

Mixed-Use, Mixed Impact: **Re-Examining the Relationship between** **Non-Residential Land Uses & Residential** **Property Values**

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Abstract

Recent trends in planning, public policy, and real estate development have favored dense mixed-use development clusters in suburban communities. This thesis examines the relationship between such activity zones and adjacent residential property values. Regression analyses were used to determine the significance and direction of this relationship in seven study districts in Miami-Dade County, Florida, with the results analyzed in accordance with each district's unique physical and contextual features. Although proximity to mixed-use districts was found to be relatively insignificant when compared with other property-oriented variables, its impact on property values was often sizeable, generally positive, and varied substantially in strength depending upon scale and location. This indicates that mixed-use districts are associated with net benefits for adjacent residential properties, and also highlights the importance of design and local context in planning for these developments. In addition, proximity to mixed-use districts was found to have a consistently stronger impact on multi-family residential property values than on those of single-family residential properties.

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I. Background + Introduction

Context

In response to Americans' growing displeasure with suburban sprawl and typical commercial strip development, mixed-use suburban centers have grown in number and popularity over the past decade across much of the nation. Arising largely in conjunction with the New Urbanism and Smart Growth movements, these developments have emerged both in newly developed planned communities and in older suburbs with weak or non-existent downtown cores. One 2007 survey of the 130 largest metropolitan areas in the United States found that there are now an equal number of "walkable urban places" in America's suburbs as in its center cities (Leinberger, 2007).

Amidst persistent concerns over climate change, fossil fuel dependency, and the depletion of developable land in many metropolitan areas, the emergence of this trend has come at a key time in the trajectory of the American suburb. Suburban demographics have shifted in recent years, with many predominantly white, upper-middle class areas becoming more ethnically and economically diverse, while remaining sites of large youth and senior populations. Because lower-income, non-white, and young and old populations have traditionally been more receptive to density, alternative travel modes, and mixed land uses, many have speculated that the demand for dense "urban" clusters has increased in suburban communities. This notion is supported not only by the proliferation of these

developments, but also by evidence that demand for multi-family housing already exceeds supply in many suburban areas (Nelson, 2007).

Proponents of mixed-use suburban town centers claim that these districts have the potential to reduce vehicular travel and associated emissions, promote diversity among housing types, businesses, and residents, and boost civic identity and community pride. Additionally, a desire to attract and retain young professionals and members of the "creative class" has also contributed to interest in cultivating "urban" lifestyle patterns in the suburbs.

In practice, however, development of this sort has been met with controversy in many suburban communities. Residents are often hostile to the idea of increased density, building heights, pedestrian activity, and vehicular congestion, in addition to the diverse populations that are often attracted by dense, mixed-use development. Moreover, the implementation of this typology is contingent upon the support and cooperation of various levels of government, private sector investment, and citizen receptiveness, all of which are mutually dependent on one another.

Rationale

In order to help evaluate the viability of mixed-use suburban town centers, this thesis will examine whether the existence of these districts provides a boost to surrounding property values. The results will help to determine whether residents are receptive

to this development typology, and what physical and contextual factors may influence this receptiveness.

This analysis will also provide a timely evaluation of the effectiveness of planning initiatives within the context of the residential property market. As planners and policymakers continue to push for increased density, concentrated development, multi-family housing, alternative transportation use, and a well-planned mix of uses, it is useful to measure whether these measures are widely supported by the general public.

Survey and interview analyses are often not reflective of actual behaviors and preferences, particularly when it comes to cultural constructs, such as neighborhood identity, and a phenomenon as path dependent as one's place of residence. Moreover, small-scale preference studies tend to suffer from issues of self-selection, where residents supporting certain development typologies flock to their areas of preference, making it challenging to assess their attractiveness and viability to the entire populace.

To counter these issues, property values are often used to provide a more quantitative and data-driven method of analyzing the receptiveness of consumers to certain features, as these values are theoretically reflections of market demand. Although assessed values do not fully reflect human valuation, they provide a strong proxy for the demand for a property, given a collection of various desirable and undesirable characteristics.

Because the majority of existing research on property value impacts of adjacent land uses considers all non-residential areas to be one in the same, particular attention will be paid to the quality and style of the built environment. The assumption examined here is that differences in context and design – from streetscaping and architectural quality, to programming and historic character, to the degree of land use homogeneity and access to transit – will make a difference in the attractiveness and desirability of a town center.

The intent of this analysis is to provide an assessment of the effectiveness of planning ideals which date back to Jane Jacobs and have been enjoying a resurgence amidst twenty-first century smart growth strategies: density, walkability, 24/7 activity, and most notably, mixed-uses. Should insignificant relationships be found between proximity to mixed-use downtown districts and residential property values, this would suggest that consumers have yet to fully support this new development paradigm. However, if the relationship between these two factors is found to be substantial, one could conclude that there is some degree of market support for these patterns of development.

Furthermore, the comparative performance of purpose-built mixed-use complexes, organically-developed downtowns, and relatively 'unplanned' strip corridors will enable evaluation of the effectiveness of planners and urban designers' efforts to craft these spaces in response to human needs, preferences, and ideals.

Finally, it should be briefly noted that, in the context of this study, the term “mixed-use” does not necessarily require the co-existence of residential and commercial use groups. Geared instead around the presence of different activity generators, this analysis uses a more expansive definition, where the integration of residential, retail, office, industrial, or civic uses in any combination may constitute a “mixed-use” environment.

Hypothesis

Based on the classical notion that unplanned mixed-use development results in negative externalities, it is expected that carefully designed centers will provide the greatest boost to adjacent property values. Of these, town centers set amidst master-planned communities are anticipated to have the strongest positive effects, as they generally are amenity-rich, leisure-oriented, and most successfully integrated with the surrounding built fabric.

Mixed-use infill developments are also expected to generate positive effects on property values, though this may be minimized where they are proximate to rail transit, as public transportation has traditionally been seen as more of a ‘nuisance’ factor than a major driver of the real estate market in our study area. The historical relevance, established amenities, and geographic centrality of organically-developed downtowns may also result in beneficial property value impacts; however, the negative externalities traditionally associated with ‘unplanned’ mixed-use areas are more likely to be exhibited amongst this

typology. Finally, proximity to automobile-oriented arterial strips is expected to have a negative impact on directly adjacent property values, due to unsightliness, noise, congestion, and other negative externalities, outweighing the convenience of nearby commercial uses.

II. Literature Review

Existing literature dealing with suburban downtowns is plentiful and extensive, and includes strands related to smart growth, transit-oriented development, consumer preferences for various housing typologies, downtown revitalization strategies, and environmental impacts of sprawl, among various other topics. Also falling under this umbrella is a relatively large body of research focusing specifically on the influence of land use patterns on residential property values.

Early research in this area focused primarily on the negative externalities associated with non-residential land uses, which Euclidian zoning has traditionally been designed to regulate. Creceine, Davis, and Jackson (Creceine, et al., 1967) found no relationship between residential property values and seventeen different types of non-residential land use in Pittsburgh, suggesting that negative externalities associated with non-residential development are extremely limited, perhaps only extending “next door.” Similarly, Grether and Mieszkowski (Grether and Mieszkowski, 1978) did not find any relationship between non-residential land use and housing prices in New Haven, CT.

Beginning in the 1980s, however, scholars

began to consider that positive effects may be associated with mixed land uses, theorizing that non-residential development is likely to influence housing values both positively – due to convenience and reduced travel cost – and negatively – due to disamenities such as noise, and traffic congestion (Li and Brown, 1980; Matthews, 2006; Mills, 1979). Li and Brown found that some non-residential land uses in Boston exhibited positive effects on housing prices due to accessibility, with these positive effects having much greater range than any negative externalities. Thus, they suggest that noise, unsightliness, congestion, and the like tend to be more locally concentrated (Li and Brown, 1980).

Cao and Cory found that in areas with particularly low shares of non-residential land uses, increasing the amount of industrial, commercial, public, and multi-family residential uses tends to increase surrounding residential property values (Cao and Cory, 1981). This suggests that there is a degree of mixing of land uses that is optimal. Other studies have supported this notion as well. In an analysis specifically focusing on New Urbanist developments, Song and Knapp indicate that a balanced mix of land uses (including single-family residential uses) increases housing values, but an increased concentration of non-residential land uses (relative to residential ones) depresses housing values (Song and Knapp, 2003).

Several scholars have determined that the impact of mixed-use development on property values depends largely on the specific composition of uses. Examining housing values in Washington County,

Oregon, Song and Knapp found increases in single-family property values to be positively related to proximity to public parks and neighborhood-scale commercial uses, but depressed by proximity to multi-family residences (Song and Knapp, 2003). Contrarily, Mahan, Polasky, and Adams found that proximity to commercial uses has a negative effect on residential property values (Mahan, et al., 2000). An analysis based on access to employment opportunities in Seattle found that proximity to commercial and university uses positively affected residential sales prices, while proximity to other schools and industrial uses had negative effects (Franklin and Waddell, 2003).

Few scholars have considered factors tangential to the role of mixed-use accessibility, such as neighborhood design and travel orientation. Jo examined the influence of street patterns on the relationship between accessibility and housing values – with traditional interconnected grids associated with higher access and greater disamenities, while suburban-style curvilinear street networks reduce both of these factors (Jo, 1996). Matthews compared the effects of retail proximity on housing values in pedestrian-oriented and automobile-oriented Seattle neighborhoods, and found that positive factors outweigh negative factors in pedestrian-oriented areas beyond a distance of 250 feet. In contrast, the positive factors are not observed in automobile-oriented areas, though negative effects remain similar (Matthews, 2006). A later study by Matthews & Turnbull found that automobile-oriented neighborhoods saw generally no effect on housing values

due to retail proximity; however, pedestrian-oriented neighborhoods experienced overall positive effects where streets were highly connected, and overall negative effects where streets were not highly connected (Matthews and Turnbull, 2007).

Similarly, the positive relationships between proximity to transit and residential property values found in multiple studies (Bartholomew and Ewing, 2011; Bowes and Ihlanfeldt, 2001; Grass, 1992; Michaelson, 2004; Michaelson, 2010) are also of interest, as they suggest the influence of “convenience” and “accessibility.” Interestingly, Bowes and Ihlanfeldt found that transit stations located away from downtown areas positively affect property values, while those located in downtown areas have negative externalities (Bowes and Ihlanfeldt, 2001). Additionally, Bartholomew and Ewing suggest that amenities associated with “transit-designed development” are influential factors on property values, independent of transit’s more direct accessibility benefits (Bartholomew and Ewing, 2011).

Also lending weight to this hypothesis, MaRous found that low-income housing developments had mixed impacts on adjacent property values in Chicago, depending upon the design, operation, maintenance, and management of a facility (MaRous, 1996). This suggests that it is not necessarily a use’s presence itself that affects property values, but its functionality, presentation, integration, and perception.

Most recently, Leinberger has contributed proficient research in this area, identifying

and exploring “walkable urban places” across the United States, but focusing primarily on the Washington DC Metropolitan Area as a national model for walkable urban development. Leinberger uses an economic lens to analyze the benefits of these development areas, citing increased rents, housing prices, transit integration, and physical development, in addition to the attraction of well-educated “creative class” residents. Fifty-eight percent of Leinberger’s DC-area “WalkUPs” are located in the region’s suburbs, making the DC region home to more walkable urban places than any other metropolitan area in the U.S. and “roughly 40 years ahead of the nation” in terms of walkability and urbanization, according to Leinberger. He also classifies these sites into six different typologies and four performance classes, providing a useful framework for analysis (Leinberger, 2012).

Given the increasing attention paid to mixed-use suburban centers by planners and developers, Rabianski, Gibler, Tidwell, and Clements have highlighted the newfound prevalence of mixed-use development and call for additional research, noting that “published theoretically-based empirical research on the topic is extremely limited.” (Rabianski, et al. 2009). After several decades of research on the relationship between mixed land use and adjacent residential property values, results have been largely mixed. However, amongst studies finding positive relationships between residential property values and adjacent mixed-use areas, context has been found to be extremely important. To date, use composition, pedestrian orientation, and neighborhood design have been highlighted

as potential influencers of property values; however, additional variability within mixed-use centers themselves (i.e., age, density, transit-orientation, neighborhood-versus-regional retail, inclusion of public amenities, etc.) has not been sufficiently evaluated.

III. Data & Methodology

Case Study: Miami-Dade County

Given the scope and goals of this analysis, a single geographic region will serve as a case study, containing multiple mixed-use districts for comparative analysis. Evaluating a single metropolitan property market enables more accurate inter-regional comparisons and minimizes the effects of inconsistent trends and market fluctuations that may vary from region to region.

Miami-Dade County was selected due to a wide variety of factors, including the diversity of Dade County's mixed-use districts, researcher familiarity with the local landscape and built environment, and the richness and availability of countywide property value data. The collection of mixed-use centers in Dade County range from traditional low-rise downtowns developed in the 1920s and 1930s to privately owned, for-profit complexes built within the past decade, providing a sufficient variety for examination.

In addition to the physical, aesthetic, and functional diversity of these districts, Dade County is also one of the most socioeconomically divided counties in the United States (Florida, 2012). Because these class divisions manifest themselves quite

clearly across space, it is possible to also consider the influence of local demographics on property value impacts of mixed-use centers.

Finally, recent development and real estate trends in South Florida make Miami-Dade County a tremendously useful case study area. For one, its population has increased significantly in recent years, surging by 54 percent between 1980 and 2010. Today, Dade is home to approximately 2.5 million residents, making it the seventh most populated county in the nation (U.S. Census Bureau). In accordance with this steady development, the county is virtually built-out, constrained by the Atlantic Ocean to the east and the Everglades (and a controversial urban development boundary) to the west.

Faced with the challenge of accommodating new growth, the city of Miami is in the midst of one of the most unique zoning experiments in the United States, becoming the first major city to adopt a form-based zoning code. Dubbed Miami 21, and developed by New Urbanism pioneers Duany and Plater-Zyberk, the city's new comprehensive zoning plan regulates the type, style, and intensity of development, as opposed to the regulation of use associated with traditional Euclidian zoning. Thus, given the increasing importance placed on mixed-use, higher-density development in South Florida, Dade County should serve as a useful bellwether for this analysis.

Data

These caveats aside, this analysis is based

upon data from 2012 municipal tax roll files, which were obtained from Miami-Dade County's Office of the Property Appraiser. These data files include various valuation measures for each parcel in the two counties – including building value, land value, total property value, and taxable values. They also contain a variety of parcel attributes, as listed below:

- Land Use
- Zoning
- Building Square Footage
- Lot Square Footage
- Number of Bedrooms
- Number of Bathrooms
- Number of Living Units
- Number of Stories
- Number of Buildings
- Year Built
- Recent Sale Date
- Recent Sale Type
- Recent Sale Price

Sale prices for any residential properties sold in 2012 were used in order to adjust Dade County assessed values in accordance with actual market activity. This was accomplished by determining the ratio of 2012 sale prices to 2012 assessed values for any properties sold within the year, and then applying this ratio to the assessed value of all residential properties. This practice was performed separately for each one-mile radial study area, in order to account for local variation in performance.

Theoretical Framework

Classic property valuation makes use of

hedonic price modeling, in which a property's total value is defined as the sum of various positive and negative values relating to the land itself, its built features, neighborhood services, and community characteristics. The attractiveness and desirability of a given parcel's location can itself be seen as a composition of various proximity influences, such as proximity to highways, schools, services, waterfront access, scenic views, and adjacency to other uses. By using regression analyses to control for other variables, we can estimate the influence of any explanatory variable, assuming the others are held constant. It should be pointed out that other factors relating to geographic proximity may also influence residential property values in ways that are not accounted for in this study.

The traditional multivariate regression model which underlies hedonic price modeling is:

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k X_k + \epsilon,$$

where Y represents the dependent variable and each X represents a theoretical independent variable. The β coefficients measure changes in Y associated with a unit change in X, while the α is constant and the ϵ represents error (Pindyck and Rubinfeld, 1981; Kelejian and Oates, 1974). In this instance, Y (the dependent value) is the adjusted property value, while the X (independent or explanatory) values are represented by various parcel attributes. Potential explanatory variables include the various building attributes and land use characteristics listed at left.

In addition, a "proximity" value was calculated

to serve as our primary independent variable. This was accomplished by geocoding all residential parcels using ESRI's ArcGIS software and subsequently calculating the distance between each residential parcel and its nearest boundary to each of our seven study districts (which are discussed at length below). For analytical purposes, these proximity measures were evaluated at three different distance ranges – a one-mile range, a half-mile range, and a quarter-mile range – in order to determine whether the strength and/or direction of proximity impacts vary with changes in scale. The data was also examined separately for single-family and multi-family housing to determine whether potential impacts vary with housing typology.

IV. Study Areas:

Within Miami-Dade County, seven sites were identified as districts meriting analysis. The region's traditional urban core – including Downtown Miami and Miami Beach – were excluded from consideration, as their density, regional primacy, and composition of uses are likely to result in dramatically distinct property markets when compared with outlying semi-urban and suburban neighborhoods. Additionally, downtowns located close to the coastline were omitted in order to avoid potential value influences of waterfront access and views.

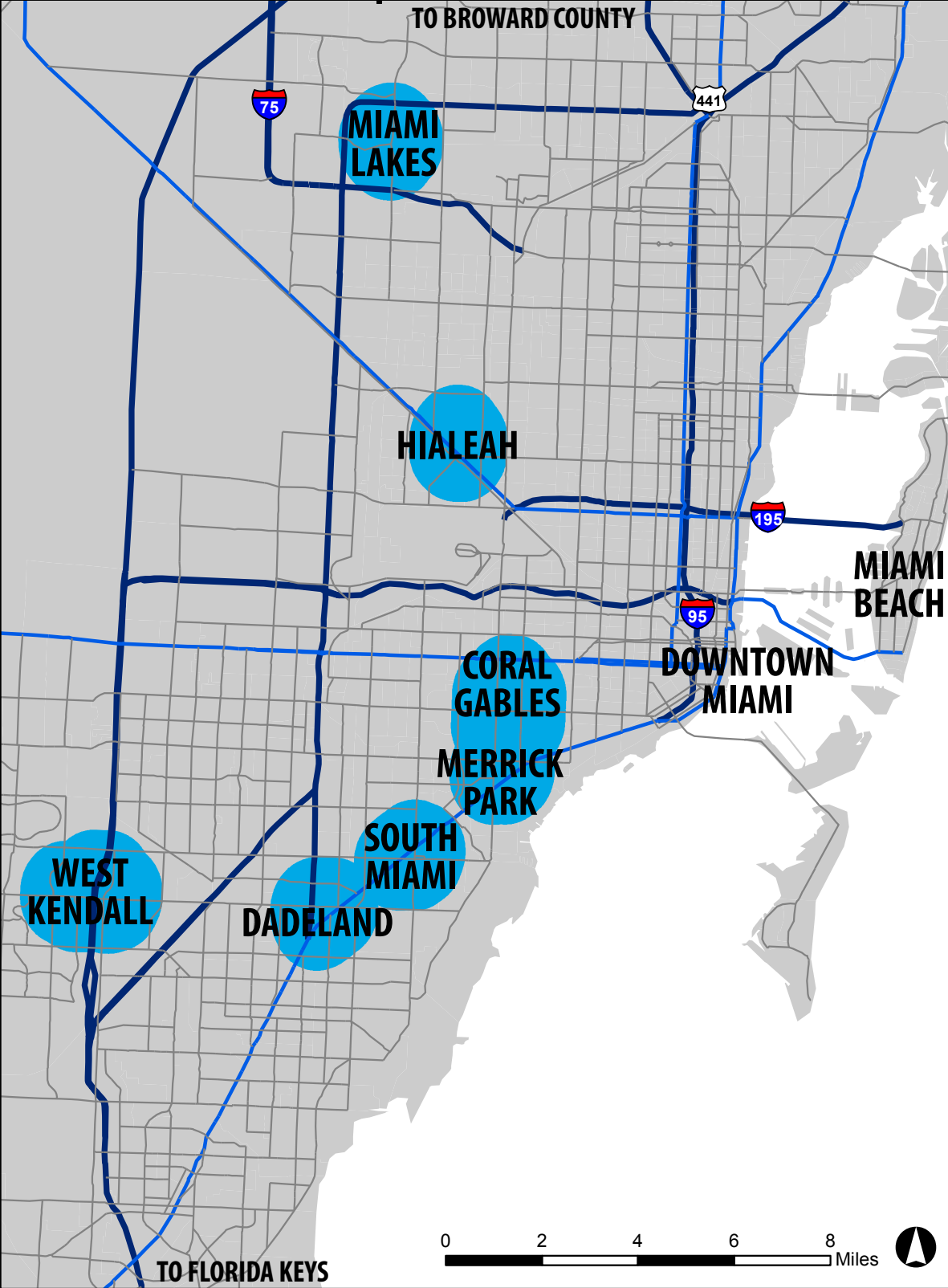
In order to contextualize this quantitative analysis, this section includes a basic qualitative overview of each study district.

Downtown Coral Gables: Long regarded as the crown jewel of Miami suburbs,

Coral Gables was developed as a planned community in the 1920s by George Merrick (namesake of Merrick Park, see below). Its downtown district is centered on the half-mile stretch of Coral Way dubbed the Miracle Mile, with galleries, theaters, restaurants, and shops – generally of the higher-end boutique variety – which spill over onto various side streets as well. Coral Gables is also home to a growing number of mid-rise residential infill developments, as well as a substantial office market, with approximately 18 million square feet of office space, mostly concentrated in the blocks to the north of the Miracle Mile (City of Coral Gables). In terms of walkability and attractiveness, Coral Gables' downtown area is architecturally pleasing and pedestrian-friendly, with ample landscaping, wide sidewalks, and mid-block pedestrian crossings. Though it lacks direct Metrorail access and is abruptly surrounded by low-rise single-family homes, it trails only Downtown Miami and Miami Beach in prominence and esteem amongst Dade County's urban districts.

Dadeland: Approximately ten miles southwest of Downtown Miami, the area popularly-known as Dadeland is the unofficial central business district of Miami's expansive Kendall suburb. Originally named for the nearby Dadeland Mall, this district grew in prominence with the development of the Datran Center office complex and the arrival of Miami's Metrorail – of which Dadeland is the southern terminus – in the 1980s. Over the past decade, however, the area has evolved into a mixed-use edge city of sorts, with several additional office towers, three residential complexes, two hotels, and a

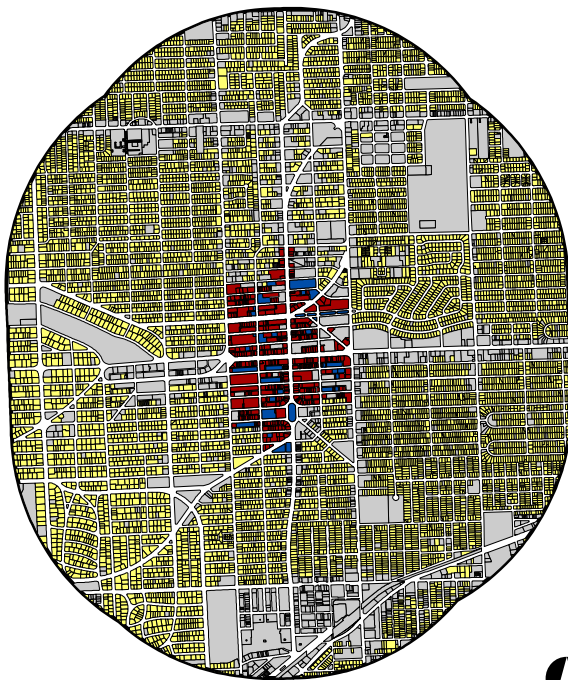
MIAMI-DADE COUNTY | FL



mixed retail-residential urban development dubbed Downtown Dadeland, which opened in 2009. Though the area grows increasingly walkable with each new development project and remains well connected to public transportation, Dadeland – surrounded by three major highways – remains automobile-oriented, and is perhaps best classified as an “urbanizing” edge city rather than an “urbanized” downtown.

Downtown Hialeah: Hialeah is a major suburban municipality – actually the sixth largest city in the state of Florida – located in the northwest corner of Miami-Dade County. As of the 2010 US Census, Hialeah had the

highest percentage of Cuban and Cuban American residents of any U.S. city, at 73%. Other Hispanic groups, including Colombians, Hondurans, Nicaraguans, and Dominicans are also well represented in Hialeah, where over 92% of the population speaks Spanish at home (U.S. Census Bureau). Although the city itself is astoundingly dense – with over 10,000 residents per square mile (compared to 1,300/sq mi for the county) – its downtown core consists primarily of single-story commercial buildings oriented towards service, retail, and governmental uses. Downtown Hialeah also competes commercially with light industrial employment areas clustered to the west along Interstate 75 and big-box retail along



Residential
 Commercial/Mixed-Use
 Civic/Institutional



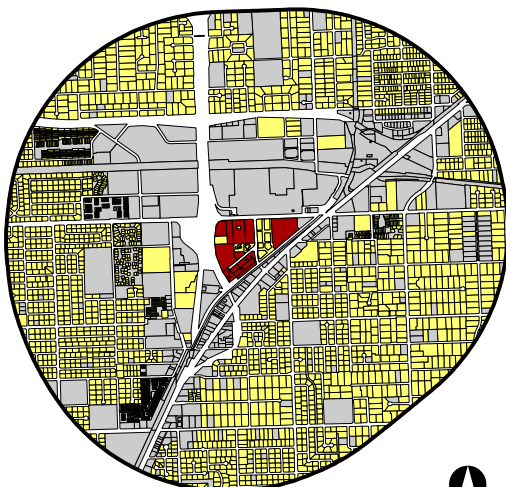
CORAL GABLES | FAST FACTS:

Population Density: 3,621 per sq mi // Median Annual Household Income: \$88,167
 % of Multi-Family Housing: 39% // Mean Travel Time to Work: 21 mins

West 49th Street surrounding Westland Mall.

Merrick Park: Coral Gables' second mixed-use cluster lies a mile to the south of the Miracle Mile, adjacent to the Douglas Road Metrorail station and U.S. Highway 1. Historically, this business district was the industrialized section of Coral Gables, though the arrival of the upscale "Village of Merrick Park" retail

complex in 2002 has largely repurposed the district. Though the lushly landscaped complex itself is tremendously insular (and is almost entirely ringed by department stores and a tremendous parking garage), a small stretch of boutiques has emerged just to the east, while a handful of residential developments north of the shopping complex provide a small population base for the area.

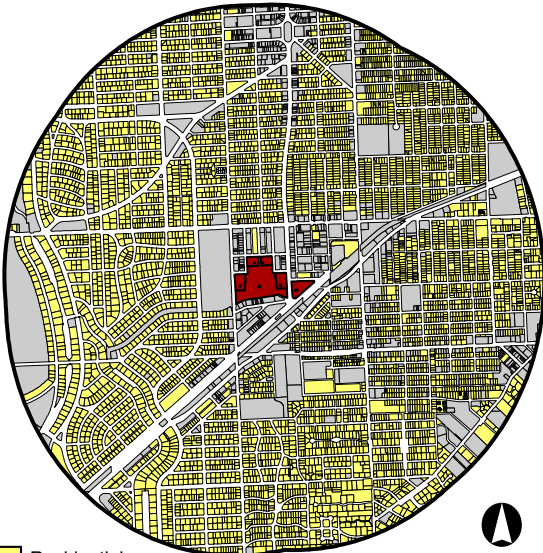
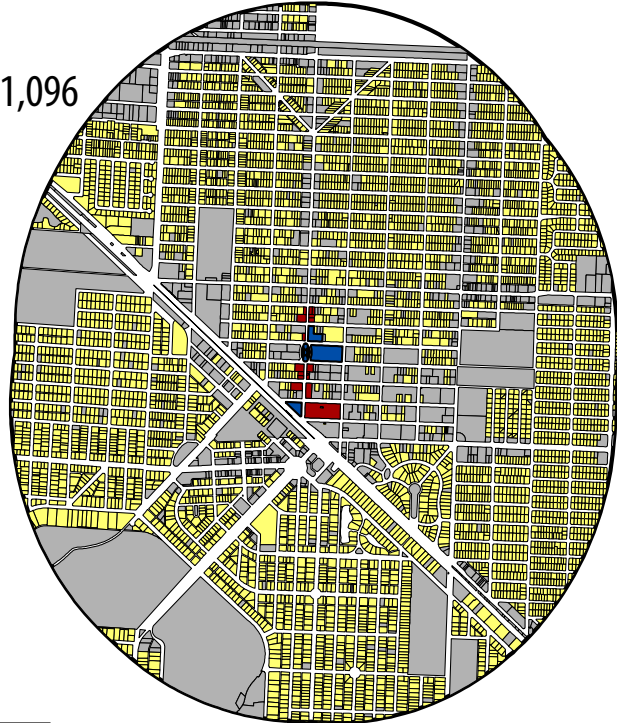


DADELAND I FAST FACTS

- Population Density: 4,687 per sq mi
- Median Annual Household Income: \$46,469
- % of Multi-Family Housing: 43%
- Mean Travel Time to Work: 37 mins

HIALEAH | FAST FACTS:

Population Density: 10,474 per sq mi
 Median Annual Household Income: \$31,096
 % of Multi-Family Housing: 48%
 Mean Travel Time to Work: 24 mins



MERRICK PARK I FAST FACTS

Population Density: 3,621 per sq mi
 Median Annual Household Income: \$88,167
 % of Multi-Family Housing: 39%
 Mean Travel Time to Work: 21 mins

Downtown Miami Lakes: Officially referred to as Main Street, the downtown area of early New Urbanist model Miami Lakes is a small-scale neighborhood center supported by a wide base of multi-family housing and small office buildings. First-floor local retail uses are primarily topped with apartments, and though the area is generally quiet, it is well programmed with community events. Though the downtown district is compact, walkable, and well-connected to the surrounding residences, it resembles more of a leisure center than a traditional commercial district and has struggled to compete with area malls and big box centers. In recent years,

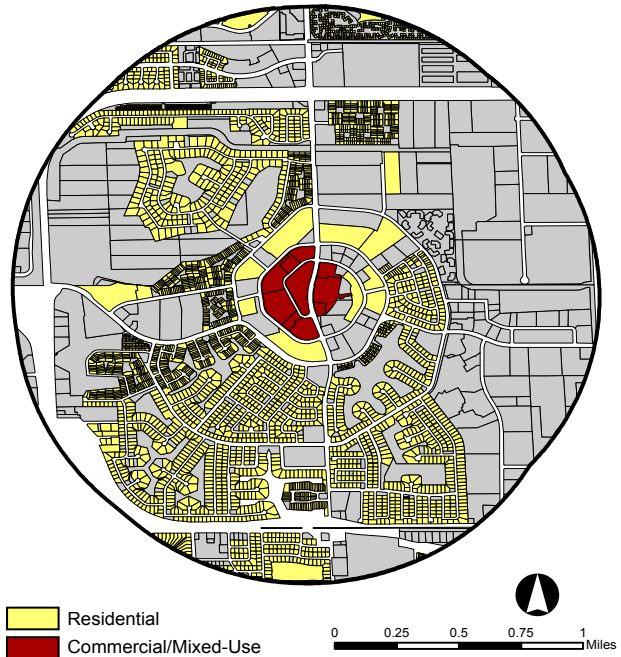
several chain retailers have been attracted to the development in order to better compete with outside commercial centers.

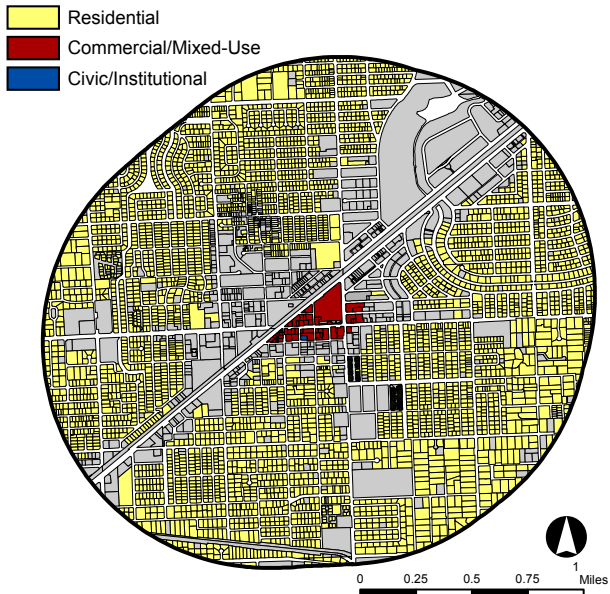
Downtown South Miami: Located along the US 1/Metrorail corridor between Merrick Park and Dadeland, South Miami is a lively multi-purpose district, with a variety of local shops and services, national retail chains, several hospitals, and a handful of multi-story office and residential buildings. The 14-year old 'Shops at Sunset Place' retail-restaurant-entertainment complex dominates much of the physical landscape and serves as a daytime and evening gathering space for



MIAMI LAKES | FAST FACTS

- Population Density: 5,211 per sq mi
- Median Annual Household Income: \$63,794
- % of Multi-Family Housing: 34%
- Mean Travel Time to Work: 28 mins





SOUTH MIAMI | FAST FACTS

Population Density: 5,138 per sq mi

Median Annual Household Income: \$63,289

% of Multi-Family Housing: 35%

Mean Travel Time to Work: 25 mins



the surrounding communities. Though it is very much a monolith when compared with the adjacent building fabric and is oriented towards its internal circulation spaces, it also has active and inviting street frontage on Sunset Drive and serves as the district’s major attraction.

West Kendall: The suburb of Kendall – particularly its seemingly endless western expanse – is often cited as the prototype of the sprawling subdivision-oriented development that dominates much of South Florida. As such, its western epicenter – located at the

Kendall Drive interchange of Florida’s Turnpike – is a classic model for traditional strip-style, automobile-oriented, big-box retail district. Within this one-mile stretch, nine shopping centers (each with its own separated parking lot) house a variety of national retailers and chain restaurants. Although several of these complexes are more leisure-oriented than typical big box centers (one is designed around a man-made lake, while another was conceived as a main-street style shopping village), no civic or office uses bring other users to the space. Additionally, Kendall Drive itself is chronically congested, and at eight

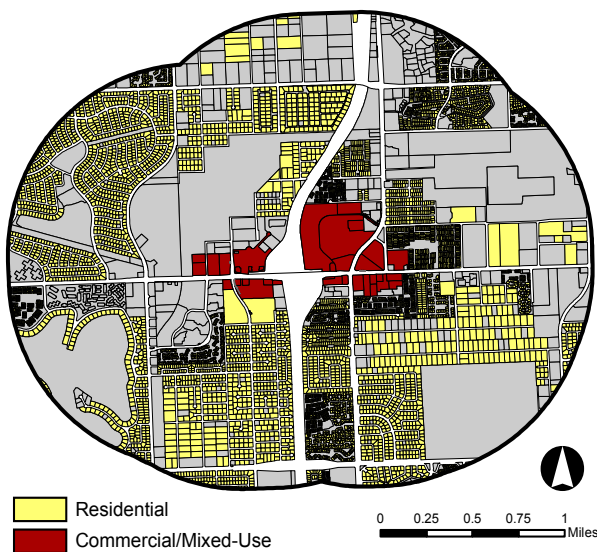
lanes wide, is completely unforgiving for any sort of pedestrian activity.

In order to streamline and simplify the comparison of these seven districts, a summary matrix was developed, synthesizing various relevant characteristics. The details within are derived from a combination of empirical research and subjective analysis, and are by no means a comprehensive depiction of the character of these areas.

The “degree of mixed use” variable is categorized according to whether a district possesses a single dominant use, one or two

primary uses, or a wide variety (more than two primary uses). Aesthetic quality is perhaps the most subjective variable, defined via a high-level examination of building and street conditions, architectural distinctiveness, and landscaping and other pedestrian realm amenities. Historic character addresses the existence of pre-1950s buildings and structures, as well as a history of local primacy.

The “typology of surrounding community” field outlines whether a district is embedded in a planned suburban community, an “old suburban” community (i.e. primarily developing prior to the 1970s), a “new



WEST KENDALL I FAST FACTS

Population Density: 13,147 per sq mi

Median Annual Household Income: \$46,469

% of Multi-Family Housing: 43%

Mean Travel Time to Work: 37 mins



suburban” community (i.e. primarily developing since the 1970s), or an edge city (i.e. an outlying central business district of significant influence and density). District size addresses both the geographic size, while pedestrian friendliness is related to the perceived primacy between pedestrians and automobiles. Physical integration with surrounding areas is highest where ample pedestrian and vehicular connections exist and the physical fabric does not include stark delineations. Finally, the presence of rail transit refers explicitly to the location of a Metrorail station either within or directly adjacent to the mixed-use study district.

V. Results & Analysis

Explanatory Power of Proximity + Other Variables

Initial bivariate regressions for the seven study areas in combination did not indicate that proximity to non-residential districts had a significant impact on residential property values. This is largely unsurprising, as one must expect that a great deal of variance is due to the suite of unique neighborhood variables that set baseline property values in each of our seven study areas, including municipal services, housing quality, schools, taxes, etc. Moreover, there are numerous land

STUDY DISTRICT MATRIX OF CHARACTERISTICS							
	Coral Gables	Dadeland	Hialeah	Merrick Park	Miami Lakes	South Miami	West Kendall
Degree of mixed use	High	High	Moderate	Moderate	High	Moderate	Low
Aesthetic quality	High	Moderate	Low	High	High	Medium	Low
Historic character	High	None	Low	Low	None	Medium	None
Typology of surrounding community	Historic planned suburb	Suburban edge city	Old suburban	Historic planned suburb	New planned suburb	Old suburban	New suburban
District size	Large	Medium	Small	Small	Medium	Medium	Low
Pedestrian friendliness	High	Low	Low	Moderate	High	Medium	Low
Physical integration w/ surrounding areas	High	Low	Medium	Low	High	Medium	Low
Presence of rail transit	No	Yes	No	Yes	No	Yes	No

and building characteristics that are likely to have stronger effects on property values than proximity to mixed-use districts.

Of available parcel attributes, building square footage and lot size were found to be the strongest predictors of adjusted property values. Building square footage alone was found to explain 70 percent of the variation in adjusted property values. The majority of remaining attributes were found to be either highly correlated with building size (such as number of bedrooms, number of bathrooms, or number of units) or statistically insignificant (such as building age).

Given that building square footage was such a highly explanatory variable, pairing building square footage and proximity to a mixed-use district as independent variables would create an appropriate model for evaluating variability in property values for each district. However, by standardizing adjusted property values by building square footage, this highly explanatory variable was accounted for in a way that isolated proximity as our model's only independent value. Thus, our resulting model – shown below -- is a simple linear regression, where independent variable X represents proximity and dependent variable Y represents adjusted property value per square foot.

$$Y = \alpha + \beta_1 X_1 + \epsilon$$

property value = coefficient + (change per unit)(proximity) + error

Spatial Differences in Influence

When the impact of proximity is analyzed by study area, a far stronger effect on standardized property values emerges. Though its overall influence remains small relative to that of other variables, any measurable impact is worthy of note. More importantly, the directional effects and the strength of the relationship between proximity and value varied significantly between each of the seven study districts:

At a one-mile scale, proximity to mixed-use districts was found to have a relatively strong influence on property values in Coral Gables and Miami Lakes, explaining 12 and 10 percent of the variance, respectively. Both of these study areas saw decreases of \$.01/sf with each 1 foot increase in distance. In other words, two otherwise comparable residential properties of 2,000 square feet would be expected to differ in property value by \$140,448 over a distance of 1 mile from Downtown Coral Gables. Although proximity alone only explains 12 percent of this variation, the correlation remains striking, suggesting that one mile in proximity is associated with \$16,292 in property value. Moreover, this proximity is also likely to implicitly influence other explanatory variables relating to access, convenience, and quality of life, making its impact higher than indicated by this analysis.

Elsewhere, Dadeland, Hialeah, Merrick Park, South Miami, and West Kendall all exhibited relationships of less than \$.01/sf per 1 foot of distance, and in each area, proximity was responsible for less than 5 percent of the variance in adjusted values per square foot.

The two downtown districts with the

ALL RESIDENTIAL PROPERTIES WITHIN 1 MILE RADIUS OF STUDY DISTRICTS*				
STUDY DISTRICT	R²	COEFFICIENT	STANDARD ERROR	P-VALUE
Coral Gables	.1160	-.0133	.0003	0.00
Dadeland	.0005	-.0006	.0003	0.04
Hialeah	.0211	.0018	.0002	0.00
Merrick Park	.0057	.0049	.0007	0.00
Miami Lakes	.0971	-.0061	.0003	0.00
South Miami	.0098	.0061	.0007	0.00
West Kendall	.0440	-.0027	.0001	0.00

*For detailed regression results, see Appendix A.

ALL RESIDENTIAL PROPERTIES WITHIN 1/2 MILE RADIUS OF STUDY DISTRICTS*				
STUDY DISTRICT	R²	COEFFICIENT	STANDARD ERROR	P-VALUE
Coral Gables	.1457	-.0266	.0007	0.00
Dadeland	.3081	-.0272	.0005	0.00
Hialeah	.0850	.0070	.0005	0.00
Merrick Park	.0755	-.0326	.0027	0.00
Miami Lakes	.0264	.0071	.0009	0.00
South Miami	.0119	.0110	.0021	0.00
West Kendall	.0051	-.0018	.0004	0.00

*For detailed regression results, see Appendix A.

ALL RESIDENTIAL PROPERTIES WITHIN 1/4 MILE RADIUS OF STUDY DISTRICTS*				
STUDY DISTRICT	R²	COEFFICIENT	STANDARD ERROR	P-VALUE
Coral Gables	.1718	-.0570	.0019	0.00
Dadeland	.7125	-.0724	.0010	0.00
Hialeah	.0161	.0046	.0013	0.00
Merrick Park	.1078	-.1209	.0158	0.00
Miami Lakes	.1935	.0264	.0020	0.00
South Miami	.0018	.0079	.0062	0.20
West Kendall	.0002	-.0007	.0011	0.51

*For detailed regression results, see Appendix A.

strongest results – Coral Gables and Miami Lakes – are both fairly large districts with a fair degree of regional – rather than merely local – influence. As such, it is unsurprising that their impacts extend to a one-mile scale. They also possess perhaps the two most diverse use compositions of the seven districts in this analysis, potentially suggesting both that varied uses increase the number of attractive factors, and that a multi-purpose community itself is more desirable. It is also interesting to note that both were explicitly designed as centerpieces of master-planned communities, Coral Gables in the 1920s and Miami Lakes in the 1960s.

At a half-mile scale, proximity was found to have a stronger influence on property values in 5 of the 7 study areas when compared with one-mile scale effects. This is consistent with the notion that impacts associated with density and walkability increase as proximity to a mixed-use district increases. Miami Lakes and West Kendall – the two study districts most distant from Miami’s traditional urban core – are the two exceptions to this trend.

Proximity was found to explain 8 percent of the property value variance in Merrick Park, 9 percent in Hialeah, 15 percent in Coral Gables, and 31 percent in Dadeland. Increased proximity was associated with lower property values in three study areas – Hialeah, Miami Lakes, and South Miami (each approximately \$0.01/sf per foot of distance) – and higher property values in Coral Gables, Dadeland, Merrick Park (all approximately \$.03/sf per foot of distance) and West Kendall (of less than \$.01/sf per foot of distance).

Though Coral Gables and Merrick Park are set in similar physical and socioeconomic contexts, their characteristics are fairly dissimilar. Edge city Dadeland is also an entirely different physical development typology. Given that many of the more neighborhood-oriented districts, such as South Miami and Hialeah, exhibited weak relationships, it appears that a half-mile analysis zone may be less useful than a quarter-mile scale (which would better accommodate effects related to pedestrian proximity) or a one-mile scale (which would presumably include automobile-oriented convenience while minimizing the effects of incompatible directly adjacent land uses).

At a quarter-mile scale, Coral Gables, Dadeland, Merrick Park, and Miami Lakes exhibited their strongest proximity-related effects. Proximity to mixed-use districts explained 11 percent of property value variance in Merrick Park, 17 percent in Coral Gables, 19 percent in Miami Lakes, and 71 percent in Dadeland. These fairly strong relationships are reinforced by the notion that Coral Gables, Merrick Park, and Miami Lakes are among the most pedestrian-friendly, aesthetically pleasing downtowns in South Florida, and the quarter-mile scale is where this is theoretically most likely to manifest itself via higher property values. The performance of Dadeland may be due to a variety of factors, including pedestrian accessibility to a major transit hub, the proximity of regional shopping destinations, and most likely, the multitude of comparatively new development skewing the hyper-local market.

This fairly high explanatory power was supplemented by strong coefficient

relationships in most cases. In Merrick Park, an additional foot in proximity was associated with a \$.12/sf increase in adjusted property value. Similar effects were seen in Dadeland (\$.07/sf increase per foot of distance) and Coral Gables (\$.06/sf increase per foot of distance).

Only Miami Lakes exhibited a negative relationship greater than \$.01/sf between proximity to a mixed-use district and adjusted property value. It is unclear what may have caused this relationship, given its similarities with other neighborhoods with positive influences, such as Coral Gables and Merrick Park. One possible hypothesis for this performance is the outlying location and geographic isolation of the community of Miami Lakes from neighboring communities.

It is also interesting to note the lack of notable influence of neighborhood-oriented downtown districts. The primary purpose of downtowns of South Miami, Hialeah, and to an extent, Miami Lakes, is to serve the needs of the immediate surrounding community. Though there are employment opportunities and some housing, they are not among the major business districts of the county, nor are they major centers of population.

Finally, although its results were not significant at a quarter-mile scale, it is important to point out that the only study area to see the influence of proximity consistently decrease with scale is West Kendall – our suburban strip control district. However, proximity to West Kendall’s commercial district was correlated with increases in property value at all scales – though these increases decrease relatively as

proximity increases. These results imply that an automobile-oriented mixed-use district exhibits greater impacts at an automobile-oriented scale (one-mile as opposed to one-quarter mile), but that the benefits associated with convenience and accessibility are reduced with increased proximity. This suggests the influence of ‘nuisance’ factors related to this sort of district (i.e. traffic, noise, unsightliness, etc.). Again, however, definitive conclusions should be made with caution, as the quarter-mile scale West Kendall results are not statistically significant.

The chart below roughly classifies each district according to its general performance across all three geographic scales. As indicated, only Miami Lakes exhibited a strong, negative relationship between proximity and property value. The remaining six districts demonstrated either positive relationships or weak, negative relationships.

SUMMARY OF FINDINGS: PROXIMITY + VALUE		
	STRONG RELATIONSHIP	WEAK RELATIONSHIP
POSITIVE RELATIONSHIP	Coral Gables Dadeland	Merrick Park West Kendall
NEGATIVE RELATIONSHIP	Miami Lakes	Hialeah South Miami

Differences in Influence between Residential Property Types

To further analyze this relationship, this data was also evaluated separately for single-family and multi-family residential properties. Several key findings emerged from this analysis. Firstly, the districts which had the strongest positive influence

on property values in the above results exhibited significantly stronger relationships amongst multi-family residential properties than single-family residential properties. For areas around Downtown Coral Gables, for example, proximity to the study district explained over 20 percent of the variance in property values for multi-family residential properties at all scales, but less than 4 percent of the variance in single-family residential properties. Dadeland, Merrick Park, and Miami Lakes exhibited similar characteristics in most cases, though some of these results were not statistically significant due to small sample sizes associated with one of the two housing types.

Secondly, multi-family housing was more likely to be associated with positive relational impacts than single-family housing. Of the twenty-one multi-family property lenses (resulting from the combination of seven study districts and three geographic scales), sixteen were associated with higher property values as proximity increased. Only in Hialeah did single-family housing exhibit a positive relationship between proximity and standardized property values, while multi-family housing exhibited a negative relationship. However, given the extremely low R-squared values for all of the Hialeah study area, it seems apparent that other housing characteristics have more of an impact on this neighborhood than locational ones.

Thirdly, the effects exhibited a tendency to strengthen with proximity, regardless of direction. It seems apparent that there are numerous positive and negative factors

associated with mixed-use districts of various types. However, regardless of the net effect of these factors, they seem to increase as proximity to a district increases. This both legitimizes concerns from neighbors of potential development zones and reinforces the positive arguments of mixed-use density proponents.

Differences in Influence According to District Characteristics

Revisiting our district characteristic matrix, several thought-provoking results emerged from this data analysis. Poor performance on measures of aesthetic quality, historic character, and pedestrian friendliness were generally associated with negative relationships between proximity and standardized property values. However, strong performances in these areas were not necessarily associated with positive relationships, primarily due to the surprising results evidenced in Miami Lakes.

Proximity to mixed-use districts in “organically” developing neighborhoods was found to have little impact on property values. In contrast, districts either within planned communities or including large-scale planned complexes were associated with comparatively strong relationships, regardless of the community’s age. These relationships were largely positive, again with the exception of Miami Lakes. One hypothesis for this result is the potentially more rational land use patterns supporting mixed-use centers as part of planned communities, in contrast with the more haphazard natural development in unplanned communities.

Interestingly, a district's physical integration with its surrounding areas did not appear related to property value impacts. Similarly, the presence of a Metrorail station was associated with strong, positive value impacts in Dadeland and Merrick Park, but not in South Miami. The lack of a Metrorail station did not appear to hamper the effects of district proximity in Coral Gables, suggesting that it is not a particularly influential characteristic in this automobile-dominated region.

Most importantly, an increased diversity of uses appears to be correlated with an increased impact on both the strength and the positive nature of property value impacts associated with proximity to a mixed-use district. Our lone low-mix district, West Kendall, was found to have virtually no relationship between proximity and impact, particularly at a small-scale (though the regression result was statistically insignificant). Coral Gables, Dadeland, and Merrick Park, which were associated with positive relationships at all three scales, all include a great variety of uses and activities.

VI. Conclusion

Limitations + Suggestions for Further Research

The findings from this analysis should undoubtedly be viewed with caution, as there are several methodological limitations and potential weaknesses in this evaluation. Firstly, there are theoretical disadvantages to the use of property values as an accurate measure of market demand and individual human preferences. Miami-Dade County's

assessed values themselves are the product of a complicated series of estimations, rather than a direct representation of the property's actual worth to the typical consumer.

Similarly, the regression model used here is a dramatically simplified manifestation of a complex and evolving housing market. It does not take into account housing styles and character, age, historic patterns of development, or the quality of neighborhood services, all of which factor substantially into the desirability and valuation of residential property. Moreover, it does not control for additional locational factors – both within and beyond the study districts in question. For instance, effects associated with proximity highways would be detected via the “proximity to mixed-use district” variable, where highways fall within a given district. Similarly, relative proximity to other amenities, including Downtown Miami, other employment centers, open space, and particularly, beaches and waterways are also likely to influence property values in ways which are not explicitly accounted for in this model.

Moreover, differences in property ownership are ignored via this theoretical framework, when in fact effects associated with convenience and various “nuisance” factors may vary based on whether a property is rented or owner-occupied. Though not manifested in assessed property values, renters (as well as absentee landowners) may personally value certain features differently than full-time resident property owners.

Moving forward, a more scientifically-derived

approach for comparing the various social and physical characteristics of each study district would further cement the results of this analysis. While the combination of quantitative valuation and proximity data with qualitative neighborhood assessments was a useful first step, quantitatively analyzing characteristics such as use composition would likely be more fruitful.

In addition, the expansion of this analysis to additional regions and property markets would also help to further contextualize the results. Given Dade County's extremely diverse population, temperate climate, and evidently growing receptiveness for dense cluster development, it may be useful to compare these results with those of physically and socioeconomically dissimilar geographic regions.

Implications

On the whole, proximity to mixed-use districts was found to be a fairly weak indicator of residential property value when compared with other property-oriented variables. However, even though proximity explained fairly small proportions of property value variation (and by only a few cents per square foot) the total change in property value effects often equalled thousands of dollars. Thus, the importance of mixed-use districts on real estate values, and more importantly, on quality of life, should not be ignored.

The net benefits to property values generally indicated by these results suggest that the positive effects of mixed-use districts (i.e., utility derived from cultural and civic

amenities, the accessibility of employment opportunities, the convenience associated with a mixed array of uses, etc.) outweigh purported negative effects (i.e., disamenities such as traffic, congestion, noise, infrastructure strain, etc.). This supports land use policies advocating for increased mixed-use development.

Additionally, the strength of observed impacts showed significant variation – both between different study districts and between multi-family and single-family residential properties. The relatively strong relationship between multi-family housing and proximity to mixed-use districts is a positive indicator for planners and policymakers pushing for clusters of increased residential densities. Additionally, it is apparent that mixed-use districts are more likely to have stronger and more positive impacts on property values where they are increasingly diverse in terms of use, of higher aesthetic quality, and located within the context of a master planned physical environment.

These results rebuff several widely-accepted beliefs associated with traditional land use planning. For one, based on our one relevant sample study district, even poorly-designed, automobile-oriented commercial districts do not appear to have the strong negative impact on property values that is commonly assumed (though some of the results in this district were not statistically significant). Secondly, because the co-presence of mass transit was associated with strong positive and weak negative impacts, it may not be as influential of a driver of mixed-use district property values as theorized. Alternatively,

it may be that other transit-related factors (service quality, station features, neighborhood context, etc.) determine its overall net effects. Thirdly, mixed-use districts with dense surrounding neighborhoods do not necessarily see strong or positive effects on property values. In contrast, mixed-use districts with low-density surroundings can be associated with strong positive property value effects.

Finally, the results of this analysis highlight key opportunities for planners. In summary, mixed-use density clusters can be associated with higher property values given the proper environment and combination of characteristics. However, the combination of desirable characteristics seems to vary with locality, suggesting the importance of localized contextual factors and differences in community preferences. As such, it is

crucial that planners, developers, and urban designers pay particular attention to these unique elements and resist the urge to transplant successful development models and design schemes from one place to another.

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Bibliography

BeyondDC. (2012). "The Value of Suburban Town Centers." From <http://beyonddc.com/log/?p=3908>.

Bowes, D. R., & Ihlanfeldt, K. R. (2001). Identifying the Impacts of Rail Transit Stations on Residential Property Values. *Journal of Urban Economics*, 50(1), 1-25.

Cao, T. V., & Cory, D. C. (1981). Mixed Land Uses, Land Use Externalities, and Residential Property Values: A Reevaluation. *Annals of Regional Science*, 16, 1- 24.

City of Coral Gables. (2013). "Coral Gables: The City Beautiful." From <http://www.coralgables.com/modules/showdocument.aspx?documentid=7361>.

Curley, M. (2012). Response of Residential Property Values to the Replacement of Limited-Stop Bus Service with Bus Rapid Transit. Graduate School of Architecture, Planning and Preservation. New York, Columbia University.

Crecine, J. P., Davis, O. A., & John E. Jackson. (1967). Urban Property Markets: Some Empirical Results and Their Implications for Municipal Zoning. *Journal of Law and Economics*, 10, 79-99.

Filion, P., H. Hoernig, et al. (2004). "The Successful Few: Healthy Downtowns of Small Metropolitan Regions." *Journal of the American Planning Association* 70(3): 328-343.

Florida, R. (2013). "Class-Divided Cities: Miami Edition." From <http://www.theatlanticcities.com/neighborhoods/2013/03/class-divided-cities-miami-edition/4678/>.

Forsyth, A. (2002). "Planning Lessons from Three U.S. New Towns of the 1960s and 1970s:Irvine, Columbia, and The Woodlands." *Journal of the American Planning Association* 68(4): 387-415.

Franklin, J.P., & Waddell, P. (2003, July 31, 2002). A Hedonic Regression of Home Prices in King County, Washington, using Activity-Specific Accessibility Measures. Paper presented at the TRB 2003 Annual Meeting, Washington, D.C.

Garde, A. (2008). "City Sense and Suburban Design: Planners' Perceptions of the Emerging Suburban Form." *Journal of the American Planning Association* 74(3): 325-342.

Gordon, D. and S. Vipond (2005). "Gross Density and New Urbanism: Comparing Conventional and New Urbanist Suburbs in Markham, Ontario." *Journal of the American Planning Association* 71(1): 41-54.

Grass, R. G. (1992). The Estimation of Residential Property Values Around Transit Station Sites in Washington, D.C. *Journal of Economics and Finance*, 16(2), 139- 146.

Grether, D. M., & Mieszkowski, P. (1980). The Effects of Nonresidential Land Uses on the Prices of Adjacent Housing: Some Estimates of Proximity Effects. *Journal of Urban Economics*, 8(1), 1-15.

- Grubisich, T. (2006). "Reston Town Center: The Upside of a Suburban Downtown." from <http://www.planetizen.com/node/20938>.
- Handy, S., J. F. Sallis, et al. (2008). "Is Support for Traditionally Designed Communities Growing? Evidence From Two National Surveys." *Journal of the American Planning Association* 74(2): 209-221.
- Jo, S.-K. (1996). A Balance Between Pedestrian and Vehicular Movement in Relation to Street Configuration. Unpublished Doctoral Dissertation, Georgia Institute of Technology, Atlanta.
- Kelejian, H. and W. Oates (1974). *Introduction to Econometrics: Principles and Applications*. New York, Harper & Row.
- Lang, R. E., E. J. Blakely, et al. (2005). "Keys to the New Metropolis: America's Big, Fast-growing Suburban Counties." *Journal of the American Planning Association* 71(4): 381-391.
- Leinberger, C. B. (2012). "Footloose and Fancy Free: A Field Survey of Walkable Urban Places in the Top 30 U.S. Metropolitan Areas." Brookings.
- Leinberger, C. B. (2012). *Now Coveted: A Walkable, Convenient Place*. New York Times.
- Leinberger, C. B. (2012). *Walk This Way: The Economic Promise of Walkable Places in Metropolitan Washington*. Brookings.
- Leinberger, C.B. (2012) *The WalkUP Wake-Up Call: The Nation's Capital As a National Model for Walkable Urban Places*. George Washington University School of Business.
- Lewis, P. G. and M. Baldassare (2010). "The Complexity of Public Attitudes Toward Compact Development." *Journal of the American Planning Association* 76(2): 219-237.
- Li, M. M., & Brown, J. (1980). Micro-Neighborhood Externalities and Hedonic Housing Prices. *Land Economics*, 56(2), 125-141.
- Mahan, B. L., Polasky, S., & Adams, R. M. (2000). Valuing Urban Wetlands: A Property Price Approach. *Land Economics*, 76(1), 100-113.
- MaRous, M. S. (1996). Low-income Housing in Our Backyards: What Happens To Residential Property Values? *Appraisal Journal*, Jan96, Vol. 64 Issue 1, p. 27. *Appraisal Journal*, 64(1), 27-34.
- Matthews, John W. *The Effect of Proximity to Commercial Uses on Residential Prices*. Dissertation. Georgia State University, 2006.
- Matthews, John W., and Geoffrey K. Turnbull (2007). "Neighborhood Street Layout and Property Value: The Interaction of Accessibility and Land Use Mix." *The Journal of Real Estate Finance and Economics* 35.2: 111-41.
- Michaelson, J. D. *The ARC Effect: How Better Transit Boosts Home Values and Local Economies*. Rep. New York: Regional Plan Association, 2010.
- Michaelson, J. D. *Walk-and-Ride: How*

- MidTOWN DIRECT Has Affected Residential Property Values within Walking Distance of Train Stations. Thesis. Columbia University, 2004.
- Mills, E. S. (1979). Economic Analysis of Urban Land-Use Controls. P. Miezkowski & M. Straszheim (Eds.), *Current Issues in Urban Economics* (pp. 511-541). Baltimore: Johns Hopkins University Press.
- Nelson, Arthur C. (2007). Leadership in a New Era. *Journal of the American Planning Association* 72.4: 393-409.
- Newberg, S. (2003). The Market for Potential Suburban Town Centers. SiteLines, Maxfield Research.
- Pindyck, R.S. and D. L. Rubinfeld (1981). *Econometric Models and Economic Forecasts*. New York, McGraw Hill.
- Rabianski, J., K. Gibler, O. A. Tidwell, and J. S. Clements, III (2009). "Mixed-Use Development: A Call for Research." *Journal of Real Estate Literature* 17.2: 205-30.
- Sharpe, W. a. L. W. (1994). "Bold New City or Built-Up 'Burb? Redefining Contemporary Suburbia." *American Quarterly* 46(1): 1-30.
- Shaver, K. M. S. S. (2010). "It Takes More Than Stores to Make A Winning Town Center." from <http://www.washingtonpost.com/wpdyn/content/article/2010/02/27/AR2010022703434.html>.
- Song, Y. and Knaap, G.-J. (2003a). New Urbanism and Housing Values: A Dissaggregate Assessment. *Journal of Urban Economics*, 54, 218-238.
- Song, Y., & Knapp, G.-J. (2003b). The Effects of New Urbanism on Housing Values: A Quantitative Approach. College Park, MD: National Center for Smart Growth Research and Education, University of Maryland.
- Southworth, M. (1997). "Walkable Suburbs? A Evaluation of neotraditional communities at the Urban Edge." *Journal of the American Planning Association* 63(1): 28-44.
- Talen, E. (2001). "Traditional Urbanism Meets Residential Affluence: An Analysis of the Variability of Suburban Preference." *Journal of the American Planning Association* 67(2): 199-216.
- U.S. Census Bureau. State and County Quick Facts, 2013.
- Zehner, R. B. (1971). "Neighborhood and Community Satisfaction in New Towns and Less Planned Suburbs." *Journal of the American Institute of Planners* 37(6): 379-385.

Appendix A: Detailed Regression Results

Coral Gables - All Properties within 1 mi

Source	SS	df	MS			
Model	6485634.79	1	6485634.79	Number of obs =	15624	
Residual	47959199.4	15622	3069.9782	F(1, 15622) =	2112.60	
Total	54444834.2	15623	3484.91546	Prob > F =	0.0000	
				R-squared =	0.1191	
				Adj R-squared =	0.1191	
				Root MSE =	55.407	

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0133251	.0002899	-45.96	0.000	-.0138933	-.0127568
_cons	167.2943	.8456458	197.83	0.000	165.6367	168.9518

Coral Gables - All Properties within 1/2 mi

Source	SS	df	MS			
Model	4486938.71	1	4486938.71	Number of obs =	8866	
Residual	26174624.1	8864	2952.91337	F(1, 8864) =	1519.50	
Total	30661562.8	8865	3458.72113	Prob > F =	0.0000	
				R-squared =	0.1463	
				Adj R-squared =	0.1462	
				Root MSE =	54.341	

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0266366	.0006833	-38.98	0.000	-.0279761	-.0252971
_cons	181.9176	1.083613	167.88	0.000	179.7934	184.0417

Coral Gables - All Properties within 1/4 mi

Source	SS	df	MS			
Model	2941983.25	1	2941983.25	F(1, 4158) =	873.39	
Residual	14006143	4158	3368.48075	Prob > F =	0.0000	
Total	16948126.2	4159	4075.04838	R-squared =	0.1736	
				Adj R-squared =	0.1734	
				Root MSE =	58.039	

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0572313	.0019366	-29.55	0.000	-.061028	-.0534346
_cons	195.7424	1.414645	138.37	0.000	192.969	198.5159

Dadeland - All Properties within 1 mi

Source	SS	df	MS			
Model	7172.69001	1	7172.69001	Number of obs =	8754	
Residual	15394003.0	8752	1750.92102	F(1, 8752) =	4.00	
Total	15401256.5	8753	1759.54033	Prob > F =	0.0435	
				R-squared =	0.0005	
				Adj R-squared =	0.0004	
				Root MSE =	41.94	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0006282	.0003111	-2.02	0.043	-.001238	-.0000184
_cons	103.1013	.8363554	123.27	0.000	101.4619	104.7408

Dadeland - All Properties within 1/2 mi

Source	SS	df	MS			
Model	3014497.42	1	3014497.42	Number of obs =	5894	
Residual	6768914.81	5892	1148.83143	F(1, 5892) =	2623.97	
Total	9783412.23	5893	1660.17516	Prob > F =	0.0000	
				R-squared =	0.3081	
				Adj R-squared =	0.3080	
				Root MSE =	33.894	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0271644	.0005303	-51.22	0.000	-.028204	-.0261248
_cons	133.8334	.8795669	152.16	0.000	132.1091	135.5577

Dadeland - All Properties within 1/4 mi

Source	SS	df	MS			
Model	3394347.45	1	3394347.45	Number of obs =	2217	
Residual	1369489.06	2215	618.279483	F(1, 2215) =	5409.99	
Total	4763836.5	2216	2149.74571	Prob > F =	0.0000	
				R-squared =	0.7125	
				Adj R-squared =	0.7124	
				Root MSE =	24.865	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0723702	.0009767	-74.09	0.000	-.0742856	-.0704548
_cons	151.0987	.7297206	207.06	0.000	149.6677	152.5297

Hialeah - All Properties within 1 mi

Source	SS	df	MS	
Model	40190.7665	1	40190.7665	Number of obs = 6676
Residual	1864762.36	6674	279.407007	F(1, 6674) = 143.84
Total	1904953.13	6675	285.386237	Prob > F = 0.0000
				R-squared = 0.0211
				Adj R-squared = 0.0210
				Root MSE = 16.715

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
near_dist	.0017986	.00015	11.99	0.000	.0015046 .0020926
_cons	61.17636	.5009113	122.13	0.000	60.19442 62.15831

Hialeah - All Properties within 1/2 mi

Source	SS	df	MS	
Model	63010.2636	1	63010.2636	Number of obs = 2393
Residual	678042.812	2391	283.581268	F(1, 2391) = 222.19
Total	741053.076	2392	309.804798	Prob > F = 0.0000
				R-squared = 0.0850
				Adj R-squared = 0.0846
				Root MSE = 16.84

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
near_dist	.0069990	.0004696	14.91	0.000	.006079 .0079207
_cons	53.30031	.7708636	68.43	0.000	51.773 54.82763

Hialeah - All Properties within 1/4 mi

Source	SS	df	MS	
Model	2629.26519	1	2629.26519	Number of obs = 780
Residual	160851.976	778	206.750612	F(1, 778) = 12.72
Total	163481.241	779	209.860387	Prob > F = 0.0004
				R-squared = 0.0161
				Adj R-squared = 0.0148
				Root MSE = 14.379

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
near_dist	.0045758	.0012831	3.57	0.000	.002057 .0070946
_cons	53.71907	.9449075	56.85	0.000	51.86405 55.5749

Merrick Park - All Properties within 1 mi

Source	SS	df	MS	Number of obs =	6707
Model	181854.668	1	181854.668	F(1, 6705) =	33.76
Residual	36116515.9	6705	5386.50498	Prob > F =	0.0000
				R-squared =	0.0050
				Adj R-squared =	0.0049
Total	36298370.5	6706	5412.81994	Root MSE =	73.393

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0042746	.0007357	5.81	0.000	.0028325	.0057168
_cons	143.4431	2.652253	54.08	0.000	138.2438	148.6423

Merrick Park - All Properties within 1/2 mi

Source	SS	df	MS	Number of obs =	1829
Model	751972.221	1	751972.221	F(1, 1827) =	144.62
Residual	9499487.48	1827	5199.50054	Prob > F =	0.0000
				R-squared =	0.0734
				Adj R-squared =	0.0728
Total	10251459.7	1828	5608.01953	Root MSE =	72.108

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0319399	.0026559	-12.03	0.000	-.0371489	-.026731
_cons	208.4449	4.942807	42.17	0.000	198.7508	218.1391

Merrick Park - All Properties within 1/4 mi

Source	SS	df	MS	Number of obs =	490
Model	453068.918	1	453068.918	F(1, 488) =	58.94
Residual	3751379.86	488	7687.25382	Prob > F =	0.0000
				R-squared =	0.1078
				Adj R-squared =	0.1059
Total	4204448.78	489	8598.05477	Root MSE =	87.677

valsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.1209269	.0157517	-7.68	0.000	-.1518764	-.0899775
_cons	294.6232	14.23058	20.70	0.000	266.6624	322.5839

Miami Lakes - All Properties within 1 mi

Source	SS	df	MS			
Model	415086.51	1	415086.51	Number of obs =	5490	
Residual	3859557.47	5488	703.272133	F(1, 5488) =	590.22	
Total	4274643.98	5489	778.765527	Prob > F =	0.0000	
				R-squared =	0.0971	
				Adj R-squared =	0.0969	
				Root MSE =	26.519	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0060756	.0002501	-24.29	0.000	-.0065658	-.0055853
_cons	126.0351	.8016833	157.21	0.000	124.4635	127.6067

Miami Lakes - All Properties within 1/2 mi

Source	SS	df	MS			
Model	38660.9843	1	38660.9843	Number of obs =	2506	
Residual	1425270.93	2504	569.197656	F(1, 2504) =	67.92	
Total	1463931.92	2505	584.403959	Prob > F =	0.0000	
				R-squared =	0.0264	
				Adj R-squared =	0.0260	
				Root MSE =	23.858	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0071169	.0008636	8.24	0.000	.0054236	.0088103
_cons	105.5034	1.396074	75.57	0.000	102.7658	108.241

Miami Lakes - All Properties within 1/4 mi

Source	SS	df	MS			
Model	66683.14	1	66683.14	Number of obs =	701	
Residual	277918.559	699	397.594505	F(1, 699) =	167.72	
Total	344601.699	700	492.288142	Prob > F =	0.0000	
				R-squared =	0.1935	
				Adj R-squared =	0.1924	
				Root MSE =	19.94	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0263517	.0020348	12.95	0.000	.0223567	.0303468
_cons	97.31828	1.876346	51.87	0.000	93.63433	101.0022

South Miami - All Properties within 1 mi

Source	SS	df	MS	
Model	334317.008	1	334317.008	Number of obs = 6012
Residual	30271813.1	6010	5036.90734	F(1, 6010) = 66.37
Total	30606130.1	6011	5091.68693	Prob > F = 0.0000
				R-squared = 0.0109
				Adj R-squared = 0.0108
				Root MSE = 70.971

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0058778	.0007215	8.15	0.000	.0044635	.0072921
_cons	171.3298	2.269847	75.48	0.000	166.8801	175.7795

South Miami - All Properties within 1/2 mi

Source	SS	df	MS	
Model	135797.527	1	135797.527	Number of obs = 2402
Residual	11302937.1	2400	4709.55712	F(1, 2400) = 28.83
Total	11438734.6	2401	4764.15436	Prob > F = 0.0000
				R-squared = 0.0119
				Adj R-squared = 0.0115
				Root MSE = 68.626

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0110498	.0020578	5.37	0.000	.0070146	.0150849
_cons	171.653	3.571081	48.07	0.000	164.6503	178.6557

South Miami - All Properties within 1/4 mi

Source	SS	df	MS	
Model	5826.4222	1	5826.4222	Number of obs = 893
Residual	3149540.13	891	3534.83741	F(1, 891) = 1.65
Total	3155366.55	892	3537.40645	Prob > F = 0.1995
				R-squared = 0.0018
				Adj R-squared = 0.0007
				Root MSE = 59.454

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	.0079295	.0061763	1.28	0.200	-.0041923	.0200512
_cons	179.7815	5.513494	32.61	0.000	168.9606	190.6025

West Kendall - All Properties within 1 mi

Source	SS	df	MS			
Model	182720.618	1	182720.618	Number of obs =	11189	
Residual	3972257.43	11187	355.077986	F(1, 11187) =	514.59	
Total	4154978.05	11188	371.378088	Prob > F =	0.0000	
				R-squared =	0.0440	
				Adj R-squared =	0.0439	
				Root MSE =	18.844	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0027129	.0001196	-22.68	0.000	-.0029473	-.0024784
_cons	74.6718	.4037902	184.93	0.000	73.8803	75.4633

West Kendall - All Properties within 1/2 mi

Source	SS	df	MS			
Model	7938.48814	1	7938.48814	Number of obs =	4089	
Residual	1537976.74	4087	376.309455	F(1, 4087) =	21.10	
Total	1545915.23	4088	378.159303	Prob > F =	0.0000	
				R-squared =	0.0051	
				Adj R-squared =	0.0049	
				Root MSE =	19.399	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0017997	.0003918	-4.59	0.000	-.0025679	-.0010315
_cons	73.30829	.597413	122.71	0.000	72.13703	74.47954

West Kendall - All Properties within 1/4 mi

Source	SS	df	MS			
Model	161.308472	1	161.308472	Number of obs =	2294	
Residual	864844.026	2292	377.331599	F(1, 2292) =	0.43	
Total	865005.334	2293	377.23739	Prob > F =	0.5133	
				R-squared =	0.0002	
				Adj R-squared =	-0.0002	
				Root MSE =	19.425	

varsf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
near_dist	-.0006955	.0010638	-0.65	0.513	-.0027815	.0013905
_cons	72.74319	.8555111	85.03	0.000	71.06553	74.42084

Appendix B: Supplementary Regression Results

CORAL GABLES - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE				
TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0359	-.0073	.0005	0.00
Single Family 1/2 mile	.0093	-.0070	.0008	0.00
Single Family 1/4 mile	.0083	-.0136	.0047	0.00
Multi-Family 1 mile	.2255	-.0200	.0004	0.00
Multi-Family 1/2 mile	.2157	-.0324	.0014	0.00
Multi-Family 1/4 mile	.2109	-.0640	.0022	0.00

DADELAND - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE				
TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0073	-.0034	.0009	0.00
Single Family 1/2 mile	.0181	-.0122	.0041	0.00
Single Family 1/4 mile	.0060	-.0226	.0354	0.53
Multi-Family 1 mile	.1506	-.0113	.0003	0.00
Multi-Family 1/2 mile	.4902	-.0316	.0004	0.00
Multi-Family 1/4 mile	.8271	-.0773	.0008	0.00

HIALEAH - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE				
TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0048	-.0012	.0002	0.00
Single Family 1/2 mile	.0017	-.0015	.0012	0.22
Single Family 1/4 mile	.0025	-.0038	.0084	0.65
Multi-Family 1 mile	.0016	.0004	.0002	0.06
Multi-Family 1/2 mile	.0399	.0043	.0006	0.00
Multi-Family 1/4 mile	.0034	.0017	.0011	0.13

MERRICK PARK - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE				
TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0356	.0113	.0010	0.00
Single Family 1/2 mile	.0057	.0084	.0032	0.01
Single Family 1/4 mile	.0294	.0474	.0161	0.00
Multi-Family 1 mile	.0018	-.0026	.0011	0.02
Multi-Family 1/2 mile	.3967	-.0790	.0011	0.00
Multi-Family 1/4 mile	.2801	-.3148	.0357	0.00

MIAMI LAKES - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE

TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0271	-.0031	.0004	0.00
Single Family 1/2 mile	.0156	.0053	.0016	0.00
Single Family 1/4 mile	.3275	.0064	.0065	0.33
Multi-Family 1 mile	.2323	-.0081	.0002	0.00
Multi-Family 1/2 mile	.0017	.0017	.0002	0.00
Multi-Family 1/4 mile	.2181	.0274	.0023	0.00

SOUTH MIAMI - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE

TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0038	-.0038	.0010	0.00
Single Family 1/2 mile	.0246	-.0202	.0039	0.00
Single Family 1/4 mile	.1670	-.1160	.0170	0.00
Multi-Family 1 mile	.0278	-.0087	.0011	0.00
Multi-Family 1/2 mile	.0103	.0086	.0023	0.00
Multi-Family 1/4 mile	.0101	-.0135	.0052	0.01

WEST KENDALL - REGRESSION RESULTS BY RESIDENTIAL PROPERTY TYPE

TYPE + SCALE	R ²	COEFFICIENT	STANDARD ERROR	P-VALUE
Single Family 1 mile	.0010	-.0005	.0002	0.05
Single Family 1/2 mile	.0088	.0027	.0008	0.00
Single Family 1/4 mile	.0240	-.0112	.0030	0.00
Multi-Family 1 mile	.1699	-.0038	.0000	0.00
Multi-Family 1/2 mile	.1127	-.0076	.0004	0.00
Multi-Family 1/4 mile	.0051	-.0036	.0012	0.00

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