

## Technical Cooperation Document

### I. Basic Information for TC

▪ Country/Region:	Brazil
▪ TC Name:	Sustainable Transit-Oriented Development in Brazil
▪ TC Number:	BR-T1394
▪ Team Leader/Members:	Jason Anthony Hobbs (HUD/CBR); Team Leader; Barbara Brakarz (CCS/CBR); Alternate Team Leader; Karisa Maia Ribeiro (TSP/CBR); Claudio Alatorre Frenk (CSD/CCS); Mario Duran-Ortiz (CSD/HUD); David Agustin Salazar (VPC/FMP); Fernanda de Sousa Oliveira (CSC/CBR); Cristina Celeste Marzo (LEG/SGO); and Beatriz Gonzalez Herrera (CSD/HUD).
▪ Taxonomy:	Client Support
▪ Date of TC Abstract authorization:	Sep 23, 2018
▪ Beneficiary:	Federal Republic of Brazil through the Ministry of Cities
▪ Executing Agency:	Inter-American Development Bank
▪ Donors providing funding:	Clean Technology Fund (CTF)
▪ IDB Funding Requested:	US\$2,000,000
▪ Local counterpart funding:	US\$0.00
▪ Disbursement period:	24 months (Execution Period 24 months)
▪ Required start date:	December, 2018
▪ Types of consultants:	Firms and individual consultants
▪ Prepared by Unit:	Housing and Urban Development (CSD/HUD) and Climate Change and Sustainability (CSD/CCS)
▪ Unit of Disbursement Responsibility:	Bank Representation in Brazil (CSC/CBR)
▪ TC Included in Country Strategy:	No
▪ TC included in CPD:	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Climate Change and Environmental Sustainability

### II. Objectives and Justification of the TC

- 2.1 The objective of this Technical Cooperation (TC) is to contribute to improve urban mobility, urban development and environmental sustainability in Brazilian cities through Transit-Oriented Development (TOD)<sup>1</sup>. Specifically, this TC seeks to deliver practical guidelines for TOD strategies tailored to Brazilian cities, based on the lessons learned from domestic and international cases but adapted to the country's legal framework and the realities of local real-estate markets.
- 2.2 Many Brazilian cities face the challenge of rapid urbanization, inefficient planning regulation and expansion in car ownership<sup>2</sup>. Additionally, several cities are characterized by uniform low density, high-value land concentrated in downtown areas, poor accessibility, dependence on automobiles and uncontrolled and noncontiguous land expansion. This spatial pattern has the negative impact of forcing

<sup>1</sup> TOD is defined by the World Bank as compact, mixed-use, pedestrian-friendly development organized around a transit station. TOD embraces the idea that locating amenities, employment, retail shops, and housing around transit hubs promotes transit usage and nonmotorized travel.

<sup>2</sup> Between 2003 and 2014, the urban population in the largest Brazilian cities increased by 21,3%, while during the same period the automobile fleet increased by 116%. *Associação Nacional de Transportes Públicos, 2016.*

low-income residents to peripheries, while many urban centers remain with low density levels. Consequently, as low-income residents commute from the peripheries to the city center they spend more time per day travelling by public transport<sup>3</sup> which leads to increased travel times and costs (e.g. traffic jams in São Paulo alone represent a BRL156.2 billion loss/year)<sup>4</sup>.

- 2.3 IDB studies on Latin American cities show that medium-sized Brazilian municipalities present unsustainable density levels<sup>5</sup>. State capitals, such as Palmas and Vitoria, have large urbanized areas, but low density<sup>6</sup> 3,671 inh/km<sup>2</sup> and 6,253 inh/km<sup>2</sup>, respectively. Several empirical studies on urban form have shown that higher density is generally associated with lower per capita transport GHG emissions<sup>7</sup>. A comparison between Curitiba and Brasilia metropolitan areas found that despite Curitiba's higher degree of car ownership per capita, the more sprawled Brasilia has a much higher carbon footprint, with annual average CO<sub>2</sub> emissions from its light vehicle fleet emitting 46% more than the Curitiba metropolitan area<sup>8</sup>.
- 2.4 In addition to the challenge of urban mobility and development, Brazilian municipalities also face constraints in financing, as on average own tax revenue represents only 21% of their total revenue, whereas more than 60% of transfers come from the federal government<sup>9</sup>. Experiences in cities like Hong Kong, Tokyo, London, Washington D.C. and New York have shown that development-based land "value capture" (LVC)<sup>10</sup>, a key pillar of TOD, is an effective alternative not only for sustainable finance but also for sustainable urbanism<sup>11</sup>. Major Brazilian cities, like São Paulo<sup>12</sup>, Rio de Janeiro, the District of Brasilia and Curitiba, have implemented different forms of LVCs tools<sup>13</sup>, with different degrees of success. International experience suggests that adapting and implementing LVC requires consistent policies, a strong institutional framework, a clear and transparent regulatory framework, strong planning and financial management, effective design, and efficient property management<sup>14</sup>.
- 2.5 Since 2001, policy frameworks and plans have been put into place to guide more equitable and sustainable urban development in Brazil. The City Statute (Law N°. 10257/2001) was a first step to strengthen local planning, including the prioritization of social function of property. Afterwards, the National Urban Mobility Law

---

<sup>3</sup> CNI, 2012. [\*Cidades: mobilidade, habitação e escala – um chamado à ação\*](#).

<sup>4</sup> Haddad, E.A. and Vieira, R.S., 2015. *Mobilidade, acessibilidade e produtividade: nota sobre a valoração econômica do tempo de viagem na região metropolitana de São Paulo*. Núcleo de Economia Regional e Urbana, Universidade de São Paulo.

<sup>5</sup> IADB, 2015. [\*Urban Dashboard\*](#).

<sup>6</sup> Net urban population density: the number of people living in the urbanized area of the municipality divided by the urban area of the municipality.

<sup>7</sup> [World Bank, 2012. Sustainable Low-Carbon City Development in China Part 1, pp. 181](#)

<sup>8</sup> [Magalhães, Fernanda; and Durán Ortiz, Mario \(2009\). Low Carbon Cities: Curitiba and Brasilia. IADB](#)

<sup>9</sup> Department of Economics, FEA-UPS. [Intergovernmental transfers and public spending in Brazilian municipalities](#). Working Paper, No 2015-03.

<sup>10</sup> Defined by the World Bank as infrastructure financing concept that seeks to capture land value created by new infrastructure, particularly transit.

<sup>11</sup> The World Bank, 2013. [Transforming Cities with Transit: transit and land-use integration for sustainable urban development](#).

<sup>12</sup> Camila Maleronka and Jason Hobbs. *Operações urbanas: o que podemos aprender com a experiência de São Paulo?* IADB 2017

<sup>13</sup> Mainly air rights sales. The Distrito Federal government financed the initial stages of Brasilia's metro system through the selling/auctioning of public lands to build *Aguas Claras* by private developers along the new metro corridor.

<sup>14</sup> The World Bank, 2015. Financing Transit-Oriented Development with Land Values: Adapting land value capture in developing countries

(Nº 12.587/2012) was introduced mandating the creation of municipal urban mobility plans and their integration with existing planning policies. While this policy framework has guided national and sub-national governments, integration between urban mobility and land use policies remains a significant gap, especially for the implementation of TOD. Though governments have developed a variety of initiatives for more efficient and sustainable transport systems, there are still several obstacles for effective action. A 2017 Brazil report from the World Resources Institute (WRI)<sup>15</sup>, identifies three main constraints: (i) complexity in institutional relationships; (ii) legally mandated but poorly implemented participatory processes; and (iii) absence of a central actor with enough coordination and capacity to act.

- 2.6 Case studies of cities that have successfully implemented TOD strategies suggests that it can: (i) promote efficient use of urban land around transit stations; (ii) be a powerful strategic financing and planning apparatus for transit and TOD related investments; (iii) help governments fund a range of high-quality local infrastructure without accumulating too much public debt; (iv) promote a pedestrian-friendly environment, thru transit riding, walking and bicycle travel, shifting trips from the automobile; and (v) reduce traffic congestion, indirectly improving air quality and reduced greenhouse gas emissions (GHG)<sup>16</sup>.
- 2.7 With the aim of greater promotion of TOD in Brazil, this TC will use Clean Technology Fund (CTF) resources to support Brazilian cities ability to develop action plans that include both strategic (macro) and design (micro) elements for multiuse, high-intensity developments<sup>17</sup>. The CTF will build on the activities implemented in the project “Low Carbon Urban Mobility for Large Cities” (BR-G1006) which aims at creating enabling planning and technical frameworks that make it possible to systematically assess investments in urban transport in large cities and promote the adoption of more formal and scientifically based sustainable transport measures and practices. The specific pilot cities that will benefit from this TC will be identified thru a competitive process, in partnership with the Government of Brazil (GoB), as part of Component 1.
- 2.8 **Strategic alignment.** This TC is consistent the Update to the Institutional Strategy 2010-2020 (AB-3008) and aligned with the cross-cutting theme of Climate Change and Environmental Sustainability, as it seeks to improve sustainable infrastructure, which is critical to deliver on the Sustainable Development Goals (SDGs), and to respond to the objectives of the Paris Agreement to limit dangerous global temperature rise to 2°C and manage climate related risk. This TC is also consistent with the IDB's Corporate Results Framework (GN-2727-6) and aligns with the strategic policy objectives in two areas: (i) social inclusion and equality thru the provision of inclusive infrastructure and infrastructure services; and (ii) productivity and innovation thru the provision of urban planning. Also, this TC is consistent with the Country Strategy with Brazil 2016-2018 (GN-2850), which seeks to support Brazil in six strategic objectives: (i) stimulate social and productive inclusion; (ii) improve the condition of the country's infrastructure; (iii) promote the development of sustainable cities; (iv) improve the institutional capacity of public entities; (v) increase the sustainable management of natural resources and climate change mitigation and adaptation actions; and

---

<sup>15</sup> WRI, 2017. [Governance of Inclusive Transit Oriented Development in Brazil](#).

<sup>16</sup> See the World Bank, 2015. Financing Transit-Oriented Development with Land Values: Adapting land value capture in developing countries

<sup>17</sup> Developments should promote: (i) easy and direct pedestrian, bicycle, and public transit access, (ii) good signage and a pleasant environment to attract substantial pedestrian flows, (iii) substantial regional accessibility to major job and activity centers, (iv) short, direct connections between transport modes and transit facilities, (v) effective parking management around stations, (vi) amongst others.

(vi) promote development through the private sector. In addition, this TC is consistent with the objectives of the “IDB Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy” (CCS) (GN-2609-1), which guides the scaling-up support for climate change mitigation and adaption activities in Latin America and the Caribbean Region (LAC). The project supports the following priorities: (i) strengthen the knowledge base priorities; (ii) strengthen institutions and public and private sector capacity; (iii) scale up investments, address financial gaps and leverage private sector investments; and (iv) expanding lending and technical assistance in key sectors. Also, this TC is also consistent with the IDB Sustainable Infrastructure for Competitiveness and Inclusive Growth Strategy (GN-2710-5) thru its focus on: (i) fostering financing mechanisms and leveraging private sector participation in infrastructure; and (ii) supporting the construction and maintenance of environmentally and socially sustainable infrastructure. Finally, this TC is also consistent with the: (i) Transportation Sector Framework Document (GN-2740-7), thru its focus on accessible, efficient, and safe urban transportation systems, and the promotion of mitigation and adaptation measures as a strategy for sustainability; and (ii) Climate Change Sector Framework Document (GN-2835-5), thru its focus on promoting a multisector approach to tackling climate change and supporting the public and private sectors in the use of innovative financial instruments and mechanisms that take the characteristics of climate investments into account.

### **III. Description of Activities/Components and Budget**

- 3.1 **Component 1. Transit-oriented Development (TOD) System Analysis (US\$300.000).** This component will finance consultancies to: (i) summarize the recent literature of TOD systems based on international cases, particularly in the developing world; (ii) carry out a country specific diagnosis for Brazil at the municipal level, including the main constraints for implementation and recommendations to guarantee an effective and impactful application of this TC’s objective. This work will include: analysis of land markets, legal frameworks and institutional structures to understand local context and existing legal, financial and institutional barriers towards TOD implementation.
- 3.2 **Component 2. Design of TOD in Brazilian cities (US\$400.000).** This component will finance municipal-level Brazilian TOD guidelines for cities, to support them in the preparation and adoption of their own transit-oriented development systems. Specifically, the step-by-step TOD Guidance Document will include: (i) how to review municipal characteristics and transport situation; (ii) how to create an enabling environment (e.g. overcome policy barriers, define delivery mechanisms, technical capacity); (iii) how to plan and design projects and proposals; (iv) how to mobilize investments (e.g. city budget, alternative financing, private funding); and (v) how to ensure implementation by defining clear roles and responsibilities, high quality projects and monitoring and evaluation frameworks.
- 3.3 **Component 3. Pilot project design for implementation of a complete TOD system (US\$1.300.00).** This component will design and structure TOD systems for at least two Brazilian cities, supporting other cities in implementing transit-oriented development. This will be achieved through:
  - a. Pilot Project Design: selection of the corridors for the TOD system pilot projects. This will include the assessment of land development requirements, costs, institutional capacity and institutional training needs of selected municipalities.

- b. Dissemination of TOD approaches: presentation of international best practices, country diagnosis and municipal-guidance to a wider audience and one-to-one sessions with pilot demonstration sites to provide tailored technical assistance and required capacity building.
  - c. Complete TOD System Pilot: compilation of findings into a final report and design of a pilot-transit oriented system.
- 3.4 The total cost of this TC will be US\$2,000,000, which will be financed by the Climate Technology Fund (CTF).

**Table No. 1: Indicative Budget (in US\$)**

<b>Component</b>	<b>IDB/Fund</b>	<b>Total</b>
Component 1. Transit-oriented Development (TOD) System Analysis	300,000	300,000
Component 2. Applying TOD in Brazilian cities	400,000	400,000
Component 3. Pilot project design for implementation of a complete TOD system	1,300,000	1,300,000
<b>Total</b>	<b>2,000,000</b>	<b>2,000,000</b>

#### **IV. Executing Agency and Execution Structure**

- 4.1 The Bank will execute this operation, due to its experience in institutional strengthening of public institutions and its multisectoral context which combines urban planning, mobility and finance at the municipal level, as requested by the beneficiary in accordance with the guidelines and requirements set out in the policy on Technical Cooperation (GN-2470-2) and in the Operational Guidelines for Technical Cooperation Products (GN-2629-1). The IDB will act as the executing agency of the TC and will be responsible for: (i) identifying the studies and technical work required for the execution of the TC; (ii) selecting and hiring consultants to provide the necessary services; (iii) supervise the consulting services that the beneficiary provides technical inputs to; and (iv) manage the execution and delivery of consulting services. The following policies will be applicable: (a) Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1); (b) section AM-650 420 of the Administrative Manual of the Bank 'Complementary Workforce' for individual consultants; and (c) IDB Corporate Procurement Policy (GN-2303-20) for non-consulting services.
- 4.2 In addition to the above components, it is expected that IDB staff provides specialized knowledge and technical quality in the activities that will be implemented, and, in that sense, missions are planned as part of the annual supervision plan to support the implementation of the proposed activities. This is essential for the proper execution of the TC and to ensure proper coordination. The execution of TC activities will be started after a non-objection letter has been issued by the liaison entity of the Brazilian Government.
- 4.3 The timeframe for implementing the TC will be two years. The monitoring will seek the success of the timely implementation of the activities, assessing its effectiveness in the long-term and ensuring timely implementation, budget control, delivery and quality of services, and other aspects related to project management. The IDB will produce semiannual reports, identifying the performance of execution, potential problems, and possible corrective measures that will be shared to the donor.

## V. Major issues

5.1 The following risks and mitigation measures have been identified:

**Table No. 2: Risks**

<b>Risks</b>	<b>Mitigation Measures</b>
TOD guidance document is not used by municipalities and fails to encourage them to adopt their own systems.	Dissemination sessions will be held with selected municipal stakeholders to explain the guide, financing alternatives and benefits.
Pilot project design is not implemented by selected municipalities.	One-to-one sessions will be held with municipalities ensuring they get the necessary technical assistance to get systems off the ground.

## VI. Exceptions to Bank Policy

6.1 No exceptions to Bank policy have been identified.

## VII. Environmental and Social Strategy

7.1 According to the Environmental and Safeguards Compliance Policy (OP-703), this TC has been classified as Category “C”. The latter ratifies a negative minimum or inexistent environmental, social and/or cultural impact; therefore, no environmental assessment studies or consultations are required for Category “C” operations. (see the “[Safeguard Screening Form](#)” and the “[Safeguard Policy Filter Report](#)”).

### Required Annexes:

- Annex I: [Request from the client](#)
- Annex II: [Results Matrix](#)
- Annex III: [Terms of Reference](#)
- Annex IV: [Procurement Plan](#)

## Sustainable Transit-Oriented Development in Brazil

BR-T1394

### Certification

I hereby certify that this operation was approved for financing under the **Clean Technology Fund (CTF)** through a communication dated September 24, 2018 and signed by Goritza Ninova (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$2,000,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, representing a risk that will not be absorbed by the Fund.

Certified by:

**Original signed**

**11/20/2018**

\_\_\_\_\_  
Sonia M. Rivera

\_\_\_\_\_  
Date

Chief

Grants and Co-Financing Management Unit

ORP/GCM