



WRI INDIA
— ROSS CENTER

WEBINAR SERIES ON TRANSIT ORIENTED DEVELOPMENT IN INDIAN CITIES

Financing - Land Value Capture

PRERNA V MEHTA, LEAD – URBAN DEVELOPMENT

A product of WRI Ross Center for Sustainable Cities

COMPONENTS

- Institutional Setup
- Regulatory Framework
- Mapping
- Design Interventions *(Planning & Design and implementation)*
- Financing
- Monitoring and Evaluation

GOAL

To impart understanding of the various Value Capture mechanisms that may contribute to facilitate Transit Oriented Development (TOD) planning and implementation.

TRANSIT ORIENTED DEVELOPMENT (TOD)

Land use + transport integration done right = 10 X economic value (over 2 decades)

Reduces gap between needs and access to resources

Avoids health spending



OPERATIONALIZING TOD: CHALLENGES

- Regulatory and Institutional gaps (enabling framework)
- Long gestation periods
- Upfront capital investment
- Limited public coffers



KEY STAKEHOLDERS IN TOD IMPLEMENTATION



Actors involved in TOD – financiers, developers and the government

- Need to be able to benefit equitably.
- Shared understanding and trust.

TOD PROJECT LIFECYCLE

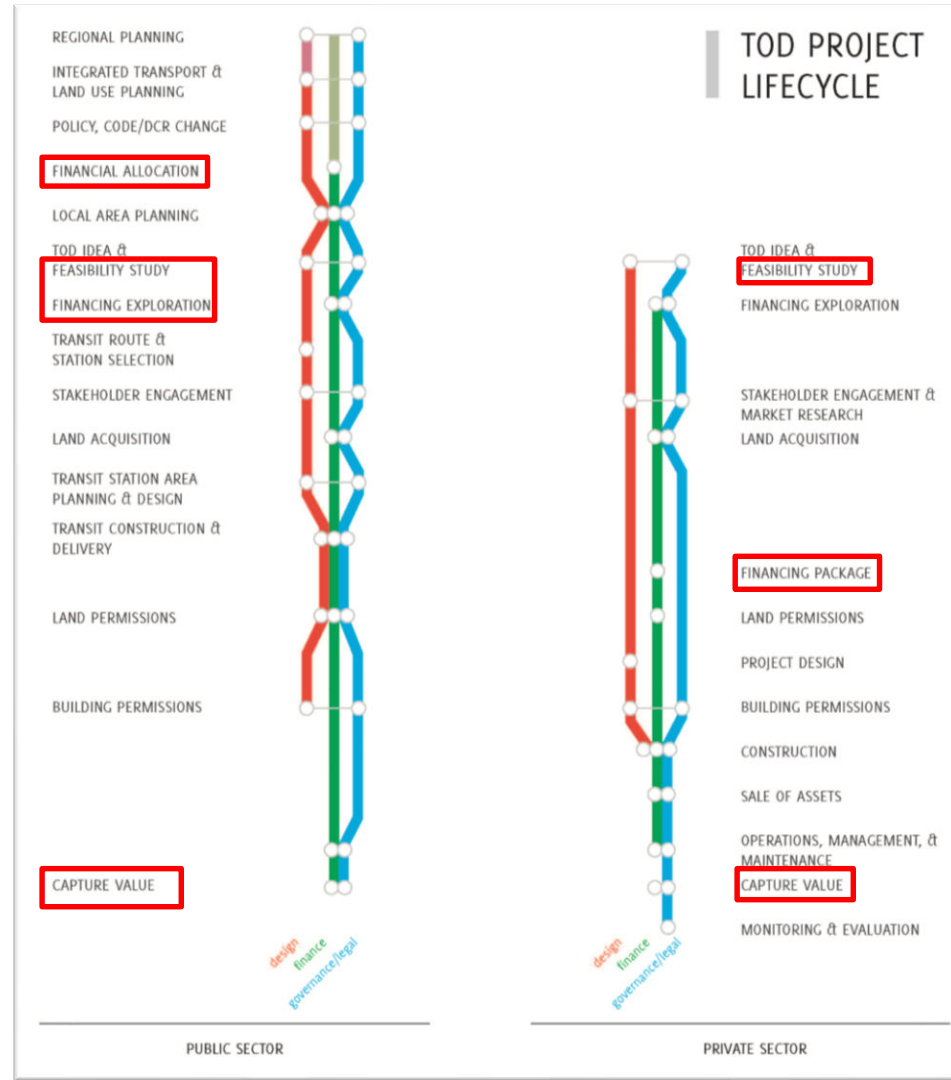


Image Source: WRI.

TOD INVESTMENTS



TOD investment: the allocation of resources by public, private, and other stakeholders that are expected to generate the range of benefits associated with TOD.

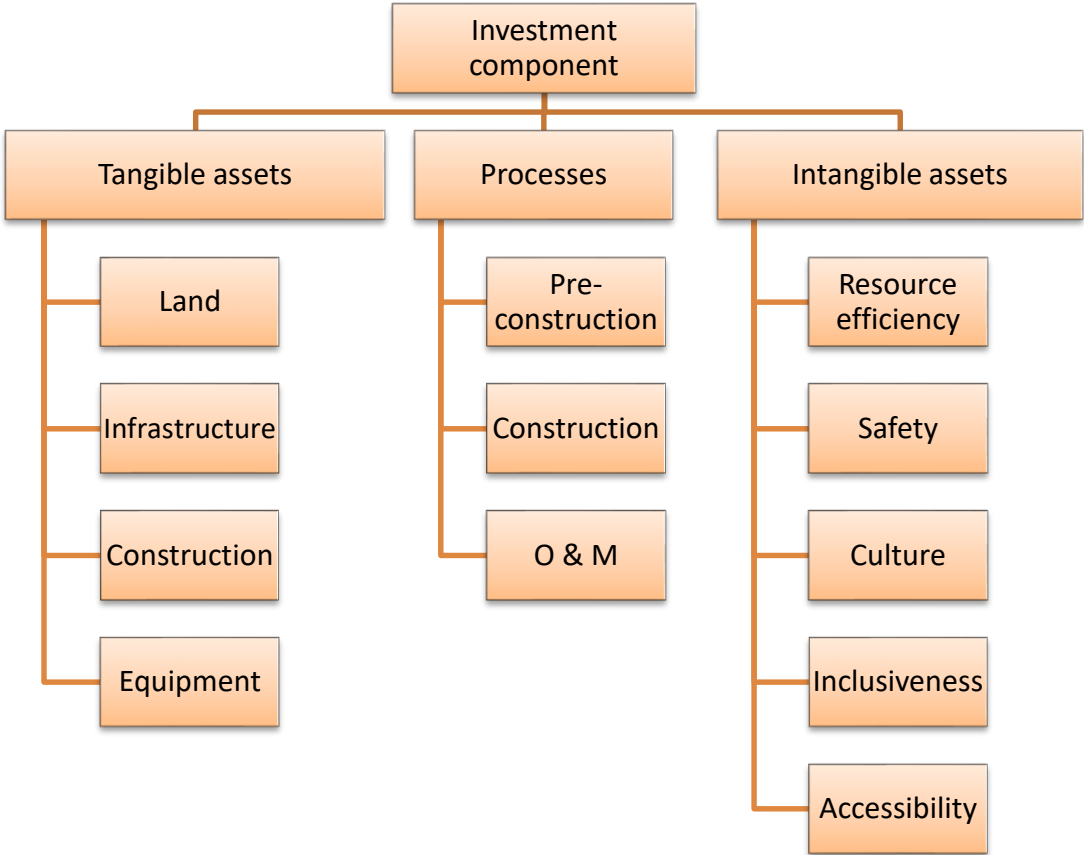
TOD INVESTMENTS

What

Investment
components

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

INVESTMENT COMPONENTS



WHAT NEEDS TO BE FINANCED



Physical Infrastructure

- 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

Processes

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

Social Infrastructure

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

TOD INVESTMENTS

What

Investment
components

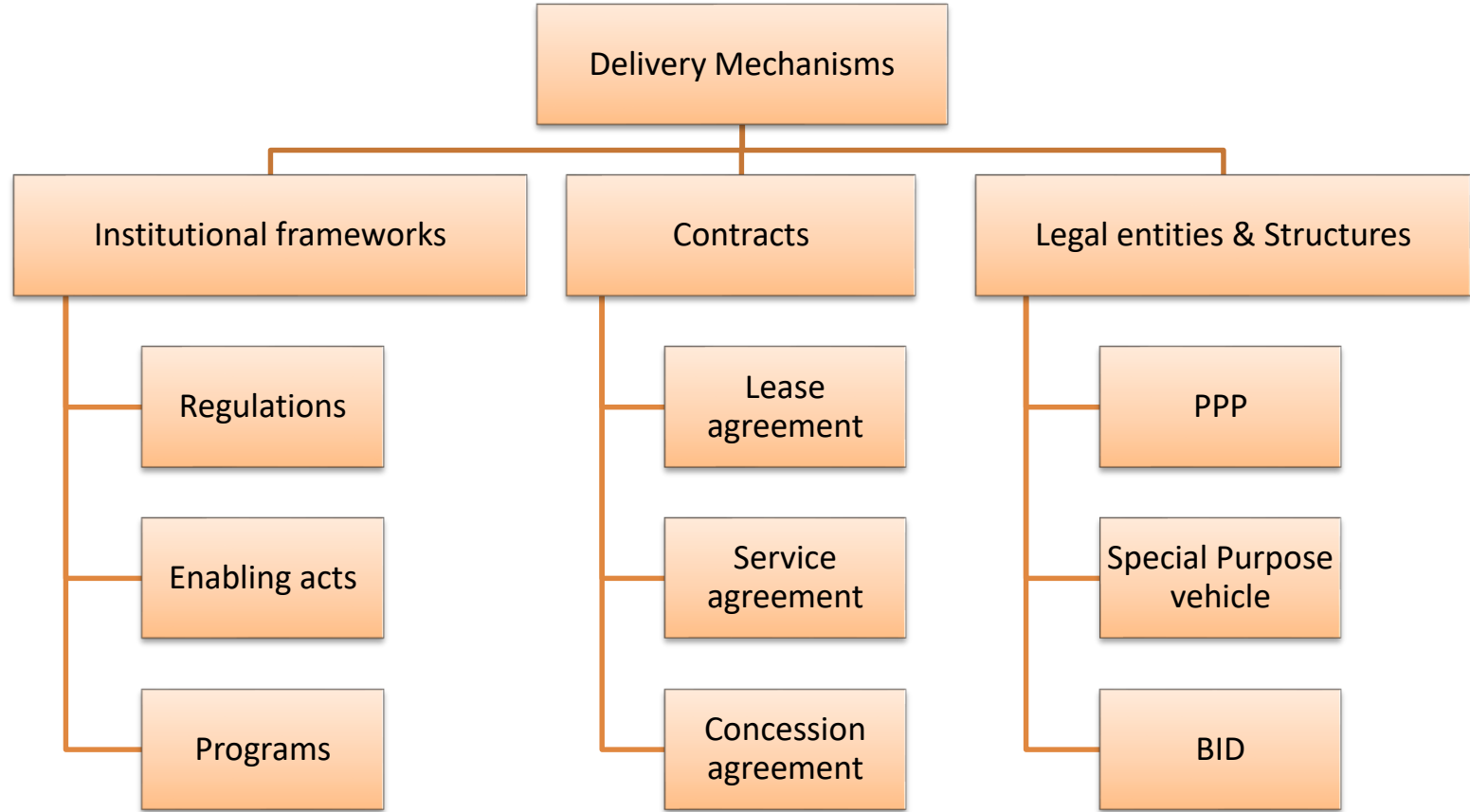
- The various assets and processes that generate cost and revenues over the course of a TOD investment

Who

Delivery mechanism

- The commercial, contractual, and institutional arrangements exist to distribute the responsibilities and risks of the investment

DELIVERY MECHANISMS



TOD INVESTMENTS

What

Investment components

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

Who

Delivery mechanism

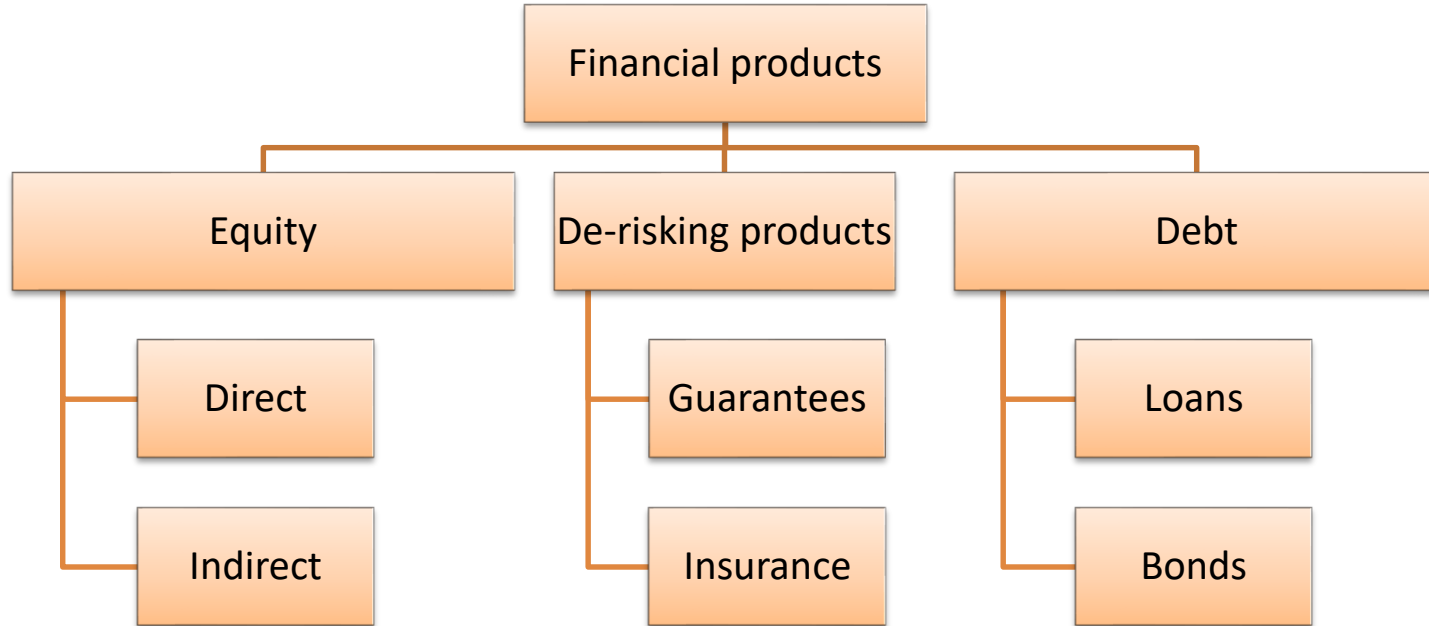
- The commercial, contractual, and institutional arrangements exist to distribute the responsibilities and risks of the investment

Where & How

Financial products

- Options for mobilizing investment capital that come at a cost for the financial service provided

FINANCIAL PRODUCTS



TOD INVESTMENTS

What

Investment components

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

Who

Delivery mechanism

- The commercial, contractual, and institutional arrangements exist to distribute the responsibilities and risks of the investment

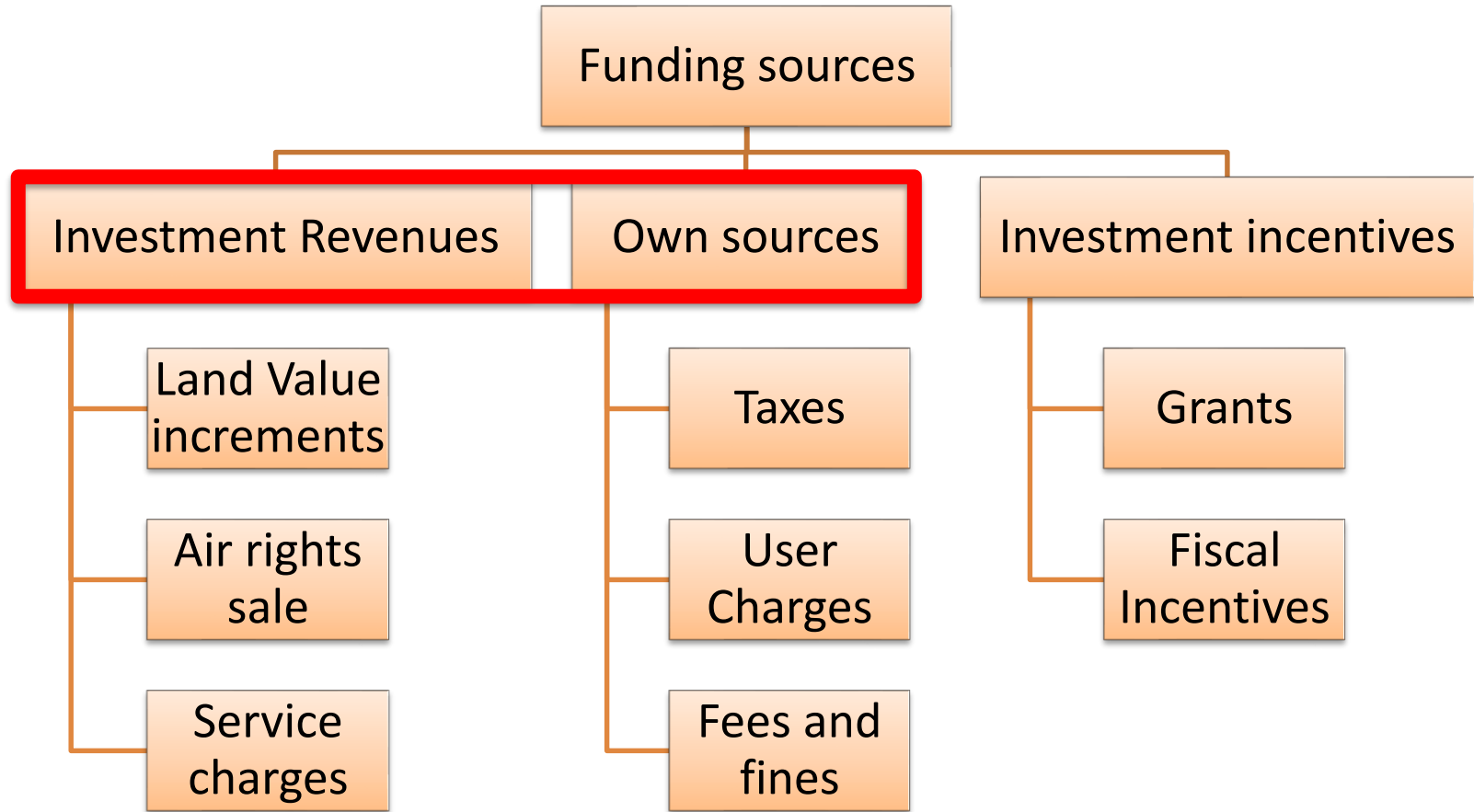
Where &
How

Financial products

- Options for mobilizing investment capital that come at a cost for the financial service provided

Funding Sources

- Revenues, and other non-reimbursable monetary support, that can be used to repay the costs of the investment components



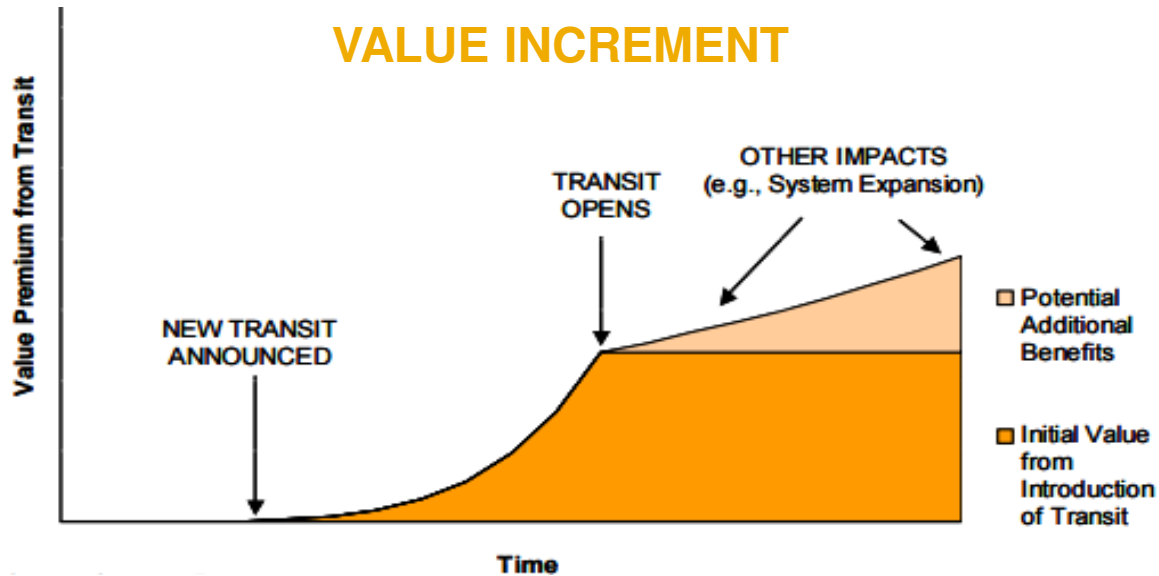
VALUE CAPTURE FINANCING (VCF) FOR TOD

- Additions to mass transit = increase in adjacent land values
- VCF method requires beneficiaries to contribute



LAND VALUE CAPTURE

Land Value capture is a type of public financing that recovers some or all of the value that public infrastructure generates for private landowners.



POLICIES AIDING VALUE CAPTURE FINANCING

- Metro Rail Policy (2017)
- National TOD Policy (2017)



STATUS QUO SO FAR VCF APPROACHES



- Traditional VCF recovers 'unearned increments' (selling)
- Recent VCF finances infrastructure investments (capitalizing)
- Dissimilar applications for revenue generation;
- Often applied in combination (reduce individual + public spend)

VALUE CAPTURE MECHANISMS

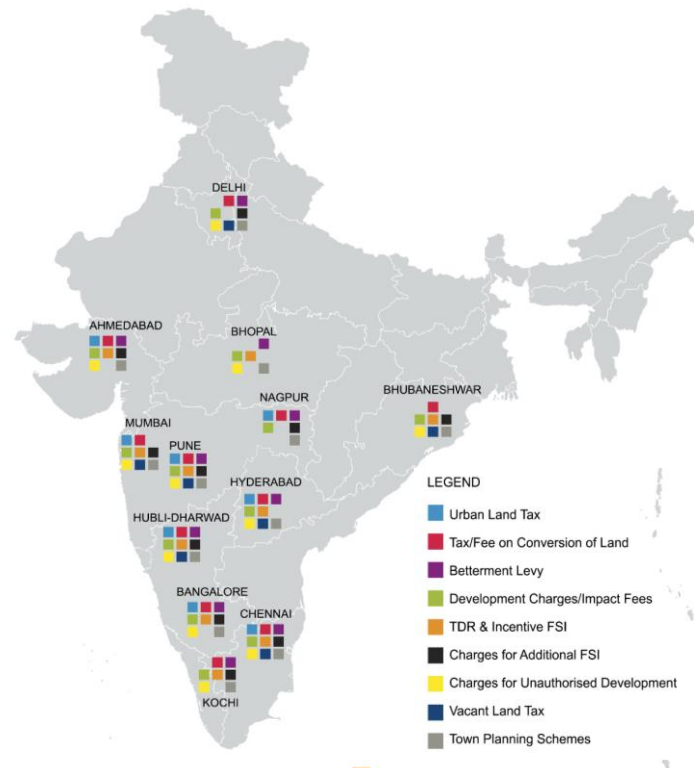
COMPARATIVE INSIGHT

Category	Mechanisms	Indian Examples	Global Examples
Tax-based	Land Value Tax / Urban Land Tax	Mumbai, Bengaluru, Ahmedabad, Pune*	London, Pittsburgh, Melbourne
	Vacant Land Tax	Mumbai, Hyderabad, Chennai, Hubli-Dharwad, Pune*	Washington D.C., Melbourne, Bogota, Seoul
	Property Tax*	Delhi, Mumbai, Bengaluru, Ahmedabad, Bhubaneswar	Washington D.C., New York, Hong Kong, Singapore
	Tax Increment Financing	Nil	Portland, New York, Chicago, London
	Transit-focused Development Fees	Nil	London, Paris, San Francisco
	Payroll-based Tax	Nil	Paris, New York
Fee-based	Fees for Change of Land-use (from agriculture to non-agriculture)/ Zoning fee*	Mumbai, Ahmedabad, Bengaluru, Kochi, Pune	New York
	Betterment Levy or Tax	Bengaluru, Ahmedabad, Mumbai, Pune*	London, Sydney, Singapore, Bogota
	Development Charges/Impact Fee*	Mumbai, Ahmedabad, Pune	Arlington, Cape Coral, Fremont, Paris
	Special Assessment	Nil	Washington D.C., New York
	Fees for Regularising Unauthorised Development*	Delhi, Mumbai, Ahmedabad, Kochi	Nil
	Additional Cess/Surcharge on New Building Permits	Bengaluru	Miami, Portland
Development-based	Transfer/Sale of Development Rights or Air Rights	Mumbai, Bengaluru, Ahmedabad, Pune	Sao Paulo, Hong Kong, London, Paris
	Premium on Additional FAR*	Delhi, Mumbai, Bengaluru, Ahmedabad, Kochi	Charlotte, New York, Minneapolis, Portland
	Land Acquisition and Development	Hyderabad, Bengaluru	Hong Kong, Tokyo
	Town Planning Schemes (TPS)/ Land Pooling/ Land Readjustment	Delhi, Ahmedabad, Amravati, Mumbai, Bengaluru, Pune	Bangkok, Jakarta, Tokyo, Berlin
	Joint Development	London, Paris, Hong Kong, New York	London, Paris, Hong Kong, New York

* Extensively used in India

MECHANISMS, FREQUENCY & SCALE OF INTERVENTION

category	Value Capture mechanisms	Frequency of Incidence	Scale of Intervention
Tax - Based	Land Value tax	Annual rates based on gain inland value uniformly	Area based
	Vacant land Tax	Recurring	Area based
	Tax Increment Financing	Recurring and for fixed period	Area based
Fee based	Fees for Changing landuse	One time	Area/Project based
	Betterment levy	One-time while applying for project development rights	Area/Project based
	Development charges (Impact fee)	One time	Area based
Development based	Premium on additional FSI (Air rights)	One time	Area (roads, railways)/ Project (metro)
	Transfer of Development rights	Transaction based	Area/Project based
	Land Acquisition & Development	One time upfront before project initiation	Area/Project based
	TP Schemes	One time upfront before project initiation	Area/Project based



BENEFITS

- Optimising land
- Financial sustainability
- Social and environmental gains

CHALLENGES

- Institutional coordination
- Planning frameworks
- Awareness and capacity
- Implementation

INDIAN CASE STUDIES

LAND VALUE CAPTURE IN CONTEXT OF RAPID TRANSIT: CASE STUDIES

Cities	Transit Funding/Financing	LVC mechanisms	Use of Revenue from LVC
Delhi	<ul style="list-style-type: none"> • Equal equity from GoI, GNCTD • Land and Central taxes • Dedicated Urban Transport Fund (Phase 3) • Interest free subordinate debt for land cost • JICA soft loan 	<ul style="list-style-type: none"> • Property Development Rights – advertising; station retail licenses; concession agreements and long-term lease for development of depot, standalone, govt. allotted sites. • Proposed for TOD fund - Sale of Premium FAR, External Development Charges. 	<ul style="list-style-type: none"> • Towards transit capital costs, operations
Bengaluru	<ul style="list-style-type: none"> • Equal equity from GoI, GoK • Domestic/foreign bank loans • Metro bonds 	<p>Proposed for Phase 1& 2:</p> <ul style="list-style-type: none"> • Additional Cess + Surcharge - on new building permits in BDA area to Metro Infrastructure Fund; shared by BMRCL (65%), BWSSB (20%), BDA (15%) • Cess - 10% (residential), 20% (commercial) on additional FAR in 150m zone; shared by BMRCL (60%), BBMP (20%), BWSSB (10%), BDA (10%) • Impact Fees - for additional FAR granted • TDR - issued by BMRC for land acquisition compensation <p>Proposed (Phase 2A) – Property Development Rights, Station Joint Development (PPP), Sale of Premium FAR, Betterment Charges</p>	<ul style="list-style-type: none"> • Towards transit capital costs, operations; infrastructure services

CONTINUED....

Cities	Transit Funding/Financing	LVC mechanisms	Use of Revenue from LVC
Ahmedabad	<ul style="list-style-type: none"> • JnNURM funds for BRTS • Smart Cities funds for projects in TOD zones • Proposed government grant (INR 12.5 per bus service km for 30 cities including Ahmedabad) • Urban Transport Fund (UTF) revenues include AJL's parking and advertising charges, grants, LVC 	<p>Proposed mechanisms (city wide):</p> <ul style="list-style-type: none"> • Sale of land parcels from TPS. • PPP - for public spaces, advertising. • Lease/rent/fees - retail spaces, on-street parking, vending. • Impact fees, TDR, sale of premium FAR (city-wide). • Guidance value property tax (4 yearly update). 	<ul style="list-style-type: none"> • AJL part financed (viability gap funding from UTF) for transit improvements, operational deficits. • AMC-AUDA can use to implement TOD plans.
Hyderabad	<ul style="list-style-type: none"> • Equal equity from GoI, GoT • L&T bank loan • Proposed - JnNURM funds for multimodal facilities, public amenities in TOD zones 	<ul style="list-style-type: none"> • Rail + Property through Joint Development – lease/rentals from development of depot, station sites; station retail licenses; rights business; advertising 	<ul style="list-style-type: none"> • Towards transit capital costs, operations

KEY LEARNINGS

Institutional Set-up:

- Need for streamlined institutional structures where transit agencies and urban local bodies work jointly on planning for value creation.
- Appointment of a nodal agency that coordinates between multiple stakeholders prove to be efficient.
- Clear-cut agreements between stakeholders and aligned mandates for different agencies, determined early in the process.

Implementation:

- Relevant stakeholders should jointly evaluate and determine transit routing, developable lands, planning/zoning parameters and LVC estimates.
- FAR thresholds and premiums should be carefully considered, fixed and operationalised.
- Town Planning Schemes, typically employed in new growth areas, is an efficient and equitable self-financing mechanism.

CONTINUED....

Regulatory framework:

- Institute local/station area plans; incorporate TOD zones and their development control regulations in city master plans.
- Incentivising a holistic approach to TOD would lead to desirable development and optimal LVC around transit stations.
- A tiered planning system aids in the creation of contextual plans with area-specific regulations at the micro level.
- Regulations should be flexible and responsive to diverse requirements.

Financial Arrangements:

- Cities should set up a TOD fund.
- A fair sharing model should be determined through collaborative engagement.
- An authority should be identified for the collection and disbursement of LVC revenues and its utilization
- Local governments should find convergence with and leverage funds from other national/state programs to finance transit and TOD.

WHERE SHOULD VCF REVENUE BE USED?

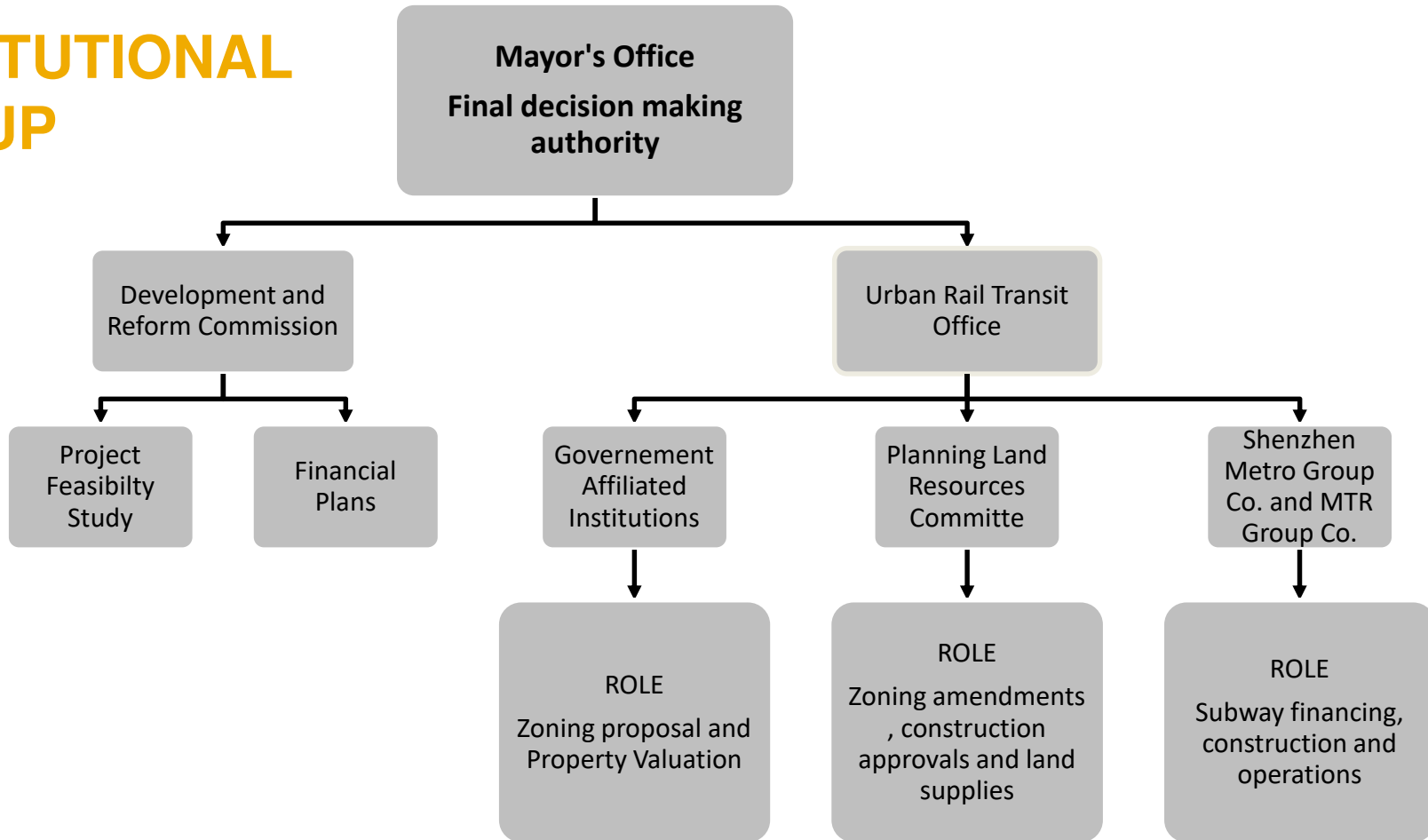


- Mass transit Capex + Opex
- Carrying capacity augmentation
- Social Infrastructure
- Affordable Housing

GLOBAL CASE STUDIES

SHENZHEN, R+P PROJECT

INSTITUTIONAL SET UP

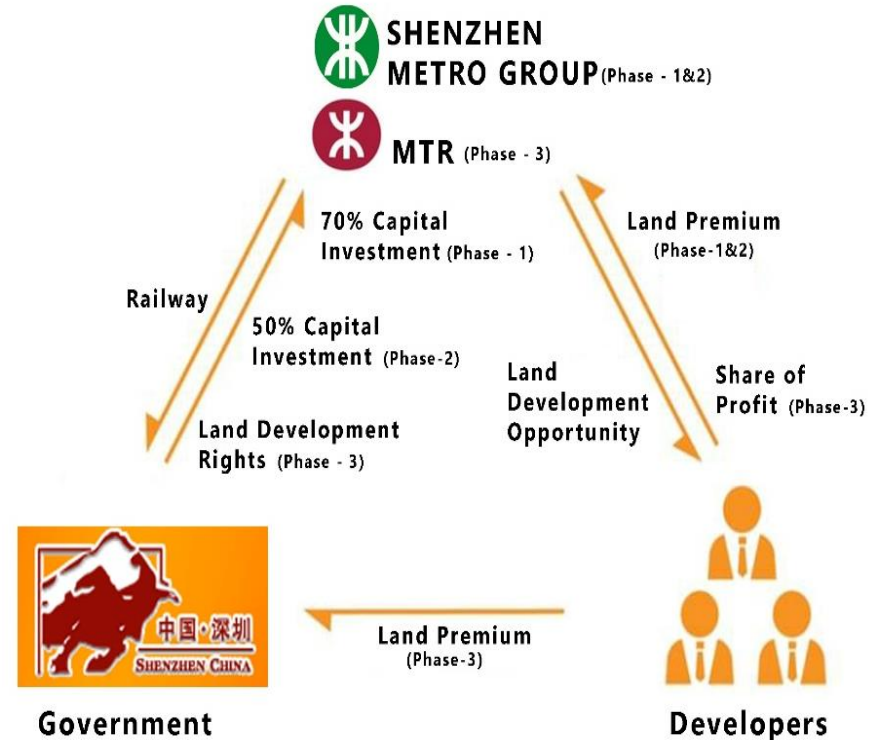


FINANCIAL SETUP

An institutional set up is being formed for the funding of the entire R+P project which happened in three phases namely:

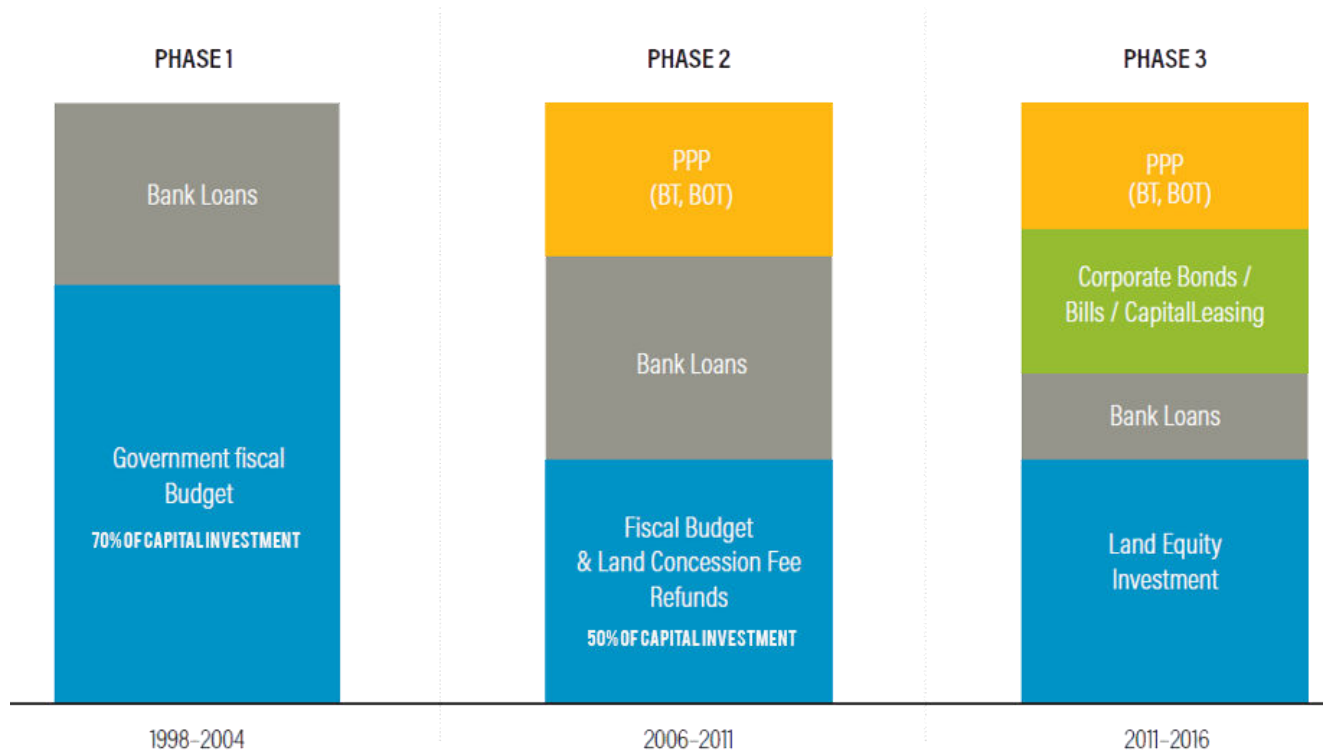
- **Phase I:** Government capital investment
- **Phase II:** Special land-use rights auctions and land concession fee refunds
- **Phase III:** Government's land equity investment

There are mainly four agencies working in a loop for Shenzhen's R+P project funding.



CONTINUED....

| Funding Structure of the Shenzhen Metro Group over the Three Phases of R+P Development



PLANNING FRAMEWORK

R+P development poses new challenges to China's existing planning processes.

Therefore, Shenzhen has made many bold innovations in the planning system that can be broadly categorized as below

- Aligned vision for R+P and multi-stakeholder engagement
- Integrated transit, land-use and financial planning
- Flexible regulatory zoning

KEY LEARNINGS

Institutional Set-up:

- Various agencies both public and private were involved but Mayor is the supreme power and decision maker for all.
- Clear agreements between the stakeholders and the multiple stakeholders.

Implementation Framework:

- Shenzhen's R+P project was divided into three phases for smooth functioning and implementation of the project.
- The phases were created for a time span of 5years each which leads to total project duration of 15years.
- Regulations and planning norms were clearly laid out for proper necessary adoption. Incorporation of land-use and transit integration helped project move in a better manner avoiding clashes in the zoning at the later stage.

CONTINUED...

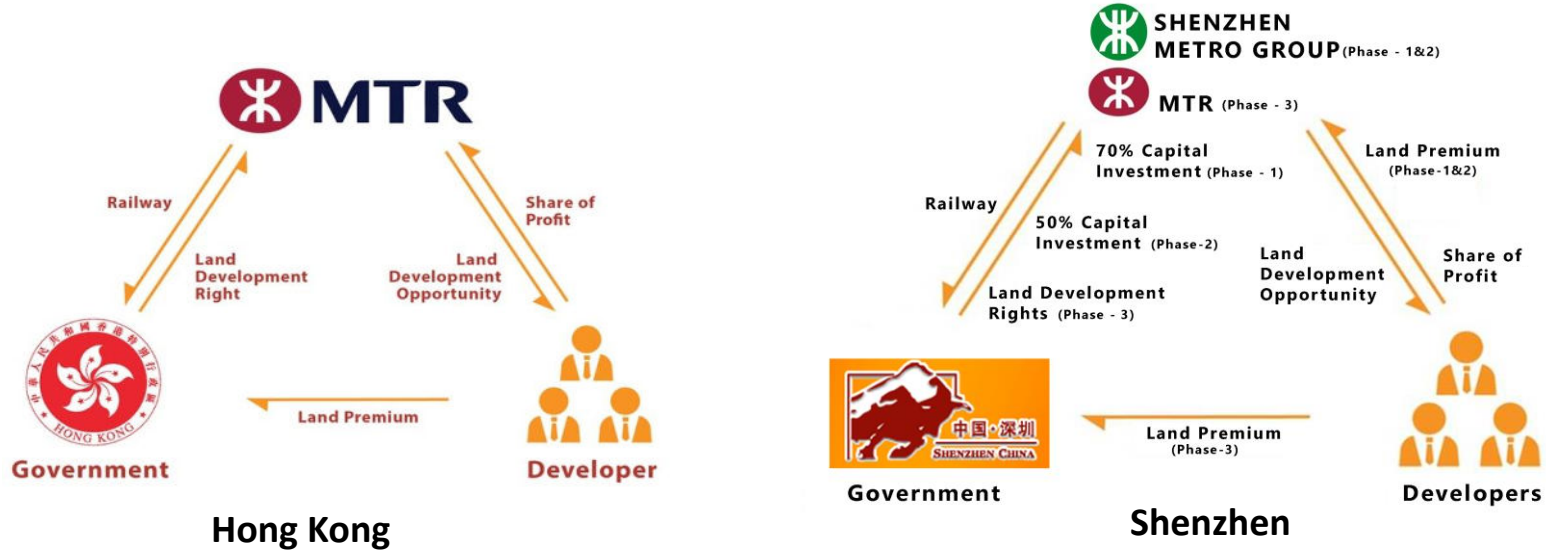
Financial arrangements:

- Various revenue generation sources.
- Clear framework between 4 major key players namely Shenzhen metro group, MTR Group, Shenzhen city government and developers is being laid.
- Phase-wise funding and financing is being taken care of by different agencies respectively.
- Involvement of private sector through various funding mechanisms such as auctions, TDR, B.O.T model and proper utilization of public sector funding.

Regulatory Framework:

- Innovations in planning framework and integration of transit, land-use and financial planning is being done.
- Flexible Zoning codes around transit stations to meet changing market demands.
- Incorporation of transit-oriented development in urban master and regulatory plans.
- Financial arrangements, integrated urban and transit planning frameworks and various land policy reforms were adopted.
- Regulated F.A.R. in case of rolling stock depot was adopted as per project demand thus giving leverages in F.A.R. consumption according to the uses.
- Innovative vertical division of land use rights in city centres to deal with land availability limitation.

COMPARISON BETWEEN HONG KONG & SHENZHEN



- Rail plus Property development in Hong Kong & Shenzhen leverages the partnership between the public sector, transit companies, and developers to coordinate planning and financing of transit systems and adjacent real-estate developments.
- By capturing the land value appreciation that follows transit projects, R+P can partly or completely fill the funding gaps in constructing costly infrastructure projects.
- Compared to financing tools such as infrastructure bonds and bank loans, R+P provides a new stream of funding for the construction and operation of public transit facilities without creating additional debt burdens.

COMPARISON BETWEEN HONG KONG & SHENZHEN

	Hong Kong	Shenzhen
Metro Companies	MTR Hong Kong	Phase 1 & Phase 2 – Shenzhen Metro Company Phase 3 – MTR Shenzhen
Government's Investment	Land equity investment from the beginning of the project	Phase 1 – 70% Govt. Capital investment Phase 2 – 50% Govt. Capital investment Phase 3 – Land equity investment
Price of Land (to transit company)	Based on before rail prices	Special Auctions with special terms to restrict the number bidders, prices slightly below the market rate.
Land Premium	Land premium was collected by the State government	In the first two phases the land premium was collected by the metro companies, it is only after the MTR joined the project the government decided not to allow MTR Shenzhen to reap all the land premium.
Land Concession	Charged from the transit company	Land Concession fee returned to the transit company by the government as a direct investment.
Scale of Government Investment	Line by line investigation to ensure future property revenues will just cover the funding gap of each line	Government Fixed rate, i.e., 50% of the total subway capital cost at each construction phase.
Government Estimates of Property Development Revenues	Based on optimistic market condition	Baseline values based on current market prices

HUDSON YARDS

INTUITIONAL SET UP

Apex Authority:
Hudson Yards
Development
Corporation (HYDC)

Collaborating Agency

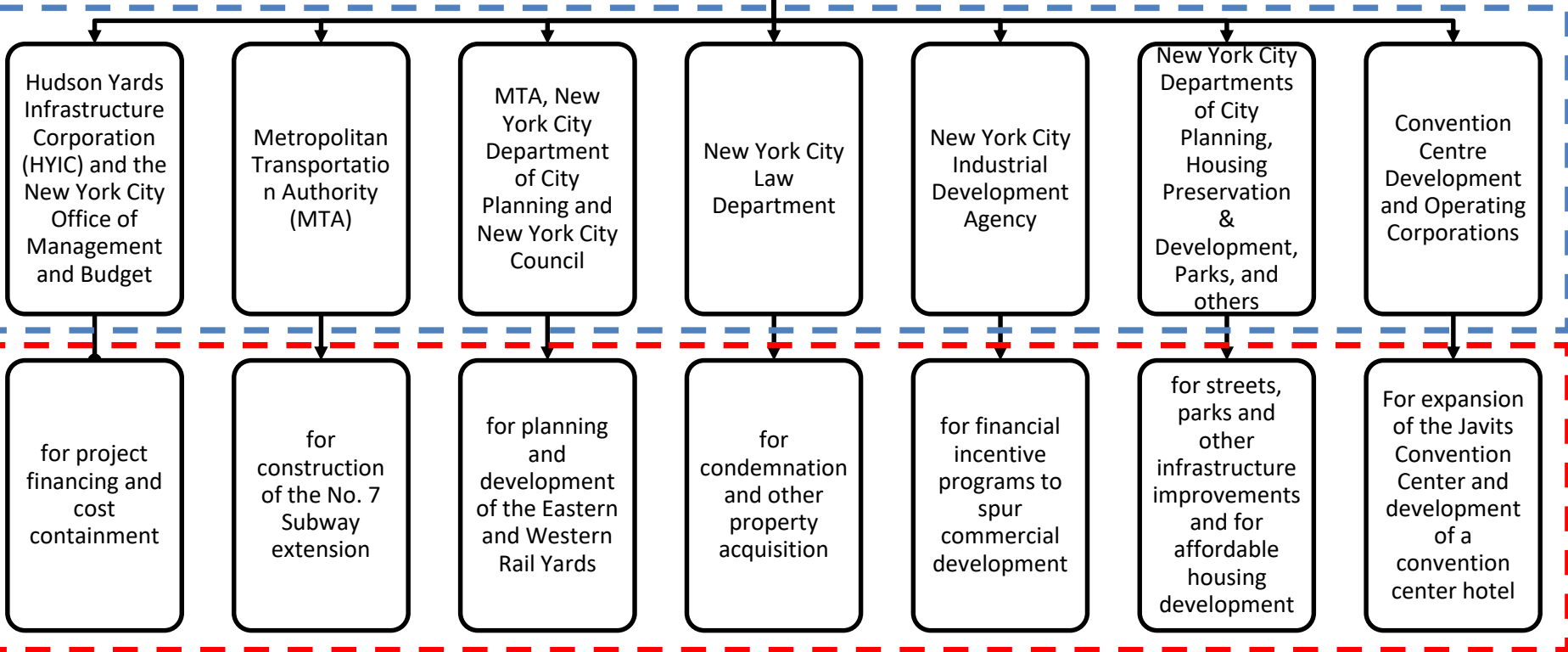


Fig: Showing institutional set -up for Hudson Yards Project

Purpose of collaboration

PLANNING FRAMEWORK

The Hudson yards project includes a series of projects to transform area into a dynamic, transit-oriented urban centre, permitting medium- to high-density development and a mix of uses, including commercial, residential, open space, cultural, convention, and entertainment. Key activities undertaken by public agencies :

- Rezoning of the Far West Side
- Property acquisition
- Drafting and implementing Financial incentives
- Drafting and adopting of new Zoning regulation
- Hudson Yards street scape manual

CONTINUED...

Various Projects undertaken under Hudson yards project:

- Extension of the New York City Subway's 7 trains to a new subway station at 34th Street.
- MTA Rail Yards (Eastern and Western)
- Hudson Park & Boulevard

FINANCIAL SET UP

To fund the physical infrastructure improvements including No.7 subway line extension, platform on ERY and new parks and streets within the Hudson Yards Redevelopment Area a district improvement fund is created (HYDC, Development Information n.d.). Revenue for this district improvement fund is generated through the following mechanisms:

- Sale of FAR/ Sale of TDR
- Property Sale
- Sale or ground lease of public owned property
- Tax Increment Financing
 - Property tax on new residential development
 - Payment in lieu of Sales Tax (PILOST)
 - Payment in lieu of Taxes (PILOTs)

KEY LEARNINGS

Institutional Set-up:

- Streamlined institutional structure with defined roles and responsibilities where various stakeholders/agencies work jointly on planning, development and construction for value creation.
- A nodal agency that coordinates between multiple stakeholders.
- Clear-cut agreements between stakeholders and aligned mandates for different agencies, determined early in the process.

Implementation Framework:

- Long terms development over span of 30 years in Phased manner is envisaged early in the development process.
- Enabling regulations and planning norms were clearly laid out for proper necessary adoption.
- FAR thresholds and premiums were determined for the entire district along with their operational modalities for timely implementation and functioning.
- Critical land acquisitions were undertaken by public agency while allocating suitable incentives to the effected.
- Infrastructure augmentation was an important component of the entire redevelopment so that it is sustainable.

CONTINUED...

Financial Set-Up:

- Several revenues source and combination of Land Value capture mechanisms have been used.
- Extensive Involvement of private sector and utilization of private sector funding.
- The HYIC is the agency for financing the project and is responsible for managing the District improvement fund (DIF) as set-up for the HY project.

Regulatory Framework:

- District level plan was instituted along with necessary development control regulations for each project with the Hudson yards district.
- A holistic approach is adopted to ensure public good while maximizing on FAR component and giving impetus to overall economic development of the district.

THANK YOU!

