India's first 31-meter U-Girder launched for Corridor -2 of Bengaluru Suburban Rail Project



Rail Infrastructure Development Company (Karnataka) limited (K-RIDE) has achieved a historic milestone with the successful launch of India's first 31-meter span U-Girder for BSRP's Corridor-2, Mallige line from Chikbanavara to Yeshwantpur. This remarkable achievement signifies a major leap forward in establishing a state-of-the-art Suburban Rail network aimed at revolutionizing Bengaluru's urban transportation. The launch of this U-Girder marks a vital step in the rapid progress of Corridor-2. It underscores the commitment of K-RIDE to deliver a world-class suburban rail system, enhancing connectivity and reducing traffic congestion for Bengaluru's citizens. This milestone reflects not just engineering excellence but also the project's resolve to stay on track toward its vision of transforming Bengaluru's urban mobility landscape. Detail report Continued on Page 8

Inspects BSRP, Metro, BDA Projects at Hebbal

Dr. Shalini Rajneesh, Chief Secretary, GoK









Dr. Shalini Rajneesh, Chief Secretary, Govt of Karnataka and N.A Haris, Chairman, Bangalore Development Authority and MLA Shanthinagar Constituency, inspected the construction of Hebbal flyover on 30.12.2024. BDA has undertaken this work to curb the traffic problem in this area. Shri Rajesh Kumar Sing IRSE, Director P&P-KRIDE, along with BDA, KRIDE and Metro officials were also present.

Greetings and New Year Best Wishes!

KRIDE achieved a significant milestone last month by launching 31m full-span, pre-cast, pre-stressed, concrete U-girder for the Corridor 2 or Mallige line of BSRP. It is the longest ever full-span U girder launched in the country for any mobility project. K-RIDE has also awarded the C2A Stations tender to the L1 bidder i.e M/s NCC Ltd. It is also important to note that key posts like GM/Finance, GM/HR, GM/SEMU and other mid-management vacancies that were vacant from a long time, have been filled. KRIDE management is contemplating 2nd phase of vacancy posts creation keeping in mind the requirements of Operations and Maintenance.

The progress of both BSRP and doubling of track project has picked up pace and the team is doubling up its efforts to meet all deadlines.

2024 has been a year of great significance for K-RIDE, as the Bengaluru Suburban Rail Project has made perceptible progress. Among the many important tasks achieved this year the following marks it as the year of significance for BSRP.

- * 100% External funding of Euro 800 million Bellandur to Karmelaram will be has been tied up by signing of loan commissioned by March 2025 and agreements with KfW (Euro 500 million) and EIB (Euro 300 million)
- In-principle approval received from Govt of Karnataka (50% equity share) procurement of Rolling stock on equity basis.
- * Required Land has been transfered for Corridor 2 and Corridor-4 from Railways.
- *Prominent tenders of Stations, S&T, Depots, civil works of Corridor 1 etc have been invited.

The year 2025 will also see major progress of BSRP and doubling projects. The section from Yeshwantpur to Chikkabanavara of Corrdior-2/ Mallige line of BSRP will be the first to be commissioned. Tender for Airport Corridor-1A is likely to be awarded. Major tenders like the tender for depot, S&T, lift and escalators, stations, are also likely to be awarded.

the entire doubling section from Baiyappanahalli to Hosur is likely to be commissioned by end of 2025.

MD Corner



Dr. Manjula N, IAS MD, K-RIDE, Secretary, IDD and Kannada & Culture, GoK







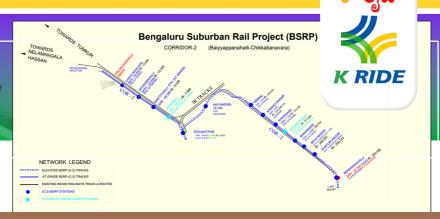




Corridor -2 Mallige Line Progress updates: As on: 31.12.2024

© Corridor -2 Baiyyappanahalli-Chikkabanavara civil works tender was awarded to L&T Limited. The 25 Km Corridor -2 consists of 8.027 km of elevated sections and 17.551 km of at-grade section.

Construction work has commenced at multiple locations along the project alignment of Corridor -2



Key Milestones Achieved

- 1. A total of 581 nos. piles have been completed at various locations of alignment (Benniganahalli-160 nos., Hebbal-144 nos. & Yeshwantpur- 233 nos.)
- 2. At-grade embankment work (filling and cutting) is in progress for the length of 3045 m and 1565 m length completed up to the formation top level. (Sec 2 1480m in progress; Sec 4 – 1565 completed and 4900 in progress;)
- 3. Electrical utilities shifting completed for 22 km (between Benniganahalli to Chikkbanavara location).
- 4. For shifting/diverting & protecting BWSSB water & sewer lines, the amount deposited to BWSSB for the various locations of alignment & work is in progress. LOA issued for 37 locations (32 for sewer lines and 5 for BWSSB water lines).
- 5. Other utilities like gas lines (GAIL) work is completed and BWSSB pipeline will be operational in the month of January-2025 in Section 4.

Civil works in At-grade Sections of length 17.551 Kms.

- * Total length of Earth Retaining Structure (ERS) work of 5299m is in progress (980m at Benniganahalli to Banaswadi, 3189m at Banaswadi to Hebbal and 1130m at Yeshwantpur to Chikkbanavara), out of which 3705m (730m at Benniganahalli to Banaswadi, 1955m at Banaswadi to Hebbal and 1020m at Yeshwantpur to Chikkbanayara) final lift work is completed and at various locations Earth Cutting work for ERS construction is in progress.
- Out of a total of 44 minor bridges (MIB), 6 nos. minor bridges have been completed, 21 nos. of minor bridges are partially completed (4 nos. between Yeshwantpur to Chikkbanavara and 17 nos. between Benniganahalli to Hebbal), and 1 nos. of minor bridge under construction.
- * 2 nos. of ROB (410A & 408B) to be reconstructed between Yeshwantpur and Chikkbanavara sections. Initial pile load test (vertical & lateral) completed for both the ROBs. Further, the designing of Substructures & Superstructures (L&T scope) is in progress.
- * At the major bridge no. 560, the initial pile load test was completed between the Banaswadi and Hebbal sections. Further, the designing (L&T scope) is in progress for Piles, Substructures & Superstructures.
- * Out of 20 nos. RUBs, 4 nos. are partially completed (Addl. 5+411, Addl. 6+512, LC 141 and LC 143) up to the top slab between Banaswadi to Hebbal section and for RUB (LC 140) 16nos. of precast RCC box segments casted & for RUB (LC144A) precast RCC box segments casting is in progress (5 nos. of segments are casted).
- A 533 m long boundary wall at Jalahalli for the Indian Air Force is completed and handed over to the Indian Air Force
- An IR boundary wall measuring 310 m in length has been completed, out of a total scope of
- The layout plan for relocation and reconstruction of assets in defence land that infringes BSRP corridor-2 at Jalahalli (CQAE) has been approved.
- The layout plan for boundary wall construction has been approved at Garrison Banaswadi (ARMY) of BSRP corridor-2.
- * Permission for gate closure at the LC elimination location has been received from the Commissioner, Bengaluru. Presently LC-141 gate is temporarily closed
 - For BSRP construction in BBMP land, permission is accorded by the Commissioner of BBMP.

Elevated Viaduct Work of total length 8.027 km from Hebbal to Yeshwantpur & Benniganahalli

- * At Golla Halli, a 21-acre precast yard has been established and completely commissioned by the contracting agency to fulfil the precast requirement of the project.
- The casting yard includes 2 fully functional Batching plants and a laboratory.
- * Additional 2 nos. of batching plants have been set up & commissioned by the contracting agency near the corridor alignment (1no. at Yeshwantpur & 1no. at Hebbal).

*Precast structures progress details:

Total nos. Casted	Location
108	
28	Pre-cast yard at Golla Halli
36	Pre-cast yard at Golia Halli
	108 28

* The casting of U-Girders and I-Girders will be done at the casting yard and these precast components will be transported to raising locations along the corridor.

* Initial pile load tests: Total 8nos. Initial pile load tests completed and concluded between Benniganahalli and Chikkabanavara. 1 no. at Benniganahalli, 1 no. at Major Bridge 560, 4 nos. between Hebbal and Yeshwantpur, and 2 no. at ROB 410A & 408B

* Pier Cap: 3 nos. of Pier Cap erection completed at YPR location.

* U-Girder: 2 nos. of U-girder erection completed at YPR location

Section Details	Total nos. Pile Casted	Total nos. Pile cap Casted	Total nos. Pier Casted	Location
Sec 1	160	13	9	Benniganahalli
Sec 3	144	13	11	Hebbal
Sec 4	233	23	11	Yashwanthpur Yard
Total	537	49	31	

The relocation of railway buildings such as Sub-Station Electrical (SSE) (80% work completed), Transaction Distribution Department (TRD) and Parcel Office work are in progress

- instructions given in the OM.
- * The reinspection was held on 21.10.2024 and report has been submitted by BBMP/TEC. High court stay is yet to be vacated

location was completed in Corridor 2.

* 10 times the tree is being planted by BBMP the cost deposited by K-RIDE.

Other miscellaneous works:

Necessary permissions for tree felling of 2098 nos.

and transplantation of 178 nos. have been obtained

from the Tree Authority (OM1 to OM3) and the work

is in progress in accordance with due norms. 65% of

tree felling work was completed and 45% of tree trans

*OM-4: On May 29, 2024, permission was obtained for the removal of 699 trees and the transplantation of 89 trees. A PIL (Public Interest Litigation) was filed against

the tree felling permission, and the Karnataka High

Court has ordered that 438 of the 699 trees (recommended for felling) to be reinspected and the remaining 350 trees (including transplantation) to be removed as per the

* The design & drawings for various structures have been approved by the proof consultant (IIT Madras).

Corridor -1 -SBC to Devanahalli Incl. Airport Link.



Corridor-1 SBC to Devanahalli is divided into two parts i.e 1A(SBC-YNK) and 1B(YNK to DHL Incl. Airport Link)

- Latest alignment for the Corridor-1 has been submitted to SWR for approval on 29.11.2024.
- NOC for Closure of LC-02 and LC-09 has been approved by Bengaluru DC/Urban.
- Updated GAD of ROB in lieu of elimination of LC-9 has been submitted to BBMP on 03rd December.















02

Corridor - 3 Kengeri to Whitefield.

Utilization of quadrupling lines from BNC to Whitefield

The alignment drawing was submitted to the Bangalore Division for approval on 2.5.24. Awaiting SWR's further observations and approval.

Corridor - 4 Heelalige to Rajankunte.

Corridor - 4 Heelalige to Rajanukunte: The civil works tender was awarded. The 46.88 Km Corridor 4 consists of 8.96 km of elevated section and 37.92 Km of At grade level section.

- Tender awarded to M/s L&T Ltd. on 30/12/2023 at a cost of Rs. 1040.50. cr Completion period 30 months.
- · Private Land acquisitions is in progress.
- · Preliminary works are in progress
- The alignment Plan was approved by SWR on 23.01.2024
- Railway land handed over to K-RIDE on 02.04.2024
- Subsequently, the pre-construction activities like geo-technical, Tree felling, Utilities shifting, and Design and structure works are under progress.
- The target date of commission of Corridor -4 (Kanaka line) of BSRP is December 2026
- 16 minor bridges completed and ERS and earth work are in progress.
- 10 nos test Piles are casted arrangements for Pile load tests are under progress



Corridor -2: Mallige Line Work Progress



CHIKKABANAVARA

ERS raft reinforcement tying works in prog between Shettyhalli-Myderahalli station truction work in progress



JALAHALLI









3. 👤 HEBBAL

4. **9** KANAKANAGAR

5. **9** NAGAWARA

6. KAVERI NAGAR

P15 Pier binder reinforcement in progress at Hebbal

Sacrificial wall work in progress kanakanagar to hebbal

Formation bank filling

Formation Ebakment bank filling



ERS wall work in progress at hebala near (BWSSB plant)



LC no 144 (A) Pre-Cast segment casting work in progress Kanakanagar





ERS wall completed Bridge no -543 Km 5/00 Banasvadi - Kaveri Nagar





















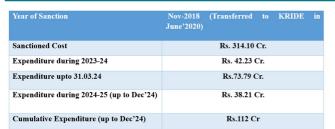




Doubling of Track Project:

Work Progress Update

Yesvantapur- Channasandra (21.7 Km) Physical progress: 45%



Yesvantpur – Channasandra doubling is running almost parallel to Corridor -2 of BSRP and the progress of doubling works are affected due to BSRP works at YPR, Lottegolahalli, Hebbal station yard, Hebbal - Banaswadi. Moreover, 4th line between Yesvantpur Bypass to Lottegolahalli is parallel to C-4 of BSRP which is elevated and formation work of 4th line work as a part of Doubling project in this stretch can be taken up after completion of BSRP C-4 elevated pier foundation works.

* The progress of Major components of works are as follows

Sl No.	Item	Unit	Total scope	Physical Progress	TDC
1	Earth work:	Cum	191000	67%	Apr'25
2	Blanketing	Cum	62500	12.50 %	May'25
3	Retaining walls	RM	6000	77%	Mar'25
4	Minor Bridge	No.	37	60%	June'25
5	Major Bridge	No.	2	30%	Aug'25
6	RUBs	No.	1	0	Aug'25
7	Service/Station Building:	No.	6	25%	Sept'25
8	Platforms:	No.	1	60%	Mar'25
9	S&T works	No.	6	15%	Sept'25
10	TRD works	Km	21.9	15%	May'25
11	Track Linking	Km	21.9	0	Aug'25

Baiyyappanahalli - Hosur (48 Km)

Physical progress: 82%



Year of Sanction	2018 -19 (Transferred to KRIDE in June'2020)
Sanctioned Cost	Rs. 498.73 Cr.
Expenditure upto FY:2023-24	Rs. 300.28 Cr.
Expenditure 2024-25 up to Dec'24	Rs.111.54 Cr
Total expenditure till 30.11.24	Rs.411.82 Cr.

SI No.	Activity	Unit	Scope	Physical progress	TDC
1	Earthwork	Cum	1115000	94%	Works are in progress. TDC: 03/25.
2	Blanketing	Cum	154000	62%	Works are in progress. TDC: 04/25
3	Minor Bridges	No.	101	88%	Works are in progress. TDC: 02/25,
4	RUBs	No	15	81%	Works are in progress. TDC: 02/25
5	Major Bridge	No.	7	70%	Works are in progress. TDC: 08/25
6	ROB	No	1	0	03/25
7	Station Building	No.	4	92%	TDC: 01/25
8	Ballast Supply	Cum	140500	60%	Works are in progress TDC: 08/25
9	Track Linking	Km	48	45%	Works are in progress TDC: 08/25
10	S&T work	No.	6	50%	Works are in progress TDC: 07/25
11	OHE Work	Km	48	50%	
12	Commissioning	Km	48	21.5%	Works are in progress TDC: 08/25



'Doubling of track' project progress updates

YESVANTAPUR TO CHANNSANDRA (21.70 KMS)







Blanketing Layer Compaction Works Near Banaswadi Yard



Major Bridge No. 582 Piling work



Minor Bridge No. 591 Pile Cap Curing Works



Hebbal Station Building Foundation Works



Retaining Wall Concrete works Near Mathikere



Blanket Top Layer Rolling Works



Formation Soil Levelling Works at Yesvantpur Yard

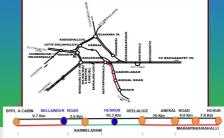


Lottegollahalli SM Building Painting works



'Doubling of track' project progress updates

BAIYYAPANAHALLI TO HOSUR (48.00 KMS)







New High level Platform at Belandur Road with Diversion track (Commissioned on 05.12.24)



Retaining wall works @ KM 181/300-400 (Anekal Road - Heelalige)



Br. No. 470 Pile cap of A1



Bridge No. 424A Road Excavation



RUB Bridge. No. 424 / A Approach Earth work formation



Blanketing @ KM 164/000-100 (Maranayakanahalli – Hosur)



Bridge 412 PSC Slab Launching











UPDATE ON BSRP FINANCES

- The sanctioned DPR provides for Bangalore Suburban Rail Project to be implemented on equity funded SPV model with equal contribution from Central (20%) and State Government (20%) and rest from multilateral agencies (60%).
- As on 31.12.2024 BSRP has recived a total fund of Rs. 500 crore from Ministry of Railways, Govt. of India and Rs. 865.43 crore from Govt. of Karnataka as part of equity & sub-debt for land, R&R.
 - 1. The total sanctioned cost of the Bangalore Suburban Rail Project (BSRP) : 4. The Loan Agreement was signed with KfW Development is ₹ 15,767 crores out of which ₹ 7,438 crores (approximately Euro 800 million) is earmarked as loan from Bilateral Funding Agencies.
 - 2. In executing a project, a loan is a critical financial tool that facilitates smooth and uninterrupted progress. From initiation to completion, the loan provides the necessary capital to overcome financial gaps, manage cash flow, and ensure that the project meets its goals.
 - 3. In this regard, KRIDE has been successfull in tying up the external funding requiements of Euro 800 million (approx Rs. 7438 Cr) for BSRP.
- Bank, Frankfurt, Germany for Euro 500 million on 15.12.2023 and European Investment Bank, Luxembourg for Euro 300 million on 14.06.2024.
- 5. This loan will facilitate the major systems tender and part of civil works for the Bangalore Suburban Rail Project.
- 6. Also, out of the loan from KfW Development Bank an amount of Euro 62 million (₹580 crore) is set aside for the work of Multi-Modal Integration (MMI).



About our funding agencies



About KfW



KfW Development Bank is a German financial institution that plays a key role in promoting sustainable economic development worldwide. As a part of the KFW Bankengruppe, it focuses on financing development projects, particularly in emerging and developing countries. KfW provides funding for projects related to poverty reduction, infrastructure development, climate protection, education, and healthcare. It works closely with governments, NGOs, and private organizations to implement initiatives that contribute to long-term social, economic, and environmental progress. Through its financing activities, KfW supports the achievement of international development goals, including the United Nations' Sustainable Development Goals (SDGs).



The European Investment Bank (EIB) is the lending arm of the European Union, dedicated to supporting the EU's policy objectives through financing projects that promote economic growth, job creation, and regional development. The EIB provides long-term loans, guarantees, and technical assistance to both public and private sector projects across Europe and in other regions. Its focus areas include infrastructure, innovation, climate action, and sustainable development. The bank plays a crucial role in financing projects that address global challenges, such as environmental sustainability, energy transition, and social inclusion, while also fostering economic integration within the EU. Through its investments, the EIB aims to contribute to the achievement of the EU's broader goals of economic stability and environmental resilience.



K-RIDE's participation in IGBC Green Building Congress 2024 from 14th to 16th November 2024.

K-RIDE participated in the 22nd Edition of the IGBC Green Building Congress 2024 held from 14th to 16th November 2024 at the Bengaluru International Exhibition Centre (BIEC), Bengaluru. This premier event, themed "Advancing Net Zero in Buildings & Built Environment," is a key platform for promoting sustainable practices and innovations in the construction and infrastructure sector.

Role of CII-IGBC

The Indian Green Building Council (IGBC), under the Confederation of Indian Industry (CII), plays a pivotal role in advancing green building concepts across India. By collaborating with central and state governments, industry stakeholders, and international agencies, IGBC fosters a sustainable built environment aligned with national and global goals.

K-RIDE's Commitment to Sustainability

As a founding member of IGBC (Membership No: IGBCFM210194), K-RIDE is committed to integrating green building principles into its flagship Bengaluru Suburban Railway Project (BSRP). This project exemplifies K-RIDE's dedication to sustainability through:

- Adoption of advanced energy-efficient technologies.
- Sustainable suburban station designs contributing to India's carbon emission reduction goals.

Key Highlights of IGBC Green Building Congress 2024

Government and Industry Leadership:

- Participation by the Ministry of Environment, Forest & Climate Change (MoEF&CC) and Government of Karnataka.
- Inaugural address by Shri Eshwar Khandre, Hon'ble Minister for Forest, Ecology, and Environment, Karnataka.
- Knowledge Sharing and Networking:
- 3-day conferences with 140+ national and international speakers.
- Parallel sessions on transformative themes such as Net Zero Homes, Existing Buildings, Renewables, and the Role of Women in Sustainability.
- B2B meetings fostering collaboration among 140+ exhibitors, 2,750+ delegates, and 6,850 visitors.
- Global Collaboration: Representation by the World Green Building Council (WorldGBC) and 18 Green Building Councils from around the globe.

K-RIDE's Key Contributions and Learnings

- 1. Showcasing Sustainable Initiatives:
 - K-RIDE leveraged the event to exhibit its commitment to:
- · Energy efficiency and waste management.
- · Advanced technologies for sustainable building management.

2. Insights and Opportunities:

- Engaged with experts on themes such as green homes, retrofitting existing buildings, and renewable energy integration.
- · Explored opportunities to incorporate global best practices into the BSRP, ensuring alignment with international standards.

3. Networking and Partnerships:

· Strengthened ties with industry leaders, government bodies, and green building councils to accelerate the adoption of sustainable practices in infrastructure development.

K-RIDE's participation in the IGBC Green Building Congress 2024 reinforces its role as a sustainability champion in India's infrastructure sector. Through active engagement, knowledge exchange, and a commitment to innovation, K-RIDE continues to contribute significantly toward achieving net-zero goals and promoting a sustainable built environment in India.

This participation aligns seamlessly with K-RIDE's vision for environmentally responsible urban transportation infrastructure, making the Bengaluru Suburban Railway Project a model for future sustainable initiatives



















Milestone



India's first 31-meter U-Girder launched for Corridor -2 of BSRP









Key Highlights of the U-Girder Launch:

: Span UP 209-210 (UP Line) Span Details

for a single track.

U-Girder Number

Concrete Quantity : 70 cubic meters. Steel Quantity : 12.5 tonnes. Total Weight : 178 metric tonnes.

Crane Specifications: The girder placement involved the use of two high-capacity cranes,

ensuring precision and safety:

Crane 1 : 550-ton capacity. Crane 2 : 700-ton capacity.

Importance of the U-Girder:

The U-Girder is a critical structural component of the rail infrastructure. It forms the base for laying the tracks and ensures the overall stability of the rail system, allowing for smooth and efficient train operations.

Execution Excellence:

This technically demanding operation was executed flawlessly, showcasing

- Technical Expertise
- Precision in design and implementation.
- Meticulous Planning: Comprehensive preparations to ensure safety and accuracy.
- Seamless Coordination: Collaboration among project teams for a successful outcome.

KRIDE has successfully commissioned additional loop line at Hosur (HSRA) in connection with Baiyappanahalli-Hosur doubling work.



This work includes alteration to centralised electronic interlocking (M/s Kyosan make) in existing main line and provision of MSDAC (axle counter) for train monitoring in place of DC track circuits duly eliminating glued joints without disrupting live train operations. This in turn enhances life of rails, as drilling of holes and multiple welds will be completely eliminated.

This work involves working in existing system, it required meticulous planning, co- ordination with Railways and observance of Railway safety rules. Even though Hosur being a busy station, there was minimal disruption to train operations and KRIDE has successfully ensured to commission the work in stipulated duration with yard flexibility (reception and despatch from all running railway lines). KRIDE has ensured to commission this work along with Railway Gati Shakti Unit as per South Western Railway (SWR) requirement. With this additional loop line provision, SWR gains additional goods handling capacity.

First train no. 11014 passed on signals at 14:57 hrs.

- 1) Insertion of 14 new points and dismantling of 9 points.
- 2) Alteration to existing Interlocking.
- 3) Emergency point operation feature is provided.
- 4) MSDAC of Frauscher make





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