

# FORM BASED CODES

## Evaluation Metrics

Please take a few minutes and answer the questions below. This will help us improve the quality of our workshops. Thank you!

1. How would you rate the workshop overall?

Quality (usefulness / applicability)	Excellent	Good	Average	Disatisfactory
		✓		

2. Please elaborate in a few lines how you will apply the concepts learnt in the workshop (what will your immediate next steps be and some associated challenges you might face)

*Continuing study is necessary*

*Challenges can be overcome*

3. What was the key message/takeaway for you from this workshop? (Was there any specific skill that you acquired? (Please mention as many as you can)

*Participative, interactive, non-lecture*

4. What improvements would you suggest for the board (was the board self-sufficient should additional content be included etc)?

5. Do you think the 5 star seamless public transport adequate? In your opinion



**Ministry of Housing and Urban Affairs**  
Government of India

**ABOUT MINISTRY OF HOUSING AND URBAN AFFAIRS (MoHUA)**

The Ministry of Housing and Urban Affairs is the apex authority of Government of India to formulate policies, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor programmes related to issues of housing and urban affairs in the country. The Smart Cities Mission was launched by the Ministry in 2015 to promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions.



**ABOUT WRI INDIA ROSS CENTER**

The World Resource Institute is a non-governmental global research organization that aims to protect earth's environment and provide for the needs and aspirations of current and future generations, including but not limited to improving the quality of life in cities, by developing and scaling environmentally, socially, and economically sustainable urban transport solutions, with capabilities to identify and implement such solutions in over fifty countries including within Europe, United States, Mexico, Brazil, Indonesia and India.

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# EVALUATION FRAMEWORK

## 1.0 What is the Evaluation framework?

The evaluation framework outlines a specific monitoring and analysis mechanism to determine how well policies, programs and projects have performed with respect to their intended goals and objectives. Evaluation frameworks can have several applications:

- **Evaluating changes/ improvements:** It can be used to track the results of specific changes, to determine status - how successful they have been, and for research purposes.
- **Problem identification:** It can help identify undesirable conditions or areas that are not functioning adequately and where service standards are not being met, for instance, wasted resources, code violations, etc. and help determine their causes. This helps practitioners rectify weak areas in the system.
- **Aid benchmarking:** Evaluation aids benchmarking by providing a set of indicators that are then used to provide insights, raise questions, compare with/identify other organizations from which one may be able to learn and improve.
- **Trend analysis:** It can help identify changes that are occurring.
- **Peer comparisons:** It allows an organization or group to be compared with peers.
- **Target setting:** It allows stakeholders to set specific targets to be achieved.
- **Providing the information on performance and noting community benefits.**

## 2.0 Purpose of formulating Evaluation framework for FBC

The intent of putting the evaluation framework for the FBC guidebook is, to provide-

- Standardized evaluation process, given that this is a new concept for Indian cities.
- Develop clear criteria for FBC project evaluation.
- Generate database of indicators.
- Measure performance of FBC projects w.r.t. intended guiding principles.
- Insights on Low and high-performance criteria, so these can be tweaked and adjusted in future applications

## 3.0 Who should use this evaluation metrics

The evaluation metrics is intended to be primarily used by key administrative bodies and the planning authorities of the city, developing and implementing FBC. However, since FBC is a community-led approach that considers private players and other stakeholders, it will also be useful to the following stakeholders who will be involved in developing the FBC projects at various stages:

- City implementation agencies
- Local elected representatives and decision-makers
- Consultants/Stakeholders working on FBC projects
- Citizens, CBOs and NGOs
- Private stakeholders like developers, housing associations, institutions

## 4.0 How to use the metrics?

The suggested evaluation metrics can be used during three stages of the FBC project:

- **Pre-construction:** Evaluating the FBC project proposals
- **During Construction:** To evaluate the project application while implementation.
- **Post Construction:** To evaluation the performance of the project w.r.t. organizing principles

## 5.0 Proposed evaluation Metrics

The FBC projects will be evaluated based on the criteria listed in the table. Please note that these are minimum criterion and cities may choose to add more based on their intent and priority. All the stated indicators should be contextual to the nature of the FBC project and the benchmarking needs to be done according to the intent of the project. However, ensure that each additional criteria and benchmarking standard can be referred to an existing standard or a derivative, for compliance.

Evaluation Criteria	Components	Indicators	Applicability			Benchmarks*
			City	Area	Project	
Coordinated Built form	Density	Percentage change in the people density of the area. (It can be increased, or decreased value based on the optimum utilization of FBC area)	✓	✓	✓	Form-Based codes Institute web site: <a href="http://www.formbasedcodes.org">www.formbasedcodes.org</a>  MOHUA NMT guidelines. <a href="http://mohua.gov.in/cms/sustain-sutp-NMT.php">http://mohua.gov.in/cms/sustain-sutp-NMT.php</a>  MoHUA service level benchmarks <a href="http://mohua.gov.in/cms/Service-Level-Benchmarks.php">http://mohua.gov.in/cms/Service-Level-Benchmarks.php</a>  Urban & Regional Development Planning, Formulation and Implementation (URDPFI) -2014 <a href="http://mohua.gov.in/link/urdpfi-guidelines.php">http://mohua.gov.in/link/urdpfi-guidelines.php</a>  National Building Code <a href="https://bis.gov.in/?page_id=117159">https://bis.gov.in/?page_id=117159</a>  UTIPEC Street design guidelines <a href="http://smartcities.gov.in/upload/uploadfiles/files/StreetGuidelines_DDA.pdf">http://smartcities.gov.in/upload/uploadfiles/files/StreetGuidelines_DDA.pdf</a>  Pedestrian Safety <a href="http://tripp.iitd.ernet.in/assets/newsimage/Pedestrian_safety_-_modelling1.pdf">http://tripp.iitd.ernet.in/assets/newsimage/Pedestrian_safety_-_modelling1.pdf</a>  Institute for Transportation & Development Policy (ITDP) Guidelines <a href="https://www.itdp.org/">https://www.itdp.org/</a>
	Mixed use	Percentage mixed use achieved in the FBC area	✓	✓	✓	
	Active edges	Percentage of buildings that are along street networks having activity on ground floor that interfaces with the public realm.	✓	✓	✓	
		Percentage of building facades interfacing with public realm.	-	✓	✓	
	Boundary walls	Percentage of transparent boundary walls.	-	✓	✓	
		Percentage of areas with no boundary/compound wall.	-	✓	✓	
	Setbacks	Percentage of building conforming to mandated setbacks.	✓	✓	✓	
	FAR	Percentage FAR consumption w.r.t. permissible limit.	✓	✓	✓	
Complete streets	Block standards	Percentage change in the length of interconnected roads/streets network.	✓	✓	✓	
	Pedestrian pathways	Percentage change in the length of road network with continuous usable pedestrian pathway/ footpath network.	✓	✓	✓	
		Length of road network with shaded footpaths.	-	✓	✓	
	Pedestrian crossings	Percentage increase in the number of safe pedestrian crossings.	✓	✓	✓	
		Percentage increase in the number of signalized pedestrian crossings.	✓	✓		
	Universally accessible pedestrian pathways	Percentage change in the length of road network with universally accessible pedestrian pathway/ footpath network.	✓	✓	✓	
	NMT networks	Percentage change in length of cycle lanes provided.	✓	✓	✓	
	Vending zones	Percentage change in number and area of dedicated/designated vending zones.	✓	✓	✓	
	Street space for IPT parking	Percentage change in number and area dedicated to IPT parking.	✓	✓	✓	
	Multi Utility zones (MUZ)	Length of road network with dedicated Multi utility zones.	✓	✓	✓	
Street Furniture	Percentage increase in number of streets with adequate usable street furniture.	✓	✓	✓		

	Adequate Street Lighting	Percentage change in the number of lighting provision.	✓	✓	✓	Indian Green Building Code (IGBC) <a href="https://igbc.in/igbc/">https://igbc.in/igbc/</a>  IRC 103 <a href="http://www.irc.nic.in/">http://www.irc.nic.in/</a>
	Signage/ Wayfinding	Percentage change in the number of Information signage.	✓	✓	✓	
		Percentage change in the number of direction signage.	✓	✓	✓	
		Percentage change in the number of traffic signage.	✓	✓	✓	
		Percentage change in the number of facility signage.	✓	✓	✓	
<b>Accessible Public space</b>	Organized greens/ Public spaces	Percentage area of public space preserved or developed.	✓	✓	✓	
	Network of green spaces	Percentage change in length of streets and NMT networks connecting the public spaces.	✓	✓	✓	
	Street level public spaces	Percentage change in public spaces along the streets.	✓	✓	✓	
	Access to public spaces	Percentage change in the number of universally accessible public spaces.	✓	✓	✓	
		Percentage increase in the diversity of people using the public space.	✓	✓	✓	
<b>Effective Mobility Management</b>	Traffic control measures	Percentage of roads with working traffic control systems.	✓	✓	✓	
	On street Parking management	Percentage of roads/Streets with earmarked on street parking.	✓	✓	✓	
	Off Street parking management	Percentage change in the number of ECS within the property.	✓	✓	✓	
<b>Contextual Landscape</b>	Vegetation	Percentage change in the number of trees either preserved or planted.	✓	✓	✓	
	Landscape elements	Percentage change in the number of landscape elements (e.g. Tree guards, buffer vegetation, etc.) provided.	✓	✓	✓	
<b>Environmenta l and cultural inclusivity</b>	Built heritage	Percentage change in the number of heritage buildings preserved.	✓	✓	✓	
	Natural heritage	Percentage change in natural heritage landscapes preserved.	✓	✓	✓	

*Note: \*The suggested benchmarks list is exhaustive but not limited to this.*

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