

Land Value Taxation as a Mechanism to Relieve Housing Supply Constraints in Austin, Texas

by

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Submitted to the Program in Real Estate Development in Conjunction with the
Center for Real Estate in Partial Fulfillment of the Requirements for the Degree of

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ABSTRACT

Through most of history cities have grown slowly, organically following the contours formed by the intersection of geography and commerce – with occasional guidance from master planners – to create resilient and equitable forms. But the industrial age begat zoning, new forms of taxation, and hastened infrastructure investments, all of which upended centuries of measured and incremental growth. Codified separation of distinct land uses required new methods of real estate taxation and enabled new forms of value creation. Time and cost savings in infrastructure construction facilitated exponential growth in the speed at which a city's form could change. Amidst the quickening morphosis, the city's ability to diligently and thoughtfully create urban forms that maximize equity for all stakeholders has been diminished; bureaucratic barriers to housing production increased costs, and necessitated subsidization in order to create affordable housing. In order to reenergize the city's ability to create an equitable city, we must reexamine our use of land-use regulations, tax policies, and formulate clear ways forward.

This thesis first seeks a broad and versatile definition of an equitable city in order to understand the desired end-state of potential interventions. Second, the author explores the formal characteristics of the equitable city, the way current land-use regulations are either facilitating or impeding the creation of that form, and the potential for a better way forward. Third, the author taxonomizes the fiscal tools available to the city which influence the urban form. Lastly, the author looks at the Highland neighborhood of Austin, TX – a marginal neighborhood with recently completed light-rail stops, a regional mall being redeveloped into a mixed-use project anchored by a community college, and building typologies which do not comply with current zoning – and proposes palatable changes to the way real estate is taxed, which will facilitate the creation of a more just, equitable, and sustainable neighborhood.

Thesis Advisor: Dennis Frenchman
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Chapter 1 - Introduction

Through most of history cities have grown slowly, organically following the contours formed by the intersection of geography and commerce – with occasional guidance from master planners – to create resilient and equitable forms. But the industrial age begat zoning, new forms of taxation, and hastened infrastructure investments, all of which upended centuries of measured and incremental growth. Codified separation of distinct land uses required new methods of real estate taxation and enabled new forms of value creation. Time and cost savings in infrastructure construction facilitated exponential growth in the speed at which a city’s form could change. Amidst the quickening morphosis, the city’s ability to diligently and thoughtfully create urban forms that maximize equity for all stakeholders has been diminished; bureaucratic barriers to housing production increased costs, and necessitated subsidization in order to create affordable housing. In order to reenergize the city’s ability to create an equitable city, we must reexamine our use of land-use regulations, tax policies, and formulate clear ways forward.

This thesis first seeks a broad and versatile definition of an equitable city in order to understand the desired end-state of potential interventions. Second, the author explores the formal characteristics of the equitable city, the way current land-use regulations are either facilitating or impeding the creation of that form, and the potential for a better way forward. Third, the author taxonomizes the fiscal tools available to the city which influence the urban form. Lastly, the author looks at the Highland neighborhood of Austin, TX – a marginal neighborhood with recently completed light-rail stops, a regional mall being redeveloped into a mixed-use project anchored by a community college, and building typologies which do not comply with current zoning – and proposes palatable changes to the way real estate is taxed, which will facilitate the creation of a more just, equitable, and sustainable neighborhood.

Chapter 2 - The Equitable City

What is an equitable city? Why choose 'equity' as the definitive goal of the city? Are there other characteristics that should be given equal or greater consideration? If it is true that equity is the definitive goal, then are cities the answer? And, is there a way to measure equity?

The dictionary defines equity as the quality of being fair or impartial. In *The Just City*, Susan Fainstein says that "[equity] does not require that each person be treated the same but rather that treatment be appropriate" (Fainstein, 2010). Which begs the further question, 'towards what end?' Fair or impartial in the pursuit of what? In *Writings on Cities*, Henri Lefebvre says that the "needs [of the person, within the city] have an anthropological foundation. Opposed and complimentary, they include the need for security and opening, the need for certainty and adventure, that of organization of work and of play, the needs of the predictable and the unpredictable, of similarity and difference, of isolation and encounter, exchange and investments, of independence (even solitude) and communication, of immediate and long-term prospects." (Lefebvre, 1996)

Of these, "immediate and long-term prospects" are the most fundamental needs that a city must provide. This echoes Fainstein's definition of equity: that treatment should be appropriate to one's efforts (Fainstein, 2010). 'Prospects', as a 'need', are unique in that they are conceptually reliant on the presence of all other needs. One does not necessarily require certainty *and* adventure, or security *and* opening, at any singular moment, but the prospect of achieving either via the reciprocity of one's own efforts must be available. Even if the individual should choose not to exert themselves towards that particular end, the prospect of fair treatment in exchange for one's reasonable efforts must be present. 'Prospects', in this way, can be seen as the nexus through which all the other needs may be translated and measured. 'Prospects' represent a pinch-point in a positive feedback loop; both a requirement to move forward, and also a potential datum of success. Thus 'prospects', or 'opportunity' is an appropriate proxy for equity.

But is equity really the most fundamental aim of the city? Are there other objectives that should take precedents over 'equity'? Susan Fainstein argues that equity, democracy, and diversity are the primary components of justice, and that justice is truly the most worthy pursuit of the city (when limited to what "appears feasible within the present context"); but she quickly subjugates democracy and diversity in favor of equity. "Inclusion [democracy] and diversity ... are trickier concepts than equity, because their multiple dimensions can be in contradiction and, when carried too far, can undermine other forms of justice." And, "For just-city theorists the principal test is whether the outcome of the process (not just of deliberation but of actual implementation) is equitable; values of democratic inclusion also matter, but not as much." In other words, independent of participation in a democratic process (which may or may not be a choice), the ability to feel that you are being treated fairly by the process is paramount. Again, equity, as a benchmark for success, and in a fundamental symbiotic relationship with all other needs, is the most fundamental and important characteristic of the city.

Thus equity is definitively our highest aim. But towards that end, are cities truly the best places to incubate and cultivate prospects, and therefore equity? The Brookings Institution found that in 2014 the world's 300 largest metropolitan economies accounted for nearly half of global output, despite having only 20 percent of the population (Berube, 2015). In other words, per capita production in the 300 largest metropolitan economies is almost 4 times greater than that outside of those metropolitan economies. If the entire planet is comprised of 100 people, creating \$100 of value annually, the 20 people within the largest cities would create \$50, or \$2.50 per person. While the 80 people outside the largest cities would also create \$50, at a rate of \$.63 per person. Cities produce!

In 2008 the OECD (Organisation for Economic Co-operation and Development) published a paper titled 'The Contribution of Economic Geography to GDP per Capita', which examines the concept of economic geography by looking at countries' proximities to areas of dense economic activity (cities). While the paper focuses on international proximities, it also makes clear that a large portion of growth is left to be explained by innovation and technology, openness to trade,

quality of institutions, and localized factors. “In the case of product markets, one of the key channels is that proximity induces stronger competition between producers, thus encouraging efficient use of resources and innovation activity. Another is that an easy access to a large market for consumers and suppliers of intermediate goods allows for the exploitation of increasing returns to scale. Furthermore, the presence of large markets allows for these scale effects to be realized without adversely affecting competition. The scope for exploiting higher returns to scale is hampered by distance to major markets, both within and across countries, due to transportation costs. Transportation costs also reduce the scope for specialization according to comparative advantage, another important driver of gains from trade along with the ability to reap scale economies.

“While the economic geography literature focuses mainly on trade linkages, a parallel literature on urban and spatial economics puts more emphasis on agglomeration externalities as a benefit from operating in an area of dense economic activity. Such externalities may include economies of scale related to infrastructure and other public services, as well as the potential gains associated with the access to a large pool of workers, and localized knowledge spillovers. In principle, it is possible to provide some quantification of these benefits, using standard measures of economic density, such as the share of population living in cities.” (Boulhol, 2008)

Simply put, areas of dense economic activity (cities) provide a greater return on investment (greater equity) for all participants in the economy. Whether or not equity is fully optimized for all participants is a different and more difficult question, and the answers are site specific. But it's clear that cities provide a greater number of prospects, and therefore more equity, than non-cities. And the better the city, the more opportunities and more equity.

Far and away the best prize that life has to offer is the chance to work hard at work worth doing. – Teddy Roosevelt

Edward Glaeser in *Triumph of the City* puts it in more human terms, and speculates about the dynamism inherent in the city dweller's condition. “Cities aren't full of poor people because cities make people poor, but because cities attract poor people with the prospect of improving

their lot in life. The poverty rate among recent arrivals to big cities is higher than the poverty rate of long-term residents, which suggests that, over time, city dwellers' fortunes can improve considerably." (Glaeser, 2011)

Equity is our most fundamental aspiration, and the city is the most effective means towards that end, but how do we objectively measure it?

Again returning to the concept of 'prospects' as the key determinate of equity, Fainstein presents the 'capabilities approach' as a means to measure the success of a city. Originally put forth by Amartya Sen, Fainstein says, "There is no general solution to the tensions among and within the values of democracy, equity, and diversity ... The capabilities approach ... offers a way to devise rules that can govern the evaluation of urban policy and provide content to the demands of urban movements." The capabilities approach "places the individual within a network of affiliations rather than regarding him or her as an atomized entity whose well-being is defined by personal freedom and realizing a defined set of preferences." "Capabilities do not describe how people actually function, but rather what they have the opportunity to do. One need not exercise one's capabilities if one chooses not to, but the opportunity must be available, including a consciousness of the value of these capabilities." (Fainstein, 2010)

Objectively quantifying 'capabilities' remains difficult. Following Sen's introduction of the capabilities approach in the 1980s, a number of indices have been created based on its theoretical framework. All use large data sets to produce numerical results that facilitate comparisons between entire regions and/or nations. The purpose of this thesis being to propose implementable interventions at the city and neighborhood level, these indices are not applicable.

Glaeser's humanistic approach provides a more appropriate, if not entirely quantitative, means of measuring the success of the city. "Urban density makes trade possible; it enables markets. The world's most important market is the labor market, in which one person rents his human capital to people with financial capital ... a big city is a diversified portfolio of employers." "The great problem of urban slums is not that there are too many people living in a city, but that

those residents are often too disconnected from the economic heart of the metropolis.”
(Glaeser, 2011)

Therefore, the equitable city has qualities which facilitate the greatest number of people being connected to the greatest number of opportunities. Opportunities are not just employment, but also interactions with other people, in which possibility lies as well. The next chapter will seek to find fundamental characteristics of urban form which can facilitate the greatest number of opportunities and prospects.

In this way, density is an appropriate proxy for opportunities and prospects. This would mean that density is, transitively, a reasonable proxy for equity. Though this is obviously overly simplistic, it also makes complete sense, as we’ve seen that areas of dense economic activity (cities) do provide a greater return on investment (greater equity) for all participants in the economy.



Waverly Diner, New York City. Image: Shutterstock

Chapter 3 - The Form of the Equitable City

As discussed in the previous chapter, the most equitable city is the one that provides the most immediate and long-term prospects to its inhabitants. But what is the urban form which facilitates the most prospects and the most equity? Is exclusively chasing prospects, without attempting to solve more fundamental structural issues, a losing proposition? Are we, as a society, providing the urban form that maximizes the possibility of prospects? How can the government regulate a free market which better facilitates the creation of a more equitable urban form?

As discussed, prospects can simply mean access to employment – access to the labor market. As Edward Glaeser said, the labor market is the most essential market, “in which one person rents his human capital to people with financial capital.” (Glaeser, 2011)

Access to the labor market is twofold. First, one must be able to afford to live somewhere. As REM said, one must be able to “stand in the place where you live.” Second, the affordable housing must also facilitate affordable access to the labor market. As an example, if affordable housing is one walkable block away from employment opportunities, then the total cost associated with access is very low. An alternate scenario is one in which affordable housing is a greater distance from employment opportunities, though well connected via multiple modes of affordable transportation such as quality bike lanes, good public transportation (bus, bus rapid transit, light rail), and/or roads that allow for a reasonable commute via car. In this case, the cost associated with access to prospects will be higher, but hypothetically should remain within reason. But if affordable housing is available in a location that provides only non-affordable access to employment opportunities, then the affordable housing is not actually holistically affordable, and access to prospects is diminished.

The point of cities is multiplicity of choice. – Jane Jacobs

Linking individuals to opportunity is a fundamental aim of the city (and, also, of most economic development work, even if it is not concerned with the form of the built environment.) But

does it make more sense to create more affordable housing near existing opportunities, or create more opportunities near existing affordable housing? Or, can the problem be solved with a more comprehensive approach?

The Center for American Progress (CAP) illustrates the current spatial mismatch between affordable housing and opportunity in Los Angeles, Houston, and Cleveland by comparing the distribution of available affordable units with the distribution of an opportunity index that is based on the presence of high-wage jobs, low poverty and unemployment rates, short commuting times, access to supermarkets and fresh vegetable stores, and schools with low drop-out rates.

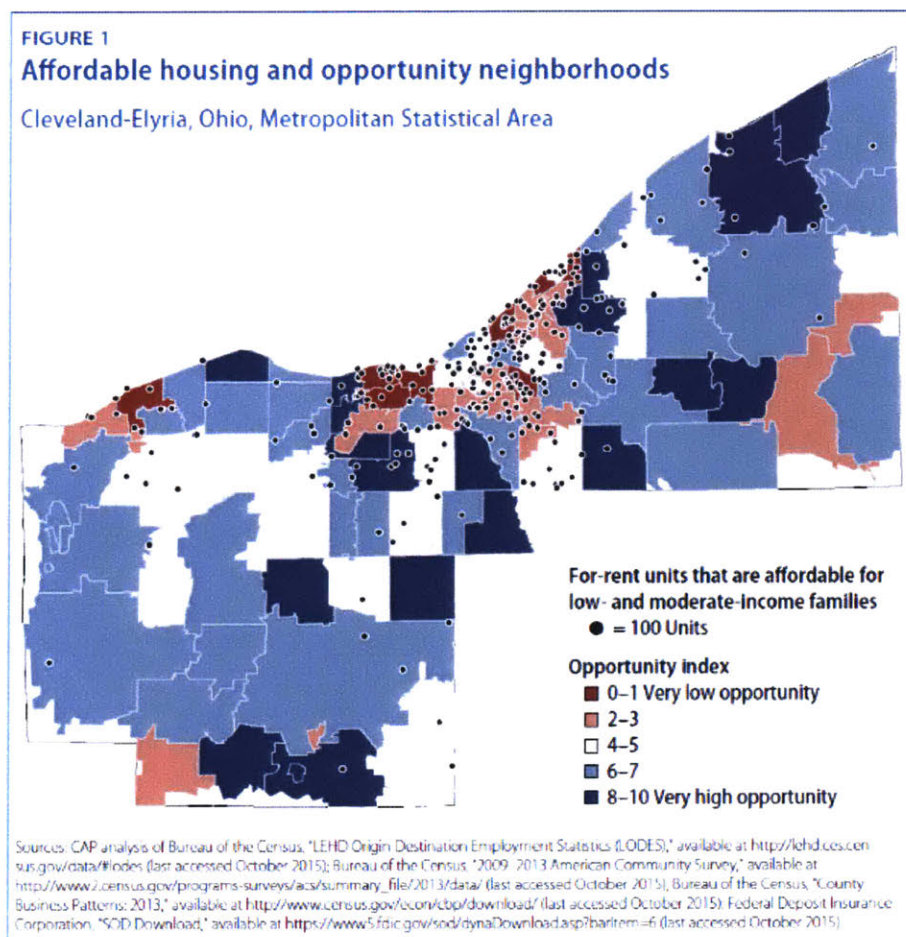


Image: The Center for American Progress

The results show a distinct disconnect between available affordable housing and opportunity. But they also show that affordable housing is clustered near the city centers and areas with greater opportunities are dispersed in the periphery.

CAP takes this information and uses it to advocate for policies that would alleviate supply constraints for affordable housing in the lower density areas that (appear to) have more opportunity. But exclusively using this approach denies fundamental truths about the ways that cities provide access to opportunity.

Yes, CAP's approach would allow greater access to *some* opportunities, but those opportunities are currently limited in number by the urban context in which they reside. In lower density suburbs the capacity for opportunity is capped by virtue of the number of accessible locations within a certain travel distance, and the mode of transportation required. As any fixed commute time will provide access to a finite number of opportunities, and the number of opportunities is limited by the density that the urban fabric provides, opportunities are limited.

This concept can be quantified through gravity indexing. Developed by Walter Hansen in 1959, the gravity index can be used to illustrate this spatial dissonance numerically. It scores locations proportional to the number of neighboring plots that can be reached within a given radius, and inversely proportional to the travel cost involved. (Sevtsuk) Of note, Sevtsuk's use of the gravity index keeps the density and attractiveness of land use destinations constant in all comparisons and focuses on accessibility differences that are purely attributable to the dimensional parameters of grids, especially block sizes.

One limitation of Sevtsuk's findings in this specific study, though actually illustrative within the context of this thesis, is that with the simple addition of density as a variable his findings can be fundamentally undermined. Though Sevtsuk finds that holding all other variables constant, there is an ideal block and parcel size, if one parcel can represent five, twenty, or a hundred destinations, then the gravity index of all dependent parcels must be re calculated and there no longer exists a supremely optimal block and parcel size.

With density constraints relieved, the next limiting factor is the transportation infrastructure. If density is increased significantly in an area with transportation infrastructure designed to accommodate only low density development, there will be immediate gridlock and eventual capital expenditures (to maintain and/or upgrade the infrastructure.)

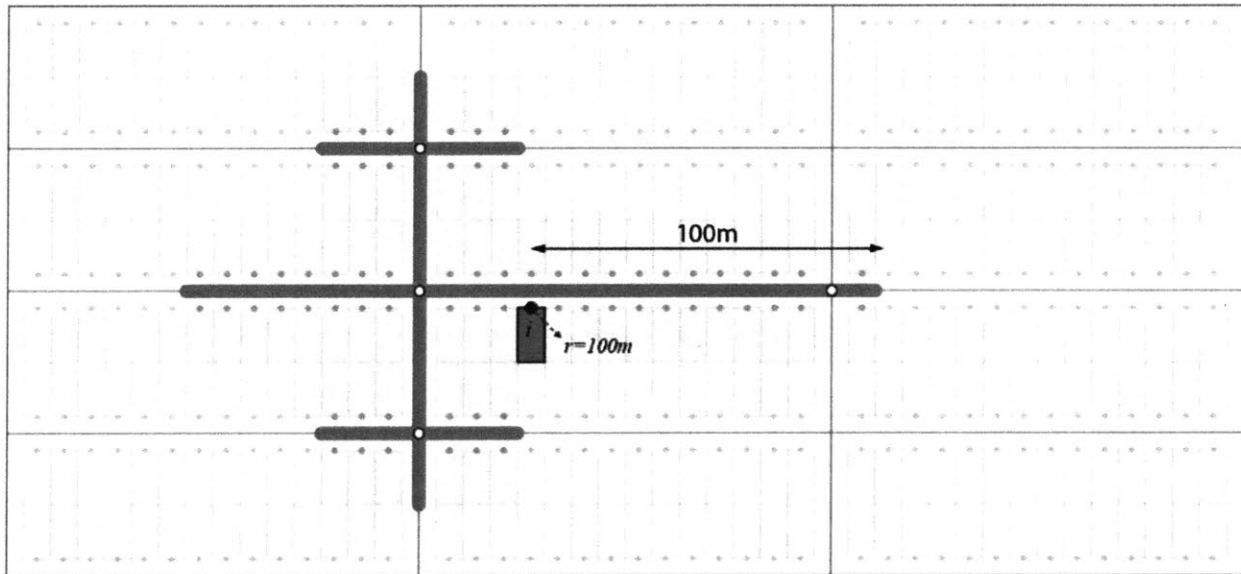


Illustration of the gravity index. Source: Sevtsuk, 2016

By approaching the problem of access by allowing greater density and also creating the requisite infrastructure to support the new density, it is clear that even outside of city centers, within the coarse grained, large block, urban fabric of suburbs and near-suburbs, there is work that can be done to increase opportunity.

CAP only attempts to solve half the problem by exclusively making recommendations to add affordable housing to areas with preexisting. This alone is not without merit, but the more holistic solution is to also look at ways to increase opportunities within city centers, and other places with the potential for greatest access to opportunity, where access to housing is also relatively affordable.

Further, if our aim is to progress existing cities towards a more equitable form, we must take the location and spatial qualities of the existing infrastructure as a given, and pursue changes in

non-physical constructs that are also deterministic of the built environment. Non-physical constructs – such as zoning and taxation policies – have every bit the potential of topography and infrastructure to effect the form of the built environment.

Affordable housing

Affordable housing as a research topic is rich with academic literature. The aim of this thesis is not to rehash all that has already been said and done on the subject of affordable housing, but rather to acknowledge the current state of affairs, and to find ways that municipalities can facilitate a well-functioning market that can provide affordable housing on its own.

It must also be acknowledged that inequity may still exist even if affordable housing is highly accessible. Certainly barriers to entry such as levels of education, biases against gender and/or race, or other complicating factors can all diminish the amount of equity achievable within society. But, they are beyond the purview of this thesis.

With those disclaimers upfront, affordable housing *is* the provenance of equity. Life has necessities beyond employment, and the cost of access to those necessities is very important. Food, culture, education (both for adults and for children) are all real requirements, and the cost associated with accessing them is a real encumbrance that must be considered. But access to those necessities and employment always starts at the home. If we are to calculate the cost of going from point 'A' to point 'B', the affordability of starting at point 'A' must be the first variable in the equation. Affordable housing is always the first barrier to entry. So what can be done about affordable housing?

In assessing the ails of post-Katrina New Orleans, Andres Duany describes “the current American system, which consists of the nanny-state raising standards so expensive and complicated that only the nanny-state can provide affordable housing. The state thus creates a problem and then offers the only solution.” Specifically Duany calls out the International Building Code (IBC) as having higher standards that “are superb, but also very expensive.” (Duany, 2009)

Recent empirical evidence supports Duany’s assertion that the ‘American system’ is fraught with avoidable costs, but points to other possible causes.

The White House addressed the issue of affordable housing in September, 2016, with the release of a ‘Housing Development Toolkit’. The toolkit promotes ten actions that “states and local jurisdictions have taken to promote healthy, responsive, affordable, high-opportunity housing markets.” (Marohn, 2016) Over time, increased bureaucracy has risen the real price of housing disproportionately to the rise in cost of construction. From 1980 to 2012 the cost of housing grew 1.7 times the cost of construction. And while some of that divergence can be attributed to land scarcity, that scarcity can be in turn attributed to the supply constraints on the urban fabric that facilitates the most opportunity.

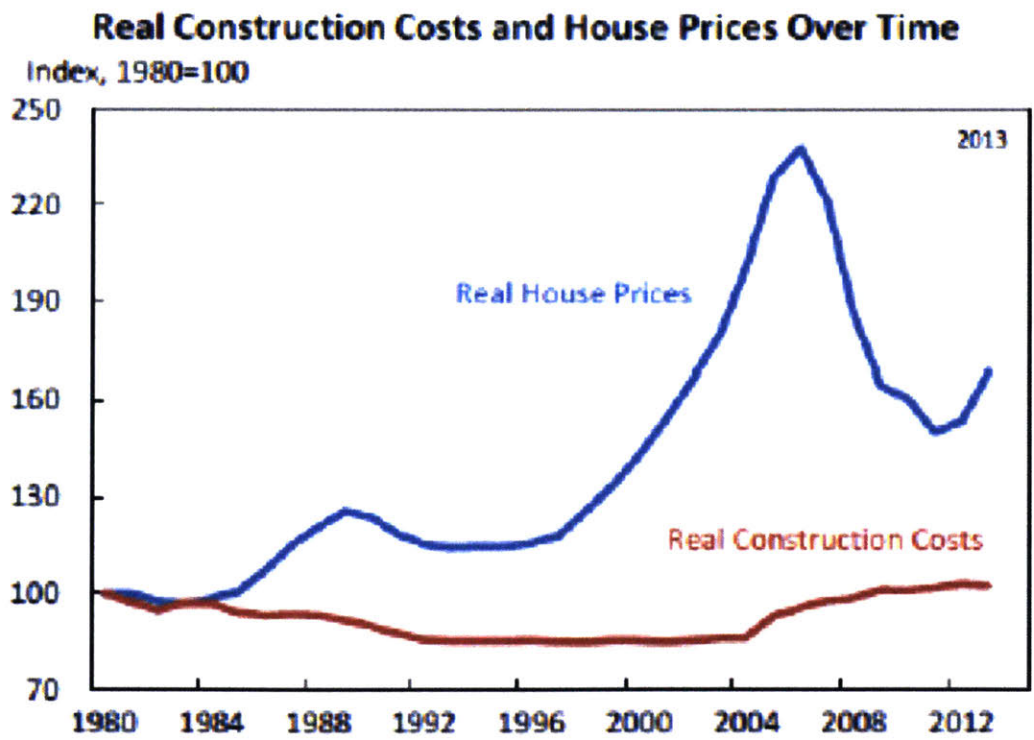


Image: Gyourko, Malloy (2015)

Looking critically at the actions that the White House recommends, the first five are directly intended to facilitate better functioning housing markets through fewer and/or streamlined regulations. Establish more ‘by-right’ development, tax vacant land or donate it to non-profit developers, streamline permitting processes, eliminate off-street parking requirements, and

allow accessory dwelling units. Of those, all but a change in tax policy speak directly to minimizing unnecessary bureaucracy and regulations, most of which are associated with zoning.

Zoning

That zoning has been used to exclude the poor from wealthy areas has been understood almost since its modern conception. Though the first set of city-wide land-use regulations in the U.S. was enacted in New York City in 1916, the use of zoning wasn't legally codified at the national level until the Supreme Court's decision in *Euclid v. Ambler* in 1926. The decision reads in part, "with particular reference to apartment houses, it is pointed out that the development of detached house sections is greatly retarded by the coming of apartment houses, which has sometimes resulted in destroying the entire section for private house purposes; that, in such sections, very often the apartment house is a mere parasite, constructed in order to take advantage of the open spaces and attractive surroundings created by the residential character of the district." (*Village of Euclid v. Ambler*, 1926) The foundation of modern zoning considers apartments to be mere parasites.

The litany of ills that zoning has produced is an ever growing list. Justin Fox enumerates them in his article "Zoning Has Had a Good 100 Years"; in addition to being exclusionary by nature, zoning has led to increased income segregation, reduced economic mobility and depressing economic growth nationwide (Fox, 2016)

Yet zoning did and does serve a purpose, which is important not to lose sight of. Paraphrasing William Fischel's "Zoning Rules!", Fox explains that "in the decades before the automobile, industrial and residential development was to a large extent constrained by the location of rail and streetcar lines. After trucks and buses became common, though, industrial businesses could locate far from railways (and wharves) and apartment developers could build far from streetcar lines. Anxious homeowners – and in some cases, merchants – clamored for rules to keep people from building factories next door." (Fox, 2016) In Fischel's words, "Zoning probably makes for more efficient provision of local services and better neighborhoods than would be available without it." (Fischel, 2015)

So exogenous supply constraints (such as zoning) can be purposefully used to exclude but the tools exist for a reason. Relieving supply constraints *carte blanche* does not directly address the reasons that there are fewer opportunities in locations where affordable housing does already exist, and may also reintroduce the problems that zoning was originally intended to solve.

A case in point is that the converse of the paradigm that CAP espouses can also be true, – that rather than increasing access in high opportunity areas, increasing opportunity in high access areas can be equally as fruitful –and the results may actually be more sustainable. Why can't better zoning can be used to increase opportunities within cities?

Again, the solution can be distilled to a healthy symbiotic relationship between opportunity and access, with affordable housing as a foundational barrier to entry. And the question of if to bring opportunity to affordable housing, affordable housing to opportunity, or focus on the accesses between the two can be answered with a more comprehensive approach which does all three.

Opportunity and Access in Urban Design

Johnathan Barnett in his Introduction to Urban Design presents another way to conceptualize zoning. “Because zoning has rarely been a positive force, in the sense of shaping the built environment to a predetermined pattern, zoning regulations have tended to pull development inward, away from property boundaries, on the theory that the public interest most in need of protection is represented by the rights of adjoining property owners.” In thinking of zoning this way – using the rights of adjoining property owners as the most suitable proxy for the public interest at large – a negative feedback loop is created which undermines the architectural quality of the public realm, of the right of way. In doing this, the value of the collective experience of moving through the public realm is diminished. What's left is a right of way shaped not by the primary users of the public realm, but by others who are concerned with metrics beyond the immediate public realm, such as the speed at which vehicles should be able to travel *through* the area. “[The planning process] has been the province of the lawyer, the surveyor, and the municipal engineer. They have considered their primary task to be, not

control over design but over more abstract considerations of public health and welfare.”
(Barnett, 1982)

We shape our buildings, thereafter they shape us.. – Winston Churchill

“Public health and welfare” can sound like the basis for an equitably formed city, but remember that those notions are applied both inward and beyond; to the interior of the building and to the functioning thoroughfares connecting points beyond. Jane Jacobs famously said that “streets and their sidewalks, the main public places of a city, are its most vital organs.” And when these vital organs are neglected, their continued health is jeopardized. If one is to access opportunity, it will be via public rights of way, and the quality of those rights of way directly impacts the costs associated with using them as access. “Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.” (Jacobs, 1961) Which means current zoning, overly concerned with the rights of the adjacent land owner and not the rights of the community as a whole, is not creating cities “by everybody.”

What next?

How do we keep the good parts of zoning while still facilitating a more equitable built environment? First, most of the work pertaining to public health and welfare has already been done by the International Building Code (IBC). The IBC describes itself as “a model code that provides minimum requirements to safeguard the public health, safety and general welfare of the occupants of new and existing buildings and structures. The IBC addresses structural strength, means of egress, sanitation, adequate lighting and ventilation, accessibility, energy conservations and life safety in regard to new and existing buildings, facilities and systems.” The public health and welfare that is supposed to be a product of zoning is actually now a product of better built buildings. The focus of the building code is appropriately inward, towards the working of the building, with additional requirements for particular adjacencies. Any ramifications of the IBC which may facilitate exclusion are tertiary and by no means intentional. Andres Duany does partially blame the IBC for inflated costs of buildings, but this

cost does contribute to greater levels of public health and welfare. And towards that pursuit, the building code is the appropriate tool.

Regarding the implications of zoning on the public realm, Barnett asks, “what about those parts of our cities and towns where large-scale redevelopment will not occur, only a process of piecemeal modifications on a block-by-block, or even lot-by-lot, basis? Is there any way to plan such areas so that they come to have the coherence of a group of buildings designed at one time? Is there an alternative to architectural consistency that will still produce a unified design for a new town or a major development?” The answer is a form-based code.

The Form-Based Codes Institute advertises itself as “a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code.” Essentially a form-based code does what zoning *should* do for the public realm. And what zoning *should* do for public health and safety is covered by the IBC.

The Congress for a New Urbanism further elucidates the virtues of a form-based codes, “which take more imagination and thought than conventional land-use zoning that simply colors an area on a map as ‘commercial.’” “Humans don't generally congregate in the middle of empty fields. We are drawn to social spaces defined by walls, trees, or facades of buildings—spaces limited in size ... [A form-based code] requires a willingness to intently study [these places] — walk, measure, and discuss it with community members, learn about the physical interventions that make other places socially successful, and then draft the plans and codes to bring about desired change. Coders, planners, and designers need to feel the urgency of social design in their bones as they shape places. Making interventions to improve walkability needs to be informed by these feelings.” While “Conventional zoning focuses on land-use of private property, rarely concerning itself with the street or the relationship of buildings to the street. In effect it has given up on the shape of the public realm, treating streets as primarily vehicle corridors. Form-based coding sees streets as public social spaces that need to be shaped; it regulates buildings and rights-of-way together as one place.” (Price, 2016)

Working with the assumption that proper rigor will be done to ‘study, walk, measure and discuss’ the specific physicalities that make a place socially acceptable, an appropriate and quantifiable proxy for opportunities and prospects is still needed. Density, the most fundamental characteristic of a city which delineates it from the non-city, is just such an appropriate and quantifiable metric. Density as an appropriate proxy for opportunities and prospects is then, transitively, a reasonable proxy for equity. Though this is obviously exceedingly simplistic, it also makes complete sense, as we’ve seen that areas of dense economic activity (cities) do provide a greater return on investment (greater equity) for all participants in the economy.

The next chapter will explore the different financial tools that a government can facilitate specific types of density, which can then be part of an equitable urban form.



Galena, Illinois. Image: www.enjoyillinois.com

Chapter 4 - Financial Tools of Facilitation

What tools does a government have to facilitate its morphosis towards a more equitable form? Beyond eminent domain, the broad brush of 'urban renewal', and large investments in infrastructure, tax policy is the gentle guiding force that can be employed at various scales (from single properties, to entire states or countries). The concept is much broader than may initially be associated with the term 'real estate tax'. In order to expand the paradigm, one might think of these various methods as "value recycling, or even "value regeneration". Taxonomizing real estate value recycling, there are three distinct levels. The first is the fundamental philosophy. Second is the creation of secondary markets. Third is project-specific interventions.

The Fundamental Philosophies

At the highest level, there are two forms of real property taxation. (Real property is land and/or improvements to the land). The first is called an ad valorem tax, and is applied by taking a percentage of the properties assessed value (assessments are made by the taxing jurisdiction, and are usually markedly less than the fair market value). The second is a special assessment tax, which is conceptually closer to fees charged to parcels within a particular area to pay for certain public projects. The most common example of a 'public project' in this context is the infrastructure which supports the taxed parcel. Most modern taxation strategies within incorporated municipalities blend these forms into a single tax, with small percentage rates for specific services (such as public schools) combined to form the total percentage tax rate for the property. Property tax rates are sometimes conveyed as a millage rate, or 'per mil', where the term is expressed as a one-thousandth of the value, rather than a percentage (one-hundredth). For example, a 2% tax rate could be expressed as 20 mills.

Conceptually, the taxation of real property (land and/or improvements to the land) can be classified within two fundamental philosophies. The more common, used by most taxing jurisdictions in the United States, assesses the value of the land and the improvements to the land, and then applies the tax rate. In theory the value of the land is independent from the

value of the improvements to the land. But in practice, the stated value of the land is often in direct relation to the value of the improvement. As in, two adjacent properties, identical in every respect except the quality of their improvements, will have very different assessed land values. This will be shown by example in the next chapter, but essentially the final, combined assessed value of the land with improvement is the only 'real' value that is taxed. Though municipalities will provide a land value distinct from an improvement value, this parsing is perfunctory, and no residual land value calculations have been done in order to produce the separate value.

Conversely, Land Value Taxation (LVT) is concerned exclusively with the value of the land, and not with the improvements upon the land. Land Value Tax is sometimes referred to as a Georgian tax after Henry George, a political economist in the late 1800's who advocated for the LVT as a single tax that would eliminate the need for all other taxes. Part of his rationale was that the LVT is a progressive tax – it taxes wealthier individuals more than less wealthy individual – yet in contrast to other progressive taxes it does not dis-incentivize productivity.

There is a finite supply of land, so rather than depressing economic activity, or allowing economic activity to migrate offshore in search of lower taxes, the land value tax can actually stimulate the economy of the location applying the tax. When the land is taxed independent of improvements two things happen. First, the tax is reapportioned among parcels and the amount of tax paid by vacant land owners (speculators) increases. (This directly echoes the White House's recommendation to increase taxes on vacant land). Second, with the amount of taxes paid by the land owner fixed relative to the value of the land and not the value of the improvements, the land owner is then encouraged to be more productive with his or her land by virtue of not being punished for doing so. Thus the LVT is both a carrot and a stick for development. Speculators are punished for their lack of productivity, and investors are rewarded for being as productive as possible.

Joseph Stiglitz has advocated for the LVT on multiple occasions. “Driving the growth of inequality ... the underlying problem is the whole structure of our economy which has been oriented more and more at increasing rents [economic rent] than increasing productivity – [rather] than real economic growth that will be widely shared with our society ... A tax on land, rents, will address some of the underlying problems. This is an idea that Henry George had more than 100 years ago ...” (Smith, 2015)

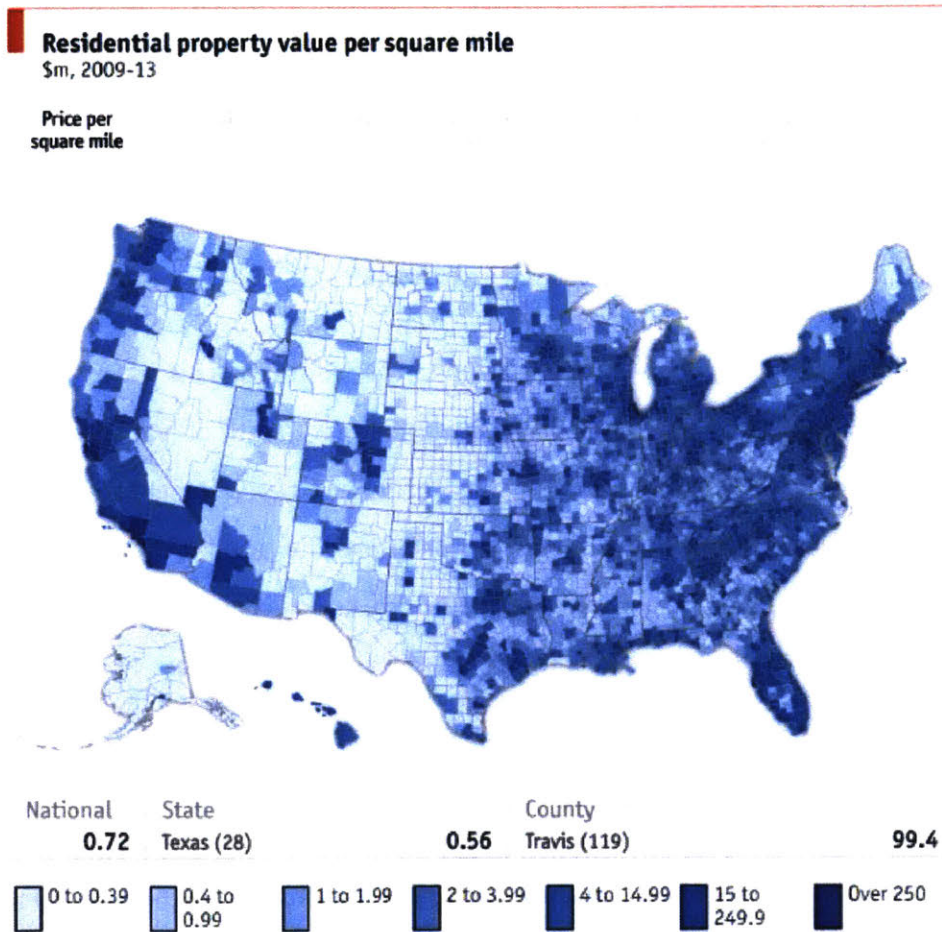


Image: The Economist; Census Bureau

“One of the general principles of taxation is that one should tax factors that are inelastic in supply, since there are no adverse supply side effects. Land does not disappear when it is taxed. Henry George, a great progressive of the late nineteenth century, argued, partly on this basis,

for a land tax. It is ironic that rather than following this dictum, the U.S. has been, through its preferential treatment of capital gains, doing just the opposite.” (Stigliz, 2014)

A hybrid of the LVT and the traditional model is a ‘two-rate’, or ‘split-rate’, system, where the real value of the land is determined independent of improvements, and then a significantly higher rate is applied to the land. Pennsylvania has allowed for this type of taxation since at least 1913, and currently 15 Pennsylvanian cities are using the two-rate approach. The LVT to improvement tax ratio is anywhere from 1.23 : 1 to 16.2 : 1. A 1982 study showed that Pittsburgh had a 70.4% increase in the value of its building permits over ten years after increasing its LVT to improvement ratio, compared to a 14.4% average decrease in 14 other comparable eastern cities. The study shows that by raising taxes, but decreasing the relative rate on improvements, Pittsburgh was able to spur economic activity at a time when other municipalities’ economies were contracting. (Hartzok, 1997)

The Land Value Tax can also have several variations. The frontage tax is a type of LVT, in which the tax rate of the parcel is figured based solely on the linear length of frontage. Sometimes this is applied to lakefront property, with the value of the property being determined by how much lake frontage the property has. In other applications the rate is determined by how much street frontage a property has. This makes philosophical sense, as street frontage is directly related to the amount of infrastructure support that a property requires. For example, if a 50’ wide parcel has 50’ of street and utilities in front of it, it should be taxed in a manner that supports the construction and maintenance of the 50’ of infrastructure which is directly supporting the property. If you add an additional metric to account for the side streets – which don’t have any frontage, but are nonetheless required – then you have essentially accounted the depth of the property in addition to the length, and created a slightly more sophisticated LVT, with tax rates mathematically derived from, again, the capital requirements of the infrastructure.

The concept of the special assessment tax can also be applied to the land value tax for any number of publicly provided amenities. A catchment area for a public transit node, or an open

space or community center, can be established in which an appropriate multiplier is applied to the LVT in order to compensate for the properties greater access to the amenity. This method of taxation would alleviate the disconnect between public transportation infrastructure and land use planning, as the land within the infrastructure's catchment could be taxed based on the expected ridership, and the parcels owners within that catchment would maximize their profit by providing that many (or more) housing units. Of course that line of reasoning assumes induced demand – if you build it, they will come – but again the assumption is being made that the small scale design decisions have been thoughtfully made and dictated by the form based code.

As will be shown in the next chapter, a pure LVT can be highly un-equitable. Obviously land in certain locations – like within cities, where the in-place infrastructure provides greater potential for access – is more valuable than less connected land. And in this same way, the land is imbued by the government – which provides infrastructure with certain characteristics which dictate the amount and quality of its improvements – with value. Constraints via a form-based code can and should be placed on improvements for the sake of the public good, for the sake of the architectural integrity of the public realm. And to this end, it is not fair to tax a parcel with a limited ability to be improved the same amount as an equally sized parcel that is allowed to contain much larger (and profitable) improvements. Thus, if a LVT is to be applied equitably, it must take into consideration the inherent capacity of the site, which would be dictated by the government by zoning or, even better, via a form-based code.

Government Created Secondary Markets for Development

Beyond the fundamental philosophies of real property taxation, there are also a myriad of ways that governments can shape the built environment through the creation of secondary markets, also called transferable development rights. The most famous of these is New York City's air rights.

In 1961 the city updated their zoning regulations to allow for the transfer of rights to develop upward. There are three ways in which air rights may be transferred, each relating to a

different intended consequence of the commodification. First is through zoning lot mergers, in which two parcels effectively become one, and the capacity to build is transferred from one parcel to the new larger parcel. This requires little oversight from the city, as the height is not transferred into a different part of the city where it may not be appropriate. Second is a special purpose district transfer. This allows for transfer between non-contiguous sites, but controls that amount of density that can be built within a determined boundary. Third are landmark transfers, in which historic or culturally significant buildings are granted the right to sell unused air rights; this allows the building to generate revenue without compromising its landmark status. (Quintana, 2015)

Brazil has also been very innovative in the creation of secondary markets. In 2001, Certificate of Additional Construction Potential Bonds (CEPACS) were approved to be used by cities across Brazil, and in 2004 Sao Paulo began to issue them. Sold via electronic auction on the public stock market exchange, the bonds allow the recipient to build a larger floor area ratio, larger footprint, and change the prescribed use (Ingram, 2010). Through the public partnership that is formed, “incentives [are] tied to payments that work both as an attraction for private investment and a way to induce developments to adjust to the transformations desired in urban policy.” The CEPAC’s jurisdiction is effectively an “intervention in a large area of the city that requires infrastructure and urban betterments such as avenues, drainage, houses for people living in slums, public areas, public equipment, and other investments. The funding should come from the incremental value originated in changes in zoning. Owners and/or developers of plots located inside the perimeter of the urban operation may present projects and pay with CEPACs for the additional rights to build.”

CEPAC’s provide the potential to “obtain compensation before the developer begins building the project. This allows the public administration to finance the construction of infrastructure without creating a deficit or public debt or using budget resources that could be employed in other activities, such as education or health (Afonso 2004). Buying CEPACs allows the entrepreneur to acquire additional building rights that may be used whenever the real estate business cycle is at the optimal point, or when the entrepreneur decides it is the best moment

to launch the project.” (Ingram, 2010) CEPACs also have the secondary effect of, after instigating new development, increasing the tax base within the CEPAC’s district. Preliminary studies have shown the potential to increase the taxable income per square meter by up to 4.4 times the previous amount. (Ingram, 2010)

In many ways CEPACs are similar to a vast array of smaller scale interventions that a municipality can sanction. CEPACs differentiate themselves by being traded on a public exchange, and by having relative indifference to the specifics of the development at the time they are initiated.

Secondary markets such as air rights and CEPACS must be implemented at a particular minimum scale in order to be effective. And since they involve fundamental changes in the way that city-sanctioned development is conceptualized, they require significant political will (likely present because of dire, critical circumstances) to be implemented. Smaller, more local interventions can be significantly more palatable.

Point interventions

At the scale of individual projects, or small districts, there are a number of financial tools that can be used by the city to facilitate a particular built form. For the purposes of this thesis, Planned Unit Developments (PUDs) – in which a developer engages the municipality to determine the projects zoning – are not considered a financial tool. PUDs usually involve the planning and taxation of entirely new neighborhoods. Thus they are about urban design as much as taxation policy, and are not intended to shape existing urban fabric so much as create all new urban fabric from scratch.

Another non-financial way that cities leverage their authority to dictate what can be built is by under-zoning. Barnett half jokes that the most zoning is written such that “The Planning Commission shall permit such development as, from time to time, it considers to be appropriate.” (Barnett, 1982) By restricting what can be built to the point that by-right development is not feasible, the city forces the developer to come to the table and make a deal

to change the zoning, and thus can exert influence on final product through those negotiations. Though real value is exchanged in this process, under-zoning is not considered a financial tool. Its piecemeal nature does not lend itself to comprehensive planning efforts by the city, and its uncertainty adds significant risk and cost to the developer. Under-zoning is the epitome of non-planning and poorly executed incentives.

Any of the following tools could be used in conjunction with a PUD, or as part of a transition out of under zoning, in order to aid the developer financially or create a type of public-private partnership in which the developer's and government's interests are aligned.

Tax Increment Financing (TIF) is a very powerful method of forming a partnership between a developer and the city. "TIF requires the creation of a TIF district, typically a geographic region that is identified for a certain TIF development purpose. The TIF district establishes a baseline property value for the properties in the district. When those properties are developed, the increase in property value creates an increase in property taxes. This increase in tax is the "increment". The taxes are paid by the property owner to the administering agency, and the agency uses those increased funds to pay for development of the particular parcels. Typically, the funds are paid during the development by the agency (with the increment being used over time to reimburse the agency). TIF rules require a "but-for" analysis: that 1) the development would not otherwise occur without the TIF and 2) the market value of the property will higher after the project (taking into consideration the TIF assistance) than it would be without the TIF." (JMW, 2013)

Another way to think of TIFs is that the increased value (the increment) created by the development is allowed to remain within the district, and be put towards infrastructure needs within the district, for a certain amount of time. Thus the city is able to participate in the planning of the development, and dictate the capital invested in infrastructure, with reduced risk of having to fund the capital needs of the infrastructure themselves. The TIF agency facilitates the expenditure of capital upfront, when normally the cash flows wouldn't be present to allow for such investment.

TIFs were originally implemented in California in 1952, and by 2004 all 50 states had authorized their use (Wikipedia). Though, in 2011, California became the first state to eliminate their continued use. Following the global financial crisis of 2007-2008, it was deemed that too much potential tax revenue was being diverted from public funding and to private development. California's actions, though spurred by the financial crisis, can be seen as a response to criticism of TIFs in general. Opponents cite gentrification, an overly simplified and broadly applied use of the "but-for" test, and the depletion of tax revenue (particularly towards schools) as fundamental drawbacks of TIF usage.

Yet even as TIFs have their detractors, and have ceased being used by that name in California, they fundamental idea is highly resilient. California now has "Infrastructure Financing Districts", which function very similarly (Peterson, 2013) As of 2008 Massachusetts has an additional program called I-Cubed (Infrastructure Investment Incentive Program) which facilitates the issuance of bonds to fund public infrastructure improvements that will support new developments, and whose increased tax revenue will be used to pay the bond's debt service.

Tax abatements are another value capture strategy, though their purpose is less about the quality of the built environment and more about economic development. Similar to TIFs, a tax abatement requires the property to be assessed in its current state. But rather than reinvesting the increased value back into the district from which it came, the taxes are refunded to the property owner when certain criteria are met. Typically this criteria is based on jobs creation (both quantity and quality of jobs). Tax abatements do not require a particular district to be defined, and the municipality can negotiate the details of the abatement with each potential development. Thus in this way abatements can be implemented in a fragmentary fashion similar to the negotiations that take place with under-zoning. Further, the use of tax abatements can be likened to the practice of municipalities paying for jobs. This practice has dubious ramifications as state and local governments engage in a race to the bottom while corporations shop for the government willing to give them the most benefit in exchange for the lowest quantity and quality of jobs (JMW, 2013).

Abatements and increment financing are both ways that cities can engage with professional developers in order to facilitate – and, to a degree, dictate – prospective development. Yet some of the more interesting tools to effect change primarily enable smaller, less professional players. As advocated by Duany and the White House in the previous section, “pink zones” can remove the red tape associated with small scale development, thus allowing the resources that would have otherwise been spent on the regulatory process to be put towards new development. The city smartly relieves itself of a certain degree of administrative burden, allows those resources to be invested in the community, and then reaps the benefits of higher tax revenue when the land is improved.

Lastly, there are a number of different ways that the end user can participate directly in the shaping of their built environment, with just a little help from the local government. Tactical urbanism is “an umbrella term used to describe a collection of low-cost, temporary changes to the built environment, usually in cities, intended to improve local neighborhoods and city gathering places.” (Wikipedia) Tactical urbanism can be guerilla, but progressive municipalities have begun to create tactical urbanism playbooks which outline specific sanctioned interventions that individuals or neighborhood organizations can implement if they so choose. A significant benefit of tactical urbanism is its lack of significant sunk costs if the project does not accomplish its intended goals. In mid-2016 Minneapolis returned most of its experimental greenway project – five blocks of partly blocked streets with lowered speeds, benches and planters, and bike lanes – to its original state after the project was deemed not to be a success. Though to the contrary, the ability of the city to quickly undo the project was a success in and of itself. A larger investment in infrastructure would have been much more difficult to uninstall, “successful” or not (Hood, 2016). Sanctioned tactical urbanism is in a way similar to “pink zones” in that the investment by the government is not direct or even directly passive; rather it is the governments relaxation of administrative burdens – and therefore costs – which incents others to shape the built environment within predetermined formal regulations.

At the other end of the conceptual spectrum is the advent of new ways to invest in public infrastructure, such as Neighborly. Neighborly is an online platform which democratizes access

to municipal bonds, allowing individuals to directly invest in the infrastructure projects that shape their city. Though the results aren't as immediate and tactile as with tactical urbanism, that citizens can be financially invested in their city strengthens the emotional investment. This indirectly facilitates a more equitable environment for all.

From philosophies that can shape an entire region, to practices to influence professionally executed developments, to methods by which citizens can feel more engaged with their city, the ways in which a government can use financing, or "value regeneration", to shape the urban form are limitless when mixed and matched at various scales. The next chapter will explore how these concepts can be applied to a specific neighborhood in Austin, TX, and the possible positive and negative ramifications.



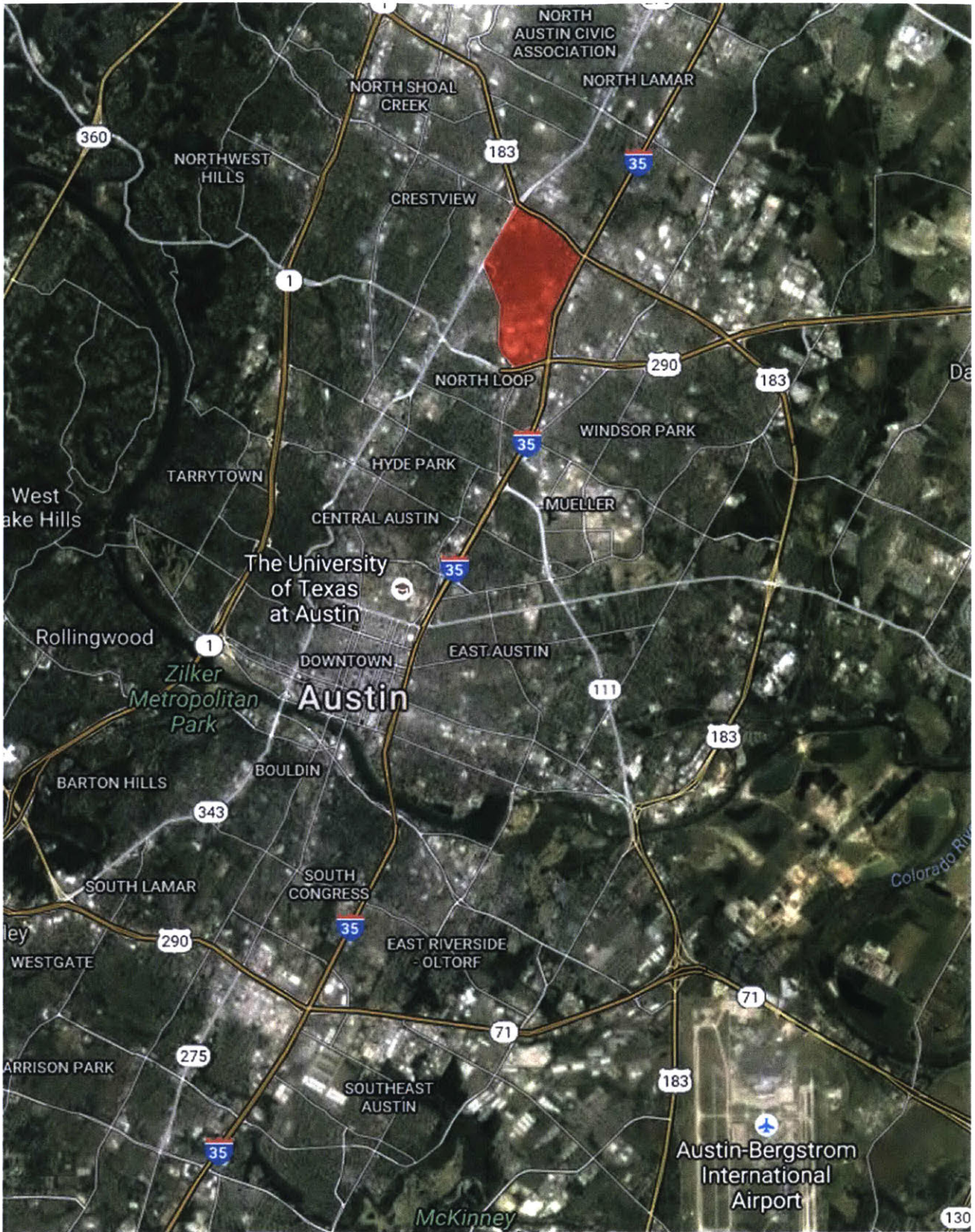
Tactical Urbanism, Kansas City Better Block Project. Image: mobileplanning.wordpress.com

Chapter 5 - Exploration of Implications: Highland Neighborhood Austin, TX

To explore the real ramifications - and potential - of applying new methods of taxation and other financial tools, with the purpose of facilitating an urban form which is more equitable for its inhabitants, we look to the Highland neighborhood of Austin, TX.

Originally developed on the edge of the city in the late 1950s, Highland is now in northcentral Austin. It is bound by the major freeways of Interstate 35 and U.S. Route 183 to the west and north, respectively. To the east is Lamar Boulevard, a major arterial that runs north south through almost all of Austin. To the south is Airport Boulevard, a major arterial that goes from northwest to southeast, cutting diagonally across north Austin and leading to the site of the former and, eventually, to the current airport. All along the neighborhood's perimeter are larger parcels zoned for varying types of commercial, light industrial, and multifamily uses. The central part of the neighborhood is almost exclusively zoned for single family homes. The vast majority of lots are large enough that duplexes are allowed "by right", though most are still single family residences. Of the 1010 single family parcels, approximately two thirds are owner occupied. The southern portion of the neighborhood is dominated by what was once a large regional mall, and is now a campus for Austin Community College; its surrounding parking lots are being redeveloped into a mix of complimentary uses.

Austin updated its ordinances pertaining to the construction of accessory dwelling units in November of 2015, relieving a number of constraints such as minimum lot size, required distance from the primary structure, and in some locations removing parking minimums. This was done as part of an effort to address an affordable housing crisis in Austin, though since the regulations were loosened, only 211 applications for a permit have been submitted (though not all have yet been approved, and fewer have been built). This is up from approximately 60 annual permit applications from 2006 to 2014 (Murphy, 2016), but still not a significant enough increase in housing supply to considerably alleviate affordability.



Highland Neighborhood. Austin, Texas. Image: Google Maps



Highland Neighborhood with ACC Redevelopment. Image: Google Maps; HM Redevelopment

The methodology for examining the neighborhood began with acquiring Geographic Information Systems (GIS) data, with associated certified tax rolls, from the Travis County Appraisal District. The data covers the entirety of the county, therefore the first step was to geographically filter the information, recreate a map of just Highland, and export the data to excel for manipulation.

This GIS data provided zoning, assessed land values, assessed improvement values, acreage, “doing business as” information, exemptions, and owner information, all geo-located via property identification number. The most significant drawback of this data is that it only provides assessed values, which are typically less than the market value. Using this data without further analysis would skew efforts to use taxes and other financial incentives in order to change the value proposition faced by the owner. Since property owners are likely to make decisions based on market value, the degree to which the assessed value differs from the market value must be ascertained. As an aside, it is also possible that the value proposition before the property owner is not the primary dictator of the property owner’s behavior; more on this later.

To quantify the difference between the assessed value and the market value, the assessed was compared with Zillow’s publicly available median home value information for the Highland Neighborhood (which, by their definition, encompasses area to the south, where home prices are higher) and the 78752 zip code (which contains areas to the east, where home prices are lower). The median assessed single family parcel in Highland used for this thesis is \$263,231, while the Zillow Highland median is \$298,100 and 78752 is \$273,200. Thus the assessed value is approximately 8% below that of the market value. Though the standard deviation of the market values is unknown, and may be significantly different than that of the assessed values, when making generalizations about the neighborhood as a whole this difference is inconsequential.

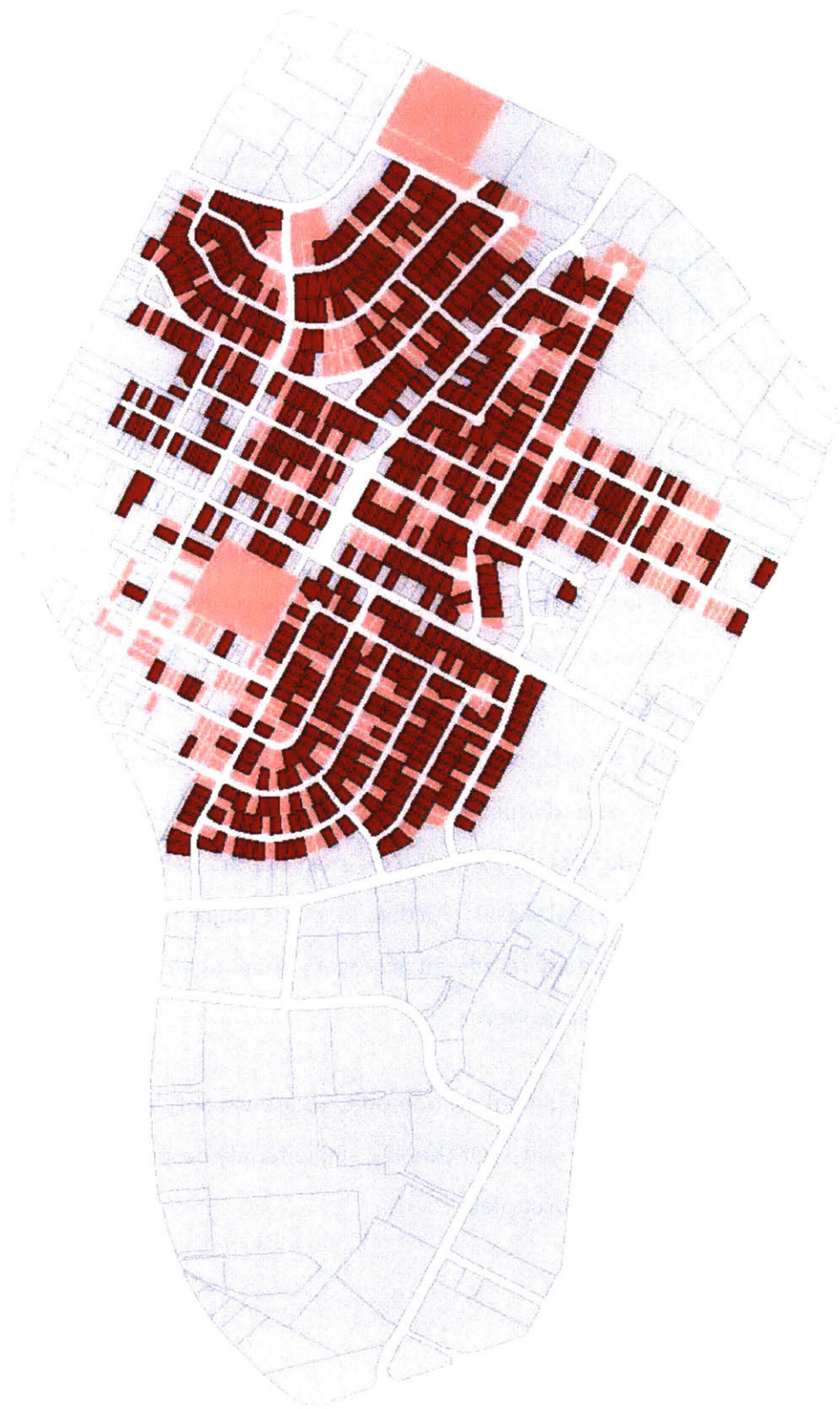


Assessed Land Value Per Acre. Source: TCAD

For the purposes of this thesis, the assessed values will be used as a proxy for market values. The taxes paid, and value used by the municipality for determining other financial incentives, are based on assessed values. And when considering that the ultimate decision to make changes to a particular parcel will most likely be done by the owner of a single family parcel (a “non-sophisticated” owner not thinking of their property as a commercial investment) who will need to see a significant reason to make a change from the status quo, the difference is small enough to be considered insignificant to the individual property owner, and as a reasonable safety factor when making generalizations about the neighborhood as a whole.

Through the course of manipulating the method by which properties’ values are assessed, it became clear that the path towards a more equitable built form would be convoluted, and given each parcels unique condition, devising a single strategy to approach the entire neighborhood hard to come by. Though ideally the final state is one in which a transparent logic is applied to the assessment of each parcel, the transition to that final state is fraught with political and personal ramifications. Is it better to devise a strategy to engage one thousand home owners with relatively homogenous parcels, or two hundred commercial property owners each with a unique asset and unique finances? For the purposes of this thesis, the multitude of single family residences presents the greatest opportunity to formulate a strategy acceptable and applicable to the real world. Further, the vast majority of single family parcels (988 of 1010) already has the capacity to add an accessory dwelling unit without doing any alterations to the existing single family home.

Of the 1010 single family parcels, 922 contain one unit, 28 are vacant, and the remainder already have two or more dwelling units. Of the 922 single family parcels that have only a single family home, 626 are owner occupied.



Pink: Single Family Zoning. Red: With Homestead Exemption. Source: TCAD

Land Value Tax

The total assessed value of all parcels in Highland is \$680,799,352. This generates approximately \$15.3M in tax revenue annually. Keeping this number a constant, but reapportioning the value based exclusively on the size of the parcel – disregarding improvements, or proximity to amenities – seems like a logical first step toward and would initially seem like an equitable reallocation of taxable value. With 466 taxable acres of land in Highland, the \$680.8M of total value would result in \$1.46M per acre. This would increase single family parcel's assessed value, on average by \$24K – increasing taxes by approximately \$550 per year. If implemented, this would assuredly instigate some development of accessory dwelling units, as the property owners would look to for ways to cover the increase in taxes. Empty lots would see the greatest increase in assessed value – from \$126K to \$307K, up \$181K – and this increase in holding cost would, as expected, decrease speculation and increase development. But implementation of a pure land value tax would be very difficult, as the increase in taxes on single family residences would correspond to a decrease in taxes on larger (currently commercial, income generating) parcels. Essentially single family parcels would be subsidizing a tax break for parcels that are already functioning investments.



Pure Land Value Tax Transition. Green Decrease, Red Increase. Source: TCAD

Volumetric Land Value Tax

Another way to think about the Land Value Tax, is that it is the potential of the land which is being assessed and taxed. Independent of if there is already an improvement to the land or not, the government has created value by providing the parcel with infrastructure which supports a certain amount of development, and this is the value to be assessed. But, as discussed in the chapter 2, it is appropriate to constrain the amount of development that can be placed on the land for the sake of the public realm. This constraint then also becomes an inherent property of the land, which dictates the potential of the land. So if we apply these constraints to the parcels of Highland, with the aim to preserve the general quality of the existing urban fabric, we see that single family parcels will have a significantly less potential to build per square foot of land.

As a proxy for a form based code, the parcel's existing zoning's building coverage percentage and maximum allowable height are used to determine the maximum volume of building that the parcel can support. Doing so ignores the impervious coverage metric (which is essentially building coverage plus surface parking), the permitted uses, and the floor area ratio (which can be seen as a redundant restriction when determining the total volume of building). It is also understood that a complete form-based code would have additional principals dictating other characteristics of buildings, but for simplicity of determining assessed values, and with the goal of determining how to change the behaviors of existing property owners, the two metrics combined to form a potential volume metric suffices.

In total, the highland neighborhood is currently zoned to have approximately 680,665,738 cubic feet of building. Thus a reapportionment of Highland's \$680.8M assessed value yields just barely over \$1 per cubic foot of building potential. Graphically it is very easy to see which parcels are underbuilt relative to their allotted volume. A few large commercial lots are so underbuilt that, even though most single family parcels are slightly underbuilt, the single family parcels assessed value actually decreases significantly in counterbalance to the large increases in the assessed values of the underbuilt commercial properties. Single family parcels decrease in assessed value by an average of \$164K, from \$268 to \$104.



Volumetric Land Value Tax Transition. Green Decrease, Red Increase. Source: TCAD

Working with the assumption that it will be measurably easier to convince one thousand single family property owners, rather than two hundred commercial property owners, to be supportive of a fundamental change in the way taxes are assessed, the volumetric land value tax would be easier to implement.

There is no clearly correct way to alter assessment and taxation methods. If the first step in the process is lowering taxes, then it will likely garner significant support, but will do little to promote single family property owners to build accessory dwelling units. Yet if the first step in the process is to raise taxes, then the process likely starts with a nonstarter. Thus an implementation strategy that is palatable to the majority of property owners, but still effective in creating more housing units, is still to be found.

One possible means of transition to a volumetric LVT is by simply fixing assessed property values of single family homes at their current number, and then educating property owners of the “by right” option to develop an ADU – an option that they already own, but that increases significantly in value when the fixed assessed value.

In order to determine the effectiveness of this strategy, the prospective metrics for ADUs are inputted into the Samuelson-McKean formula for the valuation of options (Geltner, 2007). A pro forma was built using rental rates, operational expenses, and projected growth rates derived from Zillow rental data, and construction costs estimated from talking to local contractors. Under existing conditions, with real estate taxes rising in relation to increased square footage, the net present value of a 650 square foot ADU is -\$3,656.99 and the internal rate of return is 9.51%. The Samuelson-McKean model estimates the time until exercise at 4.6 years. The current market value of an in-place ADU is \$126,343, while the critical value to instigate immediate development is approximately \$175,000. Thus the option is currently well “out of the money.” Owners of single family homes (especially those who are owner-occupiers) are unlikely to engage in this kind of financial analysis, but the results nonetheless illustrate that even if the property owner were to run the numbers, the numbers would not be conducive to development.

But by fixing the assessed value of the property, and therefore assessing no new property taxes to the new ADU, the pro forma changes significantly. Keeping all other variables constant, the net present value of an ADU increases to positive \$32,933 and the internal rate of return to slightly over 14%. The Samuelson-McKean model estimates the time until exercise at less than 8 months. The current market value of an in-place ADU is \$162,933, approximately \$8,000 below the critical value to instigate immediate development, but \$25,000 more than the present value of the forward claim on the future development. The reason the model's optimal exercise time is still in the future, and the market value not equal to or greater than the critical value, is because of the potential for returns to increase, not because development is not currently feasible.

In total there are currently 915 single family parcels which have only one dwelling unit but enough capacity to support at least two dwelling units.

If capacity of single family parcels is increased to allow for more development, beyond just a lone accessory dwelling unit, the transition to an LVT becomes less clear. Property owners are only incentivized to develop at or beyond the value at which they would be taxed. So a transition that increases real estate taxes proportional to new development, until the new value is met, would disincentivize the production of a single accessory dwelling unit. Property owners would have to develop beyond the new value in order to see a value proposition worth pursuing. A single accessory dwelling unit in this situation would be taxed the same as if there were no new taxation policy.

Another approach to implementing a modified land value tax is to create miniature tax increment financing districts, in which individual neighborhoods, or even single streets, can make an agreement with the taxing authority to improve their infrastructure with the tax increment that will be produced via the enhanced infrastructure. For example, a street could decide that it wants expanded sidewalks and bicycle lanes, with benches and plantings. These improvements could be funded via municipal bonds, with the tax increment created by improving the value of the properties going to pay the bonds. Further, the property owners

could be provided with the ability to invest directly in the municipal bonds with are funding the improvements, via Neighborly.

Within Highland, there are two ideal areas in which a miniature TIF could be applied. Both are places where a small investment in infrastructure could increase access to parcels in a manner which would facilitate the construction of accessory dwelling units. The first such place is the 7500 block of Avenue G. This street currently has no addresses on it, as well as no curbs and no sidewalks. Eleven single family homes with Eastcrest Drive addresses have backyards which front Avenue G, and on the other side two single family homes have sideyard access. Avenue G itself is a popular street which begins in the prestigious Hyde Park neighborhood. Allowing money to be invested in a small amount of infrastructure, rather than being put towards taxes, could facilitate new accessory dwelling units in each of the thirteen parcels which would have increased access.



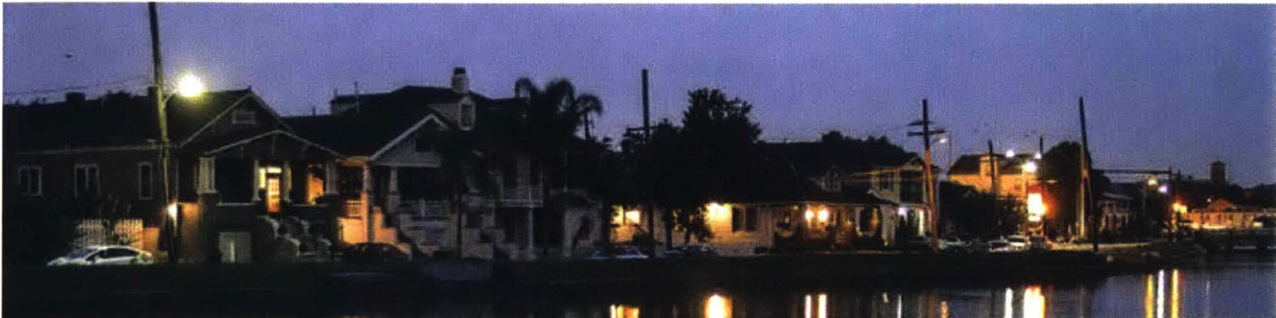
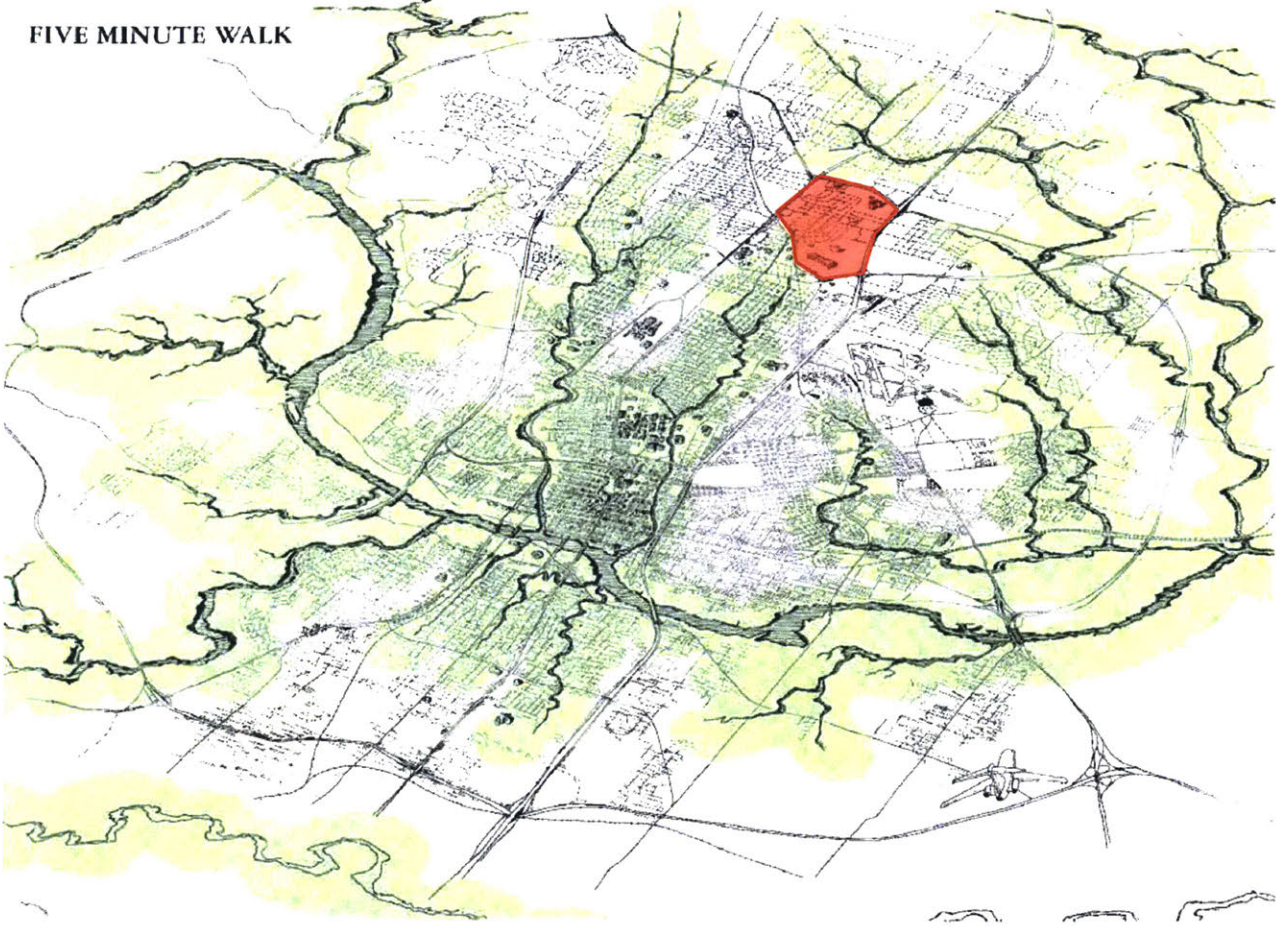
Avenue G. Source: Google



Shotgun Houses in New Orleans. Source: tinyhouseblog.com

Another similar opportunity exists along Waller Creek, which is a city-owned, thirty-foot-wide, easement which runs north to south through the southern half of the neighborhood. Creating an embankment along the narrow creek that would allow sidewalks on either side would provide direct access to twenty-six backyards which have capacity to support an accessory dwelling unit. This intervention would have a direct relationship to other historic plans for Austin's creeks, the most recent one as part of the Bicentennial Creeks Project in 1976.

FIVE MINUTE WALK



Chapter 6

Equity's most fundamental determinant is access. And access is most easily achieved through density. In order to maximize equity in the urban form, it is appropriate to encourage density via market-driven, sustainable strategies.

The concept of a land value tax is an under-utilized taxation philosophy which, if implemented, can promote density and be beneficial to all constituents. The land value tax relieves administrative burdens on local governments, while also potentially increasing the net tax base through improved land use. With the removal of taxes on improvements, the appropriate constraint on the urban form is a form-based code, which has predictable formal results which increase the livability and value of the public realm.

Implementation of a land value tax in combination with a form based code is fraught with potential political pitfalls. Owners who are dis-incentivized to maintain the status quo will likely resist the change. Constituents reflexively resistant to a new way of controlling what can and cannot be built will also likely fight the change. Further analysis should be done – and mitigations emplaced – on the matter of school funding. But the resultant condition is almost universally better for all involved. More housing would be produced, and costs to consumer would go down due to less administrative expenses.

The examples of Pittsburgh and other Pennsylvanian municipalities are proof that a modified land value tax can be implemented with the intended consequences of increased density as well as increased tax revenue coming to fruition.

There are other ways to conceptualize the implementation of a land value tax which can utilize other municipal financing tactics currently in broader use. Tax increment financing is used in all 50 states and, by diverting capital from taxes to infrastructure investment, can be used as a palatable transition to a land value tax.

In the Austin, Texas, neighborhood of Highland, all potential strategies could be used to promote a denser (more equitable) urban fabric while still maintaining, or even enhancing, the neighborhood's character. Simply by allowing an accessory dwelling unit to be constructed without adding it to the taxable assessed value increases the value of the option to build to the point that development *should* occur in short time. Owners of single family properties are less likely to consider the present value of future options in this way – and may be unwilling to forgo the privacy that comes with being the only tenant on the parcel – but education in combination with clearly presented financing options can greatly enhance the probability that new accessory dwelling units will be produced.

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