Executive Summary

A critical evaluation of the RITES report has brought out certain aspects that needs to be looked into carefully so the system can be executed for the long term benefit of the passengers who will be using it. Overall the system being proposed serves to exclude the suburban network from sharing the current railway infrastructure by proposing exclusive systems, lines and platforms for the suburban network while seemingly using the Railway space. While we have compiled a detailed list in the following pages here is the highlight of the same.

1. The route network and the corridors are mirroring the extent of the metro rail network and hence will not be useful to the region. The purpose of a heavy rail like suburban rail is to extend further than a lighter metro network and connect suburbs. The recommendation is to extend the network to Tumkur, Ramanagara, Bangarpet, Dodballapur, Chickballapur & Hosur.
2. In extending this network the average distance of the corridors will double from the existing 30+ to 60+. This will mean reworking the number of rakes and trip limits and hence the cost.
3. We recommend focus on creating night halting & secondary maintenance capacity at the suburban terminal stations to enable beginning of trips from there in the morning & ending in the evening.
4. Automatic Fare Collection systems will prevent seamless integration with existing platforms and facilities of Indian Railways. A non integrated system will prove every expensive in the long run both in terms of interoperability and segregation from the railway systems for passenger loads. Revenue should instead be realized by commercial space at stations and other means instead of investing in the fare box which has unintended consequences.
5. Elevated corridors have been overestimated and a detailed evaluation into each segment will reveal a possible reduction of 10 to 15 kilometers.
6. These elevated corridors can lead to excessive heights in case of metro lines & bridges crossing across and in case of merging lines like in Lottegollahalli can lead to a confusing maze of multi level lines.
7. Segregated stations & separate platforms are being planned for 6 coach trains and this can grossly limit the load factors in the long run. The current service already has 18 coaches and a minimum of 15 should be considered when planning station facilities.

Regards

Sathya Sankaran & Sanjeev Dyamannavar

For Praja RAAG.

Detailed Feedback

Following Major inputs should be the basis for Suburban Rail DPR :

1. Suburban Rail services should be provide up to Tumkur, Ramanagar, Bangarpet, Dodballapur, Hosur, Chikballapur as envisaged since 2009 by GoK and Railways.

2. Suburban Rail should run with EMU rakes for 40 to 60 Kms distance per direction.

3. Line capacity should be assessed with all lines Doubling, Quadrupling, Electrification.

4. Line capacity can be further increased with Automatic Signaling System, Intermediate Block Signaling System (IBS), all Level crossing elimination with fencing, Tracks should not have much gradient issue within city limits for maintaining speed.

5. Terminal capacity at Tumkur, Ramanagar, Bangarpet, Dodballapur, Hosur, Devanahalli, Nelamangala is very important for Suburban Rail running capacity.

6. EMU Car Maintenance shed Location & Capacity with Stabling Depots for night Examination

7. Junction capacity at KSR Bangalore City, Yesvanthpur, Cantonment, KR Puram, Yelahanka & Whitefield needs to be assessed & to be increased. The benefit of Quadrupling will not accrue to the system if the Yard capacities are not increased accordingly.

8. Jnanabharathi to be developed as 4th Coaching Terminal. With exploiting commercial space above Terminal. As Metro station is adjacent, integration will be much easy. Also, remodelling of KSR Bangalore city station is essential to enhance capacity. Bangalore city station has gradient issue & to be addressed

9. Air Space above Maintenance Depots should be exploited for Commercial use or locating Suburban Rail Offices including GOK offices.

10. Every Suburban Rail Station should have access from both sides, with 4 platforms.

Selected alignments of Suburban Rail as per RITES report has not considered present passenger traffic by Rail from Tumkur, Ramanagar, Bangarpet, Dodballapur, Hosur.

Capacity & Utilization of Suburban Rail will be limited, if Suburban Rail is not considered till these towns: Tumkur, Ramanagar, Bangarpet, Dodballapur, Hosur

Suburban Rail Terminal Capacity can be created at these towns and will serve Night halting of Rakes with secondary maintenance.

For starting the morning services, some rakes will have to be kept at terminal stations.

It is envisaged that the average daily distance travelled by each rolling stock unit is approximately 650 Kms

Feedback on Proposed Alignment considered by RITES :

RITES has considered following aspects for Suburban Rail in the report :

1. Automatic fare collection (AFC) system. Based on this, Suburban stations are demarcated from the existing lines. So practically we will be creating new stations either on elevated or at grade to meet AFC system.

2. Stations are planned for running 6 Car Train which will be very much inadequate. Should be planned for minimum 15 Cars as already, Bangalore has 18 Coach Services with MEMU type.

With 12 Cars rake, carrying capacity will double as frequency planned is 12 Min in peak time.

3. RITES has assumed Air Conditioned coaches will be deployed for Suburban Rail. As envisaged, extending to nearby towns with AC coaches is not feasible and will increase project cost & running cost. A mix of Ordinary coach & AC coaches is required in few trains. But a majority of trains, simple EMU type coaches are to be deployed to be sourced from BEML.

4. The frequency of Train Operations: RITES has assumed very lower frequency on all sections. Minimum 3 Trains per Hour should be planned during off-peak, during peak Hour minimum 6 to 8 Trains should be planned. Based on the frequency, Rakes requirement, Signaling system, Stabling Lines has to be designed. Design of Signaling, Maintenance Facility & Rakes should be planned for Maximum 8 to 10 Trains per Hour with 16 Coaches.

5. Jnanabharati for Maintenance and stabling facility is not suitable if the services have to be extended up to Ramanagara. Either at Bidadi or Ramanagar, facility to be created.

6. At Baiyyappanahalli area, RITES has not looked into Metro line alignment towards KR Puram and crossing Hosur line. As Whitefield – Baiyyappanahalli Metro alignment will cross Banaswadi – Hosur at Beniganahalli. So elevated corridor has to go above the Metro line.

7. The interchange between KSR City – Rajanakunte & Nelamangala to Baiyyappanahalli has to happen at Lottegolahalli at two levels. It may not be possible considering station accessibility issues at Lottegolahalli.

If Suburban rail system has to reach Towns surrounding Bangalore as envisaged, then AFC system will be difficult to implement. Surcharge on Suburban Rail tickets and more commercial space exploitation should be considered to recover Running cost and Capital cost of investment.

With the AFC system, Station maintenance cost will be almost equivalent of Metro stations in the long run.

Observations in the proposed Elevated Corridors :

Corridor - 1: Kengeri - Whitefield 35.47 Kms, only 16.51 Kms between Kengeri - KSR Bangalore City – Cantonment considered for studies.

RITES have assumed two lines out of Quadrupling between Cant – Whitefield will be used for Suburban Rail, neither SWR has given commitment nor Station capacity is assessed at KR Puram, Whitefield, Bangalore East, Baiyyappanahalli by RITES.

The corridor should start from either Bidadi or Ramanagaram to as Automobile hub has come up close to Bidadi. Kengeri – Bidadi is 17.4 Kms and Kengeri – Ramanagar is 32 Kms. At these two places, Suburban terminal capacity can be built.

Observations:

1. Technical Issues between Cantonment – Whitefield: Issue of speed, Automatic Signaling, Intermediate Block Signaling (IBS), Station capacity at Cantonment, Bangalore East, Baiyyappanahalli, KR Puram and Whitefield are not considered. Railways will later come out with constraints & excuses that more services of Suburban Rail cannot be run on the Quadrupled line.

2. Jnanabharathi: 4th Coaching Terminal should be planned with 2 / 4 Platforms and Maintenance facility

3. Bengaluru Cantonment Station: Suburban Platforms integration with Existing platforms and Metro not considered. With planned Suburban Station as elevated makes integration difficult.

4. Cantonment Suburban Rail concourse is planned at the elevated section. Reaching from Metro subway to Suburban Rail will be most difficult.

5. Quadrupling between Cantonment to KSR Bangalore city possible with minimum land acquiring from Govt of Karnataka. Elevated Corridor can be avoided.

6. Existing Services from Bangarpet: Presently 12 Pair of Train services are provided between Bangalore City – Whitefield mainly by Trains services of Bangarpet,

7. Metro integration: At Jnanabharathi, Cantonment, Baiyyappanahhali, KR Puram, Whitefield are not considered

8. Kengeri station should be planned at Grade only.

The quadrupling of Cant-Whitefield capacity can be realized after Cantonment & Whitefield Stations capacity is improved. Also, Cantonment station thru capacity is dependent on KSR Bangalore city station capacity. RITES has to give a clear plan for decongesting Bangalore City, Cantonment, Baiyyappanhalli, KR Puram & Whitefield

Corridor – 2: KSR Bengaluru city to Rajankunte Total Length is 24.88 Kms.

At Yesvanthpur, Terminal capacity to be increased with Yard remodelling, shifting Cement Sleeper Block manufacturing finicality. Similar Yelahanka station expansion to be considered to increase through the capacity of the Junction. If these works are not considered, line capacity towards Hosur, Tumkur, Devanhalli, Dodballapur cannot be realized.

At Lottegolahalli, there is no space for Auto / Taxi Stand, Parking Private Vehicles, Walking no facility. Only it will be integrated with Buses on New BEL road and ORR.

Observations:

1. Elevated corridor at Srirampur after Mantri Mall has to cross Metro line of N-S, Malleshwaram elevated station will be above two levels.

2. Yesvanthpur station and Yard requires complete redevelopment to increase terminal capacity to cater to Doubling of Yesvanthpur – Hosur line. At grade, line capacity from Lottegolhalli to Banaswadi cannot be realized even after having dedicated lines.

3. After Yesvanthpur, there are 3 ROBs at Muthyal Nagar, Mathikere, Lottegolhalli.

4. Similarly, Station at Lottegolahalli will be at level 2 and accessing from Underpass of ORR will make it a difference of 5 levels considering the elevated track has to cross existing ROBs.

5. Access to Yelahanka station from Dodballapur Road / Yelahanka new Town has to be done.

6. Rajankunte station should be planned at Grade only

7. Rajankunte – Dodballpur of 12 Kms: Should be included in Ph-1 as Textile and other industrial hubs exists on this section.

Corridor – 3: Nelamangala to Baiyyappanahalli: Total Length is 38.94

The corridor should start from Tumkur and Nelamangala. As big industrial Corridors belts like Dabaspet, Nidavanda, NIMZ, PRIDE are part of this section.

There are few issues in taking up an elevated line between Nelamanagala up to Yesvanthpur. There is sufficient Railway land exists. At grade, Suburban Rail tracks should be considered. Nearly 8 to 9 Kms of Elevated Track can be eliminated with minimum land acquiring from Defence & HMT.

In fact, Yesvanthpur – Soladevanhalli 10.72 Km section should be considered for 6 tracks to meet future train movement from Nelamangala & Tumkur towards Bangalore. This section has maximum Goods traffic coming from SGT Whitefield going to Mangalore Port. Around 6 Km of Elevated line can be avoided with grade level tracks from Nelamangala to Yesvanthpur. Some Defence land from AirForce required & shifting of Cement sleeper factory to be done.

Observations:

1. Grade level stations to be planned: Nelamangala, Tabranahalli, Soladevanahalli, Thammenahalli, Jalahalli

2. Lottegolhalli Station: Will be located at level 3 from the ground. From ORR, it will be at level 5.

Corridor – 4: Heelalige to Devanahalli: Total Length is 61.36 Kms

The corridor should be extended up to Hosur for additional 24.40 Kms (even though Hosur is in Tamilnadu. GoI should look into cost sharing as done in NCR Delhi for Regional Rail Transport System (RRTS)

As Suryanagar KHB Colony, Anekal Town, Jigani Industrial Area, Attibele Industrial belts. extension to Hosur should be considered.

Services from Yesvanthpur to Devanhalli also should be considered from Yelahanka onwards.

Observations:

1. Devanahalli Station and Heelalige should be at grade only.

2. Signature park planned at Devanhalli should also get Suburban Rail connectivity.

3. Doddajala station will serve connectivity to KIADB Aerospace Park

4. After Yelahanka towards Devanahalli, the at-grade track should be planned

Summary :

1. Overall Elevated Corridor can be reduced to extent of 14 - 15 Kms by considering Grade level tracks.

2. Jnanabharathi should be considered for 4th Coaching Terminal

3. Suburban Rail should be extended to Tumkur, Nelamangala, Ramanagar, Bangarpet, Hosur, Chikballapur

4. Elevated Stations height should be relooked from practical usage at Malleshwaram, Lottegolahalli, Mathikere.

5. Suburban Rail corridor should be extended up to KIAL Terminal

Issues at Stations: To be examined and appropriate actions can be taken.

Kengeri Station: As Elevated Two side Platform. Further extension towards Ramanagara from Kengeri need to look into as Platforms are on an elevated level.

Bangalore City: Interchange between Suburban Rail and Metro will be very difficult. Interchange time will increase for Commuter perspective.

Bengaluru Cantonment: Interchange between Suburban Rail and Metro is not considered. Also, Concourse is planned at an elevated level is practically difficult. No integration planned between Suburban Rail, Intercity and Metro.

Lottegollahalli Station: Accessibility to the elevated corridor from one side from ORR and not having any service lanes on ORR at this location. RITES has not assessed location from the Commuter perspective for the elevated corridor. Practically not possible to reach elevated stations. No place exists for Pick and Drop for elevated corridor unless major land is acquired.

Yesvanthpur Station: Maintenance yard needs redeveloping by shifting Cement Sleeper Yard, Shifting Coach Maintenance shed, adding more platforms as Railway has started removing Railway Quarters. Railway has 20 acres land towards Yelahanka, should be used for Suburban Rail infrastructure.

Yelahanka Station: Expansion of this station to be considered with shifting of Railway Quarters.

Malleshwaram station height, KR Puram Platform Capacity need to be assessed.

Terminal Stations should be at :

(Terminal stations and block stations) Should be planned at Tumkur, Ramanagaram, Bidadi, Nelamangala, Dodballapur, Devanahallai, Yelahanka, Hosur, Heelalige, Bangarpet, Whitefield.

Inputs from MRVC Mumbai Local Train Maintenance :

Would require a dedicated Depot cum workshop facility for the maintenance of the rakes.

Mumbai has Three Loco Shed for Maintenance of EMU rakes. Kurla Car Shed, Kalva Car Shed and Sanpada Car Shed

The Maintenance and Overhaul Schedules to be followed for EMUs / MEMU will generally be as under-

i) Daily Inspection: where night examination is carried out daily on stabled rakes. Major safety items including under gear of rakes are checked.

ii) Trip Inspection (IT): at an interval of 10 days during Night/Daytime. Attention to break gear & passenger amenity items is given during this schedule. Headlight focusing is also checked.

iii) Monthly Inspection (IA): Attention of all electrical and mechanical items. Passenger amenity items are also checked and attended in this schedule.

iv) Quarterly Inspection (IB)

v) Half Yearly Inspection (IC) Attention of battery, LT jumpers, couplers, suspension brass clearance is also checked in this schedule.

vi) Intermediate Overhaul (IOH)

vii) POH

Cleaning of the rakes:-

1.Dry cleaning (at night stabling siding)- Every day.

2.Wet mopping (at night stabling siding)- 5 + 1 day.

3.Washing schedule (At shed)- 18 + 02 days.

During washing, schedule rakes are washed thoroughly from inside and outside of the coach. Disinfectants are sprayed in coaches.

Night Examination: -There are 18-night stabling depots where night examination is carried out daily on stabled rakes. These are CSTM, Kurla, Bandra, Belapur, Panvel, Vashi, Thane, Thakurli, Kalyan, Ambernath, Titwala, Karjat, Kasara, KurlaCarshed, KalvaCarshed, SanpadaCarshed, Lonavala and Pune. Major safety items including under gear of rakes are checked.