

# Land Value Capture:

A study of Public-led Land Assembly in  
Germany and Development Rights Auctioning  
in Brazil

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*For the Canadian Centre  
for Policy Alternatives*

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## Appendix A: Global Land Value Capture Mechanisms Considered

# Introduction

Land Value Capture (LVC) is a process that allows communities to “recover and reinvest land value increases that result from public investment and other government actions”.<sup>1</sup> Value capture came from the idea that public investment should benefit the public, not just the lucky few. Typically, land values increase for three reasons. They will increase when government actions allow for higher, better use of the land or when new infrastructure, like new roads, transit lines, or other services are constructed in proximity to individual homes. Land values also increase when individual prosperity increases. This is because individuals tend to seek material betterment with increased prosperity, which in turn leads to an increased demand for housing.

When land values increase there are three main groups who benefit; private landowners, developers and promoters and intermediaries.<sup>2</sup> Promoters and intermediaries are those who assist with financing the development. Increasingly, municipalities are trying to figure out how to capture some of the value associated with government actions like rezoning. At an international scale, many governments have taken notice of different LVC mechanisms and their ability to capture funds for the benefit of the community. Recently, the Lincoln Institute of Land Policy released a Request for Proposal, calling for the research of global policies related to LVC.



In a Vancouver context, interest for alternative forms of LVC were sparked by Councillor Christine Boyle. In late 2018, Councillor Boyle submitted a motion to Council that called for an investigation of LVC mechanisms. The City is currently working with a consultant to research LVC mechanisms. The findings of their report will also contribute to the growing knowledge and demand for alternative forms of value capture. With the creation of the City-Wide Plan on the horizon, it is a timely opportunity to be exploring and implementing a municipally controlled financial mechanism such as LVC.<sup>3</sup>

Some of the goals of the motion are to:

- Explore an LVC tool that could work within or replace the current system of Community Amenity Contributions (CACs) and Development Cost Charges (DCCs)
- Determine the most the appropriate time to set the baseline value and at what point in the redevelopment would the new value be captured
- Articulate clear jurisdictional expectations that would ensure a tool would remain within city control, and the captured funds would go towards local priorities

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<sup>1</sup> "Value Capture and the Property Tax." LILP. December 04, 2018. Accessed March 25, 2019. <https://www.lincolinst.edu/key-issues/value-capture-property-tax>.

<sup>2</sup> Centre for Progressive Policy. "Gathering the Windfall: How Changing Land Law Can Unlock England's Housing Supply Potential." Centre for Progressive Policy. Accessed March 29, 2019. <https://www.progressive-policy.net/publications/gathering-the-windfall-how-changing-land-law-can-unlock-englands-housing-supply-potential>.

<sup>3</sup> City of Vancouver, Standing Committee of Council on City Finance and Services, *Report to Council: Land Value Capture in the City of Vancouver* . (Vancouver, BC: Standing Committee of Council on City Finance and Services, 2018) <https://council.vancouver.ca/20181205/documents/cfsc20181205min.pdf>.

Motivated by the request, this report considers alternative forms of value capture looking specifically at changes in land use. Facing a housing affordability crisis, the City of Vancouver is searching for alternative mechanisms for capturing land value. It is the City's intention to use the captured value to fund and support more affordable housing options. The Centre for Canadian Policy Alternatives has partnered with the University of British Columbia to research global land value capture practices. The report investigates how public-led land assembly and development rights auctioning have allowed Germany and Brazil to capture a majority of the windfall gains associated with land use changes and infrastructure investment. Several global LVC mechanisms were explored in depth, although many did not apply to changes in land use or had little transferability to the City of Vancouver. The conversation around LVC is and continues to be dominated by transportation improvements. A detailed list of the LVC mechanisms considered for further review can be found in Appendix A: Global Land Value Capture Mechanisms Considered.

For the LVC mechanisms used in Germany and Brazil, the risks and strengths are highlighted and their transferability to Vancouver is considered. The acceptability and legislative restrictions of each mechanism are also discussed.

## Vancouver and Community Amenity Contributions

The City of Vancouver, located in British Columbia, captures land value uplift from changes to land use primarily through CACs. This mechanism is a type of Density Benefit Agreement (DBA). Generally, this contribution works on an ad hoc basis, negotiated case-by-case between the City and the landowner/developer. Vancouver initially introduced DBAs to provide new parks, affordable housing, and other amenities in the redevelopment of False Creek and Coal Harbour.<sup>4</sup> At the time, the value capture program required developers to pay a fixed rate for each additional square foot of density that exceeded the base floor area ratio (FAR) of a land parcel. As the city introduced DBAs to other projects in Vancouver, this approach was deemed too systematic and inflexible, as many developers claimed their projects were unfeasible and would require reduced CAC standards.<sup>5</sup>

In terms of governance, the current CAC mechanism works under Section 565.1 of the *Vancouver Charter*, a provincial statute that uniquely serves the City of Vancouver. CACs are applied during the rezoning process to specific policy areas or citywide areas, as stated under section 1.4 of the *Community Amenity Contributions – Through Rezoning* document. Specific CAC policy areas use a predetermined CAC target (\$/sf) or a negotiated approach to determine the value of the contribution, while a Citywide CAC area uses only a negotiated approach to determine the contribution.<sup>6</sup> Most, if not all, CAC agreements use the negotiated approach between the City and the landowners/developers.<sup>7</sup>

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<sup>4</sup> Moore, Aaron. "Trading Density for Benefits: Toronto and Vancouver Compared." Institute on Municipal Finance and Governance. Accessed March 20, 2019. [https://munkschool.utoronto.ca/imfg/uploads/220/imfg\\_no\\_13\\_moorer3\\_online\\_final.pdf](https://munkschool.utoronto.ca/imfg/uploads/220/imfg_no_13_moorer3_online_final.pdf)

<sup>5</sup> Gray, Cameron. "Vancouver's Community Amenity Contributions (CACs)" Unpublished. Accessed March 20, 2019. <http://www.sfu.ca/content/dam/sfu/continuing-studies/forms-docs/city/community-amenity-contributions-cameron-gray.pdf>

<sup>6</sup> City of Vancouver, *Community Amenity Contributions – Through Rezoning, Vancouver, BC* (Vancouver, BC: City of Vancouver, 2018) <https://vancouver.ca/files/cov/community-amenity-contributions-through-rezonings.pdf>.

<sup>7</sup> Moore, Aaron. "Trading Density for Benefits: Toronto and Vancouver Compared." 10

A vital aspect of this negotiation process is that the developer and the city must agree on the current value of the property under current zoning, and estimate the uplift resulting from the increased density.<sup>8</sup> The two must also determine and agree on the base density for the site. The higher the base density, the lower the resulting uplift. Alternatively, a lower base density would result in a more significant uplift.

The process of determining the value of the land lift can be extremely complicated ultimately causing transparency to become an issue. The factors that the city considers when negotiating contributions are “urban design, density, land use, livability, traffic impacts, community input and community facility impacts”.<sup>9</sup>

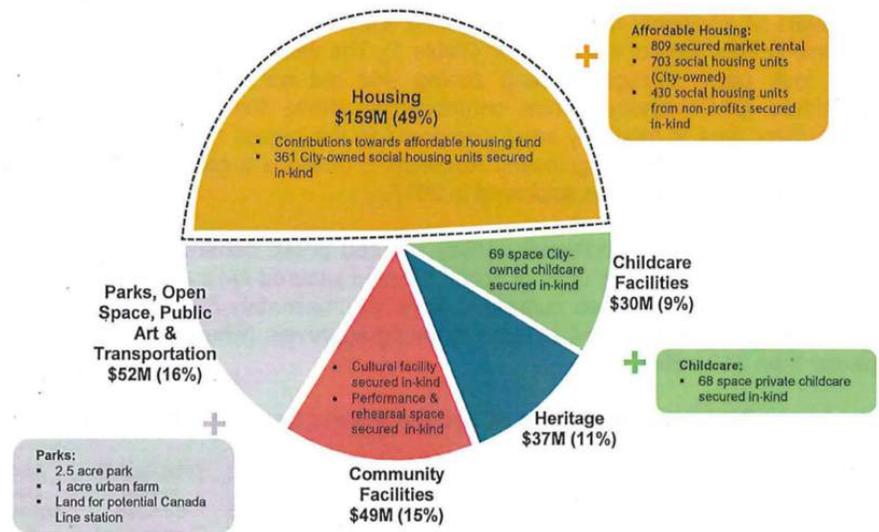
In Vancouver, city staff can determine when projects seeking greater density are not required to contribute a CAC. This leniency occurs for many non-market rental projects and projects that already include public amenities. Though, the majority of up-zoned projects will pay a CAC. In many cases in Vancouver, “developers apply to increase the density allowed on the site, not to create windfall profit, but to ensure they will make a profit to begin with.”<sup>10</sup>

Once the uplift is agreed upon, the City of Vancouver seeks to secure 70%-80 % of the uplift from the rezoned project.<sup>11</sup> However, there is much debate around whether CACs are actually catching this percentage of uplift and if CACs are capturing enough of the uplift.

The collected contributions go to a wide variety of amenities, which can be seen in Figure 1.<sup>12</sup> In 2017, a total of \$334 million was raised from CACs (\$88 million collected). These funds were raised in exchange for 4.6 million additional sq. ft.<sup>13</sup>

The majority of the contributions have been allocated towards the support of affordable housing, parks, transit, and other community amenities.

Figure 1: 2017 Vancouver CAC Contribution Allocation Summary



<sup>8</sup> City of Vancouver, *Rezoning & Community Amenity Contributions* (Vancouver, BC: City of Vancouver) <https://vancouver.ca/files/cov/cacbrochure.pdf>.

<sup>9</sup> City of Vancouver, *Rezoning & Community Amenity Contributions*.

<sup>10</sup> Moore, Aaron. “Trading Density for Benefits: Toronto and Vancouver Compared”, 10

<sup>11</sup> City of Vancouver, *Rezoning & Community Amenity Contributions*.

<sup>12</sup> City of Vancouver, Planning Urban Design & Sustainability, General Managers’ Office. *2017 Annual Report on Community Amenity contributions and Density Bonus Zoning, Vancouver, BC* (Vancouver, BC: City of Vancouver, 2018) <https://vancouver.ca/files/cov/annual-report-community-amenity-contributions-and-density-bonusing-2017.pdf>.

<sup>13</sup> City of Vancouver, Planning Urban Design & Sustainability, General Managers’ Office. *2017 Annual Report on Community Amenity Contributions and Density Bonus Zoning*

## Methods

This research project included a primary literature review of existing land value capture mechanisms that are implemented globally, informal interviews and communication with key informants via phone call and email, and in-depth research on two land value capture mechanisms.

A preliminary literature review of the existing LVC mechanisms was imperative to determine the mechanisms that may be applied in the City of Vancouver. General knowledge was acquired for each of the LVC mechanisms outlined in Appendix A: Global Land Value Capture Mechanisms Considered. Once a basic understanding of LVC was established, several key informants were identified and contacted. The key informants included; Marc Lee, Chris Clibbon, Enid Slack, Luis Felipe Quintanilla Tamez and William Buholzer. These informants provided insight into the current need for alternative forms of land value capture and the mechanisms that exist on a global scale.

A list of ten LVC mechanisms were presented to the Canadian Centre for Policy Alternatives, and through discussion, two of these mechanisms were chosen to explore further; public-led land assembly and development rights auctioning. Both mechanisms focus on capturing land value uplift related to changes in land use and have potential to be implemented in Vancouver. Extensive research of these two LVC mechanisms were conducted, and multiple case studies were identified to explain the concepts.



# Land Value Capture Mechanisms

## Public-led Land Assembly in Germany

Public-led land assembly occurs when local authorities act as the first-movers and take the lead in assembling or buying sites. When a public authority takes the lead in assembling, servicing, and potentially altering the land use in partnership with developers or stakeholders, the windfall gains are best captured<sup>14</sup>. France, the Netherlands and Germany all provide excellent examples of public authorities leading the land assembly process. In the Netherlands, it is estimated that almost 90% of the uplift in land value is captured by municipalities and is used to help fund infrastructure and affordable housing.<sup>15</sup> While the Netherlands is capturing a very high percentage of the uplift in land values, it is estimated that Germany actually captures greater than 90% of the uplift in land values due to its strict compensation rules.<sup>16</sup> German municipalities act as a developer and buy the land outright or they temporarily assemble land, service it and readjust the individual lots. They take a plan-oriented and development-oriented approach to the profession of planning. Germany has a unique and very rigid governance structure that allows for the purchasing and readjustment of land.



### Governance Structure

Germany has a strict legal framework that explicitly identifies the planning powers that are shared by all four levels of government. Generally, there is a hierarchical relationship with regard to planning powers between the federal, state, regional, and local level governments. Spatial planning powers are divested from the federal government through the *Federal Spatial Planning Act (Raumordnungsgesetz)* and accompanied by the *Federal Building Code (Baugesetzbuch)*. Not only does this *Act* delegate planning powers to lower levels of government, but it sets the overall framework for spatial planning in Germany.

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<sup>14</sup> Centre for Progressive Policy. "Gathering the Windfall", 3

<sup>15</sup> Centre for Progressive Policy, 12

<sup>16</sup> Centre for Progressive Policy, 12

The state government is bound by the *State Spatial Planning Act*, which also highlights high-level goals of the state. Interestingly, the federal and state governments actually have overlapping authority with regard to spatial planning. Both levels of government may pass laws related to spatial planning and whichever law was passed most recently takes precedent.

The regional government is responsible for administering federal government financial incentives, identifying appropriate land uses and setting quantitative housing targets for local governments.<sup>17</sup> The regional government is the “central instrument for coordination between the top-down planning of the federal and state level and the bottom-up planning from the local level”.<sup>18</sup> The municipal government has the most authority and makes the key planning decisions in Germany. The *Federal Spatial Planning Act* gives the municipal government constitutional authority to plan through a two-tiered system of land use plans.<sup>19</sup> Municipalities formulate a *Preparatory Land Use Plan* which includes legally binding guidelines which are used to inform the second tier *Binding Land Use Plan*. This second-tier plan gives land owners the specific parameters for acceptable levels of development.<sup>20</sup> Spatial planning powers are truly in the hands of the municipal government and higher levels of government rarely intervene or question local government’s spatial planning decisions.

### Land Readjustment

Under the *Federal Building Code*, municipalities have the authority to assemble and readjust unused or underused land. Known as a Mandatory Land Readjustment, this process has given German municipalities the ability to capture a significant amount of the uplift value associated with land use changes and infrastructure investment. Simply put, “German land readjustments blend planning law, real estate appraisal, and land surveying in the most productive way”.<sup>21</sup>

The *Federal Building Code* gives municipalities in Germany the authority to designate Urban Development Zones in a *Preparatory Land Use Plan*. A municipality may designate an Urban Development Zone where they would like to see an improvement to the existing land use. They may also designate any area where they would like to see more development. The local government in Germany plays a significant role in determining where future development will occur. Once the municipality designates an Urban Development Zone, they have the authority to implement Urban Development Measures. Urban Development Measures are a unique mechanism under Section 165 of the *Federal Building Code* that allows



<sup>17</sup> Crook, Tony. "Local Authority Land Acquisition in Germany and the Netherlands: Are There Lessons for Scotland?" Scottish Land Commission. Accessed February 25, 2019. <https://landcommission.gov.scot/publications-consultations-research/>.

<sup>18</sup> "Governance of Land Use." OECD. Accessed February 25, 2019. <http://www.oecd.org/gov/governance-of-land-use.html>.

<sup>19</sup> "Governance of Land Use." OECD.

<sup>20</sup> "Governance of Land Use." OECD.

<sup>21</sup> Davy, Benjamin. "Mandatory Happiness? Land Readjustment and Property in Germany." In *Analyzing Land Readjustment*, 37-55. Cambridge, MA: Lincoln Institute of Land Policy, 2007. Accessed February 25, 2019.

<https://www.lincolnst.edu/sites/default/files/pubfiles/analyzing-land-readjustment-full.pdf>.

municipalities to freeze the land value of properties within the Urban Development Zone for up to two years. Urban Development Measures combat land speculation in areas designated for development.<sup>22</sup>

Once the municipality has frozen the value of the properties, they begin assembling the lots from individual owners. Each private land owner is entitled to the market value of their property at the time of designation. As outlined in Section 194 of the *Federal Building Code*, market value must take into account “the existing legal circumstances and the actual characteristics of the land”.<sup>23</sup> This removes the potential development value from the equation when determining individual amounts of compensation. Once the municipality has purchased all of the land in the Urban Development Zone, they will service the area and take any land needed for public amenities. In some instance, the municipality will rezone the land to allow for higher and better use.

If land owners refuse to participate in the land assembly and readjustment process, their land may be taken compulsorily. Compulsory purchase is not in itself a form of land value capture, but “it is an important tool for local authorities to assemble land to deliver development, regeneration and infrastructure projects in the public interest”.<sup>24</sup> Compulsory purchasing powers give the government the right to take private land, as long as the owners are compensated at market value. If land is acquired this way the existing landowners are not allocated a piece of property after readjustment.

Once the land is successfully readjusted, the municipality will reallocate the remaining land to the original land owners. Under the standard of relative value, Section 57 of the *Federal Building Code* says that “each land owner is entitled to a new plot of land that is at least as valuable as the former plot”.<sup>25</sup> The original owners must buy the land back from the municipality at the new readjusted price. The increased value of the land based on new infrastructure, proximity to amenities and potential higher use is captured through the readjustment process.

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<sup>22</sup> Falk, Nicholas. "Capital Gains: A Better Land Assembly Model for London." London City Hall. May 16, 2018. Accessed March 19, 2019. <https://www.london.gov.uk/what-we-do/housing-and-land/land-and-development/better-land-assembly-model-london>.

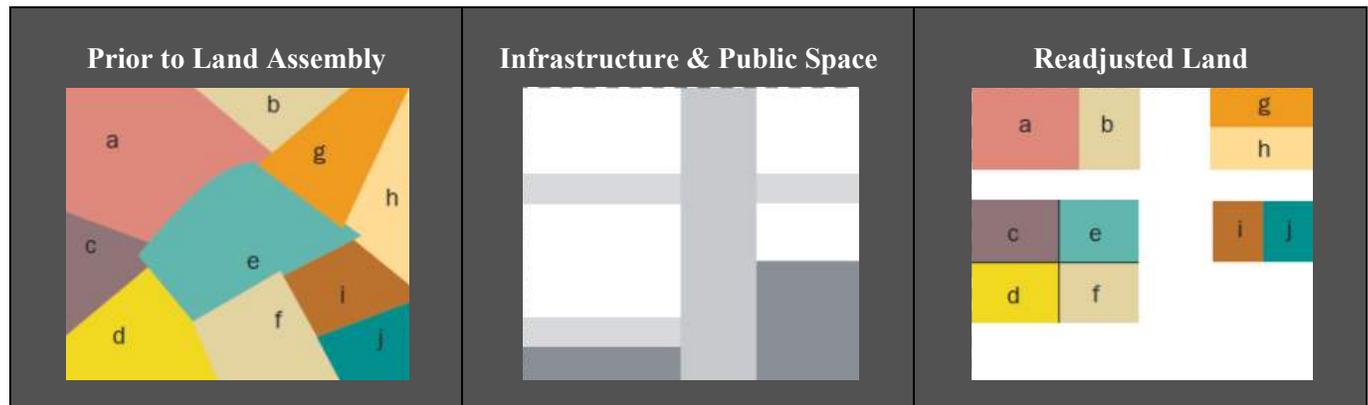
<sup>23</sup> Centre for Progressive Policy “Gathering Windfall”, 12

<sup>24</sup> House of Commons "Housing, Communities and Local Government Committee." UK Parliament. Accessed March 11, 2019. <https://publications.parliament.uk/pa/cm201719/cmselect/cmcomloc/766/766.pdf>

<sup>25</sup> Davy, Benjamin. “Mandatory Happiness? Land Readjustment and Property in Germany.”, 37

Figure 2 highlights visually how land readjustment in Germany works. If section “a” prior to the land assembly is worth 20% of the value of the total development zone, after land readjustment it must be worth at least 20% of the value of the new buildable area. The shape and size of land may be altered quite drastically by the municipality to allow for infrastructure and public space, but the original land owners will not lose their assets.<sup>26</sup>

Figure 2: A Visual Representation of Land Assembly and Readjustment



Smolka, Martin. "Implementing Value Capture in Latin America.", 49

If the value of the readjusted lot is significantly more, proportionally, than the value of the lot prior to readjustment, the owner must pay this surplus value to municipality. Owners may develop their new plot of land in accordance to the *Binding Land Use Plan*, or sell the land to a developer. If the original owner sells the readjusted land right away, they are entitled to the potential capital gains made off the land and are not required to pay a typical land transfer tax.<sup>27</sup> By exempting land owners from the transfer tax, greater acceptance for the process of land assembly and readjustment is gained.

A provision exists in which a property owner may not receive a lot within the designated redevelopment zone. After readjustment, a property owner may be compensated with a plot of land outside of the reallocation area if the municipality is unable to offer the owner a developable plot. This circumstance would occur if the *Binding Land Use Plan* does not allow for residential development. The owner would be given compensation in the form of a financial settlement if they do not receive land within the readjustment development area.

In the late 1990s, this process was questioned at large by the public, suggesting that it violated personal property rights. In 2001, the German Civil Courts “ruled on the relationship between property protection and mandatory land readjustment”.<sup>28</sup> The courts decided this process was legal because it involved a temporary taking of the land, not an indefinite taking. Despite the complexities and issues raised by the public about land readjustment in Germany, it has proven to be a successful mechanism for capturing increases in land value. Rieselfeld is a community in Freiberg, Germany that was developed using land readjustment. The municipality was able to capture a significant portion of the uplifted value as outlined in the case study below.

<sup>26</sup> Davy, Benjamin. “Mandatory Happiness? Land Readjustment and Property in Germany.”, 37.

<sup>27</sup> Crook, Tony. "Local Authority Land Acquisition in Germany and the Netherlands: Are There Lessons for Scotland?", 10

<sup>28</sup> Davy, Benjamin. “Mandatory Happiness? Land Readjustment and Property in Germany.”, 37.

## FREIBURG

Freiburg is a City located in south-west Germany near the border of France and Switzerland. The City designated a neighbourhood outside of the city centre as an Urban Development Zone and applied Urban Development Measures to assemble the land at market value. The 85-acre site was an underused sewerage yard on the edge of a relatively poor neighbourhood. The City bought the land and constructed €95 million worth of infrastructure which included a school, streets and a new public transit system before reallocating and selling off the land. The community was constructed with a diverse range of interests in mind. Due to past failures, the Rieselfeld neighbourhood development included multiple housing options and pedestrian friendly streets. The community was anchored to Freiburg's town centre by a streetcar, which was included in the €95 million. The cost of infrastructure and public spaces was completely recouped by the sale of individual lots. While some single-detached dwellings exist in Rieselfeld, the community is largely multi-family dwellings. The City had to adjust the existing land use to allow for higher density development and subsequently captured the uplift value from higher use land.



House of Commons "Housing, Communities and Local Government Committee." UK Parliament. Accessed March 11, 2019.

<https://publications.parliament.uk/pa/cm201719/cmselect/cmcomloc/766/766.pdf>

Falk, Nicholas. "Capital Gains: A Better Land Assembly Model for London." London City Hall. May 16, 2018. Accessed March 19, 2019.

<https://www.london.gov.uk/what-we-do/housing-and-land/land-and-development/better-land-assembly-model-london>.

## Strengths & Risks

The strengths and risks of land readjustment include;

STRENGTHS	RISKS
<ul style="list-style-type: none"> <li>▪ Captures the land value increase related to land use changes and infrastructure investment</li> <li>▪ Leads to greater development of unused or under-used land</li> <li>▪ Municipality has significant control in determining areas for development</li> <li>▪ Reduces speculation through the use of Urban Development Measures</li> <li>▪ Encourages development for the betterment of the community at large, rather than individual benefits</li> <li>▪ City essentially gets free land for infrastructure and public amenities</li> </ul>	<ul style="list-style-type: none"> <li>▪ Perpetuates distrust between the municipality and the public because this mechanism of assembling and readjusting land may be seen as a violation of private property rights</li> <li>▪ Displacement and gentrification</li> <li>▪ Has the potential to cause temporary homelessness</li> </ul>

### Municipality as the Developer

In Germany, local authorities act as the first movers and purchase land at market value for major developments rather than letting private developers take control. The municipality would finance the purchase of land with a loan from a local bank. Local authorities service and in most cases alter the land use to allow for greater density. Land may also be allocated for public amenities. Once the land is rezoned, serviced and replotted the municipality will host a bidding process and sell off sections of the land to private developers. This gives the municipality significant control over the type of development that is produced and typically leads to higher quality development. This bidding process also gives municipalities the ability to require affordable housing on a portion of the site. Because the municipality owns the land outright, they capture the uplift value of the land related to land use changes and infrastructure installments. This uplift value typically goes to developers in a market led by private land developers. The municipality will typically sell the land, but they may also lease it. If a municipality chooses to lease the land, they will acquire the profit over a longer period of time with less upfront gain.

Municipalities will use any money raised from selling or leasing the land to pay off the loan which was used to purchase and service the area. Any additional value gained through this process lies in the hands of the municipality and may be used to invest in affordable housing or public amenities. An example of the municipality acting as a developer can be seen in HafenCity, Hamburg.

## HAFENCITY

HafenCity is Europe's largest urban development zone located in Hamburg, Germany. HafenCity is an excellent example of a public authority acting as a developer. Hamburg is unique because it is a city-state that holds special legislative powers.

In the 1990's HafenCity Hamburg GmbH, a state-owned company, began purchasing under-used port and industrial land along the water adjacent to Hamburg's existing city centre. The company was established in order to oversee all activities related to the newly designated urban development zone. In 2000, Hamburg presented an Area Master Plan to the Community. Within the 157-acre master planned area, several *Binding Land Use Plans* were created. Throughout the process, HafenCity GmbH acted as the city's manager of development, property owner and developer of infrastructure. The City serviced the area site by site and sold the individual lots to developers. The sale of land often took place through a bidding process to ensure high-quality and diversity within the massive HafenCity master plan area. This gives the city complete control over type, use, and design of each building within the development zone. The money from the sale or leasing of land is used to pay off the loan used to finance infrastructure, roads, bridges, promenades and parks.

The master planned project is over 50% constructed and has a projected completion date of 2025. The success of HafenCity can be largely attributed to the strong relationship between HafenCity Hamburg GmbH, the City-state, and private land developers. To date, €3 billion has been invested by the public and €10 billion through private investment. Nearly ¼ of the site is public park space or public gathering squares and promenades. Hamburg HafenCity GmbH has suggested that almost all of the public dollars invested in the project have been recouped through the sale of individual sites to private land developers. Despite the size of HafenCity, it has been successfully integrated with the vibrant Hamburg centre.



HafenCity Hamburg GmbH. "HafenCity Hamburg - Startseite." HafenCity RSS. Accessed March 11, 2019. <http://www.hafencity.com/>.

## Strengths & Risks

The strengths and risks of the city acting as the developer include;

STRENGTHS	RISKS
<ul style="list-style-type: none"> <li>▪ Captures the land value increase related to land use changes and infrastructure investment</li> <li>▪ Reduces land flipping (getting land rezoned only to sell it)</li> <li>▪ The bidding process ensures quality developments</li> <li>▪ Leads to greater development of unused or under-used land</li> </ul>	<ul style="list-style-type: none"> <li>▪ The City would adopt the risks associated with being a developer, including instability in the land market.</li> </ul>

## Auctioning of Development Rights

### CEPACs

In 1995, Sao Paulo introduced CEPACs (Certificates of Additional Potential Construction Bonds) to capture the additional development potential of a site created by rezoning and other public investments.<sup>29</sup> A central characteristic of this method is that the market determines the price of the additional development rights through an auction. This method resolves one of the main issues with most LVC methods, determining the additional floor area market value.

Its implementation starts with the creation of an Urban Operation (UO) zone. These Urban Operations are areas drawn out and implemented by the local government as designated redevelopment zones within the city, where local governments have the authority to undertake transformations with the goal of attracting private investment. These zones are used as a “tool for structural transformation that is promoted through the partnership of public authorities and private developers”.<sup>30</sup> It also involves the participation of landowners, investors, residents, and other stakeholders, and has to be approved by the city council.<sup>31</sup> UO’s are designated in the city’s overall masterplan, which allows for a complete vision of the community and its potential for development.

Before CEPACs are sold, a list of capital investments (pre-approved by the public) is linked to their corresponding UO. The capital gained from the sale of CEPACs is then used for the pre-approved public improvements in their corresponding UO. These improvements have a significant focus on transit infrastructure, road improvements, pedestrian spaces, and affordable housing.

In terms of their size, CEPACs can range anywhere from 0.5 sq. m.- 2 sq. m. The size is determined in relation to the demand for the land. CEPACs tend to be larger when there is less demand for the land (i.e. near slums and favelas).<sup>32</sup> The total number of CEPACs is limited and directly linked to the additional

<sup>29</sup> Smolka, Martim. "Implementing Value Capture in Latin America." LILP. June 01, 2013. Accessed March 11, 2019. <https://www.lincolnst.edu/publications/policy-focus-reports/implementing-value-capture-latin-america>.

<sup>30</sup> Sandroni, Paulo. "CEPACS: Certificates of Additional Construction Potential". Accessed March 11, 2019. [http://sandroni.com.br/?page\\_id=310](http://sandroni.com.br/?page_id=310)

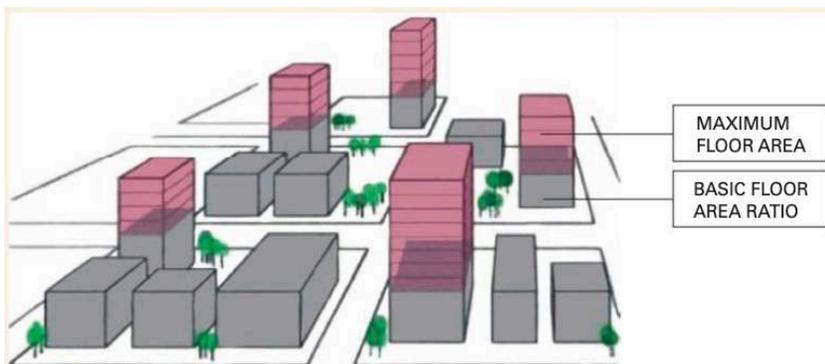
<sup>31</sup> Sandroni, Paulo. "CEPACS: Certificates of Additional Construction Potential"

<sup>32</sup> Smolka, Martim. "Implementing Value Capture in Latin America, 54.

developable space that each UO can support. The number of CEPACs for the UO are determined based on analytics done by architects, engineers, economists, and technical servants. These professionals compare the development's potential threshold with the existing infrastructure and the additional infrastructure that will be financed with funds originated by the sale of CEPACs.<sup>33</sup> The certificates are strategically sold over time through multiple auctions to maximize the value captured at each auction in time.

When the landowner/developer and CEPAC owners want to use their certificates (usually the same owner), they partner up and create a development proposal. The proposed project then goes through the development approval process. For developers, CEPACs are monetized when they proceed with their project, and the CEPAC becomes a part of their equity. For an investor, the certificates can only be monetized when they participate as an equity investor in a development project, or they sell the certificate on a secondary market. The local government would capture the value at the sale of the certificate at the public auction. Figure 3 shows a visualization of what the utilization of CEPACs for additional floor area would like.<sup>34</sup>

Figure 3: A visualization of CEPAC use



When a CEPAC zone is publicly owned, there is no issues regarding property rights as local governments are willing to give up their additional development rights to achieve their land use and policy goals. However, “if a CEPAC zone is on a privately-owned land, the existing property owners have the development right according to the local governments’

existing land use and zoning ordinances”.<sup>35</sup> In this case, the existing landowner has the option to purchase the additional development rights for their site as long as they are willing to pay the perceived market value.<sup>36</sup>

If the existing owner chooses not to purchase the CEPACs, other investors will be given the right to purchase the CEPACs. This issue leads into one of the big problems with the auctioning of development rights and its relationship with property ownership and the air rights above the by-right zoning.

## Governance Structure

“The constitutional foundations that enable UOs and CEPACs in Brazil is the *1988 Federal Constitution* and the *2001 City Statute*”.<sup>37</sup> The City Statute refers to the *Urban Development Act*, “a federal law that

<sup>33</sup> Sandroni, Paulo. "CEPACS: Certificates of Additional Construction Potential".

<sup>34</sup> Suzuki, Hiroaki, Murakami, Jin, Hong, Yu-Hung, & Tamayose, Beth. "Financing Transit Oriented Development with Land Values" World Bank Group. 2015. Pg. 216. <https://issuu.com/world.bank.publications/docs/9781464801495/244>

<sup>35</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding." LILP. September. 2018. Accessed March 11, 2019. <https://www.lincolnst.edu/publications/working-papers/cepacs-their-value-capture-viability-us-infrastructure-funding>.

<sup>36</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding." 36.

<sup>37</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding.", 6.

operationalized many land development policies outlined in the Constitution”.<sup>38</sup> Specifically, through the City Statute, Sao Paulo established its own *1990 Constitution of the City* (similar to Vancouver Charter). This Act enables the proposal of UOs by the municipal branch and the approval of UOs by the legislative branch. The Federal City Statute also allows CEPACs to be used as a municipal financial instrument.<sup>39</sup>

In terms of the auction, the Comissao de Valores Mobiliarios (CVM), the Brazilian security exchange, then registers the Urban Operation to which the CEPACs are linked in the master plan.<sup>40</sup> The CVM authorizes the auction and monitors any changes or initiatives that would change the plan of the UO. The sale of CEPACs on the exchange resolves problems that previously inhibited the sale of development rights by providing regulated, transparent, and an overall successful way to determine fair market value.

The local government’s authority who is responsible for the CEPACs administration in Sao Paulo is the Empresa Municipal de Urbanizacao (EMURB). This municipal authority creates a strategy surrounding urban operation zones and CEPACs.<sup>41</sup> Their goals are:

- Setting investment priorities for each intervention
- Preparing and establishing favourable conditions that can produce maximum returns from the auction
- Managing and collecting information and data that is relevant to each CEPAC auction

*Strengths & Risks*

STRENGTHS	RISKS
<ul style="list-style-type: none"> <li>▪ This process is also transparent as the CVM, the Brazilian security exchange governs it.</li> <li>▪ CEPACs give the municipality the ability to obtain compensation before development takes place. This ability helps the governing municipality with projections for density, and infrastructure planning.</li> <li>▪ Necessary infrastructure is implemented early, providing incentive for development projects to move forward.</li> <li>▪ The sale of additional building certificates may provide an alternate solution for shared property ownership. This would mean that both risk and reward would be shared more widely.</li> </ul>	<ul style="list-style-type: none"> <li>▪ From an investment standpoint, there is a risk related to whether the projects in a UO will transpire</li> <li>▪ Just like any investment, there is a pertained risk. This risk could be caused by juridical disruption or any other market disruptions.</li> <li>▪ Tough to gauge whether CEPACs is a successful tool.</li> <li>▪ Requires a sophisticated capital market environment.</li> <li>▪ Decreased bids in lower-income areas (so a smaller return). Requires the municipality to ensure that the bids and auctions occur in a period where they can maximize the value captured.</li> <li>▪ This mechanism could promote gentrification, as the municipality could decide that social housing is negatively affecting the maximum auction price.</li> </ul>

An example of the use of CEPACs can be seen in Agua Epraiada;

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<sup>38</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding.", 6.  
<sup>39</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding.", 6.  
<sup>40</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding.", 11.  
<sup>41</sup> Kim, Julie. "CePACs and Their Value Capture Viability in the U.S. for Infrastructure Funding", 4.

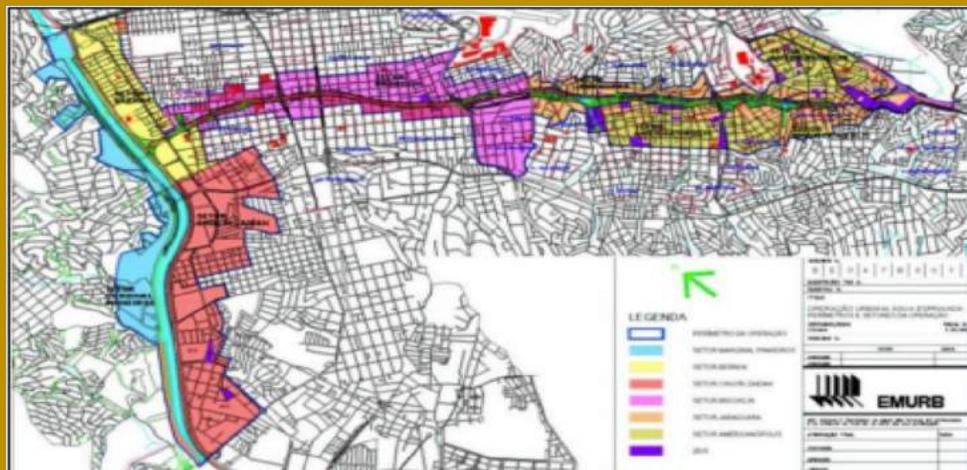
## AGUA ESPRAIADA

In 2001 the Agua Espraiada Urban Operation zone was established. The figure below shows the perimeter of the Urban Operation and its internal zones. In 2002, when the municipal strategic master plan came out, Agua Espraiada was included as one of the nine urban operations in its perimeter. The space was predominately lower class with a large number of favelas populating roughly 42,000 people within 8400 households. For this case, five key public interventions were included in its plan.

- Extension of the Journalista Roberto Marinho Avenue, to the Immigrants Highway (4.5 Km)
- Opening of a side tracks
- Two bridges over the Pinheiros River,
- Implementation of a pedestrian walkway
- Construction of 8500 social housing units for the existing favela dwellers

The total budget of all the interventions was R\$1.1 billion (500 million USD at the time), and the expectation was that the majority of the funds would come from the sale of CEPACs. The goal was to give the operation financial independence (not needing other funding other than from the sale of CEPACs). In total, 3,750,000 CEPACs were issues over 15 years, at a minimum value of R\$300, allowing for an additional 4.85 million square metres of construction.

Between 2004 and 2008, eight auctions were held raising \$R 440 million, consuming 589,000 square meters. These bonds were valued at over 370% their initial purchase trading at \$R1100 in 2008 (as of April 2019 they were trading at \$R1800). From the first auction, the city reviewed the proposed works and focused the bridge over the Pinheiros river located next to a slum. The next interventions that were executed were the expropriation of land for social housing and the construction of social housing. In 2014 it was stated that Agua Esperaida raised a total of 1.5 billion USD through the auction of CEPACs.



Nobre, Eduardo. "Who Wins and Who Loses with Great Urban Projects? Operacao Urbana Consorciada Agua Espraiada evaluation in Sao Paulo." 15<sup>th</sup> International Planning History Society Conference. Accessed March 13, 2019. [http://www.fau.usp.br/pesquisa/napplac/trabalhos/enobre/enobre\\_art13.pdf](http://www.fau.usp.br/pesquisa/napplac/trabalhos/enobre/enobre_art13.pdf).

Serva, Leao. "How Sao Paulo Uses Value Capture to Raise Billions for Infrastructure" City Lab. May 22, 2014. Accessed March 18, 2019. <https://www.citylab.com/solutions/2014/05/how-sao-paulo-uses-value-capture-to-raise-billions-for-infrastructure/371429/>

# Implementation in Vancouver

## Public-led Land Assembly

Currently there is no legislation that prohibits the City of Vancouver from utilizing public-led land assembly and land readjustment mechanisms to capture land value increases.

### Land Readjustment in Vancouver

The German model of Urban Development Measures and ability to compulsorily acquire land can be loosely related to expropriation in Canada. Under provincial statute, municipalities to have the authority to seize land from private land owners. Once a municipality slots land for expropriation and the owners are notified, the government must compensate the owners at market value. According to Section 32 of the British Columbia *Expropriation Act*, the “market value of an estate or interest in land is the amount that would have been paid for it if it had been sold at the date of expropriation in the open market by a willing seller to a willing buyer”.<sup>42</sup> The owner is also entitled to compensation for any reasonable damages that occurred based on expropriation. Expropriation is very rarely used to acquire large plots of land for development. In the Canadian context, land is typically only expropriated in order to put in public infrastructure.

The *Municipal Replotting Act* also provides a similar framework to mandatory land readjustments in Germany. The *Municipal Replotting Act* gives municipalities the authority to designate an area as a replotting district. At the initiation of the replotting scheme, all land “forms one common mass of property”.<sup>43</sup> A municipality may take any real property from the common mass that is necessary for highways, parks or public squares. The remaining land may be reallocated to the owners so long as their new parcel of land is equal in value to their former parcel. This process of replotting is quite different from the German land readjustment process. Major amendments to the Municipal Replotting Act would be necessary, especially amendments to the compensation component of the Act to allow for land readjustments in Canada and specifically Vancouver.

The major issues for implementation are related to the public’s understanding of land ownership rights and desire to own property. In Canada this process of land readjustment would likely be perceived as the unlawful taking of land.

### Vancouver as the Developer

Traditionally, municipalities within the Province of British Columbia have not engaged in public-led land assembly. You do not have to look far for a Canadian example of land assembly though. The City of Edmonton has in the past purchased and banked land for future development. Vancouver has the legislative authority to act as a developer and assemble land, but they chose to let private land developers drive the development industry. A shift in attitude and allocation of more resources within the City would allow for a more development-oriented approach to planning. Likely an entire department would have to be allocated to assemble land and allow Vancouver to take on the role of a developer.

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<sup>42</sup> Expropriation Act, RSBC 1996, c 125, ss 32

<sup>43</sup> Municipal Replotting Act, RSBC 2016, c 1, ss 4

An important aspect of the German legislation, which allows for land value freezing would also be beneficial in a Vancouver context, but this only occurs when land is slotted for expropriation (as previously mentioned). Having the ability to freeze land values prior to assembly would combat issues of speculation that are often seen in Vancouver.

## Development Rights Auctioning

Currently, in Vancouver, there is a Density Heritage Bank which is a tool used by the Heritage Conservation Authority. This tool recognizes that in order to prevent the tear down of heritage sites, owners will still be given the rights to the buildable area on their property. So, if an owner has a heritage property on a site that is 4.0 FAR, and the heritage structure that sits on the land is a 2.0 FAR, the owner will be able to transfer the development rights to a receiver site. In the case they cannot find a seller, the city can purchase the density through their density bank. The Density Bank for the City can buy density and then sell it off at a later date.

Regarding how a public auction would be implemented in the City of Vancouver, there are two options for how this could be implemented. Similar to Brazil, the Canadian Security Exchange could create legislation to allow for a public auction of land on a larger scale. This would be done in a similar fashion to CEPACs in Brazil. In a Vancouver Context, the governing authority would be the Canadian securities exchange, and this would require additional securities legislation. However, this option may give too much power to the securities exchange and the federal government.

A more straightforward and local way of implementing the public auction of additional buildable density would be to designate sites throughout the city as receiver sites and hold a city auction for density in accordance with City of Vancouver's Density Bank. It is suggested that auctions be held on an annual basis. In terms of the legislation needed for something of this nature, amendments to the Vancouver Charter would be needed from the BC legislature.

To be successfully implemented in Vancouver, two aspects of governance would need to be resolved. The first aspect is that this mechanism treats density and additional building rights as a commodity. With the sale of these development rights on a secondary market, speculation and large amounts of price appreciation would be possible which could put the affordability of the city in a deeper hole. To adhere to this, development rights from auctioning should have an expiration date. Having an expiration date would limit the amount of speculation and monopolization allowed on this investment, as investors would not be allowed to hold for long periods and would be forced to utilize their development rights.<sup>44</sup>

The second issue with the transfer of development rights would involve complications with land rights. In Canada, air space parcels are a part of the *Land Title Act*, so one does have the right to own a parcel of land in terms of the air above a development. There would need to be an easement of the additional parcel to the surface parcel. In this case, for an auctioned piece, there would be two airspace parcels in the land title legislation. Each parcel might have different zoning for each parcel. This issue regarding the zoning of each parcels would have to be resolved.

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<sup>44</sup> Elmendorf, Chris & Shanske, Darien. "Auctioning the Upzone: A New Strategy to Induce Local Government Compliance with State Housing Policies. University of California Davis School of Law. December 2018. Accessed March 15, 2019. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3296622](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3296622)

## Vancouver Hybrid

The two LVC mechanisms discussed have been successfully implemented in their respective countries of Germany and Brazil. While they can not simply be copied in the City of Vancouver, elements of each mechanism may be applied. A Vancouver hybrid land value capture system that incorporates public-led land assembly and development rights auctioning may look like the following.

### **PHASE 1:** City acts as a developer and buys land at market value

- The City would rezone or update the existing infrastructure, taking any land necessary for public spaces and amenities
- Of the land assembled by the City, some of this should be located in a designated receiver site for development rights

### **PHASE 2:** Once a year the City would host an auction and sell development rights for designated receiver sites around the City

- The receiver sites would have a maximum allowable density as per the zoning and would have a second maximum allowable building height if you purchased development rights (i.e. max height 12-storeys, max height with the purchase of development rights is 16-storeys).
- All funds are collected upfront at the time of the auction and this money would go towards affordable housing
- The development rights auctioned off would have an expiration date of 5 years to prohibit speculation
- A restriction would exist from prohibiting purchasers from reselling their development rights on the secondary market

The value gained by selling rezoned land and development auction rights could be used to support and develop more affordable housing units in the City of Vancouver. The current housing affordability crisis must be addressed and one way to do this is by capturing the windfall gains from changes to land use.

## Conclusion

This study aimed to provide an alternative land value capture strategy for the City of Vancouver by reviewing two LVC mechanisms, the Public-led Land Assembly in Germany and the Auctioning Development Rights in Brazil. This report outlined the strengths and risks of each mechanism and provided the means for implementation in Vancouver. Overall, it was determined that the municipality could capture greater value by adopting a hybrid policy that relates to both of the mechanisms.

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## Appendix A: Global Land Value Capture Mechanisms Considered

<b>Mechanism</b>	<b>Countries or Regions Used</b>	<b>Mechanism Description</b>
Public Private Partnership	Globally	This mechanism involves municipalities providing public land as equity in projects with private developers in return for a share of the land development profits.
Tax Increment Financing	United States	Municipalities divert future property tax revenue increases from a defined area or district toward an economic development project or a public improvement project in the community.
Land Lease	Australia, North America, Europe, & China	<p>Similar to that discussed in a public private partnership agreement, the government would be leasing their land to a developer, so they are able to capture the corresponding value uplift.</p> <p>In China, Land Leases are a large part of their land value capture methods. The mechanism works as a they lease the land to a developer, who would then share the net revenue proceeds of the development according to the specific terms of the lease. This is quite similar to a private public partnership, but China would still own the land as well as receiving revenue from the project.</p>
Public Led Land Assembly	Netherlands, France, & Germany	This is a method that is currently being utilized in France, the Netherlands, and Germany. Occurs when local authorities take the lead in assembling or purchasing land.
Density Benefit Agreements	North America (Toronto, New York and Vancouver)	Currently the main mode of Land Value Capture in Vancouver. This is mechanism is generally a negotiated contribution in exchange for additional density. This type of mechanism is also utilized in Toronto, under the name of Section 37.
Inclusionary Zoning	North America and Europe	A method where developers will be granted density bonuses or have requirements waived in exchange for including specified amount of affordable housing units in the development.
Betterment Levies	North America, Latin America, UK	This contribution is a charge, or a fee imposed on the owner of a selected property to defray the cost of a public improvement or service from which they specifically benefit.
Progressive Property Tax	Argentina & Brazil	A method where property tax is charged on the amount of land. Similar to the Canadian federal income tax, land would be grouped, and each category amount of land owned would be taxed at a different rate.
Transfer Development Rights	North America	A transfer of floor area rights. City provides development rights to owners of heritage sites to incentivize them to not develop on this land. Land owners are then able to sell the TDR to the owner of a receiver site or sell it back to the city's density bank.
Development Exactions (also known as Special Allowances)	Latin America, North America	The most common value capture tool throughout Latin America. In this mechanism, landowners are compelled to make cash or in-kind contributions to obtain special approvals or permissions to develop or build on land.
Auction of Development Rights	Brazil	The use of public and private auctions to sell additional development rights.