Why Bengaluru Commuter Rail Service Makes Sense?

A Socio-Economic Benefit Analysis

All public utility projects are weighed against the socio-economic benefits that it brings in. Namma Railu - Bengaluru Commuter Rail Service is no exception to that rule. World over it is acknowledge that investment in public transport system and infrastructure is always a PROFITABLE venture. It not only brings in economic returns but also a sleeve of socio returns that society and community at large benefits.

Here is one such effort in that direction. Hopefully all concerned would be able to appreciate the benefits that CRS would be bringing in.

Socio-Economic Benefits of Commuter Rail Service are measured in terms of:

1. Affordable Mobility Benefits - Connectivity, Savings in trip cost, affordable mobility
2. Congestion Management Benefits - Savings in Fuel, Less Vehicles on Roads
3. Social Benefits - Health, Environment
4. Economic Returns - Business, Sales, Employment Generation, Tax Revenues

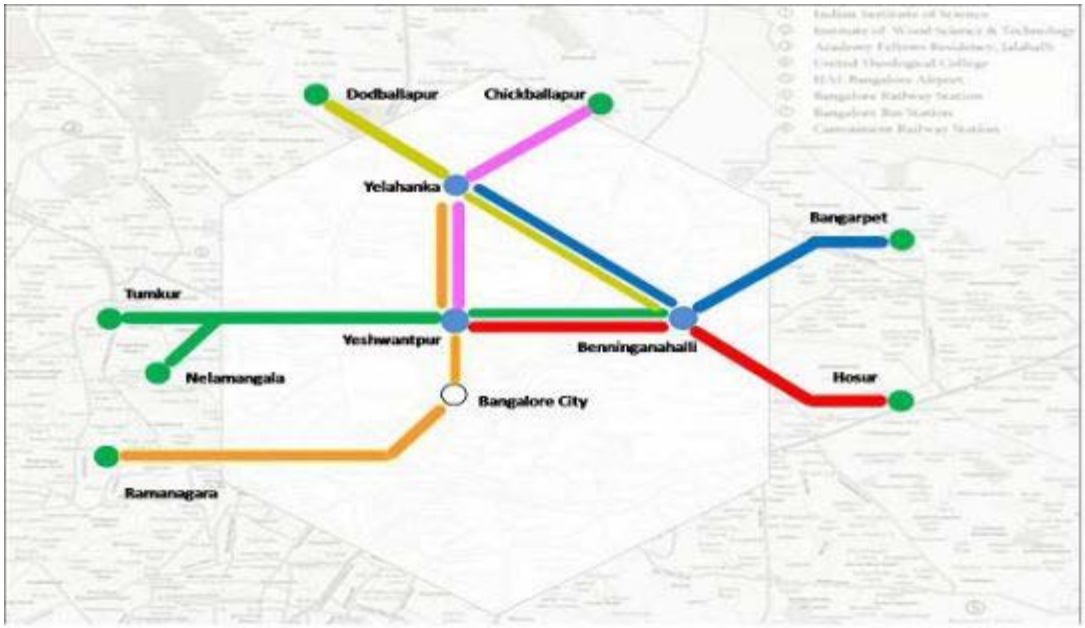
Let us analyze each one of them with the help of data that has been computed exclusively for Bengaluru CRS.

1. Affordable Mobility Benefits

1.1. Proposed CRS offers

CRS Offerings	Initial Targets
Connects Bengaluru with	Ramanagaram, Tumkur, Nelamangala, Doddaballpur, Chikballpur, Anekal, Malur, Bangarpet, Hosur
No. of Routes	6
Distance Covered	376
No. of Services per day	160
No. of Stations	85
No. of New Stations	35
Initial Ridership per day	1.5 lakhs
Catchment Population	45 lakhs
Savings in Fare per ride	Rs. 40

1.2. Proposed Bengaluru CRS Route Map



1.3. Proposed Bengaluru CRS Routes

Route	Distance (Kms)
Yeswantpur - Yelahanka - Devanahalli – Chickballapur	60
Benninganahalli - Thanisandra - Yelahanka – Doddballapur	37
Yeswantpur - Benninganahalli - Anekal – Hosur	66
Tumkur/Nelamangala - Yeswantpur – Benninganahalli	83
Yelahanka - Benninganahalli - Whitefield - Malur – Bangarpet	80
Yelahanka - Yeshwantpur - City - Kengeri – Ramanagara	50
Total route length (Kms)	376

1.4. CRS Catchment Areas

Growth Center	Distance from BLR	Population	Catchment
Hosur	40 Kms	1.5 Lakhs	Anekal, Jigani, Electronic city
Ramanagara	50 Kms	1 Lakh	Kengeri, Bidadi
Tumkur	70 Kms	3 Lakhs	Nelamangala, Peenya, Jalahalli, Hessarghatta, Dobbspet
Chickballapur	70 Kms	0.7 Lakhs	Devanahalli, BIA, ITIR, DBP, avaiation hub
Dodballapur	40 Kms	0.9 Lakh	Yelahanka, Dodballapur Indl Area
Bangarpet	70 Kms	1.5 Lakh	Malur, KIADB

* All figures are approximate and taken from publically available sources

1.5. Comparative Analysis - Case Study of Existing Yeshwantpur -Hosur passenger service from South Western Railways

YPR-Hosur Rail Service	BY CRS	By Bus	By Car	By 2Whlr
Distance in Kms	66 Kms	66 Kms	66 Kms	66 Kms
Travel Time	80 Mins	180 Mins	140 Mins	120 Mins
Rider Capacity per trip (Avg)	975	50	3	1
Commute Cost/ Fare per Trip per person	Rs. 14/-	Rs. 60	Rs. 100	Rs. 70
Fuel Consumption/Cost	Rs. 2000/-	Rs. 675	Rs. 300	Rs. 70
Fuel Operational Efficiency per Rider for this journey	Rs. 2.05	Rs. 13.5	Rs.100	Rs. 70

2. *Congestion Management Benefits*

2.1. A comparative analysis of Bengaluru CRS with Bus and Car.

Service Parameters	By CRS	By Bus	By Car
Total Proposed Daily Ridership	1,50,000	1,50,000	1,50,000
Total Distance Covered in Kms	370 Kms	370 Kms	370 Kms
# of trips/services to meet the ridership of 1.5 Lakhs	160 Trips	3000	50000
Rider Capacity per trip (Avg.)	975	50	3
Commute Cost/ Fare per Trip per person (Distance of 65 Kms) - Rationalized	Rs. 30	Rs. 60	Rs. 100
Travel Time for covering 370 Kms	480 Mins	1080 Mins	840 Mins
Fuel Cost for making Trips Carrying CRS ridership	Rs. 3,20,000	Rs. 20,25,000	Rs. 1,40,00,000
Fuel Operational Efficiency per Rider for this journey	Rs. 2.05	Rs. 13.5	Rs.100

Pls bear in mind that, these are initial numbers. Even with these initial numbers, the NET BENEFITS from Bengaluru CRS are:

1. 50 thousand car trips can be avoided to move 1.5 lakhs commuters daily.
2. Roads will be less of 50 thousand cars - Less travel time for others
3. Less fatalities - Less number of road blocks and traffic jams
4. Total Savings in trip cost compare to using cars is Rs. 60 Lakhs daily

3. Social Benefits

Social benefits are very hard to quantify and also the impact will be seen only after 5-10 years. These accrue on slower pace and most times remains invisible. Various studies done all over the world including India have shown that these can still be quantified and measured. Relying on comparative models we can with certainty can say with confidence that Bengaluru CRS will also unleash a sleeve of social benefits that communities and catchment population would enjoy. The most common and important in the list are:

1. Enables people to seek employment away from home.
2. Provides Industry and Business with labor with economic and affordable mobility.
3. Helps Reduce unemployment, hence reduce and prevent social problems
4. Proposed Bengaluru CRS offers people affordable housing in towns but still be bale to work in Bengaluru
5. Will stimulate economic growth in adjacent towns and catchment areas resulting in lifting standard of living
6. Will help people make more trips seeking health care services, Shopping and recreation for families and youth. In absence of CRS, the loss in this sector would look like this:

Transit Choices for Healthcare purposes in absence of CRS Service	
By Alternate Transport Means	48%
Look for opportunities near home	23%
Not be able to seek medical assistance	25%
Others	4%

7. CRS offers less fuel usage meaning less pollution and helps environment
8. CRS would encourage people to walk, bicycle, meaning more physical workout resulting in overall physical health of people.
9. CRS offers the best help for students and faculty with economical fares in reaching educational institutes. More opportunities, more skilled workers. In absence of CRS service, the loss could be like this:

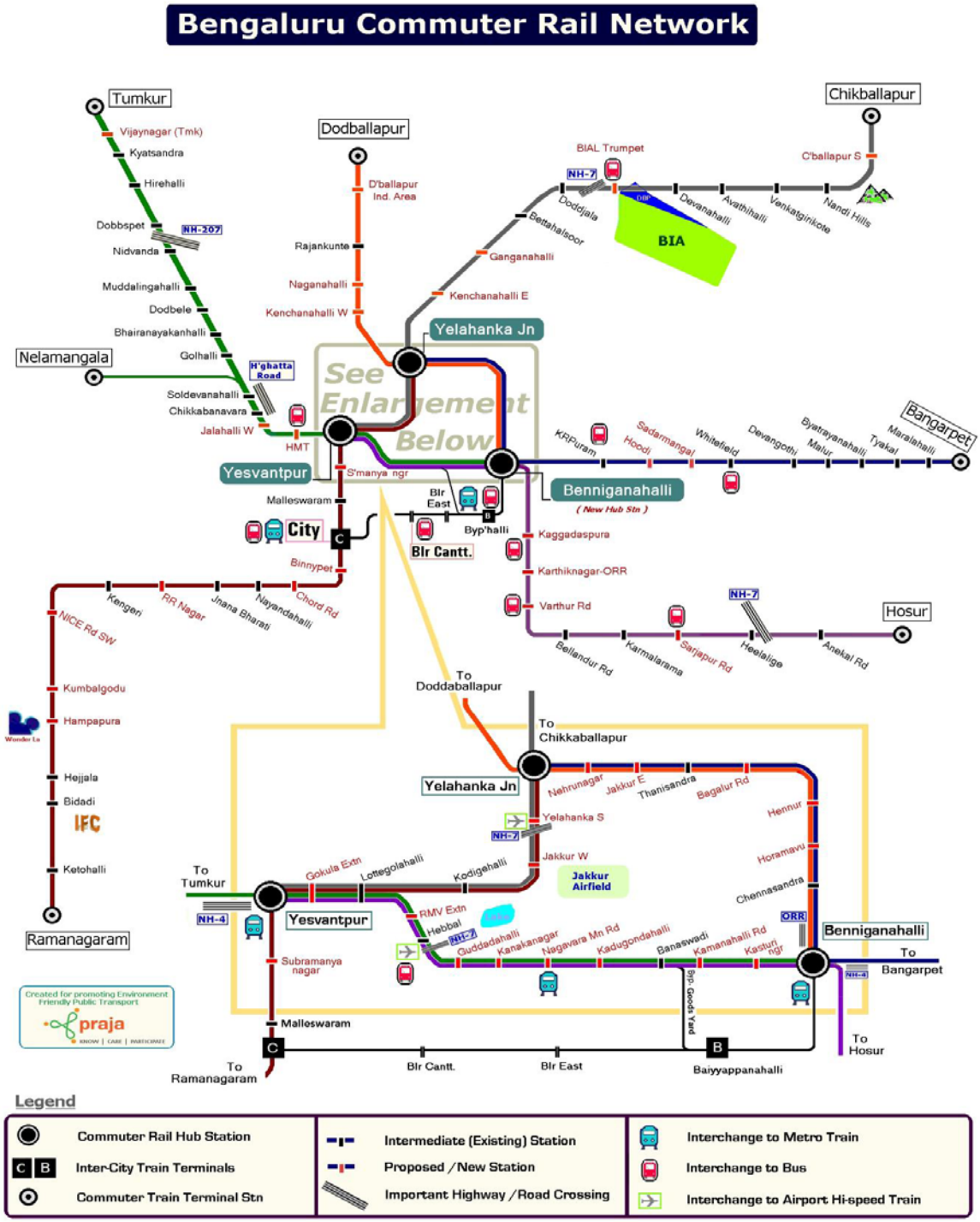
Transit Choices for Education purposes in absence of CRS	
By Alternate Transport Means	48%
Look for opportunities near home	15%
Not be able to attend School/College	13%
Missed Classes and related activities	22%
Others	2%

4. Economic Returns

1. Every Rs.100 investment would result in Rs.600 in economic returns
2. CRS operation and maintenance orders would result in cyclic business activity starting from purchase of raw material until products are made ready for use.
3. Capital Project and Operations investment would create employment
4. More transit activity at stations would encourage business activity in the vicinity
5. Affordable mobility would encourage more freight movement between Bengaluru and its adjacent towns helping specially small time traders, farmers and entrepreneurs.
6. Savings accrued via trip cost would ultimately be spent in other needs resulting in increase in consumer spending.

Cross-Sectors (% of Total Annual Ridership of 54 M) M	Savings in trip cost with CRS (In Rupees)
For Work (45%)	972,000,000
For Education (12%)	259,200,000
For Medical Services (26%)	561,600,000
For Shopping, Tourism & Recreational (15%)	324,000,000
Total Savings	2,160,000,000

5. Bengaluru CRS Map



For further details on Commuter Rail report kindly visit http://praja.in/en/nammarailu

6. References

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2. *Rail Transit in America – By Todd Litman, American Public Transportation Association*
3. *Measuring Economic Benefits of Commuter Rail – By Khalid Bekka, HDR*