Does Mix Matter?
Comparing the Performance of Mixed-Use and Single-Use Retail Clusters
During an Economic Downturn

by

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ABSTRACT

Retail development in suburban locations has long been dominated by retail “strips” along major roadways and large, enclosed shopping malls. More compact, planned alternatives to sprawl development have been gaining in popularity since the late 20th century, and many feature commercial centers that follow a different model. Drawing from “traditional” town centers, a key principle of sprawl alternatives such as smart growth and New Urbanism is to mix land uses, and retail often occurs within a vertical mixed-use form. The purpose of this research is to study one aspect of the economic viability of smart growth by comparing the retail resilience of mixed-use and single-use suburban developments during a difficult economic climate, the 2007-2009 recession.

This study uses a case study-based methodology to compare the retail resilience, approximated by the change in number of retail and food service establishments, of mixed-use and single-use retail clusters before and during the 2007-2009 economic recession. Mixed-use clusters were expected to outperform single-use clusters during the economic downturn due to their built-in customer base and urban design that provides foot traffic for retailers without requiring a dedicated shopping trip.

In a majority of case studies, however, the single-use cluster performed best during the economic recession. The results suggest that simply mixing land uses is not sufficient to create a strong, resilient retail environment. Planners and developers must rethink the design and programming of planned mixed-use communities to create better developments that are resilient in all economic climates.

Thesis Supervisor: Terry Szold
Title: Adjunct Professor of Urban Studies and Planning
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I. Introduction

Retail development in suburban locations has long been dominated by retail “strips” along major roadways and large, enclosed shopping malls. Recently, however, a new form of suburban retail development has begun to appear. More compact, planned alternatives to sprawl development have been gaining in popularity since the late 20th century, and many feature commercial centers that follow a different model. A key principle of sprawl alternatives such as smart growth and New Urbanism is to mix land uses, and retail often occurs within a vertical mixed-use form, with retail on the ground floor and office or residential space above. While this form is not new—vertical mixed-use was common in commercial centers before the rise of the personal automobile transformed the retail landscape—there has been little research on the viability of a mixed-use commercial center in a modern suburban environment.

The purpose of this research is to study one aspect of the economic viability of smart growth by comparing the retail resilience of mixed-use and single-use suburban developments during a difficult economic climate, the 2007-2009 recession. The results suggest that simply mixing land uses is not sufficient to create a strong, resilient retail environment. Planners and developers must rethink the design and programming of planned mixed-use communities to create better developments that are resilient in all economic climates.

This research is presented in six chapters. The introduction (Chapter I) provides an overview of the topic, context, and research thesis and hypotheses. A literature review (Chapter II) describes how this research fits into two existing bodies of research, comparisons between smart growth and sprawl development and retail location theory. Chapters III and IV discuss the data, methodology, and selected case studies, followed by a presentation the study results in Chapter V. In the conclusion, Chapter VI, possible explanations for and importance of the findings are presented, as well as suggestions for future research in this area of planning.

Context

The Origins of Retail Strips and Shopping Malls: A Brief History of Sprawl

Suburban sprawl is difficult to define, but people tend to know it when they see it. Definitions put forth by academics often include characterizing features such as low density, automobile-dependent, “leapfrog” or scattered development with large expanses of single-use developments, such as residential subdivisions, office parks, regional shopping malls, and commercial retail strips along major roads. In his history of sprawl (2005), Bruegmann adds a lack of systematic large-scale or regional land use
planning to his definition of sprawl, although it could be argued that sprawl is not the result of a lack of planning, but rather a lack of effective planning. Although sprawl typically occurs at the periphery of metropolitan areas, the characteristics described above can be found in rural and exurban locations as well.

Although 20th century sprawl is associated with spreading the population away from dense urban areas, movement out of cities is not a new phenomenon. The 19th century industrial cities were large, congested, polluted, and crime-ridden, and those with means moved out of the city as quickly as transportation technology allowed. The streetcar suburbs made possible by the invention of the electric streetcar could be considered an early form of sprawl in the U.S. Although the first automobile suburbs were built in the 1920s, widespread movement out of cities did not occur until after WWII and resulted from a host of factors. The decreasing cost of personal automobiles made cars accessible to more of the population and, combined with the vast highway network constructed as part of the 1956 Interstate Highway Act, allowed for a level of personal freedom and mobility previously unattained. The new ease of travel had a dramatic impact on land use, increasing the physical boundaries of metropolitan areas. With the car, it was feasible for many to live far from work, and large swaths of residential suburbs grew up around city centers. Government incentives and advancements in the production of housing made it possible for millions to achieve the American Dream of owning a single family home, which were being built in huge numbers in the newly developed, car-centered suburbs.

Inevitably, retail establishments followed the masses to the suburbs. The form of retail had to adapt to the new development form and lifestyle of suburban residents and, later, to zoning requirements as well. Two new retail forms fit the car-centric suburban lifestyle: retail strips and enclosed shopping malls. A retail strip development is typically a single-story, linear building containing several retail establishments, and located along a major road. The design emphasizes the preeminence of the car, with the strip oriented to face the road and buffered by a sea of parking. Signage is oversized so it can to be read from the passing cars. The other new suburban retail form, the regional shopping mall, molds a traditional downtown commercial district to fit the suburban setting. The shopping mall removes the residential and office components found in an urban downtown but retains the mix of retailers, including large “anchors” such as department stores, to attract customers. The whole establishment is placed indoors, in close proximity to large highways, and surrounded by ample parking.

Zoning ordinances proscribed where these new suburban retail forms and other suburban land uses could occur. Zoning was initially intended to insulate single-family housing from the encroachment of incompatible land uses and preserve land values by providing assurance as to what was allowed
to be built nearby. To achieve these goals, zoning dictated that land uses were to be kept separate. Nation-wide, cities and towns adopted zoning ordinances that featured distinct zones for residential, commercial and industrial uses, allowing little opportunity for mixed-use development.

The factors described above transformed the physical landscape and American way of life. While some consequences of sprawl could be argued as positive, such as improved access to larger, cheaper housing and greater participation in government from smaller jurisdictions, the majority of experts hold that sprawl has more costs than benefits (Burchell and Mukherji 2003; Burchell et al. 2002; Cogan et al. 2004). A plethora of negative economic, environmental, and civic consequences of sprawled development have been indentified, including increased vehicle travel, with associated pollution and traffic congestion; jobs/housing imbalance; water pollution; loss of open space; overwhelmed infrastructure; and exacerbated racial and class divisions. Most of these negative consequences are in the form of negative externalities experienced by a broad range of the population, while the positive effects of sprawl are largely captured by a smaller group of property owners and developers.

And yet, despite all the negatives, sprawl continues. Suburban employment growth and decentralization is the most prominent form of growth in the U.S., with increasing numbers of people living and working at the farthest edges of metropolitan areas (2000 US Census; Glaeser, Kahn, and Chu 2001 in Katz 2002). The reasons why sprawl continues to dominate American development are varied and include personal factors such as consumer preferences for larger homes and lots, the perception of enhanced public safety in suburban areas, and higher quality schools; market forces such as the abundance of cheap land at the periphery, subsidized costs to provide services to sprawled areas, lower taxes in suburban areas, and low gas prices; and policies such as continuing tax incentives for home ownership and (historically) an abundance of capital with which to finance home ownership (Katz 2002; Burchell and Mukherji 2003; Neuman 2005).
Figure 1. Smart Growth Principles

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<td>Mix land uses</td>
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<tr>
<td>2</td>
<td>Take advantage of compact building design</td>
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<tr>
<td>3</td>
<td>Create a range of housing opportunities and choices</td>
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<tr>
<td>4</td>
<td>Create walkable neighborhoods</td>
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<td>5</td>
<td>Foster distinctive, attractive communities with a strong sense of place</td>
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<tr>
<td>6</td>
<td>Preserve open space, farmland, natural beauty, and critical environmental areas</td>
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<tr>
<td>7</td>
<td>Strengthen and direct development towards existing communities</td>
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<tr>
<td>8</td>
<td>Provide a variety of transportation choices</td>
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<tr>
<td>9</td>
<td>Make development decisions predictable, fair, and cost effective</td>
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<tr>
<td>10</td>
<td>Encourage community and stakeholder collaboration in development decisions</td>
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Smart Growth Network

An Alternative: Smart Growth

The smart growth movement began in the late 20th century as a reaction against the sprawling car-focused, single-use development patterns described above that transformed vast tracts of United States into monotonous strips and "cookie cutter" subdivisions. The Smart Growth Network, a collaboration of several non-profit and government organizations, identifies ten principles of smart growth (Figure 1). Retail, the focus of this study, in smart growth developments takes on a different form than in sprawl, often occurring in pedestrian-, rather than car-, oriented town centers that are well connected to adjacent residential areas. The town centers are often feature mixed-use buildings with retail often occurring on the first floor with office or residential uses above.

Among other benefits, smart growth development and planning practices are marketed as an environmentally responsible alternative to sprawl. By supporting growth in a way that takes advantage of existing infrastructure, smart growth developments conserve resources and preserve open space. Improving transportation options, creating walkable communities, and mixing land uses reduces reliance on cars, mitigating associated environmental consequences such as air and water pollution. Creating vibrant, livable communities is another smart growth goal, achieved through developments that create a strong sense of place; are town-centered; transit- and pedestrian-oriented; and have a greater mix of housing, commercial, and retail uses than traditional sprawl development. Economic arguments for smart growth typically focus on the decreased cost of providing infrastructure and services, and benefits that come from a strong quality of life.

Smart growth does have disadvantages, including the potential for increased housing costs and fewer housing choices due to development limitations, reduced future development potential, and extra governmental costs for planning and implementation (Burchell and Mukherji 2003). A related complaint is that smart growth developments have the potential to be exclusionary by virtue of the premiums for homes in these developments (Katz 2002). There are also claims that smart growth goes against consumer preferences for sprawl development and ignores land markets (Gordon and Richardson 2007 in Geyer 2007; Gillham 2002; Conte 2000). New Urbanism, a neo-traditional subset
of smart growth with more proscriptive design requirements, has been criticized for being too rigid and thus ignoring local contexts, and described as nothing more than an exclusionary, more attractive version of sprawl (Neuman 2005; Gillham 2002). Neuman (2005) also questions the sustainability claims of compact development, arguing that form is less important than process (meaning the process of building cities and living, consuming, and producing in them) when evaluating sustainability.

Although there is debate about smart growth and its perceived benefits, there has been more conclusive evidence supporting smart growth, particularly in terms of infrastructure costs and environmental impacts (discussed more in Chapter II). However, the benefits of these “smarter” developments will not be fully realized if consumers do not want to live, work, and shop in smart growth developments. While several studies have shown that there is an increasing desire for smart growth developments among Americans and that customers are willing to pay a premium to live in these communities (described more in Chapter II), little research has focused on commercial preferences for and performance in smart growth developments.

This Study

The intent of this study is to address one aspect of the market viability of smart growth developments, namely, whether retail performs better in mixed-use or single-use developments during a period of economic recession. If mixed-use developments were found, as was expected, to be more resilient retail environments during an economic downturn it would have provided another rationale and empirical basis for smart growth as not only more environmentally sustainable and less costly, but also as a more economically robust location for retail establishments. The results of this study support the opposite—that mixed-use developments have been less resilient retail locations during the recent recession. This result should not be taken as support for sprawl development, rather these findings should be used to help planners and developers rethink the design and program of planned mixed-use developments in ways that enhance the viability of the retail component.

Why Mixed Use?

For the purpose of this study, mixed use refers to vertical mixed use (i.e., retail occurring in the same building as other uses) that includes at least retail and residential uses. Although vertical mixed use can occur in a range of suburban contexts, such as historical suburban centers and mixed use that develops organically, this study only looks at large-scale, planned mixed-use communities.

Mixed use was chosen as the variable by which to compare smart growth and sprawl commercial developments for several reasons. First, separated land uses is a defining characteristic of sprawl,
enforced for decades through zoning ordinances that isolated residential areas from shopping, services, and employment. Additionally, many of the negative attributes of sprawl can be attributed to separated land uses including excessive commute times, traffic congestion, air pollution, inefficient energy consumption, loss of open space and habitat, inequitable distribution of economic resources, job/housing imbalance, and reduced sense of community (Smart Communities Network 2002 in Song and Knaap 2004). Proponents of smart growth argue that many of these problems can be addressed by mixing complementary land uses. Mixing land uses allows for a variety of dwelling types\(^1\), which appeal to different ages and incomes; improves livability and a sense of place; helps reduce car dependence; and makes other forms of transportation viable. Increased street activity is a benefit attributed to mixed land uses that is particularly relevant to this study, as increased pedestrian activity not only helps revitalize community life and enhances security but also provides foot traffic to support local businesses.

**Period of Analysis: The Great Recession**

Rather than a general investigation of retail performance, this study focuses on retail resilience, approximated by the number of retail and food service (RFS) establishments located in a retail cluster, during a period of economic downturn.\(^2\) Specifically this study focuses on the “Great Recession,” a severe global recession that began in the United States in December 2007 and ended in June 2009, according to the National Bureau of Economic Research. An economic downturn presents a unique period of analysis, given the reduced retail spending overall and a high rate of retail failures. If, despite these constraints, certain retail developments outperform other developments of a similar scale and composition in the same market, it suggests that the high performing retail development has a competitive advantage. A central aim of this study is to determine whether mixed-use developments have a competitive advantage.

**Research Question and Hypotheses**

The research question at the center of this study is: *in a market of similar characteristics, do retail clusters of similar size and composition perform better in mixed-use or single-use developments during a period of economic downturn?*

\(^1\) Typical suburban residential developments only include one dwelling type—single-family homes. While single-family homes are also offered in most suburban mixed-use communities, these developments also provide the opportunity for other residential forms, such as apartment or condominiums located above retail establishments, or multifamily apartment buildings (often located in the higher density commercial centers of mixed-use developments).

\(^2\) For the purpose of this analysis, a retail cluster is defined as a geographic concentration of retail, restaurants, and services in which all businesses are located in the same development (i.e., a building or series of buildings managed by the same owner as a unit).
The mixed-use retail clusters were expected to perform better, i.e., to gain more or lose fewer RFS businesses, than the comparative single-use clusters during the economic downturn. This expected finding was based on the following hypotheses:

1. **Presence of a residential population.** In a mixed-use development, retail is interspersed with residential and commercial uses. Residential and office populations have different needs and different peak population times and, when combined, can support a wider range of retail. For example, an office park can only support retail that caters to office tenants (e.g., print and copy shops, lunch places). When residential is added to the office tenants, the development can also, theoretically, support businesses targeting the residential component (e.g., grocery stores, dinner restaurants). The variety of retail and food service businesses supported by mixing land uses creates a more dynamic retail environment, which should be more desirable for both businesses and customers.

The residential population of a mixed-use cluster provides a built-in customer base to support the retail. Based on the theoretical gravity model, this population should visit the retail establishments in their mixed-use development disproportionately more than they would visit more distant shopping locations, providing additional patronage for the local businesses. The gravity model suggests that the frequency of visiting destinations or establishments drops off at an exponential rate as distances increase, implying that having patrons nearby, such as in a mixed-use development, should be exponentially more profitable for businesses (Hansen 1959).

2. **Urban design.** Several urban design elements of mixed-use retail clusters should theoretically make mixed-use environments better locations for retail during a strong or weak economy. First, retail should fare better in locations with a strong sense of place, and placemaking is more common in mixed-use than single-use developments. Placemaking refers to landscape or design features that create a distinctive physical environment. The act of mixing land uses creates visual interest and helps to activate the street, contributing to a strong sense of place. Additional placemaking elements, such as landmarks, open spaces, enhanced landscaping, and public art, are also more likely to occur in mixed-use developments, as placemaking is another principle of smart growth. Areas with a strong sense of place attract people, even those who do not live or work nearby, because they are pleasurable or interesting, creating more foot traffic to support retail stores.

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3 Ideally, these design elements would have been a control in the study—comparison retail clusters should have similar levels of placemaking, walkability, etc. to isolate the effect of mixed land uses on retail resilience. However, this analysis uses a case study methodology, and it was impossible to select developments that were comparable on all variables except land use mix, especially since the urban design elements discussed here are often absent in single-use developments. An area for future research described in Chapter VI is the need to use a multivariate regression methodology, which could isolate the impact of different variables on retail resilience.

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I. **INTRODUCTION**
Boston’s Faneuil Hall is an example of a mixed-use development with a strong sense of place. Although both mixed-use and single-use developments can have these aspects (The Grove in Los Angeles, for example, is a single-use development with a strong sense of place), placemaking should be more common in mixed-use areas.

Another common design element of mixed-use communities that should enhance retail performance is the increased emphasis placed on pedestrians and walkability (both smart growth principles). Since mixed-use developments tend to be more walkable and pedestrian oriented than single-use developments, people who live and/or work in mixed-use areas are more likely to walk between uses, creating additional foot traffic to support retail.

3. Increased foot traffic. Both the presence of a residential population and the urban design elements discussed previously should result in more foot traffic for retail in mixed-use clusters than comparable single-use clusters. The increased foot traffic should lead to more spontaneous purchases, creating a better location for retail establishments, particularly those focused on discretionary spending such as clothing and accessories, books, cosmetics, and specialty foods.\(^4\)

Increased foot traffic due to the positive impact of having more pedestrians in mixed-use developments also means that retailers should be less dependent on customers making a dedicated shopping trip than retailers in single-use clusters. It is plausible that dedicated shopping trips would decrease during a recession as consumers cut back on spending, which should have a disproportionately negative impact on single-use retail environments.

**Study Qualifications**

The primary focus of this study is only one aspect of smart growth, mix of land uses, and one aspect of sprawl, separated land uses. Due to difficulties selecting comparison retail clusters with similar urban design and/or placemaking attributes, the variation in these aspects clouds the impact of mixed land uses on retail resilience. However, this study does not attempt to compare retail resilience across all forms of smart growth or sprawl nor does it address which types of retail establishments generally fare better during economic recessions. Due to data availability, this study does not address retail performance over a full business cycle. Also, although descriptions and analysis of case study

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\(^4\) While the performance of specific types of retail are not explicitly addressed, it could be theorized that stores selling expensive, infrequently purchased items such as furniture and electronics should be less affected by the land use mix. Because purchases of this type are often planned in advance and require a specific trip to make the purchase, it is likely less important that these stores be located near residential or office developments (people are willing to drive distances to make these big ticket purchases), but rather that they are located near other similar stores to facilitate comparison shopping. It can also be hypothesized that stores selling necessities, such as supermarkets may be less impacted by the surrounding land uses.
developments will touch on the mix of retailers present, which can be a very important component of retail resilience, retail mix is not a primary focus of the study.

This study only uses one measure of retail cluster performance, the change in the number of RFS establishments in that cluster over time. While this measure provides information on how desirable a location is for these categories of businesses, it is an imperfect measure of retail cluster performance because it does not address capture the other businesses in the cluster, such as services. Other potentially useful metrics of retail performance, such as overall vacancy rates and retail revenues might have been instructive, but data were unavailable. Although this study touches on the cost differentials of retail space in mixed-use and single-use environments, leasing costs are not a primary focus of this study. Thus, this study is not strictly an economic analysis, which would focus on measures such as rents and revenues, but more focused on the resilience of different retailing environments during an economic downturn.
II. Literature Review

Two broad bodies of literature inform this study. First, there is a substantial body of literature comparing smart growth and sprawl developments. Within this literature are studies quantifying the environmental, economic, and public health impacts of smart growth compared to sprawl; surveys and articles on corporate and residential preferences for development types; and studies on the price premiums for homes in smart growth and New Urbanist developments. Although there is considerable speculation on the performance of retail in different development forms, few studies have explicitly compared retail performance.

Retail location theory, a sub-field of urban economics, is the second body of literature that informs this analysis. Understanding the theoretical rationale for locational decisions, which are ultimately driven by performance, is obviously integral to a study on retail resilience in different developments. Despite the expansive literature on retail location theory, there is an absence of literature on the effect of built environment characteristics, such as land use mix, on retail performance and whether economic recessions disproportionately impact retail in certain development forms.

Comparisons of Smart Growth and Sprawl

There is a large body of literature on the origins and impacts of sprawl, often contrasted to more compact, planned forms of development, such as smart growth, traditional neighborhood development, and New Urbanism. Although the majority of literature focuses on negative attributes of sprawl, there are several constituencies and researchers that are in favor of the prevailing sprawl development patterns, supporting a free market approach or at the very least questioning the claims of alternative development forms. There is also debate as to how well different forms of development meet more abstract goals, such as being more sustainable or fostering a better sense of community. Figure 2 outlines viewpoints from each side on various topics within the sprawl debate. Because the built environment affects everyone, the debate is not limited to academics but includes a diverse range of organizations and stakeholders. Figure 3 highlights some of the organizations involved in the sprawl debate and their respective goals.
Figure 2. Viewpoints in the Sprawl Debate

<table>
<thead>
<tr>
<th>Sample Issues</th>
<th>Anti-Sprawl</th>
<th>Pro-Development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>No growth to managed growth</strong></td>
<td><strong>Status quo to free market</strong></td>
</tr>
<tr>
<td>Land and open space</td>
<td>Sprawl consumes valuable, limited land resources, including farmland</td>
<td>There is more than enough land and farmland left to develop</td>
</tr>
<tr>
<td>Endangered habitat</td>
<td>Sprawl fragments habitats, threatening endangered species</td>
<td>Wildlife is increasing, not decreasing, in suburban areas</td>
</tr>
<tr>
<td>Traffic congestion</td>
<td>Auto-dependent sprawl causes traffic congestion</td>
<td>Traffic congestion is an urban, not suburban problem</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Auto-dependent sprawl consumes unsustainable amounts of energy</td>
<td>Auto technology is changing, and oil reserves remain adequate</td>
</tr>
<tr>
<td>Air pollution</td>
<td>Increased auto travel caused by sprawl is contributing to global warming and air pollution</td>
<td>Global warming is still basically unproven; air pollution is an urban, not a suburban problem</td>
</tr>
<tr>
<td>Water pollution</td>
<td>Sprawl destroys wetlands and contributes to water pollution from increased runoff</td>
<td>Environmental restrictions increase housing costs and are unfair to landowners</td>
</tr>
<tr>
<td>Public health</td>
<td>In addition to polluting air and water, sprawl contributes to obesity and stress levels</td>
<td>Risks to public health are considered unproven</td>
</tr>
<tr>
<td>Community</td>
<td>Suburbia is destroying community life and character in America</td>
<td>Suburbs allow plenty of opportunities for community involvement</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Sprawl is devastating America's treasured landscapes</td>
<td>More people want to live in suburbia than want to live in cities</td>
</tr>
<tr>
<td>Economic</td>
<td>Sprawl costs more than compact development</td>
<td>Cities are more expensive than suburbs</td>
</tr>
<tr>
<td>Social divides</td>
<td>Sprawl geographically divides races and classes</td>
<td>Suburbs are becoming more diverse; opportunities are now equal</td>
</tr>
<tr>
<td>Cities</td>
<td>Sprawl has drained the cities, leaving them problem ridden</td>
<td>Cities are responsible for their own problems</td>
</tr>
<tr>
<td>Public infrastructure and services</td>
<td>High infrastructure costs associated with new sprawl development are borne by all, but benefit only a few</td>
<td>All citizens and developments are entitled to the same level of public services and infrastructure</td>
</tr>
</tbody>
</table>

Modified from Gillham 2002
The following sections provide an overview of the existing literature on different aspects of the smart growth/sprawl debate and how this research fits into the existing work. Specific issues addressed include environmental, economic, and public health considerations and consumer preferences for different development forms. Where possible, conflicting opinions are highlighted.
Environmental Considerations

The list of environmental complaints against suburban sprawl is long and, generally, more compact development is believed to be less harmful to the natural environment. Increasing density allows the same degree of development to occur on a smaller footprint, requiring fewer greenfields to be developed and thus preserving animal habitats and natural landscapes. Denser development requires fewer impervious surfaces, which reduces runoff and improves stormwater management, and mitigates the urban “heat island” effect, an increase in temperature of built-up areas relative to their surroundings that can increase energy demand during summer months. More compact development also saves energy (and thus reduces the emissions of greenhouse gases and other pollutants) because residential units are typically smaller in compact developments and because of efficiencies in heating and cooling multifamily buildings.

Perhaps the most notable environmental benefit attributed to sprawl alternatives is reduced air pollution from passenger vehicles. Transportation in the U.S. accounts for one-third of greenhouse gas emissions, and is the fastest growing source of emissions (Energy Information Administration 2009, Energy Information Administration 2011). Many researchers believe that urban form can impact transportation mode choice and travel distance, and several studies have found that developments with a mix of uses, more connected and walkable design, and a variety of transportation options lead to a reduced dependence on cars, and thus reduced vehicle miles traveled (VMT) and emissions generated (Winkelman, Bishins, and Kooshian 2010; Winkelman and Bishins 2009; Hankey and Marshall 2010; Handy, Cao, and Mokhtarian 2005; Ewing 2008; Schroeder 1998). The relationship between the built environment and automobile transportation is complicated, however, and the correlation between the more compact development and reduced VMT has not been unanimously supported theoretically or empirically. For example, Handy (1992; 1996) found that although walking trips increased in compact developments, there was little change in vehicular trips. There is also a concern that demographic characteristics and self-selection, i.e., that people choose neighborhoods that allow them to travel according to their pre-existing preferences, are responsible for the positive correlation between compact, walkable neighborhood design and reduced VMT (Kitamura, Mokhtarian, and Laidet 1997; Krizek 2000). In addition, there is a valid argument that more compact areas lead to more congestion, which increases air pollution.

Some debate remains, however, as to how truly “sustainable” compact development is, as described by Neuman in “The Compact City Fallacy” (2005). Neuman highlights the paradox between urban desirability and suburban livability and, after reviewing empirical data and the intellectual origins of sustainability, concludes that “conceiving the city in terms of form alone is neither necessary nor sufficient to achieve the [sustainability] goals ascribed to the compact city. Instead, conceiving the city in terms of process holds more promise in attaining the elusive goal of a sustainable city.” By “process,” Neuman refers to the processes of building cities and living, consuming, and producing in them.

Skeptics argue that sprawl does not threaten open space and farmland as there is plenty to spare, citing figures such as 95% of land in the U.S. remains undeveloped (Conte 2000).
Economic Considerations

The majority of research comparing development patterns has focused on the economic implications of different forms. Several studies dating back to the 1970s have quantified the costs of providing and delivering infrastructure (e.g., roads, water and wastewater infrastructure), finding significant capital cost savings from compact development forms due to economies of scale and economies of geographic scope (Real Estate Research Corporation 1974; Frank 1989; Duncan and others 1989; Burchell, Shad, et al. 1998; Muro and Puentes 2004; Burchell, Lowenstein, et al. 2002; Litman 2010). A national study, “The Costs of Sprawl 2000,” found that more compact development could save over $110 billion in road infrastructure costs alone over 25 years (Burchell, Lowenstein, et al. 2002). Studies have also documented substantial savings for delivering essential services such as police, schools, and trash collection from more compact development (Real Estate Research Corporation 1974; Burchell, Shad, et al. 1998; Burchell, Listokin, and Galley 2000; Bollinger, Berger, and Thompson 2001; Grow Smart Rhode Island 1999; Speir and Stephenson 2002 in Muro and Puentes 2004; Burchell, Lowenstein, et al. 2002).

In addition to true cost differences, smart growth is also credited with creating mostly intangible economic benefits (i.e., positive externalities) associated with an enhanced quality of life. Livability has long been recognized as an important factor for attracting industry and business and is a key tenet of smart growth. Smart growth principles such as creating “distinctive, attractive communities with a strong sense of place;” “preserving open space, farmland, natural beauty;” “creating a range of housing opportunities;” and “providing a variety of transportation options” are focused on improving a community’s quality of life (Smart Growth Network). Integrated residential, retail, and office land uses in a compact setting also reinforces and enhances an area’s sense of place while creating 24-hour activity. This activity contributes to the vibrancy of a neighborhood, and, in contrast to traditional suburban office parks, encourages interaction and creates opportunities for businesses that cater to different tenants and have different operating peaks. Several studies have shown that areas with denser employment, vibrant centers, high quality of life, and efficient transit are more attractive to companies and workers, and have higher worker productivity, due to agglomeration efficiencies and knowledge spillovers (Ciccone and Hall 1996; Cervero 2001; Iams and Kaplan 2006; Nelson and Peterman 2000; Carlino 2001 in Muro and Puentes 2004).

Other economic benefits of smart growth development include investment stability and benefits to the regional economy. Studies have shown that, during economic recessions, housing prices declined less in walkable, transit-rich neighborhoods than in traditional neighborhoods (Gopal 2008; Schalch 2008; Stiff 2008; Jackson 2008; Cortwright 2009). A complementary finding that housing in mixed-use and New Urbanist neighborhoods commands a price premium is discussed later in this chapter.
Additionally, researchers have found that smart growth in a city center may help the economic well being of surrounding neighborhoods (Greenstein and Wiewel 2001, Voith 1998, Pastor Jr 2000, Haughwout and Inman 2002 in Muro and Puentes 2004).

At least one article (Lockwood 2003) has explicitly compared the performance of smart growth town centers to traditional suburban developments. The study, which took place during a period of economic prosperity, found that the town center developments consistently out-performed standard suburban real estate products across several metrics, including office and retail lease rates, residential prices and apartment rents, retail sales and sales tax revenues, hotel room and occupancy rates, and on-site and adjacent property values.

Public Health Considerations
Two studies have investigated the link between built environment configuration and public health. Ewing et al. (2003) concluded that residents of sprawling counties were likely to walk less during leisure time, weigh more, and have greater prevalence of hypertension than residents of more compact counties. Frank and Engelke (2005) found that more compact, mixed-use communities “show significant promise for the promotion of physical activity and the reduction of regional air pollution levels” because they facilitate opportunities to walk for “utilitarian purposes.” The study acknowledges the conflict among experts, described above, on the correlation between built environment form and motorized travel patterns.

Consumer Preferences
A growing sub-section of the smart growth/sprawl comparison literature addresses consumer preferences for different development forms. Most surveys confirm that the majority of Americans prefer to live in low-density, auto-dependent, single-family developments (Logan, Siejka, and Kannan 2007; Myers and Gearin 2001). This documented preference has been often been used as an argument in favor of traditional suburban developments. However, there is small but increasing demand for locations with a range of residential forms (e.g., single-family, multi-family, townhouses, etc.), higher density, decreased auto dependence, and improved neighborhood design. For example, 37% of respondents to a 1998 Professional Builder Survey preferred higher density clustered developments (Myers and Gearin 2001).

In a 2001 article, Myers and Gearin used surveys on homeowner preferences, demographic projections, and other trends to project the future demand for denser, more walkable environments in the U.S. The study found that housing priorities change over a person’s life cycle, with younger people prioritizing good schools and low density and older people (over 45) seeking higher density environments with
nearby amenities close by. Because of the aging baby boomer population, the authors anticipate that demand for “denser, more walkable neighborhoods that adults find interesting” will increase in the future. Other factors cited as contributing to the growing preference for more compact development include increasing congestion, decreasing urban crime, immigration and enhanced urban vitality, increasing café culture, and good design of high-density developments. Fitting with the study predictions, just a few years later the 2004 National Community Preference Survey found that 61% of people buying a home in the next three years plan to buy in a smart growth area. A shorter commute was a major factor in this preference along with the convenience of being within walking distance to amenities.

There have also been attempts to quantify the value consumers place on different development models. Two studies (Song and Knaap 2003; Eppli 1999) have found that consumers are willing to pay more for single-family homes in New Urbanist neighborhoods, which share many principles with smart growth. Follow-up studies (Eppli and Tu 2009; Sobel 2011) found that these price premiums are often sustained or increased over time, indicating a strong and continued market acceptance of single-family homes in smart growth communities. It should be noted that the premiums could make these desirable neighborhoods unaffordable to some populations. Other studies have measured the effects of mixed land uses on housing values. Cao and Cory (1982) concluded that increasing industrial, commercial, multifamily, and public land uses increased surrounding home values. Song and Knapp (2004) found that housing prices increase when houses are located close to public parks or neighborhood-scale commercial uses, although the presence of larger or more intense commercial development nearby was found to have a negative effect on housing prices.

Fewer studies have focused on the commercial development preferences and performance, the focus of this study. The limited research that does exist suggests that corporations are interested in smart growth locations for many of the reasons cited above, such as improved quality of life, reduced commute times, and a range of transportation and housing options (Frej 2002; Cogan et al. 2004). A 2004 study by the National Association of Local Government Environmental Professionals (NALGEP) and the Smart Growth Leadership Institute sought to determine the private sector’s interest in smart growth during a weak economy and found that smart growth is perceived as a stable investment that sells in both up and down economies, due largely to the economic benefits, in particular the importance of quality of life. This report focused on the corporate preferences and the development of smart growth communities, and did not address preferences of retailers.

A 2006 report by the International Economic Development Council (IEDC) looked at the connection between economic development and smart growth, describing eight projects in which economic

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development and smart growth goals were aligned and mutually beneficial (Iams and Kaplan 2006). For example, the report notes that the preference for office space in mixed-use areas with transit access is often reflected in lower vacancy rates, higher property values, and lease premiums. While the report mostly offers an overview of economic development in the case study locations, it does mention some specifics about retail performance, for example that The Brewery Blocks, an urban smart growth development in Portland, Oregon, is the strongest urban market in Portland with high demand and low vacancy. In contrast to this study, the IEDC report focuses on smart growth in urban redevelopment settings and does not address periods of economic downturn.

Retail Location Theory

Retail location theory is the second body of literature that informs this analysis. Broadly, retail location theory addresses the geographic location of economic activity and land use, firm location choices, and land values. Ultimately, retail locational decisions are driven by economics—retailers will choose the location that leads to the highest profits. The field dates back to the early 20th century. While there have been many theoretical advances in retail location theory in the past century, including complex, multidimensional models predicting retail locations, some early work remains relevant, such as Proudfoot's 1937 characterization of retail patterns of American cities, all of which continue today. This study builds on the theoretical foundations of classical and neoclassical location theory, acknowledging the interconnection of location and retail performance by focusing on one attribute of a location, the mix of land uses.

History of Retail Location Patterns

Before cars, shopping occurred at the location closest to a consumer's residence because of the high travel cost to reach more distant shopping locations. Stores were small, neighborhood establishments, often with a variety of goods; in more urban areas, stores were typically located in a vertical mixed-use setting (i.e., a store on the first floor with residential or office space above). The advent of mass transit and the popularization of personal automobiles in the late 19th and early 20th centuries reduced transportation costs, and retail establishments began to cluster in the urban central business districts, again often occurring in a mixed-use setting. The network of interstates built by the U.S. government after WWII made personal travel even easier. Reduced commuting costs (both in terms of time and money) along with other incentives resulted in a mass exodus to the suburbs. Retail establishments followed to be closer to consumers and downtown retail suffered. New forms of retail development, the single-use retail strip and the regional shopping mall, emerged to fit with the suburban, car-focused

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Proudfoot's categories are: 1) the central business district, 2) the outlying business center, 3) the principal business thoroughfare, 4) the neighborhood business street, and 5) the isolated store cluster.
lifestyle. As described in Chapter I, a new pattern of suburban retailing associated with planned, smart growth or New Urbanist communities emerged in the late 20th century. These commercial centers draw on features from the past such as mixed land uses and compact, walkable design.

**Classical Location Theory**

Classical location theory, which dates back to the early 20th century, determines where retailers will locate based on exogenous factors such as transportation costs, frequency of purchase trips, buyer density, etc. The field has evolved from simple, one-dimensional models to complex mathematical models that predict optimal store location. One of the most influential models was the two-dimensional Central Place Theory initiated by Christaller in the mid-1930s (Eppli and Benjamin 1994). Central Place Theory addresses where customers will shop, postulating that customers make single purpose shopping trips to the nearest shopping centers. The concepts of range (the maximum distance a customer will travel) and threshold (the maximum demand necessary for a store to be economically viable) are combined to create a hexagonal market area for each store. Although Berry (1967) supported this theory empirically, Central Place Theory has been criticized for its inattention to multipurpose shopping trips and over reliance on distance as the sole determination of shopping preference. Later researchers argued that consumers often combine trips, which reduces total travel costs, are willing to travel further for some goods, and are indifferent to relatively small differences in distance among shopping centers (Eppli and Benjamin 1994).

**Neoclassical Location Theory**

Neoclassical retail location theory addresses the impact of endogenous factors, the positive externalities that arise from retailers locating in close proximity to other retailers. Hotelling (1929) theorized that the homogenous retailers cluster when their products or services are slightly different, based on the theory that customers are interested in more than just price. Later theories focused on the retail demand externalities that smaller, lower-order retailers receive from larger retail establishments. Unlike homogeneous retail agglomeration, which is a two-way benefit, the benefit of large retail anchors is one way—from the anchor to the lower order stores. For this reason, shopping malls typically charge the lowest rent to anchors, given their importance in drawing customers to the site; lower order retailers will pay higher rents to be located with strong anchors. A related, more recent incarnation of homogenous retail agglomeration theory is the theory of comparison shopping, which emphasizes the variety of smaller retailers within a shopping complex as essential to the shopping center's success.

A critical shortcoming of both classical and neoclassical retail location theories is the limited attention given to the impact of built environment considerations, such as density, land use, and road

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configuration on location choices. This study attempts to address one specific area of this gap by comparing retail performance in mixed-use and single-use suburban environments.

**Retail Location During Economic Downturns**

Little research has been conducted on the impact of economic recessions on retail performance and location decisions. However, two recent articles have been published on the topic. Kolko and Neumark (2010) studied whether local ownership insulates communities from economic shocks by studying establishment-level employment responses to positive and negative economic shocks. The researchers expected that “locally-owned firms are more likely to internalize the costs to the community of decisions to reduce employment and hence help to insulate cities from adverse economic shocks.” This hypothesis was empirically studied by examining employment responses to economic shocks at the establishment level, analyzing responses by business ownership structure (locally owned or not), type of establishment (headquarters or not), and size. The study’s hypothesis was disproved, with data showing that while large corporate headquarters are insulated from economic shocks, small, independent businesses are not.

A second article analyzed business decisions to reopen after a major catastrophe imposed a significant negative impact on the local economic climate. The study, which focused on post-Hurricane Katrina New Orleans, found that business decisions to reopen are likely to depend on the reopening of neighboring firms due to positive spatial spillover impacts (LeSage et al. 2010). This finding emphasizes the importance of nearby retailers on the viability of retail clusters.

**Summary**

This chapter has provided an overview of the two bodies of literature that inform this research and described how this research fills gaps in both fields. In the first body of literature, the vast and relatively recent field comparing smart growth and sprawl developments, there has been little research comparing retail performance in different forms of development, and the impact of economic downturns on different development forms. This study addresses both of those research needs. In the second body of literature, the established field of retail location theory, this study fills a gap in research focused on built environment characteristics, such as land use mix.
III. Data & Methodology

A case study-based methodology is used to compare the retail resilience, approximated by the change in number of retail and food service (RFS) establishments, of mixed-use and single-use retail clusters before and during the 2007-2009 economic recession. Several studies (Sobel 2011; Song and Knaap 2003; Eppli 1999) have used a similar case study approach to determine residential price differentials, comparing housing prices in specific developments that represent smart growth or New Urbanist designs to comparable traditional subdivisions in the same market.

Twenty retail clusters were selected in seven case study locations, including five suburban areas and two small cities. Case study locations were chosen based on the range of retail developments present and the impact of the 2007-2009 recession, approximated by the metropolitan statistical area (MSA) unemployment rate. Within each case study location, two to four retail clusters were selected to be compared over time, including at least one “mixed-use” and one “single-use” cluster. Retail clusters were selected to control for as many potentially confounding variables as possible. The number of RFS establishments in each cluster was then tracked from 2006 through 2010. This analysis was supplemented with a cursory review of current asking rents for retail space in the cluster and communication with cluster leasing agents. This chapter provides additional description of various aspects of the data and methods used while the following chapter offers more detail on the selected case study locations and retail clusters.

Definitions

The following definitions are used in this study.

- A retail cluster is a geographic concentration of retail, restaurants, and services in which all businesses are located in the same development (i.e., a building or series of buildings managed by the same owner as a unit).

- Mixed use refers to a cluster in which the majority of retail establishments and restaurants occur in a vertical mixed-use setting. That is, retail and/or restaurants are located within the same building as other uses. To qualify as “mixed use” for this study, the other uses must include a residential component.

- Single use refers to a cluster that has only retail, food service, and service establishments.

- Retail and food service (RFS) establishments are all non-automobile related businesses coded NAICS 44 and 45, and all businesses coded NAICS 722.
Case Study Locations

Seven case study locations were selected for this analysis. Five locations are suburban, outside of major metropolitan areas, and two are small cities.  

- **Suburban Cases**
  - Boston, MA northern suburbs (Medford and Somerville)
  - Boston MA South Shore suburbs (Hingham) and Cape Cod (Mashpee, Hyannis)
  - Charlotte, NC suburbs (Huntersville and south Charlotte)
  - Orlando, FL northern suburbs (Winter Park and the Baldwin Park area of Orlando)
  - Orlando, FL southern suburbs (Celebration and Lake Buena Vista)

- **Small Cities**
  - Chapel Hill, NC
  - Gainesville, FL

Locations were selected based on the presence of vertical mixed-use developments and comparable single-use developments, and also to show a geographic range and a range of recession impact, measured by the unemployment rate. Five case studies are located in North Carolina and Florida, states that have many smart growth and traditional neighborhood developments and were also impacted significantly by the recession. Four of the case studies, the two case studies outside of Boston, Chapel Hill, and Gainesville, are in metropolitan areas that have fared relatively well during the recession, with unemployment rates below state and national rates. The remaining three case studies (Charlotte and the two Orlando suburban case studies) are in locations that have been severely impacted by the recession, with unemployment rates above the national level. Additional information on the characteristics of these locations is described in the next chapter.

Selection of Retail Clusters

Within each case study location, specific retail clusters were chosen to compare over time (descriptions of the selected retail clusters can be found in Chapter IV). At least one mixed-use cluster and one single-use cluster were chosen for each location. Mixed-use clusters were selected first and, where possible, are developments that have been used in previous research as examples of smart growth and/or New Urbanism. Next, comparable single-use retail clusters were selected for each mixed-use

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8One case study, the Boston South Shore suburbs and Cape Cod location, does not fit cleanly into a “suburban” or “small city” category. While one retail cluster in this case study location is in a suburban town (Hingham), the other two clusters are in small towns on Cape Cod (Mashpee, Hyannis), a vacation area with a small year-round population. Although the Cape Cod locations do not fit perfectly with the rest of the case studies, Cape Cod is home to one of the few planned mixed-use communities in Massachusetts, Mashpee Commons. Without this case study, there would be only one case study in Massachusetts, while the other states in the study have two or more case study locations.
Because there are a myriad of confounding variables that could cloud the relationship between mix of land uses and retail performance, it was essential to control for as many variables as possible when selecting the clusters for comparison. The following variables were specifically considered:

- **Socioeconomics and demographics.** To control for socioeconomic and demographic variables, which can impact retail success during an economic downturn, compared clusters are located near each other, either in the same town or in a nearby towns with similar socioeconomic/demographic characteristics. For each retail cluster, key demographic data (population, median household income, and educational attainment) from the Census tract in which a cluster is located were recorded. These are provided in Chapter V. If a cluster spanned two census tracts, data from the two tracts were averaged. To gain a sense of demographic trends, two years of data were recorded: 2000 and 2010.9

- **Ownership structure.** All the retail clusters selected are planned developments, developed and managed by one entity. This is important because in a development managed by one entity the landlord has the ability to handpick tenants (partially achieved by charging different rents to different tenants) to create the optimal mix of businesses. Although a single owner is standard in shopping malls and retail strips, mixed use occurs in many forms, including historic town centers and organically formed mixed-use clusters, scenarios that often involve many landlords. To control for the ownership structure, the mixed-use clusters selected for this study are in recently built, large-scale, planned communities, typically developed and managed by a single entity.

- **Development size.** Because larger shopping centers have a bigger draw, it was important to compare developments of similar size. Size was approximated by the number of stores in the development.

- **Development age.** An effort was made to select comparison clusters that were a similar age. It was often difficult to find comparable developments of the same age, so developments were considered to be of comparable age if they were built or renovated within 10 years of each other.10

- **Retail composition.** To ensure that the compared developments serve the same market, the retail composition must be as similar as possible. Retail composition includes the type of stores (e.g., high-end vs. low-end, necessities vs. discretionary spending, etc.), ownership structure of retailers

---

9 The 2000 demographics are from the 2000 U.S. Census, accessed through a Geolytics platform. At the time this study was completed, the complete 2010 U.S. Census results had not yet been published, so the 2010 demographics are from Geolytics estimates. 2010 estimates that are suspected to be highly inaccurate are noted.

10 For a few shopping centers, a date of construction or renovation was not found. One case study location, Gainesville, features clusters more than 10 years apart in age—the Thornebrook Village shopping center was developed in 1983, while Tioga Town Center was developed in the 2000s.
(chain vs. locally-owned), as well as the types of anchors. Anchors have a significant impact on the success of a development, so it was important to choose comparison developments with similar anchors.

- Other unique factors. To the extent possible, cluster selection also controlled for various other factors that could influence performance, such as proximity to public transit.

Ideally, the comparison clusters would also feature similar urban design and the same level of placemaking, so that the only variable being compared in the analysis is the presence of vertical mixed use. However, because placemaking elements are a central feature in planned mixed-use communities but are less common in single-use retail developments, it was impossible to control for placemaking when selecting comparison retail clusters.

While it can be generalized that mixed-use developments generally have a stronger sense of place than single-use developments, there is variation. Some mixed-use developments are more effective at creating a sense of place than others, and some single-use commercial developments have prioritized the physical environment and placemaking, using architectural details, urban design, landscaping, and street furniture to create an attractive, inviting development. Ostensibly these investments are pursued based on the assumption that developments with a strong sense of place will have a competitive advantage over their generic competitors. To show the range in placemaking exhibited across the retail clusters, developments were categorized as having a strong, moderate, or weak sense of place based on the presence of the following six key aspects that contribute to a strong sense of place.

- Unique elements such as fountains, public art, public park, riverwalks, etc.
- Landscaping including street trees and plantings.
- Frequent hosting of events such as concerts, markets, charity fundraisers, etc.
- Pedestrian-orientated design, achieved through subordinated parking, entrances facing sidewalks instead of parking lots, pedestrian-scale signage, etc.
- Unique and varied architecture including context-specific architecture, detailed facades, and variation in form.
- Activated street achieved through outdoor seating, presence of street furniture, glass storefronts, displays that extend past storefronts, street vendors, etc.

Since it was not possible to visit every retail cluster firsthand or to conduct extensive interviews with people familiar with the developments, these characterizations were based primarily on descriptions in existing case studies, marketing materials, and images.
Retail Performance Measures

There are many ways to measure the retail performance of a commercial development. From the owner’s perspective, performance can be measured by the vacancy rate, rental income, or the tenants’ sales, particularly if the owner receives a portion of tenant revenues. A city might have different metrics of performance, such as sales and real estate tax revenues from a specific development. While a strictly economic analysis would focus on traditional performance measures such as revenues and rents, comprehensive economic data were not readily available for this analysis. The available data dictated the performance measures used in this study.

Number of Retail and Food Service (RFS) Establishments

The primary measure used in this study is the number of RFS establishments in a cluster. Because the study looks at the number of firms, rather than traditional economic measures, the focus of this study is more on resilience than pure economic performance. The change in RFS businesses over time can be used as a proxy for the performance, or resilience, of RFS establishments in that cluster. A decrease in the number of RFS businesses implies that businesses have closed or moved out of the cluster, while an increase suggests that new RFS businesses have moved to the cluster. Although this measure provides information on how desirable a location is for these categories of businesses, it is an imperfect measure of retail cluster performance because it does not capture the other businesses in the cluster, such as services.

Data Source

The business data used in this analysis were collected by InfoUSA and retrieved through ESRI’s Business Analyst platform for the years 2006, 2008, 2009, and 2010. InfoUSA’s databases contain information on over 12 million public and private companies and are updated annually, with business information confirmed through telephone calls (InfoUSA). Businesses are geocoded by matching addresses to a physical location, with an overall match rate of 88 percent.11 ESRI documentation materials state that that information is accurate as of January of the year of publication, i.e., information from the 2009 database is accurate as of January 2009 (ESRI 2009).

Although the InfoUSA data are robust, there are several limitations that may impact this analysis. First, the data only capture a snapshot of each retail cluster in each year, essentially the businesses that were present on the day that InfoUSA researchers called to confirm. In addition, the fact that the data rely on geocoding to map businesses creates some potential issues. Not all businesses are successfully

11 The 2010 data were geocoded separately, using ESRI 2009 street maps. Unmatched addresses were reviewed, and businesses located on streets falling within the retail clusters were geocoded manually.
address-matched, for example businesses that use a postal address instead of a street address, so some businesses are inherently missing from the analysis. One could argue that this is less relevant for retail and food service establishments; given the importance of customers being able to locate these businesses, they may be more likely to have a street address. Address matching also sometimes leads to a problem of addresses not corresponding exactly to a business location, in which case the business will be mis-located on the map, for example, an address may be on a main road, while the business is located in a shopping center off the main road. Although care was taken to crosscheck businesses selected for each cluster with external sources (e.g., Google maps) and to review unmatched businesses, there remains a small risk that some businesses were inadvertently left out or wrongly included in retail clusters because of location/address discrepancies.

The dataset’s lack of some key information could also affect the analysis results. From the data, there is no way to know how many businesses a cluster contains at full occupancy; it is only possible to know how many businesses were present in each year analyzed. Additionally, the data do not include information on the size of a store. Although store expansions are likely uncommon, if a store expanded to fill the place of two stores, a decrease in the number of stores would be recorded but may not actually equal an increase in vacancy. Similarly, in the unlikely event that a store expanded to fill multiple retail spaces or a cluster expanded, for example a shopping center added a new wing, it would be impossible to tell from the data whether the observed increase in businesses was due to an expansion or to new businesses filling vacant storefronts.

Analysis
To compare the performance of each retail cluster over time, it was necessary to first determine which businesses were located in each cluster in 2006, 2008, 2009, and 2010 (2007 data were unavailable). Using ArcGIS a polygon was created around the location of each cluster and the businesses located within that polygon each year were selected. Of those businesses, only those coded as “retail trade” (NAICS 44-45) and “food service establishments” (NAICS 722) were used in the analysis. Automobile-related businesses coded NAICS 44 or 45 were later removed, since these businesses are not included in this study. Quality assurance was conducted for each retail cluster, removing duplicates, miscoded businesses, and inadvertently selected businesses that are not located within the cluster (e.g., businesses on the other side of the street). Nearby businesses were also reviewed in an attempt to determine if any businesses within the retail cluster were inadvertently left out.

For each cluster, tables and graphs were developed showing how the retail clusters in each case study area compared in terms of the change in total RFS businesses over time, the deviation from a 2006 and 2008 baseline, and the percent change over each interval (2006-2008, 2008-2009, 2009-2010).
percent change in RFS businesses over the entire observation period (2006-2010), the period capturing the strong economy (2006-2008) and the period capturing the weak economy (2008-2010) were also calculated and compared. While retail clusters were primarily compared against the comparable developments in the same case study location, statistics on the average change in RFS businesses over the whole observation, the strong economy, and the weak economy were compiled for different variables, such as recession impact, mix of land uses, and degree of placemaking.

**Asking Rents**

A brief investigation of current asking rents in the selected retail clusters was conducted as another measure of cluster performance. Asking rents above the metropolitan area average suggest that there is something special about that location, for example the surrounding tenants, urban design amenities, accessibility, etc., that makes it more desirable than other locations and, thus able to command a rental premium. Higher rents imply a higher assessed value, which means more tax revenue for the local government. So, if a development performs less well in terms of changes in the number of RFS establishments, but has higher rents, it could be generating as much or more income for the developer and local government than commercial developments with more establishments but lower rents.

**Data Source**

Current (March 2011) asking rents for the selected retail clusters were found in online commercial real estate databases such as Loopnet.com and Showcase.com. These sources were supplemented by conversations with development leasing agents if asking rents were not available online. Contacting leasing agents directly also provided an opportunity to solicit their insights on the performance of specific developments during the recession. Although leasing agents from 12 developments were contacted, only four responded to requests for information.

**Analysis**

The asking rents were compared to the average retail rent (February 2011) in that metropolitan area, based on data from Loopnet.com. If multiple spaces were for lease in one development, the asking rents were averaged.

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12 Although the recession officially lasted from December 2007 through June 2009, the effects on RFS establishments are logically somewhat delayed and thus captured in the 2008-2010 data.

13 Rents in commercial developments can vary by the size of the space being rented (smaller spaces are often charged a higher rate per square foot). While the size of the spaces in the rental analysis differed slightly, they were all small- to mid-size spaces (under 10,000 sq. ft.) not large enough for anchor tenants (which typically pay the smallest per square foot rents).
Summary

As described in this chapter, the study methodology uses a case study approach, comparing the performance of single-use and mixed-use retail clusters before and during the recent recession. Based on the available data, the change in the number of RFS establishments was selected as the best measure of retail performance. The next chapter offers more detail on the case studies and retail clusters used in this research.
IV. Case Studies

The following chapter provides an overview of the selected case study areas and retail clusters. For each of the seven case study locations, a brief description of the location is provided, including the impact of the recession on that area and the demographics of the selected clusters. This is followed by a more detailed description of the selected retail clusters within that case study location.

Case Study 1: Boston, MA Northern Suburbs

The first case study location is Boston's northern suburbs, with selected retail clusters in Medford and Somerville (Figure 4). The Boston metropolitan area has fared relatively well during the recent recession, with unemployment rates for each year from 2007-2009 below Massachusetts overall and the nation (Figure 5). Medford is home to one of the few mixed-use suburban developments in Massachusetts, the transit-oriented Station Landing. The most comparable single-use development in close proximity to Station Landing is the Twin City shopping center in Somerville, which was selected for comparison. Medford and Somerville are located northwest of Boston proper and are older, denser suburbs than the other suburban case studies in this analysis. The median household income and educational attainment of the two census tracts containing the selected retail clusters fall below state figures, although income is higher in the Station Landing census tract (Figure 6).

Figure 4. Location of Boston, MA Northern Suburbs Retail Clusters
Figure 5. Boston Unemployment

<table>
<thead>
<tr>
<th>Unemployment Rate</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston-Cambridge-Quincy</td>
<td>4.4%</td>
<td>4.1%</td>
<td>4.8%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>4.8%</td>
<td>4.5%</td>
<td>5.3%</td>
<td>8.2%</td>
</tr>
<tr>
<td>USA</td>
<td>4.6%</td>
<td>4.6%</td>
<td>5.8%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

Figure 6. Demographics of Retail Cluster Census Tracts, Boston Northern Suburbs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Station Landing (MU)</td>
<td>Medford</td>
<td>7,350</td>
<td>7,656</td>
<td>$43,563</td>
<td>$44,993</td>
<td>32.5%</td>
<td>33.1%</td>
</tr>
<tr>
<td>Twin City Plaza (SU)</td>
<td>Somerville*</td>
<td>2,030</td>
<td>2,079</td>
<td>$30,133</td>
<td>$34,025</td>
<td>32.2%</td>
<td>33.7%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td>$50,502</td>
<td>$63,640</td>
<td></td>
<td></td>
<td>40.4%</td>
<td>40.8%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics
*The Twin City Plaza cluster is split between two census tracts; data from these two tracts were averaged.

Figure 7. Selected Retail Clusters, Boston Northern Suburbs

<table>
<thead>
<tr>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-'10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station Landing</td>
<td>12</td>
<td>2006</td>
<td>n/a*</td>
</tr>
<tr>
<td>Twin City Plaza</td>
<td>16</td>
<td>2005</td>
<td>Shaws, Marshalls</td>
</tr>
</tbody>
</table>

*Development does not have a clear anchor.

IV. CASE STUDIES
Station Landing (Mixed Use)
Completed in 2006, Station Landing is a transit-oriented, mixed-use development in the Boston suburb of Medford. Located along the Mystic River and adjacent to an MBTA stop (connected via a skywalk), Station Landing will ultimately include over 1 million sq. ft. of developed residential, retail, and office space. The development form is different than the other retail clusters; instead of the low-rise buildings (two to four stories) found in the other clusters, Station Landing has mostly mid-rise buildings (six stories) and a more urban feel. Also unlike the other retail clusters, Station Landing does not have single-family homes or townhomes; all residential units are apartments and condominiums. Many of the residential units are in mixed-use buildings with first floor retail. Currently, there are over 1,000 residents at Station Landing and over 30 retail, service, and food establishments, mostly chains ranging in size from 1,000 to 15,000 sq. ft. The development does not have a clear anchor, which makes it difficult to find a comparable single-use development, since virtually all single-use shopping centers are developed with at least one large commercial anchor. However, it was important to include Station Landing, one of the few examples of a planned mixed-use community in the Northeast, in this analysis to provide some geographic variation to the case studies.

Figure 9. Images of Station Landing

www.apartmentguide.com  www.stationlanding.com
Twin City Plaza (Single Use)
Across the Mystic River in Somerville, MA, Twin City Plaza is two miles from Station Landing. The single-use retail center is situated on McGrath Highway, a major thoroughfare. Twin City is an “L” shaped strip mall, with a large parking lot between the entrance and stores. The development has some parking lot landscaping, but overall is a generic development with a weak sense of place. Twin City Plaza is a comparable size and age (built in 1987, but last renovated in 2005) to Station Landing. Like Station Landing, the tenants are mostly chains. However, Twin City Plaza has two anchor stores, a Shaws supermarket and a Marshalls.

Figure 10. Twin City Plaza Retail Cluster

Google Earth

Figure 11. Image of Twin City Plaza
Case Study 2: Boston, MA South Shore and Cape Cod

The second case study location is south of Boston, with retail clusters in Massachusetts's South Shore region and Cape Cod. This location was also chosen because Cape Cod is home to one of the few traditional neighborhood, mixed-use developments in Massachusetts, Mashpee Commons. Two comparable single-use developments, one on Cape Cod and one on the South Shore, were selected for comparison. It would have been preferable for all the retail clusters to be closer geographically—especially since Cape Cod is a vacation destination, while the South Shore is a suburb of Boston—but there is a lack of commercial developments of similar size to Mashpee Commons on Cape Cod.

While the Boston metropolitan area unemployment rates are likely accurate for the retail cluster on the South Shore, a suburb of Boston, it is likely inaccurate for the two retail clusters on Cape Cod (Figure 13). Because Cape Cod is heavily dependent on tourism, it is conceivable that the region’s economy has suffered more than the Boston metropolitan area during the recession. Also, the demographics of the three retail clusters’ consumer base may be more similar than the census data in Figure 14 suggest. Because Mashpee and Hyannis are vacation communities, the census statistics, which count permanent residents, are likely an inaccurate picture of the population that visits the commercial developments during tourist season.

Figure 12. Location of Boston South Shore and Cape Cod Retail Clusters

Google Earth
### Figure 13. Boston Unemployment

<table>
<thead>
<tr>
<th>Year</th>
<th>Boston-Cambridge-Quincy</th>
<th>Massachusetts</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>4.4%</td>
<td>4.8%</td>
<td>4.6%</td>
</tr>
<tr>
<td>2007</td>
<td>4.1%</td>
<td>4.5%</td>
<td>4.6%</td>
</tr>
<tr>
<td>2008</td>
<td>4.8%</td>
<td>5.3%</td>
<td>5.8%</td>
</tr>
<tr>
<td>2009</td>
<td>7.8%</td>
<td>8.2%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

### Figure 14. Demographics of Retail Cluster Census Tracts, Boston South Shore and Cape Cod

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mashpee Commons (MU)</td>
<td>Mashpee</td>
<td>5,304</td>
<td>5,154</td>
<td>$49,716</td>
<td>$50,465</td>
<td>39.1%</td>
<td>38.8%</td>
</tr>
<tr>
<td>Cape Cod Mall (SU)</td>
<td>Hyannis</td>
<td>584</td>
<td>674</td>
<td>$30,000</td>
<td>$31,608</td>
<td>20.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Derby Street Shoppes   (SU)</td>
<td>Hingham</td>
<td>5,620</td>
<td>5,722</td>
<td>$93,308</td>
<td>$94,167</td>
<td>65.8%</td>
<td>65.6%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40.4%</td>
<td>40.8%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

### Figure 15. Selected Retail Clusters, Boston South Shore and Cape Cod

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses (’06-’10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mashpee Commons</td>
<td>Mixed use</td>
<td>48</td>
<td>2006</td>
<td>Super Stop &amp; Shop, movie theater</td>
</tr>
<tr>
<td>Cape Cod Mall</td>
<td>Single use</td>
<td>86</td>
<td>Late 1990s</td>
<td>Macy's, Sears, Best Buy, Marshalls, Barnes &amp; Noble</td>
</tr>
<tr>
<td>Derby Street Shoppes</td>
<td>Single use</td>
<td>62</td>
<td>2004</td>
<td>Whole Foods, Barnes &amp; Noble</td>
</tr>
</tbody>
</table>

IV. CASE STUDIES
**Mashpee Commons (Mixed Use)**

Mashpee Commons is a neo-traditional New England town center, located at the geographic center of Mashpee on Cape Cod. The development was originally a strip shopping center but was reconceived in the 1980s in reaction to the automobile-oriented development that was dominating Cape Cod at the time. Symbolically, the development's visionaries wanted to create a development appropriate for the town's center. The result is a compact mixed-use town center that features six interrelated neighborhoods. The intent is to recreate a traditional New England town center, which is achieved through strict site and architectural design codes. Mashpee Commons has vertical mixed-use buildings (oriented around an attractive village square) with retail and dining on the street level and residential and office space above. The development’s urban design creates an engaging, high-quality pedestrian environment with public spaces, street trees, public art, and street furniture. The groundfloor tenants help to activate the sidewalk with cafes, plantings, and displays spilling into the public realm. Mashpee Commons has approximately 80 stores (primarily upscale), restaurants, and art galleries. The complex’s owners have made a point to encourage local tenants in the development, but there are a substantial number of national chains as well. The center is anchored by a Super Stop & Shop and a movie theater.

**Figure 17. Images of Mashpee Commons**

www.mashpeecommons.com

www.mashpeecommons.com
Cape Cod Mall (Single Use)

The Cape Cod Mall is the largest shopping center on Cape Cod with a gross leasable area of over 821,000 sq. ft. and more than 100 stores and restaurants. The mall is located in Hyannis, 12 miles east of Mashpee Commons in central Cape Cod. Originally built in 1970, the mall has been renovated and expanded several times, most recently in 1999. Although there is some attempt to provide an interesting façade and some landscaping around the building, the Cape Cod Mall follows a standard enclosed regional shopping mall typology. The mall has large anchors (Macys and Sears are major anchors, while Best Buy, Marshalls, and Barnes & Noble are minor anchors) and predominantly national chain tenants.

Although Cape Cod Mall is larger than Mashpee Commons (which has roughly 80 tenants, although many of these are services which were excluded from this analysis), it was chosen as a comparison because it is the closest development, in size, to Mashpee Commons on Cape Cod.

Figure 19. Image of Cape Cod Mall

www.flickr.com/photos/nncapa/2868145407/
**Derby Street Shoppes (Single Use)**

The Derby Street Shoppes development was the first open air lifestyle center in New England, completed in 2005. The shopping center is off of Route 3 in Hingham, a coastal town along Massachusetts' South Shore and a suburb of Boston (which is 15 miles away). The Derby Street Shoppes has 436,000 sq. ft. of commercial space and nearly 80 retailers and restaurants. The development is anchored by a Whole Foods and Barnes & Noble, and tenants are a mix of national chains and local boutiques. Architecturally, the development is “designed to reflect the architectural flavor of the region,” using regionally appropriate materials such as brick, stone, and clapboard; stores are painted in pastel colors “that bring the center warmth and vibrancy” (WS Development 2010).

In addition to architectural detail, the development has street trees, plantings, outside seating, and street furniture to create an inviting pedestrian environment. In terms of tenants and size, the Derby Street Shoppes in Hingham is a closer comparable to Mashpee Commons than the Cape Cod Mall, although the customer base may differ, with Derby Street serving more local customers, while Mashpee Commons (and the Cape Cod Mall), likely are more dependent on tourists.

**Figure 20. Derby Street Shoppes Retail Cluster**

Google Earth

**Figure 21. Images of Derby Street Shoppes**

WS Development

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IV. CASE STUDIES
Case Study 3: Chapel Hill, NC

Chapel Hill is a small city of roughly 50,000 located in the Research Triangle area of North Carolina. This region is similar to the Boston metropolitan area in that it is home to several large, world-class universities and research centers. Although North Carolina suffered during the recession, Chapel Hill has fared considerably better, with unemployment rates consistently below the state rate and slightly below the national rate (Figure 23). Chapel Hill is an affluent, highly educated community and home to two recently developed smart growth communities. The three retail clusters examined are within two census tracts, both highly educated and higher income than North Carolina overall (Figure 24).

Figure 22. Location of Chapel Hill Retail Clusters

Google Earth
Figure 23. Chapel Hill Unemployment

<table>
<thead>
<tr>
<th>Unemployment Rate</th>
<th>2006</th>
<th></th>
<th>2007</th>
<th></th>
<th>2008</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Durham-Chapel Hill</td>
<td>3.9%</td>
<td>North Carolina</td>
<td>4.8%</td>
<td>USA</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>Durham-Chapel Hill</td>
<td>3.9%</td>
<td>North Carolina</td>
<td>4.7%</td>
<td>USA</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>Durham-Chapel Hill</td>
<td>4.8%</td>
<td>North Carolina</td>
<td>6.2%</td>
<td>USA</td>
<td>5.8%</td>
</tr>
<tr>
<td></td>
<td>Durham-Chapel Hill</td>
<td>7.9%</td>
<td>North Carolina</td>
<td>10.8%</td>
<td>USA</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

Figure 24. Demographics of Retail Cluster Census Tracts, Chapel Hill

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Location</th>
<th>Population</th>
<th>Population</th>
<th>Median HH Income</th>
<th>Median HH Income</th>
<th>Pct Pop 25+ with Secondary Degree</th>
<th>Pct Pop 25+ with Secondary Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Village (MU)</td>
<td>Chapel Hill</td>
<td>6,528</td>
<td>5,281</td>
<td>$59,831</td>
<td>$61,168</td>
<td>80.7%</td>
<td>79.0%</td>
</tr>
<tr>
<td>Glenwood Square (SU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meadowmont (MU)</td>
<td>Chapel Hill</td>
<td>6,291</td>
<td>6,206</td>
<td>$47,063</td>
<td>$47,979</td>
<td>73.4%</td>
<td>72.9%</td>
</tr>
<tr>
<td>Glen-Lennox Shopping Center (SU)</td>
<td>Chapel Hill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td>$39,184</td>
<td>$40,648</td>
<td></td>
<td></td>
<td>29.2%</td>
<td>30.2%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

*These two shopping centers are considered one cluster for the purpose of this analysis, but the demographics are presented separately, as the centers all in two different census tracts.

Figure 25. Selected Retail Clusters, Chapel Hill

<table>
<thead>
<tr>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-‘10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Village</td>
<td>15</td>
<td>2005</td>
<td>Weaver Street Market, Lumina Theater</td>
</tr>
<tr>
<td>Meadowmont</td>
<td>21</td>
<td>2002</td>
<td>Harris Teeter</td>
</tr>
<tr>
<td>Glen-Lennox/Glenwood Square</td>
<td>9</td>
<td>n/a</td>
<td>Fresh Market, Rite Aid</td>
</tr>
</tbody>
</table>

IV. CASE STUDIES
Southern Village Market Street (Mixed Use)

Planned in the early 1990s, Southern Village was the first New Urbanist development in North Carolina and has been used as an example of a smart growth, New Urbanist development in two previous studies (Eppli 1999; Sobel 2011). The 312-acre development is located at the southern edge of Chapel Hill along Highway 15-501. The community markets itself as a “new old neighborhood” and was designed around New Urbanism principles that draw from early 20th century neighborhoods such as wide sidewalks, rear alleys, front porches, shopping and schools within walking distance, etc. Walkability is a key feature of the community; marketing materials state that the development was designed for people, not cars (Chapel Hill Historical Preservation Society 2006). Over 3,000 people live in roughly 1,200 residential units of varied styles (including apartments, condominiums, single-family homes, lofts, and townhouses) in Southern Village.

At the heart of Southern Village is a mixed-use village center called “Market Street,” which was completed in 2005. The center is oriented around a large village green that features a performance stage for concerts and other community events. The green is surrounded by 2- and 3-story mixed-use buildings that house 252,000 sq. ft. of commercial and retail space and upper level residential lofts. Sidewalk cafes, landscaping, and brick sidewalks help create an inviting pedestrian environment. The commercial development is anchored by a grocery store and movie theater. The remaining tenants are a mix of shops, services, and restaurants and include both chains and local establishments.
Meadowmont Village (Mixed Use)

Meadowmont is a 435-acre planned, mixed-use community in eastern Chapel Hill and is close to several major roads. The developer’s vision was to create “an interconnected community that mirrors history” (Meadowmont of Chapel Hill). Meadowmont, which opened in 2002, shares many features with nearby Southern Village and other New Urbanist communities, encouraging social interaction and alternative modes of transportation through design. The community has over 1,000 residential units and a mixed-use commercial center, Meadowmont Village, which the developer describes as having an “old town square feeling.”

At the heart of the village center is a public square, complete with a fountain. The surrounding commercial streets feature covered shopping arcades, landscaping and street trees, and street furniture to improve the pedestrian experience. The commercial area offers a mix of local and chain businesses, anchored by a Harris Teeter grocery store.

IV. CASE STUDIES

Figure 28. Meadowmont Retail Cluster

Figure 29. Image of Meadowmont

www.chapelwoodinfo.com
Glen-Lennox Shopping Center and Glenwood Square (Single Use)
The Glen-Lennox and Glenwood Square shopping centers are located opposite each other on Highway 54, near the interchange with Highway 15-501 in southern Chapel Hill (a mile from Meadowmont Village). The two shopping centers are considered one retail cluster for the purpose of this analysis and are associated with the nearby Glen Lennox Cottages apartment complex, one of the oldest, largest, and most successful apartment communities in Chapel Hill. Both centers are typical commercial strip developments consisting of one linear building housing several businesses separated from the main road by a parking lot. The centers have well-kept but minimal landscaping, and the Glen-Lennox Shopping Center has some benches. The developments feature a mix of office, service, retail, and food-related tenants (both chains and local businesses) and are anchored by a Fresh Market, an upscale supermarket, and a Rite-Aid drugstore. Although both the shopping centers are older than Southern Village and Meadowmont, the centers are comparable based on the size and location.
Case Study 4: Charlotte, NC Suburbs

Charlotte is the largest city in North Carolina and a major U.S. financial center. Because of Charlotte’s large banking industry, the metropolitan area suffered greatly during the recent recession, with unemployment rates above the state and national rates. In 2009 Charlotte’s unemployment rate was 11.7% compared to the national rate of 9.3% (Figure 33). Two of the retail clusters selected, Birkdale Village (mixed use) and Northcross (single use), are in the north Charlotte suburb of Huntersville. The retail clusters are located a mile apart, on either side of Interstate 77, and are in census tracts with similar demographic and economic characteristics—higher income and more educated than the state (Figure 34). A second single-use retail cluster, the Arboretum outdoor mall, was also compared. The Arboretum, which is closer in size and tenant mix to Birkdale Village than Northcross, is located in an area of southern Charlotte that is comparable to Huntersville in educational attainment but more affluent.

Figure 32. Location of Charlotte Suburbs Retail Clusters

Google Earth
Figure 33. Charlotte Unemployment

<table>
<thead>
<tr>
<th>Unemployment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2006</strong></td>
</tr>
<tr>
<td>Charlotte-Gastonia-Rock Hill</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td><strong>2007</strong></td>
</tr>
<tr>
<td>Charlotte-Gastonia-Rock Hill</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td><strong>2008</strong></td>
</tr>
<tr>
<td>Charlotte-Gastonia-Rock Hill</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td><strong>2009</strong></td>
</tr>
<tr>
<td>Charlotte-Gastonia-Rock Hill</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
<tr>
<td>USA</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

Figure 34. Demographics of Retail Cluster Census Tracts, Charlotte Suburbs

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Location</th>
<th>Census Tract Statistics</th>
<th>Census at $Pct$</th>
<th>Pop $25+$</th>
<th>Population Median HH Income</th>
<th>$25+$ with Secondary Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northcross (SU)</td>
<td>Huntersville</td>
<td>5,412</td>
<td>8,611</td>
<td>$60,500</td>
<td>$61,032</td>
<td>50.5%</td>
</tr>
<tr>
<td>Arboretum (SU)</td>
<td>Charlotte</td>
<td>3,263</td>
<td>2,447</td>
<td>$78,661</td>
<td>$85,032</td>
<td>62.7%</td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td></td>
<td></td>
<td>$39,184</td>
<td>$40,648</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

Figure 35. Selected Retail Clusters, Charlotte Suburbs

<table>
<thead>
<tr>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-'10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birkdale Village</td>
<td>Mixed use</td>
<td>54</td>
<td>2003</td>
</tr>
<tr>
<td>Northcross</td>
<td>Single use</td>
<td>32</td>
<td>2002</td>
</tr>
<tr>
<td>Arboretum</td>
<td>Single use</td>
<td>75</td>
<td>1995</td>
</tr>
</tbody>
</table>

IV. CASE STUDIES
**Birkdale Village (Mixed Use)**

Birkdale Village is a 52-acre mixed-use development in the north Charlotte suburb of Hunsterville and has been used previously as a case study of smart growth development (Sobel 2011). The development opened in 2003 and features 360,000 sq. ft. of commercial space, 55,000 sq. ft. of high-end office and medical space, and approximately 800 residential units, including single-family homes, town houses, and apartments, most of which are located in the commercial center. The commercial center has the scale of a lifestyle center (roughly 60 stores) with many of the design features of a New Urbanist village center, such as tree-lined sidewalks, subordinated parking, a gridded street system, and buildings oriented toward the street. The commercial center, which is organized around a green, is dominated by vertical mixed-use buildings, which house a mix of major chains and local retailers. The center is anchored by a 16-screen movie theater, Dick’s Sporting Goods, and a Barnes & Noble.

Birkdale Village is considered a commercial success and was a finalist in 2003 for an Urban Land Institute (ULI) Award of Excellence. A 2005 follow-up study by ULI found that residential, retail, and office rents in the development were significantly above the market averages (Urban Land Institute in Sobel 2011). A later EPA study found that residential units in Birkdale Village had higher sales prices than comparable units in a nearby conventional suburb (Sobel 2011).

**Figure 37. Images of Birkdale Village**

---

14 A "lifestyle center" is essentially an open-air regional shopping mall.

15 "Subordinated parking" refers to parking that is placed in a more subordinate position than is common in suburban retail developments. For example, parking that is placed behind the building instead of in front.
**Northcross Shopping Center (Single Use)**

The Northcross Shopping Center is one mile from Birkdale Village in Huntersville, on the other side of Interstate 77. The shopping center is a hybrid of a traditional commercial strip and an open-air lifestyle center. Part of the shopping center follows a typical model—a strip of stores behind large surface parking lots, while another section is more pedestrian-oriented. There has been some attempt to enhance the center’s aesthetics and pedestrian realm, such as some architectural distinction among tenants, decorative lampposts, and landscaping. The center has roughly 60 stores with a range of retail, food services, and services. Based on the tenants, the development seems have larger floor plate and slightly less upscale tenants than Birkdale Village. Anchors include a Harris Teeter grocery store, Kohls, Lowes, Staples, and Target.

---

**Figure 38. Northcross Retail Cluster**

[Google Earth Image]

**Figure 39. Image of Northcross Shopping Center**

[Image of the shopping center]

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16 The center’s website describes it as “a regional open-air shopping center featuring a mix of national retailers, locally owned shops, and restaurants” (American Asset Corporation).
Arboretum (Single Use)
The Arboretum is a large open-air shopping center in an affluent area of southern Charlotte. Built in 1989 and renovated in 1995, the Arboretum is situated at the corner of two prominent Charlotte thoroughfares. The development is adjacent to residential neighborhoods and office complexes, but only service, retail, and food establishments are located within the Arboretum complex. The Arboretum offers a mix of retail strips and clusters, all surrounded by large parking lots. While the development has manicured landscaping and some architectural distinction among tenants, the design is focused on cars, not pedestrians. Unlike a traditional lifestyle center, the development is designed in a way that makes it is easier to drive than walk among various retail buildings. There are over 80 tenants in the complex, a mix of national and local businesses. The tenant mix is very similar to Birkdale Village, although the Arboretum is larger. Major tenants include a movie theater; Harris Teeter grocery store; Barnes & Noble; Bed, Bath, & Beyond; and Wal-Mart.

Figure 41. Images of Arboretum

http://melissabrownblog.com/  www.shoparboretum.com
Case Study 5: Orlando, FL Northern Suburbs

Orlando, the site of two case studies, is the third largest metropolitan area in Florida and a major tourist destination. Unemployment rates during the recession have been roughly on par with the state of Florida and higher than the national average in 2008 and 2009 (Figure 43). The northern Orlando case study includes two retail clusters located roughly 4 miles apart. The mixed-use cluster, Baldwin Park, is a planned community developed in the early 2000s on the site of an old naval training center. Because the development was constructed after the 2000 Census and the previous use was substantially different, the 2010 demographic estimates provided by Geolytics (which are based on the 2000 data) are likely inaccurate for this census tract, especially given that the development added over 4,000 residential units. The inaccurate demographic data for Baldwin Park makes it difficult to compare to the single-use cluster, Winter Park Village. However, the developments are considered comparable because they are located in close proximity and feature similar stores that likely cater to a similar clientele.

Figure 42. Location of Orlando Northern Suburbs Retail Clusters
Figure 43. Orlando Unemployment

<table>
<thead>
<tr>
<th>Unemployment Rate</th>
<th>2006</th>
<th></th>
<th>2007</th>
<th></th>
<th>2008</th>
<th></th>
<th>2009</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Orlando-Kissimmee-Sanford</td>
<td>3.1%</td>
<td></td>
<td>3.8%</td>
<td></td>
<td>5.9%</td>
<td></td>
<td>10.5%</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>3.3%</td>
<td></td>
<td>4.0%</td>
<td></td>
<td>6.2%</td>
<td></td>
<td>10.2%</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>4.6%</td>
<td></td>
<td>4.6%</td>
<td></td>
<td>5.8%</td>
<td></td>
<td>9.3%</td>
<td></td>
</tr>
</tbody>
</table>

Florida Bureau of Labor Statistics

Figure 44. Demographics of Retail Cluster Census Tracts, Orlando Northern Suburbs

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Baldwin Park* (MU)</td>
<td>Orlando</td>
<td>96</td>
<td>36</td>
<td>$53,750</td>
<td>$50,891</td>
<td>41.5%</td>
<td>41.1%</td>
</tr>
<tr>
<td>Winter Park Village (SU)</td>
<td>Winter Park</td>
<td>2,072</td>
<td>2,307</td>
<td>$27,333</td>
<td>$29,319</td>
<td>22.2%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Florida</td>
<td></td>
<td></td>
<td></td>
<td>$38,819</td>
<td>$45,844</td>
<td>29.4%</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

*2010 estimates are likely inaccurate as they do not seem to take into consideration the new Baldwin Park development, which has a population of 8,000.

Figure 45. Selected Retail Clusters, Orlando Northern Suburbs

<table>
<thead>
<tr>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-'10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baldwin Park</td>
<td>Mixed use 30</td>
<td>2003</td>
<td>Publix, CVS</td>
</tr>
<tr>
<td>Winter Park Village</td>
<td>Single use 37</td>
<td>1999</td>
<td>Albertsons, Borders, movie theater</td>
</tr>
</tbody>
</table>
Baldwin Park Village Center (Mixed Use)

Adjacent to Lake Baldwin in northern Orlando, Baldwin Park is a 1,100-acre mixed-use community developed in the 2000s on the site of a former naval training center. The community, which has 4,100 homes and 950,000 sq. ft. of commercial space, is designed in the Florida architectural style of the 1940s and adheres to New Urbanism design principles. Residences in the development come in a range of forms (e.g., single-family homes, town homes, apartments, condominiums, and live-work units) and prices. Baldwin Park’s Village Center fronts the lake and offers an array of building typologies, including office buildings, retail buildings, townhomes, apartment and condominium buildings, and vertical mixed-use buildings with residential apartments above first floor retail. The urban design is focused on the pedestrian experience and offers amenities such as open spaces, boardwalks and pavilions around the lake, public art, extensive landscaping, and unique signage. The development is anchored by a Publix supermarket and a CVS Pharmacy, and includes other retailing businesses.
Winter Park Village (Single Use)

Winter Park Village is an outdoor shopping center in Winter Park, Florida, just north of Orlando and 4 miles from Baldwin Park. The shopping center is located on a main thoroughfare. Built in the 1960s, the center was renovated in 1999 to adopt more of a lifestyle center feel, with one section of the complex transformed into a more pedestrian-oriented corridor, complete with street furniture, enhanced landscaping, and subordinated parking. The development does include residential lofts, but these are located on the edge of the shopping area, across a major road and were not considered part of the retail cluster for this analysis. The shopping center has roughly 50 shops and is anchored by a movie theater, two grocery stores (Albertsons and Chamberlin’s Natural Foods), and a Borders bookstore.

Figure 49. Images of Winter Park Village

www.shopwinterparkvillage.net

www.orlandoinside.com
Case Study 6: Orlando, FL Southern Suburbs

The second Orlando case study is the southern suburbs, near Walt Disney World. Two retail clusters, Celebration Town Center (mixed use) and the Water Tower Shoppes (single use) are in the town of Celebration, developed by a Walt Disney subsidiary. The third retail cluster, Crossroads at Lake Buena Vista (single use), is located five miles from Celebration, adjacent to Disney World. Because of its location, Crossroads is probably heavily dependent on tourists (although Celebration has become somewhat of a tourist attraction in itself and is also likely dependent on tourism). The three retail clusters are located in two census tracts. All are more affluent and educated than the Florida average, with the census tract of the Crossroads development most significantly above the state numbers (Figure 52).

Figure 50. Location of Orlando Southern Suburbs Retail Clusters

Google Earth
Figure 51. Orlando Unemployment

<table>
<thead>
<tr>
<th>Unemployment Rate</th>
<th>2006</th>
<th>Orlando-Kissimmee-Sanford</th>
<th>3.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Florida</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA</td>
<td>4.6%</td>
</tr>
<tr>
<td>2007</td>
<td></td>
<td>Orlando-Kissimmee-Sanford</td>
<td>3.8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Florida</td>
<td>4.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA</td>
<td>4.6%</td>
</tr>
<tr>
<td>2008</td>
<td></td>
<td>Orlando-Kissimmee-Sanford</td>
<td>5.9%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Florida</td>
<td>6.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA</td>
<td>5.8%</td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td>Orlando-Kissimmee-Sanford</td>
<td>10.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Florida</td>
<td>10.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>USA</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

Figure 52. Demographics of Retail Cluster Census Tracts, Orlando Southern Suburbs

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Location</th>
<th>Population</th>
<th>Median HH Income</th>
<th>Pct Pop 25+ with Secondary Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebration Town Center</td>
<td>Celebration</td>
<td>8,789</td>
<td>$47,003</td>
<td>44.0%</td>
</tr>
<tr>
<td>Water Tower Shoppes</td>
<td>Celebration</td>
<td>6,293</td>
<td>$84,776</td>
<td>62.9%</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista</td>
<td>Orlando</td>
<td>8,541</td>
<td>$89,581</td>
<td>63.1%</td>
</tr>
<tr>
<td>Florida</td>
<td></td>
<td></td>
<td>$38,819</td>
<td>29.4%</td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

Figure 53. Selected Retail Clusters, Orlando Southern Suburbs

<table>
<thead>
<tr>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-'10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebration Town Center</td>
<td>Mixed use</td>
<td>35</td>
<td>1996</td>
</tr>
<tr>
<td>Water Tower Shoppes</td>
<td>Single use</td>
<td>12</td>
<td>2005</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista</td>
<td>Single use</td>
<td>31</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*No clear anchor

IV. CASE STUDIES
Celebration Town Center (Mixed Use)

Celebration, Florida was developed by the Walt Disney Company and is one of the most famous examples of New Urbanism. The inspiration for the town's architecture is a prototypical small, southeastern U.S. town from the early 20th century (the architecture is predominantly pre-1940s style, with some modern exceptions). The town was built in the late 1990s and has been used as an example of a New Urbanist, smart growth community in other comparison studies (Sobel 2011; Eppli 1999). Located 20 miles south of Orlando and five miles south of the Walt Disney World theme park, Celebration is situated on 4,900 acres and home to 9,000 residents. Celebration's 4,060 homes, condominiums, and apartments are located in eight developments within the community.

At the heart of Celebration is Celebration Town Center, an 18-acre traditional downtown district with first floor commercial spaces and upper level residential and office space. Celebration has many local boutiques and restaurants as well as some national chains, such as Starbucks. It is anchored by a movie theater and, previously, had a small outpost of the local Goodings grocery store chain, which has since closed. Befitting a town developed by Disney, Market Street, the downtown's main street has a storybook quality, with brightly colored stucco buildings that have wide overhangs, shutters, verandas, and arcades. Many of the downtown buildings are clustered along a walkway that circles a small lake, and the downtown is connected to other Celebration neighborhoods through a pedestrian network of paths, trails, and boardwalks. Market Street is the site of many community events, such as charity fundraisers and seasonal celebrations (complete with falling fake leaves for the fall Oktoberfest festival and fake snow for the winter event).
**Water Tower Shoppes (Single Use)**

The Water Tower Shoppes is a shopping center located at the entrance to Celebration, along a major road. The complex opened in fall 2005 and features a mix of freestanding stores and larger linear multitenant buildings. Parking is located in front of the stores. The development is attractively designed with stone pavers, manicured landscaping, and a pastel, historically influenced facade that is reminiscent of nearby Celebration Town Center. Water Tower Shoppes is marketed as an upscale development with dining, "unique shops," and professional services (Crossman & Company). The tenants are a mix of national chains and local establishments, with no clear anchor. Although the Water Tower Shoppes has fewer RFS businesses than Celebration, the development was selected as a comparison because of its close proximity to Celebration Town Center. Also, the Water Tower Shoppes is a much larger development than the number of RFS businesses might imply. Marketing materials show that the complex has space for 43 tenants, and although some of these spaces are currently filled by services or automobile-related uses that are not captured in this analysis, many of the storefronts are vacant (Crossman & Company).

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**Figure 56. Water Tower Shoppes Retail Cluster**

**Figure 57. Images of Water Tower Shoppes**

www.avideng.com

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**IV. CASE STUDIES**
Crossroads at Lake Buena Vista (Single Use)

Located across from the Buena Vista entrance of Walt Disney World and at the intersection of two major roads (Interstate 4 and State Road 535), the Crossroads at Lake Buena Vista shopping complex features about 25 shops and restaurants. The shopping center is anchored by Goodings grocery store and while the majority of the tenants are major national chains (predominantly restaurants), there are some local chains and independent establishments in the development. Although the façade is brightly colored and the development has some landscaping, the center follows a standard strip mall form—a semi-circular multi-tenant building set back from the road fronted by parking and individual, freestanding restaurants. Given the development's location adjacent to Disney World, it undoubtedly serves many tourists. However, the comparison developments in Celebration are just 5 miles away and likely serve many tourists as well.
Case Study 7: Gainesville, FL

Gainesville is a medium-sized city of just over 100,000 in north central Florida and is consistently ranked by various institutions as one of the best places to live in the country. The high quality of life and presence of a major university—Gainesville is dominated by the University of Florida campus—may explain why Gainesville suffered less than other Florida cities during the recent recession, with unemployment rates below the state and national levels (Figure 61). The city is surrounded by rural areas, but there are a few large-scale planned communities on the far west side, including Tioga and Haile Plantation, home to the two mixed-use retail clusters selected for this study. All retail clusters are located in relatively affluent and educated census tracts, although median household income for census tract in which Tioga Town Center is located is only slightly above the state level (Figure 62). These demographics may be more representative of the tract's rural residents than the Tioga residents, as Tioga marketing materials cite that the development is “surrounded by the area's fastest growing and most affluent portion of the county with 70% of household incomes exceeding $50,000” (Tioga Town Center).

Figure 60. Location of Gainesville Retail Clusters

Google Earth
Figure 61. Gainesville Unemployment

<table>
<thead>
<tr>
<th>Year</th>
<th>Gainesville</th>
<th>Florida</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2.7%</td>
<td>3.3%</td>
<td>4.6%</td>
</tr>
<tr>
<td>2007</td>
<td>3.0%</td>
<td>4.0%</td>
<td>4.6%</td>
</tr>
<tr>
<td>2008</td>
<td>4.3%</td>
<td>6.2%</td>
<td>5.8%</td>
</tr>
<tr>
<td>2009</td>
<td>7.2%</td>
<td>10.2%</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Bureau of Labor Statistics

Figure 62. Demographics of Retail Cluster Census Tracts, Gainesville

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tioga Town Center (MU)</td>
<td>Newberry</td>
<td>4,439</td>
<td>6,452</td>
<td>$48,274</td>
<td>$51,669</td>
<td>37.8%</td>
<td>37.4%</td>
</tr>
<tr>
<td>Haile Village Center (MU)</td>
<td>Gainesville</td>
<td>6,927</td>
<td>5,729</td>
<td>$67,759</td>
<td>$71,396</td>
<td>71.7%</td>
<td>71.9%</td>
</tr>
<tr>
<td>Thornebrook Village (SU)</td>
<td>Gainesville</td>
<td>5,829</td>
<td>6,261</td>
<td>$53,045</td>
<td>$55,505</td>
<td>62.1%</td>
<td>62.3%</td>
</tr>
<tr>
<td>Millhopper Shopping Center (SU)</td>
<td>Gainesville</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2000 U.S. Census, Geolytics

Figure 63. Selected Retail Clusters, Gainesville

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Type of Cluster</th>
<th>Max # of RFS Businesses ('06-10)</th>
<th>Year of Development or Last Renovation</th>
<th>Anchor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tioga Town Center</td>
<td>Mixed use</td>
<td>9</td>
<td>2003*</td>
<td>n/a**</td>
</tr>
<tr>
<td>Haile Village Center</td>
<td>Mixed use</td>
<td>12</td>
<td>1990s*</td>
<td>n/a**</td>
</tr>
<tr>
<td>Thornebrook Village</td>
<td>Single use</td>
<td>29</td>
<td>1983</td>
<td>n/a**</td>
</tr>
<tr>
<td>Millhopper Shopping Center</td>
<td>Single use</td>
<td>11</td>
<td>n/a</td>
<td>Fresh Market</td>
</tr>
</tbody>
</table>

*Year construction began
**No clear anchor

IV. CASE STUDIES
Tioga Town Center (Mixed Use)

Tioga Town Center is the retail center of the Town of Tioga, an award-winning traditional neighborhood development located five miles west of Gainesville, near Interstate 75. Tioga is a 284-acre community built near the site of an abandoned settlement of the same name. The town’s planning adheres to many smart growth principles, including preserved open space, pedestrian-friendly streetscapes, and mixed land uses and was used as a smart growth case study in EPA’s 2011 study on the Market Acceptance of Smart Growth. Tioga is designed around a pedestrian park that runs along the Tioga Creek and forms a spine for the development and allows residents easy access to nature. Also, like many traditional neighborhood developments, Tioga’s architecture and urban design draw from a historical context. Architecture offers “old Southern charm” and the design is based on pre-WWII building patterns.

Construction on the 573-unit residential component of Tioga began in 1997. Single-family homes dominate although rental apartments are located in the town center area. Construction of Tioga Town Center began in 2003. In reference to the town center, marketing materials state that the commercial area “creates a sense of place at the center of suburban life where visitors can leave behind the frenzy of traffic and congestion and enjoy daily activities in a relaxed neighborhood setting” (Tioga Town Center). The buildings in the commercial area are oriented around a town square, are two to three stories, and have a mix of retail, Class A office space, and rental apartments. The Town Center website describes the retail as a “mix of dining, gourmet and fresh food grocers, specialty stores, and personal services” (Tioga Town Center). Also within the town center is a preschool, fitness center, and town hall, which is used for community events. The development has mostly local establishments, although there is a TCBY and Starbucks, and no clear anchor.

www.tiogatowncenter.com

IV. CASE STUDIES
Haile Village Center (Mixed Use)

Haile Village Center is located in the Haile Plantation planned community, a 1,700-acre development four miles west of Gainesville. Initially planned in the 1970s, the development has been under construction since the early 1990s. The two primary objectives of the traditionally designed community were “to provide a complete community where people can work, shop, attend school, and enjoy outdoor recreation and leisure time activities within walking distance or a short drive from their homes, and to develop a high-quality man-made environment while preserving, maintaining, and enhancing the natural beauty of the land” (CNU Florida). Haile Plantation was used as an example of a smart growth development in EPA's 2011 report on the market acceptance of smart growth in the residential sector.

Haile Plantation has approximately 2,700 residences in the form of single-family homes, townhomes, apartments, and condominiums. At the center of Haile Plantation, within a five-minute walk of all the residences, is the 50-acre mixed-use urban center, Haile Village Center. The area has over 30 businesses, many with residential units above, including restaurants, shops, and professional services. Although there is no traditional retail anchor in the development, at the heart of the village center is the town meeting hall and a village green. The village center's brightly colored buildings, sidewalk cafes, landscaping, and public spaces contribute to its vibrant pedestrian realm and strong sense of place.
Thornebrook Village (Single Use)

Thornebrook Village is a shopping center in western Gainesville, built in 1983. It was chosen as a comparison with Tioga Town Center and Haile Village Center because, like the mixed-use clusters in Gainesville, it features almost exclusively local stores and has no clear retail anchor. However, Thornebrook does have more RFS businesses than both the mixed-use clusters and several unique features. Thornebrook is located adjacent to the Millhopper Shopping Center (another single-use cluster selected for comparison) along a major road and near, but not connected to, residential neighborhoods.

Although Thornebrook Village is exclusively a commercial development, limited to retail, dining, and service businesses, it is not a traditional strip shopping center for two main reasons. First, the shopping center is described as a “retail condominium” complex, with business owners initially owning their own building rather than renting (Thornebrook Village). The development’s website notes that this was intended to add a feeling of permanence to the development. Also unique is Thornebrook’s concept of “shopping in the park” with the development “built along the lines of a tropical resort, with open-air covered breezeways connecting individual buildings amid lush areas of grass, flowers, and shrubbery, around a central plaza” that creates a “relaxing and congenial environment, far different from the average shopping center” (Thornebrook Village). Although the development is well landscaped and pedestrian-oriented, the architecture is monotonous.

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IV. CASE STUDIES

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17 It should be noted that this ownership structure makes the development an imperfect comparison with the other retail clusters that are owned and managed by a single entity. A single owner can exercise control over the selection of tenants, leading to the optimal tenant mix.
**Millhopper Shopping Center (Single Use)**

Millhopper Shopping Center is a commercial strip shopping center located at the intersection of two major thoroughfares in western Gainesville. The development is across from another, smaller strip mall and adjacent to Thornebrook Village. Millhopper has a mix of local establishments and national chains, and, unlike the other Gainesville clusters which lack a clear anchor, Millhopper is anchored by the upscale supermarket, Fresh Market. The center adheres to a standard strip mall design of a multitenant linear building with parking in front. A couple of freestanding stores abut the road.

*Figure 70. Millhopper Shopping Center Retail Cluster*

*Figure 71. Image of Millhopper Shopping Center*
V. Results

The following chapter presents the results of the analyses described in Chapter III. After a recap of the expected findings, the results are first presented by case study location. For each case study, the mixed-use and single-use retail clusters are compared in terms of changes in their number of retail and food service (RFS) businesses over the analysis period (2006-2010) and during strong and weak economies (2006-2008 and 2008-2010, respectively). Next, overall trends in the performance of the clusters are presented, broken down by the regional impact of the recession, mix of uses, and degree of placemaking. Chapter VI synthesizes and discusses these results in relation to the hypotheses laid out in Chapter I.

When reviewing these results it is important to note the data limitations discussed previously. In addition, it is critical to recognize that these analyses only capture trends in the number of non-automotive retail and food service businesses in a retail cluster. Because all of the selected retail clusters are also home to other tenants, such as service establishments, a decline in the RFS businesses in a cluster may not mean that the cluster overall is suffering, as the lost retail or food service businesses could have been replaced by service businesses. Also, for three of the mixed-use developments, Station Landing, Baldwin Park, and Tioga Town Center, the results at the beginning of the analysis period are likely significantly impacted by lease-up periods, as these developments were completed close to 2006.

Expected Findings

Nationwide, the 2007-2009 economic recession had severe impacts on many geographic regions and sectors of the economy, leading to higher unemployment, constrained credit availability, and an extraordinary rate of residential foreclosures. These factors combined with a general uneasiness about the future led to increased consumer saving rates, decreased consumer spending, and decreased business investment. With this reduced spending, many businesses were forced to close. It follows that this analysis should show a general pattern of retail clusters having the highest number of RFS establishments in 2006 and the lowest numbers in 2009 and 2010 during the worst of the recession. If the hypotheses outlined in Chapter I hold true, one would expect this pattern to be most obvious in single-use clusters and less pronounced or non-existent in the mixed-use clusters.

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18 Because the recession officially began in December 2007 and the 2008 data is from January 2008, 2008 does not capture the recession impact. Also, although according to the official U.S. definition, the recession ended in mid-2009, the 2010 data in this analysis continue to reflect recession level spending and investment. This is not unusual, given that local areas often exhibit different business cycle timing and severity than the nation as a whole.
Results by Case Study Location

Case Study 1: Boston, MA Northern Suburbs

Recession Impact: LOW
Cluster with Best Retail Performance During Recession: MIXED USE

Both retail clusters gained RFS businesses from 2006 to 2010, with peak numbers in 2009, during the height of the recession. The retail clusters also both gained RFS businesses during the economic boom period of 2006-2008. From 2008 through 2010, the number of RFS businesses in Twin City Plaza remained relatively flat, with a slight decline, while Station Landing continued to gain RFS businesses. Station Landing’s performance is skewed, however, by its initial lease-up period, which was underway at the beginning of this analysis.

Figure 72. Summary of Retail Cluster Performance, Boston Northern Suburbs

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of Stores</td>
<td># of Stores</td>
<td>% Change from '06</td>
<td># of Stores</td>
</tr>
<tr>
<td>Station Landing</td>
<td>0</td>
<td>3</td>
<td>n/a</td>
<td>12</td>
</tr>
<tr>
<td>(MU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin City (SU)</td>
<td>11</td>
<td>15</td>
<td>36.4%</td>
<td>16</td>
</tr>
</tbody>
</table>

Strong Economy ↑ Weak Economy ↑

Figure 73. Total RFS Businesses: 2006-2010, Boston Northern Suburbs
V. RESULTS
Case Study 2: Boston, MA South Shore and Cape Cod

Recession Impact: LOW
Cluster with Best Retail Performance During Recession: SINGLE USE

All of the retail clusters in the second Boston case study, located in the South Shore suburbs and Cape Cod, had the highest number of RFS stores in 2008 or 2009. Over the 2006-2010 observation period, only one retail cluster, the mixed-use Mashpee Commons, lost RFS businesses. Derby Street Shoppes, a single-use lifestyle center, had the biggest gain, 45.2%, in RFS businesses between 2006 and 2010, while the Cape Cod Mall had a small gain of 2.5%. During a strong economy (2006-2008), all clusters gained RFS businesses, but during the downturn (2008-2010), only Derby Street Shoppes gained RFS businesses. Although all retail clusters had some intervals of decline, Mashpee Commons had the most significant period of decline, losing 22.9% of its RFS businesses from 2008 to 2009. The comparatively strong performance of Derby Street Shoppes could be due to the fact that it is located in a more suburban area, likely to be more stable than a location such as Cape Cod that serves the more transient tourist population. During the recession, it seems likely that areas that depend on tourism might suffer more than areas not reliant on tourism spending.

Figure 77. Summary of Retail Cluster Performance, Boston South Shore and Cape Cod

<table>
<thead>
<tr>
<th>Cluster</th>
<th>2006</th>
<th>2008</th>
<th>% Change from '06</th>
<th>2009</th>
<th>% Change from '08</th>
<th>2010</th>
<th>% Change from '06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mashpee Commons (MU)</td>
<td>46</td>
<td>48</td>
<td>4.3%</td>
<td>37</td>
<td>-22.9%</td>
<td>41</td>
<td>10.8%</td>
</tr>
<tr>
<td>Cape Cod Mall (SU)</td>
<td>80</td>
<td>86</td>
<td>7.5%</td>
<td>86</td>
<td>0.0%</td>
<td>82</td>
<td>-4.7%</td>
</tr>
<tr>
<td>Derby Street Shoppes (SU)</td>
<td>42</td>
<td>59</td>
<td>-40.5%</td>
<td>62</td>
<td>5.1%</td>
<td>61</td>
<td>-1.6%</td>
</tr>
</tbody>
</table>

Strong Economy \[\uparrow\] Weak Economy \[\uparrow\]

Figure 78. Total RFS Businesses: 2006-2010, Boston South Shore and Cape Cod
Figure 79. Interval Change in RFS Businesses, Boston South Shore and Cape Cod

Figure 80. Percent Change in RFS Businesses from 2006, Boston South Shore and Cape Cod

Figure 81. Percent Change in RFS Businesses from 2008, Boston South Shore and Cape Cod

V. RESULTS
Case Study 3: Chapel Hill, NC
Recession Impact: LOW
Cluster with Best Retail Performance During Recession: SINGLE USE

All the Chapel Hill retail clusters gained RFS businesses from 2006 to 2010, with the largest increase, 62.5%, in the mixed-use cluster of Southern Village. This pattern of the mixed-use clusters outperforming the single-use cluster holds during the strong economy (2006-2008), but is reversed during the weak economy. From 2008-2010 both mixed-use clusters lost RFS businesses while the number of RFS businesses in the single-use cluster remained flat. All retail clusters had some interval in which their number of RFS businesses declined, however. In addition, Meadowmont was the only retail cluster in all the case study locations to experience two consecutive years of losing RFS businesses.

Figure 82. Summary of Retail Cluster Performance, Chapel Hill

<table>
<thead>
<tr>
<th></th>
<th># of Stores</th>
<th># of Stores</th>
<th>% Change from '06</th>
<th># of Stores</th>
<th>% Change from '08</th>
<th># of Stores</th>
<th>% Change from '09</th>
<th>% Change from '06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Village (MU)</td>
<td>8</td>
<td>15</td>
<td>87.5%</td>
<td>15</td>
<td>0.0%</td>
<td>13</td>
<td>-13.3%</td>
<td>62.5%</td>
</tr>
<tr>
<td>Meadowmont (MU)</td>
<td>16</td>
<td>21</td>
<td>31.3%</td>
<td>20</td>
<td>-4.8%</td>
<td>17</td>
<td>-15.0%</td>
<td>-19.0%</td>
</tr>
<tr>
<td>Glen-Lennox/ Glenwood Square (SU)</td>
<td>8</td>
<td>8</td>
<td>0.0%</td>
<td>9</td>
<td>12.5%</td>
<td>8</td>
<td>-11.1%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Figure 83. Total RFS Businesses: 2006-2010, Chapel Hill
Figure 84. Interval Change in RFS Businesses, Chapel Hill

Figure 85. Percent Change in RFS Businesses from 2006, Chapel Hill

Figure 86. Percent Change in RFS Businesses from 2008, Chapel Hill

V. RESULTS
Case Study 4: Charlotte, NC Suburbs
Recession Impact: HIGH
Cluster with Best Retail Performance During Recession: SINGLE USE

Only one retail cluster in the Charlotte suburbs case study, the mixed-use Birkdale Village, lost RFS businesses over the analysis period. The two single-use clusters in the case study gained RFS businesses. During the economic growth period, however, Birkdale Village had the highest percent change in RFS businesses, though this change was minimal, 1.9%, or one business. The single-use Northcross Shopping Center lost 17.9% of its RFS businesses during this time. The opposite pattern occurs during the economic downturn, when Northcross had the highest percent change in RFS businesses (34.8%) and Birkdale Village had the lowest (-7.4%). The single-use Arboretum maintained a relatively constant number of RFS businesses, although it did experience an interval of decline, losing 6.7% of its RFS businesses from 2009 to 2010.

Figure 87. Summary of Retail Cluster Performance, Charlotte Suburbs

<table>
<thead>
<tr>
<th>Cluster</th>
<th>2006 # of Stores</th>
<th>2008 # of Stores</th>
<th>% Change from '06</th>
<th>2009 # of Stores</th>
<th>% Change from '08</th>
<th>2010 % Change from '09</th>
<th>% Change from '08</th>
<th>% Change from '06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birkdale Village</td>
<td>53</td>
<td>54</td>
<td>1.9%</td>
<td>47</td>
<td>-13.0%</td>
<td>50</td>
<td>6.4%</td>
<td>-7.4%</td>
</tr>
<tr>
<td>Northcross (SU)</td>
<td>28</td>
<td>23</td>
<td>-17.9%</td>
<td>32</td>
<td>39.1%</td>
<td>31</td>
<td>-3.1%</td>
<td>34.8%</td>
</tr>
<tr>
<td>Arboretum (SU)</td>
<td>69</td>
<td>70</td>
<td>1.4%</td>
<td>75</td>
<td>7.1%</td>
<td>70</td>
<td>-6.7%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Figure 88. Total RFS Businesses: 2006-2010, Charlotte Suburbs
V. RESULTS
Case Study 5: Orlando, FL Northern Suburbs
Recession Impact: HIGH
Cluster with Best Retail Performance During Recession: MIXED USE

While both retail clusters in the Orlando Northern Suburbs case study lost RFS businesses during the economic downturn, both gained RFS businesses over the entire analysis period. Overall and during both the strong and weak economic periods, the mixed-use Baldwin Park out-performed the single-use Winter Park Village. Baldwin Park's strong performance is likely attributable to lease-up activities at the beginning of the analysis period. Baldwin Park did experience a decline in RFS businesses, losing 10%, from 2009 to 2010.

Figure 92. Summary of Retail Cluster Performance, Orlando Northern Suburbs

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baldwin Park (MU)</td>
<td>11</td>
<td>29</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>Winter Park Village (SU)</td>
<td>29</td>
<td>37</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td># of Stores</td>
<td>% Change from '06</td>
<td>% Change from '08</td>
<td>% Change from '09</td>
<td>% Change from '08</td>
</tr>
<tr>
<td>163.2%</td>
<td>3.4%</td>
<td>-10.0%</td>
<td>-6.9%</td>
<td>145.5%</td>
</tr>
<tr>
<td>27.6%</td>
<td>-8.1%</td>
<td>0.0%</td>
<td>-8.1%</td>
<td>17.2%</td>
</tr>
</tbody>
</table>

Strong Economy ↓ Weak Economy ↑

Figure 93 Total RFS Businesses: 2006-2010, Orlando Northern Suburbs
V. RESULTS
In the Orlando southern suburbs, two out of three retail clusters gained RFS businesses from 2006-2010. Only the single-use shopping center Water Tower Shoppes lost RFS businesses (16.7%) over this time. Water Tower Shoppes was also the only cluster with a peak number of RFS businesses during 2006, prior to the recession; the other retail clusters had peak RFS businesses in 2009 and 2010. The largest increase over 2006 to 2010 was in Celebration, the mixed-use cluster, whose RFS businesses grew over 73% during this time, with the majority of this growth, 57.9%, occurring during the strong economy between 2006 and 2008. The single-use clusters experienced no change in RFS businesses from 2006 to 2008. While Celebration also gained RFS businesses during the recession period, 2008 to 2010, the Crossroads at Lake Buena Vista cluster had a higher percentage change in RFS businesses over this period, 29.2%. Only the Water Tower Shoppes lost RFS businesses during the recession period. Of the three retail clusters, only the Crossroads at Lake Buena Vista experienced no period of negative change in its number of RFS businesses.

**Figure 97. Summary of Retail Cluster Performance, Orlando Southern Suburbs**

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2008</th>
<th>Change from '06</th>
<th>2009</th>
<th>Change from '08</th>
<th>2010</th>
<th>Change from '09</th>
<th>Change from '08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebration (MU)</td>
<td>19</td>
<td>30</td>
<td>57.9%</td>
<td>35</td>
<td>16.7%</td>
<td>33</td>
<td>-5.7%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Water Tower Shoppes (SU)</td>
<td>12</td>
<td>12</td>
<td>0.0%</td>
<td>9</td>
<td>-25.0%</td>
<td>10</td>
<td>11.1%</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista (SU)</td>
<td>24</td>
<td>24</td>
<td>0.0%</td>
<td>28</td>
<td>16.7%</td>
<td>31</td>
<td>10.7%</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

**Figure 98. Total RFS Businesses: 2006-2010, Orlando Southern Suburbs**
Figure 99. Interval Change in RFS Businesses, Orlando Southern Suburbs

<table>
<thead>
<tr>
<th>Location</th>
<th>'06-'08</th>
<th>'08-'09</th>
<th>'09-'10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossroads at LBV (SU)</td>
<td>0.0%</td>
<td>16.7%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Water Tower Shoppes (SU)</td>
<td>-25.0%</td>
<td>0.0%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Celebration (MU)</td>
<td>-5.7%</td>
<td>16.7%</td>
<td>57.9%</td>
</tr>
</tbody>
</table>

Figure 100. Percent Change in RFS Businesses from 2006, Orlando Southern Suburbs

Figure 101. Percent Change in RFS Businesses from 2008, Orlando Southern Suburbs

V. RESULTS
Case Study 7: Gainesville, FL  
Recession Impact: LOW  
Cluster with Best Retail Performance During Recession: SINGLE USE

All of the retail clusters in Gainesville gained RFS businesses between 2006 and 2010. The mixed-use cluster, Haile Village, gained the highest percentage of RFS businesses, 33.3%. The single-use Thornebrook Village gained 23.8% RFS businesses, while the number of RFS businesses in the Millhopper Shopping Center was relatively constant from 2006 to 2010. During the strong economic climate, all the clusters gained RFS businesses, although Thornebrook gained the smallest percentage (4.8%). During the weak economy, however, Thornebrook had the largest percentage gain in RFS businesses (18.2%). Mixed-use Tioga Town Center had the weakest performance during the recession, losing 11.1% of RFS businesses. It is worth noting that because Tioga Town Center is a small development this is only equal to a decrease of one RFS business. All retail clusters had some interval in which the number of RFS businesses declined.

Figure 102. Summary of Retail Cluster Performance, Gainesville

<table>
<thead>
<tr>
<th>Cluster</th>
<th>2006</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tioga Town Center</td>
<td>0</td>
<td>9</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Haile Village</td>
<td>9</td>
<td>12</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Thornebrook Village</td>
<td>21</td>
<td>22</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Millhopper</td>
<td>10</td>
<td>11</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Strong Economy  
Weak Economy

Figure 103. Total RFS Businesses: 2006-2010, Gainesville

V. RESULTS
V. RESULTS
Overall Trends

To help elucidate overall trends across all mixed-use and single-use clusters in all case studies, average changes in RFS businesses were determined based on different variables. While these analyses are useful to show broad trends, the data presented in this section should be reviewed with the understanding that considerable differences exist among the mixed-use and single-use retail clusters from different case studies. Unlike the case study level analysis, where variables were controlled to ensure that comparison developments were similar in many respects, the same level of control was not undertaken to ensure that all retail clusters across cases studies were similar (e.g., while retail clusters within a case study are of a similar size, size was not kept constant across all case studies).

Although several variables were analyzed, the most interesting results come when the average change in the number of RFS businesses over the whole analysis period (2006-2010), the economic boom period (2006-2008), and the period of economic downturn (2008-2010) are analyzed based on the recession impact, mix of land uses, and degree of placemaking. As mentioned earlier, several of the retail clusters analyzed (Station Landing, Baldwin Park, and Tioga Town Center) were undergoing their initial lease-up at the beginning of the analysis period. To avoid skewing the results, these developments were excluded from the following analyses.

Recession Impact

The first analysis looks at the impact of the recession, comparing the average change in number of RFS businesses in retail clusters located in areas with a low recession impact (areas with an unemployment rate below the state and national rate) to clusters located in areas with a high recession impact (areas with unemployment rate above the state and national rate). Over the whole analysis period, retail clusters in low recession impact areas gained more RFS businesses, 19.0% on average, than retail clusters located in areas a high recession impact, 15.7% on average. The results are similar during the good economy. Inexplicably, during the period of economic downturn, the retail clusters in the high recession impact areas gained 6.0% RFS businesses on average, while the clusters in low recession impact areas lost 4.6% of their RFS businesses, on average. This finding could be attributed to the fact that the retail clusters in regions severely impacted by the recession were located in affluent communities, which may have insulated these clusters from the recession.

Other analyses conducted with no notable findings included the composition of the retail clusters (percent of retail businesses compared to food service businesses) and the median household income of the cluster's census tract relative to the state level.

The Water Tower Shoppes was also likely in the middle of a lease-up period, as the development was completed in 2005. However, the Water Tower Shoppes was not excluded because, unlike the other new developments, it did not experience any period of dramatic increase. Rather, the number of RFS businesses at the Water Tower Shoppes remained relatively constant from 2006-2010.
Figure 107. Recession Impact Characterization

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Mixed Use/Single Use</th>
<th>Case Study</th>
<th>% Change in RFS Businesses</th>
<th>Overall ('06-'10)</th>
<th>Strong Economy ('06-'08)</th>
<th>Weak Economy ('08-'10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Recession Impact</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Station Landing</td>
<td>MU</td>
<td>Boston-North</td>
<td>n/a</td>
<td>27.3%</td>
<td>36.4%</td>
<td>-6.7%</td>
</tr>
<tr>
<td>Twin City</td>
<td>SU</td>
<td>Boston North</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mashpee Commons</td>
<td>MU</td>
<td>Boston South</td>
<td>-10.8%</td>
<td>4.3%</td>
<td>-14.6%</td>
<td></td>
</tr>
<tr>
<td>Cape Cod Mall</td>
<td>SU</td>
<td>Boston South</td>
<td>2.5%</td>
<td>7.5%</td>
<td>-4.7%</td>
<td></td>
</tr>
<tr>
<td>Derby Street Shoppes</td>
<td>SU</td>
<td>Boston South</td>
<td>45.2%</td>
<td>40.5%</td>
<td>3.4%</td>
<td></td>
</tr>
<tr>
<td>Southern Village</td>
<td>MU</td>
<td>Chapel Hill</td>
<td>62.5%</td>
<td>87.5%</td>
<td>-13.3%</td>
<td></td>
</tr>
<tr>
<td>Meadowmont</td>
<td>MU</td>
<td>Chapel Hill</td>
<td>6.3%</td>
<td>31.3%</td>
<td>-19.0%</td>
<td></td>
</tr>
<tr>
<td>Glen-Lennox/Glenwood Square</td>
<td>SU</td>
<td>Chapel Hill</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Tioga-Town-Center</td>
<td>MU</td>
<td>Gainesville</td>
<td>n/a</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haile Village Center</td>
<td>MU</td>
<td>Gainesville</td>
<td>33.3%</td>
<td>33.3%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Thornebrook Village</td>
<td>SU</td>
<td>Gainesville</td>
<td>23.8%</td>
<td>4.8%</td>
<td>18.2%</td>
<td></td>
</tr>
<tr>
<td>Millhopper</td>
<td>SU</td>
<td>Gainesville</td>
<td>0.0%</td>
<td>7.5%</td>
<td>-9.1%</td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td></td>
<td>19.0%</td>
<td>25.6%</td>
<td>-4.6%</td>
</tr>
<tr>
<td><strong>High Recession Impact</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Baldwin Park</td>
<td>MU</td>
<td>Orlando-North</td>
<td>+45.5%</td>
<td>163.6%</td>
<td>-6.9%</td>
<td></td>
</tr>
<tr>
<td>Winter Park Village</td>
<td>SU</td>
<td>Orlando North</td>
<td>17.2%</td>
<td>27.6%</td>
<td>-8.1%</td>
<td></td>
</tr>
<tr>
<td>Celebration</td>
<td>MU</td>
<td>Orlando South</td>
<td>73.7%</td>
<td>1.9%</td>
<td>-7.4%</td>
<td></td>
</tr>
<tr>
<td>Water Tower Shoppes</td>
<td>SU</td>
<td>Orlando South</td>
<td>-16.7%</td>
<td>-17.9%</td>
<td>34.8%</td>
<td></td>
</tr>
<tr>
<td>Crossroads at Lake</td>
<td>SU</td>
<td>Orlando South</td>
<td>29.2%</td>
<td>1.4%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Buena Vista</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Birkdale Village</td>
<td>MU</td>
<td>Charlotte</td>
<td>-5.7%</td>
<td>57.9%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Northcross</td>
<td>SU</td>
<td>Charlotte</td>
<td>10.7%</td>
<td>0.0%</td>
<td>-16.7%</td>
<td></td>
</tr>
<tr>
<td>Arboretum</td>
<td>SU</td>
<td>Charlotte</td>
<td>1.4%</td>
<td>0.0%</td>
<td>29.2%</td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td></td>
<td>15.7%</td>
<td>10.1%</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

Note: Retail clusters undergoing substantial lease-up activities were not included in averages and are crossed out in table.

Figure 108. Average Retail Cluster Change in RFS Businesses by Recession Impact

V. RESULTS
Mix of Land Uses

Next, the average change in RFS businesses in single-use and mixed-use retail clusters was compared. Between 2006 and 2010 the mixed-use retail clusters gained 26.5% RFS businesses, on average, while the single-use retail clusters only gained 12.8% RFS businesses, on average. While the same pattern holds for the strong economy of 2006-2008, it is reversed during the weak economy of 2008-2010. During this time period, the mixed-use retail clusters lost 7.4% of their RFS businesses on average, while the single-use clusters gained 3.7% on average.

Figure 109. Use Characterization

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Case Study</th>
<th>Overall ('06-'10)</th>
<th>Strong Economy ('06-'08)</th>
<th>Weak Economy ('08-'10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mixed Use</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Station-Landing</td>
<td>Boston North</td>
<td>n/a</td>
<td>n/a</td>
<td>266.7%</td>
</tr>
<tr>
<td>Mashpee Commons</td>
<td>Boston South</td>
<td>-10.8%</td>
<td>4.3%</td>
<td>-14.6%</td>
</tr>
<tr>
<td>Southern Village</td>
<td>Chapel Hill</td>
<td>62.5%</td>
<td>87.5%</td>
<td>-13.3%</td>
</tr>
<tr>
<td>Meadowmont</td>
<td>Chapel Hill</td>
<td>6.3%</td>
<td>31.3%</td>
<td>-19.0%</td>
</tr>
<tr>
<td>Birkdale Village</td>
<td>Charlotte</td>
<td>-5.7%</td>
<td>1.9%</td>
<td>-7.4%</td>
</tr>
<tr>
<td>Baldwin Park</td>
<td>Orlando North</td>
<td>145.5%</td>
<td>163.6%</td>
<td>-6.9%</td>
</tr>
<tr>
<td>Celebration</td>
<td>Orlando South</td>
<td>73.7%</td>
<td>57.9%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Tioga Town Center</td>
<td>Gainesville</td>
<td>n/a</td>
<td>n/a</td>
<td>-14.1%</td>
</tr>
<tr>
<td>Haile Village Center</td>
<td>Gainesville</td>
<td>33.3%</td>
<td>33.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td><strong>26.5%</strong></td>
<td><strong>36.0%</strong></td>
<td><strong>-7.4%</strong></td>
</tr>
<tr>
<td><strong>Single Use</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin City</td>
<td>Boston North</td>
<td>27.3%</td>
<td>36.4%</td>
<td>-6.7%</td>
</tr>
<tr>
<td>Cape Cod Mall</td>
<td>Boston South</td>
<td>2.5%</td>
<td>7.5%</td>
<td>-4.7%</td>
</tr>
<tr>
<td>Derby Street Shoppes</td>
<td>Boston South</td>
<td>45.2%</td>
<td>40.5%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Glen-Lennox/Glenwood Square</td>
<td>Chapel Hill</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Northcross</td>
<td>Charlotte</td>
<td>10.7%</td>
<td>-17.9%</td>
<td>34.8%</td>
</tr>
<tr>
<td>Arboretum</td>
<td>Charlotte</td>
<td>1.4%</td>
<td>1.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Winter Park Village</td>
<td>Orlando North</td>
<td>17.2%</td>
<td>27.6%</td>
<td>-8.1%</td>
</tr>
<tr>
<td>Water Tower Shoppes</td>
<td>Orlando South</td>
<td>-16.7%</td>
<td>0.0%</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista</td>
<td>Orlando South</td>
<td>29.2%</td>
<td>0.0%</td>
<td>29.2%</td>
</tr>
<tr>
<td>Thornebrook Village</td>
<td>Gainesville</td>
<td>23.8%</td>
<td>4.8%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Millhopper</td>
<td>Gainesville</td>
<td>0.0%</td>
<td>10.0%</td>
<td>-9.1%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td><strong>15.7%</strong></td>
<td><strong>10.1%</strong></td>
<td><strong>6.0%</strong></td>
</tr>
</tbody>
</table>

Note: Retail clusters undergoing substantial lease-up activities were not included in averages and are crossed out in table.
Placemaking

One hypothesis laid out in Chapter I for why retail would perform better in mixed-use locations during an economic downturn was that mixed-use developments are more likely to have a strong sense of place, which would draw consumers to them, regardless of the economic climate. As described in Chapter III, the level of placemaking present in each retail cluster was evaluated based on the presences of six key attributes of a strong sense of place: unique elements, landscaping, events, pedestrian-oriented design, unique and varied architecture, and an activated street. The categorizations are presented in the matrix in Figure 111, while Figure 112 shows images of retail clusters with different degrees of placemaking.

When retail cluster performance is compared by degree of placemaking, the results for the whole analysis period and the economic boom are in line with the theory that developments with placemaking aspects are better locations for RFS establishments. During these periods, retail clusters characterized as having a “weak” sense of place had the smallest average percent change in RFS businesses and clusters with a strong sense of place had the largest average percent change. However, during the period of economic downturn, the opposite occurs. Clusters with a weak sense of place perform best, gaining RFS businesses on average, while the clusters with a moderate or strong sense of place lost RFS businesses on average.

V. RESULTS
Figure 111. Placemaking Characterization Matrix

<table>
<thead>
<tr>
<th>Location</th>
<th>Unique Elements</th>
<th>Landscaping</th>
<th>Events</th>
<th>Pedestrian-oriented</th>
<th>Unique &amp; Varied Architecture</th>
<th>Activated Street</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station Landing (MU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MODERATE</td>
</tr>
<tr>
<td>Twin City Plaza (SU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WEAK</td>
</tr>
<tr>
<td>Mashpee Commons (MU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STRONG</td>
</tr>
<tr>
<td>Cape Cod Mall (SU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WEAK</td>
</tr>
<tr>
<td>Derby Street Shoppes (SU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MODERATE</td>
</tr>
<tr>
<td>Southern Village (MU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STRONG</td>
</tr>
<tr>
<td>Meadowmont (MU)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>STRONG</td>
</tr>
<tr>
<td>Glen-Lennox/ Glenwood Square (SU)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>WEAK</td>
</tr>
<tr>
<td>Birkdale Village (MU)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>STRONG</td>
</tr>
<tr>
<td>Northcross Shopping Center (SU)</td>
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<td></td>
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<tr>
<td>Arboretum (SU)</td>
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<td>WEAK</td>
</tr>
<tr>
<td>Baldwin Park (MU)</td>
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<td></td>
<td>STRONG</td>
</tr>
<tr>
<td>Winter Park Village (SU)</td>
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<td></td>
<td>MODERATE</td>
</tr>
<tr>
<td>Celebration (MU)</td>
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<td>STRONG</td>
</tr>
<tr>
<td>Water Tower Shoppes (SU)</td>
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<td>MODERATE</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista (SU)</td>
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<td>WEAK</td>
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<tr>
<td>Tioga Town Center (MU)</td>
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<tr>
<td>Thornebrook Village (SU)</td>
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<td></td>
<td></td>
<td></td>
<td>MODERATE</td>
</tr>
<tr>
<td>Millhopper (SU)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>WEAK</td>
</tr>
</tbody>
</table>

0 - 2 ● = WEAK Sense of Place

> 2 - 5 ● = MODERATE Sense of Place

> 5 - 6 ● = STRONG Sense of Place

V. RESULTS
Figure 112. Placemaking Characterization Images

**Strong Sense of Place**
*Mashpee Commons, Birkdale Village, Celebration, Tiega Town Center, Haile Village Center*

**Moderate Sense of Place**
*Station Landing, Derby Street Shoppes, Winter Park Village, Water Tower Shoppes, Thornebrook Village*

**Weak Sense of Place**
*Twin City Plaza, Cape Cod Mall, Glen-Lennoc, Glenwood Square, Northcross Shopping Center, Arboretum, Crossroads at Lake Buena Vista, Millhopper Shopping Center*

V. RESULTS
### Figure 113. Placemaking Characterization

<table>
<thead>
<tr>
<th>Retail Cluster</th>
<th>Mixed Use/Single Use</th>
<th>Case Study</th>
<th>% Change in RFS Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Overall ('06-'10)</td>
<td>Strong Economy ('06-'08)</td>
</tr>
<tr>
<td><strong>Strong Sense of Place</strong></td>
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<td></td>
</tr>
<tr>
<td>Mashpee-Commons</td>
<td>MU</td>
<td>Boston-South</td>
<td>-10.8%</td>
</tr>
<tr>
<td>Beidwin Park</td>
<td>MU</td>
<td>Orlando-North</td>
<td>145.5%</td>
</tr>
<tr>
<td>Birkdale Village</td>
<td>MU</td>
<td>Charlotte</td>
<td>-5.7%</td>
</tr>
<tr>
<td>Southern Village</td>
<td>MU</td>
<td>Chapel Hill</td>
<td>62.5%</td>
</tr>
<tr>
<td>Meadowmont</td>
<td>MU</td>
<td>Chapel Hill</td>
<td>6.3%</td>
</tr>
<tr>
<td>Celebration</td>
<td>MU</td>
<td>Orlando South</td>
<td>73.7%</td>
</tr>
<tr>
<td>Tioga Town Center</td>
<td>MU</td>
<td>Gainesville</td>
<td>-n/a</td>
</tr>
<tr>
<td>Halie Village Center</td>
<td>MU</td>
<td>Gainesville</td>
<td>33.3%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td>26.5%</td>
</tr>
<tr>
<td><strong>Moderate Sense of Place</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Station Landing</td>
<td>MU</td>
<td>Boston North</td>
<td>n/a</td>
</tr>
<tr>
<td>Derby Street Shoppes</td>
<td>SU</td>
<td>Boston South</td>
<td>45.2%</td>
</tr>
<tr>
<td>Winter Park Village</td>
<td>SU</td>
<td>Orlando North</td>
<td>17.2%</td>
</tr>
<tr>
<td>Water Tower Shoppes</td>
<td>SU</td>
<td>Orlando South</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Thornebrook Village</td>
<td>SU</td>
<td>Gainesville</td>
<td>23.8%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td></td>
<td>17.4%</td>
</tr>
<tr>
<td><strong>Weak Sense of Place</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twin City</td>
<td>SU</td>
<td>Boston North</td>
<td>27.3%</td>
</tr>
<tr>
<td>Cape Cod Mall</td>
<td>SU</td>
<td>Boston South</td>
<td>2.5%</td>
</tr>
<tr>
<td>Glen-Lennox/Glenwood Square</td>
<td>SU</td>
<td>Orlando South</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Northcross</td>
<td>SU</td>
<td>Chapel Hill</td>
<td>0.0%</td>
</tr>
<tr>
<td>Arbotetum</td>
<td>SU</td>
<td>Charlotte</td>
<td>10.7%</td>
</tr>
<tr>
<td>Crossroads at Lake Buena Vista</td>
<td>SU</td>
<td>Orlando South</td>
<td>29.2%</td>
</tr>
<tr>
<td>Millhopper</td>
<td>SU</td>
<td>Gainesville</td>
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<tr>
<td><strong>Average</strong></td>
<td></td>
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<td>10.2%</td>
</tr>
</tbody>
</table>

Note: Retail clusters undergoing substantial lease-up activities were not included in averages and are crossed out in table.

### Figure 114. Average Retail Cluster Change in RFS Businesses by Sense of Place

![Bar chart showing the average change in RFS businesses by sense of place](image)

V. RESULTS
As the preceding data show, when retail cluster performance during the economic downturn is compared by recession impact, mix of land uses, and sense of place, the results do not support the initial hypotheses. On average, mixed-use clusters performed worse than single-use clusters during the downturn and clusters with a strong sense of place performed worse than those with a weak sense of place. The next chapter will offer potential explanations for these findings.

Rent Analysis

Although data were not available for all the retail clusters in the analysis, a comparison of the current asking rents for ten retail clusters shows that the mixed-use clusters consistently command a higher rent than the average retail rent for the metropolitan area. One mixed-use cluster, Meadowmont, has an asking rent 78% above the Chapel Hill average. In contrast, the single-use developments typically commanded a lower rent relative to the metropolitan average. Two single-use clusters charged rents below the area's average retail rent. The single-use developments with some placemaking aspects, such as the Water Tower Shoppes and Winter Park Village, have asking rents that are, like the mixed-use clusters, substantially above the area average.

Figure 115. Retail Cluster Rent Compared to Metropolitan Average

The next chapter synthesizes the case study, overall, and rental analysis results presented here. In addition to evaluating and discussing the results relative to the stated hypotheses, the conclusion reflects on ways to improve the resilience of mixed-use clusters and the future research required to build on this study.

V. RESULTS
VI. Conclusion

The data suggest that although mixed-use retail clusters were able to attract and retain more retail and food service businesses than the comparison single-use clusters during a strong economic climate, during the period of economic downturn, the single-use clusters outperformed the mixed-use clusters. This finding disproves the hypotheses that mixed-use clusters would perform better due to their built-in consumer base and urban design attributes. The comparatively poor performance of mixed-use developments during the recession does not imply that these developments should no longer be encouraged. Compact mixed-use developments still have many advantages over single-use developments, including reduced environmental impacts and infrastructure costs, and higher revenues for developers and local governments due to the higher rents they command. Rather, the results suggest that developers and planners need to rethink the design and programming of mixed-use communities to ensure that the residential and retail components are aligned, with a level of residential density that is sufficient to support the scale and type of retail provided.

Discussion of Findings

General Observations
The general trend observed across all case studies was not as expected. It was anticipated that, overall, the retail clusters would have the most RFS establishments in 2006, before the recession began, and the fewest RFS establishments in 2009 and 2010 during the height of the recession. However, 13 out of 20 retail clusters had the highest number of RFS businesses during the peak recession years. It is also surprising that 15 out of 20 retail clusters gained RFS businesses between 2006 and 2010. The data show that clusters in areas severely impacted by the recession gained more RFS businesses on average during the height of the downturn, 2008-2010, than clusters in areas less impacted by the recession (which actually lost RFS businesses on average), another unexpected and inexplicable result. Overall, the mixed-use clusters reviewed seemed to be more volatile than the comparison single-use clusters, with all of the mixed-use clusters having periods of decline in RFS businesses, while two single-use clusters did not have any periods of decline.

Support for Thesis and Hypotheses
The results of this study do not support the thesis that mixed-use environments are more resilient in terms of attracting and retaining retail and food service businesses during periods of economic downturn. While the mixed-use clusters outperformed the single-use clusters overall (in five out of seven cases studies) and during the strong economy (in six out of seven case studies), the single-
use clusters performed best during the height of the recession, gaining a greater percentage of RFS businesses in five out of seven case studies. On average, the single-use clusters gained 3.7% RFS businesses during the recession while the mixed-use clusters lost 7.4%.

Although it is difficult to empirically break out the effect of the built-in customer base in mixed-use developments, which was hypothesized to create a more resilient retail environment by reducing dependence on dedicated shopping trips, the data suggest that the residential component of planned mixed-use developments may be insufficient to support the retail, particularly during an economic downturn. It is worth noting that the importance of the residential component in mixed-use developments was supported anecdotally in a conversation with the General Manager of Birkdale Village, who said the customer base provided by the development’s residences has helped the development weather the worst of the recession (Birkdale Village leasing agent 2011).

The hypothesis that developments that emphasize placemaking would fare better during strong and weak economies was also not supported empirically. Because planned mixed-use communities emphasize placemaking, it was assumed that these efforts would attract more customers and lead to superior retail performance in both strong and weak economies. While retail clusters with a strong sense of place performed best in a good economy, gaining the highest percentage of RFS businesses on average, retail clusters with a weak sense of place performed best during a down economy.

It is important to acknowledge that there are a myriad of other more cluster-specific issues that could have influenced the results. For example, a conversation with a Meadowmont leasing agent revealed that the departure of businesses from 2007 through 2009 was likely more due to management issues with the previous development owner than the recession (Meadowmont leasing agent 2011). Another leasing agent familiar with the Florida retail clusters commented that the timing of when a project is delivered to the market is the primary indicator of the development’s ultimate success (Water Tower Shoppes leasing agent 2011).

**Possible Explanations for Findings**

In addition to various cluster-specific explanations for the comparatively poor performance of mixed-use clusters in this study, the following broader explanations may also have played a role in the results.

**Mixed-Use Clusters Less Established as Retail Centers**

Although single-use shopping malls and retail strips have been a constant in the American suburban landscape for decades, commercial centers in planned mixed-use communities are a relatively new phenomenon. The mixed-use clusters in this study were all built in the 1990s and 2000s, while two of
the single-use clusters were built earlier (but renovated more recently). The reality that planned mixed-use commercial areas are newer and less established suburban retail environments may have hurt their ability to attract and retain both customers and businesses during a weakened economy.

**Higher Rents in Mixed-Use Clusters**

The analysis of current asking rents across retail clusters shows that mixed-use developments charge higher rents than other retail environments. These higher rents are likely required to offset higher construction costs for mixed-use developments as well as the cost of providing and maintaining amenities and other placemaking attributes (e.g., a development with extensive landscaping will require significant maintenance resources). During a difficult economy, businesses may be less willing to pay a premium for these amenities. In addition, businesses that do pay a higher rent likely pass this cost along to customers in the form of higher prices, which could deter customers, particularly during a recession.

**Misalignment of Residential Density and Retail Program**

Theoretically, the built-in customer base in a mixed-use development should help support the retailers. In reality, the density of residential component and the level and composition of retail in planned mixed-use communities may be misaligned. Many of the mixed-use developments studied had large retail programs featuring national chain stores typically found in regional shopping malls. Birkdale Village, for example, has over 60 stores, mostly national brands. Birkdale only has 800 residential units, however, which is insufficient to support the development’s retail component. Mixed-use clusters with a large amount of regional-serving retail, such as Birkdale Village, must compete with other regional shopping destinations. Despite their placemaking attributes, mixed-use clusters are at a disadvantage in this competition because they are typically less accessible to the number of customers required for a successful regional retail environment.

Because planned mixed-use communities with large retail components often lack the residential density to support their retail program, these mixed-use developments still depend on outside patrons making dedicated shopping trips, which are less likely during a recession. Mixed-use communities are at a disadvantage because they are less established as commercial areas and less accessible to external patrons. While many of the planned mixed-use communities have a high degree of internal connectivity, they are isolated from other residential areas nearby, limiting the number of people that can access the retail without making a dedicated shopping trip. The mixed-use clusters are also generally further from (and also thus less visible from) highways than single-use clusters, making them less accessible to the regional populations that are required to support certain retail programs. A recent ULI article corroborates the importance of residential density to successful retail in mixed-use environments. In the article a mixed-
use real estate developer comments that “mixed-use developments built in places without enough housing density have not fared well during the economic downturn” (Nyren 2011).

The level of residential density required is closely tied to the retail program, however. A smaller retail program of local-serving retail can be supported by a smaller residential population. The issue is when the residential density and retail program are misaligned so that the residential component is insufficient to support the retail, as was likely the case in many of the retail clusters in this analysis.

**Importance of Findings**

Although the results of this study do not add another layer to the economic argument in support of smart growth, at least in terms of retail resilience, the study provides valuable information planners and developers can use to improve the retail performance of mixed-use developments in up and down economies. In the article, “Return of the Town Center,” Charles Bohl writes, “The most successful town centers will be those that capture the essence of great urban places while following the practical rules of real estate and retailing” (Bohl 2003). While the mixed-use clusters in this analysis have made admirable attempts at the first part of this statement through design efforts, the comparatively poor retail resilience of the mixed-use clusters suggests that additional attention needs to be given to the second part of this statement.

In recent years both planners and developers have been enamored with mixed use as a community building and sustainable development strategy. The results of this study suggest that simply mixing uses does not create a viable retail environment. Instead, planners and developers need to look more closely at the development program of planned mixed-use communities, ensuring that the residential density is sufficient to support the scale and type of retail. The existing residential density of the planned mixed-use communities in this study may only be sufficient to support local-serving retail such as coffee shops and grocery stores. If regional-serving retail is desired, then the development needs access to a sufficient population to support that retail, either through increased residential density or through improved connectivity to existing residential areas and/or major roads that allow the regional population easy access to the development.21

Just because mixed-use developments were found to be less resilient retail environments does not necessarily imply that these developments are worse investments for towns or developers. The review of current asking rents for the retail clusters shows that, even during a difficult economic climate, mixed-use developments were found to be less resilient retail environments does not necessarily imply that these developments are worse investments for towns or developers. The review of current asking rents for the retail clusters shows that, even during a difficult economic climate, mixed-

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21 Improving accessibility to major roads is less desirable from an environmental standpoint and counter to many smart growth objectives aimed at reducing the environmental impact of the built environment.
use developments command a rental premium, a finding that was affirmed through conversations with real estate professionals. This finding implies that even if a mixed-use development has fewer tenants, it can still be a better investment than a comparable single-use development for both developers and local governments. The developer benefits from increased revenue from the higher rents, while the local government benefits from higher property values and thus higher taxes, which can be especially important during an economic downturn. In a recent article about Mashpee Commons, a planned mixed-use community on Cape Cod, the town manager of Mashpee stated, “[The higher rents charged have] meant increased revenues, which is what we’ve relied on to get through some of the tighter budget times. There’s been economic growth, jobs growth” (Shemkus 2011).

Additional Research Needs

Additional research is required to clarify the relationship between land use mix and retail performance. The following is a partial list of future research endeavors that should be undertaken to build on this study.

- **Longer analysis period.** Due to data constraints, this study captures retail cluster performance over only five years, four of which were during a recession. Subsequent analyses should track retail cluster performance over a longer time frame, capturing performance over at least one and ideally multiple business cycles.
- **Additional measures of retail performance.** Other ways to measure retail performance should be explored. Developments could be compared based on the retail revenue generated or vacancy rates.
- **Tax impacts.** In this study, the local tax revenue from the retail clusters was approximated by an analysis of the retail rents. A more robust analysis should use assessor’s data and/or sales and property tax revenue information to create a more accurate comparison of revenue generated for local governments from different development forms.
- **Qualitative research.** A more qualitative study of retail performance should be conducted. Interviews with developers, real estate agents, customers, business owners, and city planning and economic development officials would help to understand, apart from the data, what factors are influencing business location decisions and retail performance in different forms of development.
- **Multivariate regression.** To help tease out the complicated relationships between retail performance, land use, and the built environment, a more rigorous quantitative analysis of retail cluster performance should be conducted using multivariate regression and a larger sample of developments. A regression analysis would be able to separate out various effects, such as

VI. CONCLUSION
the effects of land use mix and placemaking attributes, on retail performance, addressing a shortcoming of this analysis. A range of both single- and mixed-use developments forms should be analyzed, including older examples of mixed use.

Summary

Demographic trends, changing preferences for urban lifestyles, rising energy costs, and growing environmental concerns should lead to an increased demand for smart growth in the future. As communities respond to these pressures and overall sustainability development objectives, community master plans, design guidelines, and zoning codes should shift away from sprawl development patterns and towards smart growth. Mixing land uses is an essential strategy in any smart growth plan. The results of this study show, however, that mixed land uses alone is not sufficient to create vibrant commercial areas. Instead, planners and developers need to be more thoughtful and critical of the design and programming of mixed-use communities. By paying closer attention to the alignment of retail and residential programs and the degree of external connectivity and accessibility, mixed-use clusters can be designed (or retrofitted) to be not only livable and sustainable from an environmental standpoint, but also sustainable, resilient retail centers.
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