

São Paulo's new transit oriented development based master plan: TOD scenarios and development rights

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Problem

The need to promote a more sustainable urban development model has led many cities, metropolitan areas and regions to seek more rational forms of land use and city form, such as those based on Transit Oriented Development (or TOD). The root principle of this strategy (real estate development associated to public transportation deployment) has been largely adopted before the car era. Currently, it is being increasingly adopted again worldwide, as a response to the need to promote more sustainable land use practices and thus preventing climate change. From Curitiba and Amsterdam to The Bay Area of San Francisco - that has recently adopted such approach at a regional level - the number of well succeeded initiatives, with different levels of implementation and success, has been increasing.

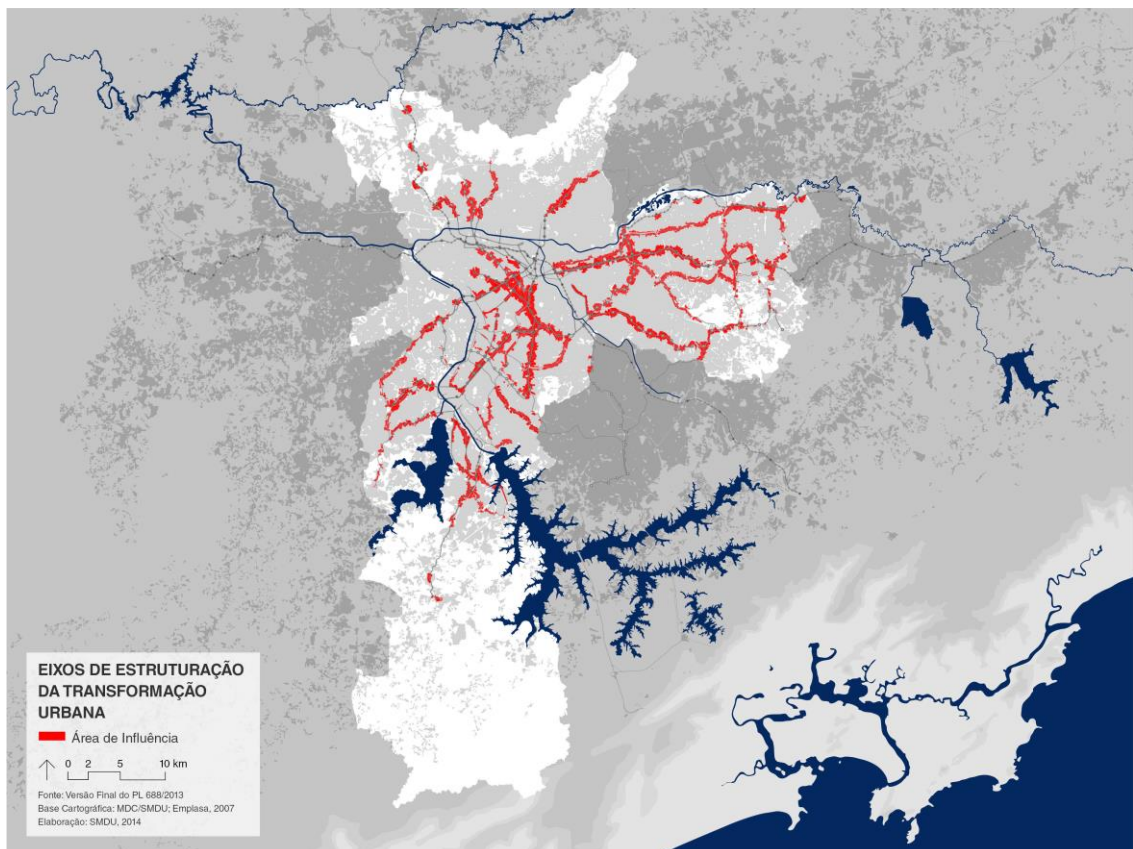
The goal of a TOD strategy is to create or improve the use of, public transportation networks, densifying areas with good transit access and at the same time interconnecting centralities in the urban fabric. By improving public transportation quality and accessibility in the city, conditions are given to a more dense and decentralized development. This development, concentrated along these "axis", creates incentives to transportation mode change, thus contributing to the reduction of traffic congestion, toxic pollution and greenhouse gas emissions.

This strategy, especially in cities that face budgetary challenges, will be more effective when based on a viable model of urban development that rely on diverse sources of funding. Ideally, these should be based on mechanisms that capture the

added value on land prices when urban parameters change and the resources it generates are reverted for urban improvement.

The adoption of a new urban development paradigm is usually accompanied by studies to evaluate these impacts, as it was the case in the revision of São Paulo's Master Plan (Law 13,430/02, substituted by Law 16,050 of 2014). The city, through a long construction process¹, determined that urban development should follow TOD guidelines and that the added value to the land would be captured by an improved development rights scheme.

Figure: *Eixos de Estruturação da Transformação Urbana (PDE 2014) – Buffers of Densification in development axis.*



¹ Which lasted about 18 months and involved intensive discussions within the executive boards the city council, with the private sector and through public workshops and hearings

This work examines how the strategy and its correspondent policy were shaped for São Paulo's context, focusing on the analysis of impacts regarding new Real Estate development.

Objectives

This paper objective's is to demonstrate the methodology adopted to evaluate the feasibility of new Real Estate development along transportation axis previewed in São Paulo's New Master Plan and consequently calculating the added value that could be captured to urban improvements given the adopted strategy. It also portrays what kind of spatial strategy was pursued, based on a concentrated deconcentration, intended to promote the integration, consolidation and socio-economic development of centralities.

The presentation of the methodology in a larger level of detail is expected to provide a case study and elements of planning tools that can serve as references to other cities pursuing a more sustainable land use strategy and an alternative to generate funds for urban improvements, while controlling land speculation.

As it deploys this strategy, and seeking its continuous improvement, the city of São Paulo not only aims the improvement of life quality to its inhabitants but also to offer a model for discussion – fulfilling its role in global climate change governance and adhering to the New Sustainable Development Goals set by the United Nations.

Methodology

The methodology adopted for this paper is one of case study, based on São Paulo's new master plan. The tools and respective methodology involved will be presented, as well as the results obtained.

One of the most used tools for long-term planning is the formulation of scenarios. In urban development, these scenarios can be represented graphically and quantitatively by measuring and evaluating the supply and demand for additional building (Borges, 2013).

To study these effects, a static compact land use model was built, covering urban development scenarios for the next 16 years (time frame for São Paulo's new Strategic Master Plan). Current land use was analyzed, determining the potential for densification given proposed Floor to Area Ratios and market activity in the recent

years. This potential is compared to the expected production of built area by the market, given the demand estimated for São Paulo in the period. This model, in turn, is supported by a model of economic feasibility of new Real Estate development, used to determine parameters later utilized to develop a cost model for development rights and related incentives.

The land use model is based on a Transit Oriented Development Strategy, which is implemented with the determination of a special zoning along existing and new high and medium capacity axis of public transportation. In such a model, the improvement or installation of new infrastructures of transport is followed by increased building parameters and the added value to the land (caused by this rezoning) is captured and reverted to urban improvements.

New construction is favored along these axis in comparison to the rest of the urban land. Some kinds of development, more desirable by the city, were made more feasible for the Real Estate sector by changing laws and regulations and their impact on land prices and thus the feasibility logic.

An onerous grant (or development rights) scheme was modelled to capture added value with different intensities according to use, location and level of income of the new dwellers. Another model is used to estimate revenues to be reverted to urban improvements.

Main Results and Contributions

Throughout the design process and approval of the Master Plan the models served as tools for the simulation and evaluation of several sub-scenarios to determine a Baseline Desired Scenario.

The models suggest that the deployment strategy adopted by São Paulo's Master Plan is feasible considering the market context. This results are obtained through different analysis, which display a possible methodology for applied studies.

It is expected that this work can inspire other cities that seek similar development strategies and at the same time contribute to a better understanding of Real Estate development economic impacts and its consequences regarding the formulation of land policy. It is also expected that this static model can serve an inspiration and reference to create more complex and dynamic models for São Paulo

and other cities, increasing the capacity of the governments to plan and act on urban infrastructure improvement and climate change.

It is believed that the Civil Society and the Real Estate Sector have also a big responsibility on the success of this new plan - but it has the potential to change the current exclusionary model that has been the city's paradigm for decades, placing São Paulo City back in the route of sustainable land use development.

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