APPENDIX (J)
Equitable Target Area Methodology
Equitable Target Area Methodology

The Equitable Target Area Index was created to identify environmental justice communities. The federal government defines environmental justice communities as minority and low income communities. Regulations such as Title VI of the Civil Rights Act of 1964 and Executive Order 12898 protect these communities and require planning organizations to identify and address any disproportionately high health or environmental effects on them. Our index is updated whenever new data is available and the methodologies are revised to more precisely identify environmental justice communities.

Index Methodology

The current version of the ETA Index was created using data from the 2012 5 year American Community Survey (ACS) and the 2010 Census. All of the data was aggregated at the census tract level. Since environmental justice communities are defined as low income and minority communities, our variables include:

- Percent of population in Census Tract considered to be in Poverty
- Percent of population in Census Tract that responded as African American
- Percent of population in Census Tract that responded as Asian
- Percent of population in Census Tract that responded as Hispanic
- Percent of population in Census Tract that responded as another race that is not White

The poverty data was obtained through the American Community Survey and all other variables were found using the 2010 Census, which is a more accurate representation of the population.

Categories were created for each variable based on the percentages of that population within each census tract. Standard deviations were then found, excluding outliers, using ArcGIS. A census tract was considered Category 1 if its percentage exceeded the highest standard deviation, Category 2 if it was between the second highest and highest standard deviation and Category 3 if it was below the second highest standard deviation. The graph below illustrates this process using a normal distribution.

Example of Standard Deviation Categories

In the maps on the following pages, the darkest area would include census tracts with a Category 1 ranking for this variable and the lighter area would include census tracts with a Category 2 ranking for this variable. While regional average had been used in the past, the number of tracts clustered near the average was found to dilute the areas in greatest need. This method solves that issue and switches the focus to the communities in greatest need. A comparison of these two options is shown in the maps.

After the categories were set, the race and ethnicity variables were consolidated across census tracts. This was done by using the highest ranked variables category. Therefore, if a census tract ranked 1 for Asian and 3
Equitable Target Areas Using Standard Deviation

ETA Index by Census Tract
- Very High
- High
- Medium

- Rail Lines
- Expressways
for all other race and ethnicity categories, the race ranking for the census tract is 1.

The poverty and race categories are then used to create a unified ETA Index. Concentration of poverty was used as a limiting factor for being considered an ETA and concentrations of minority populations affect whether an area is high or very high. This is meant to give a clearer image of the areas with the greatest need.

### ETA Index Categories

<table>
<thead>
<tr>
<th>Poverty Category</th>
<th>Race Category</th>
<th>ETA Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Very High</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Non-ETA</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Category Percent Ranges by Variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category 1</th>
<th>Category 2</th>
<th>Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty</td>
<td>86% - 34%</td>
<td>33% - 22%</td>
<td>21% - 0</td>
</tr>
<tr>
<td>African American</td>
<td>98% - 80%</td>
<td>79% - 50%</td>
<td>50% - 0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>92% - 40%</td>
<td>39% - 28%</td>
<td>28% - 0</td>
</tr>
<tr>
<td>Asian</td>
<td>46% - 13%</td>
<td>12% - 7%</td>
<td>7% - 0</td>
</tr>
<tr>
<td>Other Non-White Race</td>
<td>7% - 4%</td>
<td>3.9% - 3%</td>
<td>2.9% - 0</td>
</tr>
</tbody>
</table>

### Population Percentages by Final Category

<table>
<thead>
<tr>
<th>Index</th>
<th>2010 Population</th>
<th>Percent of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>233,273</td>
<td>4.7%</td>
</tr>
<tr>
<td>High</td>
<td>114,065</td>
<td>2.3%</td>
</tr>
<tr>
<td>Medium</td>
<td>752,792</td>
<td>15.1%</td>
</tr>
<tr>
<td>Total</td>
<td>1,100,130</td>
<td>22.1%</td>
</tr>
</tbody>
</table>

### Spatial Analysis Methodologies

Once the ETAs were located, spatial analyses could be done. Most of the analysis focused on accessibility, due to the high transit dependent population within most ETAs. ARC also analyzed Ladders of Opportunity through accessibility to specific essential services based on the type and availability of data.

Further analysis was also done on other factors relating to ETAs such as zero car households and low wage jobs. There are many more factors that could be included as well, including highest obtained education level, high school dropout rates, and crime statistics. However, for the purpose of transportation related issues, they were left out of this study.

### Buffering

The simplest way of determining accessibility is through proximity. For certain amenities, such as parks and transit stops, it can be assumed that they are most useful for those who can walk to them. Therefore, for these amenities a 0.5 mile buffer was used and overlaid onto the ETA map. While this method does not take into consideration actual travel distance or sidewalk conditions, it does serve to point out areas with little to no access anywhere near them. The resulting maps were presented in the Process / Ladders of Opportunity section of this document.

### Open Trip Planner Analyst

Open Trip Planner Analyst provides more in depth accessibility analysis by using transit schedule information and route finding algorithms to create transit travel sheds based on duration of trip. One way to utilize this tool would be to enter an address and see how far you could go, where you could go, and how long it would take you if you took transit. Open Trip Planner Analyst also allows a script to be used to find travel sheds using multiple locations.
To analyze how accessible different places within the ETAs were to different services, the ARC found point locations for grade schools, grocery stores, higher education, hospitals, and libraries. Since the ETAs cover a wide area of the region, it made more sense to use the destinations as the starting place to see how much of the ETAs were covered by their transit sheds. The resulting maps were presented in the Process / Ladders of Opportunity section of this document.

All travelsheds assume a 60 minute travel time except grocery stores, which is 30 minutes. These travelsheds include about 0.5 miles of walking distance. Only transitsheds within ETAs are shown in order to more easily understand where there are gaps in service for ETAs.

There are several caveats to these maps, however. For example, because Open Trip Planner only has access to schedule data, choosing different time periods can affect the travelsheds. These maps were all created using a 9:00 am departure time, but that level of service may not be available for those using the system at 12:00 pm. Also, most of the commuter bus systems only run service in one direction during peak periods and only during weekdays. Another factor regarding schedule information is the lack of on-demand transit options. These services greatly increase accessibility for people with disabilities and aging populations.

Zero Car Households

15% of households in the Region do not own a car. These households tend to have more burdens with mobility and less access to services. Access to transit is especially important in these areas. The map contained in the Process / Ladders of Opportunity section of this document shows that many of the census tracts with an above average concentration of zero car households are also ETAs. Zero car household data was found by census tract using 2012 ACS and are broken into categories using natural breaks starting from the regional mean.

Entry Level Jobs

For some, entry level low wage jobs can provide the first step out of poverty. However, travel time to and from these jobs can often come a large costs for things such as day care or an inability to schedule time for a second job. Therefore, availability and accessibility to low wage jobs from ETAs are crucial. The map contained in the Process / Ladders of Opportunity section of this document shows that most low wage jobs are outside ETAs and many are not well connected to transit. Total low wage jobs were found by census tract using 2012 ACS and are broken into categories using natural breaks starting from the regional mean.
Transit Accessibility to Key Destinations

Existing transit services with a half mile buffer around stations are shown here, along with ETAs, to indicate walking access to a transit stop. It is evident that most of the areas in the core of the Region are served by local or express transit systems. However, many of the areas in the outer rural counties do not have access to scheduled transit services. While Clayton County has just approved the MARTA tax, more needs to be done for areas where many households do not have a car.

The lack of transit access in some of these areas, particularly those within historic suburban town centers, means that getting to and from many essential services can be difficult. Even residents within a stop buffer may find that they are served only by a single bus route with infrequent service, which can still be severely limiting to mobility.

In order to determine actual transit access, ARC conducted an analysis using essential services such as libraries, schools, grocery stores, and major hospitals. The transit travelshed, furthest distance that can be traveled within a certain time by transit, was calculated for each service using Open Trip Planner. For this analysis it was assumed that a transit rider would be willing and able to walk up to one-half mile during their trip. The results shown in the following series of maps only include the travel sheds within ETAs for simplicity. The portions of ETAs shown in grey cannot use transit to get to that service within the defined time period.

It’s important to note that Open Trip Planner only utilizes transit schedule data and does not account for individuals who could walk to a service within the time period or the availability of on demand transit services.
Zero Car Households and Equitable Target Areas

The majority of transportation dollars in Georgia are dedicated to residents who drive. Infrastructure investments and fuel subsidies support those who have the ability and the funds to use an automobile as their primary mode of transportation. Georgia has few options for those who are unable or unwilling to drive. Suburban and rural areas in particular lack the options non-drivers need. According to the 2012 5-year American Community Survey, 6.2% of households in the 18-county Region do not own a car. Some of the zero car concentrations reach up to over 50% of households within a census tract.

As would be expected, there is a correlation between areas identified as ETAs and those with a high percentage of households without access to a private vehicle. Over the next 30 years the Region will need to take a more comprehensive approach to transportation to assist the growing numbers of residents that cannot drive or choose not to drive. Investing in transportation options now will better prepare the Region and the state to manage an increasingly diverse population with increasingly diverse needs. Additionally, the greater interest at the federal level in transportation options is evident as many states and regions are investing significant dollars into transportation alternatives.
Transit Propensity

The Region’s current transportation infrastructure fits the needs of many, but there are several areas where it may be difficult or impossible to travel efficiently without a vehicle or where the level of congestion makes using transit an attractive option for people who would ordinarily drive. The Region must focus attention on these areas, particularly where they intersect with disadvantaged populations and a high percentage of choice riders.

Population density, employment density, low income households (making less than $25,000), congestion level, and the percent of minorities were used to find areas with dependent riders and choice riders. In other words, those communities with the highest propensity to use transit services if they were available. The most obvious need is in Clayton County where MARTA was just approved to start service. There are also some pockets of transit need in the suburban town centers, where express and circulator bus services might be considered. One issue that needs to be researched more, however, is the frequency and types of services currently provided within the existing transit footprint. Upgrading heavily used bus lines to rail, and increasing the frequency and connectivity of the existing bus lines could bring a new level of alternative transportation mobility to the Region.

Accommodating the needs of those unable to drive must be a critical strategy in developing a program of transportation strategies that strengthens our economy and addresses the full spectrum of travel needs in the Region. A healthy transportation system also needs to have a diverse array of options, so the traveler can choose how to get to their destination.
Transit and Walking Travelsheds to Libraries

Libraries are a crucial resource for many households in poverty that may not have access to a computer or internet in their homes. The proliferation of online education and job applications make access to free internet an important way to connect people to opportunity. Libraries and ETAs tend to be centrally located in dense areas, therefore many people within the suburban ETAs shown in grey on this map might be able to walk or bike to the library within an hour provided the infrastructure is in place. There does not appear to be a serious disconnect between the proximity of libraries to ETAs versus non-ETAs, but the bicycle and pedestrian infrastructure in these areas should be analyzed for any gaps in connectivity.
Transit and Walking Travelsheds to K-12 Schools

Schools will typically be sited in close proximity to where people with children live. Although there are a handful of examples of new schools being located close to town centers, a trend has emerged in recent years of new schools being built in undeveloped areas with less expensive land to accommodate all grades on a single site and future growth. As this trend continues it may be increasingly challenging to access those schools by public transit, bicycling or walking.
Transit and Walking Travelsheds to Colleges and Technical Schools

It is particularly difficult to estimate a transit travel shed to higher education facilities because of their specialized nature. A person inside of a transit shed on this map may still not be able to get to the school they want to attend or have been accepted to. Travel surveys have a much higher accuracy of how students living in high poverty areas travel to school and where they attend classes. ARC has conducted an extensive travel survey in 2010 and has access to MARTA’s latest on-board ridership survey. These resources will be used to continue analyzing this aspect of accessibility.
Transit and Walking Travelsheds to Grocery Stores*

Grocery stores are much more widely scattered around the Region than the other essential services included in this analysis. Since many items purchased will be perishable, such as fresh fruits and vegetables or frozen items, a 30-minute maximum travel time was assumed rather than 60 minutes. This map would seem to indicate that levels of access are reasonably good, especially if one considers the possibility of trips completed entirely by walking, but it’s likely that many facilities shown are not full-service grocery stores. Being able to purchase packaged and processed foods at a local convenience store is not the same as having the range of options afforded by a full-service grocery. In order to better determine the level of convenient access individuals living within ETA areas have to groceries, it will be necessary to refine this analysis and better differentiate between the services and products actually provided by each facility shown.
Transit and Walking Travelsheds to Hospitals

Many households in poverty have historically not had access to healthcare and have therefore have not had access to preventative care. As healthcare becomes more affordable, more individuals living in poverty will regularly have access to this service. Most clinics can handle basic healthcare, but some specialized needs still require frequent visits to full-service hospitals. However, without accurate information about which clinics and hospitals are most frequented by people in poverty, assumptions about access are impossible to make. ARC would like to partner with public health organizations to gather and share data to gain a better understanding of where our Region has gaps in access to healthcare services.
Transit and Walking Travelsheds to Entry Level Jobs

Access to entry level jobs, which frequently pay low wages, can provide a first step out of poverty. However, if it costs too much or takes too much time to get there, the benefits of having that job are decreased by deterring that amount of time they would be able to spend in school, at a second job, or the amount of money they would have to spend on child care. Using census data, the number of low wage jobs (earning less than $1200/month) by census tract was found and compared to the Equitable Target Areas.

Many low wage jobs around the Region are in located in widely dispersed retail developments built over the last couple of decades. Even when in close proximity to ETAs, accessibility by transit to these suburban developments is often not possible. Retail developments cluster in areas where incomes and population densities are highest to have the best opportunity to make a profit. In order to continue providing those shopping opportunities to local residents, the Region must be deliberate about ensuring the people hired to run the registers, stock the shelves and sweep the floors can get to their jobs.
Transit and Walking Travelsheds to Public Parks

Accessibility to parks is important to support public health. We have many parks in the region, but some areas still have limited accessibility to them via active transportation.

While parks are widely distributed around the region, our overall number and acreage lag behind other metro areas. While the Region is making improvements in this area, it’s clear that the most sensitive ETAs tend to be those with the least access to a public park. Many of the individuals in living in ETAs also live in apartments with no access to the private yards. If the Region wants to be viewed around the nation as having a great quality of life, ensuring that communities have convenient access to nature, whether in a wilderness, a park, or in their own back yard, is essential.