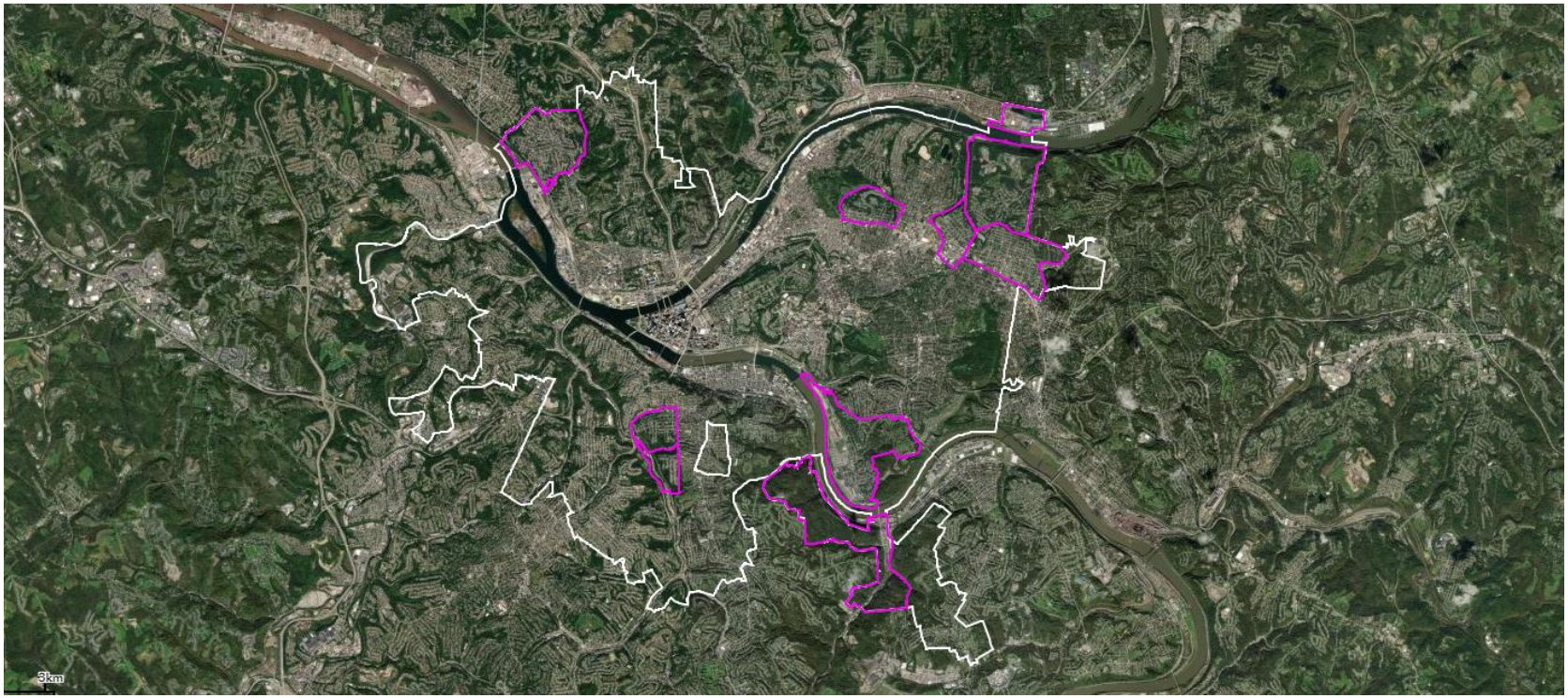
Allegheny Land Trust

TRANSFER OF DEVELOPMENT RIGHTS

Pittsburgh, Pennsylvania May 3, 2021



ECONOMIC AND REAL ESTATE ANALYSIS FOR SUSTAINABLE LAND USE OUTCOMES™

This report is a deliverable that is part of the Allegheny Land Trust's Transfer of Development Rights Study.

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Study Overview

Pilot Study: TDR Pilot Feasibility Study

Allegheny Land Trust (ALT), a non-profit land conservation organization, believes Transfer of Development Rights (TDR) is an underutilized municipal planning and land-use management opportunity. TDR mechanism's have the potential to conserve open space in urban areas and generate revenue from the sale of development rights to the private sector. Particularly in Pittsburgh, steep slopes and flood-prone areas weave their way through every neighborhood. Conservation of these spaces can protect them from hazardous and unsustainable development. The TDR mechanism can remove the risk of undesirable development from these locations and, should there be a supportive TDR marketplace, provide funding to monitor and protect open spaces.

ALT is implementing an analysis of the City of Pittsburgh neighborhoods to locate potential pilot TDR projects and has previously developed *Neighborhood Criteria* to narrow down the most eligible Pittsburgh neighborhoods from 90 to nine. As outlined below and illustrated to the right (presented in more detail on the following page), the 2019 TDR Pilot Feasibility Study used four criteria for screening Pittsburgh's neighborhoods and thus arriving at the nine evaluated in this study:

- Market Value Analysis [1]
- ALT Partner Status
- Urban Greenprint Analysis [2]
- Existing Community Plan

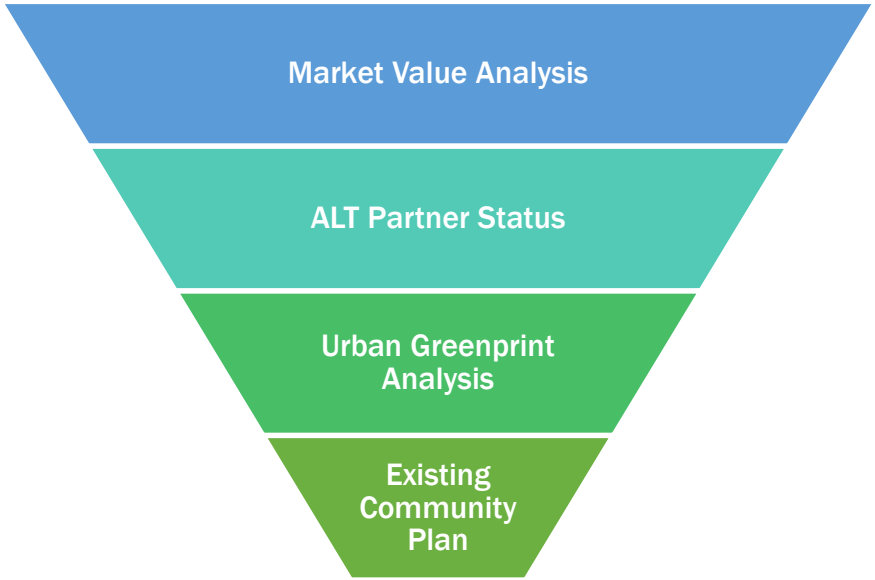


Figure source: TDR Pilot Feasibility Study, Allegheny Land Trust (ALT), 2019
[1] Urban Redevelopment Authority of the City of Pittsburgh (URA), 2016
[2] Allegheny Land Trust (ALT), 2018

Pilot Study: TDR Pilot Feasibility Study (continued)

Market Value Analysis: Economic Need

- ALT utilized Urban Redevelopment Authority's 2016 Market Value Analysis (MVA) data to identify neighborhoods located in either *Transitional* or *Distressed* Markets, representing areas that are likely ahead of redevelopment and able to benefit from a TDR Program to control reinvestment.

ALT Partner Status

- Due to the complicated nature of TDRs, priority was given to neighborhoods in which ALT has a direct or indirect trusting relationship. To develop an effective, in-depth analysis in the selected communities, personal relationships with residents and non-profits on the ground are necessary to understand the needs of the residents and neighborhood.

Urban Greenprint Analysis: Potential Sending Areas

- Potential TDR Pilot sending areas were evaluated, according to the *Urban Greenprint Analysis,* to identify project areas with the highest potential for stakeholder collaboration, investment in the extension of current green spaces, new green spaces, or green space serving as hazard mitigation, and to deliver greatest community benefit.

Community Plans

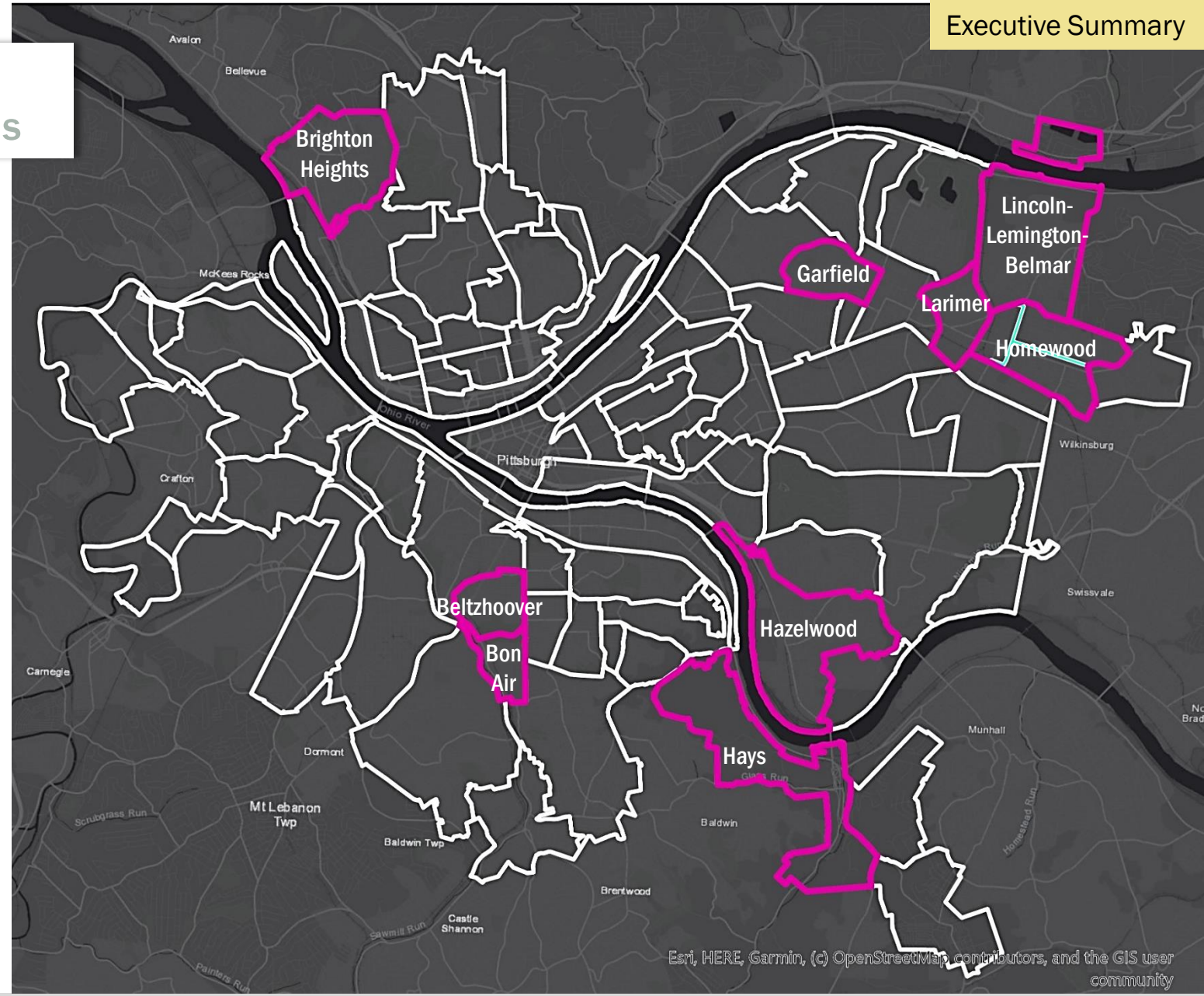
- ALT identified neighborhoods that have either completed community plans that are no more than five years old or are currently engaged with the City Comprehensive Planning process (e.g., Garfield's 2030 Plan).

City of Pittsburgh Neighborhoods Selected for Further TDR Feasibility Study

		Market Value Analysis Economic Need (2016)		ALT Partner Status		Urban Greenprint: Potential Sending Areas	Community Plan
	Neighborhoods	Transitional (F, G)	Distressed (H, I)	Direct	Indirect		
1	Beltzhoover		X		X	• McKinley Park Slopes	
2	Bon Air		X		X		
3	Brighton Heights	X		X		• St. John's Expansion	
4	Garfield	X	X	X			X
5	Hays			X		• Hay's Woods Slopes	
6	Hazelwood	X	X	X			X
7	Homewood		X		X		X
8	Larimer		X	X		• Larimer Greenbelt	X
9	Lincoln-Lemington Belmar (LLB)	X	X		X	• Chadwick Park Expansion • Highland Drive GSI	

Executive Summary

Pilot Study:
Neighborhoods

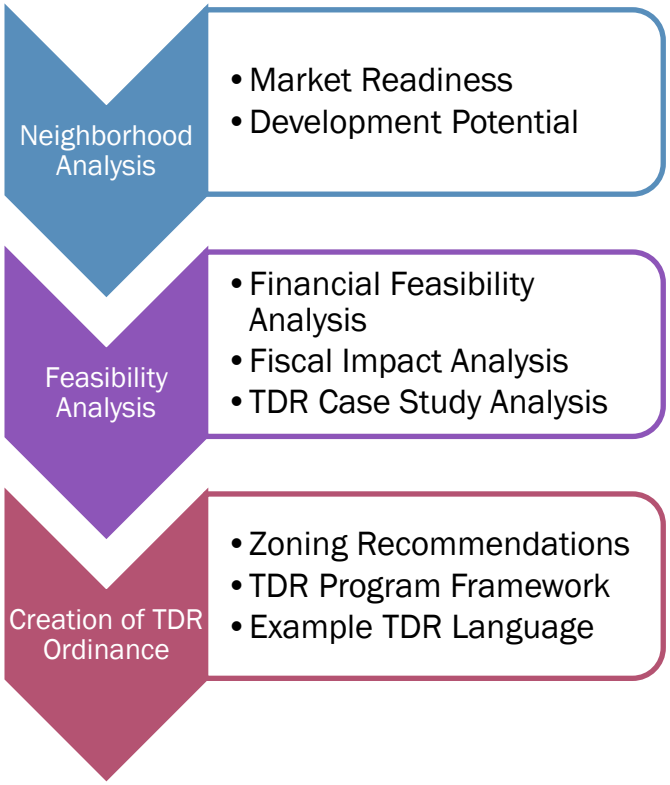


TDR Study: Scope of Work

This TDR study builds upon ALT's 2019 TDR Pilot Feasibility Study, which narrowed ALT's focus from the entire City of Pittsburgh down to nine key neighborhoods. As highlighted below, ALT hired 4ward Planning (lead consultant) and evolveEA to synthesize market receptiveness, development potential, financial feasibility, fiscal impacts, and zoning requirements within these neighborhoods to develop a potential TDR program and ordinance language. This study is intended to demonstrate the benefits of permitting TDR in fully urban contexts, with the goal of facilitating a larger-scale application in the City of Pittsburgh.

This study is designed to answer the following questions:

- What are the general market conditions in each neighborhood?
- What is the land development potential to accommodate new residential development?
- How are the study neighborhoods viewed by area developers?
- Does current zoning permit for sufficient density to make mixed-use residential development financially viable?
- What is the current market value for development rights and revenue potential for the sale of development rights?
- How much private investment is likely to be leveraged?
- What are the prospective service costs and tax revenues from new development?
- Will new infrastructure improvements be required to accommodate the new development?



Background

Transfer of Development Rights: TDR Benefits

Why TDR?

TDR, when paired with good quality community plans that identify preferred areas for density and open space, can be an effective tool to re-shape a more sustainable city fabric. Beyond generating modest revenue to support conservation activities, TDR can permanently protect sensitive areas from being disrupted or disjointed by development. In some of these areas, a group of parcels in which development is prohibited can lead to permanent divestment from the infrastructure that supports those properties. Thus, TDR can help a city to reduce its maintenance obligations, saving money, for streets and other supporting infrastructure in areas where development is not desired. These conserved green spaces, with the proper stewardship, can improve the health and valuation of their surrounding communities.

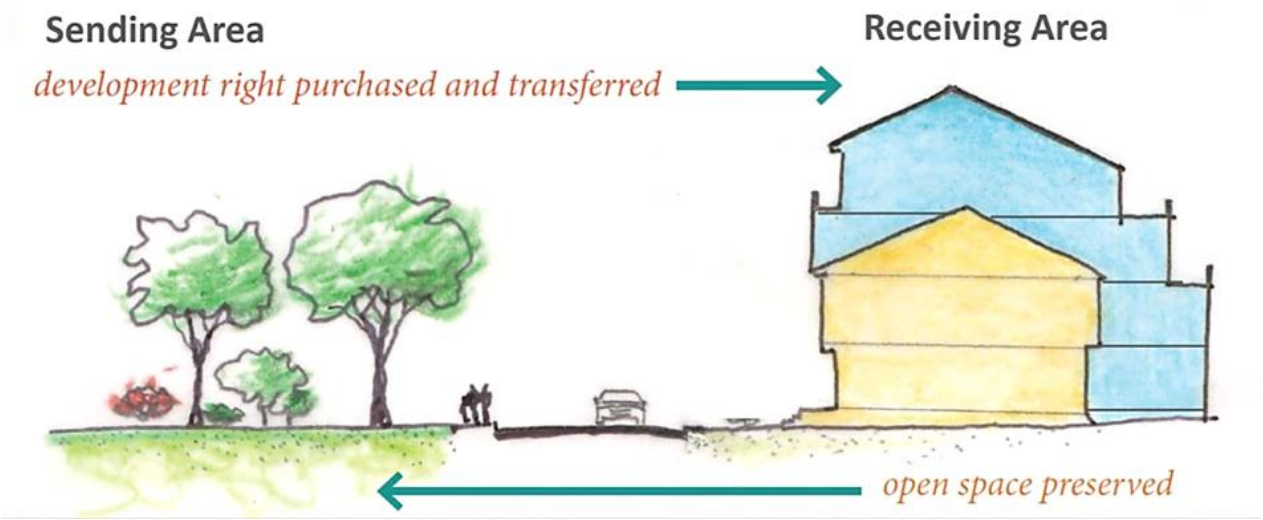
Additionally, TDR supports smart densification of other parts of a city as the market demands it. Areas well-served by transit and with adequate infrastructure can achieve higher densities of development through a TDR program. This can, in turn, generate greater revenue for a city without necessarily increasing maintenance obligations.

TDRs can help address serious issues, such as rapidly declining green space, landslides, water management, and combined sewer overflows, which have arisen from inappropriate development and poor and aging infrastructure. Furthermore, TDR programs that protect water supplies and other green infrastructure reduce municipal spending on building and maintenance projects.

Transfer of Development Rights: Sending & Receiving Sites

TDR Sending & Receiving Sites

In a TDR transaction, development rights are transferred from a group of one or more parcels to a development site consisting of one or more parcels. Parcels where development rights are being removed are "sending" their rights to parcels where the development rights are being transferred ("receiving" sites). When rights are transferred, a covenant is appended to the deed for the sending parcels that states the limitations on the sending parcels. This section discusses scenarios in which TDR is possible and scenarios in which possible TDRs are valuable and a transaction could be likely. The scenarios are evaluated against the core conditions that determine a property's highest and best use: physical possibility, legal permissibility, financial feasibility, and profitability.



Graphic: Suzy Meyer, 2019

Transfer of Development Rights: Sending & Receiving Sites (continued)

Preferred Sending Sites

TDR can be a useful aid in environmental conservation by preventing development in places where development is detrimental to the environment or open space is desired, and by supporting ongoing conservation through revenue creation. While the market will determine where rights will be sent (i.e., purchased), planning at the city-wide and neighborhood levels should determine from where rights can be sent (i.e., sold). A TDR is typically permanent, and the deprivation of developability through deed restriction permanently impacts the value of the sending parcel. For most private parcel owners, TDR will not be an attractive opportunity, as the rights are worth less than the overall parcel value. For city-owned parcels, TDR permanently constrains the potential taxable value of the parcel such that even if it were in private ownership, it would not offer meaningful taxable revenue.

Characteristics of Preferred TDR Sending Sites

- **Developability**:
  - For rights to exist, development must be physically possible and legally permitted by the zoning code. Thus, all sending sites should be in zoning districts where development is allowed by right.
- **Location**:
  - A site adjacent to or contiguous with existing parks, greenways, or other open space
  - Alternatively, a site identified for implementation of permanent green stormwater infrastructure
- **Ownership**:
  - Publicly owned sites are simple: no change in ownership is necessary.
  - Privately owned sites should first be purchased by a land trust or government agency (i.e., an entity with no plans to profit from ownership of the site).

Transfer of Development Rights: Sending & Receiving Sites (continued)

TDR Feasibility

For scenarios in which development rights exist, the next test of TDR feasibility is whether the owner is interested in selling those rights. The type of owner is significant here: private owners have different motivations than institutional or public owners. For instance, if development of a publicly owned parcel is physically possible, legally permissible, and financially feasible, the city government may determine it should not be developed so that the parcel can instead contribute to a neighborhood's public open space, and then sell the development rights to support that open space. If development of a privately owned parcel is physically possible and legally permissible but costs more than the market will pay, private owners may be interested in selling the rights but retaining ownership of the vacant land to use as a side yard or to privately conserve as open space. Most likely, however, a private owner would prefer to sell the property outright, as selling development rights would permanently devalue the land.

Depriving parcels of their developability can also alter the character of a community by preventing development in certain areas. Thus, parcels that are eligible for sending their development rights should be restricted to areas within a community that were identified as being desirable as permanent open space or green infrastructure. Given the permanence of TDR transactions, community planning is critical to ensure that rights are only sent from places community members are certain they want to be open space in perpetuity. Community plans should be consulted, and public meetings held at every major stage of the TDR transaction.

Executive Summary

Transfer of Development Rights: Lessons Learned

Existing Urban TDR Programs Provide Lessons Learned

According to The TDR Handbook (2014), for decades, several cities have used TDR to implement the goals of their downtown plans. In 1975, Los Angeles adopted a Central Business District Redevelopment Plan that promoted housing, open space, historic preservation, cultural/community facilities, and transportation improvements with TDR. Seattle adopted a similar approach in 1985, followed by Portland in 1988. That same year, New York City adopted a Theater District zone that allows the transfer of floor area when owners restore their buildings and used TDR in its West Chelsea neighborhood to develop the High Line park. The City of Pittsburgh Zoning Code allows density and intensity transfers in the Golden Triangle district, which have been used in the Pittsburgh Cultural District to protect historic buildings. According to The TDR Handbook (2014), downtown Pittsburgh's program has had limited success because baseline densities allow millions of square feet of future development as a matter of right without having to use TDR, and the supply of vacant commercial space and pace of commercial development has not generated enough demand.

Market Demand is Critical for Success

A 2009 Pruetz and Standridge study found that the top component of TDR success is market demand. Many TDR programs fail because strong demand does not exist in the local market or current zoning allows for more density than the market supports. Without demand for additional density, no TDRs will be purchased, and no properties will be preserved. A 2008 Kaplowitz, Machemer, and Pruetz study which surveyed managers of TDR programs across the country asked respondents to describe the nature of development demand in their TDR program areas — whether the development pressures are related to housing, commercial/industrial/office, or farmland. Only the demand for housing was significantly associated with successful TDR programs. As a result, this Pilot Study will focus on the transfer of residential development rights.

Sources: Nelson; Pruetz; Woodruff, *TDR Handbook: Designing and Implementing Successful Transfer of Development Rights Programs*, Washington DC: Island Press, 2014; Kaplowitz, Michael & Machemer, Patricia & Pruetz, Rick.; *Planners' eXperiences In Managing Growth Using Transferable Development Rights (TDR) in the United States. Land Use Policy*. 25. 378-387, 2008; Pruetz, Rick & Standridge, Noah. *What Makes Transfer of Development Rights Work?: Success Factors From Research and Practice*. Journal of the American Planning Association. 2009

TDR in Pittsburgh: Golden Triangle TDR Program

The City of Pittsburgh has an existing TDR program within downtown's Golden Triangle zoning district that could be expanded into a city-wide program that is zoning district agnostic or otherwise integrated within new zoning districts as the code is updated.

Pittsburgh's Golden Triangle TDR Program

While abiding by the conditions set forth in 910.01.D.1 Density and Intensity Transfers, developers within the Golden Triangle may "increase in the number of dwelling units and allowable gross floor area of buildings and structures through the transfer of such development rights from zoning lots within the GT Districts having unused development rights to other zoning lots within the GT Districts in conformity with the official master plans of the City..."[3] The conditions of the Golden Triangle program largely apply to how the rights are utilized on the receiving site and there is limited regulation that applies to the sending site.

Key conditions for receiving sites:

- The gross allowable floor area of the receiving site should be equal to or greater than the gross amount of allowable floor area to be transferred.
    - Unless the sending and receiving sites are abutting or across the street from each other, the gross amount of allowable floor area to be transferred is limited to up to 20 percent of the gross allowable floor area of the receiving site allowed by the base zoning code.
- The receiving site's development should meet conditions for transportation impacts, building massing, landscaping, etc.

2. Pittsburgh Title Nine Zoning Code: Article IV - Planning Districts: Chapter 910 - Downtown Districts: 910.01 - GT, Golden Triangle District: 910.01.D.1 Density and Intensity Transfers
3. Ibid.

TDR in Pittsburgh: Golden Triangle TDR Program (continued)

Key conditions for sending sites:

- The rights to be transferred must be unused.
- The transfer must be binding.
- For sending sites with a Historic Landmark or Performing Arts Facility, there should be a plan for rehabilitation and continuing maintenance of the Historic Landmark or Performing Arts Facility for not less than 40 years.

In the Golden Triangle District, development rights can generally be transferred from any property that has excess rights to almost any property seeking additional rights. For most private landowners in this District, TDR is unattractive because it permanently restricts developability and thus the valuation of their holdings. In some examples of this program's utilization in downtown, the sending party was the Pittsburgh Parking Authority and the parcels they sold development rights from were sites of parking structures that the Authority deemed to be permanent and had no plans for future development on or sale thereof. Thus, for the Parking Authority, the opportunity to sell unused development rights was an attractive revenue boost that was otherwise unplanned.

The *Golden Triangle District Code, Density and Intensity Transfers Section with Annotations* can be found in the Appendix of this document.

TDR in Pittsburgh: Considerations for a City-Wide TDR Ordinance

The ordinance for a City-wide TDR program could be inserted into each zoning district's language as they are revised, or it could be an addition to the overall zoning code. Implementation on a district-by-district basis would be more easily implementable, as it would allow for the incremental expansion of the existing program in the Golden Triangle district. The following considerations could guide the development of a City-wide TDR program.

Acknowledgement in neighborhood plans

Due to market conditions in the Golden Triangle and the geographic jurisdiction for where rights can be transferred to and from, transfers of development rights will not substantially change the character of the downtown neighborhood. In a City-wide program, TDR could lead to changes that bring too much development to certain areas and permanently constrain development in others. Thus, implementation of a City-wide program needs to be in alignment with neighborhood planning and rezoning efforts.

Future neighborhood plans could be explicit in their acknowledgement of TDR as a tool for the community and for developers. The plans could identify specific areas within a neighborhood that are desirable for greater density and specific areas within a neighborhood that are desirable for permanent conservation. Beyond these areas, TDR activity could be either restricted entirely or carefully regulated to ensure that TDR is utilized to support the community's ambitions for character and economic development.

While the Golden Triangle TDR program can operate with a limited geographic reach, it is unlikely that similarly restricted TDRs in other neighborhoods would be useful. For TDR to be an effective tool in Pittsburgh, it should be broadened as a City-wide program with defined areas eligible for either sending or receiving. Neighborhood planning could be the right scale for determining those areas.

TDR in Pittsburgh: Considerations for a City-Wide TDR Ordinance (continued)

Inclusion in performance-based zoning districts

In the riverfront zoning districts and the new uptown zoning districts, developers can achieve greater development density through a performance bonus points system. Similar to public art performance bonuses, which are based on overall cost of the project, a TDR bonus could be offered as an option for a developer to achieve greater development density through the purchase of development rights from eligible locations throughout the City. When considering this as an addition to an existing or proposed bonus points system, the zoning code should be careful to ensure the cost of development rights is appropriately valued relative to the developer's pro-forma. Undervalued development rights could become an easy backdoor to density for developers, rendering other bonuses entirely unattractive.

Inclusion in other zoning districts

TDR is not dependent upon a bonus points system in order to be implemented. As it is in the Golden Triangle, a TDR program can be implemented based solely upon the transfer of the number of dwelling units or the allowable gross floor area. Rights should be allowed to be transferred from and to most zoning district types, regardless of their locations relative to each other.

Promoting conservation

Just as a maintenance plan is required for transfer of development rights from historic structures in the Golden Triangle, a stewardship plan could be required for transfer of development rights from planned open space or green infrastructure. Having such a plan in place would offer the community peace of mind about the long-term impacts of permanent conservation. While the value of the rights themselves may not cover the cost of conservation entirely, that value can be added to a conservation budget with support from a variety of sources.

Takeaways

Executive Summary

TDR Pilot Potential

Clear areas for sending or receiving are places where a large contiguous group of parcels appears to be appropriate for TDR, while limited areas for sending or receiving are places where appropriate parcels are disconnected from each other, scattered throughout the community, or relatively small. Based on four TDR Pilot potential criteria developed as part of this study, six neighborhoods (Garfield, Hays, Hazelwood, Homewood, Larimer, and Lincoln-Lemington-Belmar (LLB)) have clear sending areas but only three neighborhoods (Hazelwood, Homewood, and Larimer) have clear receiving areas where future development might support a development rights transfer. Of the nine neighborhoods, only two neighborhoods (Hazelwood and Larimer) have major catalytic projects that could encourage a high level of development activity. The Hazelwood Green development will likely encourage additional investment within Hazelwood, while both the Bakery Square project and federal Choice Neighborhoods funding is likely to spur investment in Larimer. Furthermore, according to the 2019 TDR Pilot Feasibility Study, these two neighborhoods also have direct ALT partners and community plans.

Neighborhood	2019 TDR Pilot Feasibility Study				2020 TDR Pilot Potential			
	MVA Transitional or Distressed	ALT Partner Status	Urban Greenprint: Potential Sending Areas	Community Plan	Major Sending Areas	Major Receiving Areas	Catalytic Development	Neighborhood Projects
Beltzhoover	X	Indirect	X		Limited	None	None	None
Bon Air	X	Indirect			Limited	None	None	None
Brighton Heights	X	Direct	X		None	None	None	None
Garfield	X	Direct	X	X	Clear	Limited	None	None
Hays	X	Direct	X		Clear	None	None	None
Hazelwood	X	Direct		X	Clear	Clear	Hazelwood Green	Choice Neighbor.
Homewood	X	Indirect	X		Clear	Clear	None	None
Larimer	X	Direct	X	X	Clear	Clear	Bakery Square	None
LLB	X	Indirect	X		Clear	None	None	None

Legend

- Direct/Clear
- Indirect/Limited
- None

TDR Pilot Potential (continued)

The table below summarizes acreage ranges for possible sending and receiving areas by neighborhood. Possible sending areas are areas where development rights exist (residential zoning) and where those parcels are environmentally constrained. Possible receiving areas are places where the transportation network, existing land use mix, density of business activity, or recommendations of a community plan indicate that greater density of development would be desirable.

Acres of Sending, Receiving, and Major Projects

Metric Rank	Beltzhoover	Bon Air	Brighton Heights	Garfield	Hays	Hazelwood	Homewood	Larimer	LLB
Possible Sending Area	9.2 - 13.8	19.2 - 28.8	-	24.4 - 36.6	44.4 - 66.6	26.4 - 39.6	56.8 - 85.2	17.6 - 26.4	28 - 42
Possible Receiving Area	-	-	-	4 - 6	-	18 - 27	50 - 75	33.2 - 49.8	-
Catalytic Development	-	-	-	-	-	178	-	12	-
Neighborhood Projects	-	-	-	-	-	-	-	18	-

Hazelwood:

Catalytic Developments: ***Hazelwood Green***

6.0 to 10.7 million square feet of possible development over 178 acres

Larimer:

Catalytic Developments: ***Bakery Square***

800,000 square feet of office; 300,000 square feet of retail; 500 homes, 12 acres (about half) of which are in Larimer

Neighborhood Projects: ***Choice Neighborhoods***

$30M HUD award to create 334 new housing units and an 18+-acre neighborhood park

Market Readiness Ranking

The chart below ranks each neighborhood based on each market readiness metric (with one being the highest and nine being the lowest). For example, the neighborhood with the strongest 2019-2014 annual household growth rate (Garfield) was given a raking of one, while the neighborhood with the weakest annual household rate (Hays) was given a ranking of a nine. Rankings were then totaled to give each neighborhood a cumulative rank score, with the lowest score being the more favorable. The Garfield, Homewood, and Larimer neighborhoods were identified as most market-ready (21, 35, and 40 points, respectively). While the Hazelwood neighborhood score was less favorable (63 points), largely due to lower existing densities and walkability, the Hazelwood Green development currently under construction will likely encourage additional investment and increase employment and retail densities in the near term.

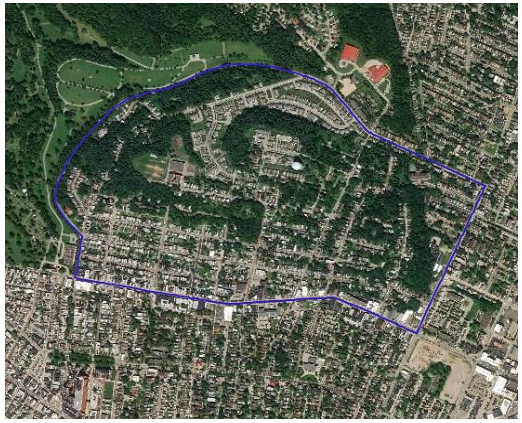
Legend

1
2
3
4
5
6
7
8
9

Metric Rank	Garfield	Homewood	Larimer	Brighton Heights	Beltzhoover	Hazelwood	Bon Air	LLB	Hays
Near-Term Growth Potential									
Annual Household Growth Rate	1	4	7	5	6	3	2	8	9
Annual Per Capita Income Growth Rate	2	5	2	4	1	8	9	6	7
Share of Housing is Medium to High Density	3	2	6	5	7	1	7	4	7
Share of Housing Units Built in 2010 or Later	1	2	3	4	5	5	5	5	5
Density Potential									
Population Density	1	3	5	2	4	6	7	8	9
Housing Density	1	2	4	3	5	6	7	8	9
Retail Business Density	2	4	1	6	7	8	5	3	9
Employment Density	1	4	7	2	3	6	5	8	9
Walkability									
Walk Score	1	3	2	5	4	6	8	7	9
Transit Score	5	4	2	6	1	8	3	7	9
Bike Score	3	2	1	4	5	6	8	6	9
Total Points	**21**	**35**	**40**	**46**	**48**	**63**	**66**	**70**	**91**

Executive Summary

Top Neighborhoods with TDR Potential: Garfield



TDR Pilot Potential

- Garfield has clear sending areas but limited receiving areas where future development might support a development rights transfer (largely limited to scattered infill sites). There are no active or planned major developments nor a community plan identifying major neighborhood projects.

Near-Term Growth Potential

- Through 2024, Garfield is expected to experience relatively flat household growth (0.5 percent per year) and relatively strong household income growth (3.8 percent per year). Furthermore, with 12 percent of its housing stock built from 2010 to 2017, the neighborhood may be receptive to additional multi-family housing development.

Existing Development Clusters

- Garfield ranks highest in population, housing, and employment density, and second highest in retail business density. Existing jobs, housing, and shop clusters may be attractive to new residents.

Walkability

- Garfield is also very walkable (Walk Score of 75), has good transit (Transit Score of 57), and is bikeable (Bike Score of 60) - factors attractive to both real estate investors and new multi-family housing residents.

TDR Pilot Potential	Finding
Major Sending Areas	Clear
Major Receiving Areas	Limited
Catalytic Development	None
Neighborhood Projects	None

Market Readiness	Rank	Metric
Near-Term Growth Potential		
Annual Household Growth Rate	1	0.5%
Annual Per Capita Income Growth Rate	2	3.8%
Share of Housing is Medium to High Density	3	8%
Share of Housing Units Built in 2010 or Later	1	12.0%
Density Potential		
Population Density	1	8,457
Housing Density	1	5,643
Retail Business Density	2	46
Employment Density	1	3,835
Walkability		
Walk Score	1	75
Transit Score	5	57
Bike Score	3	60
Total Points	21	

Executive Summary

Top Neighborhoods with TDR Potential: Homewood

TDR Pilot Potential

- Homewood has clear sending and receiving areas where future development might support a development rights transfer. With the exception of the 7800 Susquehanna site, which is primarily the repurposing of an industrial building, there are no major development projects taking place in these neighborhoods.

Near-Term Growth Potential

- With multi-family housing in buildings containing 10 units or more representing nine percent of its residential stock, and 2.2 percent of its housing stock built from 2010 to 2017, the neighborhood may be receptive to new multi-family housing.

Existing Development Clusters

- Homewood ranks second highest in housing density, and third in population density, and fourth in employment and retail business density. The neighborhood's existing jobs, housing, and shops may be attractive to new residents.

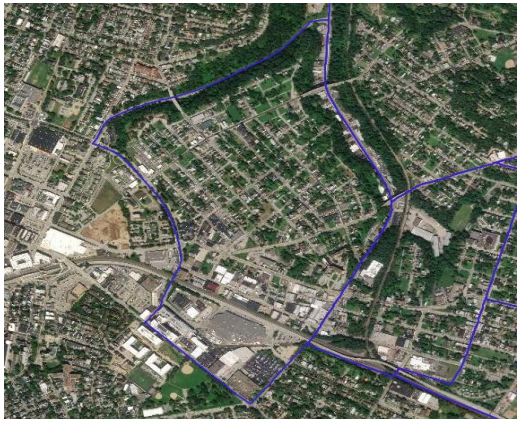
Walkability

- Homewood is somewhat walkable (Walk Score of 66), has good transit (Transit Score of 59), and is bikeable (Bike Score of 68) - factors attractive to both real estate investors and new multi-family housing residents.

TDR Pilot Potential	Finding	
Major Sending Areas	Clear	
Major Receiving Areas	Clear	
Catalytic Development	None	
Neighborhood Projects	None	
Market Readiness	**Rank**	**Metric**
Near-Term Growth Potential		
Annual Household Growth Rate	4	-0.1%
Annual Per Capita Income Growth Rate	5	3.3%
Share of Housing is Medium to High Density	2	9%
Share of Housing Units Built in 2010 or Later	2	2.2%
Density Potential		
Population Density	3	6,123
Housing Density	2	4,685
Retail Business Density	4	23
Employment Density	4	2,177
Walkability		
Walk Score	3	66
Transit Score	4	59
Bike Score	2	68
Total Points	**35**	

Executive Summary

Top Neighborhoods with TDR Potential: Larimer



TDR Pilot Potential

- Largely a hilltop neighborhood with steep slopes, Larimer has clear sending areas. Flatter areas in the southern part of the neighborhood, near Bakery Square, are zoned Urban Industrial, which are ripe for redevelopment and could be clear receiving areas.

Near-Term Growth Potential:

- While Larimer is expected to experience relatively flat household growth through 2024 (-0.3 percent per year), annual per capita income is expected to grow by 3.8 percent per year.

Existing Development Clusters:

- While Larimer ranks highest in retail density (70 retail business per square mile), it ranks relatively low in job density (977 jobs per square mile) and average in housing density (3,208 units per square mile) among the nine neighborhoods.

Walkability:

- Like Garfield, Larimer is very walkable (Walk Score of 73). The neighborhood also has good transit (Transit Score of 65) and is very bikeable (Bike Score of 74) - factors attractive to both real estate investors and new multi-family housing residents.

TDR Pilot Potential	Finding	
Major Sending Areas	Clear	
Major Receiving Areas	Clear	
Catalytic Development	Bakery Square	
Neighborhood Projects	None	
Metric Rank	**Rank**	**Metric**
Near-Term Growth Potential		
Annual Household Growth Rate	7	-0.3%
Annual Per Capita Income Growth Rate	2	3.8%
Share of Housing is Medium to High Density	6	7%
Share of Housing Units Built in 2010 or Later	3	1.2%
Density Potential		
Population Density	5	3,772
Housing Density	4	3,208
Retail Business Density	1	70
Employment Density	7	977
Walkability		
Walk Score	2	73
Transit Score	2	65
Bike Score	1	74
Total Points	40	

TDR Potential: Market Readiness & Zoning Review

Larimer is well-suited for further study

Based on the market readiness analysis, Larimer is the neighborhood that is best suited for further TDR evaluation. Larimer has open spaces and vacant parcels that are appropriate as TDR sending areas. Many of the vacant and open spaces are contiguous with each other and with existing designated open space. This includes spaces that are on steep slopes or otherwise environmentally constrained spaces that contribute to broader ecological continuity, and sites that are desirable as green stormwater infrastructure. Larimer is also a neighborhood with high levels of development activity, including the Choice Neighborhoods project and the ongoing Bakery Square development. While Choice Neighborhoods is entering its final phase, the developer of Bakery Square (Walnut Capital) continues to expand the project's footprint and development ambitions through the purchase of adjoining parcels in Larimer and neighboring communities. The Hamilton-Frankstown corridor in Larimer is primed for redevelopment and is a focus of Larimer Consensus Group's current neighborhood planning process.

Beyond Neighborhood Boundaries

Based on the zoning review, throughout Pittsburgh, development conditions vary dramatically from block to block and neighborhood to neighborhood. In most places, development ambitions do not exceed development rights. Opportunities for sending development rights exist throughout the City and throughout this study's neighborhoods; but the opportunities for receiving said development rights are often located in other neighborhoods in other parts of Pittsburgh. Consequently, the small scale of the City's neighborhoods means that containing TDR transfers to within a single neighborhood could limit a TDR program's desirability for rights purchasers and, thus, undermine the program's ability to conserve open space over the long term. Therefore, it is recommended that neighborhoods throughout Pittsburgh be considered as receiving areas.

TDR Potential: Financial Feasibility and Fiscal Impact Analysis

A Larimer-to-HUZD TDR program could prove highly successful.

The financial feasibility analyses demonstrate that a Larimer-to-Larimer TDR program, while feasible, would prove inadequate to achieve near-term, large-scale land acquisition and preservation within Larimer. Market demand and current lot values in Larimer are insufficient at present and are not likely to improve much over the next 10 years. A Larimer-to-Highly Urbanized Zoning District (HUZD) TDR program could prove highly successful, with respect to acquiring and preserving a large inventory of undeveloped lots within Larimer. Specifically, an increase in FAR for a building within a HUZD (as opposed to an increase in a building floor, as is currently permitted under the city's PBZ program) could be tied to the purchase of a Larimer TDR credit equivalent to the value of 10 undeveloped average size lots in the neighborhood). Further, the most equitable structure for the purchaser of the TDR credit would be tying the credit value to a percentage of the cost increase associated with increasing the FAR by one whole unit (e.g., 4.0 to 5.0). In this way, TDR purchase value is proportional and not regressive, as are many of the existing PBZ investment requirements within the RIV.

A Larimer-to-HUZD TDR program yields positive net fiscal impacts for both the school district and City.

According to the fiscal impact analysis, the additional 10 two-bedroom dwelling units facilitated by an expansion of the FAR from 4.0 to 5.0 under the hypothetical Larimer to HUZD TDR program yields a positive net fiscal impacts for both the school district ($4,483) and city ($16,864). Further, the net positive impacts are likely greater, insofar as local service tax (LST) and earned income tax (EIT) revenues are not made part of this analysis.

Net Fiscal Impact – School District:	$ 4,483
Net Fiscal Impact – City:	$ 16,864
Projected Net New Service Costs Total	**$ 28,670**
School District:	$ 23,150
City:	$ 5,520
Projected Net New Revenues	**$ 50,017**
Tax Revenue – School District:	$ 27,633
Tax Revenue – City:	$ 22,384

TDR Potential: Meeting Allegheny Land Trust Goals

Market fundamentals likely mean a TDR would fall short of achieving ALT's goals.

While ALT has proposed creating a traditional TDR program within Larimer to support its overarching goals of land preservation and environmental stewardship, such a program is likely to fall short of achieving these goals, based on market fundamentals which underpin a TDR program. Specifically, and based on market and financial feasibility analyses performed, the scale of development necessary to achieve significant enough revenues to preserve and maintain undeveloped land in Larimer is not supported by current market demand for residential or commercial development; nor is it likely to be supported for many years, given demographic trends (flat population and household growth within the City of Pittsburgh) and current development and redevelopment activity within other areas of the City.

ALT can help the City prepare in anticipation of economic conditions changing.

Current economic conditions in Pittsburgh mean that a TDR program is not a top priority among developers, planners, or community members. However, ALT has opportunities to advocate on behalf of TDR so that the City is prepared when economic conditions change. For ALT, recommended advocacy priorities include:

- Inclusion of TDR as a consideration in the neighborhood planning and rezoning process. This can help to proactively identify community-supported sending and receiving areas within each neighborhood.
- Analysis of TDR applicability to publicly owned parcels. Where the City owns parcels within sending and receiving zones, the City should develop an inventory of sellable rights.
- Education about the TDR program to developers, planners, and community members. As stakeholders better understand how the transfer of rights can help to support community development priorities (both sending and receiving), the greater the opportunity for successful conservation of open space.

TDR PILOT POTENTIAL

Guiding Assumptions

Guiding Assumptions

Focus on Areas Zoned for Residential

According to a review of national TDR programs, the demand for housing is most significantly associated with successful TDR programs. As a result, this study focuses on the transfer of residential development rights and attention is paid to areas in Pittsburgh that are zoned as residential but are environmentally constrained. These are locations where development rights should be sold from vacant, developable, but environmentally constrained residential land and transferred to a location within the neighborhood where additional residential density is desirable and appropriate.

Environmentally Constrained Areas Should Be Prioritized as "Sending" Areas

Environmentally constrained areas are where development is inadvisable, due to physical hazards. In this summary, environmentally constrained areas include:

- Areas identified by the City of Pittsburgh as having a slope of 25 percent or greater;
- Areas identified by the City of Pittsburgh as being landslide-prone; and
- Areas identified by FEMA as being within a floodplain.

Though Pittsburgh has a Hillside District (H) and a Riverfront District (RIV) in the zoning code, there are often environmentally constrained areas that do not have site-specific zoning regulations to discourage development. In these places, a TDR program would create a mechanism to discourage residential development in inadvisable locations while encouraging density where additional residential density is desirable.

Guiding Assumptions (continued)

Areas already zoned for Hillside, Park, or Greenway do not have transferable rights.

In many places, environmentally constrained areas are already zoned in a way that restrict development. Thus places where development is already restricted do not have rights that can be transferred.

Well-connected and walkable areas should be prioritized as "receiving" areas.

Three conditions are crucial for selecting appropriate receiving zones: 1) *availability of sufficient infrastructure, 2) developer interest, and 3) community acceptance (which will be further studied in subsequent phases of this study).* Parts of a community that have access to public transportation or have walkable amenities should be prioritized as "receiving areas," where additional residential density is desirable. These areas are typically locations appropriate for higher-density development (e.g., close to jobs, shopping, schools, transportation, etc.). Formal and informal neighborhood plans are good resources for identifying potential receiving areas within a neighborhood and whether there are specific sites in which community members desire additional development density.

Existing open space could be augmented through TDR.

Existing open space is comprised of areas permanently designated by the City of Pittsburgh as being parklands or greenways. Potential transfer of development rights "sending" sites adjacent to or connecting existing open space should be prioritized to create larger and more contiguous open spaces. Formal and informal neighborhood plans are good resources for identifying where community members desire additional open space or conversion of vacant land to park or greenway.

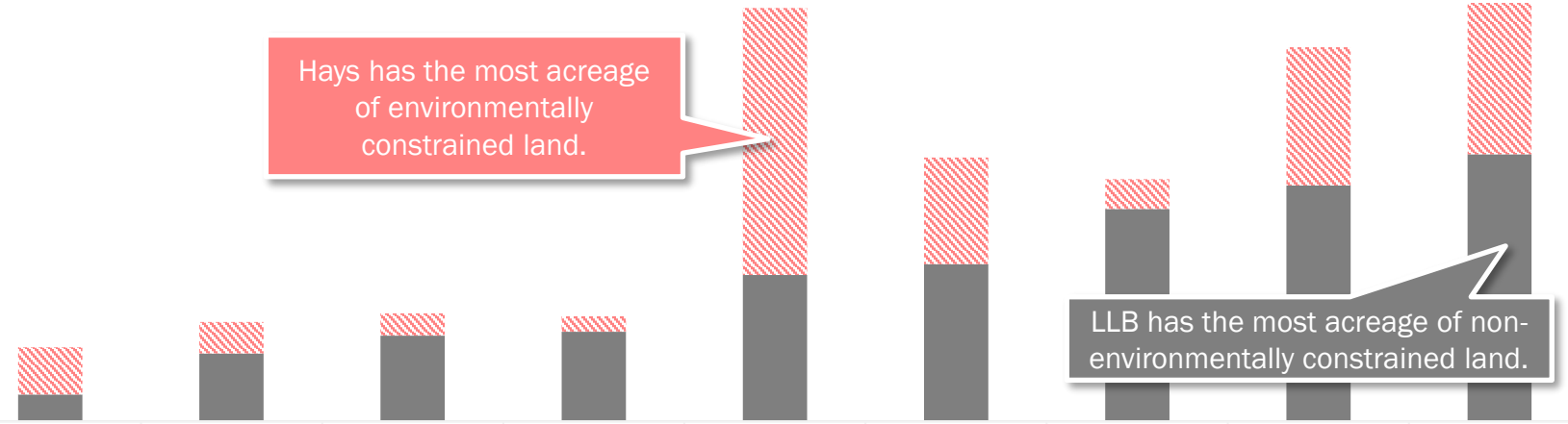
Neighborhood Comparisons

TDR Pilot Potential

Environmentally Constrained Land

Due to Pittsburgh's history and unique terrain, the City has several environmental conditions that can limit development, such as steep slopes, landslide-prone soils, and floodplains. According to data provided by the City of Pittsburgh, summarized below and mapped on the following page, primarily due to its large size, the Lincoln-Lemington-Belmar (LLB) neighborhood has the greatest acreage of non-environmentally constrained (EC) land (723 acres). Conversely, primarily due to steep slopes and landslide-prone soils, the Hays neighborhood exhibits the most acreage of EC land (732 acres). Notably, much of the non-EC land within Hazelwood is contained within Hazelwood Green (163 acres of non-EC land), while much of the non-EC land within Hays is contained with Hays Woods (256 acres of non-EC land).

Land Acreage by Neighborhood

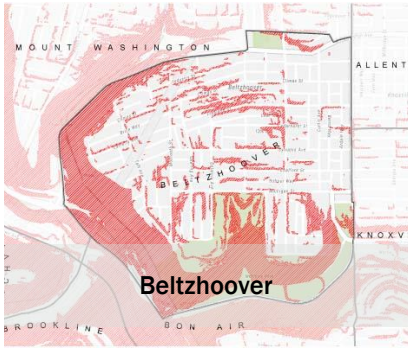


	Bon Air	Beltzhoover	Garfield	Larimer	Hays	Brighton Heights	Homewood	Hazelwood	LLB
EC Acreage	128	85	61	42	723	290	81	374	410
Non-EC Acreage	73	184	232	243	397	425	575	639	723
Total	201	269	293	285	1,120	715	656	1,013	1,134

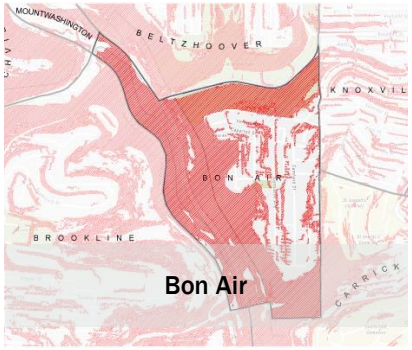
Source: City of Pittsburgh, evolveEA, 2020

TDR Pilot Potential

Environmentally Constrained Land (continued)



Beltzhoover



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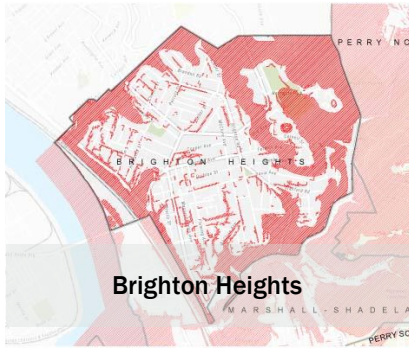
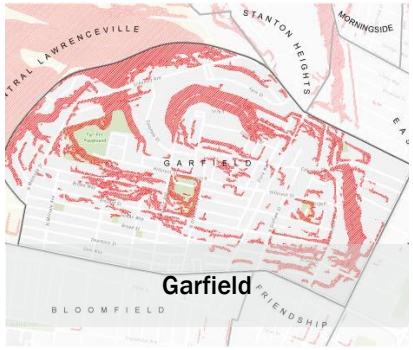
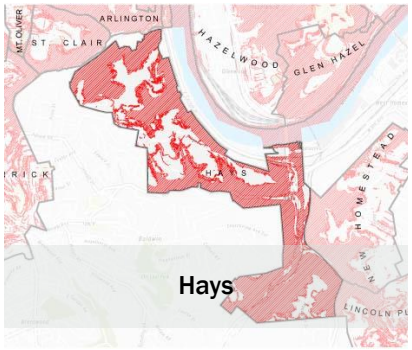


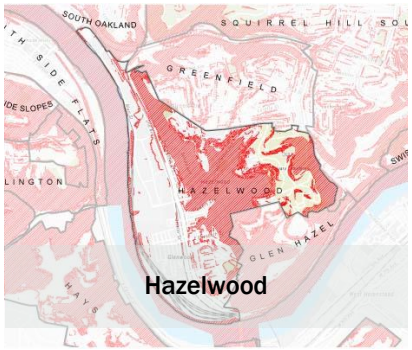
Brighton Heights



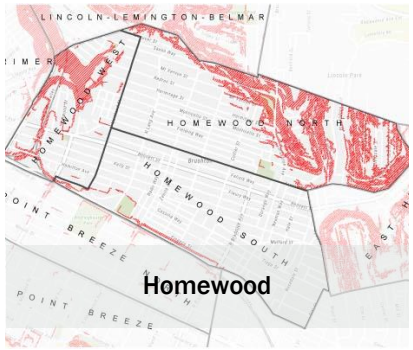
Garfield



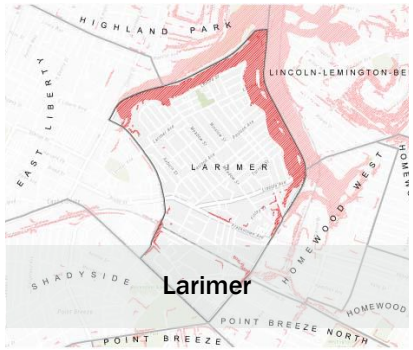
Hays



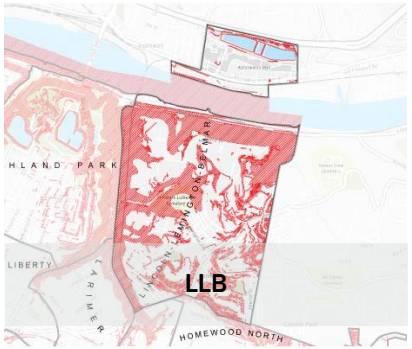
Hazelwood



Homewood



Larimer



LLB

Environmental Constraints

City Neighborhoods

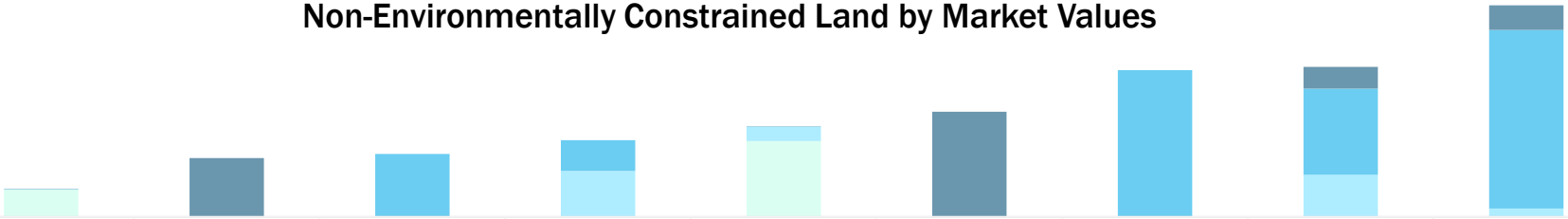
Source: City of Pittsburgh, evolveEA, 2020

TDR Pilot Potential

Economic Need

4ward Planning utilized Urban Redevelopment Authority's 2016 Market Value Analysis (MVA) data to map Transitional (scores F, G) and Distressed (scores H, I) markets by neighborhood. In general, these market areas have little new construction, average housing values below that of the county, and foreclosure and residential vacancy levels higher than the county average. These areas were selected because they represent places with the most economic. The Hazelwood neighborhood contains the largest amount of non-EC land with economic need (558 acres). The LLB and Hays neighborhoods contain the second and third largest amounts of non-EC land considered either Transitional or Distressed (250 and 179 acres, respectively).

Non-Environmentally Constrained Land by Market Values



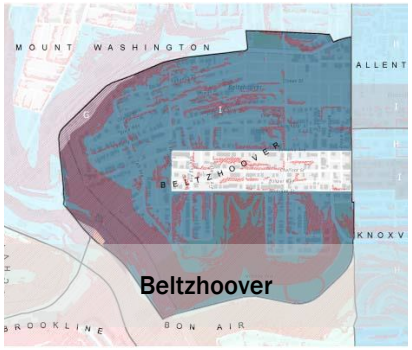
	Bon Air	Beltzhoover	Larimer	Garfield	Brighton Heights	Homewood	Hays	LLB	Hazelwood
I	0.2	155.3			0.0	277.6		57.4	65.0
H	0.0	0.1	165.9	81.2		0.1	387.8	227.5	470.8
G	0.1	0.2	0.1	121.4	39.0			111.1	22.7
F	72.8	0.0			200.3				
Total	73.1	155.6	166.0	202.6	239.3	277.7	387.8	396.1	558.4

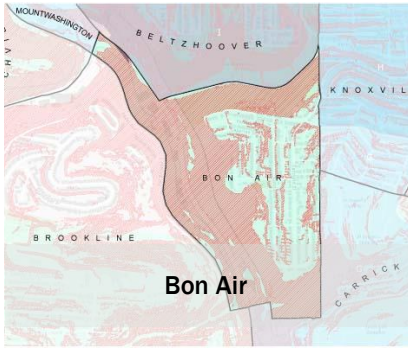
	Score	Housing Values (Compared to County)	New Construction	Tenure	Foreclosure / Res. Vacancy Levels (Compared to County)
Transitional	F	half	little	more owners than renters	average
	G	below average	little	slightly more owners than renters	double
Distressed	H	well below average	little	more renters than owners	elevated
	I	lowest	little	even share of owners and renters	highest

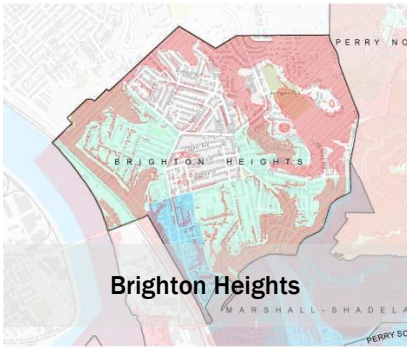
Sources: Urban Redevelopment Authority, 2016; evolveEA, 2020

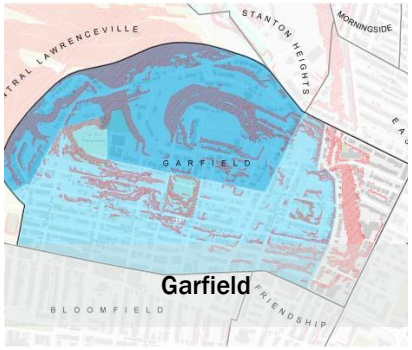
TDR Pilot Potential

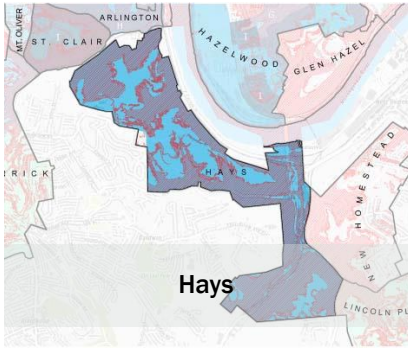
Economic Need (continued)

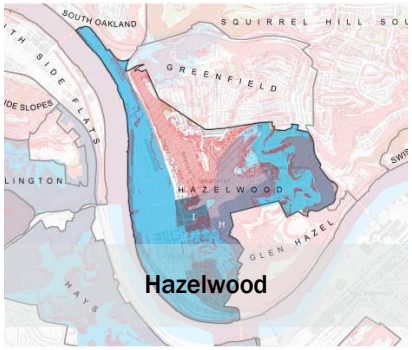


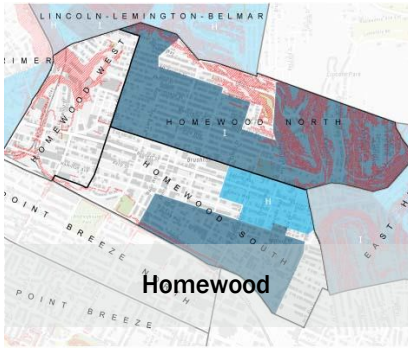


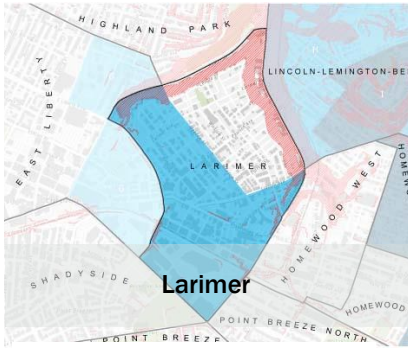


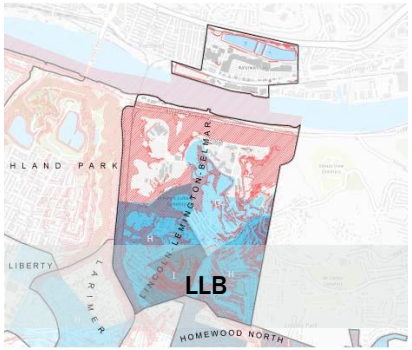












Environmental Constraints
City Neighborhoods
SPC Buildings

MVA Ratting
F
G
Transitional
H
I
Distressed
NA

Sources: Urban Redevelopment Authority, 2016; evolveEA, 2020

TDR Pilot Potential

Zoning Permitting Multi-Family Development

Below is Pittsburgh's zoning use table for those base zoning districts (e.g., residential, mixed-use, district, riverfront) that permit multi-family development (including two-unit, three-unit, and multi-unit residential) by right (illustrated as "P" below). These uses permit multi-family housing in the respective district, subject to compliance with all other applicable regulations of the zoning code. *Two-unit residential* signifies the use of a zoning lot for two dwelling units contained within a single building. *Three-unit residential* signifies the use of a zoning lot for three dwelling units contained within a single building. *Multi-unit residential* signifies the use of a zoning lot for four or more dwelling units contained within a single building.

Pittsburgh Zoning Use Table: Zoning Permitting Multi-Family Development by Right

Multi-Family Residential Uses	Base Zoning Districts											
	Residential			Mixed Use				District (DT)	Riverfront (RIV)			
	Two-Unit Residential (R2)	Three-Unit Residential (R3)	Multi-Unit Residential (RM)	Neighbor-hood Office District (NDO)	Local Neighbor-hood Commercial District (LNC)	Neighbor-hood Industrial District. (NDI)	Urban Neighbor-hood Commercial District. (UNC)	Golden Triangle District (GT)	Multi-Unit Residential (RM)	Mixed Use (MU)	North Shore (NS)	Industrial Mixed-Use (IMU)
Two-Unit Residential	P	P	P	P	P	P	P	P	P	P		P
Three-Unit Residential		P	P	P	P	P	P	P	P	P		P
Multi-Unit Residential			P	P	P	P	P	P	P	P	P	P

P = Permitted By Right
Sources: City of Pittsburgh, Pittsburgh Zoning Use Table; 4ward Planning, Inc., 2020

Zoning Permitting Multi-Family Development (continued)

Since this Pilot Study focuses on the transfer of residential development rights, neighborhoods with non-EC land zoned to permit multi-family development by right have the greatest potential to serve as potential receiving areas. Homewood contains the largest amount of non-EC land (439 acres) with zoning permitting multi-family development by right (largely within two-unit, multi-unit, and local neighborhood residential zones). The LLB neighborhood contains the second largest amount of non-environmentally constrained land (274 acres) with zoning allowing multi-family development (largely within land zoned for local neighborhood residential zones).

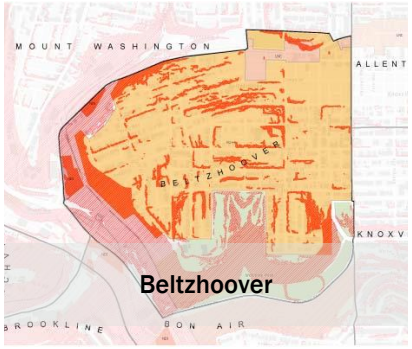
Non-EC Land with Zoning Permitting Multifamily Development

	Bon Air	Hays	Hazelwood	Brighton Heights	Larimer	Garfield	Beltzhoover	LLB	Homewood
Two-Unit Residential		15	6	14	23	57	147	0	193
Multi-Unit Residential			0	17	25	1		181	190
Local Neighborhood Commercial			13	14	25	17	6	12	52
Riverfront Industrial Mixed Use								55	
Urban Neighborhood Commercial								25	2
Neighborhood Industrial	2		7				1		0
Neighborhood Office				6					
Three-Unit Residential						5			
Total	2	15	26	52	74	80	154	274	439

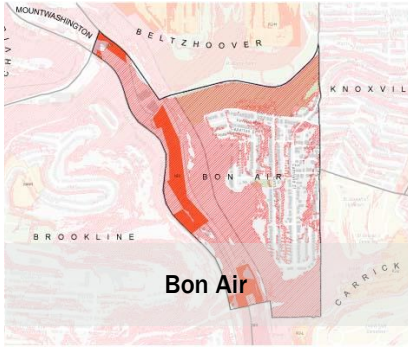
Sources: City of Pittsburgh, evolveEA, 2020

TDR Pilot Potential

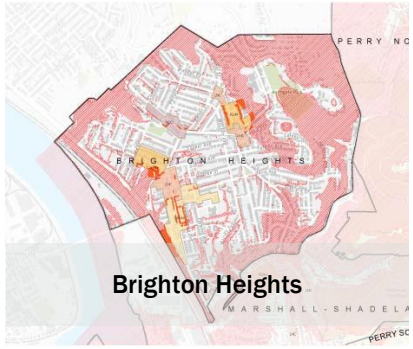
Zoning Permitting Multi-Family Development (continued)



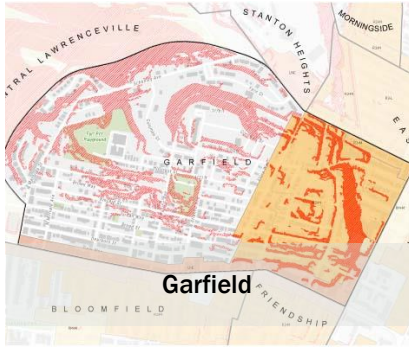
Beltzhoover



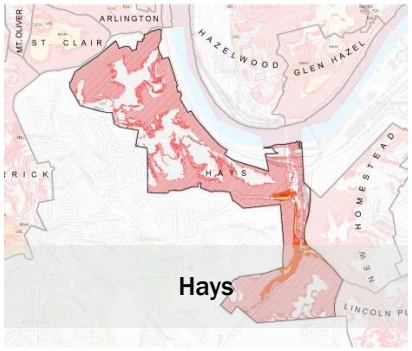
Bon Air



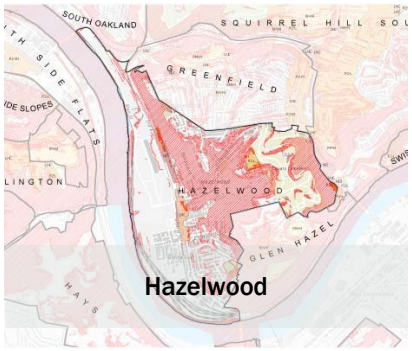
Brighton Heights



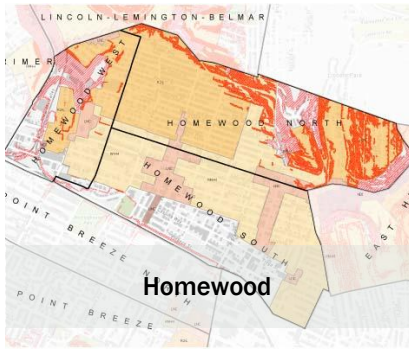
Garfield



Hays



Hazelwood



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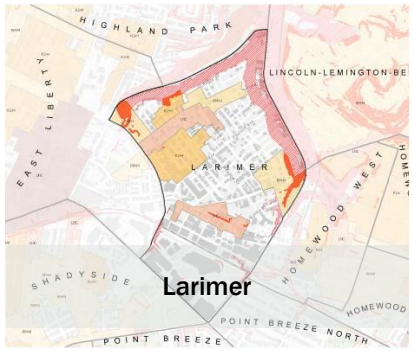
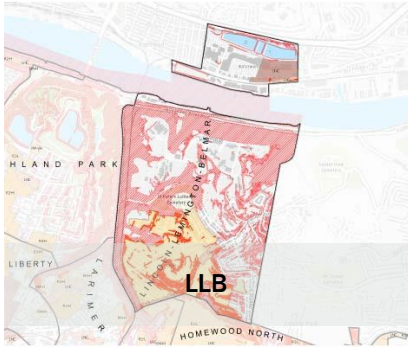


Larimer



LLB

- Environmental Constraints
- Local Neighborhood Commercial
- Multi-Unit Residential
- Three-Unit Residential
- Two-Unit Residential
- Neighborhood Office
- Urban Neighborhood Commercial
- Neighborhood Industrial
- City Neighborhoods

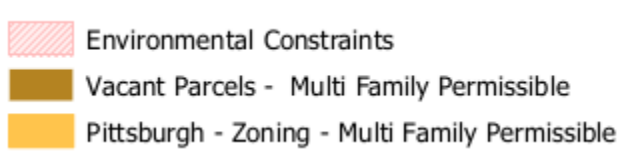
Sources: City of Pittsburgh, evolveEA, 2020

TDR Pilot Potential

Vacant Land Permitting Multi-Family Development

4ward Planning utilized data provided by the Allegheny County Property Assessments to further identify non-EC land permitting multi-family development that is currently vacant (parcels without a structure). Homewood has, by far, the most vacant non-EC land permitting multi-family housing (439 acres). The LLB and Beltzhoover neighborhoods have the second and third most vacant non-environmentally constrained land (219 and 154 acres, respectively).

Vacant Non-EC Land with Zoning Permitting Multifamily Development

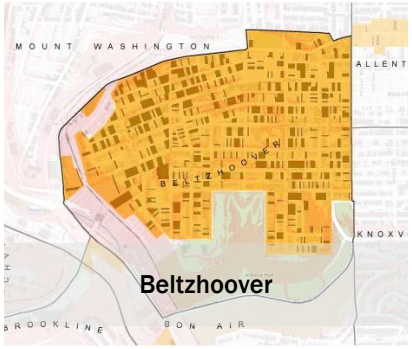


	Bon Air	Hays	Hazelwood	Brighton Heights	Larimer	Garfield	Beltzhoover	LLB	Homewood
Vacant MF (EC)	15	26	5	7	6	16	30	42	40
Vacant MF (Non-EC)	2	15	26	52	74	80	154	219	439

Sources: Allegheny County Property Assessments, evolveEA, 2018

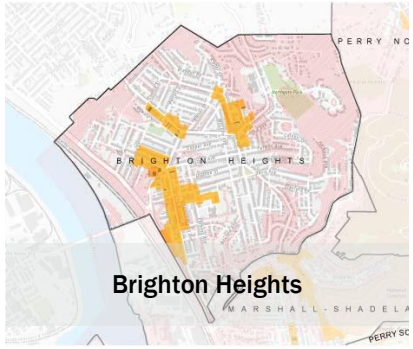
TDR Pilot Potential

Vacant Land Permitting Multi-Family Development (continued)

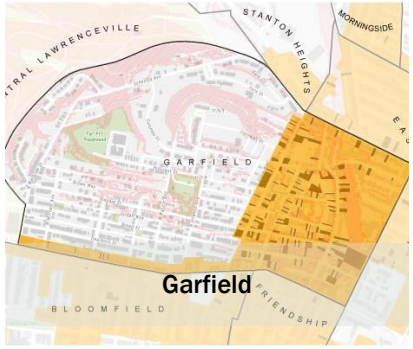


Beltzhoover

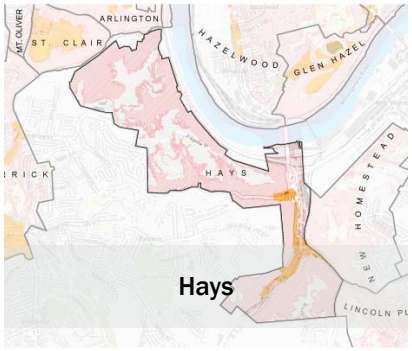
Bon Air



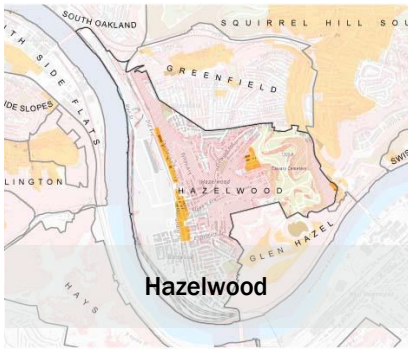
Brighton Heights



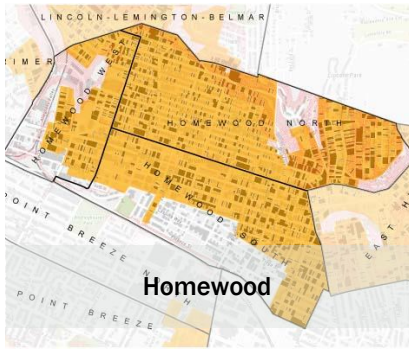
Garfield



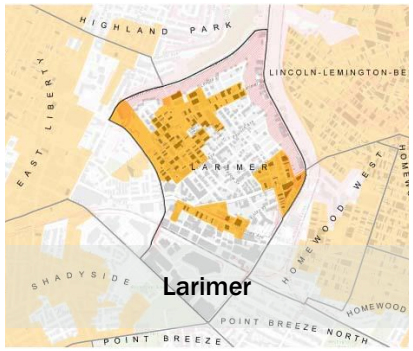
Hays



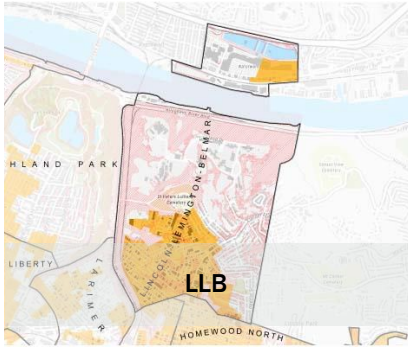
Hazelwood



Homewood



Larimer



LLB

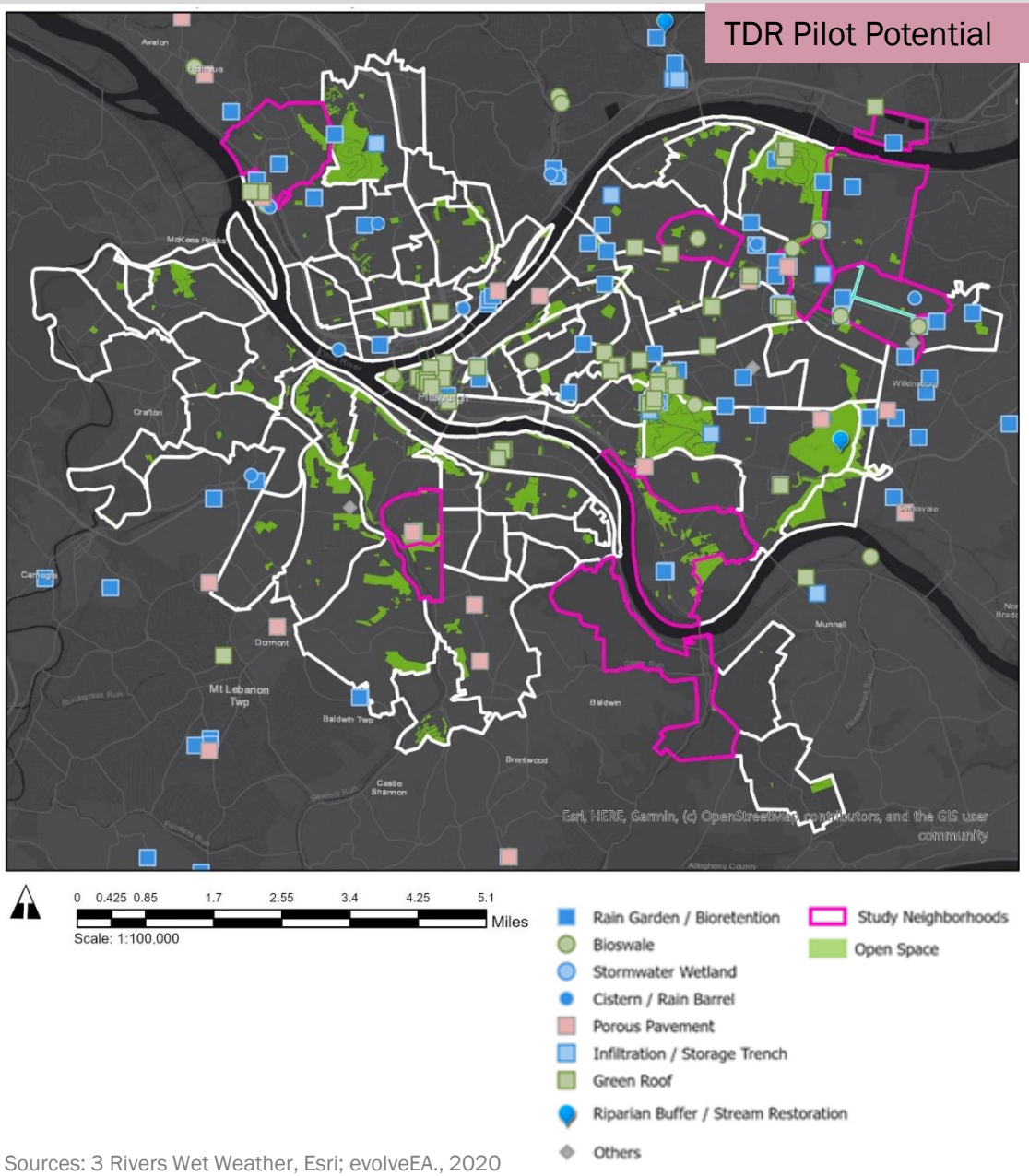
Environmental Constraints
Vacant Parcels - Multi Family Permissible
Pittsburgh - Zoning - Multi Family Permissible

Sources: Allegheny County Property Assessments, evolveEA, 2018

Green Infrastructure

Green infrastructure provides solutions for managing stormwater, reducing local street flooding, and reducing combined-sewer overflows and sewer backups caused by rainwater entering the combined-sewer system. The map to the right identifies City of Pittsburgh green infrastructure projects catalogued by 3 Rivers Wet Weather (a nonprofit organization committed to improving the quality of the County's water resources) and partner organizations.

As existing green infrastructure projects in Pittsburgh have been largely opportunistic rather than strategic, these projects are scattered on small, disconnected sites. Further, plans for future green infrastructure are currently not specific enough to support TDR planning. The largest planned green infrastructure sites, per PWSA's Green First Plan, are in parks or greenways where development rights do not exist.



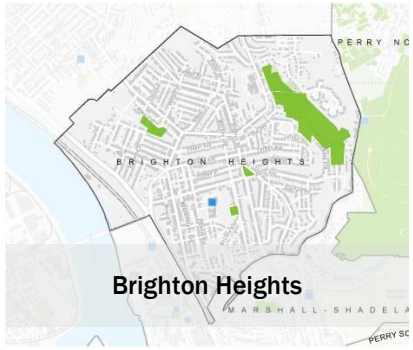
Sources: 3 Rivers Wet Weather, Esri; evolveEA., 2020

TDR Pilot Potential

Green Infrastructure (continued)

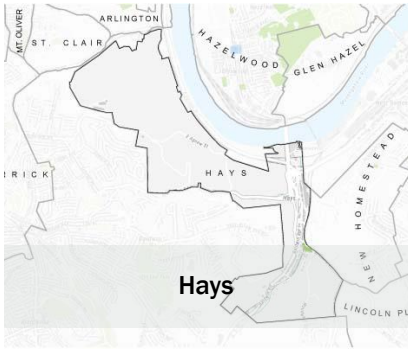
Beltzhoover

Bon Air



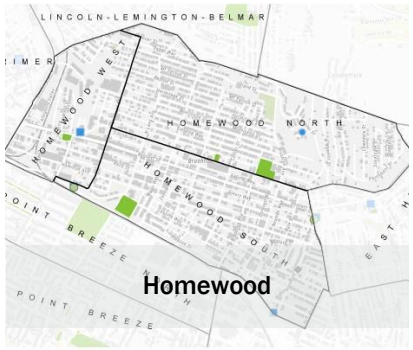
Brighton Heights

Garfield



Hays

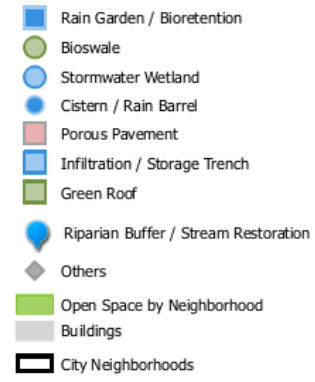
Hazelwood



Homewood

Larimer

LLB



Sources: 3 Rivers Wet Weather, evolveEA., 2020

TDR Pilot Potential

Green Stormwater Infrastructure

Small and Medium Scale Planned GSI

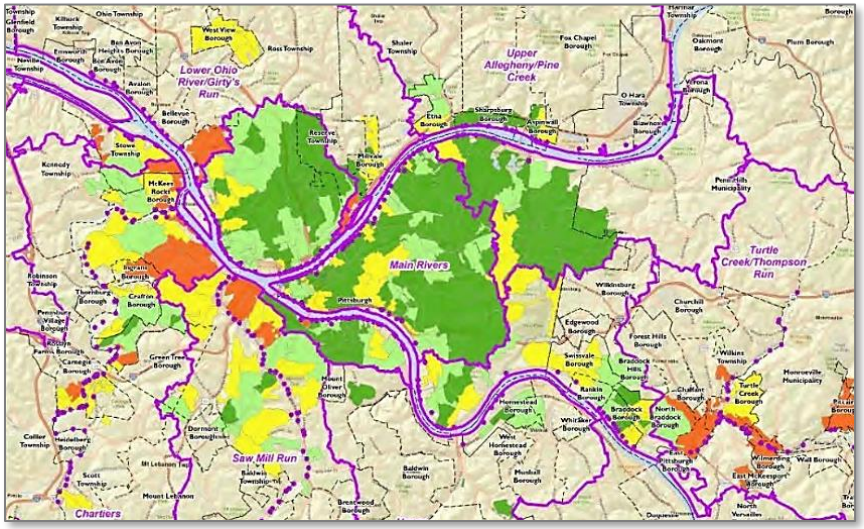
Allegheny County Sanitation Authority's (ALCOSAN) 2019-2020 *Controlling the Source* plan evaluated its service area to identify optimal sites for potential implementation of green infrastructure. Optimal sites for GSI are places within the system where stormwater detention has a high level of effectiveness in reducing combined-sewer overflows that overlap with places in the community with fewer likely construction conflicts. For small to medium scale potential GSI sites within the city, this plan is the best resource for evaluating whether the site is appropriate for GSI.

Medium and Large Scale Planned GSI

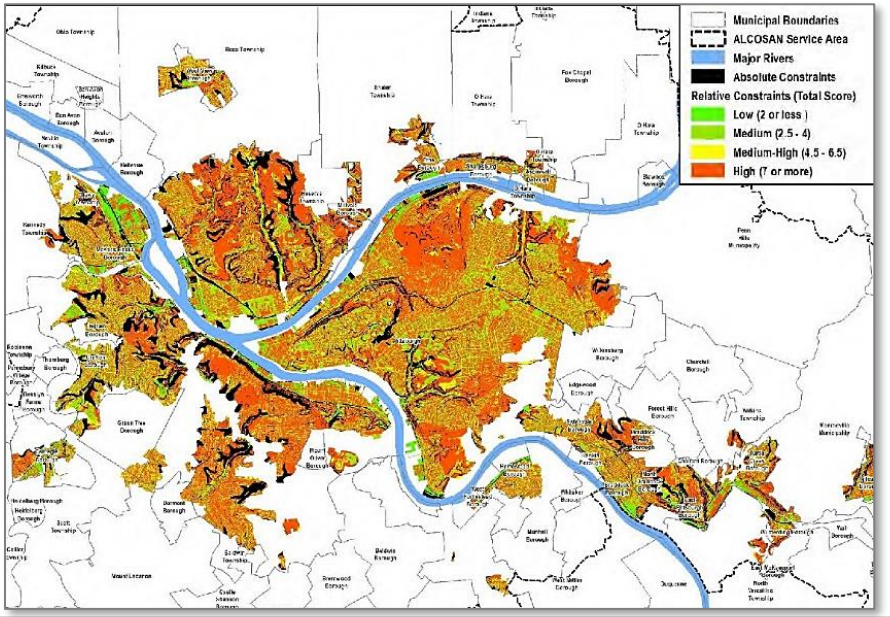
Pittsburgh Water and Sewer Authority's (PWSA) 2016 *Green First Plan* identified medium to large scale potential GSI sites, many of which were suggested in parks or greenways where development rights do not exist. With the exception of the Four Mile Run Stormwater Improvement Project and the Negley Run restoration project, there are no projects at this scale currently in development.

Sources: *Controlling the Source*, ALCOSAN, Pages 16 and 20, 2020

***Controlling the Source*: Overflow Reduction Efficiency**



***Controlling the Source*: Relative Constraints**



TDR Pilot Potential

Open Space

The Urban Greenprint Analysis, a separate report combining key greening plans from several city agencies, identifies areas in need of protection from development - which could also serve as potential TDR Pilot sending areas. The intent of the analysis was to identify project areas with the highest potential for stakeholder collaboration, investment in the extension of current green spaces, and new green spaces or green space serving as hazard mitigation - to deliver greatest community benefit. According to data provided by the City of Pittsburgh, summarized below and mapped on the following page, the Hazelwood neighborhood has the highest acreage of open space land (109 acres), of which a large portion is environmentally constrained (90 acres or 82 percent). The Beltzhoover, Brighton Heights, LLB, Hays, and Homewood neighborhoods have previously identified potential TDR sending areas such as McKinley Park Slopes and St. John's Expansion.

	Hays	Homewood	Larimer	Garfield	LLB	Bon Air	Brighton Heights	Beltzhoover	Hazelwood
Open Space -EC	0.6	0.2	0.2	3.1	14.6	23.4	26.2	29.2	89.6
Open Space	1.3	5.7	6.8	10.6	24.4	26.6	36.2	55.2	108.7

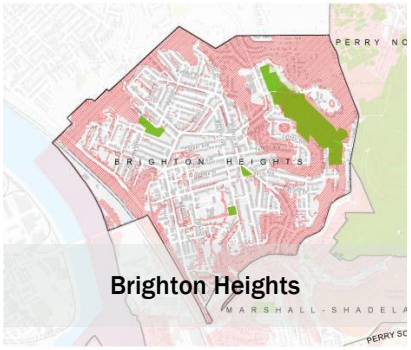
Sources: City of Pittsburgh, evolveEA., 2020

TDR Pilot Potential

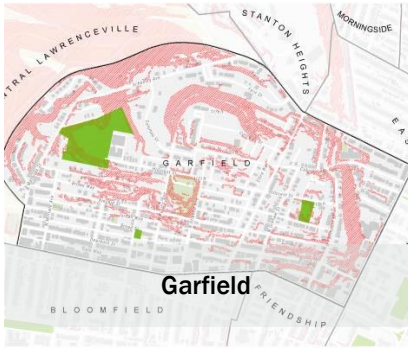
Open Space (continued)

Beltzhoover

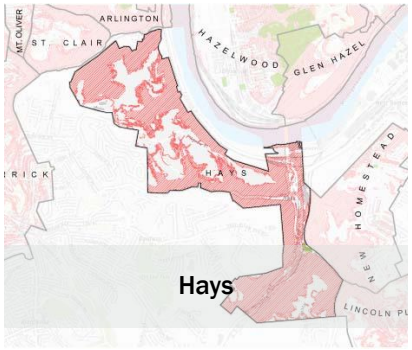
Bon Air



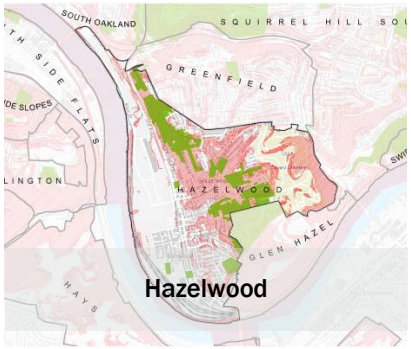
Brighton Heights



Garfield

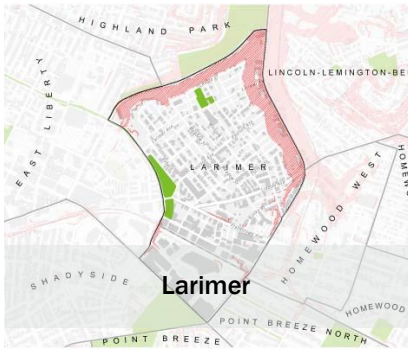


Hays

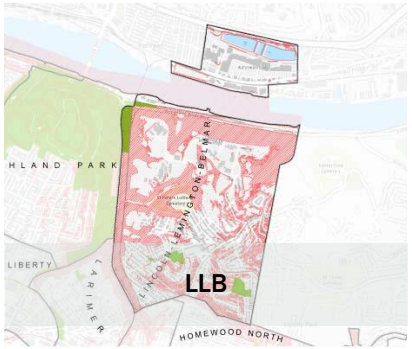


Hazelwood

Homewood



Larimer



LLB

Open Space by Neighborhood
Environmental Constraints
City Neighborhoods
Buildings

Sources: 3 Rivers Wet Weather, evolveEA., 2020

Neighborhood Profiles

TDR Pilot Potential

Beltzhoover

Sending Areas

Beltzhoover's steep slopes and areas along Saw Mill Run can make development challenging. Most of these environmentally constrained areas are already designated as Hillside or as part of McKinley Park. There is an area zoned as Two-Unit Residential High Density that is environmentally constrained due to steep and landslide-prone slopes, and an area zoned for Urban Industrial that has both steep slope and floodplain conditions.

Sending Area Findings: Limited

Receiving Areas

Beltzhoover is predominantly zoned for Two-Unit Residential High Density. There is no community or other plan that identifies areas for development or increased development. While the neighborhood is proximal to light rail stations at South Hills Junction and Boggs, the opportunities for transit-oriented development (TOD) are very limited and the Port Authority or Allegheny County (PAAC) has not performed station-area planning in either location.

Receiving Area Findings: None

Catalytic Developments or Neighborhood Projects

There are no active or planned major developments in Beltzhoover. There is no community or other plan that identifies major neighborhood projects, though there are plans for improvements within McKinley Park. This could change should the Port Authority produce a station-area plan for South Hills Junction that leads to TOD on its property. Under this scenario, increased development activity along Warrington Avenue could arise.

Catalytic Developments: None

Neighborhood Projects: None

TDR Pilot Potential

Bon Air

Sending Areas

Bon Air's steep slopes and areas along Saw Mill Run can make development challenging. Most of these environmentally constrained areas are already designated as Hillside or Park. There are areas of Neighborhood Industrial along Saw Mill Run that could be sending areas.

Sending Area Findings: Limited

Receiving Areas

Bon Air is predominantly zoned for Single-Unit Detached Residential along the hilltop and is zoned in places for Neighborhood Industrial along Saw Mill Run. There is no community or other plan that identifies areas for development or increased development. While the neighborhood has a light-rail station at Bon Air, the opportunities for transit-oriented development (TOD) are very limited, and the Port Authority or Allegheny County (PAAC) has not performed station area planning in either location.

Receiving Area Findings: None

Catalytic Developments or Neighborhood Projects

There are no active or planned major developments in Bon Air. There is no community or other plan that identifies major neighborhood projects.

Catalytic Developments: None

Neighborhood Projects: None

TDR Pilot Potential

Brighton Heights

Sending Areas

Brighton Heights' steep slopes can make development challenging. Most of these environmentally constrained areas are already designated as Hillside, as Park at Benton Field, or as Greenway at The Hollows Greenway. Areas along the Ohio River are occupied by the Allegheny County Sanitation Authority (ALCOSAN) Woods Run Wastewater Treatment Plant. There are areas of steep slopes within the neighborhood that are zoned for Single-Family Detached Residential, but as these places remain built-out, it is unlikely they will be redeveloped.

Sending Area Findings: ***None***

Receiving Areas

Brighton Heights is predominantly zoned for Single-Unit Detached Residential. There is no community or other plan that identifies areas for development or increased development. There are no major bus or light rail fixed guideways in the neighborhood that could support catalytic TOD.

Receiving Area Findings: ***None***

Catalytic Developments or Neighborhood Projects

There are no active or planned major developments in Brighton Heights. There is no community or other plan that identifies major neighborhood projects. A green infrastructure project is in development at the former St. John's Hospital site, in partnership with Allegheny Land Trust.

Catalytic Developments: ***None***

Neighborhood Projects: ***None***

Garfield

Sending Areas

Garfield's steep slopes can make development challenging. At the hilltop, these steep slope areas are zoned for Parks and Open Space at Fort Pitt Playground and hillside. In the northwestern portions of the neighborhood, there are substantial spaces zoned for Single-Unit Detached Residential where there are environmental constraints and a high level of vacancy. Based on the environmental constraints and the neighborhood's community plans, these areas should not be developed.

Sending Area Findings: Clear

Receiving Areas

Garfield's neighborhood plan calls for infill development throughout the core of the neighborhood and for increased development along Penn Avenue. These areas could be appropriate for additional density to further support a thriving Penn Avenue district. There are no major bus or light-rail fixed-guideways in the neighborhood that could support catalytic TOD.

Receiving Area Findings: Limited

Catalytic Developments or Neighborhood Projects

There are no active or planned major developments in Garfield. There is no community or other plan that identifies major neighborhood projects, aside from streetscape improvements planned for eastern portions of Penn Avenue.

Catalytic Developments: None

Neighborhood Projects: None

TDR Pilot Potential

Hays

Sending Areas

The Hays neighborhood is largely open space along the hilltop, with pockets of Two-Unit Residential Low Density in the valley along Streets Run. Recently acquired by the City of Pittsburgh, the hilltop open space area is designated as Park and called "Hays Woods." Historically, there have been development plans for the hilltop that range from single-family detached neighborhood development to the "Pittsburgh Palisades" concept for a racetrack, casino, and entertainment complex. Areas of the Hays Woods parcel may be appropriate as sending areas depending upon their designations. The residential areas along Streets Run are environmentally constrained and should eventually be subject to divestment.

Sending Area Findings: Clear

Receiving Areas

There is no community or other plan that identifies areas for development or increased development. There are no major bus or light-rail fixed-guideways in the neighborhood that could support catalytic TOD. Within the neighborhood, there are no clear places in which to send development rights.

Receiving Area Findings: None

Catalytic Developments or Neighborhood Projects

There are no active or planned major developments in Hays. There is no community or other plan that identifies major neighborhood projects, aside from development of Hays Woods into a city park.

Catalytic Developments: None

Neighborhood Projects: None

TDR Pilot Potential

Hazelwood

Sending Areas

Hazelwood's steep slopes can make development challenging. Many of these areas are zoned for Single-Unit Detached residential development and there is a notable amount of vacant parcels from which development rights could be transferred. Other environmentally constrained areas within the neighborhood are zoned as Hillside or are designated as part of the Hazelwood Greenway, which stretches across the neighborhood and is not contiguous. Non-greenway parcels that are adjacent to the greenway were identified in the City's Greenways for Pittsburgh 2.0 as being appropriate for future greenway expansion. Before designated as green space, these parcels could send their development rights.

Sending Area Findings: Clear

Receiving Areas

Areas along Second Avenue proximal to the Hazelwood Green development have been identified in community plans as being appropriate for further investment and development. These are areas where additional density would be desirable and where development pressure is likely as the Hazelwood Green development progresses.

Receiving Area Findings: Clear

Catalytic Developments or Neighborhood Projects

The Hazelwood Green development along the Monongahela River is one of Pittsburgh's largest master-planned development sites. The first on-site buildings are currently under construction within the frame of the former Mill 19. This development already has the rights necessary for a dense, mixed-use urban tract, but it will likely encourage additional investment within Hazelwood along Second Avenue.

*Catalytic Developments: **Hazelwood Green***

6.0 to 10.7 million square feet of possible development over 178 acres

Neighborhood Projects: None

TDR Pilot Potential

Homewood

Sending Areas

Technically comprised of three city neighborhoods (West Homewood, North Homewood, and South Homewood), Homewood features a mix of zoning types which include Single-Unit Attached and Detached Residential, Two-Unit Residential, Multi-Unit Residential, Neighborhood Industrial, Urban Industrial, Local Neighborhood Commercial, and Urban Neighborhood Commercial. Most of the neighborhood's core is free of environmental constraints. Areas with steep slopes in the neighborhood's north and east would be appropriate as sending areas. The Silver Lake area is a notable Urban Industrial space, which stormwater planning has identified for future divestment for the implementation of stormwater infrastructure. This could also be a sending area.

Sending Area Findings: Clear

Receiving Areas

Areas proximal to the commercial zones and two major busway stations would be appropriate for increased density. Both Homewood Station and Wilkinsburg Station have completed Transit Revitalization Investment District (TRID) studies, which recommend increased development density in those station areas. Investment at 7800 Susquehanna near Wilkinsburg Station could also spur further development activity.

Receiving Area Findings: Clear

Catalytic Developments or Neighborhood Projects

Apart from the 7800 Susquehanna site, which is primarily the repurposing of an industrial building, there are no major development projects taking place in these neighborhoods. Implementation of a development project on Port Authority-owned property at Wilkinsburg Station could encourage further development activity in Homewood's southeastern area.

Catalytic Developments: None

Neighborhood Projects: None

TDR Pilot Potential

Larimer

Sending Areas

Larimer is largely a hilltop neighborhood with steep slopes that define its boundaries. Most of the steep slopes are zoned Hillside. Urban Industrial areas in the Negley Run valley along Washington Boulevard have been identified in stormwater planning for potential divestment and reconstruction of the Negley Run stream.

Sending Area Findings: Clear

Receiving Areas

Areas in the southern part of the neighborhood, near Bakery Square, are zoned Urban Industrial and are ripe for redevelopment. A planning process, led by Larimer Consensus Group and with funding from Walnut Capital, the developer for Bakery Square, is underway. It is likely that this planning process will recommend redevelopment of the areas around Hamilton and Frankstown Avenues and that a mix of uses will be deemed desirable.

Receiving Area Findings: Clear

Catalytic Developments or Neighborhood Projects

In the southern part of the neighborhood, Bakery Square is one of the largest development projects in Pittsburgh. Following success in previous and current phases of the mixed-use development, the developer is interested in connecting across the railroad tracks to build in the Urban Industrial areas along Hamilton Avenue and Frankstown Avenue. In the western part of the neighborhood, a major residential development project with federal Choice Neighborhoods funding is nearing completion.

Catalytic Developments: Bakery Square

800,000 square feet of office; 300,000 square feet of retail; 500 homes, 12 acres (about half) of which are in Larimer

Neighborhood Projects: Choice Neighborhoods

$30M HUD award to create 334 new housing units and an 18+-acre neighborhood park

TDR Pilot Potential

Lincoln-Lemington-Belmar

Sending Areas

Lincoln-Lemington-Belmar is a Single-Unit Attached and Single-Unit Detached neighborhood with steep slopes around its borders and in pockets throughout the community. While the steep slopes around the periphery are largely zoned for Parks and Open Space, the pockets of steep slopes within the residential zones could be appropriate as TDR sending areas. Urban Industrial areas in the Negley Run valley along Washington Boulevard have been identified in stormwater planning for potential divestment and reconstruction of the Negley Run stream.

*Sending Area Findings: **Clear***

Receiving Areas

Lincoln-Lemington-Belmar is a predominantly residential community. There is no community or other plan that identifies areas for development or increased development. There are no major bus or light-rail fixed-guideways in the neighborhood that could support catalytic TOD.

*Receiving Area Findings: **None***

Catalytic Developments or Neighborhood Projects

There are no major developments or neighborhood projects taking place in the neighborhood. A former Veteran's Affairs Administration (VA) Hospital site exists in the northern part of the neighborhood and is under public ownership. Future plans for this site are not known and are not likely to proceed in the near future.

*Catalytic Developments: **None***

*Neighborhood Projects: **None***

Market Readiness

Methodology: Market Readiness

This study identified 12 neighborhood metrics to evaluate each neighborhood's market readiness as a potential receiving area in a potential pilot TDR project. These metrics help evaluate a neighborhood's likely development potential. For example, 2019-2024 annual household growth rate data estimates provided by Esri (a socio-economic data and mapping software company) was used because anticipated household formation influences near-term housing demand.

Metric	Rational	Source	Year
Near-term Growth Potential			
Annual Household Growth Rate	• Anticipated household formation or decline influences near-term housing demand	Esri	2019-2024
Annual Per Capita Income Growth Rate	• Household income growth or decline can influence near-term real estate investment	Esri	2019-2024
Share of Housing is Medium- to High-Density (10+ units)	• Areas with existing multi-family development may be most receptive to additional multi-family housing development	Esri	2017
Share of Housing Units Built in 2010 or Later	• Areas with recent multi-family development may be most receptive to additional new multi-family housing development	Esri	2017
Existing Development Clusters			
Population Density (per Sq. Mile)	• Population clusters likely have the infrastructure and services necessary to accommodate new development	Esri	2019
Housing Density (per Sq. Mile)	• Housing clusters may be most receptive to additional multi-family housing development	Esri	2019
Retail Business Density (per Sq. Mile)	• Retail clusters could best serve new residents of multi-family housing	Esri	2017
Employment Density (per Sq. Mile)	• Job clusters are attractive to commuting workers with pent-up housing demand	Esri	2017
Walkability			
Walk Score	• Walkability is often correlated with real estate values	Redfin	2020
Transit Score	• Areas with existing transit infrastructure can best serve the needs of new residents	Redfin	2020
Bike Score	• Areas with existing bicycle infrastructure can best serve the needs of new residents	Redfin	2020

TDR Pilot Potential

Key Findings: Market Readiness Metrics

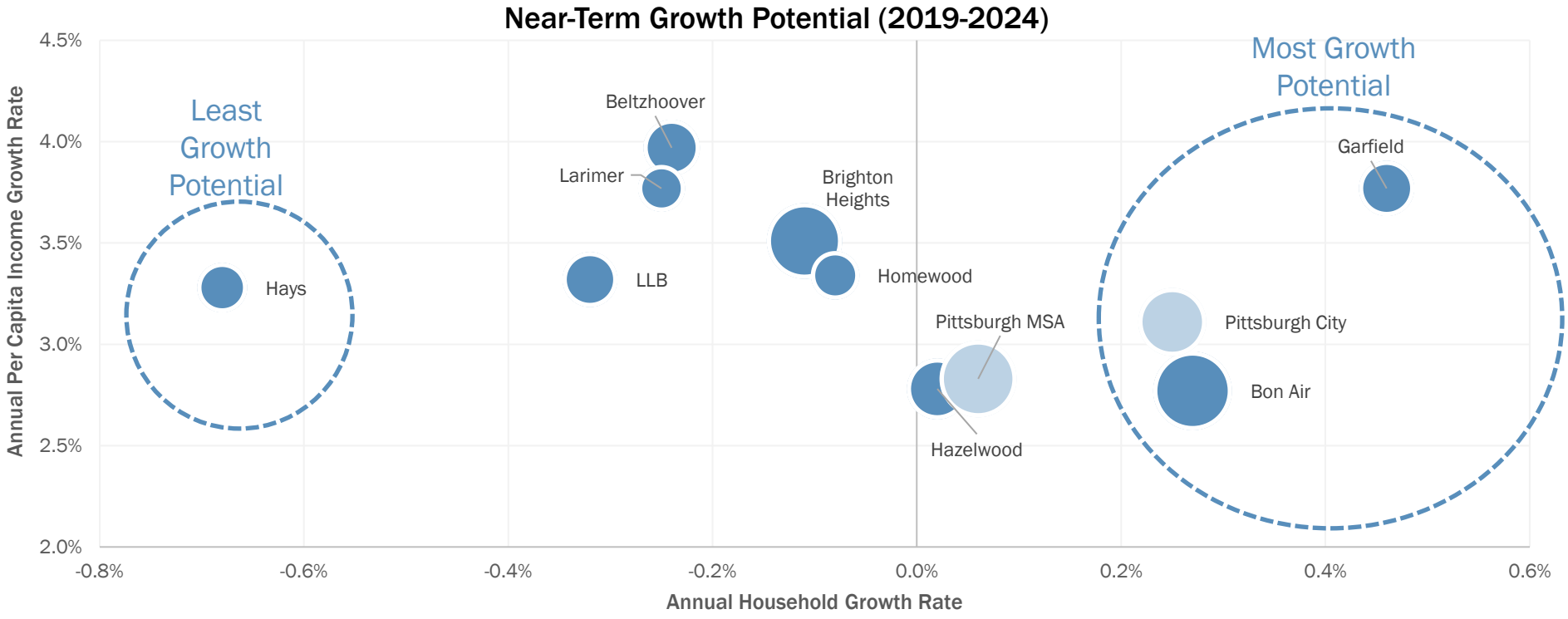
The chart below summarizes 16 market readiness metrics aimed at evaluating each neighborhood's TDR receiving area potential. Each metric is compared to the City of Pittsburgh and the Pittsburgh Metropolitan Statistical Area (MSA), where comparison data is available or meaningful. For example, while Esri anticipates that the Garfield neighborhood will grow by 0.5 percent households per year from 2019-2014, the City of Pittsburgh and Pittsburgh MSA are expected to grow by just 0.3 percent and 0.1 percent per year, respectively.

Metric Rank	Garfield	Homewood	Larimer	Brighton Heights	Beltzhoover	LLB	Hazelwood	Bon Air	Hays	Pittsburgh City	Pittsburgh MSA
Near-Term Growth Potential											
Annual Household Growth Rate	0.5%	-0.1%	-0.3%	-0.1%	-0.2%	-0.3%	0.0%	0.3%	-0.7%	0.3%	0.1%
Annual Per Capita Income Growth Rate	3.8%	3.3%	3.8%	3.5%	4.0%	3.3%	2.8%	2.8%	3.3%	3.1%	2.8%
% of Housing is Medium- to High-Density	8%	9%	7%	7%	0%	8%	12%	0%	0%	18%	9%
% of Housing Units Built in 2010 or Later	12.0%	2.2%	1.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	1.8%
Existing Development Clusters											
Population Density	8,457	6,123	3,772	6,254	4,363	2,274	2,700	2,618	185	5,578	447
Housing Density	5,643	4,685	3,208	3,279	3,084	1,286	1,725	1,287	129	2,949	204
Retail Business Density	46	23	70	20	10	31	6	22	2	48	3
Employment Density	3,835	2,177	977	3,296	2,330	808	1,079	1,697	87	3,031	237
Walkability											
Walk Score	75	66	73	46	49	37	44	28	3	63	NA
Transit Score	57	59	65	43	66	42	38	61	28	56	NA
Bike Score	60	68	74	44	40	36	36	33	15	57	NA

TDR Pilot Potential

Near-Term Household and Per Capita Income Growth

Neighborhoods with anticipated household growth and relatively high (or increasing) household incomes can be attractive for near-term real estate investment, as there is an observed uptick the neighborhood's desirability. As illustrated below, absent any significant investment, the Garfield and Bon Air neighborhoods are expected to experience positive, albeit relatively flat, household growth through 2024. Conversely, the Hays neighborhood is expected to experience negative, albeit relatively flat, household growth through 2024.



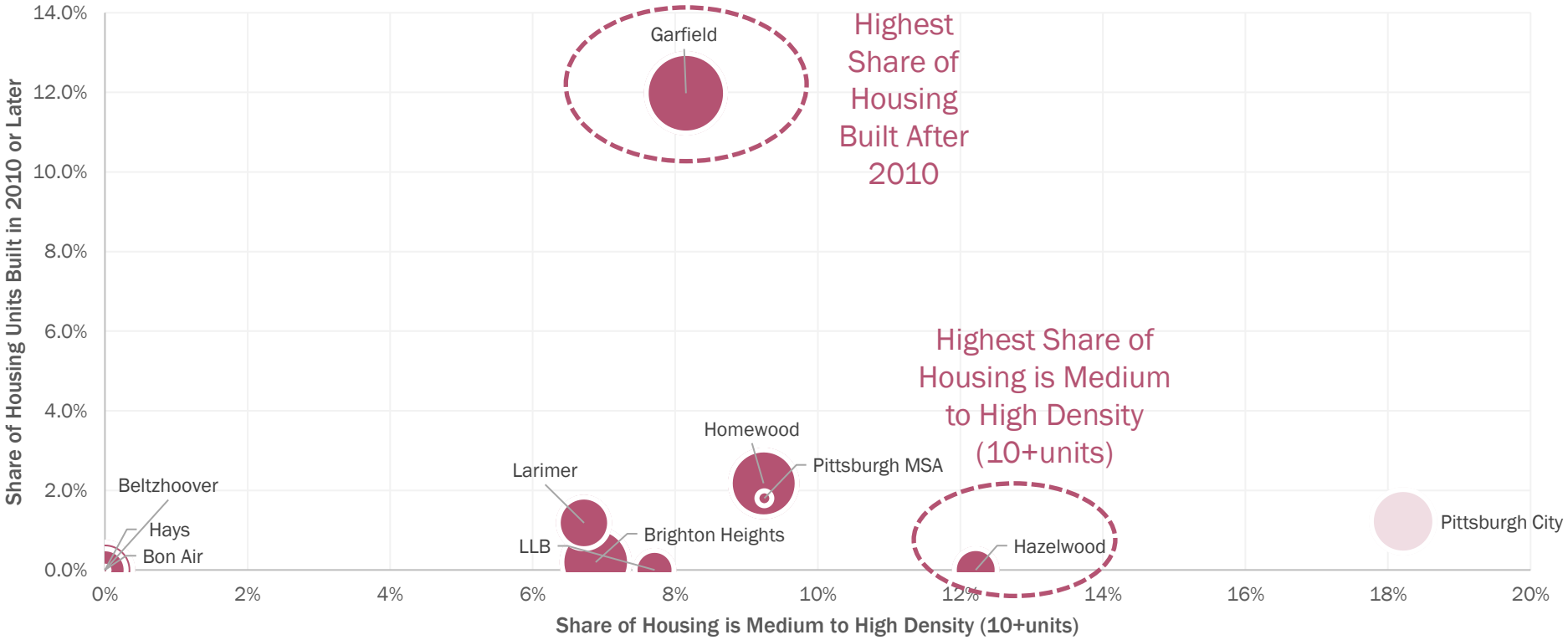
Note: Bubble size represents median household income (2019).
Sources: Esri; 4ward Planning, Inc., 2020

TDR Pilot Potential

Existing Multi-Family Housing

Neighborhoods where new housing has been recently built, particularly those with multi-family development (building with 10 or more units), may be most receptive to additional multi-family housing development (such as from TDR program implementation). As illustrated below, according to 2013-2017 ACS data, Garfield has the highest share of housing built in the last decade (12 percent built from 2010 to 2017), while Hazelwood has the highest share of housing in buildings with 10 or more units (12 percent).

Multi-Family Housing Development Environment



Note: Bubble size represents total housing density (per square mile).
Sources: Esri; 4ward Planning, Inc., 2020

Near-Term Housing Demand: Key Assumptions

Net Household Formation from 2019 to 2024 Based on Esri's Household Growth Forecasts

Households within the City of Pittsburgh are projected to decrease by 3,885 from 2019 to 2029 (by 0.3 percent per year).

Employment Growth Based on Average Annual Growth Rate of 0.5 Percent over 2019 Base Employment

Based on 2019 primary worker data provided by the U.S. Census and average 2016 to 2026 industry employment growth rate projections provided by the Pennsylvania Department of Labor and Industry for Allegheny County, workers within the City of Pittsburgh are expected to increase by 23,180 from 2019 to 2029 (by 0.5 percent per year).

Five of Every 100 PMA Workers Would Trade a Long Commute for Adequate Housing Choice Near Work

Currently, approximately 75 out of every 100 workers commute from outside the City of Pittsburgh. 4ward Planning assumes that five out of every 100 of these workers would, likely, trade their commutes if adequate housing was available.

Housing inventory expected to grow at 0.2 percent per year

Housing within the City of Pittsburgh is projected to increase by 3,260 units from 2019 to 2028 (by 0.2 percent per year).

City of Pittsburgh Should Maintain a Natural Average Annual Housing Vacancy Rate of Six Percent

A vacancy rate between four and seven percent is considered healthy as it allows the movement of relocating households. It is assumed that six percent of units in the City will remain unleased or unoccupied, permitting natural housing turnover.

Remaining Vacant Housing within the City of Pittsburgh is Physically Obsolescent or Unmarketable

With a projected housing vacancy rate of 12.8 percent, it is assumed the remaining share of vacant housing (6.8 percent) within the PMA is not available for sale or for rent, but is vacant due to repairs, foreclosure, or other personal reasons.

1.5 Percent of the City of Pittsburgh's Remaining Housing Stock Becomes Obsolescent Annually

All housing stock gradually wears out over time and, on average, 1.5 percent of units becomes obsolescent, annually.

Near-Term Housing Demand: City of Pittsburgh

Largely due to existing pent-up demand from City of Pittsburgh workers who commute into the City (75 percent of workers) and replacement of physically obsolescent housing, there is currently an identified net demand for approximately 16,690 residential units in the City of Pittsburgh. By 2029, there will be a projected net demand for approximately 20,130 residential units. Assuming that between five and 10 percent of these units could be captured within the nine neighborhoods being studied (and physical capacity exists), these neighborhoods could accommodate between 1,000 and 2,000 units by 2029.

Net Dwelling Unit (DU) Demand Through 2029

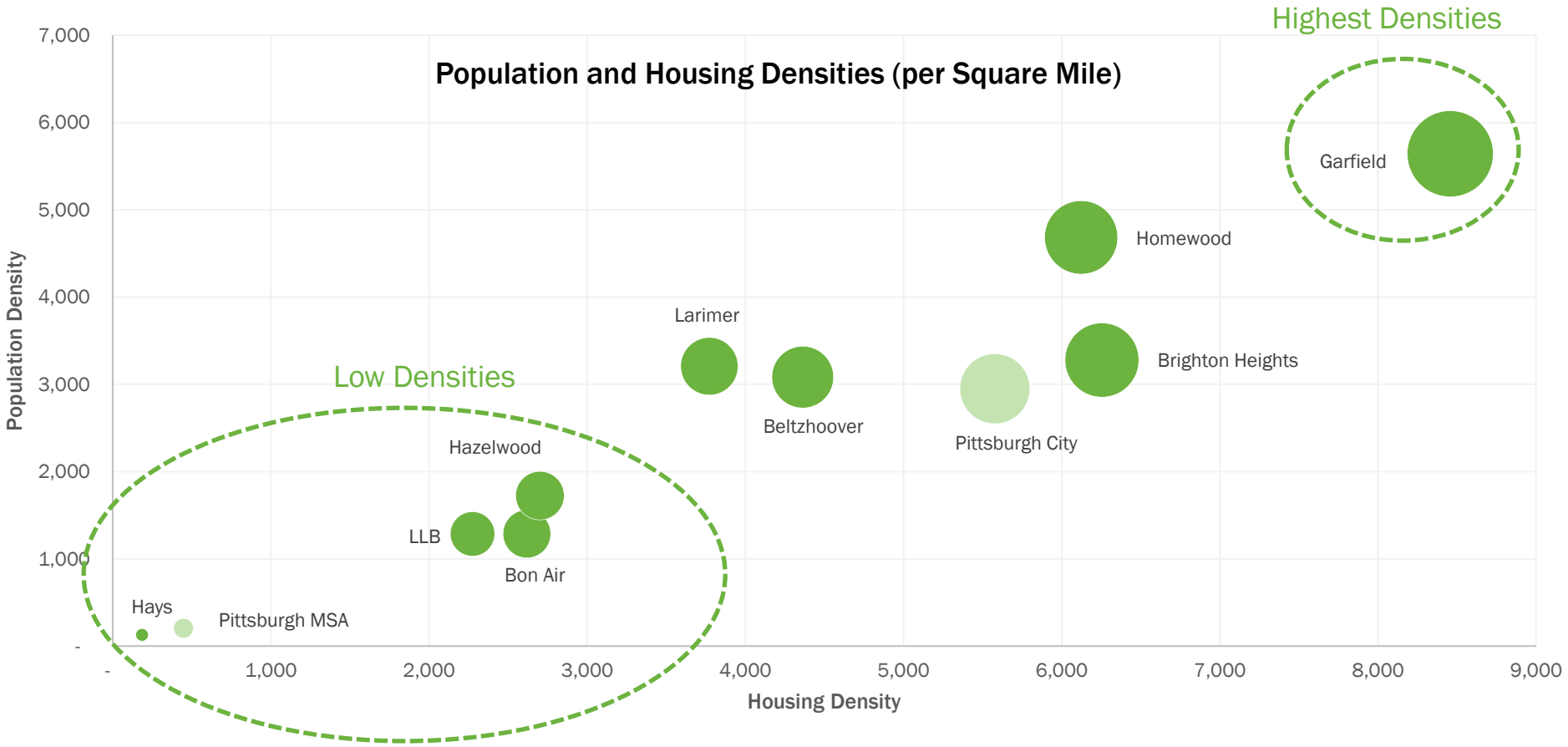
	2019	2024	2029
Housing Demand Metrics			
Estimated Households in Pittsburgh City (0.3% growth rate)	*139,427*	*141,182*	*143,312*
Estimated Workers in Pittsburgh City (0.5% growth rate)	453,260	464,710	476,440
Estimated Workers Residing Outside Pittsburgh City (75%)	338,800	347,360	356,130
Estimated Pent-Up Housing Unit Demand from Commuting Area Workers (5%)	*16,940*	*17,368*	*17,807*
Estimated Number of Naturally Occurring Vacant Housing Units (6%)	*9,611*	*9,709*	*9,806*
Estimated Aggregate Housing Unit Demand in Pittsburgh City	*165,978*	*168,259*	*170,925*
Housing Supply Metrics			
Estimated Housing Units in Pittsburgh City	160,180	161,810	*163,440*
Physically Obsolescent Units (6.8% of total units, 1.5% annual obsolescence rate)	*10,892*	*11,734*	*12,641*
New Units Added in Pittsburgh City (0.2% growth rate)	0	1,630	1,630
Estimated Net Marketable Housing Units in Pittsburgh City	*149,288*	*150,076*	*150,799*
Net Housing Demand/Supply Calculation			
Estimated Aggregate Housing Unit Demand in Pittsburgh City	*165,978*	*168,259*	*170,925*
Subtract Estimated Net Marketable Housing Units in Pittsburgh City	*149,288*	*150,076*	*150,799*
Net Housing Unit Demand/(Excess Units)	16,690	18,183	20,126
Pittsburgh City Unit Capture (5%)	835	909	1,006
Pittsburgh City Unit Capture (10%)	1,669	1,818	2,013

Source: 4ward Planning Inc. 2020

TDR Pilot Potential

Population and Housing

As illustrated below, Garfield has the highest population and housing density (8,457 persons and 5,643 housing units per square mile), while Hays has, by far, the lowest population and housing densities (185 persons and 129 housing units per square mile).



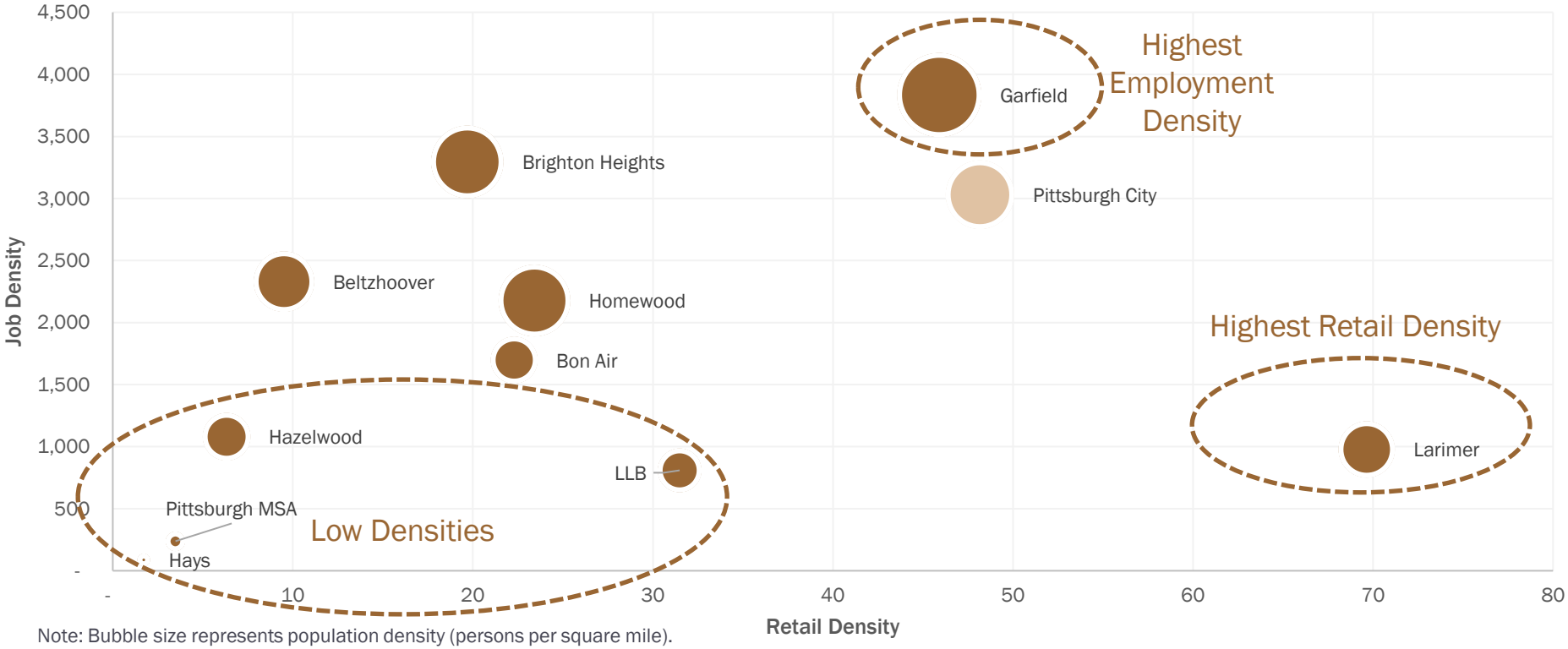
Note: Bubble size represents population density (persons per square mile).
Sources: Esri; 4ward Planning, Inc., 2020

TDR Pilot Potential

Employment and Retail

As illustrated below, Garfield has the highest job density (3,835 jobs per square mile), while Larimer has the highest retail business density (70 retail businesses per square mile). Conversely, the Hays, Hazelwood, and LLB neighborhoods have some of the lowest job and retail business densities. While Hazelwood currently has low densities, Hazelwood Green - one of Pittsburgh's largest master-planned development sites currently under construction - will likely encourage additional investment and increase employment and retail densities within Hazelwood.

Jobs and Retail Business Densities (per Square Mile)



Note: Bubble size represents population density (persons per square mile).
Sources: Esri; 4ward Planning, Inc., 2020

TDR Pilot Potential

Walk, Transit, and Bike Scores

The following scores help measure each neighborhood's access to services, transit, and bike infrastructure.

- **Walk Score** measures pedestrian friendliness by analyzing population density and road metrics such as block length and intersection density. Data sources include Google, Factual, Great Schools, Open Street Map, the U.S. Census, Localeze, and places added by the Walk Score user community.
- **Transit Score** calculates a score for a specific area by summing the relative "usefulness" of nearby routes. Usefulness is based on the distance to the nearest stop on the route, the frequency of the route, and type of route. Transit Score is based on transit agencies data.
- **Bike Score** is calculated by measuring bike infrastructure (lanes, trails, etc.), hills, destinations and road connectivity, and the number of bike commuters. These scores are based on data from the USGS, Open Street Map, and the U.S. Census.

The table below compares score ranges and interpretations.

Score	Walk Score®	Transit Score®	Bike Score
90–100	**Walker's Paradise** Daily errands do not require a car.	**Rider's Paradise** World-class public transportation.	**Biker's Paradise** Daily errands can be accomplished on a bike.
70–89	**Very Walkable** **Most errands can be accomplished on foot.**	**Excellent Transit** **Transit is convenient for most trips.**	**Very Bikeable** **Biking is convenient for most trips.**
50–69	**Somewhat Walkable** Some errands can be accomplished on foot.	**Good Transit** Many nearby public transportation options.	**Bikeable** Some bike infrastructure.
25–49	**Car-Dependent** Most errands require a car.	**Some Transit** A few nearby public transportation options.	**Somewhat Bikeable** Minimal bike infrastructure.
0–24	**Car-Dependent** Almost all errands require a car.	**Minimal Transit** It is possible to get on a bus.	

Source: Walk Score; 4ward Planning, Inc., 2020

TDR Pilot Potential

Walk, Transit, and Bike Scores (continued)

Neighborhood walkability is often correlated with real estate values, with more walkable neighborhoods - those with a mix of common daily shopping and social destinations within a short distance - commanding higher real estate price premiums over otherwise with less walkable areas. Based on data provided by Redfin (a real-estate brokerage company), Garfield has the highest Walk Score, Beltzhoover has the highest Transit Score, and Larimer has the highest Bike Score. Hays has the lowest scores in all categories. None of the nine neighborhood had scores over 90.

Legend	
70–89	Very Walkable/ Excellent Transit / Very Bikeable
50–69	Somewhat Walkable/ Good Transit / Bikeable
25–49	Car-Dependent/ Some Transit / Somewhat Bikeable
0–24	Car-Dependent / Minimal Transit

	Walk Score	Transit Score	Bike Score	Average
Larimer	73	65	74	71
Homewood*	66	59	68	64
Garfield	75	57	60	64
Pittsburgh City	63	56	57	59
Beltzhoover	49	66	40	52
Brighton Heights	46	43	44	44
Bon Air	28	61	33	41
Hazelwood	44	38	36	39
LLB	37	42	36	38
Hays	3	28	15	15

Note: Scores for Homewood includes averages for Homewood West, Homewood South, and Homewood North.
Source: Redfin; 4ward Planning, Inc., 2020

Existing Zoning Review

TDR Pilot Potential

Transfer of Development Rights: Pittsburgh Zoning

The City of Pittsburgh's TDR program is currently targeted to two districts within the City: 1) the Golden Triangle and 2) the Riverfront District (RIV). Per Pittsburgh's zoning code, the TDR program in these districts permits "*an increase in the number of dwelling units and allowable gross floor area of buildings and structures through the transfer of such development rights from zoning lots within the (GT District/two(2) adjacent DR Districts) having unused development rights to other lots within the (GT Districts/adjacent DR Districts), in conformity with the official master plans of the City…*"

The City's TDR program offers the ability to preserve open space and/or limit development which could be detrimental to historic buildings, while affording an increase in residential and commercial development in areas where such an increase is desirable and can create significant economic value and fiscal benefits. These benefits are made manifest in increased natural systems services, such as reduction in stormwater runoff and surface parking areas (which contribute to heat island effects), and the ability to increase the supply of housing affordable to middle- and lower-income residents. Further, the TDR program, as structured, does not require zoning variances, saving time and money for private investors.

However, Pittsburgh's TDR program is limited to two relatively small districts within the City, thus precluding benefit to prospective development and preservation activity outside these TDR districts. For example, the RIV's TDR credit program can only be used by property owners within that district – precluding, for example, the Larimer neighborhood from participating.

According to the only two TDR transactions enacted to date, the market value for TDR credits appears based on negotiation between transacting parties - as opposed to an estimated value tied to foregoing development (the sending party in a TDR transaction) or achieving increased development (the receiving party). Absent a transparent framework for understanding credit value, the functioning of a market for TDR credits is extremely challenged.

TDR Pilot Potential

Transfer of Development Rights: Pittsburgh Zoning (continued)

The table below presents a high-level review of the development rights of zoning and Subdivision and Land Development Ordinance (SALDO) covering the nine neighborhoods. Basic, as-of-right development rights are created by the City of Pittsburgh's zoning code, which generally covers the following two major areas:

- The first are *use restrictions* (see table below), identifying which uses can occur in each zoning district. This is governed by the use table in section 911.02 of the zoning code. Uses can either be permitted (as of right), prohibited, or permitted under various exceptions, either administratively by the zoning administrator (Administrator's exception) or from the Zoning Board of Adjustment (ZBA) as either a special exception or a conditional use.

- The second are *development standards* (see table on the following page), which address height, set back, and floor area ratio restrictions. Residential zoning districts do not have FAR (floor area ratio) requirements but do have minimum lot per unit requirements. These standards create the permitted density on a site, which determines the zoning envelope (i.e., the buildable volume of the site).

	Special Purpose Zoning Districts				Residential																					Mixed Use							Planned Devt Districts	
					R1D					R1A					R2					R3					RM											
	RIV	H	P	EMI	VL	L	M	H	VH	VL	L	M	H	VH	VL	L	M	H	VH	VL	L	M	H	VH	VL	L	M	H	VH	NDO	LNC	NDI	UNC	HC	GI	UI	RP	SP
Beltzhoover																																					
Bonair																																					
Hays	GI																																				
Hazelwood	GI																																				
Homewood																																					
Larimer																																					
LLB	IMU																																				
Garfield																																					
Brighton Heights																																					

TDR Pilot Potential

Transfer of Development Rights: Pittsburgh Zoning (continued)

Special Purpose Districts	Height	Max. Lot Coverage	FAR
Riverfront (RIV)	60' (base), (24' min.)		no FAR
IMU- Industrial mixed use subdistrict	subdistricts impact uses, not heights		
GI -General industrial subdistrict			
Hillside (H)	40' / 3 stories	50% disturbance	
Park (P)	40' / 3 stories		1:1
Educational; Medical Institutional District (EMI)	Determined by Master Plan		
Mixed Use	**Height**	**Max. Lot Coverage**	**FAR**
Neighborhood Office District (NDO)	45' / 3 stories	90%	3:1
Local Neighborhood Commercial (LNC)	45' / 3 stories	90%	2:1
Neighborhood Industrial District (NDI)	45' / 3 stories	90%	2:1
Urban Neighborhood Commercial (UNC)			
Not within 1,500' of major transit facility	45' / 3 stories	set backs	3:1
Within 1,500' of major transit facility	60' / 4 stories	set backs	4:1
Highway Commercial (HC)	75' / 5 stories		
Not within 1,500' of major transit facility		set backs	2:1
Within 1,500' of major transit facility		set backs	3:1
General Industrial (GI)	75' / 5 stories	set backs	3:1
Urban Industrial (UI)		set backs	
Not within 1,500' of major transit facility	60' / 4 stories		3:1
Within 1,500' of major transit facility	60' / 4 stories		4:1
Residential (district governs use, dev. subdistrict governs density)	**Height**		**Min Lot Size per Unit**
Very Low Density (VL)	NA to neighborhoods in study		
Low Density (L)	40' / 3 stories	set backs	3,000 sf
Moderate Density (MD)			1,800 sf
RM District	55' / 4 stories	set backs	
All other Residential Districts	40' / 3 stories	set backs	
High Density (HD)			750 sf
RM District	85' / 9 stories	set backs	
All other Residential Districts	40' / 3 stories	set backs	
Very High Density (VH)			400 sf
RM District	no limit	set backs	
All other Residential Districts	40' / 3 stories	set backs	

Transfer of Development Rights: Pittsburgh Zoning (continued)

In addition to the zoning district-specific provisions, the zoning code permits contextual height and set back requirements which allow a parcel to use a set back and height that exceed the zoning restrictions but are consistent with adjacent properties (925.06.B-F (setbacks); 925.07.D (height)). Contextual FAR, however, does not exist, so the FAR or minimum lot area per unit may still restrict overall building size, even where contextual height and setback requirements are available. Additionally, all density restrictions must be observed. For example, in the RM-H district, the height limitation is 85 feet, not to exceed nine stories, but the minimum lot size per unit is 750 square feet. Therefore, a nine-story building with 10 units per floor would require a 67,500 square-foot lot – suggesting such a development wouldn't create the desired density.

The Riverfront zoning district has a base height restriction of 60 feet, but dimensional bonuses are available on a bonus points system (905.04.K). Performance points are available, for example, for projects that provide onsite energy generation, public art, affordable housing, and riverfront public access easements. For each performance point earned the project may either add 10 feet of building height or reduce the riparian buffer zone by 10 feet. Performance points within the RIV are not transferable to other development projects.

In addition, a general performance point system also exists within the environmental performance standards section of the zoning code (915.07) and applies within designated zoning districts. Currently these designated zoning districts are the Riverfront zoning district and the Uptown Public realm district. The Riverfront zoning district is discussed in the paragraph above. The uptown public ream district does not intersect with any of the neighborhoods in this study. All the base zoning districts state that *"the environmental performance standards of Chapter 915 shall impose additional restrictions on development,"* implying the performance point system in Chapter 915 also applies to those districts, even though that is not

Transfer of Development Rights: Pittsburgh Zoning (continued)

an additional restriction. If a non-conforming use has a valid certificate of occupancy, such as a home built in an area now zoned Hillside, that non-conforming use may continue but without expansion.

Throughout the study communities, current development pressure generally does not exceed existing development rights granted by existing zoning. When development pressure exceeds existing zoning, variances within the City of Pittsburgh are somewhat routine. These zoning variances are often easy to achieve and come with little or no community benefits in exchange for additional development rights. Perhaps a TDR program could replace routine variances in areas with traditional zoning.

In some parts of the City, such as the Riverfront Zoning or Uptown EcoInnovation District, a performance-based zoning code has been instituted. In areas with performance-based zoning, developers can earn points by providing community benefits or by building to a higher standard of quality. Subsequently, these points enable additional development rights beyond the base zoning. Perhaps a TDR program could be an additional opportunity to earn points in places with performance-based zoning.

Pittsburgh's Incentive Programs: Performance Points System

The Performance Points System, also referred to as Performance Based Zoning (PBZ) was instituted as part of the City of Pittsburgh's Riverfront Zoning District (RIV) in 2018 and is designed to permit commercial and residential developers within the RIV to increase building height in exchange for satisfying investments in one or more of the following land-use policy objectives:

a) On-Site Energy Consumption – New Construction
b) On-Site Energy Consumption – Existing Buildings
c) On-Site Energy Generation
d) Affordable Housing
e) Rainwater
f) Riverfront Public Access Easements, Trails & Amenities
g) Neighborhood Ecology
h) Public Art
i) Urban Fabric
j) Transit Oriented

Pittsburgh's PBZ program operates on a point system and allows a developer to determine which land-use policy objectives to fund in order to accrue a sufficient number of points to develop one or more additional building stories. Per the current point system, one point is required to erect one additional story above what is permitted as of right (generally, the RIV allows buildings to be 55 feet tall (five stories), as of right).

The City of Pittsburgh is leveraging private-sector funds to achieve a land-use policy objective without expending public funds to do so. Potential benefits achieved include providing more affordable housing, avoidance of greenhouse gases produced by conventional HVAC systems, stormwater mitigation, and creation of public space and art. These benefits can be said to have positive impacts on social and environmental systems.

Pittsburgh's Incentive Programs: Performance Points System (cont.)

However, while broad land-use policy objectives can be achieved through a PBZ mechanism, the point system as identified within the RIV does not appear to be tied to the level of investment required to erect an additional floor, nor the financial return to the developer once the space is leased or sold (it should be stated, however, that the point system associated with the installation and maintenance of public art is based on a percentage of the total cost of construction).

The issue is relevant insofar as the cost of and return on an additional floor of building height is not uniform across all development projects. For example, a developer of a luxury multi-family rental building with a floor plate of 10,000 square feet is likely to realize a greater return on cost per square foot than is a developer of a Class A office building having the same floor plate area (based on a typical lease rate to construction cost per square foot for residential and office projects). Yet, the ability to achieve an additional floor of space could be achieved at a relatively lower cost by the apartment developer than the office developer, if both chose the same land improvement option prescribed by the City (if, for example, the cost of an on-site energy generation system had a $500,000 cost, the share of that cost relative to the financial return of the additional floor of construction (the benefit achieved) would be higher for the office developer than for the apartment developer, in the majority of cases).

Further, Pittsburgh's current PBZ system allows a great deal of discretion to private developers, with respect to which public land-use policies are financially supported – so, for example, if the cost benefit equation favored neighborhood ecology versus affordable housing, relatively few new affordable housing units would get built, all other things being equal.

EVALUATING PROSPECTIVE TDR PROGRAM: LARIMER

Development Rights

Evaluating: Larimer

Where Do Development Rights Exist: Larimer

In a neighborhood like Larimer, community members are interested in expanding green space near steep slopes or contiguous with other parks spaces. However, not all these kinds of spaces have development rights that can be transferred. The following scenarios could be possible within Larimer:

Legend

Green = TDR Supportive
Yellow = TDR Potential
Red = TDR Prohibitive

Scenario	Physically possible?	Legally permissible?	Outcome
Parcel on a very steep slope	Many steep slopes in Pittsburgh are not possible to build on no matter the zoning permissions.	Many hillside areas are covered by hillside zoning which restricts development.	**Rights do not Exist** No development rights to transfer due to being physically impossible and legally impermissible.
Vacant parcel on a somewhat steep slope	Some sloping sites in the City are possible to build on, though the costs can be high to do so.	Many hillside areas are covered by hillside zoning which restricts development.	**Rights do not Exist** No development rights to transfer due to being legally impermissible.
Vacant parcel on a somewhat steep slope	Some sloping sites in the City are possible to build on, though the costs can be high to do so.	Many hillside areas remain zoned for residential.	**Rights Exist** Development rights exist and could be transferred away.
Vacant parcel on level ground	Easily built-upon.	Zoned for residential.	**Rights Exist** Development rights exist and could be transferred away.
Fully-developed parcel with existing buildings	Buildings exist on site.	Existing buildings maximize the zoning envelope, utilizing all of the site's development rights. (i.e., one unit of housing on a parcel where one unit is allowed)	**Rights Could be Created** Development rights exist and could be transferred away if the existing buildings are removed.
Partially developed parcel with existing buildings	Buildings exist on site.	Existing buildings only partially utilize development rights. (i.e., one unit of housing on a parcel where multiple units are allowed)	**Rights Exist** Development rights exist and the unused rights could be transferred away.

Evaluating: Larimer

Where Are Development Rights Valuable: Larimer

In Larimer, two factors currently limit how development takes place. The first is that comparable property values are lower than the cost of development. For instance, if it costs $425,000 to create one new unit of housing and comparable properties in the neighborhood are valued between $80,000 and $200,000, it may not be possible to be approved for construction financing. Furthermore, the low comparable values in the neighborhood may prevent a buyer from being approved for a mortgage that meets or exceeds the development cost of the home. Buyers may also not be willing to pay as much for homes in Larimer due to the high vacancy rates and overall condition of neighboring properties.

The second factor is that the majority of the vacant parcels in Larimer are owned by the Pittsburgh Urban Redevelopment Authority (URA) and are not currently available for sale to developers. This presents both a challenge and an opportunity for people living in Larimer. On one hand, vacant parts of the community are currently unavailable to be developed and remain vacant, thus preventing new developments from offering increased comparable property values. On the other hand, public ownership ensures that the disposition of the properties will be guided by a transparent community planning process where public outreach can guide decisions about future open space, future development scenarios, and priorities for commercial uses or housing affordability.

Over time, we anticipate these factors will change. The URA's Larimer/East Liberty Choice Neighborhoods Initiative[4] is in the process of developing 334 units of new housing and neighborhood park with a $30M award from the U.S. Department of Housing and Urban Development (HUD). This has dramatically changed the character of the neighborhood, making it a more attractive, safer, and more walkable residential community. In addition, the URA's Push-to-Green program and Larimer Consensus Groups' planning process are creating greater clarity about which areas should be developed and which should be prioritized for green open space. While development costs currently exceed market prices for homes in Larimer, as the neighborhood develops, this could change in the future.

4. https://www.ura.org/pages/larimer-east-liberty-choice-neighborhood-initiative

Evaluating: Larimer

Where Are Development Rights Valuable: Larimer (cont.)

Legend

Green = TDR Supportive
Yellow = TDR Potential
Red = TDR Prohibitive

The following scenarios could be possible within Larimer:

Scenario	Financially feasible?	Most profitable?	Outcome
City-owned vacant parcel on a somewhat steep slope	Development cost exceeds market price.	Profit is not the city's only priority when considering; open space, affordable housing, or other uses could be preferred over market support.	**TDR Possible** TDR may be attractive if the neighborhood is interested in appending the parcel to existing hillside open space. TDR may be the only opportunity for the City to benefit from these kinds of properties. In this case, TDR is a useful tool for permanent conservation through development prevention.
Privately owned vacant parcel on somewhat steep slope.	Development cost exceeds market price.	Development for sale or lease is not profitable here.	**TDR Unlikely** A private owner would likely prefer to sell the property outright. Without a buyer, TDR may be the only opportunity to benefit from the property before donating it to the City or a land trust.
City-owned vacant parcel on level ground	Development costs could be close to the market price in the future.	Profit is not the city's only priority when considering; open space, affordable housing, or other uses could be preferred over market support.	**TDR Possible** TDR may be attractive if the neighborhood is interested in appending the parcel to existing open space. In this case, TDR is a useful tool for permanent conservation through development prevention.
Privately owned vacant parcel on level ground	Development costs could be close to the market price in the future.	The owner would develop the parcel according to what zoning allows and the types of development the market demands.	**No TDR** The owner would either sell the property outright or develop it themselves.
Fully-developed parcel with existing buildings	Parcel already developed.	Unless otherwise motivated, current development is in line with market demand.	**No TDR** Costs of demolition and property sale exceed the value of development rights.
Partially developed parcel with existing buildings	Development costs to maximize zoning envelope could be close to the market price in the future.	Unless otherwise motivated, the owner would likely want to maximize development to meet zoning allowances and market demand.	**TDR Unlikely** Most owners would likely prefer not to sell rights as it would devalue their property. But some owners may have no interest in future sale or development and may be interested in selling the unused rights.
Developable parcel selected for public open space or green infrastructure	Cost of open space or green infrastructure development is covered by the implementing agency.	In alignment with community plans, a gov. agency or non-profit plans to develop the parcel as open space or green infrastructure, regardless of market-determined highest and best use.	**TDR Possible** In this case, TDR could be a useful tool for project cost recovery in order to support long-term stewardship.

Conservation Opportunities

Conservation Opportunities: Larimer

Packaging multiple properties for TDR sending

As demonstrated in the pro forma model in this report, small TDR transactions with just a few properties are considered unlikely. The projects likely to gain rights will be acquiring a few dozen units or rights at a time, rather than just a few. Therefore, sites in Larimer with a package of parcels that are eligible for sending are more likely to achieve a successful TDR transaction. Packaging properties within Larimer would allow for TDR to raise more substantial funds to support community conservation efforts. Therefore, selling rights from the African Healing Garden is unlikely to occur given its small size, whereas selling rights as a package from Larimer Park, Larimer Gateway Park, and Lenora Street Garden would be more attractive to a potential buyer.

Green spaces in Larimer and TDR sending eligibility

Larimer has a variety of open spaces throughout the neighborhood and is bordered along the northwestern and northeastern edges by steep wooded hillsides. In general, parcels in or adjacent to these green spaces could be considered TDR Eligible if they contribute to the conservation goals of the community.

Defer to community planning

The tables on the following pages present identified conservation opportunities in Larimer in alignment with planning best practices and the conservation goals of ALT. They are highlighted to better understand potentially eligible or ineligible sending sites for deprivation of development rights through a TDR transaction. Members of the Larimer community were not consulted in the preparation of this document; therefore, it will be important to defer to the goals and recommendations developed in past and future community planning efforts.

Evaluating: Larimer

Conservation Opportunities: Larimer (continued)

Legend

Green = TDR Supportive
Yellow = TDR Potential
Red = TDR Prohibitive

Location	Type of Green Space	Green Space TDR-Sending Eligibility	Adjacent Parcel TDR-Sending Eligibility
Larimer Gateway Park	Larimer Gateway Park at the start of the Meadow Street Bridge which includes welcome signage for the neighborhood. This is on City-owned land but is not a formally designated park.	**Eligible** The parcels are zoned as Two Unit Residential High Density (R2-H) and should be considered eligible sending sites.	**Not Eligible** Adjacent parcels should also remain as open space but are zoned as Hillside (H) and therefore are not eligible as sending sites.
Lenora Street Garden	Lenora Street Garden which is a set of undeveloped city-owned parcels that the community is interested in developing as a community garden.	**Eligible** The parcels are zoned as Multi-Unit Residential High-Density (RM-H) and should be considered eligible sending sites.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.
Larimer Playground	Larimer Playground is a City-owned and designated park with recreational facilities.	**Not Eligible** The parcels are zoned as park and therefore do not have development rights to sell.	**Some Eligible** The Playground is not contiguous due to a single home between the basketball court and the rest of the park. This property, if acquired, could sell off its development rights as part of a park expansion project.
Larimer Avenue Green Space	A park with a gazebo along Larimer Avenue.	**Eligible** The parcels are zoned as Local Neighborhood Commercial and should be considered eligible sending sites.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.
Larimer Community Garden and Urban Farm	A park with gather spaces to support farmers' markets and community gardening along Larimer Avenue.	**Eligible** The parcels are zoned as Local Neighborhood Commercial and should be considered eligible sending sites.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.
Environment and Energy Community Outreach (EECO) Center Rain Garden	A rain garden on the site of a community center owned by the Urban Redevelopment Authority.	**Not Eligible** This is a site that could be conceived of as an opportunity for future development if the EECO is relocated. It should not be deprived of its development rights.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.

Evaluating: Larimer

Conservation Opportunities: Larimer (cont.)

Legend

Green = TDR Supportive
Yellow = TDR Potential
Red = TDR Prohibitive

Location	Type of Green Space	Green Space TDR-Sending Eligibility	Adjacent Parcel TDR-Sending Eligibility
African Healing Garden	A garden on privately owned land that was created by volunteers and with community-led fundraising. The owner, Ms. Betty Lane, is a long-time Larimer community leader.	**Possibly Eligible** If the community is interested in keeping the garden as a permanent feature, selling the development rights could help to offset the costs of stewardship.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.
Frankfort Park	A green space along a major roadway.	**Eligible** The parcels are zoned as Two Unit Residential High Density (R2-H) and should be considered eligible sending sites.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights.
Lincoln & Frankstown Green Space	A corner of an intersection with plantings stewarded by the Western Pennsylvania Conservancy.	**Not Eligible** This is a site that could be conceived of as an opportunity for future development and is zoned as Local Neighborhood Commercial (LNC).	**Not Eligible** Surrounding properties are important to the residential and commercial fabric of the community and should not be deprived of rights.
Larimer Park Zones B & C	A planned expansion of Larimer Park along a branch of Little Negley Run that includes some Housing Authority-owned parcels that are to be vacated.	**Some Eligibility** Some parcels are zoned Multi-Unit Residential High Density (RM-H) and should be considered eligible sending sites. Most parcels are zoned as Hillside (H) and therefore have no rights to sell.	**Not Eligible** Surrounding properties are important to the residential fabric of the community and should not be deprived of rights or are zoned as Hillside (H).
Hillsides along Negley Run Boulevard and Washington Boulevard	Steep hillsides at the edge of the neighborhood. These are mostly City-owned with occasional homes on some lots. Hillsides are not a part of a park or a greenway but could be at some point in the future.	**Not Eligible** These parcels are already zoned as Hillside (H) and therefore have no development rights to sell.	**Some Eligibility** If a park or greenway were to be designated for these hillsides, some adjacent properties might be appended to expand the contiguous green space area. Some of these parcels include development rights that could be sold.
Properties along Washington Boulevard	Low-density commercial properties of various types that include occupied commercial buildings.	**Potentially Eligible** If efforts succeed to implement the stormwater concepts promoted by the Larimer Consensus Group, Pittsburgh Parks Conservancy, and RAND Corporation, these businesses could be relocated to create a daylit stream. These sites are currently zoned for Urban Industrial (UI)	**Not Eligible** Adjacent parcels are zoned as Hillside (H) and therefore do not have development rights.

Financial Feasibility and Fiscal Impact Analyses

Evaluating: Larimer

Methodology: Financial Feasibility Analyses

While ALT has proposed creating a traditional TDR program within Larimer to support its overarching goals of land preservation and environmental stewardship, such a program is likely to fall short of achieving these goals, based on market fundamentals which underpin a TDR program. Specifically, and based on financial feasibility analyses performed, the scale of development necessary to achieve significant enough revenues to preserve and maintain undeveloped land in Larimer is not supported by current market demand for residential or commercial development; nor is it likely to be supported for many years, given demographic trends (flat to negative population and household growth within the City) and current development activity within other areas of the City.

Estimating the credit value for a TDR program is a multi-step process, requiring upfront real estate market and financial analyses pertaining to prospective development (and demand) in sending areas, as well as prospective development (and demand) within receiving areas. The objective of performing such analyses is to derive a market expected profit margin (e.g., the residual dollar amount after subtracting all projected development costs, fees and expenses from projected gross sales), associated with prospective development within sending and receiving districts, alike.

4ward Planning performed high-level financial feasibility analyses on three prospective TDR programs to understand how much revenue for land preservation and maintenance in the Larimer neighborhood might be possible. The scenarios include a 1) sending and receiving TDR program within Larimer; 2) a sending TDR program from Larimer to a highly urbanized district (one based on financial return on equity and another based on construction value). Next, 4ward Planning performed a high-level fiscal impact analysis of the hypothetical Larimer to HUZD TDR program example (described in more detail in the Appendix).

The following pages provide more detailed descriptions of each scenario and associated findings.

Evaluating: Larimer

Larimer to Larimer: Financial Feasibility Analysis

This scenario assumes certain targeted areas and land parcels within Larimer would be designated as TDR sending areas and parcels and all other land areas and parcels would be designated as TDR receiving areas and parcels.

For simplicity, and based on current market conditions within Larimer, we further assumed that the TDR program would principally be used to increase residential density on a given land parcel and that the density would permit a duplex or twin housing unit on what is otherwise zoned for a single-family detached housing unit (multi-family development is not considered within Larimer, given its current profile as a neighborhood suited to one- and two-family housing units. Further, multi-family residential unit development in this area is not proven to be market viable, given the relatively high residential vacancy rate in the neighborhood, and relatively low market rents currently charged).

We assume a target preservation land parcel of 5,445 square feet (an eighth of an acre*) and a market value of $3,500 (this valuation is based on the observation of estimated undeveloped land parcel values within Larimer (land value estimates ranging from several hundred dollars per parcel to a over $20,000, with the vast majority of land parcels estimated below $4,000)).

Other key assumptions for this scenario include:

Assumptions: As of Right Development	
Lot Size (S.F.)	5,445
Hard and Soft Cost/S.F.	$165
Single-Family Detached S.F.	1,800
Floor *Area* Ratio (FAR)	0.33
Gross Profit on Development	7%

Assumptions: TDR Incentivized	
Lot Size (S.F.)	5,445
Hard and Soft Cost/S.F.	$175.00
Duplex	3,000
Floor Area Ratio (FAR)	0.55
Gross Profit on Development	7%

Credit Value as Pct. of Lot Cost	40%

*Based on a review of single-family residential lot sizes within Larimer

Larimer to Larimer: Financial Feasibility Analysis (continued)

The credit value of 40 percent as a percentage of the lot value (in this case, $1,400) is simply a guestimate on what a developer might be willing to pay for the right to increase floor area ration (FAR) and achieve a greater financial return, knowing the average value of a buildable lot is $3,500.

As exhibited on the previous page, key differences between the as-of-right development and TDR incentivized development are the per square foot hard and soft costs ($10 higher for the duplex/twin, in recognition of increased costs associated with the increased number of kitchens and baths), the total square footage (though, each unit in the duplex/twin would be 300 square feet smaller than the single-family detached unit), and FAR (holding the lot size constant but allowing for the increased building footprint raises the FAR from a third of the property's footprint to a little over half of the square footage).

As identified in the scenarios on the following page, while a profit can be achieved in both, the TDR incentivized scenario provides a greater profit margin when viewed against the cost of land acquired. It should further be noted that simply dividing in half the purchase price per square foot of land does not mean that the purchasers of each unit in the duplex are better off than the purchaser of the single-family house, given that the useable land area available to the single-family purchaser is much greater and not shared.

Consequently, the developer of the duplex/twin housing project will be mindful of how much to pay for a TDR credit, so as not to disincentivize purchasers of the units.

Larimer to Larimer: Financial Feasibility Analysis (continued)

The drawbacks to this type of TDR program are the number of development parcels that would need to be developed with a higher density program (e.g., duplex/twin housing unit as opposed to a single-family detached housing unit), in order to acquire and preserve a sufficient number of undeveloped land parcels to be meaningful for environmental purposes. Specifically, and based on a TDR costing $1,400 per duplex/twin developed, it would take five such developments to provide enough revenue to acquire just two lots costing an average of $3,500. Further, additional TDR sales would be required to furnish funding needed for lot maintenance and insurance expenses.

Finally, an analysis would need to be performed to determine market receptivity for duplex/twin housing unit development within the local area, including an identification of price points, prior to establishing such a program.

As of Right Project

	Sending District
Lot Cost	$3,500
Development Cost	$297,000
Profit	$21,035
Sales Price	$321,535
Profit/Lot Square Footage	$3.86 *
Purchase Price/s.f. of Land	$59.05 **

TDR Incentivized Project

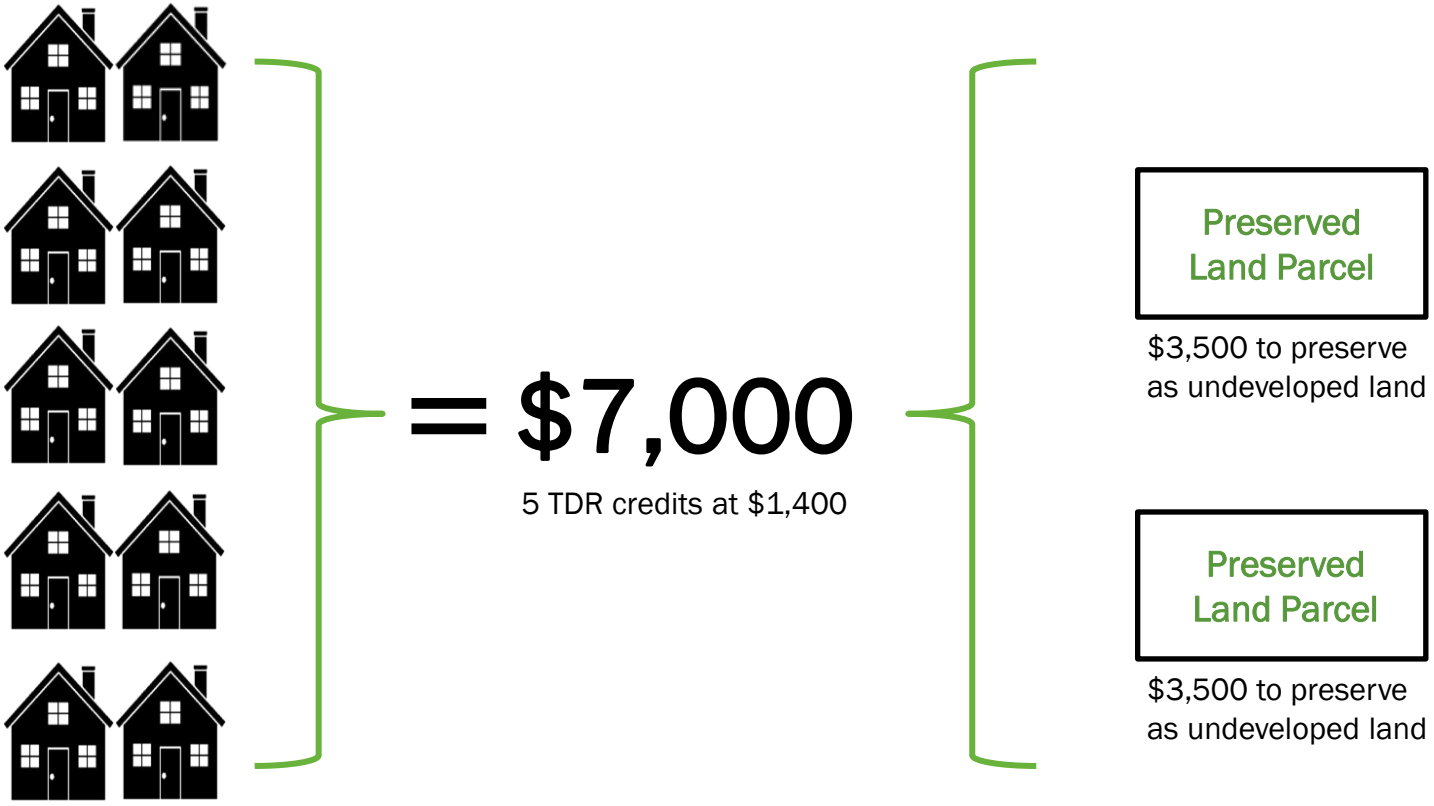
	Sending District	Receiving District
Lot Cost	$3,500	$3,500
TDR Credit Value	Pct. of lot cost	$1,400
Development Cost		$525,000
Profit		$37,093
Sales Price		$566,993
Profit/Lot Square Footage		6.81 *
Purchase Price/s.f. of Land		$104.13 **

* This metric matters to the developer

** This metric matters to the buyer

Larimer to Larimer: Financial Feasibility Analysis (continued)

The below graphic illustrates the hypothetical value proposition associated with the sale of five TDR credits in a Larimer to Larimer TDR program, as described more fully in the preceding pages. Based on an estimated $1,400 TDR credit value to develop two houses per lot in Larimer (as opposed to one), it would take the sale of five TDR credits to purchase and preserve just two undeveloped land parcels in Larimer.



Note: TDR revenue may also be used for the maintenance of undeveloped land parcels that may already be publicly owned.

Larimer to Highly Urbanized Zoning District (HUZD) Sending TDR Program

Evaluating: Larimer

Larimer to HUZD: Financial Feasibility Analysis

The scenario presented to the right assumes certain targeted areas and land parcels within Larimer would be designated as TDR sending areas and offering TDR credit purchase potential for multi-family development projects within the City of Pittsburgh's HUZD.

We assume developers of multi-family projects located within HUZD areas not offering any performance-based zoning incentives (e.g., the RIV and other downtown areas) would be open to the purchase of TDR credits to increase the floor area ratio (FAR) of their project beyond what would be permissible under as of right zoning.

A target preservation land parcel of 5,445 square feet (an eighth of an acre) and a market value of $3,500 is used for this analysis, consistent with the previous Larimer to Larimer TDR scenarios.

Other key assumptions include the following:

Assumptions

	As of Right Dev.	TDR Incentivized Dev.
Lot Size (S.F.)	10,890	10,890
Hard and Soft Cost/S.F.	$120	$180
Building Square Footage	43,560	54,450
Floor Area Ratio (FAR)	4	5
Building Efficiency Factor	0.85	0.85
Number of Units	38	48
Avg. Net Rentable S.F./Unit	950	950
Avg. Rent/S.F.	$2.00	$2.03
Avg. Rent/Unit	$1,900	$1,900
Vacancy Factor	5.0%	5.0%
Other Revenue as Pct. Of Avg. Rent	$95	$95
Interest Rate	6.00%	6.0%
Term	20	20
Amortization	30	30

Note: Assumes stick-built structure over a concrete podium.fr

Larimer to HUZD: Financial Feasibility Analysis (continued)

As exhibited in the previous tables, key differences between the as-of-right development and TDR incentivized development include floor area ratio (the TDR scenarios assumes an increased FAR from 4 to 5 and corresponding increase in building square footage from 43,560 to 54,450) and apartment units (an increase from 38 to 48 units).

In the scenarios presented to the right, the cash-on-cash return rate is used for comparison (this is also referred to as return on equity (ROE)) and, as can be seen, the return rate in the TDR incentivized scenario is 65 basis points greater than that of the as-of-right scenario. Assuming construction costs would hold constant for an increase from an FAR of 4.0 to 5.0, the ROE would increase further.

	As of Right Project	TDR Incentivized Program
Lot Cost	$1,000,000	$1,000,000
Development Cost	$7,840,800	$9,801,000
TDR Purchase Cost		$35,000 *
Total Cost	$8,840,800	$10,836,000
Debt	$6,188,560	$7,585,200
Equity	$2,652,240	$3,250,800
Potential Gross Rent	$909,720	$1,149,120
Less Vacancy & Credit Loss	$45,486	$57,456
Effective Gross Rent (EGR)	$864,234	$1,091,664
Operating Expenses (@ 35% of EGR)	$302,482	$382,082
Net Operating Income (NOI)	$561,752	$709,582
Annual Debt Service	$449,592	$551,057
Debt Coverage Ratio	1.25	1.29
Before Tax Profit	$112,160	$158,525
Cash-on-Cash Return	4.23%	4.88%

* Based on each whole number FAR increase being worth $35,000 (10 times the average lot value in Larimer)

Larimer to HUZD: Financial Feasibility Analysis (continued)

More importantly, the TDR credit value used in this example ($35,000) represents the purchase value of 10 lots within Larimer, based on the average lot value used for this analysis. That is, one TDR credit in this scenario is worth the equivalent of 25 TDR credits in the Larimer to Larimer TDR scenario. The clear advantage for the Larimer to a HUZD TDR program over the Larimer to Larimer TDR program is that fewer sales are needed to have a significant result in acquiring and preserving land parcels in Larimer. Indeed, in the current example, not all of the $35,000 fee need be used for acquisition. A portion could be set aside for maintenance and insurance for those lots acquired.

The disadvantage of this TDR scenario, however, is that it is regressive in nature, given it is simply based on FAR and ignores the project's total scale. Specifically, using the current example, the developer pays $35,000 for an increase of FAR from 4.0 to 5.0 and a development cost increase of $1,960,200 – a TDR credit value-to-cost ratio of 1.8 percent.

If, on the other hand, the building had double the square footage and lot size, the development costs could be said to be twice as much and, consequently, achieving an FAR increase from 4.0 to 5.0 would cost $3,920,400 – resulting in a credit value-to-cost ratio of 0.8 percent. Clearly, the economics of this TDR structure favors larger development projects over smaller projects. This regressive structure is also inherent in some of the city's PBZ requirements (e.g., developing a stormwater mitigation system which may cost the same regardless of the associated development project).

An approach which would address the regressive structure of TDR value would be to tie value to a percentage of the increased cost of constructing the additional floor area. This would mean, generally, the larger the floor area achieved, the larger the construction value increase and associated TDR value paid.

Larimer to HUZD: Financial Feasibility Analysis (continued)

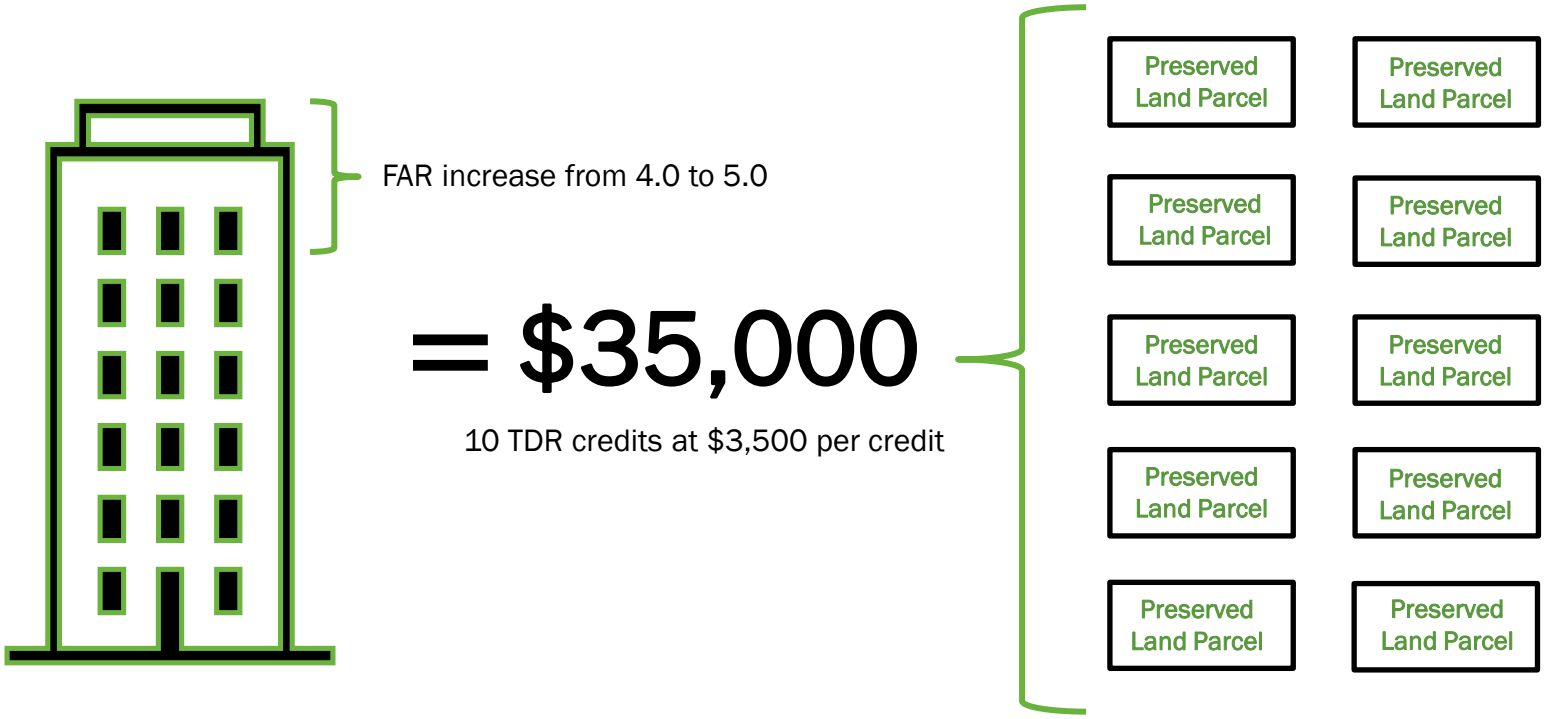
Using the previous examples, and assuming a two-percent TDR credit value associated with the increased cost of construction, the smaller project (an increase in construction value of $1,960,200) would pay $39,204, while the larger project would pay $78,408. This proportional method of determining TDR value also ties the TDR purchase value to the increase in the rate of return – that is, a percentage rise in the cost of purchasing the TDR credit should be proportional to percentage increase in the ROE.

Not only could such as system generate a great deal more revenue for land preservation and associated expenses, the method for determining value is quite transparent and easy for the development community to determine quickly (this issue is not insignificant, as many TDR programs go unsubscribed due to the complexity and opaqueness of deriving credit value).

The previous analyses demonstrate that a Larimer-to-Larimer TDR program, while feasible, would prove inadequate to achieve near-term, large-scale land acquisition and preservation within Larimer. Market demand and current lot values in Larimer are insufficient at present and are not likely to improve much over the next 10 years. A Larimer-to-HUZD TDR program could prove highly successful, with respect to acquiring and preserving a large inventory of undeveloped lots within Larimer. Specifically, an increase in FAR for a building within a HUZD (as opposed to an increase in a building floor, as is currently permitted under the city's PBZ program) could be tied to the purchase of a Larimer TDR credit equivalent to the value of 10 undeveloped average size lots in the neighborhood). Further, the most equitable structure for the purchaser of the TDR credit would be tying the credit value to a percentage of the cost increase associated with increasing the FAR by one whole unit (e.g., 4.0 to 5.0). In this way, TDR purchase value is proportional and not regressive, as are many of the existing PBZ investment requirements within the RIV.

Larimer to HUZD: Financial Feasibility Analysis (continued)

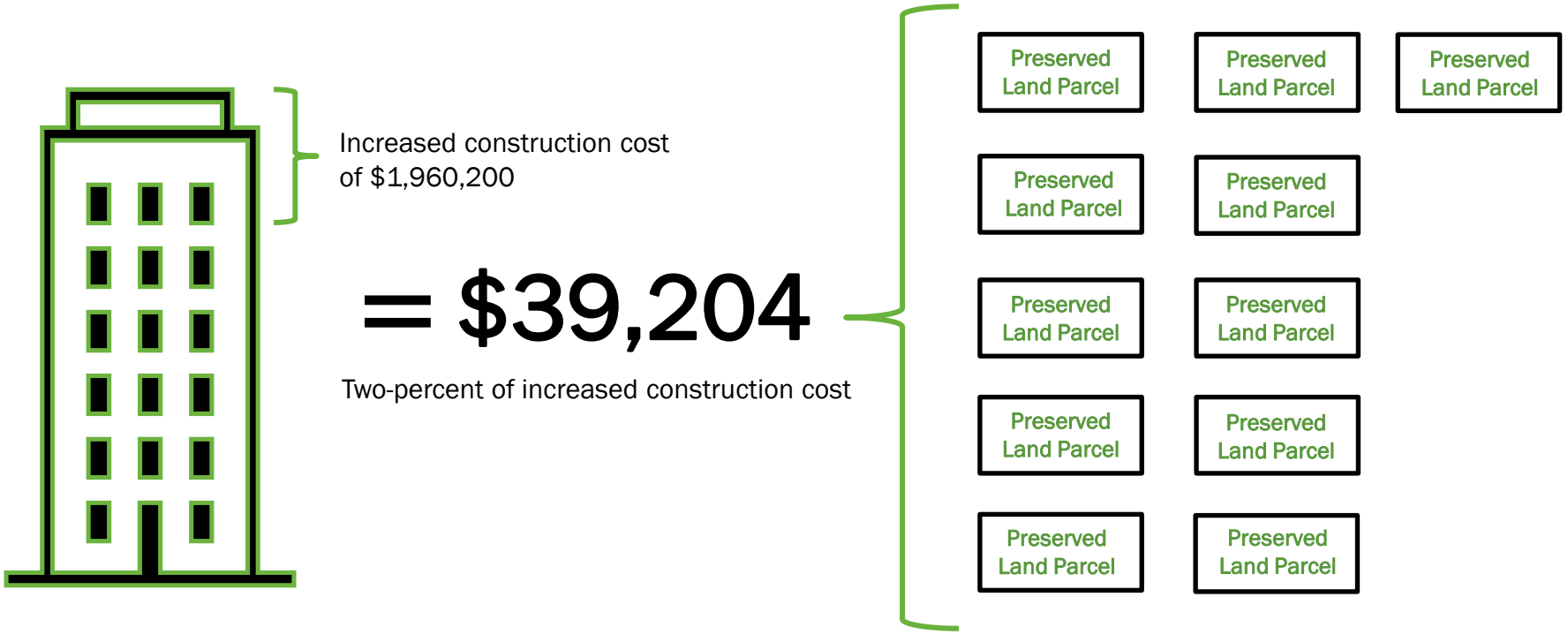
The below graphic illustrates the hypothetical value proposition associated with the sale of 10 TDR credits in a Larimer to HUZD TDR program, as described more fully in the preceding pages. Based on an estimated $3,500 TDR credit value and ten credits required to achieve an FAR whole number increase (in this example, 4.0 to 5.0), 10 land parcels in Larimer could be preserved, based on the acquisition of privately held parcels selling for average of $3,500 per lot.



Note: TDR revenue may also be used for the maintenance of undeveloped land parcels that may already be publicly owned.

Larimer to HUZD: Financial Feasibility Analysis (continued)

The below graphic illustrates the hypothetical value proposition associated with a two-percent increased construction value TDR credit, as described more fully in the preceding pages. Based on an estimated $1,960,200 increase in construction value associated with an FAR whole number increase (in this example, 4.0 to 5.0), 11 land parcels in Larimer could be preserved, based on the acquisition of privately held parcels selling for average of $3,500 per lot.



Note: TDR revenue may also be used for the maintenance of undeveloped land parcels that may already be publicly owned.

Evaluating: Larimer

Larimer to HUZD: Fiscal Impact Analysis

4ward Planning performed a high-level fiscal impact analysis of the hypothetical Larimer to HUZD TDR program example (described in more detail in the Appendix). Specifically, the fiscal impact analysis examined the likely number of new residents associated with an increased FAR (which assumes an increase in dwelling units and bedrooms) and the attendant city service costs, as well as the incremental real property tax revenue related to the increased project value.

This analysis assumed that the increased FAR would results in ten extra residential units (an increase from 38 to 48 units), each containing two-bedrooms (based on an average 950 square feet of leasable space and $1,900 per month rent).

As exhibited in the table to the right and based on the 2006 published multipliers for Pennsylvania two-bedroom multi-family housing units, the 10 additional units developed would produce an estimated 20 additional residents and two public school-age children (note: the two public-children (PSAC) are included in within the 20-resident metric).

	Apartments	Multipliers	Totals
Residents	10	1.97	20
PSAC	10	0.19	2

Given the identified per capita municipal residential service cost ($276 ($332 x .83 which represents the residential share of municipal service costs)) and per pupil service cost ($11,575), the first year annual estimated municipal and school district service costs are $5,520 and $23,150, respectively. It should be noted, however, that these values are general estimates and could vary by as much as 10 percent, lower or higher.

Larimer to HUZD: Fiscal Impact Analysis (continued)

Market Value Through the Income Approach

The below table exhibits the financial metrics associated with 10 additional two-bedroom dwelling units (based on the earlier identified FAR increase from 4.0 to 5.0). The objective is to isolate the market value associated with just these units and, subsequently, convert it into an assessed taxable value for tax levy purposes.

Projected Total Gross Monthly Rent (10 units @ $1,950/month):	$	19,500
Projected Vacancy/Credit Loss (5-percent):	$	975
Projected Total Effective Monthly Rent:	$	18,525
Projected Total Effective Annual Rent:	$	222,300
Projected Net Operating Income (80% of effective annual rent):[1]	$	177,840
Projected Market Value (based on a fully loaded cap rate of 7.3%):[2]	**$**	**2,436,164**

Notes:

[1]An 80 percent net operating income (NOI) suggests 20 percent of the total effective annual rent goes towards operating expenses, inclusive of utilities, insurance, and property maintenance). This metric is exclusive of the property tax expense, which is accounted for by the fully loaded cap rate when deriving the projected market value (see below).

[2]As earlier defined, a capitalization rate ("cap rate") allows investors, property appraisers and tax assessors to estimate the market value of a property, based on the annual return investors demand for similar property classes (e.g., the annual net operating income of a similar apartment building divided by the property's estimated sales value equals the rate of return. Dividing a known or expected NOI by a cap rate results in the expected market value). In order to derive a taxable value (assessed value), a tax assessor will add to the cap rate the current real estate property tax rate (city, county and school rates combined) which is akin to lowering the NOI to arrive at a more accurate taxable value. The combined current tax rate for Pittsburgh properties is 2.274-percent and is reflected in the above cap rate. This value was added to a base cap rate of five-percent to arrive at a 7.3 percent fully loaded rate.

Larimer to HUZD: Fiscal Impact Analysis (continued)

Real Property Tax Revenue

Development-related revenues to the City of Pittsburgh and the Pittsburgh Public School District will, principally, accrue from local real property taxes. A breakdown of the 2020 tax rates and common level ratio (CLR) rates are shown in the chart below:

Breakdown of Local Taxes

Tax Purpose	Rate	CLR	Collecting Jurisdiction	Calculated On
City	0.806%	1.14	City of Pittsburgh	$1,000 of Assessed Value
School District	0.995%	1.14	City of Pittsburgh	$1,000 of Assessed Value
Allegheny County	0.473%	1.14	City of Pittsburgh	$1,000 of Assessed Value

Source: Allegheny County Tax Assessor's Office, 2020

Based on the above tax rates and estimated total project development value using a cap rate of 7.3 percent for the 10 dwelling units, 4ward Planning estimates the following tax levies for the City, school district, and County:

Estimated Real Property Tax Revenues from Mixed-Use Rental Property

Tax Purpose	Total Value	Equalization Value	Tax Rate	Tax Levy
City	$2,436,164	$2,777,227	0.806%	$ 22,384
School District	$2,436,164	$2,777,227	0.995%	$ 27,633
Allegheny County	$2,436,164	$2,777,227	0.473%	$ 13,136

Appendix

Golden Triangle District Code: Density and Intensity Transfers Section with Annotations

910.01.D.1 Density and Intensity Transfers

An increase in the number of dwelling units and allowable gross floor area of buildings and structures through the transfer of such development rights from zoning lots within the GT Districts having unused development rights to other zoning lots within the GT Districts in conformity with the official master plans of the City, provided that:

(a) The zoning lot or lots from which unused development rights are transferred shall be known as the sending lot or lots; the zoning lot or lots on which the development rights are to be used shall be known as the receiving lot.

(b) The receiving lot, prior to the transfer of development rights shall have a gross allowable floor area under this Zoning Ordinance at least equal to the amount of gross allowable floor area to be transferred. (Note: This requirement may not be relevant everywhere. Future zoning districts should identify both a by-right maximum allowable density and a theoretical ultimate maximum allowable density inclusive of acquired rights or other density bonuses.)

(c) For residential use only on the receiving lot, development rights may be transferred from any other zoning lot within the GT District and the required minimum lot area per dwelling unit and usable open space on the receiving lot shall be calculated without regard to the increase in dwelling units resulting from the transfer of development rights; for structured parking use only on the receiving lot, development rights may be transferred from any other zoning lot within two (2) adjacent DR Districts;

(d) For any permitted use on the receiving lot, development rights may be transferred from a site containing an historic structure, designated pursuant to the Pittsburgh Code, Section 1007.02 (Section 513.0);

Golden Triangle District Code: Density and Intensity Transfers Section with Annotations (continued)

(e) For any permitted use on the receiving lot, development rights may be transferred from a site containing a not-for-profit performing arts facility, designated by Council after recommendation of the Planning Commission;

(f) Transfers of development rights in (c) through (e) above may be permitted provided the following findings are made:

(1) Any proposal for such a transfer shall assure the safety and convenience of pedestrian and vehicular traffic movement, both within the receiving lot or lots and in relation to access streets, and the harmonious and beneficial relationship of structures and uses on the receiving lot and on adjacent

property. The number and location of vehicular access points may be limited, and landscaping and other design features may be required as a condition of approval;

(2) The streets providing access to the receiving lot shall be adequate to handle increased traffic resulting therefrom, considering the size and uses of the proposed development;

(3) Except where the sending lot and receiving lot abut or are immediately adjacent across a street or way, the allowable floor area on the receiving lot shall be limited to an increase of twenty (20) percent over that allowed by the applicable base floor area ratio without regard to the transferred development rights (Note: This requirement may not be relevant everywhere. Future zoning districts should identify both a by-right maximum allowable density and a theoretical ultimate maximum allowable density inclusive of acquired rights or other density bonuses);

Appendix

Golden Triangle District Code: Density and Intensity Transfers Section with Annotations (continued)

(4) The transfer shall effect a binding reduction in the unused development rights under this Zoning Ordinance otherwise available to the sending lot, to the extent of the rights transferred, for the life of the development on the receiving lot. The transfer shall increase the development rights under this Zoning Ordinance otherwise available to the receiving lot, to the extent of the rights transferred, for the life of the development on the receiving lot. To ensure the binding effect of this transfer, a properly drawn legal instrument duly approved by the City Solicitor shall be executed by the parties concerned and shall be filed with the application for occupancy permit. The department, bureau and all other affected City departments shall note on appropriate records the reduction in development rights on the sending lot and the increase in development rights on the receiving lot.

(5) In the case of a transfer of development rights involving an Historic Landmark or Performing Arts Facility, there shall exist a plan and program for rehabilitation, if necessary, and for continuing maintenance of the Historic Structure or Performing Arts Facility on the sending lot approved by the Commission which provides for continuation of the structure and use upon which eligibility for the transfer of development rights was based for not less than forty (40) years. (Note: While this stipulation may make rights more challenging to sell from these sites, it is a good way to ensure cultural sites that sell their rights remain significant assets for years to come.)

(6) That the zoning lot to which a transfer is made must have prior to the transfer of development rights a gross allowable floor area under this Zoning Ordinance at least equal to the gross allowable floor area to be transferred.

Appendix

GIS Data Sources

General GIS Layers:

Neighborhoods
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/neighborhoods1

Allegheny County Property Assessments
Organization: Allegheny County
Last Modified: 2018
URL: https://data.wprdc.org/dataset/property-assessments

Zoning
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/zoning1

Open Space GIS Layers:

City Greenways
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/pittsburgh-greenways1

Parks
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/parks1

Environmentally Constrained Area GIS Layers:

Areas with 25% or Greater Slope
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/25-or-greater-slope

FEMA Flood Zones (2014)
Organization: City of Pittsburgh[5]
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/landslide-prone-areas

Landslide Prone
Organization: City of Pittsburgh
Last Modified: April 11, 2020, 6:00 PM
URL: https://data.wprdc.org/dataset/landslide-prone-areas

5. The original source of this data is the Federal *Emergency Management* Agency (FEMA) but it was uploaded to the Western Pennsylvania Regional Data Center (WPRDC) by the City of Pittsburgh.

Appendix

Detailed Fiscal Impact Analysis Methodology

A fiscal impact analysis (FIA) allows for the projection of the direct, current, public costs and revenues associated with residential and/or non-residential development within a political jurisdiction (most often, a municipality, in which new investment is to take place).

4ward Planning performed a high-level fiscal impact analysis, using the hypothetical Larimer to HUZD TDR program example, described in more detail in the report. Specifically, the fiscal impact analysis examined the likely number of new residents associated with an increased FAR (which assumes an increase in dwelling units and bedrooms) and the attendant city service costs, as well as the incremental real property tax revenue related to the increased project value.

A proprietary fiscal impact model, developed by 4ward Planning and used extensively for a number of projects over the past 10 years was employed for this analysis. We utilized the most current tax rates (school and city), the common level ratio (CLR), and city and school district budget expenditure figures. The latest tax rates and CLR are from 2020, while budget expenditures utilized are for the 2021 fiscal year.

Finally, our fiscal impact analysis is based on the per capita method, which determines public service costs on an average unit basis – per pupil for the school district and per capita and per employee for the City. It is, generally, a straightforward division of known annual adjusted service costs[1] divided by either total students, residents or workers. This method is the most widely used FIA approach due to both its simplicity and its low cost to perform. The recommended multipliers for population and enrollment changes can be derived using U.S. Census data.

[1]Adjusted budget expenditures removes salaries, benefits, debt service payments and capital transfers, generally; this rationale is explained in the body of this section.

Detailed Fiscal Impact Analysis Methodology (continued)

The Per Capita Multiplier Method

Based on the Per Capita Multiplier Method for estimating fiscal impact analysis, "the residential share of all residential and nonresidential service costs is estimated by dividing the residential property value and number of residential parcels by all nonresidential property values and the number of nonresidential parcels, respectively. The calculation produces the residential percent of the residential/nonresidential parcels and the residential percent of the residential/nonresidential property value. The results are averaged, and the combined value is then applied to the total local municipal costs to derive the estimated residential-associated share."[1]

Utilizing parcel data obtained from Landgrid.com, an online GIS platform which permits analysis of city, county and state parcel data, 4ward Planning utilized the below metrics to identify the residential share of Pittsburgh's annual municipal service costs (Note: assessment values were not readily available):

2020 Residential Parcels[2]:	116,842
2020 Commercial & Industrial Parcels[2]:	12,376
2020 All Other Parcels[2]	11,061
Total:	140,279
Residential Percentage:	83.3%

The average of the residential land parcel share is 83.3 percent. Consequently, only 83.3 percent of the identified per capita municipal service cost is attributable to residential service costs, as will be demonstrated in this analysis.

[1]Development Impact Assessment Handbook, Urban Land Institute, 1994 [2]LandGrid.com, 2021

Appendix

Detailed Fiscal Impact Analysis Methodology (continued)

Generally, a Pennsylvania appraiser (or property tax assessor) will assess a newly constructed multi-family rental building, for real property tax purposes, using the income approach to valuation, as further described below:

- **Income Approach to Valuation** – The tax assessor identifies a capitalized value for the stabilized development (typically, after the building is 95 percent occupied) by either imputing a monthly rent for all of the units (what the units would command in rent if a condominium building) or using the developer's projected rent, estimating annual net operating income (NOI) and dividing this value by market-based capitalization rate (CAP rate).
- **Capitalized Value** – Capitalized value represents the market value of the subject building. That is, in order to derive an assessed value for property tax purposes, the subject property's market value is determined by dividing the property's estimated net operating income (see NOI definition) by a capitalization rate (see definition), plus the addition of an equalized tax rate (this functions to arrive at a correct valuation. While a capitalized value may not be the exact amount a property would fetch on the open market, it is considered a reasonably close value approximation of an arms length market transaction.
- **Cap Rate** – The capitalization (cap) rate represents an average ratio of a property's net annual operating income (NOI) to the average sales price of comparable properties (in this case, luxury multi-family rental) within the market area. It is an approximation of what the market return rate should be for an investor, given the project's risk profile.
- **Stabilization** – That first year when the property's vacancy rate has stabilized (reached the long-term vacancy rate).
- **Net Operating Income** – Includes all associated property maintenance expenses, insurance, management fees, marketing expenses, utilities and real estate taxes. It excludes debt service expenses.

Detailed Fiscal Impact Analysis Methodology (continued)

Population multipliers are applied to prospective new housing units to estimate the number of new residents and public school-age children, all of whom will affect service costs within the city and local school district. The latest Pennsylvania-based residential multipliers are sourced from Rutgers University Center for Urban Policy Research (CUPR), which were last released in the fall of 2006.

As the latest population multipliers (inclusive of multipliers associated with public school-age children, are based on the year 2000 U.S. Census data, they are, likely, greatly overstating the number of public school-age children generated by the multi-family residential projects examined in this analysis, based on a number of observed and well documented trends in the U.S., generally, and the Pittsburgh metropolitan area, in particular.

For example, a U.S. Department of Health and Human Services National Vital Statistics Report published in January 2019, *Total Fertility Rates by State and Race and Hispanic Origin: United States, 2017,* identified that fertility rates in the U.S. are well below the average of the past 30 years (indeed, fertility rates in most of the U.S. fall below the estimated replacement rate of 2,100 births per 1,000 women (a rate identified as necessary to replacing the population over time)).

Further, the projected housing rental rates associated with this project suggests that the vast majority of household occupants will likely be middle-aged or older, and where school-age children are present, they are likely to be of high-school age (having a short time-span within the local school system).

Detailed Fiscal Impact Analysis Methodology (continued)

Residential Multipliers

The table, below, displays the residential multipliers employed for this analysis.

The multiplier sets are based on 2000 U.S. Census data and are, therefore, considered to overestimate household population figures, given declining fertility rates and the increasing formation of one- and two-person households throughout the United States and Pennsylvania, in particular, over the past 10 years.

Further, 4ward Planning's experience of both examining post construction population impacts for multi-family projects, as well as the body of research literature regarding this issue, suggests these metrics overstate the impacts.

Residential Multipliers

Unit Type	Total Persons	Total PSAC	K-6	7-9	10-12	9th Only
Multi-Family Rental						
Studio	1.20	0.00	0.00	0.00	0.00	0.00
1 br	1.26	0.04	0.02	0.00	0.01	0.00
2 br	1.97	0.19	0.12	0.03	0.03	0.01
3 br	2.76	0.70	0.35	0.18	0.17	0.07

Source: Rutgers University, Center for Urban Policy Research, June 2006

Appendix

Detailed Fiscal Impact Analysis Methodology:
Adjusting Municipal and School District Budgets

The most widely used technique for performing fiscal impact analyses (the per capita approach) has, with few exceptions, included all line-item expenditures within municipal and school district annual budgets. Ostensibly, this approach makes sense, as, if the objective is to derive a per capita budget expenditure cost, the sum total of all expenditure line items should be included when dividing by the current jurisdiction's population or households. However, this approach grossly overestimates the likely per capita/per household cost due to the inclusion of salaries, wages, and fringe benefit costs of municipal and school district personnel, as well as the inclusion of capital outlays, fund transfers, and debt service payments by municipal government and school districts.

The underlying theory of the per capita approach is that a pro rata share of goods and services are exhausted (worn out) by each resident's (or household's) consumption of said goods, services, and natural resources over some period of time (whether a month, a year, or five years). For, example, a municipality has a certain number of housing units, each of which will receive notices over the course of the year from the municipality (e.g., tax notices, water and/or sewer bill notices, health department notices, etc.). These notices are mailed and, thus, consume paper, ink, and postage, in addition to the labor involved in processing said notices. Separating out labor cost, for the moment, there is a known total cost for producing these notices and, via a simple calculation, the cost per household (recognizing that regardless of the number of household members, there is, with few exceptions, only one notice sent per household). Consequently, should additional households form within that municipality, the increase in total costs associated with sending public notices should, ostensibly, be known in advance, as the additional cost is simply a function of the per household cost multiplied by the number of new households.

Appendix

Detailed Fiscal Impact Analysis Methodology:

Adjusting Municipal and School District Budgets (continued)

Similarly, a school district will purchase a certain number of textbooks based on the student enrollment within its district. If there is an influx of new residents and the number of students is projected to increase over the current student enrollment figure, than more textbooks will be purchased and a known additional cost can be derived (note: where the school district has a sufficient number of textbooks prior to new students arriving, either due to an unexpected decrease in enrollment in prior years or its having purchased more text books than necessary, no incremental textbook cost should be attributed to each new student, as the textbook costs are already amortized over the existing student body in place, prior to the arrival of the new students). Additionally, the same logic would apply to other supplies, such as paper, pens and pencils, notebooks, chalk, staples, markers, etc.) that a school district would purchase.

While a case is easily made for the consumption of municipal and school district supplies and materials associated with residents, households, and students, the consumption or wearing out of personnel (whether municipal or school district associated) cannot be calculated in a similar manner. Specifically, the addition of residents and households to a municipality doesn't diminish the physical capacities of the town clerk, public works director or health department director, or their staffs; while they may have to spend a marginal amount of additional time in providing service to additional residents, each of these workers will continue to work an eight hour shift and earn the same wage or salary, regardless of whether the municipality experienced an increase in 100 households or a decrease 100 households (this is an economies of scale effect). The same can be said of school district personnel – an increase or decrease in enrollment, generally, will have little practical impact on the capacity and cost of a district employee.

Appendix

Detailed Fiscal Impact Analysis Methodology:

Adjusting Municipal and School District Budgets (continued)

While municipal and school district personnel are not "consumed" in the same way as office supplies, there comes a point at which additional residents (in the case of a municipal employee) or additional students (in the case of a school district employee) necessitates greater capacity than can be provided by existing personnel (most municipal and school district employees are full-time salaried personnel and, thus, for all intents and purposes, their service delivery per day, week, month, and year remains relatively fixed, regardless of the change in population (municipal) or student enrollment (school district)). It is in these situations that additional personnel are, generally, hired and an attendant increase in personnel cost incurred by the municipality or school district.

Conducting interviews with the municipal business administrator and school district superintendent (the case study approach) for purposes of understanding existing service delivery capacities and how these capacities might be overburdened with an increase of residents and public school students is a superior approach to identifying the prospective municipal and school district personnel impact (staffing and associated costs) than using the per capita method which automatically assumes each new resident and student will require additional personnel and associated costs.

For example, while 100 new households may form within a municipality (and an assumed 250 new residents in total), it is highly unlikely that new professional and administrative staff (e.g., clerk, tax collector, health department personnel, engineering staff, business administrator, etc.) would need to be increased, given the economies of scale for delivering service (principally, made possible by computer technology and modern administrative methods). Sending an additional 100 public notices or processing an additional 100 tax payments is relatively simple in the age of computers.

Detailed Fiscal Impact Analysis Methodology:
Adjusting Municipal and School District Budgets (continued)

Similarly, two or three new students assigned to a classroom with four or five available desks, extra textbooks, and a teacher already present are not likely to cause the school district to increase personnel or associated costs; that is, sufficient capacity to accommodate these students is evident.

Finally, the exclusion of capital outlays, fund transfers, and debt service payments from budget expenditures, in advance of performing a fiscal impact analysis is only logical, as these expenditures, while real, are not influenced by the increase or decrease in the number of residents, households, or enrolled students in a given jurisdiction – the amount of debt payments will not fluctuate if 400 new residents arrive, or 400 residents leave. Thus, to include these budget expenditures in the analysis is to overestimate service costs associated with new residents, households, and students.

Consequently, this analysis excludes personnel cost (salaries, wages, and benefits), capital outlays, fund transfers, and debt service from the budget expenditures used in deriving the fiscal impacts to both the City and school district. It is assumed that if additional personnel are required, surplus revenues (assuming there will be a surplus) would offset said personnel costs.

The above-described method is exhibited on the following two pages.

Appendix

Detailed Fiscal Impact Analysis Methodology:
Adjusting Municipal and School District Budgets (continued)

2021 City Budget Expenditures

General Budget Appropriations	$564,967,492
Budget Adjustments	
Salaries and Wages	$223,745,658
Health Benefits	$62,330,357
Workers Compensation	$17,415,455
Pension & OPEB	$104,314,079
Debt Service	$56,964,138
Total Budget Adjustments	$464,769,687
Adjusted General Appropriations Budget	$100,197,805
2020 Estimated Pittsburgh Population	302,205
2020 Estimated Per Capita Service Cost	$332

Adjusted budget value used in deriving the estimated expenditure per new resident.

Metric used to determine total new service cost, based on the number of new residents.

Source: 2021 Operating Budget and Five-Year Plan, City of Pittsburgh; U.S. Census Bureau; 2021

Appendix

Detailed Fiscal Impact Analysis Methodology:
Adjusting Municipal and School District Budgets (continued)

2020-21 School District Budget Expenditures ($MM)

General Budget Appropriations	$648.8
Budget Adjustments	
Salaries and Benefits	$341.7
Debt Service	$41.9
Other Financing Uses	$0.6
Total Budget Adjustments	$384.2
Adjusted Budget Value	$264.6
2020-21 Estimated Number of Pittsburgh Pupils	22,859
Estimated Expenditure per New Pupil	$11,575

Adjusted budget value used in deriving the estimated expenditure per new student.

Source: 2020 Final General Fund Budget/Capital Projects Budget; The Board o Public Education of the School District of Pittsburgh

General & Limiting Conditions

4ward Planning Inc. has endeavored to ensure that the reported data and information contained in this report are complete, accurate, and relevant. All estimates, assumptions, and extrapolations are based on methodological techniques employed by 4ward Planning Inc. and believed to be reliable. 4ward Planning Inc. assumes no responsibility for inaccuracies in reporting by the client, its agents, representatives, or any other third-party data source used in the preparation of this report.

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