

# Afcons wins bid for Bullet train undersea tunnel

STAFF REPORTER / MUMBAI

Afcons Infrastructure has emerged as the lowest bidder to construct 21-km underwater package C-2 of the Mumbai-Ahmedabad Bullet Train project.

"The National High Speed Rail Corporation Limited (NHSRCL) has opened financial bids for the construction of 21km-long tunnel, including India's first 7km-long undersea tunnel for the Mumbai-Ahmedabad High Speed Rail Corridor under MAHSR C-2 package on Friday and M/s Afcons Infrastructure Limited have quoted lowest bid," said spokesperson of NHSRCL. The technical bids of this tender were opened on February 9, 2023.

"The tunnel will be between underground station at Bandra-Kurla Complex and Shilphata. The 7km (approx) undersea tunnel at Thane Creek (Intertidal Zone) will be the first undersea tunnel to come up in the country," said an official of NHSRCL adding that the tunnel will be a single tube tunnel to accommodate twin track for both-up and down track. Thirty-nine equipment rooms at 37 locations will also be constructed adjoining tunnel location as part of the package.

To construct this tunnel, tunnel boring machines (TBMs) with a cutter head of 13.1m diameter will be used. Usually 5-6m diameter cutter heads are used for urban tunnels in MRTS-Metro system.

■ Financial bids opens for 21km Bullet Train project

■ Tunnel will be between underground station at BKC and Shilphata

■ 7km undersea tunnel will be at Thane Creek

■ Depth 25-65m from ground

■ Deepest construction point will be 114m below Parsik Hill near Shilphata



"Three TBMs will be used to make about 16km of the tunnel portion and the remaining 5km will be through New Austrian Tunnelling Method (NATM).

This tunnel will be about 25-65m deep from the ground level and the deepest construction point will be 114m below the Parsik Hill near Shilphata," he said.

Three shafts at BKC (under package C1), Vikhroli and Sawli at approximate depths of 36, 56 and 39m depths, respectively, will facilitate the construction. Inclined shaft of 42m at Ghansoli and tunnelportal at Shilphata will facilitate the construction of approximately 5km of tunnel through NATM tunnelling method.

## **BULLET TRAIN PROJECT**

# Rs 6,397 crore lowest bid for 21-km tunnel

*New Delhi:* Engineering firm Afcons has emerged as the lowest bidder to construct the 21-km tunnel for the bullet train project including India's first seven-km undersea tunnel in Maharashtra.

Afcons has bid around Rs 6,397.28 to carry out the work, lower than the only other bidder, Larsen and Toubro.

The 21-km tunnel, a show-piece infrastructure project, including a 7-km undersea tunnel at Thane Creek, is crucial to the corridor and is touted as the most challenging piece of civil engineering in the high speed rail corridor. It may take around 60 months to construct.

The bids were opened in February and there were only two.

**ENS**

# Bullet train: Afcons Infra lowest bidder for construction of 21-km-long tunnel

MUMBAI, APRIL 7

Afcons Infrastructure Limited has quoted the lower amount among two technically qualified financial bids for the construction of a 21-km tunnel, including 7 km under the sea, as part of the Mumbai-Ahmedabad bullet train project, National High Speed Rail Corporation Limited said on Friday.

This tunnel will stretch from the proposed underground station at the Bandra Kurla Complex in Mumbai to Shilphata in



neighbouring Thane district. The NHSRCL received bids from Afcons Infrastructure Limited and Larsen & Toubro Limited.

"The tunnel will be a single-tube twin-track tunnel with a diameter of 13.1 metres. Of

20.37 km, 15.42 km of tunnelling will be carried out with three TBMs (Tunnel Boring Machine) and the remaining 4.96 km will be built using New Austrian Tunnelling Method (NATM). The depth

of the tunnel will vary from 25 metres to 65 metres," the NHSRCL said.

"The tunnel will cross the Thane creek. The survey work under the creek was done using the underwater static refraction technique. The deepest construction point will be 114 metres below Parsik Hill near Shilphata," an NHSRCL spokesperson said.

The high speed corridor between Mumbai and Ahmedabad is coming up at a cost of Rs 1.08 lakh crore. —PTI



# 21-km tunnel to be dug from BKC to Thane for bullet train

**Shashank Rao**

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**MUMBAI:** A 21-km long tunnel will soon be dug between Bandra Kurla Complex and Shilphata station in Thane on the Mumbai-Ahmedabad bullet train route. It will run undersea for seven kilometers — which will make it the longest undersea tunnel in India.

The National High Speed Rail Corporation Limited (NHSRCL) on Friday awarded the ₹6,300 crore project to a contractor, who is expected to start the civil works soon. Japanese 'Shinkansen' bullet trains are expected to zip through the tunnel at speeds of 300-350 kmph. It will be a single tube tunnel accommodating twin tracks for travel in both directions.

"The financial bids of two technically qualified bidders were opened today and M/s Afcons Infrastructure Limited have quoted lowest bid," said an official from NHSRCL on Tuesday. The technical bids of this tender were opened on February 9, 2023.

"As a part of the works, 39 equipment rooms at 37 locations will also be constructed adjoining the tunnel. Tunnel boring machines (TBM) with a cutter-head of 13.1m diameter will be used. Usually 5-6m diameter cutter-heads are used for urban metro tunnels," said an engineer



Japan's 'Shinkansen' bullet trains are expected to zip through this tunnel between BKC and Thane at speeds of 300-350 kmph. AP

from NHSRCL.

Three TBMs will be used to dig about 16 kms of the tunnel and the remaining five kilometers will be through New Austrian Tunnelling Method (NATM). The channel will be 25 to 65 meters deep, with a single deepest construction point 114 meters below Parsik Hills in Thane. Three shafts at BKC, Vikhroli and Sawli, at approximate depths of 36, 56 and 39 meters respectively, will facilitate the construction. Recently, land belonging to Godrej in Vikhroli was handed over for this project. These shafts serve as entry points for the TBMs to start boring.

Incidentally, earlier this week,

the authorities had called for tenders to cut trees at Vikhroli for the tunneling purpose.

"More than 67% of total trees are invasive non-native (exotic) type generally used in livestock feed. We will undertake compensatory plantation of more than 5,300 trees. We will also transplant 141 trees," said an official from NHSRCL.

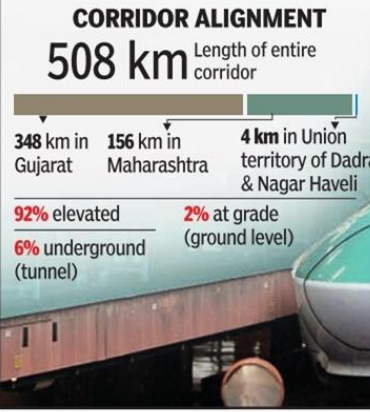
According to NHSRCL, totally 1,828 trees are there on an area of 3.925 hectares. Of which 1,243 trees on an area of two hectares will be affected for construction of traction and distribution substations. At least 585 trees on 1.9 hectares land will be cut for construction of tunnel shaft and ventilation building.

## Afcons is lowest bidder for bullet train tunnel

With a Rs 6,400-crore quote, Afcons Infrastructure has emerged as the lowest bidder to construct the 21-km tunnel between BKC and Shilphata as part of the Mumbai-Ahmedabad bullet train project. It will include a 7km tunnel which will be India's first undersea rail tunnel. The contract is expected to be inked soon and the work is likely to take 5 years, indicating that the operation of the train on the stretch may not be possible before 2028. **Manthan Mehta reports, P 2**

# COUNTRY'S FIRST UNDERSEA RAIL TUNNEL WORK TO BEGIN SOON BELOW THANE CREEK

Civil works for the Mumbai-Ahmedabad bullet train corridor is expected to gain steam in the state after the emergence of Afcons as the lowest bidder for the 21km tunnel that will start at BKC and end at Shilphata, including a 7km undersea section below Thane creek. **Manthan K Mehta reports**



### THE TUNNEL Length: 21 km

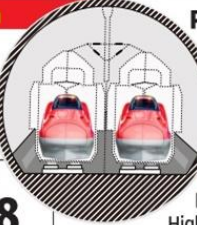
**BKC to Shilphata (Thane)**

underground **14 km** | **7km** below Thane creek, making it India's longest undersea tunnel once ready

**Start of work** Expected before monsoon | **Cost** ₹6,400 crore | **Deadline** 2028

### What is unique about the tunnel?

- It will be a single tube tunnel to accommodate twin tracks (both up and down)
  - Tunnel boring machines with a cutter head of diameter 13.1 metres will be used, making them the biggest to be used in the country
- Picture for representation



### PROJECT COMPONENTS

Work on the 156km stretch of the bullet train's corridor in Maharashtra has been divided into three packages: **C1, C2 and C3**

**C1** | National High Speed Rail Corporation Ltd (NHSRCL) has already awarded the contract for the construction of an underground terminus at BKC to sign the contract soon. The tunnel will take nearly 5 years to complete, sources say

**C3** | Is for civil and building works involving viaduct, bridges, maintenance depot and three stations (Thane, Virar, Boisar)

**C2** | Afcons has emerged as the lowest bidder for the tunnel component and NHSRCL is expected



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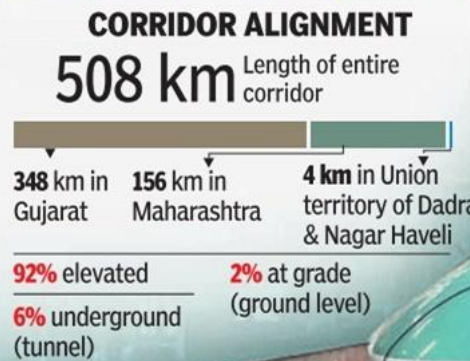
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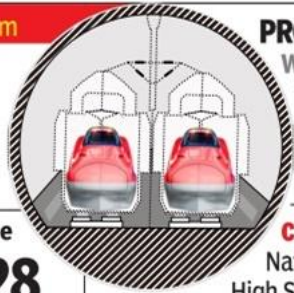
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India's first under sea water tunnel, 7 kms long, will be constructed.

# समुद्राखाली बनेल देशात पहिला ७ किमीचा बोगदा

मेसर्स फॅकॉन्स इन्फ्रास्ट्रक्चर लिमिटेडची कमी बोली

दिव्य मराठी नेटवर्क | मुंबई

बुलेट ट्रेन प्रकल्पाच्या कामांना आता महाराष्ट्रातही वेग आला आहे. मुंबई-अहमदाबाद हायस्पीड रेल्वे कॉरिडोर अंतर्गत २१ किमी लांबीचा बोगदा बांधण्यात येणार आहे. त्यात देशातील पहिल्या ७ किमी लांबीच्या समुद्राखालील बोगद्याचाही समावेश आहे. शुक्रवारी या कामासाठी तांत्रिकदृष्ट्या पात्र बोलीदारांच्या आर्थिक निविदाही उघडण्यात आल्या आहेत, ज्यामध्ये मेसर्स फॅकॉन्स इन्फ्रास्ट्रक्चर लिमिटेडने सर्वात कमी बोली लावली आहे.

बुलेट ट्रेनसाठी महाराष्ट्रातील वांद्रि-कुर्ला कॉम्प्लेक्स (बीकेसी) ते शिळफाटा (ठाणे) पर्यंत भूमिगत स्टेशन बांधले जाईल. यामध्ये ७ किमी लांबीचा बोगदा समुद्राखाली बांधण्यात येईल. समुद्राच्या आत इतका लांब बांधलेला हा देशातील पहिला बोगदा असेल. हे टर्मिनल २

ट्रॅक असलेले सिंगल ट्यूब टर्मिनल असेल. ज्यामध्ये बुलेट ट्रेनचे आगमन व प्रस्थान या दोन्ही मार्गांचा समावेश असेल. तसेच ३७ ठिकाणी ३९ उपकरण कक्षही बांधण्यात येईल.

हा बोगदा बांधण्यासाठी १३.१ मीटर व्यासाचे कटर हेड असलेले टीबीएम वापरले जातील. महत्त्वाचे म्हणजे एमआरटीएस-मेट्रो प्रणालीमध्ये वापरल्या जाणाऱ्या शहरी बोगद्यांसाठी साधारणपणे ५-६ मीटर व्यासाचे कटर हेड वापरले जातात. सुमारे १६ किमी बोगद्याच्या भागासाठी तीन टनेल बोअरिंग मशीन वापरल्या जातील आणि उर्वरित ५ किमी न्यू ऑस्ट्रियन टनेलिंग पद्धतीद्वारे (एनएटीएम) होतील. हा बोगदा जमिनीपासून सुमारे २५ ते ६५ मीटर खोल असेल. सर्वात खोल बांधकाम बिंदू शिळफाटाजवळ पारसिक टेकडीच्या खाली ११४ मीटर असेल. बोगद्याचे बांधकाम सुलभ करण्यासाठी ३ शापटचा वापर होईल.

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Tenders for underground tunnels on Bullet train route are opened

# बुलेट ट्रेन मार्गावरील बोगद्याच्या निविदा खुल्या

मुंबई, ता. ८ : मुंबई ते अहमदाबाद हायस्पीड बुलेट ट्रेनच्या कामाला सध्या वेग आला आहे. मुंबईतील वांद्रे-कुर्ला कॉम्प्लेक्स (बीकेसी) ते ठाण्यातील शिळफाटा या मार्गावर २१ किलोमीटर लांबीच्या बोगद्यासाठी दोन कंपन्यांनी निविदा भरल्या होत्या. यात 'अॅफ्कोन्स' या इन्फ्रास्ट्रक्चर कंपनीने सर्वात कमी ६ हजार ३९७ कोटी रुपयांची बोली लावली आहे. २१ किलोमीटरपैकी १४ किलोमीटर अंतर हे जमिनीखाली; तर उर्वरित सात किलोमीटर अंतर ठाणे खाडीखाली असणार आहे.

## प्रकल्प १.१ लाख कोटींचा!

मुंबई-अहमदाबाद हाय-स्पीड बुलेट रेल्वे प्रकल्प ५०८.१७ किलोमीटर लांबीचा कॉरिडोर आहे. मुंबई, अहमदाबाद या दोन शहरांना १२ स्थानकांद्वारे जोडले जाईल. मुंबई बीकेसी, ठाणे-शिळफाटा, विरार, बोईसर, वापी, बिलीमोरा, सुरत, भरुच, बडोदा, आनंद/नडियाद, अहमदाबाद, साबरमती आदी स्थानकांचा यात समावेश आहे. या प्रकल्पाची अंदाजे किंमत १.१ लाख कोटी रुपये आहे.

बुलेट ट्रेनचा पहिला टप्पा गुजरातच्या सुरत ते बिलीमोरादरम्यान डिसेंबर २०२६ मध्ये सुरू होणे अपेक्षित आहे. या बुलेट ट्रेन मार्गासाठी 'नॅशनल हाय स्पीड रेल कॉरिडोर लिमिटेड'ने सी-२ पॅकेजसाठी आर्थिक निविदा उघडली आहे. या टप्प्यातील

आर्थिक निविदा गुरुवारी (ता. ७) खुल्या झाल्या.

वर्क ऑर्डर निघाल्यानंतर बोगदा पूर्ण होण्यासाठी सुमारे पाच वर्षांचा कालावधी अपेक्षित आहे. २०२८ ही या बोगद्याच्या कामाची डेडलाईन आहे.