Residents of São Paulo painting a mural in a public park.
# Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Letter from the Director</td>
</tr>
<tr>
<td>2</td>
<td>Where We Work</td>
</tr>
<tr>
<td>4</td>
<td>WRI Ross Center Prize for Cities</td>
</tr>
<tr>
<td>6</td>
<td>Scaling Our Impact</td>
</tr>
<tr>
<td>14</td>
<td>Deep Engagement</td>
</tr>
<tr>
<td>22</td>
<td>Targeted Engagement</td>
</tr>
<tr>
<td>28</td>
<td>National Engagement</td>
</tr>
<tr>
<td>32</td>
<td>Knowledge Sharing</td>
</tr>
<tr>
<td>36</td>
<td>Financials</td>
</tr>
<tr>
<td>38</td>
<td>Donors and Partners</td>
</tr>
</tbody>
</table>

### PHOTO CREDITS

People walking and biking along a busy road in Manaus, Brazil.
Resilience and recovery have been the watchwords for cities over the last two years.

From a global pandemic that continues to ebb and flow, to major disruptions to energy and food supplies, and the re-ordering of urban spaces, cities have been through a lot. But as always, our communities continue to innovate and find new ways forward.

So too have our experts at WRI Ross Center for Sustainable Cities. We continue to focus on building broader systems resilience and bringing people together to confront the most urgent environmental and development challenges today. And we are doing it on a larger scale, in more places, with more impact than ever before.

In 2021-22, WRI Ross Center continued to deliver against our strategy and found new ways to work with cities and other partners amid the shifting global landscape. From building safer active mobility networks to directing stimulus investments, our work is both helping communities adapt now and laying the groundwork for long-term success.

In Brazil, we helped the federal government revise its national road safety plan, which pledged to cut traffic fatalities in half. In the United States, we supported the inclusion of $5 billion in new federal funding for clean school buses and the passing of the nation’s first plan to electrify an entire state school bus fleet in New York State. In India, we helped create Mumbai’s first-ever climate action plan, with equity at its core, and the same process is now being carried out in other cities in Maharashtra state, creating resilience and promoting more broad-based development at the same time. In six African cities, we are helping to change the paradigm on water resilience planning, co-creating action plans that connect upstream watershed management to more reliable supply, coordinating new financing streams, and ultimately expanding affordable access to clean water. And in China, we are helping to guide long-term national transport decarbonization strategies and pilot zero-carbon districts in Shenzhen.

Going forward we are sharpening our focus on transformative change. The science is clearer than ever: to keep global warming below 1.5 degrees C, we must transition all cities to net zero by 2050, while reducing inequality and restoring nature.

The last few years have shown that achieving this objective requires bold changes. But it’s also shown that promising solutions are being developed everywhere, from Nairobi to New York, and WRI has a key role to play in sharing experiences and propelling change. We remain committed to working toward large-scale change with partners of all kinds, from government to business and civil society.

This Annual Report shows the impact that deep, sustained engagement with cities can have on people’s lives. I invite you to explore the myriad ways we are shaping a future where cities work better for everyone.

With best regards,

Rogier van den Berg
Acting Global Director, WRI Ross Center for Sustainable Cities
Where We Work

WRI Ross Center’s global and local experts support city- and national-level change for people and the planet through three levels of engagement. In 2021-2022, we influenced more than 236 cities.
Deep city engagement is characterized by working closely with key stakeholders in a city over several years, from project inception to implementation, in multiple sectors.

Targeted city engagement includes technical assistance on a key solution. The objective is to establish or replicate a good practice via precedent-setting projects.

National engagement involves broad efforts to scale impact to multiple cities through policy reform at the regional, national and global levels.
“Necessity is the mother of invention; so, given the exponential vulnerability that cities are facing around the world, it is there where meaningful action needs to take place to improve society as a whole.”

MARTHA DELGADO PERALTA
Deputy Secretary of Multilateral Affairs and Human Rights at the Foreign Affairs Ministry of Mexico and Prize for Cities Jury Member
In October 2021, WRI launched the third cycle of the Prize for Cities. Recognizing the confluence of challenges from COVID-19, climate change and growing inequality, we selected “Thriving Together in Turbulent Times” as this cycle’s theme. Showcasing outstanding projects and leaders reshaping urban life, the Prize will award $250,000 to one grand prize winner and $25,000 to four other winners for their transformative work.

This cycle’s call for submissions earned an impressive response, attracting a diverse range of initiatives responding to uncertainty and disruption. Five finalists were announced in June 2022, with the grand prize-winning project to be named at an awards ceremony at the end of 2022.

**2021-2022 Submissions**

**The 15-Minute City**  
*Paris, France*

A concept sparking a global movement to tackle car dominance, climate change and urban inequality by ensuring residents have services and amenities at their doorsteps.

**Zu Peshawar**  
*Peshawar, Pakistan*

Putting vulnerable people at the center of a new public transit system, thereby creating a safer and healthier city for everyone.

**Participatory Housing and Urban Development in Iloilo City**  
*Iloilo City, The Philippines*

A coalition of stakeholders addressing the housing crisis from the ground-up, without uprooting communities from their jobs and support systems.

**Todos al Parque**  
*Barranquilla, Colombia*

A citywide urban parks project reversing decades of decline by creating safe and healthy green spaces for residents in every neighborhood of the city.

**The Urban Wage Employment Initiative – MUKTA**  
*Odisha State, India*

An innovative employment scheme for migrants, informal workers and the urban poor that created climate-sensitive infrastructure and is being replicated at a massive scale.

“The Prize sets a very high bar by looking for projects and initiatives that are impacting communities locally, as well as igniting change at the city level,” said Anne Maassen, Global Lead for the Prize for Cities. “In addition to inspiring others to become urban changemakers in their own right, we’re building a space to share insights about what makes these approaches work. We’re connecting thinkers, practitioners, and communities so they can access knowledge and tools to transform cities.”
Scaling Our Impact

WRI Ross Center seeks to scale our impact through a network of national and international partnerships and signature initiatives. Each initiative contributes to our central goal: transforming urban areas to be more equitable, sustainable and economically prosperous for all.
Electric School Bus Initiative

More than 20 million students in the United States ride the bus to school every day, but less than 1% of their buses are electrified. With the passage of the U.S. Infrastructure Investments and Jobs Act, signed into law in November 2021, there is a tremendous opportunity to realize the substantial health and climate benefits of electrifying this fleet. Thanks to sustained efforts by a host of advocacy groups and nonprofit organizations, including WRI’s Electric School Bus Initiative, the law delivers $5 billion in funding over five years that can be used to replace existing diesel school buses with cleaner and electric school buses.

The implications of the funding are enormous. For every community in the United States, making the transition to electric school buses can create multiple, tangible benefits. Electrification of school buses would slash airborne pollutants and lessen the inequitable burden of poor air quality, reduce greenhouse gas emissions, reduce school operating expenses and create new jobs in green manufacturing. School bus electrification can also improve community energy resilience through the use of innovative vehicle-to-grid technologies. Best of all, nationwide adoption will make electrified transport the new normal for an entire generation.

Using a bottom-up approach, WRI is now collaborating with local governments and utilities to develop electric school bus transition plans with the ultimate goal of achieving nationwide school bus fleet electrification by 2030. As of June 2022, we have established direct relationships with school districts and/or electric utilities in 18 states and identified 11 states for policymaker partnerships.

In keeping with WRI Ross Center’s equity-first approach, the Electric School Bus Initiative fosters an inclusive, participatory transition by incorporating equity into every facet of the project’s work, including review processes, communications, research and staff education.

Team members are working with partners on five priorities:

1. Supporting school districts in accelerating the equitable transition to electric school buses.
2. Collaborating with manufacturers across the electric school bus supply chain to prepare for an equitable and sustainable transition.
3. Working with electric utilities to improve interconnection and investments for electric school bus charging infrastructure, including supportive rates and tariffs.
4. Engaging with decision-makers to increase electric school bus public funding and drive policies that increase demand and reduce barriers.
5. Providing tools, resources and other support to communities pursuing school bus electrification.
A mobility hub installed as part of the Move PGH pilot in Pittsburgh, Pennsylvania.
NUMO

In the wake of the global transport disruption caused by the COVID-19 pandemic, and amid increasingly urgent calls for action on climate and equity, NUMO, the New Urban Mobility alliance, is working with cities to rethink the role, goals and metrics of transportation, as well as how they plan, build and finance the transport ecosystems that keep them moving.

CREATING EQUITABLE, LOW-CARBON TRANSPORT

For the first time in decades, the U.S. federal government is rewriting how it awards funds for state, local and national infrastructure, which has broad implications for the future of movement, work, commerce, adaptability and resilience. Working with federal partners, NUMO has been central to guiding a transition toward a system that centers equity and climate. NUMO helped establish the Communities First Infrastructure Alliance, announced by the White House in May 2022. The alliance is a national capacity-building network with more than 60 organizations that support the equitable and effective implementation of the Infrastructure Investment and Jobs Act.

SETTING THE RULES OF THE GAME

NUMO continues to convene industry and public sector stakeholders to create recommendations, tools and standards to address civic, regulatory and technical challenges from mobility disruptions. In 2021, NUMO partnered with the North American Bikeshare and Scootershare Association and the Open Mobility Foundation to launch a set of values and priorities on mobility data. Developed by a collaborative of cities, mobility service providers, technology companies, privacy advocates and academics, the Privacy Principles for Mobility Data are intended to guide the mobility ecosystem on the responsible use of data and the protection of individual privacy.

SUPPORTING AFFORDABLE MOBILITY

In 2021, NUMO supported Detroit’s Office of Mobility Innovation in expanding a 2020 E-Bike Leasing Pilot Program that provided subsidized, rented e-bikes for essential health workers, and helped to launch the Detroit Bike Challenge, a campaign to develop relationships with local bike clubs and organizations and get more people biking. This work has informed other NUMO efforts to create new federal subsidies for e-bikes and to encourage employers to experiment with micromobility to attract and retain talent and increase equity in their workforces.

PILOTING STRONGER MOBILITY AND LAND USE CONNECTIONS

NUMO is working to demonstrate what is possible through pilot projects developed around place-based partnerships among transit agencies, mobility operators, private property owners and city officials. Move PGH, a collaboration led by Pittsburgh and supported by NUMO, debuted in July 2021, connecting residents to public transit and accessible, low-cost shared mobility through a digital platform and a multimodal network of 50 mobility hubs. NUMO also supported the ULI San Antonio District Council’s partnership with the City of San Antonio and VIA Metropolitan Transit to envision a network of multimodal mobility hubs.
UrbanShift

UrbanShift, which debuted at 2021 Climate Week NYC, is supporting more than 23 cities across Argentina, Brazil, Costa Rica, Morocco, Rwanda, Sierra Leone, India, China and Indonesia in the adoption of integrated, low-carbon approaches to urban development. UrbanShift’s strategy is two-fold: engage directly with governments to design replicable, scalable projects that address the needs of rapidly growing urban populations and critical concerns around conservation, biodiversity and climate; and develop a knowledge and capacity building platform that will empower urban practitioners to plan, finance and implement such projects.

UrbanShift is funded by the Global Environment Facility and led by the UN Environment Programme, with WRI Ross Center serving as a lead executing partner. Other consortium members include C40 Cities, ICLEI – Local Governments for Sustainability, the UN Development Programme, the World Bank and the Asian Development Bank.

GEOSPATIAL DATA TO INFORM PLANNING POLICY

Understanding that access to robust yet customized data systems is essential for urban planners, the geospatial team at WRI works with UrbanShift cities to provide specific datasets, baseline indicators and analysis methods to better inform local decision-making. For San José, Costa Rica, and Freetown, Sierra Leone, WRI compiled a set of critical spatial data layers on biodiversity and urban growth, which provided a foundation for in-person “labs” that brought together city technical teams with planning experts to integrate strategic, cross-sectoral approaches to urban development challenges.

The first UrbanShift lab took place in San José in April 2022 and was attended by 48 representatives from 23 municipal institutions, looking at the environmental, social and economic impacts of the city’s proposed electric train. Another lab was held in Freetown in June, where 42 participants from the city and surrounding districts gathered to examine sustainable strategies to manage urban growth and improve resilience to heat and natural disasters.

BRINGING STAKEHOLDER VOICES TO THE FORE

UrbanShift kicked off a webinar series in October 2021 designed to spotlight the experiences of stakeholders from participating cities, including how to finance nature-based solutions, the smart climate assessment frameworks, the use of sustainability indicators to reach national climate, gender-inclusive urban planning and findings from the World Resources Report, *Towards a More Equal City*.

Perspectives from UrbanShift stakeholders were also featured at global conferences such as COP26, the UN Environment Assembly and World Urban Forum 11, as part of the project’s efforts to build political momentum for city- and national-level commitments on climate resilience and sustainable development.

THEMATIC LEARNING MODULES AS A CAPACITY-BUILDING TOOL

A series of self-guided online courses are currently being developed for the UrbanShift City Academy. These curricula will examine key integrated planning themes ranging from circular economy and urban biodiversity to climate finance. Course content is also offered to city-level decision-makers and urban practitioners at in-person workshops organized in each participating country, the first of which took place in Kigali, Rwanda, in May 2022. More than 80 participants from UrbanShift cities in Rwanda, Sierra Leone, and Morocco attended, participating in one of two simultaneous trainings on nature-based solutions and climate action planning.

TRANSFORMING CITIES FOR PEOPLE AND PLANET

With UrbanShift’s two-pillar engagement approach, the consortium is creating a movement of cities committed to transforming their urban development practices and placing nature, climate action and equity at the core of local and national decision-making.
Participants in UrbanShift’s first City Academy, in Kigali, Rwanda.
Cities4Forests

Cities4Forests is a global alliance of more than 80 cities acting to conserve, restore and sustainably manage nature, especially the world’s forests, for human wellbeing. Its member cities catalyze policy changes, facilitate the flow of finance for nature-based projects, and advocate for conservation and restoration on the global stage.

Working closely with WRI Ross Center, Cities4Forests delivered several major outcomes in 2021. In Jakarta, Cities4Forests and WRI Indonesia partnered with the city to develop two new policy changes to protect urban trees, including commitments to grow 200,000 new trees (of which more than 163,000 have already been planted), ensure that every neighborhood has at least one green space, restrict illegal tree removal and more. Cities4Forests contributed to regulation outlines and drafts, shared best practices from other cities, provided technical input and assisted the city government during the legalization process. The policies come at a critical time, as Jakarta is frequently threatened by flooding and poor air quality. Both issues will likely become more frequent and severe due to climate change, and Jakarta’s investment in urban trees will provide greater climate resilience and other benefits.

In the western U.S., Cities4Forests worked with partners including Blue Forest Conservation to develop a second Forest Resilience Bond to pay for the upfront costs of forest restoration across 48,000 acres of California’s Sierra Nevada mountains. The bond, which builds on a 2018 pilot project in California’s North Yuba River watershed, will finance $25 million

Due to their unplanned nature and a lack of strategic, coordinated actions, African cities are among the most vulnerable to climate change-related risks and shocks. Through programs such as the Urban Water Resilience Initiative and Cities4Forests, WRI Ross Center is helping urban areas address these challenges.

Aklilu Fikresilassie
Director, Thriving Resilient Cities, WRI Africa; Representative of WRI in Ethiopia

FARAWAY FORESTS

Carbon storage
Rainfall generation
Timber
Medicine
Biodiversity

INNER FORESTS

Clean air
Shade from sun
Urban wildlife
Higher property values
Recreation

NEARBY FORESTS

Clean air
Drinking water
Reduced flooding
Reduced soil erosion
Timber
Recreation

SDGS:

6 Clean water and sanitation
11 Sustainable cities and communities
13 Climate action
15 Life on land
in projects to restore land post-fire, prevent future fires, protect nearby communities, and enhance water and energy security. Cities4Forests helped steward the public-private partnership that funded the bond and catalyzed on-the-ground action on restoration.

Cities4Forests has also mobilized cities to use their political influence on behalf of forests far beyond their borders. At Climate Week NYC in 2021, nearly 60 cities and 52 mayors issued the “Call to Action on Forests and Climate” to protect and conserve forests. This declaration, which represents over 170 million residents worldwide, calls on companies to develop deforestation-free supply chains and on financial institutions to stop investing in activities that lead to deforestation. Additionally, the declaration urges national and subnational governments to enact policies that protect, restore and sustainably manage forests within their jurisdictions. This marks the first time that mayors have joined together to lobby governments, companies and financiers for greater forest conservation worldwide.

**Urban Water Resilience Initiative**

City leaders across Africa face three converging challenges: extending water and sanitation services for growing populations, managing watershed risks that lie outside city jurisdictions and building climate resilience. The Urban Water Resilience Initiative, launched in 2020 by WRI Ross Center and partners, is working with stakeholders in six cities – Addis Ababa and Dire Dawa, Ethiopia; Kigali and Musanze, Rwanda; and Johannesburg and Gqeberha, South Africa – to help address water risks and vulnerabilities through research, spatial analysis, technical assistance and capacity building. Its goals are to identify critical ways to build resilience, facilitate strategic government action plans, and secure critical funding and financing resources to implement solutions.

At COP26, the Urban Water Resilience Initiative presented a major report on pathways for action within Africa’s unique context. The report outlines the challenges and opportunities related to water resilience in rapidly growing cities and framed priority pathways for those directly or indirectly involved in the urban water sector. These pathways are now providing the foundation for the development and establishment of a Delivery Platform consisting of more than 60 organizations that will support capacity-building and scaled delivery of technical assistance to advance implementation of innovative urban water resilience solutions in African cities on a pan-African basis. Together the Delivery Platform and a set of co-created principles and priorities form the 2030 Joint Agenda for Urban Water Resilience in Africa.

With an estimated $66 billion needed to provide universal access to water and sanitation in Africa, increasing funding and delivering financing for water resilience solutions is crucial. The Urban Water Resilience Initiative has begun the creation of the African Cities Water Adaptation Fund (ACWA Fund), a blended finance instrument that will crowd in grants along with concessional loans including own funds from cities/countries to raise private capital from commercial lenders and impact investors. The initiative will raise $450 million to support 100 African cities in building a pipeline of emerging low-carbon water resilience solutions, while leveraging $5 billion in private sector finance to invest in bankable projects. By providing sustained support from project origination through implementation, the fund will create a unique funding model to fill a critical gap in water sector finance.
Deep Engagement

Long-term, continuous engagement with cities is critical to WRI Ross Center’s impact. It allows us to build trusted partnerships with local leaders, civil society and service providers to customize solutions to each context. Together, we work on strategies that are responsive to political economy factors and create momentum to disrupt the status quo, build pressure for change and sustain the conditions for urban transformation across political cycles.
Mexico

MEXICO CITY

Serving a city of more than 20 million, the Mexico City transport network encompasses the Metro and Metrobús systems, assorted bus lines, microbuses and trolleybuses. But trips that included more than one mode of travel required payment of separate fares for each – an inconvenience for passengers and a financial maze for revenue administrators. In 2021, following 18 months of collaboration between WRI Ross Center-Mexico and city officials, the municipal government of Mexico City broke the logjam. It established the first-ever unified transit payment system for the capital – an achievement that required not only the adoption of new technology to pay fares using smart cards, but also the creation of an external recharging network. The change also necessitated a transformation of the Transportation Regulation Entity (ORT) to equip it with income collection and administration functions.

Responding to the requests of the local officials, WRI began by providing technical support to the Ministry of Mobility and the ORT for a comprehensive legal, technical, and financial analysis of the Comprehensive Mobility System of Mexico City. The partners agreed to focus on a restructuring of ORT, and WRI was encouraged to propose optimization scenarios and support government entities in the formulation and review of the proposed Decree of Transformation of the Regulatory Body. WRI sought feedback from PWC, Steer, C230 and ITDP, who shared the progress of their proposals in other cities and addressed non-financial aspects, such as gender equity, resilience and sustainability. Their input served to refine and strengthen the proposals.

The most visible result of the restructuring will be a better experience for Mexico City transit users, who can utilize the different modes of transport in the capital with a single card. But the new framework offers immediate and long-lasting benefits behind the scenes by strengthening and improving the city’s mechanism for collecting and managing transit revenues. The single payment approach is an essential step in implementing a true integrated mobility system.

In 2020, WRI Mexico also partnered with Mexico City’s Secretariat of the Environment, the National Commission for the Efficient Use of Energy and the National Autonomous University of Mexico to launch the Buildings Challenge, as part of Building Efficiency Accelerator activities in Mexico. The Challenge offers technical support, training, networking opportunities and public recognition to companies as they seek to lower their energy consumption. In the first phase, it seeks to incentivize commitments by businesses to achieve a 10% energy reduction over one year. Throughout 2020 and 2021, WRI Mexico coordinated activities, organized virtual workshops and webinars and held monthly meetings with participants to identify the most cost-effective energy efficiency opportunities. The closing event of the first phase of the Challenge took place in December 2021, with the participation of nine major corporations that control more than 2.7 million square feet in 27 buildings.

MONTERREY AND MERIDA

Monterrey has announced that it will join the Building Efficiency Accelerator in 2022. One of its first activities will be the launch of the Buildings Challenge, supported by the National Commission for the Efficient Use of Energy, Tecnológico de Monterrey and the private sector. In Merida, which joined the Building Efficiency Accelerator in 2018, WRI Ross Center continues to work with the municipality on the implementation of construction regulations and methods to monitor and track progress.

JALISCO

With a history of air quality problems and record high temperatures in recent years, the state of Jalisco is working to design, implement and evaluate effective programs and policies to mitigate emissions. WRI Ross Center assisted in a collaboration between nine different municipalities and the federal agencies in charge of developing emissions inventories, resulting in the first integrated inventory of pollutants and
greenhouse gases for the metropolitan areas of the state. The inventory provides information on the origin and magnitude of pollutants so that governments and citizens can take action to reduce the effects on the most vulnerable populations.

In Guadalajara, the government of Jalisco launched a new bus rapid transit (BRT) system, Mi Macroperiférico, in January 2022. With 41.5 km of track and the capacity to move 300,000 people per day, the BRT transformed a central highway in the city into an intra-urban mobility corridor that offers safe, sustainable mobility and integration with active modes such as walking and cycling. It connects with existing light rail systems and the city’s original BRT corridor. WRI Ross Center worked with the project to launch the Nos Movemos Seguras strategy, which aims to prevent community sexual violence against girls, adolescents and women users of public spaces and mobility systems.

In addition to extending the range of Guadalajara’s public transportation, the launch of the new BRT succeeded in emphasizing the importance of the social and equity benefits the system provides: better access to services, land use that focuses on the needs of all residents, green infrastructure and improved air quality.

Colombia

BOGOTÁ

WRI Ross Center is supporting the city of Bogotá as it analyzes the regulatory framework and legal tools to support its Corredor Verde regeneration project. Experts are helping to define operating schemes and safer road designs for vulnerable users and conducting an urban inclusion and accessibility study to understand how this central corridor can help realize a more equitable city. The team is also setting out mechanisms to measure impact indicators for the city’s Barrios Vitales project, in terms of safety, universal accessibility and air quality. WRI also recently launched a Colombia office, which will provide a foundation for stepped up engagement in Colombian cities.

India

STAMP

India is investing heavily in metro rail infrastructure to provide quality public transportation in its booming cities. However, gaps in accessibility, difficulties with last-mile connectivity and unsatisfactory passenger experiences remain common. STAMP, the Station Access and Mobility Program, is a multi-year, multi-city initiative by WRI India and Toyota Mobility Foundation to improve multimodal commutes with metro and bus administrators, municipal officials and private entrepreneurs.

STAMP’s aim is to encourage commuters to use reliable, time-saving and affordable options, so that commuters will move from personal vehicles to mass transit. Such a shift will have major effects on health and equity, helping to minimize transport-related emissions and ensuring zero exclusion by enabling accessible and affordable transport for all.

Latin American cities are making important efforts to align their environmental action, urban planning and mobility to reduce emissions and achieve social equity. That requires strengthening their institutions and designing new financing mechanisms. As they implement new integrated planning models that consider key issues, like affordable housing, water stress and green infrastructure, support is vital.

Adriana Lobo
CEO, WRI Mexico
Since 2017, STAMP-enabled partnerships in five cities have united these stakeholders in the creation of new strategies for last-mile connectivity, crowd management, integrated payments and more. STAMP encourages ideas and experimentation through engagement with the private sector, including 35 startups that are leading the way to more accessible, inclusive and sustainable city mobility networks.

Pune, which joined the program in 2021, is STAMP’s newest member. Its brand-new metro system, which opened in March 2022, is expected to attract as many as 600,000 commuters daily. To ensure that their experience is affordable, safe and seamless, STAMP is working with Maharashtra Metro Rail Corporation Limited, last-mile mobility operators, technology providers and transport planners to analyze how people move across Pune and connect to their final destinations.

Additional STAMP projects in Bengaluru, Hyderabad, Kochi and Mumbai are helping those cities to maximize the impact of national investments in rail transport, as the central government makes last-mile connectivity a higher priority. STAMP initiatives across the five cities are providing a testbed for metro operators to experiment with different mobility models.

BENGALURU
In Bengaluru, the Government of Karnataka has expanded the focus of metro rail investments to include support for transit-oriented development (TOD) and multi-modal integration in order to build a compact, livable, resource-efficient city for its 11 million residents. When the city embarked on phase 2 of its metro system in 2020, it received $500 million from the Asian Development Bank (ADB) for construction, along with an additional $2 million for technical assistance in preparing a plan for transit-oriented development (TOD) and multi-modal integration.

WRI India played a pivotal role in helping to create the plan. The team provided critical inputs on policy and regulatory analysis, deep-dive studies that assessed TOD’s potential and resource efficiency, high-level convenings and capacity building efforts. As a result, the Government of Karnataka has formally appointed WRI India as technical advisor for all studies and initiatives on TOD and multi-modal integration for phase 2 of the metro. With TOD playing a central role in the project’s earliest stages, Bengaluru has an opportunity to leverage the ADB investment to create compact, livable and walkable communities around metro stations while enhancing the viability of the metro system.

KOKCHI
After Kochi, a coastal city less than 5 meters above mean sea level, experienced disastrous floods in 2018 (the economic losses for the airport alone were around $2 billion), the state mandated development of a disaster management plan. Through its partnership with WRI India, the city has embraced a transformative change in its approach, shifting from rescue and recovery to long-term preparedness and resilience.

Working with the Kochi Municipal Corporation, WRI India developed a guidance document to set a strategy focused on data-driven decision-making, integrated planning and capacity building for people-centric design. In addition, Kochi is integrating nature-based solutions to build community and individual resilience into the disaster management planning process. These can be adapted to any city that seeks to shift from a short-term focus to long-term disaster preparedness.

SURAT
In Surat, WRI India collaborated with the Surat Municipal Corporation, the Gujarat Pollution Control Board and more than 1,000 local stakeholders to create the Surat Clean Air Action Plan. Released in December 2021, the plan recommends multiple cost-effective interventions to lower emissions. Implementation of the strategy is projected to achieve a 36% reduction in particulate matter concentrations by 2025 compared to 2019 by targeting industry, transport, municipal solid waste burning and other sources.

MUMBAI
The Mumbai Climate Action Plan, unveiled in March 2022 by state and municipal officials, is the first plan of its kind in South Asia. It aims to achieve zero net carbon emissions by 2050 through the adoption of ambitious scenarios in six areas: energy and buildings, sustainable mobility, sustainable waste management, air quality, urban greening and biodiversity, and urban
flooding and water resource management. The plan reflects the ongoing engagement of WRI India and integrates the C40 Inclusive Climate Action Planning approach, with the goal of implementing mitigation and adaptation solutions across sectors.

The scope of Mumbai’s plan will require 50 new staff positions for climate officers in the city’s Department of Environment, renamed as the Department of Environment and Climate Change, as well as six administrative positions. WRI India supported the city in writing the staffing plan and the hiring process.

HYDERABAD
As the state of Telangana plans the development and expansion of several growth clusters across Hyderabad, WRI India is providing technical support to help achieve this growth more equitably and sustainably. Its goal is to help the municipality adopt an actionable economic development strategy for Hyderabad Pharma City that will drive productivity, inclusion and low-carbon development. By helping the city build its physical, economic and networking assets, WRI is laying a foundation to improve access to public infrastructure, services and economic opportunities.

DELHI
In 2021, WRI India published a study that laid out an economic geography approach to urban planning. The paper argued for the need for a regional economic development plan to support investment decisions and strategies in mega-city regions such as the National Capital Region and others in India and other countries. The findings are expected to influence Delhi State’s industrial policy.

GeoAnalytics
WRI India’s GeoAnalytics team collaborates with practice areas across WRI Ross Center to provide expertise in GIS, remote sensing, data visualization and tool development to develop actionable insights for urban decision-makers and stakeholders. The team works with a variety of datasets, including leveraging census data for vulnerability assessments, road data for measuring accessibility to services, elevation data to build flood risk models and satellite imagery to map climate hazards. For example, the GeoAnalytics team provided important support in the drafting of Mumbai’s first Climate Action Plan.

Cities in India have experienced unprecedented climate crises in the last two years, including cyclones, extreme rain events and heat waves. There is a growing acceptance of the need for urgent and innovative action to adapt, as well as recognition of the responsibility to mitigate. As Indian cities prepare their plans and implement new approaches, they are actively looking for finance to become more ambitious.

Madhav Pai
Executive Director, WRI India Ross Center for Sustainable Cities
China

SHENZHEN

The city of Shenzhen has announced that it will promote the development of near-zero carbon demonstration districts during China’s 14th Five-Year Plan period (2021-2025). These projects will explore a zero-carbon transition pathway within the specific context of Shenzhen, and help the city take the lead in achieving carbon-peaking and carbon-neutrality goals.

WRI China is providing knowledge and technical support to help local authorities design implementation plans for zero-carbon communities. We worked closely with city agencies and researchers to identify a pilot community in the Nanshan District, Shenzhen. The proposed community was approved by the Shenzhen Bureau of Ecology and Environment and was included in the Shenzhen Municipal Near-Zero Carbon Districts Demonstration in January 2022.

The team is currently helping local partners estimate community emissions and develop low-carbon strategies.

In addition to a zero-carbon community transition, WRI China is focused on enhancing the climate resilience of communities and infrastructure in Shenzhen. In 2021, WRI experts released a report that included an in-depth case study on the green-gray sea dikes, a project that has been recognized in Shenzhen Water Development’s 14th Five-Year Plan and will be fully implemented by the city. The team is also working with the Harbin Institute of Technology to conduct community surveys and assess relationships among climate risks, the built environment, impacts on residents’ physical activities and health outcomes. The research will examine cost-effective methods to mitigate the negative effects of these issues, and findings will be incorporated into the near-zero carbon community demonstration.

BEIJING

In 2021, WRI China conducted a review of Beijing’s low-emission zones, which have the potential to mitigate climate risks and improve air quality in the most congested parts of the capital. The WRI team analyzed the policies and operations of the zones and surveyed other cities using the approach, such as Shenzhen, Amsterdam and London. Those findings will serve as a reference for further research on Beijing’s zero-emission zones for trucks, which is being supported by the Beijing Transport Institute. In addition, WRI published a working paper on the challenges of promoting zero-emission vehicles in Beijing which was subsequently developed into a reference document for the Ministry of Transport.

WRI experts also carried out surveys on the current scale of electrification of trucks in Beijing, including the promotion of hybrid electric vehicles, battery-powered electric vehicles and fuel cell-powered electric vehicles. Questionnaires co-designed by WRI and Beijing Jiaotong University were sent to more than 10 transportation operating companies, both new and traditional, to identify current issues in the promotion and use of these “new energy” trucks from every aspect, including vehicle mileage, load, charging demand, policy considerations and more.
Ethiopia

ADDIS ABABA

One of the busiest arteries in Addis Ababa is Bole Road, which links the city’s ring road and its international airport. The eight-lane thoroughfare was notorious for speeding violations and a high number of fatalities until a WRI-assisted intervention sparked remarkable improvements in safety and accessibility.

WRI’s involvement in the capital dates to 2016, when it began working with municipal representatives to conduct road safety inspections at eight intersections. As part of the Bloomberg Initiative for Global Road Safety, the WRI Ross Center team submitted recommendations for improvements along Bole Road to city administrators, which were subsequently implemented in 2020. These solutions consisted of opening intersections to create more access to the street, adding push-button pedestrian signals, providing staggered crossings, installing anti-glare screens and safety barriers, and re-designing intersections.

Outcomes were dramatic. Evaluations conducted before and after showed the total number of annual crashes reduced by 56%. Average speeds dropped by 17km/h. Pedestrian signals not only increased safety and comfort for walkers, but provided greater access for people with disabilities. Creation of four additional intersections improved the neighborhood’s permeability and openness.

Over the course of WRI Ross Center’s engagement with the city, Addis Ababa has shifted its transport strategy from vehicle-oriented to people-oriented, with increased investment in non-motorized infrastructure and pedestrian safety. Following the success of this project, city administrators are replicating the approach to ensure road safety at other locations in the city. Such measures contribute to the “thriving, resilient cities” pillar of WRI Africa’s strategy, promoting integrated development that creates opportunity for everyone and maximizes economic efficiency.

Turkey

ISTANBUL

With a population of more than 16 million, Istanbul ranks as one of the most congested cities in the world. Cars choke its back streets, main thoroughfares and wide urban arterials, leaving pedestrians to fend for themselves. Although nearly half of residents use walking as their primary mode of travel, sidewalks are often narrow or non-existent.

To encourage safe and active mobility, WRI Türkiye Sustainable Cities piloted the concept of a pedestrian stop, or parklet, for the first time in 2021. Designed as part of Istanbul’s Pedestrian Accessibility Master Plan, the project created mobile and permanent parklets in sidewalk public spaces to provide citizens with a dedicated place to meet, rest and wait along busy shopping streets. Its purpose was twofold: to improve road safety to encourage walking and cycling instead of driving. Strong support for the project was led by the Mayor of Istanbul Ekrem İmamoğlu, who declared in 2020 that creating walkable, comfortable, safe pedestrian zones and squares would be a priority.

WRI first conducted desk research and identified pedestrian-dense districts to determine the location for a pedestrian stop pilot in Istanbul. After selection, WRI conducted a series of online focus groups to identify the main functional requirements of the first pedestrian stop and conducted a road safety inspection and accessibility analysis in the pilot area. At the team’s suggestion, municipal authorities agreed to reduce the speed limit in the vicinity of the project.

The debut of the first mobile parklet coincided with European Mobility Week in September 2021 and demonstrated the enthusiasm for safe sidewalks and small public spaces among city residents. Designs for a permanent parklet are now being finalized. Follow-up interviews with local residents and shop owners solicited ideas for amenities that parklets could provide, and a website was launched to explain the concept and benefits. The website also collects requests from residents for future pedestrian stops. WRI will publish a manual summarizing the key points for cities that intend to replicate the program.
Brazil

**RIO DE JANEIRO**

WRI Brasil is assisting Rio de Janeiro as it crafts its first road safety plan. In addition to determining Rio’s main road safety problems and fostering the establishment of an Executive Working Group for the plan’s development, WRI has helped the city structure the plan’s concept using the Vision Zero approach. Expected impacts include improvements in data collection, reduction in speed limits and implementation of other actions that will prioritize the most vulnerable road users. The safety agenda will include other city secretariats.

WRI Brasil is also continuing its support for the revamping of Rio’s bus rapid transit (BRT) system. The team is helping the city set up a roadmap for the bidding process to acquire bus fleets and designing contracting operations for the entire BRT system.

**CAMPINAS**

Campinas is the first Brazilian city to create a multiscale, nature-based solutions strategy to increase urban resilience. Its plan focuses on flooding, landslides and heat waves with a special emphasis on urban inclusion. WRI Brasil provided technical support for diagnosing the most vulnerable areas of the city, prioritizing nature-based actions and setting a roadmap for their implementation.

Campinas has also committed to the global road safety goal of halving traffic fatalities by 2030. WRI Brasil is the city’s main partner in the re-design and transformation of the road environment to reduce speeds and prioritize vulnerable users. As part of the JBD Zero Fatalities program (a reference to the John Boyd Dulop Avenue, the most dangerous traffic corridor in the city), WRI Brasil inspected roads and provided general safety recommendations to improve access to BRT stations. WRI Brasil’s support includes training for city staff on road safety.

In addition, Campinas is developing a bidding process to contract the provision of its entire bus public transport system. WRI Brasil is fostering the inclusion of electric buses in the bidding and providing technical support to make the case for two BRT corridors solely for electric buses.

**SÃO JOSÉ DOS CAMPOS**

São José dos Campos was the first Brazilian city to invest revenue generated from street parking to upgrade its bus fleet, acquiring 12 electric buses for the Linha Verde BRT corridor. Now, with WRI Brasil’s assistance, the city is advancing an innovative contractual process to enable the rental of 350 electric buses to serve other neighborhoods. Under the Reimagine Public Transport project, São José dos Campos is paving the way for implementation of extra fare revenues to subsidize public transport.

One of 20 cities participating in the Complete Streets Network SP, São José dos Campos is focused on capacity building and exchanging experiences in street design. In 2021, it won a Complete Streets Network SP competition with a tactical urbanism proposal. The intervention includes widening sidewalks and installing urban furniture to provide a safer, more enjoyable environment for residents. Completion of work and launch are planned for 2022, and the city intends to scale similar initiatives to other areas.

Brazilian municipalities have joined forces to advance more inclusive, resilient and low-carbon cities in the Forum Unicidades, a first-of-its-kind coalition of municipal secretaries for urban planning and development. This coalition was conceived by WRI in 2021 and is now being promoted in partnership with the National Front of Mayors (FNP). In Campinas, we are working on a nature-based solutions resilience strategy that will directly benefit vulnerable communities.

*Luis Antonio Lindau*

Director, WRI Brasil Ross Center for Sustainable Cities
Targeted Engagement

Sectoral shifts can happen through wide and sustained adoption of new technologies, business models, policies and regulations, or institutionalized practices. WRI Ross Center catalyzes shifts across the sectors that form the backbone of cities: land use and economic development, transport, and energy and resource efficiency. In each, we aim to foster equal access to core urban services as an entry point for sustainability. Our approach relies on collaboration and creating synergies across departments and levels of government to enable long-lasting and transformative results.
India

In 2021, WRI India and partners supported India’s Ministry of Housing and Urban Affairs in launching and anchoring the Nurturing Neighborhoods Challenge. This initiative targets city planning and management actions that foster the well-being of young children and their caregivers in Indian cities. To date, WRI teams have assisted with capacity building for more than 100 cities, advisory support for an additional 25 cities, and over 70 tactical urbanism pilots focused on the Infant, Toddler, Caregiver-Friendly Neighborhoods approach. As a result, 22 Indian cities are now improving their public spaces to enhance the quality of life for 1 million children and their caregivers.

Another new program has the potential to improve the lives of 160 million city dwellers by changing India’s approach to development of its urban waterfronts. WRI India is supporting the National Mission for Clean Ganga, which is working to integrate climate-adaptive and environmentally friendly practices in cities along the Ganga River. WRI India and partners developed a guidance note to be used for the planning and evaluation of forthcoming projects in the Ganga Basin, which was adopted by the River Cities Alliance, a pan-India alliance of over 30 cities, to design and develop ecologically and socially responsive urban riverfronts.

MUMBAI

More than 50% of the 30 million trips made daily in Mumbai are on foot, while only 3% are by car. Yet the city has focused on building and widening roads, with little accommodation for pedestrians and cyclists. The Mumbai Street Transformation project focuses on these vulnerable groups, who suffer high rates of road traffic deaths and injuries. It aims to enhance wellbeing, ease access to local neighborhoods, and provide safe passage for women, children and senior citizens, who often encounter barriers to mobility.

Following the successful transformation of nearly 50 traffic junctions in Mumbai, the Municipal Corporation of Greater Mumbai extended the approach to more than 300 km of streets in the city. WRI India is assisting the corporation with technical support as it enhances road safety by providing pedestrian infrastructure and improving overall road efficiency. Execution of the plan will continue for the next four years.

WRI India was involved with the Street Transformation project from its earliest stages, establishing the concept and the need to address dangerous conditions. WRI convened multiple meetings at every level, from engineers and traffic police to community leaders and state officials. It provided crucial assistance by undertaking tactical urban interventions on the ground as proof of concept.

The Street Transformation project aligns with Mumbai’s ambitious plan to mitigate the effects of climate change and reduce greenhouse gas emissions, as the transport sector is a major contributor to deteriorating air quality. It represents a landmark mission to make streets safer and accessible for road users. It is supported by Bloomberg Philanthropies’ Initiative for Global Road Safety.

Brazil

In Brazil, the cities of Campinas, Curitiba, Rio de Janeiro, Salvador and São Paulo have committed to the goal of electrifying approximately 3,000 buses by 2025 through the TUMI E-Bus Mission, and some of them have set long-term goals for electrifying 100% of their fleets (more than 24,000 buses). These leaders are at the forefront of a technological transition that will help unlock the market and foster the growth of the electric mobility ecosystem.

WRI Brasil is helping these cities establish municipal commitments to electrification projects and assisting in the structuring of electrification projects. As part of this support, the team evaluated the availability of electric buses for the Brazilian market from national and international manufacturers. It also identified challenges to this transition, such as tax structures, and offered tools to help cities understand the health impacts of poor air quality. At the national level, WRI experts participated in discussions on how to energize this transition.
Clean Air Catalyst

With a commitment from the U.S. Agency for International Development of up to $20 million over five years, Clean Air Catalyst is working to scale up clean air solutions in some of the world’s most polluted cities. The global partnership is managed by WRI Ross Center’s Air Quality team and includes leading organizations and academic institutions with expertise in air quality science, health, urban planning, gender and equity-based development and communications. Three cities have been selected to pilot the program’s data-to-action approach: Indore, India; Jakarta, Indonesia; and Nairobi, Kenya.

Indore has been awarded the distinction of being the cleanest city in India for five years in a row due to its success in improving waste and water management, but air pollution remains an issue. The initial phase of Clean Air Catalyst’s work centers on expanding air monitoring and data analysis. WRI is also conducting a comprehensive survey of the major sources of pollution and organizing focus groups, workshops and media outreach for community stakeholders, including local and national government officials, business leaders, the health and transport sectors, and communities living and working around pollution hotspots. The next phase of the project will identify the most effective ways to overcome the root causes of pollution and support a coalition of government and non-government partners to implement solutions.

In Jakarta, Clean Air Catalyst is working to augment the existing monitoring network with additional stations in the rapidly growing northern and eastern parts of the city. An additional collaboration with Google is using data from air sensors mounted on Street View cars to get a block-by-block understanding of how pollution impacts different neighborhoods. By connecting the city government and key communities, stakeholders and sectors, the project is building a common understanding of the problem and laying the groundwork for integrated clean air and climate solutions.

Collecting data to understand the health and socioeconomic impacts of pollution is a high priority in Nairobi, where informal settlements house 70% of the city’s residents. Available evidence points to poor air quality as the major cause of respiratory illness, but the city lacks the capacity for continuous, long-term measurements of particulate matter and other air pollutants. Clean Air Catalyst is supporting the expansion of Nairobi’s air monitoring network, improving source awareness and increasing stakeholder input into the city’s air quality management planning to deliver tangible, lasting impact for residents.

Through its work in these pilot cities, Clean Air Catalyst is creating a playbook for other USAID staff and missions as well as for air quality managers globally. It is also capitalizing on opportunities to highlight the need for integrated climate and clean air planning at global venues such as the COP26 Climate Conference, where it co-hosted events with the World Health Organization, NDC Partnership and World Bank. By engaging allies beyond environmental regulators and air quality agencies, the partnership is focused on finding enduring solutions to air pollution and climate change that offer immediate public health and development benefits.
Transformative Urban Coalitions

The Transformative Urban Coalitions project, funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) as part of its International Climate Initiative (IKI), made its debut in 2021. This effort enlists locally led coalitions of urban leaders in Latin America in building and implementing strategies for socially inclusive, zero-carbon cities. WRI Ross Center works alongside the United Nations University – Institute for Environment and Human Security (UNU-EHS), International Institute for Environment and Development (IIED) and German Development Institute (Deutsches Institut für Entwicklungspolitik, or DIE).

Pilot projects in five cities are now underway. Through innovative Urban Labs with multiple stakeholders in each city, which facilitate valuable research and knowledge sharing, the project aims to create unique communities that have the capacity to change, adapt and endure. The Urban Labs address and create enabling conditions for bottom-up, practical, on-the-ground solutions to reduce carbon emissions, address urban inequalities and incorporate nature-based solutions into new infrastructure proposals.

In addition to completing a first round of Urban Labs in each city, the Transformative Urban Coalitions project has also established connections with key partners. In Buenos Aires, the team led by IIED-America Latina has signed a formal agreement to collaborate with the city’s housing ministry and other local authorities. In Brazil, WRI has launched two local coalitions of stakeholders in Teresina and Recife and, with direct support from local governments, implemented a collaborative diagnostic of the Urban Labs areas. In Naucalpan and Leon, Mexico, WRI is working with local consultants to facilitate the Urban Labs. In Leon, we have engaged with the environmental state authorities, while in Naucalpan, we have engaged with the academic community and local civil society organizations.

In each city, the goal is the same: to galvanize projects that interweave decarbonization, social justice and quality of life to realize a sustainable future for all residents.
CanAIRy Alert

WRI Ross Center is partnering with Clean Air Fund, NASA, UN Environment Programme and two local, low-cost sensor networks, AirQo and AfriqAir, to support the development of air quality forecasting and analytics in Accra, Ghana; Kampala, Uganda; Kigali, Rwanda; and Nairobi, Kenya. CanAIRy Alert aims to develop a scalable air quality forecasting tool for all cities to predict poor air quality days and understand the location and source of pollution. Building on the work of CityAQ, a WRI tool that was piloted in Latin America in 2020-21, CanAIRy Alert combines local, satellite and modeling data. In collaboration with WRI’s Resource Watch platform, the data can then be plotted on a map to provide insights for air quality managers and the public. In Guadalajara and León, Mexico, local scientists using the prototype tool collected data on air pollution hotspots and worked with government officials on policies and actions to reduce exposure for local residents.
Digital Transport for Africa

Digital Transport for Africa (DT4A), led by WRI Ross Center and partners and funded by the Agence Française de Développement (AFD), is helping to advance transportation planning on the continent by encouraging innovative use of open data to improve planning and build sustainable mobility. Digitalization presents an opportunity to transform the mobility sector in Africa by reducing emissions, improving air quality and advancing equity. DT4A aims to power data-driven decision-making by transit leaders, which can not only improve user experiences but also empower cities to leverage the data revolution.

In 2021, the program offered five virtual learning sessions and one in-person meeting for students, researchers, academics and innovators from Kumasi, Accra, Lilongwe, Addis Ababa, Nairobi, Abuja, Maputo, Kampala, Abidjan, Dakar and other cities. More than 300 people attended these events, demonstrating keen interest in digital data and tools for transport research.

In 2021, WRI Ross Center also launched the DT4A Innovation Challenge. Knowing that access to funding is a major impediment for many African innovators, the Innovation Challenge is designed to support and spotlight organizations and initiatives that are contributing to the movement for open data across the region, particularly in paratransit or the informal transport sector. A jury of experts from Addis Ababa University, Transport for Cairo, Movin’On LAB Africa, MIT and WRI evaluated more than 100 promising applications for the prize. Five winners were announced in June 2022. Each will now receive $30,000 over 12 months to implement their ideas and measure impact.
National Engagement

Many national governments recognize the importance of cities, as evidenced by their endorsement of the 2030 Agenda for Sustainable Development. However, fewer than two in five countries have a strategy for cities in their economic frameworks, budget allocations, infrastructure planning or governance structures. WRI Ross Center helps achieve greater impact through policy reform beyond the city level, from regional blocks to national governments and global agenda setting. We help align efforts across levels of government and relevant actors to give cities the resources and latitude needed to achieve transformative change. Top-down and bottom-up information exchange and policy dialogue is at the heart of this multi-level engagement strategy.
Brazil

In Brazil, major banks such as CAF, the Development Bank of Latin America, have the power to influence infrastructure projects that affect the lives of more than 150 million people in urban areas. In 2021, following five years of WRI Brasil’s involvement, CAF officially incorporated the “Complete Streets” concept into its operations, requiring all CAF-funded projects across the country to embody its principles.

Complete Streets was introduced by WRI in Brazil in 2017 and amplified through a dynamic partnership with the National Front of Mayors (FNP). Its foundational principles promote the democratic and inclusive use of public spaces to create more equitable cities. The program gives pedestrians, bike-users and public transport passengers better access to urbanized areas by asserting their “right to the city,” a principle that advocates for wider access to urban opportunities. Now being widely disseminated by Brazilian universities, Complete Streets principles are aligned with the Stockholm Declaration, New Urban Agenda, Brazilian National Urban Mobility Plan, Brazilian National Road Safety Plan and Sustainable Development Goals.

In 2018, WRI Brasil supported the design and implementation of the first Complete Streets pilot in Porto Alegre, using CAF funds. WRI experts suggested that CAF use the opportunity to transform conventional repaving investments into a more comprehensive project that would benefit more people and prioritize sustainable mobility. When the first tactical urbanism intervention was completed, it triggered a move to insert Complete Streets principles into all CAF operations related to urban mobility. Today, the concept is being built into 19 projects in 16 cities, and an additional eight cities have projects in the planning stages.

CAF also engaged WRI Brasil to create and implement a road safety engineering course to develop and strengthen the technical capacities of agencies in charge of operations financed by CAF in Brazil. The training explained the principles of Complete Streets as well as best practices in road safety audits for government decision-makers from 13 cities. This course is now being replicated in Buenos Aires as part of the Bloomberg Initiative for Global Road Safety and it is potentially replicable to every country in Latin America.

The Brazilian National Road Safety Plan, called the National Plan of Traffic Deaths and Injuries Reduction (PNATRANS), was revised and strengthened in 2021 with key assistance from WRI Brasil. The new version offers a comprehensive plan for road safety across the country to protect residents and reduce the high number of fatalities and injuries from traffic accidents.

PNATRANS strengthens the enforcement of traffic legislation and sets out objectives that parallel those of the Second Decade of Action for Traffic Safety proclaimed by the UN. It calls for actions that can be implemented and monitored effectively, reflects the Safe System and Vision Zero approaches to road safety, and provides incentives for safer and more sustainable modes of transport.

WRI was invited to support the development of the new plan as a result of its long-standing relationship with Brazil’s national government, the Ministry of Cities, and a 10-year history of work on road safety supported by Bloomberg Philanthropies. We were the only institution invited to sign a memorandum of understanding with the Ministry of Infrastructure to support the review process of PNATRANS and the development of safe design manuals.
The WRI Brasil team took the lead in coordinating meetings and providing technical guidance, focusing on six fundamental pillars: traffic safety management, safe streets, safe vehicles, traffic education, assistance to victims, and regulations and enforcement. Work included the benchmarking of road safety plans; a comprehensive analysis of road safety programs, ensuring diversity and geographical representation in the six working groups; building capacity; providing technical supervision; and conducting a final review of the plan. More than 100 specialists from various governmental and non-governmental bodies and entities were involved, along with many other stakeholders.

Following six months of input from these groups, the new PNATRANS was approved by the National Council of Traffic and signed by the Minister of Infrastructure. The plan has the potential to save tens of thousands of lives and achieve a new emphasis on road safety in Brazilian society.

Turkey

A WRI Türkiye Sustainable Cities campaign to promote cycling in Turkish cities has achieved major impact through effective communications and a well-timed shift to connect the program with the transportation challenges presented by COVID-19.

The Get Türkiye Cycling campaign, funded by the European Union, supported urban cycling communication campaigns in İzmir, Eskişehir and Lüleburgaz. It offered participants field studies in Amsterdam with the Dutch Cycling Embassy, as well as local training on strategic communications and campaign design. Each session featured hands-on workshops to design a custom cycling campaign strategy and offered mentorship by key experts. After the training, each city designed its own campaign to promote cycling as a viable commuting choice.

During the pandemic, WRI Türkiye Sustainable Cities proposed the idea of relating cycling campaign themes to COVID-related health and safety messages, which aligned with the country’s top agenda. Two pilot cities accepted the proposal, and Istanbul approached WRI Türkiye Sustainable Cities to co-develop a similar campaign, Move for Your Health!, featuring billboards, posters and videos. Five additional cities have now implemented the campaigns, adapting these materials and underscoring the message that cycling is a vital mode of urban transport.

A related European Union-funded program, Cycling for All, is empowering residents to participate actively in local and central decision-making in Turkey. It supports eight municipalities and 16 civil society organizations as they develop local and national action plans. Their collaboration resulted in a National Strategy Plan on Urban Cycling, presented to ministries in Ankara in March 2022.

Zero Carbon Building Accelerator

Since 2015, WRI Ross Center has led the Building Efficiency Accelerator, a global partnership in support of the UN Sustainable Energy for All Initiative, to help governments create policies and programs to reduce energy consumption. The Zero Carbon Building Accelerator (ZCBA) builds on the success of this partnership.

Urban design defines what cities deliver. Do we want more parking spaces and pollution, or clean air and green places? During COVID-19, many of us experienced the bliss of quiet streets, cycling and walking in parks. As cities take up their bustling once more, let’s retain that memory and deliver solutions that are good for people, nature and climate.

Stientje van Veldhoven
Vice President and Regional Director, WRI Europe
of this program to help governments achieve a broader objective: to meet global climate goals by decarbonizing the world’s buildings by 2050.

With the support of the Global Environment Facility, UN Environment Programme, World Green Building Council and other partners, the ZCBA is coordinating the development of roadmaps and action plans for zero-carbon building sectors in Turkey and Colombia with the aim of expanding to the Building Efficiency Accelerator’s expansive network of subnational partners.

In Turkey, the ZCBA has collaborated with the Ministry of Environment, Urbanization and Climate Change since June 2021 to develop a national plan for building decarbonization, as well as city action plans for implementation in Gaziantep and Konya. After collecting initial input for a baseline assessment, the team identified the major barriers and challenges to building decarbonization and actions needed to overcome them.

In Colombia, the ZCBA has been working with the Ministry of Environment and Sustainable Development and Consejo Colombiano de Construcción Sostenible (Colombia Green Building Council) since March 2021 to develop a national roadmap for building decarbonization. Through outreach, dialogue, planning and policy action, WRI and participating ministries are engaging with jurisdictions in Bogotá and Cali to create and implement action plans aligned with national roadmaps and existing city goals.

The ZCBA will also provide a global forum to explore common challenges and opportunities to improve energy efficiency in construction and operations. Project partners will work with regional development banks and financial institutions to pursue new business models and financial solutions for building decarbonization.

In 2021, Turkey accelerated its fight against the climate crisis by targeting net zero carbon for 2053. Its 2050 Climate Change Strategy and 2030 National Climate Change Adaptation Action Plan are now in effect. Turkish cities, which hold 93% of the population, have begun to join forces for climate adaptation, urban resilience and an inclusive future. We’re supporting them with projects focusing on sustainable urban mobility and low-carbon development.

— Günes Cansiz
Director, WRI Türkiye Sustainable Cities
Knowledge Sharing

Robust, action-oriented research on how cities can deliver core urban services equitably and sustainably informs all of WRI Ross Center’s on-the-ground activities. During 2021-2022, COVID restrictions and concerns around in-person engagements required our teams to revise plans to release findings and undertake trainings, with more emphasis on virtual events and digital knowledge sharing. But key research products helped guide cities in response and recovery planning, including the culmination of the World Resources Report, *Towards a More Equal City.*
Towards a More Equal City: Seven Transformations for More Equitable and Sustainable Cities

The synthesis report of the World Resources Report, Towards a More Equal City, was launched in October 2021. The result of six years of research from 160 authors and reviewers, the report presents a new vision for urban planning and development that can lead to better quality of life for under-served urban residents, as well as citywide economic and environmental benefits. Case studies of seven crucial urban transformations and detailed recommendations show how to reimagine urban service provision, include the excluded and create the enabling conditions for real, lasting change.

Over 1,400 people from around the world participated in the launch of the synthesis report, which was held online and featured global and local leaders and WRI experts, including Maimunah Mohd Sharif, Executive Director of UN-Habitat. Additional dissemination followed at COP26, where the messages from the report resonated strongly. WRI Ross Center teams are now focused on integrating the findings of this research into programmatic work on the ground, working with our international offices and teams around the institute.

Steering a Green, Healthy, and Inclusive Recovery Through Transport

This report from WRI and the Transport Decarbonisation Alliance (TDA) evaluates how countries, cities and companies have allocated funds, directed policies or launched actions that impact the transport sector in response to COVID-19. It analyzed $298 billion in global stimulus funds committed between March 2020 and February 2021. Of these, roughly 44% has gone to subsectors with positive implications for climate and sustainability goals. The research identifies several intersectional opportunities and explores five key opportunities and action areas for transport decarbonization and public-private participation for countries, cities and companies.

Accelerating Innovation in Urban Service Delivery in Indian Cities: Lessons from TheCityFix Labs India

This practice note summarizes the impact, experiences and lessons learned from the TheCityFix Labs India, held between September 2018 and September 2019 and supported by the Citi Foundation through its Financing Sustainable Cities Initiative. It assesses India’s innovation ecosystem and the potential for on-the-ground demonstrations and pilot projects to mobilize investment and spark policy reform for the successful delivery of sustainable urban services. It also sheds light on some of the enabling conditions needed to deliver sustainable urban infrastructure in the Indian context and issues that must be addressed to enable small players and new entrants in this area to participate and overcome obstacles.
Safe Bicycle Lane Design Principles: Responding to Cycling Needs in Cities During COVID and Beyond

The implementation of emergent, or pop-up, bike lanes has received an overwhelming response during COVID-19 and created a growing desire for safe and efficient bicycle infrastructure. This guide assists with the design of high-quality, safe, temporary measures that also create the foundation for systemic and lasting changes that nurture a culture of cycling, facilitate the development of quality cycling networks, and move cities and urban mobility toward a sustainable future.


Cities in Africa face escalating water-related challenges, compounded by worsening climate change and rising urbanization. This report from the Urban Water Resilience Initiative frames core challenges and major barriers that prevent water resilience in African cities and offers four priority pathways for action as a starting point to build resilience.

Impact-Driven Investing in New Mobility Enterprises: Perspectives from Kampala, Uganda, and Hyderabad, India

This research paper features key insights on impact-driven investing in mobility enterprises in two case cities, Kampala, Uganda, and Hyderabad, India. It highlights the current challenges to impact investing in mobility enterprises and outlines opportunities to confront these challenges and pathways to safe, clean and inclusive transportation for vulnerable urban residents.

Electrifying Ride-Hailing in the United States, Europe, and Canada: How to Enable Ride-Hailing Drivers to Switch to Electric Vehicles

Efforts to reduce transportation emissions through electrification can accelerate their impact by focusing on intensively used vehicles, such as those driven on ride-hailing platforms like Uber and Lyft. Using an original methodology and data from Uber, this paper identifies the barriers that prevent ride-hailing drivers from accessing electric vehicles and charts how governments, industry and other stakeholders in 10 cities are making progress towards dismantling them.

Decarbonizing China’s Road Transport Sector: Strategies Toward Carbon Neutrality

China’s road transport sector plays an important role in meeting carbon early peaking and carbon neutrality goals. This study examines how the sector might be decarbonized by modelling five scenarios using the LEAP model. It aims to inform China road transport sector’s emission reduction target, identification of cost-effective measures that deliver on the sectoral emission reduction targets, facilitation of low-carbon investments, and identification of decarbonization measures with air pollution reduction co-benefits.

Existing utility poles and streetlights can help meet the growing demand for electric vehicle charging and enable equitable access to this infrastructure. Building on insights collected from current U.S. pilots and interviews with over 30 stakeholders across city governments, electric utilities, charging equipment manufacturers and ridesharing companies, this paper offers stepwise guidance for U.S. cities and utilities interested in pole-mounted chargers.

Technical Note for a Dataset of Electric School Bus Adoption in the United States

This technical note describes the methods used to create a first-of-its-kind dataset of electric school bus adoption across the United States. The dataset is organized by school district and tracks the number of buses per district and variables such as the manufacturer and funding sources. It also includes school district characteristics including poverty, income, racial composition and locale type.

ImpactAr Tool: Valuing Air Quality Health Impacts of Urban Bus Fleet Changes in Brazil

Developed in partnership with the Children’s Investment Fund Foundation, ImpactAr provides information on the number of fatalities and hospitalizations and the consequent economic and welfare costs related to changes in air pollution levels caused by modifications to urban bus fleets in Brazil. The methodology can be applied by any city, operator or researcher.

Rolling Out Electric Buses: A Guidebook on Route Prioritization and Implementation Planning

Electrification of public bus transport ranks high on India’s sustainable urban mobility agenda. This guidebook is designed to help public and private transit agencies adopt a calibrated approach to induct electric buses into their services, to ease the technology shift and ensure continued quality.

Seizing the Urban Opportunity Country Reports

As countries strives to bounce back from the effects of the pandemic, there are opportunities to ensure sustainable, inclusive growth by unleashing the power of compact, connected, clean and resilient cities. Country reports for Brazil, China, India, Indonesia, Mexico and South Africa, published in advance of COP26, present the results of tailored policy analysis and modelling, delving into national findings summarized in the full Coalition for Urban Transition’s Seizing the Urban Opportunity report.
Financials

WRI Ross Center’s financial outlook is strong, thanks to the support and flexibility of our donors, the commitment of our staff and partners, and our diversified portfolio. Our FY22 budget is projected to grow to over $35 million.
WRI Ross Center Funding

- S. M. Ross
- WRI Bilateral Sources
- Shell
- Toyota Foundation
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Donors and Partners

WRI Ross Center is grateful for the support and partnership of our donors. As we continue to adapt to changing circumstances, they have stood by us, challenged us, and provided advice and encouragement as we continue to advance our objectives.

We would like to recognize WRI Ross Center’s Advisory Group, a globally recognized group of city leaders and urban experts who generously contribute their expertise and influence:

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