

GBM decision on FOBs (25/11/2010):

- i. **FOBs are to be the exception, not the rule. They are to be provided only under circumstances where no at-grade crossings are feasible.**
- ii. **Underpasses not be provided at all, unless under extreme circumstance where no other solution (Including FOBs) are feasible.**
- iii. **At-grade crossings (raised table-tops or zebra crossings) with Pedestrian / Pelican Signals and adequate signage and traffic calming measures are to be used on all Urban Roads within city limits. Pedestrian Signals (approx. 20 Sec.) should be synchronized along with the nearest full-traffic signals along all roads including arterials and sub arterials, for smooth movement of traffic along with safe pedestrian / NMV crossing.**

GENERAL PRINCIPLES FOR PEDESTRIAN CROSSINGS (Source: UTTIPEC Street Design Design Guidelines)

Since Pedestrians must be given the shortest possible direct route to cross the street, the most preferred Crossing for them is "at-grade".
 Mid Block Crossings must be provided for people to cross the street safely between building entries or bus stop locations or active landuses on opposite sides of the street. Mid-block crossings may be provided with pedestrian operated signals and table top crossings.
 At-grade pedestrian crossings must be provided at all T-junctions.
 PREFERRED PED/ NMT CROSSINGS FOR VARIOUS ROAD R/Ws:

R/Ws ≤ 30 m	A Pedestrian cycle should be added to all at-grade signalized junctions. At mid-block, signalized pedestrian only crossings to be provided.
R/Ws above 30m - to - 80 m	Separate pedestrian cycle is not necessary. However, Median Refuge Islands as per UTTIPEC Guidelines be provided at all signalized crossings and mid-block pedestrian only crossings.
R/Ws above 80 m	Separate pedestrian cycle is not necessary. However, Median Refuge Islands as per UTTIPEC Guidelines be provided at all signalized crossings and mid-block pedestrian only crossings.

Foot Over Bridge (FOB) Need Criteria and Design standards/requirements

GENERAL STANDARD

An FOB may be permitted only at Mid Block Locations for people to cross safely and conveniently if the proposal for the FOB meets the Need Criteria stated below .

NEED CRITERIA AND DESIGN STANDARDS/REQUIREMENTS

	COMPONENT	SUB-COMPONENT	DESIGN STANDARDS/REQUIREMENTS <i>NOTE: Subways not permitted under any circumstances unless it provides shortest direct access to an underground Metro Station.</i>
1	Need criteria	≥ 80M Roads	FOB could be provided at mid-block or T-point locations on roads of 80 M or more for people to cross safely and conveniently, where at-grade crossings are not feasible. If provided, requirements 2 to 7 below (location and design criteria) must be met.
		> 30 up to 80M Roads without BRT	Exceptional FOB may be permitted where: - At grade pedestrian crossing is not possible due to severe physical site constraints. - Strong desire line exists within 150M of the landing of an existing flyover. If provided, requirements 2 to 7 below (location and design criteria) must be met.
		> 30 up to 80M Roads with BRT	Pedestrian crossings to be designed as part of an integrated BRT proposal Interim solution of atgrade pedestrian crossing with synchronised signals with nearest intersection / signal on either side may be considered till such time
		≤ 30M Roads	Exceptional FOB may be permitted where an at grade Pedestrian crossing is not possible due to severe physical site constraints. If provided, requirements 2 to 7 below (location and design criteria) must be met.
2	Location criteria, (once conditions in 1 have been met)		Should be located at Mid Block Locations aligned with: 1. Areas with pedestrian attractors with mid block entries like shopping areas, schools, key civic areas, residential areas,etc. 2. Land Use activities and neighbouring building entries and destinations etc 3. Mid block transit/Bus stop locations
3	Perceived ease of accessibility	Reaching the FOB	1. Pavements leading to the FOB must be encroachment free, accessible to all categories of road users. 2. Guided pedestrian movement to be implemented.
		Universal Accessibility	1. Should have a combination of either "Staircase + Ramp" or "Staircase + Elevator" for universal accessibility. 2. Tactile paving/tiles and a colour contrast should be provided at the top and bottom of the flight of steps and these areas should be well lit.
		Pedestrian movement adjacent to FOB access	An unobstructed pavement of min. 1.8M must be left clear of the staircase and ramps/elevators and all FOB related features and other obstructions.
		Pedestrian movement at grade	Fences, medians, railings or other barriers may be needed to prevent pedestrians from crossing at grade to ensure their safety
4	Engineering Feasibility		i) Min Width of FOB walkway: - FOB only for pedestrians: 2.50 -3.00M - For Pedestrians & cyclists: 3.50M ii) Min Width of staircase: 2.5M iii) Vertical clearance: - A height of 5.5M as per standard must be kept free above Roadways iv) FOB should span the entire carriageway such that one can cross safely. v) A slope of 8% (1 in 12) on footbridge ramps, while a slope of 5% (1 in 20) with appropriate resting places/ landings is preferable. vi) All public staircase, ramp/ elevator design standards to be followed. vii) Minimum size for Elevator is 1400 x 1400 MM viii) Cycle Elevators should be provided at every alternate FOB and should be 1400 x 2000 MM ix) Relocation of overhead services must be considered while designing the structure
5	Usability	All year round weather protection	FOB must provide partial shelter from the elements at least along one edge of the bridge. This is most relevant during extreme weather conditions.

		Lighting for safety and visibility	FOB must deliver a sense of security and safety even during evening/night. Adequate lighting must be provided at both access points and along the FOB. Lighting level on and around the FOB must be minimum 20 lux. Access to the FOB should also be well lit.
		Seating	Resting places and seating must be provided at minimum two locations along the bridge.
		Garbage Disposal	Garbage bins must be located adjacent to both access points.
		Way Finding/information maps	Signage indicating the location of an FOB must be provided as per standard. Where appropriate, particularly near pedestrian attractors, way-finding / information maps must be provided.
6	Quality and type of construction	Structural system	Easy and quick to erect and space efficient structural systems are recommended. Structures which can be dismantled in future and reassembled elsewhere are highly recommended.
		Quality	Robust and vandalism-proof materials and furniture/fixtures should be used

If an FOB is considered, it is mandatory to submit the following to UTTIPEC in addition to requirements of UTTIPEC Modified submission format for traffic and transport projects :

1. Base information:

- Proposal Base Map showing ROW including nearest intersection on either side. This will be the Study Area.
- Building footprints and all existing features and physical infrastructure (existing and proposed, if applicable) along ROW
- Landuse on either side of ROW highlighting key pedestrian attractors
- Location of all existing pedestrian crossings within Study Area
- Location of bus / BRT stops and Metro corridor and stops
- Current accident data from Traffic Police for Study Area with specific location of accidents.

2. Feasibility report of at grade pedestrian crossing (signalised or pelican) at the proposed location of the FOB , to include:

- Options for signal synchronisation to test feasibility
- Options for redesign of existing junctions, if applicable