transportation investments address access deficiencies and equitably distribute project benefits.

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<sup>6</sup> ROCOG excludes the residents of the Federal Medical Center from its analyses, since state and local transportation decisions do not affect their transportation options. Other group quarters populations (nursing home residents, group homes, and so on) are addressed.

- For **project design**: refine the selected alternative so that it
  - maximizes project benefits
  - increases adequacy of access for populations with inadequate access, if applicable,
  - eliminates (if possible) or minimizes adverse impacts, and/or
  - mitigates adverse impacts where they cannot be avoided.

Transportation authorities should identify such measures cooperatively with affected neighborhoods and should engage residents in identifying appropriate mitigation in all neighborhoods, including those with significant environmental justice populations (especially populations with limited English proficiency)<sup>7</sup>.

In many cases, transportation projects do not generate significant adverse impacts. In many other cases, environmental impacts and environmental justice issues can be addressed without extensive study. Generally, ROCOG road authorities should conduct project-specific environmental justice analysis at a qualitative level except when a project triggers an Environmental Impact Statement (EIS). Consistent with the need to match the geographic scale of transportation impacts (and to avoid distorting the results by combining heterogeneous populations), the expense of analyzing impacts warrants using data that is readily available at a level of geographic aggregation easy to assemble. However, when detailed analysis is necessary, the cost of such analysis is very small in comparison to the costs of transportation systems, and the benefits of well-designed systems justify the required investment.

If area communities had even distributions of environmental justice populations, an equitable distribution of transportation benefits and impacts would automatically result. This is not the case, however, as is shown in Appendix C. Regionally, low income and racial minority populations are concentrated in Rochester. Although Rochester is less segregated than most Midwestern communities, within the Rochester area, certain neighborhoods have relatively high proportions of households of lower income and minority race. The concentration of population by race appears to be chiefly the result of the separation of rental housing and lower cost housing from higher cost housing. Segregation of households by income is undesirable by itself, but in addition, housing style segregation will likely result in increasing segregation by race.

Of area jurisdictions, only Rochester has formally committed to a policy of integrating affordable housing. Olmsted County and other ROCOG jurisdictions should also make that commitment. An equitable region is made up of inclusive, not exclusive, communities. Inclusive communities in turn are made up of inclusive, not exclusive, neighborhoods.

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<sup>7</sup> See ROCOG's Public Involvement Policy for a detailed description of outreach measures, at [http://www.co.olmsted.mn.us/planning/rocoG/Pages/Current2007ROCOGPublicInvolvementPolicy\(PIP\).aspx](http://www.co.olmsted.mn.us/planning/rocoG/Pages/Current2007ROCOGPublicInvolvementPolicy(PIP).aspx).

## Identifying Environmental Justice Neighborhoods

### *1.1 Appropriate Geographic Scale*

Most federal agencies and MPOs appear to have settled on Census block groups or Census tracts as the geographic unit of analysis, primarily because the Census reports income at levels no smaller than block groups. On the fringes of Rochester and in the small cities and rural areas of Olmsted County, using areas as large as tracts and most block groups results in the following types of errors:

- *Aggregation errors:*
  - In the ROCOG area, many Census block groups and most Census tracts have heterogeneous populations, such that concentrations of low socio-economic status are averaged out; and
  - Similarly, in some cases, while the average values reported for a tract or block group may indicate that it is made up of environmental justice neighborhoods, some of the included areas may not be.
- *Transportation impact scale:*
  - Since many transportation impacts occur within 1000 feet of a transportation facility, all Census tracts and most Census block groups are at too large a scale to be useful.

Where population densities are high and the dimensions of block groups are small<sup>8</sup> (in the core of the urbanized area of Rochester), it is sometimes appropriate to use Census block groups to identify environmental justice neighborhoods.

#### 1.1.1 Aggregation Errors

Aggregation of dissimilar areas into single units of analysis can lead to two different types of errors: inclusion of non-EJ neighborhoods as EJ neighborhoods (the less likely of the two), and exclusion of EJ neighborhoods from EJ classification. As an example of the latter error, block group 1 of tract 16.03, along the west side of TH 63 in Cascade Township, includes 457 housing units, of which 266 are manufactured homes in parks. The average housing value of single family homes in the block group is higher than the ROCOG area average. The proportion of persons in poverty in the block group is within 1% of the County average. Nevertheless, while the standard approach might conclude there are no environmental justice populations within the block group, we can be reasonably confident based on Census PUMS<sup>9</sup> housing and household data that the two manufactured home parks include a significant number of lower income households. School district data from the mid-2000s confirm this conclusion. There are similar geographically large and heterogeneous block groups throughout Olmsted County.

An example of the former type of error is Census Tract 9.03, which has an overall high level of poverty, but which is made up of three block groups with a range from 2% to 39% in persons in poverty. Using tract data to identify environmental justice neighborhoods in this area would include neighborhoods without significant environmental justice populations. A block group in

<sup>8</sup> ROCOG uses a distance from residential areas in the block group of no more than 1,500 feet from major transportation facilities to identify block groups small enough to be useful in this analysis.

<sup>9</sup> According to the 2008-2012 ACS PUMS data for Olmsted County, 40% of households residing in mobile homes had incomes less than two times the poverty level, compared to 11% of households living in conventional single family detached housing.

the Stewartville area (with an area of 7.4 square miles) presents a similar issue. It includes a number of blocks with very different housing and household characteristics.

Research has established that housing characteristics correlate well with socio-economic status,<sup>10</sup> so where we have a wide variation in housing characteristics, for example, we also have wide variation in socio-economic status. Other studies analyzing aggregation errors comparing Census data with individual sources of socio-economic status conclude that block group, tract, and zip code level data significantly misrepresent individual socio-economic status.<sup>11</sup>

#### 1.1.2 Transportation Impacts:

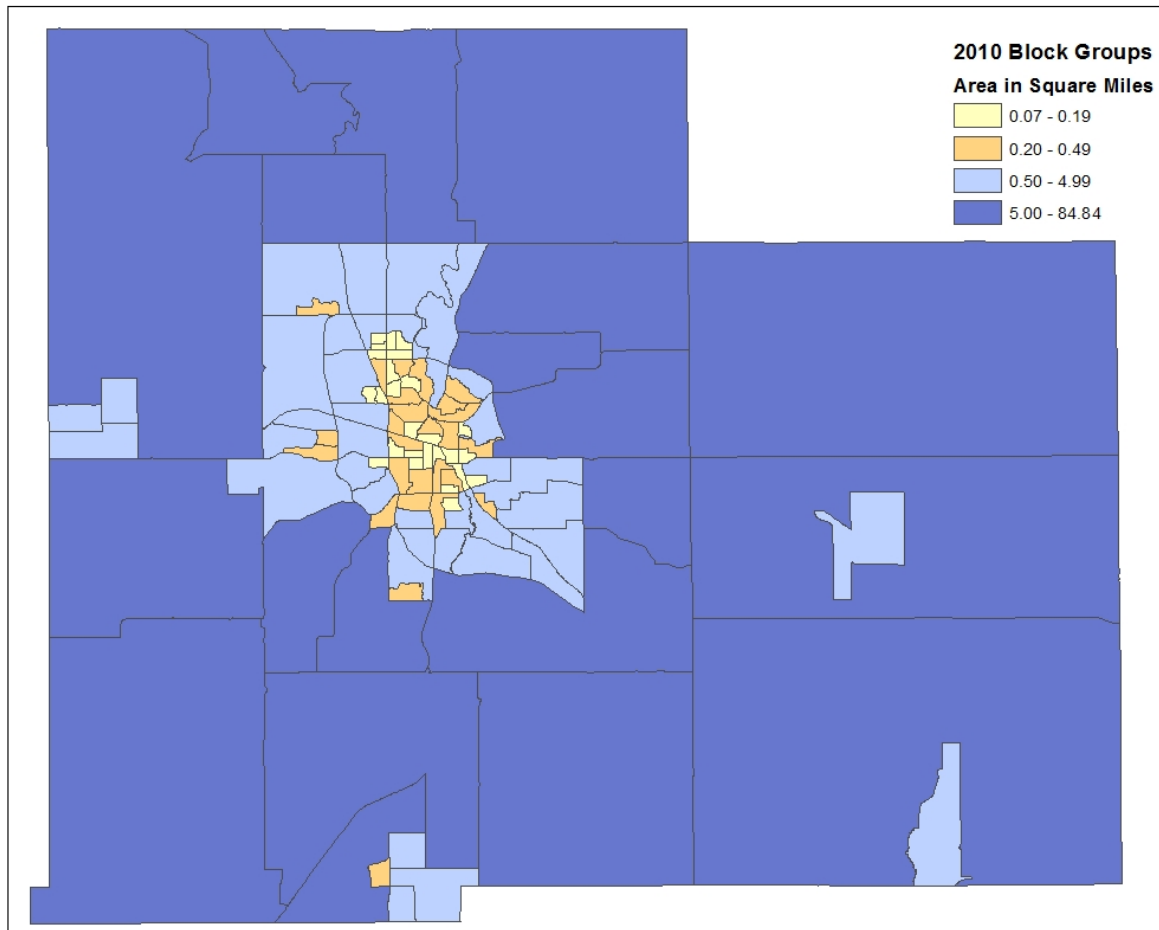
Numerous studies of the noise and air quality impacts of transportation facilities indicate that many of the most significant impacts occur generally within roughly 1,000 feet (one or two blocks) of the transportation facility. The analysis of the proposed DM&E expansion provides an example. That analysis concluded that noise from the proposed 37 trains per day would fall below thresholds of concern beyond 1,100 feet (roughly two blocks) from the tracks and that vibration impacts would extend only 200-300 feet from the tracks (less than one block). Figure 1 shows the scale of Olmsted County's 2010 block groups, twenty of which are over five square miles in area.

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<sup>10</sup> See, among others, Development and Initial Testing of a New Socioeconomic Status Measure Based on Housing Data, Young J. Juhn, et al, Journal of Urban Health, October 2011; 88(5)933-944.

<sup>11</sup> A 2012 study found that block group level classification of socio-economic status (SES) misclassified 31% of survey respondents in the highest income class as being in a low SES class and misclassified 27% of the lowest income respondents as being in a high SES category. Comparison of Individual vs. Area-level Socioeconomic Measures in Assessing Health Outcomes of Children in Olmsted County, MN, Maria Pardo Crespo, et al, Journal of Epidemiology and Community Health. Submitted 7/12/2012.





**Figure 1: 2010 Census Block Groups**

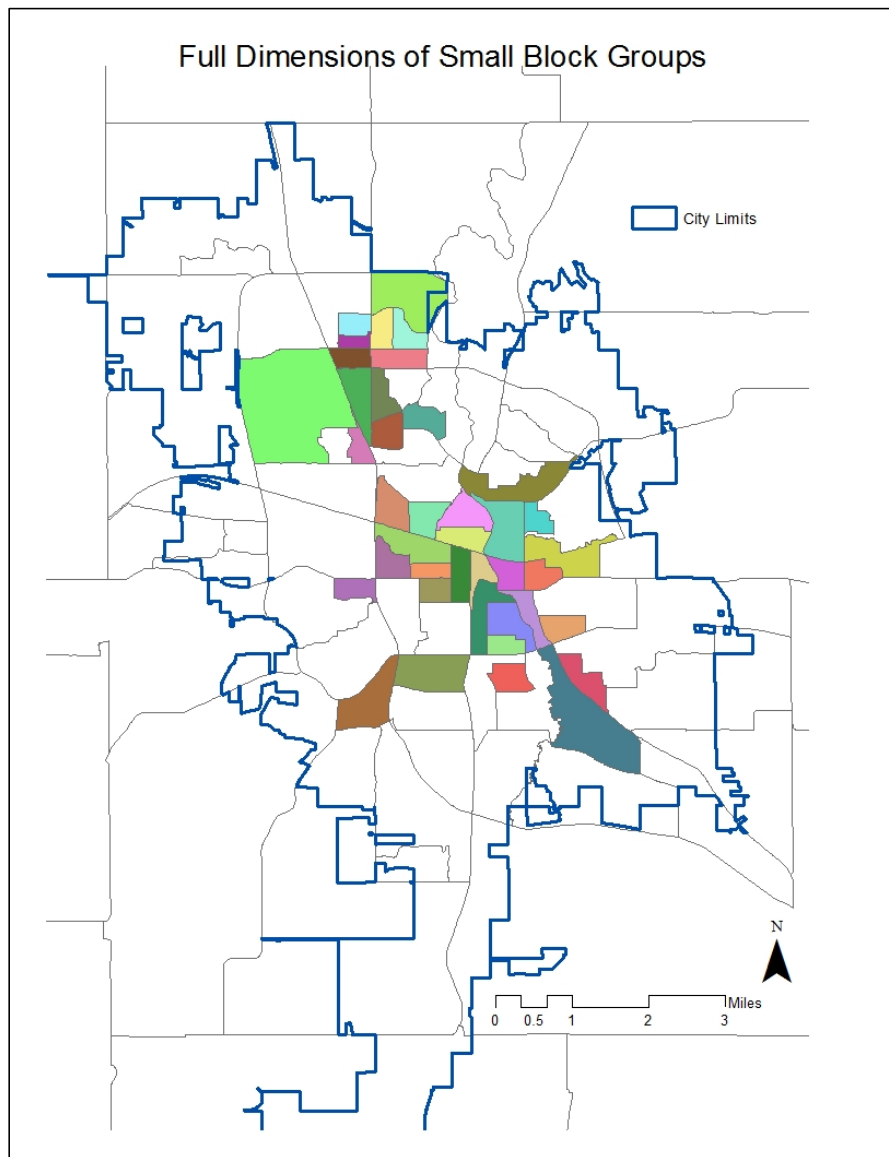
Based on these considerations, ROCOG has determined that it is usually preferable to identify neighborhoods using Census blocks as our units of analysis, rather than block groups or tracts. At the project level, analysts can define ad-hoc neighborhoods in part by their relationship to a particular transportation project. For the purposes of environmental justice analysis, ROCOG defines a “neighborhood” at the project level as

*an area with identifiable geographic boundaries and neighborhood features, potentially affected by a transportation project.*

The major difficulty introduced by this approach is the problem of determining poverty and other income information for areas smaller than reported by the Census. ROCOG uses the relationships between income and readily available household and housing characteristics derived from Census Public Use Micro-Sample data (described in Appendix D) to estimate income distributions for geographic areas for which the Census does not report income. In addition, where a block group is geographically compact, relatively homogeneous, and meets any of the thresholds for classification as an environmental justice neighborhood, the entire block group will be classified as an environmental justice neighborhood.

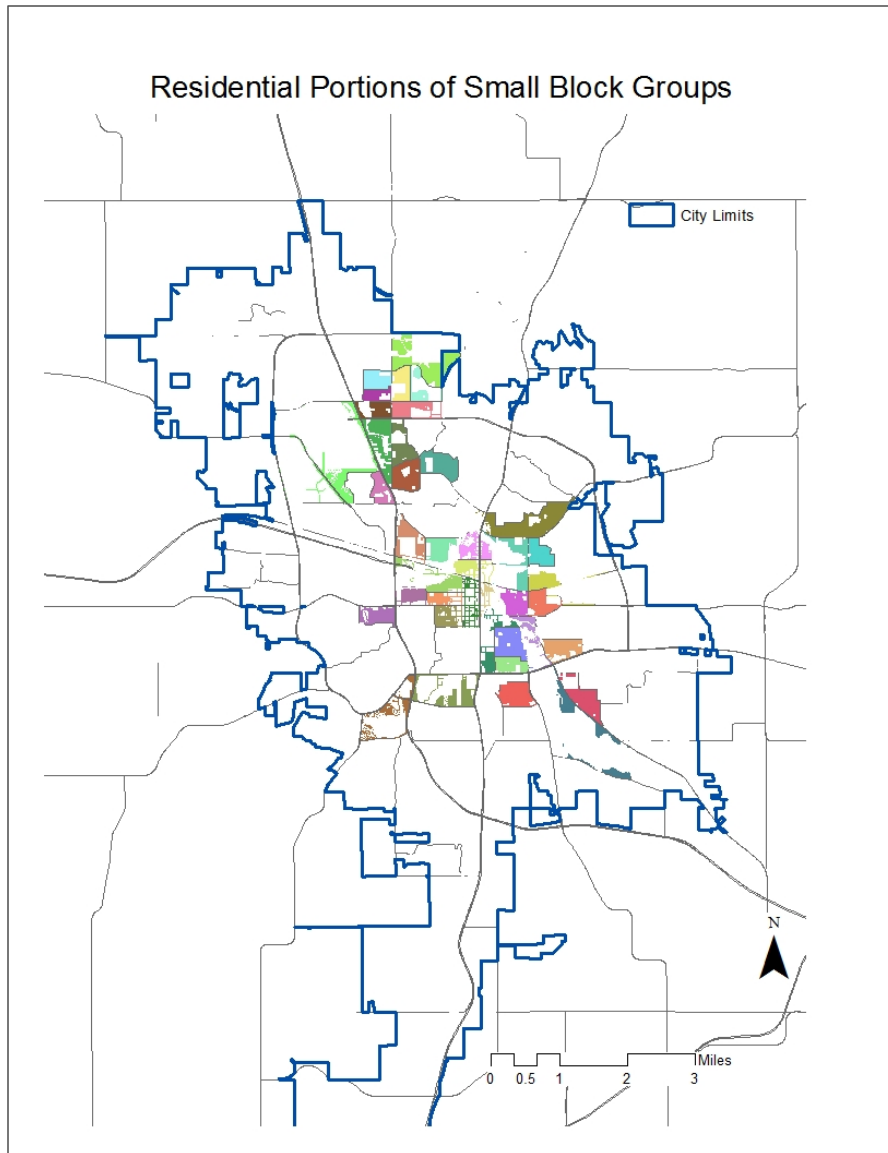
Of the 111 block groups in Olmsted County, 40 avoid issues with identifying transportation impacts, based on a maximum separation of residential development from potential

transportation impacts of not more than roughly 1500 feet.<sup>12</sup> The following two maps show the “small” block groups total area and their residential portions. Rochester is the only jurisdiction that has block groups for which all residential development is located within 1,500 feet of major transportation facilities.



**Figure 2 All Small Block Groups**

<sup>12</sup> In some cases flood plains, industrial development, parks, or other features are included in the block group. For example, Block Group 4 in Tract 14.01 is 1.8 square miles in area, but the residential portion of the block group is only one tenth of a square mile.



**Figure 3 Residential Portions of Small Block Groups**

### ***1.2 Defining “Significant Environmental Justice Populations”***

The ROCOG environmental justice analysis protocol reflects a broad range of populations consistent with the suggestions in the FTA Circular. Where analysis relies on non-Census data to identify environmental justice populations, we will generally aggregate the data at the block level.

#### ***1.2.1 Defining “Significant Environmental Justice Populations” on the Basis of Race and Ethnicity***

Census data from the 2010 full count Census, updated annually with the Census American Community Survey, provides information on populations of racial and ethnic minorities. The

2010 Census data is readily available by block, while the American Community Survey data is available at block group and higher levels.

Minority population growth made up over 50% of Olmsted County's population growth and almost 60% of the Rochester – Four-Township Area<sup>13</sup> growth in the 2000-2010 decade (see Table 1). Such rapid growth makes it important to maintain current information on the distribution of minority populations at as fine a level of geographic detail as possible. As the years go by, and new developments create new blocks, ROCOG will rely on ACS data and real property data to estimate the distribution of minority populations, confirmed by school district data if it becomes available.

**Table 1 Population Growth 2000-10 by Race/Ethnicity**

Share of Growth by Group	Olmsted County	Rochester-Four Township Area	Balance of Olmsted County
White, not Hispanic or Latino	48.8%	41.2%	87.9%
All Minority Population	51.2%	58.8%	12.1%
Hispanic or Latino	15.6%	17.4%	6.6%
Black Alone, not Hispanic or Latino	17.3%	20.8%	-0.3%
Asian Alone, not Hispanic or Latino	12.5%	14.5%	2.6%
Other Minority, not Hispanic or Latino	5.7%	6.2%	3.2%
Share of All County Growth	100.0%	83.6%	16.4%

### 1.2.2 Defining “Significant Environmental Justice Populations” on the Basis of Language and Country of Origin

The Census American Community Survey provides information on populations of persons of foreign birth and persons of foreign language, available at block group and higher levels. As the years go by, and new developments create new blocks, ROCOG will rely on ACS data and real property data to estimate the distribution of immigrant populations, confirmed by school district data if it becomes available. From 2000 to 2013, international migration accounted for over 80% of Olmsted County's net migration and roughly 30% of total population growth,<sup>14</sup> making it important to track international populations for purposes of environmental justice analysis. The population of students speaking languages other than English in the home has grown correspondingly rapidly, from 2,511 in 2001 to 4,392 in 2014, an increase of 75%.<sup>15</sup>

According to the 2009-2013 ACS Five-Year Estimates, one in eight Olmsted County residents over 5 years of age speaks a language other than English at home, of whom 41% (roughly 7,000 individuals) “speak English less than very well.”<sup>16</sup> Over half of this population is concentrated in just 15 block groups in Rochester.<sup>17</sup>

<sup>13</sup> The Rochester – Four-Township Area includes the City of Rochester and the four adjacent townships of Cascade, Haverhill, Marion, and Rochester Township. Because the boundary of the Rochester Urbanized Area changed between 2000 and 2010, we have included all of the population of these jurisdictions in the figures in the table. We use the Urbanized Area figures for calculating thresholds of concern (below).

<sup>14</sup> US Census Bureau, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2013 and prior years.

<sup>15</sup> Minnesota Dept. of Education, file accessed at <http://w20.education.state.mn.us/MDEAnalytics/Data.jsp>

<sup>16</sup> U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Estimates Table B16004 – AGE BY LANGUAGE SPOKEN AT HOME

<sup>17</sup> See Appendix C for measures of segregation of this and other groups in the area.

### 1.2.3 Defining “Significant Environmental Justice Populations on the Basis of Disability”

The Census collects data on disability through the ACS. The best available sources of disability information for areas smaller than Census block groups will be real property data and estimates based on age. Using the incidence of disability by age, smaller area counts or estimates of population by age, and real property data on group quarters housing and senior housing, we can estimate the incidence of disability in an area of analysis.

According to the 2009-2013 ACS Five-Year Estimates, roughly one in twelve non-institutionalized Olmsted County residents had a disability (roughly 11,700 individuals).<sup>18</sup> The disabled population is fairly widely distributed throughout Olmsted County, with most tracts having between 5% and 15% of their population with at least one disability. The exception is Census Tract 1, the downtown Rochester tract, where 38% of the population has a disability. This is due to a concentration of apartment buildings designed for disabled residents and/or seniors. According to the Census ACS data, persons over 65 are over 4.5 times as likely to have a disability as persons who are 18 to 64 years of age. On this basis, blocks with more than 66% of population over 65 are likely to have concentrations of disabled persons meeting the environmental justice threshold.

### 1.2.4 Defining “Significant Environmental Justice Populations” on the Basis of Income

The FTA guidance defines “low income” to mean “any person whose ... household income is at or below the Department of Health and Human Services poverty guidelines.”<sup>19</sup> FTA encourages MPOs to use locally relevant measures of income also, such as those relying on a ratio to area median income. Since 2002, ROCOG has applied this approach to examining income, for three reasons:

- Poverty measures currently do not reflect the local cost of living, but instead are based on national averages for household budgets of different sizes, depending chiefly on the cost of food. Where an area’s median income has an effect on prices of other necessities, such as for child care and housing, the poverty level understates family budget stresses. Since transportation is a significant element in household budgets, we can use data on housing cost stress to identify areas where transportation alternatives would be helpful to alleviate these stresses. Based on housing, transportation, child care, food, and health care costs, the estimated income needed to live without subsidy in the City of Rochester is roughly two times the official poverty level.<sup>20</sup>
- If poverty were the only criterion to address income disparities, communities without populations with income below poverty could not have an income-based environmental justice problem. In such a community, however, if there were a consistent bias adversely impacting lower income neighborhoods and favoring higher income neighborhoods, there would be an environmental justice concern on the basis of socioeconomic status according to EPA’s definition.

<sup>18</sup> U.S. Census Bureau, 2008-2012 American Community Survey 5-Year Estimates Table S1810 – DISABILITY CHARACTERISTICS

<sup>19</sup> FTA Circular C4703.1, August 15, 2012, page 7.

<sup>20</sup> Massachusetts Institute of Technology Living Wage Calculator, <http://livingwage.mit.edu/places/2710954880>, compared to poverty levels by household size by the author.

- The smallest geographic area for which poverty is reported is the block group, which for reasons identified above sometimes results in aggregation errors and/or distances too large to reflect transportation impacts. Alternative measures relying on local information or on other block-level Census data related to income provide a higher level of geographic precision. For example, while the ACS 2010-2014 reported proportion of female headed householder families ranges from 0% to 24% for block groups, the range for blocks in the 2010 Decennial Census was from 0% to 100%.

### 1.3. Identifying a “Threshold of Concern”

A neighborhood is considered to be an environmental justice neighborhood if it has "significantly higher proportion" of an environmental justice population. As a matter of convenience, some federal agencies have defined “significantly higher” as being ten percent higher than the community average. This approach results in unreasonable conclusions, so that when a minority proportion is low (say, 2%), the threshold becomes six times the community average, while if it is high (say, 40%), the threshold is only 25% higher than the community average. For indicators for which the minority proportion is under 15%, ROCOG identifies as the threshold the proportion that lies in the 90<sup>th</sup> percentile or higher of block groups. Where the minority proportion is above 15% (as with the “all race/ethnic minority” combination for race and ethnicity), the 80<sup>th</sup> percentile is the threshold.<sup>21</sup> For income-related measures, the threshold applied to block groups is the 80<sup>th</sup> percentile (which, for the proportion in poverty, is the same as the 90<sup>th</sup> percentile in the 2000 Census).

The table below indicates the threshold for each of several minority groups, along with minority percentages for three areas, Olmsted County (the full ROCOG planning area), the Rochester Urbanized Area (roughly equivalent to the Rochester and four township area), and the balance of Olmsted County.

**Table 2 Minority Proportions & Environmental Justice Thresholds**

Measure	Olmsted County %	Urbanized Area %	Balance of County %	EJ Threshold
Black (sub-Saharan & African American) (1)	4.8%	5.8%	0.4%	10.9%
Asian or Pacific Islander (1)	5.4%	6.5%	0.9%	10.1%
Hispanic – Latino (1)	4.2%	4.9%	1.5%	8.7%
All race/ethnic minority (1)	16.6%	19.6%	3.8%	27.0%
Households w/ persons with a disability(2)	16.1%%	16.5%	14.7%	20.2%
Persons with incomes below poverty (2)	8.0%	9.3%	4.2%	24.0%
Persons with income below 2 x poverty (2)	22.7%	25.5%	14.7%	41.8%
Persons 5+ years old speaking a language not English (2)	12.6%	16.0%	2.7%	26.0%
Foreign Born Population (2)	9.7%	11.8%	1.2%	20.8%

(1) U.S. Census Bureau 2010 Census full count

(2) U.S. Census Bureau American Community Survey 2009-2013 Five Year Estimates

<sup>21</sup> We use the 90<sup>th</sup>ile level for populations with small minority proportions in the community to avoid overemphasizing random effects in population distribution. We use the 80<sup>th</sup>ile level where random effects on concentration of population are lower. This approach also reflects the proportionally larger margins of error in ACS data for small minority populations.

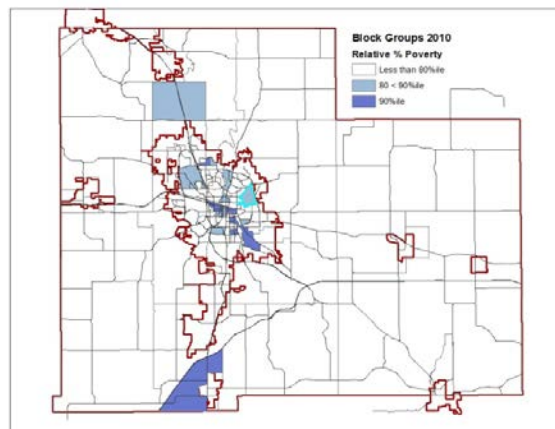
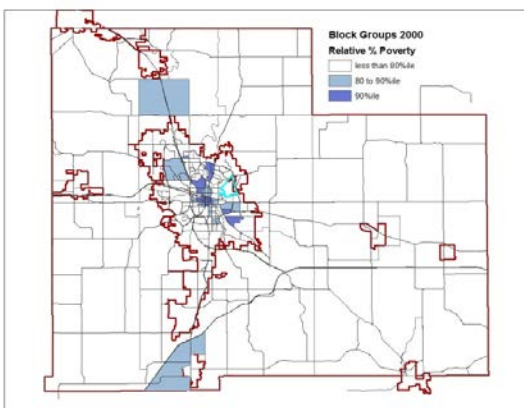
## 1.4 Mapping Environmental Justice Neighborhoods

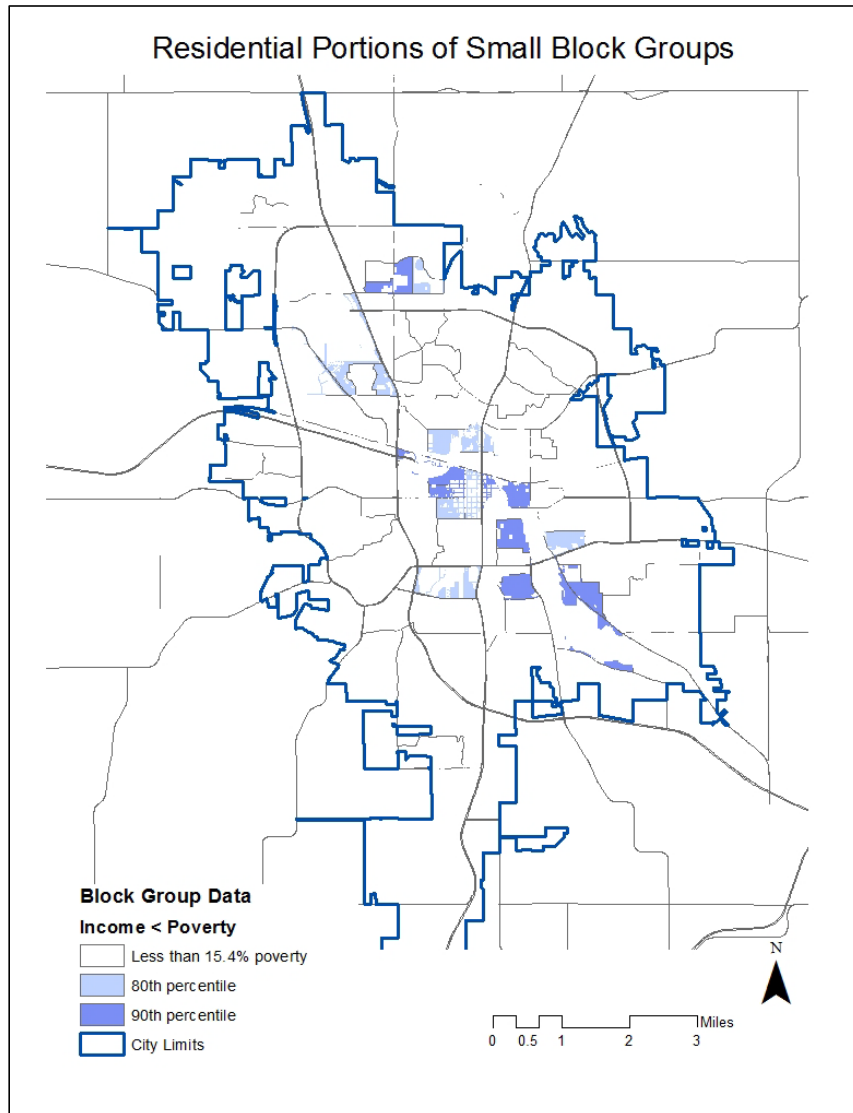
### 1.4.1 Lower Income Neighborhoods Based on Census Data

Census ACS data from the 2009-13 five-year estimates are readily available on the internet. The distribution of poverty by block group among persons in households ranges from 0.0% to 42%, with the top 10% having rates over 24.0%. The household population with incomes below two times the poverty level ranges by block group from 0% to 79%, with the top 20% of block groups having proportions over 41.8%.<sup>22</sup> Note that the prevalence of poverty has increased, so that while only 10% of block groups had over 15% of households in poverty in 2000, as of the 2013 five year ACS data, 20% of block groups met that threshold.

Of the 40 block groups with dimensions such that they avoid disguising transportation impacts, 22 qualify as environmental justice neighborhoods on the basis of income. Six of these qualify on the basis of being in the 90<sup>th</sup> percentile of proportion of persons in poverty and sixteen additional block groups (that do not qualify on the basis of poverty alone) are in the 80<sup>th</sup> percentile of proportion of persons within two times the poverty level. Of the sixteen, ten are above the 80<sup>th</sup> percentile for the proportion of persons in poverty. The following maps show the income-related data for the residential portions of those small block groups.

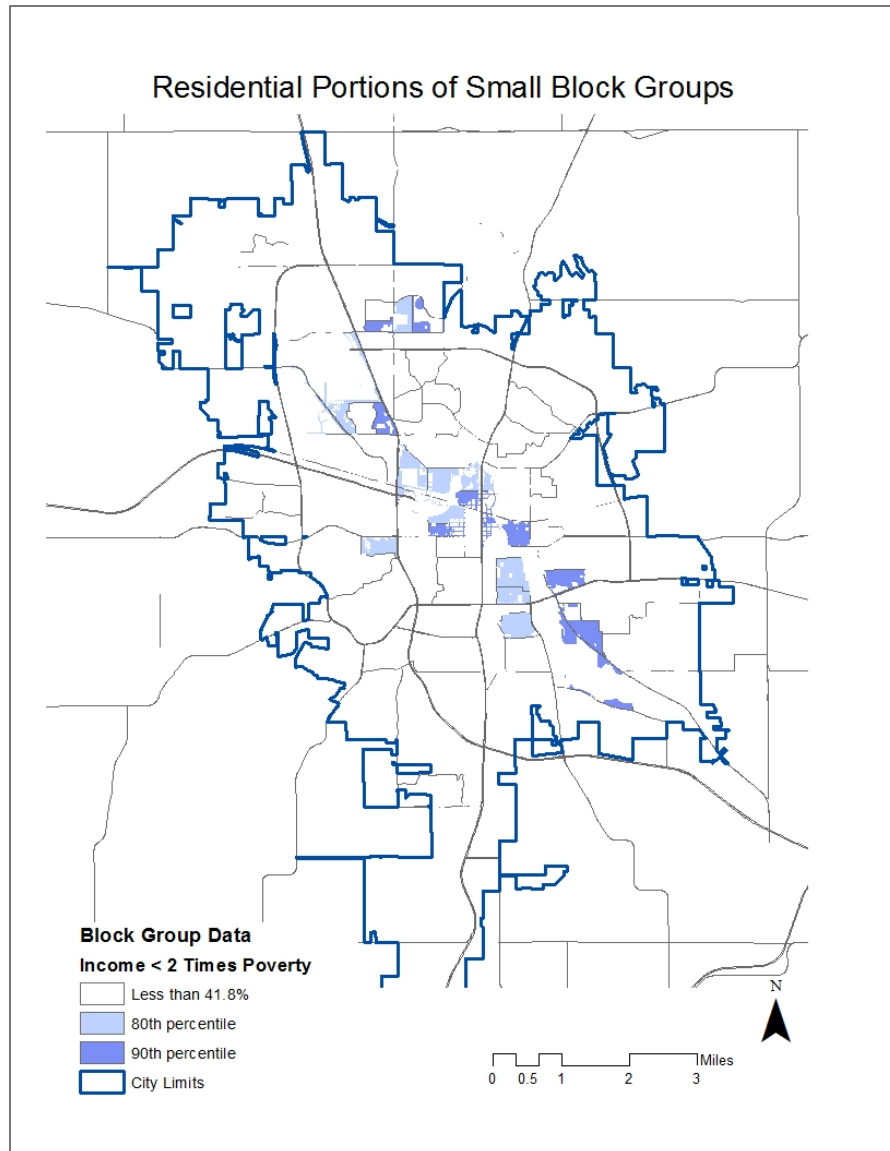
<sup>22</sup> One block group in Census Tract 23, highlighted below, is misclassified in the 2013 ACS data. Outlines show city limits.





**Figure 4 Poverty Thresholds in Residential Parts of Small Block Groups**

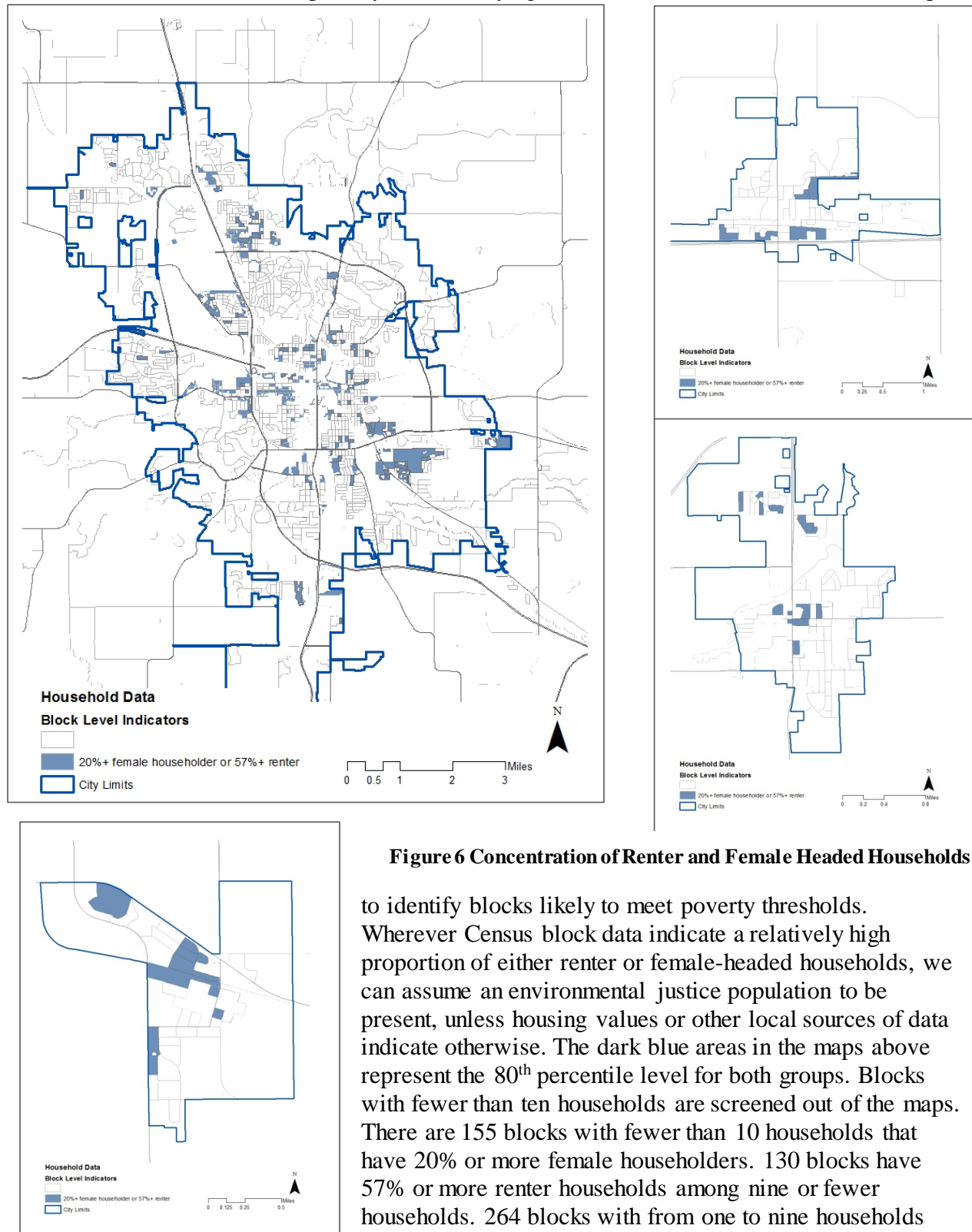




**Figure 5: Income under Two Times Poverty Level in Small Block Groups**

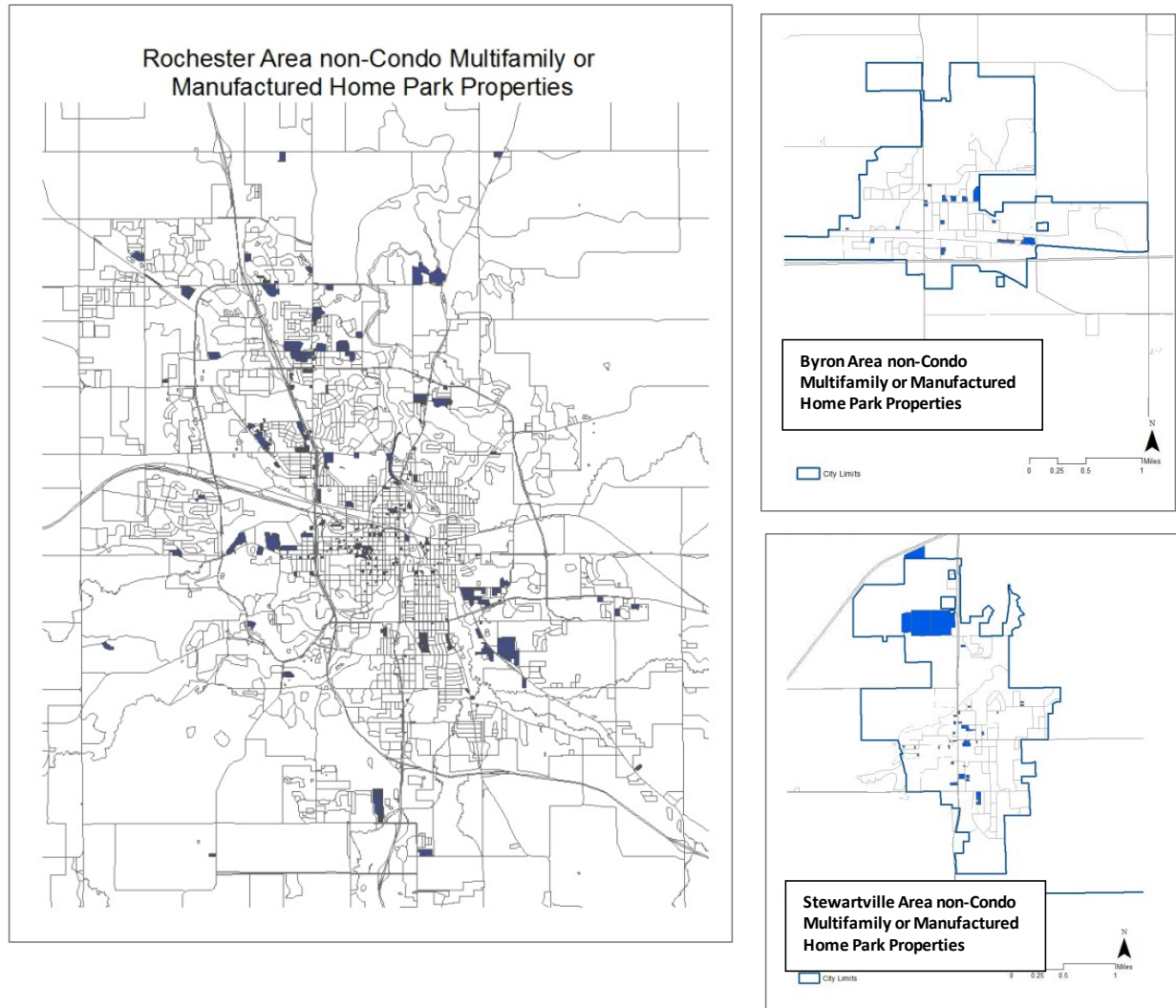
Other Census data, available at the block level, is strongly correlated with the incidence of poverty. Three such factors are race/ethnicity (for which see below), family type, and tenure. Female-headed households and renter households have a relatively high likelihood of meeting a poverty threshold (44.8% of renter households and 46.8% of female headed family households

have incomes under two times poverty), so identifying concentrations of these households helps

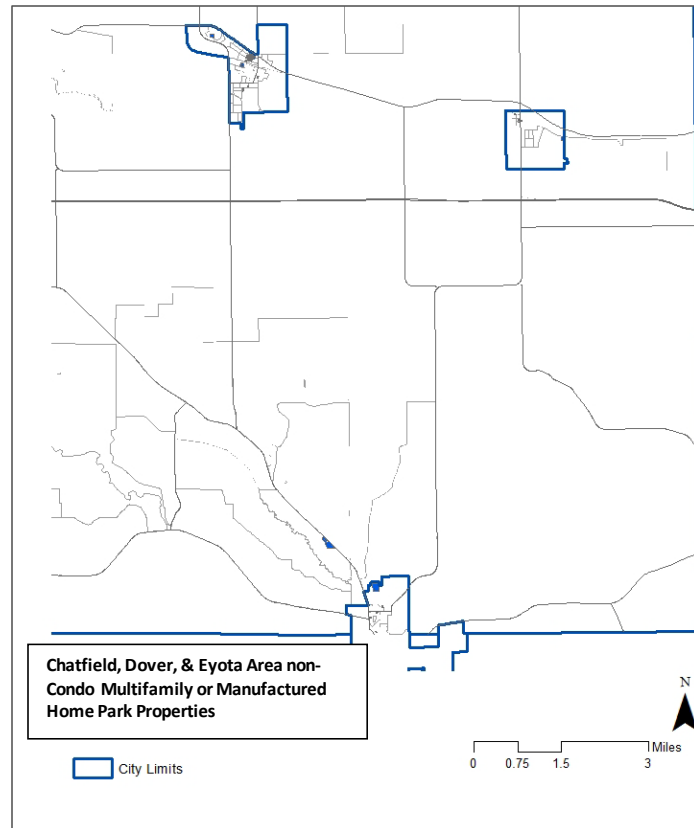
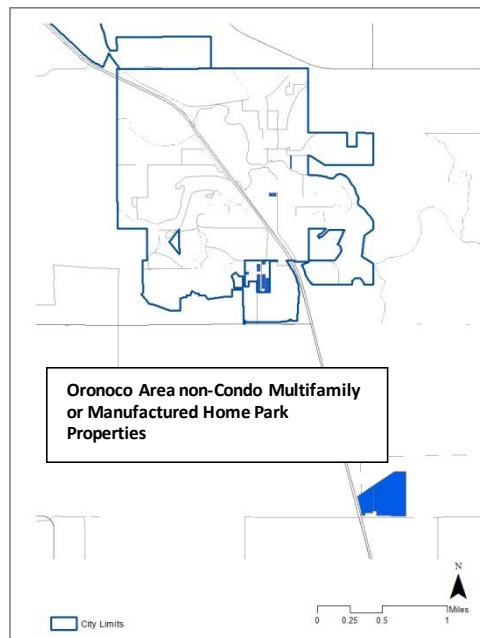


#### 1.4.2 Lower Income Neighborhoods Based on Housing Values from Real Property Data

Using PUMS data for 2008-12, we identified the relationships between income and structure type, household type, and tenure. For example, while 7.1% of households living in single family

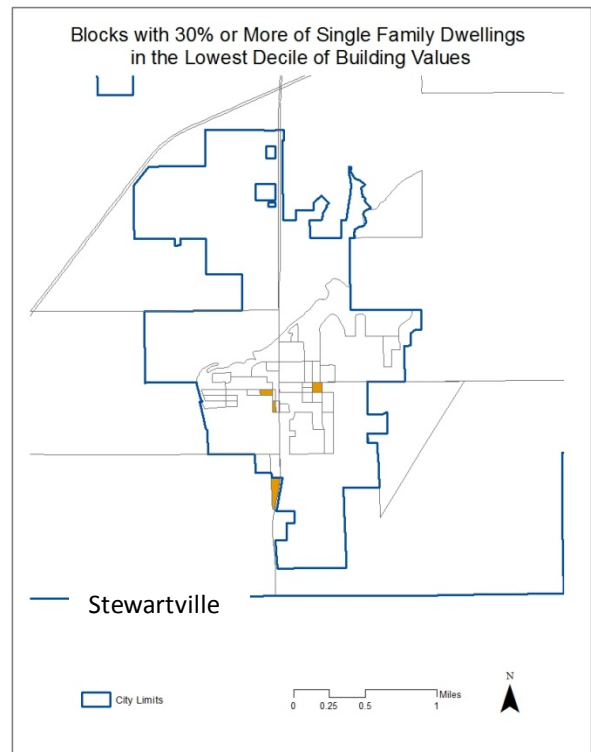
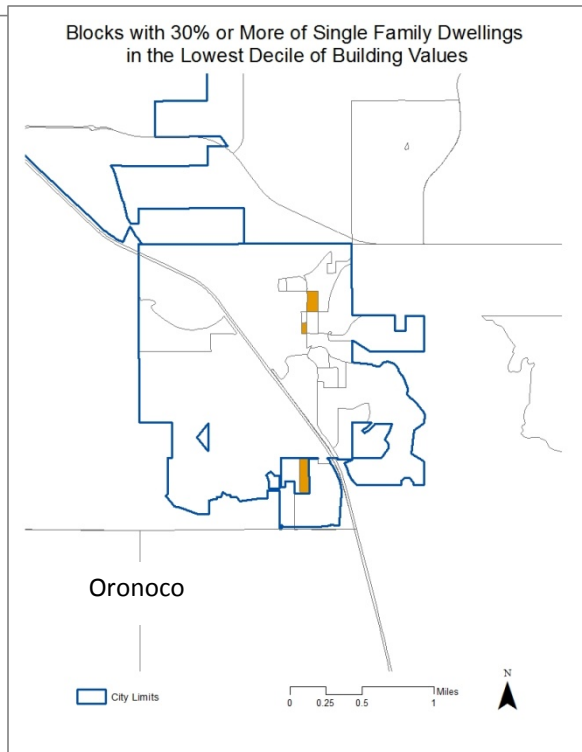
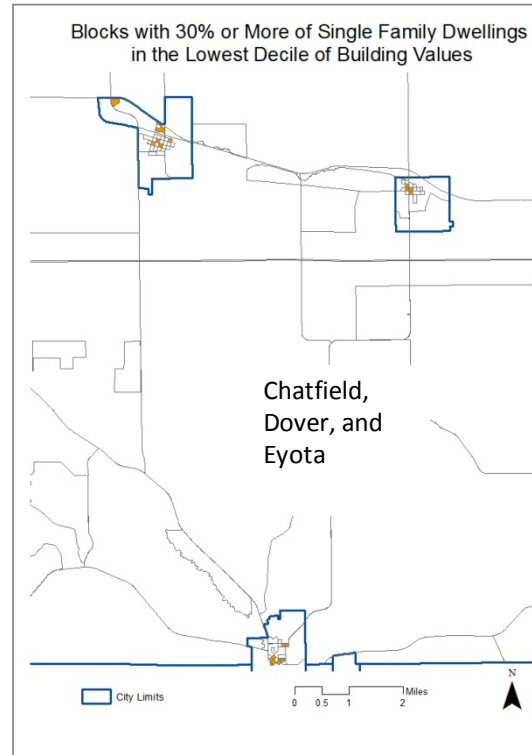
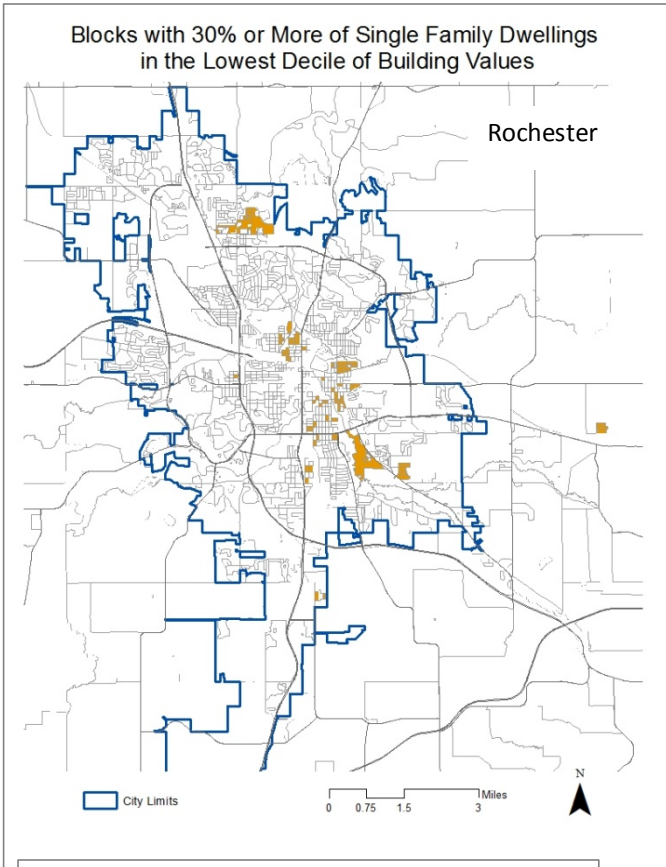


**Figure 7 Non-Condo Multifamily & Manufactured Homes**



detached housing have incomes below the poverty level, for all other structure types, the average poverty rate is 26.4% (see Table D-1 in Appendix D). On average, this means that a block with 43% or more of multi-family or manufactured housing could be expected to meet poverty thresholds. Building value per unit can be used to distinguish between high-end condominium and rental structures and lower value structures. The attached map shows locations of multifamily and manufactured home properties in the Rochester area, excluding condominium properties.

For single family detached dwellings, blocks with relatively high concentrations of homes in the lowest decile of building values should be considered likely to meet the threshold for households with incomes less than two times the poverty level. There are blocks with such concentrations in the cities of Chatfield, Dover, Eyota, Rochester, and Stewartville, and also in some of the rural service centers. The maps shows blocks with 30% or more of single family homes in the lowest decile of building values.

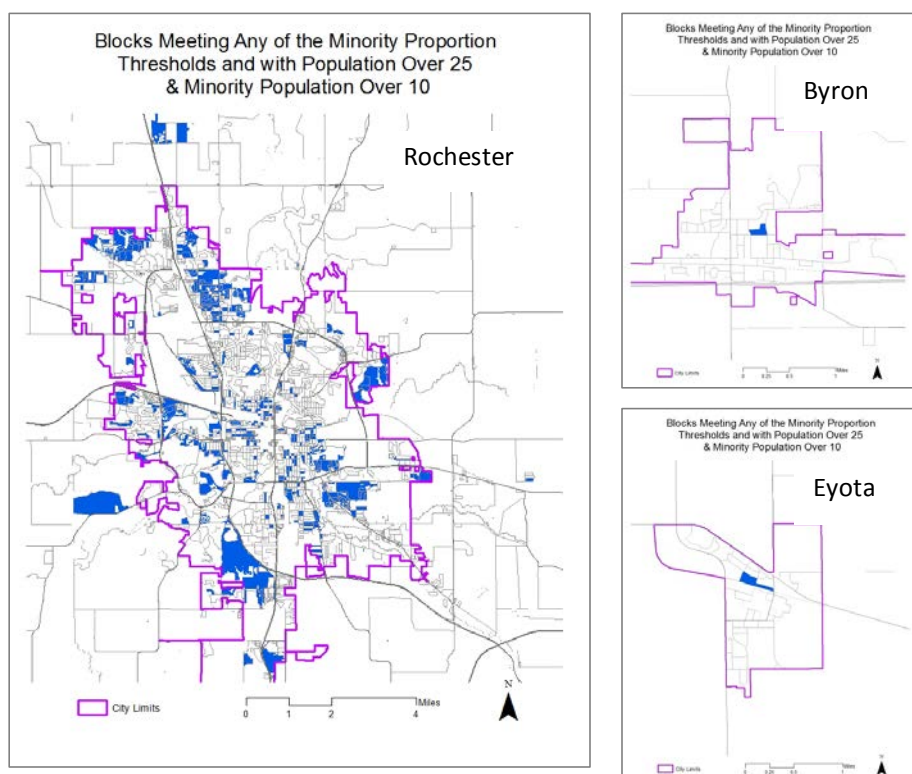


### 1.4.3 Disability Estimated based on Age

The proportions of disability by age are such that blocks with 66% or more of population over 65 are likely to have over 20.2% of population with at least one disability. Eighteen Census blocks meet the criteria of having populations of at least 25, of whom 66% or more are over 65. Most of these blocks are the locations of senior housing, nursing homes or extended care facilities. The exceptions are three townhouse complexes in Rochester, one along Viola Road NE and two along Salem Road SW. As the population ages, analysts should be aware that townhouse complexes may include concentrations of disabled persons.

### 1.4.4 Minority Neighborhoods Based on 2010 Census Data

The 2010 Census data on race and Hispanic/Latino ethnicity is available at the block level. There were 299 blocks with at least 29% minority residents, 207 of which had total populations of 20 or more. All but five of these 207 blocks were inside the Rochester-four township area. The five include one block each in the cities of Dover, Eyota, Oronoco, and Stewartville and one block in Oronoco Township (not shown). Ten percent of non-Hispanic white residents and 48% of minority residents live in blocks that are at least 29% minority; 3% of non-Hispanic white residents and 16% of minority residents live in blocks that are at least 50% minority. The concentration by race is highest among non-Hispanic Black residents (65% of Black residents live in blocks that are at least 29% minority) and Hispanics (49.7% live in blocks that are at least 29% minority). The following map shows blocks with total populations over 25 and minority populations over ten<sup>23</sup>, with minority proportions exceeding the thresholds shown in Table 2.



**Figure 8 Blocks Meeting Minority Thresholds**

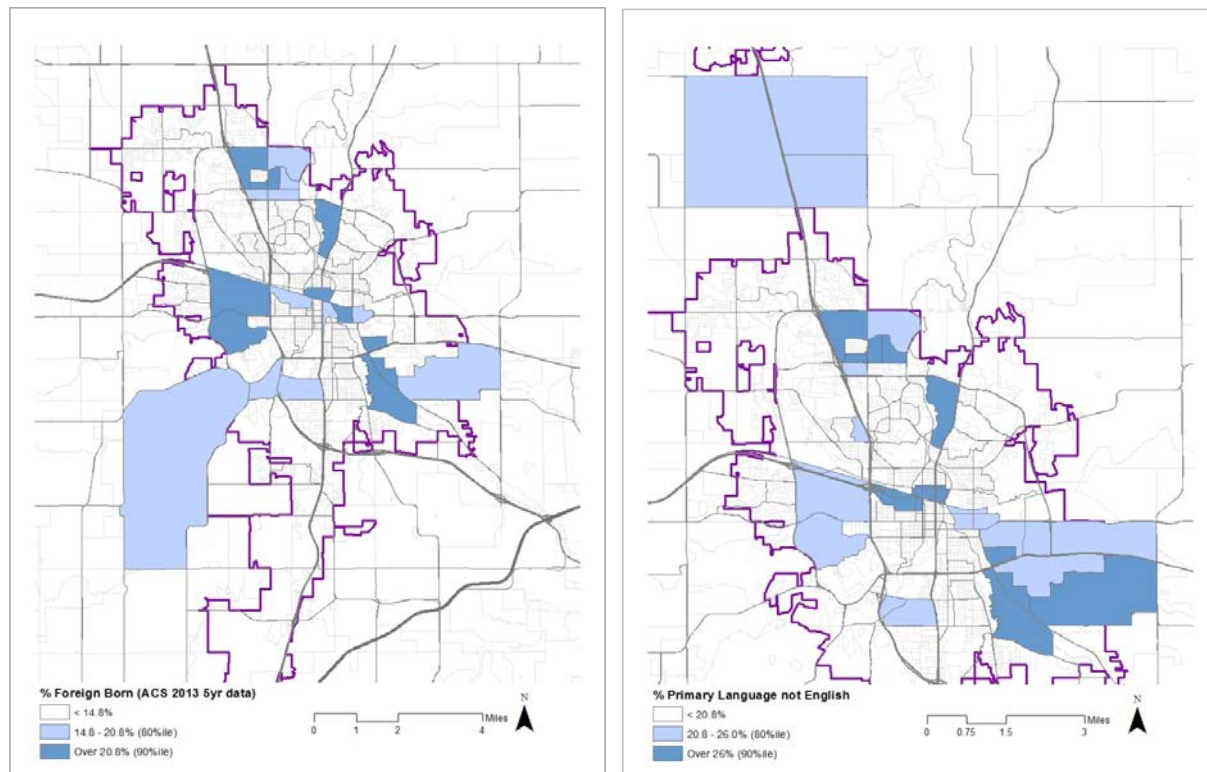
<sup>23</sup> Of 617 blocks meeting any of the thresholds in Table 2, 179 have total populations under 25, 281 have total minority populations under 10, and 294 blocks meet either criterion. Analysts preparing environmental justice reports should rely on file copies of unscreened maps to identify clusters of adjacent blocks that cumulatively meet race and ethnicity thresholds.



#### 1.4.5 Foreign Born and Language Status Based on Census Data

ACS five year summary data provides data on foreign born population by age category and race and ethnicity at the block group level. The following two maps show the distribution by block group of the foreign born population and the households whose primary language is not English. Both groups are concentrated in and around Rochester. It will be critically important to address language gaps when planning and implementing transportation improvements in areas with concentrations of non-English speakers.

Note that an area of Rochester Township and southwest Rochester has a high concentration of foreign born residents. Many of the area's foreign born residents are professionals working for the Mayo Clinic, IBM, and other similar employers.



**Figure9 Block Groups with High Foreign Born and non-English Populations**

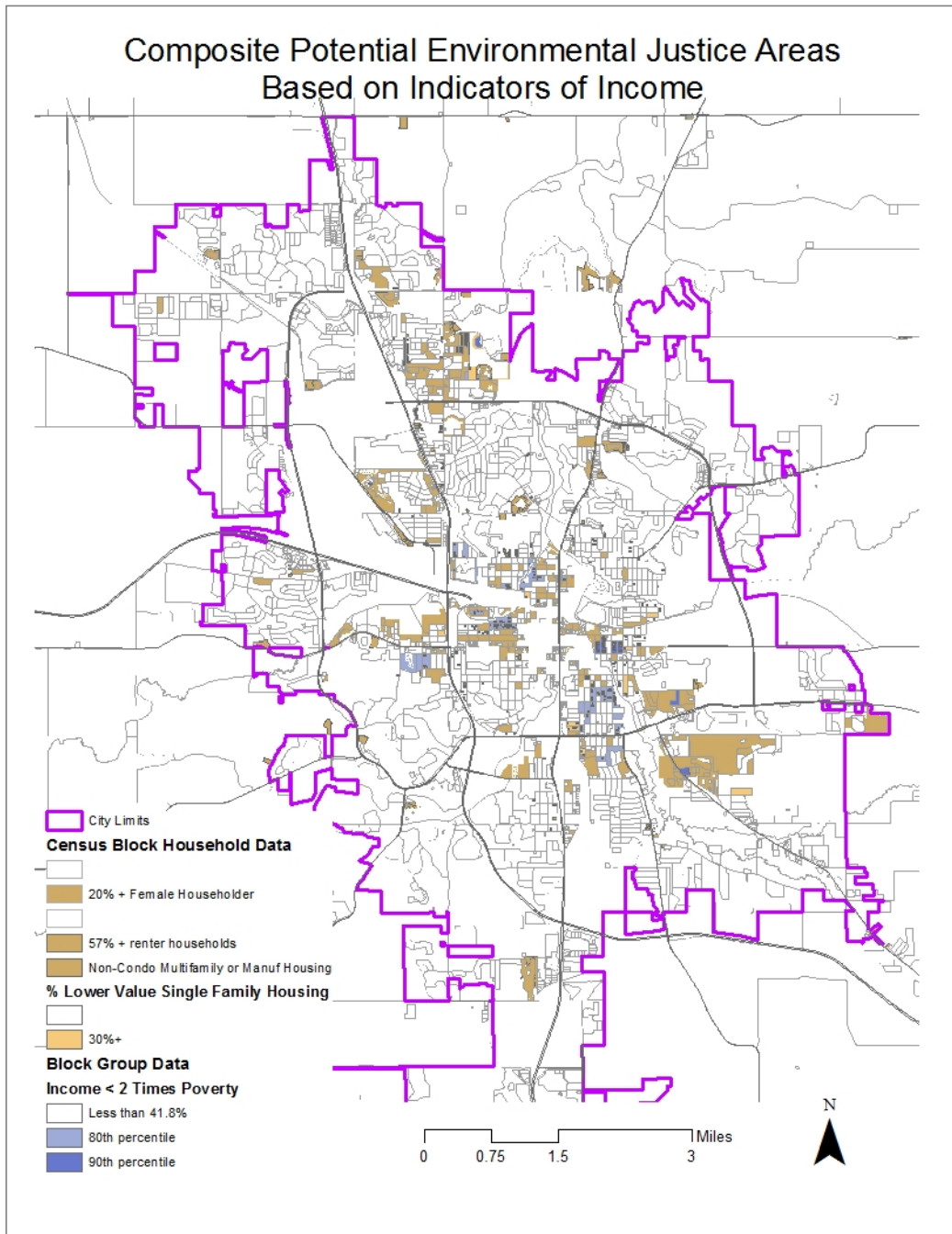
### **1.5 Conclusion**

In summary, a neighborhood should be treated as an environmental justice neighborhood under any of the following circumstances:

- It meets any of the direct measures described above, including those related to income, disability, or foreign born population for small block groups, and those related to race and ethnicity for blocks; or
- It meets any of the indirect measures described above at the block level, including concentrations of lower valued single family dwellings, concentrations of lower valued

multi-family and manufactured home housing, or (from block level Census data) concentrations of elderly persons, female-headed households, or renter households.

The following maps provide illustrations of potential environmental justice neighborhoods based on income measures. In combination with the minority threshold maps, these indicate EJ neighborhoods. Note that many areas meet multiple criteria; income-based areas may also meet minority thresholds. Composite maps presented in the section below on access reflect both income and minority status.



**Figure 10  
Rochester  
Area  
Potential EJ  
Areas based  
on Income**



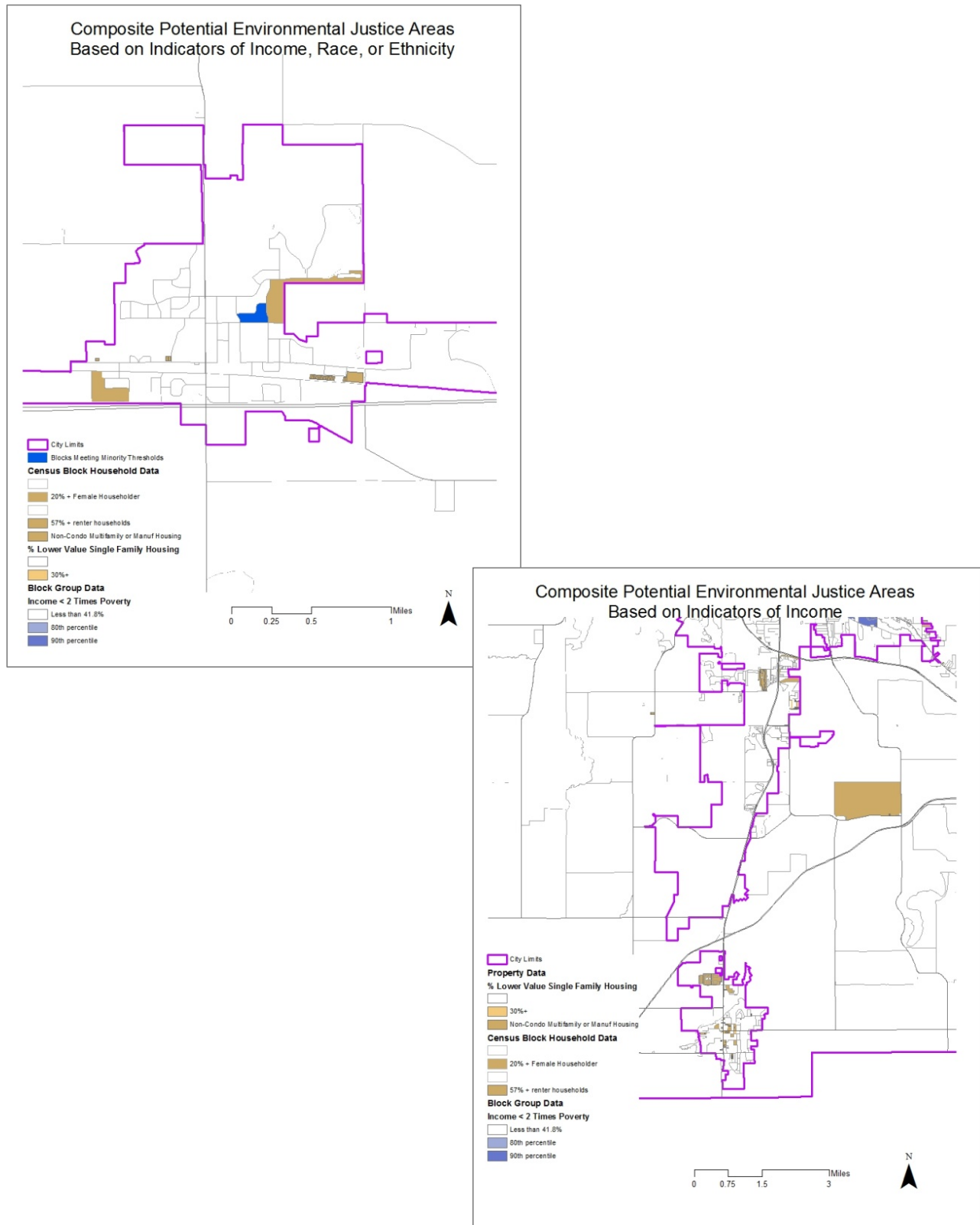
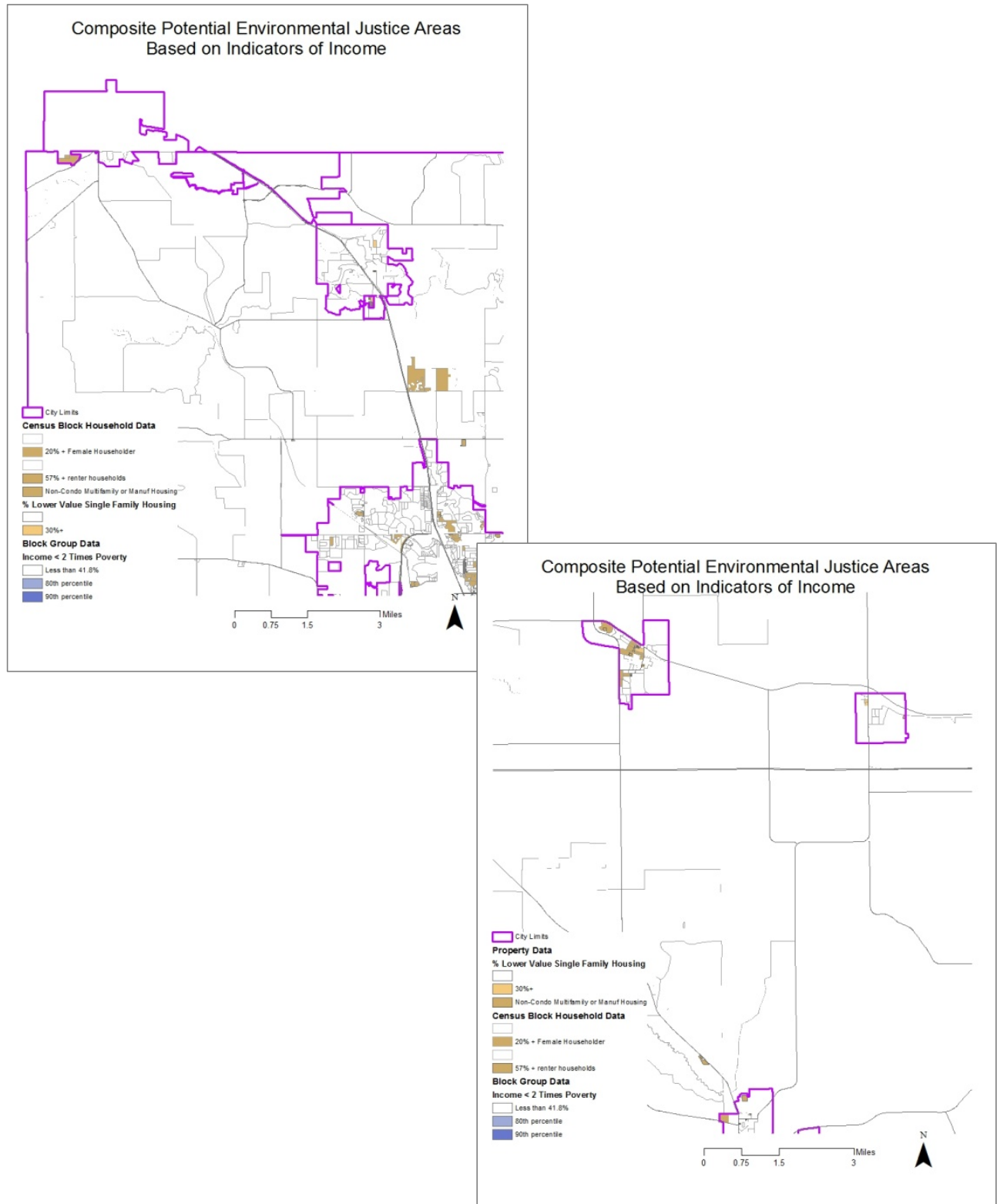


Figure 11 Byron and Stewartville/Simpson Area Potential EJ Neighborhoods Based on Income



**Figure 12 Pine Island, Oronoco Area; Chatfield, Dover, & Eyota Potential EJ Neighborhoods Based on Income**

## Identifying Access Gaps

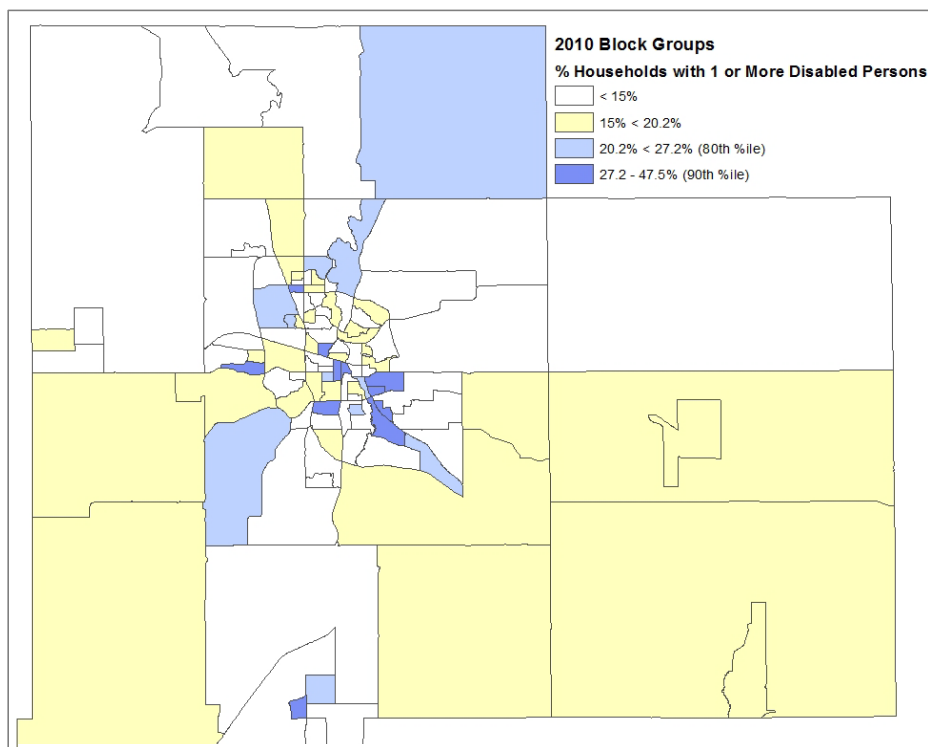
Access limitations affecting households and individuals are the product of combinations of circumstances affecting the following:

- the individual (such as disability and off-peak hours of employment);
- the household (vehicle ownership, poverty, and the number of workers per vehicle, for example);
- the neighborhood (distance from jobs, groceries, schools, and so on); and
- infrastructure (presence or absence of sidewalks and bicycle facilities, the availability of transit, and distance from and frequency at different times of transit service).

An equitable transportation system will invest in strategies to reduce or eliminate inadequate access, reflecting the fact that strategies will differ depending on the mix of these circumstances.

### 2.1 Individual Characteristics

#### 2.1.1 Disability



**Figure 13 Households with Persons with a Disability**

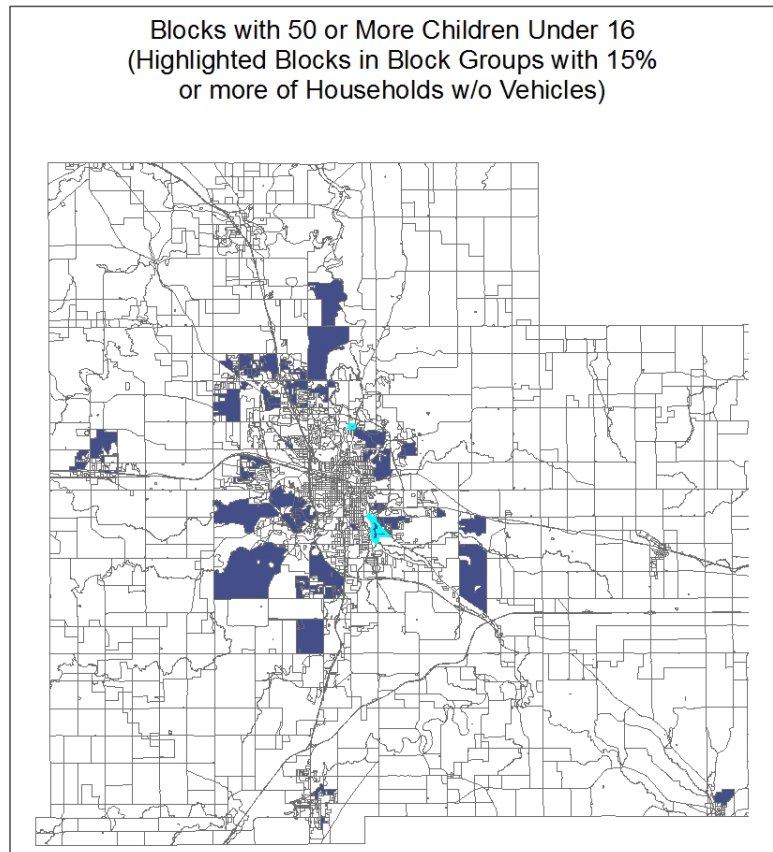
The population of persons who have one or more disabilities is geographically widespread. While eight block groups have no households in poverty, for example, there are no block groups with fewer than ten households with at least one family member with a disability. The block groups in the downtown area of Rochester have the highest concentrations of households with disabled person, with over 45% of households in that category.

As the map shows, all of Farmington Township and parts of Cascade, Marion, and Rochester townships fall into the 80<sup>th</sup> percentile class in terms of proportion of households that include persons with a disability. Many other rural areas of Olmsted County also have proportions of households with persons with disabilities between 15% and 20%. As the population ages, these proportions will increase, indicating a need for increased attention to transit serving rural areas.

Olmsted County is one of only a few counties in Minnesota that lacks a countywide transit service.

### 2.1.2 Population Under 16

Children under 16 have limited mobility in auto-dependent neighborhoods, especially when they live in households without cars. The map shows areas of Olmsted County with 50 or more children under 16 years old. Two areas of blocks in the County, one along Marion Road SE and one along North Broadway, both in Rochester, have a relatively high incidence of households without vehicles coupled with high numbers of children under age sixteen.



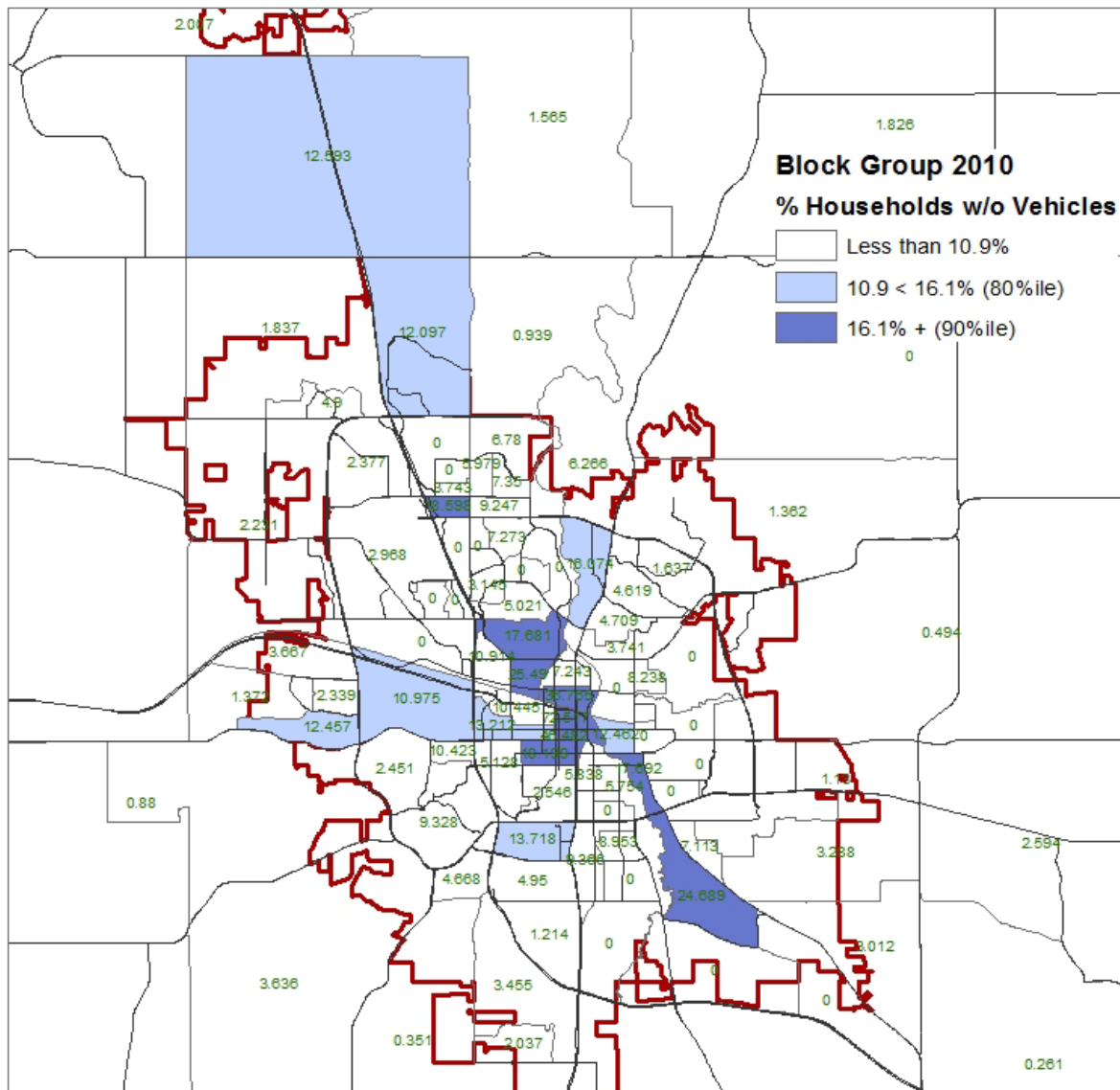
**Figure 14 Concentrations of Children Under 16**

### 2.1.3 Off-Peak Employees

The ACS data provides information on commuting patterns, including both mode of transportation to work and the time of day that workers leave their homes for their jobs. The sample size is such that the coefficient of variation for block group level estimates of non-peak work trips (for convenience defined as those trips start before 6 am or after 6 pm) average 27% and range as high as 69.1% of the estimate. This makes it difficult to provide meaningful block group level maps of concentrations of off-peak workers. Countywide, roughly one in five workers leaves home during off-peak times. Tract 21 (which includes Stewartville) has the highest number of off-peak workers at 915, 30% of the workers who live in Tract 21. Tract 6 (the Washington School neighborhood in Rochester) has the highest proportion of off-peak workers, with 830 off-peak workers representing 40% of resident workers. Tract 6 also has a significant proportion of households with limited vehicle ownership (see below). Extending transit service hours and geographic coverage would help to address access gaps these workers may face.

## 2.2 Household Characteristics

The following map displays concentrations of households without vehicles by block group. We know from PUMS data that this is highly correlated with income. Only one block group outside Rochester meets the threshold, the block group which includes Oronoco Estates. If vehicle registration data were made available, it would be a very useful tool for analyzing access limitations at the block level.



**Figure 15 % Households without Vehicles by Block Group**

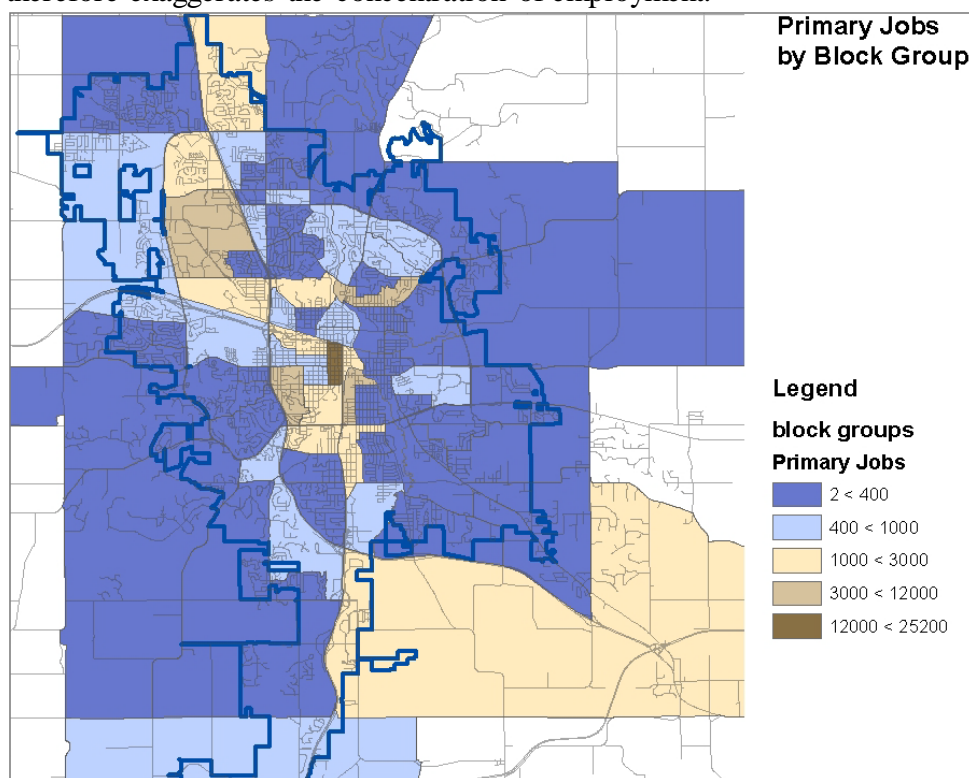
## 2.3 Neighborhood Characteristics

The following figures show the distance of urban neighborhoods from employment centers and the location of urban residences beyond locally acceptable distances from parks, schools, and full-service groceries.

### 2.3.1 Employment

Because Rochester's jobs are concentrated in its downtown, most Rochester urban neighborhoods are within two miles of roughly 40,000 primary jobs. Areas that lack transit access to the downtown therefore indicate an access gap. Since a number of low wage jobs (restaurant workers, for example) require work in hours for which transit service is not provided, the effective service gap is larger than the map indicates. For those workers, transit and auto alternatives are even more important, such as pedestrian or bicycle access. We assume that jobs within one mile can be reached by bike, motorized wheelchair, or on foot, given safe and adequate facilities.

The following map is derived from the Longitudinal Employer-Household Dynamics data base, assembled by the Census Bureau from payroll data that it gets from state employment agencies, in our case the Minnesota Department of Employment and Economic Development. While reporting employers are supposed to report detailed employment by address, in many cases employers report employment at the address where payroll data is accumulated. The map therefore exaggerates the concentration of employment.

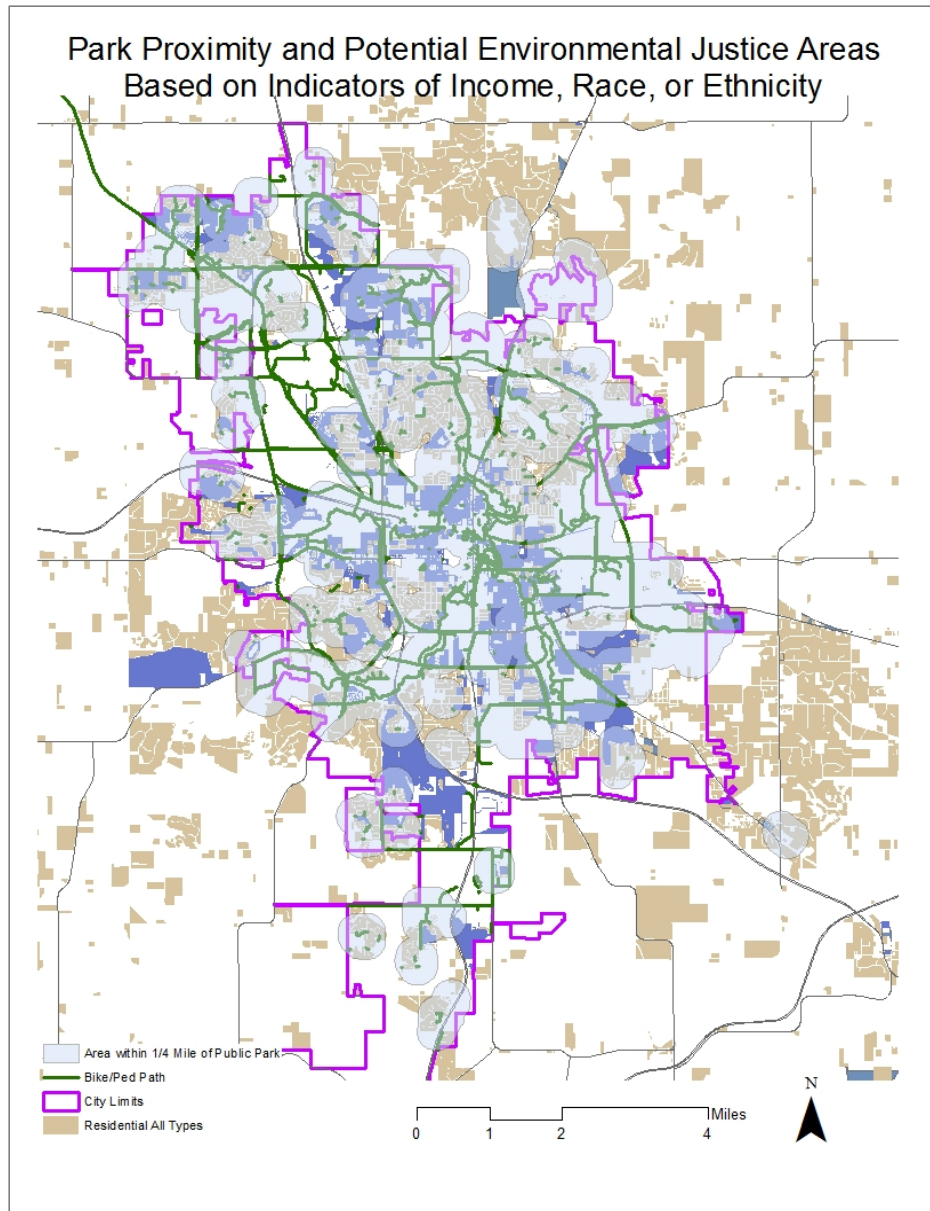


**Figure 16 Primary Jobs by Block Group**



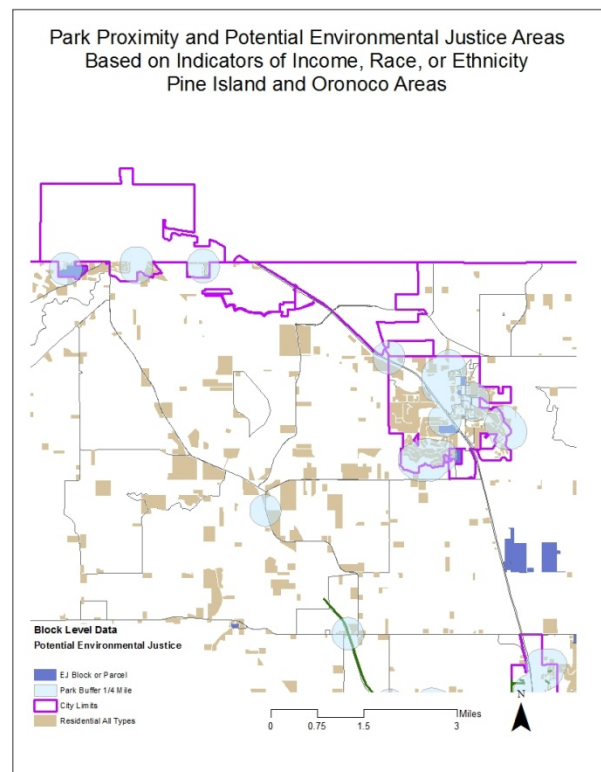
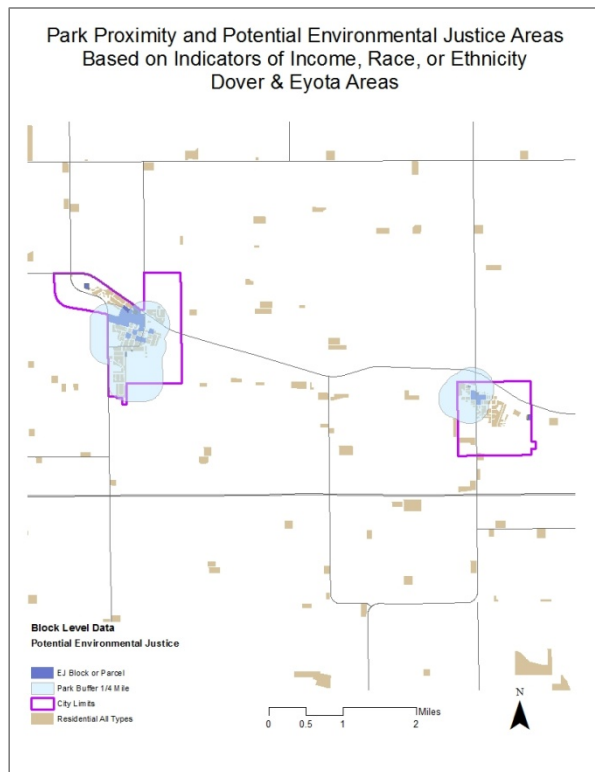
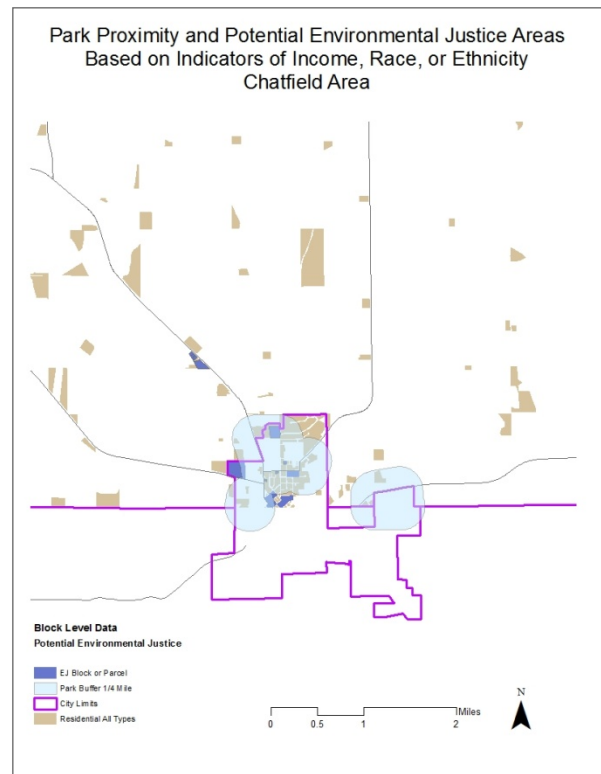
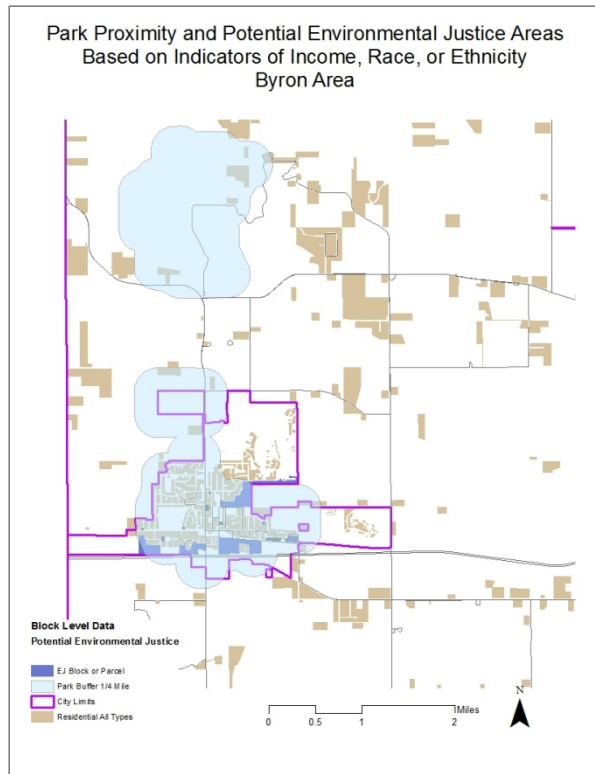
### 2.3.2 Parks and Trails

Within the Rochester Urbanized Area, most EJ neighborhoods based on income are within one quarter mile of park and playground facilities. In fact, due to the relative absence of public parkland in suburban townships, EJ neighborhoods are in closer proximity to parks than many affluent neighborhoods. This is also the case with the bike trail and bike lane system.

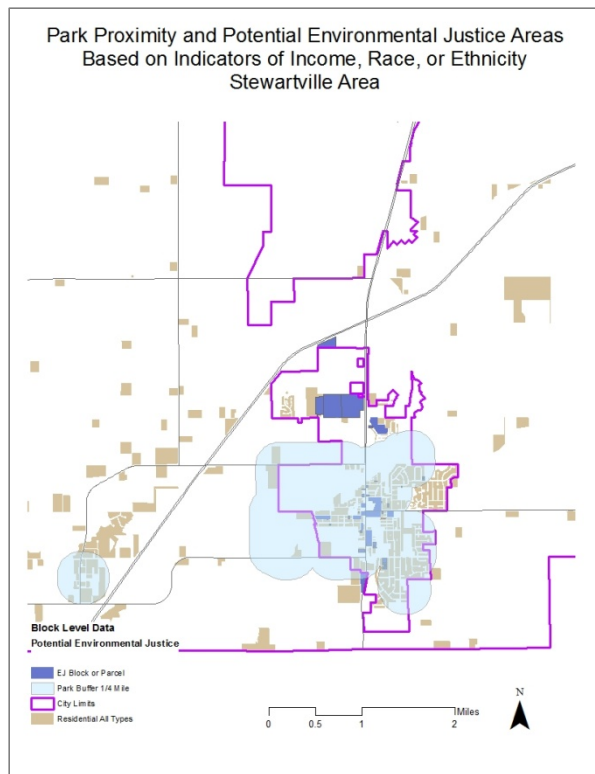


**Figure 17 Rochester EJ Areas by Distance from Parks & Trails**

The following maps show neighborhood proximity to parks for the small cities, showing both residential areas in general and EJ neighborhoods.

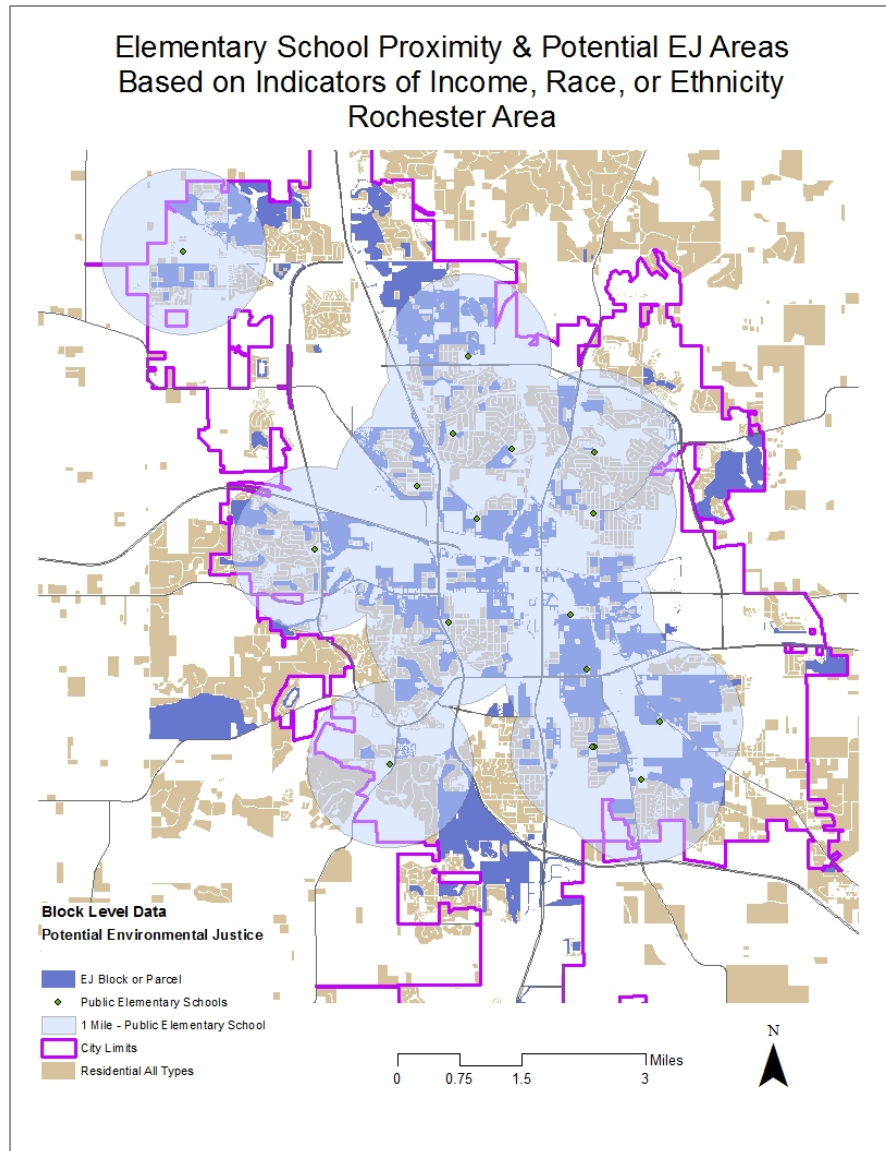




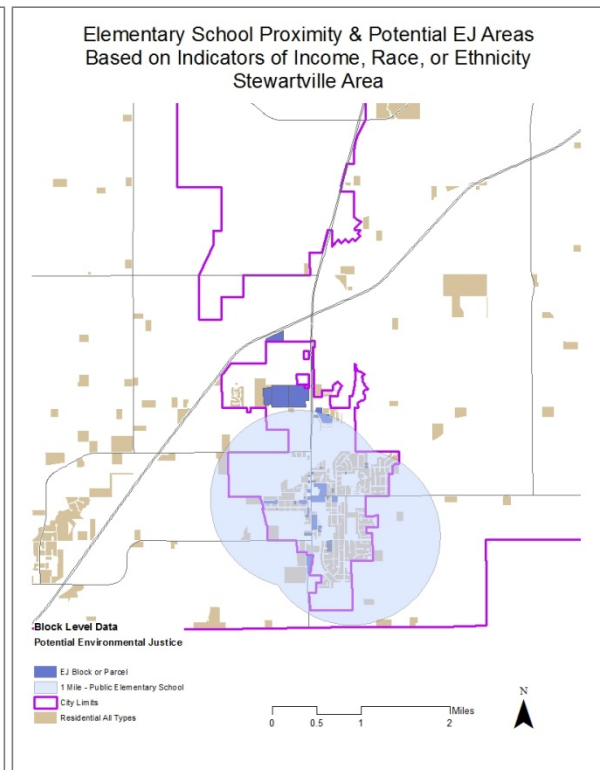
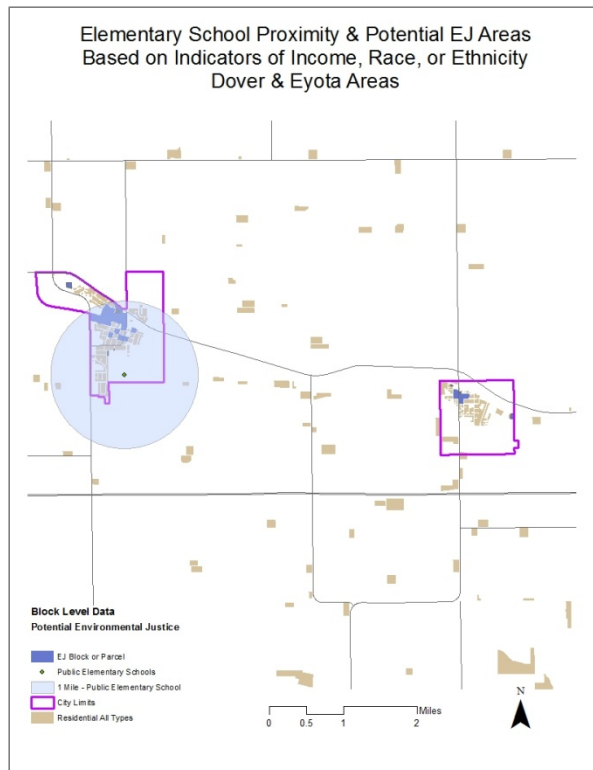
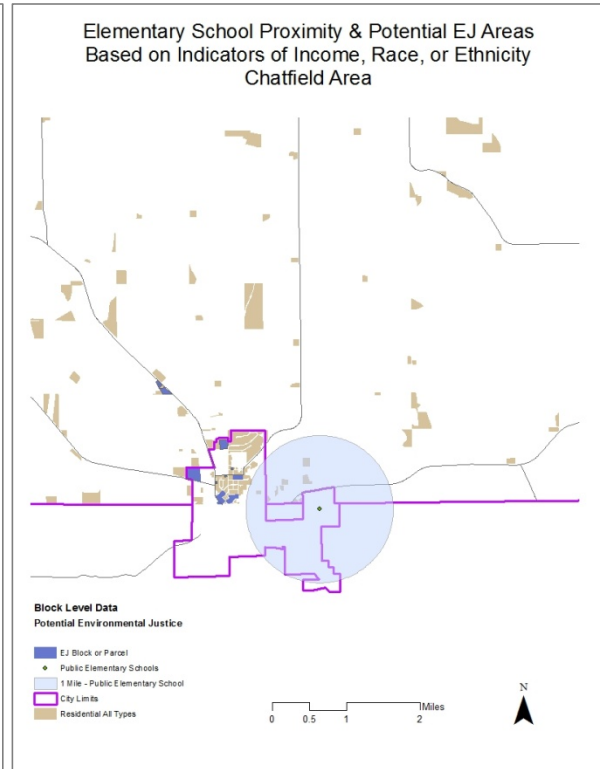
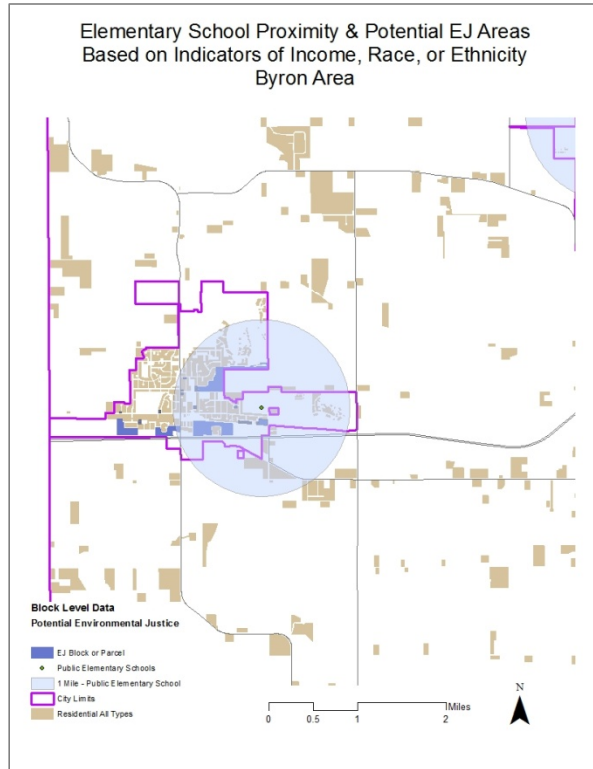


### 2.3.3 Public Elementary Schools

The following maps show neighborhood proximity (for cities only) to public elementary schools, using a distance of one mile (beyond which school busing is provided).

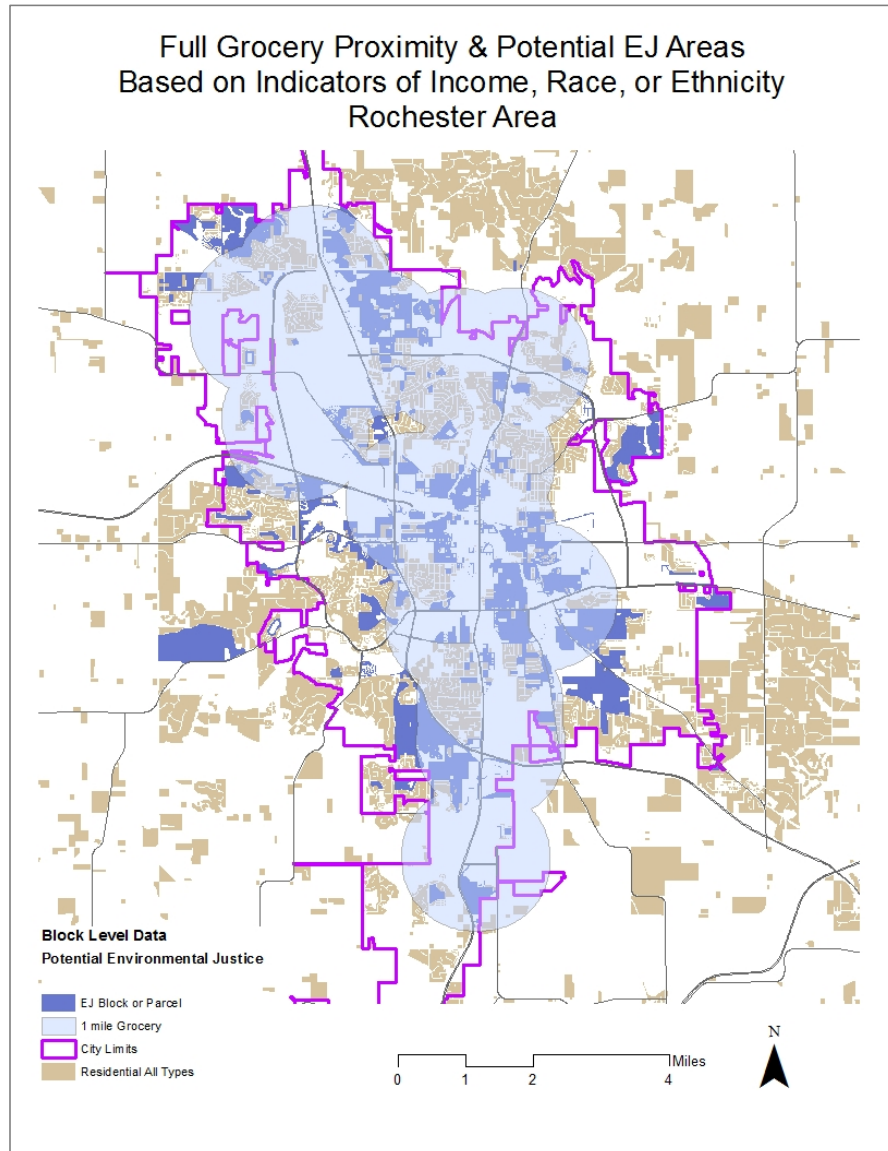


**Figure 18 Residences by Distance from Elementary Schools**

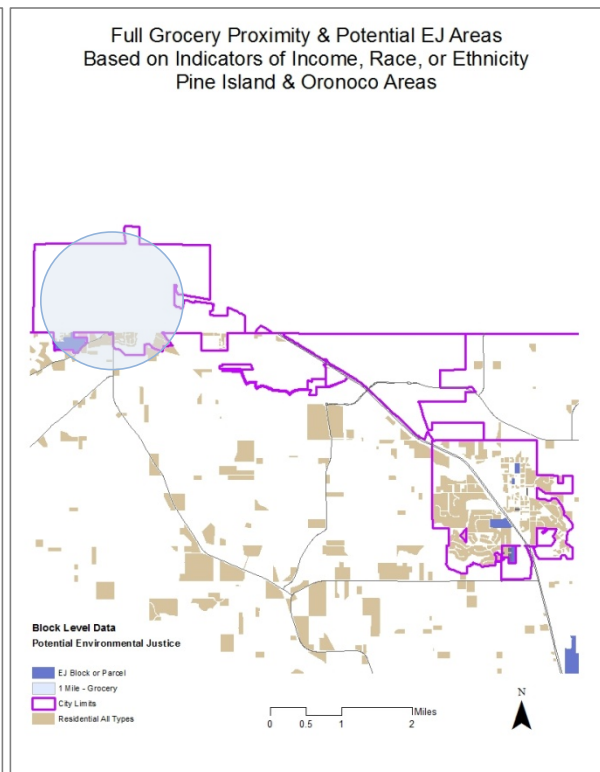
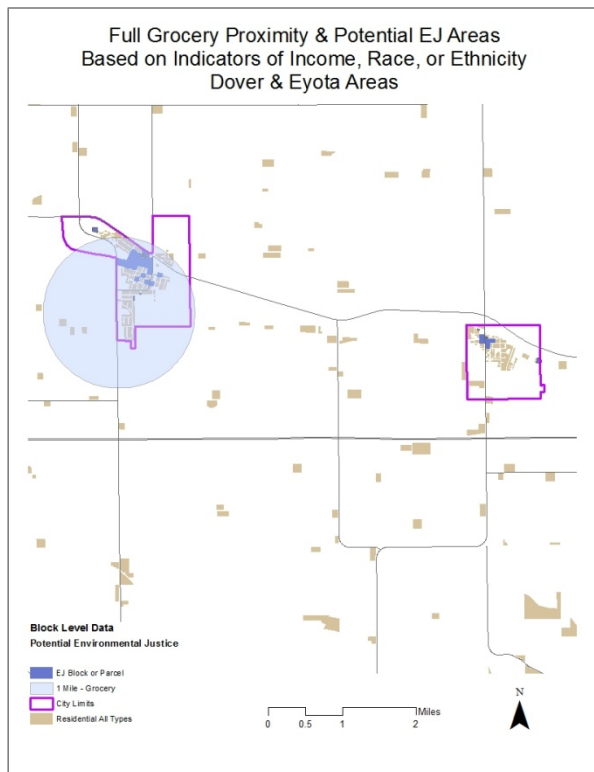
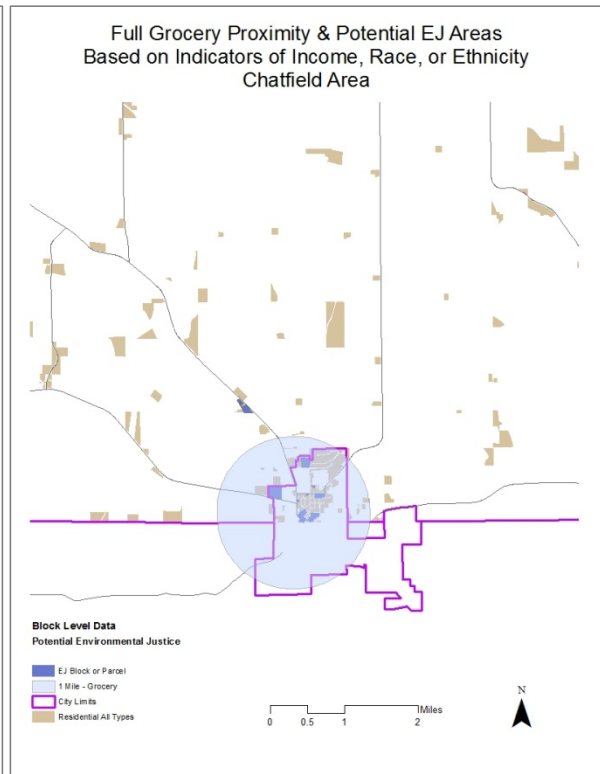
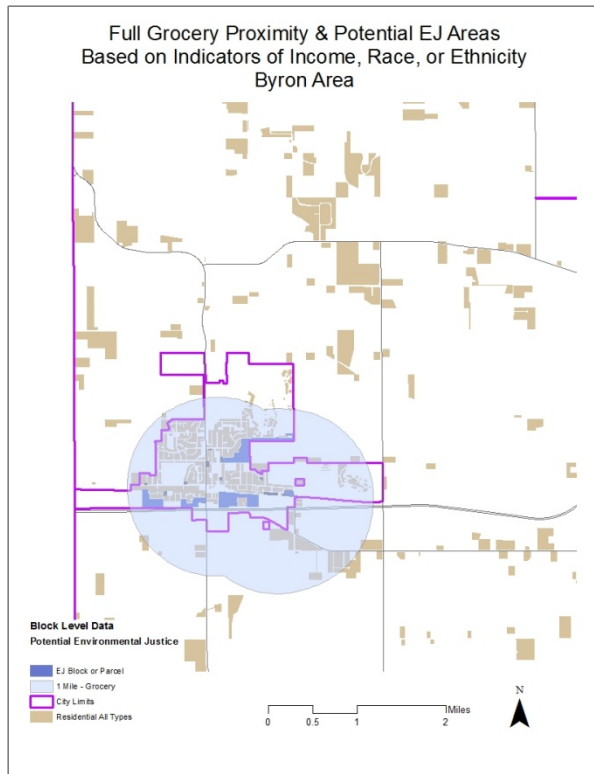


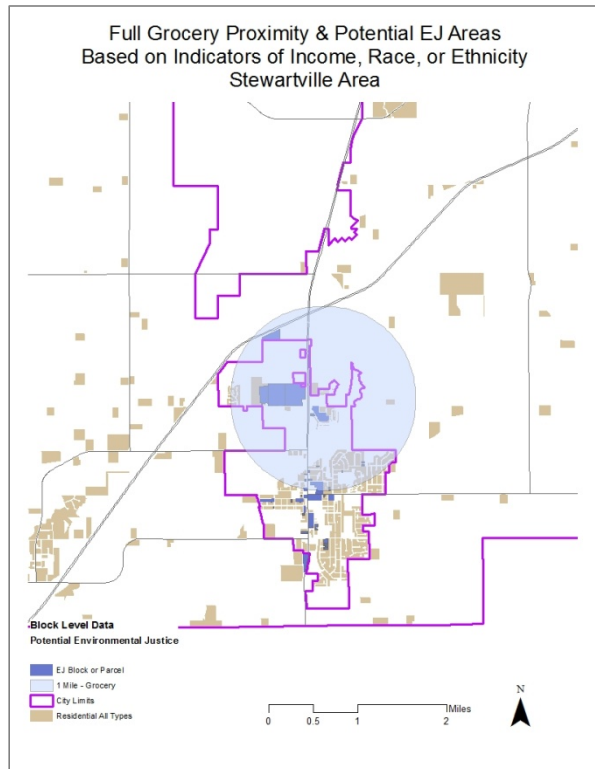
### 2.3.4 Grocery Stores

The following maps show distances of residential areas from grocery stores. Households with limits on private vehicle availability are at a health and economic disadvantage if their food sources do not offer healthy and affordable fresh vegetables, fruits, and protein sources.



**Figure 19 Residences by Distance from Grocery**





**Figure 20 Residences by Distance from Grocery**

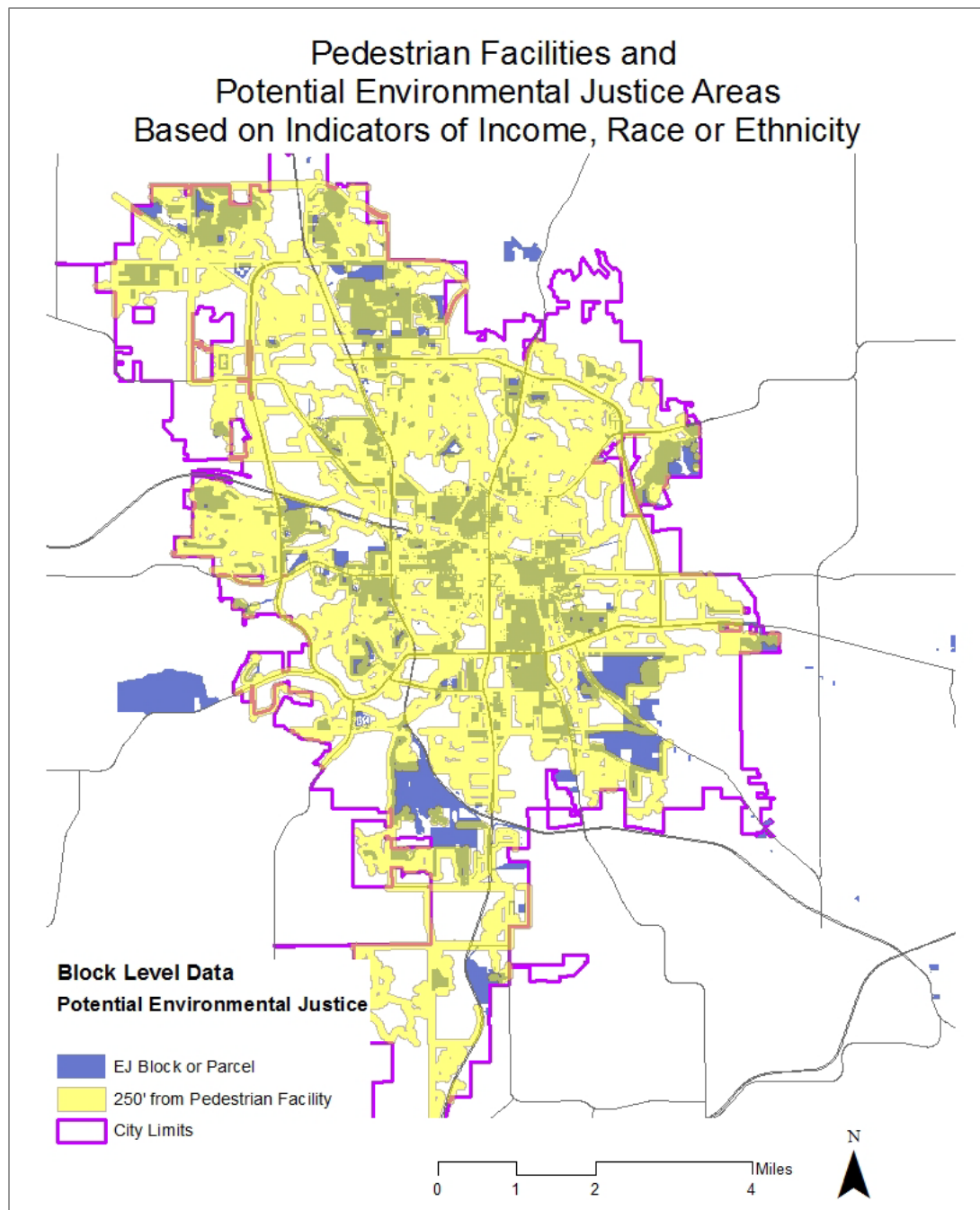
## ***2.4 Infrastructure Characteristics***

### ***2.4.1 Pedestrian Facilities***

The following map shows the distribution of pedestrian and bicycle facilities within the urbanized area. Note that many of the areas lacking pedestrian facilities were developed within townships and annexed after development. While Rochester has had a strong pedestrian facility policy since the 1980's, areas developed prior to that time may lack facilities, as do all areas developed as rural subdivisions.

Many of the subdivisions developed in the smaller cities also lack pedestrian facilities. While ROCOG lacks detailed pedestrian facility maps for the smaller cities in the planning area, significant access gaps have been identified as part of Safe Routes to School plans. Some of those gaps have been closed due to successful grant applications based on those plans.

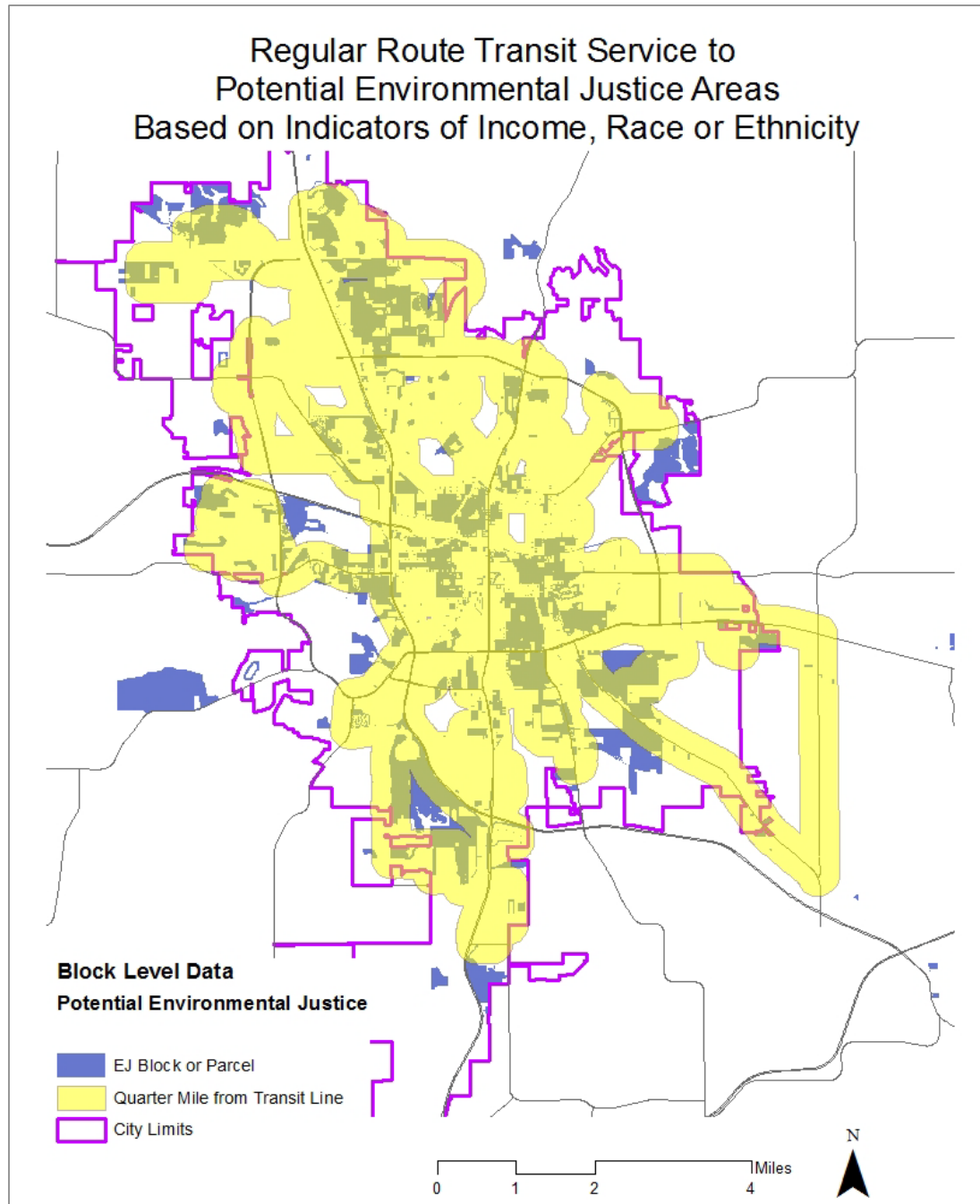




**Figure 21 Rochester Residences by Distance from Pedestrian Facility**

#### 2.4.2 Transit Facilities

As with pedestrian facilities, regular route transit service (provided only within the immediate Rochester area) generally covers nearly all of the environmental justice areas based on income. There are a few unserved neighborhoods that qualify as EJ neighborhoods based on race or ethnicity; other unserved EJ areas based on income especially should be examined as part of any planned transit system expansion.



**Figure 22 Rochester EJ Areas - Regular Route Transit**

Outside the Rochester area, the only community with public transit service is Stewartville, which has a dial-a-ride system. A private subscription commuter service serves all area cities, connecting commuters to Rochester employment centers. Most, if not all, commuters are employed at one of the Mayo Clinic Rochester facilities.



## ***2.5 Access Gap Conclusions***

The following conclusions apply to access gaps:

- All public entities should prepare to address an increase in the population with mobility limitations as the population ages.
- Especially where infrastructure gaps coincide with neighborhood, household, and individual characteristics that limit access, area jurisdictions should work to invest resources to close those gaps.
- Responsible entities should site school and other public facilities (e.g., polling places) so that neighborhoods have convenient non-motorized access to community services.
- Finally, land use and zoning practices should promote convenient non-motorized access to private sector goods, services, and employment.

## Benefits and Adverse Impacts

### *3.1 Needs-Based Distribution of Benefits*

Consistently through its planning program, ROCOG has committed to a needs-based system of setting infrastructure investment priorities for all transportation modes. It is ROCOG's intention to identify transportation needs and invest in transportation infrastructure across the community to meet the access needs of area residents. ROCOG has adopted policies which provide for attention to the special needs of some transportation-disadvantaged members of environmental justice populations and which promote the equitable distribution of the benefits of transportation investments.

ROCOG's intention with regard to these matters is addressed in the ROCOG Policy Directions identified in Chapter 5 of the Long Range Transportation Plan.<sup>24</sup>

### *3.2 Identifying Adverse Impacts*

Adverse impacts that may occur from transportation investments can be identified at the level of the Long Range Plan, the Transportation Improvement Program, or the actual transportation project itself. Potential impacts that are not localized in specific neighborhoods are addressed in the environmental review process and need not be addressed separately in environmental justice analyses. Impacts specific to neighborhoods can occur as adverse changes in

1. general transportation access and/or access to amenities (e.g., open space) and neighborhood and community services and support facilities;
2. noise and vibration;
3. property values;
4. damage to or elimination of environmental, historic, or aesthetic amenities in the neighborhood;
5. safety, where system changes increase risks of injury or property damage or where access to emergency services is disrupted;
6. air quality, where such impacts are concentrated in neighborhoods (for example, increased air pollutant concentrations); and
7. water quality, where particular stream reaches are important to neighborhoods or where there is an increased localized risk of groundwater contamination (such as in discharge/recharge areas of the Decorah Edge).

In general, for environmental justice analysis purposes, ROCOG will evaluate transportation investment using the performance criteria provided in the Long Range Transportation Plan. Where environmental justice analysis entails special considerations not addressed in the Policy Directions Report, these considerations are discussed further below

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<sup>24</sup> See <https://www.co.olmsted.mn.us/planning/roco/2040lrtp/Documents/Chapter%205%20Policy%20Review.pdf>.

### 3.2.1 Adverse Changes in Access

Diminished access (defined as occurring when the travel time or distance by any mode from a neighborhood to community services has increased by more than five minutes or 10% from pre-project travel time<sup>25</sup>) will be particularly important when it involves

- increased travel time for access (especially pedestrian access) to neighborhood facilities such as parks, playgrounds, elementary schools, full service groceries, and neighborhood convenience retail uses;
- increased travel time by all modes for access to employment centers, community facilities, and community commercial areas; or
- increased travel time for emergency services from dispatching points to the neighborhood.

Maintaining pedestrian and bicycle accessibility is particularly important to maintaining neighborhood identity. Creating barriers to pedestrian movement can occur as the result of widening existing streets, routing through traffic through residential areas, replacing parking lanes with travel lanes, and replacing neighborhood uses with parking areas. All of these have the potential to disrupt neighborhoods. Changes to street operations or physical profiles can reduce or improve bicycle accessibility.

### 3.2.2 Noise and Vibration

Noise will be quantified in environmental justice analyses at the project level only for changes in facilities of a magnitude sufficient to require detailed environmental review. Since the adoption of a plan or program normally significantly precedes conducting an environmental review, noise analysis at the plan and program level will be used only to identify potential impacts, rather than to quantify those impacts exactly. At the project level, for those projects triggering environmental review, noise from transportation facilities should be estimated using the FHWA Traffic Noise Model or equivalent standard engineering methods. For ROCOG Environmental Justice analysis purposes, whether at the plan, program, or project levels, an adverse noise impact will include either of the following:

- an increase in transportation related noise affecting sensitive receptors of more than 10 dBA Ldn<sup>26</sup> from existing condition background levels; OR
- a post-construction noise level exceeding 65 dBA Ldn.

The rationale for the first standard (for post-construction noise values lower than 65 dBA) is the impact on property values, which various studies have estimated at between 0.08% and 1.05% per decibel (with a weighted average impact of 0.4% per decibel) for increased highway noise (Nelson).<sup>27</sup> A ten decibel noise level increase would therefore result in a property value loss of

<sup>25</sup> The comparison should be made using the median commuting travel time by mode and by jurisdiction. For example, five rural townships have median commuting times between 25 and 27 minutes, the highest in Olmsted County (ACS 2010-2014). The median bus travel time in Rochester is just under 20 minutes; there is a bimodal distribution with a substantial share in the 30 to 35 minute range, probably reflecting transfers.

<sup>26</sup> Ldn is a noise measure reflecting the nuisance value of noise by weighting night-time noise as if it were ten times as loud as daytime noise.

<sup>27</sup> Nelson reviews ten studies of fifteen areas and finds a weighted average property value loss per decibel of noise increase of 0.40 per decibel, with a standard deviation of 0.23. Most of these are studies of freeway locations and may not apply as well to arterial or collector street situations.

around 4%, or \$8,000 on a \$200,000 home, which would be a substantial loss of wealth for neighboring property owners. Traffic noise is heavily influenced by commercial traffic, especially large trucks moving at low speeds (Haling and Cohen).<sup>28</sup> Transportation system changes that route commercial traffic past residential areas have high noise and potential property value impacts as a result.

### 3.2.3 Property Values

Adverse property value impacts related to transportation infrastructure may result from a variety of sources in addition to noise. In practice, given the small number of property sales per decade in most established neighborhoods, it will be difficult to identify or predict an impact from transportation facilities using local data. For this reason, the conclusions of relevant national studies should be relied upon to estimate impacts. Property value impacts will be quantified in environmental justice analyses at the project level only for changes in facilities of a magnitude sufficient to require environmental review.

### 3.2.4 Impacts on Recreational, Cultural, Historic, and Aesthetic Features

The ROCOG objective to “promote local street systems that reinforce the character and identity of neighborhood residential environments” entails two directives:

- First, ROCOG jurisdictions should use transportation investments to enhance neighborhood character. Investment in non-vehicular transportation facilities, such as bicycle and pedestrian facilities, are particularly important in this regard because of the linkage they can provide between the neighborhood and the recreational, cultural, historic, and aesthetic features (including natural habitat features) of the neighborhood and community.
- Second, ROCOG jurisdictions should avoid disruption of recreational, cultural, historic, and aesthetic features that reinforce and enhance neighborhood character. Beyond avoiding investments that reduce access to such features, ROCOG area transportation authorities should also avoid disrupting such features directly. Some disruptions may be unavoidable. ROCOG will identify where such impacts occur and compare the incidence of such impacts to ensure that the incidence does not disproportionately impact environmental justice neighborhoods.

### 3.2.5 Impacts on Safety

Several of the goals and objectives identified in the ROCOG Long Range Transportation Plan address reducing risks of injury or property damage and preservation of access to emergency services. Since the late 1970's, ROCOG has had a program in place to identify locations with high accident experience and to develop projects reducing accident risk. Identification of high-priority intersections and other accident locations has been based on accident risk and experience criteria unrelated to the ethnicity or socio-economic status of adjacent neighborhoods.

Local jurisdictions require new developments to provide multiple accesses to new developments once those developments reach a certain number of dwelling units or commercial intensity. The purpose of these requirements is to ensure adequate access by emergency vehicles and adequate access by neighborhoods and customers. ROCOG's policy is to provide multiple response routes to existing and newly developing neighborhoods. Disruptions to emergency response should be rare, but where they may occur, ROCOG staff will analyze their impact using the methodology

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<sup>28</sup> At 20 mph, a 5-axle diesel truck generates the noise equivalent of 149 passenger cars.

applied to analyze the emergency response implications of the proposed DM&E Bypass (Reiter and Pesch). Mapping fire response times against minority and low income neighborhoods appears to indicate that for the most part environmental justice neighborhoods are as well or better served in terms of fire response than the average neighborhood. The same appears to be true for police and ambulance service also, at least in the Rochester urbanized area.

### 3.2.6 Increases in Air Pollutant Concentration

The concentration of air pollutants will be quantified in environmental justice analyses at the project level only for changes in facilities of a magnitude sufficient to require detailed environmental review. The following discussion applies to project level analyses.

Historically, the concentration of air pollutants such as carbon monoxide was of concern chiefly in the downtown area, due to temperature inversion effects, barriers to dispersion created by tall buildings, significant commercial vehicle traffic, and high traffic volumes moving at relatively slow average speeds with significant idling. More recently, all of Olmsted County is in compliance with National Ambient Air Quality Standards (NAAQS). However, there are two types of air pollutants of concern in the Rochester Urbanized Area. These are ozone and very small particulates. With the possible exception of organic carbon particles, ozone and very small particulates are generally widespread. Increased incidence of respiratory ailments in other areas of the country adjacent to high-volume roadways indicate that there may be localized air pollutant concentration issues in close proximity to high volume truck routes and concentrations of parking facilities. However, the potential for local impacts requires detailed study.<sup>29</sup> Because some of the neighborhoods in and near downtown Rochester are environmental justice neighborhoods, if preliminary analysis of air quality indicates a need to conduct dispersion analysis, that analysis should address environmental justice issues as well.

The quantity of air pollutants (as opposed to their concentration) is a community-wide issue and not specific to particular neighborhoods. For this reason, air quality concerns related to the quantity of air pollutants generated are not environmental justice concerns.

### 3.2.6 Water Resources

Impacts on water resources will be quantified in environmental justice analyses at the project level only for changes in facilities of a magnitude sufficient to require environmental review. The following discussion applies chiefly to project level analyses.

#### 3.2.6.1 Surface Water

Many ROCOG area neighborhoods are blessed with ready access to streams and impoundments. Especially because park land is concentrated along surface water bodies, but also in other locations without park land, water quality in these streams and lakes is important not only as a general community environmental issue, but also as a local neighborhood recreational and aesthetic resource. Streams and lakes are fished in, waded in, walked along, canoed or kayaked in, played beside, and appreciated throughout the ROCOG area.

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<sup>29</sup> Recent studies by the Minnesota Department of Health indicate that the highest incidence and severity of asthma in Minnesota occurs along the I-94 corridor, indicating that asthma is related to proximity to high volume transportation facilities and that transportation derived particulates may have a neighborhood as well as a community impact.

Potential surface water impacts from transportation facilities include

- destruction of wetlands and stream habitat from disruption of surface and subsurface flows from grading;
- increases in the rate of runoff from the creation of channels (road ditches and storm sewers) and increases in impervious surface area;
- reduction in the quality of runoff through sediments and contaminants from construction, maintenance (road de-icing), and use (for example, from accidental spills by vehicles hauling hazardous materials); and
- destruction of vegetation and resultant loss of stream and shoreland habitat.

ROCOG's approach to this issue, for all neighborhoods, is to carry out transportation projects in such a way as to avoid sensitive areas where possible, to minimize impacts where avoidance is not possible, to restore vegetation where it is damaged, and to remove sediments and restore water quality and fisheries if preventative measures fail. Through a combination of avoidance and complete mitigation, ROCOG intends to avoid long term adverse impacts on surface water quality from transportation construction, maintenance, or use. Attaining this goal will require

- planning transportation facilities so as to avoid sensitive areas;
- implementing emergency response systems to provide for prompt management of spills;
- managing construction, operation, and maintenance activities so as to maintain runoff quantity and quality and to control erosion and sedimentation; and
- planning and carrying out grading so as to minimize disruption of natural habitats such as wetland areas.

### 3.2.6.2 Ground Water

Because the ROCOG area is in a geologic setting that is highly susceptible to ground water pollution, and because nearly all residents of the ROCOG area rely on ground water for potable water supply, ground water resources are critically important to this area. The quality of ground water resources is both a community and a neighborhood issue due to the limited area of recharge for wells in aquifers relied on for drinking water. Modeling done for the City of Rochester identified areas recharging municipal wells of roughly one mile in diameter (the fifty year time-of-travel zone) (Cook, based on Delin, 1993). Ground water concerns can thus have an impact at the same scale as neighborhoods, and thus can be included potentially as environmental justice concerns.

Potential ground water impacts from transportation facilities include

- destruction of wetlands relying on ground water discharge from disruption of subsurface flows from grading;
- reduction in the quantity of infiltration and ground water recharge from the creation of channels (road ditches and storm sewers) and increases in impervious surface area;
- reduction in the quality of infiltration and ground water recharge through the introduction of contaminants from construction, maintenance (road de-icing), and use (for example, from accidental spills by commercial vehicles hauling hazardous materials); and

- destruction of vegetation and resultant loss of nutrient uptake in areas adjacent to groundwater recharge areas.

ROCOG's approach to this issue, for all neighborhoods, is to carry out transportation projects in such a way as to avoid sensitive areas, to minimize impacts where avoidance is not possible, and to mitigate impacts where necessary. Through a combination of avoidance and complete mitigation, ROCOG's goal is to avoid adverse impact on ground water quality from transportation construction, maintenance, or use. Attaining this goal will require avoidance of sensitive areas where possible; design of facilities so as to minimize disruption of nutrient uptake and groundwater recharge and flows where avoidance is not possible; careful management of construction and maintenance activities to minimize risk to ground water quality; and prompt emergency management of spills.

The Rochester municipal water supply comes from deep wells that are interconnected. Once a spill occurred, if contamination were to show up in a well, the response would be to serve the area supplied by the well from other wells in the system. Contamination problems might be more significant on the fringes of the urbanized area, where reliance on private wells is highest, water quality monitoring is not routine, and alternative sources are not readily available. Only a few of the neighborhoods relying on private water supplies are predominantly minority or low income neighborhoods.



## Identifying Disproportionate Benefit/ Impact

### 4.1 Baseline Condition of Transportation Infrastructure and Services

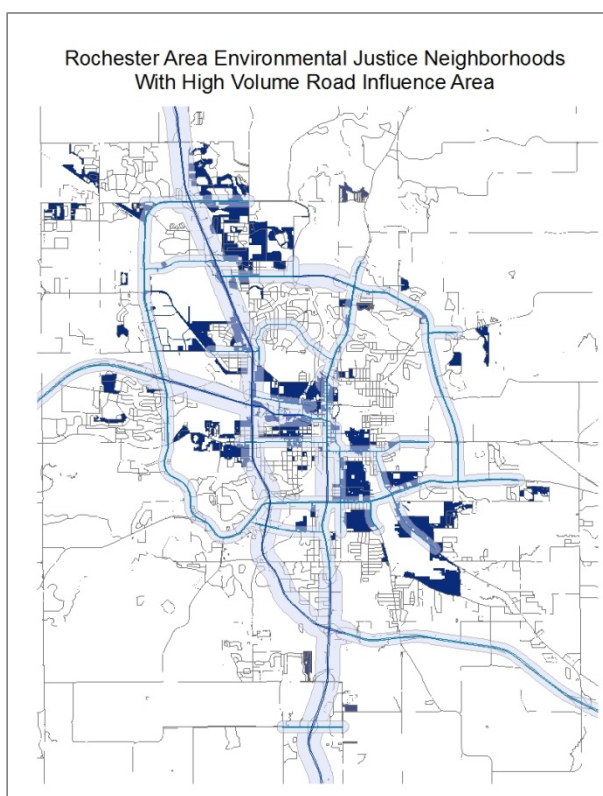
As a first step in implementing this Environmental Justice policy, ROCOG has conducted an assessment of environmental justice aspects of the current highway, transit, bikeway, and pedestrian systems by

- identifying transportation system benefits and adverse impacts, including
  - evaluating neighborhood access to employment centers, commercial centers, community and neighborhood recreation centers, and neighborhood facilities by mode;
  - identifying accident hot-spots, especially for pedestrians and children, by neighborhood; and
  - identifying facility deficiencies such as distance to nearest bike path, presence or absence of sidewalks and other pedestrian facilities, condition of roadway pavements, and so on.
- identifying the areas benefited or impacted by transportation system conditions and the neighborhoods within the impact areas, and
- relating deficiencies in access to environmental justice populations.

The following maps show the location of low income and minority environmental justice neighborhood locations in comparison with higher volume roads, the transit system, and the existing and planned bikeway system. It appears to be the case that the roadway network does not disproportionately benefit or impact EJ neighborhoods.

#### 4.1.1 Higher Volume Roads

To analyze the distribution of high volume road impacts, we defined an arbitrary transportation noise, vibration, and air quality impact area of 1,000 feet from roads with over 25,000 average daily traffic and 500 feet from roads with 10,000 to 25,000 average daily traffic. There are 14,300 dwellings within that area, of which roughly 6,000 are single family detached dwellings or townhouses (excluding manufactured homes) and 8,300 are other types of dwellings. While less than 15% of single family dwellings countywide are in this impact area, 45% of other dwellings (including high value condos) are in this area. Because residents of multifamily dwellings and manufactured homes have a higher probability of being in a rental or female-headed household, or being of low income or minority race or ethnic status, it is likely that environmental justice populations are disproportionately located near high volume roads. Nevertheless, most environmental



**Figure 23 Potential EJ Neighborhoods in High Traffic Areas**

justice neighborhoods are located outside the impact areas of high volume roads. Outside the Rochester Area, the only environmental justice neighborhood within the impact area of a high volume road is the manufactured home park on the north side of Stewartville.

#### ***4.1.2 Transit System***

Nearly all parts of the environmental justice (EJ) neighborhoods in Rochester are within a quarter mile of a transit route (see figure 21). This means that environmental justice neighborhoods are better served than many non-EJ neighborhoods in Rochester and better served than all neighborhoods outside Rochester. The access gaps related to off-peak employment affect low wage workers to a greater extent than high-wage workers, so extending hours of service would disproportionately benefit EJ neighborhoods. The map shows the areas within a quarter mile of bus routes; darker areas are underserved EJ neighborhoods.

#### ***4.1.3 Bikeway System***

As shown in Figure 17, potential environmental justice neighborhoods are well-served by Rochester's bicycle trail and bike lane network. Rochester has adopted a complete streets policy, commendably implemented through its development process with the commitment of its Planning and Public Works Departments.

Recreational trip purposes are served by the Douglas Trail. Proposed regional trails will connect area parks to population centers and Stewartville and Eyota to the Rochester trail system. Bike trails in Byron, Chatfield, Eyota, Pine Island, and Stewartville connect neighborhoods to school facilities and parks.

#### ***4.1.4 Sidewalk System***

As Figure 20 (above) shows, most environmental justice neighborhoods are well-served by Rochester's pedestrian network. Rochester has had a long-standing policy applying to pedestrian facilities, commendably implemented through its development process with the commitment of its Planning and Public Works Departments.

There are no sidewalks in rural areas. In the small cities, pedestrian facilities are much less extensively provided than in Rochester. Pine Island subdivisions in both older and newer areas are mostly provided with sidewalks, and some newer areas in some cities are provided with sidewalks. Gaps in the network are widespread, however.

#### ***4.1.5 Conclusion***

With some exceptions, Rochester area environmental justice neighborhoods are well served by the pedestrian and bikeway systems. The exceptions chiefly relate to the annexation of areas developed outside the City of Rochester, which have not yet been provided with pedestrian and bicycle facilities. Within Rochester, environmental justice neighborhoods generally have the same or better levels of transit service as other neighborhoods, with the exception of annexed areas not yet provided with transit service. Off-peak employees in all neighborhoods would be better served with extended transit service hours.

Outside Rochester, the absence of transit service and the sparser bicycle and pedestrian network force automobile reliance on lower income populations, to their detriment.

#### ***4.2 Transportation Plan and Transportation Improvement Program***

Disproportionate benefit and impact will be evaluated at the Transportation Plan and Transportation Improvement Program level in the same way as for the baseline system assessment described above. ROCOG will insure through this review that the benefits and impacts of planned transportation investments are evenly distributed across neighborhoods without disproportionately benefiting or impacting environmental justice neighborhoods. ROCOG may adopt Transportation Improvement Programs that allow for disproportionate benefit from investments over the short term, but is committed to long term proportional benefit and to the principle of making transportation investments based on need. ROCOG will strive to insure that adverse impacts are mitigated and that impacts that are not feasible to mitigate do not disproportionately impact environmental justice neighborhoods. ROCOG will also ensure that closing gaps in neighborhoods with inadequate access receives a high priority in transportation investment decisions.

#### ***4.3 Transportation Project Level***

Similar steps will be undertaken at the project level, with the exception that the ranking and correlation steps will be replaced by detailed identification of environmental justice populations, mitigation measures, and any unmitigated impacts. Unless an EIS is already required, the ranking steps above will be performed using qualitative judgments rather than quantitative methods.

## **Outreach to Environmental Justice Populations**

At the project level, ROCOG will encourage road authorities and other transportation service providers to identify a range of options for mitigating adverse impacts of transportation investments, relying on standard engineering practices as the source for those options. In addition, ROCOG area communities are committed to involving affected neighborhoods in refining and advising on selection of preferred options.

At the plan and program levels, ROCOG will adhere to the strategies identified in the ROCOG Citizen Participation element of the Long Range Plan to involve persons of diverse backgrounds and interests in its advisory committees and to fully involve the general public in its public outreach efforts.

ROCOG recognizes that it cannot rely on a complaint-based or conventional hearing-based approach to environmental justice issues. Making formal complaints or appearing at hearings requires a sense of empowerment, which members of environmental justice populations may lack. Efforts to involve disadvantaged populations generally and environmental justice communities specifically in transportation mitigation efforts at the project level necessarily include the measures described below.

### **5.1 General**

In addition to the special outreach efforts to disadvantaged populations described in the ROCOG Citizen Participation element of the Long Range Plan, development of mitigation efforts will include notices of meetings and other materials sent directly to both tenants and owners of property in the area affected by the proposed mitigation. For areas served by neighborhood associations, ROCOG will also contact neighborhood associations serving geographic areas that include environmental justice populations, including the Kutzky Park Neighborhood Association; the East Side Pioneers Neighborhood Association; the Southeast Settlers Neighborhood Association; the Goose Egg Park Neighborhood Association; and the Rochester Neighborhood Resource Center.

### **5.2 Low Income**

ROCOG will involve the following community organizations in plan and program level efforts and will rely on these organizations to assist in contacting and advocating for low income populations in the ROCOG area:

- United Way of Olmsted County
- the Olmsted County Housing and Redevelopment Authority;
- Channel One, Inc. (the local food shelf);
- the Salvation Army;
- Family Service Rochester;
- Lutheran Social Services;
- Southeast Minnesota Workforce Center; and
- Catholic Charities.

In addition, when transportation investments affect employers with significant numbers of low wage employees, ROCOG will contact those employers to ask for assistance in contacting their employees and providing information about projects and mitigation options.

### **5.3     *Race and Ethnicity***

ROCOG will involve the following community organizations in plan and program level efforts and will rely on these organizations to assist in contacting and advocating for ethnic and racial minority populations in the ROCOG area:

- the Rochester branch of the NAACP;
- the Rochester – Olmsted County Diversity Council;
- the Intercultural Mutual Assistance Association;
- the Rochester International Association; and
- faith organizations serving minority communities, including religious institutions serving recent immigrants to the ROCOG area (see below).

### **5.4     *Refugee and Immigrant Status***

ROCOG will involve the following community organizations in plan and program level efforts and will rely on these organizations to assist in advocating for and contacting other ethnic and racial minority populations in the ROCOG area:

- Olmsted County Public Health
- Olmsted County Community Services
- the Intercultural Mutual Assistance Association,
- the Rochester Islamic Center and area mosques and schools
- the Buddhist Support Society,
- Somali Refugee Resettlement,
- the Rochester International Association,
- the Rochester School District English for Speakers of Other Languages (ESOL) and Adult Basic Education programs,
- Lutheran Social Services, and
- Catholic Charities.

As new immigrant groups come to Rochester, ROCOG will expand this list. ROCOG will also work through employers, manufactured home park managers, and apartment management companies to distribute information. Because a number of recent refugees and immigrants have limited English language ability, ROCOG's outreach measures will include translation and interpreter services at meetings and in other written and oral contacts.

### **5.6     *Other Groups***

ROCOG will make special efforts to involve representatives of the following groups whenever changes in services or other transportation projects may affect their interests.

- disabled individuals (representatives could include Southeast Minnesota Center for Independent Living, PossAbilities of Southern Minnesota, Family Service Rochester, the National Alliance for the Mentally Ill, and operators of transitional housing for chemically dependent and others recovering from impairment);
- children (represented by organizations such as Childcare Resource and Referral, the Olmsted County Youth Commission, Boys and Girls Clubs, and area school districts and charter schools);
- residents and managers of group quarters and transitional housing;

- landlords and tenants of low income housing; and
- employers and employees of industries with high proportions of low-wage and off-shift workers.

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## APPENDIX A: Executive Order 12898

February 11, 1994

### FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

#### Section 1-1. IMPLEMENTATION.

1-101. Agency Responsibilities. To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall 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 populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1-102. Creation of an Interagency Working Group on Environmental Justice (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an Interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1-103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner; (3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health



and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3-3 of this order;

(4) assist in coordinating data collection, required by this order;

(5) examine existing data and studies on environmental justice;

(6) hold public meetings at required in section 5-502(d) of this order; and

(7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1-103. Development of Agency Strategies. (a) Except as provided in section 6-605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b) - (e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1-104. Reports to The President. Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1-103(e) of this order.

Sec. 2-2. Federal Agency Responsibilities For Federal Programs. Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such, programs, policies, and activities, because of their race, Color, or national origin.

Sec. 3 -3. Research, Data Collection, and Analysis

3-301. Human Health and Environmental Research and Analysis. (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to, substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3-302. Human Health and Environmental Data Collection and Analysis To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1-103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have substantial environmental, human health, or economic effect on the surrounding populations, when such

facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001-11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

#### Sec. 4-4. Subsistence Consumption Of Fish And Wildlife.

4-401. Consumption Patterns. In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4-402. Guidance. Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5-5. Public Participation and Access to Information (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

#### Sec. 6-6. General Provisions.

6-601. Responsibility for Agency Implementation. The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6-602. Executive Order No. 12250. This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6-603. Executive Order No. 12875. This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6-604. Scope. For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6-605. Petitions for Exemptions. The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6-606. Native American Programs. Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian

Tribes.

6-607. Costs. Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6-608. General. Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6-609. Judicial Review. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance of the United States, its agencies, its officers, or any other person with this order.

William J. Clinton

THE WHITE HOUSE,  
February 11, 1994.

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## **APPENDIX B: US Department of Transportation Order 5610.2(a)**

May 2, 2012

### **Final DOT Environmental Justice Order**

#### **Summary:**

The Department of Transportation (the Department or DOT) is issuing an update to Departmental Order 5610.2(a) (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). This Order updates the Department's original Environmental Justice Order, which was published April 15, 1997. The Order continues to be a key component of the Department's strategy to promote the principles of environmental justice in all Departmental programs, policies, and activities.

DOT Order 5610.2(a) sets forth the DOT policy to consider environmental justice principles in all (DOT) programs, policies, and activities. It describes how the objectives of environmental justice will be integrated into planning and programming, rulemaking, and policy formulation. The Order sets forth steps to prevent disproportionately high and adverse effects to minority or low-income populations through Title VI analyses and environmental justice analyses conducted as part of Federal transportation planning and NEPA provisions. It also describes the specific measures to be taken to address instances of disproportionately high and adverse effects and sets forth relevant definitions.

This updated Order reaffirms DOT's commitment to environmental justice and clarifies certain aspects of the original Order, including the definitions of "minority" populations in compliance with the Office of Management and Budget's (OMB) Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity of October 30, 1997. The revisions clarify the distinction between a Title VI analysis and an environmental justice analysis conducted as part of a NEPA review, and affirm the importance of considering environmental justice principles as part of early planning activities in order to avoid disproportionately high and adverse effects. The updated Order maintains the original Order's general framework and procedures and DOT's commitment to promoting the principles of environmental justice in all DOT programs, policies, and activities.

#### **Order 5610.2(a)**

**Subject: Department of Transportation Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

##### **1. Purpose and Authority**

- a. This Order updates and clarifies environmental justice procedures for the Department in response to the Memorandum of Understanding on Environmental Justice signed by heads of Federal agencies on August 4, 2011, DOT's revised environmental justice strategy issued on March 2, 2012, and Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994.

The Department's original Environmental Justice Order, issued April 15, 1997, was a key component of the Department's original strategy and established

procedures to be used by DOT to comply with Executive Order 12898. This revised Order continues to be a key component of DOT's environmental justice strategy. It updates and clarifies certain aspects of the original Order while maintaining its general framework and procedures and DOT's commitment to promoting the principles of environmental justice in all DOT programs, policies, and activities. Relevant definitions are in the Appendix.

- b. Executive Order 12898 requires each Federal agency, to the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, to achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including interrelated social and economic effects, of its programs, policies, and activities on minority populations and low-income populations in the United States. Compliance with this DOT Order is a key element in the environmental justice strategy adopted by DOT to implement the Executive Order, and can be achieved within the framework of existing laws, regulations, and guidance.
- c. Consistent with paragraph 6-609 of Executive Order 12898, this Order is limited to improving the internal management of DOT and is not intended to, nor does it, create any rights, benefits, or trust responsibility, substantive or procedural, enforceable at law or equity, by a party against the Department, its Operating Administrations, its officers, or any person. Nor should this Order be construed to create any right to judicial review involving the compliance or noncompliance with this Order by the Department, its Operating Administrations, its officers or any other person.

## 2. **Scope**

This Order applies to the Office of the Secretary, DOT's Operating Administrations, and all other DOT components.

## 3. **Effective Date**

This Order is effective upon its date of issuance.

## 4. **Policy**

- a. It is the policy of DOT to promote the principles of environmental justice (as embodied in the Executive Order) through the incorporation of those principles in all DOT programs, policies, and activities. This will be done by fully considering environmental justice principles throughout planning and decision-making processes in the development of programs, policies, and activities, using the principles of the National Environmental Policy Act of 1969 (NEPA), Title VI of the Civil Rights Act of 1964 (Title VI), the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, (URA), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59; SAFETEA-LU) and other DOT statutes, regulations and guidance that address or affect infrastructure planning and decision-making; social, economic, or environmental matters; public health; and public involvement.



- b. In complying with this Order, DOT will rely upon existing authority to collect data and conduct research associated with environmental justice concerns. To the extent permitted by existing law, and whenever practical and appropriate to assure that disproportionately high and adverse effects on minority or low income populations are identified and addressed, DOT shall collect, maintain, and analyze information on the race, color, national origin, and income level of persons adversely affected by DOT programs, policies, and activities, and use such information in complying with this Order.

## **5. Integration with Existing Operations**

- a. The Office of the Secretary and each Operating Administration shall determine the most effective and efficient way of integrating the processes and objectives of this Order with their existing regulations and guidance.
- b. In undertaking the integration with existing operations described in paragraph 5a, DOT shall observe the following principles:
  - 0. (1) Environmental justice principles apply to planning and programming activities, and early planning activities are a critical means to avoid disproportionately high and adverse effects in future programs, policies, and activities. Planning and programming activities for policies, programs, and activities that have the potential to have a disproportionately high and adverse effect on human health or the environment shall include explicit consideration of the effects on minority populations and low-income populations. Procedures shall be established or expanded, as necessary, to provide meaningful opportunities for public involvement by members of minority populations and low-income populations during the planning and development of programs, policies, and activities (including the identification of potential effects, alternatives, and mitigation measures).
  - 1. (2) Steps shall be taken to provide the public, including members of minority populations and low-income populations, access to public information concerning the human health or environmental impacts of programs, policies, and activities, including information that will address the concerns of minority and low-income populations regarding the health and environmental impacts of the proposed action.
- c. Future rulemaking activities undertaken pursuant to DOT Order 2100.5 (which governs all DOT rulemaking), and the development of any future guidance or procedures for DOT programs, policies, or activities that affect human health or the environment, shall address compliance with Executive Order 12898 and this Order, as appropriate.
- d. The formulation of future DOT policy statements and proposals for legislation that may affect human health or the environment will include consideration of the provisions of Executive Order 12898 and this Order.

## **6. Ongoing DOT Responsibility**

Compliance with Executive Order 12898 is an ongoing DOT responsibility. DOT will continuously monitor its programs, policies, and activities to ensure that

disproportionately high and adverse effects on minority populations and low-income populations are avoided, minimized or mitigated in a manner consistent with this Order and Executive Order 12898. This Order does not alter existing assignments or delegations of authority to the Operating Administrations or other DOT components.

**7. Preventing Disproportionately High and Adverse Effects**

- a. Under Title VI, each Federal agency is required to ensure that no person, on the ground of race, color, or national origin, is excluded from participation in, denied the benefits of, or subjected to discrimination under any program or activity receiving Federal financial assistance. This statute affects every program area in DOT. Consequently, DOT managers and staff must administer their programs in a manner to assure that no person is excluded from participating in, denied the benefits of, or subjected to discrimination by any program or activity of DOT because of race, color, or national origin. While Title VI is a key tool for agencies to use to achieve environmental justice goals, it is important to recognize that Title VI imposes statutory and regulatory requirements that are broader in scope than environmental justice. There may be some overlap between environmental justice and Title VI analyses; however, engaging in environmental justice analysis under Federal transportation planning and NEPA provisions will not necessarily satisfy Title VI requirements. Similarly, a Title VI analysis would not necessarily satisfy environmental justice requirements, since Title VI does not include low-income populations. Moreover, Title VI applies to all Federally-funded projects and activities, not solely those which may have adverse human health or environmental effects on communities.
- b. It is DOT's policy to actively administer and monitor its operations and decision-making to assure that nondiscrimination and the prevention of disproportionately high and adverse effects are an integral part of its programs, policies, and activities. DOT currently administers policies, programs, and activities which are subject to the requirements of NEPA, Title VI, URA, SAFETEA-LU and other statutes that involve human health or environmental matters, or interrelated social and economic impacts. These requirements will be administered so as to identify, early in the development of the program, policy or activity, the risk of discrimination and disproportionately high and adverse effects so that positive corrective action can be taken. In implementing these requirements, the following information should be obtained where relevant, appropriate and practical:
  - Population served and/or affected by race, color or national origin, and income level;
  - Proposed steps to guard against disproportionately high and adverse effects on persons on the basis of race, color, or national origin, and income level;
  - Present and proposed membership by race, color, or national origin, in any planning or advisory body that is part of the program, policy or activity.
- c. Statutes governing DOT operations will be administered so as to identify and avoid discrimination and avoid disproportionately high and adverse effects on minority populations and low-income populations by:

0. (1) identifying and evaluating environmental, public health, and interrelated social and economic effects of DOT programs, policies, and activities,
1. (2) proposing measures to avoid, minimize and/or mitigate disproportionately high and adverse environmental and public health effects and interrelated social and economic effects, and providing offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by DOT programs, policies, and activities, where permitted by law and consistent with the Executive Order,
2. (3) considering alternatives to proposed programs, policies, and activities, where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, consistent with the Executive Order, and
3. (4) eliciting public involvement opportunities and considering the results thereof, including soliciting input from affected minority and low-income populations in considering alternatives.

#### **8. Actions to Address Disproportionately High and Adverse Effects**

- a. Following the guidance set forth in this Order and its Appendix, the head of each Operating Administration and the responsible officials for other DOT components shall determine whether programs, policies, or activities for which they are responsible will have an adverse human health or environmental effect on minority and low-income populations and whether that adverse effect will be disproportionately high.
- b. In making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancements measures that will be implemented and all offsetting benefits to the affected minority and low-income populations may be taken into account, as well as the design, comparative impacts, and the relevant number of similar existing system elements in non-minority and non-low-income areas.
- c. The Operating Administrators and other responsible DOT officials will ensure that any of their respective programs, policies or activities that will have a disproportionately high and adverse effect on minority populations or low-income populations will only be carried out if further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effect are not practicable. In determining whether a mitigation measure or an alternative is "practicable," the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.
- d. The Operating Administrations and other responsible DOT officials will also ensure that any of their respective programs, policies, or activities that will have a disproportionately high and adverse effect on populations protected by Title VI ("protected populations") will only be carried if:

0. (1) a substantial need for the program, policy, or activity exists, based on the overall public interest; and
1. (2) alternatives that would have less adverse effects on protected populations (and that still satisfy the need identified in subparagraph d(1) above), either
  1. (a) would have other adverse social, economic, environmental or human health impacts that are severe; or
  2. (b) Would involve increased costs of extraordinary magnitude.
- e. DOT's responsibilities under Title VI and related statutes and regulations are not limited by this paragraph, nor does this paragraph limit or preclude claims by individuals or groups of people with respect to any DOT programs, policies, or activities under these authorities. Nothing in this Order adds to or reduces existing Title VI due process mechanisms.
- f. The findings, determinations, and/or demonstration made in accordance with this section must be appropriately documented, normally in the environmental impact statement or other NEPA document prepared for the program, policy, or activity, or in other appropriate planning or program documentation.

## Appendix

### 1. Definitions

The following terms where used in this Order shall have the following meanings:

- a. DOT means the Office of the Secretary, DOT Operating Administrations, and all other DOT components.
- b. Low-Income means a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
- c. Minority means a person who is:
  0. (1) Black: a person having origins in any of the black racial groups of Africa;
  1. (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
  2. (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
  3. (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
  4. (5) Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- d. Low-Income Population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant,

geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity.

- e. Minority Population means any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity.
- f. Adverse effects means the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of DOT programs, policies, or activities.
- g. Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that:
  - 0. (1) is predominately borne by a minority population and/or a low-income population, or
  - 1. (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.
- h. Programs, policies, and/or activities mean all projects, programs, policies, and activities that affect human health or the environment, and which are undertaken or approved by DOT. These include, but are not limited to, permits, licenses, and financial assistance provided by DOT. Interrelated projects within a system may be considered to be a single project, program, policy or activity for purposes of this Order.
- i. Regulations and guidance means regulations, programs, policies, guidance, and procedures promulgated, issued, or approved by DOT.

May 2, 2012

Ray LaHood

Secretary of Transportation

## APPENDIX C: Measuring the Extent of Segregation

If all minority and majority populations were evenly distributed across the community, there would be no neighborhoods with relatively high proportions of minorities. The "dissimilarity index" is a measure of the extent to which the distribution of minority populations is uneven, representing the percentage of majority or minority population that would have to move to another neighborhood to result in a perfectly even distribution of the population across the neighborhoods in a community. Since a random distribution of population is rarely if ever an even distribution, the dissimilarity index overstates systematic segregation when unit populations are small and/or the community proportion of the minority group is small. The term "systematic segregation" in this context means "statistically non-random."

Nevertheless, the dissimilarity index is useful for comparing levels of segregation for different types of minority group within metropolitan areas and for comparing metropolitan areas to each other. Researchers typically use census tracts as the geographic unit of analysis. Applying this approach to Olmsted County and the Rochester urban area census tract data (covering Rochester and the adjacent four townships) results in the dissimilarity indices presented in the table below. For purposes of comparison, males (48.5% of the population) had a dissimilarity index (DI) in 2010 of 2.9%.

**Table 3 Dissimilarity Indices - Olmsted County and Rochester Area**

Census Tract Level Dissimilarity Index for Selected Population and Housing Attributes for Olmsted County and the Rochester and Four Township Area		
Factor	Olmsted County	Rochester-4T
Black v White/non-Hispanic-Latino (WNHL) 2000	48.1%	42.1%
Asian v WNHL 2000	33.1%	26.0%
Hispanic/Latino v WNHL 2000	33.1%	27.8%
All minorities v WNHL 2000	32.5%	25.3%
Black v WNHL 2010	44.6%	36.7%
Asian v WNHL 2010	28.4%	19.7%
Hispanic/Latino v WNHL 2010	35.2%	30.7%
All minorities v WNHL 2010	29.6%	22.4%
Renter household population v owner 2000	41.4%	43.1%
Renter household population v owner 2010	39.0%	40.1%
Household population in poverty v other ACS 2009-13 <sup>30</sup>	30.9%	30.9%
"Speak English less than very well" ACS 2009-13	38.5%	31.7%
Foreign born v native ACS 2009-13	35.3%	28.0%
Persons with disabilities v other 2008-12 ACS	13.8%	13.3%

The overall indices for "all minorities" in 2000 and 2010 are lower than for low income persons and lower cost housing styles. The dissimilarity index for all household populations of minority

<sup>30</sup> Note that estimates based on 2009-13 ACS data may be exaggerated somewhat due to the margins of error for each tract's population.

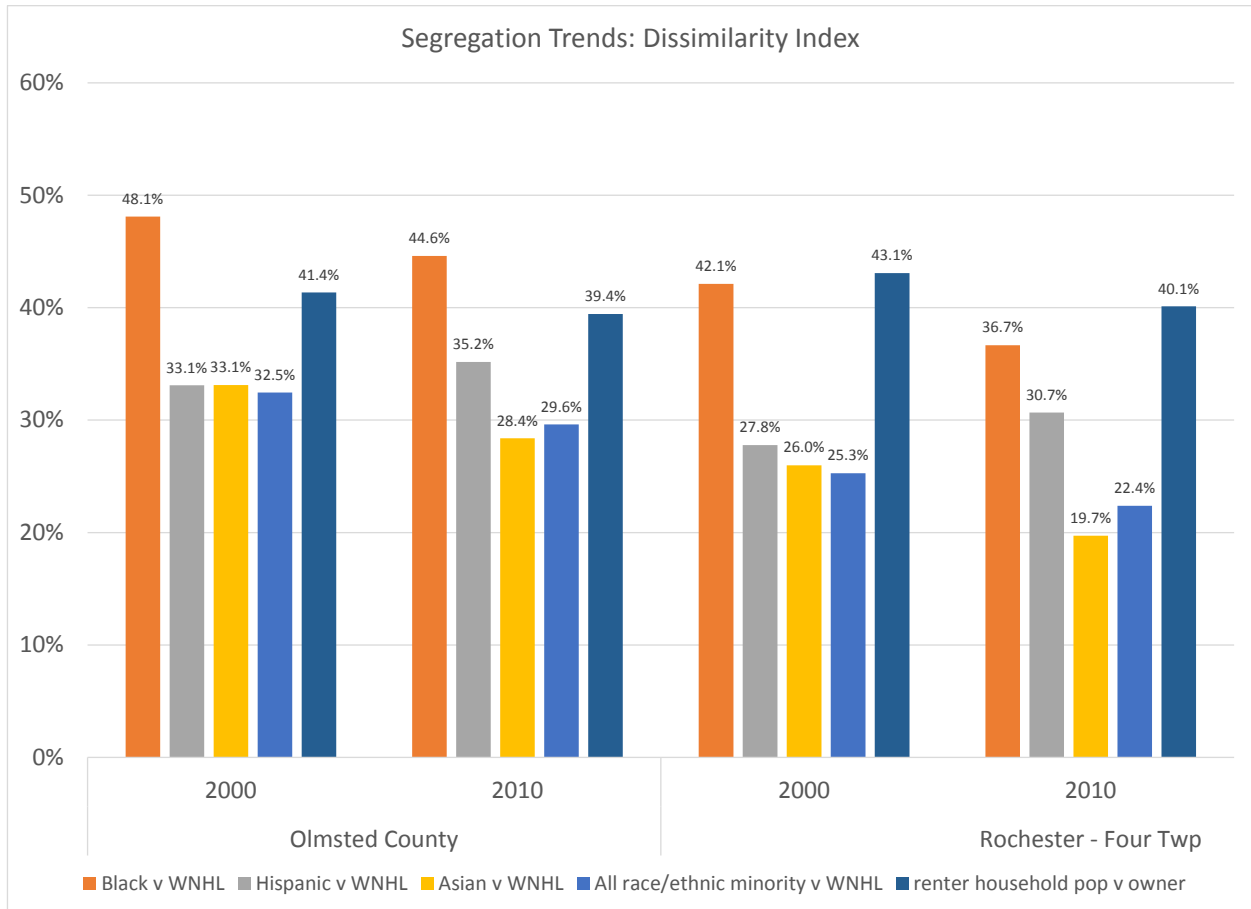
race fell slightly in 2000 and again in 2010 and remains low in comparison to larger metropolitan areas and in comparison to similar sized cities in the Midwest. However, the dissimilarity index for the Black –non-Hispanic population is relatively high compared to other groups and the dissimilarity index for the Hispanic-Latino population increased between 2000 and 2010. Also of concern are the relatively high dissimilarity index levels for low income minority populations and renter households. Households that combine minority race, low income, and limited English proficiency may experience segregation levels exceeding 50%.<sup>31</sup>

This is the result of concentration of lower cost rental housing in limited areas of Rochester. School enrollment data confirm the concentration of racial minorities in Rochester, with 37% minority students in 2014-15 compared to 6% in the other districts and 41% low income students compared to 22% in smaller districts. The low availability of affordable rental housing outside Rochester contributes to the concentration of poverty in some Rochester neighborhoods. The lack of a housing code outside Rochester further reduces the supply of housing meeting standards qualifying properties for HUD rent subsidies.

Segregation of lower income households is undesirable by itself, but in addition, concentrating new lower cost housing will result in increasing segregation by race. Of area jurisdictions, only Rochester has formally committed to a policy of integrating affordable housing. Olmsted County and other ROCOG jurisdictions should also make that commitment. An equitable region is made up of inclusive, not exclusive, communities. Inclusive communities in turn are made up of inclusive, not exclusive, neighborhoods.

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<sup>31</sup> Based on estimates by Census tract of the distribution of low income population by race and ethnicity from the 2009-2013 Five Year American Community Survey. These estimates have high margins of error, which complicate calculation of the dissimilarity index.



**Figure 24 Trends in Segregation - Olmsted County and Rochester Area**



## APPENDIX D: Data Sources and Analysis in Detail

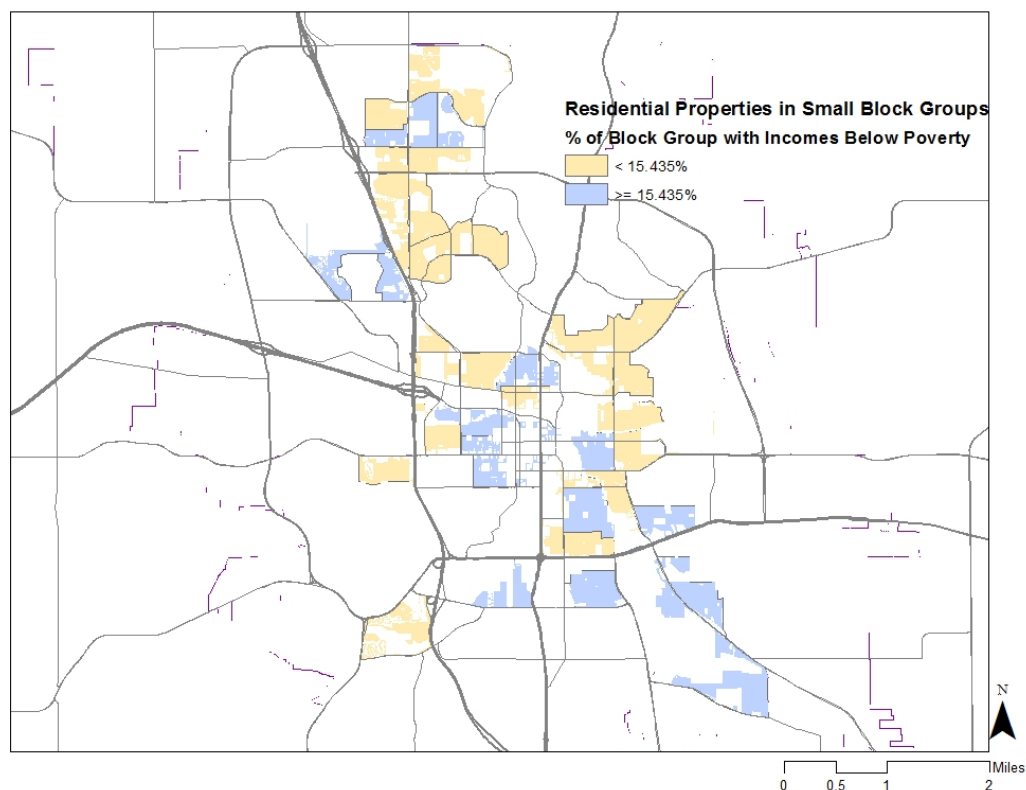
The methodology for identifying environmental justice populations relies on Census data from the decennial Census and the annual American Community Survey, along with property data, including data on the locations of subsidized housing and group quarters. The sources relied on for identifying environmental justice populations are described and evaluated below.

### D.1 Census Data

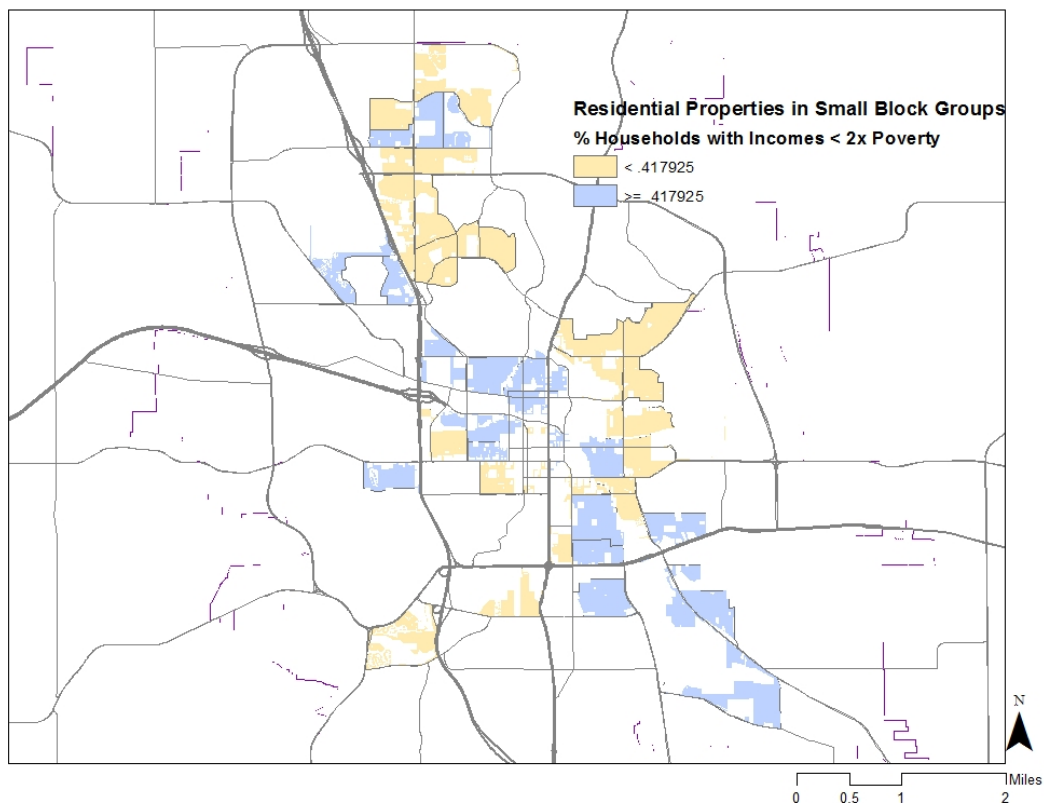
#### D.1.1 Block Group Data

The lowest level of geographic aggregation for which the Census reports income data is the block group. For 72 of the 112 block groups in Olmsted County, the data covers too large an area to be directly useful for environmental justice analysis. Depending on the geographic extent of the project and its impact area, block group data for 40 block groups may be useful.

In the core neighborhoods of Rochester, population density results in small block group dimensions. Because these block groups are relatively homogeneous, we were able to derive relationships among real property variables and block data and poverty measures. We use block group-derived measures directly where appropriate. The following maps show poverty measures for the residential areas of block groups small enough to be useful for EJ analysis.



**Figure 25 % Poverty for Small Block Groups**



**Figure 26 % Two Times Poverty for Small Block Groups**

#### D.1.2 Public Use Microdata Sample (PUMS) Data

Census data from the Public Use Microdata Sample (PUMS) for Olmsted County has been examined to determine relationships at the household level among variables related to race, language, national origin, income, and housing characteristics.

In general, while very few persons with incomes below the poverty level live in relatively expensive residences, many of those who dwell in inexpensive residences have incomes above the poverty level. Reflecting additional household attributes strengthens the relationship between housing characteristics and poverty. Because the PUMS data reflects actual households, instead of aggregated data for households, it is possible to determine relationships with statistical validity. Analysis of household level data from PUMS Census data confirms the strong correlation between income and housing and household attributes. As shown in the table below, the PUMS data identifies several variables associated with risk of poverty that are available as attributes of parcels, that are provided by the Census at the block level, or that could be available aggregated at the block level from cooperating school districts .

**Table 4 Poverty Measures Related to Census Block Level Data from Census and Local Sources**

Poverty Measures Related to Census Block and Parcel Variables				
Variable	Poverty %	2 X Poverty %	PUMS Sample size	Confidence Interval* (+/-)
Parcel data				
housing style				
single family attached & detached	7.1%	16.3%	1,997	1.4%
manufactured home	21.1%	50.6%	99	8.3%
multifamily 2-4 unit	26.7%	52.4%	92	8.6%
multifamily 5-19 unit	22.7%	49.0%	90	8.7%
multifamily 20-49 unit	39.7%	58.1%	73	9.5%
multifamily 50+ unit	25.1%	52.3%	92	8.6%
Census block data				
tenure				
owner households	2.7%	12.4%	1,960	1.2%
renter households	17.5%	44.7%	417	4.0%
household type				
married couple	2.3%	8.4%	1450	1.2%
female householder family	16.0%	46.8%	163	6.4%
female householder non-family	12.6%	36.8%	405	3.9%
School district student data				
household language				
English only	4.9%	17.1%	2,150	1.3%
Spanish	10.5%	23.9%	67	8.6%
Other Indo-European	4.0%	13.3%	75	6.5%
Asian	6.8%	18.6%	59	8.3%
Other	15.4%	50.0%	26	16.1%
Threshold	15.4%	41.8%		
* Calculated for two times poverty level at 90% confidence.				

### D.2 Real Property and Related Data

In addition to the parcel data described above, several sources of current real property data can be compiled to use with the demographic data sources. These include

1. Data on residential structures and group quarters locations;
2. Housing code enforcement data indicating the number of units at addresses for rental property;
3. Data from the Olmsted County Housing and Redevelopment Authority on the locations of publicly owned subsidized housing; and
4. Data from the files of the Rochester Olmsted Planning Department and the Olmsted County Community Services Department on the locations of housing for persons with disabilities, and other special housing types.

Real property data has four significant advantages over other data sources:

- it is current;
- it applies at the parcel level, the most precise available level of geographic detail;
- it is audited routinely for accuracy;
- it has 100% coverage, as opposed to sample data; and
- all of it is public data.

While there is a lag between the occurrence of building improvements and their being reflected in property records, that lag is no longer than the lag between Census data collection and release. Real property data provides a good statistically sound basis for estimating aggregate block level household characteristics.

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