

## Appendix C: Environmental Justice

On February 4, 1994, President William Clinton signed Executive Order 12898: *Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations*. Executive Order 12898 augments the 1964 Title VI Civil Rights legislation that assures that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Environmental Justice (EJ) is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative consequences resulting from industrial, municipal and commercial operations or the execution of federal, state, local and tribal programs and policies (U.S. Environmental Protection Agency).” The focus of EJ embraces three fundamental principles:

- Avoid, minimize or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

The U.S. Department of Transportation (U.S. DOT) expounded on EPA’s definition and stated that “in making determinations regarding disproportionately high and adverse effects on minority and low-income populations, mitigation and enhancements measures will be taken into account, as well as design, comparative impacts and the relevant number of similar existing system elements in non-minority and non low-income areas.”

The U.S. DOT has issued guidelines to Metropolitan Planning Organizations (MPOs) regarding their role in EJ. The role of the MPO is to:

- Explore needs within minority communities;
- Involve minority communities and disabled persons in the transportation planning process;
- Include minorities/disabled persons on boards and committees in leadership roles,
- Document Title VI efforts;
- Advertise public meetings in places where minorities/disabled persons go;
- Hold meetings at times and places convenient for the minority community;
- Communicate in languages other than English (orally and written);
- Consider special needs in public accommodations; and
- Follow up with the minority community after public meetings, when decisions are made and after project implementation.

House Bill 3588 passed during the 78<sup>th</sup> Texas Legislature mandated the coordination of public transportation services and funding among health and human service agencies, the Texas Workforce Commission, and the Texas Department of Transportation (TxDOT). The intent of HB 3588 is to: 1) eliminate waste in the provision of public transportation services; 2) generate

efficiencies that will permit increased levels of service; and 3) further the state's efforts to reduce air pollution.

A project steering committee was created by the H-GAC Board of Directors. The committee, the Regional Public Transportation Coordination Steering Committee, was comprised of 43 stakeholders representing public transportation agencies, social service agencies, transportation advocacy groups and health and human service agencies throughout the 13-county Gulf Coast region. The steering committee was especially helpful in the coordination of public meetings.

Between July 24 - August 18, 2006, eighteen (18) public meetings were held throughout the 13-county Gulf Coast region in support of regional public transportation coordination activities. The purpose of the outreach was to gain insight from stakeholders in the region regarding existing public transportation services and needed public transportation services. While many in attendance at the meetings expressed their appreciation of the services that are currently being offered, most agreed that there were further transit services necessary to completely meet their area's needs. A generalization of the comments included:

- A desire for public transportation to be available on nights and weekends in order to meet the needs of shift workers, recreational trips, and other purposes.
- The general public had a lack of information about available public transportation services within their area(s).
- Problems with Medicaid transportation.
- The existing rules and regulations make it difficult for many people to access existing public transportation services (especially for medical purposes).
- Concerns about the elderly citizens needing transportation.
- Concerns for the youth needing transportation to jobs and recreational activities.
- Comments regarding emergency evacuation and the transit dependent population and others without access to transportation.
- Concern that some elected officials don't take public transportation seriously.

Total public meeting attendance reached 350 attendees, including the general public, advocacy group representatives, elected officials, social service agencies, transportation providers, and city, county, and state officials.

Public sentiment towards public transportation was also gathered through the use of four attitudinal surveys (Consumer Survey, Economic Development Survey, Social Service Agency Survey, and Public Transportation Inventory Survey) that were distributed across the 13-county Gulf Coast region. Each survey focused on a different group of intended respondents. A total of 1,569 completed surveys were returned to the consultant for tabulation. The results of each survey and meetings can be found on the project website <http://www.ridethegulfcoast.com>.

In addition to H-GAC's outreach efforts, the United Way Texas Gulf Coast (UWTGC) with consultant assistance from the Texas Citizen Fund (TCF) conducted additional outreach in the United Way's four-county service area (Fort Bend, Harris, Montgomery, and Waller). The TCF outreach was conducted to gather input on mobility challenges from persons with disabilities, seniors, low income residents, and others through a consumer survey available in English, Spanish, Vietnamese, online, in large print, and over the telephone. TCF analyzed 3,544 surveys, the results of which provide the basis for a snapshot of how seniors, persons with disabilities, and low income residents in their four county service area travel and what constrains their mobility. The TCF also facilitated workshops throughout the UWTGC service area to obtain the same information that was asked in the survey. TCF used H-GAC EJ Accessibility Analysis data to strategically locate the workshops in areas of large percentage minority populations, zero auto households, and low income households. Workshop attendance was 115 persons.

The findings of the UWTGC/TCF outreach are:

1. The mobility of persons with disabilities, seniors, and low-income persons is tenuous, whether they use public transportation or report driving.
2. Medical care and groceries are the chief destinations to which access is limited.
3. Travel to, from, and within Harris County is a challenge throughout the region for those who use public transportation.
4. Passengers have significant concerns about their safety and security when using public transportation.
5. Potential public transportation customers are often unaware of transportation services.
6. Passengers cite affordability as a challenge.

### **Envision Houston Region**

In the fall of 2005 H-GAC partnered with prominent stakeholder groups to conduct a series of visioning workshops entitled “Envision Houston Region.” The purpose of the workshops was to explore alternative growth strategies to identify innovative approaches to solve transportation problems while engaging the community and serving as a catalyst for their interaction with local governments and decision makers in the process.

On September 17, 2005, H-GAC partnered with Blue Print Houston, a local non profit organization dedicated to building community support for a planning process that makes improvements to Houston’s quality of life to host an Envision Houston Region workshop at the University of Houston Hilton Hotel in the Third Ward area of Houston. The meeting was attended by over 400 persons. A diverse group of citizens attended the workshop including civic associations, business and development groups, university students and faculty, environmental groups, as well as planning experts from local and state agencies. Over fifty zip codes within the city of Houston were represented at the workshop. This was the most inclusive workshop of the Envision Houston Region initiative.

The 8-county H-GAC region is projected to increase in population by more than 4 million people by the year 2035. This correlates to adding a city the size of Los Angeles on top of the current H-GAC region population. As Table 1 indicates, a large percentage of this projected growth will be accounted for by growth in minority populations. As the H-GAC region becomes increasingly diverse, Environmental Justice issues will continue to be at the forefront of H-GAC’s transportation planning efforts.

**Table 1: Projected Demographic Changes in H-GAC Region 2000-2035**

<b>H-GAC Region</b>	<b>2000</b>	<b>2035</b>	<b>% change</b>
Population	4,669,571	8,835,000	89.20%
Households	1,639,401	3,302,013	101.40%
% Minority	52.10%	68.97%	16.87%
% Non-minority	47.80%	31.02%	-16.87%
% Zero-Auto Households	8.28%	14.10%	5.82%

Year 2000 Source: U.S. Census Bureau

The projected demographic data highlights important changes that will affect Environmental Justice analyses in the future for which planning should begin today. For example, the projections forecast an increase in the percentage of zero-auto households in the H-GAC region to nearly 15%, an increase of almost 6% from year 2000. This projected increase emphasizes the

need for increased investment in transit services and other alternative means of transportation. Although planning efforts are underway to identify communities with high transit needs, this projection suggests this work needs to be both ongoing and expanded.

As can be seen in Table 2 as well as Chart 1, significant changes in the distribution of household income are projected to occur in the H-GAC region between 2000 and 2035. In this analysis household income is divided into five quintiles, or classifications (\$0 to \$15,000, \$15,000 to \$30,000, \$30,000 to \$50,000, \$50,000 to \$75,000 and \$75,000 and above.) The income figures are presented in 1995 dollars, meaning they are constant dollars and do not factor in inflation levels. The current (year 2000) household income distribution has the least percentage of households in the lowest income quintile (\$0 to \$15,000) and the highest percentage of households in the highest income quintile (\$75,000 and above). The projection for year 2035 shows this distribution reversing, with the highest income quintile having the lowest household percentage share, and the lowest income quintile the second highest household percentage share. While the percentage of households within the middle quintile (\$30,000 to \$50,000) is projected to increase by 2035, the largest projected increase is in the lowest quintile

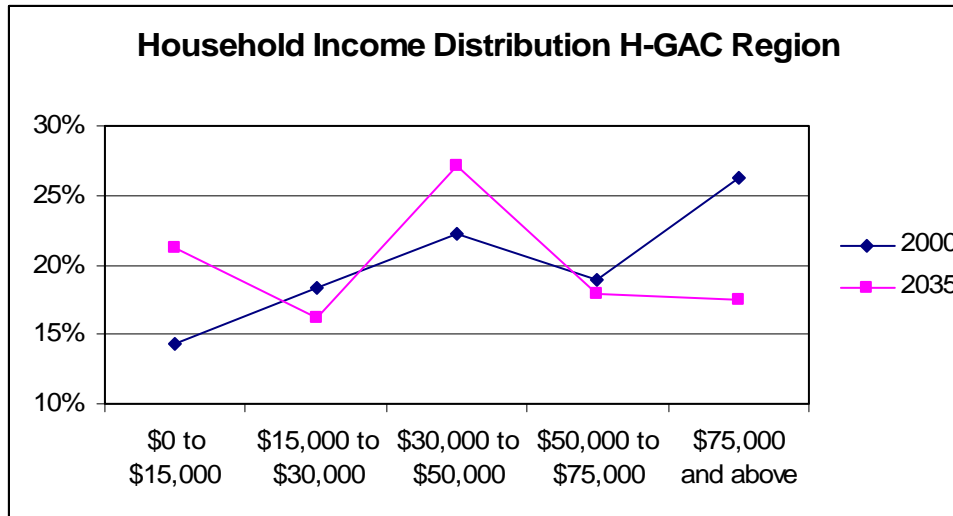
**Table 2: Percent of Households in H-GAC Region within Income Categories**

Household Income	2000	2035	% change
\$0 to \$15,000	14.31%	21.22%	6.91%
\$15,000 to \$30,000	18.32%	16.23%	-2.09%
\$30,000 to \$50,000	22.27%	27.07%	4.80%
\$50,000 to \$75,000	18.91%	17.98%	-0.93%
\$75,000 and above	26.19%	17.51%	-8.68%

Year 2000 Source: U.S. Census Bureau

This projected shift in income distribution has implications for future environmental justice analyses. As the percentage of low-income households is projected to increase, special consideration should be given in long-range planning efforts to transportation projects that benefit these households. Outreach to low-income households is also an essential component of environmental justice and special efforts should be made to identify these households and include them in the planning process at the earliest possible stage.

**Chart 1: Projected Change in Household Income Distribution 2000-2035**



The previous information and projections provide an overview of H-GAC demographics at the regional (8-County) scale. Although this regional-level information allows projections to 2035, most of these projections are not available at finer units of analysis such as the TAZ (Transportation Analysis Zone) or CBG (Census Block Group) level. Data at these finer levels allows for identification of specific environmental justice communities. The methodology used by H-GAC to identify environmental justice communities is outlined below.

#### **Environmental Justice Index: Aggregate Scoring Methodology**

The objective of an environmental justice analysis is to determine if the costs and benefits of the 2035 RTP are experienced differently by EJ versus non-EJ communities. In order to make such a determination, it is necessary to identify where EJ and non-EJ communities are located, for that is where the populations are most likely to experience the benefits or costs of the transportation system. Indexes, such as the environmental justice index developed for this analysis, allow multiple variables to be depicted as a single value. In this case, the variables of minority, low-income, and elderly populations are calculated into a single index – the Environmental Justice Index. The benefit of an index is that it allows for mapping of multiple variables and helps to identify areas where additional EJ analysis should be targeted.

The input variables in the Environmental Justice Index are percent elderly, percent minority, and percent low-income. Elderly is defined as persons over the age of 65. In accordance with US DOT Order (5610.2) minority is defined as Black, Hispanic (regardless of race), Asian American, American Indian and Alaskan Native.

- Black – a person having origins in any of the Black racial groups of Africa;
- Hispanic – a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- Asian American – a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands; and
- American Indian and Alaskan Native – a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.

Poverty is defined at the family level and not the household level, therefore, poverty status of the household is determined by the poverty status of the householder. Households are classified as poor when the total income of the householder's family in the last twelve months is below the

appropriate poverty threshold. Poverty thresholds vary depending upon three criteria: size of family, number of children, and, for one and two-person families, age of the householder. In accordance with US DOT Order (5610.2) low-income is identified as “a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.” The Department of Health and Human Services uses federal guidelines to establish poverty thresholds for the Houston region. The poverty threshold for a family of four in the Houston region was \$19,356.00 for the year 2005. <sup>i</sup>

Table 3, below identifies the median household income for the H-GAC region.

**Table 3: Median Household Incomes by County**

<b>County</b>	<b>Median County Household Income (Family of 4)</b>	<b>80 percent Median County Household Income (Family of 4)</b>	<b>50 percent Median County Household Income (Family of 4)</b>	<b>30 percent Median County Household Income (Family of 4)</b>
Houston-Galveston-Brazoria CMSA	\$51,426	\$41,140.80	\$25,713	\$15,427.80
Brazoria County	\$48,632	\$38,905.60	\$24,316	\$14,589.60
Chambers	\$47,964	\$38,371.20	\$23,982	\$14,389.20
Fort Bend	\$63,831	\$51,064.80	\$31,915.50	\$19,149.30
Galveston	\$42,419	\$33,935.20	\$21,209.50	\$12,725.70
Harris	\$42,598	\$34,078.40	\$21,299	\$12,779.40
Liberty	\$38,361	\$30,688.80	\$19,180.50	\$11,508.30
Montgomery	\$50,864	\$40,691.20	\$25,432	\$15,259.20
Waller	\$38,136	\$30,508.80	\$19,068	\$11,440.80

Source: U.S. Census Bureau, Census 2000

The unit of analysis for this methodology is the census block group. For each census block group the percent of minority, low-income, and elderly residents was calculated. These figures were then compared with the regional average for percent minority, percent elderly, and percent low-income to calculate a ratio. The average for the H-GAC region for these variables is: 52% minority, 7.4% elderly, and 13.4% low income. For each category (percent minority, percent low-income, percent elderly), block groups with a ratio lower than the regional average were assigned a score of 0. Block groups with a ratio equal to that of the region, but less than twice that of the region, were assigned a score of 1. Block groups with a ratio at least twice that of the region were assigned a score of 2. Once each attribute in each block group was assigned a score, the scores were summed to create an aggregate score.

EJ Index: Aggregate Scoring Matrix:

0-1 Point: Area of ‘LOW’ Environmental Justice concern

2-3 Points: Area of ‘MODERATE’ Environmental Justice concern

4-6 Points: Area of ‘SIGNIFICANT’ Environmental Justice concern

As can be seen in Table 4, below, approximately 7% of the H-GAC region population has been identified as being in a census block group of significant environmental justice concern. This 7% of the population represents approximately 11% of the total number of census block groups in the 8-county region. As can be seen in Figures 1 and 2, below, although the significant EJ communities identified are located in all 8-counties of the H-GAC region, the majority are located within Harris County and the central City of Houston. A breakdown of EJ significant block groups by County may be found in Table 5. A complete listing of the EJ significant communities, listed by County and block group number, may be found at the end of this appendix.

**Table 4: Distribution of EJ Communities in H-GAC Region**

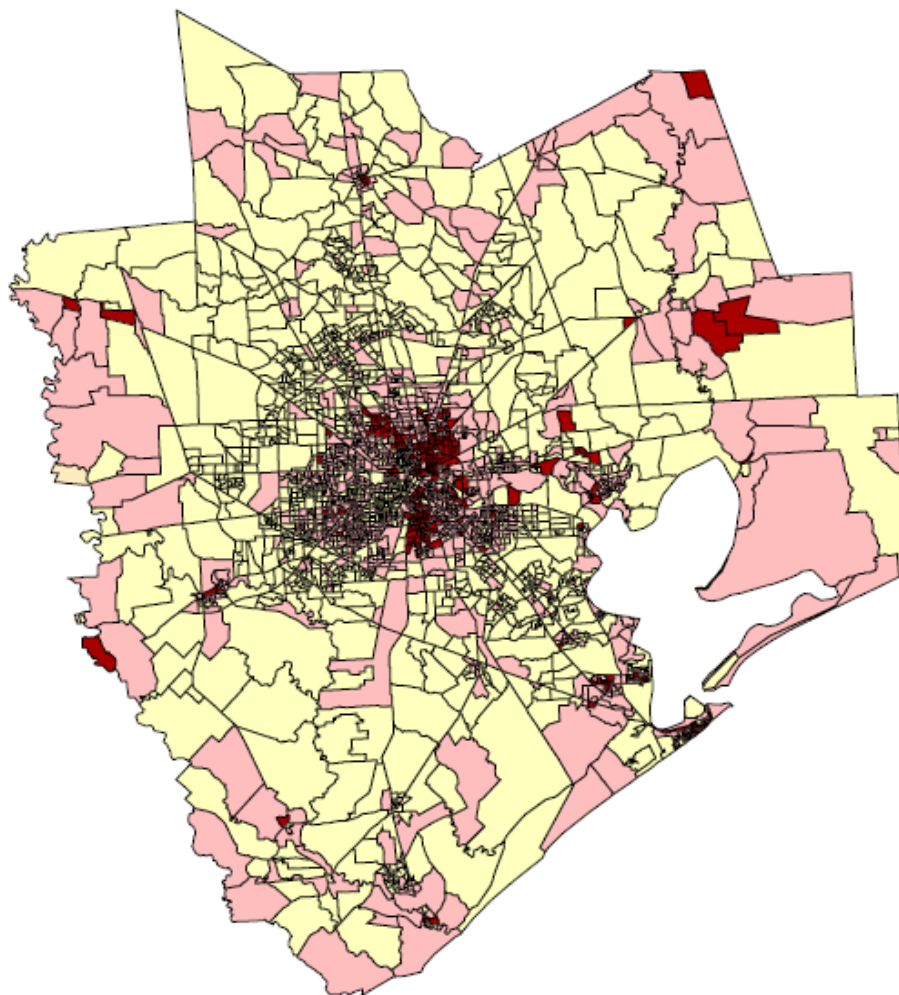
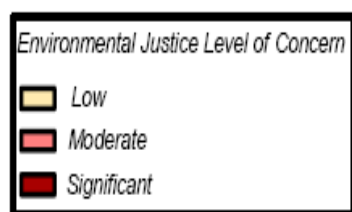
EJ Score	Population	% of Total	# of Block Groups	% of Total
Low	2,465,934	53.0%	1231	45.6%
Moderate	1,844,025	39.7%	1170	43.3%
Significant	340,220	7.3%	296	10.9%
Total	4,649,324	100%	2516	100%

The significant EJ communities are shown in red in Figures 1 and 2, below. These communities are the focus of the analysis of the effects of the 2035 RTP on EJ communities. As the H-GAC region encompasses diverse geography, some of the EJ significant communities are in areas that are quite rural while many are within the urban core. Rural EJ communities have different needs than those within the city center. For example, for a rural EJ community, public transportation services are most likely non-existent and this may be the community's top concern. In the urban core, public transportation is available in most cases and the top transportation concern may be safety, congestion, or the quality of transportation options.

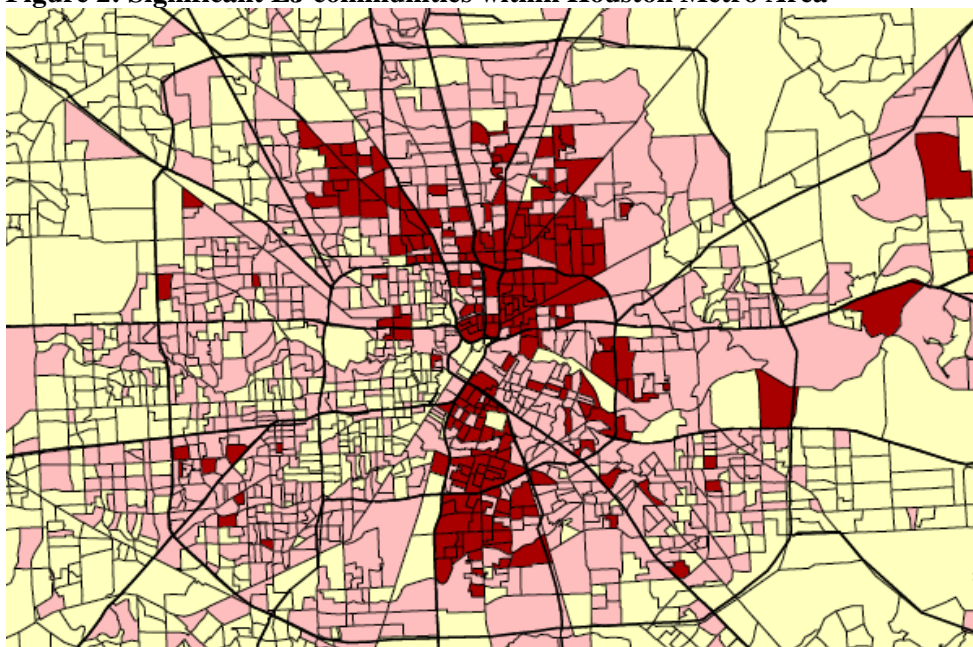
**Table 5: Breakdown of EJ Significant Block Groups by County**

County	# of Block Groups	% of Total EJ Sig. Block Groups	Total EJ Sig. Pop.	% of Total EJ Sig. Pop	% EJ Sig Pop as % of total county Pop
Brazoria	2	0.006	1728	.508	.715
Chambers	1	0.003	465	.137	1.7
Fort Bend	3	1.0	3,861	1.1	1.0
Galveston	37	12.5	29,953	8.8	11.9
Harris	244	82.4	294,320	86.5	8.6
Liberty	4	1.3	3,751	1.1	5.3
Montgomery	3	1.0	3,437	1.0	1.1
Waller	2	0.006	2,705	.795	8.3
Total	296	100%	340,220	100	7.3

**Figure 1: H-GAC Region with EJ Communities of Concern**



**Figure 2: Significant EJ communities within Houston Metro Area**





### **Transportation System Use and Environmental Justice (EJ) Communities:**

Transportation choice refers to the quality and quantity of transportation options available. In order to assess transportation choice one must examine how the various segments of the population use the regional transportation system. Such an analysis can help determine potential inequity, transportation needs, and transportation benefits.

As table 6 below indicates, regardless of income, race, or County of residence, the majority of Houston Galveston area residents (77%), drive alone in their vehicle as their primary mode of transportation for work trips. A significant share of H-GAC region residents carpool (14%), while only 3% use public transit, and only 2% walk or bike for their journey to work.

The H-GAC region is diverse in both its geography and its population, and significant differences in mode share exist by County and by demographics. Detailed breakdowns of transportation mode share for EJ significant, moderate, and non-EJ communities for each County may be found at the end of this document.

**Table 6: H-GAC Region Transportation Mode Share**

Work Trip Mode Share	Drive Alone	Carpool	Public Transit	Walk/Bike
Total H-GAC Region	<b>77%</b>	<b>14%</b>	<b>3%</b>	<b>2%</b>
National Average	<b>77%</b>	<b>10.7%</b>	<b>4.7%</b>	<b>2.5%</b>

Source: U.S. Census 2000, American Community Survey

The most notable differences in transportation mode share exist between EJ Significant and Non-EJ communities. Income clearly influences the ability of households to own and operate vehicles, thus EJ significant communities are more dependent on transit for work trips, using transit for 9% of work trips compared with 2% of non-EJ communities. For those EJ significant communities within the METRO service area, the percent using transit increases to 11%, the highest level of transit use among the different user groups identified for this analysis.

EJ significant communities are almost twice as likely to carpool and have a substantially lower level of driving alone. EJ significant communities in Montgomery County have the highest rate of carpooling at 36%, while EJ significant communities in Chambers County have the highest rate of walking/biking at 9% of all work trips. Regionally, EJ significant communities walk or bike to work at 4 times the rate of non-EJ communities.

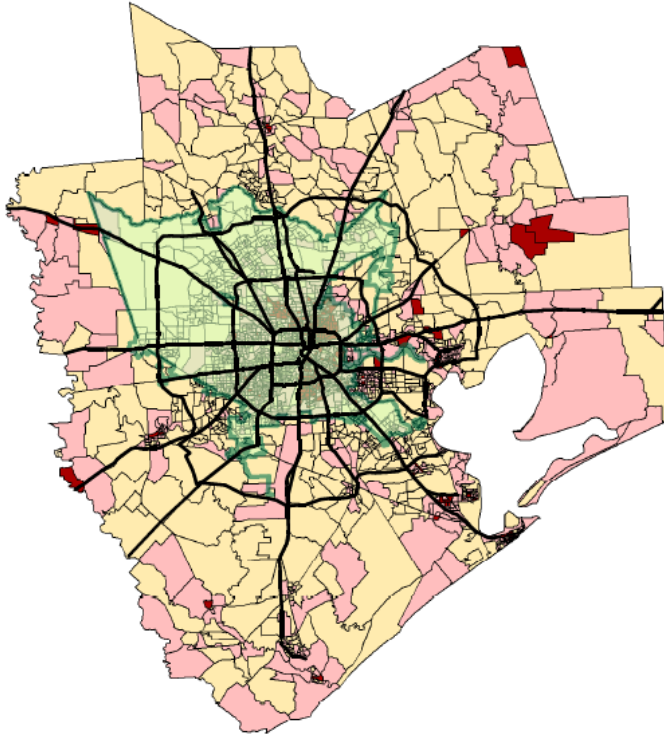
**Table 6: H-GAC Region Transportation Mode Share by level of EJ Significance**

Work Trip Mode Share	Non-EJ Total H-GAC Region	EJ Moderate Total H-GAC Region	EJ Significant Total H-GAC Region
Drive Alone	82%	71%	63%
Carpool	11%	18%	20%
Public Transit	2%	4%	9%
Walk/Bicycle	1%	3%	4%

Source: U.S. Census 2000

Due to the high percentage of the total H-GAC region population that resides in Harris County, mode share usage within Harris County heavily influences the regional averages. Additionally, the majority of EJ significant identified communities and the majority of transit services exist with Harris County, necessitating a close examination of Harris County mode usage both within and outside of the METRO Service Area.

Figure 3, below, shows the extent of the METRO Service Area, in green. The METRO service area covers 1,285 square miles. The service area does not cover all of Harris County, thus table 3 below is split by those communities inside and those outside the METRO service area. Transit options beyond the METRO service area are limited, although some commuter bus services as well as demand response and fixed route services do exist in the outlying counties. Please see the transit section of the full 2035 RTP for more information concerning transit services available in the H-GAC 8-county region.



**Figure 3: H-GAC EJ Communities within METRO Service Area (MSA)**

Over 80% of the EJ significant population in the H-GAC 8-County Region lives within the METRO service area. Despite this, significant areas of unmet transit need exist throughout the 8-County region, including within Harris County. As seen in Table 3, although the highest level of transit use for work trips within the 8-County region is within EJ significant communities within the METRO service area at 11%, EJ significant communities outside of the METRO service area reported 0% transit usage, among the lowest

in the 8-County region. Despite these large differences in transit usage, EJ significant communities both within and outside of the METRO Service Area have similar demographics in terms of income and zero-auto households which may serve as a proxy for transit need. Obviously there is a strong correlation between transit system usage and availability of transit services. Despite this strong correlation, transit system gaps remain in areas where the system need is among the highest.

**Table 7: Harris County Work Trip Mode Share by EJ Community**

Harris County Work Trip Mode Share	Non-EJ in MSA	Non-EJ outside of MSA	EJ Mod. in MSA	EJ Mod. outside of MSA	EJ Sig. in MSA	EJ Sig. outside of MSA
Drive Alone	81%	85%	69%	75%	62%	74%
Carpool	11%	11%	19%	18%	20%	21%
Public Transit	3%	<1%	6%	1%	<b>11%</b>	<b>0%</b>
Walk/Bike	1%	1%	3%	3%	3%	3%

Another important difference in mode share between non-EJ and EJ significant communities within Harris County is the rate of carpooling. As seen in Table 7, above, EJ significant communities, both within and outside the METRO Service Area have carpooling rates almost twice the level reported in Non-EJ communities. This data can be used to help plan future or expanded HOV lanes and facilities within EJ significant communities.

## Accessibility Analysis

The purpose of this analysis is to determine whether EJ significant populations experience (or will experience by 2035) longer travel times (by auto and/or transit) as a result of the implementation of the 2035 RTP. For the purposes of this analysis, six EJ communities throughout the 8-County region were examined in-depth.

**Methodology:** The accessibility analysis was conducted by computing the average travel time from each origin TAZ (Transportation Analysis Zone) for both auto and transit travel to an identified destination TAZ. In order to measure the impact of projects within a specific community and to capture the true travel patterns of the EJ community, this analysis identifies the individual trip pattern within the selected TAZs. This methodology differs from previous EJ accessibility analysis methodologies that calculated travel times from EJ communities to selected major activity centers (such as the CBD and the Texas Medical Center). When we look at where people who live in the EJ community are actually traveling, we find that these major activity centers are not necessarily the top travel destination, especially for those communities located in the outlying counties.

Thus this analysis identifies, through use of the travel demand model, the single TAZ receiving the most trips from the EJ community. When the major trip destination TAZ was identified, the travel time to this destination TAZ was calculated for three measures: current year (2005), 2035 with the plan, and 2035 no-build. The no-build scenario is the 2035 population on the 2005 transportation network (no new projects.)

The following TAZs have been selected for the accessibility analysis. Each TAZ contains one or more CBGs (Census Block Groups) identified in the EJ analysis as being of high EJ significance.<sup>1</sup>

Origin TAZ's for Accessibility Analysis:

Neighborhood	TAZ # 1	TAZ #2	TAZ #3	TAZ #4
Conroe	2501	2495	2553	2500
Galveston	2871	2872	2873	2885
Gulfton	1222	--	--	--
Third Ward	690	670	673	686
Baytown	601	602	640	600
Hempstead	2365	2366	--	--

The TAZs identified in Galveston, Gulfton, and the Thirds Ward overlap the study areas of the special district pedestrian and bicycle studies conducted in those communities. As these areas contain multiple TAZs with EJ significant populations, the TAZs selected are the sites of the recommended improvements that came out of the pedestrian and bicycle studies. As higher

<sup>1</sup> As TAZ and CBG boundaries do not always overlap exactly, some of the general demographics found in the tables on the following pages may include portions of areas outside of a TAZ.

proportions of EJ populations than non-EJ populations make use of pedestrian and bicycle facilities (see transportation mode analysis, Section 3), these projects are of significance to the EJ analysis. In addition, the bike/ped studies contained significant community involvement and outreach to develop projects relevant to each communities needs.

The travel time analysis for each of the identified neighborhoods is presented below:

The City of Conroe is located approximately 40 miles north of Houston along I-45 in Montgomery County. Conroe is the largest city in Montgomery County and is the county seat with a population of 26,812 as of the 2000 Census.

As can be seen from the table above, the identified TAZs are a high EJ priority community, containing high percentages of both minority and low-income residents. The travel time analysis showed that the majority of trips originating from this community are to local TAZs. The destination TAZ identified, TAZ 2467 had the highest number of trips from the origin TAZs. TAZ 2467 is located within the City of Conroe central district, and has several retail opportunities.

**Conroe: Destination TAZ 2467**

**Travel Time Accessibility Analysis:**

Travel Time (in minutes)	2005	2035	2035 No-Build
Auto Travel To destination TAZ 2467	3.2	2.9	3.2
Transit Travel to destination TAZ 2467	*No Transit Service Available		

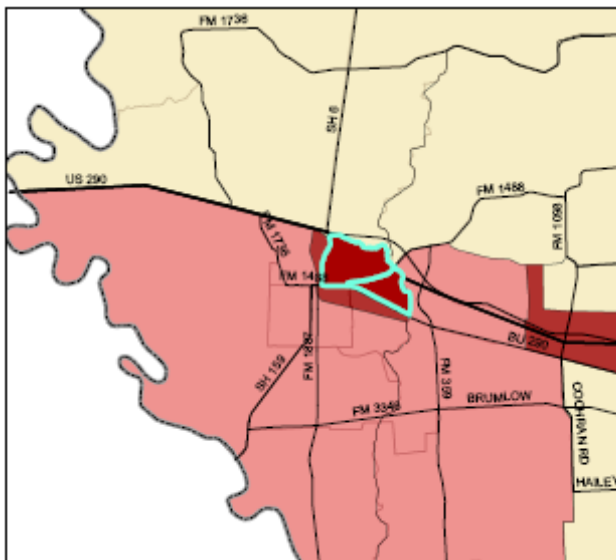
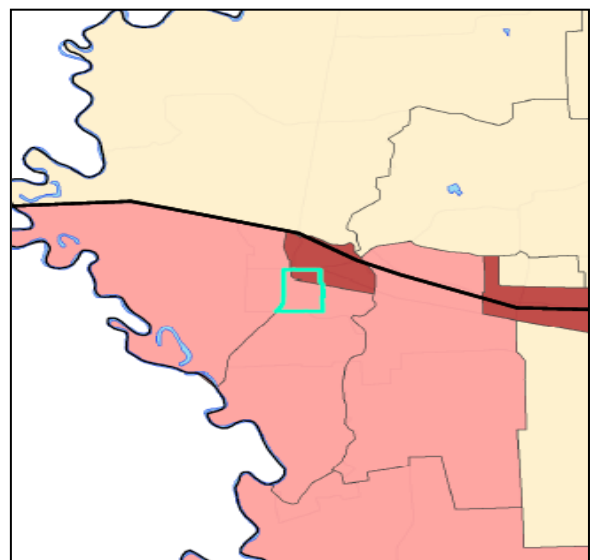
The auto travel time is projected to decrease slightly with the implementation of the projects in the 2035 RTP and increase back to 2005 level of 3.2 minutes under the no-build scenario.

**Hempstead**

Hempstead is located in Waller County, approximately 50 miles northwest of the City of Houston along US 290 and SH6. Hempstead is the county seat of Waller County and has a population of 4,691 as of the 2000 Census.

	Total Population	% Minority	% Below Poverty	% Elderly
Identified Area (TAZs 2365 and 2366)	1,543	82%	43%	13%
H-GAC Region	4,669,571	52%	13.4%	7.4%

The identified community within the City of Hempstead is a significant EJ area. It is highly minority, low-income and also has a high percentage of elderly. The majority of trips originating from this community have a destination within the surrounding area – very few trips are into the Houston CBD. The destination TAZ identified for the travel time analysis, TAZ 2368, is within the City of Hempstead and encompasses the southern part of the urbanized Hempstead area.

**Hempstead Origin EJ TAZs: 2365 and 2366****Hempstead Destination TAZ 2368****Accessibility Analysis**

Travel Time (in minutes)	2005	2035	2035 No-Build
Auto Travel Time to destination TAZ 2368	2.6	2.8	2.8
Transit Travel Time to destination TAZ 2368	*No Transit Service Available		

The travel time from the identified EJ TAZs to the destination TAZ is projected to increase slightly by 2035 for both the 2035 RTP and the 2035 no-build scenario. However, this increase is so small that it is not significant.

### **Gulfton**

The Gulfton community is about 3.4 square miles in size, with a population density of about 17,500 people per square mile, making this the densest neighborhood in Houston. It is much denser than the City of Houston as a whole (at 3,477).<sup>2</sup>

	Total Population	% Minority	% Below Poverty	% Elderly
Identified Area (TAZ 1222)	13,701	95%	35%	2%
H-GAC Region	4,669,571	52%	13.4%	7.4%

The land use in Gulfton is primarily multi-family housing. For many people in Gulfton, walking, cycling, and transit are their main means of transportation, since a high percentage of households do not own a car.

The Gulfton community was identified by the Houston-Galveston Area Council (H-GAC) as a special district for strategic investment of pedestrian and bicycle facilities in 2004. Key findings from the Gulfton Special District Pedestrian Bicyclist Study needs assessment completed in 2004 include:

- US 59/Southwest Freeway and the Westpark Tollway create major barriers within the neighborhood and were not developed with pedestrian or bicycle accommodation in mind
- North/south movement in the district is difficult, although very important
- The streets on which residents can travel are not calm, pedestrian- or bike-friendly streets

Project submittals within the 2008-2011 TIP emerged from the Gulfton Special Districts Study. These projects include:

- Construct multi-use trail along the south side of the Westpark Tollway
- Construct multi-use trail along the Harris County Flood Control District drainage ditch
- Replace deteriorated or missing sidewalks:







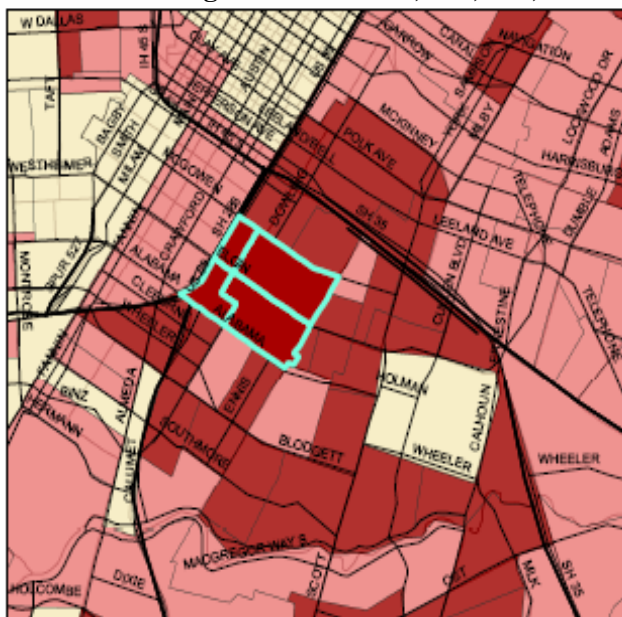
selected by H-GAC as a pilot for the Special District Pedestrian and Bicycle study in 2004.

	Total Population	% Minority	% Below Poverty	% Elderly
Identified Area	4,240	97%	43.6%	14.8%
H-GAC Region	4,669,571	52%	13.4%	7.4%

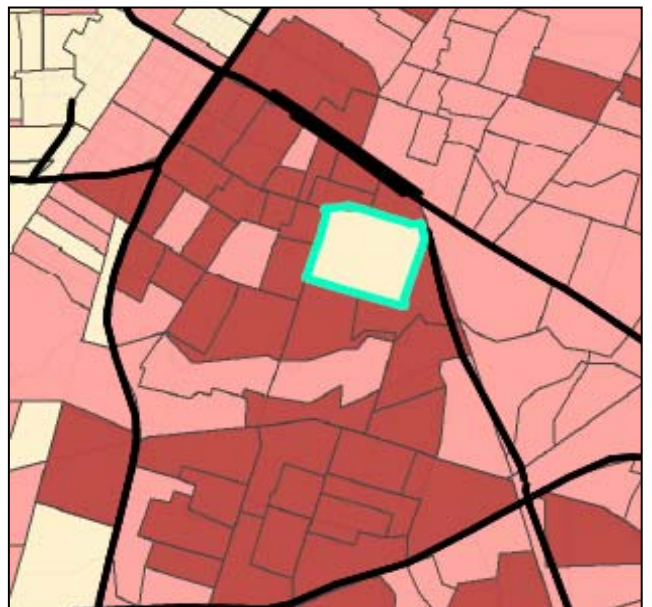
As an outcome of this study, Phase II TIP Project submittal for the Greater Third Ward area included:

- Replacing narrow, deteriorated, or missing sidewalks with new 5' sidewalks
- Providing curb extensions and crossing islands at Holman at Delano and at Holman at Ennis (located within selected origin TAZs, below)

**Third Ward Origin EJ TAZs 670, 673, 686, 690**



**Third Ward Destination TAZ 705**





**Accessibility Analysis:**

Most of the travel trips originating within the identified Third Ward area are local in nature. The TAZ receiving the most trips to it is TAZ 706, within the Third Ward community and home to the University of Houston, a major employer.

Travel Time (in minutes)	2005	2035	2035 No-Build
Auto Travel Time to destination TAZ 706	4.5	5.2	4.8
Transit Travel Time to Destination TAZ 706	40.4	37.2	40.6

The auto travel time is projected to increase slightly with the implementation of the projects in the 2035 RTP and decrease back to 2005 level under the no-build scenario. As can be seen in the large discrepancy between the auto and the transit time, improvements in transit for local trips is highly needed in this area, especially given the higher than average number of zero-auto households in this community. Although the transit time is expected to decrease by 2035, the time remains significantly higher than the auto travel time.

**Galveston**

The City of Galveston, located on Galveston Island approximately fifty miles southeast of Houston, has a population of approximately 57,247 as of the 2000 Census. The predominant land use in the identified EJ analysis area is residential, with single and multi-family uses intermingled and commercial uses lining Broadway Avenue. The selected TAZs within Galveston have a high population density and the area is composed of an interconnected street network (grid).

The urban portion of Galveston, from 1<sup>st</sup> to 53<sup>rd</sup> streets and from Harborside Drive to Seawall was selected as a priority study area for a pedestrian and bicyclist plan by H-GAC completed in September 2006. Galveston ranked high in this consideration in part due to the high use of alternative transportation such as walking, cycling, and transit on the Island. Transit services in Galveston are provided by Island Transit, an agency of the City of Galveston.

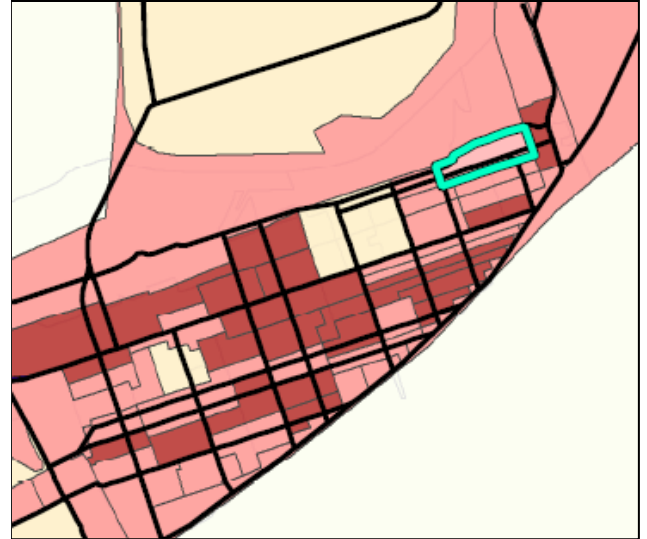
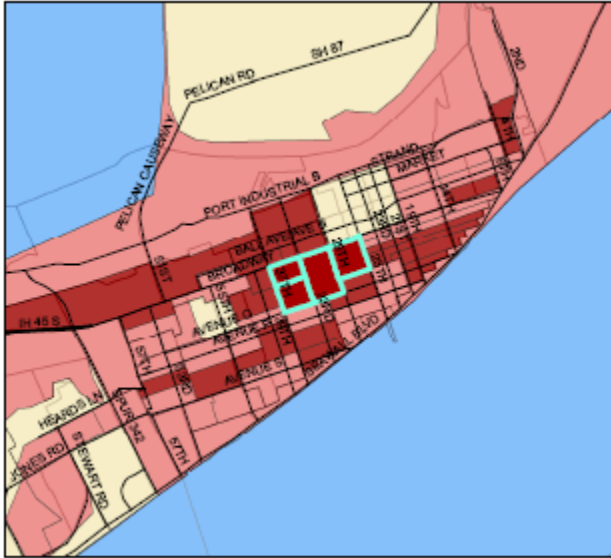
	Total Population	% Minority	% Below Poverty	% Elderly
Identified Area	3,321	87%	27%	16.5%
H-GAC Region	4,669,571	52%	13.4%	7.4%

Seventeen projects were recommended out of the bike/ped study for inclusion in the 2008-2011 TIP. The City of Galveston has committed the required 20% local match for these projects. Key projects include:

- Development of a bikeway network
- Pedestrian and crossing improvements
- Bike racks at businesses and on buses
- Curb extensions on Seawall Blvd.

**Galveston Origin EJ TAZs 2871-2873, 2885**

**Galveston Destination TAZ: 2855**



### Accessibility Analysis:

Travel Time (in minutes)	2005	2035	2035 No-Build
Auto Travel Time to Destination TAZ 2855	6.1	6.4	6.2
Transit Travel Time to destination TAZ 2855	* Transit Data Not available		

The destination TAZ, 2855, is a major work destination, encompassing portions of UTMB. The travel time is projected to increase slightly with the implementation of the projects in the 2035 RTP and decrease back to 2005 level under the no-build scenario.

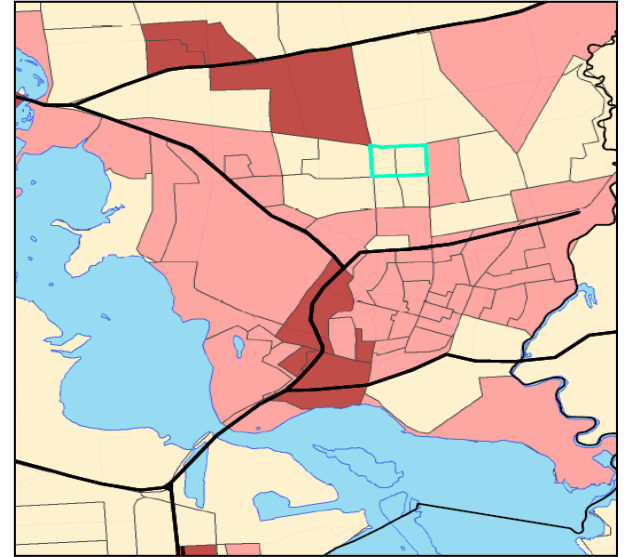
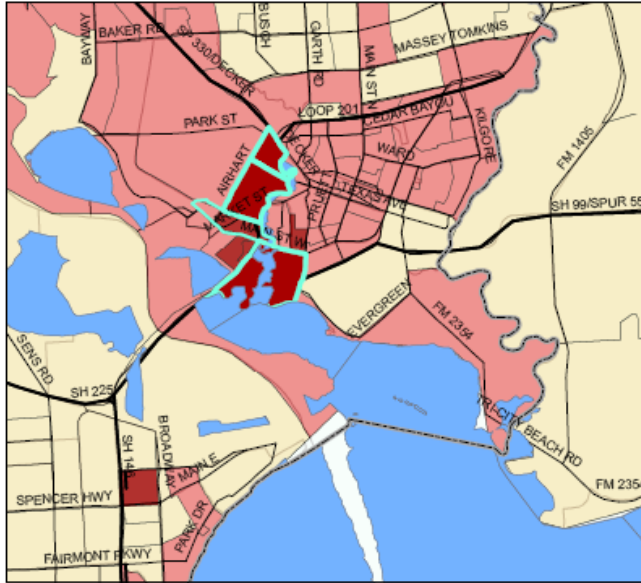
## Baytown

Baytown is located on the northern shore of Galveston Bay between the San Jacinto River on the west and the Trinity River on the east. As of the 2000 U.S. Census, Baytown had a total population of 66,430, making it the fourth-largest city within the metropolitan area. Several large industries such as Exxon Mobil, Chevron, Bayer, and Amoco, are located within Baytown, making use of its geographic location along the Houston ship channel, east of the City of Houston. The destination TAZ, 615 is located north of the industrial port area and is home to a large swath of retail, including a WalMart Super Center, one of the largest employers in the Baytown Area.

	Total Population	% Minority	% Below Poverty	% Elderly
Identified Area	1,767	78.5%	33.4%	16.8%
H-GAC Region	4,669,571	52%	13.4%	7.4%

**Baytown Origin EJ TAZs: 600, 601, 602, 640**

**Baytown Destination TAZ 615**



#### Accessibility Analysis:

Travel Time (in minutes)	2005	2035	2035 No-Build
Auto Travel Time To destination TAZ 615	10.1	10.3	11.4
Transit Travel time to destination TAZ 615	*No transit service available		

The travel time to the destination TAZ from the selected Environmental Justice area is expected to increase slightly by 2035 with the implementation of the 2035 RTP and increase more significantly if the 2035 RTP were not implemented (the 2035 No-build scenario).

#### Accessibility Analysis Results:

As can be seen from the above tables, the auto travel times do not vary much between the current level and the year 2035. This is because the majority of the trips are local and the travel times are so short that the future growth and congestion that will be occurring on a regional scale will have little impact on these very local trips. Transit travel time data was only available for two of the selected communities: Gulfton and the Third Ward, both located within the METRO service area. The large disparity between auto and travel times for these two locations suggests that an improvement in local service would be of great benefit to these communities. In addition, the EJ significant communities not currently served by transit should be examined for transit feasibility.

#### Section 4: Conclusions and Next Steps

Environmental Justice is an ongoing process and H-GAC is continuously looking to expand and improve upon EJ efforts to ensure equity in the transportation planning process. Future analyses may be able to expound upon the accessibility analysis presented in the 2035 RTP. As the H-GAC region becomes increasingly diverse, environmental justice will continue to be an important piece of the transportation puzzle.

- **Existing Problems and Concerns**

Through the public outreach to Environmental Justice communities several existing problems and concerns were identified. Many of these problems are not unique to Environmental Justice communities, but rather, as the Regional Service Coordination

outreach showed, are common throughout the region. H-GAC hopes to continue work with communities to reach solutions to these concerns.

Lack of mobility was the most frequently cited concern, especially for the transit-dependent. For those residents outside of the METRO service area options are often limited. The Regional Service Coordination Plan, which is currently in its final stages, is working to coordinate services currently offered by varying social service and transportation agencies to improve efficiency and create new opportunities for expanded services. This may be particularly beneficial to areas with currently limited services. H-GAC has applied to the sponsor for FTA JARC funds for 2006-2009 and it is anticipated that several pilot projects to serve the region may be applied for.

- **Possible Future Expansion of Analysis Methods**

There are many different methods that may be used to assess the costs and benefits of a transportation plan to specific populations. Each of these methods has its advantages and disadvantages and examines a particular aspect of the Environmental Justice picture, such as accessibility, mobility, or health impact. Given time and data constraints, it is not possible to perform every possible analysis, nor would this guarantee improved benefits for Environmental Justice populations. The analysis methods used in the 2035 RTP were chosen after a review of best practices in Environmental Justice literature and other MPO's RTP's.

Currently H-GAC's modeling capabilities preclude analysis in two important Environmental Justice arenas: highway noise and air pollutant emissions effects. In future RTPs such an analysis may be possible and will provide an additional tool to assess the distribution of benefits and burdens of the RTP. A highway noise analysis would consist of highway noise modeling to identify road segments that experience a measurable increase in noise levels between the base year and the plan year. Demographics of the communities within a determined distance of these segments would be analyzed to assess if a disproportionate impact is created in Environmental Justice populations. Such an analysis will also allow for sound walls and other noise mitigation measures to be identified.

An air pollutant emissions analysis would focus on emissions estimates for pollutants associated with localized health effects (dispersed emissions are not able to be modeled at the local level). Such emissions include CO and PM<sub>10</sub>. Similarly to the highway noise analysis, the air pollutant emissions analysis would identify areas with measurable increases in air pollutant and examine the demographics of those areas to assess if a disproportionate impact is borne Environmental Justice populations.

## **H-GAC Environmental Justice Appendix Data**

### **A. EJ Scoring and Identification Data**

Population living in each EJ category:

EJ Score	Population	% of Total
Low	2465934	53.0%
Moderate	1844025	39.7%
	340,220	7.3%

Significant		
Total Pop.	4,650,179	100%

Number of block groups in each EJ category:

EJ Score	# of Block Groups	% of Total
Low	1231	45.6%
Moderate	1170	43.3%
Significant	296	10.9%
Total # Block Groups	2697	100%

Transit (METRO Service Area):

EJ Significant	# of Block Groups	% of Total
Blocks Groups in MSA	228	77.8%
Population in MSA	279561	82.3%
Total # Block Groups	293	100%

### Identified EJ Significant Block Groups by County

#### Brazoria County EJ Significant Identified Block Groups

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Brazoria	662000	2	855	55.5	20.1	16.8	Significant
Brazoria	664300	2	873	70.2	31.5	10.4	Significant

#### Chambers County EJ Significant Identified Block Groups

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Chambers	710300	1	465	73.3	19.5	18.9	Significant

#### Fort Bend County EJ Significant Identified Block Groups

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Fort Bend	674800	1	1375	69.3	32.8	15.3	Significant
Fort Bend	675000	1	1795	95	29.1	8.9	Significant
Fort Bend	675800	4	691	98.1	18.5	14.7	Significant

#### Galveston County EJ Significant Identified Block Groups

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Galveston	720800	1	788	95.7	35.5	11.7	Significant
Galveston	720900	1	892	76.1	32.0	11.0	Significant
Galveston	720900	4	1627	57.2	28.0	9.5	Significant
Galveston	722200	3	394	88.1	34.5	10.4	Significant
Galveston	722200	4	659	79.5	33.2	15.2	Significant
Galveston	722300	5	625	68.3	34.9	8.0	Significant
Galveston	722300	8	520	58.1	33.8	11.5	Significant
Galveston	722400	3	422	100.0	52.6	19.4	Significant
Galveston	722600	2	1076	79.8	20.4	24.8	Significant
Galveston	722700	2	647	99.2	36.9	28.1	Significant
Galveston	722700	3	751	100.0	21.8	15.6	Significant
Galveston	722700	4	1473	91.5	15.8	17.2	Significant
Galveston	723000	1	1157	85.7	25.8	16.5	Significant
Galveston	723000	2	1331	76.1	16.6	17.2	Significant
Galveston	723100	1	692	66.2	29.6	8.5	Significant
Galveston	723600	3	509	69.2	15.3	21.2	Significant
Galveston	724000	1	1161	82.5	60.1	14.4	Significant
Galveston	724200	2	1012	65.4	29.8	9.2	Significant
Galveston	724300	6	641	59.0	35.7	9.2	Significant
Galveston	724400	3	633	64.1	24.8	43.4	Significant
Galveston	724400	4	747	56.9	19.1	20.1	Significant
Galveston	724400	5	936	65.5	29.7	14.5	Significant
Galveston	724400	6	632	82.3	32.6	10.4	Significant
Galveston	724600	1	486	100.0	50.4	12.8	Significant
Galveston	724600	2	1246	98.6	61.2	8.7	Significant
Galveston	724700	1	1175	91.2	36.3	9.5	Significant
Galveston	724700	2	482	67.0	38.0	11.8	Significant
Galveston	724700	3	974	89.2	20.1	22.2	Significant
Galveston	724800	3	525	74.9	30.1	20.0	Significant
Galveston	724900	2	719	60.8	35.7	9.5	Significant
Galveston	724900	3	664	58.1	14.9	16.7	Significant
Galveston	725000	1	966	59.9	15.3	21.0	Significant
Galveston	725100	1	690	89.4	15.5	24.1	Significant
Galveston	725100	2	782	76.6	28.6	15.1	Significant
Galveston	725200	2	478	91.0	20.3	19.9	Significant
Galveston	725400	3	480	67.7	21.5	24.8	Significant
Galveston	725400	4	961	56.0	21.0	21.6	Significant

### Harris County EJ Significant Identified Block Groups

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	511600	6	489	88.1	28.4	7.4	Significant
Harris	210200	1	888	93.8	43.1	10.4	Significant
Harris	210300	1	716	94.1	43.4	10.1	Significant
Harris	210300	2	1726	97.7	32.8	11.6	Significant
Harris	210300	3	1343	97.3	43.7	11.4	Significant
Harris	210300	4	1215	94.8	36.0	11.2	Significant

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	210300	5	702	94.7	32.6	9.1	Significant
Harris	210400	1	1148	97.2	42.2	9.3	Significant
Harris	210400	3	2664	97.7	41.4	7.7	Significant
Harris	210500	1	644	98.3	30.0	8.2	Significant
Harris	210600	3	1701	84.0	14.5	18.2	Significant
Harris	210600	4	2042	82.1	33.3	7.4	Significant
Harris	210700	3	916	96.3	30.0	17.9	Significant
Harris	210800	1	521	100.0	39.3	18.8	Significant
Harris	210800	3	1287	98.8	35.7	8.4	Significant
Harris	210800	4	373	100.0	37.3	8.6	Significant
Harris	210900	1	1052	97.7	32.3	17.1	Significant
Harris	210900	2	788	99.4	29.6	17.9	Significant
Harris	211000	1	996	99.5	45.7	18.9	Significant
Harris	211000	2	1171	97.8	40.1	15.5	Significant
Harris	211100	1	488	100.0	31.6	12.7	Significant
Harris	211100	2	825	100.0	48.4	12.4	Significant
Harris	211100	3	1038	100.0	41.5	14.8	Significant
Harris	211100	4	896	100.0	36.6	12.6	Significant
Harris	211100	5	1021	99.1	69.9	9.3	Significant
Harris	211100	6	1580	98.7	43.2	10.2	Significant
Harris	211100	7	875	100.0	47.0	14.1	Significant
Harris	211200	1	1265	100.0	43.0	17.6	Significant
Harris	211200	2	1408	98.9	38.9	11.8	Significant
Harris	211200	3	917	100.0	31.1	11.0	Significant
Harris	211300	1	876	99.1	28.9	20.2	Significant
Harris	211300	3	465	100.0	34.4	27.1	Significant
Harris	211300	4	660	99.2	34.4	13.8	Significant
Harris	211300	5	872	91.5	39.6	13.1	Significant
Harris	211300	6	1240	98.5	49.2	15.4	Significant
Harris	211400	1	844	100.0	40.3	11.4	Significant
Harris	211400	2	1565	94.3	67.3	10.7	Significant
Harris	211500	1	576	95.8	37.0	7.5	Significant
Harris	211700	1	1591	99.2	35.4	19.0	Significant
Harris	211700	2	1106	98.4	39.7	13.9	Significant
Harris	211700	3	1629	97.8	38.1	10.0	Significant
Harris	211800	1	289	100.0	33.2	22.8	Significant
Harris	211900	1	1740	97.4	32.7	10.2	Significant
Harris	211900	3	1221	93.9	30.2	8.0	Significant
Harris	212000	2	1703	95.4	35.3	10.8	Significant
Harris	212100	3	1607	99.3	19.9	31.4	Significant
Harris	212100	4	1073	100.0	20.9	28.8	Significant
Harris	220100	1	1394	100.0	35.7	8.8	Significant
Harris	220100	2	768	99.5	27.3	14.8	Significant
Harris	220200	1	1209	95.2	30.4	9.4	Significant
Harris	220200	2	570	81.2	24.9	17.2	Significant
Harris	220300	3	2528	84.2	30.0	7.5	Significant
Harris	220400	3	1164	80.1	30.0	9.9	Significant

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	220500	2	3441	76.7	30.2	16.1	Significant
Harris	220600	1	2699	88.4	38.0	9.9	Significant
Harris	220700	1	938	86.4	36.2	16.8	Significant
Harris	220700	3	892	99.4	28.3	8.1	Significant
Harris	220700	4	1400	91.1	27.9	8.3	Significant
Harris	220800	2	1720	97.3	50.8	12.4	Significant
Harris	220900	1	875	90.6	32.7	11.0	Significant
Harris	221300	1	2258	78.9	28.1	9.3	Significant
Harris	221900	1	1417	83.5	29.4	9.8	Significant
Harris	222000	2	753	85.7	37.2	11.7	Significant
Harris	222000	3	728	83.1	27.9	10.0	Significant
Harris	222100	2	2399	83.2	31.6	7.6	Significant
Harris	222300	3	578	95.3	38.1	15.4	Significant
Harris	230100	1	1324	98.4	46.5	13.0	Significant
Harris	230100	2	528	98.5	23.3	20.5	Significant
Harris	230200	1	862	92.1	40.1	8.2	Significant
Harris	230200	2	688	100.0	25.0	17.6	Significant
Harris	230200	3	955	98.5	40.6	18.0	Significant
Harris	230200	4	583	98.8	40.1	13.2	Significant
Harris	230200	5	959	99.3	20.4	15.7	Significant
Harris	230300	1	932	100.0	49.5	12.8	Significant
Harris	230300	2	896	95.5	33.6	8.8	Significant
Harris	230300	3	581	100.0	34.9	20.0	Significant
Harris	230400	1	505	100.0	44.8	15.4	Significant
Harris	230400	2	1510	97.5	31.5	14.3	Significant
Harris	230400	3	1466	99.0	32.1	13.0	Significant
Harris	230400	4	462	98.9	55.2	12.6	Significant
Harris	230500	3	1748	96.8	30.3	10.9	Significant
Harris	230600	4	553	98.7	37.1	18.1	Significant
Harris	230700	2	1668	96.6	40.3	11.8	Significant
Harris	230800	1	1563	96.2	35.4	8.1	Significant
Harris	230800	2	1319	99.1	20.1	15.5	Significant
Harris	230900	1	1123	96.5	45.3	11.8	Significant
Harris	230900	2	1075	100.0	32.5	23.4	Significant
Harris	230900	3	834	98.9	48.2	17.0	Significant
Harris	230900	4	1250	100.0	53.0	16.5	Significant
Harris	231000	2	2143	94.3	33.8	9.7	Significant
Harris	231100	2	1541	85.9	44.5	8.1	Significant
Harris	231400	1	2557	99.0	21.9	17.8	Significant
Harris	231500	2	1025	99.1	32.7	10.2	Significant
Harris	231600	2	1802	99.7	19.8	17.4	Significant
Harris	231800	2	839	91.2	30.9	8.3	Significant
Harris	231900	1	1895	97.2	28.0	9.7	Significant
Harris	231900	4	1299	98.7	29.3	9.1	Significant
Harris	233600	1	539	98.0	31.7	16.1	Significant
Harris	233600	2	704	100.0	30.3	18.6	Significant
Harris	233600	3	1147	96.2	20.8	17.4	Significant



County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	233700	3	621	63.1	34.1	17.4	Significant
Harris	233700	7	565	91.0	32.0	10.3	Significant
Harris	252500	2	537	30.9	30.2	14.9	Significant
Harris	252800	3	1256	82.1	15.4	16.1	Significant
Harris	253000	1	911	98.0	28.8	13.6	Significant
Harris	253000	2	799	87.2	28.4	11.8	Significant
Harris	253200	2	538	52.2	14.3	15.8	Significant
Harris	254400	4	699	80.8	30.5	12.3	Significant
Harris	254500	1	1003	98.5	37.0	20.0	Significant
Harris	254600	3	764	52.4	28.8	12.7	Significant
Harris	254600	4	1116	81.2	15.2	17.0	Significant
Harris	310100	1	701	97.6	40.1	13.0	Significant
Harris	310200	1	681	98.8	42.9	8.2	Significant
Harris	310200	2	541	98.9	45.1	23.7	Significant
Harris	310500	2	2637	93.4	39.1	8.4	Significant
Harris	310900	3	1227	96.3	30.7	8.9	Significant
Harris	310900	5	1911	93.6	34.4	9.8	Significant
Harris	311000	2	1801	97.6	27.4	7.8	Significant
Harris	311100	1	1421	99.1	33.1	9.6	Significant
Harris	311100	5	1811	97.6	29.3	8.7	Significant
Harris	311200	2	1944	87.7	38.2	8.8	Significant
Harris	311400	1	1166	89.4	31.4	9.6	Significant
Harris	311500	2	3583	93.5	35.7	7.7	Significant
Harris	312000	1	713	64.2	19.4	17.1	Significant
Harris	312000	2	1512	79.5	40.1	17.7	Significant
Harris	312200	1	452	100.0	49.8	16.4	Significant
Harris	312200	2	833	100.0	56.9	13.3	Significant
Harris	312200	3	452	98.5	51.5	13.9	Significant
Harris	312200	4	498	99.2	60.6	12.4	Significant
Harris	312300	1	874	99.1	43.8	13.7	Significant
Harris	312300	2	1717	95.6	42.7	15.0	Significant
Harris	312400	1	469	100.0	37.1	14.5	Significant
Harris	312400	2	448	100.0	44.9	19.2	Significant
Harris	312400	3	785	96.2	46.2	18.0	Significant
Harris	312400	4	864	98.6	43.1	12.8	Significant
Harris	312600	1	1064	87.5	30.6	10.5	Significant
Harris	312700	1	659	98.8	27.3	12.6	Significant
Harris	312700	3	585	99.0	42.2	25.8	Significant
Harris	312800	2	633	98.4	48.5	13.1	Significant
Harris	312900	1	2371	99.0	38.4	12.3	Significant
Harris	312900	2	1665	98.6	13.6	17.7	Significant
Harris	313000	1	763	97.1	14.5	19.0	Significant
Harris	313000	3	956	98.3	27.4	18.5	Significant
Harris	313200	2	612	98.4	27.1	15.8	Significant
Harris	313300	1	555	99.1	26.5	21.4	Significant
Harris	313300	2	988	96.3	24.4	21.2	Significant
Harris	313400	1	1308	97.3	37.2	13.7	Significant

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	313400	2	1506	96.7	28.4	10.7	Significant
Harris	313500	1	866	96.8	37.0	14.2	Significant
Harris	313500	2	998	95.7	46.3	12.1	Significant
Harris	313500	3	692	100.0	44.5	10.7	Significant
Harris	313600	1	1094	95.0	20.5	20.2	Significant
Harris	313600	2	563	100.0	27.4	11.4	Significant
Harris	313600	3	1078	100.0	30.3	13.8	Significant
Harris	313600	4	1688	100.0	37.4	9.1	Significant
Harris	313700	1	967	99.4	31.7	18.7	Significant
Harris	313700	2	1652	96.9	22.3	16.2	Significant
Harris	313800	1	1131	100.0	69.8	7.6	Significant
Harris	313800	2	820	100.0	43.0	25.1	Significant
Harris	313900	2	647	73.7	35.1	10.5	Significant
Harris	320200	3	1440	83.3	28.8	9.9	Significant
Harris	320300	2	933	92.3	29.7	8.6	Significant
Harris	320700	1	2510	63.4	23.0	21.5	Significant
Harris	321000	4	662	67.1	17.4	15.9	Significant
Harris	322100	1	1517	58.9	35.7	7.6	Significant
Harris	322500	2	55	100.0	38.2	9.1	Significant
Harris	323400	1	2568	63.4	30.6	8.3	Significant
Harris	331100	1	587	100.0	33.2	18.4	Significant
Harris	331100	2	704	98.2	31.3	20.3	Significant
Harris	331100	3	694	100.0	38.8	17.7	Significant
Harris	331100	4	1197	99.2	31.7	14.2	Significant
Harris	331200	1	1638	99.6	35.3	16.8	Significant
Harris	331200	2	1132	97.0	35.1	16.3	Significant
Harris	331300	1	480	100.0	18.5	20.8	Significant
Harris	331300	2	550	98.9	27.3	23.5	Significant
Harris	331300	3	837	100.0	15.9	20.1	Significant
Harris	331300	4	1694	99.2	23.0	28.7	Significant
Harris	331300	5	1141	100.0	18.5	22.2	Significant
Harris	331400	1	2579	100.0	66.7	10.5	Significant
Harris	331500	1	829	98.8	18.6	27.1	Significant
Harris	331500	3	554	100.0	19.1	34.8	Significant
Harris	331500	5	911	100.0	14.8	24.8	Significant
Harris	331700	1	1735	97.1	54.5	8.8	Significant
Harris	331700	2	896	100.0	25.8	15.2	Significant
Harris	331800	1	551	98.5	29.6	14.0	Significant
Harris	331800	2	764	97.4	25.4	22.6	Significant
Harris	331800	3	1514	100.0	29.1	15.5	Significant
Harris	331900	1	886	99.0	33.4	28.4	Significant
Harris	331900	3	1049	100.0	35.8	8.8	Significant
Harris	332000	1	1568	96.6	42.2	9.5	Significant
Harris	332000	2	988	99.3	32.6	11.8	Significant
Harris	332000	4	469	100.0	14.1	31.1	Significant
Harris	332100	1	1539	99.0	41.5	8.1	Significant
Harris	332200	2	2446	97.8	31.1	10.1	Significant

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	332300	1	1328	99.6	27.0	14.5	Significant
Harris	332400	1	1443	100.0	30.7	13.2	Significant
Harris	332700	2	1392	88.4	17.3	15.8	Significant
Harris	333200	5	1248	87.9	20.5	16.0	Significant
Harris	343400	2	517	91.1	22.4	15.3	Significant
Harris	410100	3	687	98.4	40.8	15.4	Significant
Harris	421400	3	733	68.3	29.1	10.1	Significant
Harris	422400	5	1477	73.7	21.2	16.4	Significant
Harris	423000	3	2062	68.7	27.4	8.6	Significant
Harris	423300	4	2675	67.4	20.2	16.4	Significant
Harris	432800	1	5568	83.2	30.3	14.1	Significant
Harris	433000	3	4490	94.9	34.3	8.5	Significant
Harris	433200	4	1710	80.5	33.8	8.1	Significant
Harris	433300	1	2017	57.4	20.2	17.8	Significant
Harris	510500	2	683	77.9	45.1	8.1	Significant
Harris	510500	3	1092	87.4	38.5	10.7	Significant
Harris	510600	3	418	88.3	34.4	7.4	Significant
Harris	510600	4	1618	95.2	37.2	9.8	Significant
Harris	510900	3	1489	88.7	27.0	7.5	Significant
Harris	511200	1	654	77.8	41.9	10.9	Significant
Harris	520600	1	1638	67.2	29.4	9.0	Significant
Harris	521600	1	423	91.5	27.0	28.1	Significant
Harris	522400	1	3005	61.9	30.8	11.0	Significant
Harris	530300	2	631	97.9	22.7	22.3	Significant
Harris	530300	3	353	100.0	54.7	24.4	Significant
Harris	530300	4	644	93.3	31.1	11.5	Significant
Harris	530300	5	546	97.8	55.9	17.9	Significant
Harris	530400	1	1693	98.8	33.0	19.1	Significant
Harris	530400	2	1084	89.2	35.6	16.1	Significant
Harris	530500	1	3241	97.4	30.6	7.7	Significant
Harris	530500	2	2014	86.0	29.9	8.7	Significant
Harris	530600	2	603	100.0	24.0	16.6	Significant
Harris	530600	3	932	93.9	34.0	12.4	Significant
Harris	530700	1	2075	91.9	36.5	9.5	Significant
Harris	530700	2	2417	88.2	31.7	8.5	Significant
Harris	530800	1	1278	97.3	32.9	20.0	Significant
Harris	530800	2	802	98.9	25.2	15.2	Significant
Harris	530800	3	1757	90.3	17.4	17.9	Significant
Harris	531800	1	1328	98.5	19.7	14.8	Significant
Harris	531800	2	791	100.0	28.3	15.5	Significant
Harris	531900	2	1366	99.6	27.0	12.2	Significant
Harris	531900	3	449	97.1	18.9	24.9	Significant
Harris	533000	1	908	97.6	15.2	18.9	Significant
Harris	533100	2	2047	99.3	54.7	9.0	Significant
Harris	533200	1	1045	95.5	29.3	10.7	Significant
Harris	533300	2	2180	99.4	49.1	9.9	Significant
Harris	533300	4	1066	100.0	46.8	17.7	Significant

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Harris	533400	1	437	100.0	36.8	20.1	Significant
Harris	533400	4	1155	100.0	37.1	14.5	Significant
Harris	533600	1	1425	84.8	29.2	7.4	Significant

#### **Liberty County EJ Significant Identified Block Groups**

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Liberty	700600	1	883	6.6	37.7	16.8	Significant
Liberty	701000	2	775	61.8	46.2	10.7	Significant
Liberty	701400	4	1278	65.6	16.1	14.9	Significant
Liberty	701400	5	815	62.0	21.0	16.1	Significant

#### **Montgomery County EJ Significant Identified Block Groups**

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Montgomery	693100	1	874	91.1	34.8	8.4	Significant
Montgomery	693100	3	1482	94.3	52.7	9.6	Significant
Montgomery	693900	1	1081	84.5	27.0	7.4	Significant

#### **Waller County EJ Significant Identified Block Groups**

County	Tract	Block Group	Total Pop	% Minority	% Poverty	% Elderly	EJ Level
Waller	680300	2	1162	90.8	21.4	19.1	Significant
Waller	680500	2	1543	82.1	43.2	12.6	Significant

#### **Breakdown by County**

County	# of Block Groups	% of Total EJ Sig. Block Groups	Total EJ Sig. Pop.	% of Total EJ Sig. Pop	% EJ Sig Pop as % of total county Pop
Brazoria	2	0.006	1728	.005	.007
Chambers	1	0.003	465	.001	1.7
Fort Bend	3	1.0	3,861	1.1	1.0
Galveston	37	12.5	29,953	8.8	11.9
Harris	244	82.4	294,320	86.5	8.6
Liberty	4	1.3	3,751	1.1	5.3
Montgomery	3	1.0	3,437	1.0	1.1
Waller	2	0.006	2,705	.007	9.1
Total	296	100%	340,220	100	7.3

## **B. Mode Share Data**

Total, H-GAC Region, by EJ Significance

Mode Share	Non-EJ Total H-GAC Region	EJ Moderate Total H-GAC Region	EJ Significant Total H-GAC Region
Drive Alone	82%	71%	63%
Carpool	11%	18%	20%
Public Transit	2%	4%	9%
Walk/Bicycle	1%	3%	4%
Other	4%	4%	4%

#### H-GAC Region Mode Share by County

County Totals	Drive Alone	Carpool	Public Transit	Walk/Bike	Other
Harris County	76%	15%	4%	2%	3%
Fort Bend County	81%	16%	1%	<1%	1%
Galveston County	78%	14%	1%	3%	4%
Brazoria County	83%	13%	<1%	1%	2%
Montgomery County	80%	13%	1%	1%	5%
Liberty County	78%	16%	0%	1%	5%
Chambers County	84%	11%	0%	1%	4%
Waller County	74%	17%	<1%	4%	4%
Total H-GAC Region	77%	14%	3%	2%	4%

#### Mode Share, Harris County, EJ Significant

Mode Share	Harris County EJ Significant in MSA	Harris County EJ Significant not in MSA
Drive Alone	62%	74%
Carpool	20%	21%
Public Transit	11%	0%
Walk/Bicycle	3%	3%
Other	4%	2%

#### Mode Share, Harris County, EJ Moderate

Mode Share	Harris County EJ Moderate in MSA	Harris County EJ Moderate not in MSA
Drive Alone	69%	75%
Carpool	19%	18%
Public Transit	6%	1%
Walk/Bicycle	3%	3%
Other	3%	3%

#### Mode Share, Harris County, EJ Low

Mode Share	Harris County EJ Low in MSA	Harris County EJ Low not in MSA
Drive Alone	81%	85%
Carpool	11%	11%
Public Transit	3%	<1%
Walk/Bicycle	1%	1%
Other	4%	2%

Mode Share, Chambers County

Chambers County			
Mode Share	Low	Moderate	Significant
Drive Alone	86%	80%	80%
Carpool	10%	15%	10%
Public Transit	0%	0%	0%
Walk/Bicycle	1%	4%	9%
Other	3%	2%	1%

Mode Share, Montgomery County

Montgomery County			
Mode Share	Low	Moderate	Significant
Drive Alone	81%	78%	61%
Carpool	12%	16%	36%
Public Transit	1%	<1%	0%
Walk/Bicycle	1%	2%	<1%
Other	5%	5%	2%

Mode Share, Liberty County

Liberty County			
Mode Share	Low	Moderate	Significant
Drive Alone	79%	79%	72%
Carpool	16%	15%	24%
Public Transit	<1%	<1%	<1%
Walk/Bicycle	<1%	2%	3%
Other	3%	4%	1%

Mode Share, Galveston County

Galveston County			
Mode Share	Low	Moderate	Significant
Drive Alone	83%	74%	65%
Carpool	10%	17%	20%
Public Transit	1%	1%	4%
Walk/Bicycle	2%	4%	7%
Other	4%	4%	4%

Mode Share, Fort Bend County

Fort Bend County			
Mode Share	Low	Moderate	Significant
Drive Alone	83%	77%	66%
Carpool	12%	18%	28%
Public Transit	2%	1%	0%
Walk/Bicycle	<1%	1%	1%
Other	4%	3%	5%

Mode Share, Brazoria County

Brazoria County			
Mode Share	Low	Moderate	Significant
Drive Alone	84%	81%	76%

Carpool	12%	15%	14%
Public Transit	<1%	<1%	0%
Walk/Bicycle	1%	2%	3%
Other	3%	3%	6%

Mode Share, Waller County

Waller County			
Mode Share	Low	Moderate	Significant
Drive Alone	75%	73%	74%
Carpool	17%	17%	14%
Public Transit	<1%	1%	0%
Walk/Bicycle	4%	3%	7%
Other	4%	5%	5%

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<sup>i</sup> Center for Public Policy Priorities, <http://www.cppp.org/files/8/poverty101.pdf>