

Vishakhapatnam Beachfront Development, Andhra Pradesh, India

30km Long Stretch



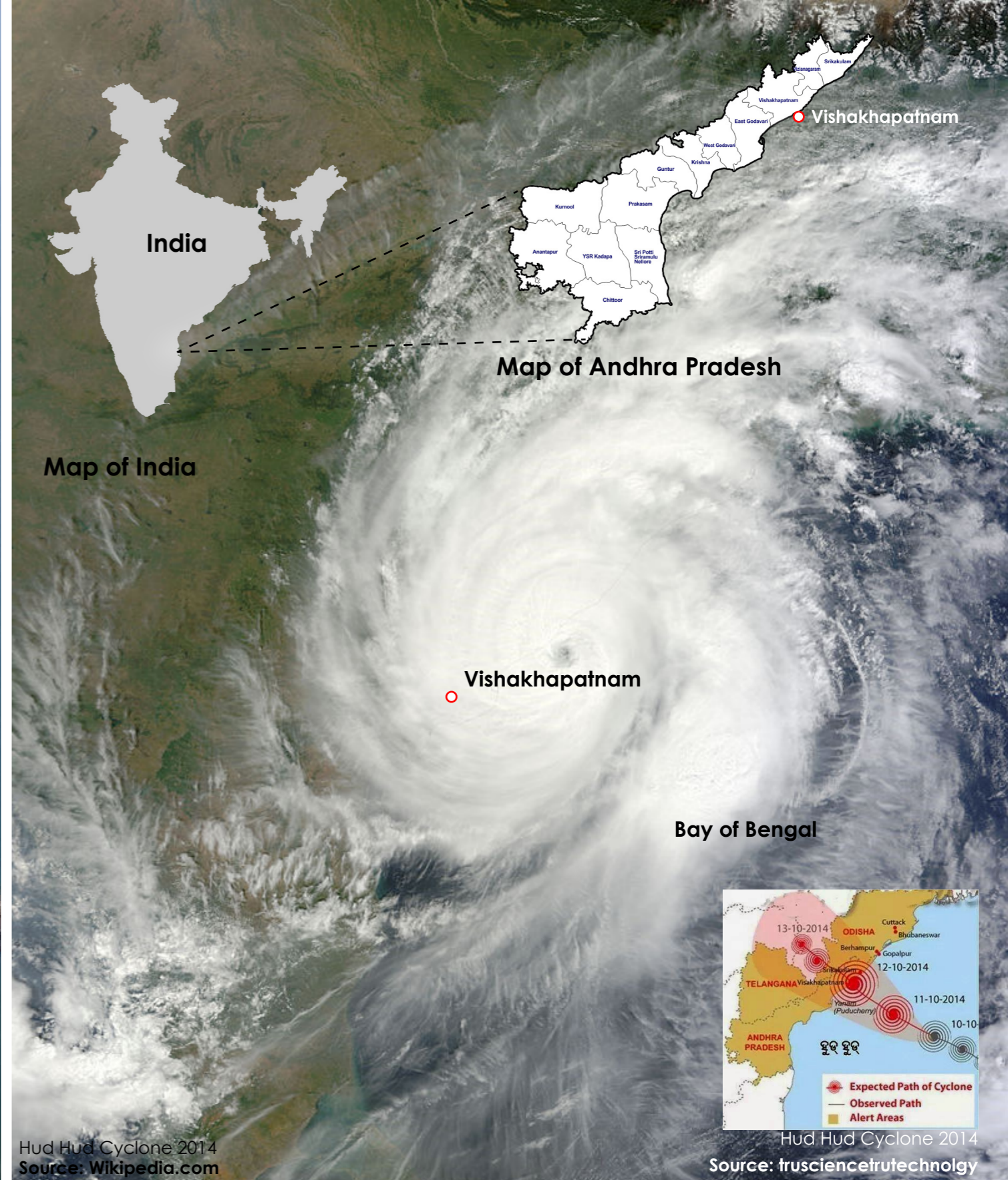
The **30-km long beachfront** in the city of Vishakhapatnam was devastated by cyclone Hud-Hud in 2014. The efforts to restore the Beachfront were initiated by Greater Vishakhapatnam Municipal Corporation (GVMC) under **Andhra Pradesh Disaster Recovery Project (APDRP)** in 2017. Thereby, **INI Design Studio** was appointed as design consultant to prepare a comprehensive master plan for the beach front.

The plan focuses on the complex **interplay between the environmental, social, cultural and urban fabrics** in the site. The beachfront changes its character as it runs along different urban and semi-urban land uses. The presence of fisher communities and other informal sectors with their livelihoods closely entwined with the beachfront adds to the diverse character and issues on the site.

The Master plan is developed with the following goals.

1. **Creating a comprehensive Master plan for 30 km** of Vishakhapatnam Coast that addresses the diverse character while unifying the entire stretch through subtle interventions.
2. **To enhance the engagement of people and urban pockets** with the water in a sustainable manner.
3. **Use of sustainable techniques for restoration and remediation** of existing parks and public spaces.
4. **Create a methodology and demonstrate appropriate intervention** and construction for the ecologically and culturally rich site.
5. **To create vibrant public areas** along with providing enough opportunities for traditional & alternative livelihood for the coastal communities.

City of Vishakhapatnam
Source: Wikipedia.com



Hud Hud Cyclone 2014
Source: Wikipedia.com

Hud Hud Cyclone 2014
Source: fruscience.rutecology



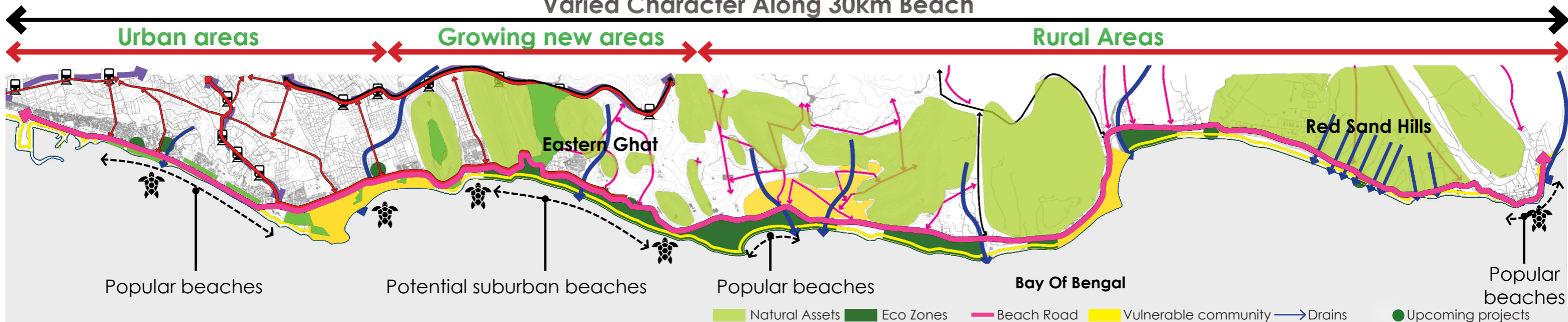
Shoreline of Vishakhapatnam, 2014
Source: the hindu



Condition of Promenade due to Hud Hud, 2014
Source: the hindu

OPPORTUNITIES

Varied Character Along 30km Beach



Upcoming Newer development along the beachfront

1. Development of **newer urban magnets - IT SEZ**
2. The proposed **new lateral roads**
3. **Metro station** beach road
4. Potential increase in floating population and tourist due to PCPIR, Sagarmala and other upcoming regional projects

Manmade assets and Existing Infrastructure

1. **Continuous Beach road**
2. Available Parks , Historical & culturally significant buildings and tourist spots in precinct of the beach front.
3. **Existing Disaster management plan** & identified routes for the evacuation

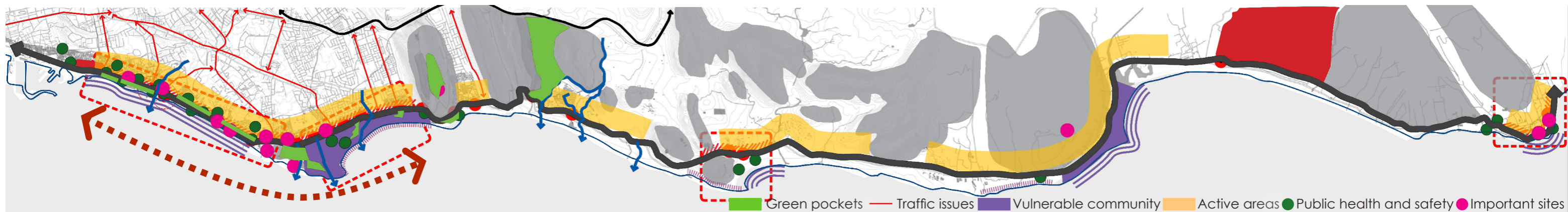
Natural assets

1. **Unexplored sub urban beaches** with natural geo heritage sites and eastern ghats
2. **Cleaner creeks & estuaries** on north with Gambheer Gedda river & Gosthani river
3. **Un touched eco sensitive areas**

Coastal community

1. **Asset of having indigenous fisherman** communities prevailing along the beachfront
2. **RK beach is Popular and Multi used destination** with abundant community based activity

ISSUES



Traffic congestion and Inefficient use of Right of way

1. Limited Public Transport Facilities
2. Limited Lateral Connectivity to City

Disconnect with Water

1. Due to level difference between beach and land, most part of the beach road is **disconnected with water**

Vulnerability

1. Sea level rise, lack of amenities, coastal erosion and frequent cyclones
2. Effect of sea derbies, construction debris, disposals from hatcheries in **close proximity to Eco Zones**
3. **Fragmented retaining walls** & lack of strong resilient strategy towards coastal protection

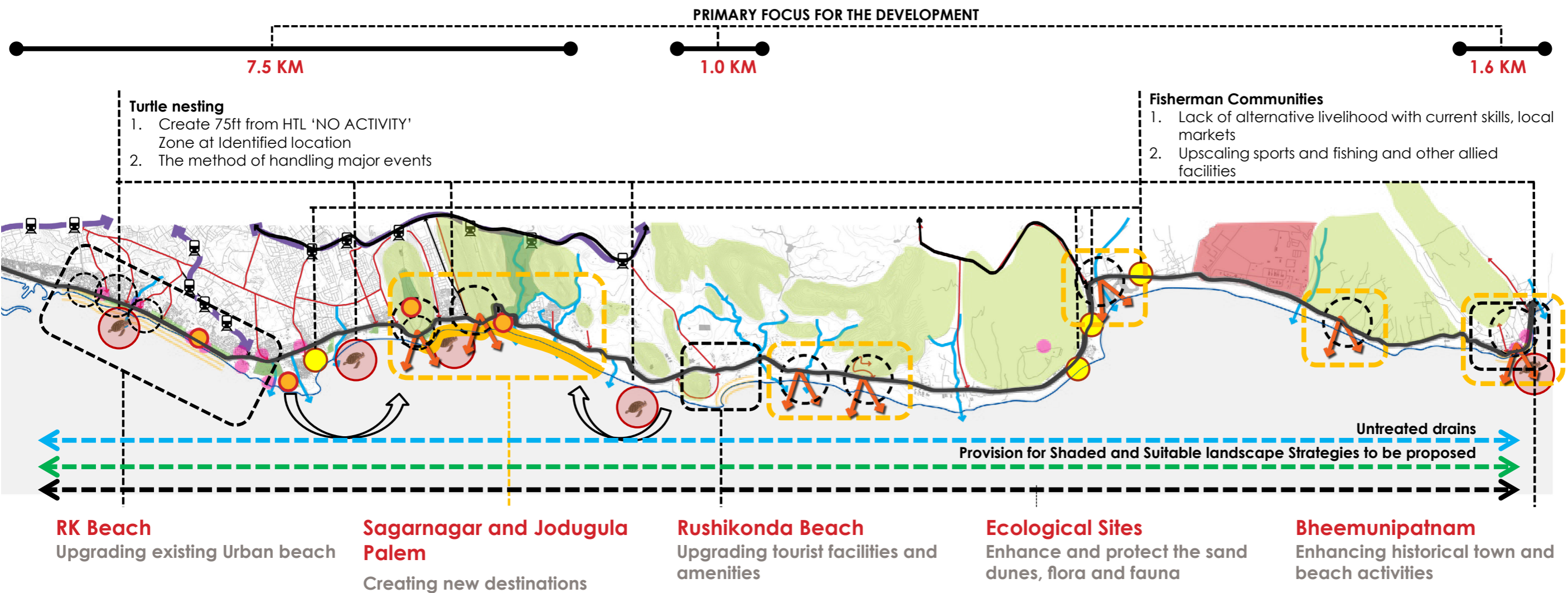
Public health, Safety & Security and Public realm

1. **Rough Coastal bathymetry** due to rocky ridges and coastal morphology.
2. **Limited watch tower & basic amenities**
3. **Lack of awareness for Dos and Donts**

Beach front character gets affected due to-

1. **Limited physical and visual access between the beach and beach road**
2. **Buildings/ structures hindering** the view of the beach from the beach road
3. **Untreated water disposal** in the sea via creeks and drains along with Sea debris hampering the beach.
4. **Fragmented green corridors** and varying tree density

IDENTIFICATION OF INTERVENTION AREAS THROUGH COMMUNITY & STAKEHOLDER PARTICIPATION



- 3 Public Consultations
- 2 Survey with Fisher Communities
- 400+ Online User Survey
- 17+ Multiple Stakeholders
- Informal Discussions with Street Hawkers



Traffic Management

Solid Waste/ Sanitation

Infrastructure

Recreation

Waste Water

Beach Beautification

Integrated Planning

Safety and Security

Inconvenience

Public Awareness

COMMUNITY CONSULTATION & PARTICIPATION



Interaction with fisherfolks in Jalaripetta



Household Survey and interactions at Jalaripetta



Discussions with self help groups



Discussion of proposals with panchayat members



Household Survey and interactions at Bheemunipatnam



Household survey of fisher community at Jalaripetta



Public display of proposed interventions at Bheemunipatnam



Engagement and survey with street vendors & Hawkers at RK beach

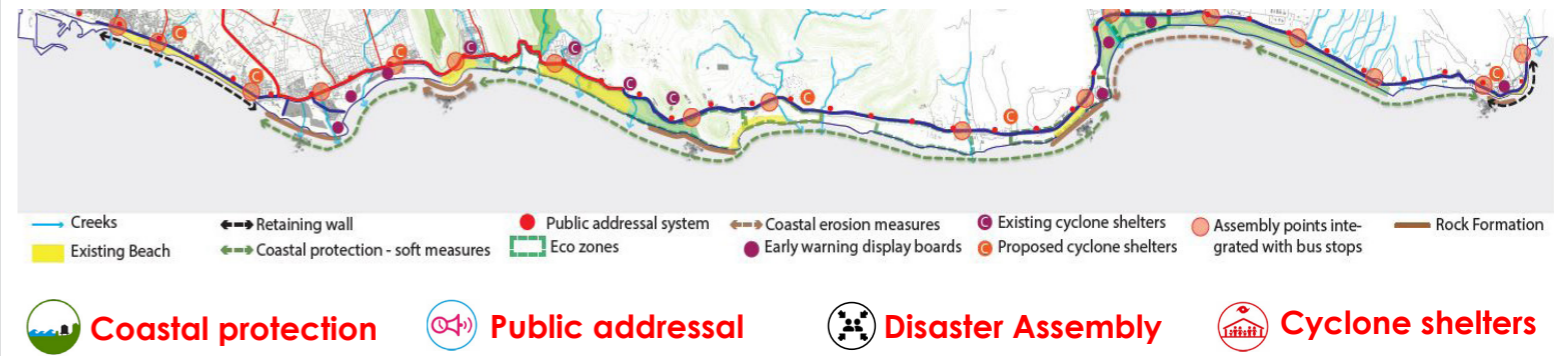


Public display of proposed interventions

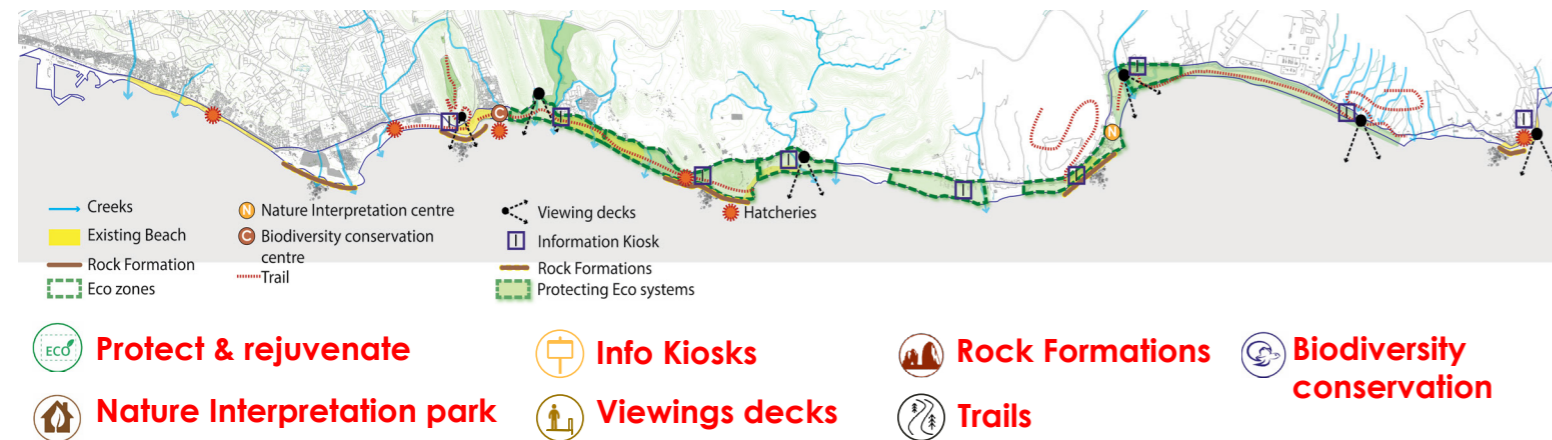
MASTER PLAN KEY DESIGN STRATEGIES

The plan is driven by **seven strategies** – pivoted upon the sensitivity of the site to its **environment, users, and built forms**. The master plan vision was to integrate the fragmented character of the entire beachfront through sensitive and subtle design interventions along with focussed area-based solutions.

4. BUILD THE INFRASTRUCTURE TO ENHANCE RESILIENCE ALONG BEACHFRONT



1. BUILD AND RESTORE UPON NATURAL ASSETS



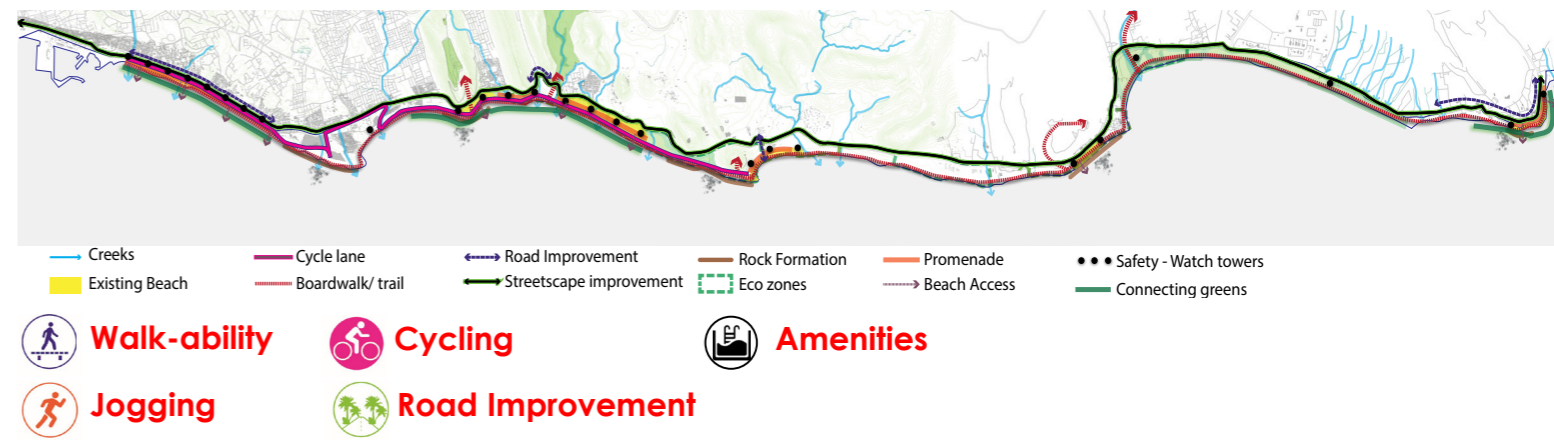
2. BUILD AND RESTORE UPON MAN-MADE ASSETS



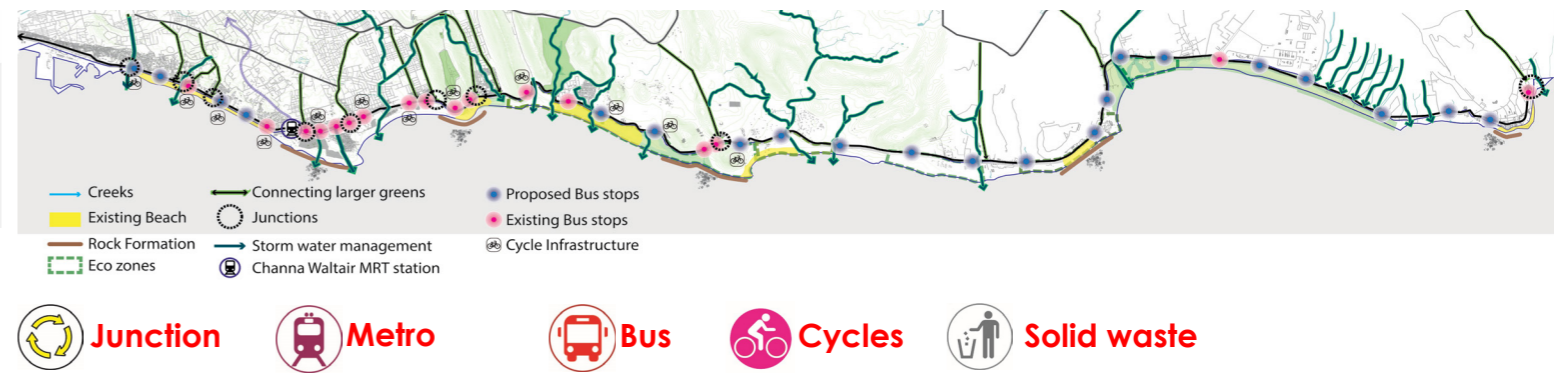
3. ENHANCE THE RESILIENCE AND LIVELIHOODS OF COASTAL COMMUNITIES



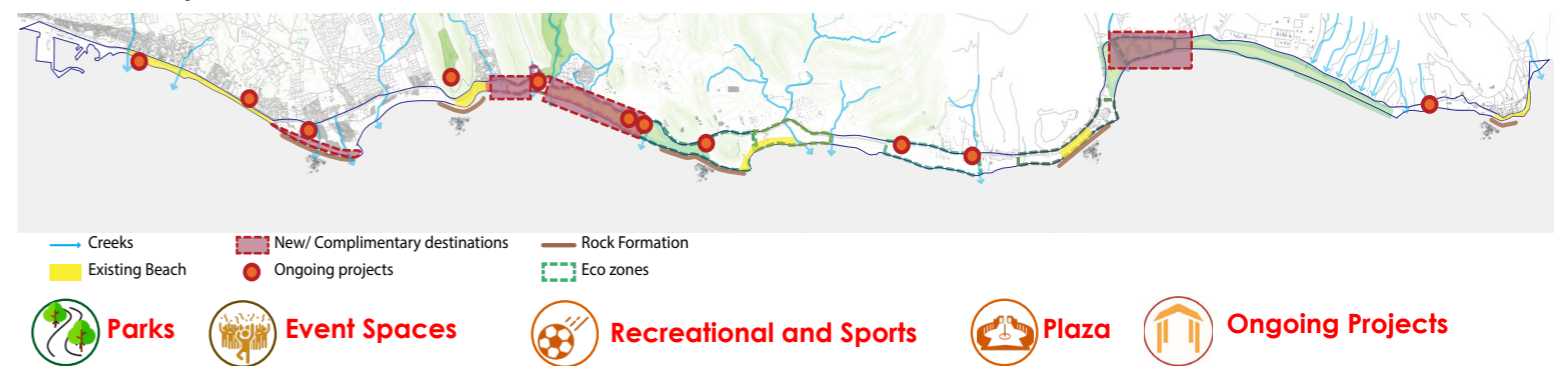
5. STRENGTHEN PHYSICAL AND EXPERIENTIAL INTERRELATIONSHIP BETWEEN VARIOUS DESTINATIONS ALONG THE BEACHFRONT



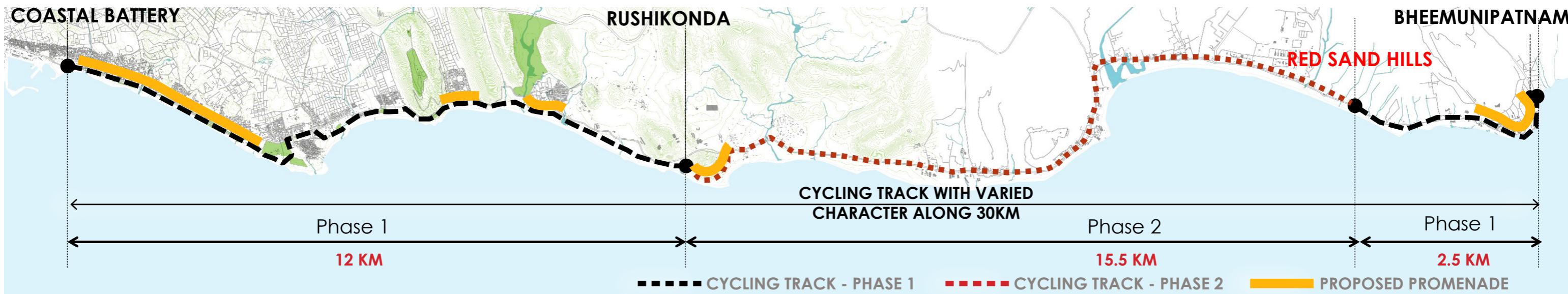
6. INTEGRATE AND COMPLIMENT WITH THE LARGER CITY NETWORK



7. DEVELOP NEW AND COMPLEMENTARY PUBLIC SPACES AS PER THE POTENTIAL AND CURRENT/ FUTURE NEEDS



PROPOSED CYCLE TRACK WITH VARIED CHARACTER



PROPOSED CYCLING TRACK AT VARIOUS AREAS



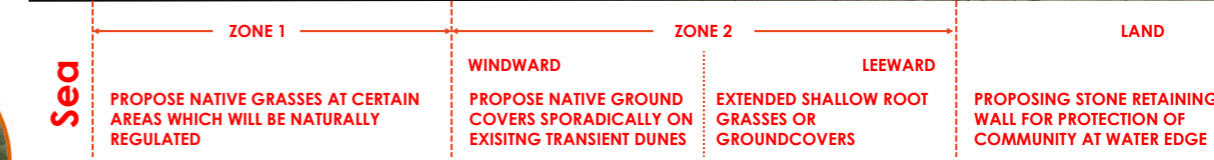
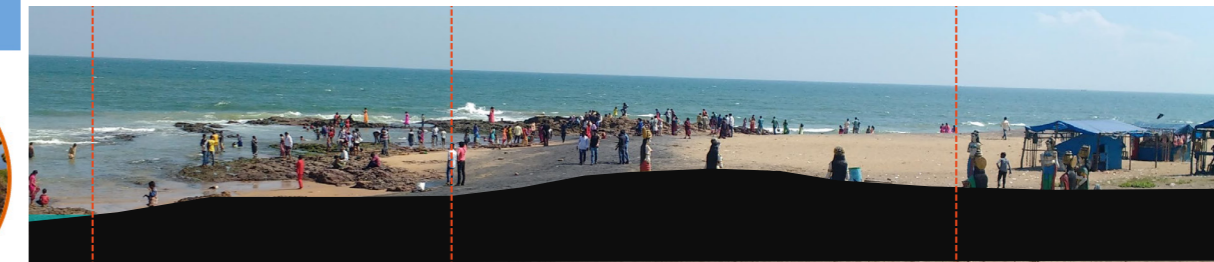
LANDSCAPE STRATEGIES- ADDRESSING THE ECOLOGICAL CONTEXT OF THE SITE

ECOLOGICAL NICHE FOR MARINE AND TERRISTIAL CREATURES, GRADUALLY DECREASING SAND EROSION SUSCEPTIBILITY GIVING RESILIENCE AGAINST STRONG WIND AND WATER CURRENTS.



ECO ZONE 1 BERM		ECO ZONE 2 IPOMOEA PES CAPRAE		ECO ZONE 3 IPOMOEA PES CAPRAE		ECO ZONE 4 PALM PLANTATION		ECO ZONE 5 MARINE PLATFORM		ECO ZONE 6 MARSH LAND	
SAND DUNE WITH GROUND COVER		WAVE CUT PLATFORM		COASTAL SAND DUNES		WHITE EGRET		WAVE CUT PLATFORM		GAMBHEERAMGEDDA ESTUARY	
ROCK PROMONOTORY		SAND DUNE WITH GROUND COVER		BERM		MOLLSUCS					

Diversity of Ecological Features



Proposed Natural Drainage systems



Boardwalks and trails protecting coastal flora and fauna



Enhancing the ground cover



Protecting sandy edges with ground cover and temporary fence



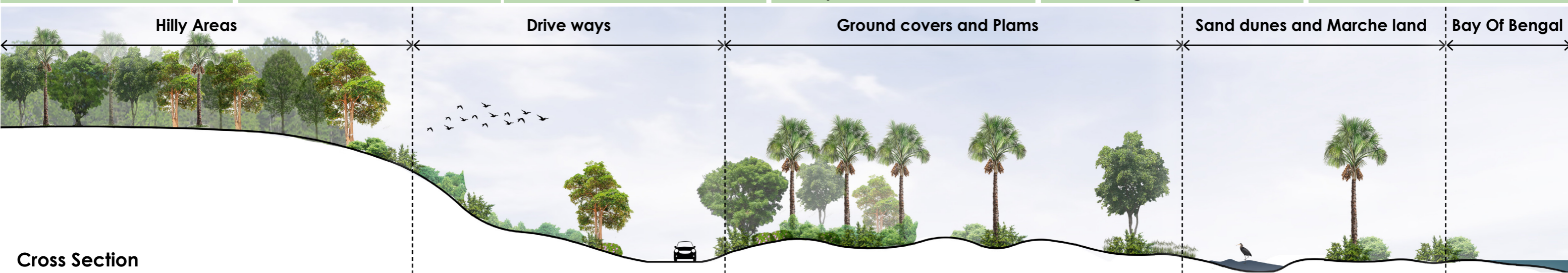
Palmyra plam strategically placed for experiential quality of space and resilience.



Protection and Enhancement of Marche with Reeds, Aquatic and grass land

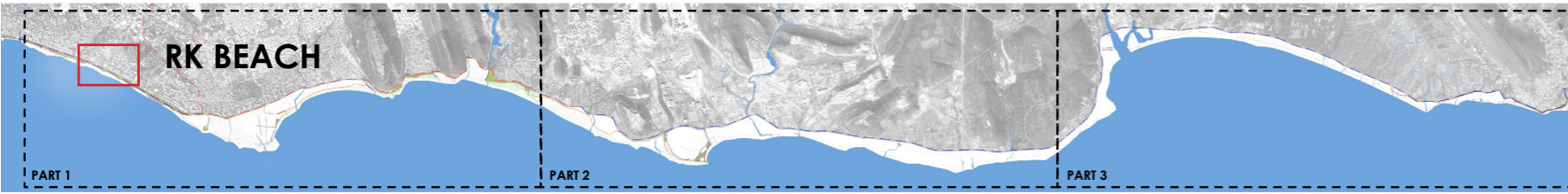


Protecting wave cut rock formations

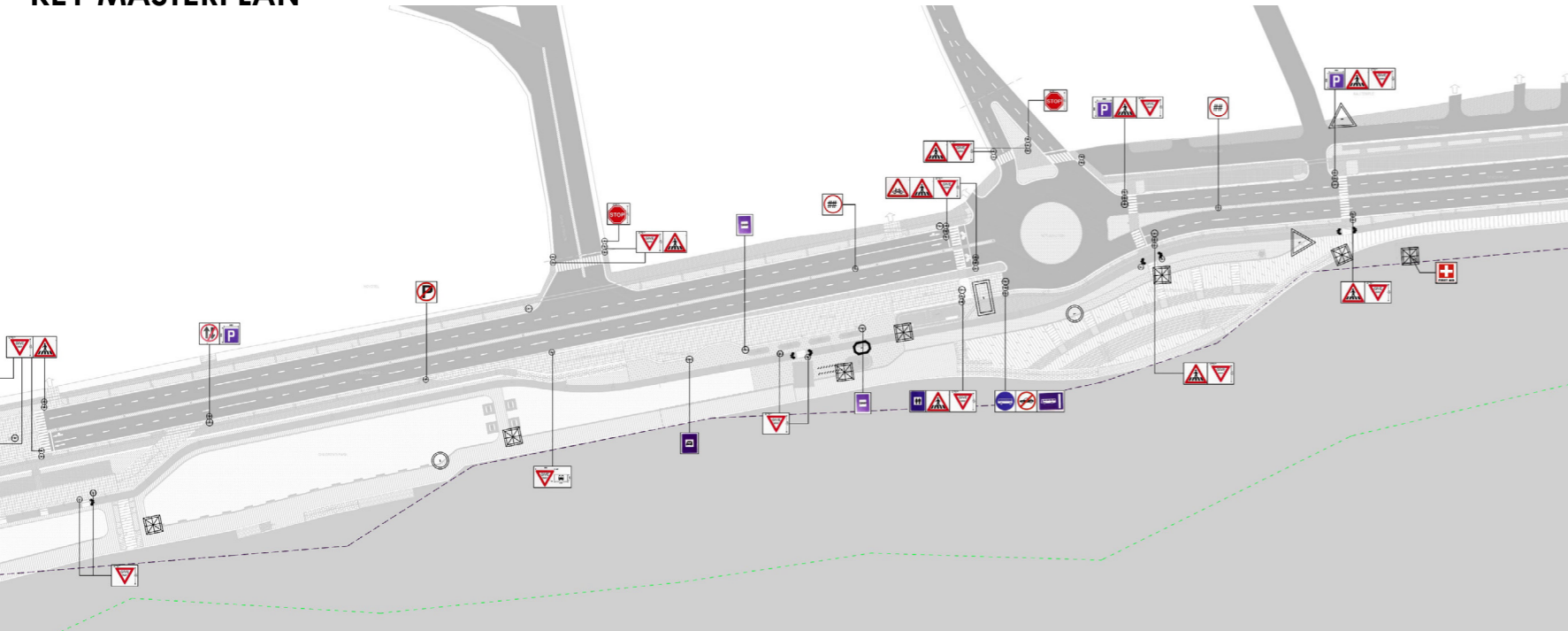


Cross Section

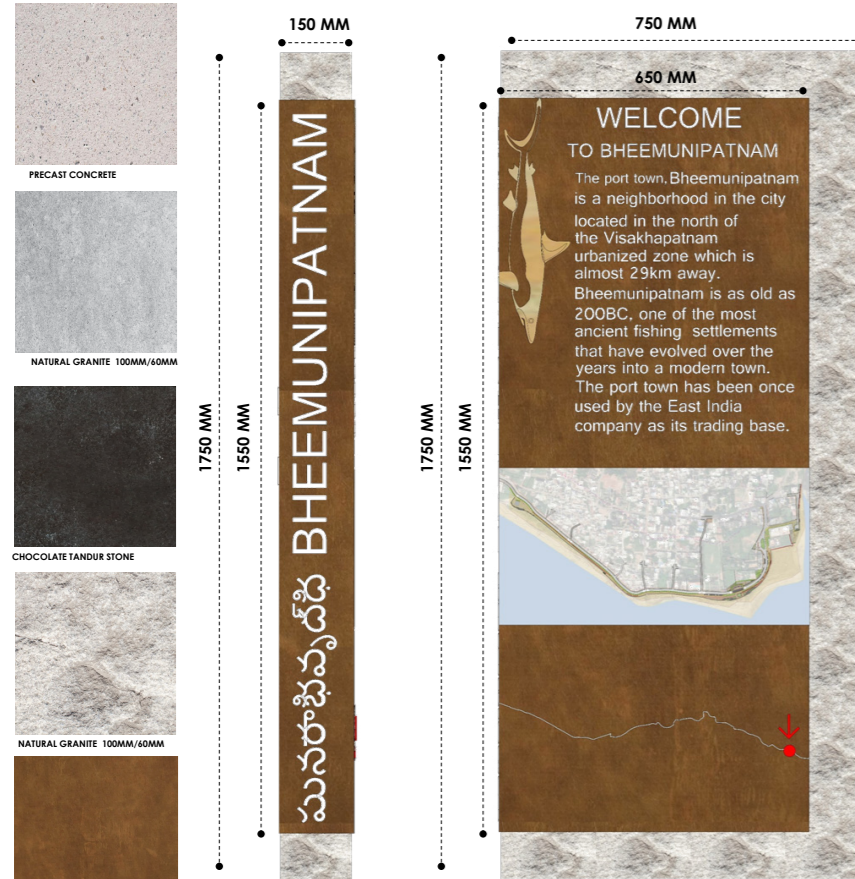
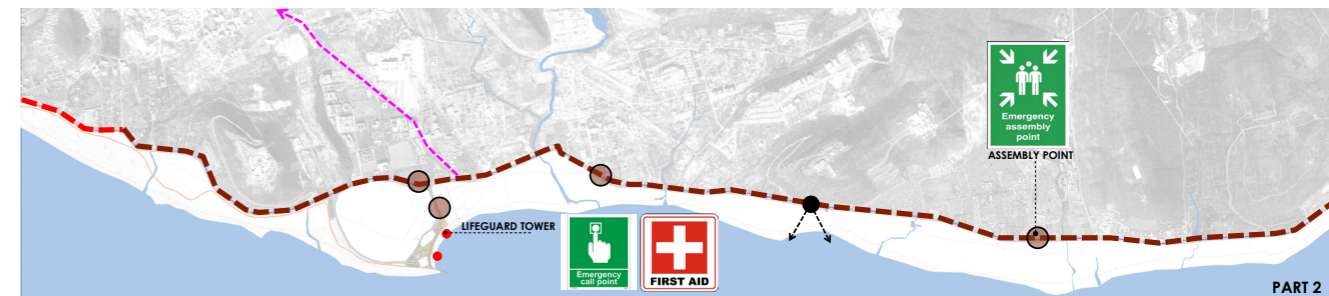
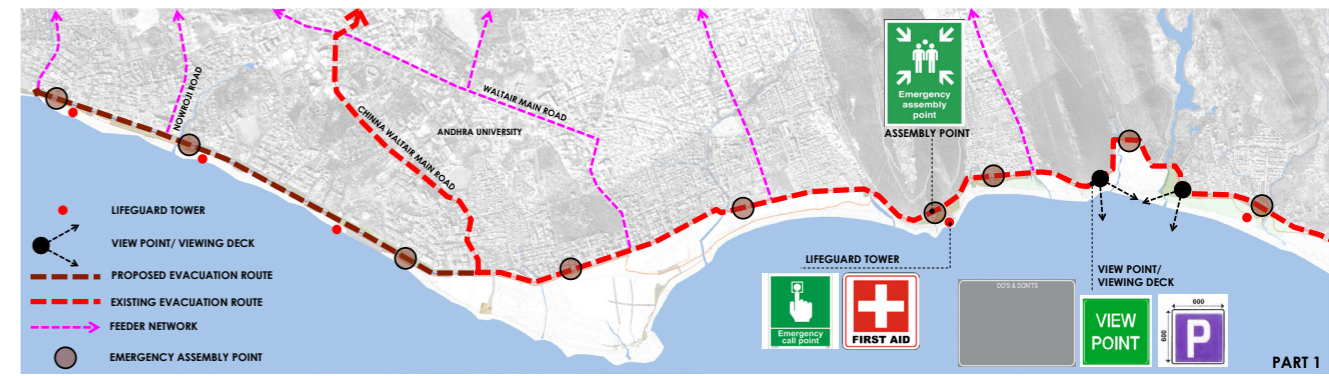
WAY FINDING AND SIGNAGES WITH UNIFIED LANGUAGE



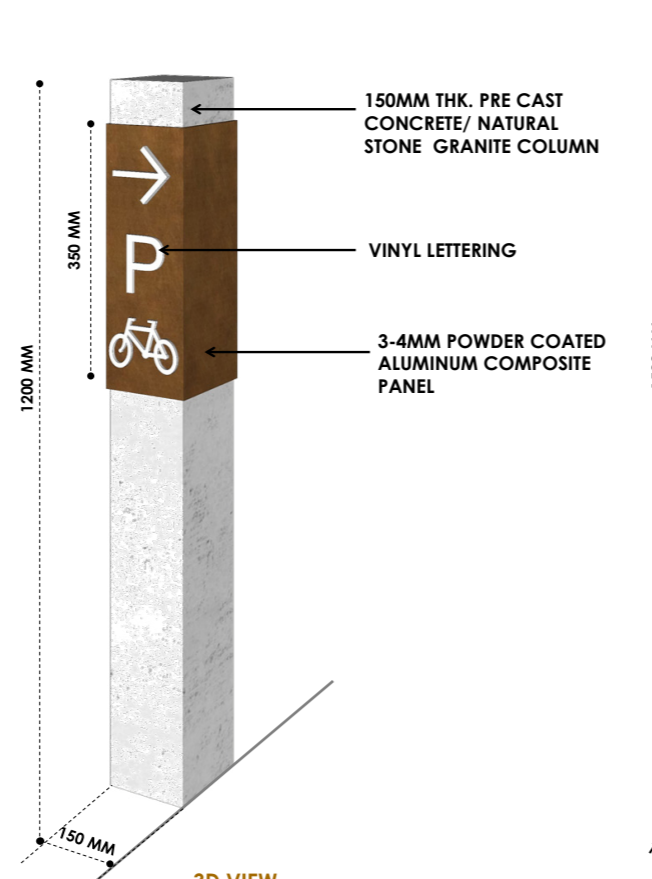
KEY MASTERPLAN



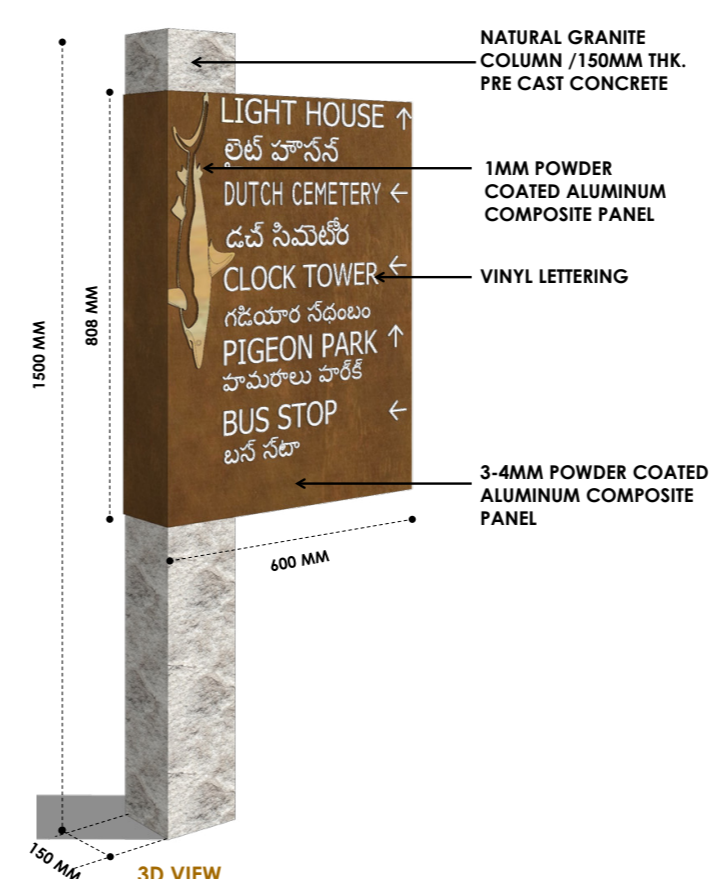
PROPOSED SIGNAGE AT RK BEACH



INFORMATIVE SIGNAGES



LANDMARK SIGNAGE

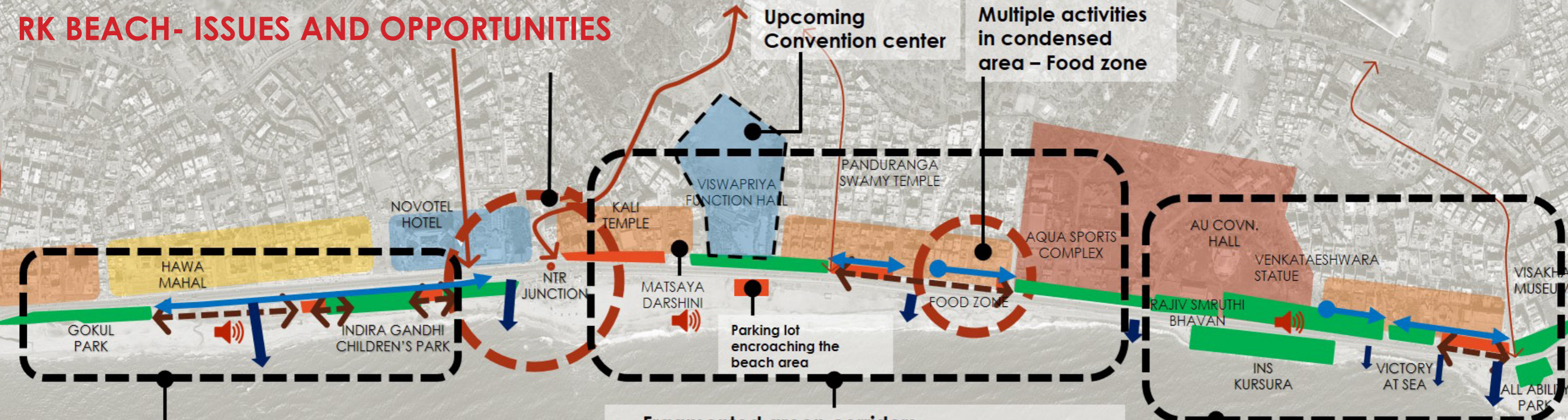


DIRECTIONAL SIGNAGE



ECOLOGICAL AREA SIGNAGES

RK BEACH- ISSUES AND OPPORTUNITIES



- Fragmented green corridors
- Disconnected beach and promenade
- Disconnected assets & landmarks
- Insufficient parking
- Insufficient beach access
- Beach erosion
- Fewer activities
- Established B&B and hospitality sector

- Fragmented green corridors
- Fragmented service roads
- On street parking
- Disconnected assets & landmarks
- Noise and accessibility issues during events
- Active turtle nesting zone
- Multiple activities
- Upcoming Convention center
- Visual connect between promenade & beach

- Lack of coherence between institutions
- Beach erosion
- Insufficient dedicated parking
- Low lighted zone
- Isolated culturally significant buildings
- Existing roadside leisure activities
- Upcoming parks and other development in precinct



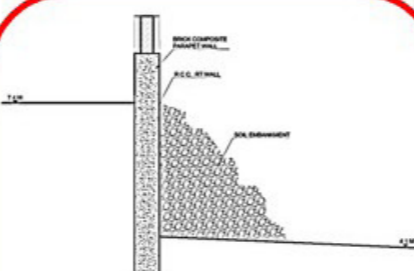
CHALLENGES WITH EXISTING EDGE OF RK BEACH



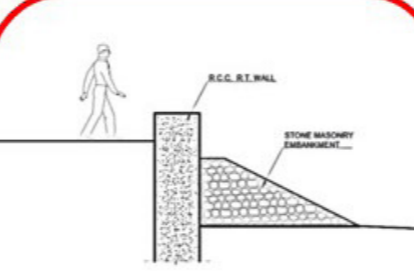
INACCESSIBLE, SCALE OF THE REVETMENT IS NOT SUITABLE FOR HUMAN MOVEMENT. LITTER IS USUALLY FOUND TANGLED BETWEEN THE REVETMENTS



OPEN & ACCESSIBLE, VULNERABLE TO BEACH EROSION AND OTHER NATURAL HAZARD



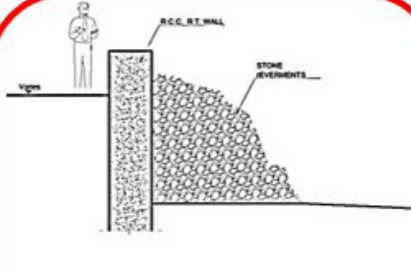
INACCESSIBLE, THE STYLE OF COMPOUND WALL IS ECCENTRIC AMONGST THE ONE FOUND ALONG THE RK BEACH



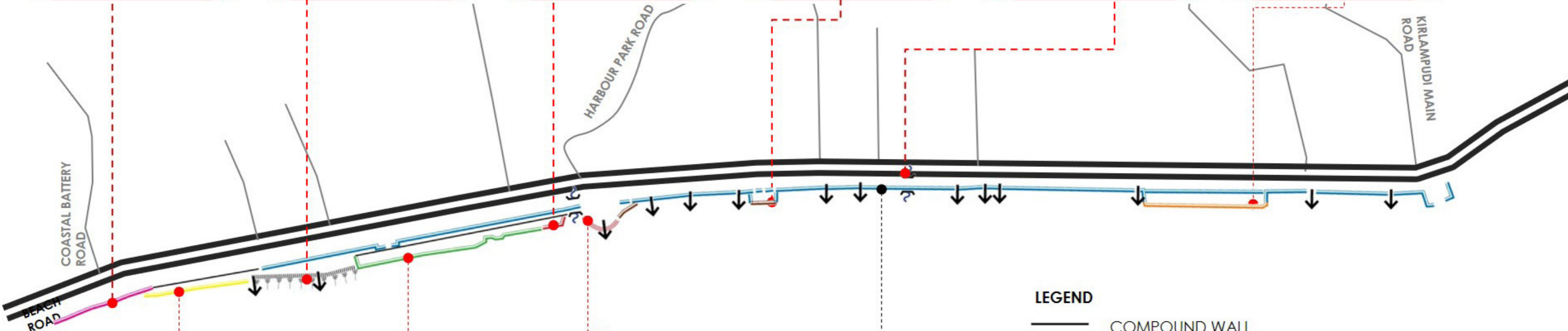
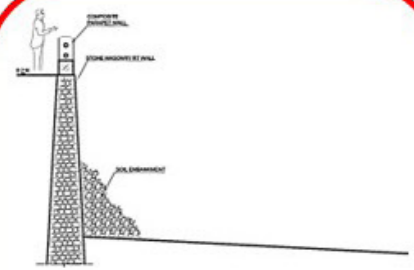
THE PERMANENT EMBANKMENT CAUSES ENCROACHMENT OF THE VALUABLE BEACH



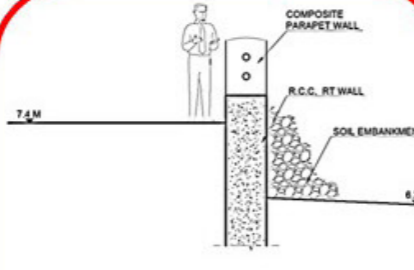
THE CULVERTS END ABRUPTLY CAUSING OPEN CANAL DRAINING INTO THE SEA.



INACCESSIBLE, THE STONE ACTS AS BARRIER FROM THE SEA WAVES AND DAMPEN ITS ENERGY, BEACH WIDTH IN THIS REGION IS MINIMAL.

INACCESSIBLE, HUGE BLANK WALL DISRUPTS THE OPEN CHARACTER & CREATES A SENSE OF ENCLOSE ON THE BEACH



INACCESSIBLE, BROKEN AT CERTAIN LOCATIONS, PROVIDES VISUAL CONTINUITY BETWEEN PARK AND BEACH



STAIRS ACTS AS EFFECTIVE EMBANKMENT, ALSO FUNCTIONS AS A LANDMARK AND PROVIDES SEATING FOR THE USERS



DRAWF WALL, OPEN & ACCESSIBLE AT PLACES, IT'S SWOLLEN AND HAS CRACKS AT FEW PLACES

LEGEND

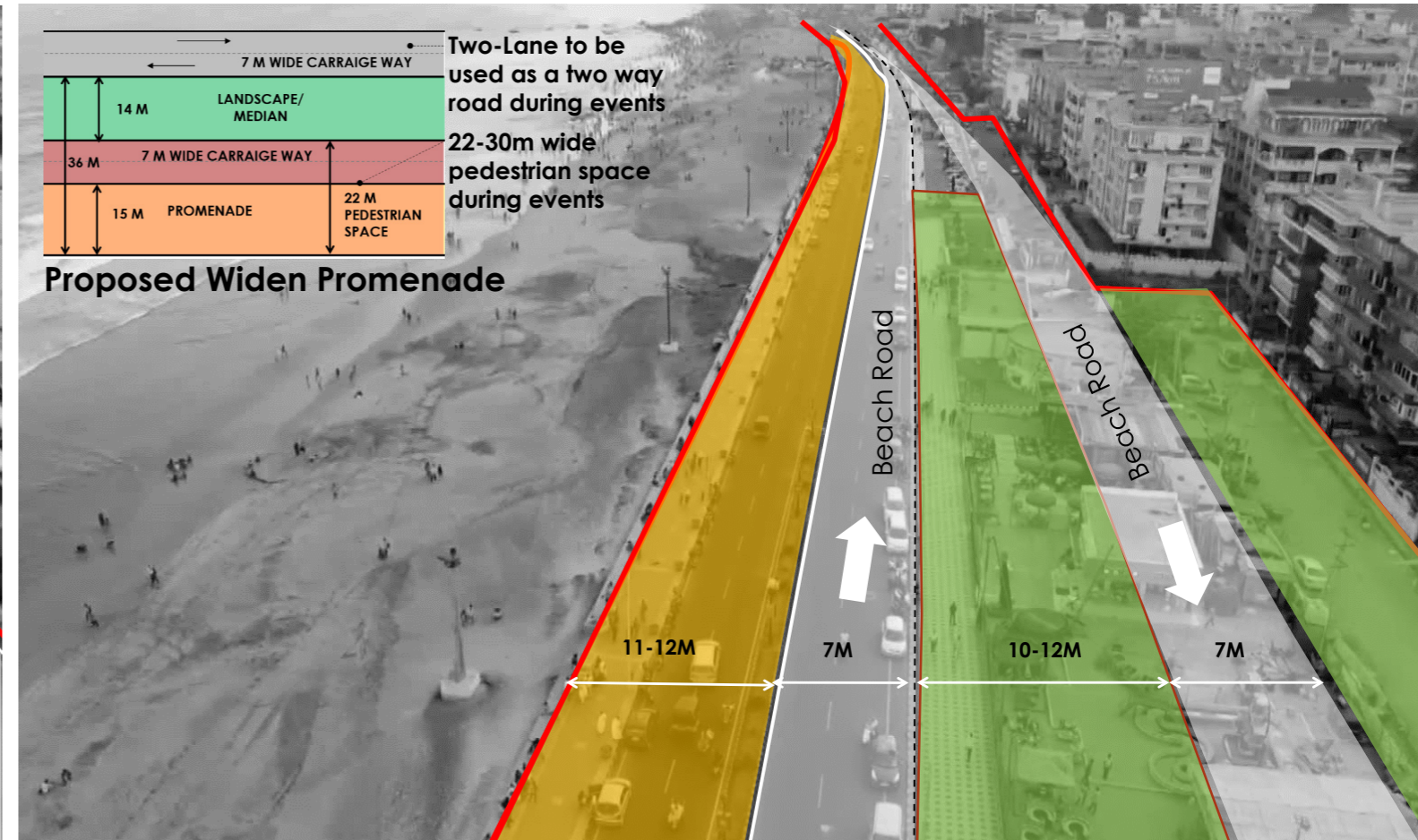
- COMPOUND WALL
- STONE MASONRY RT WALL WITH PRECAST RCC REVETMENTS
- STONE MASONRY RT WALL
- ▤ SOIL REVETMENTS
- RCC RT WALL
- RCC RT WALL ALONG WITH COMPOSITE PARAPET
- RCC RT WALL ALONG WITH BRICK PARAPET
- RCC RT WALL ALONG WITH STONE MASONRY EMBANKMENT
- RCC RT WALL ALONG WITH STONE REVETMENTS
- STAIRS AS EMBANKMENTS
- ➔ ACCESS STAIRCASE
- ☒ CULVERTS



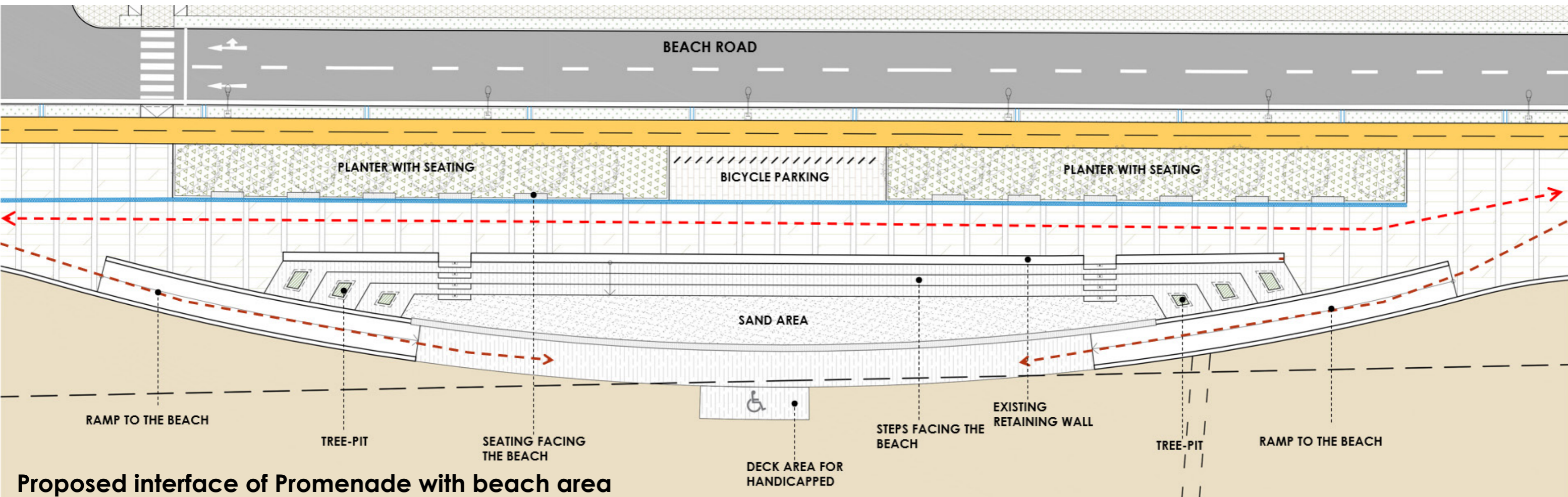
PROPOSED WIDEN PROMENADE WITH SEATING AREA - RK BEACH



Existing Condition of Beach Road



Proposed Promenade



RK BEACH PROPOSED BEACH ROAD

BAY OF BENGAL



RK BEACH PROPOSED PROMENADE INTERFACE WITH BEACH

The proposal was made by taking the existing promenade and widening it towards the landward side by adjusting the existing road.

1. Stepped seating mitigates the difference in the levels and provides an active interface with the water
2. Cycling track on the promenade lend character to the active public realm
3. Strengthening existing retaining wall structure
4. Barrier-free access to the beach
5. Resilient landscaping along the promenade and on the beach.

BAY OF BENGAL

Beach

Stepped down Promenade

Beach Road

Existing Condition

TENNETI PARK - PROPOSED CYCLING AND WALKING TRACK

Providing dedicated walking and cycling track for the heritage town of Bheemunipatnam

1. Dedicated walking and cycling track
2. Boardwalk with views
3. Benches for seating



Existing Condition

BHEEMUNIPATNAM - PROMENADE



Providing dedicated walking and cycling track for the heritage town of Bheemunipatnam

1. Dedicated walking and cycling track
2. Proposed retaining wall structure with Seat wall that can withstand the potential force and abrasion by wave action
3. Adequate sitting spaces.
4. Contextual Landscape approach that integrates the existing green patches
5. Dedicated barrier-free access areas

BHEEMUNIPATNAM - PROMENADE

Providing dedicated walking and cycling track for the heritage town of Bheemunipatnam

1. Dedicated spaces for vendors and hawkers
2. Seating spaces on the Sea wall
3. Integration of existing trees and green patches



BHEEMUNIPATNAM - PROMENADE AND HERITAGE STRUCTURE INTERFACE WITH BEACH

Providing dedicated walking and cycling track for the heritage town of Bheemunipatnam

1. Active Public Realm around the Heritage Lighthouse Structure
2. Restoration of the Lighthouse Precinct
3. Stepped Seating on the Promenade
4. Dedicated Cycling and Walking Space



Existing Condition



RUSHIKONDA BEACH



JALARIPETA COMMUNITY SPACES



Existing Condition

The proposal for upgrading the street-scape of Jalaripeta community area for their livelihood.

1. Providing pedestrian-friendly streets
2. Adequate facilities and informative panels for disaster awareness in the community spaces
3. Providing fish drying platform to make the hygienic way of fish sorting and drying.
4. Providing seating spaces along the streets