

# Curitiba, Brazil

## The “Ecological Capital” forerunner in Urban NEXUS planning

**Curitiba, the “Ecological Capital” of Brazil, is a world renowned model for innovative integrated planning and management. Through the institutionalization of an Independent Public Authority, the Institute for Urban Planning Research (IPPUC), the metropolis designs, coordinates and implements cross-cutting solutions to address multiple urban challenges for housing, transport, water and waste management.**

Urban NEXUS Case Story 2014 - 05

August 2014

### The project in brief

Fifty years ago, the city of Curitiba experienced a surge of economic and population growth, increasing from 140,000 inhabitants in 1940, to 360,000 by 1960. The development placed strain on the City’s housing, transport and waste management sectors and systems. Infrastructure and services failed to keep pace with new settlements, and private vehicle use led to growing traffic congestion and poor air quality. Amidst Curitiba’s growing pains, the city underwent frequent flooding events, which continued to worsen with the rise of informal settlements, decreasing green areas and an outdated channelization system. In 1964, in response to local demand, former Mayor Ivo Arzu called for a radical integrated planning scheme for urban development to respond to Curitiba’s challenges. Following a bid, the City commissioned the Institute for Urban Planning Research (IPPUC), a team of visionary architects and urban planners, including, Jamie Lerner (former three-time Mayor of Curitiba and governor of Paraná), as the Municipal Independent Public Authority to carry out studies and surveys to devise a set of unconventional, low-cost integrated urban planning solutions and programs, through the creation of a revised Master Plan. Flooding, infrastructure and housing challenges were addressed in the Plan through the restructuring of river corridors to allow canalization via natural flood plains and the construction of water catchment ponds and 28 parks, saving the City costly conventional infrastructure.. Residents in informal settlements vulnerable to flooding along the river were relocated to 50,000 homes, not only safeguarding residents from floods, but also reconnecting them to infrastructure while positively impacting health, well-being and employment. Simultaneously to improve air quality, lessen traffic and guide high-density growth, five arterial public transit corridors to host an Integrated Transit Network were developed, dedicating major arterial roads to Bus Rapid Transit systems coupled with high density zoning. In tandem, to increase ridership, the city offered incentives such as a flat rate for all distances along with the “Green Exchange”, waste-for-transit (or food) employment program which lessened waste and bolstered social inclusion and health. Today 85% of residents use public transport and 70% of the city's residents recycle. Buses no longer in use are repurposed as mobile schools and work spaces.



<b>Date</b>	1964-ongoing
<b>NEXUS Sectors</b>	Waste-Transport-Housing-Social
<b>NEXUS Innovations</b>	Law + Policy; Design + Technology; Institutions (also PPPs); Communications + User Behavior
<b>Scale</b>	City-wide (3.2 million people)
<b>Budget</b>	n/a

### What makes it "Urban NEXUS"?

The deeply embedded nature of the IPPUC within the administration offers a NEXUS for the integration of silos encompassing diverse sectors, services, systems for enhanced resource efficiency and planning. The structure of the IPPUC consisted of a 14-member

## Urban NEXUS Definition

The Urban NEXUS is an approach to the design of sustainable urban development solutions. The approach guides stakeholders to identify and pursue possible synergies between sectors, jurisdictions, and technical domains, so as to increase institutional performance, optimize resource management, and service quality.

It counters traditional sectoral thinking, trade-offs, and divided responsibilities that often result in poorly coordinated investments, increased costs, and underutilized infrastructures and facilities. The ultimate goal of the Urban NEXUS approach is to accelerate access to services, and to increase service quality and the quality of life within our planetary boundaries.

ICLEI / GIZ 2014

## Further Reading

DAC & Cities, 2014, Sustainable Cities, "Curitiba: the green capital", accessed at <http://www.dac.dk/en/dac-cities/sustainable-cities/all-cases/green-city/curitiba-the-green-capital/?bbredirect=true> (20 Aug 2014)

Hidalgo, D., Custodio, P., Graftieaux, P., A, 2014, "Critical Look at Major Bus Improvements in Latin America and Asia: case studies of hitches, hi-ups and areas for improvement; synthesis of lessons learned", accessed at: <http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/Hidalgo-Graftieaux-CriticalLook.pdf> (20 Aug 2014)

ICLEI, 2002, ICLEI Case Study No. 77, Curitiba: Orienting Urban Planning to Sustainability: [http://www.iclei.org.br/policies/CD/P2\\_4\\_Estudos%20de%20Caso/1\\_Planejamento%20Urbano/PDF106\\_EC77\\_Curitiba\\_ing.PDF](http://www.iclei.org.br/policies/CD/P2_4_Estudos%20de%20Caso/1_Planejamento%20Urbano/PDF106_EC77_Curitiba_ing.PDF) (20 Aug 2014)

GIZ and ICLEI, 2014, Operationalizing the Urban NEXUS: towards resource efficient and integrated cities and metropolitan regions, GIZ Study: [www.iclei.org/urbanexus](http://www.iclei.org/urbanexus)

Deliberative Board chaired by the Mayor, and members of the Executive Board, a consortium of representatives from the Socio-Economic Planning Supervisory Board, the Territorial Planning Supervisory Board, the Legal Implementation Department, Administrative and Technical Department departments of Public Works, Public Interest Services, Urban Affairs, Concessions and Permits, Social Wellbeing, Municipal Roads, URBS - the Municipal Urban and Sanitation Company, and COHAB - the Popular Housing Company of Curitiba and one City Council representative, involved in each stage of the planning and development process. The IPPUC's unique institutional integration within the administration galvanized solutions through comprehensive zoning to scale up jurisdictions, while re-integrating systems through the simultaneous design and implementation of water, drainage, sewerage and roads.. Additionally, Urban NEXUS institutional integration reintegrated social inclusion and behaviors with services and sectors through policies and jurisdictions (e.g., transport and waste management in the "Green Exchange" program).

## Scope for improvement

Although the top-down decision making process in Curitiba took less time and reduced conflicts between agencies during the planning and implementation of the Curitiba's Master Plan and programs, the lack of a bottom-up approach failed to fully integrate public participation. As a precursor to the development of the Master Plan, the City held an intensive series of "Curitiba of Tomorrow" public input discussions spearheaded by the IPPUC in 1965, however active citizen involvement could have been strengthened throughout all stages of the planning and development process.

## Replication

The creation of an independent municipal authority such as IPPUC to monitor, coordinate, design and support the implementation of integrated cross-sectoral projects and investments is highly replicable, provided there is a strong political and administrative support and capacity.

## Acknowledgements

**Authors:** Angèle Cauchois, Martin Abbot, Chaitanya Kanury, Louise Cousyn, and Victoria Vital Estrada (SciencesPo - ICLEI Capstone Project)

**Editors:** Lucy Price, Louisa Weiss (ICLEI World Secretariat)



On behalf of:



The Urban NEXUS project 2013-2014 was funded by GIZ on behalf of BMZ to develop the "Operationalization of the NEXUS approach in cities and metropolitan regions". The Urban NEXUS project included: a baseline study and report (GIZ and ICLEI, 2014), the identification and preparation of case studies and shorter case stories, and the design and implementation of action-oriented pilot projects supported by the German Development Cooperation. ICLEI, as implementing partner of the Urban NEXUS project, is responsible for the content of this Case Story.

**ICLEI – Local Governments for Sustainability** has various series of brief Case Stories focusing on urban sustainability activities of ICLEI Members and local governments that are part of projects and processes across the globe.

The media are free to use the content and pictures of this case story, giving reference to GIZ and ICLEI: [www.iclei.org/publications](http://www.iclei.org/publications).

ICLEI World Secretariat, Kaiser-Friedrich-Straße 7, 53113 Bonn, Email: [urban.research@iclei.org](mailto:urban.research@iclei.org) © GIZ and ICLEI August 2014