TOD Finance and M&E
TOD: Types of Capital Investment

When considering financing strategies for TOD corridor development, what needs to be financed?

- **Investment Size: Large**
  - Capital costs for BRT, LRT, or metro systems
  - Often paid by public sector, but funding can be raised through capturing land value uplift and real estate improvements

- **Investment Size: Small-Medium**
  - Local street improvements & sidewalk/NMT infrastructure
  - Can be paid by developers in strong markets or by local government

- **Investment Size: Varies**
  - Consists of construction costs of residential/commercial buildings
  - Most costs to be paid by developer, but public subsidy sometimes required if weak market or affordable housing is required

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- **Transit Infrastructure**
- **Street Infrastructure & Public Realm**
- **Real-estate development / Housing Construction**
A business model is a framework that includes all of the elements that make it possible for an investment to generate a return. A TOD business model is a framework that includes all the elements that allow a TOD investment to generate [social, economic, environmental and financial] return.

The Round, a TOD in Beaverton, Oregon, U.S.A.

The various assets and processes that generate cost and revenues over the course of a TOD investment

**Investment Components**

**Tangible assets**
- Land
- Infrastructure
- Construction
- Equipment
- Accessibility

**Intangible assets**
- Resource efficiency
- Safety
- Culture
- Inclusiveness

**Investment components**
Corridor scale
Investment components

**Tangible assets**
- Land
- Transit Track (Bus Lanes, Railways etc) and Transit stations
- Roads, street networks, pedestrians, bike lanes,
- Other TOD related investments (station plaza, bus terminal, public amenities, etc)
- Public and private buildings
- Public utilities

**Intangible assets**
- Articulated Density
- Public safety
- Walkability
- Mixed land use
- Cohesive Community
- High Quality Public places and Cultural heritage

**Processes**
- Feasibility studies
- Detailed engineering and investment cost estimate
- Financing arrangement
- Securing lands and site preparation
- Procurement and construction
- Monitoring and evaluation
- Operation and Maintenance
- Community engagement (all through critical stage from planning to implementation)
Funding Sources

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.
De-risking products: products designed to lower the costs of finance by reducing the likelihood that an investor will not receive a return on investment.

TOD products can access **guarantees and insurance** for de-risking purposes, which include:

- Credit guarantees
- Revenue guarantees
- Political risk insurance
A Review of TOD Benefits

Mobility Benefits

- Increase access to jobs and amenities city wide
- Improve access to a low cost transport solution (public transit/walkable urban space/bicycle infrastructure)
- Reduce automobile dependency

Social Benefits

- Revitalize neighborhoods
- Promote social equity through creation of mixed-income housing near transit
- Increase accessibility for less mobile.
- Improve health and increase physical activity through creation of walkable neighborhoods

Environmental Benefits

- Lower air pollution and GHG emissions by reducing automobile dependency and urban sprawl
- Reduce energy consumption
- Conservation of green and natural spaces

Economic Benefits

- Increase agglomeration and access to employees
- Encourage economic resilience through diversity
- Energize local economy
- Increase property values along corridors to help fund needed infrastructure
- Reduce infrastructure costs
- Reduce transport cost

Image Source: WRI.
Thoughts on M&E Systems

• When creating a M&E system for a TOD project, the project owner must:
  o Establish project goals, in collaboration with other project stakeholders
  o Set output and outcome performance indicators
  o Collect data on outputs and outcomes at regular intervals
  o Integrate feedback into project implementation
Performance Indicators
Measuring for Mobility Outputs and Outcomes

TRAVEL BEHAVIOR
Output Performance Indicators:
• Changed parking rules (such as limits, pricing, and location)
Outcome Performance Indicators:
• Automobile usage, measured in VKT
• Mode share
• Auto ownership
• Transit use

ROAD SAFETY
Output Performance Indicators:
• Number of redesigned street intersections and crossings
• Km of bicycle lanes
Outcome Performance Indicators:
• Vehicular speeds on roads
• Public perception of pedestrian and bicycle safety
• Number of vehicular accidents and fatalities

TRANSIT SERVICE & QUALITY
Output Performance Indicators:
• Number of transit options
• Integration of multi-modal options within transit stations
• Frequency of transit service
Outcome Performance Indicators:
• Total area accessible in 45/60 mins
• Percentage of jobs accessible in 45 mins by public transport+NMT
• Satisfaction levels
• Changes in travel time

ACCESSIBILITY & WALKABILITY
Output Performance Indicators:
• Number of high-density developments located within a station-area
• Change in length and width of unobstructed sidewalks/footpaths
Outcome Performance Indicators:
• Walkability Score
• Number of pedestrian and bicyclist accidents

Image Source: WRI.
Performance Indicators
Measuring for Social Outputs and Outcomes

NEIGHBORHOOD REVITALIZATION
Output Performance Indicators:
• Number of community facilities, amenities, and educational services within a project area
• Redesigned streetscapes, public spaces, and building facades throughout a project area
• Number of mixed-use developments within a project area
Outcome Performance Indicators:
• Public perception of a project area

SOCIAL EQUITY
Output Performance Indicators:
• Number of affordable housing units
• Interconnection designed for the less mobile
Outcome Performance Indicators:
• Improved access to transit and services for all socioeconomic groups
• Diversity within a project area, including racial, ethnic, gender, religious, & socioeconomic diversity of local residents, business-owners, and workers
• Increase accessibility for less mobile

SOCIAL CAPITAL & CITIZEN PARTICIPATION
Output Performance Indicators:
• Number of community outreach programs
Outcome Performance Indicators:
• Residents’ involvement in community projects and initiatives

Image Source: WRI.
Performance Indicators
Measuring for Environmental Outputs and Outcomes

REDUCED EMISSIONS
Output Performance Indicator:
• Transport system and land use prioritizing transit and NMT
• Establishment and implementation of low emission zones around metro stations

Outcome Performance Indicator:
• Number of days of good air quality
• Overall GHG intensity of transport
• Overall energy intensity of transport

CONSERVATION OF GREEN AND NATURAL SPACES
Output Performance Indicator:
• Creation/maintenance of park and/green space as a result compact urban development in TOD areas
• Infill and brownfield reclamation

Outcome Performance Indicator:
• Habitat conservation through preservation of ecological areas
• Increased tree cover and reduced heat island effect

Image Source: WRI.