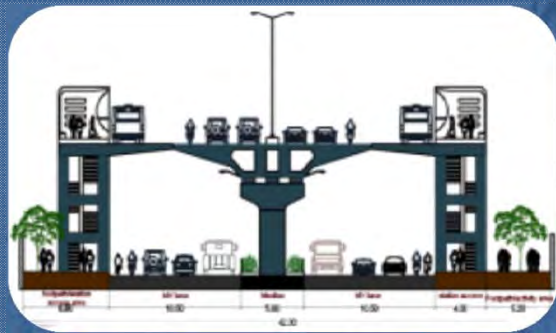


Bus Rapid Transit System (BRTS) Amritsar, Punjab

Asia BRT Conference, 30th September 2014



An initiative of
Punjab Bus Metro Society (PBMS) &
Municipal Corporation Amritsar



Introduction-Amritsar

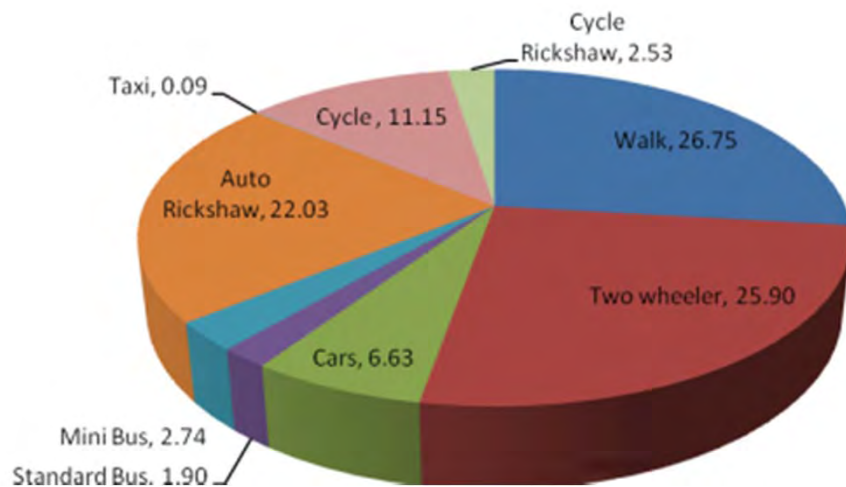
- Culturally rich city
- Home to Shri Harmandir Saheb (Golden Temple)
- Other tourist attraction – Wagah Border, Durgiana Temple
- Daily tourist inflow – 1 Lakh Approx
- Population as per 2011 Census - 11.84 lakhs
- Estimated population by 2031 - 20 lakhs
- Area of MC Amritsar - 142.3 Sq. Km.
- Institutional hub of Punjab



Bus Rapid Transit System, Amritsar, Punjab

Need for Public Transport

- Existing PT – Auto & Cycle Rickshaws, Taxis & City Buses
- Auto rickshaws – 18000 Approx
- Modal Share of Auto Rickshaws – 22%
- Unregulated IPT Modes
- Educational trips – 43%



Average Trip Length (ATL)

5.71 km

Trips for Work Purpose

46%

Trips for Education Purpose

43%



Bus Rapid Transit System, Amritsar, Punjab

Why BRTS ?

Amritsar aspired Metro

Unfavorable Demand
High Costs
Long Construction Time

Other Option - BRTS

Establishment of PBMS

**Stakeholder
Consultation**

**BRTS
Workshop**

**National and
International
site visits**

**Review of Best
Practices**



BRTS Selected



Bus Rapid Transit System, Amritsar, Punjab

Orienting towards BRTS

Istanbul,
Turkey
visit by
DCM and
PBMS
officials



BRTS
Workshop
by PBMS
and MoUD
at
Amritsar

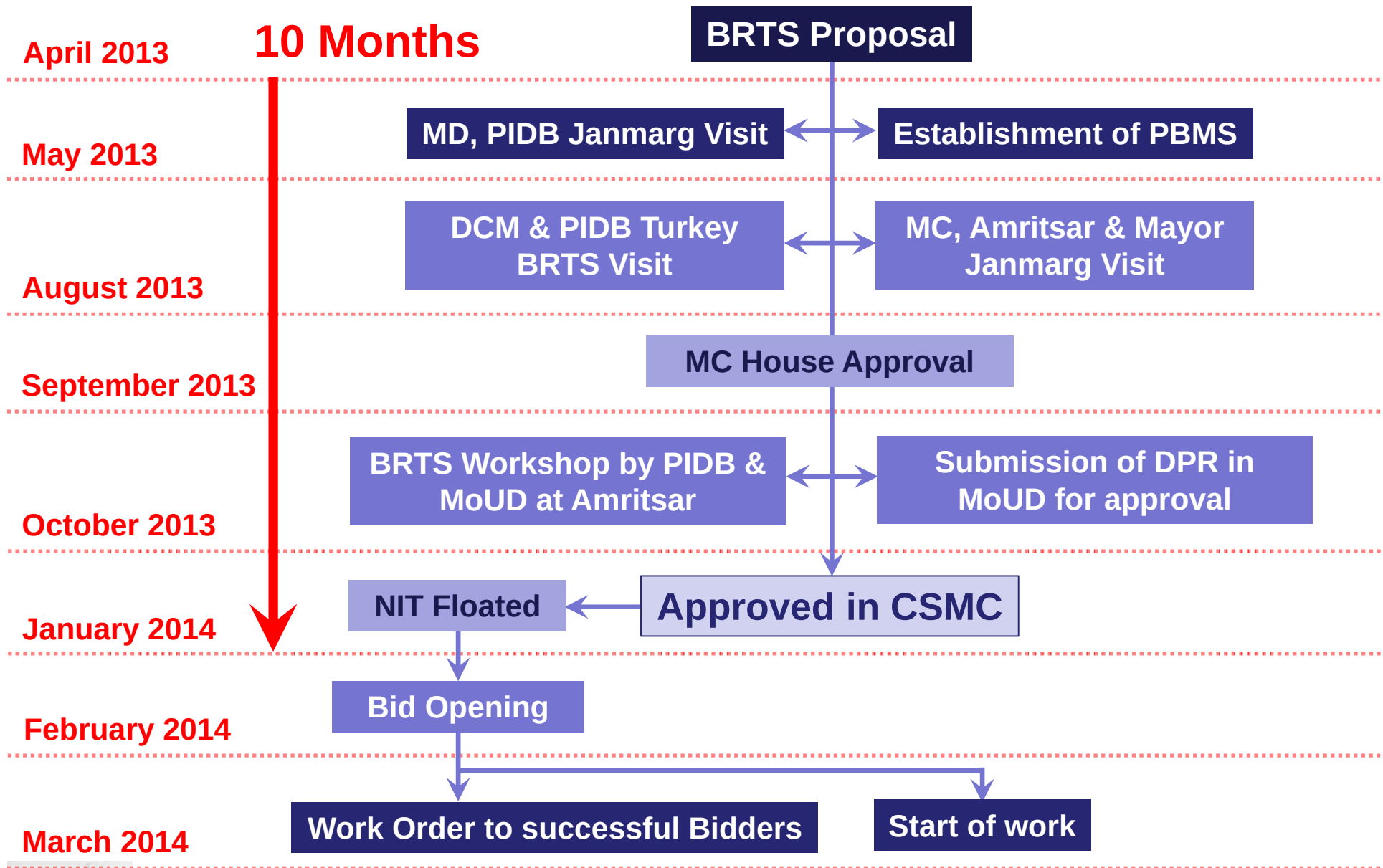


Janmarg
BRTS
visit by
MC
Amritsar
Officials



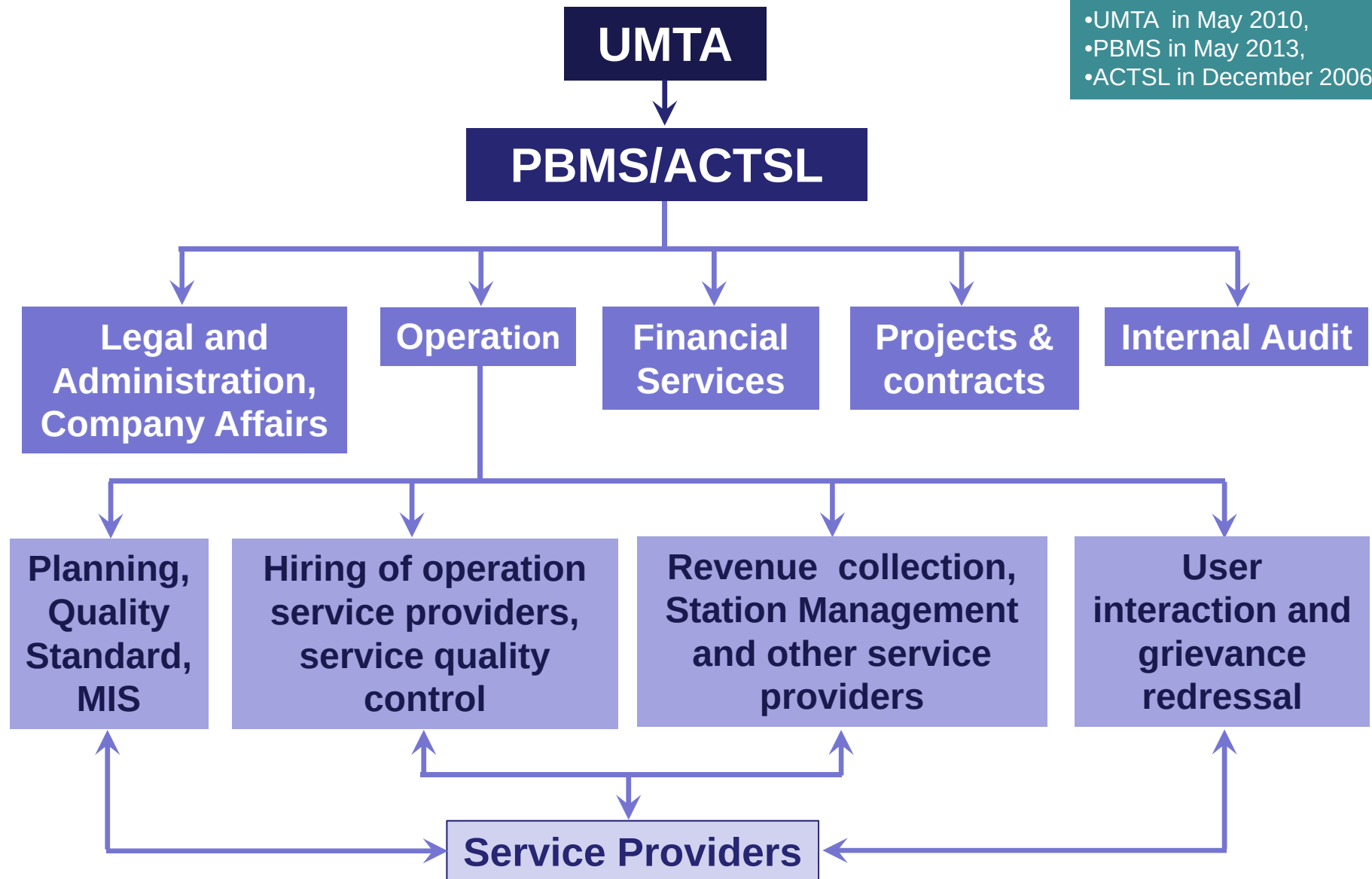
Bus Rapid Transit System, Amritsar, Punjab

Milestones



Institutional set up

- UMTA in May 2010,
- PBMS in May 2013,
- ACTSL in December 2006



Project Partners

- 1) Ministry of Urban Development, GoI – Partial Funding
- 2) Punjab Bus Metro Society (PBMS) – Project Development , Planning, Partial Funding, Execution and Operations
- 3) Municipal Corporation – Consultation and Resolution of Local Issues
- 4) Public Works Department (PWD) – Project Execution
- 5) Urban Mass Transit Company- Project Consultant

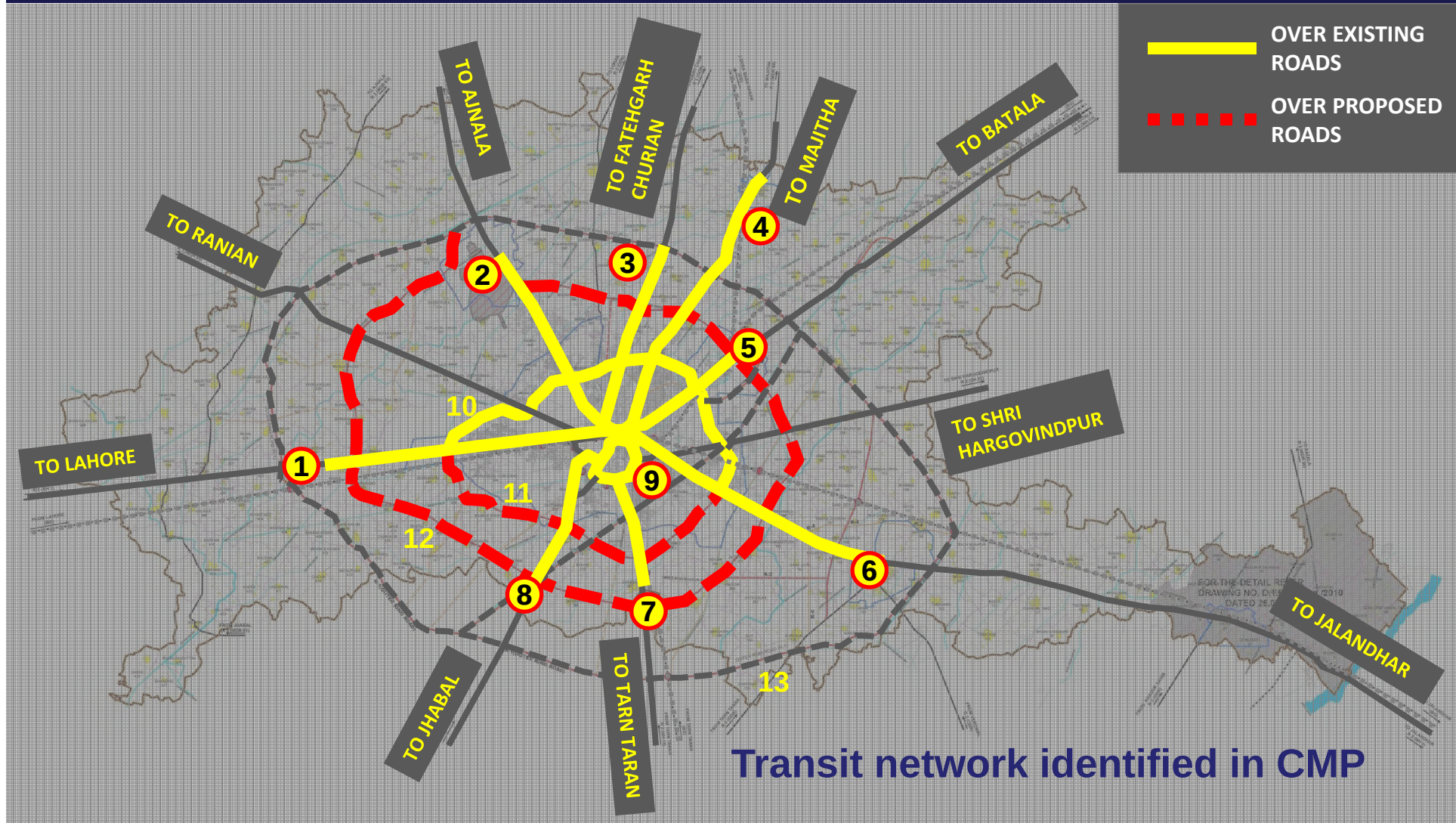


Punjab Bus Metro Society (PBMS)

- PBMS was registered on May, 2013 under Society Registration Act, XXI of 1860
- Headed by Chief Secretary, the primary objective of PBMS is to promote public transport in the urban areas of Punjab
- Major functions include project development, policy formulation, implementation mechanism, funding etc.
- PBMS was formed at the conceptual stage of BRTS in various cities of Punjab
- Establishment of PBMS at such a early stage help in smooth sailing of Amritsar BRTS project



All identified BRT Corridors



Proposed Transit Corridors were considered for Prioritization and immediate implementation



Bus Rapid Transit System, Amritsar, Punjab

Ridership Sustainability



Connectivity

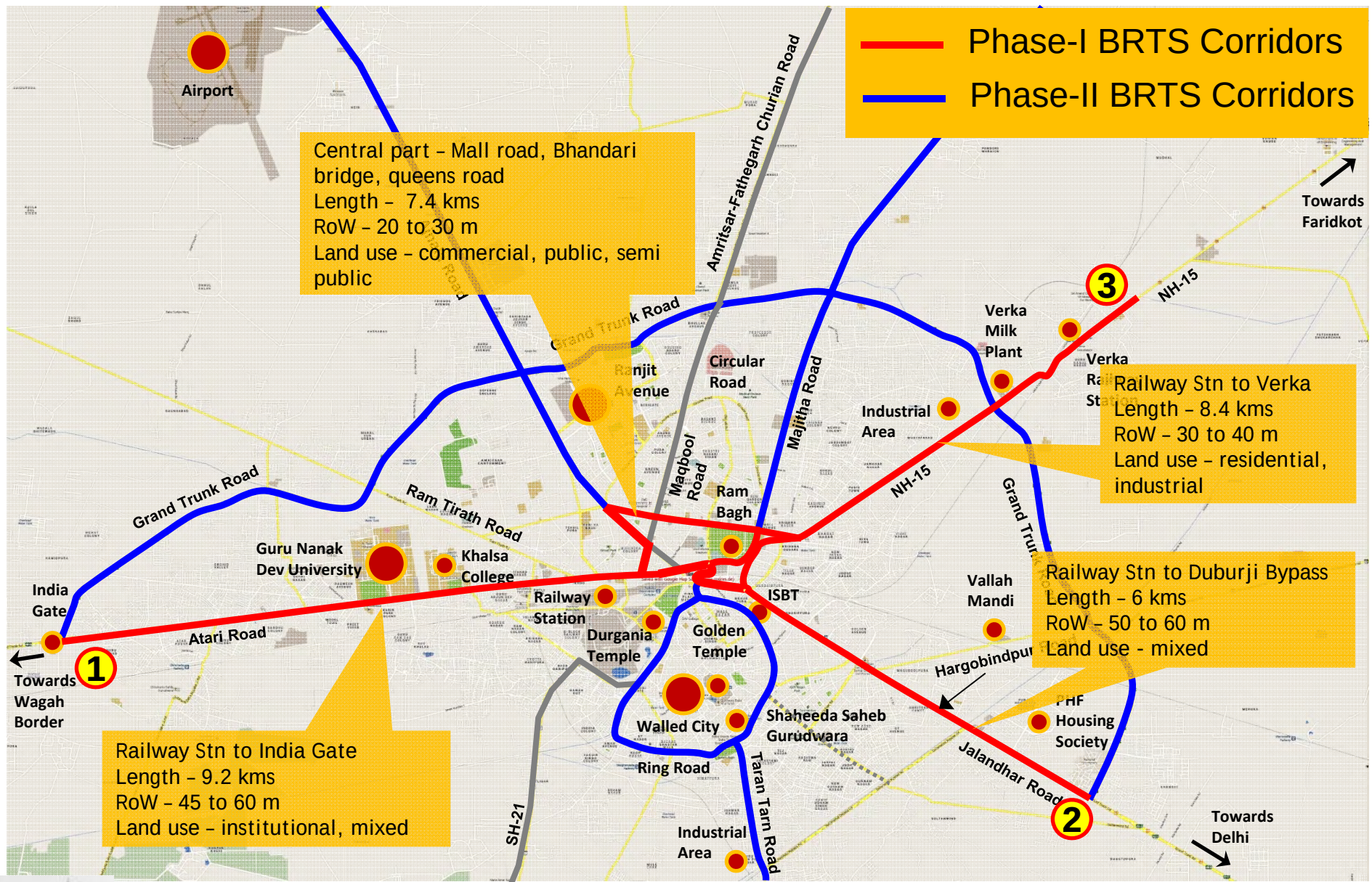


Comparative Analysis for BRTS Corridors Prioritization

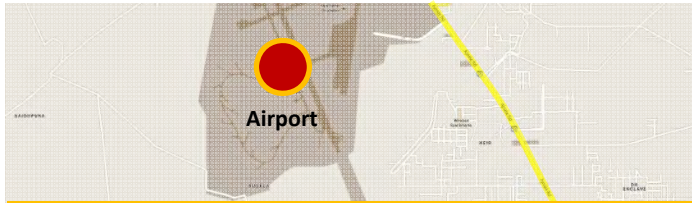
Corridor	Ridership 1 - Unsuitable 2 - Adequate 3 - Ideal	Overlap with Roads connecting activity nodes 1- Low 2 - Moderate 3 - High	Overlap with IPT routes 1- Low 2- Moderate 3 - High	Ease of Implementation 1 - Unsuitable 2 - Adequate 3 - Ideal	Overall Rating
Old GT Road - Lahori Mal to ISBT	3	3	3	3	12
Ajnala Road - ISBT to Airport	2	3	2	1	8
Fatehgarh Churian Road - ISBT to Middle Ring Road X-ing	1	3	2	1	7
Majitha Road - ISBT to Majitha	1	3	3	1	8
Verka Road -ISBT to Verka	2	3	3	2	10
Old GT Road - ISBT to Jandiala	3	3	3	3	12
Tarn Taran Road - ISBT to Mandiala	2	3	3	1	9
Lahori Gate to Middle Ring Road X-ing along Khemkaran Road	1	1	1	1	4
Walled City Circular Road	1	3	3	1	8
Inner Ring Road - India Gate to MCA Gate	1	3	1	2	7



Identified priority BRT corridors



Issues and Challenges



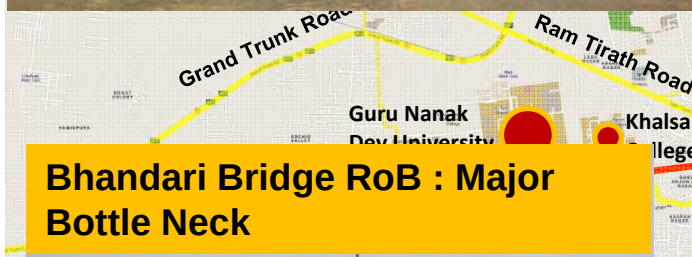
Ram Bagh : ASI Site



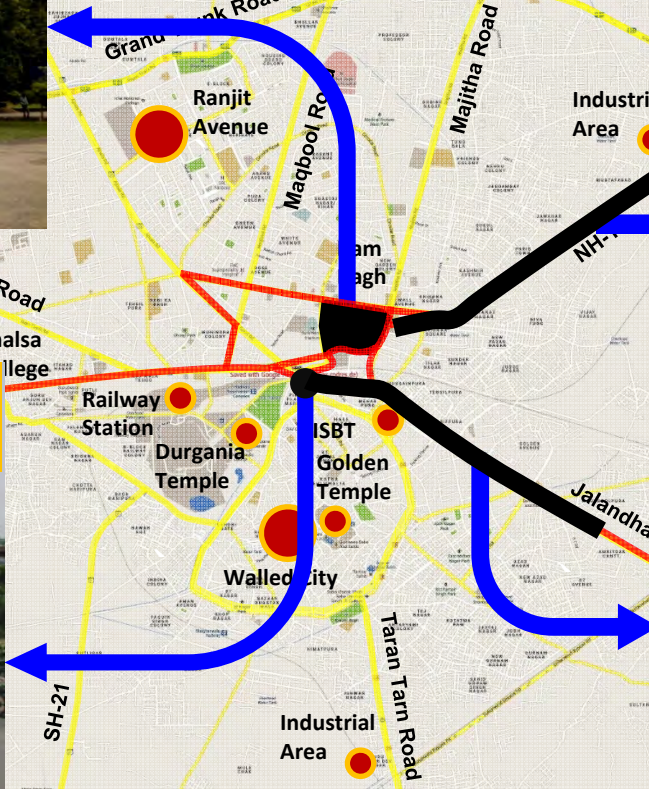
Verka Railway Crossing



HT Line



Bhandari Bridge RoB : Major Bottle Neck



Existing Elevated Road



Decongestion of Bhandari Bridge – New RoB



Bus Rapid Transit System, Amritsar, Punjab

New RoB at Verka Crossing

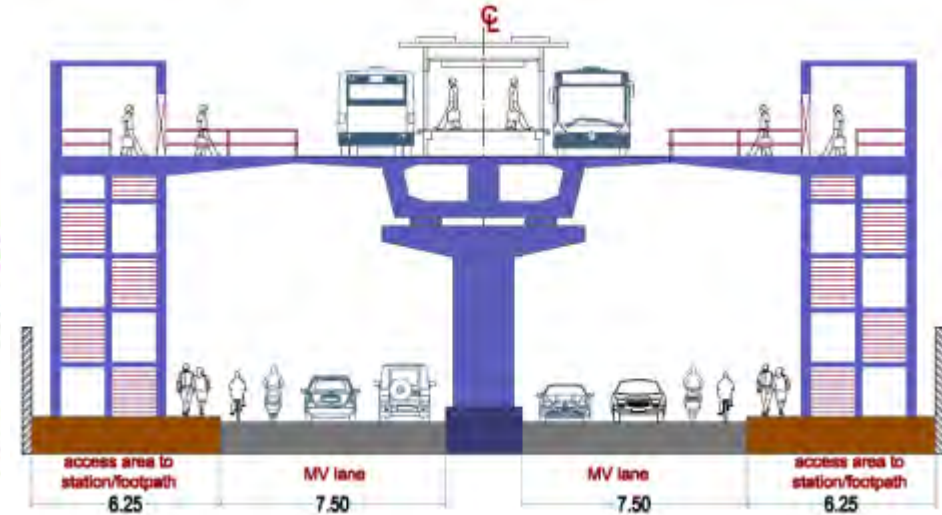
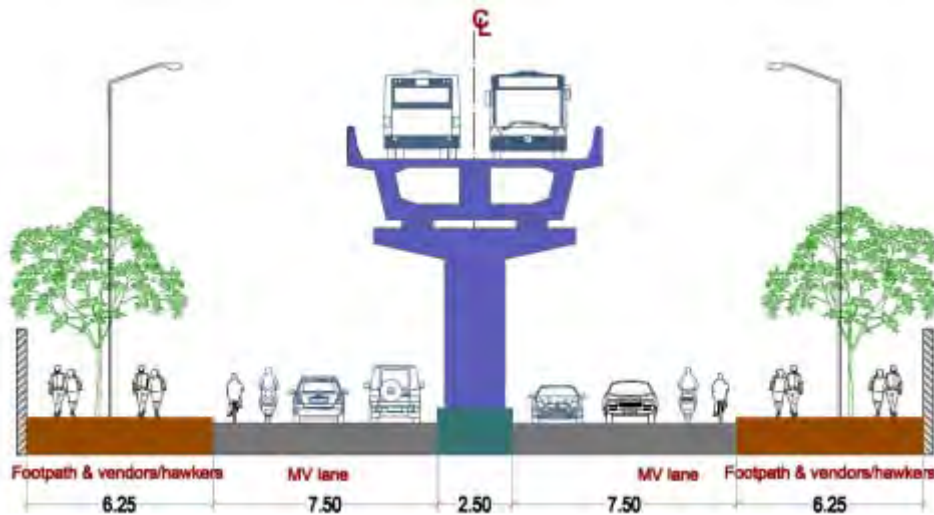
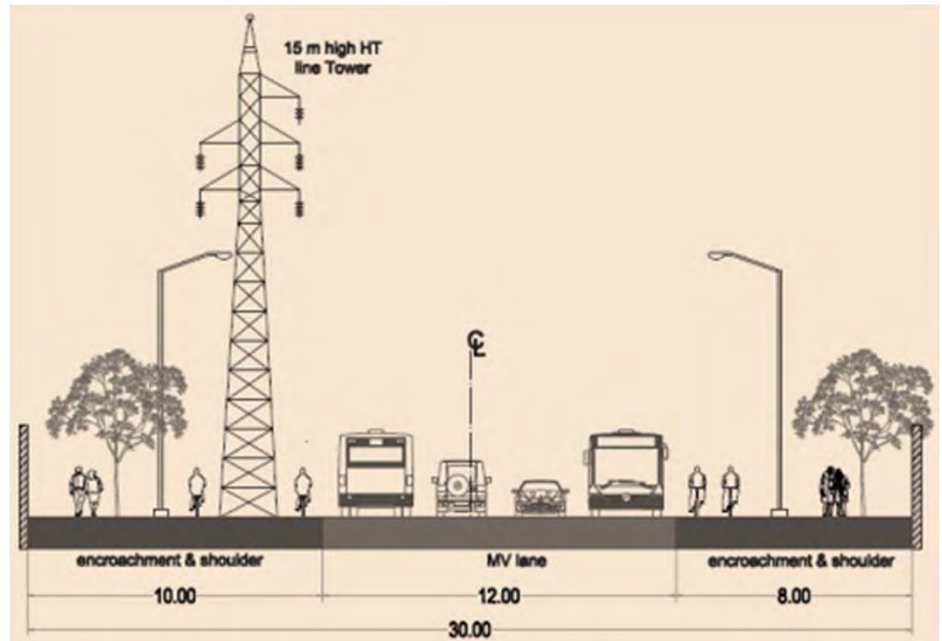
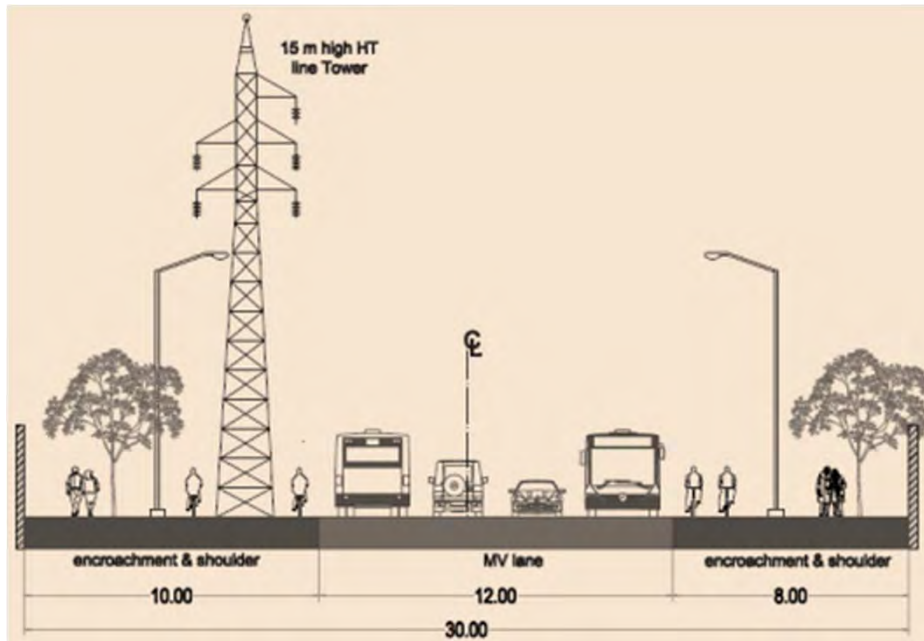


Retrofitted BRTS Stations along Existing Elevated Road



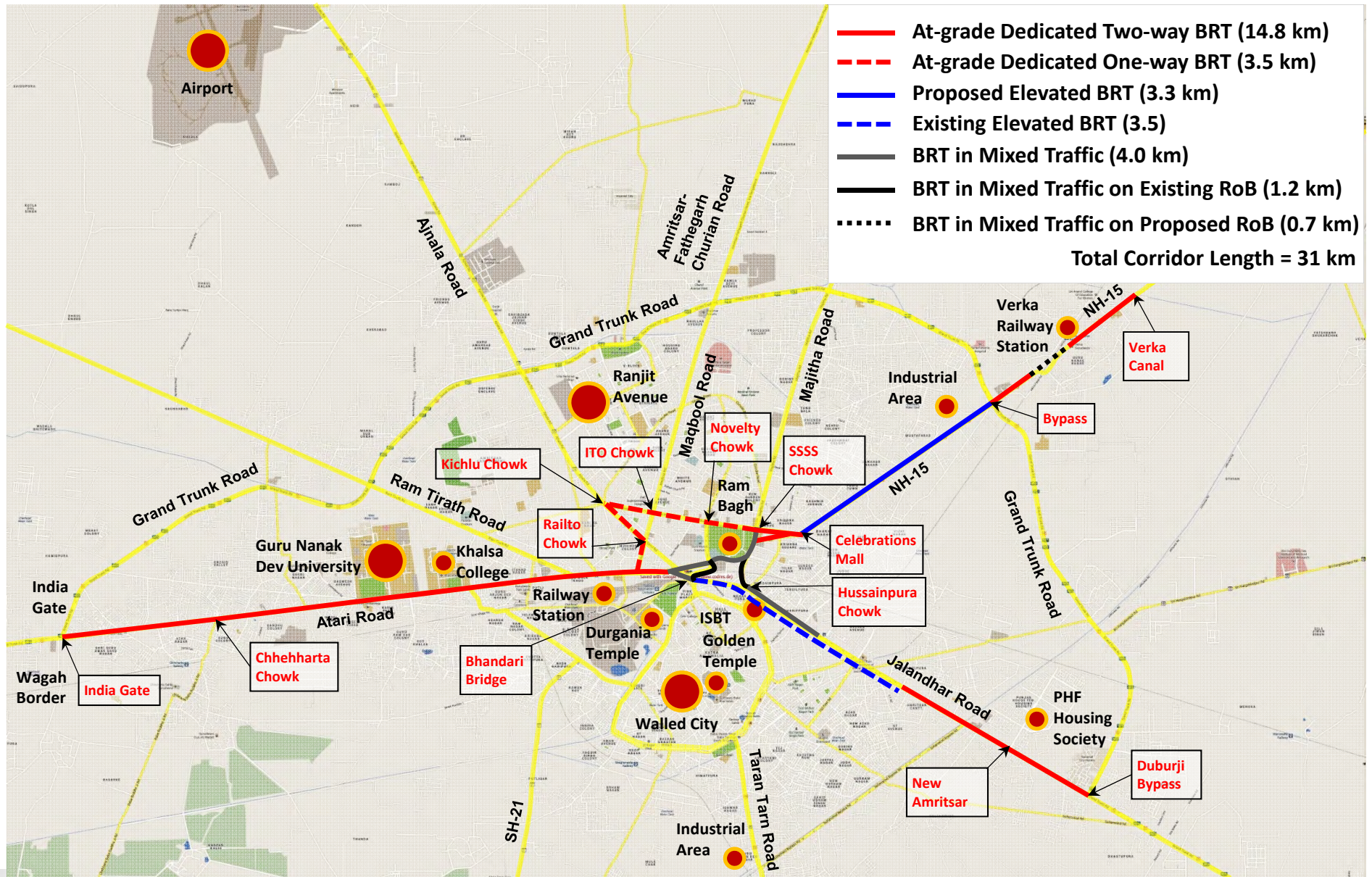
Bus Rapid Transit System, Amritsar, Punjab

New Dedicated BRTS Elevated Road

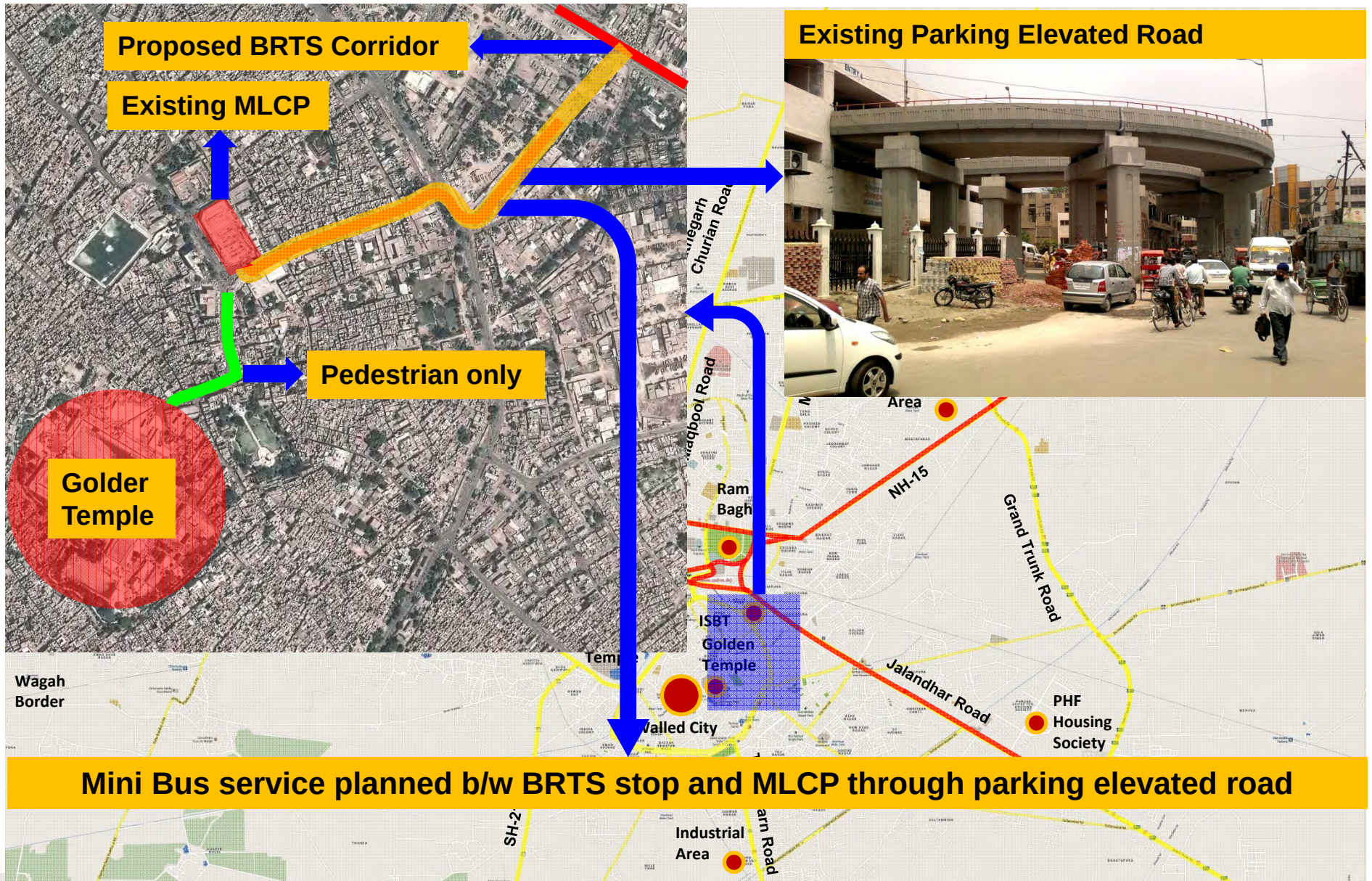


Bus Rapid Transit System, Amritsar, Punjab

Proposed BRTS Arrangement



Connectivity with Golden Temple



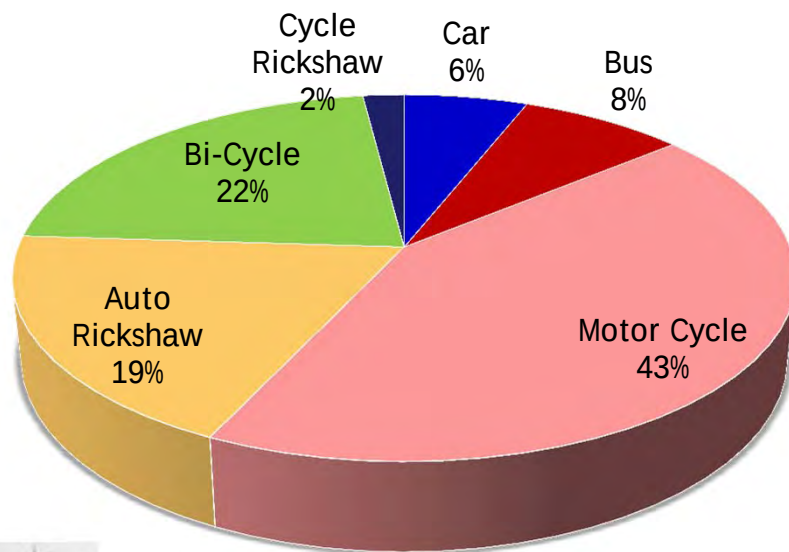
Proposed BRTS Station Design



Bus Rapid Transit System, Amritsar, Punjab

Next: Ludhiana BRTS

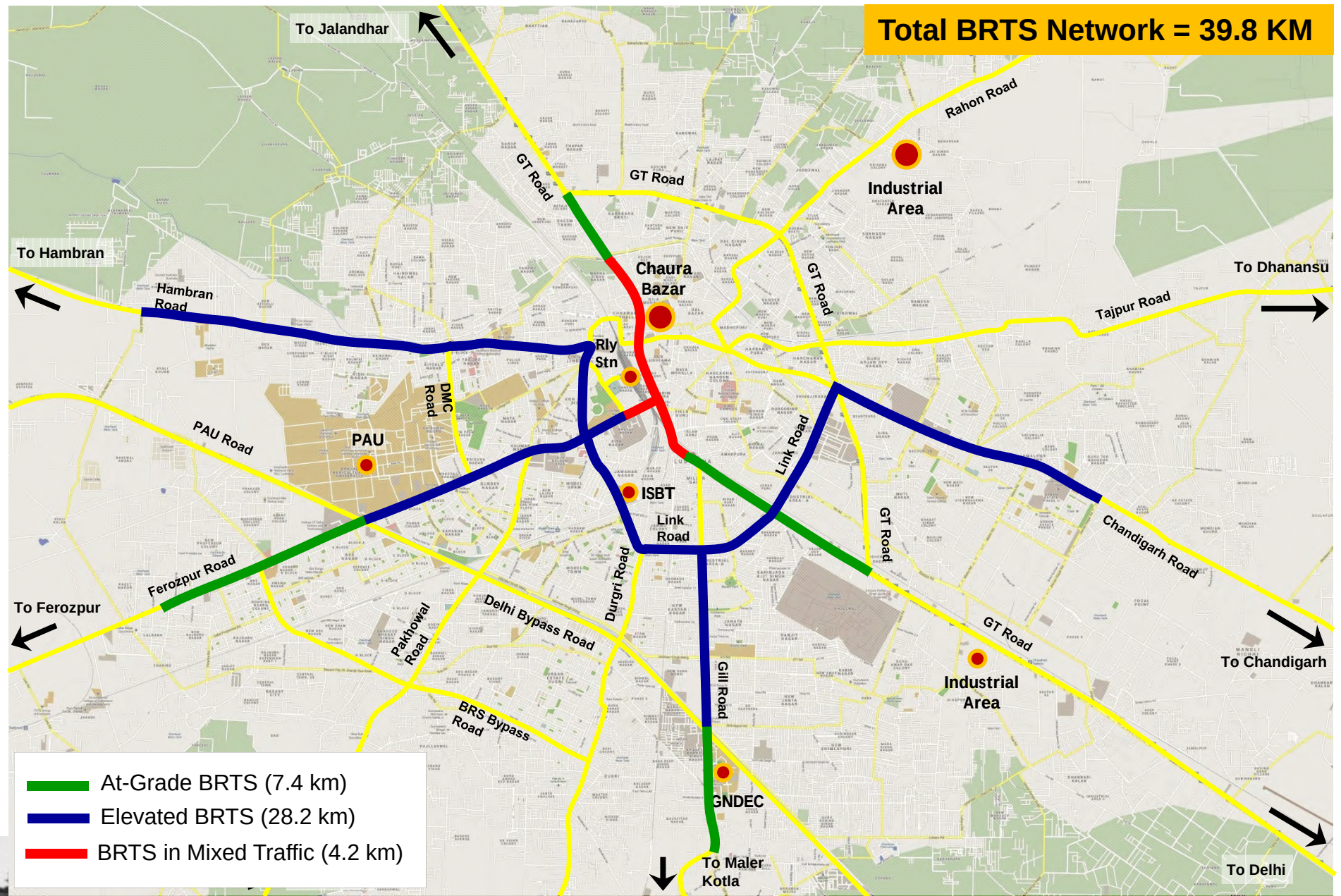
- Largest City of Punjab
- Population as per 2011 Census - 16.14 lakhs
- Area of MC Ludhiana - 159 Sq. Km.
- Industrial hub of Punjab
- Existing PT – Auto & Cycle Rickshaws, Taxies & City Buses
- Unregulated IPT



Bus Rapid Transit System, Amritsar, Punjab



Ludhiana BRTS - Alignment



Bus Rapid Transit System, Amritsar, Punjab

Thank You



Punjab Bus Metro Society (PBMS)
&
Municipal Corporation of Amritsar



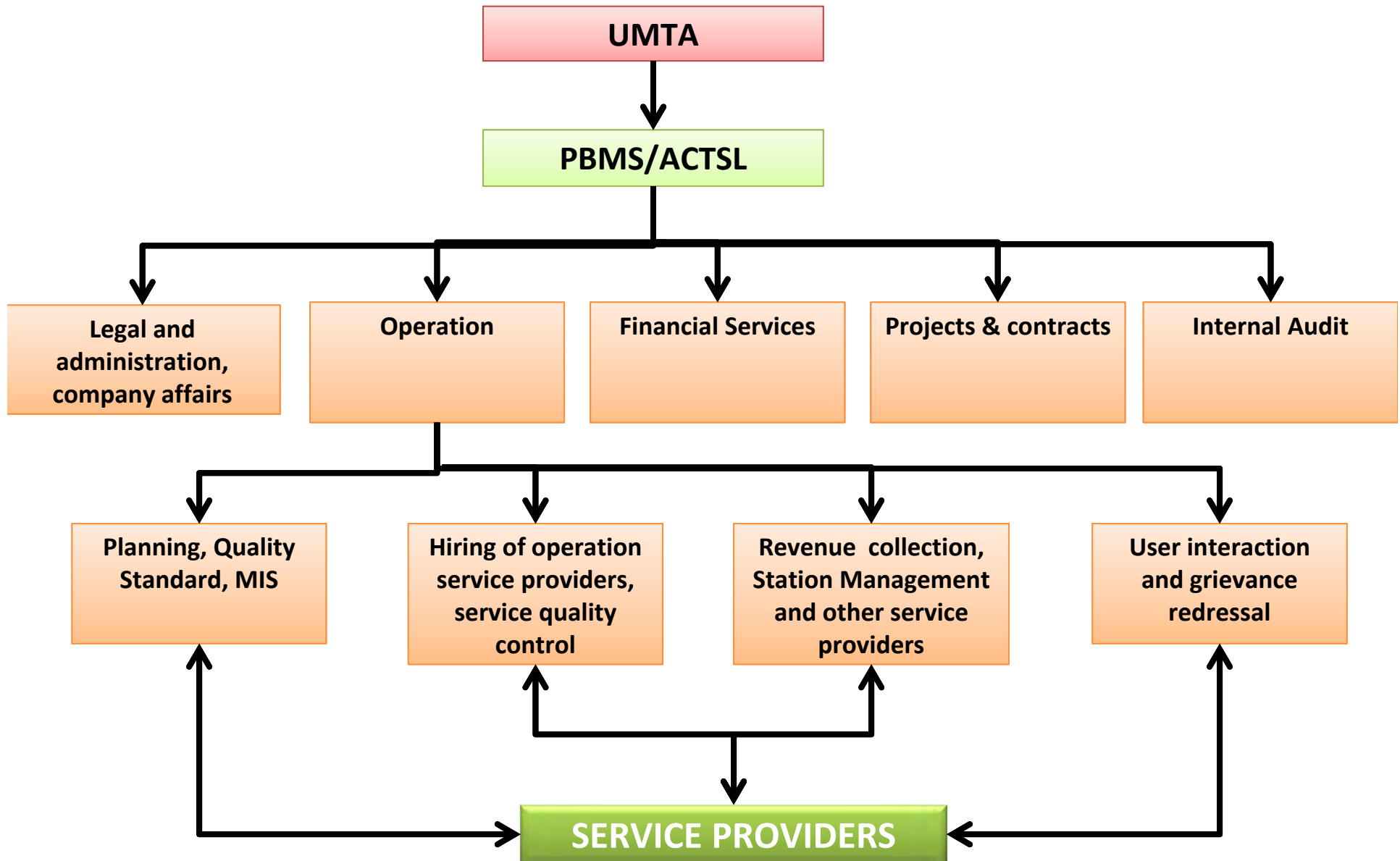
Milestones

SN	Milestones	Achieved
1	Proposal for DPR & PMC of BRTS in Amritsar and Ludhiana	April, 2013
2	MD, PIDB visit to Janmarg BRTS, Ahmedabad	May, 2013
3	Establishment of Punjab Bus Metro Society (PBMS)	May, 2013
4	Istanbul, Turkey BRTS visit by DCM & PIDB officials	August, 2013
5	MC, Amritsar & Mayor visit to Janmarg BRTS, Ahmedabad	August, 2013
6	MoA b/w PBMS and UMTC for DPR & PMC of BRTS in various cities of Punjab	September, 2013
7	Workshop on BRTS by PIDB and MoUD at Amritsar	October, 2013
8	Submission of Amritsar BRTS DPR in MoUD for Approval	October, 2013
9	Amritsar BRTS DPR Approval in CSMC	January, 2014
10	Notice Inviting Tender (NIT)	January, 2014
11	Bid Opening	February, 2014
12	Work Order to successful Bidders	March, 2014
13	Start of work	March, 2014

Concept to Approval in 10 Months



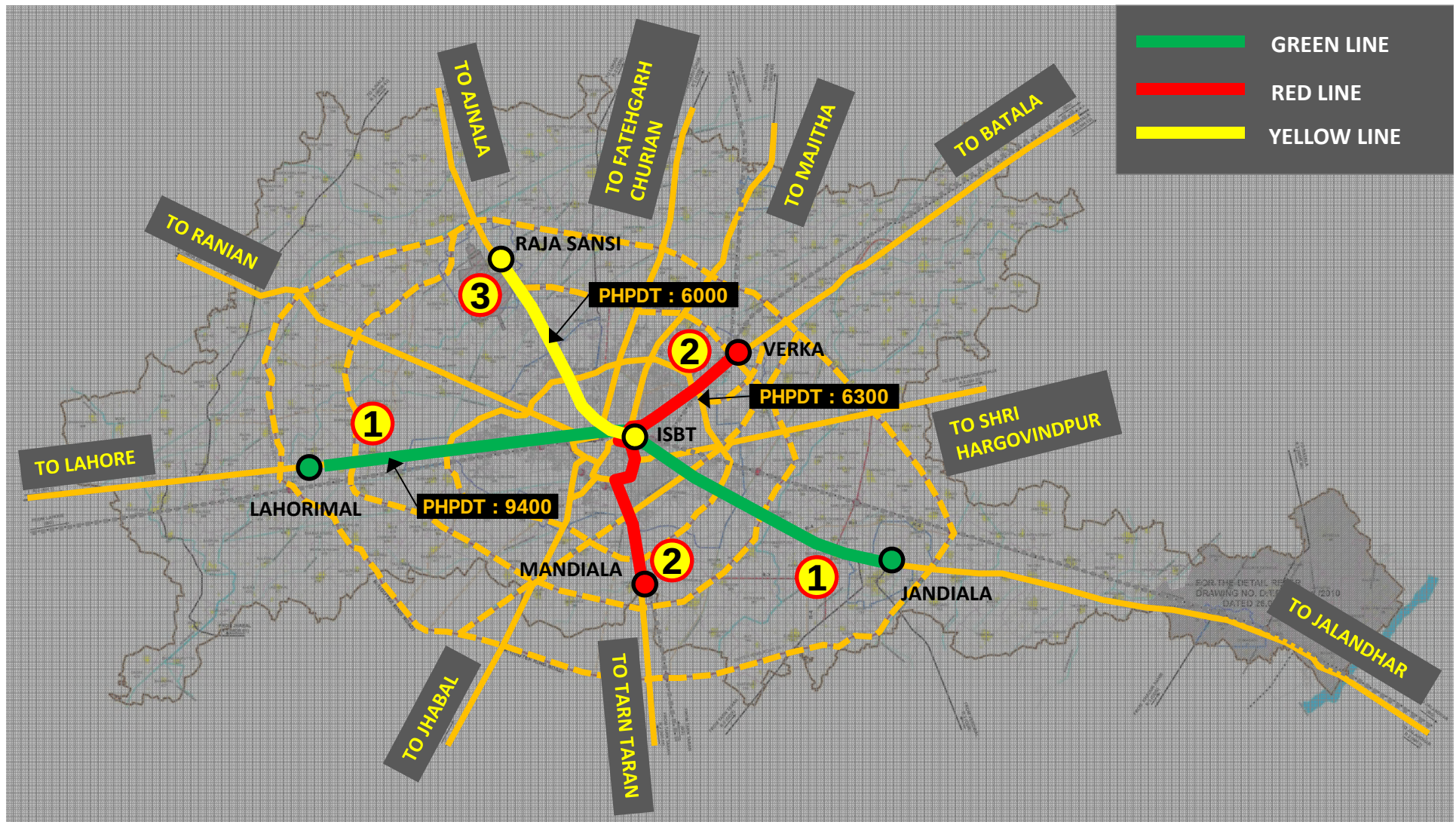
Proposed Institutional set up



*UMTA in May 2010, PBMS in May 2013, ACTSL in December 2006

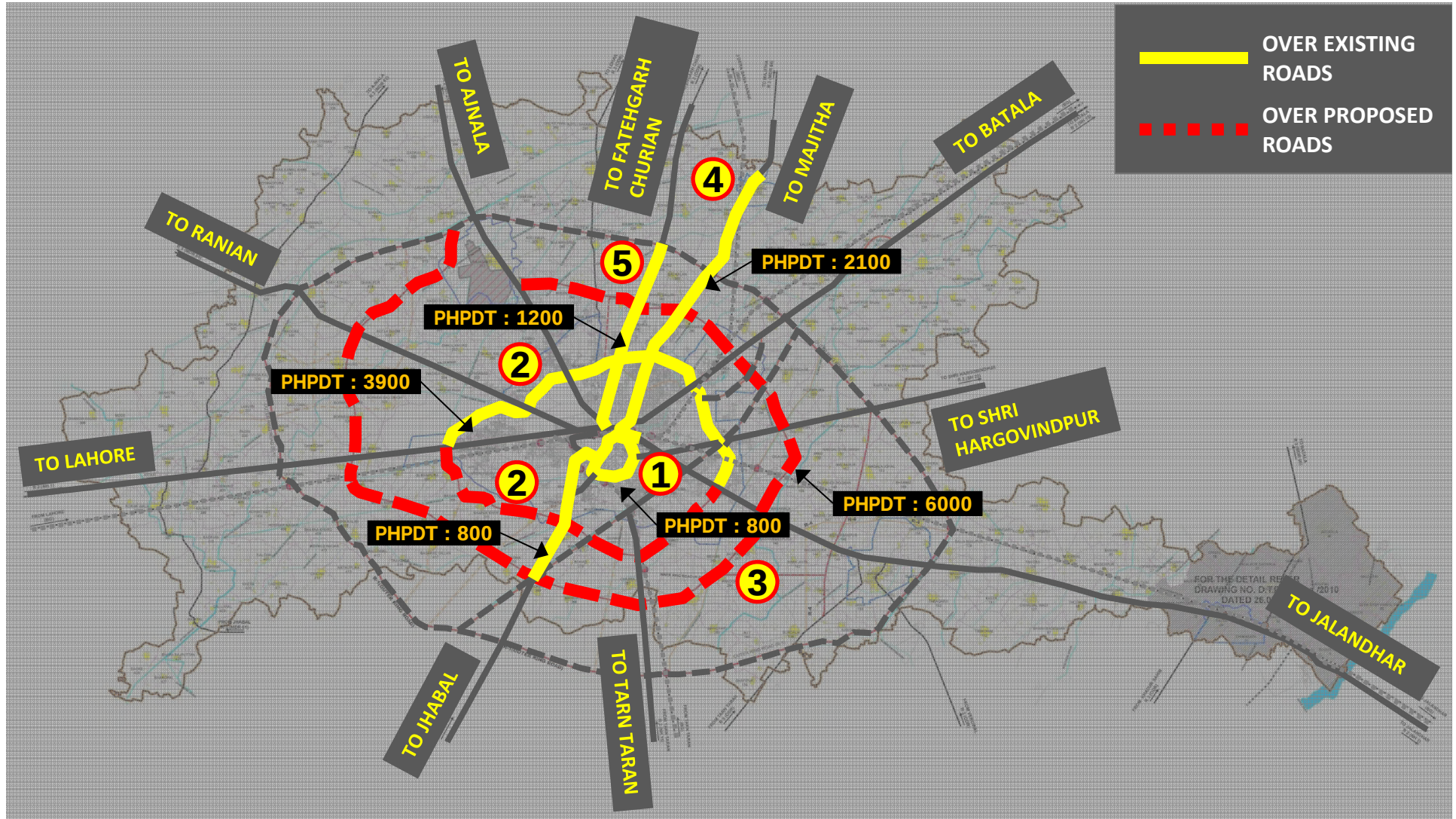
Bus Rapid Transit System, Amritsar, Punjab

Proposed LRT Corridors and PHPDT (2031) as per CMP



Bus Rapid Transit System, Amritsar, Punjab

Proposed BRT Corridors and PHPDT (2031) as per CMP



Bus Rapid Transit System, Amritsar, Punjab

Corridor Constraints and Considerations

Constraints

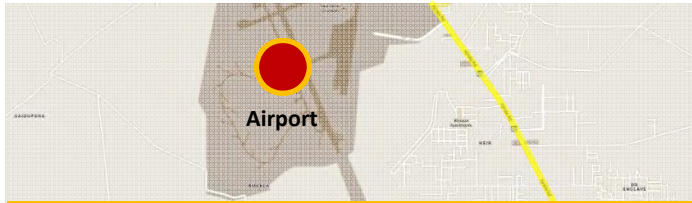
- 1) Bhandari Bridge being single major Rail Over Bridge is the biggest constraint in corridor planning;
- 2) Elevated road along Chandigarh Road;
- 3) High tension line along and across Verka Road (also along Chandigarh Road) reduces effective RoW; and
- 4) Ram Bagh being an ASI conserved site restricts any type of construction within 100m from the site boundary.
- 5) Railway Crossing before Verka Railway Station

Considerations

- 1) Existing elevated road is considered for BRT operations by providing curb side BRT stops through retro fitting flanged structures;
- 2) Integration with proposed PRT stations to extend connectivity to walled city area
- 3) Road adjacent to Ram Bagh is considered for BRT operations



Issues and Challenges



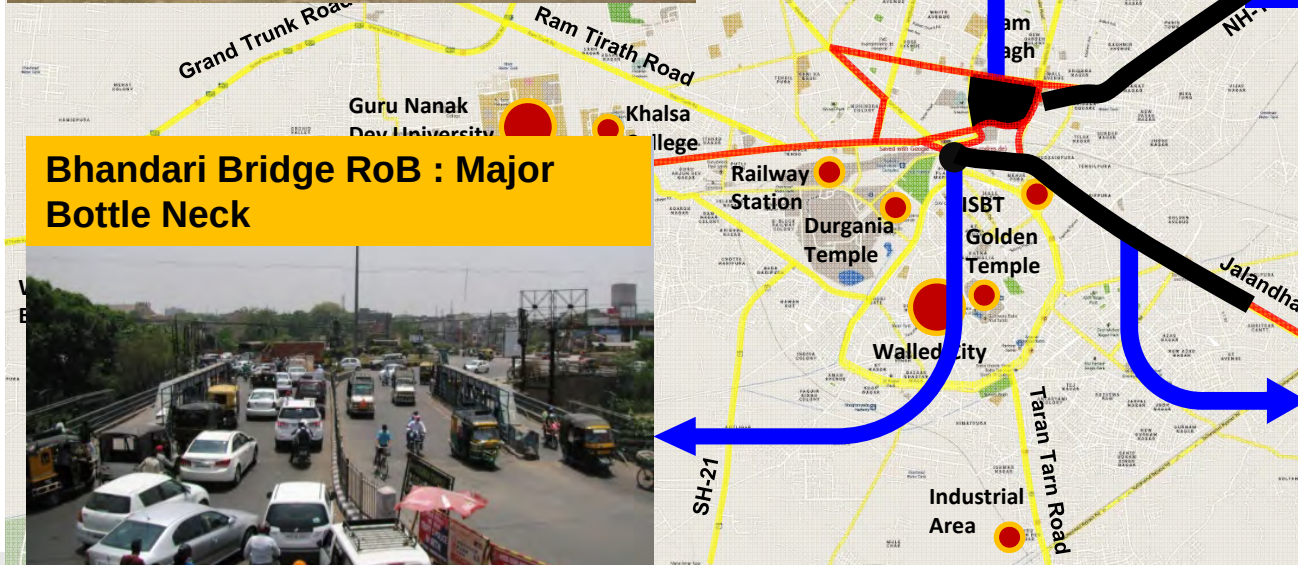
Ram Bagh : ASI Site



Verka Railway Crossing



HT Line



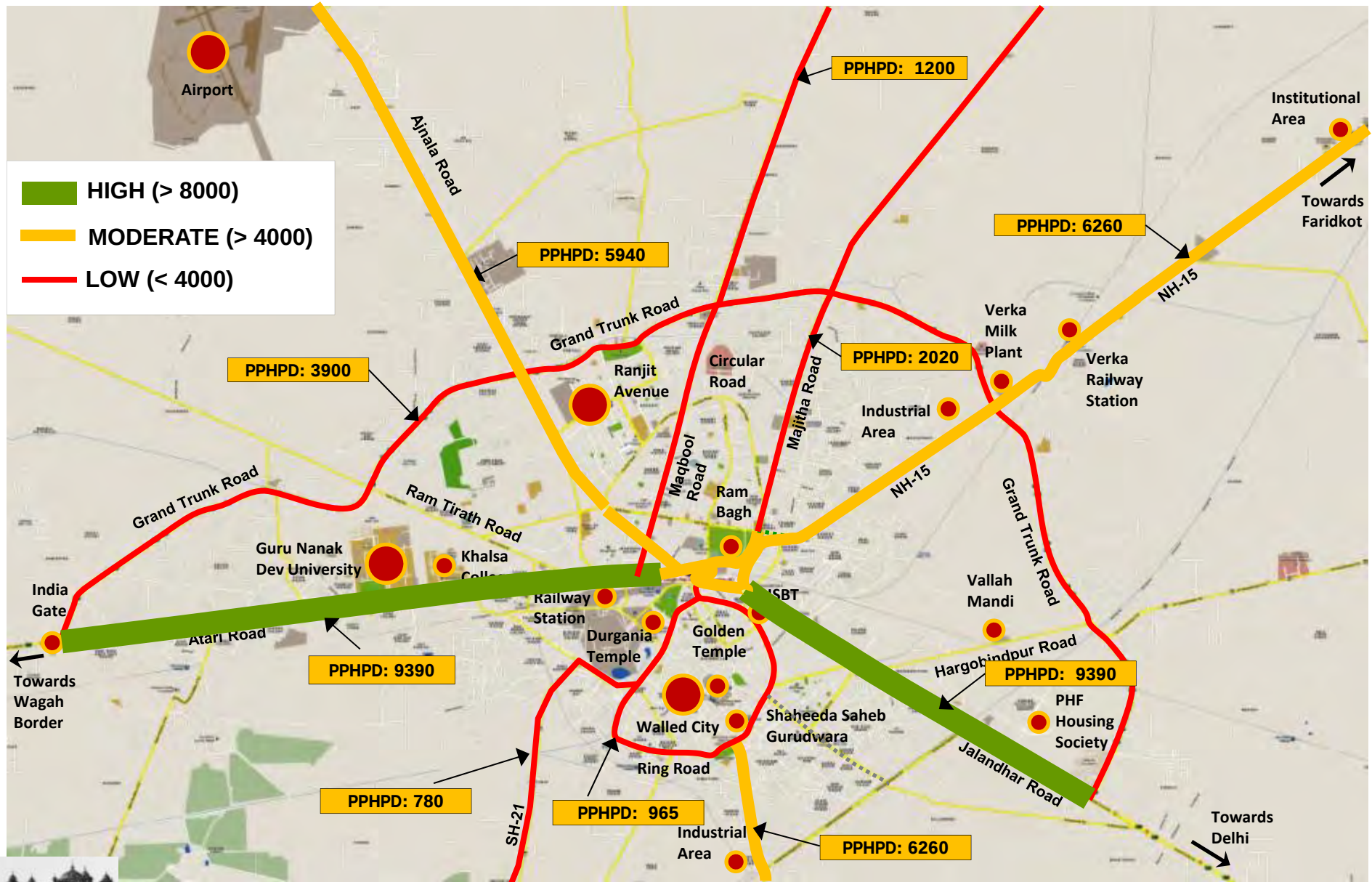
Bhandari Bridge RoB : Major Bottle Neck



Existing Elevated Road

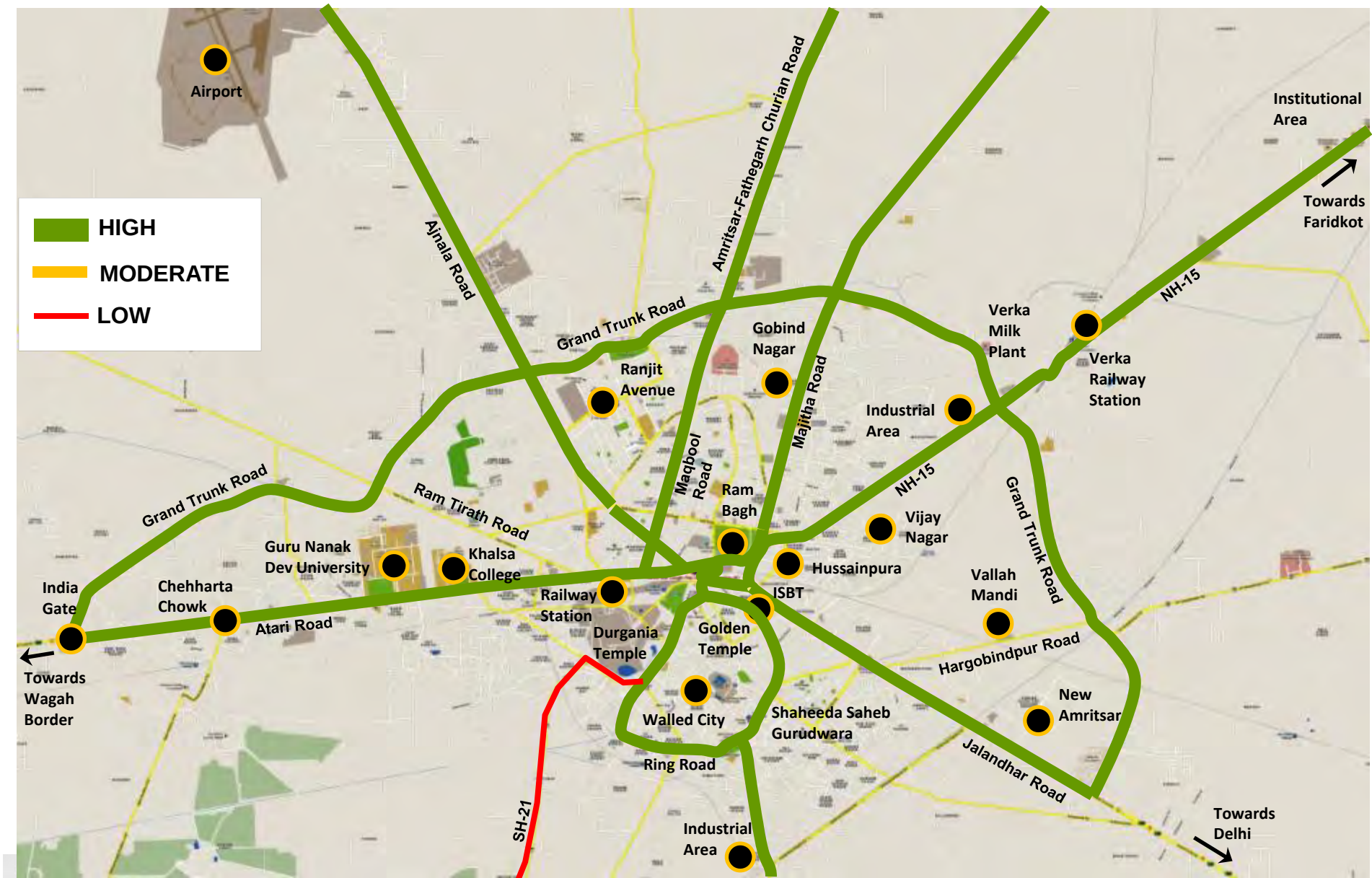


Criteria – 1: Ridership (2031)



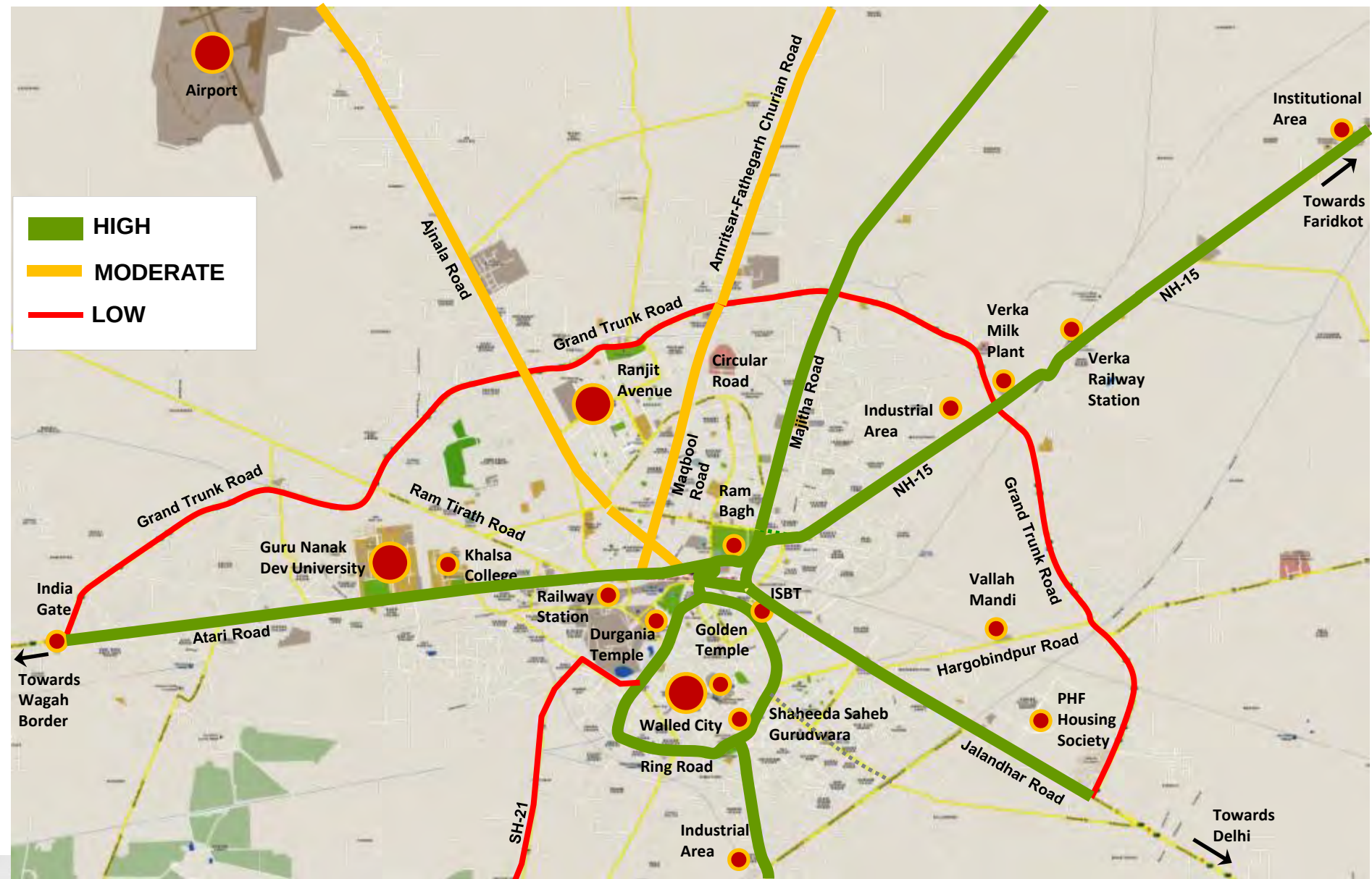
Bus Rapid Transit System, Amritsar, Punjab

Criteria – 2: Connectivity to Major Activity Centers



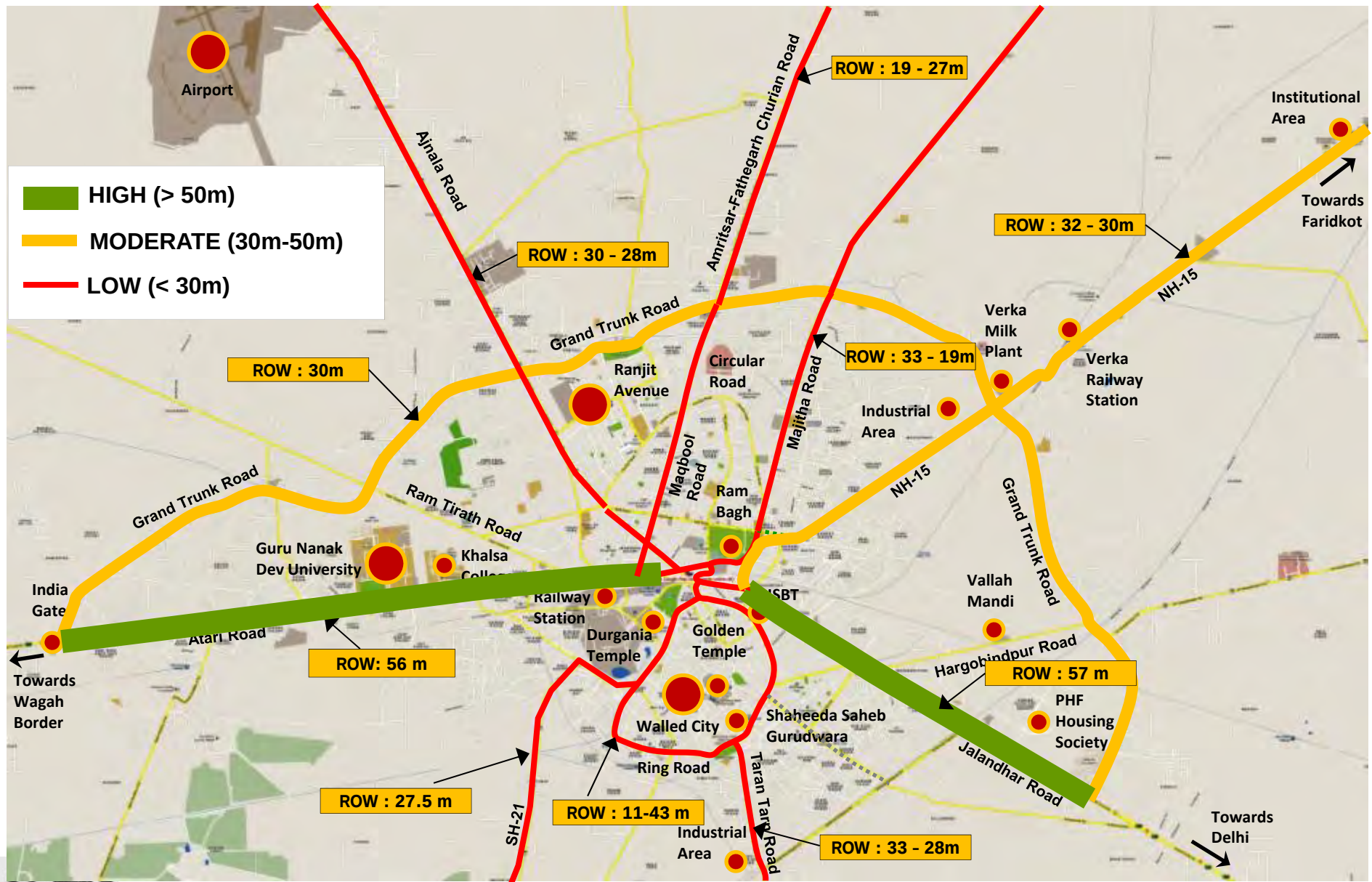
Bus Rapid Transit System, Amritsar, Punjab

Criteria – 3: Overlap with existing IPT Routes



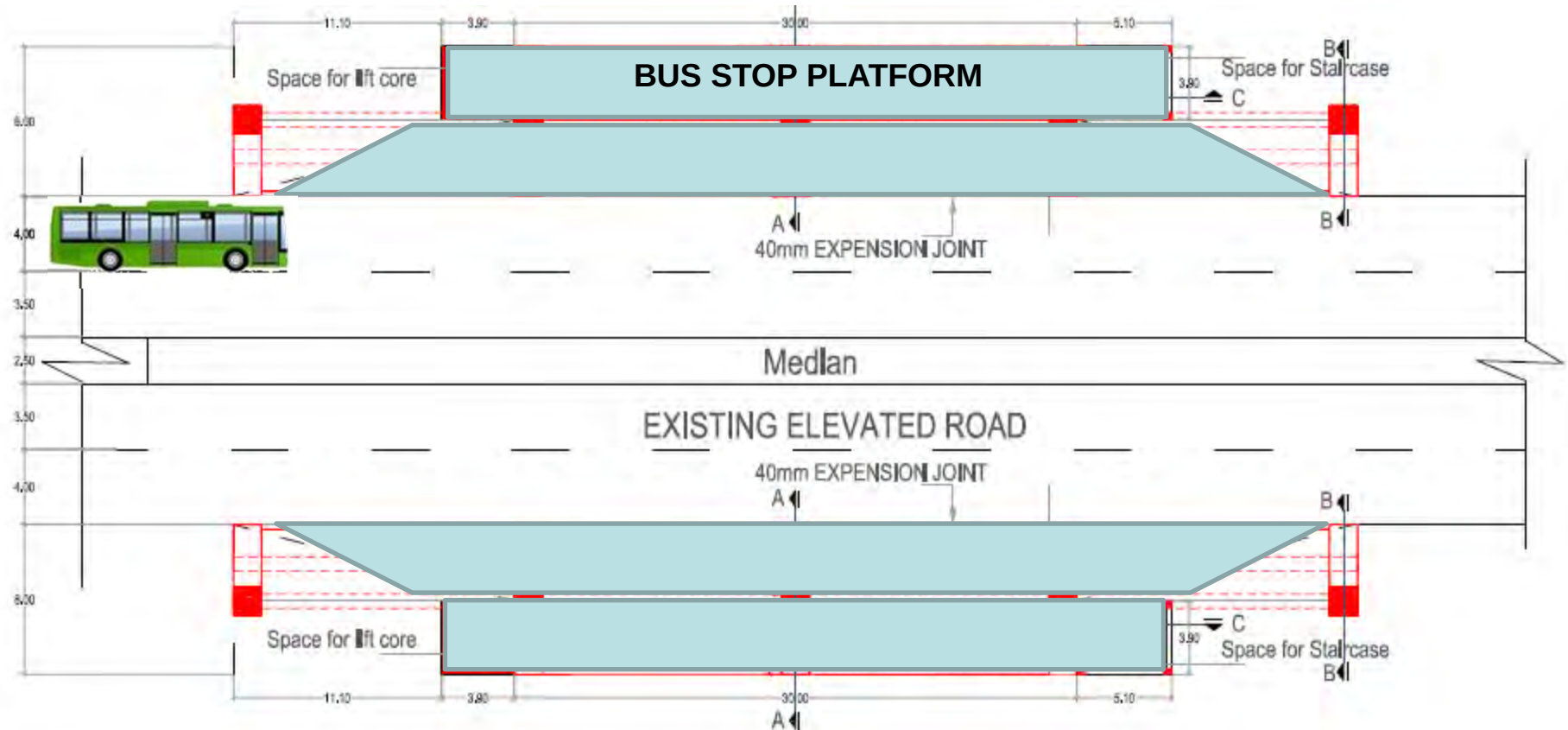
Bus Rapid Transit System, Amritsar, Punjab

Criteria – 4: Ease of Implementation



Bus Rapid Transit System, Amritsar, Punjab

Retrofitted BRTS Stations along Existing Elevated Road



Plan/layout – Retrofitted BRT Station on existing elevated road



Service Level Benchmarks (SLB)

Sr. No.	Indicator	Existing LoS	LoS After BRTS
1	Public Transport Facilities	4	1
2	Pedestrian Infrastructure Facilities	2	2
3	NMT Facilities	4	2
4	ITS Facilities	4	2
5	Travel Speed	3	2
6	Road Safety	3	2
7	Pollution Levels	1	1
8	Integrated Land use Transportation	3	2

