Analysis of the Environmental Justice Compliance of the Chicago Transit Authority (CTA)

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ABSTRACT

Environmental Justice (EJ) derives its principles

The Federal Transit Administration has issued three principles of

potentially give agencies a useful tool that could aid in the decisions to distribute funds and prioritize projects in future years.

OVERVIEW OF THE METHODOLOGY

This section reviews issues related to the boundaries of the CTA service areas, the selection of the geographical unit of analysis, and the selection of areas that are to be considered environmental justice neighborhoods.

Identification of the Study/Service Area

For the purposes of this project, the CTA divided its service area into six geographic zones (Loop, North, Northwest, South, Southwest, and West). The CTA chose to use broad descriptions of the zonal boundaries (e.g. “service limits to the west”) and as a result the demographic figures compiled are approximations. However, we are confident that the approximations are representative of the zone’s true demographic make-up. The inclusion or exclusion of certain populations in this analysis due to broad zonal boundaries is a concern and will be addressed in future months.

The demographic analysis for this research is conducted at two levels: (1) at the zonal level, and (2) at the census tract level. Therefore, our analysis includes all census tracts that have their geographic center located within the six zones. This method has given us realistic approximations of the demographic and economic conditions in each service area. However, these numbers are only approximations and future work on defining the appropriate boundaries .7422 Tm(m)Tj10.98 0

ustice Neighborhood Identification

ers have debated the process of identifying ar tice (EJ)
thout consensus on the most appropriate meth , various issues
development of a compliance methodology a

unit of analysis

ldress two issues when determining the speci rea. First,
nsider the desired size of the unit of analysis. geographic
as population measures. Secondly, agencies ata are available
gregation (disaggregation) of the geographic romises in
f analysis will often be made on account of d

must be considered is with regards to the ta and the ease
ng census block vides great
f
study area into a few zones provides for easy and

environmental justice study, including, but not limited to, race, ethnicity, income-level, disability, and age. For the purposes of this paper, criteria were selected on the basis of minority status, ethnic background, and income levels.

Race and Ethnicity: Race (Black) and ethnicity (Hispanic) are two criteria that are always analyzed in environmental justice studies. There are typically two ways a unit of analysis can qualify as an EJ neighborhood on the basis of race and/or ethnicity. A common way to decide this is through the use of a reference area. For example, if an environmental justice study were being conducted for a city, then the percentage of Blacks and Hispanics, as a total of the entire city population would be calculated. Consequently, any unit of analysis within the city that meets or exceeds this threshold would qualify as an EJ-neighborhood. For example, if a city's population included 15% Hispanic people, then any unit of analysis with a Hispanic population of 15% or higher would be considered an EJ-neighborhood. The reference area technique is becoming increasingly popular with municipalities and metropolitan planning organizations across the nation.

The other method that could be used to determine an EJ neighborhood on the basis of minority or ethnicity is by setting an arbitrary threshold. For example, the Agricultural Advisory Board in the Environmental Protection Agency defines a minority community as a census tract that has a minority group that accounts for greater than 30% of the total population in that census tract. This method is not as common, partly because the percentage chosen is subject to criticism as it typically has little backing by past studies or federal actions. The use of a reference area seems to be more logical, and furthermore it allows for methodologies to evolve smoothly over time and adapt to specific local trends.

Income: The last criteria that must be decided concerns low-income populations. This decision appears to be much more complex then the decision on racial and ethnic populations. In the past, studies have used the reference area technique. In order to use this technique, the percentage of people living at or below the poverty rate (or some other income measure) is calculated for the reference area and any unit of analysis that meets or exceeds the threshold is considered an EJ-neighborhood. The reference area technique is sometimes conducted through use of the median household income. The threshold would be determined by the region's median household income. If a unit of analysis has a median household income of a 10.a3898 340 0 10.98 318.21 357.9045 Tm(e)Tj10.9

In addition to the above discussed methodology concerns, agencies should consider whether the use of varying degrees of EJ neighborhoods is appropriate. For example, should a census tract with a high level of poverty be analyzed in the same manner as a census tract with a high degree of minorities, low-income individuals, and people with disabilities?

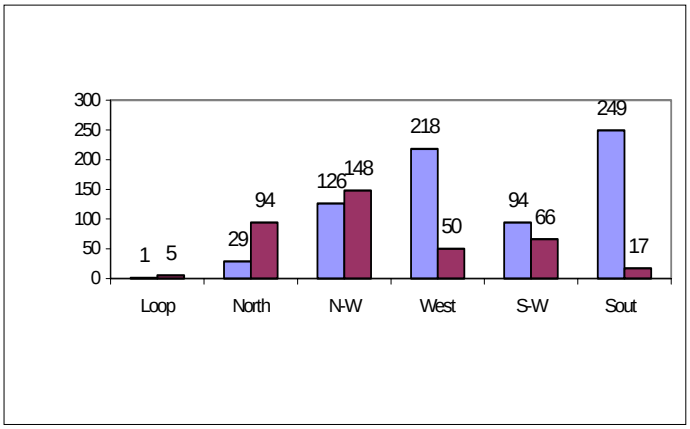
The selection of the criteria to be used is very critical to establishing a good methodology. The way that an agency chooses to display the data is critical to what the results of the study will actually reveal.

COMPARISION OF EJ NEIGHBORHOODS AND NON-EJ NEIGHBORHOODS

The importance of adopting an acceptable definition of an EJ neighborhood was underscored in the previous section. Next, we look at the definitions used for this study.

EJ Neighborhood Definitions

The reference area methodology is used in this research for identifying geographic units of analysis (i.e. census tracts) that qualify as environmental justice neighbor8 2 Tm618s9v6Te(en)Tj10.98 0 0 10.96.9613


300
250
200
150
100
50
0
1
5
29
94
126
148
218
50
94
66
249
17
Loop
North
N-W
West
S-W
Sout

Results of the Comparison

The study area consists of 1,107 census tracts according to the 2000 decennial census. (Table 1) These tracts qualify as EJ tracts under either the race, ethnic, or low-income categorization. The most striking detail about the distribution is that the study area has more census tracts under the EJ classification (762) as opposed to the non-EJ classification (345), or 69% compared to 31%. An overwhelming majority of these EJ tracts are concentrated in the West and South zones (43% of all census tracts) with the Northwest zone's EJ tracts accounting for another 11% of the total census tracts.

In addition to a strikingly high number of EJ tracts, the data revealed extremely high concentrations of the target populations within the EJ neighborhoods. As previously stated, EJ tracts only have to exceed the Cook County threshold in one or more of the target populations. This means that there is no distinction between EJ tracts that meet the threshold and those that exceed the threshold by two or three times. However, the concentrations of the target populations were evident after running comparisons between EJ neighborhoods and non-EJ neighborhoods. The following statistics clearly show the high concentrations of the target populations in EJ neighborhoods.

> System-wide, 86% of the low-income population is found to live in the EJ tracts, with only 14% living in the non-EJ tracts.
>
> System-wide, 96% of the Black population is found to live in the EJ tracts, with only 4% living in the non-EJ tracts.
>
> System-wide, 87% of the Hispanic population is found to live in the EJ tracts, with only 13% living in the non-EJ tracts.
>
> System-wide, only 11% of the White population is found to live in the EJ tracts, with 89% living in the non-EJ tracts.

Looking at the zones with the greatest population of the target populations the data revealed even higher amounts of concentration.

> The South zone has the largest Black population in the in the study area (586,184) and the EJ tracts in this zone account for nearly all (99.9%) of the Black population in the zone.
>
> The Northwest zone has the largest Hispanic population in the study area (357,619) and the EJ tracts in this zone account for 83% of the Hispanic population in the zone.
>
> The South zone has the largest low-income population in the study area (276,154) and EJ tracts in this zone account for slightly over 99% of the low-income population in the zone.

Of the 762 EJ census tracts in the study area, 32 qualify as EJ tracts on all three criteria (i.e. they meet the threshold for race, ethnicity, and low-income). These are critical neighborhoods that need the utmost attention. These 32 census tracts are distributed amongst the six zones with the North, and Northwest having two and four tracts each respectively. The West zone includes nine tracts and the South zone includes ten tracts.

Table 2 depicts the work trips made in the study area by public transportation. This table reveals some interesting details.

TABLE 2. Work Trips by Public Transportation

	Tracts	Low-income population	Total Work Trips	Total Work Trips by Public Transportation	Percent Total by Public Transportation
Loop	6	2,204	10,675	2,724	25.5%
North	123	95,039	283,071	105,045	37.1%
N-W	274	227,275	550,855	92,430	16.8%
South	266	276,154	251,597	69,834	27.8%
S-W	160	141,644	278,256	37,222	13.4

the first step in this research. A fair amount of work lies ahead in order to develop a completed methodology and analyze the compliance of the CTA.

FUTURE WORK

The research team will next have to tie the capital investments to the demographic information to analyze if there are inequities in the process. The team will make use of ridership information from the CTA as well as identify/develop other performance measures for the transit system to perform an equity analysis.

There is also a need to develop accessibility measures (number of transit users able to access jobs) and mobility measures (number of jobs accessible within certain time) based on data from the census as well as other transportation models developed in-house at the Urban Transportation Center. Finally, in order to gain an increased insight on the state of the various EJ neighborhoods, more economic and social data will be compiled. The increased data will reveal particular issues that plague many of the distressed neighborhoods. Understanding these issues could help the CTA in their project prioritization process.

The geographic realignment of the EJ tracts, based on a comparison of the 1990 census data with the 2000 census data, will also shed light on the trend in the target population. These tasks along with the development of a framework for future environmental justice analyses will equip the CTA with a tool to ensure equitable service investments in the Chicago area.

ACKNOWLEDGEMENTS

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