

**Bangalore Metro Rail Corporation Ltd.**

(A Joint Venture of Govt. of India &amp; Govt. of Karnataka)

3rd Floor, BMTCL Complex, K.H. Road  
Shanthinagar, Bengaluru - 560 027, INDIA  
Phone : 080-2296 9202, 2296 9203, Fax : 080-2296 9204  
E-mail : md@bmrc.co.in Web : www.bmrc.co.in

No. BMRCL/Phase 2/CGM (P&amp;D)/C-23649/2020/1248

Date: 3<sup>rd</sup> June, 2020

Additional Chief Secretary,  
Urban Development Department,  
Government of Karnataka,  
Vikasa Soudha,  
Bangalore 560 001.

Sir,

**Sub: Implications for Bangalore Metro as per the current scope and priority for implementation of Suburban Rail Project.**

**Ref: Letter no. KRIDE/Projects/37/ls/2020 dated 27.05.2020 of Managing Director, KRIDE**

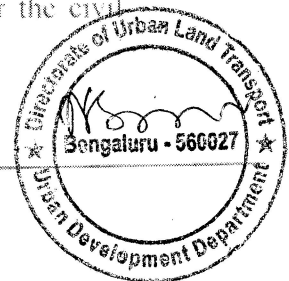
As per the Feasibility study for Bangalore Suburban Rail Project prepared by M/s RITES, the following 4 corridors covering a length of 148.17 KM are proposed.

Corridor 1	KSR Bengaluru - Yelahanka – Devanahalli/Airport	41.10 km
Corridor 2	Baiyyapanahalli - Mattikere – ChikkaBanavara	25.01 km
Corridor 3	Kengeri - KSR Bengaluru - Whitefield	35.52 km
Corridor 4	Heelalige - Yelahanka - Rajanukunte	46.24 km

The Suburban Rail project as per the present proposal has the following implications for Bangalore Metro Rail project adversely impacting viability and sustainability of the metro project.

**1. Suburban Rail and Metro competing with each other:**

- i. **Corridor-3 (Kengeri - KSR Bengaluru - Whitefield)** runs almost parallel to the East-West Metro line of which, 18 km is already in operation and 22 km is in advanced stage of construction and planned to be commissioned in 2021. The current utilization of the operational 18 km Metro line is about 40% of the capacity of 50000 PHPDT (Peak Hour Peak Direction Traffic). The proposed suburban Corridor-3 will adversely affect the ridership of the Metro line. The Corridor-3 of the suburban rail is expected to have PHPDT of 8961 only in the year 2031 as per its feasibility report, when the almost parallel Metro line will have significant spare capacity.
- ii. **Corridor 1 & 1A (KSR Bengaluru - Yalahanka - Devanahalli (Corridor 1) and Airport terminal connectivity (Corridor 1A))** of Suburban will also be competing with already approved Airport Metro line and under-planning ORR West line. The State Government has already approved the Airport Metro line at total cost of Rs. 9617 Crore. The acquisition of private lands has been completed mostly and utility removal works are in progress. The funding of the senior debt from multilateral and bilateral development agencies is in advanced stage of approval. The tenders for the civil



works are planned to be invited within June 2020. The metro airport line is expected to serve large parts of ORR having large IT parks and residential complexes, and is part of the overall ORR-Metro network announced by the government.

Two rail based transport systems to Airport coming up at almost the same time will share the ridership and are likely to become unviable even for the final capacity of the airport at about 90 million passengers per annum.

Both the systems are planned to have alignment parallel to each other for about 5 km after the trumpet junction. The proposed alignment of the suburban rail conflicts with the metro alignment approved by BIAL authorities for which detailed design has been carried out and tenders are about to be called.

A key plan showing the Suburban corridors along with the existing, under construction and future corridors of Bangalore Metro is attached as **Annexure-1**.

## 2. Priority for Suburban corridors

It is suggested that the suburban rail system should be implemented in following order of priority so that the suburban system complements the operational, under-construction and planned Metro lines, instead of the two public transport systems competing with each other and becoming unviable.

Proposed Priority	Year	Suburban Corridor	Route Description
1	2020	Corridor-2	Baiyyapanahalli - Mattikere - ChikkaBanavara
2	2024	Corridor-4	Heelalige - Yelahanka - Rajanukunte
3	2028	Corridor-1	KSR Bengaluru - Yalahanka – Devanahalli only
4	After 2031	Corridor-3	Kengeri - KSR Bengaluru - Whitefield

It is also suggested that implementation of Corridor-1 as priority 3 should be limited to KSR Bengaluru - Yalahanka – Devanahalli section only and that corridor should not be extended to the airport by way of a branch line 1A from Trumpet junction as that extension will severely cut into ridership of the Metro line. A multi-modal transfer station can be established near the trumpet junction for passengers to reach the airport by using bus service for last mile connectivity. Further, once ORR-West Metro line is established, even the western parts of the city will get much better connectivity to the airport through metro network.

## 3. Conflict of Suburban corridors with Metro lines:

### i. Conflict between Suburban corridor 1 and ORR-West Metro line at Lottgollahalli:

ORR West Metro line, as an extension of ORR East Metro with seamless integration to Airport Metro corridor near Hebbal, has been proposed by the state government in PPP mode for which updating of the DPR prepared already BMRTL is under way.



The proposed Suburban corridor-1 is indicated to cross the Outer Ring Road (ORR) at Level 2 with reference to the ORR RUB level. The ORR at this location is at (-)1 Level as Road under Bridge (RUB) and if Suburban Corridor is constructed at Level 2, ORR West Metro will actually have to be constructed at Level 3, requiring the Pier height of upto 26m with connected construction difficulties and cost implications. The sketches showing the Metro and Suburban proposals are attached as **Annexure-2A & 2B**.

To avoid the above conflict, BMRCL suggests that one of the following modifications in Suburban Corridor-1 may be adopted:

- a. The Suburban corridor-1 should run at grade alongside the existing SWR track. This will permit Metro to continue at Level 2 with reference to the ORR RUB level. This option will also permit effective integration of the suburban system with the existing Lottegollahalli Railway station.
- b. The Suburban corridor-1 should be established at Level 3 with reference to ORR RUB level. However, that level effectively will be level 2 only for the suburban system as the railway lines cross over the ORR at elevated ground level 1 on the sides. This will permit Metro line to be established at Level 2 with reference to the ORR RUB level.

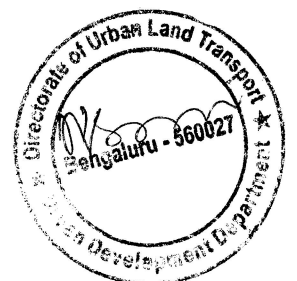
ii. **Conflict between Suburban corridor 1A and ORR-Airport Metro line at Entry point of BIAL (near Trumpet):**

From Suburban corridor-1, one additional line is proposed to take off from Trumpet to Airport Terminal. BMRCL's assessment is that building two rail based public transport systems for providing connectivity to the airport will not be appropriate use of limited public resources leading to both systems continuing to be unviable even at full expansion capacity of the airport and requiring recurring financial support from the government. However, if the government still decides to support establishment of both systems, the alignment conflict, as detailed below, should be resolved.

The at-grade Suburban line 1A is planned to cross the Airport Metro line running at Level 1 near BIAL boundary. However, the Suburban line will infringe with the Metro Piers and will obstruct the entry road leading to the proposed Metro depot in this area. The sketches showing the Metro alignment and proposed Suburban corridor in this area is attached as **Annexure-3A, 3B & 3C**.

To avoid the above conflict, BMRCL suggests one of the following modifications in Suburban corridor-1A:

- a. Soon after Trumpet, the suburban line should go as underground. This line anyway is planned to be underground a little later up to Airport Terminal and if the underground section starts about 500 meter earlier, it will avoid blocking the Depot entry road. However, the underground section should be deep enough to be below the metro pile structures.



- b. The Suburban Rail alignment should branch off prior to Metro Depot towards right and join back the Airport alignment as shown in **Annexure-4**. This will avoid conflict with the Metro structures.

#### 4. Funding of senior debt for the Suburban Corridors and ORR-Airport Metro line

It is understood that KRIDE has approached Asian Development Bank (AB) and Japan International Cooperation Agency (JICA) for senior debt required for the Suburban project. While the loan funding from multi-lateral and bilateral development agencies with long tenure and moderate interest rate is highly desirable for an infrastructure project like rail based public transport system, in view of low financial viability of such system, KRIDE's approach has created an unintended complication for BMRCL to arrange the funding for the metro project as BMRCL's proposals for funding from the same agencies are at advanced stage of approval. BMRCL has received informal queries from these agencies seeking clarifications regarding two competing projects being taken up at the same time and thereby adversely impacting viability of the metro project.

BMRCL's proposals for the loan funding from these two agencies for the ORR-Airport line as a central sector project, namely ADB and JICA, went through the consideration of line ministry (MoHUA) in GOI, NITI Ayog and were finally considered by the steering committee in Department of Economic Affairs in MoF, GOI. Thereafter, the proposals were posed to both agencies by DEA. The current status of consideration by those two agencies are as follow.

##### i. Funding by ADB

ADB has taken in-principle decision to fund USD 500 million for the civil works; fact finding mission is currently ongoing; loan negotiation is expected in Q3 and loan approval is expected in Q4 of CY 2020. ADB has also agreed to provide retroactive financing for the project and has been vetting tender documents and providing NOC for the advance procurement.

##### ii. Funding by JICA

JICA has shortlisted Bangalore Metro and Delhi Metro projects for possible funding of 50 billion Yen (about USD 500 million to BMRCL including USD 182 million for Phase 2 underground line) during CY 2020 for rolling stock and other system components after two contact missions. The loan preparatory mission is expected in June 2020, while the loan approval is expected within the current year.

With such advanced stage of consideration and loan approval by these two agencies for loan for the metro project, it will be better if similar proposals for the competing Suburban project are not posed to the same agencies. Therefore, KRIDE may be advised to approach multi-lateral and bilateral agencies, other than ADB and JICA, for its funding needs.

#### 5. Level-playing field

As both metro and suburban rail will be providing similar services, their fare structure and periodicity of the revision should by and large be same to facilitate level playing



field. The feasibility report of the suburban project envisages much lower fare. In that event, there might be clamor from the public to seek matching lower fare in the metro, which may lead to need for higher receiving financial support from the state government.

#### 6. Design Issues in Suburban Rail System

Except for the alignment conflicts, as detailed in para 3 above, other design issues in the suburban project do not concern BMRCL per se. However, following suggestions are being made based on experience gained by BMRCL in designing and building urban rail based mass transport system.

- i. Between Yeswanthpur and Lottegollahalli, Suburban corridors 1 and 2 have different sections and only one section has an intermediate station at Muthyalanagar. As the suburban services are planned at more than 10-minute interval, and the lines will have advanced train control systems (most likely CBTC which can allow 2-minute frequency also), both corridors between these two stations can share common section.
- ii. The proposed construction of Suburban Corridor-2 on a public road, namely Mohankumar Road over a length of about 2 km can be avoided.
- iii. The interchange station between these two corridors can be Muthyalanagar instead of Yeswanthpur.
- iv. Possibility of using SWR tracks, except in city core area where SWR network is already constrained, for operational integration may be explored so that option of extending suburban rail using SWR tracks upto nearby towns is not foreclosed.

It is requested that KRIDE may be advised to implement the Suburban Rail project taking into consideration the above aspects, resolve the alignment conflicts with Metro and follow priority of the corridors as indicated.

Thanking you,

Yours faithfully,  
Sd/-  
(AJAY SETH)  
Managing Director

Encl: As above

Copy to:

1. Additional Chief Secretary, Finance Department, Vidhana Soudha, Bengaluru
2. Principal Secretary, Infrastructure Development Department, Vikasa Soudha, Bengaluru
- ✓ 3. Commissioner, Director of Urban Land Transport, TTMC, Shanti Nagar, Begaluru

*Ajay Seth*  
(AJAY SETH)  
Managing Director

