



Final Report and Capacity Building Strategy

High Volume Transport: City Retrofit for All

January 2023

High Volume Transport: City Retrofit for All

HVT/045

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Abstract	
The document summarizes the elements of the High Volume Transport: City Retrofit for All project, including the project itself, key lessons learned from the work, and the plan for engaging the target audience to be aware of the work, understand it, and use it to make better decisions related to TOD in the target region of East Africa.	
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ABBREVIATIONS/ACRONYMS

BRT	Bus rapid transit
DART	Dar Rapid Transit Agency
FCDO	Foreign, Commonwealth & Development Office
HVT	High Volume Transport
IMC	IMC Worldwide Ltd
ITDP	Institute for Transportation and Development Policy
LDP	Local development plan
LMIC	Low- and middle-income country
LRT	Light rail transit
NGO	Non-governmental organisation
NMT	Non-motorised transport
TOD	Transit-oriented development



SECTION 1: INTRODUCTION

The following report provides an overview of the City Retrofit for All research project, funded by UKAID through the UK Foreign, Commonwealth & Development Office under the High Volume Transport Applied Research Programme, managed by DT Global (formerly IMC Worldwide). In this report we provide an overview of the project, the activities completed, key lessons learned, and our plan for future capacity building and research uptake.

SECTION 2: PROJECT OVERVIEW

The HVT City Retrofit for All project is a £397,884.39 research and capacity building project designed to foster the creation of greener, more inclusive, more accessible, and safer cities in the low-income country (LIC) environment in Africa.

1. Project Background

One of the greatest drivers of both climate change and inequity is urban sprawl. Many cities in Africa and South Asia are growing rapidly with informal settlements multiplying along major roads. Facing increased congestion along these corridors, cities often look to build urban highways as a means of improving traffic flow. As part of the HVT: State of Knowledge Final Report on Urban Transport, ITDP found research showing that sprawl leads to higher costs, lower productivity, and less equity. The research has also shown that urban highway expansion leads to congestion and sprawl. The lack of an appropriate street network, coupled with a lack of public services being co-located with these new developments, means that transport costs, in both time and money, are high, access to jobs and services is limited, and there is a high reliance on walking in unsafe conditions. The question to answer then is what are the solutions that will solve for lack of access and continued sprawl.

While existing research has assessed approaches to creating compact growth on the urban fringe (UN-Habitat, 2015), our premise was that most of the urban growth in the African context had been informal settlement sprawl, often with low overall densities but overcrowded housing. Indeed, from 2000 to 2015 the global urban footprint expanded 50 percent faster than the urban population. This research was based on the idea that the solution is to transform already low-density sprawl into transit-oriented development - denser places grounded in transit and walking with a mix of activities and strong, sustainable linkages to other parts of the city. The purpose of this research project was to better understand how to implement inclusive, equitable, transit-oriented development (TOD) within the existing built-up area of rapidly urbanizing cities in low-income countries in Africa, particularly Ethiopia and Tanzania. These countries represent different governance contexts in the region, in terms of public participation and governance centralization. Further, we sought to understand what TOD looks like in lower income countries and how to achieve it. Due to the existing low-density development patterns surrounding many African cities, we anticipated that creating such development patterns will largely involve retrofitting existing urbanized areas.

Inclusive, equitable, transit-oriented development (TOD) has been shown to mitigate many of the challenges of urban sprawl. By reducing spatial mismatch through increased densities and a greater mix of uses, travel distances and the cost of providing transport and other services decreases. Through inclusive planning, lower-income residents are able to live closer to work, reducing the money and time burden of transportation. By designing streets for low vehicle speeds and safe comfortable walking and cycling, as TOD principles suggest, safety has been shown to improve. Taken together, these designs have been shown to facilitate strong social networks and communities that provide additional support to lower-income residents. Less need for travel reduces the demand for the fossil fuels that power most motorized travel reducing the impact of climate change. Less motorized travel also reduces the emissions driving local air pollution, and the related public health impacts.

However, an improved public realm can make an area more attractive and expensive, potentially harming more vulnerable populations. This project aimed to help us understand the constraints faced by lower income, disadvantaged populations by examining impacts on affordability, especially in informal settlements. Globally, we are seeing both the feminization of poverty (meaning that women represent a disproportionate



percentage of the world's poor) and the feminization of informality, where in these grey spaces away from formal power structures, women are finding work, livelihoods, and mobility. By examining informal areas, we also hoped to unpack different disadvantaged groups' experience of access and mobility, with a focus on women.

While there was some research on the use of specific planning tools in Latin American, little research existed on Africa or India. Many studies of existing measures in those regions focused narrowly on one or two aspects, such as economic development. We took a comprehensive, multi-lens approach to document the context and impact of the urban retrofit interventions. We measured impacts along several aspects of sustainability, including:

- Access (ability to reach destinations, opportunities, open space, etc.);
- Equity (Affordability, access for low-income & minority residents, etc.);
- Efficiency (use of resources, e.g. land, money);
- Environment (Climate Change, pollution); and
- Health & Safety (traffic injuries and deaths, air quality).

2. Objectives

The objectives of this research were to better understand the existing conditions and context of urban growth in East Africa, assess case studies of specific initiatives to create equitable infill, transit-oriented development, and to translate the learning from those efforts into reports, tools, and capacity building materials that inform practitioners and decision makers to create more equitable urban growth, particularly in the East Africa and LIC context.

This was identified as a major gap in knowledge in the HVT: State of Knowledge Final Report on Urban Transport. We aimed to develop products and programs to effectively share that knowledge with the decision makers who can act upon it. We anticipated that this work would have applicability beyond LICs in Africa, leading to better cities throughout the region and potentially in other LIC and middle income country (MIC) environments (including both lower-middle income and upper middle income countries, as defined by the World Bank). We aimed to conduct research to inspire future research efforts, academic and otherwise, into this topic area to further inform practitioners and decision makers.

The research project aimed to not only fill gaps in existing research but to make that research actionable, to achieving real world impacts. Knowledge is often siloed from practitioners and when available, not presented in a way that practitioners can easily apply. Thus, we focused on outputs that can be used, devoting a sizable portion of the budget for dissemination and application of that knowledge.

Our project scope sought to bridge climate change concerns with the goals of inclusivity and equity. While a project may primarily focus on one area of concern, it should also address the other at some level. We will not be able to meet our climate change goals without taking into account social justice and inclusivity, and we will not be able to solve for inequity unless we also address the impacts from climate change, which will disproportionately affect lower income and marginalized communities.

Finally, the geographic focus on the proposal was lower income countries in South Asia and Africa, places that may have lower resources and capacity but are facing the challenges of rapid urbanization and growth.

Therefore, the HVT City Retrofit for All research project's objectives can be summarized as follows:

1. Develop new knowledge on how to create infill equitable TOD that is useful and applicable to lower income countries in Africa and South Asia;
2. Ensure this knowledge assists low-resourced but fast-growing places to create greener, more inclusive, more accessible, and safer places for all; and
3. Transform this knowledge into action by developing useful tools that practitioners can use in multiple contexts and conducting capacity-building activities to teach practitioners to use them.



3. Relation to Other HVT Projects

There were nine additional projects in progress as part of Phase 2 of the HVT program. These include the following efforts:

TRANSITIONS (Vectos South Ltd): Transitioning the policy debate, stakeholder relations and informal transport services for a low carbon future. Research on the role of informal transport in the global south and how this can be transformed to a cleaner, more affordable, and efficient solution for HVT across West and Southern Africa;

Inclusive climate resilient transport planning in low income countries in Africa (University of York): The project is designed to deliver a “Guidance Framework for Inclusive Climate Resilient Transport” based on a review and critical appraisal of state-of-knowledge, best practice and in-country applications in Ethiopia, Rwanda, Uganda and Zambia;

Climate resilient sustainable road pavement surfacings (University of Birmingham): The project aims to assess the applicability of three types of road surfacing technologies in Ethiopia to demonstrate their technical and economic suitability for the range of traffic and environmental conditions of high volume roads typically seen in LICs;

Novel traction systems for sustainable railway futures in LICs (University of Birmingham): The project intends to explore cost-effective traction solutions for sustainable railway futures in Sub-Saharan LICs;

Africa Urban Mobility Observatory (GoMetro): Big Data applications will generate data, benchmark performance, and draw policy insights to inform city Action Plans and promote inclusive, low-carbon mobility in African LIC cities in Tanzania and Ethiopia;

Decision Support Systems for Resilient Strategic Transport Networks in Low Income Countries (University of Southampton): Support investment decisions and option selection for long distance strategic land transport projects by creating the first multi-state transport infrastructure decision support system in a developing context across Uganda, Zambia, Kenya and Tanzania;

EMPOWER (Vectos South Ltd): Practical tools for decision makers and citizens to tackle sexual harassment in African urban transport. To build the capacity of transport professionals to address sexually related harassment and assault on women and girls when they travel door-to-door in Nigeria;

An Investigation into the Impact on Social Inclusion of HVT Corridors, and Solutions to Identifying and Preventing Human Trafficking (Cardno Emerging Markets): Research outcomes will inform the design and implementation of a pilot activity aimed at embedding HVT into the prevention and response to human trafficking in Tanzania and Uganda; and

Women’s Personal Safety, Participation and Employment Linkage in Urban Public Transport (ALERT Engineering): Applied research to assess women’s safety, participation, travel patterns on urban transport services, role of women in decision making and job opportunities in transport in Ethiopia.

IMC Worldwide facilitated a Research Uptake Deep Dive meeting on 18 November 2020 to coordinate research uptake activities among the research partners. ITDP participated in this meeting and assisted in the follow up coordination. ITDP did not conduct additional coordination with the other research teams.

4. Methodology Overview

To maintain consistency in our work, we developed the following methodology. The work was divided into three teams, a **US-based team**, an **Africa-based team**, and an **India-based team**.

Baseline Report

First, the project team conducted a baseline analysis of TOD, with a focus on conditions and actions in East Africa. As part of this, the **India-based team** conducted a literature review of baseline urban growth knowledge, with a focus on East Africa and the target cities. They looked at literature related to urbanisation, governance and institutions, and TOD policies. The **US-based team** conducted quantitative baseline data



collection. This included gathering and analysing quantitative data for the four target cities, comparing them to common global indicators and targets. The **Africa-based team** gathered government policy documents related to urban planning and TOD in the four target cities and countries. The team also identified interview subjects and conducted interviews with key stakeholders in government to understand existing conditions, perceptions, tools, and capacities related to urban planning and TOD in the target cities. The Africa-based team, with assistance from the global team, reviewed the documents and interviews to gain a better sense of the context of planning and governance in the target cities. The **US-based team** compiled the results into the Baseline Report, which was reviewed by the rest of the project team.

Case Studies Report

For the case studies report, the teams worked together to select relevant case study locations for detailed analysis. The teams also jointly developed a methodology for collecting quantitative site data related to the TOD Standard in each of the six case study locations. They jointly developed a resident survey and survey methodology, as well as interview questions and interview methodology for the six case study locations. The **Africa-based team** and **India-based team** collected background information on each case study location, including the site history, local planning context, and other relevant information. They also went into the field at the case study locations to directly collect quantitative data for a TOD Standard assessment. The two teams conducted the residents surveys to gain information on mobility, access, and basic services, again on location at the case study locations. Finally, the teams conducted a series of interviews with area residents as well as with key stakeholders who were involved in the policy interventions at the case study locations. The teams analysed the results and drafted the respective report sections describing the results. The **US-based team** compiled the results into the full case studies report and added an overall assessment of the combined results. The report was then reviewed by the rest of the project team.

Guidance Tools and Frameworks report

For the Guidance Tools and Frameworks report, all three teams collaborated to identify key themes and lessons and organize them into actionable tools. The **US-based team** translated the theme into draft tools, which were reviewed by the rest of the team. The **Africa-based team** led round table discussions in Addis Ababa, Ethiopia and Dar es Salaam, Tanzania to gain the perspective of local decisionmakers about the recommendations in the tools. Based on this feedback, the **US-based team** revised the guidance tools. The final Guidance Tools and Frameworks report was then reviewed by the rest of the project team to ensure that the recommendation reflected local conditions in the target countries and region.

Capacity Building

The **Africa-based team** led the development and implementation of workshops and other capacity building activities to deliver research to practitioners and decision makers in the region. This included identifying the right participants, coordinating to ensure their attendance, and developing materials and strategies to be most effective at conveying the information. The team also developed visual materials to summarize research findings and recommendations for the target audience.



SECTION 3: RESEARCH COMPLETED

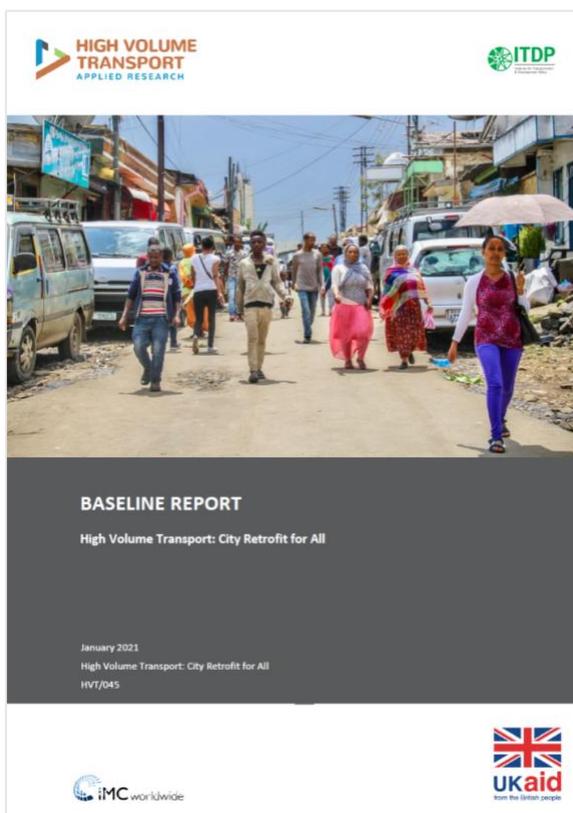
5. Inception Report

The inception Report was delivered on 1 October 2020 and was amended and approved in January 2021, following several rounds of review. The report describes the project in detail, including background for the project, scope of work, team structure, and short terms plan for work in the first few months of the project. The Inception report also detailed planning for project management and risk management. Also included in the report were some of the initial findings of the literature review which were later incorporated in to the Baseline Report.

6. Baseline Report

The Baseline Report was first submitted in November 2020 and approved in February 2021. The report laid the foundation for the project by describing the current state of knowledge on TOD as well as by creating an understanding of the urban growth context and policy environment in which TOD policies would be implemented, setting the stage for the Case Studies Report. In the Baseline Report, we researched the TOD policies themselves, the context in which they were implemented and the impact they have had.

Figure 1. Baseline Report



This baseline report contained two main components. In the first part, we reviewed the literature about the current status of TOD around the world, with a specific focus on low-income countries. We also assessed the existing conditions in four target cities in low-income countries in Sub-Saharan Africa, including an analysis of quantitative data on current development indicators, an assessment of existing development policies and an examination of capacity to implement policies.

To directly assess existing conditions for TOD, we selected one primary city (largest city) and one secondary cities (population > 500,000) in the two target LICs in Eastern Africa:

- Ethiopia
 - Addis Ababa
 - Bahir Dar



- Tanzania
 - Dar es Salaam
 - Mwanza

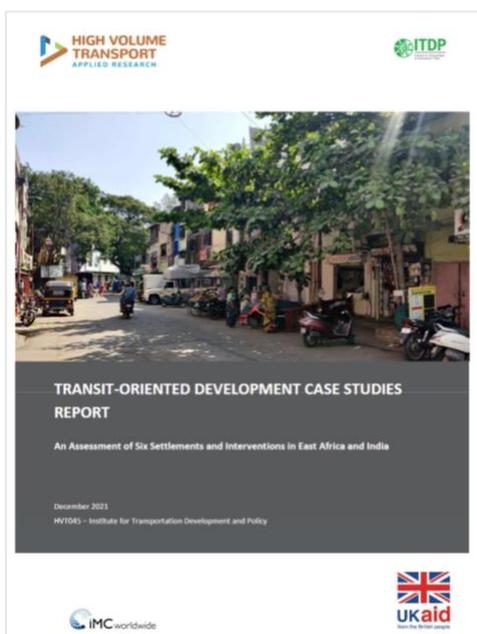
We selected these cities because they represent different governance approaches; we had existing relationships there, providing a clear path to move guidance to practitioners; and there is a strong visibility of the two large urban areas in the region—Dar es Salaam and Addis Ababa—creating a pathway for disseminating ideas beyond these specific cities and countries. The cities we focussed on in this report are a convenience sample of primary and secondary cities in Eastern Africa. ITDP has field staff in Dar es Salaam and Addis Ababa and professional relationships to planners in these cities, as well as in the secondary cities in the sample (Mwanza and Bahir Dar). The presence of field staff and pre-existing relationships in these four cities made them a clear choice as the focus for our research, as this facilitated data-gathering, particularly for the qualitative data (policy documents and interviews) in this report. We hoped the lessons learned in these contexts may serve as examples for countries with similar governance in the region and beyond.

This Baseline Report included an assessment of the literature on TOD, with a focus on TOD in the African context. It also included an in-depth analysis of the conditions in the target cities and countries. This assessment included an analysis of the data on urban growth and sustainable transport in the target cities, based on existing indicators. It also included a review of policies and planning documents related to urban growth at both the city and the national level for the four cities. Finally, it included a series of interviews with practitioners and stakeholders to gain a qualitative assessment of the state of TOD in the target cities as well as insight into the capacities and challenges for creating TOD in those cities.

7. Case Studies Report

The Case Studies report was submitted on 20 October 2021 and was approved in April 2022. In the report, we assess six policy interventions in India, Ethiopia, and Tanzania that have fostered elements of inclusive transit-oriented development (TOD). The goal of the report was to better understand the characteristics of the case study sites, in terms of elements of inclusive TOD (access, basic services and housing affordability). We also aimed to understand the key impacts of the policy interventions, and how they were developed and implemented. Finally, we aimed to understand what lessons can be learned from the cases for creating inclusive TOD in low- and middle-income countries, in the East Africa region, and particularly in Ethiopia and Tanzania.

Figure 2. Case Studies Report



In the report, we used data gathered from street audits to derive scores according to the TOD Standard, as well as a short household survey, to measure the quantitative impact of policy interventions. This is one of the



first times that the TOD Standard has been applied in these contexts, and we consider this research to be exploratory. Table 1 below provides a summary comparison of scores generated for each site by applying the TOD Standard scorecard tool. We supplement the quantitative results with qualitative results from a series of interviews we conducted with local residents and key stakeholders involved with and impacted by the intervention, as well as site observations from the six case studies.

Table 1: Summary of TOD Standard scores

TOD Element	MAX	TOD Scores					
		Ethiopia		Tanzania	India		
		Addis Ababa		Dar es Salaam	Ahmedabad	Mumbai	Pune
		Gotera Condominium	Jemo Condominium	Tandale Argentina BRT Station	Gupta Nagar	Charkop Site and Services Area	Yerwada
WALK	15	3	2	6	7	6	9
CYCLE	5	0	1	1	3	3	1
CONNECT	15	0	4	4	11	1	13
TRANSIT	-	All sites contain a qualifying transit station					
MIX	25	3	12	12	18	17	14
DENSIFY	15	15	15	13	11	13	13
COMPACT	10	10	8	10	6	10	10
SHIFT	15	12	15	15	15	15	15
TOTAL	100	43	57	61	71	65	75

Source: ITDP

We examined case studies in India because it is a middle-income country with far fewer economic resources than high-income countries and a prevalence of informal settlements in its cities. The target countries of Tanzania and Ethiopia also have very limited resources relative to high-income countries and a strong prevalence of informal settlements. India has a relatively long history of interventions to improve its informal settlements. Since many of these interventions have been in place for decades, they may provide important lessons that we think could be applicable to the East African context, given the similarities described above.

However, there are important differences in the environmental, social, political, and economic contexts between the regions and countries that must be considered when attempting to transfer lessons from one location to another. In the case studies, we provide as much information about these contexts as possible within the project scope. We also frame our conclusions as context-specific lessons to be considered, rather than broad truths applicable across contexts.

In the case study report, we sought to identify key characteristics of settlements in India and Africa in terms of inclusive TOD. We also present policy implications from our research, divided into two categories: 1. Existing development patterns that appear to facilitate inclusive TOD characteristics without specific government interventions, and 2. TOD elements that require government action to be realised.

Finally, the report concludes with a discussion of how the lessons of this research might relate to efforts to create inclusive TOD across entire cities and regions. This includes a more theoretical discussion of the timeframe to implement policies, resource needs, and necessary political support for ubiquitous, inclusive TOD.

A key finding in the report is that the case studies consistently performed poorly on the ‘WALK’ and ‘CYCLE’ metrics of the TOD Standard. Field researchers registered missing or incomplete sidewalks and cycle paths; obstacles in walkways, including parked vehicles; garbage, and debris; vendors; and long street segments. Residents across the sites reported similar issues in household surveys and interviews. By contrast, the case studies consistently scored moderately well on the ‘MIX’ and ‘SHIFT’ metrics, with food vendors, stores, schools, health care, and other non-work destinations located close to residences, and many residents



accessed these by walking. By contrast, access to parks and green spaces was missing across the sites. Space dedicated to car travel, car parking, and driveways was minimal in most of the sites, and particularly in the sites with the least government intervention. However, the lack of formal parking spaces, while good for the 'SHIFT' metric, may have a negative effect on the walking environment, as interviews and site observations noted that vehicles parked haphazardly on streets created obstacles for people walking. Although not a part of the TOD scores, quantitative and qualitative data on basic services, showed a mixture of access, and most of the services were created through direct government intervention. Residents in most cases expressed satisfaction with access to water and other services and emphasised the great improvements that these services had made in their lives.

Based on the results, we identified two categories of TOD development patterns: development patterns that appear to foster inclusive TOD goals with little to no government and development patterns that appear to require direct government intervention to achieve inclusive TOD goals. The elements that do not appear to require intervention include creating a mixture of uses, active pedestrian environment (frequent visual and physical connections between buildings and the street), and limited parking. The elements that appear to require more direct intervention include the provision of basic services, construction of sidewalks, provision of shade, construction of bicycle lanes, creation of a well-connected street grid, access to parks, and provisions to foster affordability and inclusion.

This research examined six urban case studies from an 'inclusive TOD' perspective. As described above, residents in all but one (Dar es Salaam) of the study sites stated that interventions and improvements led to increases in housing costs, preventing many low-income people from moving into these areas. Low-income residents in several of the case study sites were able to remain in place, even though prices continued to rise. Thus, there appears to be a strong need for more housing and in particular, more housing near amenities and in safe, walkable areas with the benefits of inclusive TOD. The question of how to create inclusive TOD at a large scale remains challenging.

The process for upgrading informal settlements was successful at meeting many of the elements of TOD, but the upgrading process appears to be rather slow. This may make it challenging to expand such interventions broadly if the current rate of urban growth continues. The Sites and Services model also appears to be successful at creating large amounts of housing in a format that supports inclusive TOD. Creating the infrastructure from the start may provide a faster path to inclusive TOD than informal settlement upgrading. However, in larger cities there may be limited locations where such schemes are possible.

This research showed that all three Indian sites involved not just physical aspects of improving housing for low-income residents but also slow and labour-intensive processes of community and consensus building. The results of these processes appear to have been positive, according to the residents and policy-makers we spoke to, leading to areas that were safe from crime as well as resident maintenance of toilets and semi-private spaces. Although slower and more labour-intensive than simply building infrastructure, creating socially cohesive settlements may have considerable long-term benefits. Of course, whether the Indian experience is applicable to other contexts, such as in East Africa, is an open question.

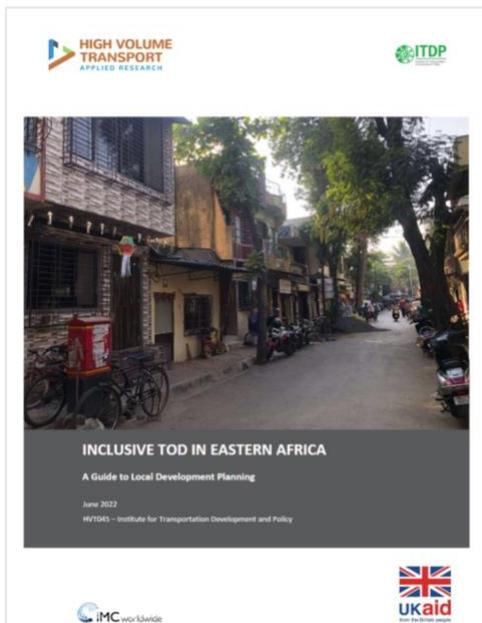
8. Guidance Tools and Frameworks

The Guidance Tools and Frameworks report was submitted on 23 February 2022 and was approved in July 2022. The tool was specifically designed to assist governments (and the planners who work for them) in eastern Africa develop local development plans (LDPs) that are in line with inclusive TOD principles. LDPs are detailed plans for urban buildings, transportation, infrastructure and other development in a neighbourhood or other subset of a city. In eastern Africa, we observed rapid and sprawling growth, often in areas not supported by public transport. We also saw a pattern of development that is often low-rise, fragmented, and informal, often with inadequate space allocated to streets, urban transport, and public spaces. This often results in poor access to opportunities and unsanitary conditions. Finally, we observed limited governmental capacity for intervention to improve conditions. While TOD generally offers a framework for rethinking urban planning regulations and conditions towards enhanced access for all, existing TOD-based guidance tools are largely designed for high-income countries and are not very helpful for the conditions in eastern Africa. While this tool was specifically designed to address the specific issues that were observed in eastern Africa, similar



conditions may be common across the African region and in other low- and middle-income countries, so it is likely that it will be useful in those places as well.

Figure 3. Guidance Tools and Frameworks



The guidance tool is focused on LDP planning around public transport stations, complimenting existing guidance for large-scale and local-area planning. LDPs are of particular interest for two reasons. First, it is the scale of planning at which the characteristics of the "building blocks" of the city—the individual development sites and buildings—can be regulated and shaped. LDPs must address the tension between public interest policy, on the one hand, as well as the particular interests of local landowners, developers, and stakeholders on the other. Second, the local area is the scale of people's everyday life in the neighbourhoods where they live, learn, work, and socialise. Urban life is shaped by the texture of streets, passages, buildings, frontages, local businesses, and public and semi-public spaces. This urban texture in turn influences the mobility and transport options that residents and visitors will have and the choices they will make.

The tool may be used for brownfield (former industrial) and greenfield (former agricultural or natural areas) development. However, this tool is specifically targeted at LDPs for informal residential urban areas, which can be some of the most challenging sites in the African region to plan for, given the poverty and fragility of communities there. The tool can be used in small, medium, or large cities, but it has been specifically targeted at large, fast-growing cities which can be some of the most challenging places to plan, given the high levels of poverty and rapid urban growth.

9. Academic Paper

ITDP developed an academic paper, titled *Towards Inclusive TOD: Exploratory Station-Area Case Studies in India and Africa*, and submitted to the Transport Research Board Annual Meeting Conference Journal on July 31, 2022. The paper was accepted for inclusion in the journal on October 25, 2022, and we will be presenting it at a session at the conference on January 10, 2023.

The academic paper describes our efforts to better understand the challenges and opportunities to create TOD in LMICs. In the paper, we explain how we conducted the exploratory, embedded mixed-methods case study. This includes collecting quantitative and qualitative data on six study areas that include housing projects for low-income residents in Addis Ababa (Ethiopia), Dar es Salaam (Tanzania), Ahmedabad, Mumbai, and Pune (India). In the paper we show that our research revealed several favourable factors related to TOD in the study areas, such as relatively high population densities and a healthy mix of land uses. Our data also revealed potential challenges to creating inclusive TOD in LMICs, including walkability, street network



connectivity, public transportation provision, basic services (sanitation and drinking water) and housing affordability. We also found that participatory community-building processes can have desirable impacts in the long term. These findings reflect the findings in the Case Studies Report.



SECTION 4: LESSONS LEARNED

The research project has led to a variety of lessons that we learned and can take to decisionmakers, researchers and practitioners. These include lessons for conducting research itself, lessons for how things have happened, and lessons for how to implement more effective policies to lead to inclusive TOD. The following are the major lessons learned:

Basic Services are Foundational

The biggest finding of the research was the need for basic services as a prerequisite for all other aspects of inclusive TOD. Without basic services, the other aspects often fail to function, as seen by the lack of trash collection leading to the build-up of trash that blocked sewer drains leading to the flooding of footpaths and roadways, greatly reducing access after rain events. Residents and stakeholders described the provision of basic services as hugely impactful on the lives of residents, in terms of time savings and health benefits.

Where Government Intervention Is and Is Not Required for Inclusive TOD

One of the most important results from this research is identifying and prioritizing the key needs for planning inclusive TOD in the LIC/MIC urban context. In the research, we were able to identify several key elements of inclusive TOD that appear to occur with limited or no government intervention, particularly in informal settlements. These include higher densities, a mixture of uses, visually active frontages, physically permeable frontages, and minimal space devoted to automobiles and parking. By understanding that in the LIMC context particularly, these elements may occur without intervention, the government is able to focus efforts on the elements where intervention is most needed.

The elements where government intervention is needed, include the provision of basic services, the construction of footpaths and cycle paths, shade and shelter elements, well-connected street/path networks, and elements to promote affordability alongside improvements to infrastructure and services. By understanding that these elements require intervention, governments can focus on these issues to ensure high-quality walkable environments.

Need to update the TOD Standard

While performing this research, we noticed that the TOD Standard, as currently written, is lacking several key elements that are critical to inclusive TOD in the low- and middle-income country (LIMC) context. Most important is the provision of basic services, which is implied in the TOD Standard, but these services are frequently absent, particularly in informal settlements. By explicitly drawing attention to these elements, we can highlight their importance. Also, in applying the TOD Standard to the informal settlement context, we also identified many areas where the scoring guidelines did not provide clear directions on how they should be applied. For our effort, we discussed these issues within the team and developed shared standards for applying the Standard in a variety of situations not covered by the TOD Standard guidance. In the future, we plan to update the TOD Standard to incorporate better guidance so that it may be applied in a wide variety of contexts, with minimal need for in-depth training.

Need for Better Planning Tools for Local Area Plans

While performing this research, we talked to many decisionmakers and practitioners in East Africa, and we noted a need for better tools for planning small areas, such as around transit stations. While some tools exist, they are often expensive and difficult to use, requiring expensive training and ongoing support to use effectively. More readily accessible tools would alleviate the financial burden on cities to do effective planning.



SECTION 5: RESEARCH UPTAKE AND CAPACITY BUILDING STRATEGY

To ensure that the results of the research inform real world decision making, ITDP developed and is in the process of implementing a strategy for research uptake and capacity building. This strategy was developed early in the process so that it the work would incorporate it during the process. Much of the research uptake and capacity building was funded and completed as part of the research project, but we will continue to disseminate the research and use it build capacity among the target audience well after the project has formally ended. ITDP cannot be held accountable for research uptake and capacity building work beyond the end of the project and grant, but the work proposed and planned is directly in line with ITDP's ongoing project work supported by other grants and in line with our broader mission and strategic plan.

10. Objectives

The goal of the research uptake and capacity building strategy is to improve the way cities affect health, access, equity, and the environment, by helping them to implement inclusive TOD through spreading the results of this research. For health, we believe that more widespread inclusive TOD will lead to more walking and cycling, and this increased physical activity is linked to improved mental and physical health. Similarly, by shifting trips from private motor vehicles to walking, cycling, and public transport; cities produce less air pollution, which is tied to increased rates of disease and death. Inclusive TOD improves access to destinations by using space and resource more efficiently to reduce the time and money required for people to reach destinations. For equity, by prioritizing access by modes available to the most people (walking, cycling, and public transport) while ensuring affordability, inclusive TOD distributes access more equitably to less advantaged populations. Finally, by shifting travel away from motor vehicles, inclusive TOD reduces air pollution and greenhouse gas emissions.

To achieve this research uptake and capacity building goal, we developed the following objectives:

First, we aim to communicate the results of our work at a high level to the target audience (see Target Audience below). This way, they become aware of the research, understand how it might be relevant to their work, and become interested in learning about it in more detail. Our communication actions include the following:

- Interviewing the target audience as part of the TOD research and
- Conducting round table discussions with the target audience as part of the vetting of the research.

Second, we aim to build capacity of researchers, decision makers, and practitioners so that they are able to use the research and tools we developed most effectively. This includes:

- building capacity for decision makers and practitioners in LMICs to use the TOD tools in policy and planning and
- adding to the academic body of knowledge on TOD in LMICs, allowing of researchers to do additional research building off this work.

11. Target Audience

ITDP is primarily targeting groups who can use the information to make TOD policy and planning decisions, and successfully implement TOD policies, particularly those in East Africa and those who make decisions related to the East Africa region. The primary target audience includes:

- practitioners (who guide the development and implementation of policies),
- decision makers (who decide policy),
- agency heads,
- city mayors,
- national ministers, and
- development aid organizations (e.g. development banks).



The secondary audience that we are targeting includes those who can develop additional research and spread information. This secondary audience includes:

- TOD researchers (academia, mostly universities) and
- NGOs.

12. PMU (DT-Global / FCDO) Capacity Building Activities

The project management unit (PMU), which consists of DT-Global (formerly IMC) and FCDO (formerly DFID) has committed to a series of activities to assist in the uptake of the ten research projects that are part of this research programme. These activities include:

- HVT podcasts (focus on each project),
- project profiles (on HVT website),
- collective storytelling,
- central planning and production of blog posts, articles, thought leadership pieces, videos, podcasts, animations,
- focus output on impact stories –build library,
- dissemination and outreach via online channels (website, newsletter, journals, social media) and offline channels (side events, workshops, conferences), and
- events and speaking opportunities.

ITDP has participated in a number of these activities including:

- presenting at the HVT-sponsored UNEP regional conference (Regional Africa Forum on Inclusive & Mobility in a Changing Climate) held in Kigali, Rwanda 9-13 June 2022;
- recording an episode for the Reimagining Motion podcast ('Episode 1: Inclusive transit-oriented development with Jacob Mason of ITDP'), in which we describe the results of our research; and
- facilitating at session on 9 November 2022 at COP27 in Sharm el Sheik, titled 'Opportunities for African Cities to Meet Their Transport and Urban Planning Needs in a Greener, More Sustainable Way' in which we presented the findings of our research.

13. ITDP Research Uptake and Capacity Building Plan

ITDP's plan for research uptake includes three components: 1) engaging stakeholders in the research, 2) communicating research results, and 3) building stakeholder capacity. The goal is to involve key people we are trying to reach with the work into the research process itself, then communicate the message broadly to additional targets, and finally to do more in-depth training with a select group of engaged stakeholders. Much of this work was funded and completed as part of this research project. In addition, ITDP will continue to disseminate the research and work to build capacity based on this research beyond the end of this project. This is part of our ongoing, independently-funded work on TOD in the study locations and regions and is in line with ITDP's broader mission and strategic plan.

13.1 Component 1: Engage stakeholders in the development of the research

ITDP has worked to engage key stakeholders in the research from the beginning of the project, and this work is complete. This engagement served two functions. First, it has helped tailor the research to best meet the needs of those stakeholders by seeking and incorporating their feedback from the beginning, so we avoided missing important aspects or perspectives in the research. The second benefit is that it informed stakeholders of the research so that they (and their networks) could anticipate the completion of the reports and then use them and let others know about them. We engaged stakeholders in the following ways:



13.1.1 Interviews

As part of the research, we conducted interviews for the:

- baseline assessment (12 interviews) and
- case study assessment (18 interviews).

These interviews were with key decision makers in the governments of the target cities and the other case study cities in East Africa and India. These detailed interviews brought these stakeholders into the research process and incorporated their feedback from the beginning.

13.1.2 Policy Guidance Round Table Discussion(s)

In January 2022, we brought together key stakeholders, particularly decision makers and practitioners in the target countries, to discuss the findings of the research and how they could be translated into guidance for better policymaking and decision making to better develop TOD in the target countries. The feedback from these round table discussions was incorporated into the final guidance in the Guidance Tools and Frameworks report, as well as the other more visual communications materials.

13.2 Component 2: Communicate with stakeholders

We have identified a number of means of communicating our research to the target audience (described above), as part of both this research project and ITDP's ongoing work on the topic in the region. As part of the communications we completed for the project, ITDP:

- developed infographics to convey key results of the research to the target audience;
- posted the research report on the ITDP website (with FCDO permission);
- presented and helped coordinate the HVT-sponsored UNEP regional conference (Regional Africa Forum on Inclusive & Mobility in a Changing Climate) held in Kigali, Rwanda 9-13 June 2022;
- recorded an episode for the Reimagining Motion podcast ('Episode 1: Inclusive transit-oriented development with Jacob Mason of ITDP'), in which we describe the results of our research; and
- facilitated a session on 9 November 2022 at COP27 in Sharm el Sheik, titled 'Opportunities for African Cities to Meet Their Transport and Urban Planning Needs in a Greener, More Sustainable Way' in which we presented the findings of our research; and
- presented the results of the academic paper developed from the research at the Transportation Research Board Annual Meeting conference in January 2023.

In addition, as part of work beyond the scope of this project, we plan to:

- present webinars to convey results;
- post information on social media (e.g. Twitter, Facebook);
- publish blog posts to publicise the research results;
- post research on partner websites (e.g. NGO partners);
- email research results to the full ITDP network via regular newsletters;
- email research results to specific partner organizations that work in the TOD space (e.g. UNEP, TUMI, UN-Habitat, SLOCAT, SUM4ALL, World Bank, GDCI, AfDB, ADB, IsDB, etc.); and
- reference the research in global transportation reports that ITDP helps write (e.g. Sustainable Mobility for All: Global Status Report).



13.3 Component 3: Capacity Building

ITDP will continue to conduct specific capacity building activities to help target audience member develop a deeper understanding of how to apply the guidance tools to make better decisions and plans in their regions.

13.3.1 Project Workshop

ITDP hosted project workshops in Dar es Salaam and Addis Ababa in December 2022 and January 2023, respectively, to demonstrate how to apply the guidance tool to make better planning decisions. In the Dar es Salaam workshop, the tool was presented as part of a workshop on the development of TOD plans around the BRT system that opened in 2016, with one additional line under construction, one line funded, and three more lines planned.

13.3.2 Integration into ITDP technical work

Lastly, ITDP works directly with governments in the target countries, and we have already begun directly applying this research in our own work with those governments. ITDP also has a locally-staffed regional office in Nairobi, which oversees smaller satellite offices in Addis Ababa and Dar es Salaam. Our work includes providing direct technical assistance to government decision makers and practitioners. As part of this, we will convey the findings directly, in conversation, training, and other means. It will also form the foundation for our own recommendations for actions in the region and in related regions where we work, such as other countries in Africa as well as India and Indonesia.

In the most specific instance of applying this research, the government of Dar es Salaam has engaged us to assist with TOD planning around several BRT stations there, as part of a broader effort to develop plans for TOD along the multiple current and future BRT corridors there. We are already applying the research finding and tools directly to that work.

13.3.3 Transit-oriented development conference

ITDP's Africa office; in partnership with UN-Habitat, the International Climate Initiative, and the HVT programme; organized a regional conference titled Transit-Oriented Development: Planning for Diversity and Social Inclusion, which brought together policy makers and practitioners from East Africa and beyond to share lessons learned and best practices on sustainable mobility and urban development. The conference, held in October 2022, included in-depth discussion of the findings of the HVT study.

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