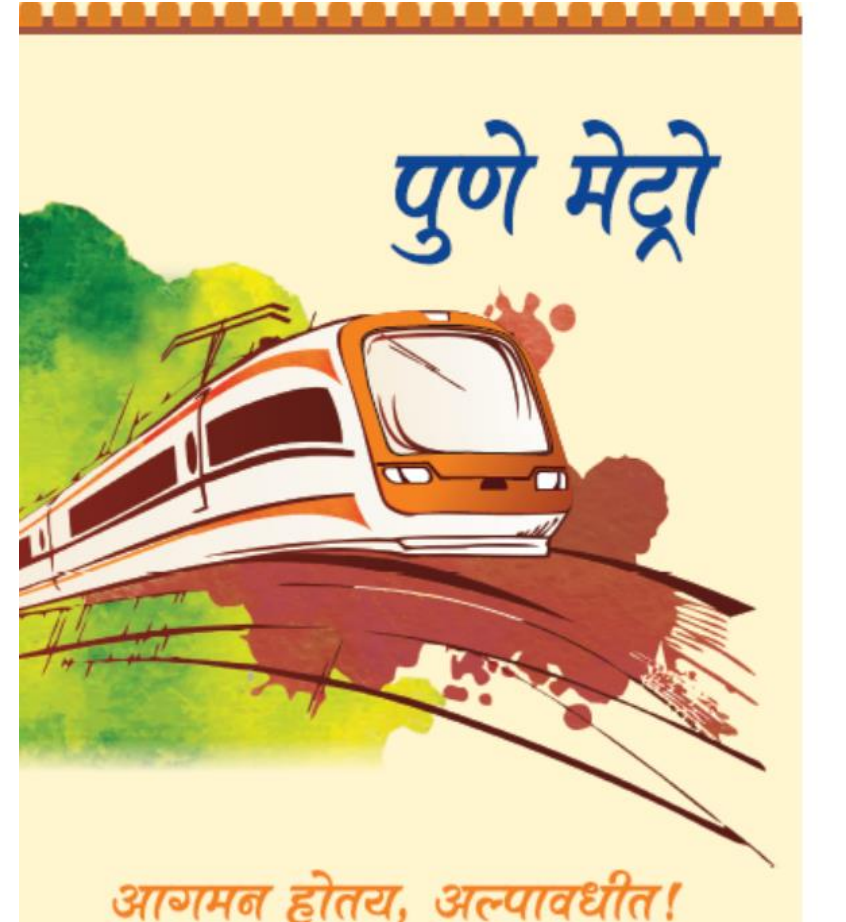




# ENVIRONMENTAL INITIATIVES



# PUNE METRO LAYOUT









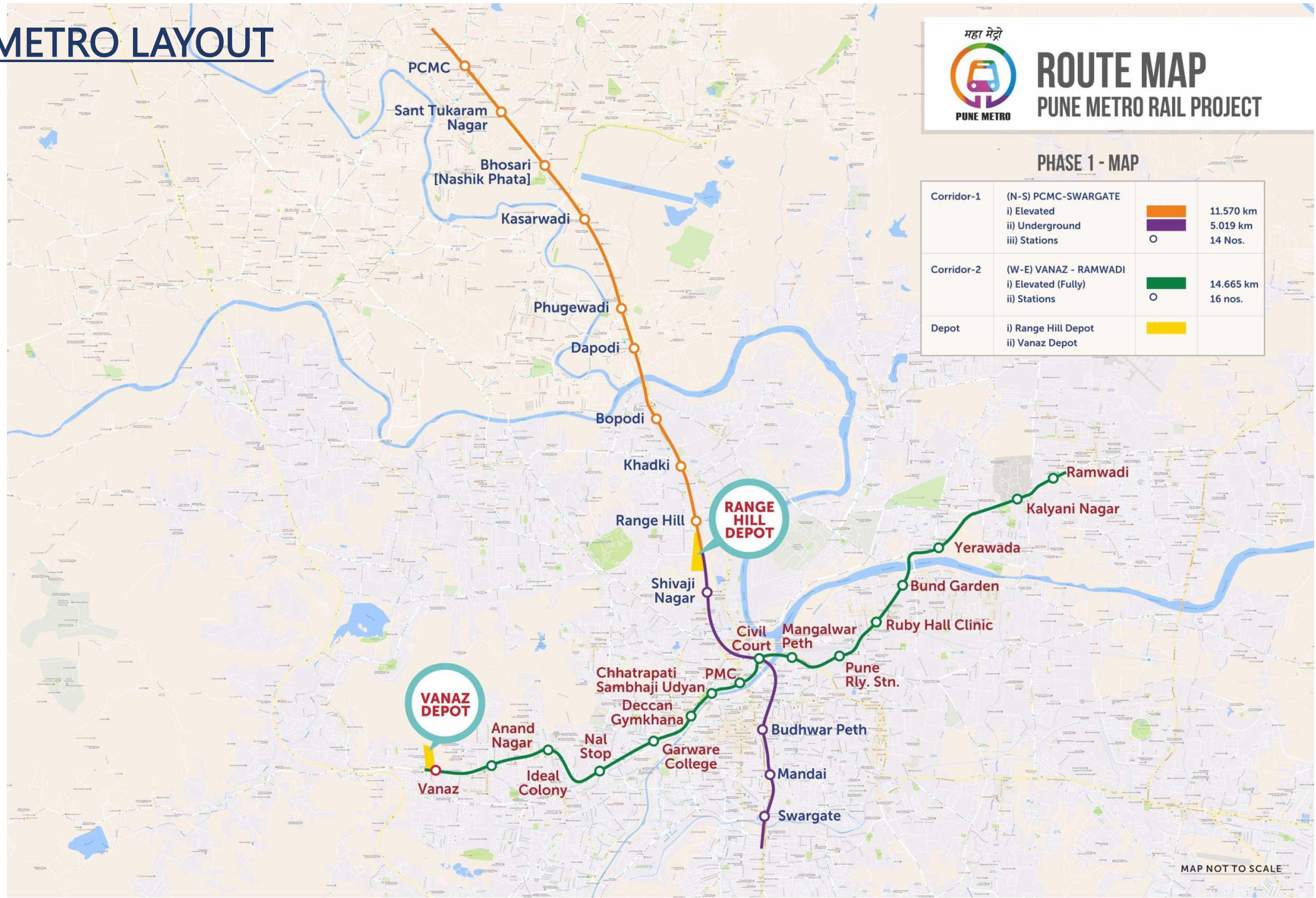
महा मेट्रो  
PUNE METRO

## ROUTE MAP

### PUNE METRO RAIL PROJECT

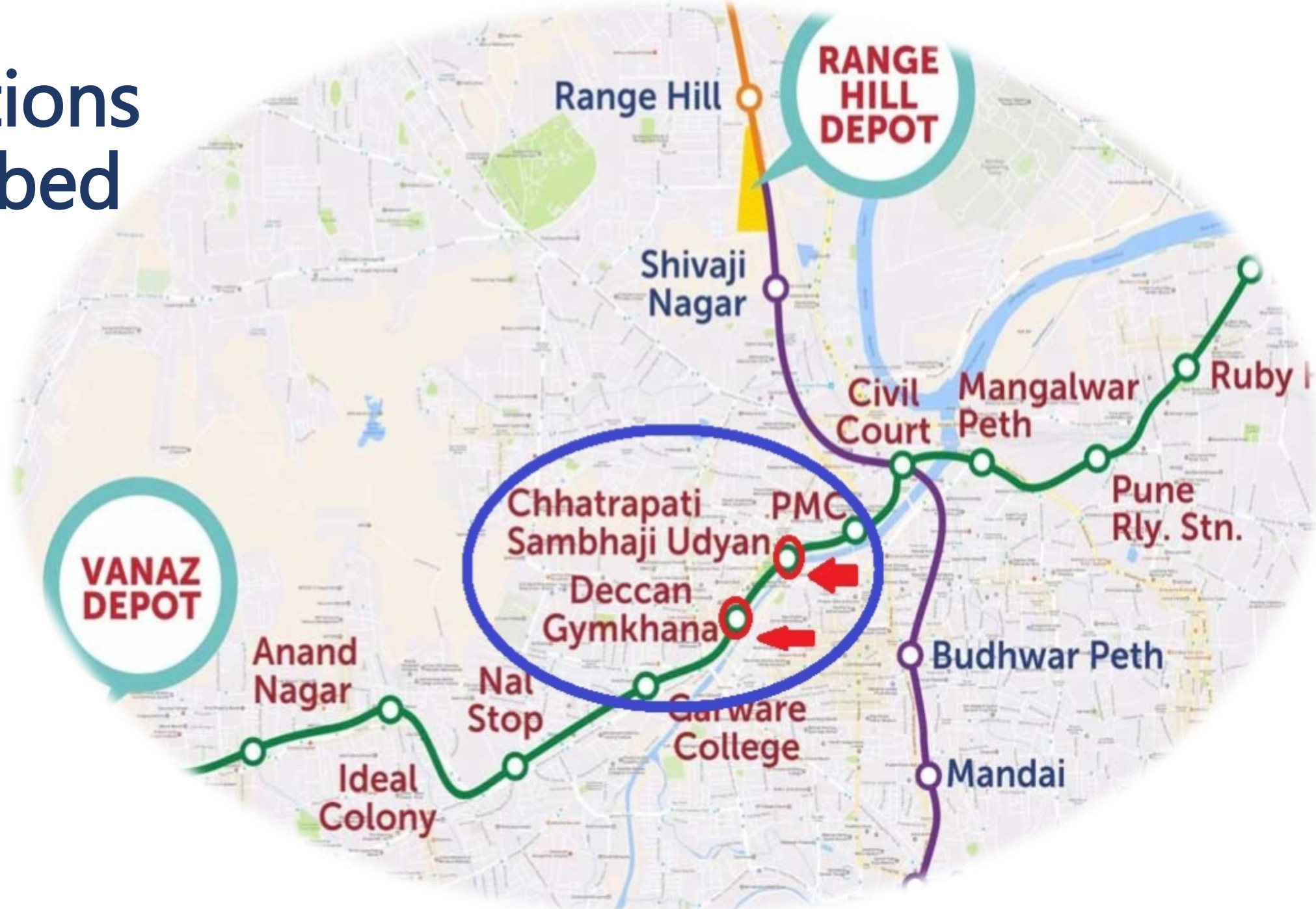
#### PHASE 1 - MAP

Corridor-1	(N-S) PCMC-SWARGATE i) Elevated ii) Underground iii) Stations	  	11.570 km 5.019 km 14 Nos.
Corridor-2	(W-E) VANAZ - RAMWADI i) Elevated (Fully) ii) Stations	 	14.665 km 16 nos.
Depot	i) Range Hill Depot ii) Vanaz Depot		



MAP NOT TO SCALE

# Two Stations on Riverbed



# Concerns regarding construction on Riverbed

1. Lead to unprecedented flooding
2. Cause irreversible damage to bio diversity
3. Will cause disaster to lives and property
4. Large number of trees will be destroyed

**NGT asked an expert committee from NEERI to examine the above**

# NEERI EXPERT COMMITTEE REPORT

Findings from expert Committee team from Hydrology, Ecology and Bio-diversity:

1. Obstruction to the river is insignificant as it does not cross the river.
2. No rare, endangered and threatened species of tree/herbaceous flora was observed at the metro site.
3. Due to the piers the increase in submergence is from 2mm to 23mm.

# NGT JUDGEMENT CONCLUDED

The Expert Committee had concluded that impact of construction of piers for metro rail on river hydrology is insignificant, considering the level of discharge in river due to rise in afflux from 2 to 12 mm in increased submergence from 3 to 23 mm.

Recommendations of the committee which the project proponent has undertaken to comply include compensatory afforestation, cleaning of drain and installing dust sensor.

# NGT JUDGEMENT CONCLUDED

In view of the above we are of the opinion that it will not in public interest to prohibit the project. However, the project may be completed by following all the safeguards suggested by the expert committee.



*Green  
Initiatives*



# RAIN WATER HARVESTING

in Collaboration with Groundwater Survey & Development Agency

## Purpose:

- Recharging water
- Improving quality of water

Pune metro project annual recharge figures in  $\text{m}^3$

Viaduct – 21,312  $\text{m}^3$

Stations – 9,132  $\text{m}^3$

Depots – 4,416  $\text{m}^3$

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**Total - 34,860  $\text{m}^3$**

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# Solar Energy

Sr No	Potential locations Type	DC Capacity (kWp)	Energy (kWh/Annum)
1	Elevated Station Rooftops along with FOB's for C-1	1818	2833290
2	Elevated Station Rooftops along with FOB's For C-2	2858	4330840
3	Range Hill Depot and Boundary Wall Mounted	876	1431690
4	Vanaz Depot	508	812540
5	Viaduct for C-1 & C-2	5137	8257000
	<b>Total</b>	<b>11197</b>	<b>17665360</b>

# Trees

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- Decrease in CO2 absorption – 21.8 Kg/Year
- Oxygen production – 49 Kg/Year
- Trees are our best sources for enhancing air quality and reducing noise.

**“Metro Policy- NO Trees are to be CUT”**



# CHALLENGES

**1. Space for Depot** – Agriculture College- 331 fruit bearing trees were transplanted. These trees were Amla, Fig, Guava, Pomegranate, Jamun, Mangoes and Custard Apple through Root Ball methodology.

**2. DPR norms are planting 5 trees for every tree removed:**

1. We have planted: **8700 Trees**
2. Transplanted : **614 Trees**





Shot on OnePlus



Shot on OnePlus



Shot on OnePlus



Shot on OnePlus

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## Tree Transplantation Process Translocation of Mango Trees

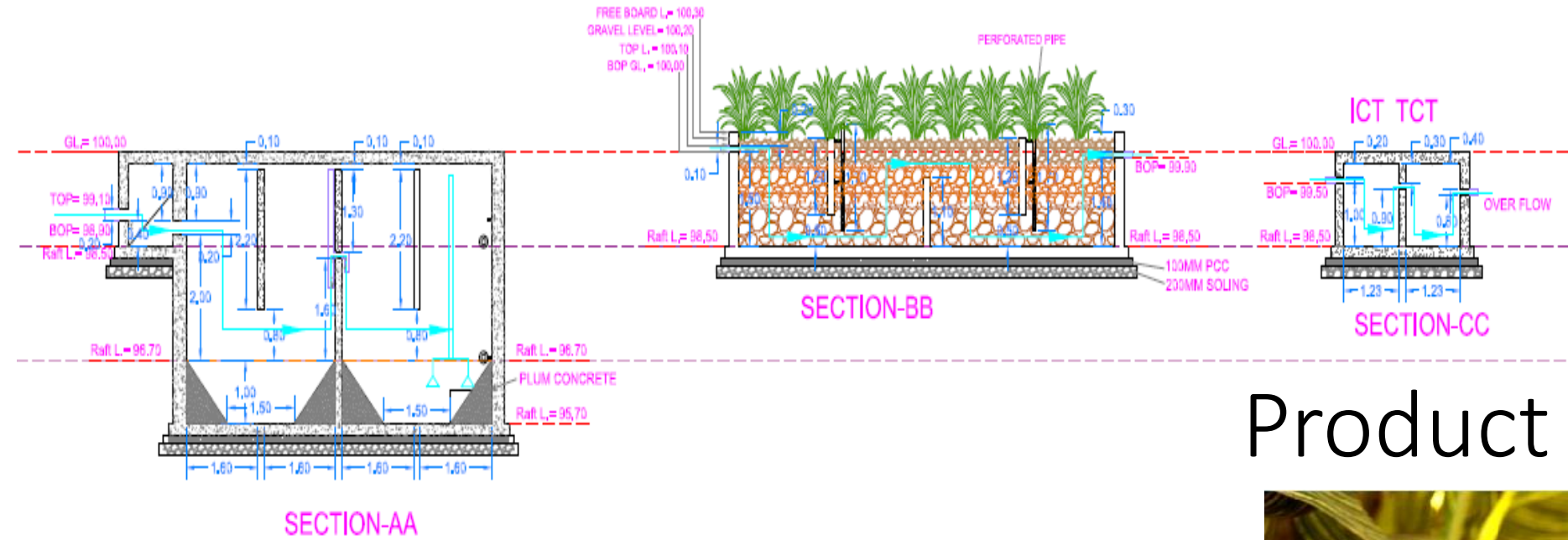
# WAY FORWARD

## ROOT ZONE TECHNOLOGY



Bio digesters will be used for treating sewage at Stations and Root Zone Technology will be adopted for Depots, both for sewage and effluent treatment plant.

# Root Zone –Flow Diagram (10 KLD)



## Product Water quality

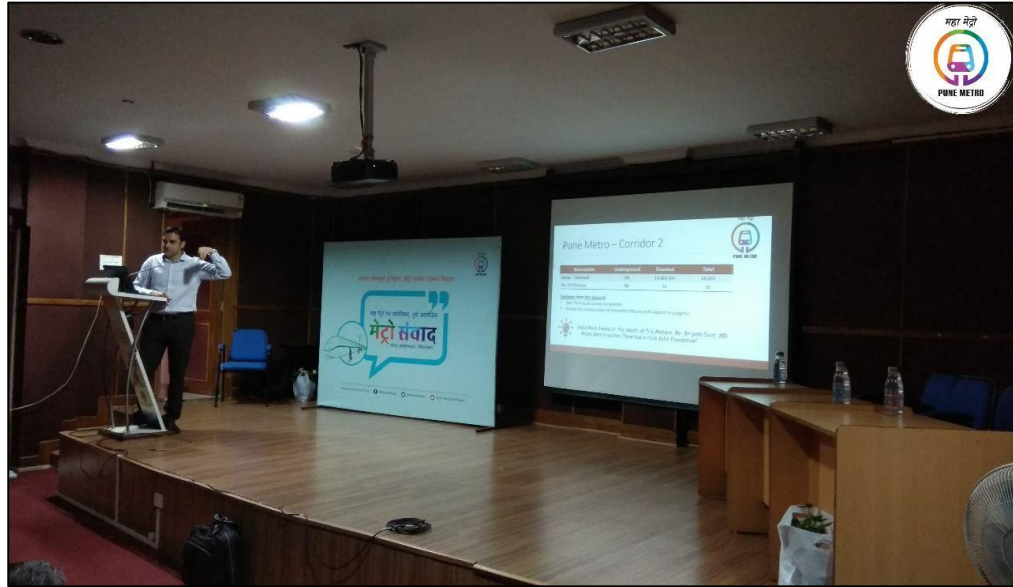


**Total Area Required – 36 Sq.Mtr.**

- Covered Area (Can be reused) – 22 Sq.Mtr.
- Dedicated Area for Plantation Bed – 14 Sq.Mtr.

**No. of Plants required: 75 @ 300/plant**

# Other Initiatives



SAMVAD ↑



QRT Team ↑



→ Mahiti Kendra



A white, hand-drawn style thought bubble sticker is centered on a corkboard background. The sticker has a soft, irregular shape with a small tail at the bottom. The text 'Thank you!!' is written in a bold, black, sans-serif font. The corkboard background is a light brown color with a visible, textured surface of small, irregular particles.

Thank  
you!!