

# *Durham, NC*

## Individualized Marketing Demonstration Program Individual City Report

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Individualized Marketing Demonstration Program  
City Report

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## 1.0 Introduction

Durham is a 229-square-mile, single city county with a population of 234,199. The area is characterized by 98,000 acres of hardwood and evergreen forests and 7,800 miles of cropland. Durham is at the pinnacle of the Research Triangle Region of North Carolina, which is consistently ranked among the best places to live and do business in the nation. Durham provides an opportunity to test how Individualized Marketing works to reduce car use and promote environmentally friendly transportation options. The enthusiasm of the community leaders and the public is critical to long-term, local investments to achieve local transit building goals and to build a more sustainable, community based transportation system.

## 2.0 Selection Reasoning

Durham was selected based on four criteria previously established before project solicitation began. These criteria included:

- a. Leveraging Resources
- b. Partnerships & Coordination
- c. Integration of Project with Overall Strategic Approach
- d. Value of Project Characteristics as National Model

### a. Leveraging Resources

This factor focused on the applicant's ability to secure resources beyond those provided by the FTA, and the applicant's commitment to the success of the project through examination of the commitment and resources provided, including in-kind contribution of material, equipment, space, staff time, and other creative contributions.

In response to this criterion, Durham's Triangle Transit Authority (TTA) committed a budget of \$29,700.

The city provided office space for use during the project, equipped with two computers, a fax line shared with the TTA internet, and six phone lines. A secured area for storage of materials and survey documents was also provided.

Unlimited access was provided to all printed marketing materials, such as schedule brochures, how-to-ride guides, and ridesharing and vanpool brochures. TTA promised participation in the design process, printing, and mailing of additional marketing materials as well.

TTA also agreed to share a post office box for collection of the surveys and service sheets.

### b. Partnerships & Coordination

This factor focused on special consideration given to appropriate partnerships created by the applicant for implementation of the project. Scoring took into account the applicant's ability to clearly explain how the staff would coordinate with the project team, how both would contribute toward the success of the project, and how the results of the project would be utilized to improve the applicant's organization. Scoring also was determined by whether the applicant addressed how the project would coordinate with related activities in the organization and community, as well as successful partnerships with community organizations in the past.

In response to this criterion, Durham coordinated with numerous organizations to assure support and strategic partnerships. Each organization was included as a potential

partnership for a specific purpose that would directly benefit the Individualized Marketing program. These organizations included, but were not limited to:

- Durham Area Transit
- Durham-Chapel Hill-Carrboro Metropolitan Planning Organization
- North Carolina Department of Transportation, Public Transit
- Durham County
- Triangle J Council of
- Local Neighborhood Associations (Crest Street, Old West Durham, Trinity Park, Trinity Heights, Walltown, and Watts Hospital-Hillandale)

In addition to the new partnerships forged by TTA, the transit authority has had a culture of actively cultivating relationships with a wide range of community organizations and individuals for years throughout the planning and design of TTA's regional rail project connecting Durham, Research Triangle Park, Cary, and Raleigh. These stakeholders, ranging from residents to businesses to employees to government staff and political officials, have been involved in advising the transit agency on route alignment, station location, and station design.

### **c. Integration of Project with Overall Strategic Approach**

This factor focused on the degree to which the project would fit into an overall approach to increase ridership in the applicant's location. Greater consideration was given to areas that have demonstrated success in planning and executing other initiatives aimed at increasing ridership, and could show a high level of commitment throughout the organization for the project.

In response to this criterion, Durham outlined its services to the community, proving that the TTA has worked hard to position itself as a mobility manager in the Triangle region.

The TTA also emphasized projects from previous years that are similar to, and in support of the concept of marketing to the individual. Some of these projects included:

- Hiring customer service representatives to staff the call center (September 2002)
- Providing customized door-to-door trip planning for the four public transit agencies in the region, available through the call center, or online at [www.GoTriangle.org](http://www.GoTriangle.org) (October 2003)
- Providing online ridematching (available April 2004)
- Providing a regional Emergency Ride Home program (April 2004)
- Participating in a Best Workplaces for Commuters registration and publicity campaign (Spring/Summer 2004)
- Conducting telephone and on-board surveys (several in 2003)
- Conducting an employer-based survey of employee commuting habits in Durham County (September 2003)

### **d. Value of Project Characteristics as National Model**

This factor focused on whether demographic and situational characteristics of the city proved to be of high value as a research demonstration to other locales. Scoring also took into effect the applicant's ability to point out the value of the location as a national or regional model.

In response to this criterion, Durham provided many positive factors that contributed to its desirability as a candidate for the project. For example, the Triangle region of North Carolina is a fast growing, mid sized, metropolitan area, which is similar to many cities

nationwide. Its increasing problem with air quality and congestion problems resulting from automobile reliance further identifies it with many large cities throughout the United States. Like many other areas, Durham has only moderate levels of bus transit service. The city is also one of many representing a mixed income, suburban setting.

**e. Other Considerations**

In addition to the four main criteria, other considerations were regarded during the selection process. Some of these included:

- i. Population Size
- ii. Active Fleet Size
- iii. Unlinked Passenger Trips
- iv. Climate Zone
- v. Diversity index

These criteria were scored according to the following chart:

<b>Population size:</b> <i>Very Small</i> Less than 100,000 <i>Small</i> 101,000 – 250,000 <i>Medium</i> 251,000 – 500,000 <i>Large</i> 501,000 – 750,000 <i>Very Large</i> 750,000 and above		<b>Active Fleet Size:</b> <i>Small</i> <50 peak vehicles <i>Mid</i> 50-100 peak vehicles <i>Large</i> 100-500 peak vehicles <i>Very Large</i> >500 peak vehicles		<b>Diversity Index (based on % of non-whites):</b> <i>Very Low</i> Less than 20% <i>Low</i> 21 – 40% <i>Moderate</i> 41 – 60% <i>High</i> 61 – 80% <i>Very High</i> 81% and above	
<b>Unlinked Passenger Trips:</b> <i>Low</i> Less than 1 million <i>Mid</i> 1 million to 4 million <i>High</i> 4 million to 30 million <i>Very High</i> over 30 million		<b>Climate Zone:</b> <i>Zone 1</i> Very cold <i>Zone 2</i> Cold <i>Zone 3</i> Moderate <i>Zone 4</i> Warm <i>Zone 5</i> Very Warm			

*i. Population Size*

Durham offers a large population of 627,846 people. Out of the 66 applicants to the Individualized Marketing Demonstration Program (IMDP), Durham was ranked 16<sup>th</sup> in population size, making it an appropriate representation of larger, fast growing cities that may possibly use the individualized marketing approach in the future.

*ii. Active Fleet Size*

Durham’s active fleet size was a very positive contributing factor to the city’s selection, as they have between 100 and 500 peak vehicles, which is considered to be a large fleet size.

*iii. Unlinked Passenger Trips*

Durham’s unlinked passenger trips were also a determining factor in city selection, as they ranged between 1 million and 4 million, considered a mid ridership statistic.

*iv. Climate Zone*

Durham’s climate also served as a substantial national model, due to their warmer weather. The city’s moderate winters also made it possible to be more lenient with the IMDP schedule in Durham, seeing as how the area receives little snow, which would interfere with transit ridership statistics and functionality.

*v. Diversity Index*

Like that of Bellingham, Washington, Durham's diversity index is considered to be low, with only 21 – 40% of non-whites living in the area. However, because of the many other desirability factors of the area, Durham was kept in consideration despite its low diversity index.

### **3.0 Public Transit System Description**

The Triangle Transit Authority is a regional transit authority serving Wake, Durham, and Orange counties in North Carolina. The TTA was created in 1989 by the General Assembly, with a mission "to plan, facilitate, and promote, for the Greater Triangle Community, an affordable, safe and secure customer-oriented public transportation network which provides mobility, promotes economic opportunities, and protects the environment." TTA provides the following services:

- Regional bus and shuttle services connecting Raleigh, Durham, Chapel Hill, Cary, Apex, Garner, Research Triangle Park, and RDU Airport. We also connect four major universities.
- Paratransit service to those who cannot use our fixed-route services.
- Vanpool service to anyone who lives or works in our three-county jurisdiction.
- Transportation Demand Management services to employers in Durham and Wake counties. Planning and design of a 35-mile rail transit system with 16 stations connecting Durham, RTP, Cary and Raleigh, with shuttles linking RDU International Airport and RTP. The rail transit system is expected to be operational in late 2007 or early 2008.
- Regional public transit information system including management of a telephone information system and web-based trip itinerary planner.

### **4.0 Coverage / Average Annual Ridership**

At the beginning of the IMDP, average TTA ridership in the target area fell between 1200 and 1500 people. TTA's partner organization, the Durham Area Transit Authority (DATA) has slightly higher ridership, ranging from 45,000 to 60,000 people.

In 1999, Durham County passed a law that companies of 100 or more employees have to implement an employer information system, which includes:

- An annual commuter service
- Company contact point
- Transportation fares on site

At the start of the IMDP, TTA was working with 83 companies and over 85,000 employees. 65 employers were surveyed, and 15,500 responses were received. Of the 15,500 responses:

- 81% of employees drove to work alone
- 6% carpooled
- 2% other
- 1% teleworked
- 1% took the bus
- 1% drove a motorcycle
- <1% vanpooled
- <1% bicycled/walked

TTA also operates a vanpooling program. At the start of the IMDP, TTA had 15 passenger vans with at least 7 passengers per vehicle, which were leased to various agencies/people. A small monthly fee was charged per rider, with drivers riding free. Of these 15 vans, all but 6 were in operation, although vanpooling only made up about 1% of commuters.

TTA's partner agency, DATA was also highly involved in the IMDP. During the start of the program, DATA had 16 routes, 62 buses, and 4.1 million passengers, with 85% captive riders, 25 passengers per hour, and 13,000 miles logged per month.

## 5.0 Test Area

Within the city of Durham, a certain area was designated as a "test area." Houses within the test received marketing intervention. A control group was also established, based on a random selection process.

### a. Reason for Selection

There were many reasons for selecting the particular test area within Durham, which included, but are not limited to, the following:

- The area provided the project with a sufficient number of households to draw random samples for the survey and marketing intervention. It is common practice to have an area of around 16,000 – 18,000.
- The area's topography was conducive to bicycling and walking modes (relatively flat).
- A future rail station was planned at the Duke Medical Center and at Ninth Street, both of which are at the southern edge of the test area.
- The neighborhoods were moderate income and racially diverse; therefore, different from the three other previously selected sites. It was agreed that the FTA IMDP would look at four scenarios and not four identical projects, resulting in a much broader scope of lessons learned.

### b. Description, physical, ridership, how served, etc

The target area is located in West Durham and is comprised of older and racially more diverse neighborhoods. There is an incomplete network of sidewalks and limited transit service (several local bus routes with connections to the rest of the local system and several regional bus routes). There are also several neighborhood-scale, pedestrian-oriented commercial districts. There are fairly low car ownership rates for this area (12% have no vehicle available), as compared to the three county region (6%). There are also a lower percentage of residents driving alone to work in this area (61%) when compared to the region (78%). Activity in this area is also significantly influenced by Duke University and Medical Center, and may be a good model for other such academic locales.

## 6.0 Methods

### a. How IMDP was applied

The Individualized Marketing Demonstration Program is marked by three distinct phases:

1. 'Before' Survey
  - a. Segmentation Phase
    - i. Group I
    - ii. Group R
    - iii. Group N
2. Individualized Marketing Intervention
  - a. Motivation and Information Phases
  - b. Convincing Phase
3. After Survey

These three phases follow a process that has been pre-planned and implemented previously in other areas. Each lasts approximately six weeks.

*i. 'Before' Survey*

The Durham 'Before' survey was conducted using a mail-back survey technique utilizing a one-day trip diary for all household members. The goal of the 'Before' survey was to gather information about the target and control areas, including residents' current travel patterns and habits, their interest in public transportation, walking, and cycling modes, and their willingness to learn more about environmentally friendly modes of transportation in their community. The first nominated travel day for the Durham 'Before' survey was on October 25, 2004. Announcement letters were sent in advance to inform 2,400 participants about the purpose of the travel survey. A main mailing letter and an information pamphlet accompanied the mail-back survey diaries, which were received by respondents on their nominated travel days. A series of telephone calls and reminder letters were then used to motivate the respondents to return their travel surveys.

*a. Segmentation Phase*

Segmenting households using the 'Before' survey data made it possible to identify households that were willing and able to change their mobility patterns, and those who already use one or more environmentally friendly modes. Households that were not interested and had no potential for change received no further direct contact, but were sent an AAA brochure on how to use their car more efficiently.

Nine hundred persons were randomly selected from the target group. These 900 were then classified into three main groups:

1. Group 'I' – Participants willing and able to change their mobility patterns, and those interested in receiving more information about the how, when, and why of public transportation and alternate transportation methods.
2. Group 'R' – Participants already using one or more environmentally friendly transportation mode. This group was then separated into two sub-groups:
  - a. 'R with' meaning participants already using environmentally friendly transportation mode(s) but interested in receiving information.
  - b. 'R without' meaning those already using environmentally friendly mode(s) but not interested in receiving further information
3. Group 'N' – Households not interested in changing their transportation habits, and those determined to have no potential for change.

*ii. Individualized Marketing*

*a. Motivation and Information Phases*

The motivation and information phases focused attention on all households in the 'I' (interested) group and in the 'R with' group (regular users of one or more environmentally friendly modes with information needs). Households in the 'I' and 'R with' groupings were mailed a Service Sheet that contained a comprehensive list of public transportation, bicycling, and walking materials that could be ordered. The 'R without' group

respondents received a gift item for already using an environmentally friendly mode, along with additional information materials. This design methodology was utilized because it was observed that regular users of alternative modes without information requests could benefit from new and updated materials.

*b. Convincing Phase*

In the convincing phase, further services, or 'home visits' were offered to households as an opportunity to learn more about a particular alternative mode via a face-to-face conversation with a qualified representative for each mode, (bus driver, cycling and/or walking professional). The convincing phase was instrumental in motivating and encouraging households to try out an alternative mode they were interested in. Bus passes were distributed during public transportation home visits, thereby allowing household members to 'test' the system.

*iii. After Survey*

The Durham 'After' survey was conducted using a self-administered mail back survey for households and individuals. The survey forms were identical to those used in the 'Before' survey. Announcement letters, reminder letters, and phone calls were also used to motivate residents to fill out and return their travel surveys. The first nominated travel day for the 'After' survey was on April 5, 2005.

**7.0 Results**

**a. 'Before' Survey**

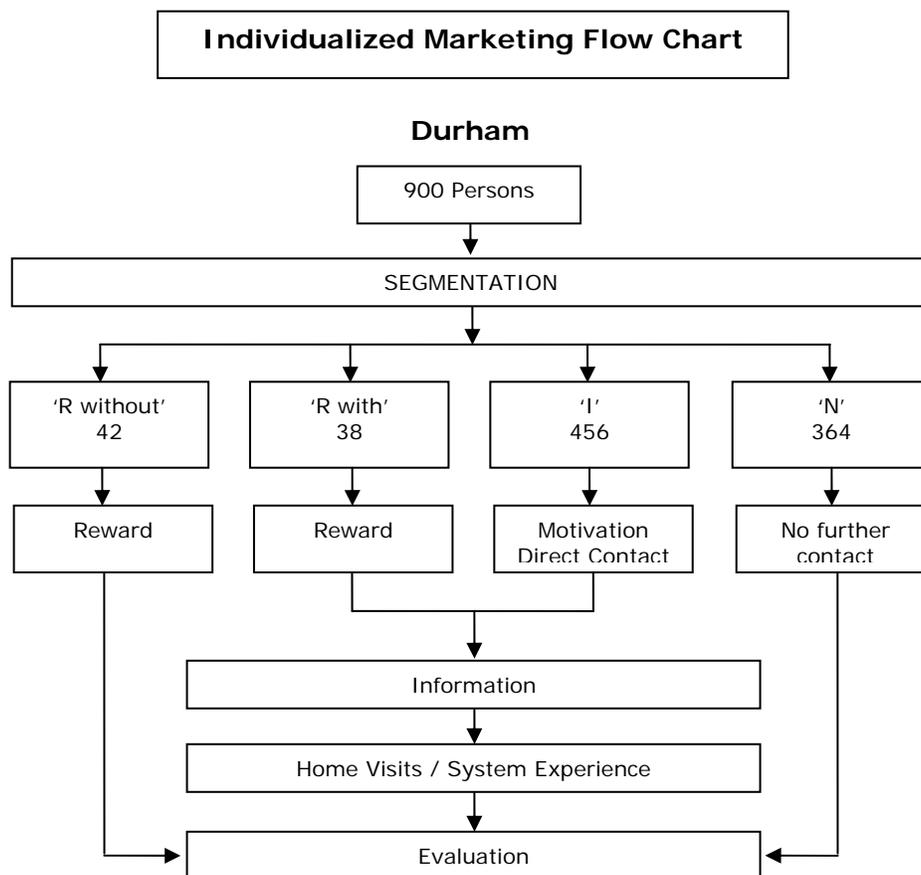
As shown in the table below, of the 2,400 surveys mailed, 470 were returned by the post office without opening for varying reasons, such as the residents had moved or the address no longer matched the household name. That reduced the sample size to 1,930 persons. Of those, 1,043 completed and returned the survey. This represents a 54% response to the 'Before' survey.

***'Before' Survey Response***

Gross Number of Surveys Mailed	2,400
Surveys Returned To Sender Due to Address Change (Sample Loss)	470
Adjusted Gross Sample Size	1,930
Surveys Returned Complete	1,043
Response Rate	54 %

As shown in the table below, results from the segmentation phase of the 'Before' Survey indicate that there were 456 persons (51%) in the 'Interested' or 'I' group, 80 persons (9%) in the 'R' group, and 364 persons (40%) who were in the 'Not Interested' or 'N' group.

**Figure 1: IMDP flow chart**



*i. Deliveries*

A total of 268 tote bags with information were delivered personally to Durham residents within three days after receiving their service sheets.

*ii. Home Visits*

A total of 5 home visits were conducted during the convincing phase. These home visits were approximately 40 minutes long and were perceived as “positive” by each household. They included:

- Three households received combined bicycling and walking home visits from cycling/walking specialists. Each household received personal advice on bicycling and walking issues and concerns in addition to information materials, a historic postcard set, and a notepad.
- Two walking home visits were conducted by walking advocates from a local walking organization. Information materials were distributed to households, in addition to a historic postcard set and notepad.

**b. After Survey**

The response rate to the Durham ‘After’ survey was 66%, with 1,174 persons (net) returning their travel survey, as can be seen in the table below.

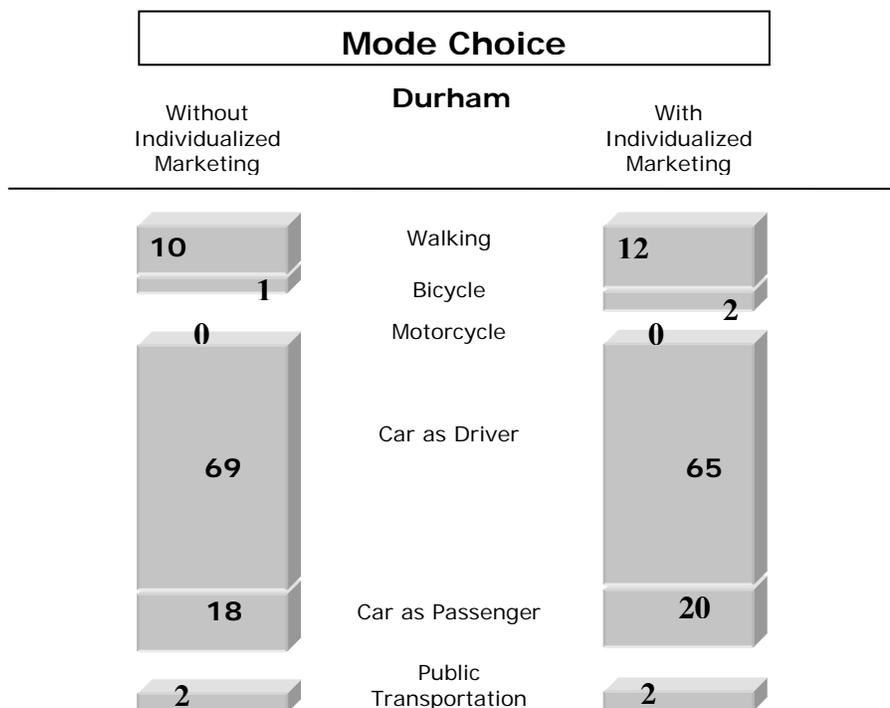
### 'After' Survey Response

Gross Number of Surveys Mailed	2,150
Surveys Returned To Sender Due to Address Change (Sample Loss)	364
Adjusted Gross Sample Size	1,786
Surveys Returned Complete	1,174*
Response Rate	66%

\* Total survey returns are broken down into two sections – the target group returns totalled 581 persons and the control group returns totalled 593 persons \*

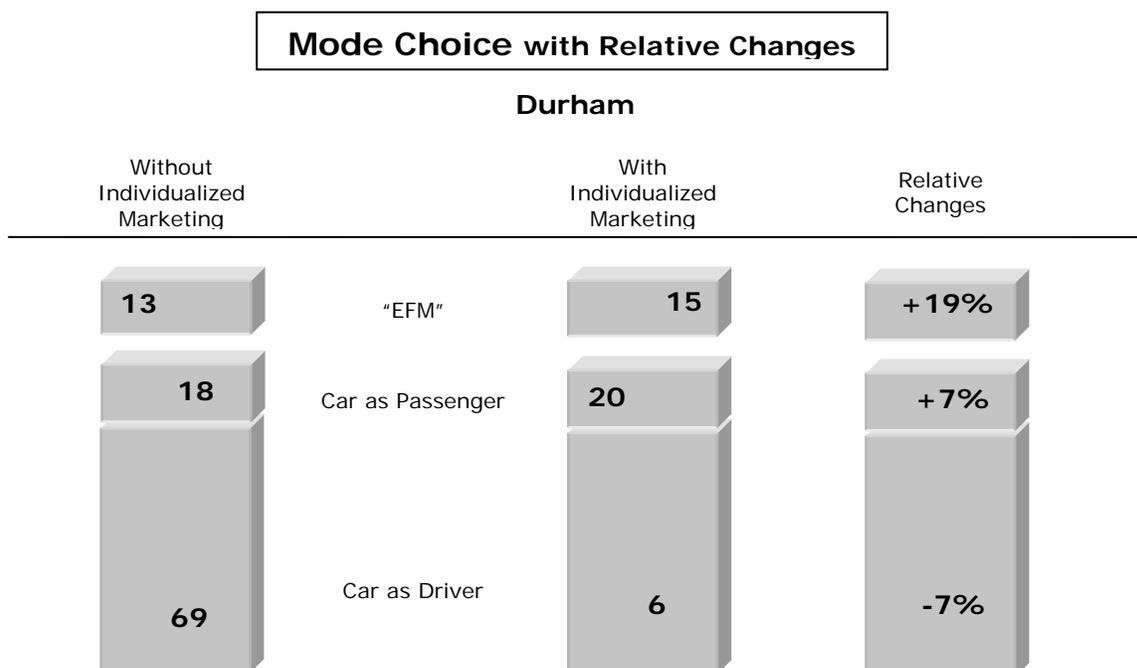
### c. Comparison of Before & After Survey Results

An important component of the Durham Individualized Marketing Demonstration project is the extensive evaluation of results. A pilot project aims to assess the potential of different techniques for application on a larger scale in Durham; therefore, a detailed and robust evaluation of the effects on travel behavior is of critical importance. The actual changes in mode choice are the key indicator of a successful campaign in Durham. To separate the effect of the IMDP from other influences, a control group was applied to the survey design. The changes due to the IMDP are calculated by comparing the travel patterns in the target group with those in the control group. This comparison between target and control groups consequently demonstrates the effect of Individualized Marketing. The survey results indicate that there were significant changes in the use of most main travel modes as a result of the Durham IMDP. Car (as driver) usage decreased by 4% and the two environmental modes promoted, (walking and cycling), showed increases. The use of public transportation rose slightly, but these small changes can only be seen on the detailed level of trips per person per year.



The figure above indicates that before Individualized Marketing intervention, residents were walking (without using another mode) for 10%, and bicycling for 1%, of their daily trips. The car represents the mode most frequently used, with 69% car (as driver) and 18% car (as passenger) trips. Public transportation accounts for only 2% of all trips. Environmentally friendly modes (EFM) showed increases following the marketing intervention, with walking and bicycling modes increasing by one percentage point each. Car (as passenger) rates rose by two percentage points, whereas car (as driver) rates decreased by four percentage points.

The figure below shows the changes in mode choice measured by the 'After' survey in terms of trips per person per year. There was a 7% reduction in car (as driver) use with corresponding increases (+19%) in environmentally friendly modes (EFM) and for the car as passenger mode (+7%).



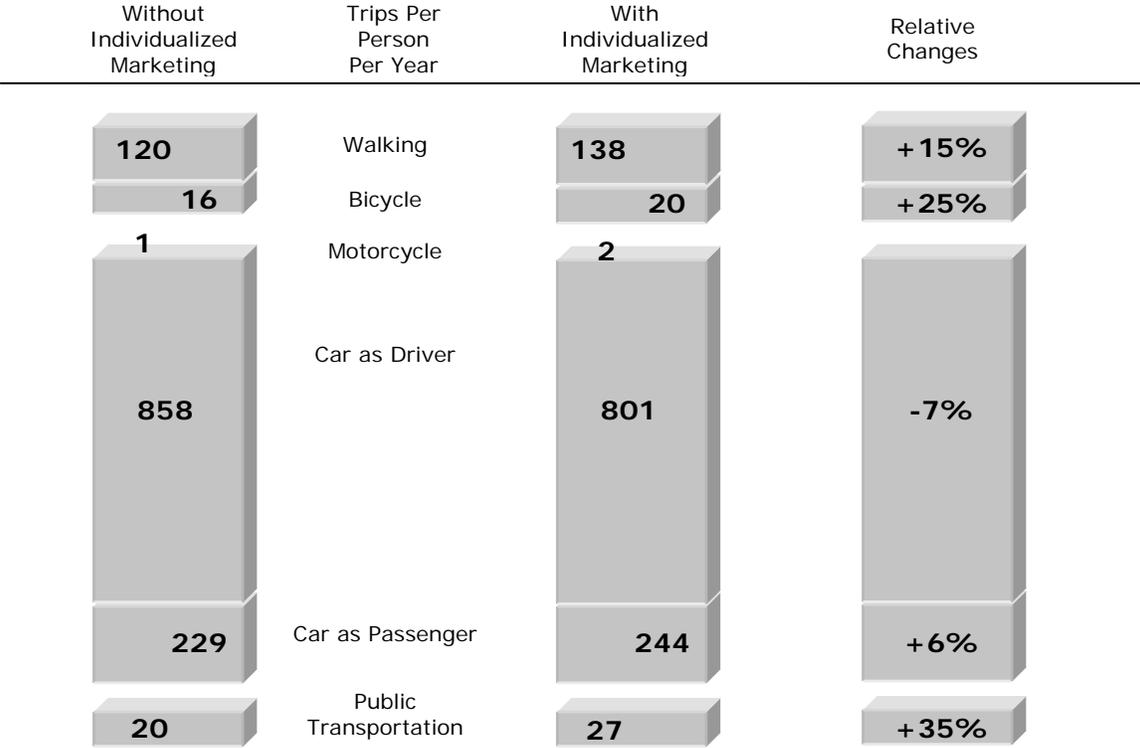
Experience shows that in countries with such low levels of public transportation use, it is more effective to promote walking, bicycling, *and* public transportation. The results for the public transportation mode will be better than simply promoting public transportation alone, and this was the rationale for promoting all environmentally friendly modes in the FTA Individualized Marketing Demonstration Project in Durham.

The figure below demonstrates everyday mobility in Durham, which excludes long distant trips and holiday travel. For an average of the year (341 days), the majority of trips were made by car, with 858 trips taken by car (as driver) and 229 by car (as passenger). On average, one trip per person per year was made by motorcycle. There were 365 trips undertaken per person, per year, by environmentally friendly modes: 120 by foot, 16 by bicycle, and 20 by public transportation.

After the Individualized Marketing Intervention, car (as driver) trips decreased by 7%, whereas the car (as passenger) mode increased by 6%. Car (as driver) trips were replaced by environmentally friendly modes – walking increased by 15%, bicycling by 25%, and public transportation by 35%, representing statistically significant changes.

**Mode Choice: Trips Per Person Per Year**

**Durham**



The table below compares everyday mobility car mileage with and without Individualized Marketing. The target group, which contained 900 persons, had a total of 770 cars (both before and after). A successful IMDP campaign resulted in an 11% reduction in vehicle miles traveled by these cars. This equates to 530,000 miles reduced per year.

**Car Mileage**

Without Individualized Marketing		With Individualized Marketing
770	(Private) Cars in Total	770
18	Miles Per Car Per Day (everyday mobility)	16
4.73 million	Total Miles Per Year (341 days)	4.2 million
	Reduction (mi per year)	-0.53 million
	Relative Reduction	-11%

#### **d. Intended Use of Results**

TTA plans to use the results to help make decisions about whether a residential-based individualized marketing approach is a viable complement to the employer-based strategies already in use. As TTA prepares for the opening of regional rail service at the end of 2007, the individual marketing process may be used as a tool to help residents understand how the rail service could fit into their daily activity. The IMDP could also be used as a potentially effective way of promoting other new transit services in the region that would be geographically targeted.

TTA also plans to use the results to advocate for a broader application of the use of individualized marketing with local and state governmental partners.

### **8.0 City Response**

TTA believes it would be very difficult to attribute ridership changes to the IMDP because the project was done on such a small scale, and there were other fare and service changes that were occurring at the same time. However, they felt that the results of the project show that there are intangible benefits to producing and sharing marketing materials that empower the user to make smarter choices.

TTA was able to reach Durham citizens in ways that have not been tried before, and which proved effective. The project also helped build community relationships with various neighborhood associations including: the City and County Government, the Convention Center and Visitor's Bureau, Downtown Durham Inc., etc. The partnerships with these groups helped TTA stay on budget during production of literature for the project, plus the alliances built will remain strong beyond the completion of the IMDP.

After the completion of the IMDP, TTA plans to use the lessons learned from the IMDP to target University students, using similar outreach tactics, and other tools. They found that social marketing, like that of the IMDP, is a concept that can be used to TTA's advantage in future projects.

### **9.0 Conclusion**

The Individualized Marketing Demonstration Program in Durham was successful in many ways. TTA was able to present a good project with a small amount of funding for resources through community support, and valuable lessons were learned in the process. The Durham project team committed necessary resources to the project to ensure that the marketing intervention had a direct impact on residents in the target area. The results indicate travel behavior changes were accomplished.

Following the marketing efforts, car use decreased by seven percentage points, whereas environmentally friendly modes increased by 19 percentage points.

The success of the Durham IMDP results shows that Individualized Marketing can be effectively implemented in larger cities comprised of older and more racially diverse neighborhoods. Based on these encouraging results, it is anticipated that a large scale project conducted in Durham would substantially reduce car use and increase the mode share of walking, cycling, and public transportation trips.