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The Effect of Commercial Development Types on Property Tax Revenue: A Case Study of Commercial Property in North Buffalo, New York

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Abstract

Municipalities largely rely upon property taxes to fund their operations. They also have a great deal of control over the types of developments permitted within their jurisdiction. Different development types have different levels of value and it is important that municipalities understand the relative values of each development type in order to make an informed decision as to what they should permit to be built within their jurisdiction. This study tests the theory that urban/new-urbanist type developments are more valuable than suburban types and thus provide greater property tax revenues to the municipality by comparing various commercial building development types to the property tax assessment per acre of those developments, while controlling for myriad variables. The quantitative measures utilized were developed from various governmental sources including Geographic Information Systems. A hedonic pricing model was developed and tested through the use of multiple regression. The researcher found that urban development types provided a higher assessed value per acre than suburban development types. The results imply that municipalities should encourage more urban type commercial developments as opposed to suburban type commercial developments in order to maximize the property tax payoff of such developments.

Keywords

Commercial Development

Municipality

New-urbanism

Property Tax

Tax Assessment

Sprawl

Urbanism

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Chapter I: Introduction

Introduction

In the United States, municipalities rely on property taxes for a significant portion of their revenues. The amount of property tax collected is reliant on the assessed values of the properties within that municipality. It is important for a municipality to understand the consequences of various types of new construction or remodeling on the future assessed value of that structure so that they can make a determination as to what measures they should take to ensure that their property tax base is capable of affordably generating sufficient revenue to support their needs. The researcher lives in Buffalo, NY, an older city that is experiencing significant new development for the first time in many years and is interested in ensuring that benefits of new development are maximized in order to stabilize local government finances. This study will help to achieve that goal by determining which commercial development types provide the highest assessed values and thus provide more property taxes to a municipality than other types.

Statement of Problem and Purpose of Study

Municipalities throughout the United States rely on property taxation as a significant source of revenue to fund their expenditures. Property taxes are an *ad valorem* tax, meaning that the amount collected is directly connected to the value of the real property within the municipality. In such a system, municipalities have a vested interest in maintaining or growing the cumulative value of the properties within their boundaries in order to maintain or grow their base of revenue with which required services are provided to their citizens. If the revenue base stagnates or declines, the municipality can have serious difficulty providing the same level of services in the long term.

One of the methods by which a municipality can influence the values of its properties is by controlling the form and function of the structures built on those properties. Traditionally, municipalities have accomplished this through Euclidean zoning (see: *Village of Euclid, Ohio v. Ambler Realty Co.).* Euclidean zoning came about in the early twentieth century, and is a system whereby contrary uses are separated from each other; e.g., heavy industrial geographically removed from detached single-family housing. Euclidean zoning does not address the buildings forms (also referred to herein as development types), merely their uses. If the municipality desires to control building forms in order to maximize property value it must know the answer to various questions. Is a commercial building more or less valuable when its parking lot is located in front of or behind the building? What about if there is no parking at all? Do mixed-use buildings (i.e., buildings of multiple stories with both residential and commercial uses) have a higher value per square foot than single-use buildings? With the answers to these questions, the municipality can make an informed decision on whether or not to implement laws or regulations mandating that buildings be built in such a way as to maximize their value.

The purpose of this study is to test the theory that urban/new-urbanist type developments are more valuable than other types and thus provide greater property tax revenues to the municipality by comparing various commercial building development types to the property tax assessment per acre of those developments, controlling for their size, street frontage, traffic counts of fronted streets, and building age. Data were collected on the entire population of commercial properties in the North Buffalo neighborhood of the City of Buffalo (neighborhood area as identified by neighborhood maps maintained by the University at Buffalo's Lockwood Memorial Library) through use of publicly available property, and GIS data from the City of Buffalo website.

Significance of Study

This study will help to provide municipalities with the information they need to make an informed decision on whether or not to attempt to control commercial building forms in order to maximize their value and will identify which types of commercial developments provide maximum value. This study will also fill a gap in the literature because there are no studies that specifically show the relationship between different commercial development types and property values.

Chapter II: Review of Related Literature

Introduction

Municipalities influence the values of their properties by dictating the form and function of structures built on those properties through Euclidean zoning. The advantages of Euclidean zoning, such as removing the possibility of a steel plant being built across the street from a row of single family homes are obvious; however, there are many cases where the impacts and advantage of Euclidean zoning are exceedingly difficult to discover, and cannot be easily comprehended by the political establishment, let alone the layman (or taxpayer). Euclidean zoning also does not address the forms of the buildings/developments themselves, merely their uses.

The adoption of Euclidean zoning by municipalities led to the suburban sprawl that is the predominate development pattern today (Duany, Plater-Zyberk, & Speck, 2000b). The new-urbanism movement was founded in response to the problems of suburban sprawl and the resultant abandonment and decay of central cities. This abandonment and decay was recognized as early as the 1970's (Bradford & Rubinowitz, 1975, p. 78). New-urbanism is an urban planning theory that advocates that communities be built on a walkable as opposed to an auto-

oriented plan. One of its central tenets is that this type of development will result in more valuable and sustainable communities that will convey various benefits on the citizens of a place and on their government. For example, residents of new-urbanist developments have "more neighborhood social contacts" and "engaged in more outdoor activities" than those in sprawling suburbs (Brown & Cropper, 2001, p. 413). New-urbanism and its relationship to property taxes and commercial building types is an important theme throughout the research presented within this review.

Because no research was found that exactly covered the topic of how new-urbanist commercial development types affect property values and thus impact property taxes, this review will focus on three subjects that bear tangentially on the issue. The three subject areas, which developed the rationale and hypotheses behind the study and are herein reviewed, are: new-urbanism, property taxation, and impacts on property values/assessments.

Review and Critique of Literature

New-Urbanism

New-urbanism, as a movement, was founded by Andres Duany, Elizabeth Plater-Zyberk, and others in the early 1990's (Duany, Plater-Zyberk, & Speck, 2000a). They describe new-urbanism in their seminal work on the subject of urbanism and sprawl, *Suburban Nation* (2000a). They define new-urbanism as an urban planning theory that centers around the belief that cities should be organized and built in such a way as to promote diverse neighborhoods with a range of uses in close proximity to each other (e.g., housing, retail, light industrial, municipal, etc.), and characterized by being walkable, having public transit available, and providing for economic and environmental sustainability. Streets should be organized into cohesive traditional neighborhoods of inter-connecting streets, buildings should be built close to the sidewalk and on

generally small lots, green space should mostly be organized into functional parks, mixed-use buildings should dominate the commercial streets, and neighborhoods should provide a range of housing suitable for citizens from across the socio-economic spectrum (Duany et al., 2000a). Simply put, new-urbanism is old urbanism, city building the way it was done before the automobile era and Euclidean zoning took full control of development patterns after World War 2.

Most older communities were originally built this way and the vast majority of extant structures in our older municipalities fit within the definition of new-urbanism. Duany et al. (2000b) argue that "sprawl" is the opposite of urbanism. Sprawl has five components: (1) Housing Subdivisions; (2) Shopping Centers; (3) Office Parks; (4) Civic Institutions; and (5) Roadways. Since the dawn of the automobile era, most development in older municipalities has been in the new sprawl pattern, slowly replacing the older forms of urbanism. This new pattern primarily consists of reduced density, the geographic separation of the five components, or uses, as described above, and building site design being focused on easy automobile access. Most municipalities require, through land-use rules (zoning), that new construction to be built on this pattern; these land-use rules make new-urbanist development very difficult or illegal (Garde, 2006, p. 51). Older municipalities, having been originally built in an urban pattern, make very poor facsimiles of sprawling suburban towns when redevelopment in the sprawl pattern happens (which is typically mandated by the zoning code), resulting in many parts of these older places being a hybrid that is neither truly sprawl nor truly urban, but tend to have the negative aspects of each. At the same time, many older municipalities have seen their total assessed property value reduced considerably. This is likely due to the inherently less valuable nature of auto-oriented development, especially when grafted onto an otherwise intact new (old)-urbanist

model. Lucy and Phillips (2000) suggest that in recent years older suburbs have started to fall on hard times as their lack of housing diversity drives people away, resulting in lower property values, which lowers property tax revenues, ultimately leading to inadequate funding of schools and other governmental needs.

Mixed-use commercial projects, a key building type espoused by new-urbanism, have obtained double-digit returns for investors and are extremely popular amongst retirees and younger people (Culp, 2003). They also pay large quantities of property tax as a result of their success and resultant high property values.

Critiques of New Urbanism

Despite these, and other successes, not everyone agrees with the central tenets of new-urbanism. Ellis (2002) examines and rebuts some of the critiques of the new-urbanism. Overall, he argues that "the critical attack on new-urbanism remains unconvincing." The first critique of new urbanism is outlined by Sudjic and Sayer (1992); they state that new-urbanism is rooted in nostalgia and that it is more suited "to a Mediterranean fishing village social organization" (p. 282) than to our current time, and in so doing ignores the very real deficiencies of the past. Ellis rebuts this by stating that: "New Urbanists do not support the return of the racial, economic, or gender inequalities of earlier times. Nor is there praise for the *insularity* of 19th-century small towns or neighbourhoods" (p. 268). Although new-urbanism replicates many of the urban forms of yesterday, it does not seek to re-create the social or economic paradigms of that era, merely the richly detailed daily life in walkable cosmopolitan places.

Another criticism of new urbanism is the relative popularity of sprawl. If the argument is that new-urbanism is so superior, then why has the market seemingly chosen sprawl? Kotkin and Drukker (2005) estimate that since 1950, more than 90 percent of all growth in U.S. metropolitan

areas has been suburban and that more people are moving from cities to suburbs that from suburbs to cities (p. 9-10). Ellis (2002) rebuts this argument by stating that "Since World War II, low-density auto-dependent urban form has been heavily subsidized by the US government, aggressively marketed as the highest rung on the ladder of life, and endorsed as the only modern alternative by professional land planners, transportation planners and developers" (p. 270). He also notes that new-urbanist development has been illegal due to Euclidean zoning in most municipalities in America for the past roughly 70 years (p. 270). Beyond this explanation, Parchomovsky and Siegelman (2012) argue that there are a number of negative externalities to sprawl that suburban homeowners do not pay for and that the "standard 'revealed preference' argument [that] people live in suburbs, thus they prefer them, and living there is efficient—is likely to be wrong. A combination of market, governmental, and legal failures is associated with sprawling cities" (Parchomovsky & Siegelman, 2012, p. 259). Essentially, their points are: that the reason sprawl seems more popular than urbanism is that government corrupted the housing market, and that the suburban development pattern generates negative externalities that suburbanites do not have to pay for.

Another criticism of new-urbanism is based on equity. Lehrer and Milgrom (1996) argue that new-urbanism is oriented toward the wealthy and upper middle class and perpetuates economic and racial segregation through the development of exclusive developments on the edges of metropolitan areas. Ellis (2002, p. 279) takes on the equity argument against new-urbanism by explaining that new-urbanism isn't solely limited to large green-field development on the urban fringe. Another part of the equity problem is that there is simply so little well-built urbanism remaining in our municipalities that the places where it does exist are often very popular and thus expensive (Talen, 2010; Trudeau, 2013). There are however, successful new-

urbanist developments that have been built specifically to accommodate low income housing in such places at Pittsburgh (Deitrick & Ellis, 2004). Ellis (2002, p. 279) notes that there is nothing intrinsically within new-urbanism that makes it inequitable. In fact, new-urbanism argues that many types of housing that can accommodate people of various means be built within close proximity to each other. Apartments should be located above storefronts, homeowners should be allowed to build garage or attic apartments for rent, townhouses and row-houses should be encouraged as well as other building types that can accommodate people of all ages and income levels.

New-urbanist Solutions at the Municipal and State Level

Both states and municipalities can exert control over the built environment, states by right, and municipalities in accordance with state law. Various states and municipalities have attempted new-urbanist or its close relative, smart-growth policies. Smart-growth policy, as described by Sullivan and Yeh (2013), is roughly equivalent to new-urbanism in that they both result in less sprawl, however as Jepson Jr and Edwards (2010, p. 419) note, new-urbanism is more focused on the design of the built environment than smart-growth is. Four characteristics of smart-growth are identified: (1) Compact and Mixed-Use Development; (2) Promote a Variety of Transportation Options; (3) Protect Environmentally Sensitive Areas; and (4) Account for Affordable Housing. Following are relevant examples of new-urbanist and smart-growth policies.

Larsen (2005) speaks directly to this equity issue discussed in the preceding section by tackling the role of new urbanism in revitalizing inner city neighborhoods. She examines the impact of new-urbanist policies on the inner city neighborhoods of Parramore and Eola in Orlando, Florida over a 12-year period. Prior to this period the city of Orlando implemented a

number of policies to encourage new-urbanist development throughout the city. Both neighborhoods previously suffered decline that resulted in the lowering of the economic health of each community. During the study period, new-urbanist developments did not seem to occur with great frequency in the poorest neighborhood of Parramore; however, Eola did experience significant amounts of new-urbanist development. As part of their new-urbanist development, Orlando took steps to ensure that affordable housing continued to be built in the affected neighborhoods. This was achieved and helped reach the goal of maintaining greater diversity in the neighborhood without displacing existing residents. (When wealthy newcomers displace current residents, that process is known as gentrification.) Larsen (2005) advocates a concept known as the "Just City", where redevelopment happens with positive outcomes for people of all income-levels, and notes that municipalities that take a "just city" approach to new-urbanist development will understand "that there will still be winners and losers, but the just city recognizes these tensions and offers a means to work on addressing them with, above all, equity in mind" (p. 799).

Sullivan and Yeh (2013) identify various approaches that states have used to implement, or not implement, smart-growth programs and the consequences of each. They utilize Colorado and Virginia as negative examples and Oregon as a successful one. Colorado is held out as a state that has essentially no statewide smart-growth planning or policy. As a result, they had the "largest decrease in farmland of the states surveyed" and ranked "third highest in traffic congestion growth" (Sullivan & Yeh, 2013, p. 356). Similarly, Virginia does not have state wide smart-growth policies, resulting in them posting "the second largest increase in developed land per person between 1982 and 1997" and the "highest rate of conversion from rural to urban land" (Sullivan & Yeh, 2013, pp. 357-358).

Oregon is held out as the best example of the successful implementation of smart-growth standards. Oregon utilized statewide goals to guide regional planning in a focused smart-growth approach. One mechanism that they have used regionally is an "urban growth boundary (UGB)" (Sullivan & Yeh, 2013, p. 383). The UGB forces all new development to happen within the boundary, resulting in increased density and the construction of mixed-use new-urbanist developments. As a result of Oregon's system they were "largely successful in preventing sprawl and containing development" and Portland's average commute time was reduced by 9 percent (Sullivan & Yeh, 2013, p. 387).

Property Tax

The property tax is often the most important source of revenue for municipalities. This is typically because municipalities can control their property tax rate, but have less control over other sources of revenue like state aid, federal aid, and fines. Over the past 100 years, property tax revenue as a share of all local revenue has declined from 73.1 to 27.6 percent in 2007 (Bartle, Kriz, & Morozov, 2011, p. 272). From 1902 to the present, the share of local revenue provided by state and federal governments rose from 6.6 to 37.9 percent, a dramatic increase (Bartle et al., 2011, p. 272).

While the federal, state and local shares of revenue seem to have stabilized in recent years, spending in terms of real dollars has continued to increase at both the state and local levels; state and local expenditures nearly quadrupled from $324.4 billion to $1.15 trillion nationally between 1980 and 2000 (O'Conner, 2003, p. 79). These rising expenditures put pressure on local governments to raise more revenue, which they have done. Local property tax revenues have continued to expand, growing approximately 190% in the 1990's alone (Bartle et al., 2011, p. 272), while tripling between 1980 and 2000 (O'Conner, 2003, p. 79). It is important

to also note that revenues have plateaued in recent years, barely changing between 2000 (26.8%) and 2007 (27.6%). Based on these recent data, one can conclude that property tax revenue (as a share of all local revenue), has stabilized.

State and federal governments rely disproportionately on income taxes as opposed to property taxes. Income tax revenues usually fall during times of economic hardship such as recessions. The result of this is that the state and federal government often decrease transfers to municipalities during these difficult times (Bartle et al., 2011, p. 274). Thus, because it is the largest revenue source that municipalities can completely control, it is crucial for them to maximize their property tax revenues in an effort to become less reliant on state and federal government funds and better withstand the ebbs and flows of state and federal aid over the course of the economic cycle.

Oates (1999) and Spelman and Spelman (2003) note that the property tax provides transparency in local governments costs. This is because the property tax is highly visible to homeowners due to the annual (or semi-annual) nature of payment, making it very easy for homeowners to see exactly what they are paying. There is however, a caveat to that visibility, in that renters do not directly pay property taxes as the tax is captured by their rent; they do not typically see or pay the property tax bills. Another major advantage of the property tax is that according to Oates (1999, p. 67) the tax is "a tax on capital; as such, it is likely to be quite progressive in its incidence."

The property tax is not immediately affected by the economy as short term increases and decreases in residents' incomes do not generally rapidly affect property assessments (Spelman & Spelman, 2003). Although recent events related to the financial crisis that began in 2008 (which included a mortgage crisis precipitated by the collapse of real estate prices) seem to contradict

this point, the mortgage crisis seems to be a once in a lifetime event. Typically, assessments occur only once every few years, and therefore tend to fail to capture short-term changes in property values.

Property tax revenue grows in two ways: by increasing the property tax rate or by increasing the total assessed value of property in the municipality. The first method is relatively straightforward and provides for a very rapid response when confronting a budget shortfall, as the municipality can simply increase the tax rate on property to bring in more revenue to cover their deficit. The second method requires a long term approach whereby the municipality either encourages new development which will be added to the tax rolls, or takes some other action which will make currently existing properties more valuable and thus increase their assessments for taxation purposes. When individual properties' values rise, thus raising the overall property tax levy (sum total of all property taxes due to a municipality in a given fiscal year), it is known as "appraisal drift" (Dare, Guebel, & Isett, 2013, p. 21). Appraisal drift can have a negative impact on homeowners whose incomes or wealth does not grow fast enough to keep pace with their rising property tax bills, sometimes resulting in them being forced to sell home or risk seizure due to inability to pay their taxes. Appraisal drift can be a positive for a municipality that has historically experienced wide-scale depreciation of its property values and a corresponding drop in its property tax levy.

As noted previously, because sales and income tax receipts fluctuate with current economic conditions – while the property tax is not subject to such short-term fluctuations – the use of the property tax as a primary means of raising local revenues has a clear advantage over those other types because it provides a more consistent revenue stream. This observation, however, should not imply that reliance on property taxes for municipal revenue generation is

without its detractors. So, for example, a common criticism leveled against property taxes is that they lead to "inter-jurisdictional fiscal inequality" (Oates, 1999, p. 68). Inter-jurisdictional fiscal inequality was first recognized by Logan (1976, p. 333) (although not described by that name) and is caused by a type of self-selection by different demographics, resulting in homogenous communities – the result of which is the inequitable distribution of public wealth in communities across the metropolitan area. This means that different municipalities have different tax bases and that municipalities comprised of the wealthy (with high property values) will be able to raise more revenue and fund more or better services than municipalities with poorer residents (and lower property values). On the surface this appears to be a significant shortcoming of property tax reliance. However, Oates (1999) persuasively argues that all forms of local taxation have the same issue. Income taxes raised on residents of a poor municipality will be correspondingly low, as will corporate taxes paid to a municipality with little corporate presence. Essentially, any tax levied at the local level will by definition reflect the relative affluence of the citizens and companies that reside within their boundaries.

Although inter-jurisdictional fiscal inequality seems to be inescapable when collecting taxes on a local level, it is important to examine how this relates to school districts, which are largely dependent on local property taxes for funding. Kent and Sowards (2009) examine the relationship between property taxation and school finance by examining cases from across the country and the equity issues created by this relationship. Significantly, primary and secondary education receives 46.9 percent of its funding from local sources, 78 percent of which is provided by property tax revenues (Kent & Sowards, 2009). They state that the result of this inequity is that municipalities that are composed of poorer residents spend less on education on a per-pupil basis than districts composed of wealthier residents. Paradoxically, poorer districts

usually require even more resources because of increased numbers of English language learners and other special needs students, putting high quality education even further out of reach for these disadvantaged districts. Some states have implemented state-wide property taxation and shared those revenues with localities in order to minimize the effects of inter-jurisdictional fiscal inequality (Almy, 2000, p. 42). Thus, as these studies have demonstrated it is important for municipalities to work to grow their tax base so that they are not reliant on state aid, which can be abruptly changed by macro-level economic circumstances or the winds of political change at the statehouse.

Beyond state aid, one way that localities cope with inequities in their property tax base is by varying/increasing their tax rates in order to bring in more funds. Coombs, Sarafoglou, and Crosby (2012) examined the economic implications of this coping mechanism. Utilizing data on home sales in Savannah, Georgia between 2000 and 2005, they show that increases in property tax rates result in lower residential property values as evidenced by home sale prices. This can lead to a "death spiral" for poor municipalities where the need for funds is ever increasing, while the total municipal property tax levy continues to decrease necessitating further increases of the tax rate, which then results in the further deterioration of the tax levy, which then necessitate another increase of the tax rate, this cycle then continues, *ad infinitum*.

So, now that it has been established that municipalities must work to increase their tax base for the reasons described above, what are some of the other actions that they take when their tax base begins to shift, in either a positive or negative direction? Ihlanfeldt (2012) attempted to answer this question by examining data from cities and counties in Florida over a fifteen-year period from 1995-2009: expenditures were reduced in four categories: General Government

(e.g., financial, legal, administrative, planning, etc.), Public Safety, Physical Environment (e.g., utilities, garbage collection, sewer, etc.), and Culture/Recreation.

Alternatively, when cities experience appraisal drift and the property tax base of the municipality rises, the municipality tends to lower their property tax rate in order to maintain a similar property tax levy. This is often even mandated by the state in the form of a property tax circuit-breaker or cap system (Dare et al., 2013).

It is important to understand the consequences of municipalities within a metropolitan area changing their property tax rates in order to provide the services demanded by their citizens. Charles Tiebout's (1956) landmark theory on local expenditures models how those consequences come about. The Tiebout model, as it is now known, states that individuals will move from one municipality to another based upon which municipality have a tax rate and service level that appeals to that individual. This is now known as "voting with your feet."

The phenomena described by Coombs et al. (2012) above, whereby any increase in the property tax rate is reflected in the property values and ultimately the property assessment, simply shows the consequence of many individuals voting with their feet by moving to other places, reducing the desirability of property in the original municipality and further eroding its tax base. Ihlanfeldt's (2012) research led him to the same conclusion. He stated that: "how local governments respond to changes in their property tax base in the short run may alter the attractiveness of the community to different groups" (p. 27). He further described the process by stating:

> "If the tax base is declining and the city responds by raising its millage rate, it risks losing business investment to the other cities within the county. If the tax base is increasing, a city may look upon this as an opportunity to lower its millage rate and attract business investment away from its neighbors. But a city may be reluctant to lower its millage rate too much out of a fear that this may precipitate a bidding war among cities within its

> region, resulting in long–term negative consequences for its property tax revenues" (p. 47).

Song and Zenou (2009) attempt to provide an answer to another related aspect of that question, namely: do property tax rate changes increase sprawl? They examined the relationship between municipal property tax rates and urban sprawl in 445 urbanized areas across the United States. They determine that lower property tax rates in the suburbs, as compared to central cities, result in more development in those suburbs; this phenomenon is a primary contributor to sprawl. A one percent increase in the "ratio of the property tax rate in suburbs to the rate in the central city reduces the extent of the urban spatial by 0.27 percent. Essentially, when a municipality increases its tax rate above its neighbors it is incentivizing economic development within those neighbors at its own expense. Most municipalities seem to know this to be true, even if they aren't aware of the exact data. This weighs into the decision to control spending rather than raise taxes. As predicted by the Tiebout Model, this often has a similar end result, whereby people and businesses leave the municipality, not necessarily because the taxes are too high, but because the level of services is too low. There is no optimal way for a municipality to deal with a decreasing tax levy. This is why is it so crucial to maintain or grow the levy in order to maintain a competitive advantage with surrounding areas and to provide the highest possible service level at the lowest possible tax rates.

Brueckner and Kim (2003) look at the same issue from a slightly different perspective, laying out a model of the connection between property tax rates and urban sprawl by examining the effect of property taxes on property improvements. In the United States, almost all property taxes are leveled on the value of the land itself as well as the value of any "improvements" to the land (the buildings on the land). The result is developers' constructing buildings that are less dense than they would under a system with no property tax (or a lesser property tax) on

improvements because this keeps their taxes down. This incentivizes low-density sprawl. Brueckner and Kim (2003) advocate a switch from property taxes based on the value of the improvements and land combined to a property tax based on the value of the land itself, independent of the buildings or improvements on it; this is known as a "land value tax (LVT)." Although this isn't common, Jones (2006) argues that it is possible to assess land independent of improvements for the purpose of a LVT and also describes a method of conducting such an assessment. Brueckner and Kim (2003, p. 20) state that if this change is made in a revenue neutral way the switch would "shrink the city," by which they mean that it would incentivize increased density and limit sprawl. Oates and Schwab (1997) set out to determine the effects of a land value tax by examining the results in the only major American city to implement an LVT in the modern era, Pittsburgh. In the decades after implementation of the LVT in Pittsburgh, there was significantly more development in downtown Pittsburgh than in a group of comparable cities. Interestingly, they note that at the time Pittsburgh implemented LVT, the pre-conditions for a downtown resurgence were poorer in Pittsburgh than in some of the other cities, notably Buffalo, and that despite this, Pittsburgh easily eclipsed those peer cities in downtown development (p. 17).

Impacts on Property Values/Assessment

The previous section contains a discussion of the causes and effects of a change in property tax revenues and rates in a municipality. In this section, the impacts of mixed-land use development on the assessed values of properties will be explored, with an eye toward determining if mixed-use development is likely to result in higher or lower property values than sprawl-type development. After a comprehensive search of various sources dealing with assessment, urban planning, and public administration was conducted, no studies were found that

directly addressed the impact of new-urbanist type development on property values of commercial or mixed-use buildings. However, some articles have been published on the subject of how mixed-use development affects nearby residential properties (primarily single-family homes). An important precursor to this research was conducted by Brigham (1965); his work established a significant positive correlation between land value and accessibility to places of desired travel, including employment centers, which is a central tenet of new-urbanism.

Koster and Rouwendal (2012) examined the relationship between mixed-use (not explicitly described as new-urbanist, but nonetheless seeming to mostly conform with new-urbanist principles) developments and residential property values within a single community. They examined 10,152 housing transactions (representing 80% of the total) in the Rotterdam City, Amsterdam Region during 2006. Their research found that residents were willing to pay a 2.5 percent residential home percent price premium to live in a mixed-use community versus a non-mixed-use community. They call this premium "willingness to pay."

Kauko (2009) examined the property values of residential property in Budapest in neighborhoods that experienced significant new-urbanist type infill. They found that property values grew in neighborhoods where this type of infill was built faster than in the neighborhoods where new-urbanist developments were not undertaken. A possible drawback to these particular articles is that they examine regions in Europe, which has relatively less sprawl and more urbanism than the United States and thus may not be directly comparable.

Song and Knaap look at the same issue in a series of articles, but focus on the United States. They determined that residents will pay more for houses with connective street networks, shorter dead-end streets, more and smaller blocks, and better pedestrian accessibility (Song & Knaap, 2003, p. 236). They then examine the impact on single family housing prices "when

mixed uses are included in neighborhoods" (p.676) in Washington County, OR. They utilized GIS data as well as sale price data and conducted a hedonic analysis. They determined that residential single-family detached home property values rise when in proximity to neighborhood commercial structures as well as public parks, especially when those are within walking distance. Song and Knaap (2004, p. 676) found that the "research also shows that housing prices are higher in communities that are dominated by single-family use and in which multi-family residential, commercial, industrial, public institutional and public park uses are evenly distributed." Song and Knaap (2004, p. 677) suggest their research indicates four factors that should guide the discussion of mixed land use neighborhoods: first, the type of mixed land uses needs to be compatible with the surrounding single-family residences; second, public parks should be welcomed, third; new businesses in neighborhoods should be service-oriented; and, fourth, "commercial developments should be appropriate to the neighborhood, scaled in size to fit the neighborhood, and should offer convenient access to pedestrians.

Tu and Eppli (2001) attempt to compare housing values in exclusively new-urbanist neighborhoods against housing in non-new-urbanist neighborhoods. They analyzed 5,000 home sales in three different municipalities from 1994-1997 in order to determine the impact of new-urbanist development patterns on housing prices. The three municipalities are from various parts of the country: Kentlands near Washington, D.C.; Laguna West near Sacramento, California; and Southern Village in Chapel Hill, North Carolina (Tu & Eppli, 2001, p. 3). They controlled for various confounding variables and found that homebuyers paid between 4.1 and 14.9 percent more for homes in the new-urbanist developments as opposed to standard suburban developments, a statistically significant result (pp. 2-4).

Again, these studies are somewhat less pertinent to the purpose of this study because they do not examine the values of multifamily residential properties, nor do they examine mixed-use properties to determine if being mixed-use increases their values.

Summary

This literature review examined the linkages between property taxes and new-urbanist development patterns on property values and municipal finances. The research indicates that new-urbanist development patterns can positively influence property values and thus impact municipal finance. The primacy of property taxes on municipal finance is discussed, establishing the need to establish a robust plan to ensure the maintenance and growth of municipal property values. Further study is necessary to determine if new-urbanist development patterns increase the property values of commercial structures and thus increase the property tax levy.

Statement of Hypothesis

The literature review indicated that commercial developments built in accordance with new-urbanist principles (i.e., multiple story, building built to the front lot line with retail/commercial space on the first floor and offices or apartment above) will be more valuable (on an assessed value per acre basis) than developments built in accordance with other paradigms (i.e., automobile oriented sprawl characterized by single story buildings built in the middle or rear of a lot with parking between the building and front lot line).

Alternative hypothesis: Urban/new-urbanist commercial developments have property values per acre greater than non-new-urbanist commercial developments.

Null hypothesis: Urban/new-urbanist commercial developments have property values per acre less than or equal to non-new-urbanist commercial developments.

Chapter III: Methodology

Design of Study

This statistical study utilizes a quantitative methods research design to test the theory that urban/new-urban types of commercial building development provide higher assessed values per acre than suburban types, controlling for the size, street frontage, traffic counts of fronted streets, and building age of the various developments. The study accomplishes this through the use of a hedonic pricing model and the data will be analyzed through the use of multiple regression. The following hedonic multiple regression model was utilized:

Assessed value per acre = commercial development type +

building size (1st floor acreage) + lot acreage (size) + average annual daily traffic (street traffic count) + lot street frontage + building age

The dependent variable "assessed value per acre" is framed as "per acre" because land is the one variable that municipalities cannot control. The municipality can influence the form and function of commercial development, but it cannot create more land, which acts as a constraint to growing property tax revenues. Additionally, the size of individual parcels varies and any analysis of assessed value must take that fact into consideration; this study accounts for that difference in parcel size by looking at assessed values on a per acre basis.

The confounding variables of building size, lot size, street traffic count, street frontage, and building age are all publicly available. The independent variable of commercial

development types was determined by the researcher in accordance with the process described in section c.

In order to better understand the dependent and independent variables univariate analysis was also conducted prior to conducting the multiple regression analysis. After conducting the multiple regression and analyzing the results, the researcher decided to conduct a stepwise multiple regression as well, the analysis of which is also included.

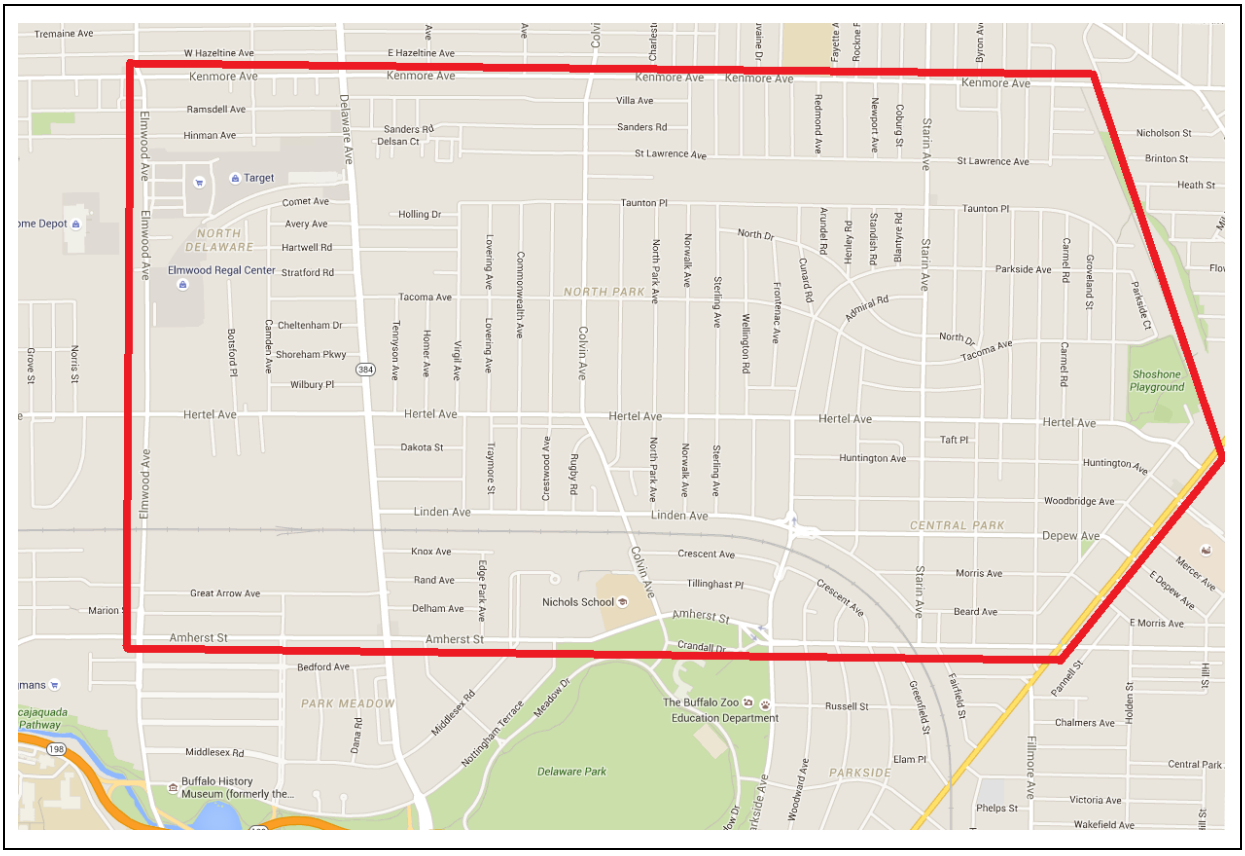
Sample Selection and Description of Participants

The population of interest for this study consists of all commercial developments extant in the United States. The population that is accessible to this study is all commercial developments in the city of Buffalo. This population is accessible due to geographic proximity and familiarity to the researcher as well as the availability of property data from the government of the city of Buffalo.

The city of Buffalo neighborhood map maintained by the University at Buffalo's Lockwood Memorial Library was utilized to provide a list of potential neighborhoods from which to choose a cluster sample. There are numerous advantages to using a cluster sample in this case. Choosing a single neighborhood allows for the elimination of confounding variables that could affect a random sample of properties over a large geographic area; examples of such variables include: the demographics of nearby residents, abandonment of nearby properties, access to various means of transportation, quality of nearby schools, crime rates, etc. Additionally, utilizing the cluster method allows for the selection of a neighborhood with a diverse mix of different development types, from urban/new-urbanist to suburban, which is needed to fulfill the goals of the study.

The researcher examined each city of Buffalo neighborhood using Google maps in order to identify a neighborhood that exhibited both urban/new-urbanist and suburban development patterns. The North Buffalo neighborhood best fit the criteria for the study and was selected. This neighborhood is depicted in Figure 1 Boundaries of the North Buffalo Neighborhood and is defined by the following boundaries: Kenmore Ave. (northern), Elmwood Ave. (western), Amherst St. (southern), and Main St. and an abandoned railroad right of way (eastern).

Figure 1 Boundaries of the North Buffalo Neighborhood



North Buffalo is also a good fit for this study because the entire neighborhood was reassessed at the same time, 2010 (M. Garozzo-Payne, personal communication, April 29, 2015), allowing for simpler analysis. All commercial developments in this neighborhood were included in the sample, with the exception of commercial developments on streets for which there is no traffic

count data (as traffic count data is one of the control variables). Additionally, commercial developments that were not built with a retail component were excluded (e.g., manufacturing plants, apartment buildings, and government facilities).

Data Collection Methods

Data for this research was obtained through three primary sources:

- City of Buffalo Geographic Information System (GIS);
- City of Buffalo Property Information website; and
- State of New York, Department of Transportation, Traffic Data Viewer.

Thes data include the control variables of building size, street frontage, traffic counts of fronted streets, and building age of each commercial development. (An average was calculated for parcels with multiple buildings of various ages.)

Neighboring parcels with a common owner and obvious codependence (e.g., shared parking or driveway, single business over multiple parcels, etc.) are considered single commercial developments: their data were combined and treated as a single parcel.

The dependent variable, assessed value per acre, was created by dividing each parcel's assessed value by its acreage (both data were obtained from the GIS). The researcher identified two potential methods of determining "commercial development type" (a potential explanatory variable). The first option involves utilizing the various use codes assigned to each property in the GIS. Dozens of use codes exist and the researcher conducted a visual analysis of the properties once the data was obtained in order to determine if use codes can be grouped into roughly five commercial development types. The use codes as identified by the city were not consistent and this method was rejected. The second method considered was determined by the researcher through a visual analysis of the various commercial development types extant in

North Buffalo and influenced by the various types of commercial developments identified in the review of the literature. Five commercial development types were identified and are listed in order from most urban/new-urban to most suburban: (1) multi-story street-front, (2) single-story street-front, (3) strip-mall, (4) free standing store, and (5) big-box shopping center. For the purposes of this study the first two development types are considered urban/new-urban, while the final three are considered suburban. North Buffalo examples of each of these types are included in Figures 2-6.

Figure 2 Example of Commercial Development Type 1: Multi-story street-front Commercial Development Pattern in North Buffalo

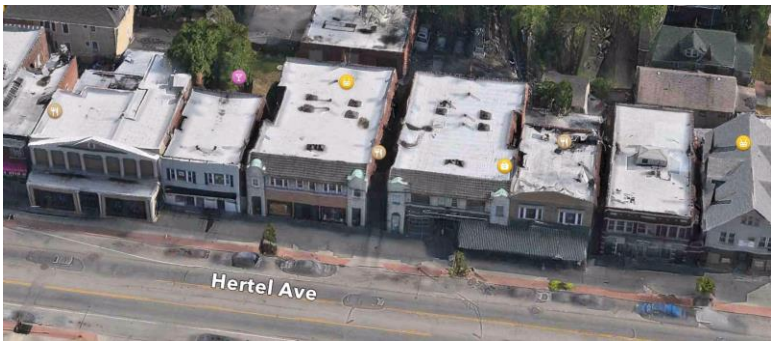


Figure 3 Example of Commercial Development Type 2: Example of the single-story street-front commercial development pattern in North Buffalo

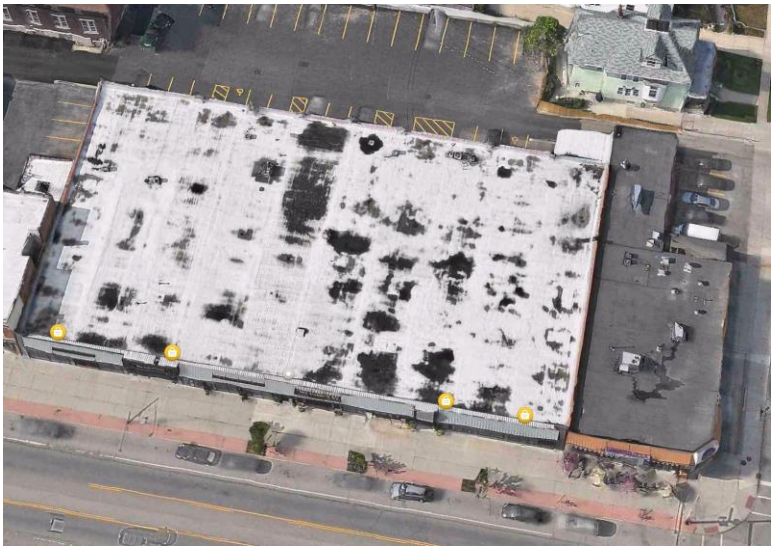
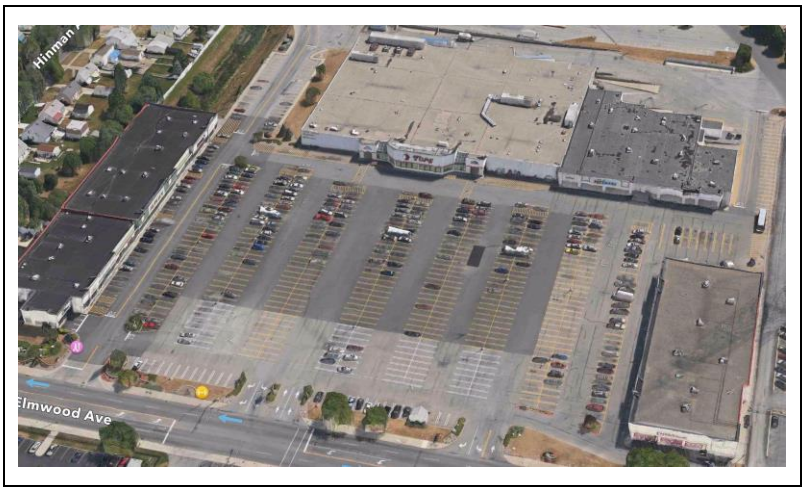


Figure 4 Example of Commercial Development Type 3: Example of the strip-mall commercial development pattern in North Buffalo

Figure 5 Example of Commercial Development Type 4: Example of the free-standing store commercial development type in North Buffalo

Figure 6 Example of Commercial Development Type 5: Example of the big-box shopping center commercial development type in North Buffalo



The researcher utilized google maps and street-view in conjunction with the GIS data to categorize each property into one of the five categories.

Chapter IV: Data Analysis and Discussion

Due to the nature of this (quantitative) analysis, it would be difficult to separate the data analysis from discussion; therefore, discussion of the results is integrated with the data analysis. This chapter presents the data through both descriptive and inferential statistical analyses. The chapter begins with a description of the statistics (central tendency and variability). The second section is an inferential analysis designed to test this study's hypothesis.

Descriptive statistics

Quantitative data were collected from their various sources as described above.[1] Table 1 Descriptive Statistics of Dependent and Independent Variables provides descriptive statistics (centrality and variability) for the dependent and independent variables.

Table 1 Descriptive Statistics of Dependent and Independent Variables

	Lot street frontage	Lot acreage	Year building constructed	Acreage of building footprint	Annual average daily traffic	Commercial development type	Assessed value per acre
N	278	278	278	278	278	278	278
Mean	119.64	.74	1948.13	.22	15,180.29	2.17	1,031,977.59
Median	82.80	.20	1941	.08	13873	2	840,058.53
Mode	50	.09[a]	1920	.04	13873	1	422,535.21[a]
Std. Dev.	116.15	1.95	32.18	.53	5,307.95	1.25	709,394.51
Range	809.87	15.96	157	4.82	19361	4	4,179,389
Minimum	18	.02	1855	.004	6240	1	94,115.28
Maximum	827.87	15.98	2012	4.83	25601	5	4,273,504.27

a. Multiple modes exist, the smallest value is shown.

Because the hypothesis was designed to test whether or not new-urbanist type commercial developments were more valuable per acre than suburban type commercial developments, descriptive statistics were obtained for the various independent variables by development type separately. As laid out in chapter III, paragraph (c) the commercial

[1] The independent variable is scale, while all other variables are scale, with the exception of "commercial development type", which is nominal.

development types were broken down into five categories, labeled 1 through 5 and referred to throughout this section as type 1, type 2, etc. Type 1 is considered the most urban, while type 5 is considered the most suburban. Of the 278 commercial developments, a plurality, 122, were type 1; the second most common development type was type 3 with 55. There were 51 type 2 developments, 37 type 4 developments, and 13 type 5 developments. The descriptive statistics by commercial development type are presented in Table 2 Descriptive Statistics by Commercial Development Type below.

Table 2 Descriptive Statistics by Commercial Development Type

	Commercial Development Type	Mean	Median	Standard Deviation	N
Assessed Value per Acre	1	1,390,871.590	1,202,896.418	752452.760	122
	2	1,062,833.220	877,659.574	761,902.271	51
	3	597,908.983	545,229.244	264,647.768	55
	4	647,208.815	595,734.817	246,987.057	37
	5	474,401.572	503,524.673	141,827.019	13
Lot frontage	1	71.218	50	68.168	122
	2	81.278	66	45.273	51
	3	166.938	135.250	112.704	55
	4	176.891	163	76.162	37
	5	361.414	366.930	260.116	13
Lot acreage	1	.194	.121	.291	122
	2	.230	.162	.187	51
	3	.784	.509	.905	55
	4	.653	.417	.559	37
	5	7.834	6.443	4.852	13
Year building constructed	1	1924.99	1920	20.488	122
	2	1948.33	1950	27.416	51
	3	1966.55	1965	24.839	55
	4	1981.46	1987	19.251	37
	5	1991.69	1995	13.187	13
Acreage of building footprint	1	.102	.057	.138	122
	2	.105	.091	.084	51
	3	.252	.196	.295	55
	4	.089	.061	.092	37
	5	2.032	2.054	1.440	13
Annual average daily traffic	1	13,381.697	12,272	4,348.297	122
	2	14,452.730	12,673	5,092.544	51
	3	17,271.160	19,379	5,039.359	55
	4	17,303.680	19,379	6,302.768	37
	5	20,024.230	19,379	4,867.885	13

As shown in Table 2, the mean and median assessed value per acre both decreased from the most to the least urban types, with the exception of type 4 having a larger mean, $647,209, and median, $595,734, than type 3, which was $597,909 and $545,229 respectively. Interestingly, the mean assessed value per acre for type 1 is 293 percent higher than the assessed value for type 5 developments. The standard deviations for the two more urban development types were three to five times larger than for the three suburban development types, indicating that there is a much wider range of values for the urban development types.

Lot frontage also increased as the development type moved from most to least urban. Median lot frontages were 50 feet for type 1, 66 feet for type 2, 135.250 feet for type 3, 163 feet for type 4, and 366.930 feet for type 5. The means showed a similar trend. Standard deviations fluctuated between the various types with types 3 and 5 having the largest standard deviations.

Lot acreage showed a similar increase as the development types went from most to least urban. The median type 1 lot acreage was .194 acres, while type 2 was .230 acres, type 3 was .784 acres, type 4 was .653, and type 5 was 7.834 acres. Interestingly, type 4 lots were slightly smaller than type 3, and type 5 lots were much larger than those in any other category. Mean lot acreage showed a similar trend. Type 5 exhibited the largest standard deviation, 4.852, while the standard deviations for the other types were all below 1. The large shopping plazas typical of type 5 vary widely in their total acreage.

"Year building constructed" increased as the development type went from most to least urban, which is consistent with the history of development as described in the literature review (chapter II). Buildings of type 1 were constructed in 1924 on average, while buildings of type 2 were built in 1948, type 3 in 1966, type 4 in 1981, and type 5 in 1991. Median ages were very close to the age as calculated by the mean and exhibited the same trend as the means. Standard

deviations ranged between 13 and 27 (indicating a great deal of variability), with types 2 and 3 having the largest deviations.

The size of the building's footprint mostly increased as the commercial development type went from urban to rural, however type 4 actually had the smallest building footprint. This can be explained by the fact that most commercial development type 4 buildings tend to be small fast food restaurants or other modestly sized buildings surrounded by a large parking lot (average building footprint of .089 acres). Most building footprints tended to be very small, excepting type 5, with averages of .102 acres for type 1, .105 acres for type 2, .252 areas for type 4, and 2.032 acres for type 5. Type 5 buildings are significantly larger on average than the other types, which can be explained by the relatively large stores common to this development type. Many large plazas with grocery stores, hardware stores, or department stores comprise the buildings in commercial development type 5. Medians exhibited the same trend as the means.

Annual average daily traffic counts also increased as the commercial development type went from more urban to more suburban. Type 1 had an average of 13,381, type 2 was 14,452, type 3 was 17,271, type 4 was 17,303, and type 5 was 20,024. Because many of the commercial developments shared the same handful of traffic counts, the medians were very similar; three commercial development types exhibited the same median annual average daily traffic count. The standard deviations were also very similar for each development type.

Inferential statistical analysis

The researcher expected that there would be a statistically significant difference between each of the different commercial development types and that the more new-urbanist development types provide a higher value per acre than the suburban types. In order to test the alternate hypothesis of whether urban/new-urbanist commercial developments have property values per

acre greater than non-new-urbanist commercial developments, the hedonic price model identified in chapter III, paragraph (a) was used: 278 commercial developments met the criteria identified in chapter III, paragraph (b); data was collected on each in accordance with chapter III, paragraph (c); and the resulting data was analyzed using SPSS in accordance with the process identified in chapter III, paragraph (d).

SPSS was used to conduct multiple regression using the formula described in chapter III, paragraph (a). Table 3 Multiple Regression Model Summary shows the model summary obtained from SPSS. The R^2 in this case is .239, while the adjusted R^2 was .222, which means that the model explains 22.2 percent of the variation in the assessed value per acre in real life. This number suggests that the model is a moderate fit, therefore it may not be able to accurately predict the assessed value per acre from known independent variables.

Table 3 Multiple Regression Model Summary

Model	R[a]	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489	.239	.222	625786.548
a. Predictors: (Constant), Lot street frontage, lot acreage, year building constructed, acreage of building footprint, annual average daily traffic, commercial/retail development type				

The Analysis of Variance (ANOVA) table is listed below in Table 4 Multiple Regression ANOVA. The coefficients are listed in Table 5 Multiple Regression Coefficients. A significant regression equation was found ($F(6,271) = 14.16$, $p < .001$), with an R^2 of .239. Commercial developments' assessed value per acre is explained by the following formula:

Assessed Value per Acre = 2,582,788.71 – 751.766(Lot Street Frontage) – 12,548.529(Lot Acreage) – 485.293(Year Building Constructed) + 185,406.091(Acreage of Building Footprint) – 1.009(Annual Average Daily Traffic) - 245,600.720(Commercial Development Type)

Table 4 Multiple Regression ANOVA

Model [a]		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.27E+13	6	5.545E+12	14.160	.000[b]
	Residual	1.061E+14	271	3.916E+11		
	Total	1.394E+14	277			

a. Dependent Variable: Assessed Value per Acre
b. Predictors: (Constant), Lot street frontage, lot acreage, year building constructed, acreage of building footprint, annual average daily traffic, commercial/retail development type

Table 5 Multiple Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients			95 % Confidence Interval for B	
Model[a]	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	2,582,788.71	3,252,148.26		.794	.428	-3,819,898.7	8,985,476.16
Lot street frontage	-751.766	488.412	-.123	-1.539	.125	-1,713.330	209.798
Lot acreage	-12,548.529	72,570.808	-.035	-.173	.863	-155,422.76	130,325.707
Year building constructed	-485.293	1708.987	-.022	-.284	.777	-3849.872	2879.286
Acreage of building footprint	185,406.091	257,356.992	.139	.720	.472	-321,267.11	692,079.293
Annual average daily traffic	-1.009	7.695	-.008	-.131	.896	-16.160	14.141
Commercial development type	-245,600.720	48,871.632	-.434	-5.025	.000	-341817.06	-149384.39

a. Dependent Variable: Assessed Value per Acre

With a p value of less than .001, the regression equation's results are significant, however the only independent variable that was a significant predictor as shown in the "Sig." column of table (5) was "commercial development type"; all other independent variables were insignificant predictors.

The researcher conducted a stepwise regression in SPSS as a follow on measure to verify this. Table 6, Table 7, and Table 8 show the results obtained from the stepwise regression in SPSS.

Table 6 Stepwise Multiple Regression Model Summary

Model	R[a]	R Square	Adjusted R Square	Std. Error of the Estimate
1	.479	.229	.227	623832.433
a. Predictors: (Constant), commercial development type				

Table 7 Stepwise Multiple Regression ANOVA

Model[a]		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.199E+13	1	3.199E+12	82.195	.000[b]
	Residual	1.074E+14	276	3.892E+11		
	Total	1.394E+14	277			
a. Dependent Variable: Assessed Value per Acre b. Predictors: (Constant), commercial development type						

Table 8 Stepwise Multiple Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model[a]	B	Std. Error	Beta	t	Sig.
1 (Constant)	1,619,606.53	74,839.570		21.641	.000
Commercial development type	-271,363.53	29,931.522	-.479	-9.066	.000
a. Dependent Variable: Assessed Value per Acre					

The stepwise multiple regression found a significant regression equation ($F(1,276) = 82.195$, $p < .001$), with an R^2 of .229. Development's assessed value per acre is equal to 1,619,606.53 – 271,363.53(Commercial Development Type). Because the p value was less than .001, commercial development type was a significant predictor. All other independent variables were eliminated.

Because the results of the multiple regression and stepwise multiple regression were both significant, the null hypothesis is rejected and the alternative hypothesis accepted; urban/new-urbanist commercial developments have property values per acre greater than non-new-urbanist commercial developments**.** Therefore, it can be concluded that the more urban a commercial development is, the higher the assessed value per acre the development will have.

The researcher utilized the regression equation to determine the value of five hypothetical proposed commercial developments for a single site in order to compare the assessed value per acre of the development if it were built in each of the five commercial development types. The proposed development alternatives had the attributes shown in Table 9 Hypothetical Commercial Development Comparison by Commercial Development Type.

Table 9 Hypothetical Commercial Development Comparison by Commercial Development Type

Development	1	2	3	4	5
Lot street frontage	200	200	200	200	200
Lot acreage	2	2	2	2	2
Year building constructed	2015	2015	2015	2015	2015
Acreage of building footprint	0.5	0.5	0.5	0.5	0.5
Annual average daily traffic	20000	20000	20000	20000	20000
Commercial development type	1	2	3	4	5
Assess Value per Acre	$1,256,395	$1,010,795	$765,194	$519,593	$273,993

The regression equation can also be used to predict assessed value per acre. Using the same data to fill in the independent variables for this hypothetical case, the anticipated assessed value per acre for the development built in multi-story street front development type (type 1) is 455 percent higher than that of the one built as a big box shopping center (type 5). The implication here is that the municipality's tax base would be increased the most by the construction of a building built in the model of commercial development type 1. However, this conclusion should be tempered due to the adjusted R Square of .222 (see Table 3 Multiple Regression Model Summary), which implies that the variables measured account for 22.2 percent of the variability in the data.

Chapter V: Summary, Implications, and Future Research

Implications of Possible Outcomes

There are many implications of this study for municipal governments. They cover a variety of areas such as taxation, land use, and economic development. This study indicates that the most valuable properties, in terms of assessed value per acre, are those that are multiple or single story and are built right up to the sidewalk in an urban/new-urban fashion (commercial development types 1 and 2). These buildings also tend to be the oldest in North Buffalo. The newer, more suburban development types (type 3, 4, and 5) are not providing as much tax revenue to the city and county as the older more urban development types.

The results of the study strongly indicate that the City of Buffalo could strengthen its tax base by making every effort to ensure that older buildings of urban types remain in use and are properly maintained. Redevelopment plans that replace urban type buildings with suburban type buildings should be closely scrutinized to ensure that the development is truly in the best interest of the municipality.

Over time, if Buffalo continues to redevelop commercial property in the suburban commercial developments types identified, it stands to reason that the City's overall property tax base would be lower than would be the case if existing urban/new-urbanist commercial developments were well-maintained/revitalized and/or new urban/new-urbanist commercial developments were undertaken. This lowering effect and resulting constraint on the tax levy, increases the likeliness of either service cuts or increased property tax rates – both of which the Tiebout Model predicts would result in even less development in the city – resulting in a vicious cycle of fewer and fewer services and higher and higher tax rates.

To mitigate this effect, state and local policy makers could adopt policies that steer new developments into those more urban development types. As discussed in Chapter II above, the adoption of an urban growth boundary is one option to increase the demand, and thus the price, of land, which in turns drives up the density of developments as seen in Portland, Oregon (discussed above). Adjustments to the zoning code that require developments to conform to the more urban commercial development types would also serve to accomplish this.

Limitations of this Study

The study was limited to one neighborhood of the City of Buffalo. Although a diverse and representative neighborhood, the relatively small number of data points (278) means that caution should be taken when applying the results of the study to other areas. The overall results, that urban development types are more valuable than suburban ones is likely externally valid and transferable to other locations, however the precise numbers determined by the regression analysis are likely not widely applicable beyond Buffalo, NY due to the uniqueness of each real estate market. Difficulty in expanding the study to include much larger geographic areas would be encountered as many data points had to be obtained by the researcher separately and manually added to the data table. Examples include annual average daily traffic counts and commercial development types.

Another limitation lies in the weakness of adjusted R^2 of .222. The model does not predict the assessed value per acre of individual properties based upon the values of the independent variables with a great deal of accuracy. This somewhat limits the (predictive) applicability of the results as municipalities should be circumspect about weighing potential new commercial developments based upon their possible future assessed value per acre using the

model described here. Instead, municipalities should triangulate the methodologies they utilize to predict the payoff of new construction.

Future Research

This research examined the assessed value per acre of commercial development types by individual parcel. Future research should be conducted in order to determine the assessed value per acre of entire blocks or neighborhoods in order to determine the relative values of neighborhoods of differing types and the effects of nearby developments on the assessed values of other developments in the general vicinity; for example, is there a virtuous cycle whereby the presence of certain types of development raise the property values of all nearby parcels, regardless of the development on them? The literature review (Chapter II) revealed that similar research has been conducted for residential properties in mixed-use versus suburban neighborhoods – the results of these studies offer a promising foundation for future research on commercial properties.

Another potential area for future research is in examining the relationship between the costs of public infrastructure and services in a neighborhood and the assessed value per acre of the properties in that neighborhood, with a goal of determining whether or not the properties are providing enough property tax revenue to sustain their share of the cost of services and infrastructure. Ideally, this would help inform municipalities as to which types of developments they should allow based upon their infrastructure and service costs.

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Appendix

Date Table:

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
	680	AMHERST ST	217.89	0.852	1892	1	0.632	6,240	422,535
	117	COLVIN	156.72	0.342	1975	4	0.041	6,518	365,497
	534	COLVIN	81.20	2.481	1971	3	0.419	11,831	94,115
	553	COLVIN	119.88	0.179	1900	1	0.049	11,831	502,793
	564	COLVIN	117.93	0.179	1969	1	0.142	11,831	1,128,492
	625	COLVIN	127.51	0.332	1950	4	0.027	11,831	225,904
	626	COLVIN	127.51	0.451	1977	3	0.135	11,831	521,064
	2075	DELAWARE	177.00	0.406	1995	4	0.029	25,601	626,601
	2080	DELAWARE	134.02	0.208	1961	4	0.046	25,601	855,769
	2095	DELAWARE	114.40	0.268	1950	2	0.104	25,601	932,836
	2113	DELAWARE	41.31	0.144	1950	2	0.063	25,601	2,055,556
	2119	DELAWARE	38.00	0.131	1965	2	0.047	25,601	946,565
	2130	DELAWARE	641.02	5.267	1960	3	1.893	25,601	510,765
	2141	DELAWARE	192.00	0.661	2004	3	0.228	25,601	900,151
	2155	DELAWARE	151.51	0.536	2000	3	0.191	25,601	923,507
	2161	DELAWARE	38.00	0.124	1855	1	0.060	25,601	927,419
	2165	DELAWARE	78.00	0.270	1980	2	0.035	25,601	555,556
	2181	DELAWARE	148.92	0.218	1988	4	0.034	25,601	662,844
	2215	DELAWARE	153.81	1.000	1978	4	0.117	25,601	769,000
	2226	DELAWARE	147.00	3.181	1981	5	0.666	25,601	319,082
	2227	DELAWARE	96.36	0.281	1979	4	0.067	25,601	885,053
	2228	DELAWARE	163.00	0.661	2000	4	0.111	25,601	1,210,287
	2229	DELAWARE	103.25	0.331	1969	3	0.170	25,601	906,344
	2230	DELAWARE	47.50	6.443	2009	5	2.146	25,601	605,308
	2234	DELAWARE	142.88	0.699	2007	5	0.119	25,601	608,011
	2240	DELAWARE	120.00	0.529	2006	4	0.067	25,601	824,197
	2265	DELAWARE	39.44	0.110	1910	1	0.067	25,601	1,590,909
	2289	DELAWARE	38.29	0.115	1900	1	0.040	25,601	773,913
2262, 2290		DELAWARE	355.00	1.942	2007	3	0.555	25,601	402,369
	2300	DELAWARE	120.00	0.702	1950	3	0.372	25,601	626,781
	2303	DELAWARE	156.20	0.432	1981	4	0.067	25,601	694,444
	2310	DELAWARE	340.00	2.532	1994	4	0.467	25,601	539,100

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
2350, 1052 Hertel		DELAWARE	167.55	0.659	1,986	3	0.240	20,367	925,645
	2363	DELAWARE	269.51	0.857	1976	4	0.057	20,367	511,085
	2380	DELAWARE	282.60	0.881	1995	4	0.107	20,367	582,293
	2401	DELAWARE	50.12	0.173	1925	1	0.050	20,367	635,838
	2417	DELAWARE	40.50	0.145	1960	3	0.019	20,367	413,793
	2424	DELAWARE	220.00	0.677	1995	3	0.290	20,367	838,996
	2431	DELAWARE	50.12	0.186	1965	3	0.004	20,367	322,581
	2455	DELAWARE	49.22	0.192	1966	2	0.032	20,367	338,542
	2462	DELAWARE	98.00	0.245	1982	3	0.065	20,367	983,673
	2480	DELAWARE	63.63	0.203	1992	3	0.060	20,367	412,808
	2484	DELAWARE	60.00	0.104	1920	1	0.078	20,367	1,250,000
	2491	DELAWARE	149.00	0.256	1980	1	0.139	20,367	886,719
	2497	DELAWARE	131.00	0.569	2012	2	0.171	20,367	1,757,469
	2515	DELAWARE	110.26	0.330	1964	3	0.045	20,367	208,788
	2524	DELAWARE	37.42	0.094	1918	1	0.035	20,367	1,010,638
	2525	DELAWARE	72.00	0.156	1925	1	0.087	20,367	1,346,154
	2531	DELAWARE	40.35	0.090	1930	1	0.045	20,367	1,388,889
2536, 2538, 2543, 2550		DELAWARE	397.16	1.352	2005	3	0.196	20,367	526,701
	2556	DELAWARE	35.09	0.086	1930	1	0.056	20,367	2,151,163
	2566	DELAWARE	185.79	1.151	1971	4	0.175	20,367	589,140
	2611	DELAWARE	98.31	0.298	2000	3	0.042	20,367	838,926
	2625	DELAWARE	544.02	5.684	1982	5	1.609	20,367	373,153
	2643	DELAWARE	343.30	1.515	1943	3	0.383	20,367	376,436
2626, 2636, 2638, 2656, 2658		DELAWARE	511.31	15.980	1997	5	4.825	20,367	700,826
	2677	DELAWARE	324.87	0.958	1940	3	0.605	20,367	469,729
	2730	DELAWARE	320.92	0.861	2002	3	0.229	20,367	1,045,296
	2731	DELAWARE	211.46	0.632	2001	4	0.061	20,367	706,962
	1592	ELMWOOD	135.00	0.373	1930	2	0.090	23,658	361,930
	1597	ELMWOOD	134.50	0.245	1943	2	0.073	23,658	522,449
	1602	ELMWOOD	75.00	0.204	1943	4	0.028	23,658	516,667
	1609	ELMWOOD	190.00	0.750	1942	3	0.224	22,371	584,000
	1629	ELMWOOD	35.30	0.127	1920	1	0.028	22,371	787,402
	1635	ELMWOOD	135.25	0.738	1935	3	0.666	22,371	846,883
	1652	ELMWOOD	47.59	0.129	1980	1	0.036	22,371	895,349
	1654	ELMWOOD	29.00	0.076	1930	1	0.034	22,371	1,223,684
	1672	ELMWOOD	31.00	0.077	1910	1	0.046	22,371	1,623,377
	1680	ELMWOOD	54.10	0.170	1910	1	0.039	22,371	794,118
	1695	ELMWOOD	493.42	1.508	1908	1	0.698	22,371	563,660

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
	1738	ELMWOOD	392.00	2.566	1900	1	0.803	22,371	2,182,385
	1770	ELMWOOD	112.85	1.040	1975	3	0.286	22,371	245,192
	1833	ELMWOOD	272.80	5.403	1979	5	2.305	22,371	536,739
	1893	ELMWOOD	366.93	7.907	2006	5	1.117	19,379	480,966
	1941	ELMWOOD	197.19	3.474	1920	3	0.349	19,379	143,926
	1996	ELMWOOD	405.00	1.881	1996	4	0.221	19,379	678,363
1999, 2001		ELMWOOD	708.00	14.037	1998	5	3.150	19,379	552,468
	2050	ELMWOOD	112.00	11.916	1995	5	3.044	19,379	503,525
	2058	ELMWOOD	149.00	0.879	1997	4	0.111	19,379	739,477
	2090	ELMWOOD	37.38	3.753	2005	5	0.376	19,379	322,915
	2110	ELMWOOD	190.00	1.004	1996	4	0.184	19,379	398,406
	2128	ELMWOOD	151.62	2.612	1980	3	0.924	19,379	516,845
2101, 2109, 2141		ELMWOOD	827.87	13.66	1987	5	4.081	19,379	574,854
	2200	ELMWOOD	173.04	0.630	2012	4	0.053	19,379	1,000,000
	2206	ELMWOOD	53.70	0.131	1932	3	0.116	19,379	278,626
	2207	ELMWOOD	120.00	0.629	1975	2	0.238	19,379	612,083
	2208	ELMWOOD	66.96	0.534	1935	3	0.298	19,379	280,899
	2221	ELMWOOD	120.40	0.509	2001	3	0.252	19,379	589,391
	2222	ELMWOOD	230.50	1.281	2000	4	0.079	19,379	355,191
	2235	ELMWOOD	75.00	0.158	1930	1	0.045	19,379	474,684
	2252	ELMWOOD	80.77	0.125	1920	3	0.026	19,379	577,600
	770	HERTEL	116.86	0.289	1950	4	0.030	10,615	570,934
	820	HERTEL	80.00	0.258	1920	1	0.148	16,578	675,581
	887	HERTEL	90.00	0.248	1987	4	0.039	16,578	677,419
	900	HERTEL	329.67	2.157	2000	4	0.348	16,578	595,735
	909	HERTEL	150.00	0.380	1920	2	0.155	16,578	534,211
	932	HERTEL	63.00	0.162	1920	2	0.135	16,578	1,088,889
	940	HERTEL	48.00	0.436	1920	3	0.110	16,578	385,321
	942	HERTEL	70.00	0.196	1930	1	0.032	16,578	433,673
	955	HERTEL	120.00	0.361	1920	3	0.212	16,578	1,024,931
	975	HERTEL	360.00	1.542	1978	3	0.551	16,578	373,541
	1000	HERTEL	250.00	1.328	1985	3	0.633	16,578	489,458
	1025	HERTEL	584.69	9.933	1974	5	2.054	16,578	216,450
	1094	HERTEL	99.12	0.169	1928	2	0.063	12,272	1,053,254
1083, 1101		HERTEL	274.19	0.977	1978	4	0.074	12,272	572,364
	1116	HERTEL	100.00	0.273	1960	4	0.042	12,272	604,396
	1122	HERTEL	37.50	0.105	1920	1	0.047	12,272	923,810

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
	1126	HERTEL	37.50	0.104	1910	1	0.046	12,272	855,769
	1127	HERTEL	50.00	0.185	1910	2	0.065	12,272	457,297
	1138	HERTEL	50.00	0.139	1986	4	0.034	12,272	431,655
	1146	HERTEL	87.50	0.144	1925	2	0.113	12,272	1,215,278
	1171	HERTEL	35.00	0.129	1910	1	0.048	12,272	860,465
	1172	HERTEL	50.50	0.145	1928	1	0.103	12,272	1,862,069
	1175	HERTEL	100.00	0.139	1900	1	0.116	12,272	1,287,770
	1191	HERTEL	34.00	0.093	1933	1	0.080	12,272	1,720,430
	1195	HERTEL	34.00	0.096	1901	1	0.041	12,272	942,708
	1197	HERTEL	34.00	0.093	1910	1	0.031	12,272	1,069,892
1196, 1198		HERTEL	85.00	0.301	1973	3	0.047	12,272	655,482
	1200	HERTEL	115.00	0.254	1920	1	0.172	12,272	1,279,528
	1201	HERTEL	84.40	0.211	1920	1	0.086	12,272	1,090,047
	1209	HERTEL	75.00	0.174	1920	1	0.121	12,272	1,465,517
	1220	HERTEL	115.00	0.096	1915	2	0.092	12,272	1,739,583
	1225	HERTEL	50.00	0.092	1920	1	0.065	12,272	2,880,435
	1232	HERTEL	35.00	0.080	1920	1	0.030	12,272	1,125,000
	1234	HERTEL	35.00	0.120	1910	1	0.040	12,272	1,125,000
	1238	HERTEL	20.30	0.018	1920	1	0.017	12,272	4,166,667
	1239	HERTEL	105.00	0.192	1920	1	0.154	12,272	1,718,750
	1256	HERTEL	50.00	0.115	1915	2	0.107	12,272	1,000,000
	1261	HERTEL	150.00	0.276	1952	3	0.056	12,272	561,594
	1264	HERTEL	50.00	0.208	1925	1	0.083	12,272	1,057,692
	1271	HERTEL	100.00	0.183	1920	1	0.133	12,272	1,420,765
	1278	HERTEL	90.00	0.316	1940	3	0.047	12,272	664,557
	1281	HERTEL	50.00	0.094	1928	1	0.088	12,272	2,127,660
	1291	HERTEL	50.00	0.091	1920	1	0.084	12,272	2,175,824
	1292	HERTEL	100.00	0.188	1925	1	0.149	12,272	1,861,702
	1297	HERTEL	80.00	0.148	1930	2	0.133	12,272	2,027,027
	1301	HERTEL	186.38	0.366	1956	4	0.043	12,272	1,016,393
	1306	HERTEL	100.00	0.341	1964	2	0.076	12,272	586,510
	1318	HERTEL	50.00	0.116	1920	1	0.066	12,272	1,465,517
	1335	HERTEL	80.76	0.088	1929	1	0.081	13,873	2,840,909
	1336	HERTEL	140.00	0.331	1986	3	0.155	13,873	1,102,719
	1349	HERTEL	40.00	0.103	1900	1	0.040	13,873	873,786
	1350	HERTEL	168.50	0.564	2003	2	0.163	13,873	877,660
	1357	HERTEL	40.00	0.102	1910	1	0.029	13,873	882,353
	1361	HERTEL	40.00	0.099	1910	1	0.036	13,873	898,990

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
	1362	HERTEL	41.50	0.078	1932	1	0.040	13,873	1,666,667
	1365	HERTEL	40.00	0.106	1930	1	0.041	13,873	1,179,245
	1368	HERTEL	100.00	0.274	1930	1	0.203	13,873	1,779,197
	1384	HERTEL	200.00	0.855	1925	2	0.528	13,873	680,702
	1406	HERTEL	50.00	0.153	1920	2	0.127	13,873	1,437,908
	1413	HERTEL	105.00	0.284	1910	1	0.177	13,873	1,373,239
	1416	HERTEL	310.00	0.817	1915	1	0.714	13,873	795,594
	1425	HERTEL	50.00	0.261	1920	1	0.344	13,873	1,245,211
	1431	HERTEL	40.00	0.116	1920	1	0.043	13,873	1,068,966
	1435	HERTEL	115.00	0.117	2006	1	0.077	13,873	4,273,504
	1451	HERTEL	50.10	0.060	1925	1	0.052	13,873	2,500,000
	1452	HERTEL	35.00	0.089	1925	1	0.078	13,873	3,707,865
	1456	HERTEL	33.00	0.081	1951	1	0.040	13,873	1,913,580
	1457	HERTEL	50.00	0.092	1921	1	0.053	13,873	1,739,130
	1460	HERTEL	33.00	0.088	1940	2	0.108	13,873	1,477,273
	1462	HERTEL	32.83	0.078	1920	1	0.069	13,873	2,179,487
	1463	HERTEL	49.90	0.137	1920	2	0.076	13,873	1,167,883
	1469	HERTEL	50.00	0.208	1923	1	0.093	13,873	1,048,077
	1472	HERTEL	34.00	0.084	1908	1	0.033	13,873	2,619,048
	1473	HERTEL	50.00	0.298	1900	1	0.138	13,873	738,255
	1477	HERTEL	50.00	0.132	1920	1	0.130	13,873	1,628,788
	1478	HERTEL	66.00	0.170	1910	1	0.132	13,873	1,852,941
	1487	HERTEL	212.00	0.564	1920	1	0.304	13,873	1,134,752
	1488	HERTEL	117.00	0.385	2008	2	0.110	13,873	1,127,792
	1504	HERTEL	33.00	0.102	1920	1	0.065	13,873	2,039,216
	1506	HERTEL	36.00	0.036	1920	2	0.035	13,873	4,166,667
	1510	HERTEL	36.00	0.035	1920	2	0.035	13,873	3,571,429
	1511	HERTEL	63.00	0.091	1925	2	0.027	13,873	1,043,956
	1514	HERTEL	36.00	0.035	1920	2	0.035	13,873	2,142,857
	1518	HERTEL	21.85	0.020	1920	2	0.021	13,873	2,250,000
	1519	HERTEL	71.00	0.122	1919	1	0.115	13,873	2,131,148
	1530	HERTEL	44.85	0.107	1935	1	0.027	13,873	841,121
	1534	HERTEL	18.00	0.020	1935	1	0.036	13,873	2,500,000
	1535	HERTEL	36.50	0.067	1920	1	0.057	13,873	3,059,701
	1537	HERTEL	35.00	0.065	1919	1	0.053	13,873	2,230,769
	1541	HERTEL	35.00	0.064	1920	1	0.052	13,873	1,640,625
	1543	HERTEL	53.00	0.182	1925	1	0.090	13,873	1,043,956

Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
1547	HERTEL	53.00	0.180	1920	1	0.090	13,873	1,361,111
1553	HERTEL	35.00	0.091	1920	1	0.052	13,873	1,483,516
1556	HERTEL	348.50	1.143	1995	3	0.274	13,873	765,529
1557	HERTEL	54.50	0.113	1920	1	0.082	13,873	2,610,619
1563	HERTEL	70.00	0.146	1917	1	0.118	13,873	1,643,836
1580	HERTEL	85.25	0.142	1936	1	0.114	10,688	2,112,676
1585	HERTEL	115.75	0.183	1950	1	0.035	10,688	655,738
1588	HERTEL	73.43	0.138	1920	1	0.087	10,688	1,811,594
1598	HERTEL	51.59	0.094	1910	1	0.038	10,688	1,436,170
1599	HERTEL	35.00	0.125	1930	1	0.036	10,688	848,000
1600	HERTEL	105.00	0.099	1925	1	0.036	10,688	1,717,172
1603	HERTEL	35.00	0.121	1914	1	0.031	10,688	966,942
1607	HERTEL	320.00	1.159	1995	1	0.681	10,688	2,157,032
1650	HERTEL	133.42	0.141	1950	4	0.007	10,688	560,284
1661	HERTEL	65.00	0.121	1930	1	0.119	10,688	2,024,793
1669	HERTEL	120.00	0.325	1970	2	0.248	10,688	1,076,923
1670	HERTEL	42.00	0.131	1920	1	0.041	10,688	801,527
1678	HERTEL	252.00	0.807	1960	3	0.211	10,688	545,229
1695	HERTEL	35.00	0.107	1949	1	0.028	10,688	915,888
1700	HERTEL	37.00	0.115	1910	1	0.033	10,688	739,130
1705	HERTEL	35.00	0.122	1910	1	0.037	10,688	774,590
1707	HERTEL	164.00	0.370	1986	4	0.043	10,688	540,541
1726	HERTEL	177.00	0.417	1998	4	0.078	10,688	947,242
1735	HERTEL	80.00	0.074	1905	1	0.035	8,195	2,770,270
1736	HERTEL	31.65	0.058	1920	1	0.028	8,195	1,517,241
1738	HERTEL	21.08	0.042	1920	1	0.023	8,195	1,738,095
1740	HERTEL	21.05	0.040	1920	1	0.023	8,195	1,825,000
1742	HERTEL	21.09	0.040	1920	1	0.022	8,195	1,800,000
1744	HERTEL	35.13	0.069	1920	1	0.023	8,195	1,130,435
1745	HERTEL	38.00	0.073	1910	1	0.027	8,195	1,582,192
1748	HERTEL	40.00	0.117	1910	1	0.030	8,195	931,624
1764	HERTEL	240.00	0.720	1950	3	0.393	8,195	1,069,444
1781	HERTEL	77.00	0.091	1920	1	0.062	8,195	1,840,659
1793	HERTEL	54.00	0.082	1930	2	0.077	8,195	1,634,146
1805	HERTEL	50.00	0.157	1935	1	0.059	8,195	700,637
1831	HERTEL	50.00	0.160	1938	1	0.061	8,195	812,500
1837	HERTEL	50.00	0.222	1930	1	0.050	8,195	373,874
1850	HERTEL	40.00	0.075	1920	1	0.071	8,195	1,466,667

	Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
	1854	HERTEL	92.40	0.170	1910	2	0.115	8,195	1,052,941
	1855	HERTEL	55.00	0.086	1930	1	0.082	8,195	2,069,767
	1867	HERTEL	150.00	0.274	1950	4	0.030	8,195	364,964
	1868	HERTEL	90.00	0.163	1925	2	0.135	8,195	1,012,270
	1880	HERTEL	50.00	0.093	1943	2	0.095	8,195	1,268,817
	1890	HERTEL	56.00	0.105	1925	1	0.054	8,195	1,761,905
	1900	HERTEL	121.00	0.220	1950	4	0.020	8,195	486,364
	524	KENMORE	130.30	0.407	1960	3	0.196	15,926	429,975
	672	KENMORE	115.00	0.335	1948	3	0.120	14,047	305,970
	690	KENMORE	165.00	0.584	2004	4	0.092	14,047	941,781
	710	KENMORE	242.00	0.703	1988	4	0.155	12,673	419,630
740, 750		KENMORE	237.91	0.606	1997	3	0.103	12,673	336,469
	802	KENMORE	55.00	0.153	1955	2	0.053	12,673	686,275
	806	KENMORE	195.00	0.523	1965	2	0.217	12,673	688,337
	838	KENMORE	157.00	0.521	1965	2	0.180	12,673	383,877
	852	KENMORE	97.00	0.353	1937	1	0.079	12,673	481,586
	862	KENMORE	90.00	0.242	1970	3	0.069	12,673	681,818
	864	KENMORE	150.00	0.416	1965	3	0.150	12,673	516,827
	902	KENMORE	45.00	0.117	1975	2	0.210	12,673	769,231
	914	KENMORE	60.00	0.164	1960	1	0.098	12,673	884,146
	924	KENMORE	60.00	0.165	1965	3	0.068	12,673	878,788
	932	KENMORE	60.00	0.158	1965	3	0.057	12,673	822,785
	938	KENMORE	80.00	0.279	1953	1	0.052	12,673	448,029
	948	KENMORE	40.00	0.107	1955	2	0.069	12,673	794,393
	956	KENMORE	245.00	0.735	1970	3	0.282	12,673	1,156,463
	990	KENMORE	70.72	0.168	1970	2	0.091	12,673	714,286
	1082	KENMORE	140.00	0.356	1978	3	0.111	12,673	730,337
	1100	KENMORE	142.50	0.313	1920	1	0.168	11,580	1,182,109
	1116	KENMORE	33.45	0.079	1950	2	0.041	11,580	734,177
	1192	KENMORE	98.00	0.221	1990	1	0.087	11,580	859,729
	1200	KENMORE	166.00	0.389	1945	3	0.210	11,580	565,553
	1212	KENMORE	104.00	0.251	1930	1	0.050	11,580	470,120
	1228	KENMORE	170.00	0.408	1989	4	0.070	11,580	209,559
	1248	KENMORE	30.00	0.071	1950	2	0.011	11,580	295,775
	1308	KENMORE	30.00	0.071	1958	2	0.017	11,580	422,535
	1324	KENMORE	165.00	0.397	1947	1	0.179	11,580	516,373
	1348	KENMORE	62.00	0.135	1950	3	0.022	11,580	363,704
	1362	KENMORE	66.00	0.159	1920	1	0.053	11,580	754,717

Address Number	Street Name	Lot Frontage	Lot Acreage	Year Building Constructed	Commercial Development Type	Acreage of Building Footprint	AADT	Assessed Value Per Acre
1370	KENMORE	66.00	0.150	1950	2	0.094	11,580	816,667
1412	KENMORE	44.00	0.104	1918	1	0.023	7,918	458,654
1416	KENMORE	42.00	0.087	1940	1	0.040	7,918	712,644
1500	KENMORE	136.00	0.326	1950	2	0.066	7,918	291,411
1582	KENMORE	34.00	0.073	1940	1	0.027	7,918	821,918
1584	KENMORE	66.00	0.160	1950	2	0.094	7,918	687,500
1606	KENMORE	117.00	0.717	2008	2	0.123	7,918	369,596
1660	KENMORE	62.00	0.130	1930	1	0.180	6,934	769,231
1670	KENMORE	55.00	0.117	1960	2	0.080	6,934	769,231
1674	KENMORE	94.00	0.477	1960	1	0.217	6,934	461,216
1700	KENMORE	156.00	0.723	2011	3	0.209	6,934	456,432
1716	KENMORE	396.00	3.250	1972	5	0.927	6,934	372,923
1758	KENMORE	96.00	0.203	1955	3	0.129	6,934	492,611
2900	MAIN	155.00	0.625	1960	3	0.133	19,693	816,000
2910	MAIN	120.00	0.332	1950	3	0.056	19,693	381,627
2924	MAIN	50.00	0.205	1935	2	0.080	19,693	536,585
2934	MAIN	50.00	0.204	1985	2	0.030	19,693	508,824
2938	MAIN	95.30	0.234	1987	2	0.184	19,693	961,538
2948	MAIN	90.00	0.309	1985	1	0.215	23,212	906,149
523	STARIN	130.00	0.236	1988	4	0.041	9,844	1,271,186