ARE SMALL EFFICIENCY DWELLING UNITS THE NEXT WAVE FOR URBAN DWELLERS IN AUSTIN’S INFILL DEVELOPMENT?

SUITABLE LOCATIONS FOR SMALL EFFICIENCY DWELLING UNITS IN AUSTIN’S TODs

by

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Executive Summary

The following report details research and analysis in order to assess the background market and market-based feasibility of the development of efficiency apartment units in the central Austin Area. It explores the potential and opportunities of reducing the size of apartments and promoting efficiency apartment unit development as a strategy to improve housing affordability for the Generation Y (Gen Y) population while taking advantage of urban redevelopment investments near Austin’s main TODs. This report evaluates the implications of a significant demand for less expensive and smaller alternative housing products for a growing population group near downtown Austin. With this report, I attempt to identify ideal parcels that best support this development spatially and financially speaking.

Building upon demographic and population data, as well as residential multifamily analysis, I use GIS to evaluate the development feasibility for small efficiency dwelling apartment projects located near the selected TODs as well as identify the three locations that can support this type of development. The site selection study will look at parcels within walking distance from the new mass transit system, in order to contribute to the decrease of single-occupant vehicles in the city. Likewise, proximity to amenities and services will be considered. The study will borrow from housing surveys about Generation Y preferences to define the criteria for the analysis. Clustering and concentration of existing efficiency apartment units near Austin’s downtown will also be analyzed in order to predict patterns or conditions that attract this type of development. By including elements like land costs and square footage that discussed in other parts of this report, the suitability report aims to identify land parcels that can financially and spatially support this type of development. After eliminating parcels that do not meet the selected criteria, this report identifies ideal parcels for efficiency apartments units.

The results will provide parcel candidates for new multifamily housing constructions based on a ranking of available vacant land parcels and their locations within certain demographic and spatial characteristics of around city center Austin’s TODs. The results obtained can be used by city planners, and both for profit and non-profit multifamily residential developers for future development purposes. This report may contributes to the policy discussion about different approaches to housing affordability and offers an assessment guide for new housing development opportunities for a diverse range of city residents.
Suitable Locations for Small Efficiency Dwelling Units in Austin's TODs  
By Andres Galindo | 388K-62250  Fall-2012

The Housing Problem

Austin is currently facing a double problem of an undersupply of housing for all levels of household income and simultaneously, an affordability crisis that has particularly affected households of lower and moderate incomes. Although housing construction is currently growing at an aggressive pace, high demand for Austin’s limited housing stock has caused rents and home prices to soar, and vacancy rates to fall. As Austin’s economy continues to generate job growth, it will become increasingly difficult to retain the diversity of households that forms the base of the city’s labor force.

This report will explore the potential and opportunities for shrinking the size of apartments and promoting the production of efficiency apartments as a strategy to improve housing affordability for young workers and to take advantage of urban redevelopment investments near the Austin’s main TODs. A new generation of young professionals, fresh out of college, new to the city, unencumbered by possessions, and eager to experience urban life has manifested interest in trading in larger floor-area in the suburbs for small spaces and the convenience of living close to the things they need. This shift has created a significant, unmet need for entry-level, car-free housing with access to transit and the culturally rich core of the City of Austin.

Despite a soft housing market, rents in some of America’s biggest cities are sometimes beyond the means of many families and singles that want and need to live in downtown areas. Driven by a strong and diverse industry that provides jobs at many skill and salary levels, a culturally rich local charm, seven colleges, and a substantial young workforce, the housing market in downtown Austin, as in many great cities in the United States, has begun to experience significant pressure. Data shows that almost 55 percent of Austin’s total renter households spend more than 30 percent of their total income on rent, a number that is believed to be much higher among younger households.1

Austin has experienced a dramatic increase in housing prices and rents during the last decade. A combination of job growth, increasing population, and a lack of affordable housing in Austin’s current housing market have sent occupancy rates for rental properties to almost 96 percent marking a historical high.2 As shown in the most recent U.S. Census, released in 2010, the Austin Metropolitan Area continues to experience phenomenal growth and is now the 14th largest city in the nation. Housing affordability has become the center of discussion at every level, making clear the need to build more homes to address the systemic problems existing in this housing submarket. In order to find adequate solutions for the Austin market, it is crucial to understand the elements that are driving the demand and causing uneven pressure on some housing products.

Approximately 30 percent of the U.S. workforce belongs to the Gen Y, but the percentage in Austin is even higher. This demographic cohort is more strongly attracted urban

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1 2010 U.S. Census.  
2 Austin Investor Interests, LLC.
life in more compact spaces than to suburban life and bigger housing for less money. This has created a relatively large, and unmet, need for entry-level, car-free housing with access to public transit and the culturally rich core of the City of Austin.

In order to improve housing affordability in this market, we need to think about what we are building and for whom. If the primary goal is to increase affordability, then success should depend on an understanding that a household’s ability to rent a unit should not merely be based on tenants buying power, but also on a trade-off between price and access to amenities and living experiences obtained in the housing stock.

One of the solutions cities like New York and San Francisco have been exploring, to relieve the pressure on the housing market, is allowing more density and reducing the minimum unit size limit in order to provide a larger supply of micro apartments or small efficiency dwelling units in places with public transportation and cultural vibrancy. This solution gives Gen Y, young, creative professionals in many fields the opportunity to access more affordable apartments that meet their needs and interest in urban living. This group is often blamed for the overheating rental market, and causing additional pressures on family housing prices. Indeed, at the recent New Partners for Smart Growth Conference in San Diego, panelists representing recognized real estate and consumer research firms made it clear that a radical shift in preferences is on the horizon. According to researchers, this shift in the housing market is largely driven by the preferences of Gen Y (the largest generation since the Boomers). We can count on significant changes in the nature of real estate development over the next 20 years, affecting the way we define the urban living experience. In some mid-size U.S. cities the signs of this shift are just recently starting to be seen, while in other cities, the housing market is not fully prepared to meet the future demand.

In places like Austin, which has one of the highest Gen Y populations, the shift in the real estate preferences is quite evident. Progressive developers are introducing higher numbers of infill, multi-family developments that aim to appeal to Gen Y and to maintain the growing urban atmosphere in Austin. The typical floor plans of the past are being replaced by smaller, more open designs that fit the mid-rise style projects located in vacant or underutilized parcels of land in existing developed areas of Austin.

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411th Annual New Partners for Smart Growth.
5Joe Molinaro from the National Association of REALTORS® provided an overview of findings from NAR’s 2011 national preference survey. Shyam Kannan from RCL Co explored the details of the survey using segmentation analysis focusing on Americans’ preferences for transit-oriented developments and walkable communities. Arthur C. Nelson, also from the University of Utah, reviewed three subnational surveys on preference for TODs and transit accessibility, including California, Arizona, Nevada, New Mexico and western Texas, and he gave special attention to existing underserved markets and equity.
This type of development, known as infill development, supports strong economies by maintaining residents, jobs and businesses within the city. It supports social equity by providing convenient access to transportation, reducing costs. Infill development that focuses on smaller units contributes greatly to the reduction of automobile dependence and minimizes the taxes needed to support the spread of development on the city's edge. Additionally, by offering more variety of opportunities and not only single-family detached homes, infill development promotes a more diverse housing supply for residents who want to live in the central city (Austin 2012). Austin’s unique employment diversity has also led developers to shift toward building a larger percentage of one-bedroom units, supplemented by a stock of two-bedroom units, and targeted at upscale tenants. But with less than 5% of the current housing stock in efficiency units (a figure that contrasts the overwhelmingly large population identified as Gen Y), it seems that developers and policy makers in Austin have fallen short in addressing the housing needs of young professionals.

Progressive developers are discussing the use of small-efficiency unit apartments to alleviate the price pressure on rentals across some housing markets by diverting single renters away from those markets. This discussion represents an important opportunity to provide smaller housing products with financially accessible rents. Although one can argue that building smaller apartments does not create affordable housing because dwellings are cheaper simply because they are smaller, smaller units do in fact, make apartments more financially accessible to people who are looking for smaller spaces and a distinctive lifestyle Housing size is particularly loaded with personal values and social behaviors that are reflected in the tastes of Gen Y.

Developers, planners, and scholars in many cities across the U.S. are currently exploring the dimensions of this population, its preferences and needs. The work is laid out for developers who aim to provide a variety of affordable and market rate housing. Austin may be changing gears towards a new direction. Despite the barriers to infill development, such as limited land stock, tight regulations and tedious regulatory processes, and neighborhood opposition, some developers have found routes to achieve significant economic outcomes.
Problem Statement

I believe that smaller housing solutions, such as efficiency apartment units, have great potential in Austin, Texas. They have the ability to create both diversity and density adequate to serve unmet needs for housing that is affordable for single person low-and moderate-income households. The demographics of Austin, with its high concentration of Generation Y, make this an ideal city for this type of housing. Neighborhoods in close proximity to downtown and incoming rail station areas are poised to embrace a new housing product allowing new residents to access these transit lines while alleviating pressure on other housing markets.

Key Points and Background

The following is a summary of some stats that reflect demographics and and market conditions that affect the demand for smaller and more affordable housing units. This information was obtained from previous housing market analysis I conducted.

- Nearly 50 percent of total renter housing units is occupied by householders under 35 years.
- 1-person households integrate 41.9 percent of the renter-occupied units.
- 55 percent of the total number of renter-occupied units have householders under 35 years age and are located within the City of Austin.
- The probability that a rental unit would be occupied by a household integrated by one person younger than 35 is more than 23 percent, resulting in nearly 41,000 housing units.
- Efficiency units average 438 square feet and are almost 40 percent smaller in size than the one-bedroom units.
- Efficiencies within the subject market area reported a rental increase of over 10% during the past months, showing high demand for small apartments.
- The unit mixes that are expected on the market appear to be declining, retreating to the smaller units that were prevalent in the 1980-1990s.
- Trends also indicate that the lack of desirable land sites is diminishing the number of typical three-story, garden style apartments.
- None of the complexes evaluated consists solely of efficiency apartments; all of them are mixed unit types.
- The majority of the new multi-family developments have some kind of mixed-use component, usually retail on the ground floor.
- The average size of the renter-occupied households in the market area decreased more than 10 percent to 1.80 in 2010.
- On average, the estimated multi-family demand that the market area can potentially support over the next 8 years is 214 units per year.
- The income segment that earns between $25,000 and $50,000 accounts for over 13,000 households.
- Rents that are supported by the income segment earning between $25,000 and $50,000 range from $625 to $875 at the lower end and from $875 to $1,275 at the higher end. This represents between 60% and 80% of the Austin MHI.
• The total number of units this income segment demands will be around 67 new units annually for the next 8 years.
• A 1-person household living in an efficiency units while paying 30 percent or less of their income in rent, should pay between $798 and $1,064 monthly in rent.
• Average rents in the market area have climbed more than 25 percent in five years to from $1,284 in 2007 to $1,616 in 2012. In comparison to the 13 percent increase in average rents (from $773 to $875 per month) in the Austin MSA.
• During the past 10 quarters, 281 new units were added and 642 units were absorbed in the subject market area, which means than in average the market area absorbed around 256 units annually.
• The efficiency unit stock is aging. Three quarters of the total efficiency housing stock is 26 years old or more.
• For these units, rents per square feet range from $1.75 to $2.58.
• In the next 5 years more than 75 percent of the total efficiency apartment stock, which coincidentally is significantly smaller in comparison than what has been produced recently, will be decaying or put off the market as they age past 30 years.
• This will create a gap in the market for this small product type (320 to 420 sq. ft).
• The average monthly rent for efficiency apartment is $1,170, which is unaffordable to the average Gen Y individual with a median household income of $41,000.
Research Questions

This report seeks to understand how developments that offer small size (efficiency) units buildings can contribute to improve housing affordability in central Austin. What is the relevance of transit-oriented-developments (TODs) in supporting this type of housing developments? What is the present and projected supply of, and demand for, small size (efficiency) apartments in the TODs located within two miles of the center of Austin’s Central Business District (CBD) and how do they compare to supply and demand of efficiency apartments in the rest of the city? What are the key site characteristics needed to accommodate this type of development and are there sites in the urban core of Austin that meet these characteristics? What are the better sites to build more efficiency apartments? In order to answer these questions this report evaluates the demand for efficiency apartments units and the feasibility of this product type, as well as its potential to improve housing affordability for unattended groups near transit-oriented-developments and target areas in central Austin and its surrounding areas.
Methodology and Data Collection

This analysis considers the demographics, employment opportunities, and economics of the study area at a macro and micro level. Based on an extensive review of available data from federal, state, regional and local sources, I will present a thorough analysis of Austin’s MSA. Specifically, data obtained from Austin Investors Interests LLC., Nielsen Solution Center, (among others) are used. The demand forecast was previously identified. It is tailored to the subject market segment, efficiency apartment units, the economic or price point within the segment group, and location within the selected submarket area.

After analyzing the MSA level, I assess the demand for multi-family units at the subject market level. The underlying goal is to determine the demand trends for efficiency apartments units in the submarket area. The data needed to perform the demand analysis at this level were obtained using Census Bureau boundaries by zip codes and information acquired from Austin Investors Interests LLC, also by zip codes. By concentrating the analysis within a smaller area, it is possible to get a more accurate understanding of the particularities and trends of the submarket area.

The study builds on data from the 2010 census, combined comparable data from the 1990 census, and data from 2005-2009 American Community Survey 5-Year Selected Population Tables. My aim is to analyze trends over time for selected geographic areas and to determine the relationship between household income, age, size of apartments units, and type of housing. In order to identify spatially the most suitable to build efficiency apartments units, data from the ESRI website from the 2000 census, along with the shapefile for the census tracts themselves will be obtained. Another source for geographic data will be the City of Austin (COA) website and some from the Capital Area Council of Governments (CAPCOG) website.

The area of study will cover a 3/4-mile radius of each of the TODs located within two miles of the intersection of Sixth Street and Congress Avenue, which is the area defined by the city of Austin as Designated Housing Area on the Austin Zoning Code. Data will include GIS information (shape files and data) from the United State Census Bureau and the City of Austin websites to identify census tracts demographics composition from the 2010 Census. Data from the Texas Central Appraisal District on property value for 2009 and the combined land value will be analyzed to calculate and estimate the value of the properties.

Data Sources

The data sources included the City of Austin GIS Data Sets (COA),ESRI Tigerline Data Sets 2010, Capitol Area Council of Governments (CAPCOG), and 2010Census Data. The information describing the currents multifamily housing stock in the market area was limited to describe properties that were larger than 49 units. Raw data was obtained from Austin Investors Interests LLC. This data was compiled and cleaned in order to make it compatible to ArcGIS.

One data limitation this study faces is the use property values from 2010. The only available data from TCAD is out-of-date at this point, and it may not reflect the housing price
recovering that Austin has experienced during the last three years. Yet, the study is made in a way that can be easily updated and in that case the findings will likely change.

Large Scale – Market Area

- Looking at density by census tracts.
- Multi-family Inventory
  - Total units in structures +50 units
  - Total Housing Units with No Bedrooms and 1 Bedroom
- Looking at the Austin concentration of multi-family housing by census tracts, showing redlines and street car
- Concentration of Householders age 15-34 yrs. with 1.00 or less occupant per room
- Concentration of Renter Occupied Housing Units (1- and 2-person per household)
- Concentration of Renter Occupied Housing Units with Householders age 15 to 34 yrs.
- The area of analysis with the 2-miles radio buffer. Including selecting TODs contained within that buffer.
- Concentration of population by age cohort

Small Scale- Neighborhood Scale

- Parcels allowing multifamily development following the current Austin’s zoning code categorized by height permitted and minimum floor area of land required
- Property Values total Area
- Floodplains and hazardous facilities
- Parks
- Efficiency dwelling Units inventory
- Parcels with higher potential to be assembled
- Parcel within 3/4 mile distance from the TOD’s
- Final top 3 parcels for Efficiency Units developments
Findings

Map index

1. Market Area Definition

   Efficiency Apartment Inventory

   1. Multifamily Residential Properties containing Efficiency Units
   2. Total Efficiency Units by Year of Built
   3. Average Rents per Square Foot of Efficiency Units by Year of Built
   4. Average Monthly Rents and Share of Total Efficiency Unit Stock by Year of Built

   Most Suitable TOD by Census Tracts

   1. Household Size
   2. Households Paying 30 percent or more of Income in Rents
   3. Occupants per Room 1.02 to 1.5
   4. Renter Occupied by Householders 15 to 34 Years of Age
   5. Renter Occupied By Householders 15 to 34 years of Age living in Multifamily Properties
      with 49 units or more
   6. Census Tracts Selection Analysis and Criteria
   7. Most suitable Census Tracts and TOD Selection

   Most Suitable Parcels at Neighborhood Scale

   1. Parcels Within Walking Distance with No Constraints
   2. Undeveloped Parcels and Multifamily Developments
   3. Parcel selection by Size and Area
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Suitable Areas For Efficiency Apartments
Study Area Analysis and Criteria Selection

Households Paying 30 Percent or More of Household income on Rents: Need of Affordable Housing Best - 30%

Occupants per room 1.01 to 1.05: Lack of Housing Diversity Best - 25%

Renter Householder 15 to 34 Years of Age: Place Attractiveness 25%- Best

Renters living in Multifamily Residential Apartments Larger than 50 units: Product Type Likelihood Best - 20%

Prepared by Andres Galindo
Coordinate System: NAD1983 StatePlane Texas Central 4203
Sources: 2010 U.S. Census, CAPCOG, COA
Date: November 2012
Suitable Areas For Efficiency Apartments
Study Area Selection based on Most Suitable Census Tracts

The Census Tract Suitability Rankings derived from analysis of household size, % of 1.01 to 1.5 person per room, % of gross rents paying 30% or more of household income, % Renters 15 to 34 Years Age, and % this age group renting in multifamily residential properties larger than 50 units.

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Prepared by Andres Galindo
Coordinate System: NAD1983 StatePlane TexasCentral 4203
Sources: 2010 U.S. Census, CAPOG, COA
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Suitable Parcels For Efficiency Apartments

Parcel Selection

The selected parcels are larger than 20,000 square feet with potential future parcel assembling. The value of the land shall be below $850,000. Proximity to Saltillo Station is considered, too.

Top Three Parcels
- $240,000 - (22,516 Sq. ft.)
- $545,106 - (21,513 Sq. ft.)
- $815,106 - (37,916 Sq. ft.) - Best

Town Lake
- .75 mile radius from Saltillo TOD

Major Highways

Red Line MetroRail

TODs

Prepared by Andrés Galindo
Coordinate System: NAD1983 StatePlane Texas Central 4303
Sources: 2010 U.S. Census, CAPCOG COA
Date: November 2012
Analysis

Examining the stock of efficiency units in the market area gives great insight to the conditions that are affecting the lack of diversity and affordability in housing for single person households. Limited supply and an aging housing stock have contributed to inflate the housing market near downtown. The maps described the unbalanced location of this type of units. Interestingly, there are no efficiency units under those conditions in areas where the city has invested in improving the transportation infrastructure. Moreover, as the map previous maps highlight rents for these small units are now unreachable for many residents. The below illustrates the current multi-family stock by dates of completion and help to further the analysis presented. According to it, the market area has a new multi-family housing stock with nearly 43 percent built in 1990 or later. By large, the past decade added the greatest number of multi-family units with 3,356 units, which represents more than one third of the total existing stock. Nearly 50 percent of the total housing units were built between 1970 and 1989. These older units are mainly concentrated in the zip code 78704. The 1990-1999 periods added the least number of units to the housing with 642 or 6.35 share of market.

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<td>97.6%</td>
<td>762</td>
<td>7.54%</td>
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<td>98.3%</td>
<td>642</td>
<td>6.35%</td>
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<td>904</td>
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<tr>
<td>2000-2009</td>
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<td>$1.97</td>
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<tr>
<td>2010-2012</td>
<td>52.5%</td>
<td>337</td>
<td>3.33%</td>
<td>2</td>
<td>859</td>
<td>$2.15</td>
<td>0.00%</td>
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|                  | 10,111        | 61          | 824             | 568           | 21          | 437       | $1.61          | 2.12           |

Source: Austin Investors Interests Inc. 2nd Quarter 2012 Market Analysis Report. Conventional properties greater than 49 units, at least 50% of the property is offering market rents.
Prepared by Andres Galindo

Table 1 Date of Completion of Multi-family stock in Market Area

This table also provides detailed information about unit completion, average rents, and size of units throughout the last decades. However, when looking the age of efficiency apartment stock, it did not follow the multi-family housing overall trends. From 1960 up to date 568 units efficiency units were added to the market area. The greatest number of efficiency units was built in the 1980’s with 360 units. Out of the 568 efficiency units that exist in the market area, 435 were built before 1986. No units were added during between 1990 and 1999. As it constitutes over three quarters of the total efficiency housing stock that are 26 years old or over, it is evident that the housing supply of this product type is aging. It is likely that in the coming years it will required adequate and appropriate maintenance, or indeed to be replaced. Interestingly, the share of market of efficiency units in the last decade was below 25%, and there were no new efficiency units added between 2010 and 2012. The average size of units has increased as the decades pass by, reaching its highest of 569 sq. ft. between 2000 and 2009. More compact
developments with smaller units were added during the 1960’s and the 1980’s with and average unit size of 318 and 412 sq. ft. respectively. Interestingly, as the maps show, the highest rents per square footage charged on units that were built in the 1960’s with $2.58, followed by units built in the 2000’s with $2.35. I would like to make a brief parenthesis in the analysis to highlight the implication of this evidence. According to this information, in the next 5 years more than 75 percent of the total efficiency apartment stock, which coincidentally is significantly smaller in comparison with what is being produced recently, will be decaying or putting out of the market as they are 30 year old or more. This will definitely create gap in the market for this small product type ranging from 320 to 420 sq. ft. that will bring rents to levels never seen.

The census tract analysis indicates that some areas such as downtown and south central Austin concentrate single person and young professionals households. The household size maps shows that east Austin is among all the zip codes analyzed the area that has larger families. Census tracts adjacent to TOD stations have the largest households with two people or more per housing unit. As expected downtown area concentrates the highest number of renters householder 15 to 34 year of age living in apartment complexes larger than 49 units. However, the youth population is also attracted to the southern areas. Census tracts long some vial corridors such as Lamar and South Congress are preferred by this age. In overall, under the ranking methodology selection applied in this analysis, the census tracts surrounding Plaza Saltillo Station are poised to be the area the best suit this type of development from the demographic and standpoint.

Once we selected the TOD area, the analysis zooms in at the neighborhood in order to identify the best parcel to develop efficiency apartments units. Final portion of this study evaluates parcel that have no constraints, such as locations within 100 years- floodplains or too close to major vial arteries. The map titled “Parcels with no constraints” shows that the area is almost completely built up, with only few parcels identified as “undeveloped.” Interestingly, no vacant lands are found. One of the premises of almost any real estate developments is first look at parcels that are ready to build or vacant. In this case, I decided to look at sites that are defined as undeveloped, as the cost of demolishing existing structures may be lower than fully constructed properties. I also assumed that achieving rezoning tend to be more likely when the similar uses are proxy to the subject site. Therefore, the existence of multifamily property may facility this typically tedious and time consuming process. In order to build multifamily residential with more than 50 units, the Austin zoning code stipulates that the tract of land must be larger than one acre. There are no parcels with that size, but in this case we would look at the largest possible sites that hold those conditions. After crunching the number using a proforma model, in order to achieve lower rents that meet the demand no more than $ 850,000 can be paid. Due to this project will have to incur in purchasing more land to reach the density level required, reserving additional funds to that would be necessary.
Conclusiones

The age of housing stock, a mismatch of household income versus rent prices, and the lack of housing diversity are amongst the most significant evidence of this demand. As Austin continues to be a regional employment generator and magnet for cultural events and entertainment, this demand will only increase.

Inner city areas and central neighborhoods have returned to the spotlight as developing in underutilized and vacant land is understood as a strategy for reverting sprawl and increasing opportunities for sustaining mass transit investments. As this report illustrated, existing transit-oriented-development in Austin contributes greatly to overall affordability goals. In order to achieve these goals, a collaborative approach between public and private efforts must be implemented. The City of Austin must embrace the housing problem and proactively seek out and plan for more infill and new urbanism style development opportunities. This should include strategies that range from educating residents about the need for increased housing diversity and density that offer opportunities for affordable housing products to allowing creative and innovative approaches from the private sector in order to alleviate pressure on the local housing market.

While the idea that dwellings can be cheaper simply because they are smaller does not bring a definitive solution to the lack of affordability in Austin’s housing market, in the current situation this approach may provide a window of opportunity for lower-and moderate income young professionals to rent in the city. This report showed evidence that there is demand for rental units for single person households earning between $25,000 and $50,000 that are able to support monthly rents ranging from $650 to $1,060. The mismatch between supply and demand based on household income was estimated at 67 units per year.

Currently, average rents for efficiency apartments and one-bedroom units are around $1,200 and $1,400, which is much higher than what this group can afford. In order to for this group, comprised mainly of Gen Yers, to live in the subject area and have affordable rents, they have to rent two- or three-bedroom apartments with other unrelated peers and share the costs. Once divided by the number of bedrooms, monthly rents for 2- or 3-bedroom apartments (between $750 and $800 roughly) are potential competition for efficiency units and offer a viable option for Gen Yers, who are willing to share space with roommates.

What I propose with this report is reducing the size of efficiency units to the point that the development and management costs can support rents between approximately $750 and $1,060. Achieving these rents could provide a solution for many one-person households who want to live alone and in urban settings near services and public transit without being overburdened by housing costs. Although renting by bedrooms in larger units will be always cheaper, determining a premium that Gen Y households are able to pay is crucial for maximizing the return of investing in this type of unit. The strategy should be to capture a significant number of these individuals by offering them efficiency units for a determined period of time before they decide to have a family and look for more space.
This report has made evident that the vast majority of existing efficiency units smaller than 450 square feet were built before 1986. In the next five years the wave of Gen Yers will reach its peak and 75 percent of the stock of smaller units will become old and obsolete. The City of Austin will likely be unable to provide affordable housing targeting young professionals looking for this housing type. This could cause a decline in Austin’s population of young professionals, who may look for employment elsewhere in order to look for less expensive housing markets. Increasing the supply of efficiency units is important for preserving housing choices. This represents a great opportunity for developers to market products requested by this group. This study focuses on determining the type of product that will hit the market in the next three years and drawing on trends from the past years, it is reasonable to assume that the large proportion of units will be one and 2 bedrooms.

Because financial feasibility and the investment risks associated with this type of housing development are not included in this report, I strongly recommend that more analysis and research be done in order to understand the economics of this unique type of project. Performing financial analyses and thorough strategic planning will provide cursory information for potential investors.

Although the general wisdom in real estate development says that in order to improve the chances for success in this field, projects must be targeted to the widest market. In this case, the particularity of this product type is that efficiency unit buildings can create a niche that could be embraced by other groups, not only Gen Yers, who may also want high-quality, urban-style housing, preferably in neighborhoods offering cultural amenities. Instead of seeing this trend as an outlier, progressive and more adventurous developers should look to capitalize from the demographic shifts discussed in this report. Overcoming regulatory and financial pitfalls while providing smart solutions will require an extra effort from these developer due to the intrinsic complexities implied is this type of development that were briefly discussed in this report.

The success of a real estate project depends on three factors: location, location, location. Therefore, identifying sites for this type of project and examining the real estate market in the immediate vicinity will be vital to success. Land availability can be one of the largest barriers to development as landowners may be reluctant to sell, wanting to hold on to their properties longer in order to maximize profit. Typically, in the areas served by mass transit the price of land is higher because more units are allowed to be built. The selected subject market area is especially convenient for young professionals and residents pursuing an urban lifestyle. Additionally, many neighborhood plans in the area show the need to create housing that is affordable, accessible, and attractive to a diverse range of people. By looking for locations with these conditions, developers may save time and money by avoiding tedious rezoning processes and parcel assembling.

Another options that developers may consider when selecting a site is reusing and remodeling an existing building. Often times, the historical character of the building can add value and charm that can increase marketing opportunities and appeal to Gen Yers. Even though intangibles such as the perceived impacts on surroundings neighborhoods and financial mechanisms to fund the proposed development were not discussed in the scope of this report, they will undoubtedly factor into the decision-making process and the expected development
performance. Developers, communities, and affordable housing advocates have their reasons for opposing what I propose in this report but they all agree on the need to embrace the discussion about how much space is actually required in order to allow low- and moderate-income groups to live in the city. Efficiency units will never solve the problem of housing affordability in this area; however their development can contribute greatly to the alleviation of market pressure by capturing the demands of Generation Y, a growing population in the area.
References


City of Austin. Special Use Infill Options and Design Tools Available Through the Neighborhood Plan Combining District. Legal Document, Austin: City of Austin, 2012.


Appendix
Methodology

City Scale

1. Preparing Datasets
   2. Collect, clean, join and clip Census Tracts 2010 map from Travis County into Austin city limits. (SF1 2010-QTH2-Tenure, Household Size, And Age of Householders: 2010 and ACS 2010 SF4-DP04 Housing Characteristics)
   3. Collect, clean, and clip landfills, vacant land maps, railroad, and streets, transit oriented developments districts, hydro, major roads, and zip code boundaries into Austin city limits.
   4. Project all layers into NAD 83/ State Plane Texas FIPS 1983 projection system
   5. Clean and organize excel data containing multi-family housing inventory for Zip code 78701, 78702, 78703, and 78704 obtained from Austin Capital Investments LLC. Save it as (mf_50_data). Within excel, add new columns identifying the type of units by number of bedrooms (TYPE_UNITS) and total number of units per category (N_UNITS). Geocode addresses, create an address locator, and geocode addresses using threshold of 75%. Export layer named it mf_50.
   6. Collect and clip shapefiles of Travis County boundaries and City of Austin. Save them as Travis_base and city_limits
   7. Create a Reference Map (Ref_map) showing Travis County Limits, and Austin City Limits, creeks and rivers, railroad, and major roads. Use maps obtained from steps 4 and 5
   8. Create a Citywide base map (citywide_base) showing Travis County Limits, and Austin City Limits by zip codes and 2010 census tracts with streets, creeks and rivers, railroad, and major roads. Intersect zip code boundaries into 2010 census tract areas.
   9. Create a Market area map showing Austin City Limits by zip codes and 2010 census tracts with streets, creeks and rivers, railroad, and major roads. Create a 2-mile radius buffers from the interception of 6th street and Congress Ave. Select the four zip codes that are 50 percent or more area within this buffer. The result should highlight 78701,-02,-03, and -04 zip codes. Selected the four zip codes a create a new shapefile as (4zips_codes)
   10. Collect, clean, and clip landfills, vacant land maps, railroad, and streets, transit oriented developments districts, hydro, major roads, and zip code boundaries into 4zips_codes
   11. Using citywide_base map, create a data base of Household Size. It will include database of population and area from Census 2010 by census tracts. Go to attribute table add a new column (area) and calculate area. Normalize total population by area
   12. Using 4zips_code map, create a data base of multi-family inventory from ACS 2010 SF4-DP04 Housing Characteristics. Select by attributes Householders with 1.00 or less occupant per room. In the attribute table create a new column to calculate the ratio of value over the total number of households in the census tracts.
   13. Using 4zips_code map, create a data base of multi-family inventory from (SF1 2010-QTH2-Tenure, Household Size, And Age of Householders: 2010 . Select by attributes Gross rents as a percentage of total household income. In the attribute table create a new column to calculate the ratio the former over the total number of households in the census tracts.
14. Using 4zips_code map, create a data base of multi-family inventory from (SF1 2010-QTH2-Tenure, Household Size, And Age of Householders: 2010. Select by attributes Renter Occupied Housing Units with Householders age 15 to 34 yrs. the attribute table create a new column to calculate the ratio of this value over the total number of households in the census tracts.

15. Using 4zips_code map, create a data base of multi-family inventory from (SF1 2010-QTH2-Tenure, Household Size, And Age of Householders: 2010. Select by attributes Renter Occupied Housing Units with Householders age 15 to 34 yrs. living in multifamily properties with 49 units or more the attribute table create a new column to calculate the ratio of this value over the total number of households in the census tracts.

16. Create and clip 3/4mile radii buffers around redline stations (TODs) within the 4zip_code.

17. In order to identify the which TOD has the highest potential to support small apartments units, we will assume that the ratios values obtained before will be weighted as follows:
   a. Householders with 1.00 or less occupant per room. 25%
   b. Gross rents as a percentage of total household income 30%
   c. Renter Occupied Housing Units with Householders age 15 to 34 yrs. 25%
   d. Renter Occupied Housing Units with Householders age 15 to 34 yrs. living in multifamily properties with 49 units or more 20%

18. Then select the buffer with the highest score. Clip and create a new layer using the buffer selected from 4zip_code. Save it as Study_area_clip

**Neighborhood Scale** This phase of the analysis will look at the most suitable parcels that can support this type of development. But first we erase the unsuitable parcels.

19. Open and clip parcel_layer into Study_area_clip. Save it as parcels_clip. Now create a vacant parcel shapefile by selecting by attributes the parcel identify with a “Y” in the VLI_2010 column. Create a new layer called Vacant_clip

20. Add land_status layer. Select by attributes all the parcels that have NO_CONSTRAINS in the land_status column. No constrains means that the parcel is not affected by 100 years flood plains. Create a new layer with the selected parcels and save it as no_const. Add Study_area_clip. Clip no_const into Study_area_clip. Save it as no_cont_clip

21. Open a new data frame and add Land-use shapefile. Select by attributes all the parcels that are zoned as multifamily. Create a new layer with the selected parcels and save it as mf_parcels. Then, Clip it into Study_area_clip. Save it as mfParcel_clip

22. Add parks_amenities points layer. Clip it into Study_area_clip. Save it as Amenities_clip

23. Union vacant Vacant_clip, no_cont_clip, mfParcel_clip, and Amenities_clip. Save as potential_parcels

24. Since we are looking for parcels that are single-owned, large enough and within a certain price that can sustain the construction of a multifamily development, all the parcels that are smaller are larger than Z1(To be Defined) and within a range price of X1 and X2(To be Defined) are eliminated. Eliminate them using attribute selection tool and save it as

25. Also we want to eliminate parcel with higher Land Value vs Improvements Value ratio. When developing a parcel that has a property on, typically developers would first demolish this property. Therefore, what they are looking to land parcels with the lowest investment value relative to the land value. Open the attribute table and create a new column to calculate the ratio of land value over
investment value. Name this new column VALUE_RATIO. Now select those lower than 1. As we did before eliminate them using attribute selection tool and save it as final_parcel.

26. Now we want to identify parcels that best fit the criteria
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