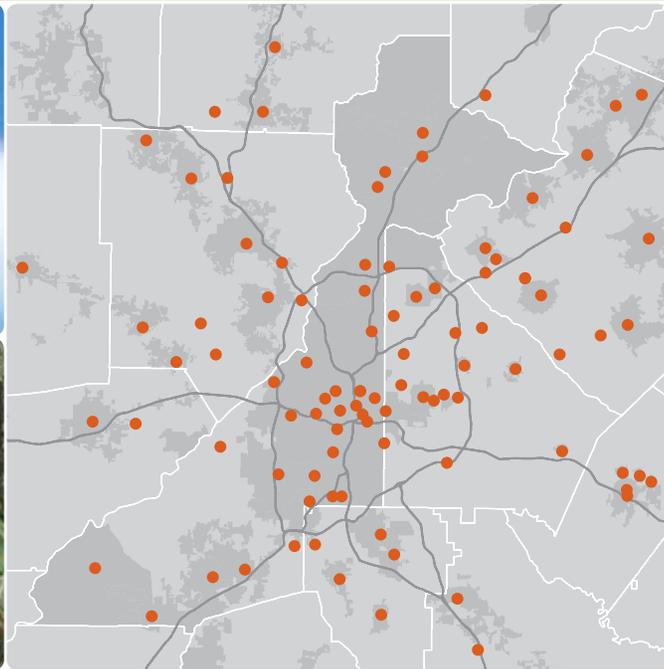


2009 Livable Centers Initiative

INDICATORS & BENEFITS STUDY



ATLANTA REGIONAL COMMISSION



2009 Livable Centers Initiative

INDICATORS & BENEFITS STUDY

Contents

Executive Summary	3
Background of the Livable Centers Initiative Program	4
Key Indicators	6
Results	9
Summary	15

Executive Summary

The Livable Centers Initiative (LCI) is a program offered by the Atlanta Regional Commission (ARC) that encourages local jurisdictions to plan and implement strategies that link transportation improvements with land-use development to create sustainable, livable communities. Since its inception in 1999, 96 communities around the Atlanta region have completed LCI studies and ARC has provided more than \$140 million in LCI study and transportation funding to support these LCI plans.

The purpose of the LCI Indicators and Benefits Study is to examine a sample representation of the LCI plans and determine the benefits and impacts of the LCI plans, policies and projects on the community and the region as a whole. Ten (10) LCI areas were selected from the 96 completed LCI studies. The plans selected were located throughout the region and have a variety of local issues and opportunities for growth and redevelopment. The selected areas were evaluated with software known as INDEX. INDEX allows planners to develop different growth scenarios composed of land use and transportation options in an ARCGIS environment.

The study findings support the premise that increased employment and housing options concentrated in centers and corridors, with supporting transportation options, can reduce per capita vehicle miles traveled (VMT) within those study areas while expanding the population and employment base within the study area. The LCI study areas examined using INDEX all showed, with one exception, decreased levels of VMT for the residents living within those areas. This potential reduction in driving is attributed to moving toward a more balanced jobs-to-housing ratio within those areas, an increase in the diversity of land uses and an improved multi-modal transportation network.

The LCI program has become important to the Atlanta region and has had meaningful impacts on both land-use and transportation needs. The program has yielded tremendous results, with a relatively small investment of just one percent of the Atlanta Regional Transportation Plan (RTP) funds.

Background of the Livable Centers Initiative Program

The Livable Centers Initiative (LCI) is a primary implementation program for the Regional Development Plan policies adopted by the Atlanta Regional Commission (ARC) Board in October 1999, and later revised in March 2003 and May 2006. The primary goals of the program are to:

- 1) Encourage a diversity of mixed-income residential neighborhoods, employment, shopping and recreation choices at the center/corridor level
- 2) Provide access to a range of travel modes including transit, roadways, walking and biking
- 3) Develop an outreach process that promotes the involvement of all stakeholders

The LCI program provides incentives for local jurisdictions to take land-use actions that create a greater mix of uses, including housing choices in centers and corridors. The unique aspect of the LCI program is its ability to connect study funds and local land-use initiatives with dedicated funds for transportation projects. Communities that implement the land use policies of their completed plans receive priority funding for transportation projects within their study areas.

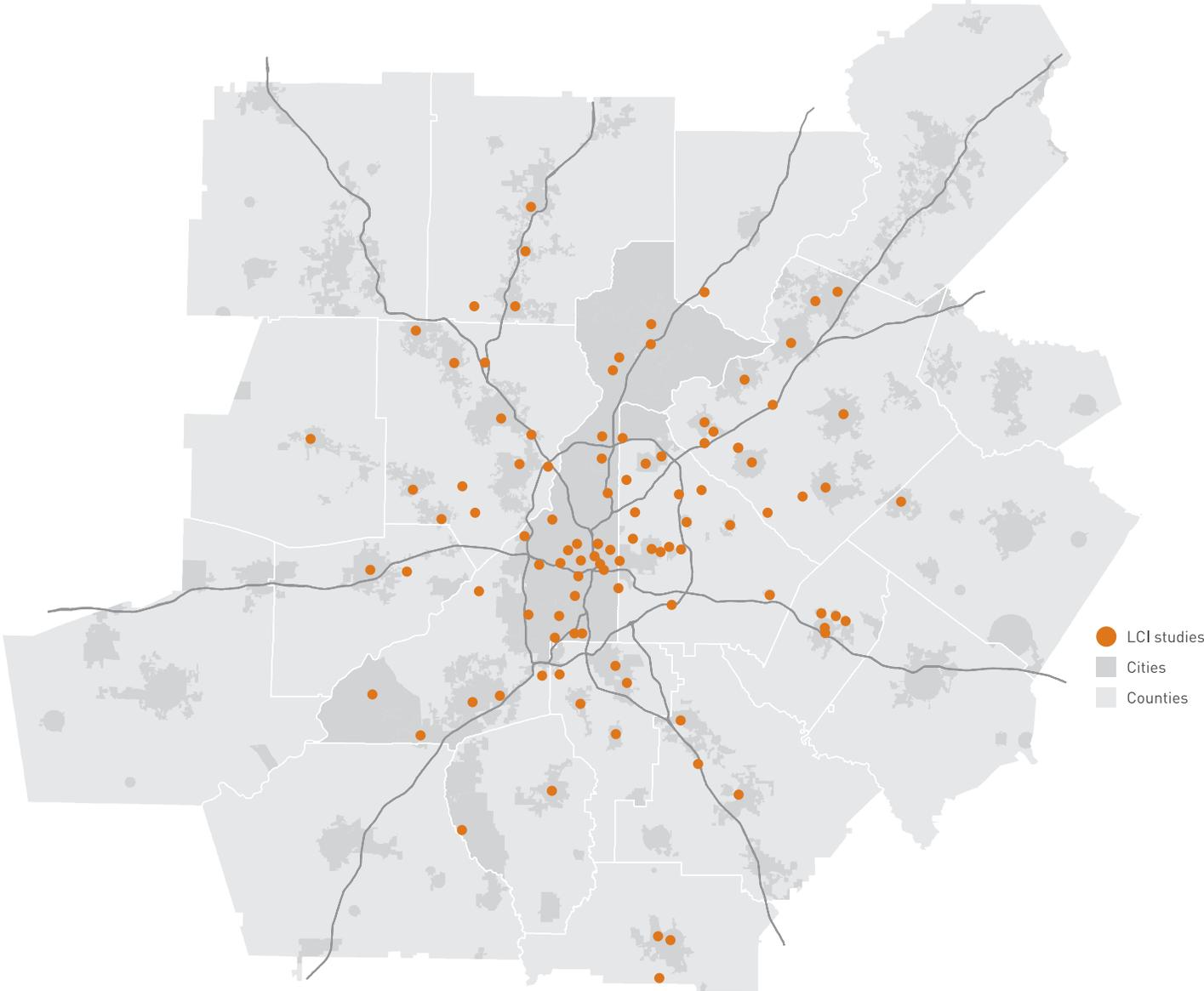
Planning funds are provided to local governments and non-profit organizations to prepare plans for the enhancement of town centers, activity centers and corridors. LCI plans generally attempt to take advantage of the infrastructure and private investments committed in the local community to achieve more balanced regional development, reduce vehicle miles traveled (VMT) and improve the regional air quality.

ARC established the LCI program in 1999, committing \$1 million of federal transportation funds annually to complete land-use and transportation studies. Additionally, the program dedicates \$500 million to fund transportation projects identified during the studies. Over the past nine years, the LCI program has spurred cities, counties and communities of all sizes throughout the Atlanta region to plan activity centers, town centers and transportation corridors that bring a new level of livability to the region.

To date, more than \$140 million in planning and transportation funds have been allocated to 96 distinct areas in the region, and approximately \$129 million of the planned \$500 million for transportation projects has been programmed.

More information on the LCI program, including all study area plans, is available on the ARC Web site: www.atlantaregional.com/lci.

LCI Study Areas



LCI Indicators and Benefits Study

The purpose of this LCI Indicators and Benefits Study is to examine LCI studies and the impact of their plan implementation. Specifically, it looks at how the plans might affect the region's air quality and vehicle miles traveled (VMT). Ten (10) areas were selected from the 96 completed LCI studies. The 10 sample studies were selected based on a variety of factors including:

- Regional location
- Availability of GIS data
- LCI study type (town center, activity center, corridor)
- Land use recommendations in the study

LCI communities are classified as different types of communities, including:

- Activity Centers, which are major centers of regional importance
- Town Centers, which are traditional downtowns
- Corridors that can be developed at an urban scale

The LCI studies were evaluated with software known as INDEX, developed by Criterion Planners in Portland, Oregon. The software allows planners to develop different growth scenarios composed of land-use and transportation options within an ARC/GIS environment. The INDEX model uses local land-use inputs, the local transportation network and local travel behaviors to provide a baseline input for the indicators.

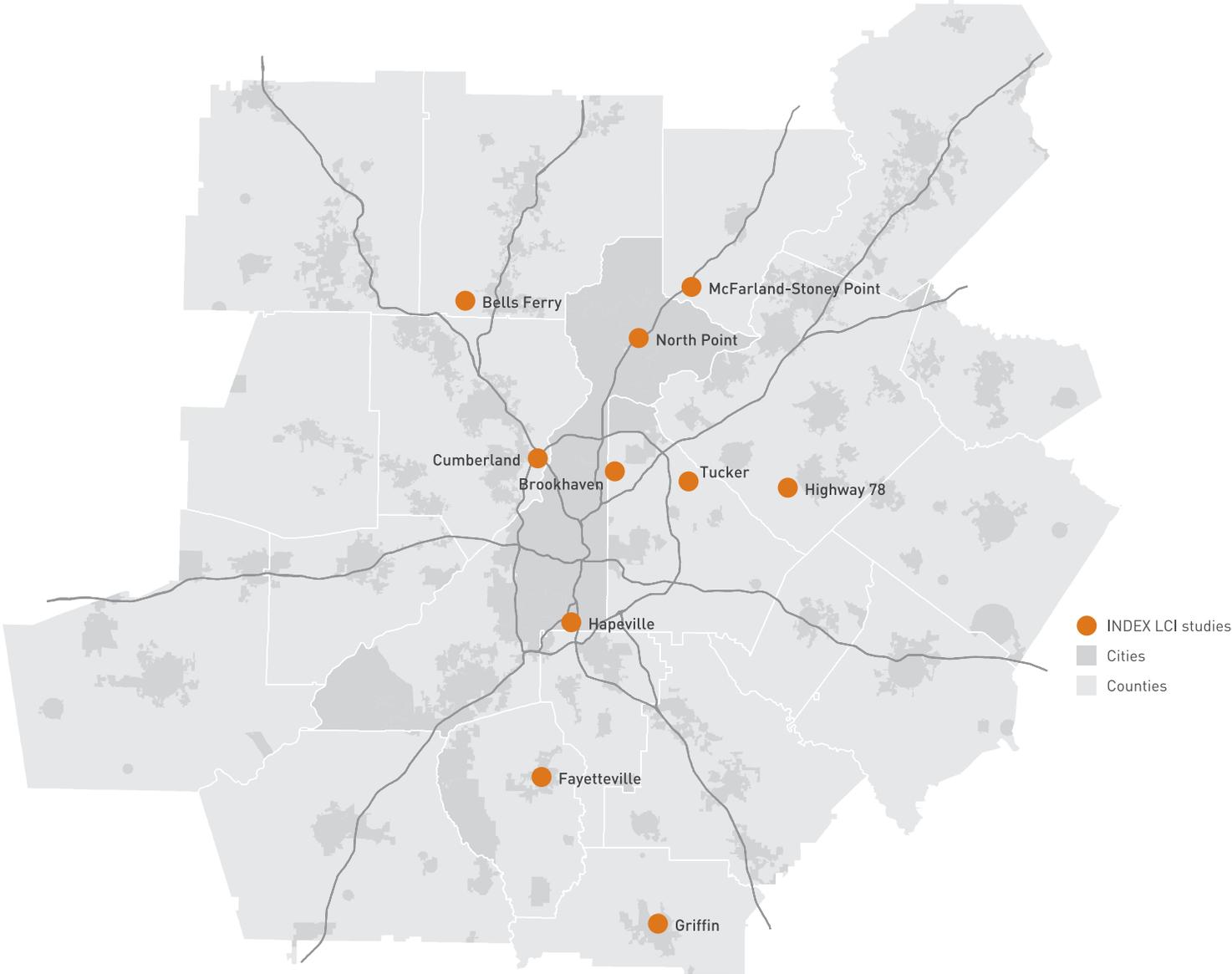
INDEX then applies “elasticities” related to Density (population), Diversity (jobs/housing balance) and Design (street density, sidewalk completeness and route directness) to consider the impacts that future land-use changes and transportation projects may have on the community.

The elasticities that form the basis for the model indicators were developed from more than 40 national, regional and neighborhood studies of travel and other development-related issues. The elasticities use demographic and urban form data (intersections and mix of land uses) to estimate, among other things, average weekday per capita VMT and the resulting emissions produced.

It is important to note that the indicators are a measure of change. The actual score is less important than the magnitude and degree of change.

ARC Land Use Division staff used INDEX to “paint” the existing land uses and the recommended land uses in the 10 selected LCI areas. The existing transportation system was added for each of the study areas. The transportation system is composed of existing roads, sidewalks and other pedestrian routes, as well as the transit network. The following sections of the report provide the results of the INDEX evaluation.

2008 INDEX LCI Study Areas



Key Indicators

Several indicators are considered key to understanding the impacts of land-use change on the function of a town center, activity center or corridor. Those indicators are:

Jobs-Housing Balance

“Jobs-Housing Balance” is a useful indicator for small geographic areas to determine the availability of housing opportunities for employees within the area. When limited housing is available in a job center, more automobile or transit trips are required to bring employees to the area. Areas are considered balanced if the indicator is around 1-1.5 jobs per housing unit. Areas that are significantly more than 1.5 are considered job rich, while areas that score less than 1 are considered housing rich.

Density

Having density allows for conservation of land and provides a greater efficiency in providing public services. Dense environments encourage pedestrian activity if they are designed appropriately along with other uses and pedestrian amenities such as sidewalks and street furniture. Within the Atlanta region, areas are considered dense if they have more than eight dwelling units per acre.

Internal Street Connectivity and Street Route Directness

Street Connectivity and Street Route Directness are indicators of how connected a community is. Areas that are connected have redundant transportation systems that allow multiple connections between uses. Areas that provide direct connections between different uses allow for increased pedestrian activity within those uses. These areas generally see a corresponding reduction in VMT.

“Use Mix” and “Use Balance”

“Use mix” is the proportion of mixed or dissimilar land uses within a grid on a scale of 0 to 1, where 1 signifies the most mixed areas. Each cell within the grid is compared to each adjacent cell. Areas that contain the same land uses receive a score of 0; areas of different land uses receive a score of 1. Use Balance is the overall mixture of land uses within the total study area. Studies have shown that areas with a strong use mix and balance see a decrease in VMT.

Vehicle Miles Traveled

Vehicle Miles Traveled (VMT) is the measure of average miles driven per day, per person for residents in the study area. Areas that have a lower VMT typically have closer jobs and services near each resident’s home location. Reductions in VMT have a corresponding reduction in emissions, including greenhouse gases.

Changes in density, an improved street network and changes in jobs-housing balance all lead to changes to VMT. This indicator is the key result from changes made to the other indicators. While increased density may change the jobs housing balance, it also may decrease the VMT and the resulting emissions. Providing alternate routes, multiple transportation modes and a connected street network provides a more redundant transportation system that allows for transportation options, supports a higher residential density and leads to a reduction in VMT.

Table 1: INDEX Indicators Evaluated

Indicator	Units	Indication of Improvement
Population	Persons	-
Employment	Employees	-
Population Density	Persons/study area gross acre	-
Employment Density	Jobs/ employment land uses acres	-
Street Route Directness	Weighted average ratio of shortest drivable route distance versus straight-line distance, from residents and employees of developed parcels to a central node destination	Decrease in score
Use Mix	Proportion of mixed or dissimilar developed land-uses among a grid	Close to One
Use Balance	Proportional balance of developed land-uses, by (net or gross) land area	Close to One
Jobs to Housing Balance	Total number of jobs divided by number of dwelling units	0.8–1.5
Single-family Share	Single-family percentage of the total number of dwelling units	-
Multi-family Share	Multi-family percentage of the total number of dwelling units	-
Transit-oriented Residential Density	Average number of dwelling units per net residential acre within a ¼ mile of transit stops	Increase in score
Vehicle Greenhouse Gas Emissions	CO2 emitted from light vehicles in lbs/capita/year	Decrease in score
Home-based Vehicle Miles Traveled	Average daily home-based vehicle miles traveled per capita	Decrease in score

Results

In 2005, as part of the Envision6 regional planning process, ARC used INDEX to examine the impact of new growth within regional town centers and activity centers on the performance of the regional transportation system. The results of land-use scenarios analysis indicated that the best results are achieved when jobs and people are close together. However, the analysis also shows that the concentration of growth leads to localized congestion due to the lack of local infrastructure to handle the increased demand on the local system.

The LCI studies plan for new growth within those centers and corridors, and provide the new transportation options that can alleviate the localized congestion. The INDEX studies evaluated in this project have yielded similar results to the 2005 Envision6 analysis.

The 10 LCI communities each developed unique plans to their circumstances. Cumberland Activity Center, for example, had very few residential units within the study area. However, under the LCI plan, it adds almost 15,000 new residents within the study area through mixed-use development on vacant or underutilized land such as parking lots. The Cumberland LCI plan also called for new connections over I-285 to increase the grid pattern within the study area.

Cumberland Existing Land Uses



Cumberland LCI Land Uses

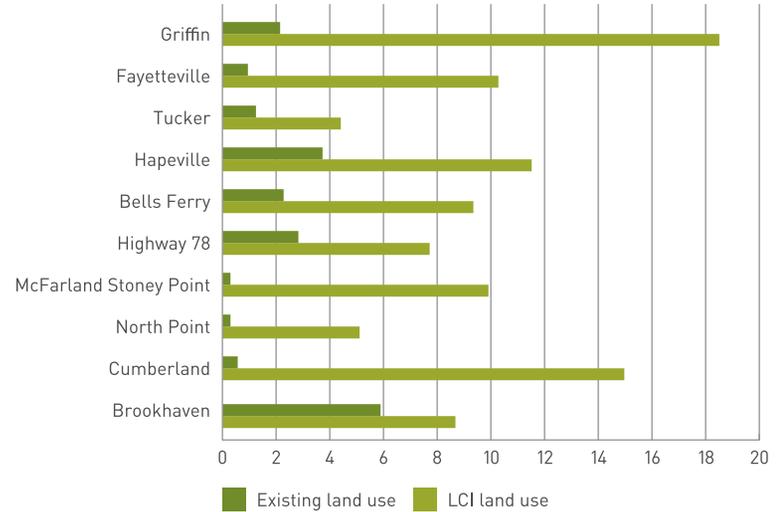


Population Density

Within each LCI study area, the studies recommended land-use types that would cause a sizeable increase in population within those areas. All plans experienced an increase in the gross population density within the study areas, while preserving the existing single-family residential base. The population growth occurred by developing underutilized or vacant properties, such as parking lots or single story commercial developments.

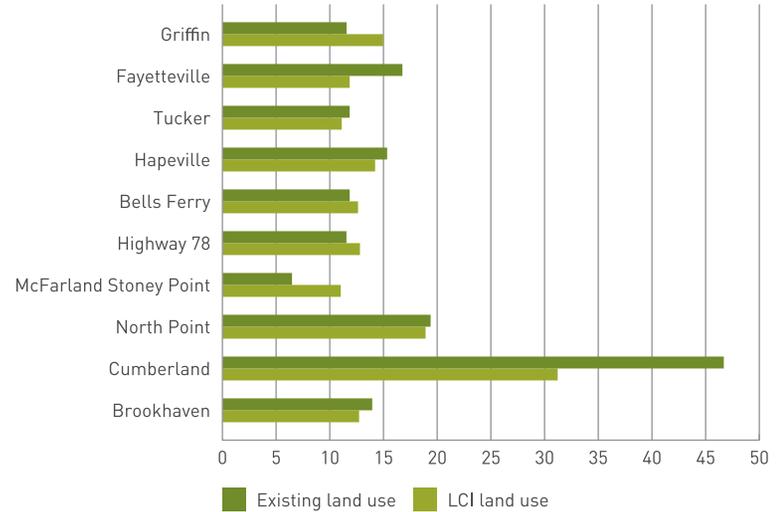
This same phenomenon is shown in employment changes within the LCI study areas. All LCI study areas experienced employment growth under the LCI plan except Brookhaven, which had a slight decrease as older industrial uses were redeveloped into residential uses. However as the graph shows the employment density changed relatively little or in some cases had a decrease. This is because areas expanded their employment base by redeveloping areas into mix-use developments that increased the employment base, but at a lower density than a traditional commercial or office development.

Chart 1: Population Density



*Population Density is calculated persons/gross study area acres.

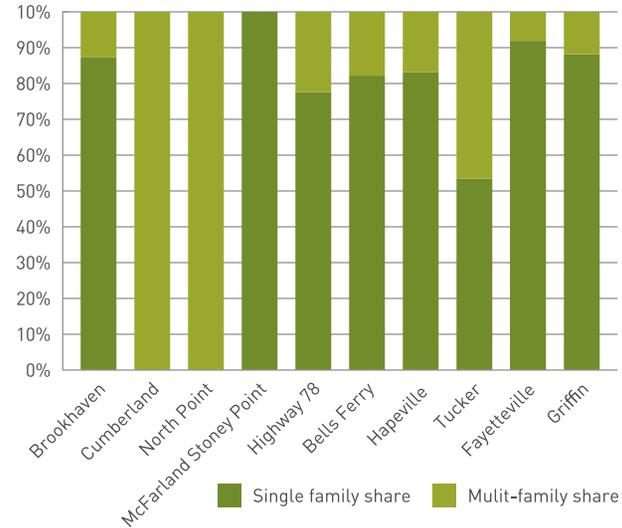
Chart 2: Employment Density



*Employment Density is calculated workers/employment area acres.

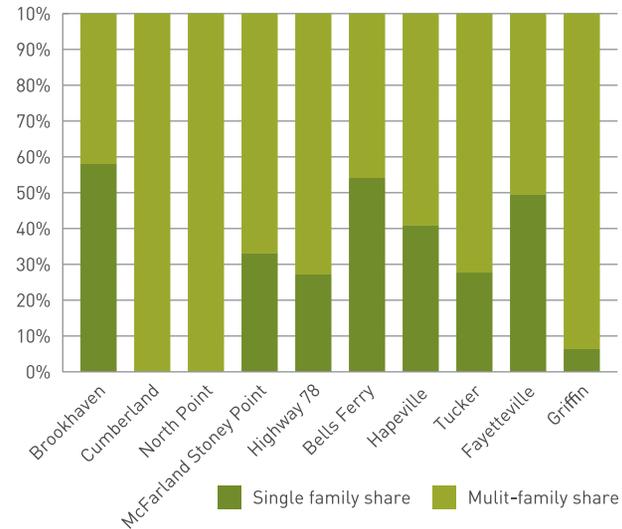
The majority of the LCI existing residential stock is considered single-family except within North Point and Cumberland. The LCI plans recommended increasing residential uses within all the LCI study areas. However, due to the existing development constraints within those areas, the majority of new LCI residential construction would be three-to-six stories of mixed-use residential or townhomes. The increase of multi-family or attached residential product allows the study areas to have significant increase in their population, making those areas more desirable to retail developments such as restaurants and other locally-serving retail or office developments.

Chart 3: Existing Residential Mix



*Multi-family is defined as any attached residential project.

Chart 4: LCI Residential Mix



*Multi-family is defined as any attached residential project.

Jobs-Housing Balance

With the changes in employment and the increase in residential development, the jobs-housing ratio within the LCI study areas became more balanced. This is especially true in the study areas with a current high level of employment with limited residential development. The town center areas that did have a large population still moved toward a balanced jobs-housing ratio by adding jobs and housing proportionally.

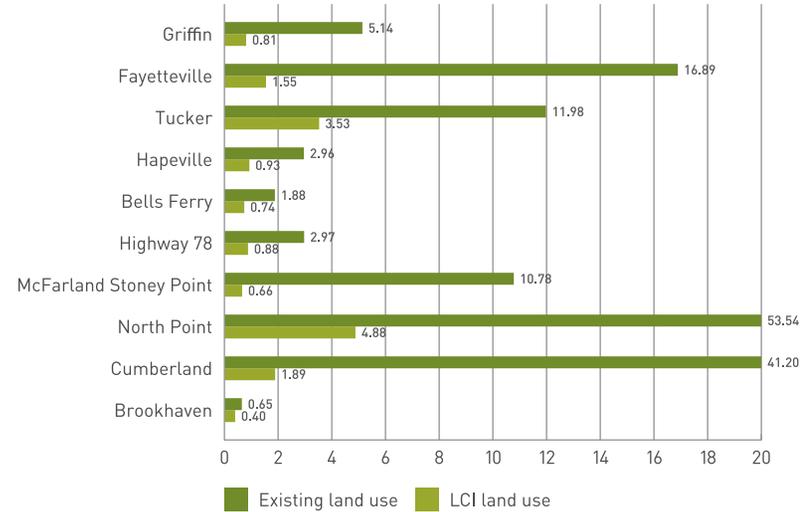
The majority of study areas increased the mixture and balance of uses within their study areas. These mixtures allow residents and employers the opportunity to use alternative forms of transportation between uses if the transportation network allows those forms.

Areas with a high concentration of jobs added a significant number of new residential units by developing vacant lands and redeveloping underutilized properties such as parking lots or single-story shopping centers. This new type of development pattern resulted in significant changes in the job-housing balance within those study areas, causing a significant reduction in VMT.

The findings of this study support the theory that increased housing options in job-concentrated areas have the impact of reducing per capita VMT. This is further supported by studies from Chicago, Los Angeles and San Francisco, which have shown doubling density within areas can reduce driving by more than 30 percent.

The study areas examined (with one exception) showed decreased levels of VMT for the residents living there. This has been attributed to a more balanced job-to-housing ratio and mix of uses within those study areas, and an improved multi-modal transportation network.

Chart 5: Jobs-Housing Balance



*The ratio of jobs to the number of housing units

Chart 5: Home-based VMT



Summary

The results from the INDEX analysis show that there is positive and meaningful impact to the region if the LCI plans are built out.

However, the development needs to incorporate the three D's: density, design and diversity. Density, without the appropriate design and diversity, has the potential to cause major issues within the study area.

The jobs-housing balance influences the diversity of the uses within the study area. Areas with a high mixture of uses, both at the micro level scale and the macro level scale, encourage transportation options such as walking, biking or transit.

Many of the communities added new transportation options like transit and improved the transportation connections under the LCI plan. These new options and connections are necessary to implement the LCI plans. As part of the three D's, design of the transportation network is essential to accommodate the influx of density within the LCI study areas.

By providing areas of density with good design and diversity of uses, areas can experience a decline in VMT, and the resulting emissions, with the new growth. By accommodating the new growth in areas that have a lower VMT, this will cause a decrease in the regional VMT and provide a benefit for the region as a whole.

The LCI program, as indicated through this modeling, can reach the goal of improving air quality by changing the VMT in the LCI areas. However, support at the local level for the plan is crucial for the success of the program. As each LCI study plan is implemented, it is crucial to implement not just one component — land use or transportation — but both components, to maximize the benefits of the investments.





ATLANTA REGIONAL COMMISSION

40 COURTLAND STREET, NE
ATLANTA, GEORGIA 30303
ATLANTAREGIONAL.COM