Leveraging the TOD Community of Practice to Transform the Urban Space

Gerald Ollivier  
TOD CoP Leader  
World Bank Hub Singapore
TOD Approach
### WHY TOD?

<table>
<thead>
<tr>
<th>More Competitive</th>
<th>Access and Mobility</th>
<th>Resilient to Natural Hazards</th>
<th>Partly self financing by capturing value created</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality neighborhoods with lower infrastructure costs and lower CO2</td>
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</table>

Resilient to Natural Hazards

Lower Transport and Housing cost

Partly self financing by capturing value created

WHY TOD?
<table>
<thead>
<tr>
<th></th>
<th>8 Principles for Inclusive and Resilient TOD</th>
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<tbody>
<tr>
<td>1</td>
<td>Align Human/Economic Densities, Mass Transit Capacity and Network Characteristics for Greater Accessibility</td>
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<tr>
<td>2</td>
<td>Create Compact Regions with Short Commutes</td>
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<td>3</td>
<td>Ensure Resilience of Areas Connected by Mass Transit</td>
</tr>
<tr>
<td>4</td>
<td>Plan and Zone for Mixed Use and Mixed Income Neighborhoods at Corridor Level</td>
</tr>
<tr>
<td>5</td>
<td>Create Vibrant, People-Centric Public Spaces Around Stations</td>
</tr>
<tr>
<td>6</td>
<td>Develop Neighborhoods that Promote Walking and Biking</td>
</tr>
<tr>
<td>7</td>
<td>Develop Good Quality, Accessible and Integrated Public Transit</td>
</tr>
<tr>
<td>8</td>
<td>Manage Private Vehicle Demand</td>
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</tbody>
</table>

*Source: World Bank TOD COP*
<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CITY</th>
<th>INTER-NEIGHBORHOOD</th>
<th>NEIGHBORHOOD</th>
<th>STREET</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUALITY PUBLIC TRANSIT</td>
<td>Proximity to urban centers</td>
<td>Financial viability of public transport</td>
<td>Access to public transit</td>
<td>Public transit infrastructure</td>
</tr>
<tr>
<td>NON-MOTORIZED MOBILITY</td>
<td>Continuous street network</td>
<td>Pedestrian and cycling networks</td>
<td>Internal connectivity</td>
<td>Sidewalks and bike paths</td>
</tr>
<tr>
<td>VEHICLE DEMAND MANAGEMENT</td>
<td>Optimization of daily commutes</td>
<td>Safe and orderly roads</td>
<td>Parking management</td>
<td>Road safety for all users</td>
</tr>
<tr>
<td>MIXED-USE AND EFFICIENT BUILDINGS</td>
<td>Regional facilities</td>
<td>Public amenities and marketplaces</td>
<td>Efficient buildings</td>
<td>Live streets</td>
</tr>
</tbody>
</table>
## Design Elements of TOD at Various Scales

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<tbody>
<tr>
<td>Neighborhood Centers and Active Ground Floors</td>
<td>Local economy</td>
<td>Neighborhood centers</td>
<td>Active ground floors</td>
<td>Public-private transition</td>
</tr>
<tr>
<td>Public Spaces and Natural Resources</td>
<td>Green area networks</td>
<td>Energy, water and waste efficiency</td>
<td>Green and public space networks</td>
<td>Public life</td>
</tr>
<tr>
<td>Community Involvement and Identity</td>
<td>Inclusive stakeholder engagement</td>
<td>Place identity</td>
<td>Community management</td>
<td>Sharing the street</td>
</tr>
</tbody>
</table>

A product of WRI Ross Center for Sustainable Cities
TOD Tools

**Institutional Categories**
- Political Leadership & Vision (PL)
- Land (L)
- Institutional Structure (IS)
- Regulatory Environment (RE)
- Stakeholder Engagement (SE)

**Physical and Technical Aspect**
- Infrastructure (TRANIT + OTHER) (I)
- Design (D)
- Financing (F)
- Affordable Housing (H)

**Enabling Factors**

**Voluntary Tools for Land Assembly**
- Tool 1: Land Readjustment
- Tool 2: Urban Redevelopment
- Tool 3: Land Sharing

**Involuntary Tools for Land Assembly**
- Tool 1: Eminent Domain
- Tool 2: The Right of Preemption

**Funding Sources**
- Investment Revenues
  - Service Charges
  - Land Value Capture
  - Air Right Sales
  - Own Source Revenue
- Investment Incentives
  - Grants
  - Fiscal Incentives

Revenues, and other non-reimbursable monetary support, that can be used to repay the costs of the investment components
TOD Program FY18
TOD COP IN ACTION

- Support Operations
- Leverage Engagement
- Deepen Knowledge Base
- Leverage Partnerships
- Broaden Core Group
Support Operations

JIT Desk Support
5 Activities

Resources for Actions
5 Notes

Deep Support
4 Grant Applications

TOD Engagement Matrix

Newsletter (2)

Leverage Engagement

Lessons and Innovation
5 Notes
Leverage partnerships

Partner with WRI and ITDP
Partner with UM GSG
Partner with Urbanscape KSB

Broaden Core Group

Engage
Interviews
Expert inputs
Composition of 147 CoP Members
(% by GP/CCSA, Region, DC/Country Offices)

- Urban
- Transport, T&C, Land, PPP, Cch
- Other
- EAP
- SAR
- LAC
- MENA
- AFR
- ECA
- Global initiatives
- DC
- CO

Inner ring: GPs & CCSAs
Middle ring: regions
Outer ring: DC/COs
TOD KSB/CoP Core Administrative Team

Gerald Ollivier
Leader

Cuong Duc Dang
Co-Leader

Hiroaki Suzuki
Lead Advisor

John Good
CoP Knowledge Coordinator, Singapore

Daniel Levine
Knowledge Partner Coordinator, Japan

Gunes Basat
Community Facilitator, Washington DC

Asako Sato
KSB Online Facilitator, Tokyo

Haruka Imoto
Knowledge Partner Coordinator, Japan

Sarah Xinyuan Linh
Knowledge Partner Coordinator, Singapore

John Good
CoP Knowledge Coordinator, Singapore

Daniel Levine
Knowledge Partner Coordinator, Japan

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DC Connector, Washington DC

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Shigeyuki Sakaki
TOD Content Expert

Aiga Stokenberga
Africa Connector, Washington DC

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Knowledge Partner Coordinator, Japan

Cuong Duc Dang
Co-Leader

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Africa Connector, Washington DC

Yuko Okazawa
Knowledge Partner Coordinator, Japan
What our members say about the TOD CoP?

“I take CoP as the go to person when I have any questions regarding ToD. They were very responsive when I sent a request on sample ToRs for a client. The practice leader quickly put together a set of study reports for me” **Wenyu Jia, Sr. Urban Transport Spec. (Washington DC)**

“The deep dive organized by the CoP helped me to shape the design of the TOD sub-component in my project and facilitated the Govt buy-in.” **Yonas Eliesikia Mchomvu, Sr. Transport Spec. (Dar es Salaam)**

“I have relied on the TOD COP substantially in the last years and have found the COP to be responsive, active, and technically on top of their game” **Joanna Mclean Masic, Sr. Urban Spec. (Serbia)**

“I have benefited from the resources in the OneDrive folder when writing ToRs for developing master plans for selected BRT station areas in Dar es Salaam” **Aiga Stokenberga, YP, (Washington DC)**
Leveraging & Developing Tools with other GPs
TOD Technical Deep Dive in Tokyo

Cross-sectoral cooperation and partnership within WBG and external partners bring comprehensive knowledge of best case studies and policies and provide new insights to client cities and ongoing projects as part of one week in-depth learning event.

Site visits and new knowledge products created through the partnership with TDLC.
FROM STUDY TO METHODOLOGY: 3V FRAMEWORK

Urban China Report (T+U)
China Metro Projects (T)

Training module (TDD) (U+T) and TDLC
3V Publication (T+U)
TF on integrated urban and transport planning (T+U)

Application to Quito, Buenos Aires, Mumbai (T+U)

Transforming the Urban Space through Transit-Oriented Development
The 3V Approach

Serge Salat and Gerald Ollivier

WORLD BANK GROUP
Transit Oriented Development (TOD) at a Corridor Scale

The Transit Oriented Development (TOD) at a Corridor Scale is an educational course that introduces the concept of TOD and its potential benefits. It covers the implementation cycle of a TOD project, illustrating actors, sectors, institutions, and regulations that must be coordinated for a project to move forward and drawing from lessons learned and common barriers to implementation.
The main objectives of the toolkit include:

- Creating a comprehensive TOD knowledge product that reiterates the basic arguments with stronger emphasis on detailed design requirements and implementation mechanisms.
- Combining policy best practices with design and financial case studies, with a focus on low and middle-income countries.
- Creating a set of new tools and checklists to assist city leaders, practitioners, private developers and citizen representatives in understanding the implementation mechanisms, trade-offs and ‘pros and cons’ of TOD projects.

3.2.5. Interactive Games

How do you liven up discussions around TOD, get participants thinking outside of the box & get people to take a holistic & inclusive approach to community planning around stations?

Why not try a game?
TOD How-To Guides on Key Topics

Steps to Implement LVC in New Transport Corridors

1. Demonstrate the usefulness of the transit corridor on the long-term%
2. Identify potential redevelopment sites, determine public/private ownership status, and assess potential economic growth areas
3. Plan service routes and stations, and develop cost estimates for transit infrastructure
4. Estimate financing gap and prepare potential LVC funding mechanisms
5. Identify transit corridor areas with opportunities to develop high-density projects

LVC Conditions for Success

For LVC to work, a city needs to have a few key characteristics:

- Relatively strong real estate demand, rising population
- Comprehensive property records and property taxation system in place
- Usually, fixed-guideway rapid transit infrastructure
- Available land around transit stations to develop/ unused development potential
- Local government & public authorities with good governance structures

Seven Examples of Good Practice

- Smart development: Maximize urban spaces in urban renewal projects
- Proper planning and design
- Promote compact urban development
- Encourage mixed-use development
- Foster community involvement
- Promote green building practices
- Enhance public transportation connectivity

LVC Projects / Resource Documents Related to LVC

The World Bank has done significant work in land value capture (LVC) and TOD. A sampling of these resources follows:

1. WBR TOD Corridor Course (LVC topics specifically in Modules 5 & 6)
   - Description: This course offers a comprehensive overview of TOD Corridor planning
     - Source: http://transportpartnership.org/transit/training-material/transit-oriented-development-and-corridor-design-
       - Source: http://transportpartnership.org/transit/training-material/transit-oriented-development-and-corridor-design-

2. Rio de Janeiro Workshop on TOD, Presentation on LVC (in Portuguese)
   - Description: This presentation was shown at a November 2016 workshop in Rio de Janeiro and covers a wide range of land value capture and finance strategies.
     - Source: http://collaboration.worldbank.org/docs/DG/33779 (attached PPT)

3. Case Study: Land Readjustment in Japan, Tokyo: Development Learning Centre (TODC)
   - Description: This report demonstrates the ways that public agencies and private landowners can adjust parcel boundaries and provide opportunities for redevelopment.
     - Source: https://collaboration.worldbank.org/docs/DG/35649

4. Mexican City Recommendations, prepared by ITP
   - Description: This report has recommendations for implementing TOD-style development in the Mexico City area. Specific LVC and financing approaches are summarized on Page 18 in Table 3.
     - Source: https://collaboration.worldbank.org/docs/DG/35649

5. India TOD Guidelines funded through IDA
   - Description: A national-level guideline prepared by the Instituto de Urbanismo
     - Source: http://collaboration.worldbank.org/docs/DG/35649

6. Lima-Calledo Metro Line 2 TOD Study (report in Spanish)
   - Description: These comprehensive engagement tools are being integrated into actual planning and implementation for the Lima-Metro Line 2 TOD project.
     - Source: https://collaboration.worldbank.org/docs/DG/33716

7. Da Nang Urban Development Study
   - Description: This ongoing study looks at TOD along a specific corridor to connect the existing city with a new infrastructure project.
     - Source: https://collaboration.worldbank.org/docs/DG/305931

For more information, please visit the World Bank’s website or contact the team.
Moving Forward
### Current TOD Engagements by Type

**Awareness Raising (14 cities)**

This type of project raises the concept of transit-oriented development and the need for integrated transport and land use planning to city leaders, as groundwork for more action in the future.

<table>
<thead>
<tr>
<th>City</th>
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<tbody>
<tr>
<td>Belgrade</td>
<td>Early TOD awareness for station redevelopment projects &amp; comprehensive redevelopment</td>
</tr>
<tr>
<td>Buenos Aires</td>
<td>Early TOD awareness for regional planning</td>
</tr>
<tr>
<td>Cape Town</td>
<td>Early TOD awareness for land value capture and transaction advice</td>
</tr>
<tr>
<td>Cebu</td>
<td>Early corridor planning for upcoming BRT and TOD awareness</td>
</tr>
<tr>
<td>Chittagong</td>
<td>Early corridor planning and TOD awareness</td>
</tr>
<tr>
<td>Dakar</td>
<td>Early corridor planning for upcoming BRT and TOD awareness</td>
</tr>
<tr>
<td>Ho Chi Minh City</td>
<td>Ho Chi Minh City Green Transport Development Project (P126507)</td>
</tr>
<tr>
<td>Nairobi</td>
<td>Early TOD awareness for station development program</td>
</tr>
<tr>
<td>Recife</td>
<td>Early awareness for TOD master planning</td>
</tr>
<tr>
<td>Rio de Janeiro</td>
<td>Upgrading and Greening the Rio de Janeiro Urban Rail System (TOD workshop held to raise awareness in November 2016)</td>
</tr>
<tr>
<td>Sao Paulo</td>
<td>Brazil Energy Efficient Cities Program (P150942)</td>
</tr>
<tr>
<td>Semarang</td>
<td>City Planning Labs (P158752) for data gathering and capacity building</td>
</tr>
<tr>
<td>Sincelejo</td>
<td>Early TOD awareness for bus transfer/terminal station</td>
</tr>
<tr>
<td>Thessaloniki</td>
<td>Early TOD awareness for corridor planning &amp; redevelopment</td>
</tr>
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</table>

**Solution Formation (14 cities)**

In these studies, the World Bank works with cities on identifying the specific strategies and design possibilities for land along a rapid transit corridor (or sometimes city-wide), with the aim to prepare for TOD implementation.

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<tr>
<td>Addis Ababa</td>
<td>Addis Ababa Urban Land Use and Transport Support Project (P151819)</td>
</tr>
<tr>
<td>Bogota</td>
<td>Bogota TOD Implementation Strategy Along SITP Network (P156821)</td>
</tr>
<tr>
<td>Da Nang</td>
<td>Danang Sustainable City Development Project (P159049 &amp; P123384)</td>
</tr>
<tr>
<td>Dar es Salaam</td>
<td>Dar Metropolitan Development Project (P123134) &amp; Urban Transport Improvement Project (P150937)</td>
</tr>
<tr>
<td>Fortaleza</td>
<td>Urban Transport Infrastructure and Redevelopment Financing through Land Value Capture (P164683)</td>
</tr>
<tr>
<td>Kunming</td>
<td>Kunming Urban Rail Project (P117656)</td>
</tr>
<tr>
<td>Lima</td>
<td>Technical Assistance for Structuring and Integration of Metro Projects in LCR (P153851)</td>
</tr>
<tr>
<td>Mecca</td>
<td>Planning for Transit Oriented Development (P154965)</td>
</tr>
<tr>
<td>Mexico City</td>
<td>Mexican Engagement on TOD Policy Changes (P159989)</td>
</tr>
<tr>
<td>Mumbai</td>
<td>Mumbai Urban Transport Programme Phase 3 (MUTP3) (P159782)</td>
</tr>
<tr>
<td>Naya Raipur</td>
<td>TOD Naya Raipur: A Proactive Approach</td>
</tr>
<tr>
<td>Quito</td>
<td>Quito Line 1 Metro Project (P144489)</td>
</tr>
<tr>
<td>Surabaya</td>
<td>Surabaya Urban Corridor Development Project (P148821)</td>
</tr>
<tr>
<td>Zhengzhou</td>
<td>Zhengzhou Urban Rail Project (P128919)</td>
</tr>
</tbody>
</table>

**Implementation (7 cities)**

In these cities, transit-oriented development is being taken beyond initial study to be implemented within the development policies and governance of the cities, incorporating reform in land use planning, land value capture, and introducing catalytic projects in TOD focus areas.

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<tr>
<td>Beijing</td>
<td>GEF China Sustainable Cities Integrated Approach Pilot (P156507)</td>
</tr>
<tr>
<td>Guiyang</td>
<td>Summary: After the Ministry of Housing and Urban-Rural Development (MoHURD) released urban design guidelines that aim towards TOD, this project will customize these general recommendations for application in China’s fast-growing cities. The project will incorporate TOD principles in city planning processes and into future urban and transit plans for the cities at left, and create a national-level TOD platform for sharing data and best practices.</td>
</tr>
<tr>
<td>Nanchang</td>
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<tr>
<td>Ningbo</td>
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<tr>
<td>Shenzhen</td>
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<tr>
<td>Shijiazhuang</td>
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<tr>
<td>Tianjin</td>
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</table>
WB’s new Environmental and Social Framework (ESF)

• Broader coverage of social issues, including:
  • Inclusion and non-discrimination: explicit protection for disadvantaged and vulnerable groups
  • Clearer and broader focus on gender issues
  • Expanded community health and safety provisions, including road safety
  • Introduction of loss of ecosystem services as a social impact

• Better integration of environmental issues, including:
  • Estimation of project GHG emissions

• Greater emphasis on stakeholder engagement and meaningful consultation through enhanced requirements for transparency and stakeholder engagement throughout the project cycle
WB’s new ESF & TOD

New ESF

• Disadvantaged or vulnerable groups, non-discrimination and inclusion
• Concept of universal access
• Evaluate and monitor traffic and road safety and conduct road safety assessments
• Avoid or minimize project-related emissions of climate pollutants, GHG and black carbon
• Avoid or minimize involuntary resettlement by exploring project design alternatives
• Enable stakeholders’ views to be taken into account in project design

TOD

• Take it into account when designing transit stations surroundings:
  • Universal accessibility: children, elderly, people with mobility and other impairments (disabilities), and other special needs
  • Road safety. Ensure safe access to stations (bike lanes, walkways, crossings)
  • Security & GBV. Social interaction and feeling of security; design for personal security of female transit users walking or cycling to and from stations, including street harassment and other forms of GBV
• Quality of public spaces around stations and neighborhoods
• TOD concentrates higher passenger volumes on a less energy-intensive modes (mass transit + NMT): lower emissions
• Last-mile connectivity: pedestrian and bicycle, further modal shift
• Inclusionary housing zoning + LVC to reinvest in affordable housing
• Neighborhood redevelopment with input and support from local community; participatory planning with special interest groups

Improve accessibility, sustainability, social inclusion, economic vibrancy, and livability of station surroundings
Bogota’s Metro Line 1 TOD & the new ESF
Bogota’s Metro Line 1 TOD & the new ESF

$450k: Planning and financing gender-informed last-mile NMT connectivity infrastructure using TOD and LVC
Key Takeaways

- Relevant
- Client-focus
- Broaden perspective

- Modular/Reuse
- How to/Checklists/Cases
- Systematic reviews

- Sustainable budget wise
- Pool resources
- Common consultants
EXAMPLES
FROM SMALL-SCALE DESIGN TO CITY-WIDE STRATEGY

Station-level:
fine-grained urban design and specific parcel-level phasing and feasibility

Corridor-level:
comprehensive examination of land use strategy along a specific transit corridor

City-level:
policy and strategy for metropolitan implementation of TOD concepts
In anticipation of a potential metro transit line, city is working on a strategy to revitalize a major corridor along a new tramway and tie into the traditional/historic urban fabric

Project Objective:
A feasibility study to support the development of a metro system in Surabaya, aiming to facilitate improvements in accessibility and mobility, and to strengthen the capacity for integrated urban transport planning and management in Indonesia

Key Insights:
✓ Improved information and data is key to successful planning of the corridor
✓ Regulatory planning tools such as policies and guidelines are central for land value capture
✓ Practical capital works projects and urban design/public space improvements in corridor have a considerable impact on the image, identity and usage of the MRT
Detailed parcel-level analysis, with expected building areas and real estate value generated.

Detailed urban design, including integration of new development with existing kampong (village) fabric.

Surabaya Urban Transport Corridor Development Project (P148821)
In a fast-growing and congested region, Lima is expanding its metro system. Line 2 connects the coastal port with a river valley between mountains on the urban fringe, a primarily residential area.

Comprehensive engagement for integrated planning along the new metro corridor, to identify specific parcels for development, recommend urban design and public space changes, and financing arrangements/options.
LIMA: RECOMMENDATIONS FOR LAND USE & PUBLIC SPACE

Key Insights:

✓ Integrated transit connections can assist in multi-modal transit operations and urban planning, and can help more cohesive urban districts around future stations.

✓ Vertical spaces should also be leveraged to provide access and public space, and can be created during initial metro excavation work.

Small transit nodes & centralities can be created with good infrastructure design.

Need to combine proposed land uses with investment in road network and public space network.
EXPLORING VERTICAL SPACES ALONG LIMA METRO LINE 2

Connected network of public spaces

Vertical commercial and residential development

Underground expressway, bus interchange & parking

Metro Line 2
Context:

Fast-growing Tanzanian capital city is building a network of bus rapid transit (BRT) corridors within existing urban fabric along three major corridors.

Project Objective:

Create a Corridor Development Strategy (CDS) to develop an integrated land use and transport plan and guidelines to guide the detailed development and appropriate densification along the BRT corridor.

Provide TOD guidelines and pedestrian oriented development solutions for future BRT corridors.
INITIAL RECOMMENDATIONS & FEEDBACK FOR DAR BRT CORRIDORS

For first BRT line, looking at surrounding urban fabric allows planners to determine appropriate station design typology at each node along corridor.

Workshop Insight: specific real estate mgmt. decisions (such as parking design and retail tenancy) play a key role in how people perceive the corridor.
Project Objective: As part of a large urban infrastructure project, aim to develop a BRT corridor in Da Nang, provide new urban connecting roads, and provide technical assistance and capacity building.

Context: To connect with upcoming relocated rail station along mainline, a targeted BRT corridor development to extend from existing city center to major new commercial node to be developed at new station.
DA NANG CORRIDOR PROJECT – DETAILS & INSIGHTS

Key Insights:

✓ Need for a formal coordination structure between central government, city government, and investors, given large amounts of investment
✓ Need to formalize land value capture (LVC) arrangements
✓ Need a platform for sharing information and getting feedback from project stakeholder

Design typology recommendations for stations along BRT corridor
Raipur / TOD Strategy for Naya Raipur District

Context:

Naya Raipur is a master-planned greenfield district being developed about 10km east of the current city, with new transit and road infrastructure, with the vision of “mobility of all, affordable, equitable, and safe” (including BRT/LRT/railway/NMT infra)

Examples of Naya Raipur land use planning concepts
INSIGHTS FOR GREENFIELD TOD PLANNING IN INDIA

Project Objective:

Refine the plan for Naya Raipur with a baseline study and evaluation with international planners through a charrette and workshop. Establish the TOD policy and provide capacity building for implementation, and carry out needed modification in the statutory development and road plans.

Key Insight:

TOD planning should be done by buffer distances from rapid transit stations, and not by city sector, which is the traditional approach for city planning in India.
China-GEF Integrated Cities Pilot Project

Context:

Customizing recently released TOD urban design guidelines by Ministry of Housing and Urban-Rural Development (MoHURD) for application in city planning processes, for application in China’s fast-growing cities

Project Objectives:

• In Beijing, Tianjin, Shijiazhuang, Ningbo, Nanchang, Guiyang, and Shenzhen, to incorporate transit-oriented development principles in their policies and into future urban and transit plans
• Create national-level TOD platform for sharing data and best practices
TOD WITH CHINESE CHARACTERISTICS: INITIAL INSIGHTS

- Adopt, adapt, or abandon international TOD guidelines
- Localizing TOD for each city’s context is the rule rather than the exception

What urban design makes sense for each Chinese city based on history and context? (not blindly accepting USA TOD norms)

How do ubiquitous shared bikes extend the transit station area and affect accessibility planning? What assumptions change?
Emerging Trends and Tools to Plan TOD

- New forms of big data on movement patterns allow finer-grained planning of station area and accessibility
- Evolving research on land value can help build case for land value capture

Beijing: Information from stationless bicycle sharing helps to understand station usage and movement patterns
4. Key Lessons & Next Steps for WB TOD
KEY LESSONS
➢ TOD in existing built-up area or greenfield land?

➢ Which agency sponsors project? How do they relate to other government agencies?

➢ Current status of real estate market demand? New transit corridor in a growing or stagnating area of city?

➢ Are incentives aligned to encourage cooperation between public and private sector?

➢ Funding sources for infrastructure?
A NETWORK FOR JOB ACCESSIBILITY

Zhengzhou
- Population: 6.4 million
- GDP per capita: US$11k
- Peak hour accessibility

Percent of jobs accessible within 45 minutes by public transit

a. Line 1, 2, and 3 and walking: 12%
b. Scenario a plus bus: 28%
c. Scenario b plus TOD: 39%
d. Scenario c plus bicycle: 46%

Source: The 3V Framework (World Bank)
LAND READJUSTMENT OFTEN DIFFICULT IN BUILT-UP AREAS

- In developing countries, land tenure is often not well-established, limiting possibility for redevelopment.

- Formalization of title and adjustments of parcel configuration often necessary, as well as reform of property taxation system.
UPFRONT INFRASTRUCTURE DESIGN COORDINATION ALLOWS FOR BETTER INTEGRATION WITH TOD PROJECTS

Examples of integrated design from Lima
TOD PROJECTS INVOLVE COMPLEX MIX OF PUBLIC, PRIVATE SECTORS

Pre-consultation & strategy development:
- Economic development officials:
  - Determine transit tech
- Urban planners:
  - Finalize route and stations
  - Inventory potential redevelopment sites
  - Assess economy & potential growth areas
- Real-estate developers:
  - Developers assess potential real estate projects in corridor

Economic development officials:
- Finalize cost estimates for transit infra
- Economic development officials:
  - Operations plan for transport integration
- Transport planners:
  - Refine station designs for transfers & NMT
  - Confirm street infra to be changed

Transport planners:
- Finalize transit service changes for integration

Urban planners:
- Refine station area plans with stakeholders
- Refine station area plans with stakeholders
- Create branding strategy & market corridor

Implementation of TOD corridor:
- Discuss high-potential redev sites at stations
- Discuss phasing of dev & contribution to infrastructure/incentives needed
- Monitor progress compared to plan
PARTNERSHIP WITH PRIVATE-SECTOR DEVELOPERS IS LIKELY NECESSARY FOR TIMELY IMPLEMENTATION

- Need to gauge interest in development opportunities, to determine level of public involvement for infrastructure development

- Developers need to understand new design standards, to ensure that standard practices are phased out (e.g. barrier walls, super-blocks, etc.)
INFRASTRUCTURE FINANCE OPTIONS & LAND VALUE CAPTURE MUST BE EVALUATED EARLY

Transit feasibility phase
- Need to gauge what level of infrastructure investment is necessary:
  - For transit capital investment & operations
  - For supporting infrastructure to enable densification

Corridor development/TOD analysis phase
- What value is likely to be generated?
- What are the tools and enabling policies in place to capture value?

(changing tools may require legislation, which takes time)