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Title: Feeling Left Out: Investigating the Perceived Failure of  
Baltimore's Inclusionary Housing Program through a Game Theory  
Analysis

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# **MASTER'S PROGRAMME IN URBAN MANAGEMENT AND DEVELOPMENT**

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## **Feeling left out: Investigating the perceived failure of Baltimore's inclusionary housing program through a game theory framework**

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## Summary

This research is a case study of the Inclusionary Housing program in Baltimore, Maryland, United States which was established to secure a certain percentage of affordable housing units in market-rate residential developments. This research seeks to explain why less than 40 affordable units have been delivered in Baltimore despite the thousands of new residential units constructed in the city since 2007 when the law instituting the program was passed. This research attempts to understand the design and implementation of the program through a game theory framework and positions the stakeholders in the public-private partnership to provide affordable housing as two players in a sequential, asymmetric game with almost perfect information.

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In honor of my dad, Darryl Alan Robinson, Sr.

## Abbreviations

IHS	Institute for Housing and Urban Development
IH	Inclusionary Housing
PPP	Public-Private Partnership

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# Chapter 1: Introduction

## 1.1 Background

Inclusionary Housing (IH) programs have been in use in the United States (US) since the 1970s and have grown to be an important tool for local governments around the country to provide affordable housing for low-income households. IH programs may involve a series “of land use regulations that require developers of market-rate residential development to set aside a small portion of their units, usually between 10 and 20 percent, for households unable to afford housing in the open market” (Calavita and Mallach, 2009, p. 15).

The lack of affordable housing in US cities, and in Baltimore in particular, has historically been due to patterns of rapid urbanization and migration of people to industrialized areas in search of work. Baltimore, with its port and harbor, was a choice destination for many from as early as the mid-18<sup>th</sup> century. Industries built up around wheat and flour, and later on, during the American Revolutionary War, shipbuilding. Throughout the 19<sup>th</sup> century and the establishment of the Baltimore & Ohio Railroad, import and export industries continued to grow. The population continued to swell to 80,000 in 1830, the second largest city in the United States with an average of 4,000 immigrants mostly from Ireland, Scotland, France and the Caribbean arriving each year. Baltimore also claimed the largest African-American community, made up of both slaves and free blacks, in the country during this time (Department of Planning, 2006).

Toward the end of the century, more Italian, German, Polish and Lithuanian immigrants arrived in Baltimore. “An influx of African American rural migrants in the 1870s and 1890s [after the American Civil War] worsened already crowded conditions in many Baltimore neighborhoods, but discrimination meant that little to no new housing would be designated for them” (Department of Planning, 2006, p. 36).

Baltimore’s population continued to grow to over 700,000 in 1920. This time also saw the formal expansion of the city and the passage of the city’s first zoning ordinance. Development in real estate, finance and building technology allowed for suburban expansion and the creation of thousands of new homes. However, “three times before World War I the City Council passed ordinances forbidding [African-Americans] from moving into white neighborhoods. Each was overturned, but unfortunately they represented only the most formal and overt of numerous racist tactics. With the newest offerings within the expanding housing stock largely off limits, many blacks bought and rented secondhand” (Department of Planning, 2006, p. 39-40).

The Great Depression, starting in 1929, hit Baltimore particularly hard. The national government created the Federal Housing Administration to provide housing to those now without work and falling deeper into poverty, especially in urban areas, through construction of Public, or social, housing complexes. After the second World War, federal policies encouraged further suburban expansion through FHA mortgages and national highway construction (Department of Planning, 2006).

Many Baltimoreans, however, were forced to move. In the City, the rate of demolition rose from 600 households a year throughout the 1950s to 800 in the early 1960s. The number reached 2,600 per annum in the late 1960s, as sites were cleared for expressways, new schools, and Public housing projects. Poor and African-American populations were disproportionately affected. At the same time, blockbusting reached its peak with the population turnover in Edmondson Village. Over a period of ten years (1955 –1965) most of the area’s white residents were replaced by African-

Americans. In situations such as this, “investors” could buy low by capitalizing on white residents’ fears of a worsening neighborhood and sell high to African-American families desperate for a chance at homeownership (Department of Planning, 2006, p. 42)

By the 1980s and the political shift to neoliberalism in the US, many Public housing projects were demolished making way for urban renewal. Renewal projects like the Inner Harbor in Baltimore were developed with the use of federal funds and block grants (Department of Planning, 2006). Of the Public housing complexes, Chaddha and Wilson (2011, p. 180) explain,

“These buildings were home to thousands of poor residents living in highly concentrated poverty. The physical structures were often in disrepair, and high rates of crime and violence threatened the safety of Public housing residents. The demolition of Public housing projects was supported by federal assistance, including the HOPE VI program that replaced the buildings with mixed-income developments [...] Pressures on local governments to generate sufficient revenue after the federal disinvestment from cities, the demolition of Public housing projects was linked to urban economic development strategies. Many of the buildings were located near redeveloped downtown areas, which could attract middle-class residents who, unlike Public housing residents, would pay property taxes on market-rate housing.”

The federal disinvestment from cities at the time included policies that drastically increased the income inequality gap by “slashing funding for social programs for the poor and cutting taxes for the wealthy” (Kovandzic, Vieraitis and Yeisley, 1998, p. 572). Further, the legacy of segregation laws and ordinances, first enacted in the early part of the 20<sup>th</sup> century, as well as discriminatory and predatory mortgage lending practices, and unequitable zoning plans continue to plague urban cores in the US and their effects are still realized in marginalization of poor people and people of color who inhabit them, especially when it comes to accessing affordable housing (Kovandic, Vieraitis and Yeisley, 1998).

Contemporary IH programs emerged perhaps in response to these early policies and were bolstered by the Fair Housing Act of 1968 which coincided with the Civil Rights movement in the US. Beginning largely in suburban areas surrounding Washington, DC, these programs aimed to include housing for low-income households in newly constructed units that targeted those with higher income. Pioneering programs can be traced to early 1970s in Fairfax County, Virginia and Montgomery County, Maryland.

Since then, IH programs have become “one of the most promising strategies available to ensure that the benefits of development are shared widely” (Jacobus, 2015, p. 3) and that affordable housing is made available to low-income households.

In June 2007, the City Council of Baltimore passed its own ordinance to initiate an IH program. At the time of its passing, the Baltimore metropolitan area was cited as one of the most attractive housing markets in the country. Housing prices had more than doubled from \$181,045 in 1997 to \$434,983 in 2007 according to data made available by the Lincoln Institute of Land Policy (Davis and Palumbo, 2007). Average home sale prices in the United States were roughly \$313,600 in 2007 in comparison (US Census Bureau, n.d.). Much of the rise in housing price at the time can be attributed to speculation and house flipping whereby investors would purchase relatively inexpensive dilapidated homes, renovate or rehabilitate the structures, then sell them to new homeowners at twice the price, usually within a 12-month period.

At the same time, income levels in Baltimore remained relatively low, but stable. According to Department of Housing and Urban Development data, area median income (AMI) for the Baltimore metropolitan area was \$75,800 in 2007 (US Department of HUD, 2007). In the 2000 US Census, 22% of all individuals in Baltimore were living below the national poverty level. In 2015, 23.7% were living in poverty (US Census Bureau, 2015).

In order to provide affordable housing for those increasingly left out of the now unaffordable housing market, the City Council, encouraged by staunch housing advocates, voted for an IH ordinance. Modeled after other programs in neighboring municipalities like Montgomery County, the ordinance would require that developers of 30 units or more to make 10 to 20% of those units affordable, in exchange for land rezoning or subsidy from the City. Advocates hoped that that ordinance would strengthen communities, stimulate economic development, and enhance economic and racial integration in Baltimore.

However, at the same time Baltimore was beginning its IH program, some researchers began questioning the merits of such initiatives. Critics challenged the programs on two main fronts: 1. that IH programs have a significant, unintended effect on housing market supply by drastically limiting any new housing development in the jurisdiction thereby increasing already unaffordable housing rates; and 2. that of incidence—that developers would pass the cost burden of providing affordable units onto consumers, further driving up the price of housing (Stringham and Powell, 2011). In response leading advocates have gone on to support a more robust approach to IH programs that are coupled with additional zoning schemes and initiatives that are more directly tied to land value recapture (Calavita and Mallach, 2009, p. 21).

## **1.2 Problem Statement**

Baltimore's IH program, at first glance, seems to incorporate these new best practices. However, a recent review of the program shows that, "Despite a 2007 city law that advocates hoped would make developers reserve a portion of new housing projects for the needy, only 32 homes at four developments have been created under the city's inclusionary housing law since it went into effect" (Sherman, 2014).

In a span of five years, the IH program in Baltimore produced less than 40 affordable units for low-income families despite continued development of high-income housing and despite the ever increasing demand from low-income households. In the year 2009 alone, 341 new housing units were constructed in Baltimore City (Maryland State Data Center, n.d.). One would expect that at least 30 of those units would have been offered as affordable housing under the City's IH program. This, however, was not the case. Further, the announcement that the Port Covington project, led by Sagamore Development, to revitalize 260 acres of the city's southern waterfront at costs of over \$6.9 billion, would be exempted or waived from the IH requirement points to significant deficiencies in the design and implementation of the IH program (Wenger, 2016).

Does this mean that Baltimore's IH program is a failure? And if it is, why?

## **1.3 Research Objectives**

The objective of this research is to evaluate the efficacy of Baltimore's IH program in the provision and production of affordable housing units in Baltimore City.

Sub-objectives:

- To assess the design and implementation of Baltimore's IH Program as it relates to the provision and production of affordable housing units

- To analyze how different program elements and options would affect the provision and production of affordable units in Baltimore
- To understand which program options are optimal for the maximum provision and production of affordable units in the context of Baltimore's housing market

## 1.4 Provisional Research Questions

Main Research Question: How does the design and implementation of Baltimore's IH program impact its ability to provide affordable housing units?

Sub-Questions:

1. What can a summative assessment of Baltimore's IH program tell us about the relationship between design and implementation and the provision and production of affordable units?
2. How might different program elements and options affect the provision and production of affordable units?
3. What is the optimal program design to maximize the provision and production of affordable units in the context of Baltimore's housing market?

## 1.5 Significance of the Study

Leaders in US cities employ a variety of strategies to increase the supply of affordable housing for low-income households. Little federal or state funding is available to support these efforts so the onus is largely on local leaders to come up with creative solutions to secure units. Therefore, it is of great relevance to leaders in these cities and researchers on the topic of affordable housing to understand ways to evaluate IH programs and their real and perceived ability to impact the supply of affordable housing.

Most research on IH programs focus on well-established, successful programs in suburban areas with strong, competitive land markets (California, Montgomery County, Maryland & Fairfax County, Virginia). Few studies examine failing or newly emerging programs in urban centers with weak or fragile land markets (Baltimore, Pittsburgh). Additionally, most research on IH programs focuses on feasibility of implementation and not efficacy—the program's ability to actually generate affordable housing units. Studies conducted in Cambridge (2016), Detroit (2016), Iowa (2013), New York (2015) and Oahu (2015) are all feasibility related in nature.

Finally, no research can be found on the analysis of IH programs through a game theory framework. One study (Hollingshead, 2015) employs Eightfold Path methodology for policy analysis which includes elements of game theory, but is wholly different from this study.

## 1.6 Scope and Limitations

This study analyzes the design and implementation of Baltimore's IH program through a game theory framework. It does not include analysis or comparative assessment with local IH programs in other jurisdictions. It focuses solely on Baltimore's IH program.

This study does not focus on the legitimacy of IH as an affordable housing strategy. It makes the assumption that IH programs are legal under current US law.

Limitations of the study include skewed housing data because of the housing crisis in the US in 2008. This study does not focus on local land markets' ability to recover from the housing crisis, nor does it undertake the impact of the housing crisis on IH programs.

## Chapter 2: Literature Review / Theory

All literature reviewed identify inclusionary housing (IH) programs as tools or instruments to provide affordable housing units. While motives for or objectives of such programs may differ (social integration, land value capture, etc.), indeed, the expected outcomes are generally similar. Whether or not these tools function as a tax against developers or buyers of market-rate units driving housing prices up, as critics would suggest (Powell and Stringham, 2011), is irrelevant; IH programs remain largely defined in the same terms. A shift in the understanding of what an IH program actually is becomes necessary if one aims to unpack how and why they function the way they do and to determine if IH is a viable and sustainable strategy for affordable housing provision and production in any land and housing market context. It also offers an opportunity to explore explanations for a failing program beyond a “weak land market” as Calavita and Mallach (2011) suggest and it investigates beyond the explanation of incredibly low land prices, limited staff capacity, or too high administration costs as reasons for failure as Jacobus (2015) proposes. The shift must be from defining IH programs as a tool used to carry out a particular function to understanding them as a partnership—between two rational actors with correlating and competing interests and goals, in essence, a game.

### 2.1 Defining Inclusionary Housing

Traditionally, IH programs have been defined as a tool—a policy or regulation. Most definitions acquired in literature prefer to describe its technical aspects. For example, Calavita and Mallach (2009; 2010), in much of their writing define IH programs as “land use regulations that require developers of market-rate residential development to set-aside a small portion of their units, usually between 10 and 20 percent, for households unable to afford housing in the open market” (Calavita and Mallach, 2009, p. 1). de Kam, Needham and Buitelaar (2014, p. 390) provide a critique of this definition stating that it is specific to the American practice and merely “describes a response to socio-economic and ethnic segregation”.

Jacobus (2015) offers a definition that is more representative of those definitions found in recent literature from around the world including those of Hickey (2013; 2015), Strurtevant (2016), and Pogliani (2013). It “refers to a range of local policies that tap the economic gains from rising real estate values to create affordable housing—tying the creation of homes for low- or moderate-income households to the construction of market-rate residential or commercial development” (Jacobus, 2015, p. 7). While both definitions adequately explain how IH may be implemented and both hint at the relationship between the Public and Private sectors to bring about affordable housing, neither explicitly acknowledge IH programs as a Public-private partnership (PPP).

Recognizing IH programs as PPPs to secure affordable housing can be a starting point to understanding why these programs are designed the way they are and how they are implemented in order to meet their objectives. But first, one must understand the historical context of affordable housing in the US, where IH was first adopted and implemented, in order to arrive at a more robust definition of IH programs as PPPs.

**Table 1: Definitions of Inclusionary Housing Found in Literature**

Author	Year	Definition
Calavita and Mallach	2010	Land use regulations that require developers of market-rate residential development to set aside a small portion of their units, usually between 10 and 20 %, for households unable to afford housing in the open market
Powell and Stringham	2011	A price-control program on new development requiring builders to sell or rent those homes which are deemed affordable to very low-, low-, or moderate-income households
Basolo	2011	Policies and programmes aimed at mixing incomes within housing developments and communities
Pogliani	2013	Local plans and policies to provide social and affordable housing
Hughen and Read	2014	Policies that combine legal mandates and economic incentives to encourage residential real estate developers to include affordable units in otherwise market-rate projects
de Kam, Needham and Buitelaar	2014	Using a land-use planning system to stimulate the provision of social housing by non-Public bodies utilizing commercial profits
Hickey	2015	Policies that work through local land use approvals processes to make a share of otherwise market-rate housing affordable to low- and moderate-income households
Jacobus	2015	A range of local policies that tap the economic gains from rising real estate values to create affordable housing—tying the creation of homes for low- or moderate-income households to the construction of market-rate residential or commercial development
Stromberg and Strutervant	2016	Programs that use local control over the regulation of land use to require or incentivize the production of affordable housing as part of market rate housing development

Source: Author

### **2.1.1 Government Produced Affordable Housing: 1930s-1980s**

In the US context, affordable housing production has had a storied past. Until the 1980s, affordable housing or housing for low-income households had largely been provided and produced by the national government. Public housing, or social housing as it is called in Europe, was produced in most cities in the US starting in the 1930s in response to the urban slums that developed out of rapid urbanization and migration attributed to the Industrial Revolution and ultimately reinforced by the economic collapse of the Great Depression (Anderson, 1977).

Public housing units were largely funded, constructed and maintained under the auspices of the national government. Additional demand-side subsidies and incentives were provided through the Federal Housing Administration and the Federal National Mortgage Association (Fannie Mae) to promote homeownership for moderate- and middle-income households. At its peak, the federal government produced millions of Public housing units all over the country for those households who could otherwise not afford housing at market rates. This production carried on through decades of prosperity in the US which also saw increases in wages, spending, and consumption for many Americans, though not all (Anderson, 1977).

### **2.1.2. Market Produced Affordable Housing: 1980s-present**

Things changed in the 1980s with the emergence of neoliberalism in the US, or the political shift to economic liberalism and privatization. Kovandzic et al. (1998) describe a particularly unrelenting assault on cities across the US and the poor people who resided in them as government budgets were slashed, funding cut, social programs crippled or axed completely during this time.

One of most enduring legacies of neoliberalization at the time was the dissolution of government production of Public housing. The federal government ended completely its

production of Public housing units and encouraged and incentivized local governments to destroy existing Public housing complexes and to replace them with new, mixed-income and mixed-use developments through new Community Development Block Grants (CDBG) (Chaddha and Wilson, 2011, p. 180). Further, the government shifted the production of affordable units to the Private market through a new tool called the Low-Income Housing Tax Credit (LIHTC). This encouraged private developers to produce units affordable to low-income households through incentivizing federal tax breaks (Chaddha and Wilson, 2011).

But at the dawn of the 21<sup>st</sup> century, there became growing concern of an affordable housing shortage. With the rise of globalism and wealth gap widening in the US, many households found themselves consistently priced out of market-rate housing. Additional demand-side subsidies, such as Section 8 vouchers provided by the federal Department of Housing and Urban Development, were in short supply and waitlists for housing assistance topped several million (US Department of HUD, n.d.). By 2008 an already desperate situation was exacerbated when higher income households began competing with lower income households for lower priced, often rental, housing. This occurred as a result of the bubble bursting on balloon-payment mortgages which resulted in hundreds of thousands of home foreclosures across the nation especially in middle class suburban areas. By then, hundreds of IH programs had been established around the country in an effort to fill the gap left by an inadequate private housing market.

### **2.1.3 Government Intervention: Provision of Merit Goods**

Bately (1996) describes several instances in which there is a case for government intervention in the provision of services or goods that would otherwise be better served by the Private sector. These cases lay the foundation for PPPs. The case most useful in understanding IH is that of merit goods, or goods that everyone should have access to “regardless of their ability and willingness to pay the market price” (Bately, 1996, p. 728). These goods are excludable and rivalrous and are “considered so meritorious that their satisfaction is provided for through the Public budget, over and above what is provided for through the market and paid for by private buyers” (Musgrave, 1959, p. 13).

Bately (1996, p. 728) goes on to argue that in the provision of merit goods, the roles of the government and the Private sector can be related in two ways:

1. Separating responsibility of arranging for services to be delivered from the actual production of the service;
2. Separating elements of direct provisions or “unbundling” of services.

Affordable housing, one could argue, is a merit good as evidenced by the government’s commitment to maintain the provision of affordable units, ensuring that the good is available, though it had outsourced its production to the Private sector through the use of LIHTC during the high tide of neoliberalization. Musgrave confirms in his seminal text on Public finance that “Public services aimed at the satisfaction of merit wants include such items as Publicly furnished school lunches, subsidized low-cost housing, and free education” (Musgrave, 1959, p. 13). The actualization of these merit goods requires that the government intervene in the market, thus creating a Public-private partnership to provide and produce them.

If affordable housing can be considered a merit good, which is provided by the Public though produced through the Private sector, in the case of IH, can IH programs, with the goal of providing and producing a merit good, be considered Public-private partnerships? Yes!

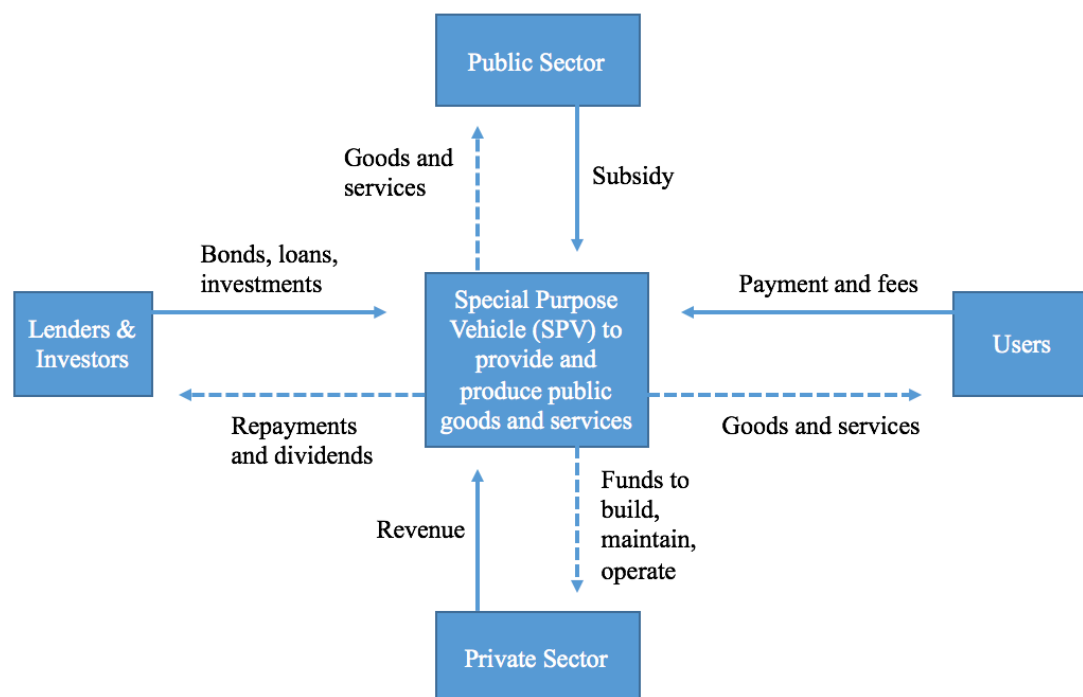
### 2.1.4 Public-Private Partnerships to Achieve Affordable Housing

Yescombe (2011) places the PPP in the US context to “refer to Publicly-funded provision of social services by non-Public actors” (Yescombe, 2011, p. 2). Here lies a more accurate and exacting definition of IH programs. If IH programs can be construed as PPPs, then IH programs should be considered a partnership between the Public, at the local government level, and the Private market to execute the provision and production of affordable housing; or the Public provision of affordable housing through the Private market at the local level.

Understanding IH programs in this way allows for a more nuanced approach and more robust framework to analyze the design and implementation of such programs and their ability to achieve their objectives. In this way we have two actors, the Public and the Private, working in collaboration and in conflict to reach similar or contradictory goals. Here one is able to identify the specific strategies available to each actor, the goals they may have, complimentary or not, and how this impacts the overall number of affordable units procured. This is the game they play.

Defining IH programs in this way alleviates the critiques by theorists like Stringham and Powell (2011) or Glaeser and Gyourko (2002) who suggest that IH is simply a tax or price cap on market rate housing and that any Public intervention in housing markets translates into further increasing costs of housing. If objectives of the Public and Private actors are contradictory and do not include keeping costs low, then yes, the outcome of the program could lead to increasing costs. But that does not mean that IH programs are inefficient, failing, or counterproductive. It could simply mean an aligning of objectives or a revision of strategies is necessary to achieve an outcome with which both actors would be satisfied. Defining IH programs as PPPs allows for the imagining of IH programs as interactions, as relationships, as games between the Public and the Private to secure affordable housing.

Figure 10: General Structure of PPPs



Source: Adapted from US Federal Highway Administration, 2017.

## 2.2 Partnerships as Games

Explaining relationships through a game theory framework is evident across all disciplines though especially relevant to those in the social sciences, including economics and political science. Game theory expresses causal relationships through mathematical, quantitative terms and can be particularly helpful in modelling outcomes given a certain set of criteria. It can also help to implicitly demonstrate rationale with regard to policy design and implementation. In the realm of PPPs, game theory can help to illuminate the preconditions for success, identify conflicting or contradicting goals between actors, highlight opportunities and contingencies, and optimize cooperation and collaboration, all the while accounting for the wants and needs of all stakeholders involved. In this sense, game theory may also be referred to as ‘conflict analysis’ or ‘interactive decision theory’ (Ho, 2013). It takes into account how decisions of one actor impacts decisions of another actor thus affecting the overall outcome.

### 2.2.1 Defining PPPs

While there is no definitive definition of partnerships in the literature, several disciplines offer up key ideas to give partnerships meaning. Linder (1999) represents PPP ideology in six terms:

1. As management reform, or an innovative tool to transform government practices;
2. As problem conversion, or a tool to solve problems related to good and service delivery;
3. As moral renovation, or as giving the people (society) ownership as opposed to the state;
4. As risk shifting, or transferring risk to the Private sector;
5. As reconstruction of Public sector, or the deregulation of the labor market; and
6. As sharing of power, or an attempt to stimulate innovation and costs sharing.

Scharle (2002, p. 227) provides an intensive treatment of understanding PPPs as games defining PPPs as “co-operation between Public and Private sectors” in order to meet social demands. “A partnership might be as extensive as privatizing facilities or services, or it might simply involve applying financing or management techniques from the Private sector” (Akintoye et al, 2008, p. 4) to Public governance structures.

Both Scharle (2002) and Yescombe (2007) outline the basic types of partnerships most commonly found in the provision of social or Public goods and services which include:

- BTO – build, transfer, operate; private sector leases from Public sector;
- BOT – build, operate, transfer; ownership is transferred to Public sector free of charge;
- BOO – build, own, operate; ownership is retained by private sector; and
- DBFO – design, build, finance, operate; Public sector leases from private sector.

**Table 1: Types of PPPs**

	Build-Transfer-Operate (BTO)	Build-Operate-Transfer (BOT)	Build-Own-Operate (BOO)	Design-Build-Finance-Operate (DBFO)
Who constructs?	Private sector	Private sector	Private sector	Private sector
Who operates?	Private sector	Private sector	Private sector	Private sector
Who owns?	Private sector during construction, then Public sector	Private sector during contract, then Public sector	Private sector	Private sector
Who pays?	Public sector or users	Public sector or users	Private sector, Public sector, or users	Public sector or users

Who is paid?	Private sector	Private sector	Private sector	Private sector
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Source: Adapted from Yescombe, 2007.

Depending on objectives and goals, the PPP may be designed in one model versus another. For example, in the case of IH-PPP, the local government may require that the Private developer transfer ownership of affordable housing units, free of charge, to a local housing authority thus qualifying the partnership as a BTO. Or the local government could decide to subsidize the market-rates for units for a certain period of time paying directly to the developer, perhaps offering tax incentives as payment instead, qualifying the partnership as a BOO. How does the government make the decision to structure the IH-PPP as a BTO versus a BOO? What has motivated the decision? What is the pay-off should the government decide to select one model versus another? And how is the pay-off different for the Public and Private given the decision?

Application of a PPP model to provide affordable/Public/social housing is evident in case studies conducted in Malaysia (Abdul-Aziz and Kassim, 2016), India (Sengupta, 2006), Ghana (Kwofie et al., 2016), Nigeria (Ibem, 2016) and Ireland (Redmond and Russell, 2008). Though it should be noted that these case studies do not apply a game theory framework to assess efficacy of the PPPs.

### 2.2.2 Defining Games

Very simply a game can be defined as an interaction between two or more rational players to achieve a pay-off given a set of rules. Here rationality is defined as the desire to maximize one's pay-off while taking into account the fact that the opponent is also rational and is also trying to maximize their pay-off (Kargol and Sokol, 2008).

“Games consist of two or more participants: the players. Each player has a set of alternative choices governed by the rules of the game; s/he can select a strategy (a plan of her/his sequential choices or moves) to arrive at the outcome of the game. The possible choices and moves respond to the rules of the game. The actual outcome depends on the players' strategies; for each possible outcome each player gets a pay-off. It is assumed that all players behave rationally: they seek their best possible outcome” (Scharle, 2002, p. 236).

There are many types of games that are described throughout the literature. The most important aspects that distinguish games from one another relate to how the players interact and what kind of information they have available to them.

**Table 3: Types of Games**

Type	Description	Example
Cooperative	Players form groups that are externally enforced and compete against other groups	Political coalitions, cartels
Non-cooperative	Players cannot form alliances; agreements must be self-enforcing (bargaining)	Tit-for-Tat
Symmetric	The strategies are the same for each player	Chicken
Asymmetric	Not identical strategies for all players	Ultimatum
Zero-sum	One player's gain is another player's loss; no additional resources may be added	Poker
Simultaneous	Both players move at the same time, simultaneously	Prisoner's Dilemma
Sequential	Players have some knowledge about earlier actions and make moves in a sequential manner	Tic-Tac-Toe

Perfect Information	All players have all knowledge of all moves made and potentially made by other players	Chess, Checkers
---------------------	--	-----------------

Source: Author, adapted from Leyton-Brown and Shoham, 2008.

One of the most often cited and basic games is that of the Prisoner's Dilemma which is a two-person, symmetric and simultaneous game. In it, two prisoners must decide whether to stay silent or betray the other in order to avoid jail time. If both prisoners stay silent they each serve 1 year in jail, however, if one prisoner decides to betray the other who stays silent, the pay-off is drastically different for both. Both must decide at the same time without knowing what the other will do. How should they act? What should each of their strategies be, given the amount of jail time they will serve should one choose to stay silent or betray the other? These types of games are expressed in normal form through a pay-off matrix as seen below.

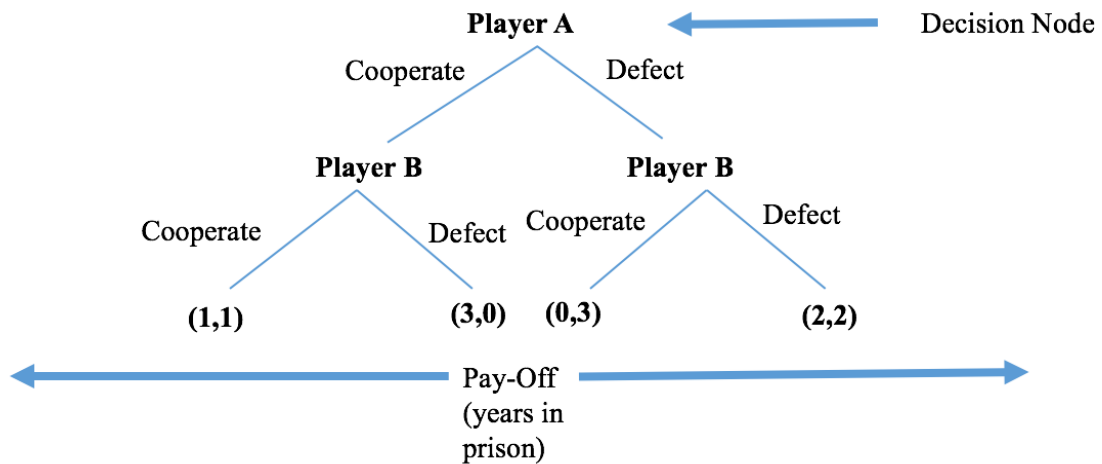
**Figure 11: Example of Simultaneous Games: Pay-Off Matrix, Prisoner's Dilemma**

		<b>Prisoner B</b>	
		Betray A (cooperate)	Stay Silent (defect)
<b>Prisoner A</b>	Betray B (cooperate)	Both serve 1 year	A goes free, B serves 3 years
	Stay Silent (defect)	B goes free, A serves 3 years	Both serve 2 years

Source: Adapted from Leyton-Brown and Shoham, 2008.

In a sequential game, one player moves at a time. This player's choice is influenced by the move that the other player chose just before. Examples of sequential games include Chess, Checkers, and Tic-Tac-Toe. They are generally expressed in extensive form through decision trees as indicated below with pay-offs for the first player indicated in the first value in brackets and pay-offs for the second player listed as the second value. In the Prisoner's Dilemma, if players move sequentially, Player B would have a significant advantage in achieving a greater pay-off. If Player B is aware of the move Player A has made, Player B will have a better understanding of the decision she should make if the objective is to avoid jail time.

Figure 12: Example of Sequential Games: Decision Tree, Prisoner's Dilemma



Source: Adapted from Leyton-Brown and Shoham, 2008.

While both Scharle (2002) and Ho (2013) argue that most PPPs are sequential, multi-person games with imperfect and incomplete information, the theory of institutions allows for the game of IH-PPP to be interpreted differently.

### 2.2.3 Theory of Institutions and Almost Perfect Information

“Institutional theory examines the processes and mechanisms by which structures, schemas, rules, and routines become established as authoritative guidelines for social behavior. It asks how such systems come into existence, how they diffuse, and what role they play in supplying stability and meaning to social behavior” (Scott, 1995, p. 408). In other words, the theory examines the epistemology of governance of self and of society as a whole, how one knows how to act in certain situation or given a certain circumstance. One knows these things because these behaviors have been *institutionalized*, or established as authority.

Critics of game theory and its application to PPPs could cite the idea of imperfect information. Prentice (1975) argues that decision-making is completely subjective and depends upon one’s own interpretation of strategies and pay-offs. Because of this, perfect information is impossible thus complicating the idea of the game to a point of obsolescence. However, the theory of institutions offers a path forward.

If moves, strategies and pay-offs are institutionalized, more perfect information becomes possible. If players understand and accept the authoritative guidelines (the rules) for how they should behave in a game, then all players have no need to interpret the moves, strategies and pay-offs subjectively; the rules are objective and become a matter of fact. Luckily in the case of the IH-PPP, the authoritative guidelines are institutionalized in a legal framework; the rules are established through local policies and regulations. This means that private developers do not have to guess about the fee that will be imposed on them or the number of units that they must offer as ‘affordable’. Local governments do not have to wonder how many developers will participate in the IH-PPP if the mandate has already been established through the law. Because the rules are very clearly outlined in policies and regulations, it simplifies the game, making it easier to play.

### 2.2.4 The IH-PPP as a Game

Based on the literature the game of the IH-PPP can be categorized as follows:

- two-player: the Public and the Private;

- asymmetric: the moves of the Public differ from the moves of the Private;
- sequential: the Public moves first and the Private responds;
- with almost perfect information: the Public and Private have knowledge of what moves the other has made or may make, though there is always knowledge that will remain unknown to both.

With this established, game theory provides an opportunity to solve the equation mathematically –to unpack design and implementation choices of the IH program and how that impacts how many affordable housing units will be provided.

### 2.2.5 Other Options for Assessing PPPs

Literature reveals a plethora of other ways of thinking about, analyzing, and understanding the success of PPPs. One of the most prominent methods for analysis centers around the idea of Critical Success Factors, or CSFs. This concept describes a method in which “a few key areas of activity” are identified as absolutely necessary to ensure favorable results. This approach was developed in the 1970s from an organizational management perspective. It refers to a qualitative data collection method through structured interviews to draw attention to and make explicit the most highly relevant points of the subject being discussed. It argues that by using such terms as “strategy”, “goals”, and “objectives” during an interview one is able to cull out those factors that are most critical for the success of a certain project (Rockart, 1985). For example, in the Ghana case study, Kwofie et al (2016, p. 58) argue that “to count success in PPP project delivery, its implementation must be preceded by sound benchmarks for success and development of enabling success factors based on theoretical research to enable predictions and forecasts of outcome in PPP performance”.

More recent iterations of CSF analysis include S.M.A.R.T methodology and key performance indicators (KIPs) (Shahin and Mahbod, 2007). Unfortunately, this type of analysis is only relevant ex-ante, or prior to implementation of the PPP, in order to forecast its performance and design the intervention accordingly. It does not support analysis ex-post. These methods are often employed at the onset of the partnership and suppose that the partnership is established through a procurement process. This is not the case for the IH-PPP. However, this method may have a role in valuing *nominal*, qualitative variables necessary to structure the game.

Other important methods for assessing and evaluating PPPs are offered through a financial perspective. Net Present Value (NPV) and Internal Rate of Return (IRR) use a cost-benefit analysis to determine profitability of a project. While profitability is relevant to one of the players of the IH-PPP (the Private), it does not encompass the overall pay-off that is sought for both players. NPV and IRR are limited in their use for this case. However, an attempt to express relationships through *real* value (money) is always relevant in the realm of service and good delivery.

Further, the above mentioned approaches to evaluating PPPs assess feasibility, not efficacy. Borrowing from the Public health discipline, feasibility can be defined as the possibility, practicality, or viability of implementing a supposed intervention (Porta, 2016), while efficacy can be defined as the capacity or ability of the intervention to produce a desired effect or outcome (Last, 2007). Therefore, it is critical to identify a methodology that will adequately reflect the pay-offs of both players, that can provide an analysis ex-post and illuminate how a partnership, structured differently, would affect those pay-offs. Game theory provides such a framework.

## 2.3 Valuing and Evaluating Outcomes and Pay-offs

Games may be won or lost when one player's pay-off is greater or less than the pay-off of the other player. Because both the PPP and game theory frameworks have emerged from a business perspective it would be logical to assume that the pay-offs established in a PPP game would be valued through risk allocation, or the mitigation of financial loss. Both Ho (2013) and Scharle's (2002) applications of game theory to PPPs relies heavily on risk allocation as pay-off such that values can be expressed in real numbers. In this context, whoever assumes the least amount of risk wins. However, risk may not be the best measure of pay-off given the objective of each player of the IH-PPP game. A government may be happy to assume financial risk through subsidies and incentives to the Private sector if this is supportive in achieving its objective. One must investigate the preferences of both players to arrive at appropriate values of pay-offs in order to structure the IH-PPP game.

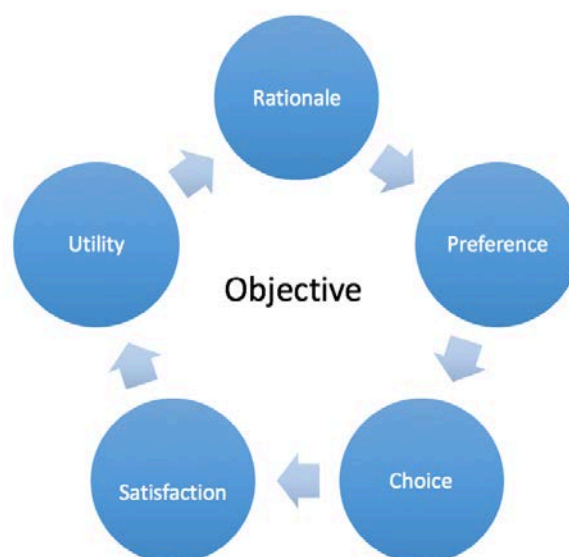
### 2.3.1 Rationality - Preferences, Choices, Satisfaction, and Utility

In the IH-PPP game we assume that both players (the Public and the Private) are rational, that they act in reasonable and logical ways (von Neumann and Morgenstern, 2007). This logic can be expressed through preference, or liking. While preference does not illustrate overall objectives of the players, it can help to demonstrate how and why a player has chosen a particular strategy to attain their objective.

If a player has more liking for one choice versus another, rationality assumes the player will make the choice that offers more liking—the preference. This choice will bring about a certain level of satisfaction—the fulfilment of an expressed preference. Satisfaction is measured in utility which can be understood as the usefulness in supporting one's reasoning and logic. In the social sciences, utility is often referred to as a quantifiable measure of “happiness” or “well-being” (Calhoun, 2002).

Acting in accordance with preference begets a choice. A choice begets satisfaction and, if the concept of rationality holds, satisfaction should result in a favorable outcome in line with an objective that can be measured in utility.

Figure 13: Rational Strategy Building



Source: Author

Utility, then, could be the source of assigning values to pay-off in the IH-PPP game. In this sense, utility can be defined as a measure of preference that can be ranked during the decision-making process (von Neumann and Morgenstern, 2007). How much utility does a particular choice in design and implementation of an IH program provide to each player? Is the Public “happier” with choosing a mandatory or voluntary IH program? How do we know? Which choice is more aligned to the Public’s objective? Is the Private more “satisfied” building affordable units on- or off-site? How much more “satisfied”? How does building units off-site align with the Private’s objective? Which choice is rational and more aligned to each player’s objective bringing about the most utility? What then would be the assigned value of the pay-off for that choice? And when pay-offs of the Public and the Private are compared, who is the winner?

Recent critics of game theory argue that players do not always act rationally. Behavioral economics is an entire discipline dedicated to the argument that utility is subjective. It explores, psychologically, why players may often make irrational choices, defying logic and traditional economic models. This critique could be helpful in explaining anomalies and observed phenomenon through cultural, social, emotional or political factors that influence decision making (Kahneman, 2003). However, this critique does not detract from the arguments in support of applying a game theory framework to evaluate IH-PPP. It simply highlights what could potentially be intervening or mediating variables.

### 2.3.2 Expected Utility - Probability and Uncertainty

Because the IH-PPP is institutionalized through a legal framework, one can anticipate with some certainty the moves of each player. However, there invariably remains a degree of uncertainty with regard to intervening or mediating variables such as social and political factors that may influence how players act. There also remains uncertainty particularly with regard to how the Private will respond to Public policy decisions. Therefore, it is crucial to understand the probability that an action will occur in order to ascertain the *expected* utility of a policy decision. Taking into account the likelihood that the Private will act in a certain way given choices the Public has made essentially averages the level of “happiness” across all possible actions and gives more accurate and realistic utility values to arrive at an optimal solution.

### 2.3.3 IH Program Design and Implementation Choices

Jacobus (2015) delivers a helpful guide which outlines the various ways IH programs may be structured.

**Table 4: IH Program Design and Implementation**

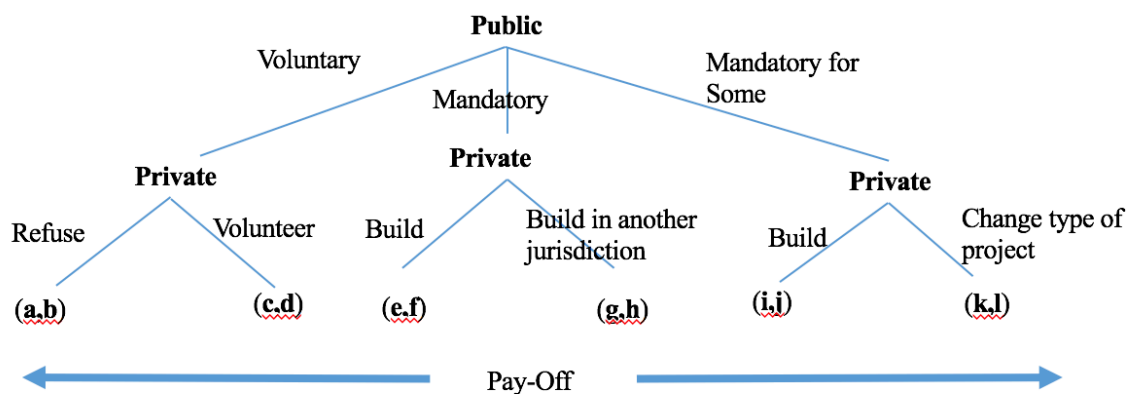
Design Elements	Implementation Options
Participation	Make voluntary for all Make mandatory for all Make mandatory for some
Geography	Entire jurisdiction Targeted areas
Beneficiaries	Target select low-income households Target all low-income households

Set-Aside Requirement	Below 20% Above 20% Offer in-lieu fee
In-Lieu Fees	Priced at affordability gap Priced at production cost
Off-site Development	Require on-site Allow off-site
Incentives	Density bonuses Fee waivers Tax break
Design Standards	No standards Identical standards for affordable and market rate units
Affordability Preservation	Restrict sale or lease of units Purchase units directly Require transfer of units

Source: Adapted from Jacobus, 2015.

From here one can begin to imagine a sequential game between the Public and Private in which each design element becomes a decision node. It can be expressed in a decision tree with outcomes and pay-offs and expected utility yet to be determined.

**Figure 14: Example of Sequential IH-PPP Game**



Source: Author

### 2.3.4 Optimization and Equilibrium

Games can be solved in a variety of ways. Players can win, lose, or draw. For the IH-PPP it is important not for the Public or the Private to win, but to reach an optimal equilibrium in which both players have maximized their pay-offs. If both players in the IH-PPP game have

maximized their pay-offs and will gain no more utility by choosing any other course of action, if both players are the “happiest” they can be given the rules of the game and given what brings the most “happiness” to the other player, then the maximum number of affordable units should be delivered as a result. The process of maximizing pay-offs is called optimization.

In economics, optimization can be defined as the “maximization of benefits or the minimization of losses” (Black et al., 2017). In engineering, it is described as the best compromise or “solution to a problem between conflicting requirements” (Schaschke, 2014). In statistics, optimization refers to “the minimization or maximization of some function, usually subject to restrictions” (Upton and Cook, 2014). If one is able to establish pay-off values for each player given a set of rules, one should be able to identify those strategies that provide the maximum pay-off.

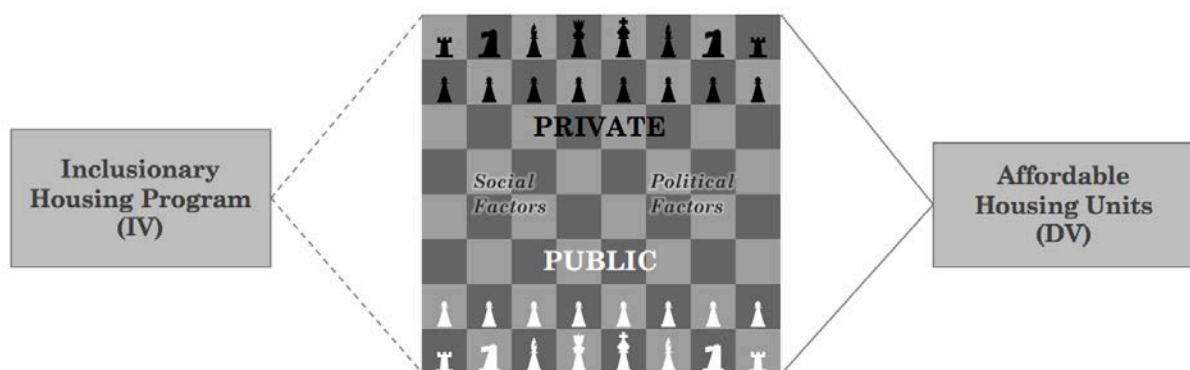
Some strategies are considered *dominant* if the pay-off achieved is greatest regardless of what other players do. A player’s *minimax* strategy minimizes the maximum pay-off of opposing players in zero-sum games. Conversely, a player’s *maximin* strategy maximizes the minimum pay-off they will receive in zero-sum games. A *Nash equilibrium* offers solutions where no player has any incentive to change his or her strategy given the choices of the other players. Consider the example of the Prisoner’s Dilemma. “In the prisoner’s dilemma, although [Stay Silent, Stay Silent] may seem better for both players it is unstable since every player will want to deviate from this solution to get extra benefit or avoid other’s betrayal. Any suspect who deviates from [Betray, Betray] will be hurt and any suspect who deviates from [Stay Silent, Stay Silent] will be rewarded. Therefore, the only predicted strategy that no player wants to deviate from is [Betray, Betray] and this is the Nash equilibrium in the prisoner’s dilemma” (Ho, 2013, p. 5).

*Pareto optimality* describes a scenario from an outsider’s perspective in which both players can be observed as optimizing their pay-off though scales of their utility may be different. It requires that one player’s strategy is dominant and the other player’s strategy provides no less than the maximum utility it may obtain using any other strategy.

Game theory offers several theorems for achieving equilibrium between players. It offers ways of building strategies that will enable players to maximize pay-off. The implications of this approach to the IH game can serve to improve delivery of affordable units through a public-private partnership in which both players are realizing their maximum potential pay-offs. It can also work to explain failures in realizing the greatest potential outcomes.

## 2.4 Conceptual Framework

Figure 15: Conceptual Framework



Source: Author

The conceptual framework situates the IH-PPP in a game theory framework and, in a simple way, organizes understanding of inclusionary housing programs as strategic, economic games between the Public and Private sectors in order to achieve affordable housing units.

On the left side of the diagram stands the IH program, the independent variable, with extended dotted lines signaling the elements that define the IH program. The chessboard signifies the strategic, sequential, two-player game. In it the Public is designated as the white player (in Chess, the white player always begins the game) and the Private is designated as the black player who moves in response to the Public.

Highlighted on the board are additional social and political factors that may influence the economic game. Both players make moves that may or may not be informed by these factors. For this reason, social and political factors will be considered mediating variables in this research.

Finally, solid lines point to the right side of the diagram indicating what is at stake in the IH-PPP game –affordable housing units. The strategic interactions between the Public and Private during the game will ultimately impact how many units are provided for low-income households.

## Chapter 3: Research Design and Methods

### 3.1 Revised Research Questions

Questions have updated and revised to reflect topics described in the literature review.

Main Research Question: How does the design and implementation of Baltimore's IH program impact its ability to provide affordable housing units?

Sub-Questions:

1. What can a *game theory analysis* of Baltimore's IH program tell us about the relationship between design and implementation and the provision and production of affordable units?
2. How might different program elements and options affect the provision and production of affordable units?
3. What is the optimal program design to maximize the provision and production of affordable units in the context of Baltimore's housing market?

### 3.2 Definitions

Terms that describe variables and indicators to be operationalized are defined as:

- Affordable housing – housing offered below market rate and intended for those households that earn less than the average median income in Baltimore;
- Inclusionary Housing (IH) program – a public-private partnership at the local level to secure affordable housing units;
- IH Program design elements – policy components that constitute the IH program;
- IH Program implementation options – regulatory selections for how the IH program will be put into practice;
- Social and political factors – perception of the interactions between society and government;
- Critical success factors – the most influential factors that reflect one's objectives and result in the greatest utility; and
- Expected utility – the expected satisfaction with and usefulness of certain policy choices given the probability that one choice is made over another.

### 3.3 Operationalization: Variables, Indicators

**Table 5: Operationalization Chart**

Concept	Variables	Indicators	Data Collection Method	Data Type	Data Source	Scale of Measurement
Affordable Housing	Supply of Affordable Housing Units (DV)	# of affordable and market-rate units	Desk research	Secondary Quantitative	Agency reports	Real values
Inclusionary Housing Program	Elements & Options of Program Design & Implementation (IV)	Expected utility of program elements & options for the Public  -critical success factors	Semi-structured interviews	Primary Quantitative/Qualitative	Purposive, snowball sample of politicians, elected officials, Public servants, academics and housing advocates in Baltimore	Ordinal scale
			Desk research	Secondary Qualitative	Baltimore IH Policy & Regulation; City Council meeting minutes	N/A
		Expected utility of program elements & options for the Private  -critical success factors	Semi-structured interviews	Primary Quantitative/Qualitative	Purposive, quota sample of builders of multi-unit housing developments in Baltimore	Ordinal scale
			Desk research	Secondary Quantitative/Qualitative	Surveys and interviews of housing developers in Baltimore conducted by other organizations	N/A
	Social and Political Factors (MV)	Social and political perspective of Public and Private respondents	Interviews and surveys	Primary Quantitative/Qualitative	Demographic information of Public and Private respondents	N/A

Source: Author

### **3.4 Research Strategy**

Case study methodology provides an in-depth explanation for a particular phenomenon, or in this case, the perceived failure of Baltimore's IH program. "Depth is equated with 'detail, richness, completeness, wholeness, or the degree of variance on an outcome that is accounted for by an explanation'" (Gerring, 2007, p. 49; Blume and Blatter, 2008, p. 348) A case study using a game theory framework can provide even greater "thickness" for the research. "Thickness refers to the number and diversity of observations which are conducted within a case, and the intensity with which the researcher reflects on the relationship between the empirical observation and the theoretical references" (Blume and Blatter, 2008, p. 348).

The research design is an evaluative, deductive case study through collection of primary qualitative and secondary quantitative data that seeks to evaluate the phenomenon through the specific factors of program design and implementation that influence performance of IH programs are yet unknown.

The research is conducted as a single case study with embedded units having various types of respondents and data sources. This type of case study design may also be referred to as a layered or nested design. Conducting the research using this strategy is effective in understanding how and why the IH program performs the way that it does. It is most adequate because it limits the interference of the researcher and takes into account the contextual conditions for such performance. Applying this type of research to the Baltimore IH program is adequate especially because the boundaries between the phenomenon and its context are not clear (Baxter and Jack, 2008).

### **3.5 Data Collection Methods**

This research used both qualitative and quantitative data gained from interviews and desk research to understand the phenomenon of the Baltimore IH program. Semi-structured interviews were conducted through purposive, snowball sampling of politicians, elected officials, Public servants, academics, and housing advocates in Baltimore as well as developers of multi-unit housing, including both small and large firms. This included firms that were for-profit and non-profit as well as those firms that have and have not built affordable housing previously. Respondents were selected based on their prior knowledge and influence on the initial 2007 IH ordinance.

Desk research and analysis of secondary quantitative data was also conducted in addition to interviews to support findings. This analysis consisted of review of city agency reports on affordable housing units available and those constructed since 2007 when the IH program was instituted as well as newspaper articles and surveys conducted by other organizations.

Additional secondary qualitative desk research was conducted on Baltimore's Inclusionary Housing Policy and Regulation to understand the revisions and changes to the policy over time. This included reviews of City Council meeting minutes and IH Taskforce reports. This provided an additional source for understanding the expected utility of program design and implementation for the Public. Further, a secondary quantitative and qualitative study of previously completed surveys and interviews of housing developers in Baltimore was conducted to support findings related to the expected utility of the Private.

### **3.6 Data Analysis Methods**

Analysis began with defining specific indicators of expected utility or Critical Success Factors for both the Public and Private. This was done through a qualitative analysis of interviews with respondents. Transcribed interviews were coded and analyzed to identify the most relevant and critical factors related to successful IH policy and implementation specific

to Baltimore. These factors were narrowed down to a list that existed across all respondents and relevant to each element of IH policy and was used to measure expected utility for each policy option using an ordinal scale. For the Public, the ordinal scale measured from 0-5 because six critical factors were identified across all respondents and for the Private the ordinal scale measured from 0-3 because three critical factors were identified across all respondents.

Once the expected utility scales were established, a list of IH policy options were gathered using a survey the literature and other secondary sources. They were identified as follows:

**Table 6: Updated IH Program Design and Implementation**

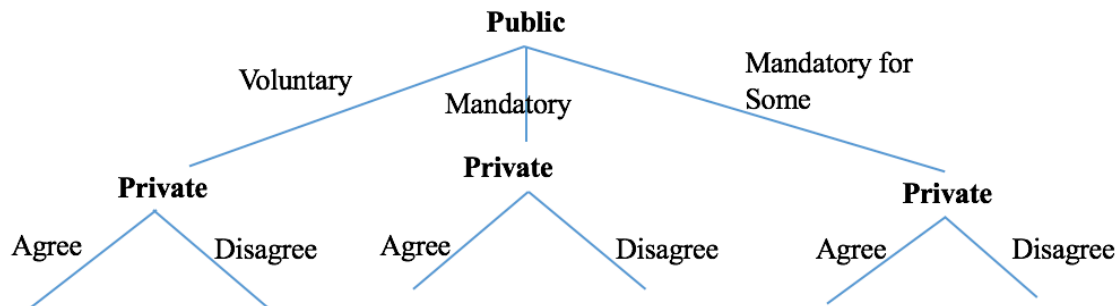
Design Elements	Implementation Options
Participation	Make voluntary for all Make mandatory for all Make mandatory for some
Geography	Entire jurisdiction Targeted areas
Beneficiaries	Target select low-income households Target all low-income households
Set-Aside Requirement	Below 20% Above 20% Offer in-lieu fee
In-Lieu Fees	Priced at affordability gap Priced at production cost
Off-site Development	Require on-site Allow off-site
Incentives	Offer incentives Mandate cost offsets
Design Standards	No standards Identical standards for affordable and market rate units
Affordability Preservation	Restrict sale or lease of units Purchase units directly Require transfer of units
Waivers and Exemptions	Request Variance Based on cost offset availability Subsidy too high

Source: Adapted from Jacobus, 2015.

Then decision trees were drawn to represent each design element and relevant implementation options in a sequential game model. Each design element is treated as its own

separate game and its outcome has no bearing or consequence on the outcome of any other game. In the model the Public is represented as Player 1 making the first move or policy option. The Private is represented as Player 2 and makes the subsequent move either Agreeing or Disagreeing with the policy option that was selected by Player 1 as shown in the example below.

**Figure 16: Example of Decision Tree for IH-PPP Game Model (Participation)**



Source: Author

Then each policy option was measured against the established ordinal scale for the Public. Each critical success factor that was met through a policy option was given one point. If a policy option met all Critical Success Factors for the Public, it was given one point for all factors. If it met none, it was measured at 0. This method was copied for the Private, but using its own ordinal scale. If agreeing to the policy option met each Critical Success Factor for the Private, it was measured at a 3. If it met none it was measured at a 0. The same was done for the option to disagreeing to each policy option. The tables below give an example of these measurements.

**Table 7: Example of Measures of Expected Utility (Participation)**

		PARTICIPATION											
		Expected Utility for the Public							Expected Utility for the Private				
		Critical Success Factor #1	Critical Success Factor #2	Critical Success Factor #3	Critical Success Factor #4	Critical Success Factor #5	Critical Success Factor #6	TOTAL		Critical Success Factor #1	Critical Success Factor #2	Critical Success Factor #3	TOTAL
Policy Options	Voluntary	1	0	1	0	0	0	2	Agree	1	1	1	3
									Disagree	0	0	0	0
	Mandatory	0	1	1	1	1	1	5	Agree	0	1	0	1
									Disagree	1	1	1	3
	Mandatory for Some	1	0	0	1	0	1	3	Agree	0	1	1	2
									Disagree	1	1	0	2

Source: Author

Any option that resulted in Disagree for the Private automatically scored 0 points for the Public as the Public garners no utility from the Private not agreeing to the policy and therefore not participating in the IH program. The Private, through Disagreeing, could choose to challenge the policy in court, could opt to build elsewhere, outside of Baltimore, could mount political opposition to the proposed bill before it is approved, or could advocate for additional changes to the bill to offset those with which they disagree.

These measurements were then input as pay-off values into the sequential game model with the first value representing expected utility pay-off for the Public, and the second value representing expected utility pay-off for the Private for each respective policy option.

Once the pay-off values were input into the model, a few actions took place:

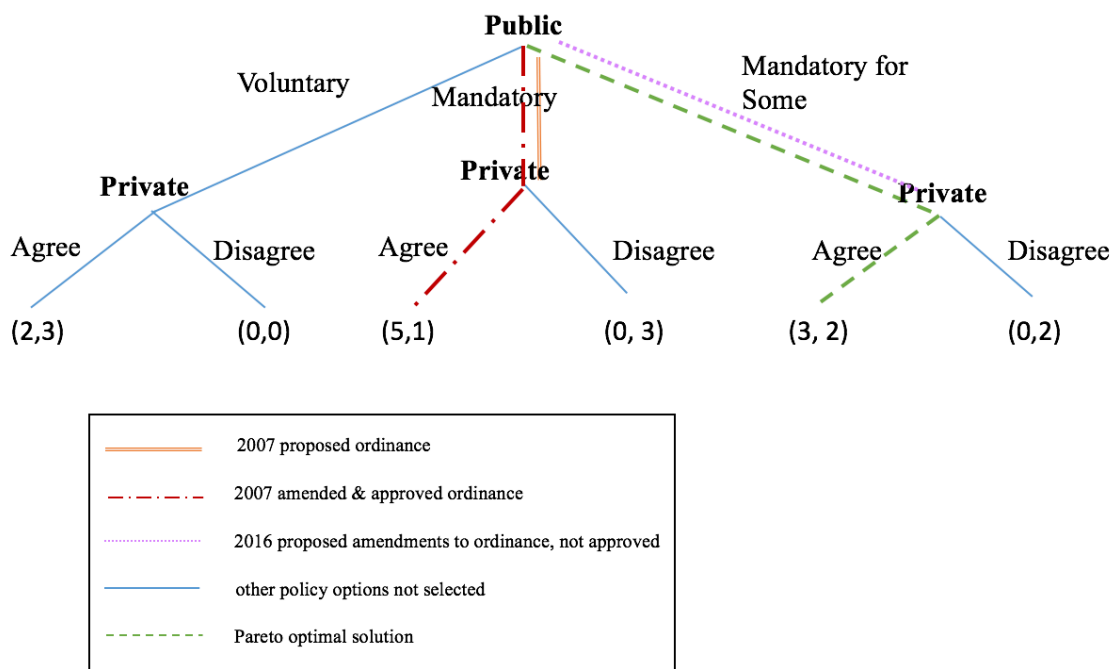
1. Traced the original policy proposed in 2007 and observed its outcome;
2. Traced the amended and approved policy from 2007 and observed its outcome;
3. Traced the proposed amendments to the policy from 2016 that was not approved and observed its outcome;
4. Calculated the Pareto optimal solution for each game and observed its outcome. A solution is considered Pareto optimal if the following is true:

$$U_{pub}(o_{pub}^s, o_{pri}^s) > U_{pub}(o_{pub}^p, o_{pri}^p) \Rightarrow U_{pri}(o_{pub}^s, o_{pri}^s) > U_{pri}(o_{pub}^p, o_{pri}^p)$$

such that  $U$  equals utility for each player,  $pub$  and  $pri$ , and  $o^s$  represents a specific option and  $o^p$  represents any other possible option. In other words, a solution is Pareto optimal if no other solution gives more utility to both players and makes one player strictly better off than any other solution; then

5. Compared all the outcomes.

Figure 17: Example of IH-PPP Game Model with Utility Outcomes (Participation)



Source: Author

The outcome of each game had no bearing on the outcome of any other games. Each game was treated separately and its pay-offs calculated without influence of any other games.

This method allowed the researcher to model which program design elements and options and which configuration of elements and options demonstrate the greatest causality on the production of affordable housing units. This analysis represented “empirically relevant configurations in order to find out whether dense links exist among the causal factors” (Blume and Blatter, 2008, p. 340). “Game theoretical modelling indeed implies, like any modelling exercise, a simplification and abstraction from the real world. However, in some disciplines, for instance economics, the translation of the real world into a formal model is very much accepted and appreciated. Mathematical approaches to the analysis of complex situations have evolved through time as a very significant field of study” (Samsura et al.,

2010, p. 565). This approach also allowed the researcher to look for answers to a seemingly failing IH program beyond simply a weak or volatile housing market and allowed the complexity of the public-private partnership to reveal itself.

Blume and Blatter (2008, p. 349) go on to argue that “We can get deeper insights when we identify empirical evidence of causal mechanisms on a lower level of analysis”. A game theory framework supports using empirical evidence to trace back to the exact program design elements and implementation choices that have the greatest impact on the strategic interactions between the Public and Private in the provision of affordable housing units in Baltimore.

Samsura et al. (2010, p. 575) further explain, “Game theoretical modelling can be one of the tools for exploring the strategic logic of situations. It forces us to be specific about the characteristics of conflicting situations. The specific advantage of game theory in formal modelling is its focus on strategic interaction and conflict in collective decision-making processes. It naturally leads us to consider the individual strategic decisions and their interdependency in relation to collective outcomes. In addition, game theory provides a way to think about the complexity of strategic interaction and, in particular, about the conflicting structure of collective decision-making processes.”

This methodology also provided the ability to trace pathways of program design and implementation over time especially as it relates to urban land development. “Game theory is able to conceptualize the structure of relations between actors in land and property development, which in the end may lead us to a better understanding about the land and property development process” (Samsura et al., 2010 p. 565).

It also allowed the researcher to precisely and accurately identify key components of the policy that represent a political impasse. “As a formal model, game theory allows us to see exactly how the conclusions of a model follow from its assumptions. Of course, the assumptions can and should be discussed, but the outcome of game theoretical modelling can be described very precisely. In addition, formal modelling also creates a logical structure for an argument and its accumulation. The logical structure of a model allows a modeler to add to it or rub out something from it to derive new conclusions and leads to new insights or the clarification of a problem” (Samsura et al., 2010, p. 566).

“In general, models coerce the accuracy of argument. Models force the modelers to be explicit in expressing the assumptions, and in arriving at conclusions by deduction. They have to show how a particular conclusion derives from certain assumptions.” (Samsura et al., 2010, p. 575)

### **3.7 Validity and Reliability**

Triangulation of data sources, data types and research methodology was required in order to increase reliability and validity of the research. Subjectivity, bias, and assumptions of respondents and the researcher were also considered. Particular care was taken to minimize the impact of these factors on the research and consisted of avoiding usage of certain language and descriptions and using open-ended questions during interviews.

Reliability of the case study is a challenge due to the fact that there are a limited number of units to study. Implementing various data collection methods for various types of data (primary and secondary, quantitative and qualitative) was necessary. It is imperative that care was taken to expertly document protocols and maintain a database of information acquired during the study in order to increase reliability.

The inability to generalize findings beyond the particular case being studied posed a challenge to external validity. However, embedding the case, or breaking the case into smaller units of study (different types of respondents) that can be compared internally garnered greater validity (Baxter and Jack, 2008). While findings may not be generalized beyond the Baltimore context, the methodological approach may be applied in other contexts.

In terms of validity and reliability of game theory models, “as long as the strategies of the stakeholders in the model are not based on empirical data, the usefulness of the outcomes for decision support is only limited. However, it is certainly possible to validate the preferences of the stakeholders, for instance by making use of stated preference techniques” (Samsura et al. p. 574) which this research aims to do. It is possible, however, “to test and validate empirically the outcomes of game theoretical modelling” (Samsura et al., p. 566).

## Chapter 4: Research Findings

### 4.1 A Brief Timeline

City of Baltimore Council Bill 05-0066R (Resolution) “A Council Resolution Concerning Task Force on Inclusionary Zoning” was introduced on June 6, 2005 by Councilmember Young, President Dixon, Councilmembers D’Adamo, Reisinger, Conaway, Branch, Mitchell, Kraft, Clarke, Rawlings Blake and Holton. The amended and adopted resolution was drafted “for the purpose of creating a task force to study the prospect of creating an inclusionary zoning and housing plan in Baltimore City to increase the supply and distribution of adequate, affordable housing across the City so that we can better meet the needs and demands of current and future residents” (City of Baltimore, 2005). The City Council Inclusionary Zoning Task Force convened shortly thereafter. It held the responsibility of making policy and other strategic recommendations to the City Council in an effort to institute IH in Baltimore which it did in a report titled, “At Home in Baltimore: A Plan for an Inclusive City of Neighborhoods” published in July 2006.

As a result, City of Baltimore Council Bill 06-0558 “Inclusionary Housing” (IH) was first read and introduced on December 4, 2006 by Councilmembers Young, Clarke, Holton, Branch, Reisinger, Rawlings Blake, Conaway, Curran, Harris, Kraft, D’Adamo, Welch and Mitchell and was assigned to the Land Use and Transportation Committee.

Bill 06-0558 was reviewed and reworked through committee, which included at least 4 public hearings and various public debates and panel discussions. Several months later the bill was finally resubmitted for seconder reader on June 11, 2007. This new draft included 43 amendments to the original draft, the most important changes relating to developer entitlement to offset costs, exemptions and waivers from the program, and oversight and decision-making shifts from an IH Board to the Housing Commissioner of Baltimore. The bill, with all amendments, was adopted and ordered for printing, with only Councilmember Spector voting “Nay”. The bill was signed on June 19, 2007 by Mayor Martin O’Malley amidst his campaign for governor of Maryland, which he would go on to win in November 2007, resigning as Mayor of Baltimore a few weeks later. Bill 06-0558 was enacted and went into effect at the beginning of 2009.

On December 27, 2014, a reporter for the Baltimore Sun, Natalie Sherman, published an article detailing the performance of Baltimore’s IH program since going into effect with the headline, “Despite rule, few affordable units created in new developments” (Sherman, 2014). In the article Sherman notes that over 9,000 new units had been constructed in the City since 2010, many of them luxury apartments, during a major real estate development boom in the city. While thousands of those units were exempted from the ordinance, just 32 units had been designated as affordable through the IH program (Sherman, 2014; IHB Report, 2014). Subsequent articles and reports were published in the following months drawing attention to the ordinance and its ineffectiveness at generating affordable units despite major residential development projects in the city, especially that of Port Covington, a revitalization effort led by Sagamore Development, to redevelop 260 acres of the city’s southern waterfront at costs of over \$6.9 billion. City officials had announced that Port Covington would be exempt from the IH program and waived from the requirement of having to offer 20% of its planned 7,500 residential units as affordable.

A year after the Sun article was published, City of Baltimore Council Bill 15-0279R (Resolution) “A Council Resolution Concerning Task Force on Improving Baltimore City’s Inclusionary Housing Program” was introduced on December 7, 2015 by Councilmember Henry, President Young, Councilmembers Kraft, Costello, Middleton, Stokes, Clarks, Scott,

Curran, Mosby, Welch, and Spector. The adopted resolution established a new task force “with the duty of studying results of the Inclusionary Housing program over the last eight years, while also analyzing current and projected demographics and market demands” (City of Baltimore, 2015).

Several months later, City of Baltimore Council Bill 16-0735 “Inclusionary and Affordable Housing Requirements – Increasing Program participation” was first read and introduced by Councilmembers Henry, Clarke, and Stokes on August 15, 2016 and assigned to the Housing and Community Development Committee. The new bill attempted to redesign the program by providing an option to developers to pay in-lieu fees instead of building affordable units, eliminating mandatory participation of projects of less than 30 units, and removing any design standards for affordable units. Bill 16-0735 was not supported by several city agencies and ultimately failed. It was referred back to committee on September 12, 2016 with Councilmembers Young, Kraft, Curran, Spector, Middleton, Holton, Reisinger and Costello voting “Nay”.

On July 27, 2017, Michael Snidal and Gregory Friedman, both of the Citizens Planning and Housing Association, published an op-ed in the Baltimore Sun urging city officials to further study the IH program in order to address what they believe are its obvious inadequacies. As of completion of this research, no new task force has been established and no new study has commenced. The original City of Baltimore Council Bill 06-0558 as amended and adopted in 2007 remains in effect to this day.

**Figure 18: New Units Constructed in Baltimore Over Time**

Year	New Units Constructed in Baltimore Over Time*	
2005	Bill 05-0066R (Task Force) introduced	1256 units
2006	Bill 06-0558 (IH ordinance) introduced	649 units
2007	Bill 06-0558 (IH ordinance)	319 units
2008		1080 units
2009	Bill 06-0558 in effect	341 units (10 IH units)
2010		369 units (10 IH units)
2011		989 units
2012		730 units
2013		1257 units (5 IH units)
2014		821 units (7 IH units)
2015	Bill 15-0219R (2nd Task Force) introduced	1293 units
2016	Bill 16-0735 (revised IH ordinance) introduced and not passed	
	New Units	IH Units

\*includes only new construction

Source: Author, 2017. Maryland Department of Planning, 2016.

According to a 2014 IH Board report, 32 affordable units had been delivered through the program since its enactment. These included units at Miller’s Court, Mill No. 1, Mt. Vernon Mill and 520 Park residential developments (Inclusionary Housing Board, 2014). Subsequent reports were not available to the researcher.

## 4.2 Respondents

Interviews were conducted with 8 respondents who had significant knowledge of the IH program in Baltimore. They ranged from City officials, Councilmembers, housing advocates and experts, real estate professionals, developers, and residents. Many respondents were involved with the IH program since the first Task Force formed in 2005, while others have been tasked with redesigning the program currently. Some had been involved in the actual development of affordable units and others had been involved in challenging the ordinance prior to its enactment in 2007. All interview participants have remained anonymous throughout this research as the redesign of the IH program in Baltimore is active and ongoing.

Each respondent was asked to participate in a semi-structured interview to help explain the housing market in Baltimore and the rationale behind the design of the IH program in Baltimore. These interviews provided qualitative data that allowed the researcher to identify factors that respondents believed were critical to the success of the IH program in Baltimore.

Additional unpublished papers, reports, and memos supported data collected through these interviews. Videos and transcriptions of previous panel discussions, debates, and hearings were also used. Also included was a careful review of published articles and reports since 2005 related to the IH program in Baltimore. This data was then triangulated with data collected through the interviews.

All legislation, including all bills, ordinances and resolutions related to the IH program in Baltimore were also carefully reviewed for primary data. Evidence of this data can be found in the Discussion section that follows each game tree.

## 4.3 Mediating Variables

Social and political factors were identified as intervening variables for this research. Each respondent was asked the same series of seven questions related to the role of government in society. Depending on how they answered the questions, respondents were identified to have either liberal or conservative social and political ideologies.

All respondents interviewed for this research were identified as having liberal ideologies. Therefore, no further action was taken to control political or social factors that may influence interview responses. A summary of this data is included in the appendix.

## 4.4 Critical Success Factors

All data was used to identify Critical Success Factors for both the Public and the Private, respectively. These factors can be described as artifacts or principles that are essential for achieving an objective or mission.

For the Public, IH programs should, in no particular order of importance:

- *Maximize the number of affordable units constructed* meaning the greatest number of affordable residential units should be constructed as a result of the IH program relative to the overall number of market-rate units being constructed in the city.
- *Minimize unintended housing market consequences* meaning that elements of the IH program has minimal negative impact on the supply or demand of housing in Baltimore, that there is minimal impact on any developers' desire to construct new units in Baltimore and offer those units at competitive prices, and that demand for those units continues to grow. It may also mean having minimal impact on the actual cost to users to rent or own both affordable and market-rate housing.

- *Maximize socio-economic integration* meaning that IH policy promotes and encourages integration of households of various income levels in residential development projects and particularly supports lower-income households accessing developments, areas, neighborhoods, and districts “of opportunity” that they would otherwise be unable to afford.
- *Minimize administrative costs and processes* meaning that additional layers of government needed to administer the program are minimal or limited in costs and scope.
- *Maximize political feasibility* meaning that any IH program must garner support from all constituencies, must be legal and fair, and must be approved and supported by all governing bodies.

For the Private, agreeing or disagreeing to an IH program is determined by whether or not it allows developers to, in no particular order of importance:

- *Maximize project feasibility* meaning that development projects should be able to gain the same access to capital, financing, and any other federal, state, or local subsidy or incentive regardless of being subject to any IH program or mandate. Any IH program should not overburden projects by unnecessarily increasing project timelines, application processes and paperwork, or complexity.
- *Maximize profits* meaning that development projects should be able to produce comparable financial return, that reflect recent local trends, as any other development project not subject to any IH program or mandate in Baltimore. Costs related to IH program requirements should be minimal and should be offset by subsidies, incentives, or cash payments.
- *Maximize fairness* meaning that certain development projects should not be specified or targeted unfairly or be made more or less responsible to meet obligations set forth in any IH program than any other development project.

These factors were used as the basis for valuing expected utility and construction of the game models.

## 4.5 Game Models

The following pages demonstrate the data collected and the outcomes that have resulted. Each section details the specific policy options that are being discussed and the expected utility for each option for both the Public and the Private based on the identified Critical Success Factors.

The game tree uses the expected utility for each option as pay-off values. It details policy decisions made over time including what was proposed in the original IH bill from 2007, what was amended and approved in that bill, and what was proposed in a new 2016 bill. Finally, the Pareto optimal solution for each game tree is highlighted.

Following the game tree is a sample of text from data sources that discuss the particular policy options outlined in the game tree. This text aligns with the data being presented in the section.

## 4.5.1 Participation

### 4.5.1.1 Policy Options

*Voluntary* meaning any and all residential developments may or may not participate in the IH program at their own discretion.

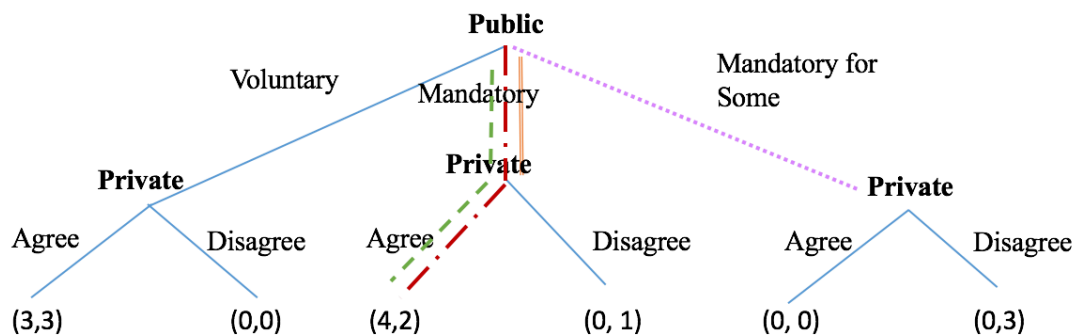
*Mandatory* meaning any and all residential developments must participate in the IH program.

*Mandatory for some* meaning some residential developments must participate in the IH program while others are strictly exempt.

### 4.5.1.2 Expected Utility

		PARTICIPATION											
		Expected Utility for the Public						Expected Utility for the Private					
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL	
Policy Options	Voluntary	0	1	0	1	1	3	Agree	1	1	1	3	
								Disagree	0	0	0	0	
	Mandatory	1	1	1	0	1	4	Agree	1	0	1	2	
								Disagree	0	1	0	1	
	Mandatory for Some	0	0	0	0	0	0	Agree	0	0	0	0	
								Disagree	1	1	1	3	

### 4.5.1.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- . - . - .</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - - - -</span>	Pareto optimal solution

#### 4.5.1.4 Discussion

“I will say this... the primary thing that I would like to see is a way that we are holding developers accountable to either produce the units or provide the resources to produce the units [...] I do want to see some equity in terms of what developers are doing in the city and what they are providing in the way of affordable housing and mixed income housing,” (Respondent #5, 2017).

“There is a perception that there is a wealthy developer that is, you know, getting a sweetheart deal in the city, and if they're getting this multi-million dollar check from the city, why can't they take care of the little guy?” (Respondent #1, 2017).

“At the time the city was subsidizing, actively supporting most development that happened either with zoning changes or payment in lieu of tax agreements. So people said well wait a minute. Why is the city helping people develop when those people aren't doing their share to create some affordable housing?” (Respondent #6, 2017)

“The leaders of some city agencies are pushing to significantly restrict legislation that would require developers to include affordable units in all Baltimore residential projects, but the City Council sponsors of the bill are sticking by their original plan,” (Madera, 2006).

“The guy who was the national expert came in and said, “Look, here is what is important when you do inclusionary zoning. One is: It has to apply to everybody or it should apply to everybody because in the absence of any intervention, if you apply inclusionary to some parcels, some properties, and not others, you're basically lowering the price of the land on the properties where you require it because if you have to build the same thing anywhere else you're driving...the only place to make that up is in the value of the land. So what you're doing is you are affecting the market and the only way that you can fix that is one of two ways: you either provide some subsidy or you make it apply to everybody and say every parcel of land is affected by this, so if you don't want to buy this land and you want to go buy that other piece of property that doesn't need a zoning change, then fine, you're going to have the same requirements,” (Respondent #6, 2017).

**“While Sagamore is exceeding City requirements in its commitments to funding affordable housing, the ability to finance the construction of subsidized units on-site relies on the availability of increasingly competitive federal resources. This issue is not unique to Port Covington. As such, the ability for development projects to remain financially viable while also supplying subsidized units is subject to forces outside of developers' and even local municipalities' control. Moving forward, we must examine new ways of filling funding gaps to help build supply and keep development projects financially feasible,” (Anonymous, 2017).**

“What would compel the city to implement a high-performance market-rate rental housing tax credit that does not contain a provision for inclusionary housing (otherwise known as affordable housing, encompassing below-market rents for low-income people, persons with disabilities, and seniors) when Baltimore City residents are already paying the highest property taxes in the state while earning a median annual household income roughly 55 percent below that of the state's median annual household income?” (Hornstein, 2014).

“You're gonna have a lot of fight as long as that's the way you do it because you're not applying these principals evenly. You're just applying them to those you can and we don't do that for anything else. We only do it that way for housing,” (Respondent #6, 2017).

“Members of the GBC's Built Environment and Regional Transportation Committee are mulling potential unintended consequences of a city task force's proposals for increasing

affordable housing in the city through enactment of an ‘inclusionary housing’ concept[...] arbitrary mandates could result in artificially stifling housing development in the city at a time when city leaders are seeking to increase resident, advocates for developers and real estate agents warned at a July 27 GBC meeting to review the task force recommendations,” (Baltimore Sun, 2006).

“‘It’s what was required, and I get it, and we know we have to account for it in the next project,’ [Dominic Wiker of the Time Group] said. ‘In our case it didn’t require any extraordinary measures to get that type of income demographic in our building,’” (Sherman, 2014).

“‘There are places in this country where developers come to the table knowing that their deal is not going to go through until they do this. Once that atmosphere is created here, we won’t be having these conversations,’” (Sherman, 2014).

“Despite receiving a waiver, Under Armor CEO Kevin plank’s Sagamore Development Co., which is developing the \$5.5 billion waterfront project at Port Covington, has agreed to a goal of making 10 percent of the 7,500 proposed, mostly rental residences ‘affordable,’” (Broadwater, 2016).

“If the project already needs government help to work, then that just puts us on the hook from even more money to build units that way. We should be focusing our attention on building inclusionary units in any project that is so strong they can just build it,” (Graham, 2017).

“Some questioned whether it’s appropriate to impose such mandates on unsubsidized private property,” (Baltimore Sun, 2006).

“We want a city that everyone can enjoy, and if we are, you know, from an economic standpoint, we want jobs to be in Baltimore City. Our job is to promote job growth in Baltimore City... And if we want that, we want jobs for everyone, we want a city where those people that have those jobs can actually afford to live in the city. Because there's no point in even attracting all of these jobs to the city if they have to live in Baltimore County... In general for the health of commercial corridors, you want a mix of people that are from all walks of life because that supports thriving districts. You don't want monocultures usually because that's not generally healthy for a city,” (Respondent #1, 2017).

“Immediately after it got passed we experienced the Great Recession so that derailed any sense of really seeing if it’s possible that this could work and I think everybody was over-optimistic about how well the market would perform. While they were developing the legislation some of the thresholds that were established were very, very high to even start to require a developer to provide the housing even if they city would pay for it... Property values declined, market demand decreased, so the high thresholds were never met... So every pillar that this legislation was built on just sort of dissolved and what we’ve ended up with is this very isolated set of circumstances where this works at all,” (Respondent #2, 2017).

## 4.5.2 Geography

### 4.5.2.1 Policy Options

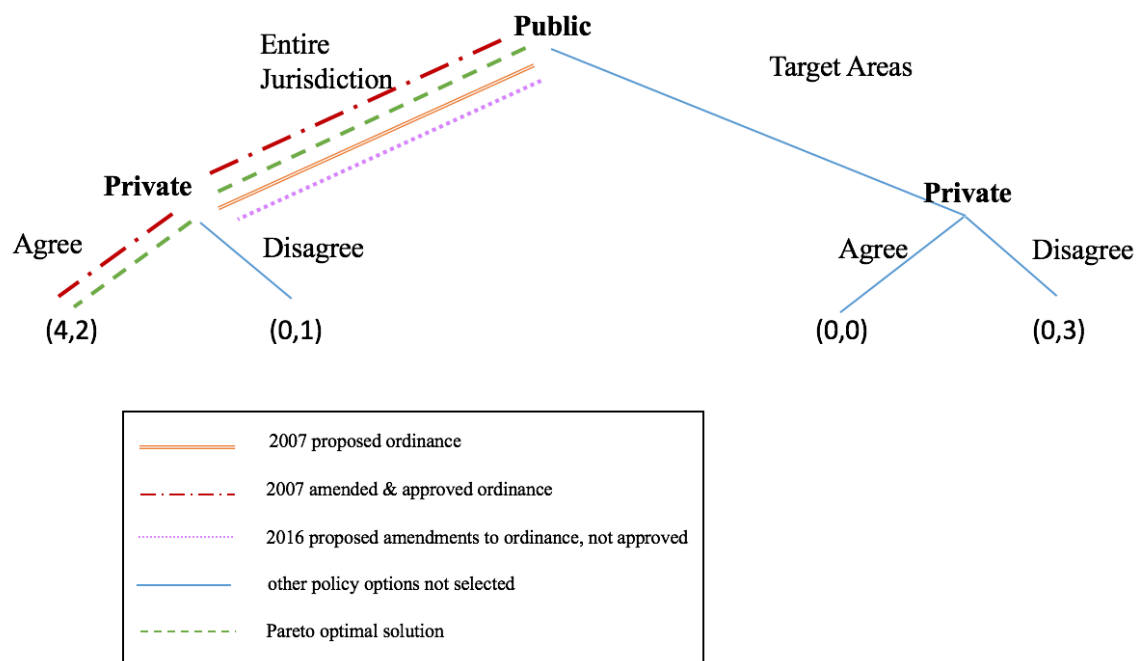
*Entire jurisdiction* meaning the IH program affects all residential developments in the city regardless of where they are located.

*Target areas* meaning only residential developments in specific areas or neighborhoods would be subject to IH program.

### 4.5.2.2 Expected Utility

		GEOGRAPHY										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Entire Jurisdiction	1	1	1	0	1	4	Agree	1	0	1	2
								Disagree	0	1	0	1
	Target Areas	0	0	0	0	0	0	Agree	0	0	0	0
									Disagree	1	1	1

### 4.5.2.3 Game Tree



#### 4.5.2.4 Discussion

“Ordinary land use regulation has often restricted affordable housing opportunities to locations that are racialized ‘black’ and resulted in an uneven distribution of public sector resources, access to wealth, stigmatized reputation, and constrained opportunities for social mobility,” (McFarlane, 2017).

“There’s not one Baltimore. I’m building and developing for one part of Baltimore and that market basically runs from harbor neighborhoods up Charles Street and, you know, seems to be pushing a little bit into places like south Baltimore to Pigtown and Ridgley’s. Mount Vernon is kind of growing its footprint. But there’ve been barriers that folks like us have not crossed. You know the MLKs, jumping over the JFX on the east,” (Respondent #4, 2017).

“So for instance we know that there are some parts of the city where the price points don’t allow people of moderate income to be able to afford housing units in those areas. We do see a concentration of lower priced housing in parts of the city like the ones I represent like West Baltimore and also some parts in East Baltimore and now we’re seeing prices tick up in other parts in the city. There have been desires to include affordable units in some of those developments across the city,” (Respondent #5, 2017).

“There is a lot of focus of developing in areas of opportunity. Higher income, better school type areas,” (Respondent #6, 2017).

“This idea, again, of where I personally believe that restoring public access to the waterfront for everyone to enjoy is something we should aspire to. And we don’t have the money to do it, so if can leverage a project, we should do that. As long as we’re including these checks and balances that we have in place,” (Respondent #1, 2017).

“If you want somebody to come and build decent housing in West Baltimore or East Baltimore what is the infrastructure that supports people to live in those areas? They’re tough areas, there’s no grocery store, there’s all the issues that are going on in those parts of the city, there’s no good public transportation to get in and out. That’s not an attractive place to build,” (Respondent #6, 2017).

“I think it should be a mandatory goal to have at least a portion of units set aside for some degree of affordable units everywhere, but if for some reason that proved impossible to do, then there should be, in the higher market areas, a requirement for a cash contribution,” (Respondent #2, 2017).

“It’s always cheaper to build affordable housing in Sandtown than it is in Harbor East. In doing the IH law I think there are a lot of people who agree with that,” (Respondent #7, 2017).

“I think it goes back to the feeling of the old Housing Commissioner which was ‘I can build it very cheaply right here, why would I want to spend all of this on these high opportunity neighborhoods?’ But on the other hand there’s so much research that says that when you’re in the high opportunity neighborhoods outcomes are better. But I think we have to do what we can to build affordable housing in high opportunity neighborhoods even if it is sometimes more expensive,” (Respondent #7, 2017).

### 4.5.3 Beneficiaries

#### 4.5.3.1 Policy Options

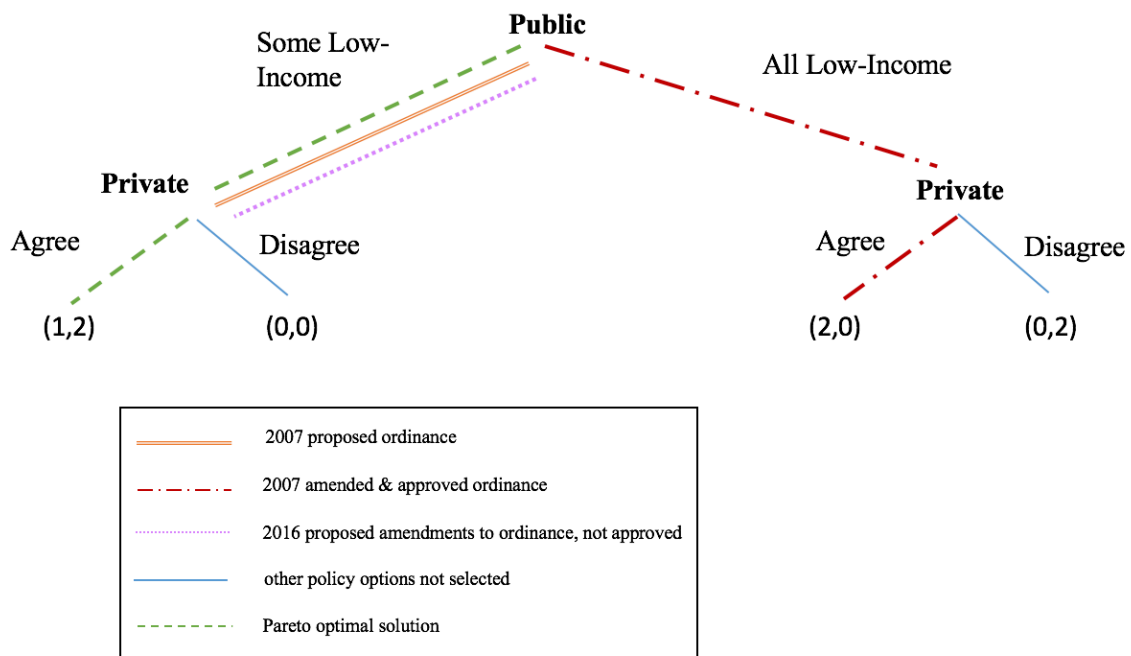
*All low-income* meaning that affordable units generated by the IH program would be available to all levels of income including extremely low, very low, low, and moderate levels of Area Median Income.

*Some low-income* meaning that affordable units generated by the IH program would be available to only specific levels of income generally excluding extremely low and very low-income households.

#### 4.5.3.2 Expected Utility

		BENEFICIARIES										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Some Low-Income	0	0	0	1	0	1	Agree	1	1	0	2
								Disagree	0	0	0	0
	All Low-Income	0	0	1	0	1	2	Agree	0	0	0	0
								Disagree	1	1	0	2

#### 4.5.3.3 Game Tree



#### 4.5.3.4 Discussion

“The developer doesn’t control federal allocation of tax credits, so they can’t guarantee delivery of 50/60% AMI. They executed an MOU through the BOE and are required to meet their goal of either securing LIHTC or other credits, doing 10% at 80% AMI, or paying a fee in lieu,” (Anonymous, 2017).

“It’s more politically palatable that inclusionary zoning results only in providing affordable housing for moderate-income people who are not the very poor,” (McFarlane and Johnson, 2017).

“At that time rentals were affordable, now we have a situation where it’s kind of the opposite where pressure on rentals is going up. But what she [Sandy Newman of Johns Hopkins University’s Policy Institute] concluded was that there really wasn’t a lack of affordable units, what Baltimore had was no affordability at any level, that incomes were so low that it doesn’t matter where you put the units because people just can’t afford to pay and that ties into drugs and crime in neighborhoods and just general disinvestment,” (Respondent #3, 2017).

“I see us making more progress in terms of converting, increasing owner occupancy and helping people to stabilize their own financial situation and their neighborhoods at the same time. And this inclusionary housing ain’t gonna do it,” (Respondent #3, 2017).

“Well I think we’d want to make the income levels as low as you can go even if there are less overall units, that’s just my feeling. I think 60 or 80% can get there because some people go up to 80% or 100% AMI. Thankfully, Baltimore is not in that position where we have that kind of need, so I think we definitely want to focus on moderate income,” (Respondent #7, 2017).

“It’s a question of amount versus need. So at 60% AMI you could get affordable units for twice as many units for people at 30% AMI, but that’s half of the people, so it’s hard,” (Respondent #1, 2017).

“The fundamental problem with affordable housing is supply and demand. That there is more demand than there is supply and if you built more the price of all of it would be less, so why aren’t we building more?” (Respondent #6, 2017).

“There are also very real and substantial questions about whether producing inclusionary zoning units for the very or extremely low-income individual is actually economically feasible without significant financial subsidies,” (McFarlane, 2017).

“By creating economic opportunities, the demand-side approach can have just as much of an impact on housing needs by lifting workers out of poverty and thus reducing the demand for subsidized units,” (Anonymous, 2017).

“And all of the units developed so far have gone to households with moderate incomes – not the very needy,” (Sherman, 2014).

“All these apartments are going to be renting for \$1,400 a month. I mean, can you see why people might be skeptical that the city isn’t doing enough to bring in affordable housing?” (Graham, 2017).

“I think it should be the whole ladder. 30%, 50%, 60%, 80% [of AMI], there should be sort of combinations that allow all of that to happen, but there should be some degree of emphasis on the lowest and the most needy,” (Respondent #2, 2017).

## 4.5.4 Set-Aside

### 4.5.4.1 Policy Options

*Below 20%* meaning that less than 20% of market-rate units must be offered as affordable under IH requirements.

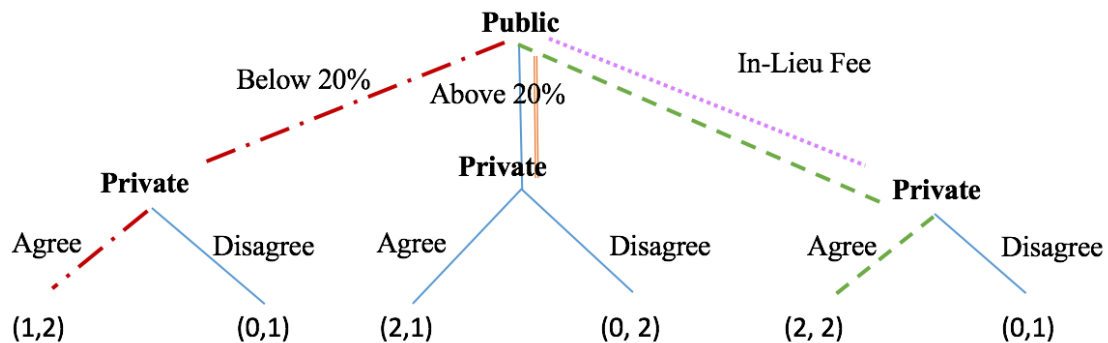
*Above 20%* meaning that 20% and above of market-rate units must be offered as affordable under IH requirements.

*In-lieu fee* meaning that developers have the option to contribute to an IH fund instead of offering the required number of affordable units.

### 4.5.4.2 Expected Utility

		SET-ASIDE										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Below 20%	0	0	0	0	1	1	Agree	1	0	1	2
								Disagree	0	1	0	1
	Above 20%	1	0	1	0	0	2	Agree	0	0	1	1
								Disagree	1	1	0	2
	In-Lieu Fee	0	1	0	1	0	2	Agree	1	1	1	3
								Disagree	0	0	0	0

### 4.5.4.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- . - . -</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - - - -</span>	Pareto optimal solution

#### 4.5.4.4 Discussion

“There’s a variety of ways developers could participate. I think expert minds better than myself should be involved in putting this together, but if I were to do my own naïve version, developers in strong market areas would be required to set aside sets of units or contribute substantial dollars to a fund. Anybody who contributed the dollars in that fund, that could provide the capital for non-profit developers who could do work throughout the city so you could you have both for-profit and non-profit developers involved,” (Respondent #2, 2017).

“For those projects receiving a significant land use authorization or rezoning, the set-aside requirement is 10%. For those projects receiving a major public subsidy, the set-aside requirement is 20%. For projects receiving neither subsidy nor rezoning, the requirement is 10%,” (McFarlane and Johnson, 2017).

“This is where our position and the development community didn’t necessarily jive... I was saying, look, don’t get involved in saying you’ve got to set aside 5-10 % of units and they have to meet a certain level of income. What you do is you put a formula in place that says if you’re going to build \$500,000 units then you’re going to pay \$20,000 per unit into this housing fund. And then you can do whatever you want, you can market to whomever you want. You still have to pay and that’s the fee. And if you’re building \$250,000 units maybe you pay \$10,000. It would be something graduated and that’s where you generate the money. You don’t get into any of the intricacies of how they are marketing or financing,” (Respondent #3, 2017).

“Inclusionary zoning ordinances also vary in terms of the required proportion of units that is to be set aside, built, or otherwise made available within a specific geographic location. Other differences revolve around whether the affordable housing will be leased or sold, as well as the size and type of developments to be subject to this regulation. An informal survey found that such ordinances, regardless of how they are structured by local governments, resulted in only a small number of new units, between 4% and 35% of the total stock being produced,” (McFarlane and Johnson, 2017).

“My impression is that most of the successful IH programs are instituted in what I would call ‘strong market cities’. So the public sector has quite a bit of leverage in terms of negotiating having private developers either provide specific units- 10%, 15%, whatever it might be or getting developers to contribute into funds that could be used to provide off site housing and that one of the key ways that’s done is through density bonuses. In Baltimore while we have portions of the city that could be considered ‘strong market’, I don’t think we’re quite at the level of top tier cities even in our ‘strong market areas’ so our level of leverage is considerably reduced when trying to make these kinds of deals. And indecently, we just redid our zoning code...one of the pieces was we did not, for most of downtown, we do not have height or density limits...that was seen as a way to encourage more development,” (Respondent #2, 2017).

“10% of units will be affordable. Developer will use commercially reasonable efforts to apply for LIHTC – 60% AMI units; of those 5% will be for 50% AMI or below; City will make housing resources available etc. If unsuccessful with LIHTC, developer will produce these units at 80% AMI provided can be constructed on financially reasonable basis. If [developer] cannot, they will pay into fund on a sliding scale. Amounts will be adjusted in each phase and there will be a true up after each 750 units,” (Anonymous, 2017).

“One example of flexibility is when a statute permits the number of units to be individually tailored to a particular project or when an ordinance creates a menu of choices for either building units or contributing towards an affordable housing fund. With flexibility comes

discretion, and with discretion comes the opportunity for the other part of land use regulation, which is deal-making,” (McFarlane and Johnson, 2017).

“Well, for one we have a limited fund as it relates to subsidizing some of these units. Essentially there is no real ...put it this way, it would be challenging to require developers to include those units because basically we’d be paying for, say, a one bedroom or efficiency in a luxury building,” (Respondent #5, 2017).

“The theory is that the local government will use those funds to construct affordable units elsewhere. Although it is difficult to articulate exactly what the legitimate reasons could be for this feature other than political expediency, this feature permits flexibility in terms of how to comply with the law, which is attractive to some developers,” (McFarlane and Johnson, 2017).

“Yeah, I think that is the way that should have happened and just been like, ‘Okay we’re all doing it’. But I think the credit [Mutli-Family Housing Tax Credit] that really benefitted a lot of us, I think there should have been some type of payback and I think it should have gone into some sort of fund which could have gone ...kept it really simple...” (Respondent #4, 2017)

“But even in those four developments the law applied to – Millers Court in Remington, 520 Park Avenue in Mount Vernon and Union Mill and Mill No1 along the Jones Falls – the set-asides fall short of targets established under the rule. Just 32 of those projects’ 351 units are designated as affordable,” (Sherman, 2014).

“My ideal would be 20%, but, you know, the minimum should be 10% and maybe there’s some negotiation between that,” (Respondent #2, 2017).

“City Councilman Bill Henry has proposed altering the law to eliminate the requirement that the city provide funds for the units – while cutting in half the number of required affordable-housing units. That proposal is expected to be debated in the coming weeks,” (Broadwater, 2016).

## 4.5.5 In-Lieu Fee

### 4.5.5.1 Policy Options

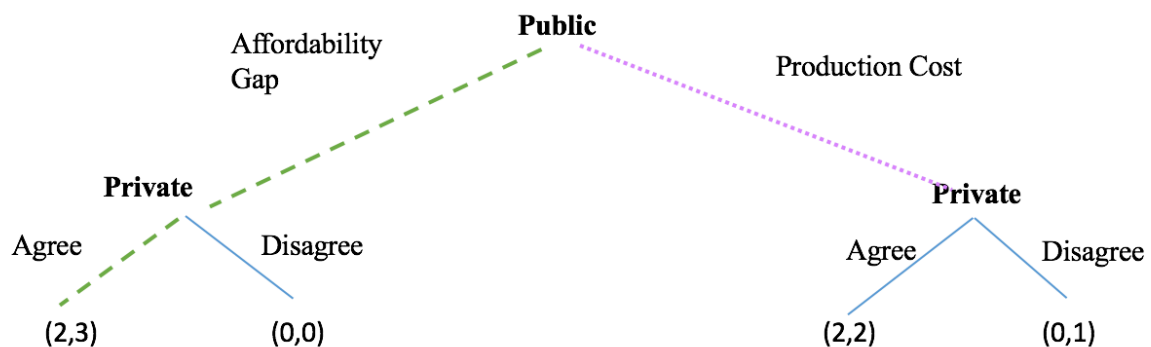
*Priced at affordability gap* meaning an in-lieu fee is set at the price of market-rate unit minus the price a low-income household could afford for a similar unit.

*Priced at production cost* meaning an in-lieu fee is set at the cost to construct the affordable unit elsewhere.

### 4.5.5.2 Expected Utility

		IN-LIEU FEE										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Afford. Gap	0	1	0	0	1	2	Agree	1	1	1	3
								Disagree	0	0	0	0
	Production Cost	0	1	0	0	1	2	Agree	1	0	1	2
								Disagree	0	1	0	1

### 4.5.5.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- . - . -</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - - - -</span>	Pareto optimal solution

#### 4.5.5.4 Discussion

“Another option open to municipal leaders is to allow developers to pay a fee-in-lieu of building affordable units. This can be beneficial when projects anticipate high condominium of homeowner association fees. As well, said [Innovative Housing Institute executive director Patrick] Maier, municipalities can set aside in-lieu funds in a local housing trust fund or use the proceeds to build subsidized housing units,” (Wong, 2015).

“When we do the in lieu fees you have to make it so that in different parts of the city it’s at different levels. That’s how they do it in Chicago and a few other places,” (Respondent #7, 2017).

“It would need to be on some kind of sliding scale. I think minimum contributions, if you’re going to make a cash contribution, should be no less than \$20,000, and it may be on a sliding scale that goes up to as much as \$100,000,” (Respondent #2, 2017).

“There are issues that developers face, but I certainly think that we need to have flexibility. In certain cases, it may make sense to pay an in-lieu fee or build units off site,” (Respondent #7, 2017).

“However, the politics of inclusionary zoning is such that most jurisdictions do not follow the pure integrative approach, but instead provide some measure of flexibility with respect to this integrative policy goal, which allows developers to comply by paying in lieu fees for affordable housing located elsewhere,” (McFarlane and Johnson, 2017).

“That was the construct of the bill and that brought a consensus of people where even developers and others said well that makes sense and there was some relief for fee-in-lieu for properties where it made no sense like the Ritz Carlton. That was kind of the way it worked,” (Respondent #6, 2017).

“In two cases, developers agreed to contribute to the inclusionary housing trust fund to bypass the requirement. The Jefferson Apartment Group, which developed the 304-apartment Jefferson Square at Washington Hill complex, for example, paid \$470,000 to the fund, according to the city. Beatty Development Group agreed to contribute \$30,000 per residence for 10 percent of units it builds at Harbor Point into the fund,” (Sherman, 2014).

“While exempt from the inclusionary housing law, developer Beatty has agreed to voluntarily contribute as much as \$3 million to the IH fund, if Harbor Point completes its projected build-out of over 1,000 residential units by the early 2020s,” (Sweeney, 2014).

## 4.5.6 Off-Site Development

### 4.5.6.1 Policy Options

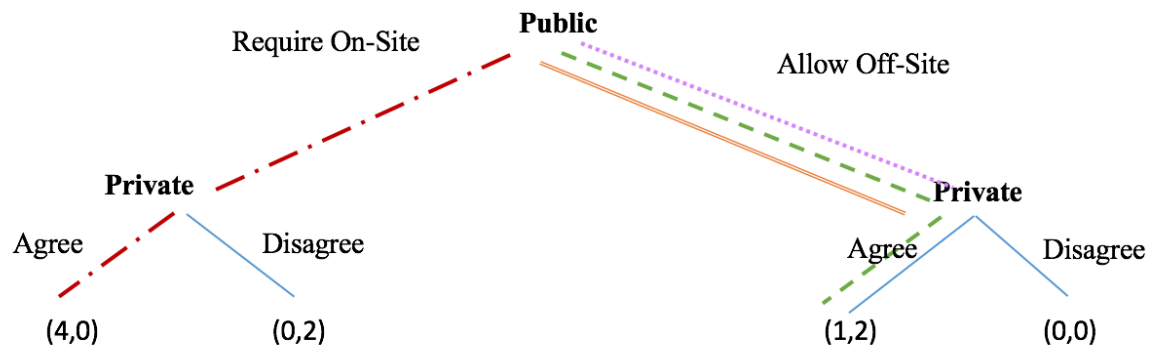
*Require on-site* meaning all affordable units must be constructed within the same development project.

*Allow off-site* meaning any affordable units may be constructed in another location other than the development project.

### 4.5.6.2 Expected Utility

		OFF-SITE DEVELOPMENT										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Require On-Site	1	0	1	1	1	4	Agree	0	0	0	0
								Disagree	1	0	1	2
	Allow Off-Site	1	0	0	0	0	1	Agree	1	0	1	2
								Disagree	0	0	0	0

### 4.5.6.3 Game Model



	2007 proposed ordinance
	2007 amended & approved ordinance
	2016 proposed amendments to ordinance, not approved
	other policy options not selected
	Pareto optimal solution

#### 4.5.6.4 Discussion

“We need flexibility within certain limits, in lieu fees, off site, that sort of thing,”  
(Respondent #7, 2017).

“This offsite development occurs because developers would simply prefer to write a check rather than find ways to build affordable housing that can coexist alongside market-rate housing. It also occurs where developers prefer to avoid the inclusionary aspect of the mandate because of concerns about the ‘marketing effects of mixing poorer folks with wealthier ones.’ Lastly, offsite construction may serve as an indirect way for local governments to avoid increased ‘administrative costs’ in whiter, higher-income areas,”  
(McFarlane and Johnson, 2017).

“Supplemental on or off site units – another 10%. In any event at least 12% have to be on site. Fund payments – different sliding scale. 10% of on or off site units will be at 30% AMI subject to availability of vouchers,” (Anonymous, 2017).

“Whether it’s going to be onsite or off site I’m not married to either one of them,”  
(Respondent #5, 2017)

“I would be a proponent of trying to get the inclusionary housing units in the market-rate projects because I think even if you have a city that has affordable housing, you’re not realizing a full potential of a mixed income community if you still have these islands of elite areas and then there’s the other areas. So I’d rather see some degree of mixed required everywhere,” (Respondent #2, 2017).

**“I think with offsite units you have to be careful. For example, the Port Covington agreement says you can build it anywhere in the city. That’s not what you want to do. What I am thinking...you’re building a tower, your construction is more expensive, so maybe its makes more sense to build a wood frame building right across the street,”**  
(Respondent #7, 2017).

**“The developer has set a goal of having at least 10% affordable housing units on-site. The developer will pay a penalty fee to the City if this goal is not achieved,”**  
(Anonymous, 2017).

“The developer of a residential project may apply to provide off-site affordable residential units in whole or partial substitution for the units required [...] An analysis of how the off-site substitution will further mixed-income housing opportunities in the neighborhood in which the residential project is located [...] Off-site units may be allowed under this part only if: (1) They will be provided at another location in the same neighborhood as the residential project to which they are being credited; and (2) In the aggregate, the off-site units and any affordable units provided on-site at the residential project are no fewer than the number of affordable units required” (City of Baltimore, 2007).

“Using TIF for housing would be limited to affordable housing on-site, which limits number of affordable units that could be delivered while keeping the project viable (higher cost of units inside TIF district vs. outside (fewer affordable units that could be incorporated into a project that can still be financed),” (Anonymous, 2017).

“I prefer on-site,” (Respondent #2, 2017).

## 4.5.7 Incentives

### 4.5.7.1 Policy Options

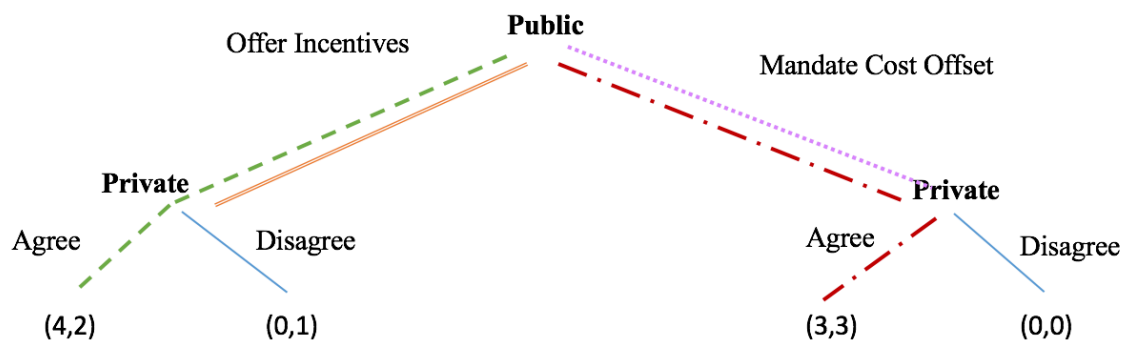
*Offer incentives* meaning that the IH program makes available products like density bonuses, relaxed parking requirements, tax credits and rebates, fee waivers, expedited permitting, etc. to help offset costs of having to fulfill IH requirements.

*Mandate cost offsets* meaning that if the total dollar amount of all subsidies and incentives, with the added option of cash payments to developers, does not completely and totally offset the costs of meeting IH requirements then the development project is waived or exempted from the IH program.

### 4.5.7.2 Expected Utility

		INCENTIVES										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Offer Incentives	1	1	1	0	1	4	Agree	1	0	1	2
								Disagree	0	1	0	1
	Mandate Cost Offset	0	1	1	0	1	3	Agree	1	1	1	3
								Disagree	0	0	0	0

### 4.5.7.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- . - . - .</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - - - -</span>	Pareto optimal solution

#### 4.5.7.4 Discussion

“Generally governments do not create tax incentives for market-rate rental housing, instead opting to create tax credits for inclusionary housing. Affordable housing is imperative to the economy, and in Maryland affordable housing tax credits have been notably beneficial, encouraging developers to create over 53,000 new homes, and creating over 62,000 jobs in the process. The economic benefits far outweigh the possible negative effects of the housing tax credit: private investors and developers create the housing and provide the start-up money necessary for the project, and thus bear all the financial risks associated with the investment. Maryland estimates that since the affordable housing tax credit was implemented the state has granted \$2 billion in tax credits, which have returned \$5 billion worth of local income. While affordable housing tax credits are economically beneficial to the state, they more importantly provide relief and housing to those that would otherwise be unable to afford to house them due to Baltimore City's high property tax rate,” (Hornstein, 2014).

“I think the biggest policy change the city did was probably about four or five years ago when they did a blanket property tax credit, incentivizing multi-family development,” (Respondent #4, 2017).

“The most frequently offered incentive is the density bonus [...] Designing the appropriate density bonus has thus far been more art than science. It has become increasingly clear that allowing for taller or more sprawling developments can actually cost a jurisdiction more. This is due to more intensive use of public goods and services. These higher administrative costs, which are rarely acknowledged and fully accounted for by the government, may contribute to financial shortfalls and more borrowing by local governments,” (McFarlane and Johnson, 2017).

“Developers are entitled to a cash cost offset even for projects receiving a major public subsidy, and the Housing Commissioner has the discretion to ‘determine [if] the major public subsidy is insufficient to offset the financial impact on the developer of providing the [required] affordable units,’” (McFarlane and Johnson, 2017).

“‘I feel we need to get a task force back together to make sure the developers are putting some money in,’ [City Council President Jack] Young said. ‘It’s not meeting the goals. We have to give developers a lot of subsidies to do it. Those days are over. They have to put skin in the game.’” (Broadwater, 2015).

“Baltimore has traditionally subsidized development heavily. These subsidies include tax credits, abatements, enterprise zones, direct expenditures ‘in the form[s] of grants, bonds, tax increment financing (TIFs),’ and other subsidies, such as ‘payments in lieu of taxes,’ (McFarlane and Johnson, 2017).

“The financing, the tax credits, all of that that is available as incentives. And they work,” (Respondent #3, 2017).

“So one example is the school funding formula with the state. So with tax increment funding deals, on paper, you’re developing at a rate where the paper assessments are more than what you’re actually bringing in because you have all of this subsidy. Sure, I think that’s a problem with the funding formula. In the long term, though, do you want to give up...so let’s say we’re getting \$10...I use a lot of analogies...let’s say we’re building a project and we get \$10 in tax revenue from that new project and because of that new revenue we’re losing a dollar in school subsidy from the state. Would you give up that \$10 to keep that \$1? To me as long as the scales are being outweighed you shouldn’t give up new investment just so you can keep a subsidy,” (Respondent #1, 2017).

“I know that that policy has worked in primarily higher costs markets. You can give the developer back something. You can say to the developer, ‘You have to build these units, but in return we’re going to give you density,’ but we don’t need that. It’s like, ‘We’re fine’. Because the market doesn’t benefit that, the developers are like, ‘We don’t care,’ and the city’s letting them off, so then it’s just like you’re out,” (Respondent #4, 2017).

“We have not developed anything in the city in a while, but historically it was very expensive to develop in the city even for market rate housing and most people that develop market-rate housing needed subsidies. So what that suggests is that if you need subsidies to build market rate housing how are you ever going to build affordable? So it’s very expensive in the city,” (Respondent #6, 2017).

“But inclusionary zoning works in Montgomery County because it applies everywhere because the market rate costs...you can build in Montgomery County without subsidy and so if you get more units, you can subsidize others. That’s the way it works,” (Respondent #6, 2017).

“Under the terms of the ordinance, however, in all cases, any residential project of 30 or more units with inclusionary units would be entitled to 100% cost offsets either through cash payments from the city’s Affordable Housing Trust Fund or through discretionary density bonuses, which are available upon application from the Board of Municipal and Zoning Appeals,” (McFarlane and Johnson, 2017).

“But what was interesting to me [...] some of the other leaders behind it kind of made this calculated decision that they would have to hold the developers harmless. In other words, if there were increased costs, that those costs would be made up by the city and that was one of the premises at the very beginning,” (Respondent #3, 2017).

“As I told you from the very beginning, they had in the bill that the city would offset the costs and they had in their mind that there would be this fund that the city would draw from, but the fund didn’t have any way of generating money unless the city allocated money to it,” (Respondent #3, 2017).

“It doesn’t explicitly say that the developer must be held harmless. It’s interesting. That’s actually how most inclusionary laws are designed with that intent. But since there is no way to guarantee it. The only way to guarantee it is through a cash payment. In theory you can do that through things like speedy permitting and tax abatements in some jurisdictions and density bonuses, they let you go easy on parking requirements. But here it was developers need to be held harmless and basically that was done with the housing authority,” (Respondent #7, 2017).

“I think they believed that that was the only way they could get any kind of support out of the development community and so they put that in and probably on the hope that at some point the city would come up with some money,” (Respondent #3, 2017).

“The design of Baltimore’s law – shaped by 100 amendments to the legislation first introduced in 2007 – also made it ineffective, advocates said. One of the most significant roadblocks is a provision in which the city agreed to offset the costs of the affordable units for developers, using vehicles such as density bonuses and cash payments from a new inclusionary housing trust fund,” (Sherman, 2014).

“It’s a fundamental flaw to think that the city should pay for it all out of pocket. That just doesn’t make any sense...There were strong developer interests that influenced the ultimate legislation that got passed. That’s been a head scratcher for me from day one,” (Respondent #2, 2017).

## 4.5.8 Design Standards

### 4.5.8.1 Policy Options

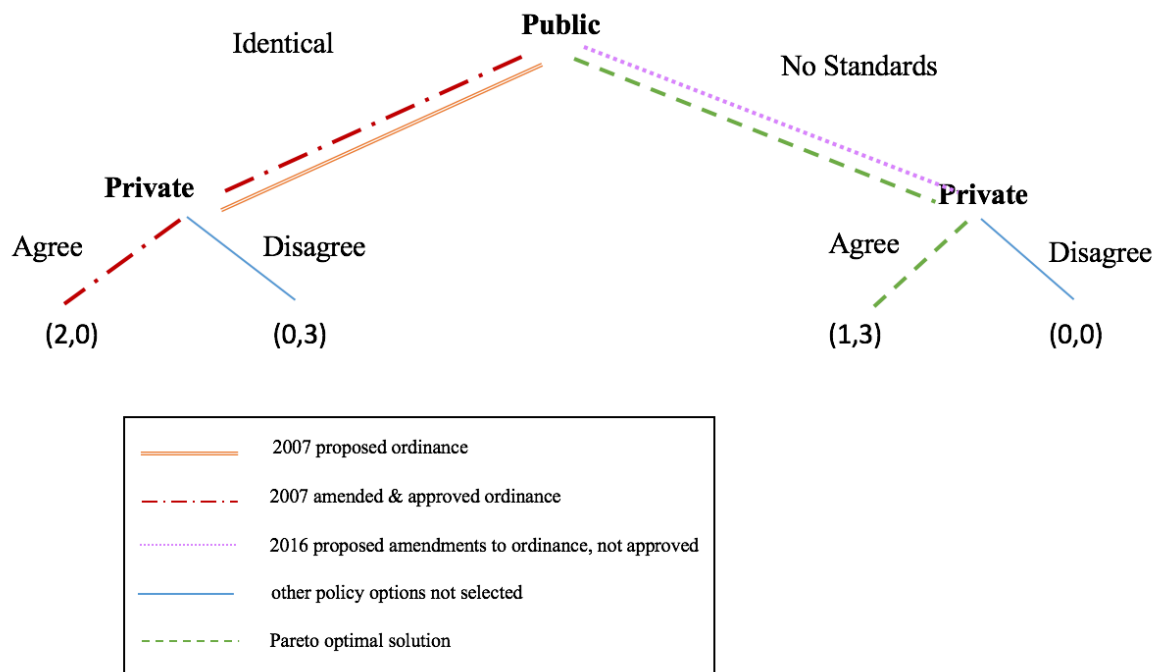
*Identical* meaning that affordable units constructed must be the same as market-rate units in the same development project per IH requirements.

*No standards* meaning that affordable units may differ and vary from market-rate units in the same development project per IH requirements.

### 4.5.8.2 Expected Utility

		DESIGN STANDARDS										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Identical	0	0	1	0	1	2	Agree	0	0	0	0
								Disagree	1	1	1	3
	No Standards	0	1	0	0	0	1	Agree	1	1	1	3
								Disagree	0	0	0	0

### 4.5.8.3 Game Tree



#### 4.5.8.4 Discussion

“The units that are constructed are often comparatively modest with simpler, less expensive features, thus building long-term affordability through the dimensions and features of the actual unit itself,” (McFarlane and Johnson, 2017).

“The affordable units required by this subtitle must be: (1) complementary to the market rate units in the same project as to their exterior appearance; and (2) comparable to the market rate units in the same project as to: (i) number of bedrooms; and (ii) overall quality of construction,” (City of Baltimore, 2007).

“So I think...when people talk about, ‘We need affordable housing,’ they’re talking about off street parking, modern kitchen, upgraded bathrooms, but that’s not what’s here,” (Respondent #3).

“You probably have to approach that reasonably. I would say there should be no visible external difference, but inside, if somebody’s in an ultra-luxury complex and they’re getting gold plated counter tops, I think the other person could live with a different standard,” (Respondent #2, 2017).

“When these developers are putting together their financing package they’ve got to show that they can make money and they have to show the lender how many units they’re going to sell, the price point, the time frame. And then all of a sudden when you throw this monkey wrench and you say ‘Five of these units we’re going to sell at half of what the market price is and this is how we’re going to subsidize those’, they’re not going to have the same kind of upgrades,” (Respondent #3, 2017).

“Developer David Tufaro’s Terra Nova Ventures received \$450,000 for five apartments in the 84-unit Mill No.1 under the inclusionary program. Tufaro said strengthening the rule need not hurt new projects as long as the city is flexible – allowing for less deluxe fixtures in affordable units, for example,” (Sherman, 2014).

“‘We want people to live in neighborhoods of opportunity. Does this mean they need to live in the most upscale units in those neighborhoods? Would two moderately priced units in the same building be better than one higher-end unit?’ [director of the Citizens Planning and Housing Association Mel] Freeman asked. The board is divided on this issue, he says. ‘Some members feel that the inclusionary units should be just like all the others, not different.’ Other members, he says, are in favor of more inclusionary units, period,” (Sweeney, 2015).

“So as far as design standards, an example of this where I think it was a failure was formerly known as Flag House Courts, those were old school public housing units torn down in the Germantown neighborhood and replaced with Albemarle Square. You can tell which are the affordable units by looking at the fixtures on the outside of the building...It just looks cheap. When it comes to code, does everyone deserve or need a granite countertop? I don’t think that necessarily makes sense, but exterior, I think it can put a stigma on affordable housing when design standards on the outside are clearly different,” (Respondent #1, 2017).

## 4.5.9 Affordability Preservation

### 4.5.9.1 Policy Options

*Restrict sale/lease* meaning that developer is restricted to sale or lease affordable units at the affordable price to users identified by the city government. Users may be other organizations or low-income households.

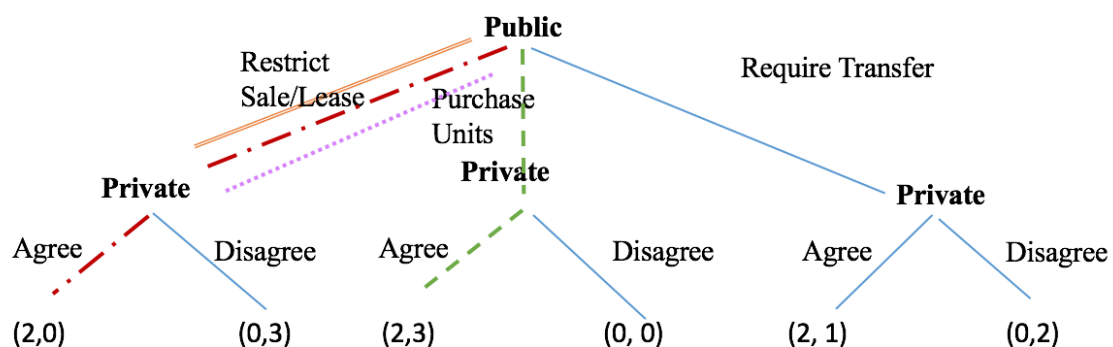
*Purchase units* meaning that the city government purchases the affordable units at an agreed upon price, usually more than affordable rate but less than market-rate price, directly from the developer and re-sales or leases to users they have identified. Users may be other organizations or low-income households.

*Require transfer* meaning developers are required to transfer ownership of affordable units to the city government at no cost.

### 4.5.9.2 Expected Utility

		AFFORDABILTY PRESERVATION										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Restrict Sale/Lease	0	0	1	0	1	2	Agree	0	0	0	0
								Disagree	1	1	1	3
	Purchase Units	0	1	1	0	0	2	Agree	1	1	1	3
								Disagree	0	0	0	0
	Require Transfer	0	1	1	0	0	2	Agree	0	0	1	1
								Disagree	1	1	0	2

### 4.5.9.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- - -</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - -</span>	Pareto optimal solution

#### 4.5.9.4 Discussion

“If you could “condominium-ize” the affordable units within a project whether it’s actual condos or apartments, if they city could purchase those units and then just manage them like a condo. But you would need...It would be ideal if the city... If there are covenants over those condos, like, if the city basically bought those condos and they are dedicated as public units, but we didn’t have to manage them, where the developer still managed them, that could be an interesting model. Though, I don’t think the city should be in the business of buying a privately developed unit,” (Respondent #1, 2017).

“Lenders generally advise individuals to spend no more than 28 percent of their monthly income on a mortgage or rent. According to the Department of Housing and Urban Development, the fair market monthly rental value of a two-bedroom home in Baltimore City is \$1,252.49. This amount far exceeds the suggested 28 percent allotment lenders suggest for people to spend on housing per month considering the median annual household income in Baltimore City is \$40,803.50,” (McFarlane and Johnson, 2017).

“The housing commissioner and designated housing providers have a right of first refusal to purchase or rent up to one-third of affordable units provided in a residential project under this subtitle,” (City of Baltimore, 2007).

“Every unit sold at an affordable cost under this subtitle must remain at an affordable cost, as provided in this section, for an initial period of not less than 10 years from the date of its initial occupancy. If the unit is resold during this initial 10-year period, the affordability period resets for an additional 10 years from time of purchase, regardless of who purchases the unit,” (City of Baltimore, 2007).

“You want to see people who are going to contribute to the tax base and invest in the city. The challenge is in the long-term do those people stay in the city when their kids become school age? Do they purchase houses in the city? But that kind of economic activity is welcome especially for a city that has declined in population over time,” (Respondent #5, 2017).

“As such, the Court has paid increasing attention when a local government requires property owners to accede to what are perceived to be public needs that, based on an invisible metric, the government should purchase rather than be perceived to be forcing an uncompensated trade,” (McFarlane and Johnson, 2017).

“One way to do that is to raise a fund of money that will basically buy down these units and make everybody financially neutral,” (Respondent #6, 2017).

“I think that’s a good question. I think that one needs some real study about the places that have been successful. I’m sure there’s a range of ways you could do it. You may want to trigger continued [affordability through] project by project commitments that have to renewed every 30 years and maybe that way you could also build in some specific renovations so that somebody says, “We’ll keep that affordable unit status quo while we upgrade everything else”. I wouldn’t be opposed to having somehow a role for a non-profit or non-public entity to manage this whole thing. I’m not sure how that would work whether they would actually be responsible for specific units or whether they would be just the entity that the property owners would be responsible to. The property owners or developers would still be implementing the program, but there’s a specific entity to provide the oversight. I think that needs a lot of study,” (Respondent #2, 2017).

## 4.5.10 Waivers and Exemptions

### 4.5.10.1 Policy Options

*Request variance* meaning that developers may request that certain and specific IH requirements be relaxed in order to make offering affordable units in development projects more feasible.

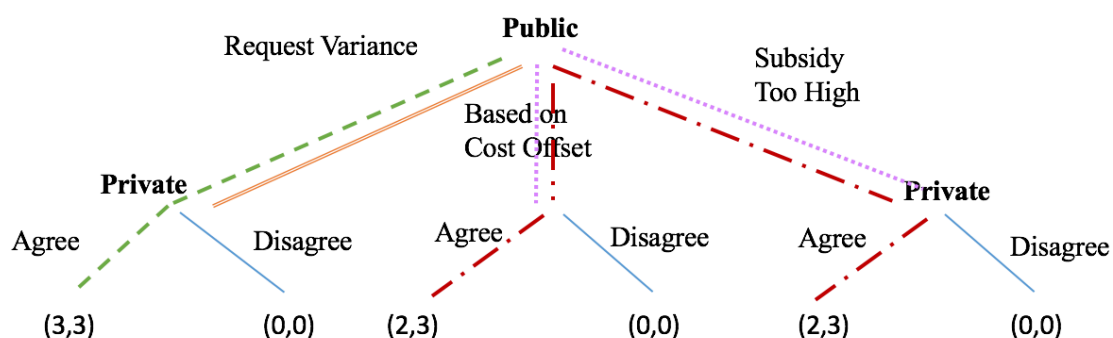
*Based on cost offsets* meaning that complete waivers and exemptions from the entire IH program is based on whether or not cost offsets (incentives and subsidies) offered through the program equal the cost to developers of offering affordable units.

*Subsidy too high* meaning that complete waivers and exemptions from the entire IH program is determined by whether cost offsets (incentives and subsidies) exceeds a certain threshold.

### 4.5.10.2 Expected Utility

		WAIVERS AND EXEMPTIONS										
		Expected Utility for the Public						Expected Utility for the Private				
		Maximize Units	Minimize Market Impact	Maximize Integration	Minimize Admin Costs	Maximize Political Feasibility	TOTAL		Maximize Project Feasibility	Maximize Profit	Maximize Fairness	TOTAL
Policy Options	Request Variance	1	1	0	1	0	3	Agree	1	1	1	3
								Disagree	0	0	0	0
	Based on Cost Offset	0	1	0	0	1	2	Agree	1	1	1	3
								Disagree	0	0	0	0
	Subsidy Too High	0	1	0	0	1	2	Agree	1	1	1	3
								Disagree	0	0	0	0

### 4.5.10.3 Game Tree



<span style="color: orange;">—</span>	2007 proposed ordinance
<span style="color: red;">- . - . -</span>	2007 amended & approved ordinance
<span style="color: purple;">.....</span>	2016 proposed amendments to ordinance, not approved
<span style="color: blue;">—</span>	other policy options not selected
<span style="color: green;">- - - - -</span>	Pareto optimal solution

#### 4.5.10.4 Discussion

“A project gets a waiver if either City cannot afford to pay the subsidy or the subsidy required is higher than an amount established in the ordinance,” (Anonymous, 2017).

“Developer is required to be made whole; City waived IH per its own policy not because a special exemption was made for Port Covington,” (Anonymous, 2017).

“So let's say your project, you know, unsubsidized is giving you a 10% return which is very low on the market standpoint, and that's about... the typical market return that developers look for is 15% Internal Rate of Return. It depends on the developer and the risk level, but that's kind of what we see as normal and what Pricewaterhouse Coopers... you know, what accounting firms view as normal or average, or something that can get financed... Right, because investors are going to want a certain return. Banks are going to want to see that your project can repay its debt services.... So, let's call it 15%, so Port Covington, for example, even after the TIF is only achieving what we're projecting right now to be a 10% return. So if you're requiring them to subsidize units on top of that, you're talking about single digit returns... How are you going to finance a project? So a big part of, you know, the problem here and in other cities is just how are you paying for it, how are you funding the program? A law is great but if you can't enforce it, then you have to waive the provision, which is what happens in a lot of the projects just because we don't have the money there,” (Respondent #1, 2017).

“The extent of the law's dysfunction was uncovered this week when Housing Commissioner Paul Graziano testified before a City Council committee that the legislation would require cash-strapped Baltimore to pay \$180 million to the developers of the planned Port Covington project to build affordable housing there. Lacking such funds, the city has approved a waiver so the law does not apply to the development,” (Broadwater, 2016).

“The second conceptual issue was who pays for it. So if I build a unit that costs \$2,000 a month and I have to rent it out for \$500 a month, I am losing \$1500 a month. Who pays for that? Now there are different schools of thought on that. One is, and this is what the guy who... I believe what he said was is that if we as a society... it's not an individual or property developer's problem that there is an affordable housing problem, one could argue that it shouldn't be their problem to fix that,” (Respondent #6, 2017).

“It's like ‘We want you to do this, we'll make you whole. If we can't make you whole, you don't have to do it’. And they never put in place steps they needed to do to make people whole,” (Respondent #6, 2017).

“Developers would do it if they had to do it. They won't do it if they don't have to because they don't want to. I don't know how a developer, in my mind, a reasonable developer should not have any objection if they are able to be made whole economically,” (Respondent #6, 2017).

“And I'm really not pointing out a particular person, but I think with, like, Harbor East, the city got fleeced. And the amount of dollars that were for infrastructure, for land, all these things, you're kinda like, ‘Wait, wait, wait, you didn't get anything?’ That seems to me to be a big problem,” (Respondent #4, 2017).

“Thousands of new homes are exempt from the ordinance, which is only triggered when the city provides a subsidy or rezoning for market-rate projects with more than 30 units. Those exempted include at least 2,200 new units in already subsidized developments, such as senior housing,” (Sherman, 2014).

“What we’ve also seen is that even with our IH board often times we wind up just issuing waivers for developers because the cost that it would take for them to include the affordable units doesn’t necessarily make sense for the project model and doesn’t really give us what we need because it doesn’t really fit even within the structure we are looking for. So at this point we are not seeing a whole lot of it,” (Respondent #5, 2017).

“We can’t justify putting the subsidy for that unit, so therefore the project will wind up getting a waiver and there are not units that are created in those projects,” (Respondent #5, 2017).

“The city put no money into it. So everybody went and developed. I assume the developers went, ‘Okay, I have to do this affordable housing. I gotta do 10%. Here’s what it’s gonna cost,’ and the city said, ‘Well, we don’t have that money, so you don’t have to do it.’ That’s my guess,” (Respondent #6, 2017).

“From their standpoint, they don’t want to deal with it anyway. So they weren’t really interested in seeing something that was really going to work. They were just interested in stopping it. Whereas we were interested in seeing something that would really work and I’m not being altruistic about that,” (Respondent #3).

“So the challenge became and the construct of the bill was, ‘We are going to require you to do this, but we, the city, should pay for it and if we have money, you have to do it and if we don’t have money, you don’t have to do it’. That was the construct of the bill and that brought a consensus of people where even developers and others said, ‘Well, that makes sense.’ And there was some relief for fee-in-lieu for properties where it made no sense like the Ritz Carlton. That was kind of the way it worked,” (Respondent #6, 2017).

“In the end it seemed like the big, driving force was ‘Keep developers whole,’ which meant that even if we provide inclusionary housing, this legislation dictates that it’s the city government’s responsibility to foot the bill,” (Respondent #2, 2017).

“But what I heard was that there was a lot of concern that this would slow down development. And so the feeling was we need to put people on with the fact that they had to put this stuff in there in a way that would make it really impossible for the units to be built,” (Respondent #6, 2017).

“That was combined with advocates who believed this is a good principle and then there was enough push back because the city was sensitive to, ‘Well, we can’t kill the development that’s happening’. So that compromise became a way of getting everybody to the table. But it had the effect of diluting its impact because there was no leadership in the city,” (Respondent #6, 2017).

“Proponents of the bill say that this new City mandate was not designed to impose any additional burden on developers but instead to ensure ‘that the city cover the costs of the affordable units,’ said Bibi Caporizzo, the housing director for the Citizens Planning and Housing Association (CPHA),” (The Johns Hopkins New-Letter, 2007).

“The experience of a midsized city like Baltimore, Maryland shows a need to consider the extent to which takings law demands that developers must be subsidized to produce inclusionary housing units,” (McFarlane and Johnson, 2017).

## Chapter 5: Conclusions and Recommendations

### 5.1 Analysis of Games

In only two out of ten games, Participation and Geography, did the amended, approved policy option from 2007 match the Pareto optimal solution. This means that the IH ordinance as it currently stands enacted is hardly optimal and significantly less efficient than it could be, according to the game theory framework. Outcomes from the amended, approved 2007 policy options totaled 24 units of utility for the Public out of 50 possible units (48%) over the 10 games. The Private earned 12 units of utility out of 30 possible units (40%) over the 10 games. In comparison, outcomes from the Pareto optimal solutions resulted in 25 units of utility (50%) for the Public and 24 units of utility (80%) for the Private over the 10 games.

In half of the games, five out of ten, the proposed policy option from 2016 matched the Pareto optimal solution. This means that had the 2016 bill been approved, it's likely that the IH program would have become more optimal, strengthening program efficiency and the overall partnership, though still hardly optimal. Policy options from the 2016 bill resulted in 18 units of utility (36%) for the Public and 19 units of utility (60%) for the Private which offers less utility to both players than the Pareto optimal solutions over the 10 games.

In six out of ten games, the initial proposed policy option from 2007 matched the Pareto optimal solution. Had the initial proposed policy passed as written it would have demonstrated greater efficiency than the amended approved bill from 2007 or the proposed bill from 2016. Policy options from the proposed bill resulted in 23 units of utility (46%) for the Public and 14 units of utility (47%) for the Private over 10 games.

In only one game, Geography, did all policy options match each other as well as the Pareto optimal solution. In only the In-Lieu Fee game did none of the policy options match.

These findings are consistent with how respondents generally regarded the IH program.

### 5.2 Answering the Research Questions

*How does the design and implementation of Baltimore's IH program impact its ability to provide affordable housing units?*

Since the design and implementation of Baltimore's IH program has not changed since the program began, it is difficult to measure empirically how those choices actually impact the number of affordable units delivered. It is impossible to compare how many units were delivered as a result of one policy option versus another because the ordinance that institutes the IH program has never been updated, reformed, or amended beyond its initial enactment in 2007. However, a game theory analysis can provide a theoretical answer to the question. By observing outcomes from the game models, one can understand how different options could potentially impact the efficiency and optimization of the IH program overall. It shows, theoretically, how different design and implementation choices could negatively or positively impact the program resulting in more or less delivery of affordable units.

*What can a game theory analysis of Baltimore's IH program tell us about the relationship between design and implementation and the provision and production of affordable units?*

A game theory analysis of Baltimore's IH program details what type of design elements and implementation choices provide the greatest amount of utility to the players involved in the program. Not only does it highlight the elements and options with the greatest utility, it also details those that provide the optimal equilibrium between players. In theory, this means that efficiency of the program will be at its maximum when optimal equilibrium is achieved. Understanding Baltimore's IH program through a game theory framework provides an

empirical analysis that would otherwise be unavailable and displays that analysis in a visual way that's easy to understand.

*How might different program elements and options affect the provision and production of affordable units?*

Using a game theory framework, one is able to lay out all policy options and measure them against each other. The game models trace policy options over time and allowed this researcher to observe and compare those outcomes. In theory, those options that lead to more utility would positively impact the provision and productions of affordable units.

Additionally, games that resulted in outcomes that all matched signify policy elements that are of less significance to the delivery of units because stakeholders agree on how the policy option should be implemented. Games that resulted in no outcomes matching reveal policy elements that represent the greatest contention between stakeholders where thoughts and opinions vary greatly. This is helpful in understanding which elements and options may have the greatest causal relationship to the provision and production of affordable units.

*What is the optimal program design to maximize the provision and production of affordable units in the context of Baltimore's housing market?*

The Pareto optimal solution for all games can be used as post against which all other policy and implementation options can be considered. The Pareto optimal solution highlights policy options and implementation choices that give the greatest utility to each player and is a dominant strategy for at least one player. In the case of these game models, the Private is the player that always earns its dominant strategy because it is the second player and its Disagreement results in zero units of utility from the Public.

### **5.3 Additional Findings**

Other themes that were discovered in the research include the impact of leadership in the development of the IH program in Baltimore and its implementation. While not a subject of this research, the role that the lack of leadership and long-term vision plays in the performance of Baltimore's IH program was a common theme among respondents. For example, one respondent revealed during an interview that the first meeting of the IH board, the board that was established to provide oversight of the program, was not convened until 2014, a full 5 years after the bill went into effect in 2009. In that time, thousands of market-rate units had been constructed in Baltimore.

Further, critical misunderstandings of the local housing market as well as misunderstandings around the specifics of the IH ordinance in Baltimore possibly contributed to policy decisions made or advocacy in favor or against certain policy options that impacted the performance of the IH program. Data collected revealed several instances where the mandates in the law and references to housing market were misstated or misrepresented.

### **5.4 Recommendations**

More research could be conducted in other cities with similar IH programs with particular focus on programs that have altered or amended the program over time. This would allow a basic and true empirical analysis of policy options and implementation elements that have the greatest causal effect on the provision and production of affordable units. Additionally, those same programs could be analyzed using a game theory framework. The results of both types of analyses could then be compared to each other.

In the specific case of Baltimore, more research could be conducted to further test the game models by allowing representatives of the Public and Private to actually play out the games as

designed. Observing the outcomes of those games and comparing them to those conducted in this research could provide a more robust analysis of Baltimore's IH program. Additionally, if or when actual changes are made to the IH ordinance in Baltimore, conducting an empirical analysis of affordable units delivered as a result and comparing those to the game models would be an expansive test of the application of game theory in this case.

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# Annex 1: Research Instruments

## Interview Guides

Erasmus University, Rotterdam, The Netherlands  
Institute for Housing and Development Studies (IHS)  
Msc. Urban Management and Development (UMD13)  
June/July 2017

### Interview Guide (Private) for Inclusionary Housing (IH) Program

*Research Topic:* “Feeling Left Out: Investigating the Perceived Failure of Baltimore’s Inclusionary Housing Program through a Game Theory Framework”

*Research Question:* How does the design and implementation of Baltimore’s IH program impact its ability to provide affordable housing units?

The objective of this research is to evaluate the efficacy of Baltimore City’s Inclusionary Housing Program. This interview is intended to help gather information and data for academic purposes. All the information gathered will be held strictly confidential. The researcher asks that you respond to the questions as sincerely as possible. Thank you for your time and participation.

#### Part 1: General Information

Name of Institution/ Organization: \_\_\_\_\_

Position/Title: \_\_\_\_\_

How long have you worked in this capacity? \_\_\_\_\_

#### Part 2: Type of Developer

1. How many housing units has your business built or did it plan to build in 2016?
2. Is your business for profit or non-profit?
3. Does your business have any experience in building affordable housing units (meaning housing priced below market value and intended for those households that earn less than average median income)?
4. If so, what was the motivation for doing so?

#### Part 3: Perspective

Choose one of the two statements in each section below that most reflects your own personal views or values –even if neither is exactly right.

Selection	Statement
	Businesses make too much profit
	Most businesses make a fair and reasonable amount of profit
	Problems in Baltimore would be worse WITHOUT the intervention of the City government
	Problems in Baltimore are made worse WITH the intervention of the City government

	It is the responsibility of the City government to ensure that all citizens have adequate housing
	All citizens should be responsible for their own housing
	Businesses and individuals are better at providing municipal services
	City government is better at providing municipal services
	The City has done too much to help poor citizens
	The City should do whatever it takes to help poor citizens
	The economic system in Baltimore is generally fair to all citizens
	The economic system in Baltimore generally favors one specific group
	My political and social values lean toward liberalism
	My political and social values are lean toward conservatism

#### Part 4: Preferences

1. How would you describe the Baltimore housing market?
2. What makes Baltimore an attractive market for housing development?
3. How does your market analysis influence your development decisions?
4. Who are the targeted end users of your projects?
5. Are certain areas of the city more attractive than others? Why?
6. Are there certain types of projects you prefer to build? Why?
7. What are critical success factors in the feasibility of projects in Baltimore?
8. What role does economic development play in your housing projects?
9. How do you finance projects?
10. What are the highest costs of development? What are the lowest?
11. What is your strategy for managing costs of development?
12. Does the City provide adequate incentives/subsidies to attract development?
13. Are there certain incentives/subsidies that are more useful than others?
14. Are there other federal and state incentives/subsidies that you utilize?
15. How does Baltimore's bundle of land and development rights compare to other cities?
16. How does the price of land in Baltimore compare to other cities?
17. Does the City have certain legal requirements (i.e. zoning) that impede development? What are they?
18. Does the City have certain administrative requirements (i.e. permits, applications, impact studies) that impede development? What are they?

**Erasmus University, Rotterdam, The Netherlands**  
**Institute for Housing and Development Studies (IHS)**  
**Msc. Urban Management and Development (UMD13)**  
**June/July 2017**

Interview Guide (Public) for Inclusionary Housing (IH) Program

*Research Topic:* “Feeling Left Out: Investigating the Perceived Failure of Baltimore’s Inclusionary Housing Program through a Game Theory Framework”

*Research Question:* How does the design and implementation of Baltimore’s IH program impact its ability to provide affordable housing units?

The objective of this research is to evaluate the efficacy of Baltimore City’s Inclusionary Housing Program. This interview is intended to help gather information and data for academic purposes. All the information gathered will be held strictly confidential. The researcher asks that you respond to the questions as sincerely as possible. Thank you for your time and participation.

Part 1: General Information

Name of Institution/ Organization: \_\_\_\_\_

Position/Title: \_\_\_\_\_

How long have you worked in this capacity? \_\_\_\_\_

Part 2: Inclusionary Housing Programs

1. How do you define inclusionary housing?
2. What were the objectives of the IH program in Baltimore?
3. What would you say are best practices regarding IH programs?
4. What are the most important factors that influenced design and implementation of the IH program in Baltimore?
5. Which stakeholders were involved in the program design?
6. Were there particular elements of the program that brought about conflict or push back from stakeholders? What were they?
7. How was the conflict resolved?
8. How many times have the IH policy and regulation been revised?

Part 3: Perspective

Pick one of the two statements in each section below that most reflects your own personal views or values –even if neither is exactly right.

Selection	Statement
	Businesses make too much profit
	Most businesses make a fair and reasonable amount of profit
	Problems in Baltimore would be worse WITHOUT the intervention of the City government
	Problems in Baltimore are made worse WITH the intervention of the City government

	It is the responsibility of the City government to ensure that all citizens have adequate housing
	All citizens should be responsible for their own housing
	Businesses and individuals are better at providing municipal services
	City government is better at providing municipal services
	The City has done too much to help poor citizens
	The City should do whatever it takes to help poor citizens
	The economic system in Baltimore is generally fair to all citizens
	The economic system in Baltimore generally favors one specific group
	My political and social values lean toward liberalism
	My political and social values are lean toward conservatism

#### Part4: Preferences

For the questions below, assume that you are designing the ideal IH program for Baltimore.

1. Who or what type of developers would be required to participate in an IH program? Why?
2. Which areas of the city would be subject to the program? Why?
3. Who should the beneficiaries of the affordable units should be? Why?
4. What is the preferable percentage of units that should be earmarked as affordable? Why?
5. Would you offer the option to developers to pay in-lieu fees if they choose not to build affordable units? What is the preferable rate for the fee (i.e. production cost, affordability gap, etc.)? Why?
6. Do you prefer on-site or off-site development of affordable units? Why?
7. Would you offer incentives to developers to participate in program (i.e. density bonuses, fee waivers, etc.)? Is there an incentive you favor more than the others? Why?
8. What type of design standards would you require for affordable units? Should they be identical to market-rate units? Why?
9. How would you maintain affordability over the long-term? Should developers maintain control of units or should they be turned over to the city and if so, at what price? Why?
10. What is your overall objective in designing the program in this way?

## Mediating Variable Measured: Social and Political Factors

Statement	Respondent #1	Respondent #2	Respondent #3	Respondent #4	Respondent #5	Respondent #6	Respondent #7	Respondent #8
Businesses make too much profit								
Most businesses make a fair and reasonable amount of profit								
Problems in Baltimore would be worse WITHOUT the intervention of the City government								
Problems in Baltimore are made worse WITH the intervention of the City government								
It is the responsibility of the City government to ensure that all citizens have adequate housing								
All citizens should be responsible for their own housing								
Businesses and individuals are better at providing municipal services								
City government is better at providing municipal services								
The City has done too much to help poor citizens								
The City should do whatever it takes to help poor citizens								
The economic system in Baltimore is generally fair to all citizens								
The economic system in Baltimore generally favors one specific group								
My political and social values lean toward liberalism								
My political and social values are lean toward conservatism								

## ATLAS.ti: Codes from July – Revised in October

### ATLAS.ti Report

#### Inclusionary Housing

##### Codes

Report created by Shayna Robinson on Jul 5, 2017

- **% of affordable units**

- **administrative costs**

- **affordability**

**Comment:**

maintaining affordability for units created by IH

- **area median income**

- **beneficiaries**

**Comment:**

of IH units

- **best practices**

**Comment:**

of IH policy, regulation and implementation

- **conflict**

**Comment:**

issues between public and private or other stakeholders

- **design standards**

**Comment:**

oh IH units

- **developers**

- **fairness**

- **feasibility**

**Comment:**

of development projects

- **government officials**

- **housing affordability**

**Comment:**

housing affordability in general in Baltimore

- **in-lieu fees**

- **incentives**

- **location**

**Comment:**

area of city

- **marketability**

**Comment:**

of IH included projects

- **policy**

**Comment:**

IH policy

- **production costs**

**Comment:**

of IH units

- **profit**

- **socio-economic integration**

- **stakeholders**

- **unintended market consequences**

## **ATLAS.ti Report**

### **Inclusionary Housing**

#### **Codes**

Report created by Shayna Robinson on Oct 23, 2017

- **% of affordable units**
- **administrative costs**
- **area median income**
- **beneficiaries**
- **best practices**
- **conflict**
- **demand**
- **design standards**
- **developers**
- **fairness**
- **feasibility**
- **funding**
- **housing affordability**
- **in-lieu fees**
- **land value**
- **leadership & vision**
- **LIHTC**

- **location**
- **maintaining affordability**
- **motivation private**
- **motivation public**
- **offset**
- **on-site vs. off-site**
- **participation**
- **policy**
- **production costs**
- **profit**
- **socio-economic integration**
- **subsidy and incentive**
- **supply**
- **TIF**
- **unintended market consequences**
- **waiver**