

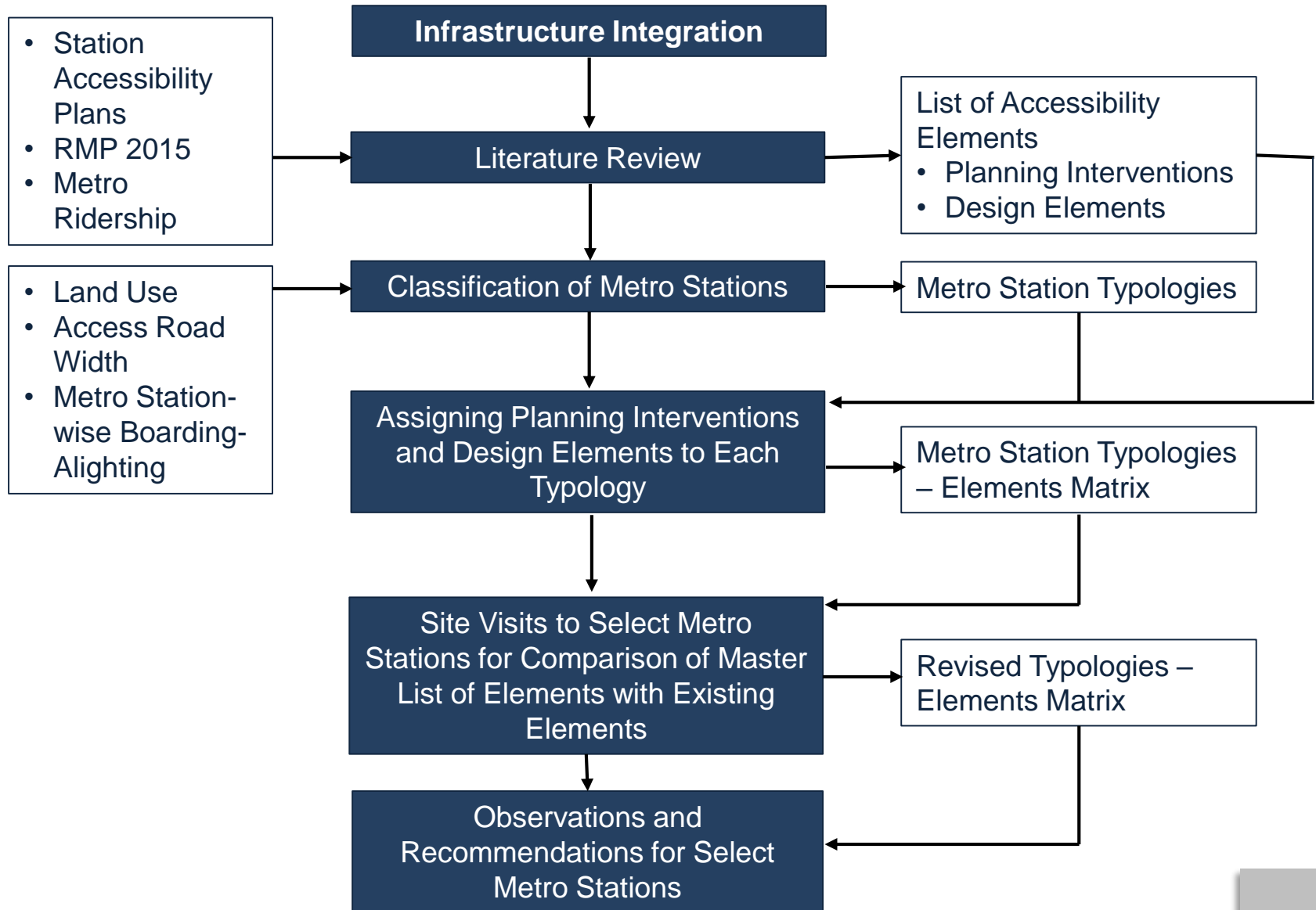


# Infrastructure Integration

# Objectives

- To develop a Metro station typology-elements matrix
- To assess accessibility measures at select Metro stations.

# Methodology



# MS Typologies: Elements Matrix

Metro Station Typology	Type	Required Infrastructure Elements
1	Transport Hubs	<ul style="list-style-type: none"> <li>• Bus bays, footpaths, pedestrian crossings (interchange connections)</li> <li>• IPT bays/stops, pre-paid IPT counters</li> <li>• Way-finding</li> <li>• Pick-up, drop-off</li> </ul>
2	High Residential, 30-80m road, HB (High Boarding)	<ul style="list-style-type: none"> <li>• Bus bays/stops</li> <li>• IPT bays/stops</li> <li>• Private vehicle parking</li> <li>• Footpaths</li> </ul>
3	Non-Residential 30-50m road, HB	<ul style="list-style-type: none"> <li>• IPT bays/stops, pre-paid IPT counter</li> <li>• Bus bays/stops</li> <li>• Footpaths</li> <li>• Way-finding</li> </ul>

# MS Typologies: Elements Matrix

Metro Station Typology	Type	Required Infrastructure Elements
4	Residential 12-30m road, HB	<ul style="list-style-type: none"> <li>• IPT bays/stops</li> <li>• PV parking</li> <li>• Footpaths</li> </ul>
5A	Residential, 30-80m road, LB (Low Boarding)	<ul style="list-style-type: none"> <li>• Footpaths, pedestrian crossing</li> <li>• Bus bays/stops</li> <li>• IPT bays/stops</li> <li>• Commercial activity space</li> </ul>
5B	Mixed land use, 30-80m road, LB (Low Boarding)	<ul style="list-style-type: none"> <li>• Bus bays/stops</li> <li>• IPT bays/stops</li> <li>• Footpaths, pedestrian crossing</li> <li>• Way-finding</li> </ul>
6	Residential/Mixed, 12-30m road, LB	<ul style="list-style-type: none"> <li>• IPT bays/stops</li> <li>• Footpaths</li> <li>• PV parking (two wheeler)</li> </ul>

# Select Metro Stations for Analysis

Station Name	Type
Yeshwanthpur	Type 1
Banashankari	Type 2
Sandal Soap Factory	Type 3
South End Circle	Type 4
S. V. Road	Type 5
K. R. Market	Type 6

# Yeshwanthpur MS: Typology 1

## Study Area for Yeshwanthpur Metro Station



Key plan showing access points at Yeshwanthpur Metro Station

# Elements Comparison

Required Elements	Existing Scenario					
	A	B	C	D	E & F	G
<b>Access Points</b>						
Users	General	Special	General	Special	Railway Commuters	General
Footpaths	Yes	Yes	Yes	Yes	Yes	Yes
Pedestrian crossings, interchange connections	No	No	No	No	NA	No
IPT bays/stops	Partially	No	No	No	NA	Partially
Way-finding	Partially	No	Yes	No	No	Yes
Pick-up, drop-off	No	No	No	No	NA	Partially



# Feasible Bus Bay/Stop Locations



- Access points with feasible bus bay locations nearby

Access points at Yeshwanthpur Metro Station



Service road at access points A and C



Bay at access point G

# Findings and Recommendations

## Findings

- Existing infrastructure elements at Metro stations
- Physical integration issues with respect to multimodal infrastructure

## Recommendations

- Adoption of the Metro Station Typology – Elements Matrix for future station design
- Dedicated transfer facilities for buses and IPT at Metro stations.