GSUDA

GOA STATE URBAN DEVELOPMENT AGENCY

Margao

Municipal Council

Draft Master Plan Report



Preparation Of Master Plans 2041
For Ponda, Margao & Valpoi Municipal Council

Consultant :

studio POD



This report has been prepared in accordance with the terms and conditions for appointment of StudioPOD as consultants by Goa State Urban Development Agency (GSUDA) in August 2022.

Prepared For :

GSUDA

GOA STATE URBAN DEVELOPMENT AGENCY

Prepared By :

studio POD

Consultants

Since 2013, StudioPOD Design Pvt. Ltd has worked relentlessly to push the boundaries of urban design in the global context. The POD team has worked in multiple roles roles for projects in India, UAE & USA.
The projects span across various disciplines including urban planning, urban design, transport planning, campus planning, campus planning, landscape urbanism and streetscapes.


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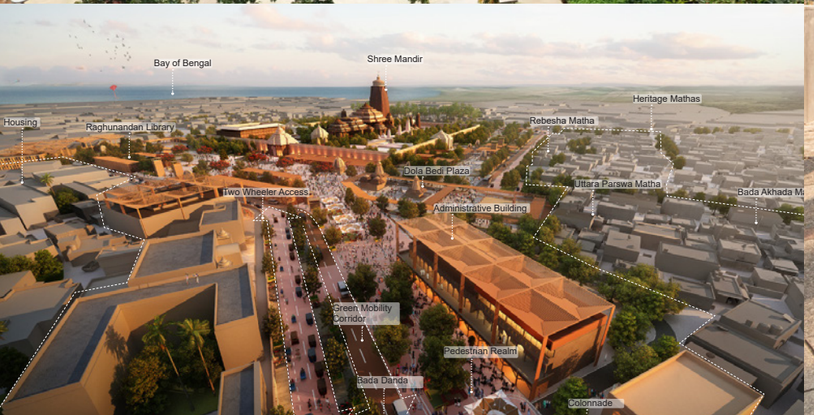
Bay of Bengal
Shree Mandir
Heritage Mathas
Housing
Raghunandan Library
Rebesha Matha
Dola Bedi Plaza
Two Wheeler Access
Uttara Parswa Matha
Bada Akhada M
Administrative Building
Green Mobility Corridor
Pedestrian Realm
Bada Danda
Colonnade

Executive Summary

Margao is a city and a municipal council in South Goa district and is the headquarters of the Salcette Taluka. The city's estimated current population is approximately 1,19,000 residents and the presence of the markets, schools, colleges, hospitals, bus terminal, the main railway station (Margao Junction) and several administrative facilities has made Margao one of the fastest growing cities and the commercial capital of Goa, attracting a large daily transient population from the surrounding areas.

Margao lies amidst a rich, varied and sensitive eco-system. The city is nestled in between and around hills, with the Zuari river running along the east of the hills. The Sal river runs through Margao's western edge, beyond which is the coastal village of Colva. The region is home to several endemic flora and fauna species, and khazan lands flanking the Zuari river.

It vital that the development in and around Margao occurs in a planned and systematic manner that allows the city to blossom into one with a rich and diverse economy, serves the social & recreational needs of the residents and is respectful of the ecology. In this regard the Goa State Urban Development Agency (GSUDA) appointed StudioPOD in August 2022 to prepare a 2041 Master Plan for the city.

To gain a thorough understanding of the local context, the consultant team carried out a series of site visits, meetings with key stakeholders of the local constituencies and reviewed studies, project reports and recently completed projects. The findings from this analysis have been synthesized into a strengths, weaknesses, opportunities and threats (SWOT) analysis which assisted in the creation of a holistic and workable vision and formed the basis for the preparation of the master plan.

Following this, the key development aspects that the master plan for Margao must address are:

Flood Resilient Landscape - Address flooding and other environmental challenges through strategic planning of open spaces and infrastructure
Active Public Realm - Develop active and vibrant open and recreation spaces at the city and neighbourhood level
Integrated Public Transit - Transportation and parking plan that enhances connectivity and prioritizes public transport & NMT use, and alleviates traffic congestion
Diverse Economy - Building on the historic and ecological strengths to develop a multi-faceted economy
Inclusive Communities - Integrate social and community infrastructure facilities in all neighbourhoods

In addition, investing in intelligent infrastructure and augmenting the existing civic infrastructure will meet the town's growing demand.

For each of the development aspects a detailed analysis has been carried out which included an analysis of the existing condition, case studies of potential solutions and development of a contextual concept plan.

Following the creation of city wide concept plans for each aspect, a shelf of projects under each of these heads have been identified and a comprehensive implementation plan & schedule developed. The implementation plan accounts for the urgency of the identified projects need as well as the budgetary and implementation constraints and time-lines.

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Approach & Methodology

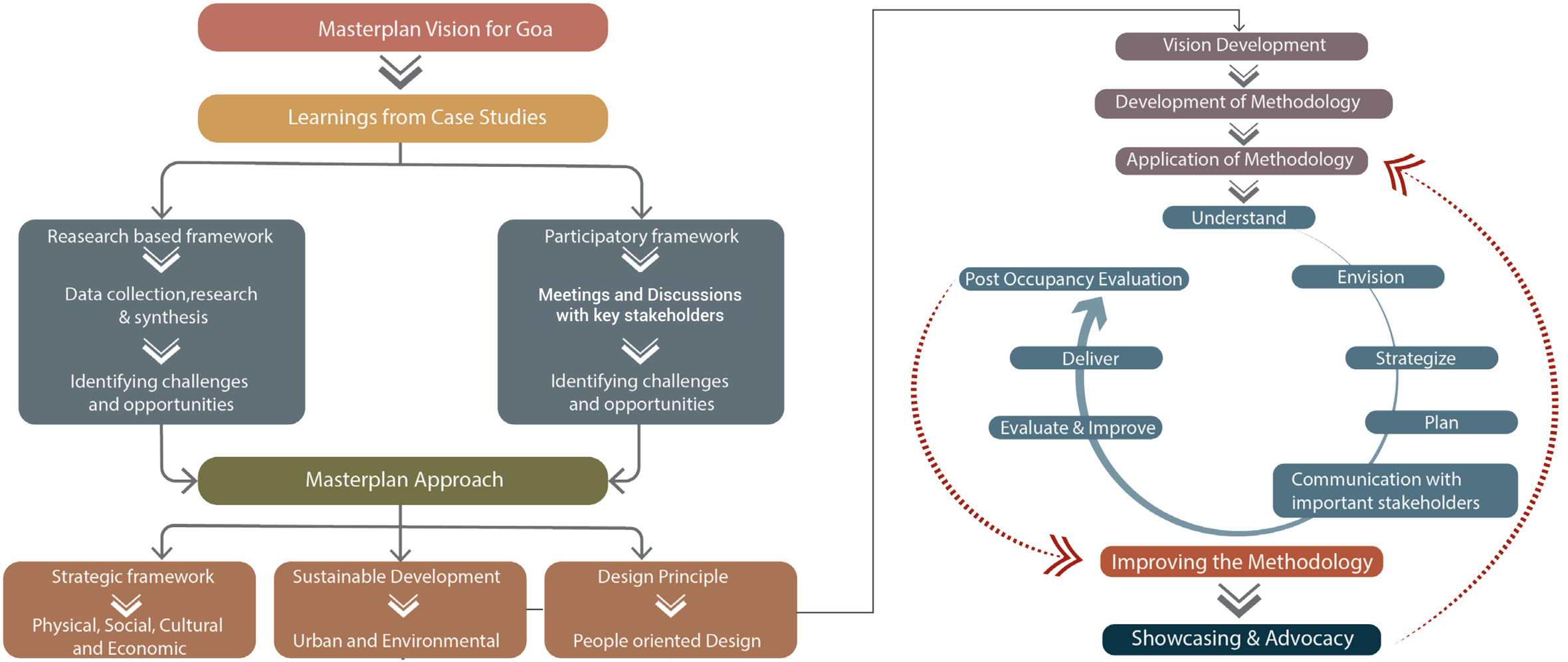
The process for developing the Margao Master Plan has been a highly interactive and focused effort. The planning effort has evaluated a diverse range of interrelated variables, which has resulted in the establishment of a framework that is workable and aligns with the vision developed in conjunction with the stakeholders.

Unlike the traditional linear design sequence, an iterative and agile planning has been employed. This resulted in a relatively complete concept at each stage, based on the level of knowledge and understanding at that time. The process involved close collaboration amongst all members of the consultant team and the GSUDA team. The development process of the Master Plan is outlined in the tasks below:
Due Diligence & Existing Conditions Analysis
Vision and Concept Master Planning Options
Final Master Plan & development cost estimates

Stage 1: Due Diligence & Existing Conditions Analysis
As part of the Stage 1, all prior planning documents and projects were thoroughly analysed through several lenses, including transportation, urban design, public realm, sustainability, and civic infrastructure. This study summarised key observations and findings and assisted the consultant team and stakeholders in articulating the vision and objectives for the development of Margao.

Stage 2: Vision and Concept Master Planning Alternatives Options
The opportunities and constraints identified during Stage 1 were delved into deeper and the key takeaways informed the development of the Master Planning options for the town. Strategic options for the town were developed, each with an incremental degree of change. These options were evaluated based on the several parameters including: transportation, public realm, sustainability and inclusivity. Following a series of meetings with GSUDA and key stakeholders from the Margao and Fatorda constituencies, a preferred alternative was agreed upon.

Stage 3: Final Master Plan & development cost estimates
The Final Master Plan report has been prepared and includes all items identified in the RFP.
The master plan addresses all of the key development aspects identified in the vision and concludes with a shelf of projects along with a phase wise implementation plan.


Masterplan Vision for Goa
Learnings from Case Studies
Reasearch based framework
Data collection,research & synthesis
Identifying challenges and opportunities
Participatory framework
Meetings and Discussions with key stakeholders
Identifying challenges and opportunities
Masterplan Approach
Strategic framework
Physical, Social, Cultural and Economic
Sustainable Development
Urban and Environmental
Design Principle
People oriented Design
Vision Development
Development of Methodology
Application of Methodology
Understand
Envision
Strategize
Plan
Communication with important stakeholders
Improving the Methodology
Showcasing & Advocacy
Deliver
Evaluate & Improve
Post Occupancy Evaluation



Report Structure

The Margao Master Plan Report begins with a Master Plan Overview chapter which gives summaries the SWOT analysis carried out and the Master Plan strategies which have been detailed in the report.

The next section has been divided in two distinct sections:

A. Site Analysis - Detailed analysis of the existing conditions & it concludes with a SWOT analysis which influences the development of the vision and master plan.

B. Master Plan - This section begins with establishing the vision for the development of Margao. The next portion of this section focuses on the preparation of the mater plan and how each key development aspect has been addressed and comes together as a cohesive and holistic master plan. This chapter concludes with a shelf of projects and a phase wise implementation plan.

PART A : Site Analysis

A.0 Masterplan Overview

A.1 Regional Analysis

A.2 City Analysis

A.4 Planning Process

A.5 Synthesis

PART B: Concept Master Plan

B.1 Future Vision and Perspective

B.2 Flood Resilient Landscape

B.3 Active Public Realm

B.4 Integrated Public Transit

B.5 Diverse Economy

B.6 Inclusive Communities

B.7 Proposed Master Plan & Interventions

B.8 Implementation Process

A

SITE ANALYSIS

A.0 Masterplan Overview

A.1 Regional Analysis

A.2 City Analysis

A.4 Planning Process

A.5 Synthesis

Chapter

A.0

Master Plan Overview



Fig.A.0.1 Aerial view of the Margao Municipal Garden. Source: Google



Fig.A.0.2 Aerial view of the Pandit Jawaharlal Nehru Stadium. Source: Google

A.0.1. Location & Significance

Margao is part of the *Velhas Conquistas*, or the Old Conquests of the Portuguese settlement which encompass modern-day Salcette, Mormugao and Bardez. Historically, Margao has been the market town of South Goa. The proximity to the sea and the agricultural lands resulted in large fish and spice markets being set up in and around city.

Goa's main railway station is located in Margao and is located close to Dabolim Airport, Mormugao Port and Vasco City. The NH-66, SH5 and SH8 which pass through the city provide connectivity with these landmarks and the rest of the region.

The excellent road and rail transport options have assisted in Margao becoming an industrial and commercial hub in South Goa with an array of businesses based in and around the city. The proximity of the beaches of South Goa have also encouraged the development hospitality industry in Margao.

As Margao is the administrative headquarters of both Salcette Taluka and the South Goa district; several Taluka and District administration buildings are located in Margao. The city is also home to regional level civic infrastructure including the New M.M.C market, Municipal Garden and Pandit Jawaharlal Nehru multi-purpose stadium.

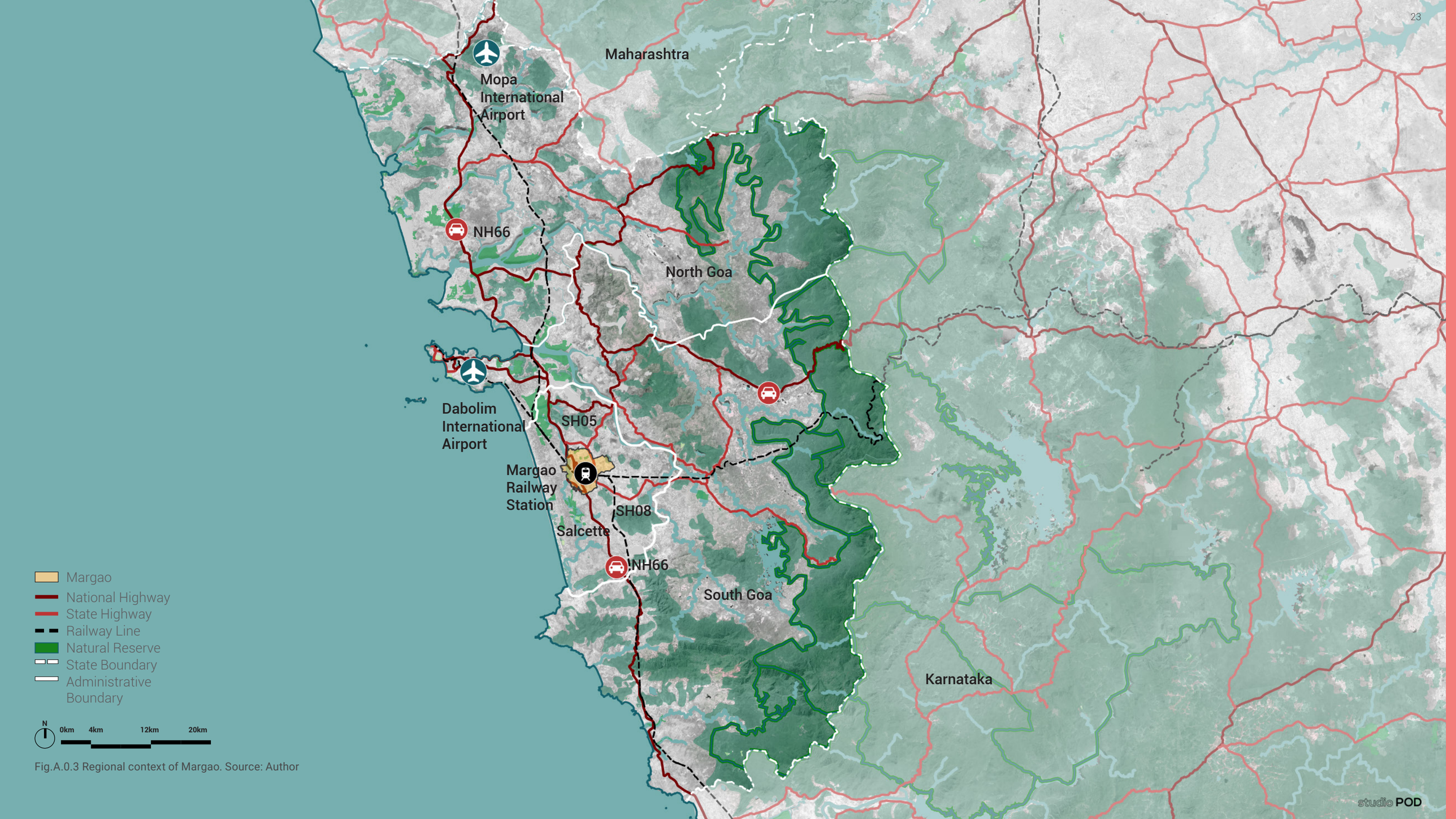


Fig.A.0.3 Regional context of Margao. Source: Author

studio POD



Fig.A.0.4 Dabolim International Airport. Source: Google



Fig.A.0.5 Margao Railway Station. Source: Google

A.0.2. Regional Connectivity

Goa's main railway station is located in Margao and all trains plying on the Konkan Railway stop in Margao. The city is well-connected with the rest of the region through the road highway network as well.

NH66 runs through the city, connecting Margao to Panjim, Dabolim Airport and Vasco da Gama in the North and Palolem and beyond in the South.

SH05 connects Margao to Ponda to the North East

SH08 connects Margao to Curchorem to the East

~23 km
from Dabolim airport

~33 km
NH66 to Panjim

~19 km
SH05 to Ponda

~21 km
SH08 to Curchorem

Margao Junction
Main Railway station

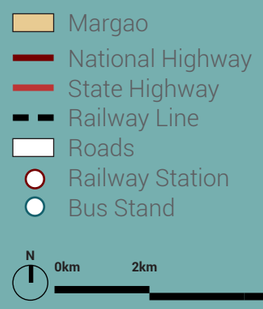
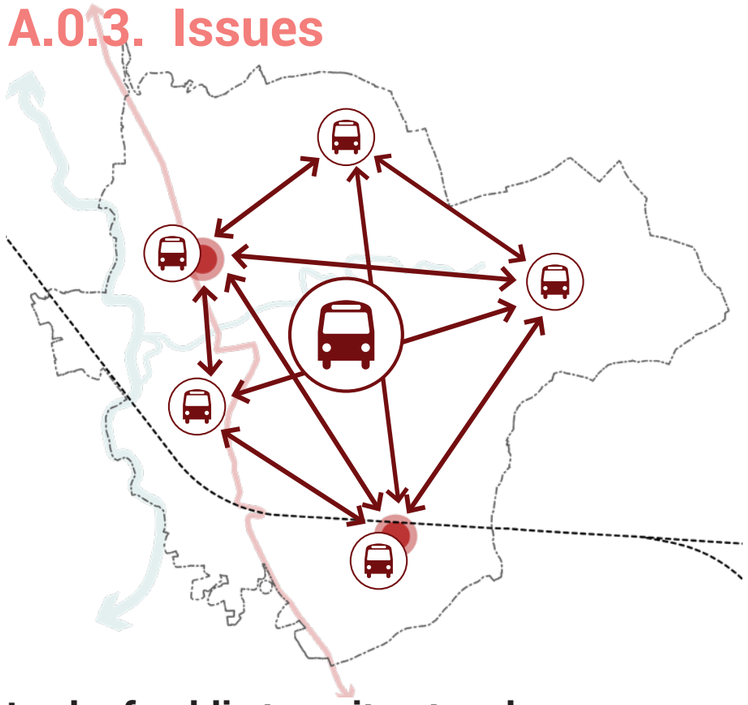


Fig.A.0.6 Regional connectivity of Margao. Source: Author

studio POD

A.0.3. Issues

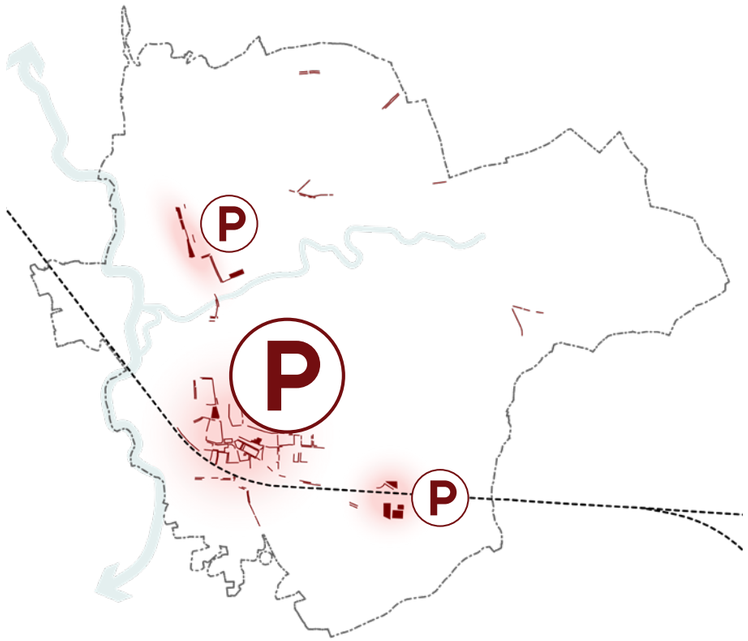


Lack of public transit network

There is no effective public transport system that connects the major destinations in Margao with each other and the residential areas.



Fig.A.0.7 Private buses at Margao Railway station. Source: Author

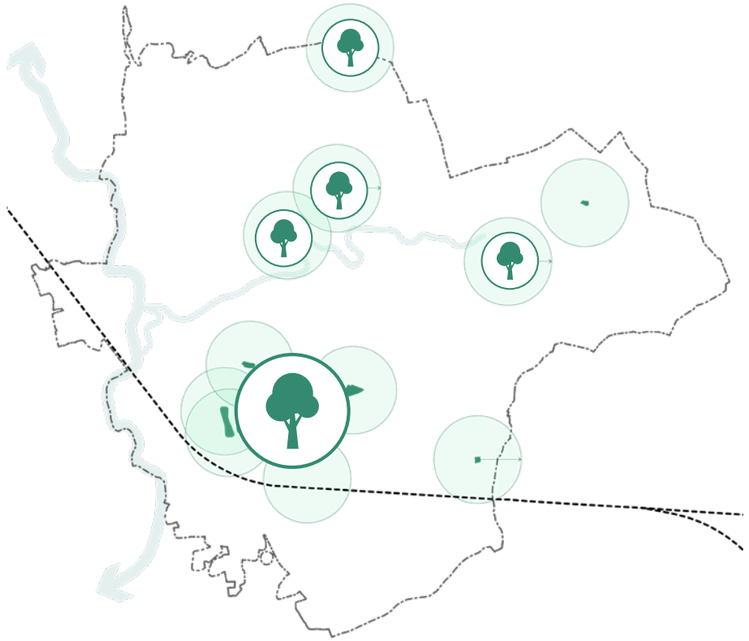


Unorganised parking

Lack of designated and adequate off-street parking spaces in the city centre leads to parking along the carriageway and within open spaces.



Fig.A.0.8 Two-wheeler parking next to the Municipal Building. Source: Author



Insufficient open spaces

The city has a lack of well-programmed and accessible open and recreation spaces at the neighbourhood and city level.



Fig.A.0.9 Unprogrammed open space in Margao. Source: Author



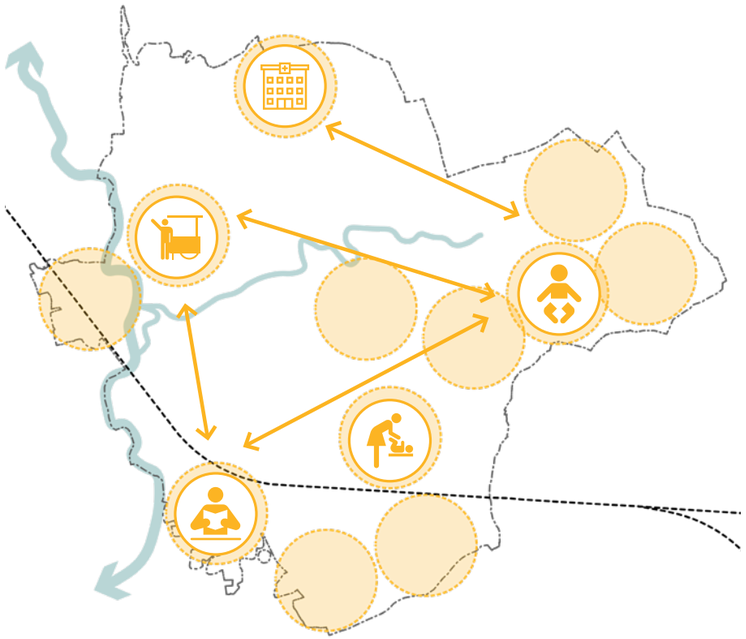
Flooding

During the monsoons, the developments in low-lying areas, on river banks and flood plains tend to get flooded.



Lack of waste management

Solid waste management infrastructure from collection to disposal is inadequate. This results in garbage being strewn along roads and clogging of drains.



Lack of community facilities

The current provision and distribution of public community facilities such as community centres, anganwadis, schools and cultural centres is inadequate for the city's population



Fig.A.0.10 Inundation in Comba subway during rainfall. Source: The Goan

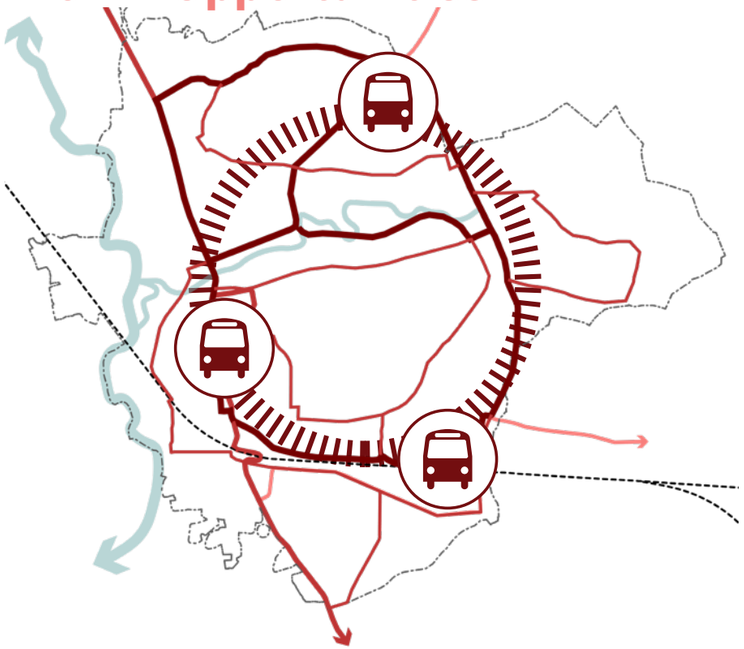


Fig.A.0.11 Garbage dumped along the roadside. Source: Author



Fig.A.0.12 Inadequate community facility. Source: Author

A.0.4. Opportunities

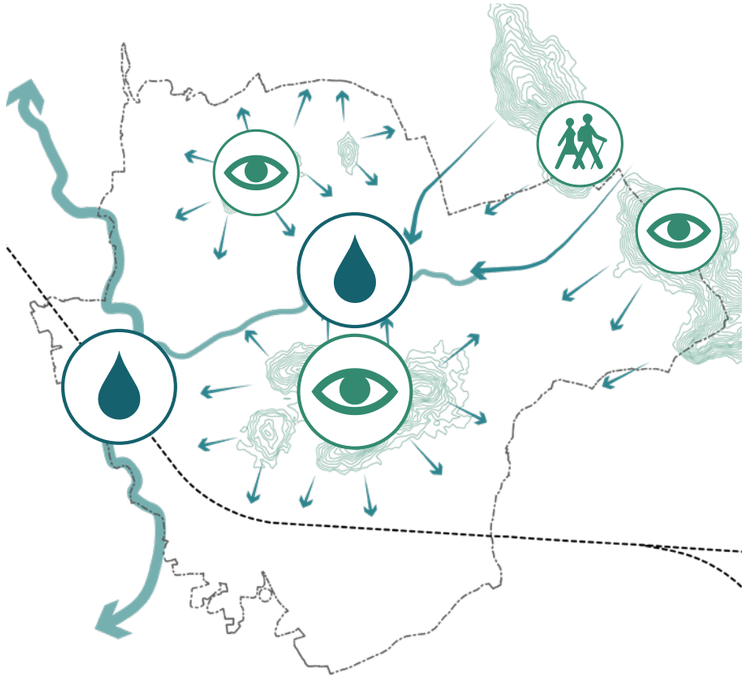


Establishing comprehensive mobility

Margao's street network and distribution of attractors and destinations provides an opportunity for creating an efficient multi-modal transport network.



Fig.A.0.14 Local bus that connects different cities. Source: Author



Embracing the natural topography

Undeveloped low lying areas can be transformed into active floodable landscapes which can be used by the city's residents for recreation, along with the hillocks which offer scenic views of the city.



Fig.A.0.15 Low-lying area in Margao as natural catchment. Source: Author



Sal River as an eco-recreational corridor

Strengthening the banks and creating riparian landscapes along the river edge will help address the flooding issues faced by the community and also serve as an active open space.



Fig.A.0.16 Kayaking along Sal river upstream from Margao. Source: The Great Next



Developing agro-tourism

An agro-tourism route that includes visits to the large coconut, cashew and spice plantations in the greater Margao area, will provide tourists a unique experience and create new employment opportunities



Fig.A.0.17 Agriculture farms in Margao. Source: Author

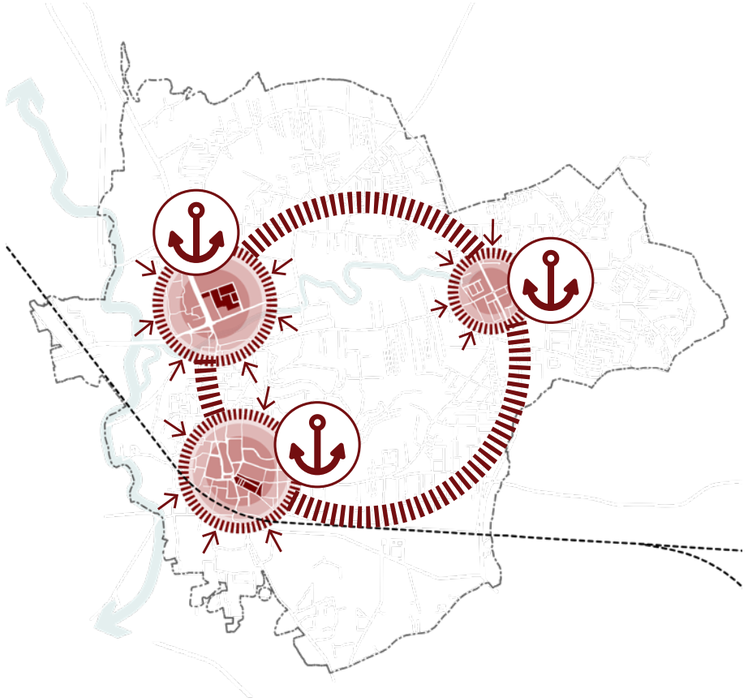


Strengthening heritage tourism

Margao has a rich cultural history and has several heritage structures that if restored and well marketed will make Margao into a tourist destination.



Fig.A.0.18 Abade Faria road with heritage houses. Source: Author



Creating new economic identities

The excellent connectivity and urban nature lends itself well to attracting new industries in line with the vision set by the State Government's vision.



Fig.A.0.19 Administrative centre and municipal park of Margao. Source: Author

A.0.5. Strategies



Flood resilient Landscape

Establish a resilient green-blue network in the city

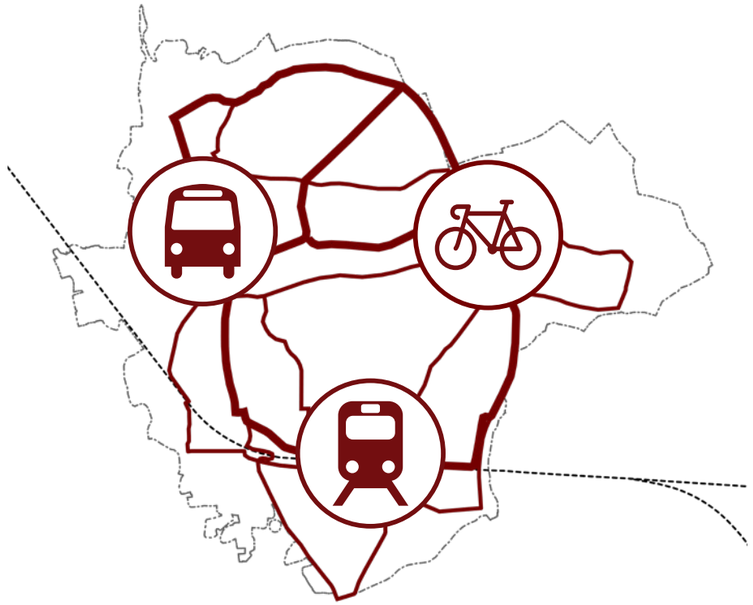
- Develop open space buffers along rivers and nallas to assist in averting the flooding of developed areas.
- Create open spaces and public realm that minimises rainwater run-off.
- Develop low-lying areas as multi-purpose floodable landscapes.



Active Public Realm

Activate open spaces and create a public space network

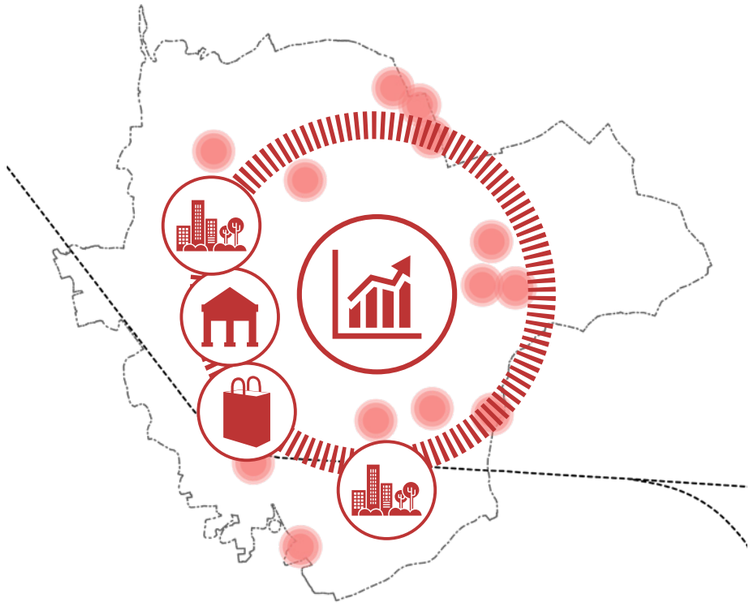
- Develop well programmed public open spaces at all scales to meet the needs of the residents.
- Connect the open spaces through a network of active streets.
- Regenerate the centre of the city and activate public spaces.



Integrated Public Transit

Create a well-connected and accessible transit system for the city

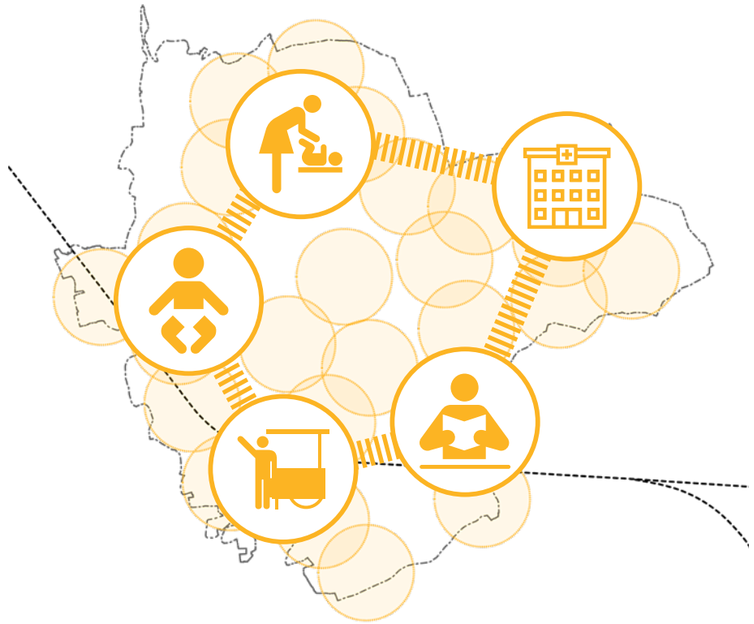
- Introduce a comprehensive public transit system that connects all parts of the city.
- Design streets to encourage public transport and non-motorised transport.



Diverse Economy

Foster the development of new industries in Margao

- Develop a new economic strategy for Margao-Fatorda: **Develop-Celebrate-Regenerate**
- Develop new economic anchors within Margao
- Create tourism opportunities that celebrates the history and heritage of the city



Inclusive Communities

Introduce public amenities and strengthen communities

- Build on existing community amenities and develop a network of amenities within walkable neighbourhoods
- Create spaces for large gathering, events and festivals in the city
- Develop facilities that cater to cultural interests within each neighbourhood



Fig.A.0.20 Existing Sal river edge. Source: Author



Fig.A.0.21 Proposed Sal river edge. Source: Author

A.0.6. Flood Resilient Landscape

During the monsoons, the Sal River and nalas have a tendency to burst its banks and flood the surrounding areas. Further low-lying areas between the hillocks and in the south have a tendency to flood. The cause of flooding is due to unchecked development in the flood plains and low lying areas as well as the lack of a well defined buffer area along the river. To address the issue of flooding a multi-scalar approach has been planned including the design of river buffers, open spaces and streets.

Following a detailed study of the topographic and flooding data a 20m wide buffer along the river and 3m along the nalas is planned. These buffers areas will be planted with native grasses, shrubs and trees that will assist in reducing erosion of the banks, a zone that can absorb the water overflowing from the river and prevent the construction of structures. During the dry months, these buffer areas will serve as waterfront open spaces that can be enjoyed by the residents.

The city has a few low-lying areas which are undeveloped. These spaces have been identified and planned to be developed as ‘sponge parks’ which will be planted with vegetation that will assist with the infiltration of water into the soil. Similar to the buffer areas, during the dry season these sponge parks will serve as open spaces that can be used by the residents.

The rapid run-off from streets and paved areas leads to the inundation of abutting areas. All streets are designed to have bio-swales which will assist in increasing infiltration of run-off and slow its progress to the abutting areas.

This multi-scalar approach will help in making Margao flood resistant and environmentally friendly.

80 acres *of Sal river buffer*
18 acres *of nala/other water body buffers*

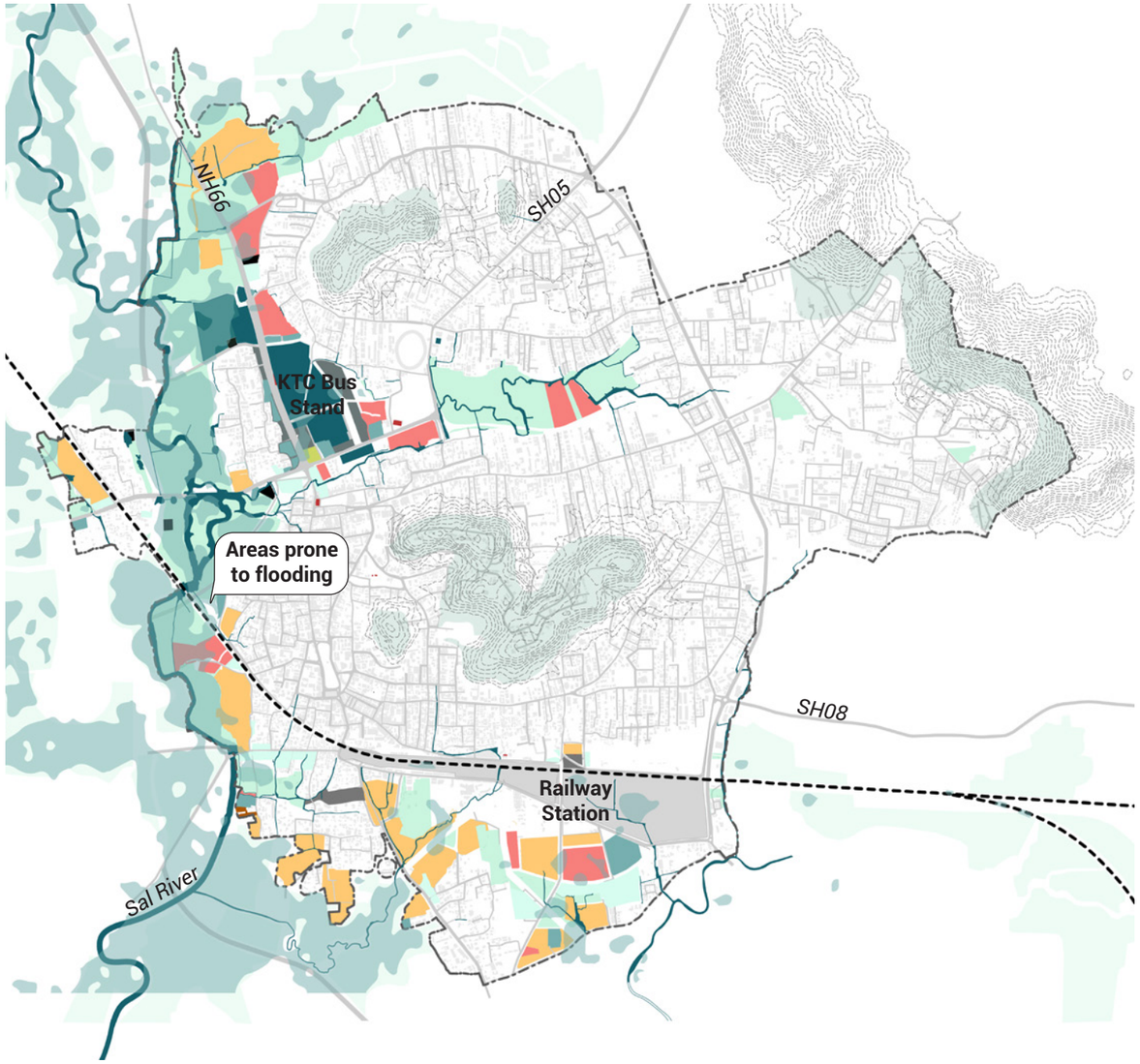


Fig.A.0.22 Flood prone areas and ODP land uses in Margao. Source: Author

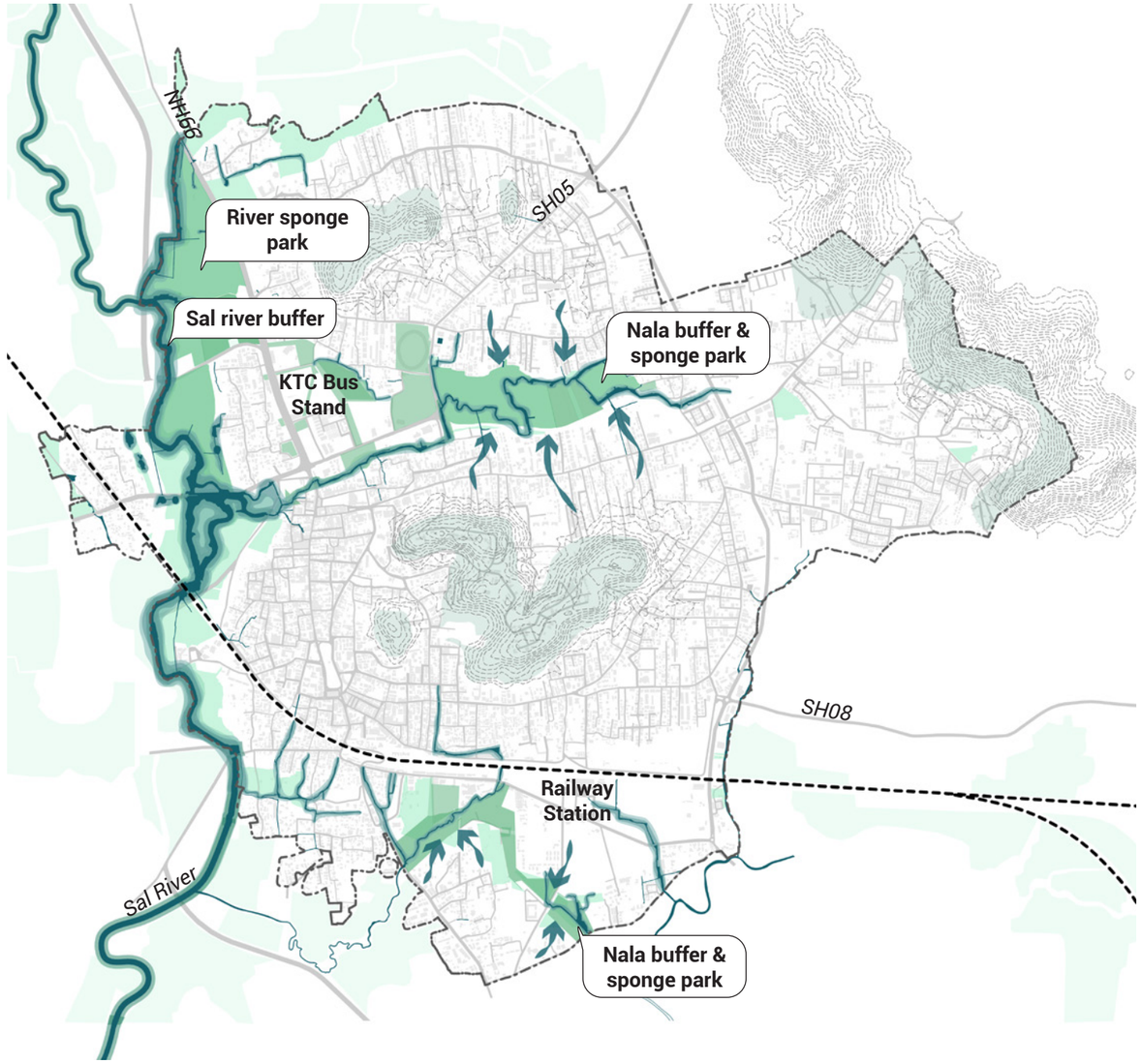


Fig.A.0.23 Proposed Flood Resilience Strategy. Source: Author



Fig.A.0.24 Existing Municipal Garden edge separated from the street. Source: Author



Fig.A.0.25 Proposed permeable edge to increase visibility and connectivity. Source: Author

A.0.7. Active Public Realm

The current provision of open and recreation spaces in Margao doesn't meet the needs of the current population. Further, the existing open spaces are not evenly distributed across the city, are not programmed or maintained well.

Margao has a diverse natural landscape comprising of river & nala edges, hillocks and built open spaces including plazas. This combination of natural and built open spaces offers an opportunity to create a varied and vibrant open space network.

The Public Realm strategy has been developed to maximise the utility of the existing open & undeveloped spaces and to create open spaces at city and neighbourhood level. The city level open spaces shall be large and programmed to offer unique experiences such as riverfront recreation, sports grounds, public spaces and view points on hillocks, and green corridors.

Neighbourhood level open spaces shall be smaller in size and designed to cater to the daily needs of the residents. The neighbourhood parks are located at the centre of neighbourhoods and within walking distance to all residents.

The neighbourhood and city level open spaces are connected through the grid of streets. This will enable the creation of a network of open spaces that can be easily accessed by all residents using non-motorised means.

117 acres *of city and neighbourhood scale open spaces*

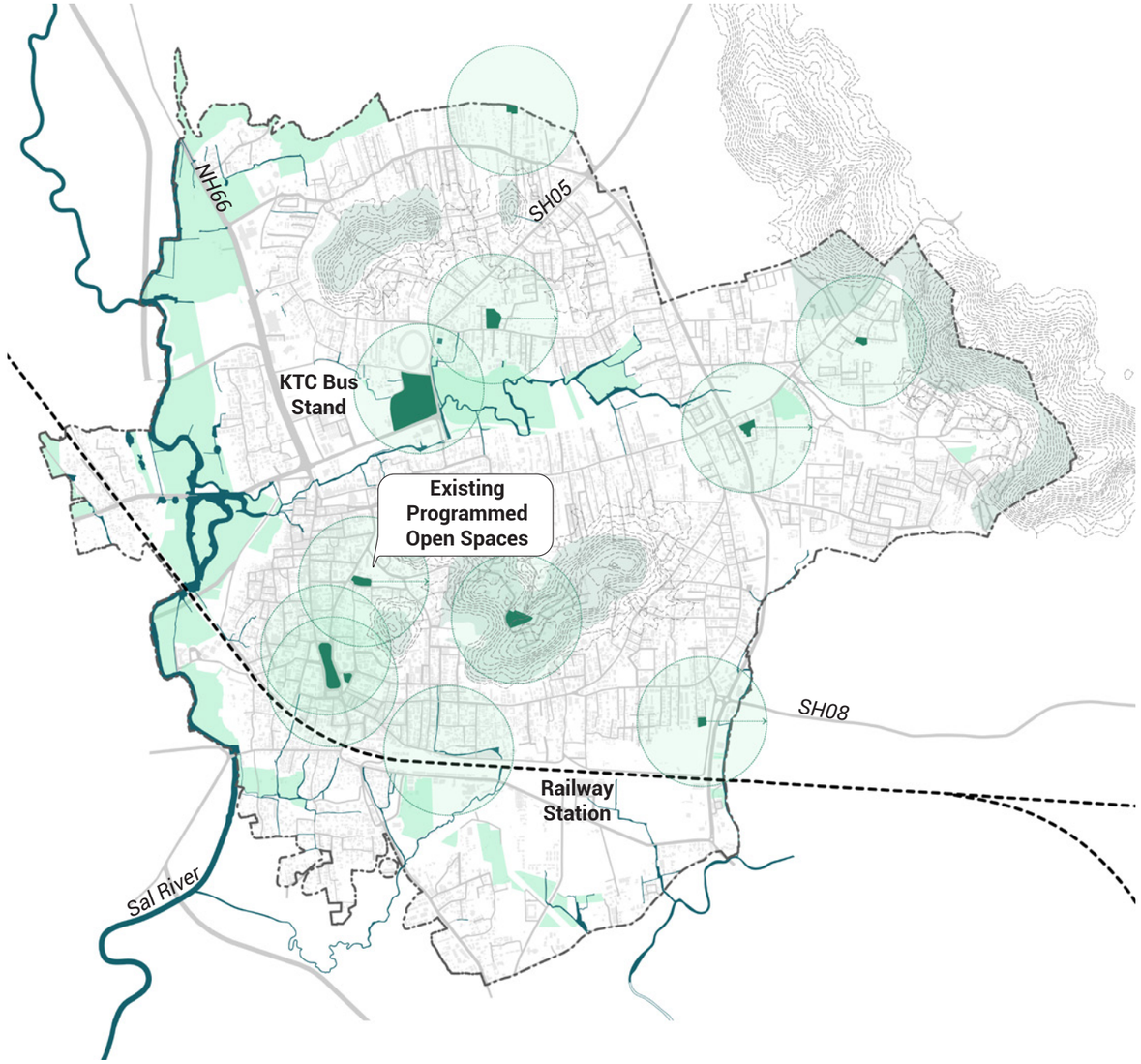


Fig.A.0.26 Existing Programmed Open Spaces in Margao. Source: Author

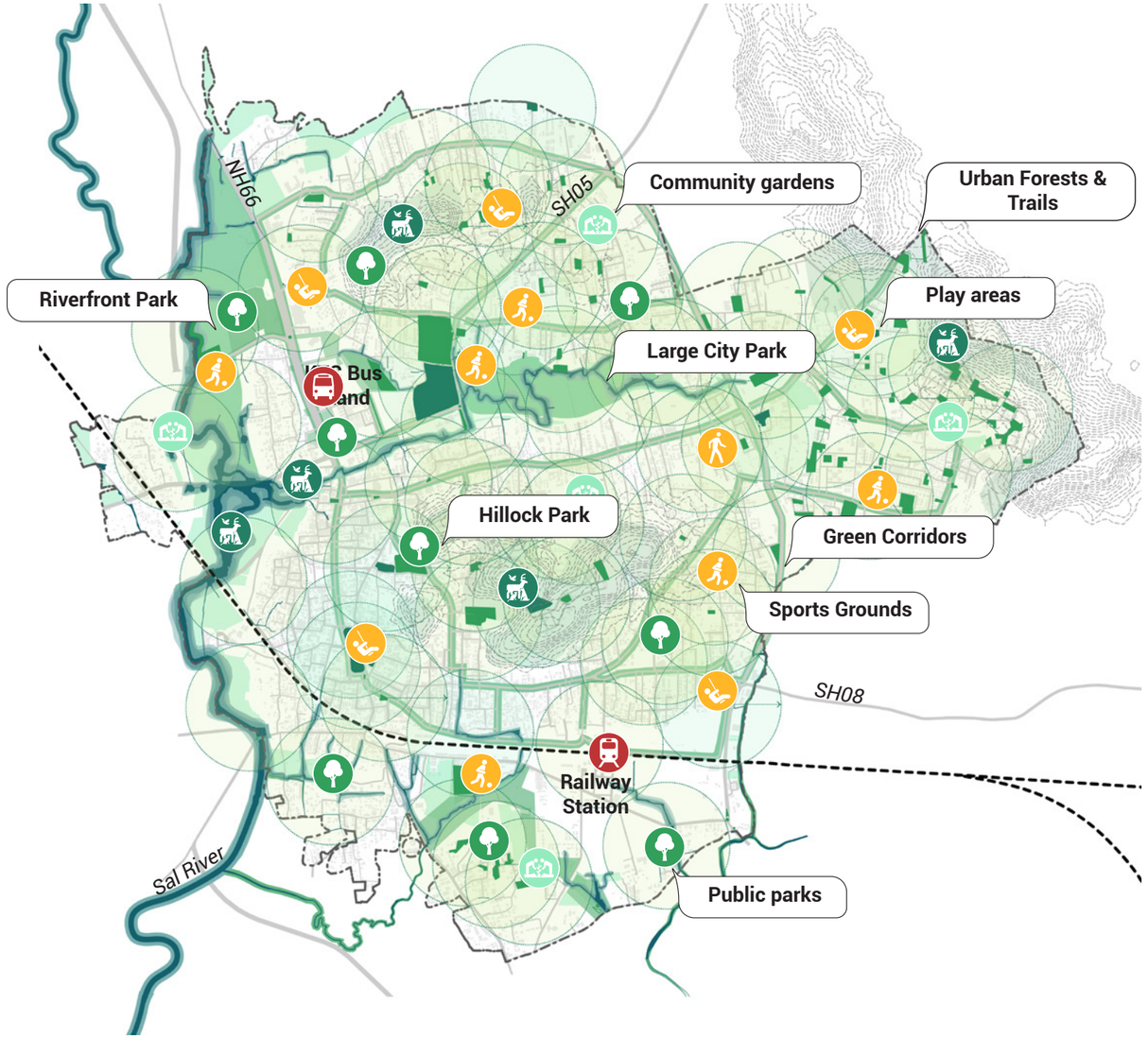


Fig.A.0.27 Proposed Open Space Strategy. Source: Author

N 0m 200m 600m 1200m



Fig.A.0.28 Traffic congestion and prominance of private vehicles in the city. Source: Author



Fig.A.0.29 Margao Railway Station. Source: Author

A.0.8. Integrated Public Transit

The centre of Margao is characterised by a network of narrow streets with an ROW ranging from around 6m to 20m. The lack of public transport and well planned public realm has resulted in a high dependence on private vehicles. The existing streets don't have the capacity to handle the vehicular traffic and there is a lack of off-street parking spaces which results in vehicles parking along the road edge. This exasperates the traffic congestion experienced in the city centre.

To address the traffic congestion issues being faced in the city centre, a public transport system is planned along with a re-design of the streets to encourage NMT and public transport use.

The streets of Margao are envisioned to be multi-functional spaces that will be engines of economic activity, social hubs, and platforms for civic engagement. The streets have which identified for development in the Mobility section shall be developed as complete streets with well planted and programmed footpaths. This will transform streets from only being connectors to becoming integral parts of the public realm.

A hierarchical public transit network is proposed that will connect origins & destinations and enhance intra-city mobility. Along the major streets which have a wide ROW (including NH-66, SH-05, SH-08 and Old Station Road) that connect major destinations train station, market, KTC bus stand a bus loop is planned and on the narrower secondary streets shuttle busses are planned which will provide connectivity to all the residential neighbourhoods. The shuttle and bus stops are planned such that they are within 700m walking distance.

To address the on-street parking issues in the city centre, multi-level car parks are planned on the Old Station Road and in the city centre.

16.8 km *of primary public transit streets*
8.6 km *of re-designed & new streets*

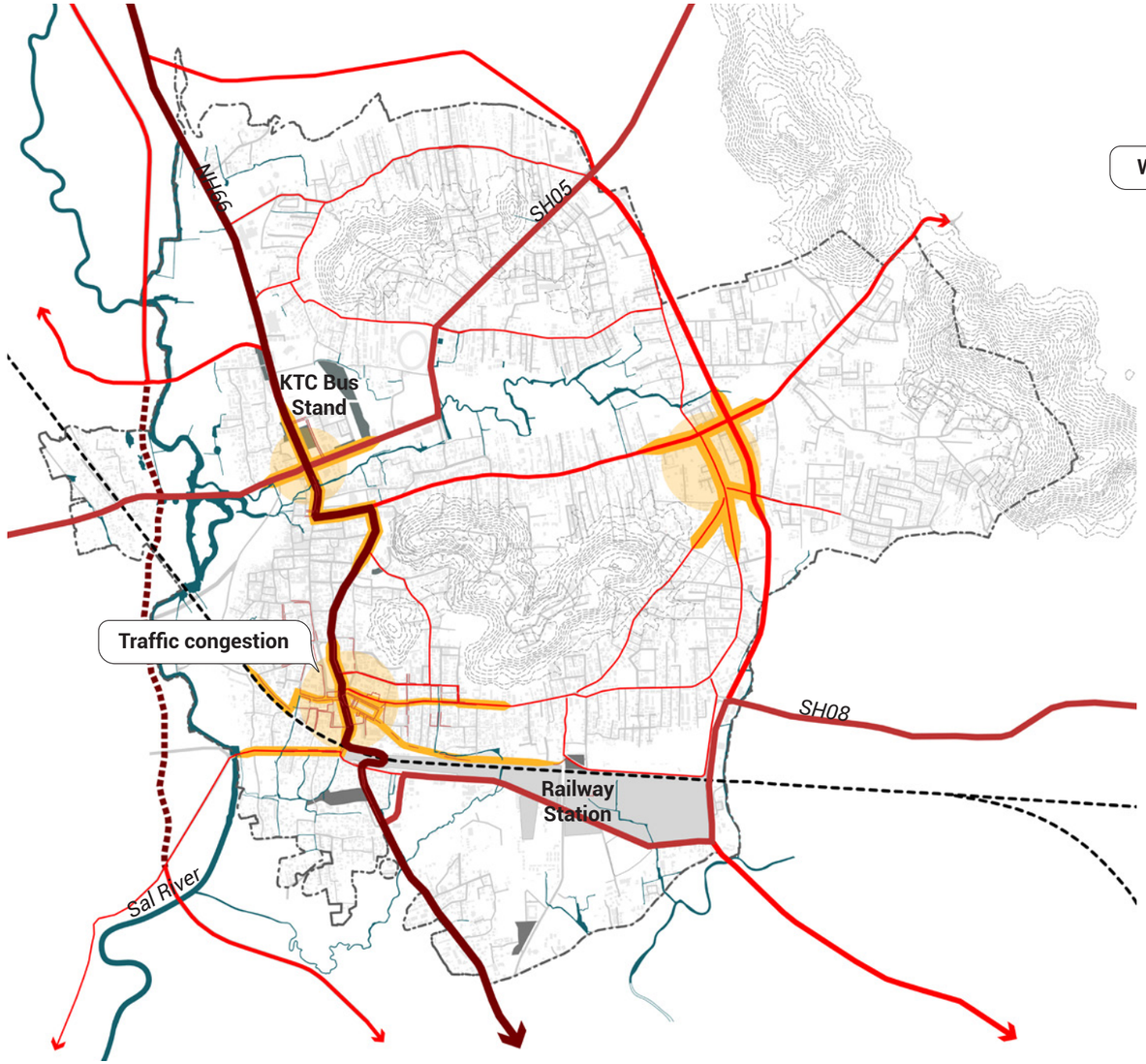


Fig.A.0.30 Existing Transport & Parking Issues in Margao. Source: Author

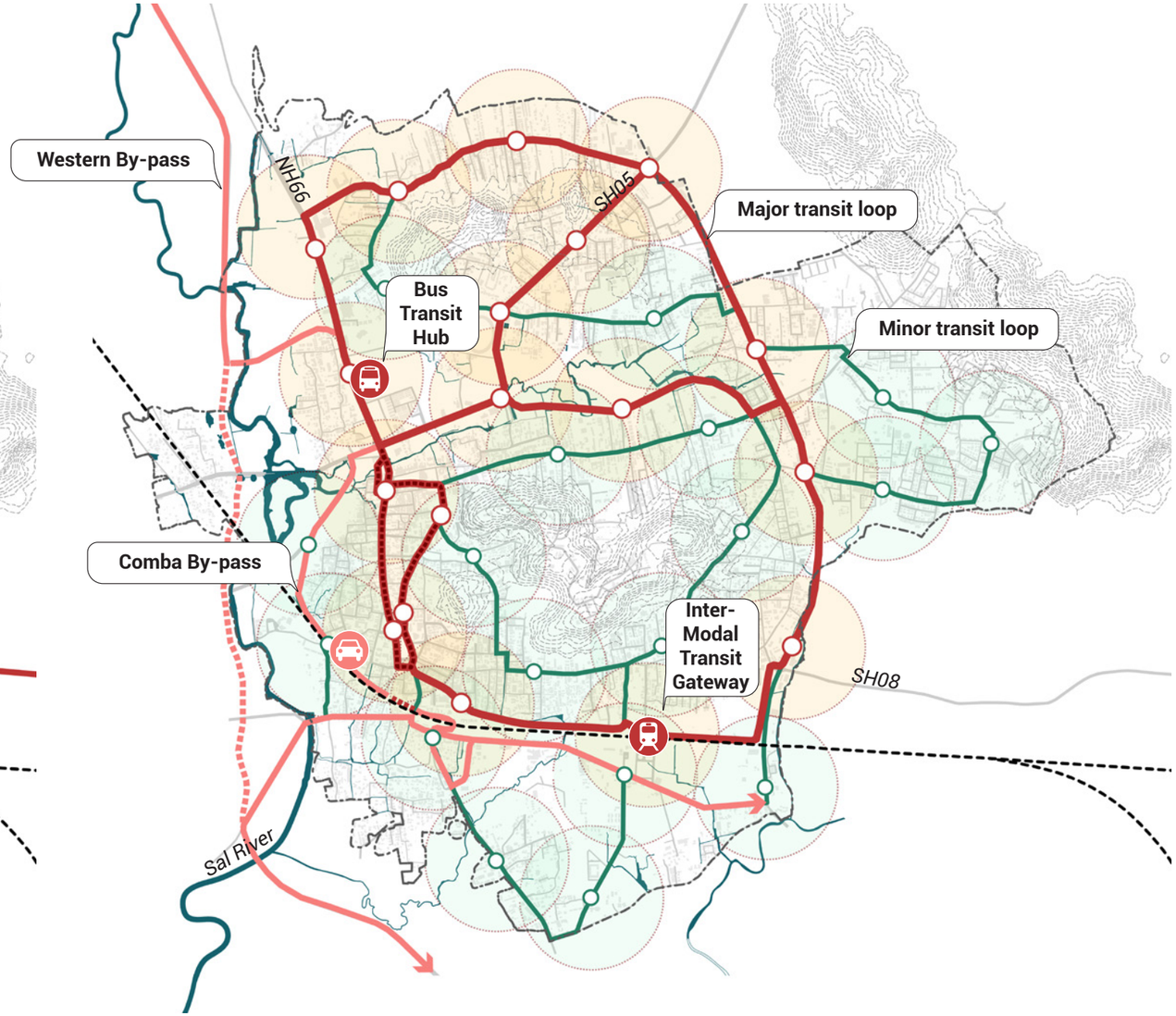


Fig.A.0.31 Proposed Public Transit Network and Mobility Strategy. Source: Author



Fig.A.0.32 Existing Heritage Street. Source: Author



Fig.A.0.33 Proposed Heritage Street. Source: Author

A.0.9. Diverse Economy

In the past the economy of Margao, was centred around the market where fish, spices and other agricultural items were traded. The excellent connectivity has assisted the diversification of the local economy to include a mix industries located at the Margao and Verna Industrial Estates.

Margao has a rich heritage, and along with the unique and diverse ecology their is a great opportunity to develop heritage tourism in Margao. The city centre has a several hertiage sites including the Holy Spirit Church, Margao Municipal Garden and Margao Municipal Council building. To improve access and improve their visibility and create a cohesive narative the streets are being re-designed with wider public realms and pedestrian plazas which will connect all the hertiage sites. Further a Museum of South Goa is planned in the city centre which will celebrate the city's history.

As descibed in the mobility section, the development of the streets in the city centre are being designed as multi-functional spaces. This will provide an opportunity for the creation of new retail and F&B opportunities along the new streets. These interventions will also assist the growth of the exisiting markets and commercial establishments in Margao.

The Government of Goa has identified agro-tech, bio-tech and several other new industries as focus areas for the economic growth of the state.

***3** major economic anchors created*

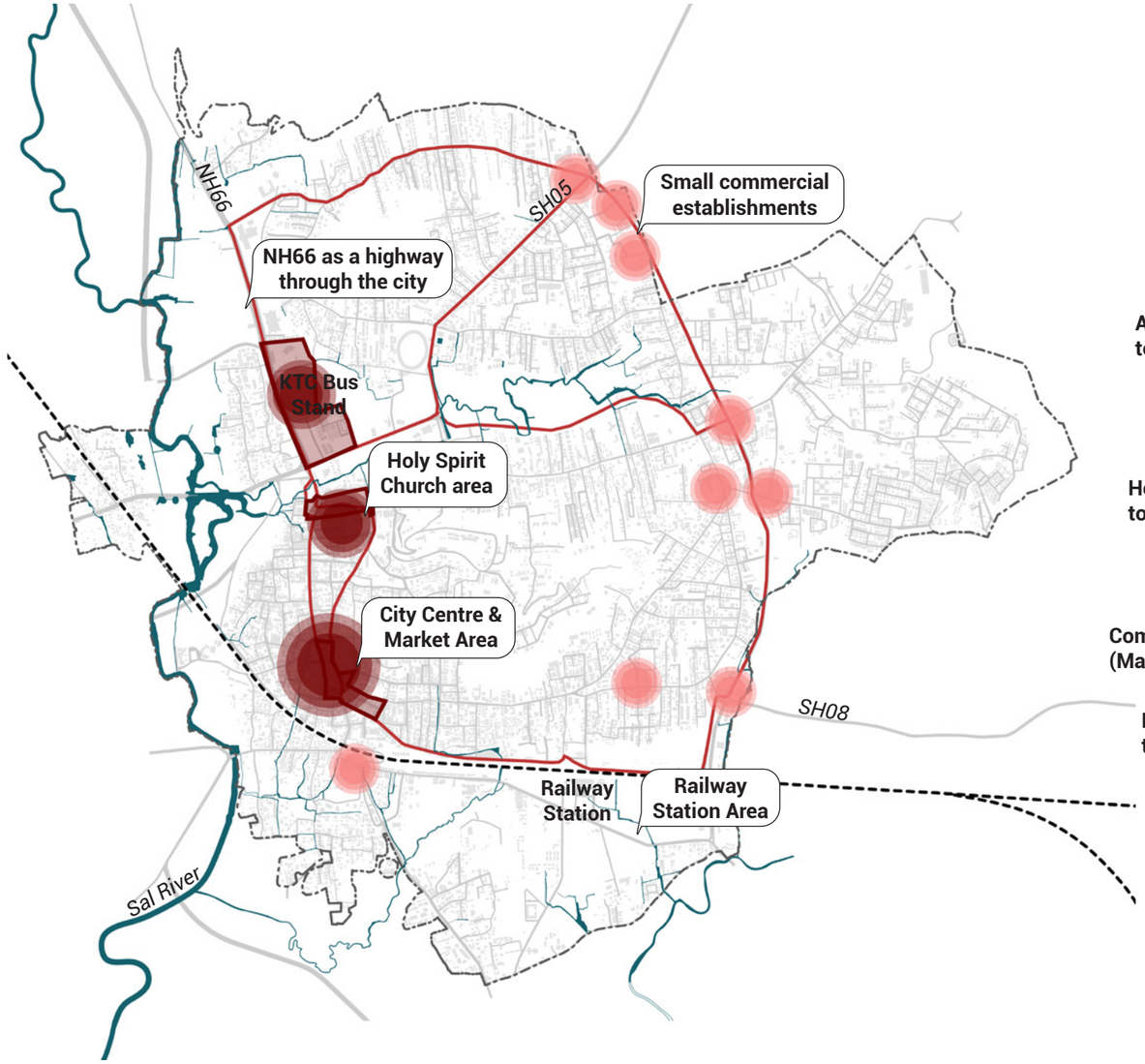


Fig.A.0.34 Existing Economic nodes in Margao. Source: Author

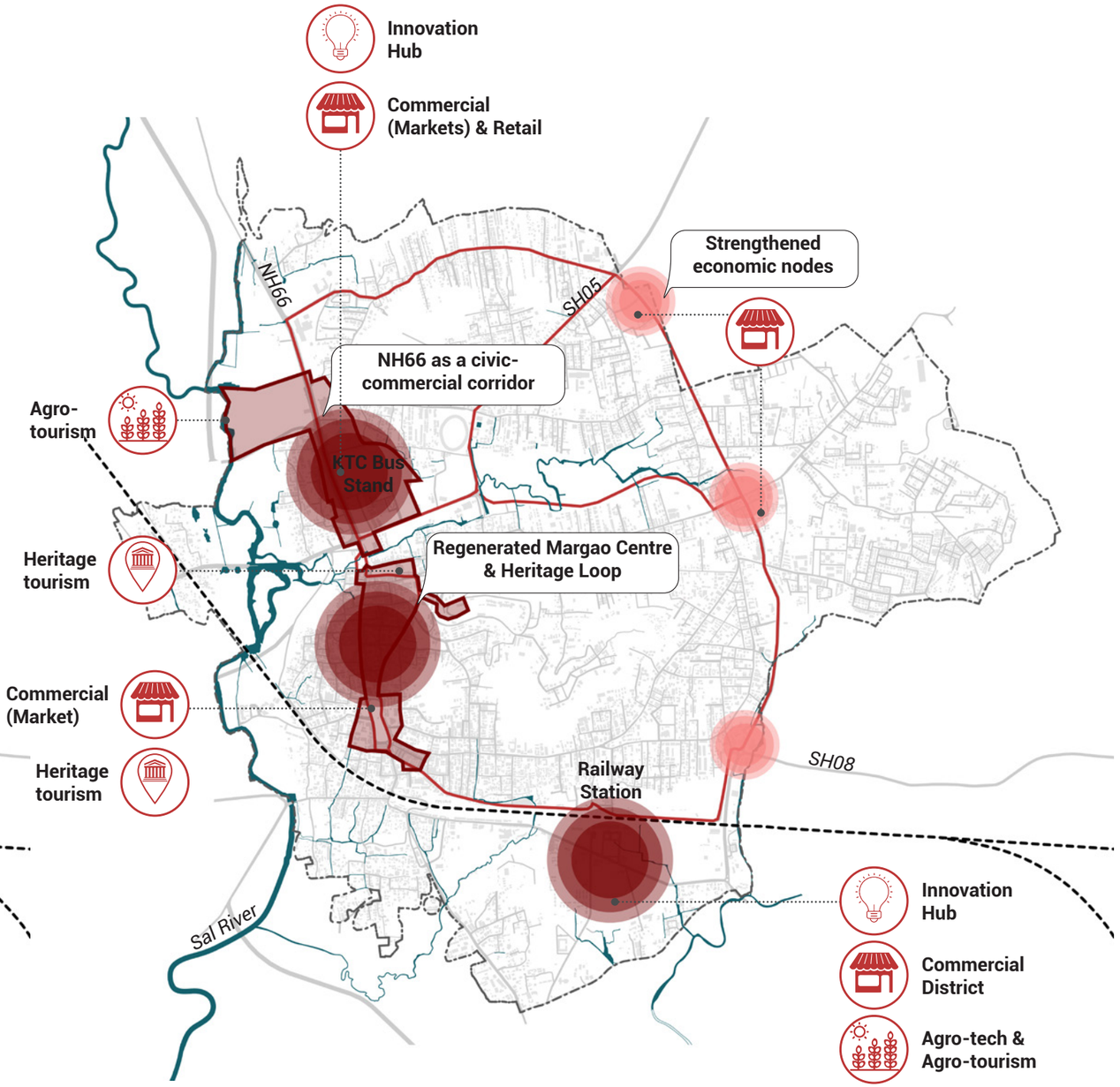


Fig.A.0.35 Proposed Economic Strategy. Source: Author

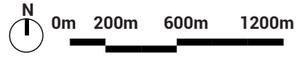




Fig.A.0.36 Existing Community Courtyard in Margao. Source: Google Street View



Margao: 15.96 km²

Population: 87,650

Source: CENSUS Data

2011



Margao: 15.96 km2

Population: 1,19,000

Source: CENSUS Data

2023



Margao: 15.96 km2

Population: 1,79,000

Source: Author calculations from CENSUS Data

2041

Comprises of one or more of:

- *Community Garden*
- *Childrens' Playground*
- *Community Hall/Centre*
- *Daycare/Nursery school*
- *Anganwadi*
- *Healthcare Centre*
- *Park*
- *Sports Ground*
- *Library*
- *Local Vendors*

A.0.10. Inclusive Communities

The analysis of the existing socio-cultural facilities has found that while Margao has sufficient healthcare, education and public facilities in the city, the distribution of healthcare facilities is not even throughout the city.
There is a lack of sufficient amenity spaces such as community rooms, community halls and libraries, anganwadis, family welfare centres, nursery schools and play areas. The exisiting amenity spaces are found only in a few neighbourhoods, thereby limiting their accessibility to a significant proportion of the population living in Margao. Considering the existing population and the estimated increase by the year 2041, the amenity space provision will have to be augmented.
The existing distribution of community facilities has been mapped and the introduction of new facilities based on the provision requirements as per the URDPFI has been proposed. The strategy for their distribution focuses on ensuring that each ward has a community hub within it with a number of these facilities; this will ensure that residents have easy and walkable access to them.

***25** community hubs introduced in the city*

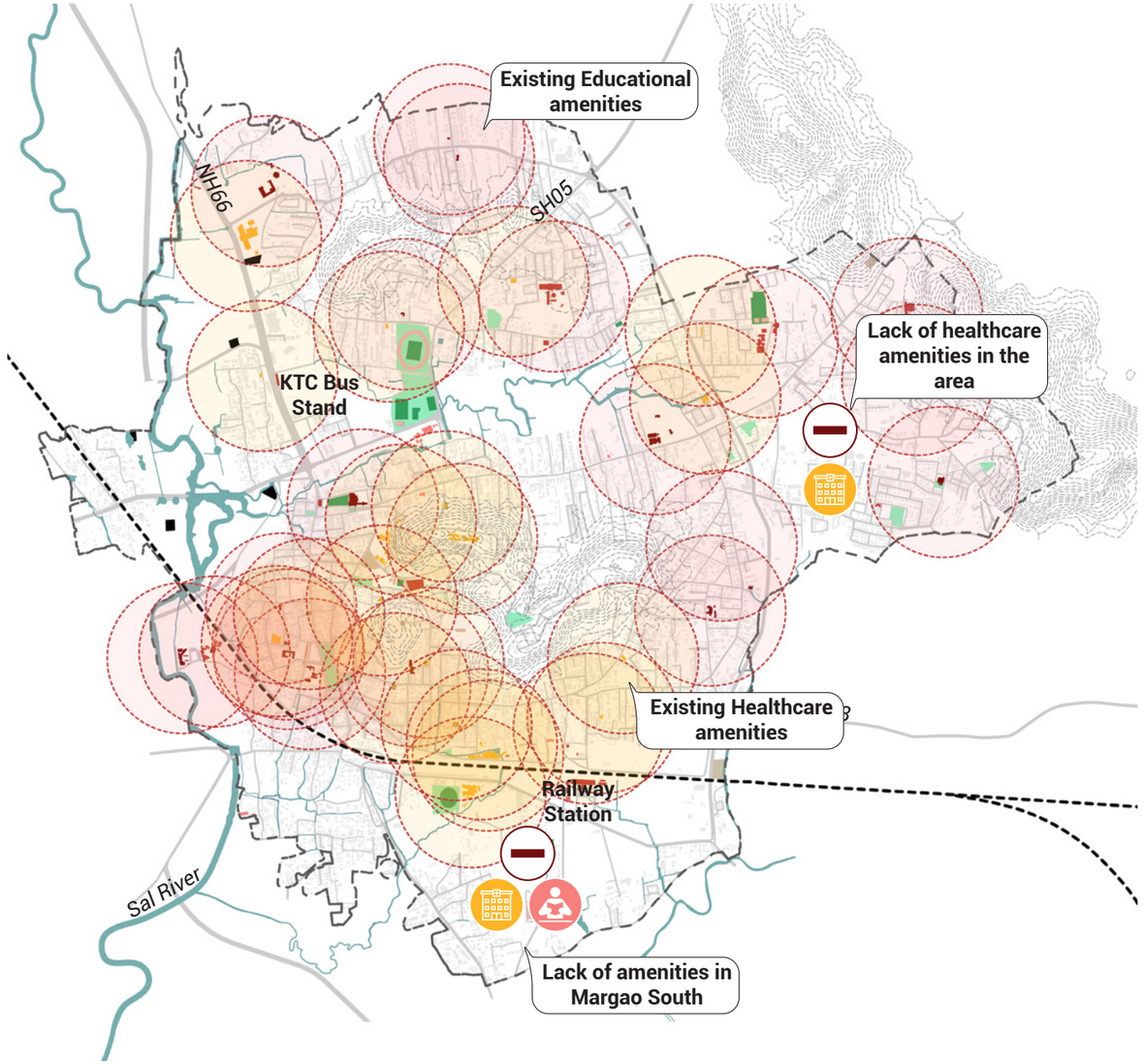


Fig.A.0.37 Existing Social Infrastructure in Margao. Source: Author

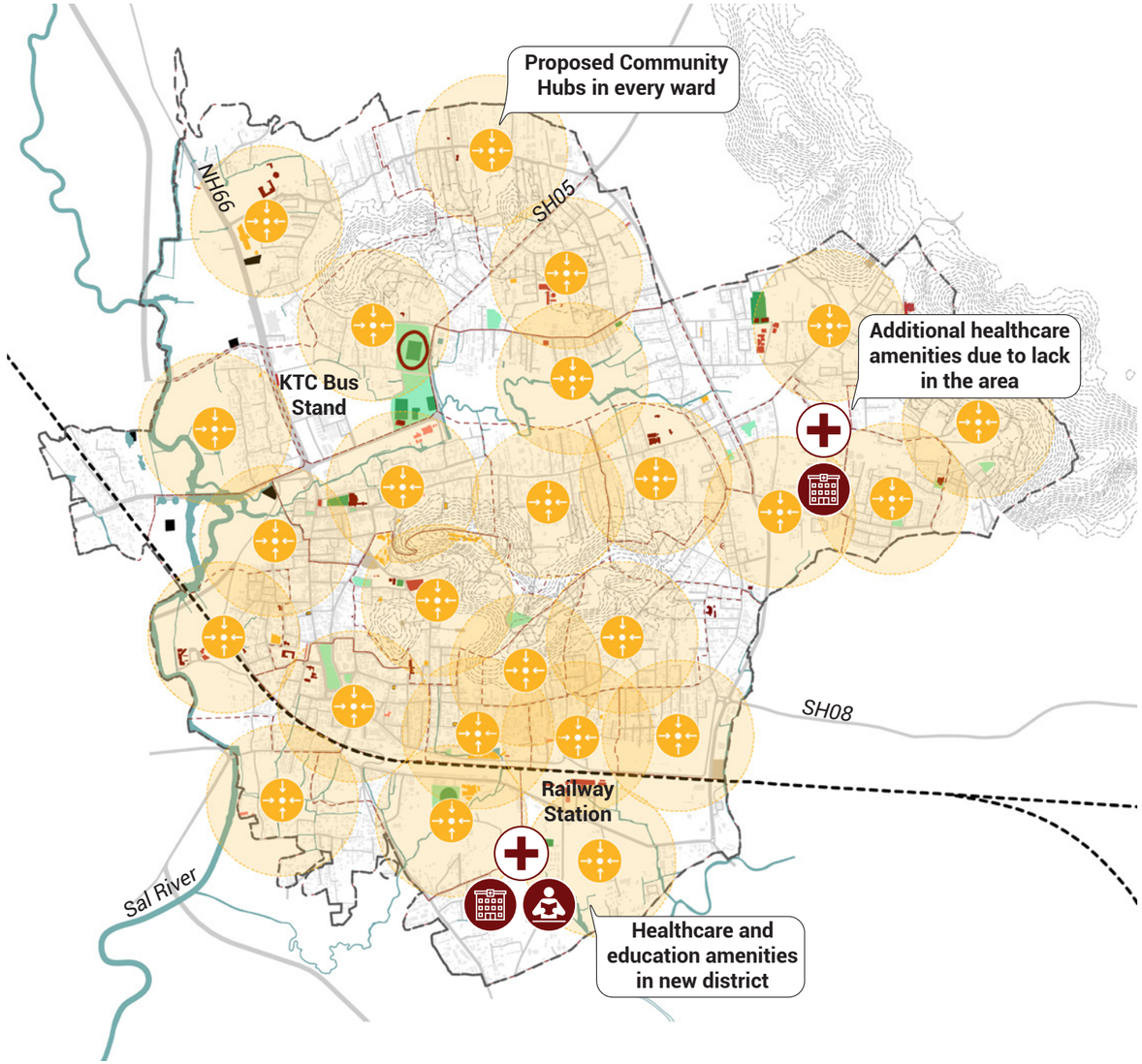


Fig.A.0.38 Proposed Community Infrastructure Strategy. Source: Author

Interventions

Zone 1

1. Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development
2. Develop the Clock Tower Circle, Damodar Circle and Sal-NH66 Junction as gateways and entry points into Margao
3. Develop a Biodiversity Park for the heart of Margao that acts as a sponge park and city park
4. Regenerate NH66 into a Civic & Commercial Corridor
5. Connect the Comba By-pass with the Old Station Road to relieve congestion in city centre

Zone 2

1. Rejuvenate the Margao Municipal Garden and Aga Khan Children's Park and the adjoining plaza to be more public friendly and inclusive
2. Develop the Museum of South Goa and adjoining plaza in the centre of Margao
3. Regenerate the Market Building and Market Street
4. Creating a Heritage Loop with public transit access (e-shuttle buses) and pedestrian friendly streets
5. Regenerate the Holy Spirit Church area by pedestrianising of streets and restricting vehicular traffic
6. Program and develop accessible open spaces such as the Temple Plaza and Monte Hill public space

Overall

1. Develop the Inter-Modal Transit Gateway at the Margao Railway Station
2. Create a No-build Green Buffer of 20m along the Sal river to protect river edge with promenades, pavilions & leisure spaces
3. Create a No-build Green Buffer of 5m along nalas to accommodate flood waters
4. Integrate green streets in the city
5. Identify and create sponge parks throughout the city of Margao
6. Introduce and develop a public transit system in the city of Margao
7. Introduce Community Hubs with community facilities at a 5 minute walking distance from every neighbourhood
8. Identify and develop gateways at the main entry points into Margao
9. Develop commercial nodes along the primary loop that promote retail development
10. Upgradation of streets with dedicated bicycle lanes and pedestrian friendly footpaths
11. Identify and develop plots for parking in Margao

A.0.11. Proposed Interventions

The projects identified stem from the integration of the overall strategies proposed in Margao. These projects have been identified based on the stakeholder engagements & immediate needs based on the analysis of the issues and opportunities. These priority projects are mostly concentrated along the NH66 as it is the most significant corridor in the city. The projects address several factors such as mobiltiy, flood resilience, activation of the public realm, and economic development.

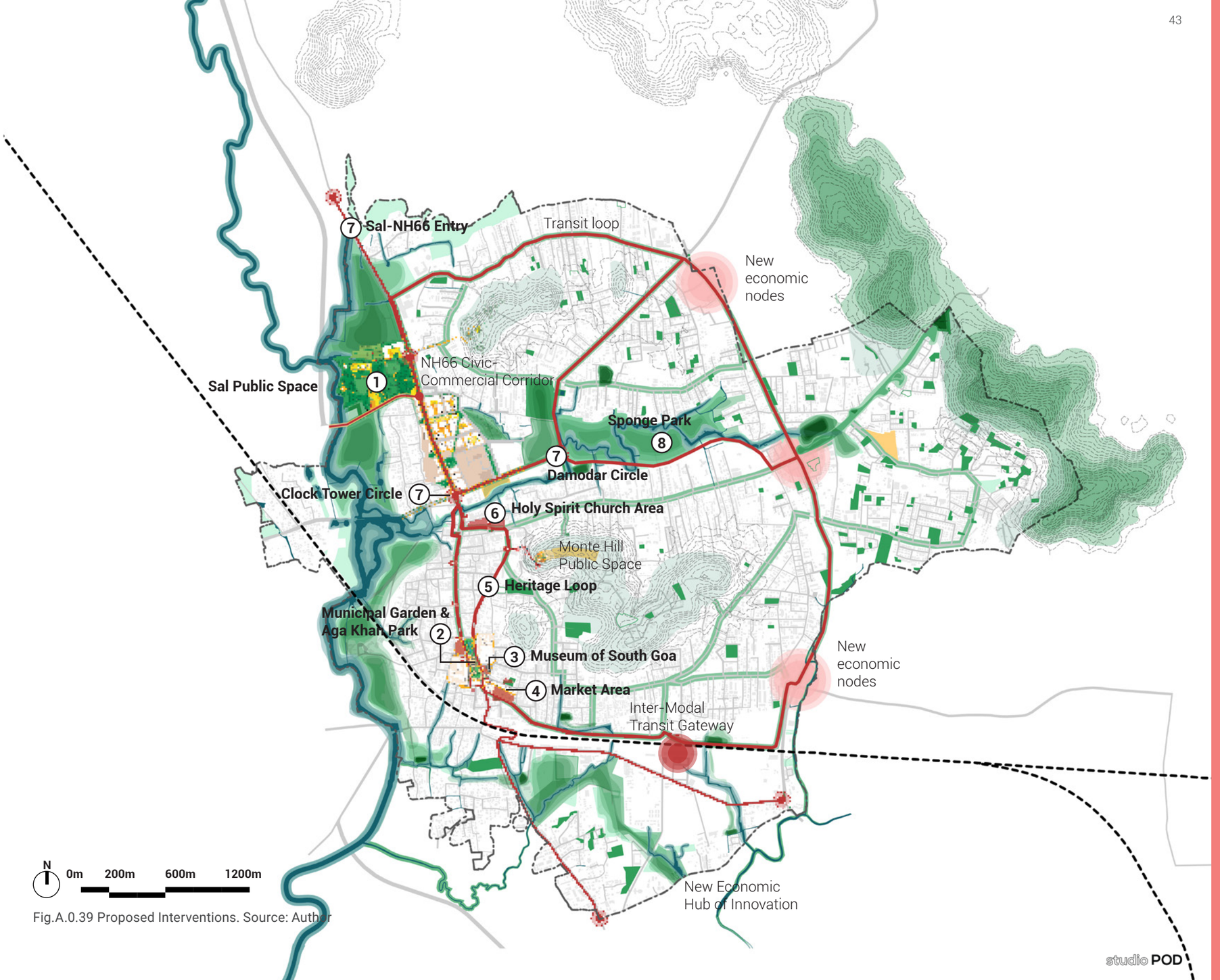


Fig.A.0.39 Proposed Interventions. Source: Author

Restrategising the NH66 as a Civic & Commercial Corridor

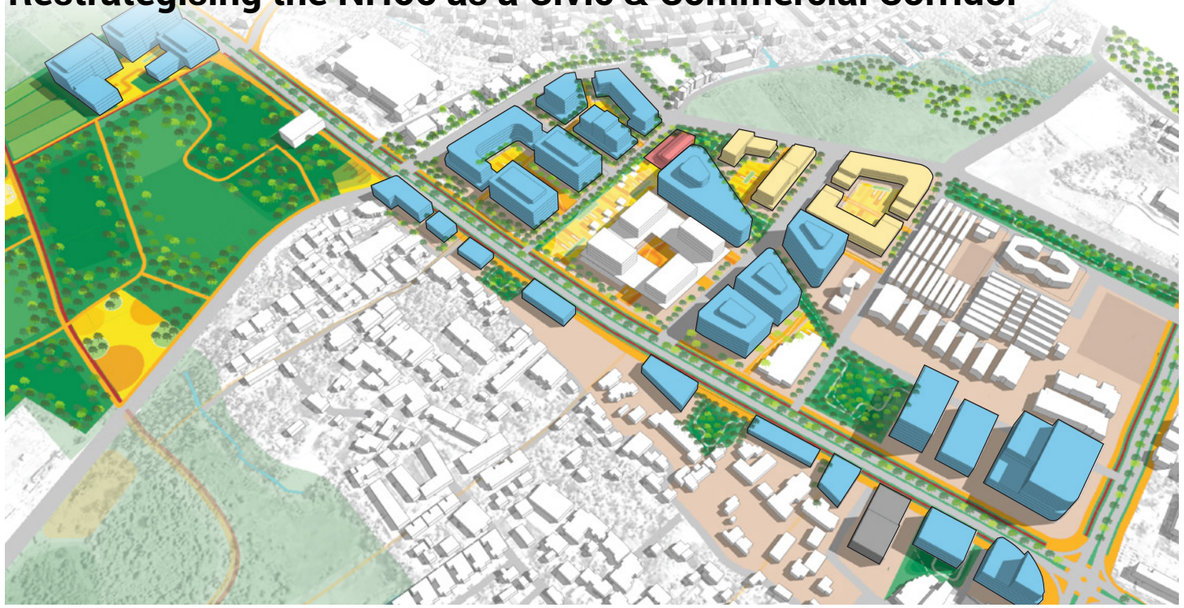


Fig.A.0.40 NH66 new development land use. Source: Author

Creating a Transit & Commercial District



Fig.A.0.41 NH66 new development. Source: Author

Rejuvenating the Sal river



Fig.A.0.42 Sal waterfront intervention. Source: Author

Re-imagining the entry into Margao - Clock Tower Circle

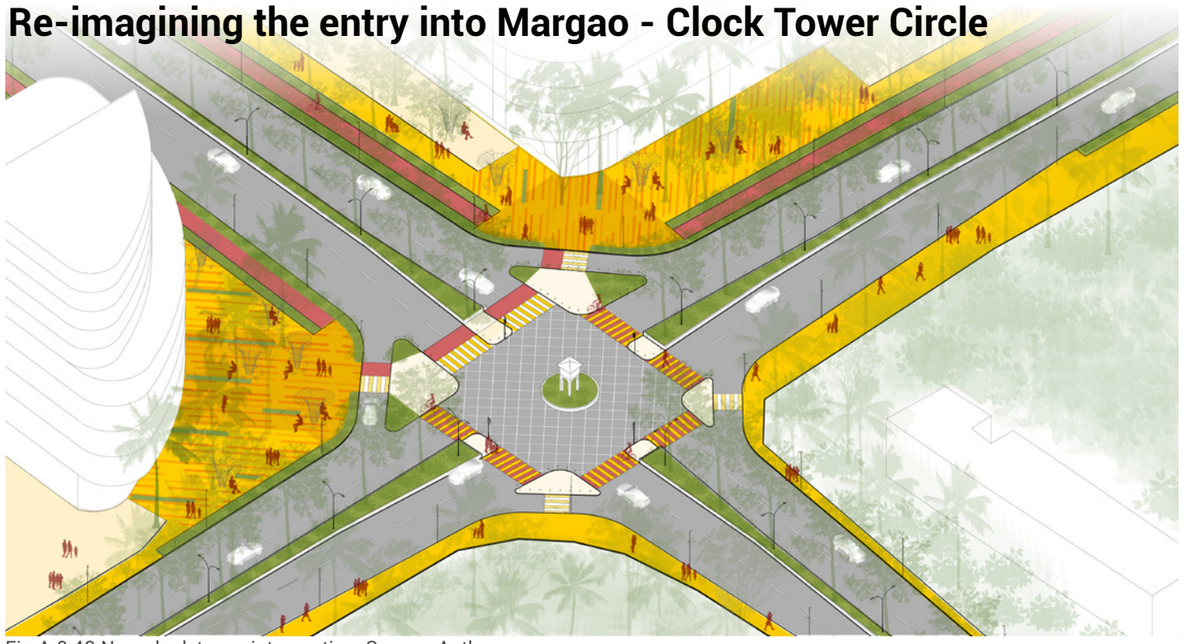


Fig.A.0.43 New clock tower intersection. Source: Author

A.0.12. Zone 1: Fatorda

The NH66 is re-strategised as a civic-commercial corridor, anchored at the current KTC Bus Stand, with an integrated green-blue network of programmed open spaces across Fatorda. The Clock Tower Circle is re-imagined as an entry gateway into Margao from Colva through the creation of a public realm. The Sal river is rejuvenated with revived farming, agro-tourism, public spaces, parks, walking and cycling trails, and other riverside recreation activities.

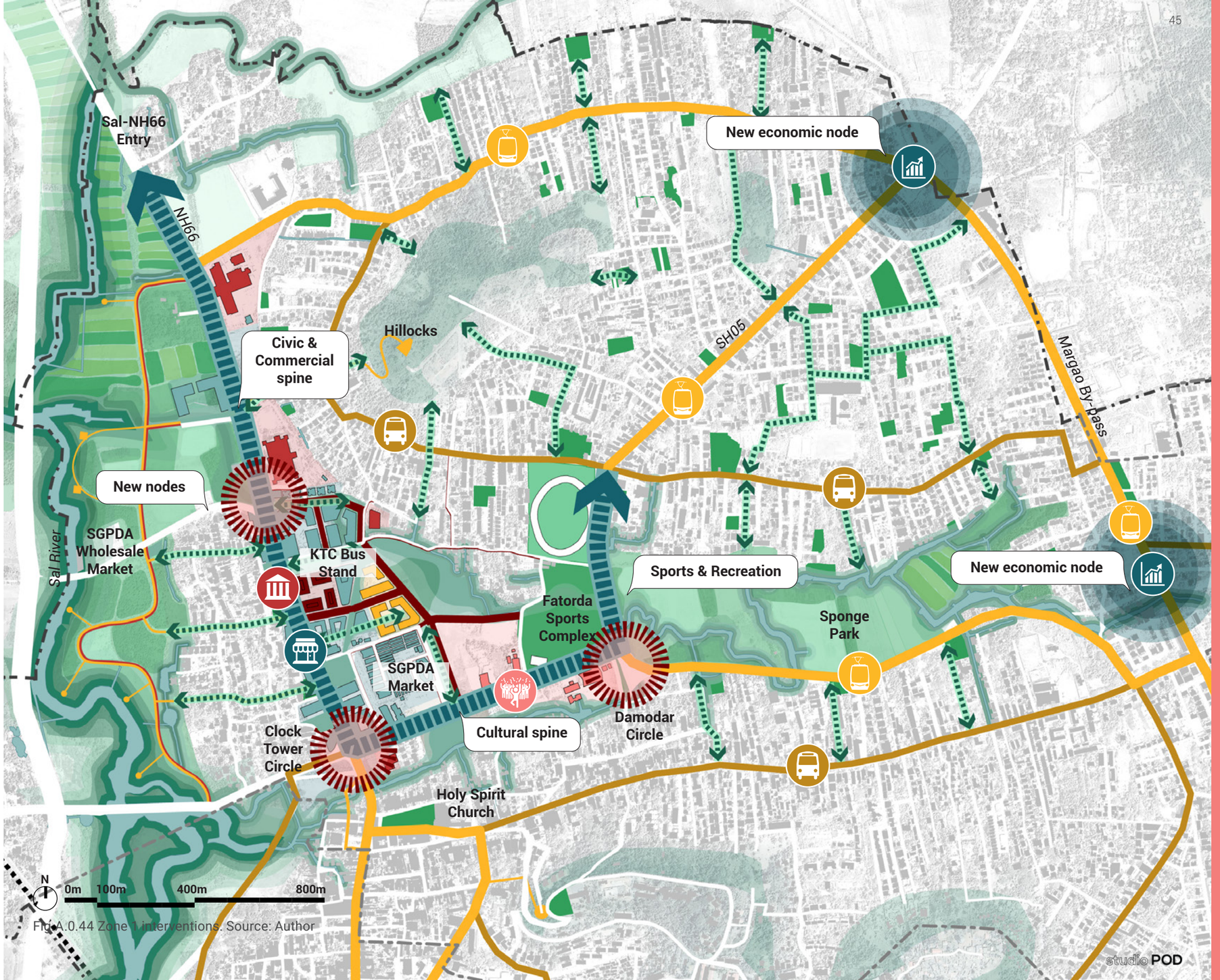


Fig A.0.44 Zone 1 interventions. Source: Author

Reviving the Holy Spirit Church Area



Fig.A.0.45 Pedestrian street along Holy Spirit Church. Source: Author

Activating the Municipal Garden Area



Fig.A.0.46 New Aga Khan Children's Park. Source: Author.

Developing the Museum of South Goa



Fig.A.0.47 New plaza outside the museum of South Goa. Source: Author

Regenerating the MMC Market Area



Fig.A.0.48 New pedestrian market street. Source: Author

A.0.13. Zone 2: Margao Centre

Mobility is addressed through aligning the public transit loop with the existing one-way route in the centre of the city, eliminating dead-ends in the area and providing parking plots along major vehicular roads. The Municipal Garden and Aga Khan Park are opened up to the adjoining street, the Administrative Building of Salcete Communidade is converted into a Museum of South Goa and the plaza adjoining the building connects to the market street, which is also converted into a pedestrian street. A Heritage Loop is proposed with e-shuttles connecting the Municipal Garden and the Holy Spirit Church area, which is revived with pedestrian streets and plazas.

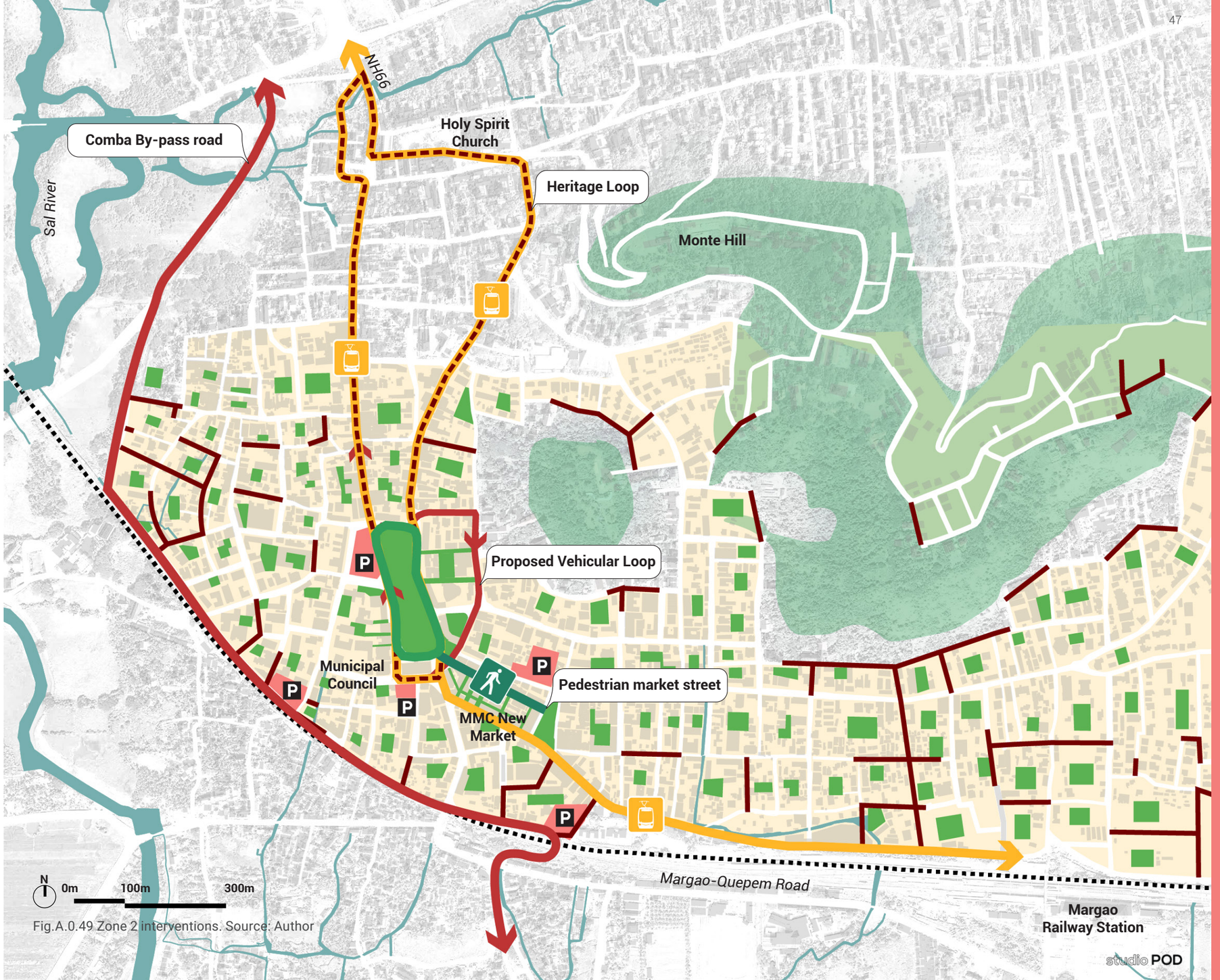


Fig.A.0.49 Zone 2 interventions. Source: Author

Chapter A.1

Regional Analysis



Fig.A.1.1 Mathany Saldhana Administrative Complex, Office of District Collector, South Goa. Source: MGS Architecture



Fig.A.1.2 Taj Exotica Beach Resort, Benaulim. Source: Trip Advisor

A.1.1. Settlement Area & Population

The Salcette Taluka in South Goa with a population of over 2.2 lakhs is amongst Goa's most populous and densely populated Talukas. The Taluka is located along the west coast and is bound to the north by Mormugao and Zauri River to the east.

Building on it's adjacencies to the coast, Vasco and Dabolim Airport, Margao located at the centre of the Salcette Taluka is home to a mix of industries and businesses. In addition to being a hub of commerce in South Goa, Margao is also the administrative headquarters of both Salcette Taluka and the South Goa district. The city with a population of 1.19 lakhs is Goa's second largest city by population after Vasco has been rapidly growing over the last decade.

Amongst the fastest growing city's in Goa

Projected population for 2023:

Margao - 1,19,000

Projected population for 2023 (talukas):

Salcette - 2,28,513
Ponda - 31,100
Tiswadi - 1,75,618
Mormugao: 1,38,000

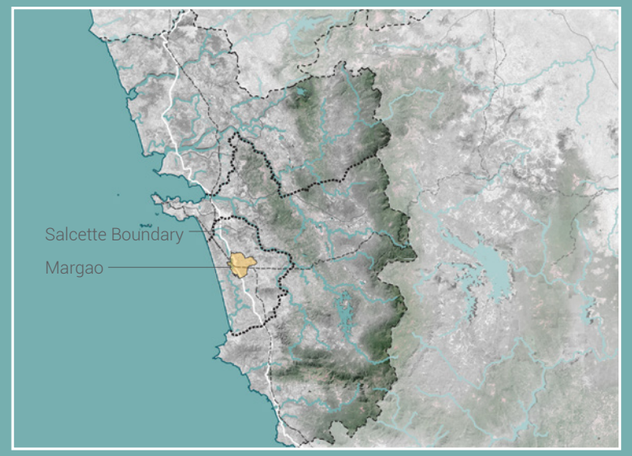


Fig.A.1.3 Regional population. Source: Author

Tiswadi
1,75,619

Ponda
31,100

Mormugao
1,38,000

Salcette
2,28,513

Margao
1,19,000

Margao
Margao Boundary
Taluka Boundary
Railway Line
Roads
Railway Station
Settlement Zone

N
0km 2km 6km

studio POD



Fig.A.1.4 Colva Beach. Source: Google



Fig.A.1.7 Rachol Seminary. Source: Google

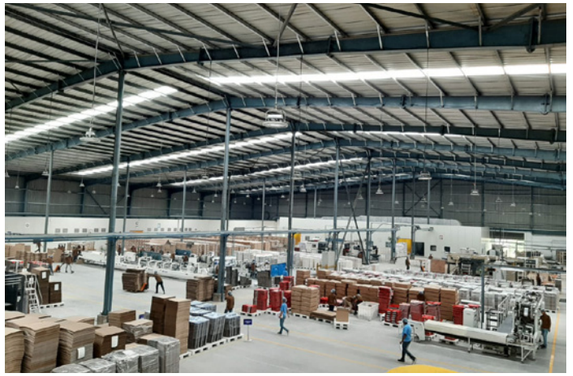


Fig.A.1.5 Borkar Packaging. Source: Google



Fig.A.1.8 Pepsi Factory. Source: Wikimapia



Fig.A.1.6 Margao SGPDA Market. Source: Author



Fig.A.1.9 Margao Wholesale Fish Market. Source: Google

A.1.2. Regional Economy

Historically, Margao has been the market town of South Goa. The proximity to the sea and the agricultural lands resulted in large fish and spice markets being set up in and around city. The new M.M.C Market with its labyrinth of aisles is amongst the largest markets in Goa and attracts retailers and shoppers from across Goa.

The proximity to the Dabolim Airport, Mormugao Port, Vasco City and the excellent connectivity the NH-66 provides has resulted in Margao becoming an important commercial hub in Goa. Several manufacturing and processing industries lie in and around Margao. The Margao Industrial Estate, is located to the south east and the Verna Industrial Estate located to the north of the city are the significant estates with a mix of logistics, manufacturing and processing & packaging industries.

In addition to industry and commerce, South Goa especially the Salcette Taluka, with its long coastline dotted with sandy beaches are a huge draw for domestic and international tourists. Catering to the year round tourist population, several large hotels and resorts are located along the beaches. Capitalising on Margao's connectivity to the beaches and other tourist attractions in the region; hotels, restaurants and other tourist facilities have developed in the city as well.

Commercial capital of Goa with diverse economies

Goa Tourism Statistics (2018-19)

13,86,500 Domestic Tourists

2,47,212 Foreign Tourists

565 Hotels

Source - Statistical Handbook of Goa 2018-19

Margao Industrial Estate

100 Functioning Industries

1,400 workers (2017)

Servicing, Repairing, Packaging, Cutting Tools, Food products, Printing, Chemicals

Fishing

Approx. **1.5 cr** business is conducted at the Margao SGPDA market daily

Approx. **20** lorries of fish are sold at the SGPDA market daily

150 fish vendors at SGPDA market in Margao

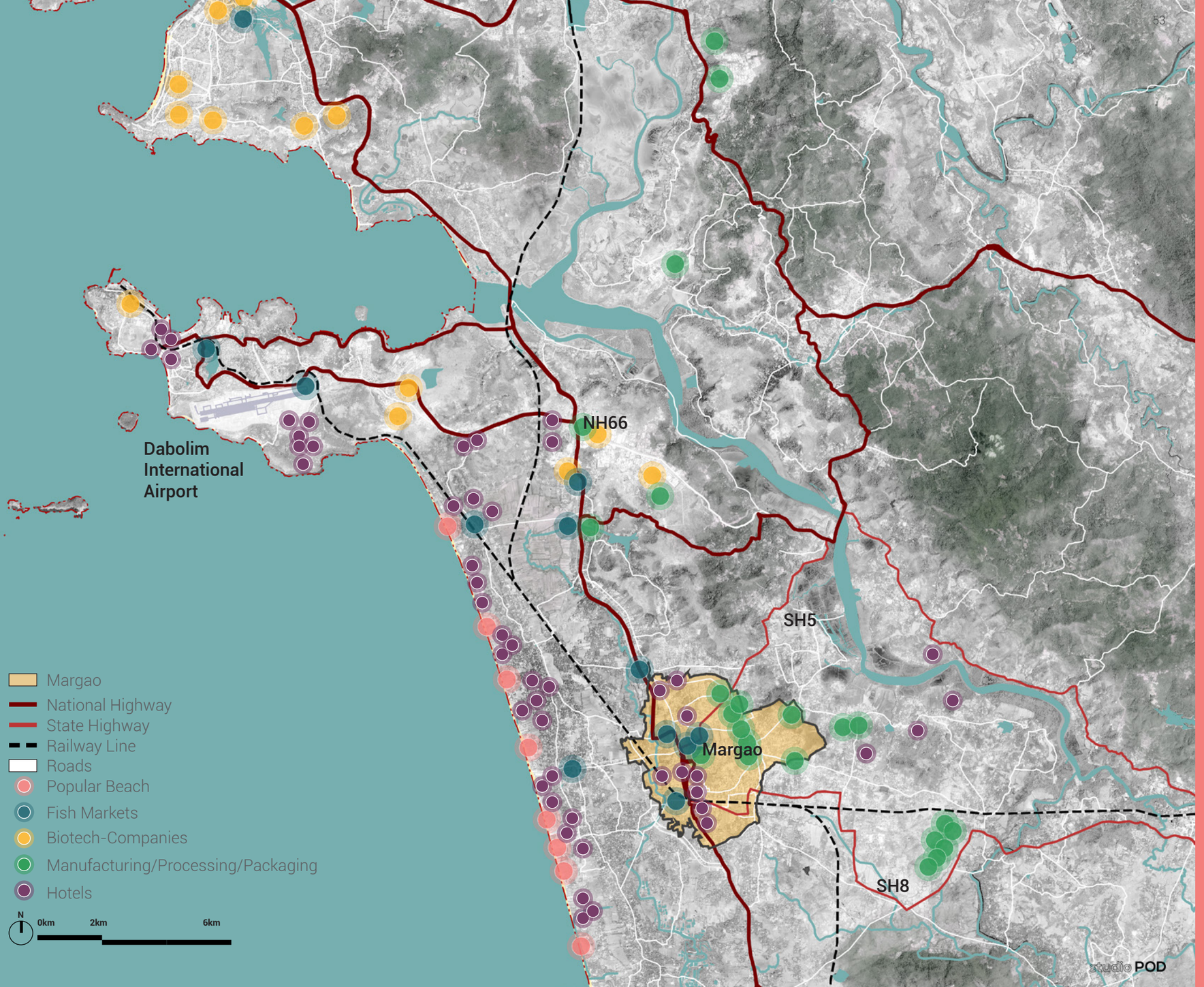


Fig.A.1.10 Regional Economy. Source: Author



Fig.A.1.11 Khazan lands near Rachol on the banks of Zuari river. Source: Facebook/Goenkars



Fig.A.1.12 Mangroves. Source: Herald Goa

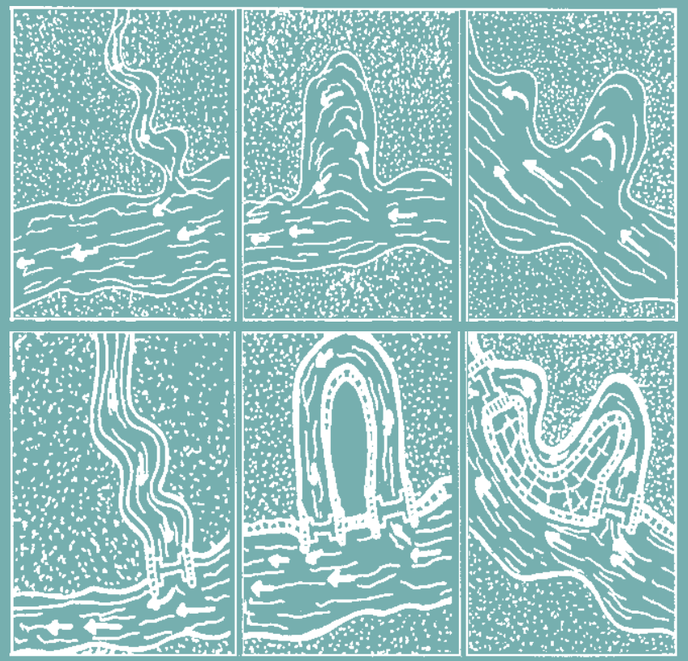
A.1.3. Ecology & Biodiversity

Margao is bounded by the Zuari River and the Western Ghats to the east, smaller hills to the north, and the Sal river and the coast to its west. These natural features significantly influence the ecology, biodiversity and agricultural practices. The Bondla Wildlife Sanctuary located on the Western Ghats, is mostly covered with native deciduous and semi-evergreen trees. The sanctuary also has an abundance of fauna including species that are unique to the region.

The Zauri River forms an estuary just to the north of the Salcette Taluka where it meet the sea. The lands around which the estuary is formed are known as Khazan lands. These lands have dense mangrove forests, estaurine landscapes and have a rich biodiversity.
In the past, on the Khazan lands, various types of wild rice were cultivated that could withstand the saline soil and air conditions. Recently, these traditional varieties have been phased out and been replaced with modern, high-yielding varieties.

The fertile soil and the proximity of fresh water from the rivers has fostered the development of large scale coconut and cashew plantations across South Goa and within the Salcette Taluka.

Nestled within a heterogeneous landscape



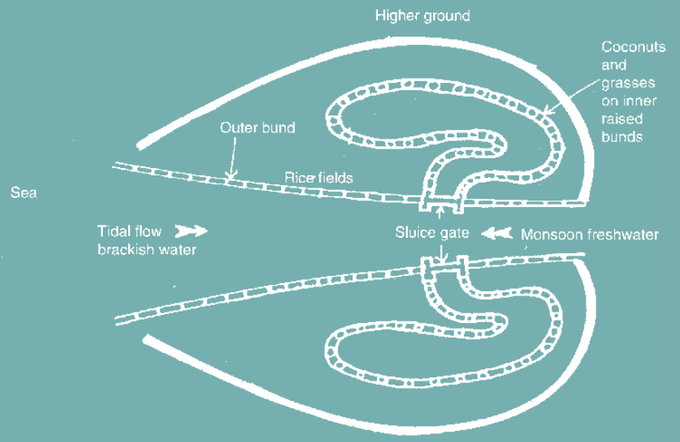


Fig.A.1.13 Khazan landscape. Source: NZDL

Fig.A.1.14 Regional Ecology. Source: Author

Panaji

Dabolim International Airport

Bondla Wildlife Sanctuary

Ponda

Zuari River

Sal River

Margao

Margao
Railway Line
Roads
Agricultural Land
Khazan Land
Wild Life Sanctuary
Other Open Spaces

N
0km 2km 6km



Fig.A.1.15 Collared Kingfisher. Source: Singapore Bird Project



Fig.A.1.16 Painted Stork. Source: Wikipedia



Fig.A.1.17 Rice cultivation in Khazan lands. Source: Google

The Khazan lands are characterised by:

15 species of Mangroves

17 salt-tolerant varieties of rice are cultivated

20 species of grasses and weeds

10 varieties of edible bivalves, **6** of mussels, and clams, oysters, crabs and prawns

Many resident and migratory birds

Crocodiles, other reptiles and Mammals

Salt-tolerant species of bacteria, fungi, algae and other microorganisms.

150 species of fungi

Located in a region that has a unique biodiversity

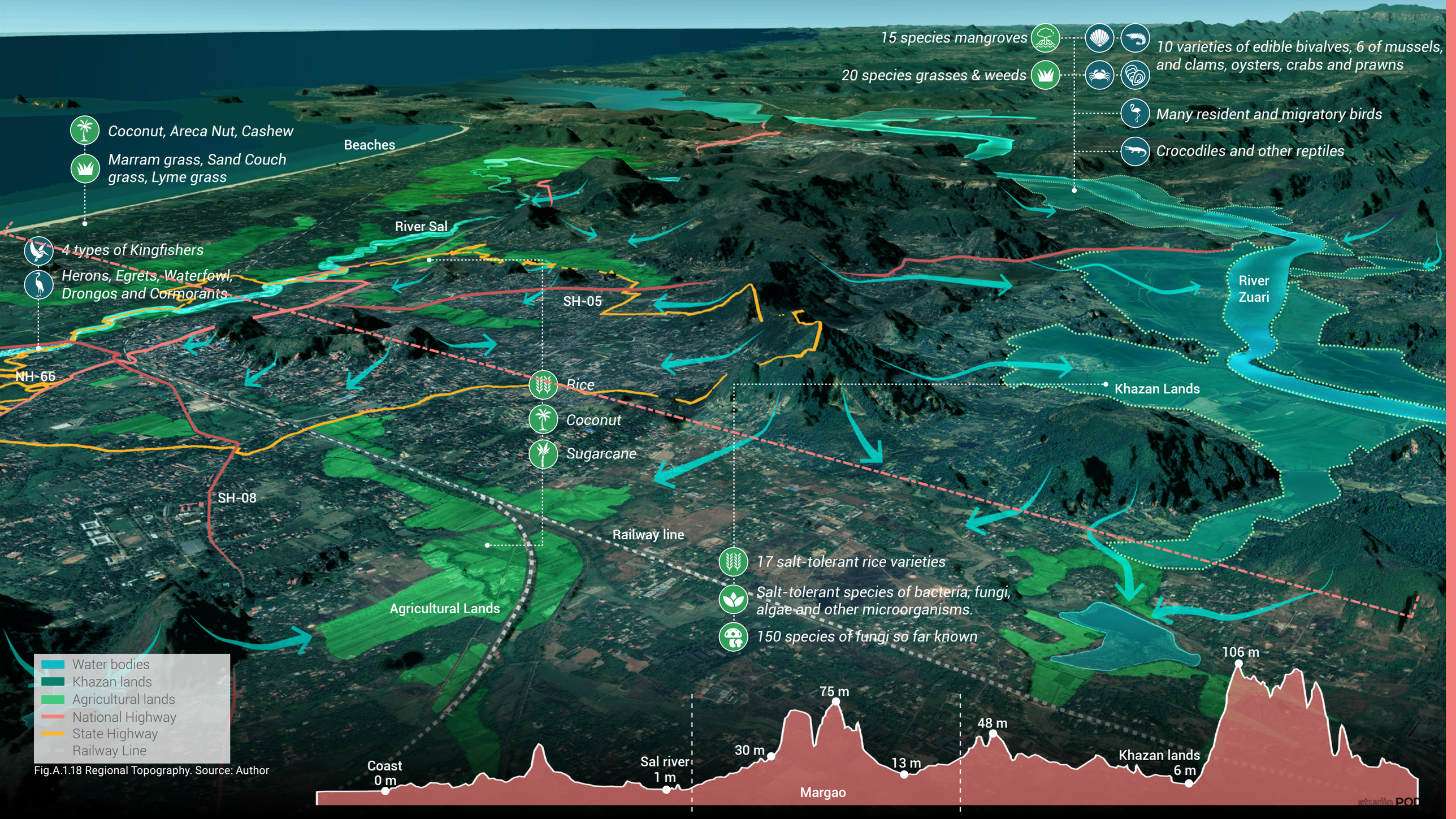


Fig.A.1.18 Regional Topography. Source: Author

Chapter

A.2

City Analysis

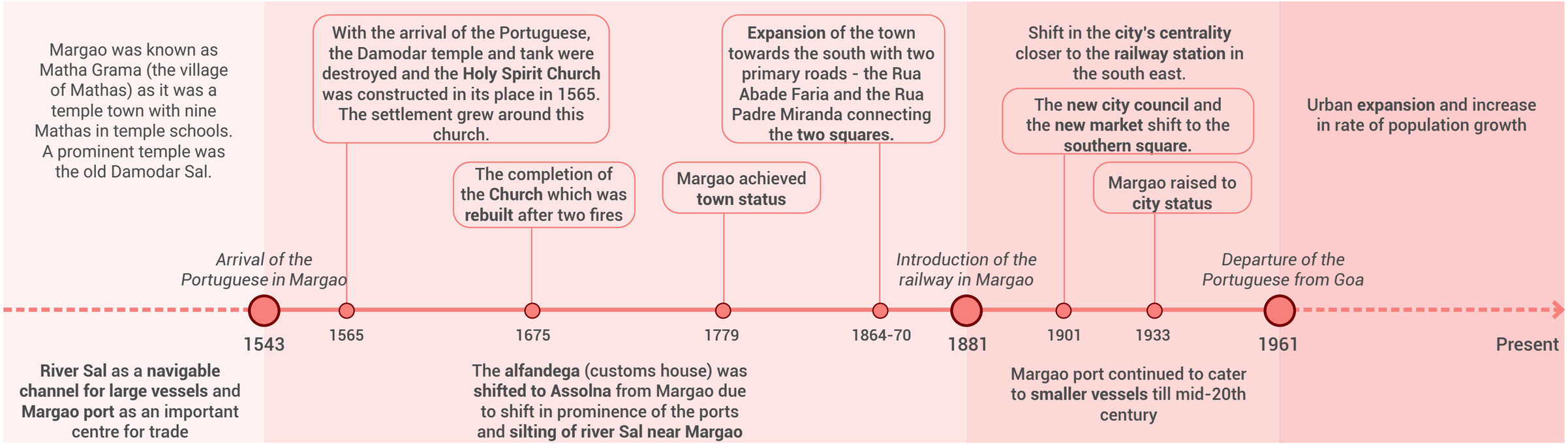


Fig.A.2.1 View of a street in Margao. Source: Facebook/Team BHP

A.2.1. Historic Evolution of Margao

A.2.1.1. Timeline of Margao

Prior to the Portugese colonisation of Goa, Margao was a temple town and home to the prominent Damodar Sal temple. Following the Portugese arrival in 1543, Margao became a part of the Velhas Conquistas, or the Old Conquests of the Portuguese settlement. The evolution of Margao from being a settlement to a town and eventually a prominent city in South Goa can be attributed to various factors such as the expansion of the Portuguese settlements, the introduction of the railway, and Goa's development and urbanisation over the last few decades .



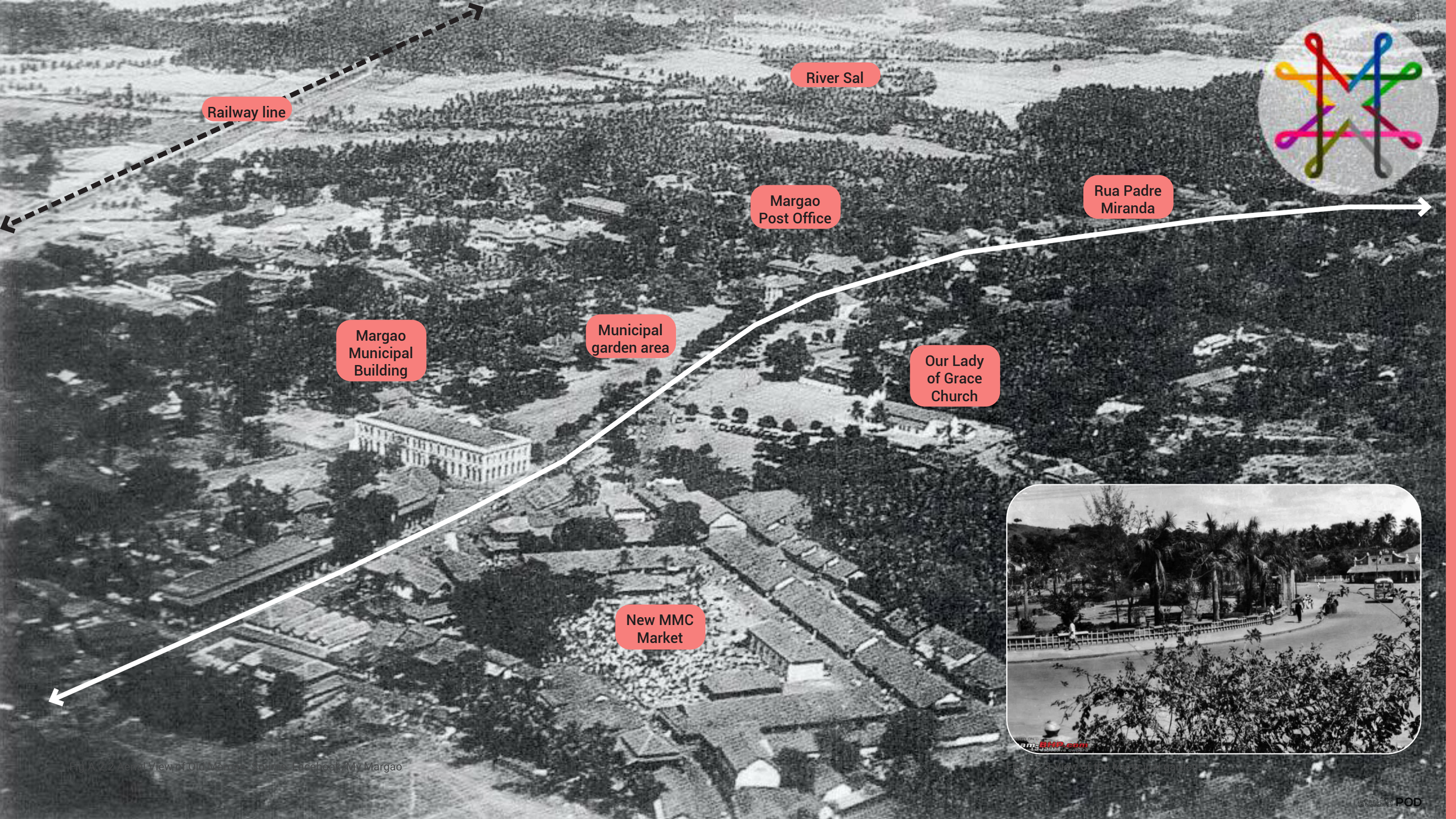


Fig. A.2.2 Aerial View of Old Margao - Source: Facebook/My Margao

Fig. A.2.3 View of the Main Road



Fig.A.2.4 The Sal River today. Source: Goemkarponn



Fig.A.2.5 Pathemari / Uru boat which was used for trade. Source: Wikipedia

A.2.1.2. Sal River & Trade

The Sal river originates from a small spring in Verna and is due to the tidal flows is a saltwater river from Khareband onwards till Mobor and Cavelossim. This is reportedly how it gets its name - Sal (Portuguese for salt) and Khareband (Khare, in Konkani for salty).

Roof tiles were brought in from Mangalore and salt was sent back from Goa and the Sal River was the prime route for the trade. This was done in 'Pathemaris', known as 'Fat' boats. On the river also plied boats carrying carrying spices and condiments across the Indian Ocean Arabia and Africa. This bustling trade contributed significantly towards making Margao a prosperous settlement even before the arrival of the Portuguese. Along with trade, the town became an important centre for education, religious activities, and cultural centres.

In the middle of the 19th century the Alfandega (customs house) was shifted to Assolna from Margao due to shift in prominence of the ports. Margao port, however, did cater to smaller vessels till the mid-20th century.

Today, the river is a heavily silted and resembles only a gentle stream.

Sal River's transition from a navigable channel with flourishing trade to a silted stream

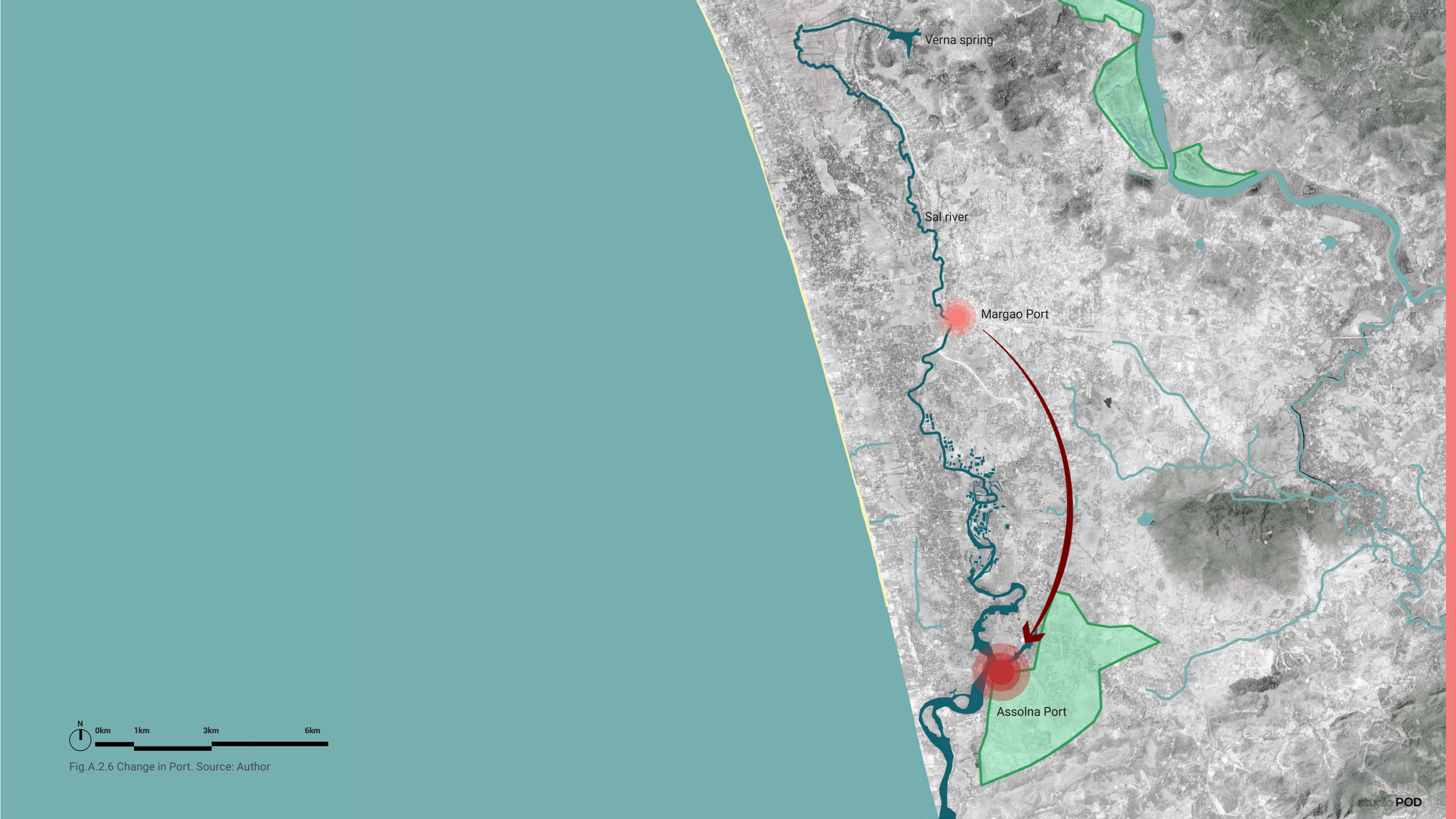


Fig.A.2.6 Change in Port. Source: Author

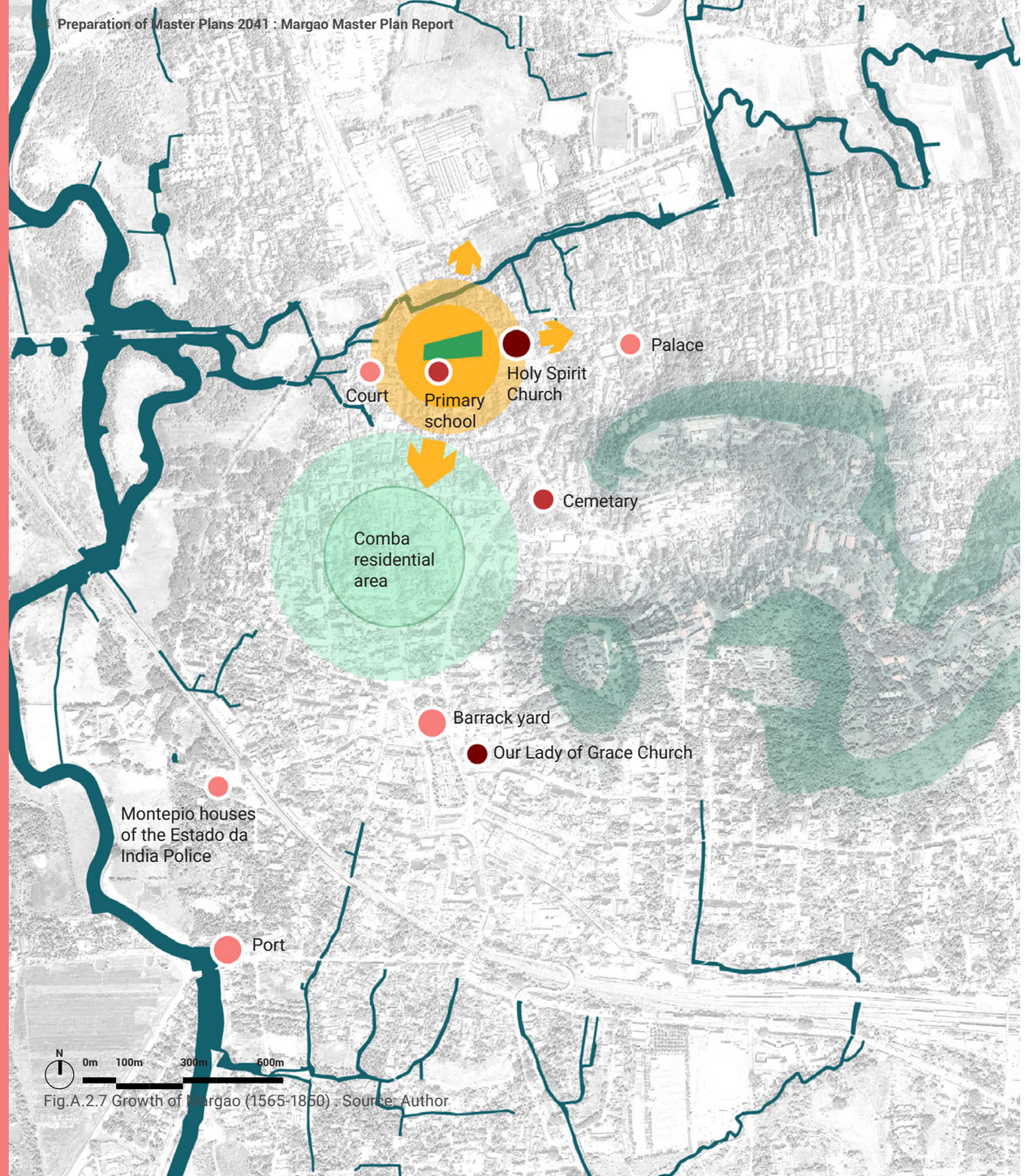


Fig.A.2.7 Growth of Margao (1565-1850) . Source: Author

A.2.1.3. Growth of Margao (1565 - 1850)

The centre of the town was the Largo da Igreja (Church Square) around which the main public buildings including the Church, school and court were built.

The density around the centre was higher and primarily resided by the Christian community while the low density Comba residential area to the south was resided by the Hindus.

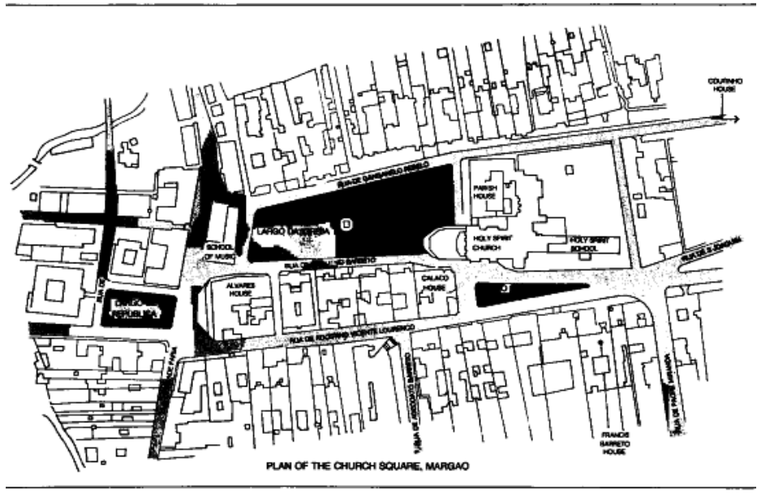


Fig.A.2.8 Plan of the Church Square. Source: Margao - a heritage of living spaces. Splendid Goa. ProQuest LLC. Media Tranasia.



Fig.A.2.9 Holy Spirit Church. Source: Author

A.2.1.4. Growth of Margao (1850-1881)

The Rua Abade Faria was developed which connected the two squares: Largo da Igreja (Church Square) and Largo dos Quarteis (Barracks Square).

Development took place along the new streets including the expansion of the hospital and the construction of the Rua Padre Miranda.



Fig.A.2.10 Old Municipal Building. Source: Sahapedia



Fig.A.2.11 Holy Heart of Mary Hospital. Source: HPIP

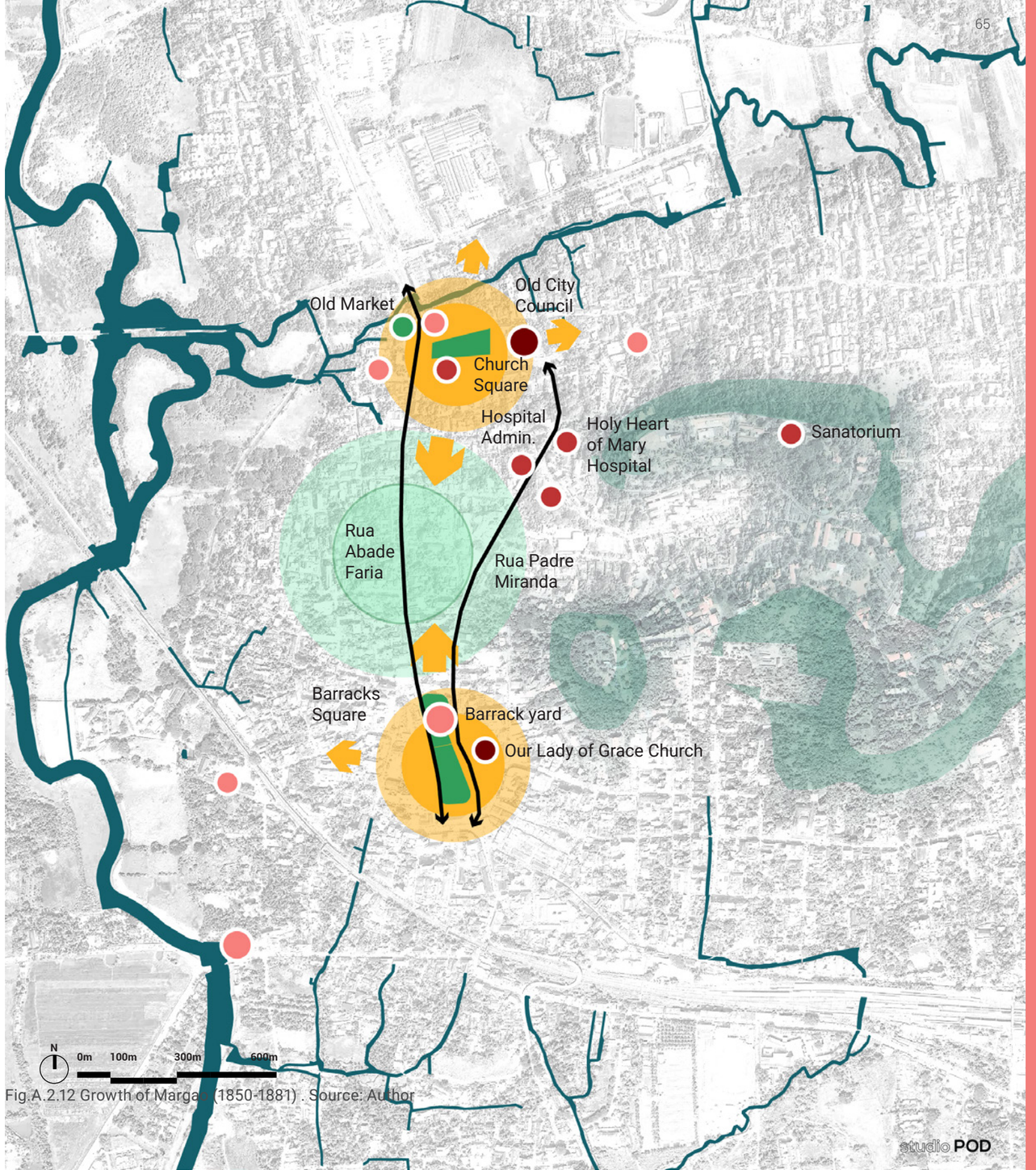


Fig.A.2.12 Growth of Margao (1850-1881) . Source: Author

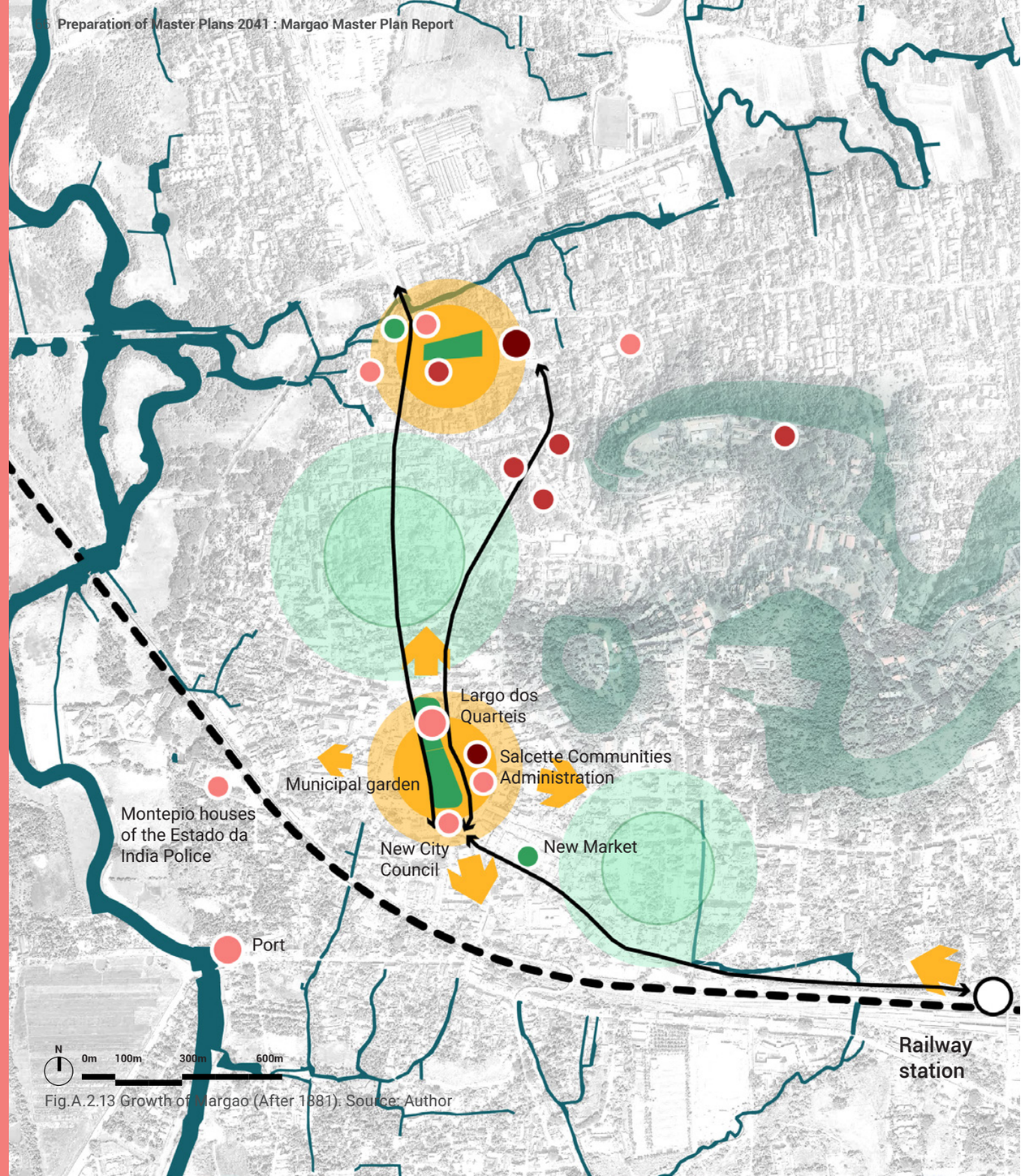


Fig.A.2.13 Growth of Margao (After 1881). Source: Author

A.2.1.5. Growth of Margao (After 1881)

The late 1800s saw the introduction of the railway, connecting parts of Goa through Margao to the Mormugao harbour. The city's centrality started to shift southwards, closer to the station. Residential areas started to densify around the southern square.

The New City Council was developed in the Largo dos Quarteis and the new market came up close the square.



Fig.A.2.14 Margao Municipal Council. Source: Wikipedia



Fig.A.2.15 Municipal Garden. Source: Author

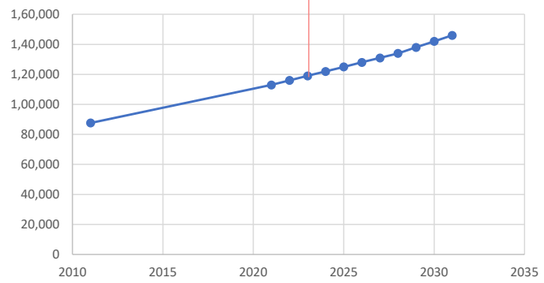
A.2.2. Margao City Demographics

Projected population (2023):

1,19,000

Population (2011):

87,650



Population of Children (Age 0-6): **8688**
(9.91% of total population)

Female Sex Ratio: **976** (State average: 973)

Literacy rate: **91.09%** (State average: 88.70 %)

Male literacy: **93.58%**

Female literacy: **88.54%**



Fig.A.2.16 Margao settlement distribution. Source: Author

A.2.2.1. Margao in Comparison

Margao	Panjim	Ponda	Valpoi
1,06,484 Population	70,991 Population	22,664 Population	8,532 Population
22 km² Area	53.70 km² Area	5.22 km² Area	11.70 km² Area
4,831/km² Population Density	1,322/km² Population Density	4,342/km² Population Density	729.2/km² Population Density
1.21% Annual Population Change	0.92% Annual Population Change	2.5% Annual Population Change	0.75% Annual Population Change

A.2.3. Outline Development Plan 2028 For Margao Planning Area

- Site Boundary
- Railway Line
- Conservation Area
- 0.1% Petrol Filling Station
- 8.7% Roads
- 1.7% Water Bodies
- 9.7% Agricultural Zone
- 6.7% Commercial Zone 1
- 5.7% Commercial Zone 2
- 0.02% Commercial Zone 3
- 1.5% Special Commercial Zone
- 43.8% Residential Zone 1
- 2.6% Residential Zone 2
- 0.4% Special Residential Zone
- 6.4% Public/Semi-public/Government/ Religious Zone
- 0.2% Defence area
- 0.5% Industrial Zone
- 4.9% Natural Reserve
- 2.9% Open Space
- 0.1% Crematorium/Cemetary/Burial Ground
- 0.4% SIP Pressure Conduit
- 2.6% Transport, Warehousing and Communication Zone
- 0.6% Parking Area

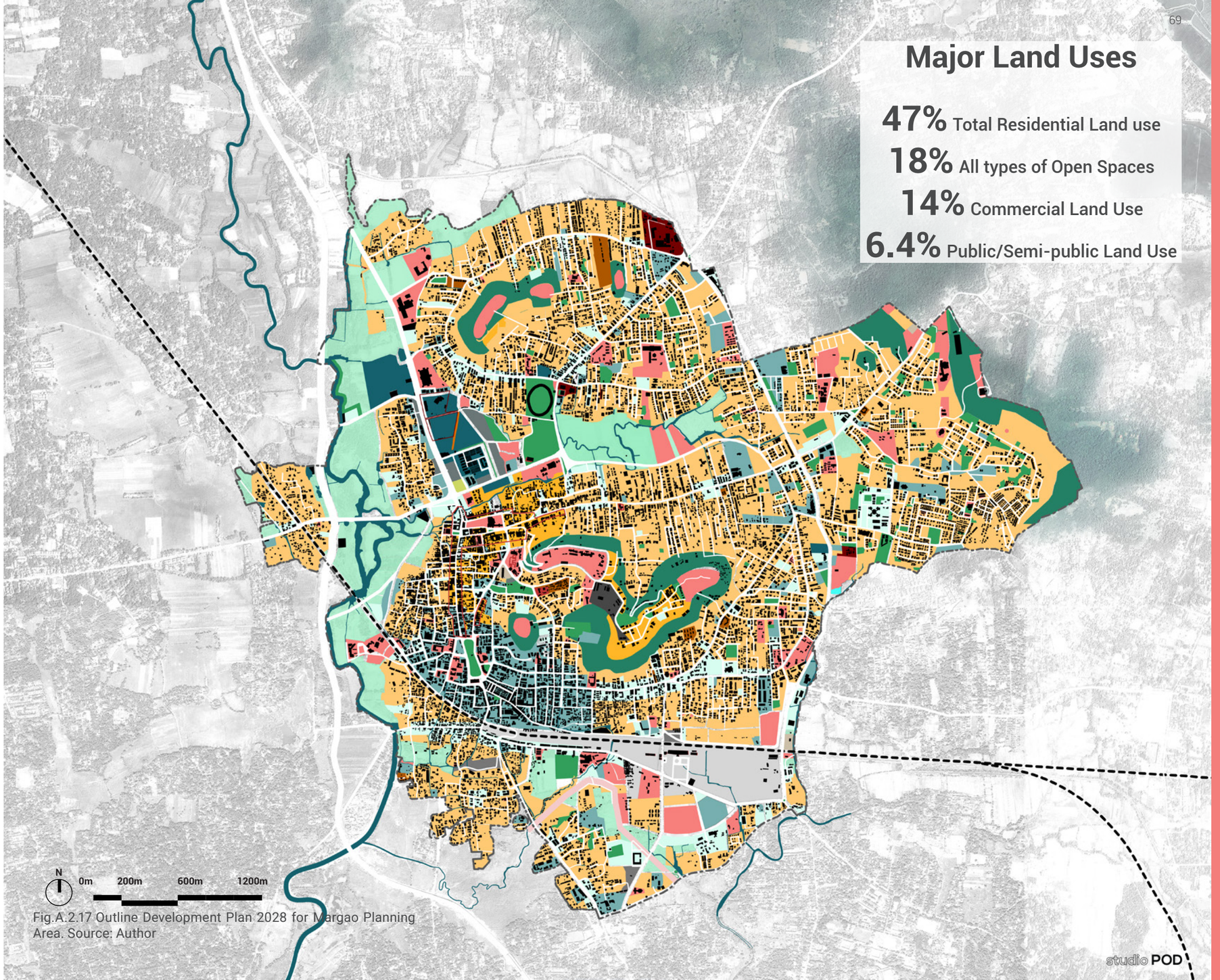


Fig.A.2.17 Outline Development Plan 2028 for Margao Planning Area. Source: Author

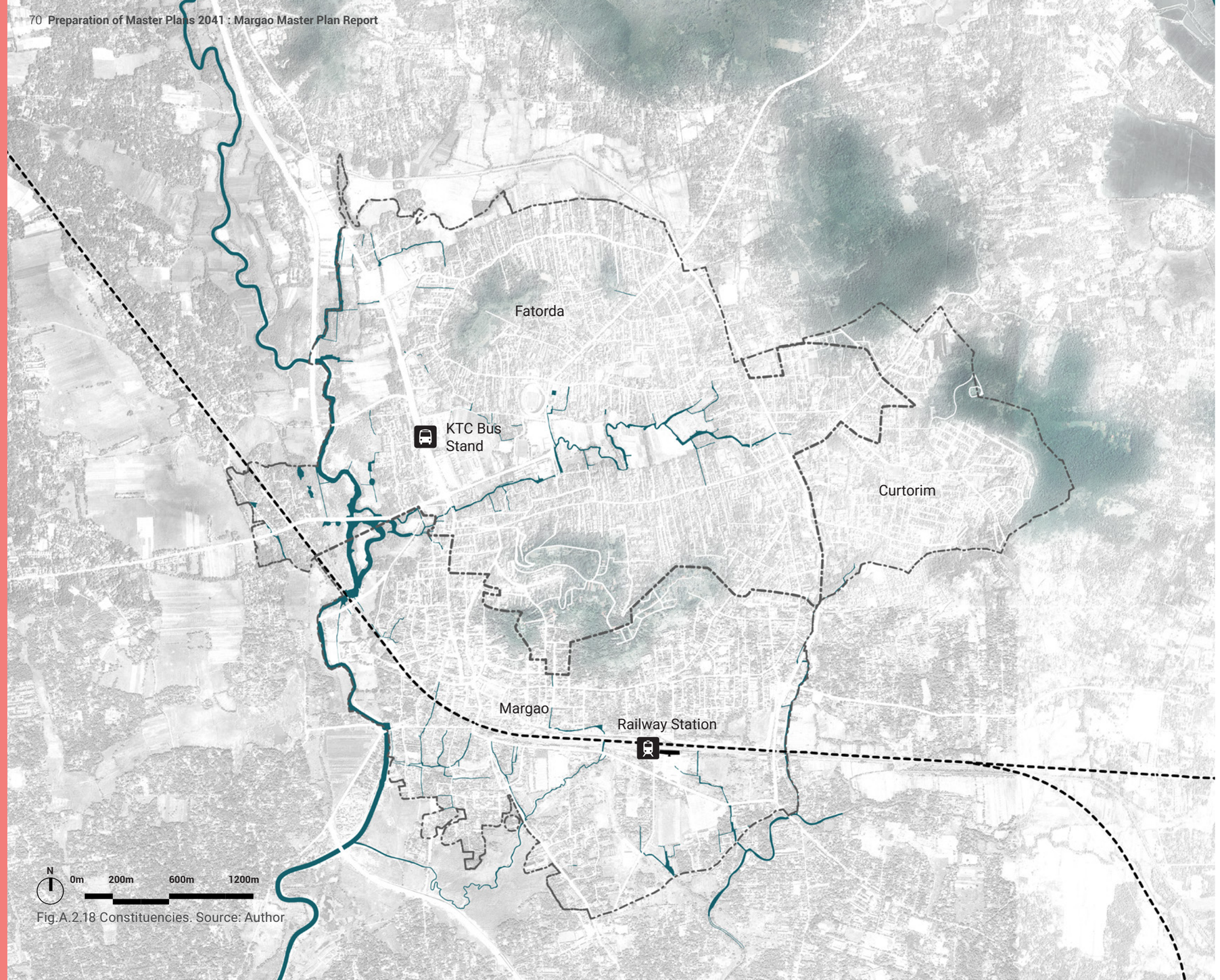


Fig.A.2.18 Constituencies. Source: Author

A.2.4. Constituencies

There are 3 electoral constituencies in Margao - Margao, Fatorda and Curtorim.

2022 Elections voters population:

Fatorda: **30,845**

(Male 14,640; Female 16,205)

Margao: **29,508**

(Male 14,406; Female 15,098; Third Gender: 4)

Curtorim: Unknown

Source: Election Commission of India, State Election,2022 to the legislative Assembly of Goa

A.2.5. Wards

Number of wards in Margao as of 2023:

25

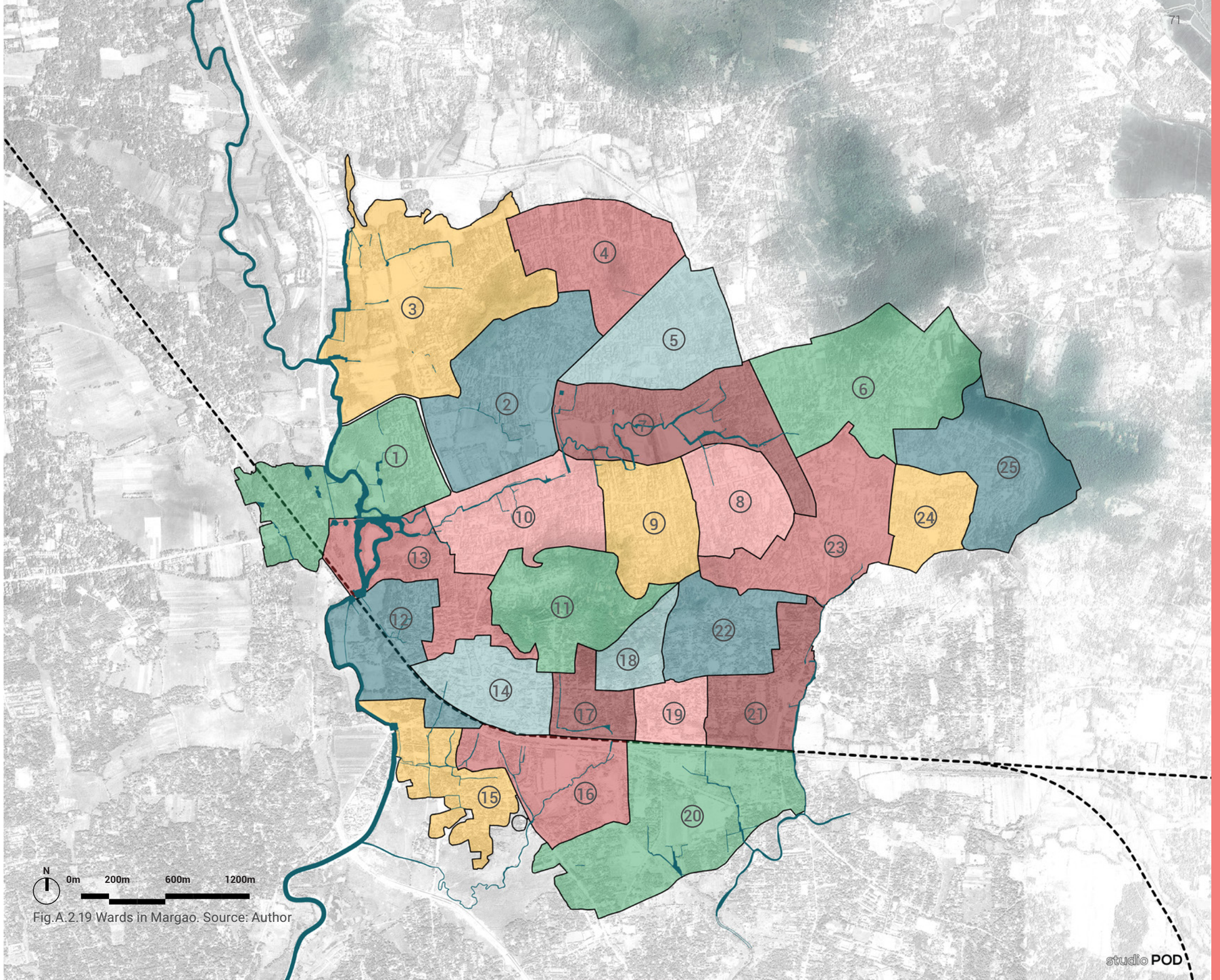


Fig.A.2.19 Wards in Margao. Source: Author



Fig.A.2.20 Historic residence near the Holy Spirit Church. Source: Author



Fig.A.2.21 Historic residence on St. Joaquim road. Source: A casa senhorial



Fig.A.2.22 Moti Dongor slums on Monte Hill. Source: Author

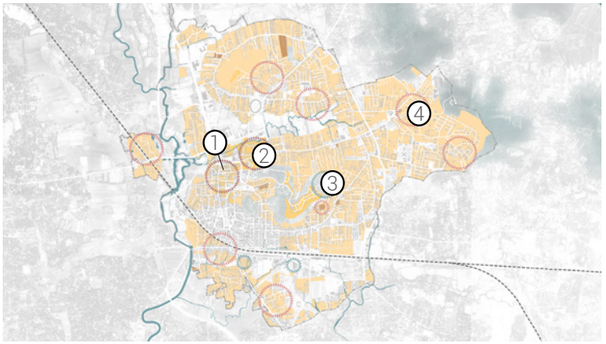


Fig.A.2.23 Independent houses in Gogol. Source: Google Street View

A.2.6. Residential Typologies

Major Typologies include:

1. Historic settlements
2. Informal settlements
3. Typical Residential Areas



Historic settlements (Heritage areas) have the potential to generate revenue through tourism

Historic Settlements

The historic areas of Margao are characterised by two distinct types of houses:

1. Grandiose and outward-looking old Portuguese Christian houses, characterised by decorative balcaos and facades
2. Comba residential area with small, modest and inward-looking with central courtyards

Informal Settlements

1. Moti Dongor slums on Monte hill
2. Azad Nagar slums near the ESI Hospital on Margo-Quepem road

Typical Residential Areas

Some residential areas include:

Co-operative Housing Societies in Margao classified as Special Residential zone
Gawli wada community in Fatorda
Gogol Housing Board street

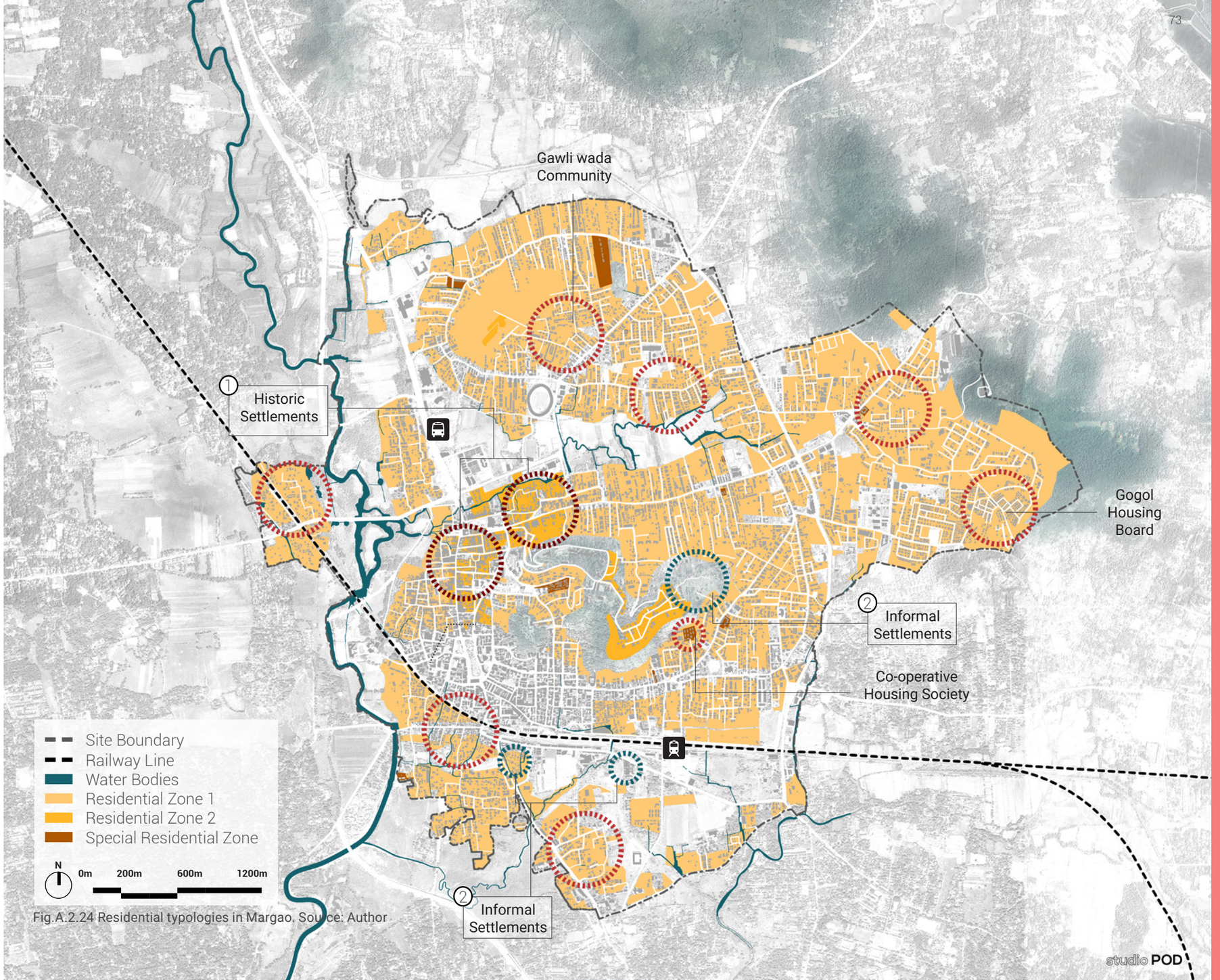


Fig.A.2.24 Residential typologies in Margao. Source: Author



Fig.A.2.25 SGPDA Market Complex. Source: Author



Fig.A.2.26 New wholesale fish market. Source: Author



Fig.A.2.27 MMC New Market. Source: Author



Fig.A.2.28 Borkar Packing company in Margao Industrial Estate. Source: Google

A.2.7. Economic Drivers & Commercial Areas

A.2.7.1. Economic Drivers

Main economic activity:

1. Wholesale Market (fish, vegetables, meat) catering to different parts of the state
2. Tourism - connection to Colva beach and other spots
3. Secondary Industry (Margao Industrial Estate) manufacturing, packaging, processing industries

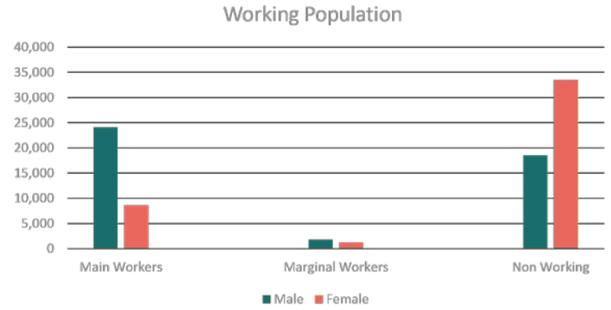


Fig.A.2.29 Working Population. Source: Census 2011

Commercial Capital of Goa with Wholesale and Retail markets catering to South Goa

While there are several hotels in Margao and the city has a lot of tourism potential, the city acts more as a transit point that connects to tourism hubs around the city. The city is recognised more for its commercial character than its ability to generate revenue through tourism.

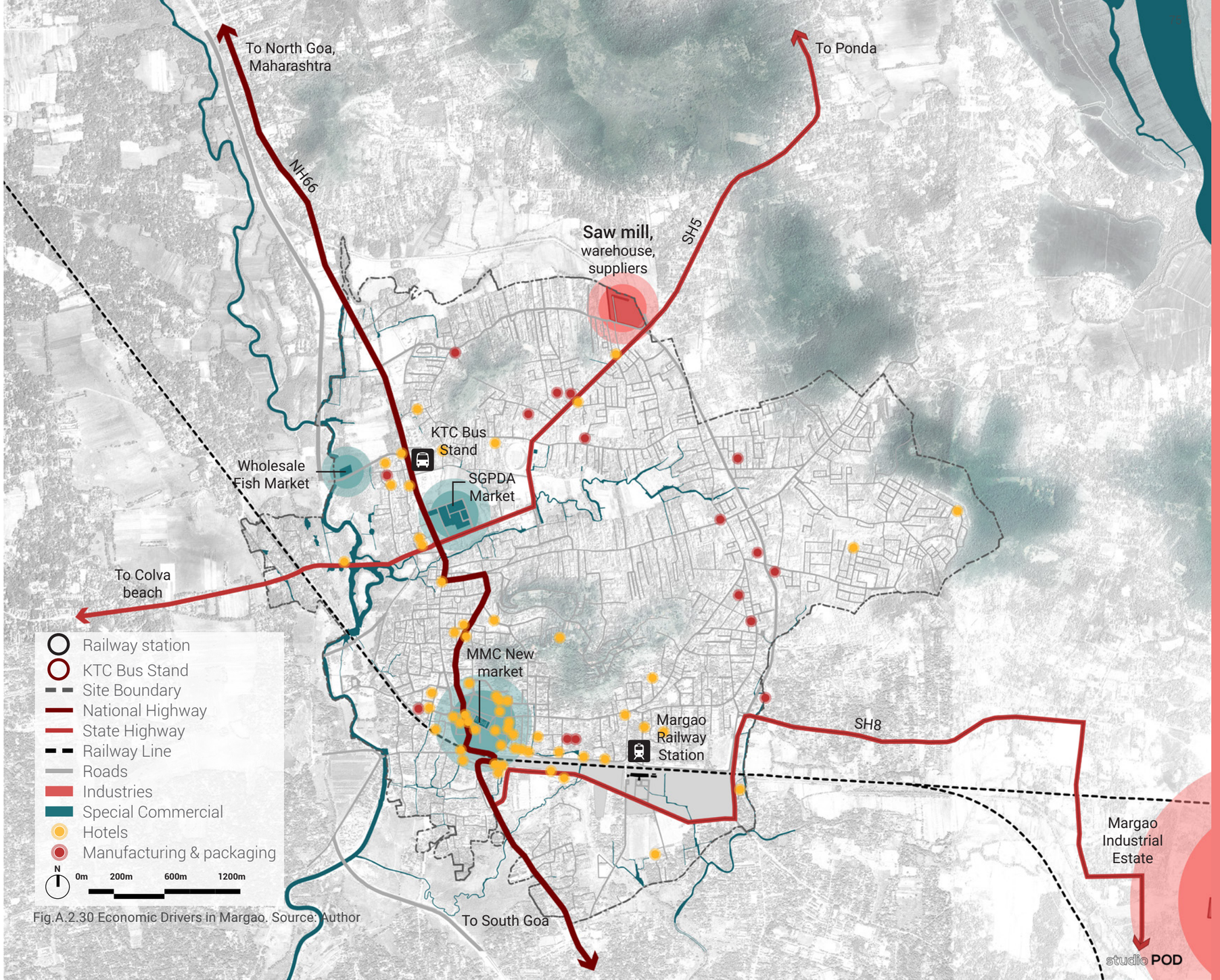


Fig.A.2.30 Economic Drivers in Margao. Source: Author



Fig.A.2.31 Chaos in narrow streets, no segregation for pedestrian and vehicular movement due to street parking. Source: Author



Fig.A.2.32 Organized SGPDA market complex with dedicated parking space. Source: Author



Fig.A.2.33 Street edge commercial complex. Source: Flickr



Fig.A.2.34 Retail streets without designated parking areas and lack of footpath. Source: Author

A.2.7.2. Commercial Areas

14% Commercial Land Use

6.7% Commercial zone 1 (200 Floor Area Ratio)
5.7% Commercial zone 2 (150 Floor Area Ratio)
0.1% Commercial zone 3 (80 Floor Area Ratio)
1.5% Special Commercial zone (300 Floor Area Ratio)

Majority of commercial zones are concentrated along the NH-66, which passes through the city core.

The categories of commercial areas in Margao are identified as:

1. Old market area
2. Newly developed market area
3. Offices in new commercial establishments
4. Mixed-use with retail

Historic and new commercial establishments require organisation of movement of both pedestrians and vehicles

① Old Market Area

These areas are characterised by old built fabric, compact narrow streets and encroachment by various small commercial establishments. Food items, clothes and kitchenware are some of the items sold here.

② Newly Developed Market Area

These markets are newly developed areas with large infrastructure and parking areas, for example the wholesale fish market and SGPDA retail market that sells vegetables, meat and fish.

③ Offices in new commercial establishments

This type of fabric is characterised by new built form and like commercial complexes but lack organised parking and pedestrian space. These include small offices and automobile or furnishing showrooms.

④ Mixed-use with retail

This type of fabric is characterised by the use of outdoor space by shops, unorganized parking and lack of pedestrian pathways. The shops are essentially general stores or hardware stores.

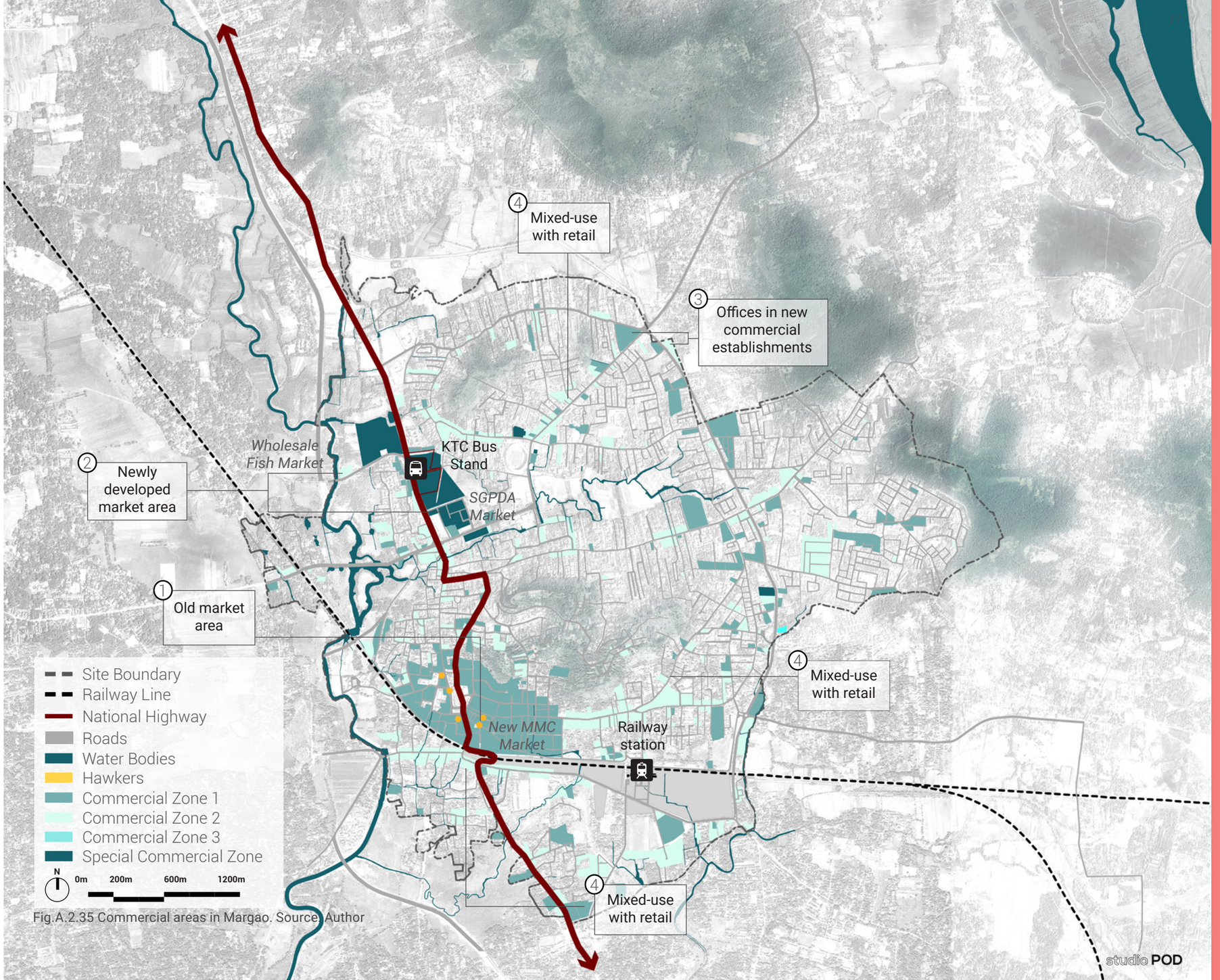


Fig.A.2.35 Commercial areas in Margao. Source: Author



Fig.A.2.36 Buses parked at KTC bus stand. Source: Google



Fig.A.2.37 Auto rickshaw stand outside the bus stand. Source: Author



Fig.A.2.38 Private vehicle parking at the railway station. Source: Author



Fig.A.2.39 Private bus stand at the railway station. Source: Author

A.2.8. Transport & Parking

A.2.8.1. Public Transport

97,584

passengers/day (KTC Goa overall) in 2015

10,000

passengers/day at Margao station in 2016

The main issues relating to public transport in Margao are:

1. Lack of coverage and connectivity within the city between major public transit nodes
2. Lack of designated and legible bus stops within the city for existing buses

Lack of public transport connectivity in the city and no direct link from the railway station to the bus stand

KTC Bus Stand

The KTC Bus Stand at Margao is one of the major depots in Goa, connecting to various other towns in the state owing to its central location. However, some of the issues identified in the complex are:

1. Unorganized bus parking in the complex
2. Unorganised Auto-rickshaw stand in front of KTC bus stand entrance
3. Lack of proper pedestrian pathways outside and inside the bus stand complex
4. Random car parking in front of entrance due to a lack of designated spaces for parking

Margao Railway Station

The Margao railway station (Madgaon Junction) is the main station in Goa, connecting to cities across other states. The station covers a massive area and witnesses heavy footfall. However, there are large expanses of parking spaces (which were previously covered with dense green foliage) for:

1. Private vehicles - cars and 2-wheelers
2. Self-driven motorbike taxis provided by KRC (Konkan Railway Corporation) for commuters
3. Auto-rickshaw services
4. Private bus transport for commuting



Fig.A.2.40 Main transit stations in Margao. Source: Author



Fig.A.2.41 NH-66. Source: Author



Fig.A.2.42 Arlem By-pass. Source: Author



Fig.A.2.43 SH-05/Margao- Ponda Highway. Source: Author



Fig.A.2.44 Western By-pass under contruction. Source: Author

A.2.8.2. Road Network

Following the topography of the region, the roads create loops around the hills and connect to the major highways. There is one National Highway (NH-66) and 2 State Highways (SH-05 and SH-08) passing through the city.

The Western By-pass road is currently under construction along the Sal river. Once the road is completed the through traffic from NH-66 within the city will be partially diverted to the By-pass road.

The NH-66 and the The roads within the developed city area are secondary streets and are used to access the residential neighbourhoods.

Margao is well-connected by road to other cities, with major national and state highways passing through the city

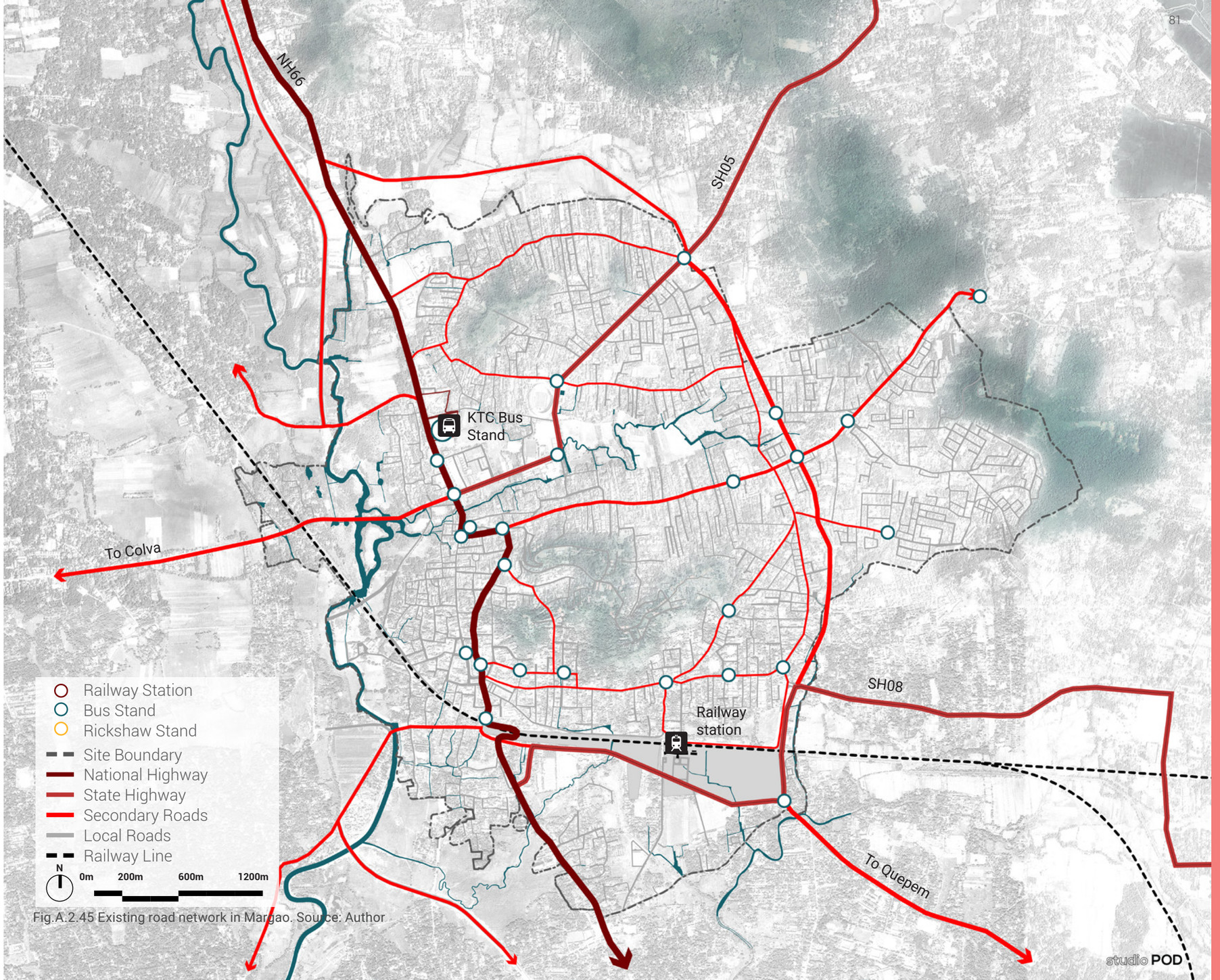


Fig.A.2.45 Existing road network in Margao. Source: Author



Fig.A.2.46 Built form of MMC New Market. Source: Author



Fig.A.2.47 2-wheeler parking. Source: Author



Fig.A.2.48 Congestion & parking at MMC New market. Source: Author



Fig.A.2.49 Encroachment along commercial fronts. Source: Author

A.2.8.3. Traffic Congestion in Old Market area

The NH-66 passes through the Old Market Area as a result this area experiences heavy through traffic as well as local traffic generated by the market. The streets in the area are narrow and coupled with the high on-street parking demand the capacity of the carriageway is compromised. During peak hours, the streets experience heavy traffic congestion. The parked vehicles also often block the footpaths which creates unsafe conditions for the pedestrians and reduces the carrying capacity of the footpaths.

Haphazard parking, narrow roads, a lack of safe pedestrian paths and encroachments leading to congestion

A.2.8.4. Traffic Congestion

Peak traffic hours (Source: Google Maps):

NH66 (Clock Tower circle) :
11.00 - 1.00 pm (weekdays)
4.00 - 7.00 pm (weekdays)

Municipal Garden and New MMC market area:
11.00 - 2.00 pm (weekdays + Saturday)
6.00 - 8.00 pm (weekdays + Saturday)

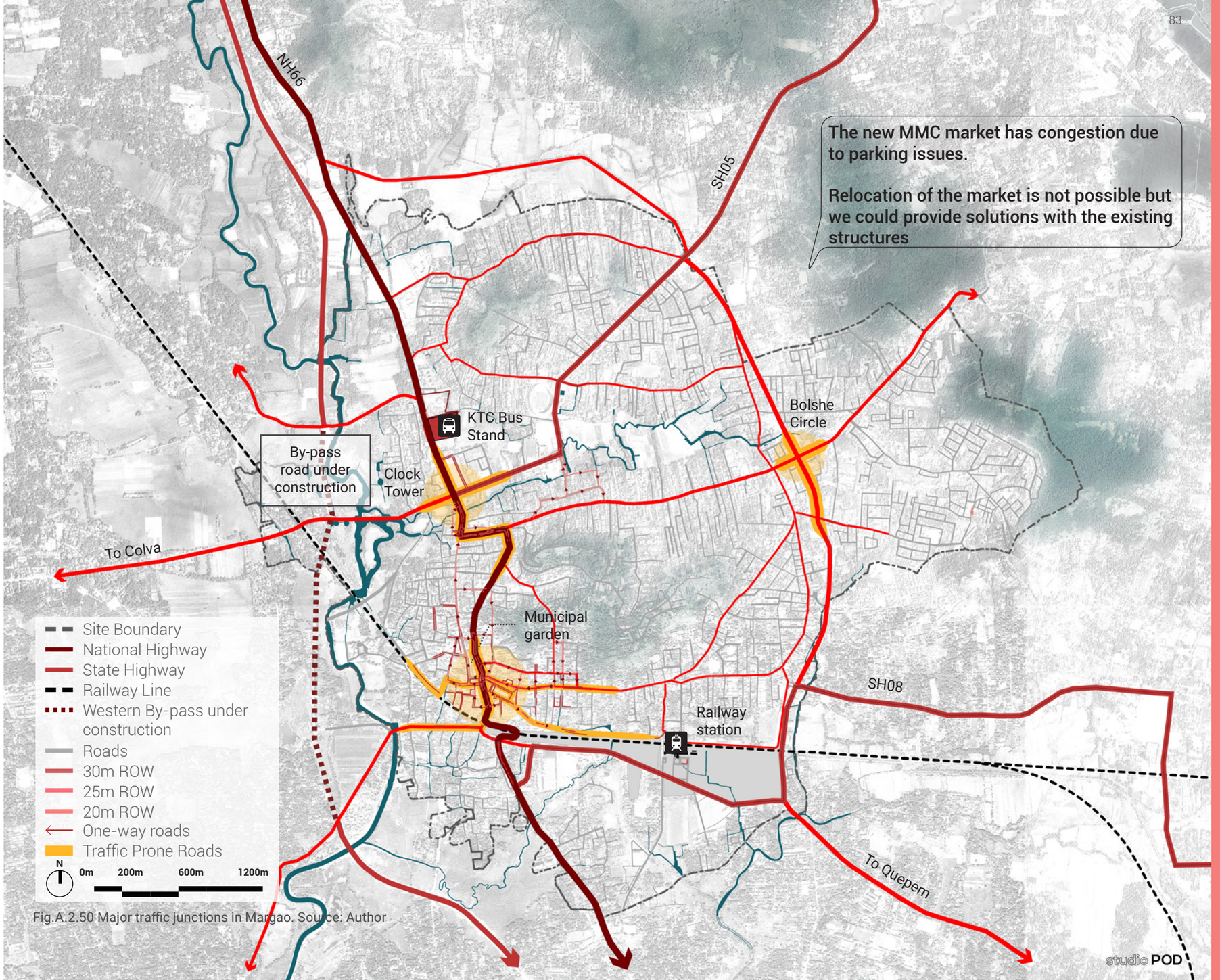


Fig.A.2.50 Major traffic junctions in Margao. Source: Author



Fig.A.2.51 Parking close to the market. **Source: Author**



Fig.A.2.52 2-wheeler parking in open spaces. **Source: Author**



Fig.A.2.53 Trucks and cranes parked along highways. **Source: Author**



Fig.A.2.54 Large parking spaces opposite the bus stand. **Source: Author**

A.2.8.5. Existing Parking

The existing parking is primarily on the side of the carriageway or on open/undeveloped spaces near major roads. The primary parking locations include:

1. For market near Municipal Garden is primarly on street and on plaza in front of the temple.
2. Trucks and cranes are parked on SH-08 carriageway.
3. Large area of parking provided for 2 & 4-wheelers opposite the KTC bus stand.

Unorganised parking in the city and a lack of correlation between ODP parking zones and congestion areas

A.2.8.6. Planned Parking

As per the current ODP, several areas along the NH66 have been designated for parking, both on ground and multi-level.

97,024.06 Sqm

Public parking area

20,541.48 Sqm

MLP in commercial zone



Fig.A.2.55 Low-lying open space to be converted into parking area as per ODP. Source: Author

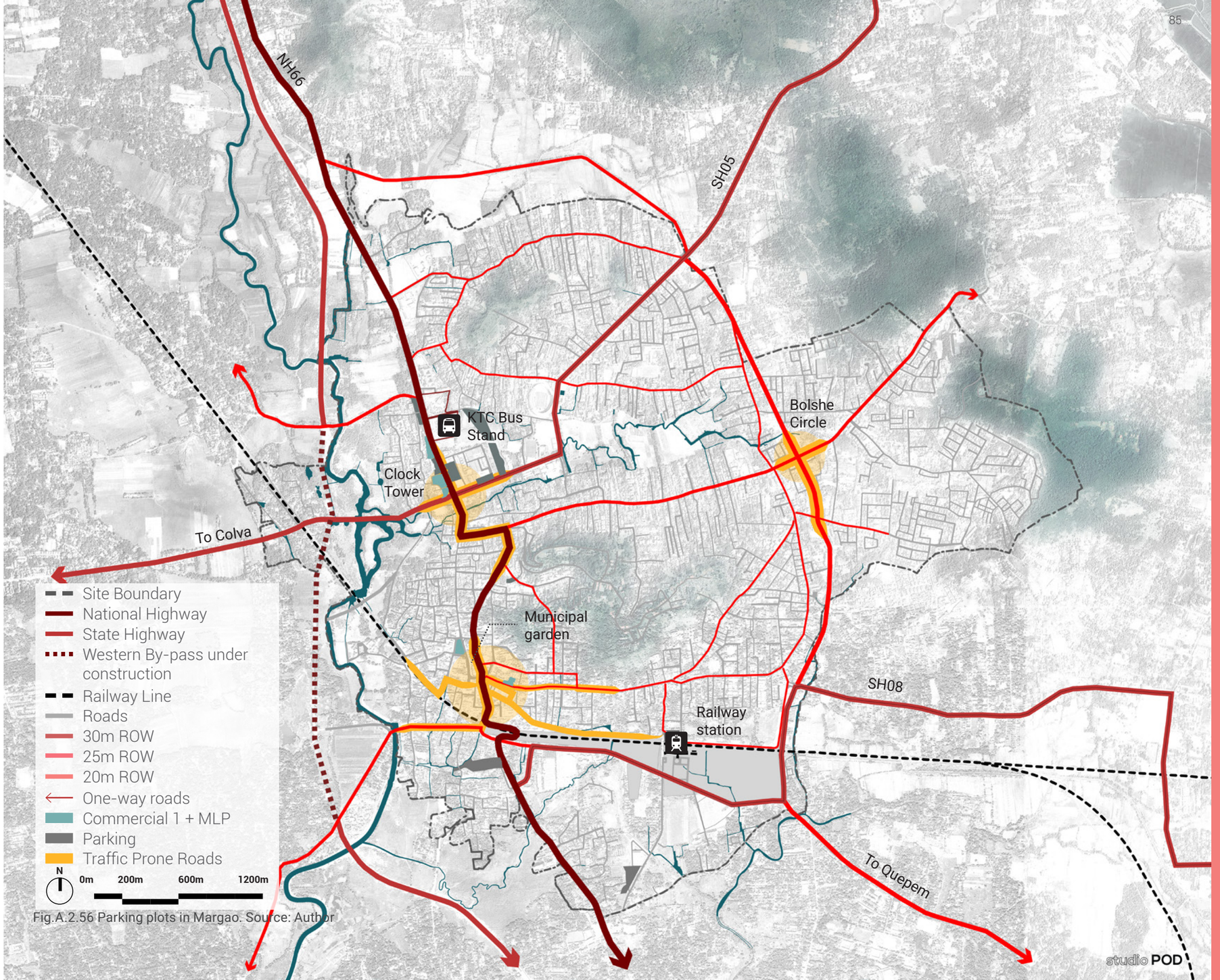


Fig.A.2.56 Parking plots in Margao. Source: Author



Fig.A.2.57 De-silting of Sal river. Source: Author



Fig.A.2.58 Informal settlements along Sal river. Source: Author



Fig.A.2.59 Khazan lands along the Zuari river. Source: Author



Fig.A.2.60 Agricultural lands in the valley between the hills. Source: Author

A.2.9. Topography & Hydrology

Margao's layout and development is defined by its hills and rivers. The city is bound by the hill in Fatorda in the north and the Monte Hill to the south; the city's urban development is concentrated in the area between the hills.

A low-lying valleys are formed in the middle of the hills, where run-off from the hills collects and naturally flows towards the Sal River to the west. The areas abutting the Sal River are low lying and tend to flood during the monsoon season. As a result the development in these areas is primarily agricultural.



1. Sal river runs North-South to the western edge of the city
2. Agricultural land around the Sal and in the valley between Monte Hill and Fatorda hillocks
3. Khazan lands (agriculture) along the Zuari river
4. Margao is characterised by hillocks, each surrounded by settlements and hills with natural reserves to the east.

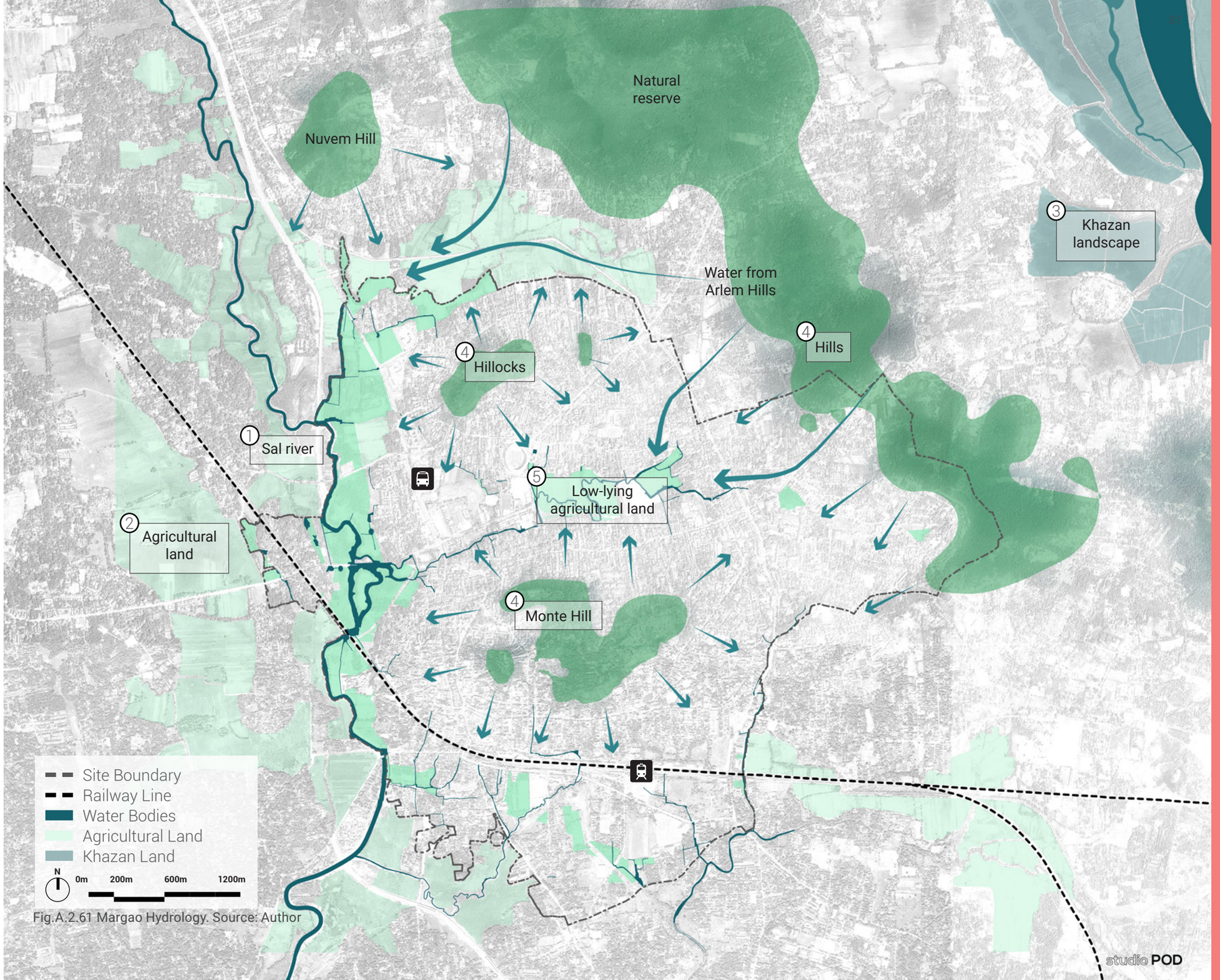


Fig.A.2.61 Margao Hydrology. Source: Author



Fig.A.2.62 Uncultivated agriculture land along the Sal river tributory in Fatorda. Source: Author



Fig.A.2.63 Culturable waste land along the Sal river opposite the wholesale fish market. Source: Author.



National Remote Sensing Agency (NRSA) estimates put wastelands at 16.21% of the total land area of the country. Of this, 16.74% is culturable and rest 4.47% is unculturable. The wastelands are found maximum in Jammu and Kashmir 60.10%.
Total wastelands in India: 129.57mha

Fig.A.2.64 Classification of Waste Land. Source: ENVIS/Planning Commission of India

A.2.9.1. Agriculture Land

According to Bhoomi Geo Portal, several agriculture lands along the Sal river are currently fallow and two large patches of culturable waste land, which means that they have not been used for cultivation for over 5 years. These could be due to salinity or water logging. Additionally, the culturable waste lands are located very close to the SGPDA Market and the Wholesale fish market and therefore, could possibly be exposed to contamination.

Opportunity to revive fallow and culturable waste land along the Sal river

The presence of fallow land and culturable waste land along the Sal river points to a few important conclusions:

1. The fallow land needs to be recovered and made fertile again to allow cultivation to happen.
2. The culturable waste lands need to be revived in order to make then fit or cultivation. Alternatively, they also offer the possibility of accommodating uses other than agriculture.

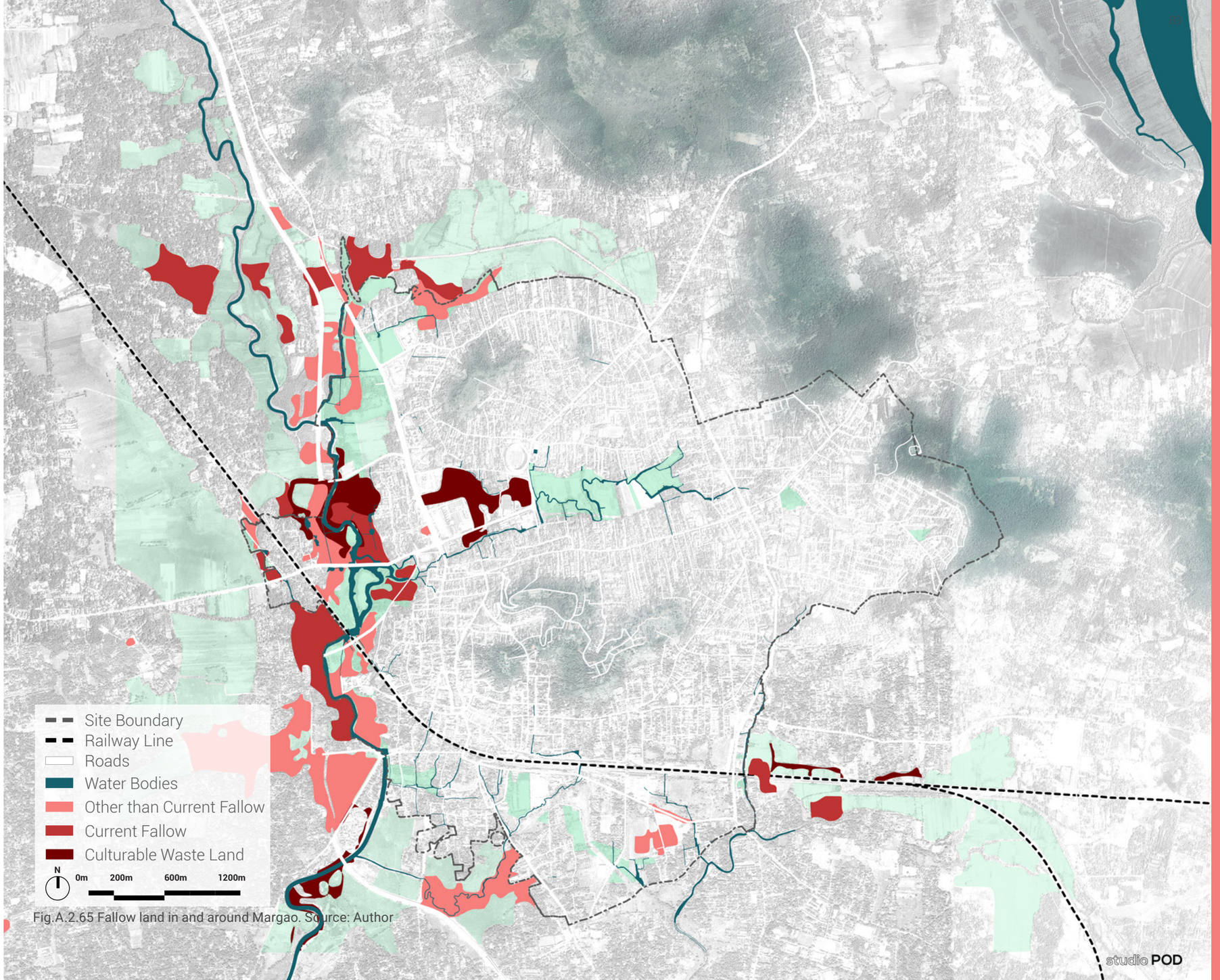


Fig.A.2.65 Fallow land in and around Margao. Source: Author



Fig.A.2.66 The Sal River in Margao. Source: Goemkarponn



Fig.A.2.67 The Zuari River at Rachol. Source: Google

A.2.9.2. Topography

Margao's layout and development is defined by its hills and rivers. The city is bound by the hill in Fatorda in the north and the Monte Hill to the south; the city's urban development is concentrated in the area between the hills.

A low-lying valleys are formed in the middle of the hills, where run-off from the hills collects and naturally flows towards the Sal River to the west.

The areas abutting the Sal River are low lying and tend to flood during the monsoon season. As a result the development in these areas is primarily agricultural.

Rich and diverse landscape of Margao as an opportunity



Fig.A.2.68 Landscape of Margao. Source: Author



Fig.A.2.69 View from Monte Hill. Source: Author



Fig.A.2.70 Low-lying lands near Zuari river. Source: Google

A.2.9.3. Slope Analysis

The slope analysis has been carried out to understand the terrain gradient and assist in identifying developable and non-developable lands.

The green shaded area reflects the relatively flat areas (less than 1:5 slope). Most of the existing built fabric and street network lies within these flat areas.

The steep terrain (greater than 1:5 slope) has been identified in shades of red and orange. These areas are not suitable for development and currently most of these areas are presently under natural green cover. However there are a few areas of steep terrain which have been developed.

Steep sloped areas unsuitable for development are being built on



Fig.A.2.71 Slope analysis of Margao. Source: Author



Fig.A.2.72 Comba subway flooded during rains. Source: TheGoan



Fig.A.2.73 Old Station road inundated by water. Source: TheGoan

A.2.9.4. Flooding Analysis

The low-lying areas are, primarily around the Sal River and the valley between the Monte hill and Fatorda hill. These areas are prone to flooding during heavy rainfall events.

Due to developments and encroachments in these low lying areas, the natural flow and retention of water is hampered resulting in flooding at local and city level.

Additionally, the lack of a comprehensive stormwater drainage network in the city further exasperates the flooding situation.

The ongoing construction of the Western By-pass road and other new developments in the low lying areas, may increase the likelihood of flooding.

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To ward off flooding in Salcete, study of River Sal flow is critical

09 Jul 2018 | 05:50am IST MARGAO: Salcete taluka is the basin of River Sal, which is a network of several tributaries that are, depending on the seasons, either fed by rainwater discharge or by springs located at the foot of the plateaus and hills surro...

Several areas within low-lying areas around the Sal river and nalas are under threat of flooding



Fig.A.2.74 Flooding analysis of Margao. Source: Author

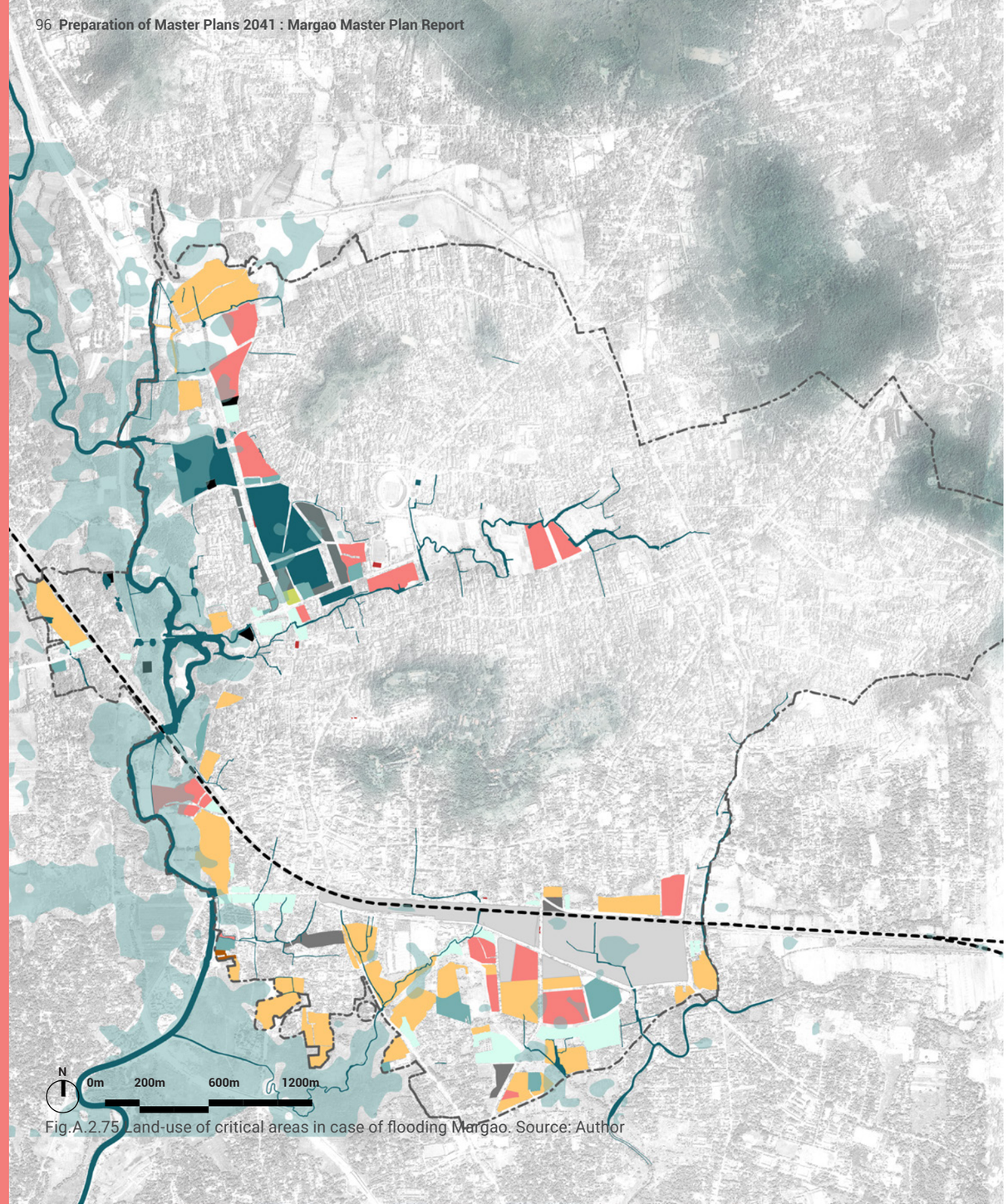


Fig.A.2.75 Land-use of critical areas in case of flooding Margao. Source: Author

A.2.9.5. Proposed Land Use in Critical Areas

As per the current ODP, in low-lying areas, several government/public lands, a few residential and commercial zones are located.

Land Uses in low-lying areas include:

1. Public/Semi-public/Government/Religious zones
2. Residential zones
3. Commercial zones
4. Parking zones
5. Transport, Warehousing and Communication zone
6. Petrol Filling Station zones
7. Roads



DTE www.downtoearth.org.in

Road construction projects are destroying Goa's traditional wetlands

Intensive infrastructure projects in Goa are threatening a unique wetland system that protects the state from flooding

Re-evaluation of ODP zones from a hydrology and economy perspective is required



Fig.A.2.76 Critical areas in case of flooding Margao. Source: Author



Fig.A.2.77 Paris has 11.5 sqm open space per person. Source: Planetizen

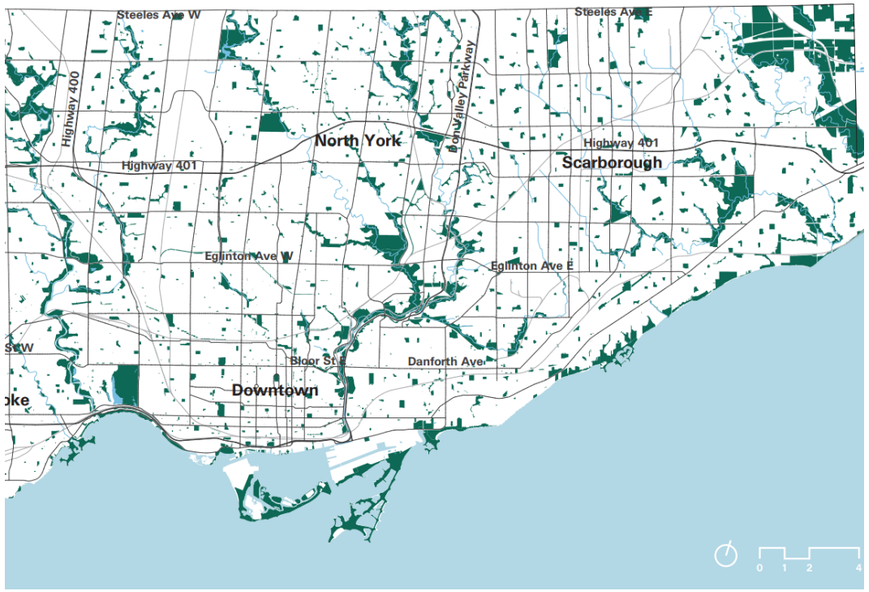
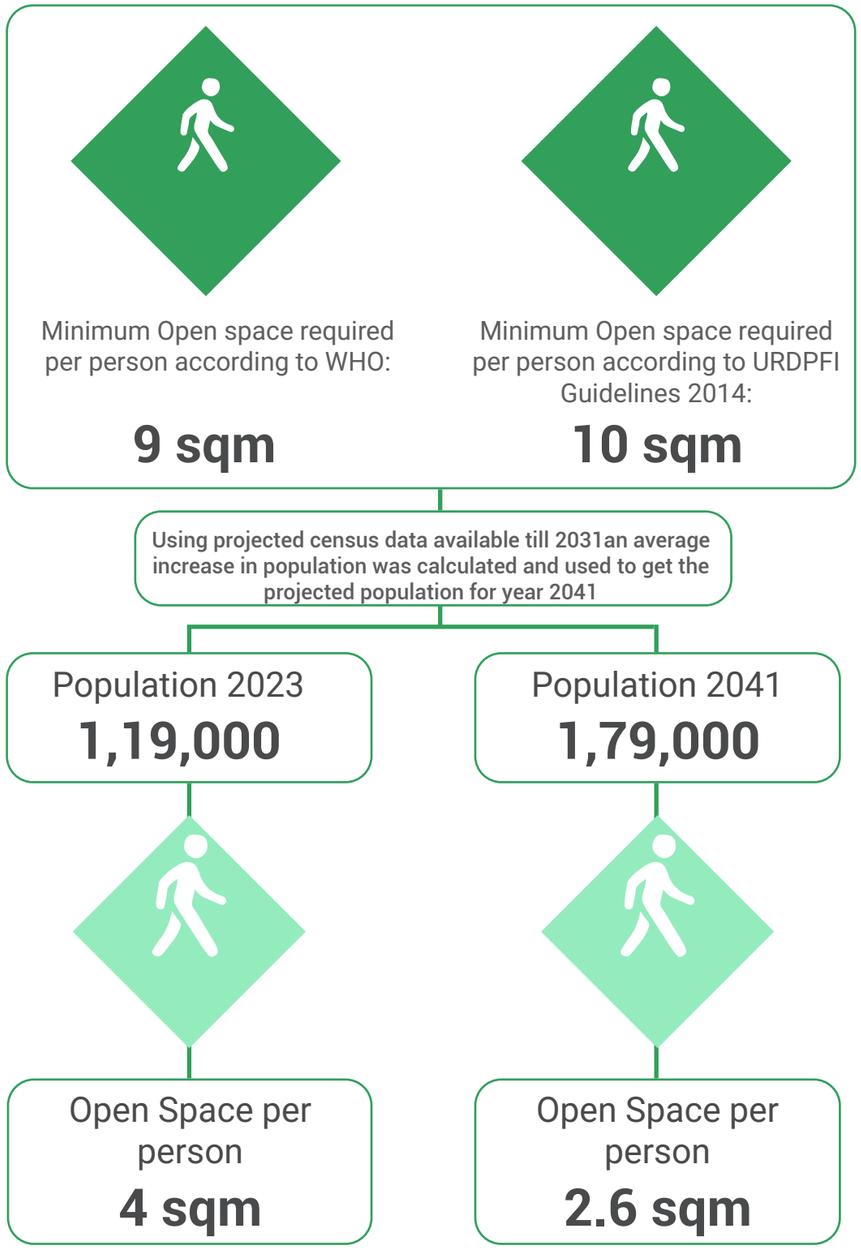


Fig.A.2.78 Toronto has 12.6 sqm open space per person. Source: Metroscapes



A.2.10. Open Space & Recreation

As per the to the World Health Organisation (WHO), a city should provide a minimum of 9 sqm of open space per person. Whereas, the URDPFI Guidelines states that 10-12 sqm of open space is required per person.

The current provision of open space in Margao is well below these open space metrics. The Open Space as per the current ODP is 4,74,616.2 sqm; and the projected population for 2023 (Census) is 1,19,000 resulting in a per capita open space allocation of 4 sqm. By 2041, the population is estimated to increase to 1,45,494 which will reduce the per capita open space provision to 2.6 sqm

In order to meet the URDPFI open space requirements a significant increase in open space provision is required.

Open Space is well below the requirement according to international standards

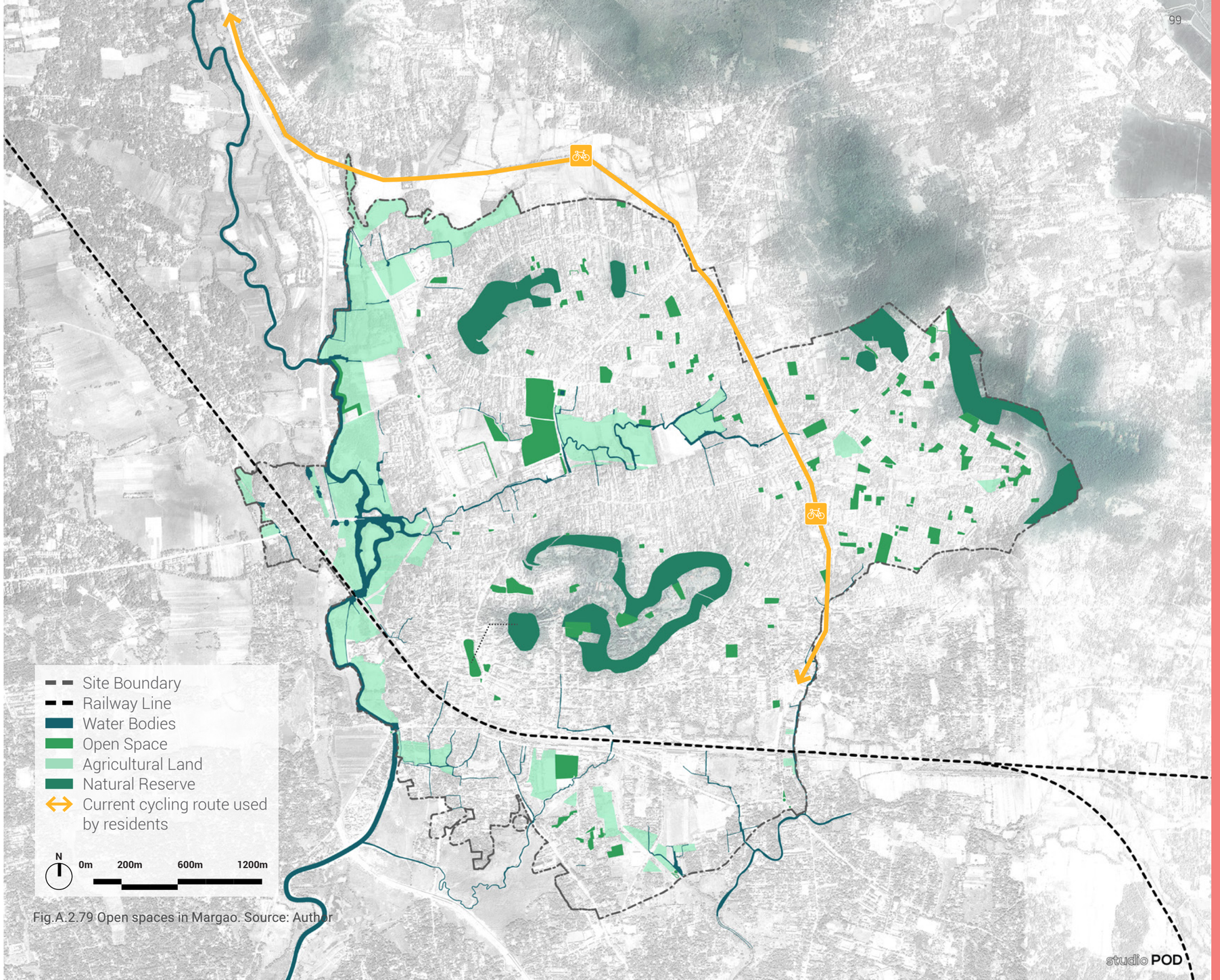


Fig.A.2.79 Open spaces in Margao. Source: Author

Different open space land uses in ODP.

Open Space: **2.97%**

Natural Reserve: **4.94%**



Fig.A.2.80 Market street view towards the Municipal Garden. Source: Author



Fig.A.2.81 View from edge of street towards low-lying area. Source: Author



Fig.A.2.82 View of Sal river from Seraulim road. Source: Author



Fig.A.2.83 View of Sal river from Fatorda hill. Source: Google

A.2.10.1. View Corridors

Margao offers multiple vantage points from which to view the city and the surrounding landscape. These points offer panoramic views of the city from the hills, vistas framing views of significant landmarks, and ends of streets from which offer views of the agricultural fields and water bodies.

Opportunities to build on existing views and vistas

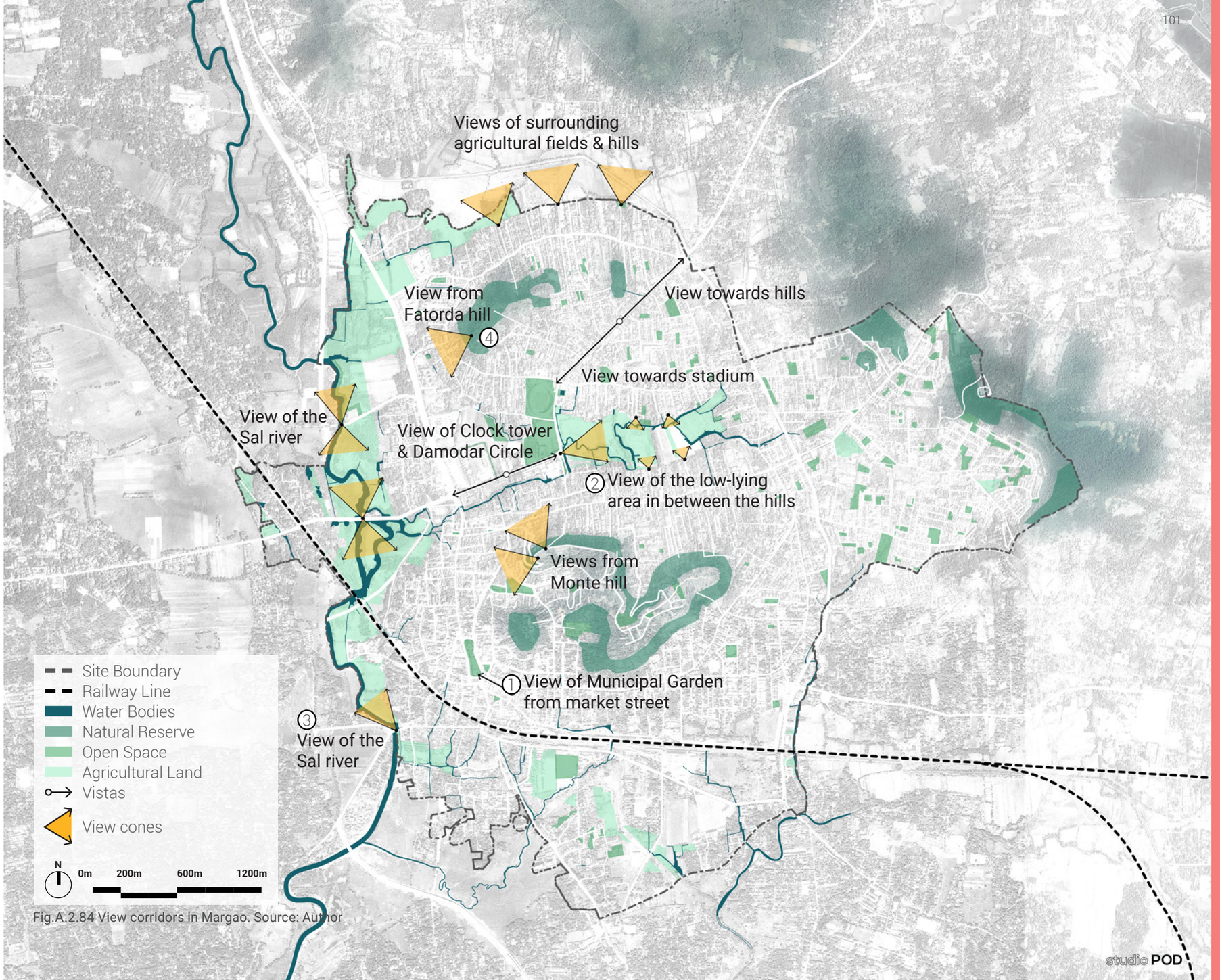


Fig.A.2.84 View corridors in Margao. Source: Author



Fig.A.2.85 Gogol Childrens' Park. Source: Author



Fig.A.2.86 Playground on Old Station Road. Source: Author



Fig.A.2.87 Fatorda Sports Complex & SGPDA Joggers Park. Source: Author



Fig.A.2.88 Gogle Childrens' Park Amphitheatre. Source: Author

A.2.10.2. Programmed Open Spaces

Recreational parks and playgrounds, be it at the city or the neighbourhood scale are few and inadequately distributed within the city. Several areas are more than a 400m (5 min) walking distance from the nearest open space.

Currently, the programmed city level open spaces include the Municipal Garden and the Fatorda Sports Complex. These spaces are better programmed and maintained; hence attract a large number of visitors. The Gogol Childrens' Park is an example of a popular neighbourhood level park.

Open spaces are not well-distributed and are lacking in the southern and western neighbourhoods of the city

Recreational parks and gardens

Parks such as Municipal Garden, Ana Fonte Garden and Gogol Childrens' Park, Aga Khan Children's Park

Sports grounds

1. SGPDA joggers park is used by the public for jogging and walking activities
2. Fatorda Sports complex is used for state and national level sports
3. Pandit Jawharlal Nehru Stadium was one of the venues for the under 17 Fifa World Cup
4. We for Fatorda football ground is used for local football

Gathering space and amphitheatre

1. Lohia Maidan
2. Gogol Childrens' Park

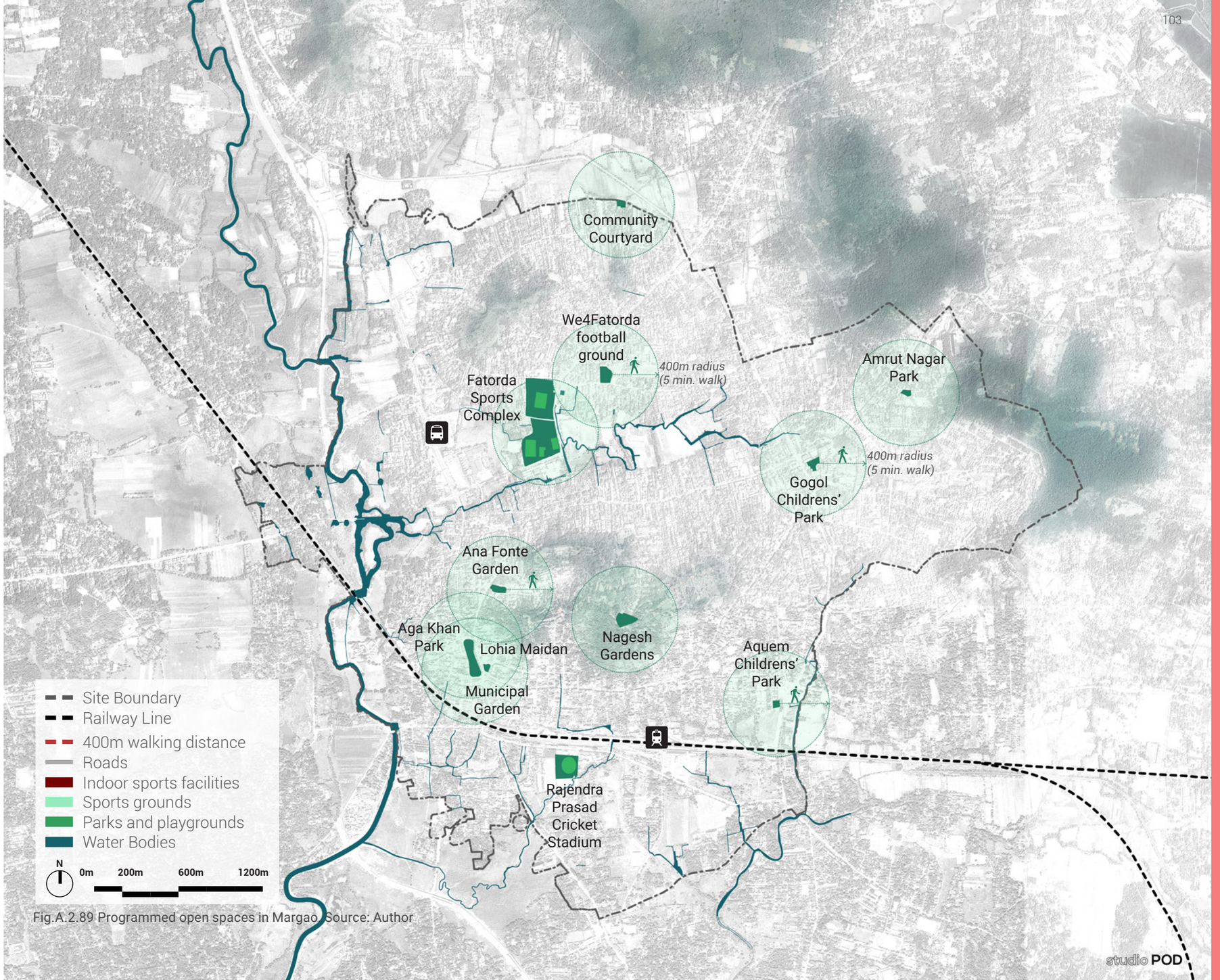


Fig.A.2.89 Programmed open spaces in Margao. Source: Author



Fig.A.2.90 Designated open space with walking track in Fatorda. Source: Author



Fig.A.2.91 Senior Citizens Park. Source: Author



Fig.A.2.92 Costa ground. Source: Author



Fig.A.2.93 Demolished Borda garden. Source: Author

A.2.10.3. Unprogrammed Open Spaces

Margao has several smaller open spaces that are located within neighbourhoods which are currently not programmed or well maintained. These can be used as playgrounds, parks and gardens to meet the residents daily recreation needs. There is also a lot of potential to create new city level open spaces in the low-lying areas of the city.

Several unprogrammed open spaces in ODP, disconnected from surrounding neighbourhood

Intended Open spaces with minimum infrastructure

1. Senior Citizens Park
2. Open Spaces with just a walking track

Unkempt open grounds

Unkempt open grounds with uninviting edges being used by residents/communities for playing/ parking

Demolished due to lack of maintenance

Borda Garden demolished due to lack of maintenance and sold to private company

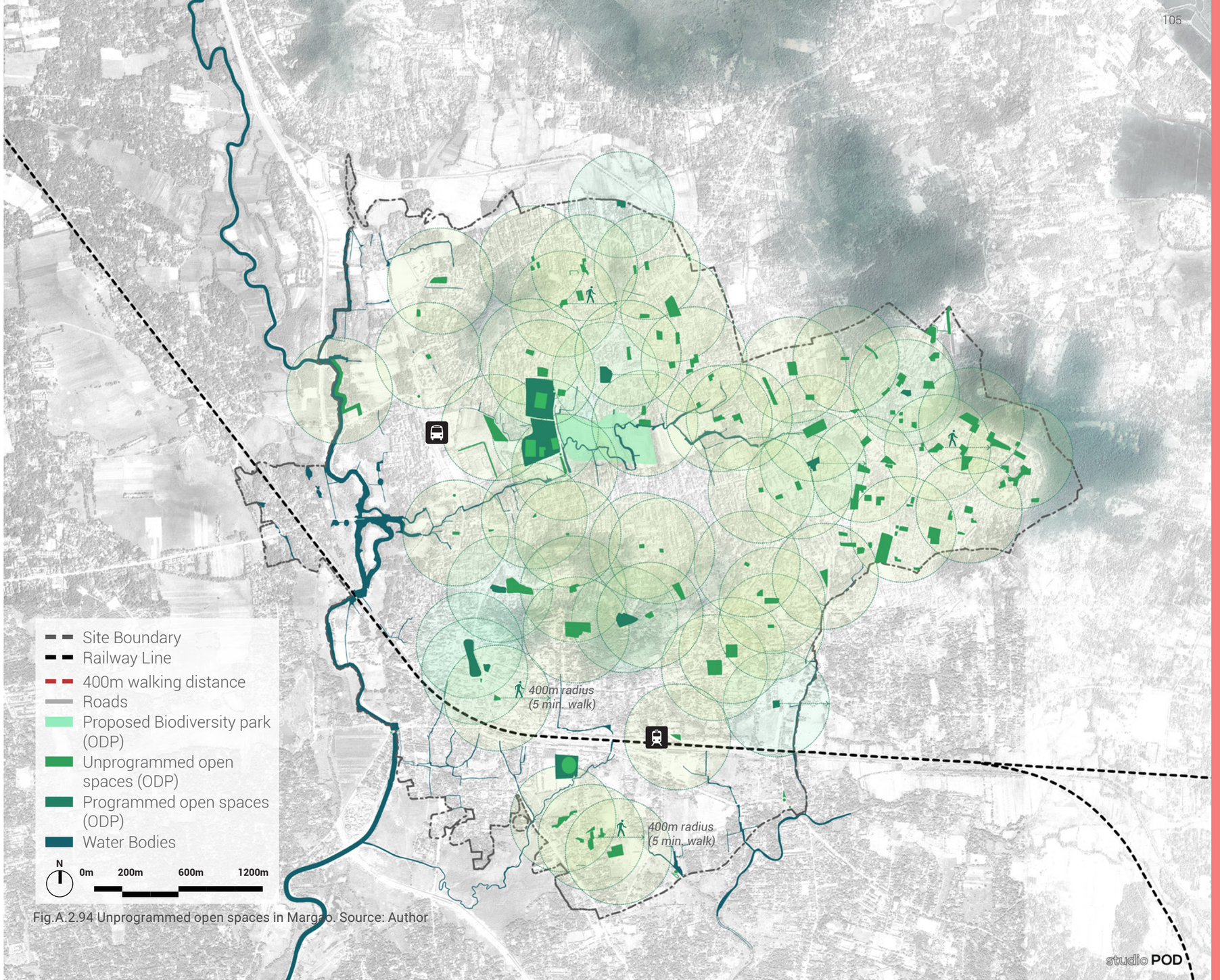


Fig.A.2.94 Unprogrammed open spaces in Margao. Source: Author



Fig.A.2.95 View from Monte Hill towards South. Source: Author



Fig.A.2.96 View from Fatorda Hill towards NH-66 and Sal river. Source: Google

A.2.10.4. Hillocks

The hillocks of Margao offer panoramic views of the city and surrounding landscape from different points

Hillocks in Margao are occupied by residences and public land. They lack public spaces and parks.

Land uses on Hill tops (ODP):

Natural Reserve
Public/Semi-public/Government Land
Residential zone
Crematorium/Cemetery
Defence area
Special Residential zone
Commercial zone

Hillocks in Margao lack public spaces and are being taken up by the residential sector.

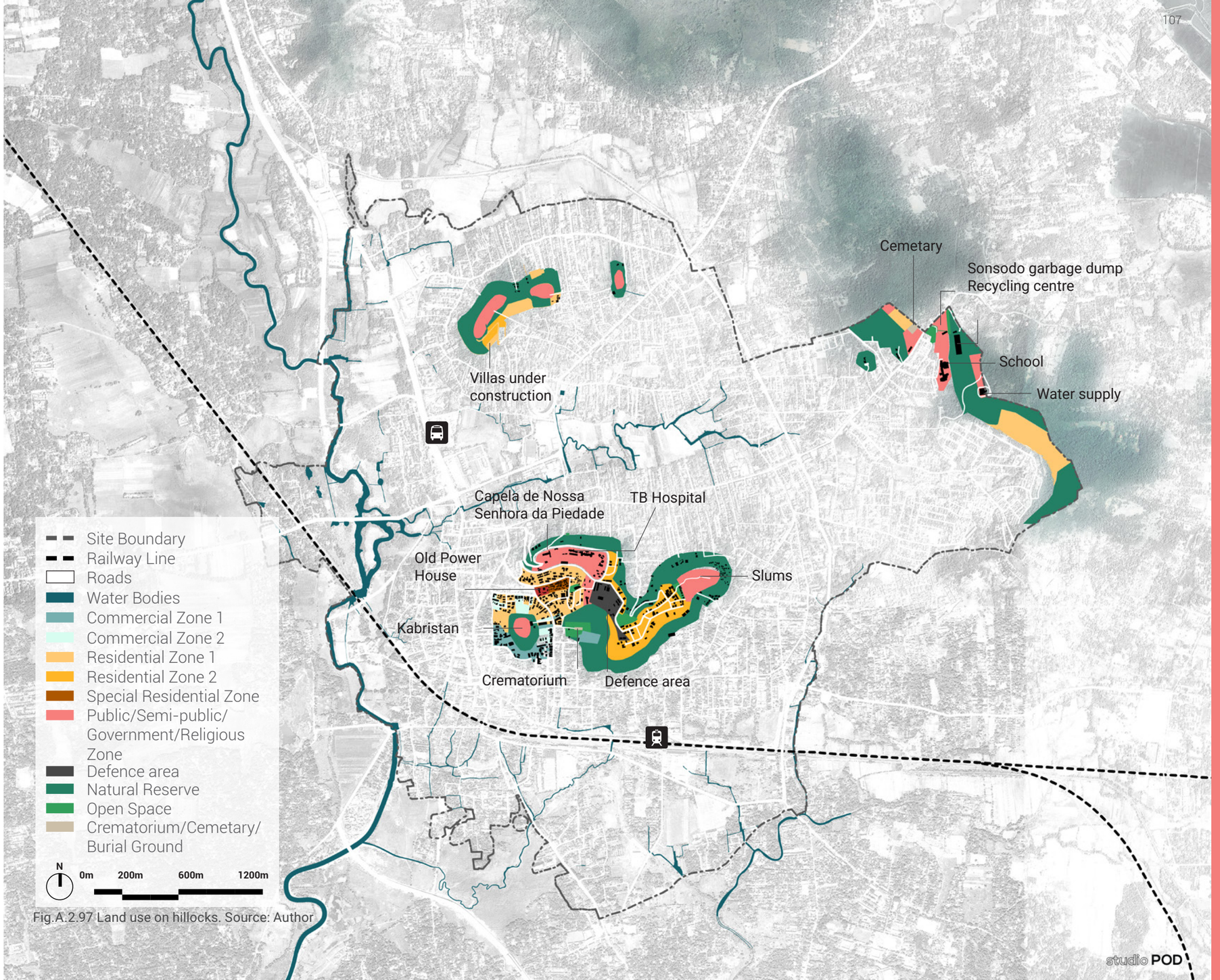


Fig.A.2.97 Land use on hillocks. Source: Author



Fig.A.2.98 Community facility in Fatorda. Source: Author



Fig.A.2.99 T.B.Hospital in Margao. Source: The Goan



Fig.A.2.100 Vidya Vikas Academy. Source: Joon Square



Fig.A.2.101 Shree Damodar Temple. Source: Google Street View

A.2.11. Community & Social Infrastructure

A.2.11.1. Existing Social Infrastructure

As per URDPFI guidelines, the number of healthcare, education and religious facilities meet the demand of the current population.

Higher concentration of healthcare and education facilities are located in Pajifond compared to the suburban areas such as Gogol to the east of the Margao by-pass road and Sanscar Society to the south of the railway station.

Small religious facilities including chapels/ churches, mosques or temples found in every neighbourhood.

A few streets in Fatorda have community courtyards with community halls, religious facilities and play areas or gathering spaces.

Sufficient healthcare and education facilities, with a higher concentration in Pajifond and lower concentration in suburban areas

Community Courtyards

Community courtyards in Fatorda with religious building, community hall and play area at end points of residential streets

Healthcare facilities

Margao has several hospitals with many of them being multispecialty hospitals, including 1 district hospital.

Educational facilities

Margao has sufficient schools but fewer than required number of kindergarten/pre-primary schools for its population (2023 projection).

Religious facilities

Religious institutions like churches, mosques and temples are present in Margao.

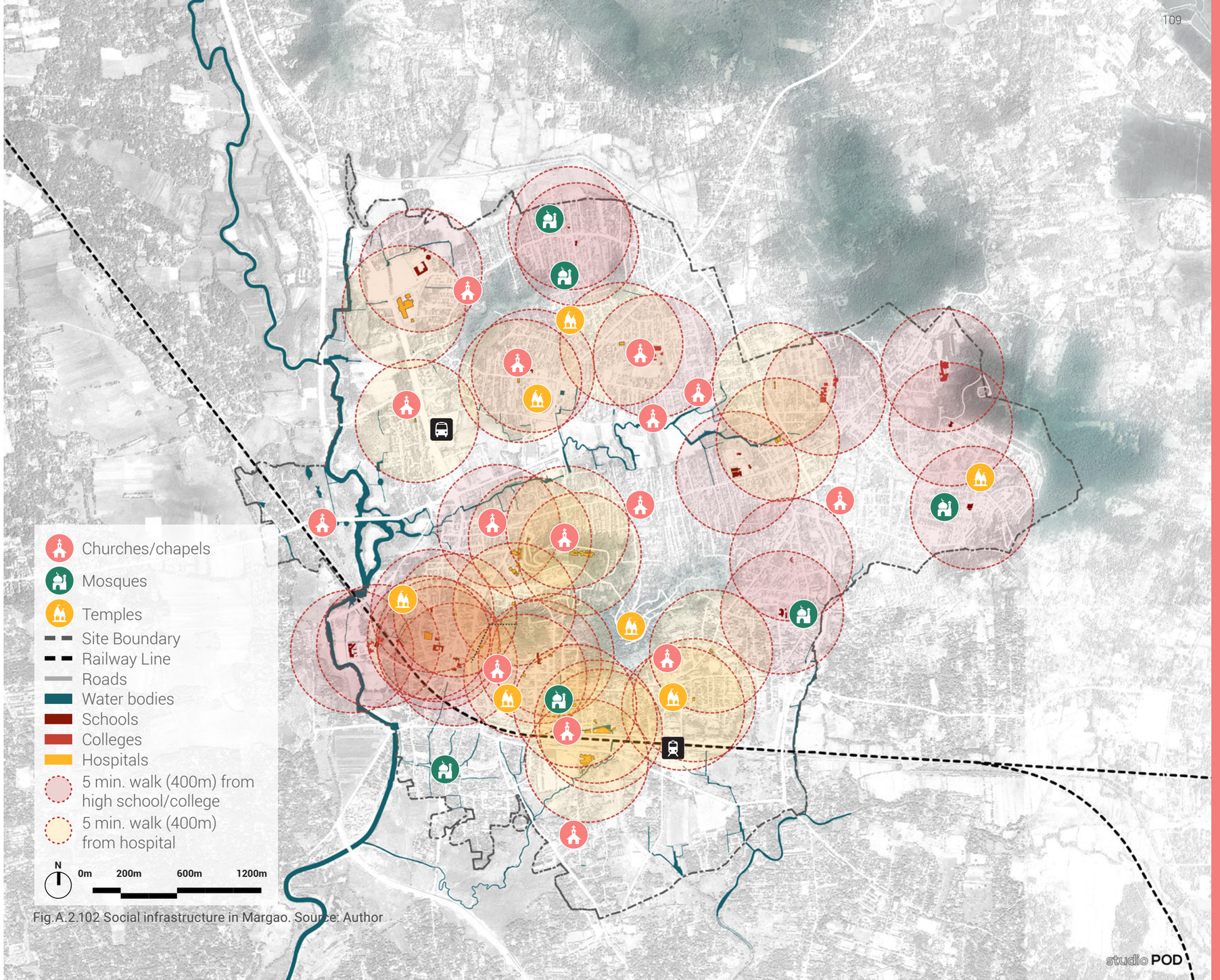


Fig.A.2.102 Social infrastructure in Margao. Source: Author



Fig.A.2.103 Ravindra Bhavan. Source: Author



Fig.A.2.104 Craft Festival. Source: Google



Fig.A.2.105 Purumentachem Festival. Source: Google



Fig.A.2.106 Dindi festival. Source: Google

A.2.11.2. Culture

Margao has several cultural facilities including: Ravindra Bhavan: cultural centre at Fatorda that organises various cultural programs.

Dindi: main cultural and religious celebration of the Hindus of Margao. It is one of the oldest festivals in Salcete taluka, celebrated at the Vithal Rakhumai temple and the Damodar temple.

Purumentachem Fest and The feast of Pentecost: celebrated at Margao's Church of the Holy Spirit in the month of May.

The Craft Festival of Margao: this handicraft festival of Goa is a part of the 50 years completion of the liberation of the state.

Lack of a safe public realm to support cultural festivities and processions

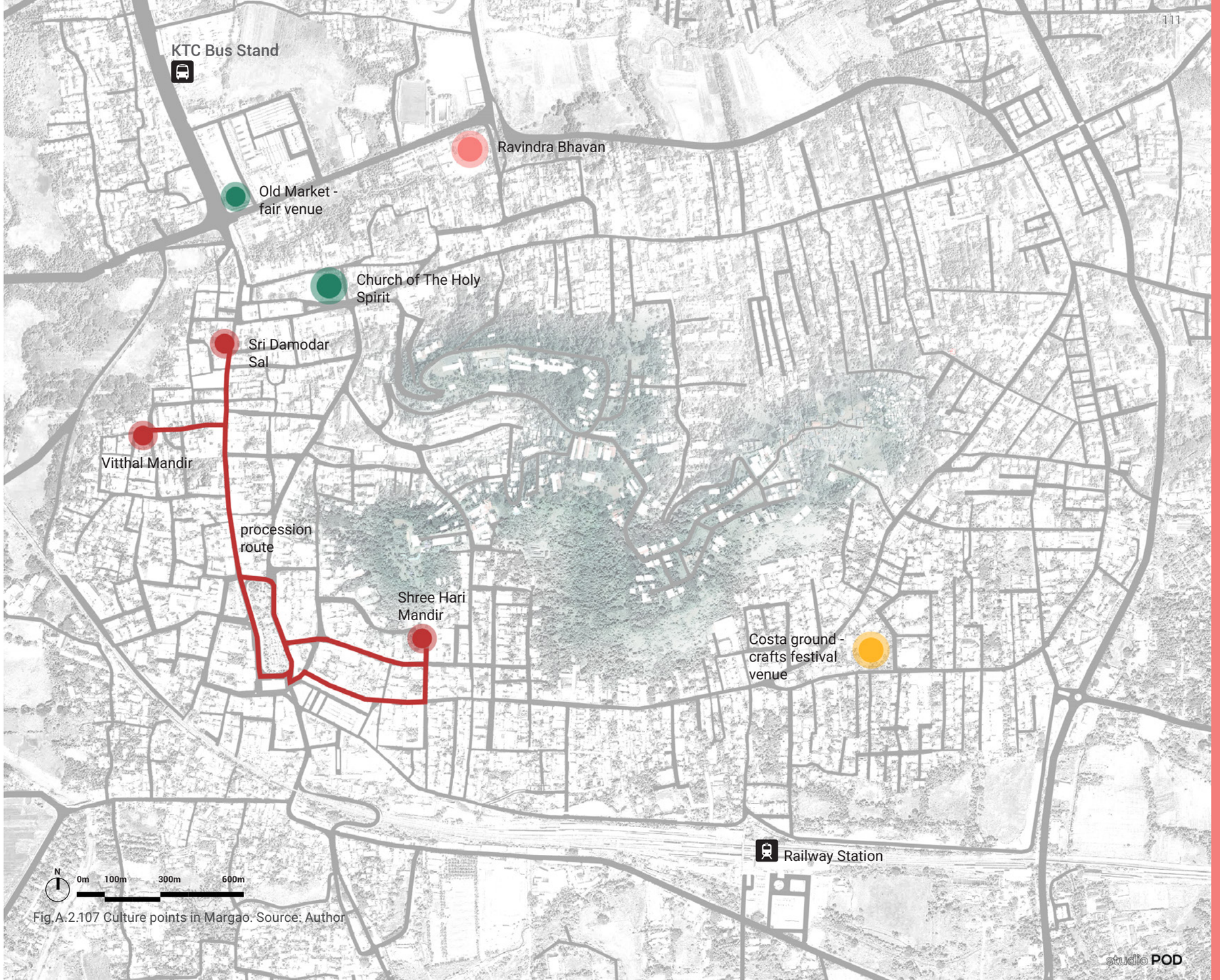


Fig.A.2.107 Culture points in Margao. Source: Author

studio POD

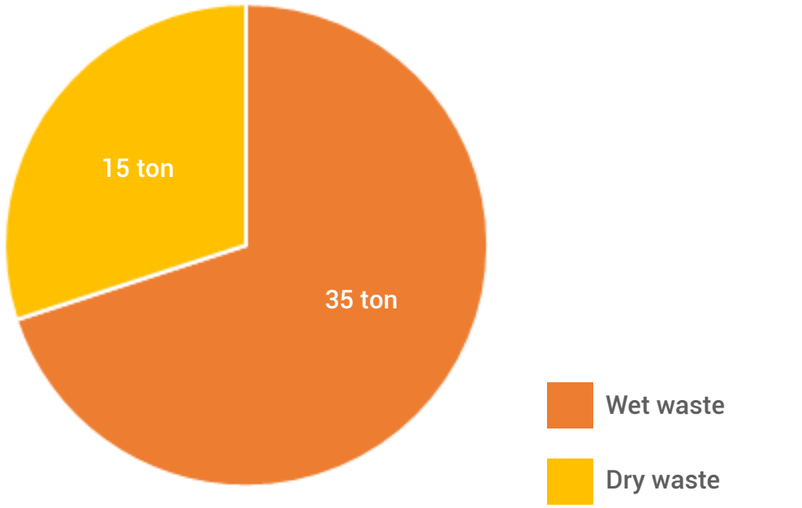


Fig.A.2.108 Sonsodo Garbage dump. Source: Author

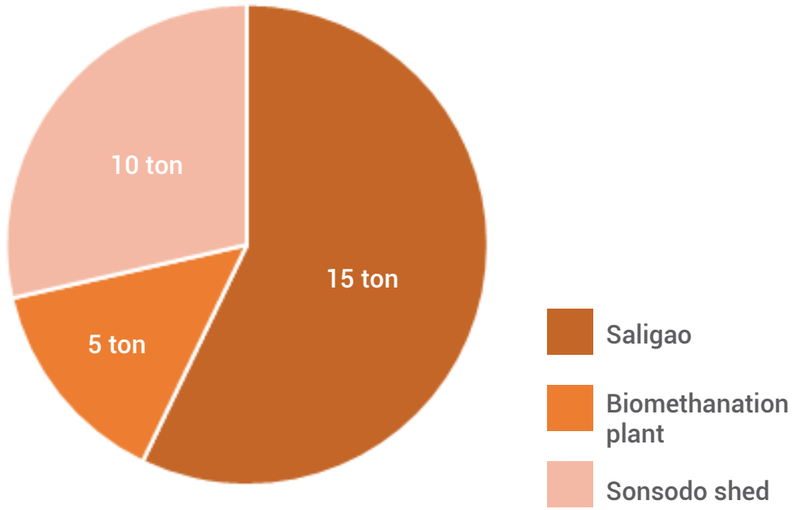


Fig.A.2.109 Bio-methanation plant in Fatorda. Source: Navhind Times

Waste generated by Margao in a day:



Dry waste from Margao:



A.2.12. Civic Infrastructure

Existing facilities in Margao:

1. Solid Waste Management facility next to the Sonsodo Garbage Dump
2. 2 STPs of 20 MLD and 6.7 MLD capacity are located close to the Sal river however untreated sewage still flows into the river from this area
3. Biomethanation plant of 5 ton/day capacity which has been planned to produce 400 cu.m of bio-gas and generate 450 units of power to be used for the plant's operations and lighting streetlights at SGPDA market. Additionally, 700-1000 kg organic manure for maintenance of municipality garden and lawns

The total waste generated by Margao in a day is 45 ton, out of which 35 ton is wet waste and 15 ton is dry waste.

Out of the dry waste generated, about 15 ton is being sent to the Saligao Waste Treatment Plant, and 10 ton is being sent to the Sonsodo shed in Margao. Only 5 ton is being treated at the Biomethanation plant in Fatorda, from which the manure generated is being sent to the municipal gardens and the power generated is being used to light the streets in the SGPDA market.

Note:
As per 2025, The facility functions as a segregation unit, separating wet waste from dry waste.
Wet waste is transported to Cacora for further processing. Dry waste is bundled into bales for disposal or recycling. Sanitary waste is sent to Pundai, Goa for treatment. Coconut branches are crushed into powder and sent to Saligao for conversion into briquettes.

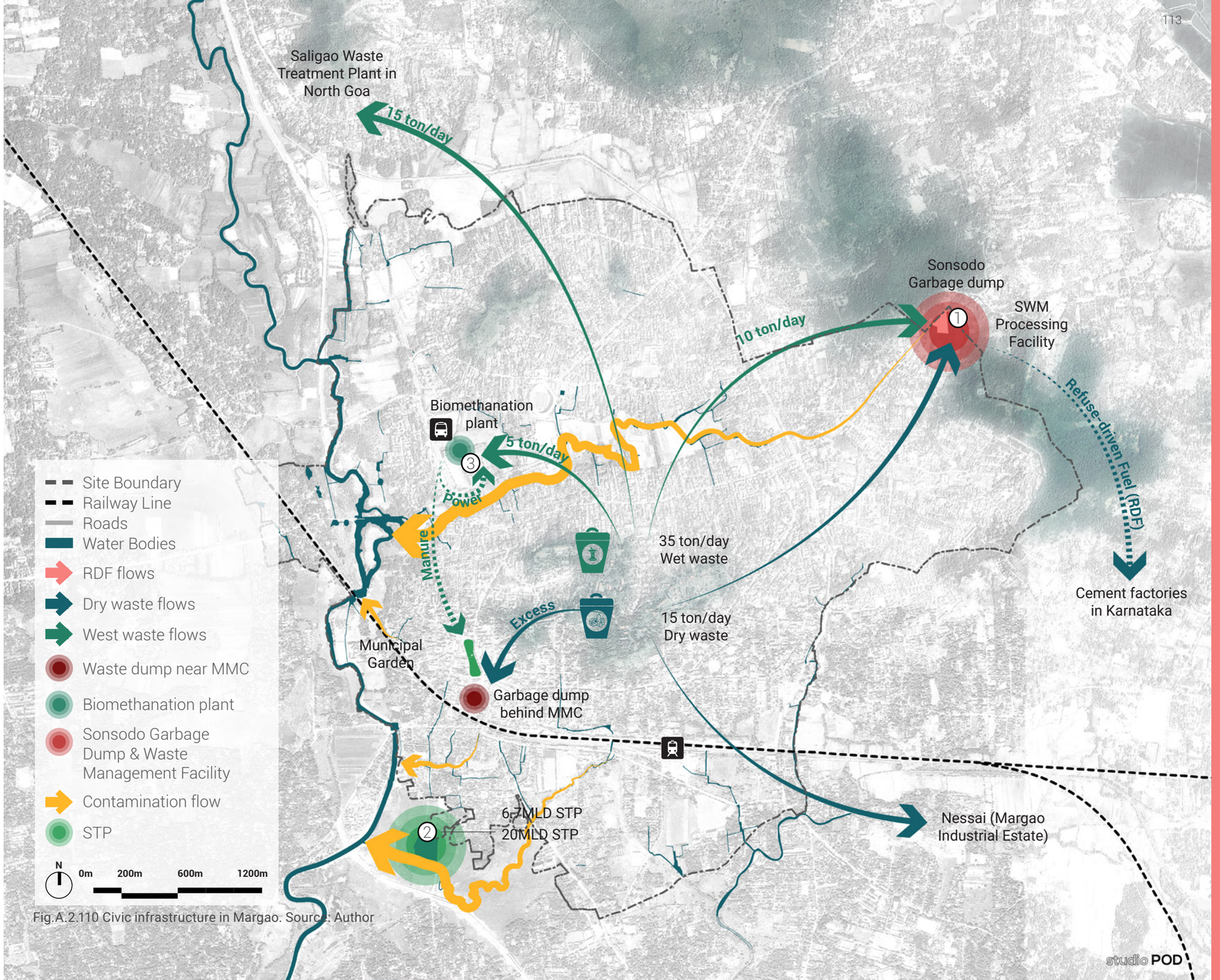


Fig.A.2.110 Civic infrastructure in Margao. Source: Author



Fig.A.2.111 Garbage dump behind the MMC. Source: Author



Fig.A.2.112 Garbage dumped along the road in certain areas, despite notices. Source: Author



Fig.A.2.113 Sonsodo recycling centre. Source: The Goan



Fig.A.2.114 Polluted drain in Margao. Source: Author

A.2.12.1. Solid Waste

Issues:

1. There is a lack of segregation of waste at source leading to an increase in unsegregated waste at the Sonsodo legacy dump.
2. Lack of space at Sonsodo results in dry waste being dumped behind the MMC building.

Proposed projects:

1. 15-tonne per day (TPD) capacity Bio-methanation plant at Sonsoddo which will treat the waste that is currently being sent to Saligao.

Lack of waste management system for the city and Improper disposal of waste

A.2.12.2. Sewage

Issues:
1. Contamination of water from Sonsodo down to the Sal river due to overflowing of leachate from the dump.
2. Raw sewage is being discharged from the city's stormwater drains, and the STP into the Sal river without being treated.

Proposed projects:
1. Temporary tender for leachate collection at Sonsodo
2. Bioremediation at the Sonsodo legacy dump

Open drains collecting pollution before reaching the Sal river



Fig.A.2.115 Open drains collecting pollution before reaching the Sal river. Source: Author



Fig.A.2.116 20MLD STP. Source: SFC Environment



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Margao civic body, Sewerage Corp under fire as various authorities scrutinise Sal pollution issue

From identifying and plugging domestic sources of sewage contamination, to diverting waste-water nullahs and recaliberating the two STPs at Navelim, the SIDCL and MMC have their hands full with directions to restore the lifeline of Salcete

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Citizens miffed as raw sewage from STP still released into River Sal

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Fig.A.2.117 Drains running through the city get polluted before they connect to the Sal river. Source: Author

Chapter

A.3

Planning Process



Fig.A.3.1 Stakeholder consultation meeting to discuss key strategies for Margao. Source: Author



Fig.A.3.2 Stakeholder consultation meeting held with MLA Digambar Kamat and other stakeholders. Source: Author

A.3.1. Stakeholder Consultations

In order to get a better understanding of the city, the context, and its aspirations, multiple discussions were held with key stakeholders of the Margao and Fatorda constituencies. The MLAs of the respective constituencies voiced their ideas on the current and future needs of Margao. The suggestions have been captured and categorised under 4 main components of the master plan.

Stakeholder Meetings held:

- Meeting with MLA Vijai Sardesai on 7th February 2023
- Meeting with MLA Digambar Kamat on 18th April 2023
- Meeting with MLA Digambar Kamat and key stakeholders on 17th May 2023
- Meeting with MLA Vijay Sardesai on 18th May 2023

Discussions held during the analysis phase:

- Armstrong Fernandes, Assistant Engineer (Div 6 Roads), PWD
- Manuel Barrato, Chief Officer, Margao Municipal Council (MMC)
- Shrikant Lavande, Assistant Engineer-I, MMC
- Manasi Prabhudesai, Landscape Architect, Studio Terrarium

A.3.2. Mobility Suggestions

public transport

We need for a **Mobility Plan**, especially connecting the Margao Railway Station and the KTC Bus Stand



- **Smart shuttle, e-buses, e-taxi and e-rickshaw services** must be developed in the city
- **Transport Plaza** next to the wholesale fish market (provision of petrol pump, warehouses, toilets and rest areas)

cycling

Cycle tracks need to be provided (need for a **Cycling Plan**)



traffic congestion

- Need to **de-notify the NH66** passing through the city as a highway

A **road connection** around Pajifond to the Old Station Road would help reduce traffic in the new MMC area

pedestrian experience

Can we **pedestrianise** the stretch from the old market to the church in heritage area?



- **Streets** in the Malbhat area need to be redeveloped
- **Intersection** development at Sri Damodhar Circle and its precincts

parking

Margao requires a **Parking Plan** and paid parking

entry experiences

- The **entry experience to Holy Spirit Church** needs to be enhanced
- **Entrance point to Fatorda**, the canal, bridge and the river needs to be developed



Fig.A.3.3 Unorganised private vehicle parking in Margao centre. Source: Author



Fig.A.3.4 Clock Tower Circle, an entry gateway into Margao. Source: Google Street View

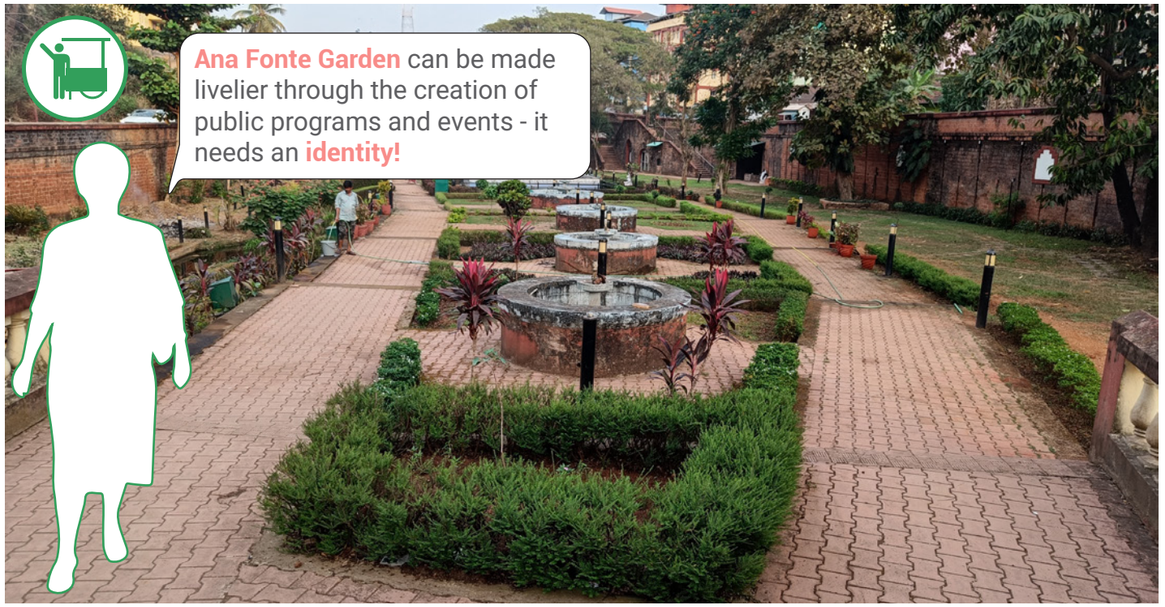


Fig.A.3.5 Need for programming at Ana Fonte Garden. Source: Author



Fig.A.3.6 Low-lying land suggested to be transformed into a public park near Damodar Circle. Source: Author

A.3.3. Open Space Suggestions

programming

- Need for **programming in Ana Fonte Garden** through the creation of public programs and events (need to create identity)

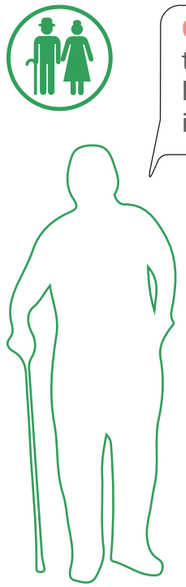
public parks

Need for **more recreational open spaces** in Margao

- Develop a **public park on Monte Hill**, overlooking the city, as well as connect the multiple trails that lead up and down the hill by foot



Older people hang out in the Municipal Garden with laughing clubs happening in the evenings



exhibition ground

Exhibition Ground for Margao needed



A.3.4. Economy Generation Suggestions

revenue generation

- **Revenue generation** strategies for the **Municipal Garden** are needed

Engine of growth and revenue generation required for Margao

Farming in the region is an important economic driver - rice is grown and consumed, extra is sold. Red rice, *Bhindi* and other vegetables are also grown in some areas

agriculture

new economies

IT area required for Margao

Presence of **public land** behind the Monte hill church (TB Hospital area) that can be developed

heritage tourism

- Old Hospital Building has **heritage value** and can be repurposed and included in the heritage trail

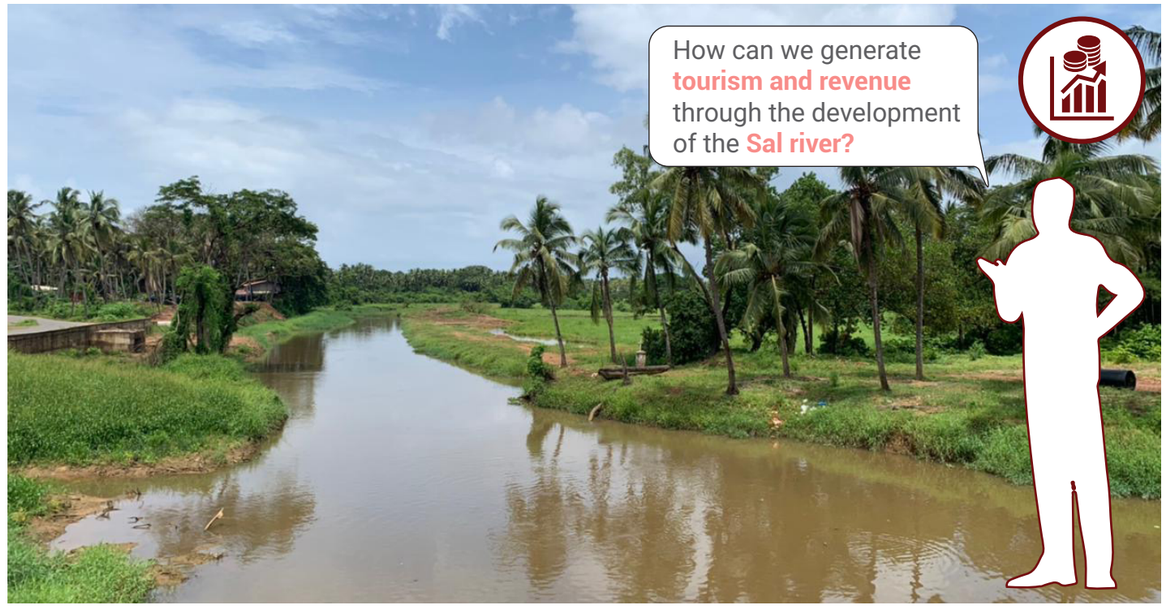


Fig.A.3.7 Potential to generate revenue at the Sal River in Margao. Source: Goemkarponn



Fig.A.3.8 Heritage areas offer potential to develop a tourism loop. Source: Author



Fig.A.3.9 Sal river de-silting underway. Source: Author



Fig.A.3.10 Drains running through the city get polluted before they connect to the Sal river. Source: Author

A.3.5. Resilience & Sanitation Suggestions

waste management

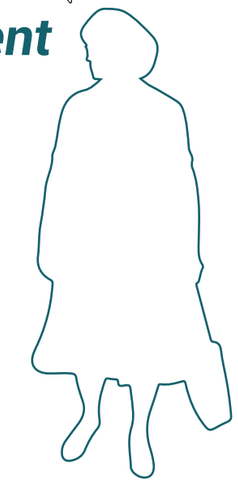
Need for a **Waste Management Plan** with waste disposal solutions

- While de-silting of Sal river is underway, **pollution from sources** continue.

Movement of water to Sal river, its bank and **flood plains to be identified and strengthened** to accommodate surge in water levels.

flood management

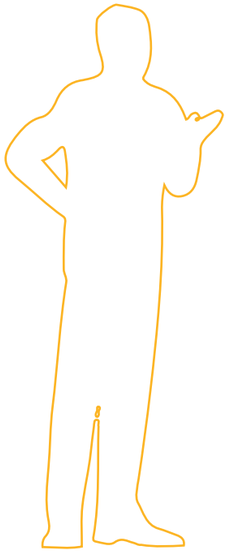
- The low-lying area near the Pandit Jawaharlal Nehru stadium is used as a **catchment area** during the monsoon period.
- **Flooding** in certain areas due to encroachments



Development of the land owned by the department of energy to be looked into for **renewable energy generation**

renewable energy

A.3.6. Other Suggestions



Incorporate the larger city level strategies into the **Outline Development Plan**

Outline Development Plan

redevelopment

The heritage value of the **Salcette Communidade Building** (built in 1960's) has depreciated over time and the area can be redeveloped



Fig.A.3.11 The Administrative Building of Salcette Communidade. Source: Author

rehabilitation

Slum dwellers on Monte hill need to be rehabilitated at a short distance



Fig.A.3.12 Moti Dongor slums on Monte Hill. Source: Author

appropriateness

All projects should be favourable to **local weather** conditions

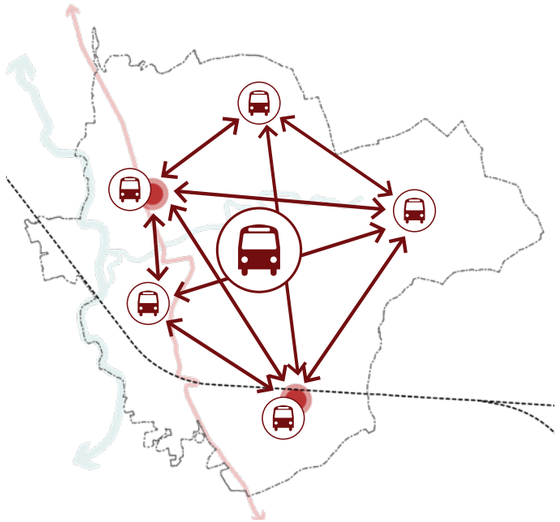
All projects to be **maintenance friendly**

Chapter

A.4

Synthesis

A.4.1. Issues

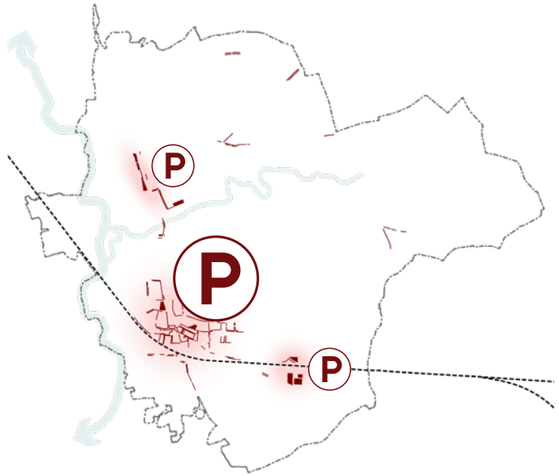


Lack of public transit network

There is no effective public transport system that connects the major destinations in Margao with each other and the residential areas.



Fig.A.4.1 Private buses at Margao Railway station



Unorganised parking

Lack of designated and adequate off-street parking spaces in the city centre leads to parking along the carriageway and within open spaces.



Fig.A.4.2 Two-wheeler parking next to the Municipal Building



Insufficient open spaces

The city has a lack of well-programmed and accessible open and recreation spaces at the neighbourhood and city level.



Fig.A.4.3 Unprogrammed open space in Margao



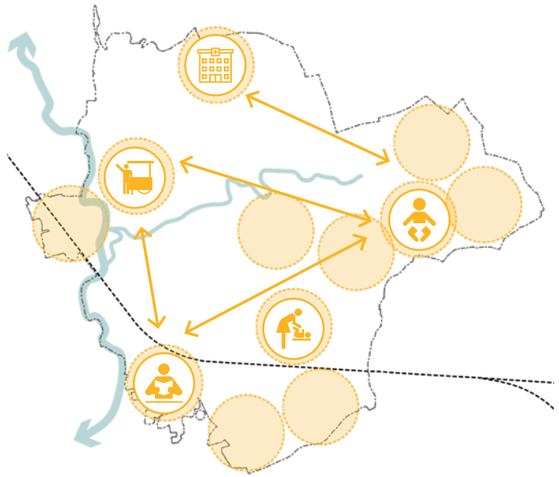
Flooding

During the monsoons, the developments in low-lying areas, on river banks and flood plains tend to get flooded.



Lack of waste management

Solid waste management infrastructure from collection to disposal is inadequate. This results in garbage being strewn along roads and clogging of drains.



Lack of community facilities

The current provision and distribution of public community facilities such as community centres, anganwadis, schools and cultural centres is inadequate for the city's population



Fig.A.4.4 Inundation in Comba subway during rainfall



Fig.A.4.5 Garbage dumped along the roadside



Fig.A.4.6 Inadequate community facility. Source: Author

A.4.2. Opportunities

Establishing comprehensive mobility

Margao's street network and distribution of attractors and destinations provides an opportunity for creating an efficient multi-modal transport network. A network that can help reduce traffic congestion, provide systematic on street parking and make streets more pedestrian friendly to encourage non-motorised transport

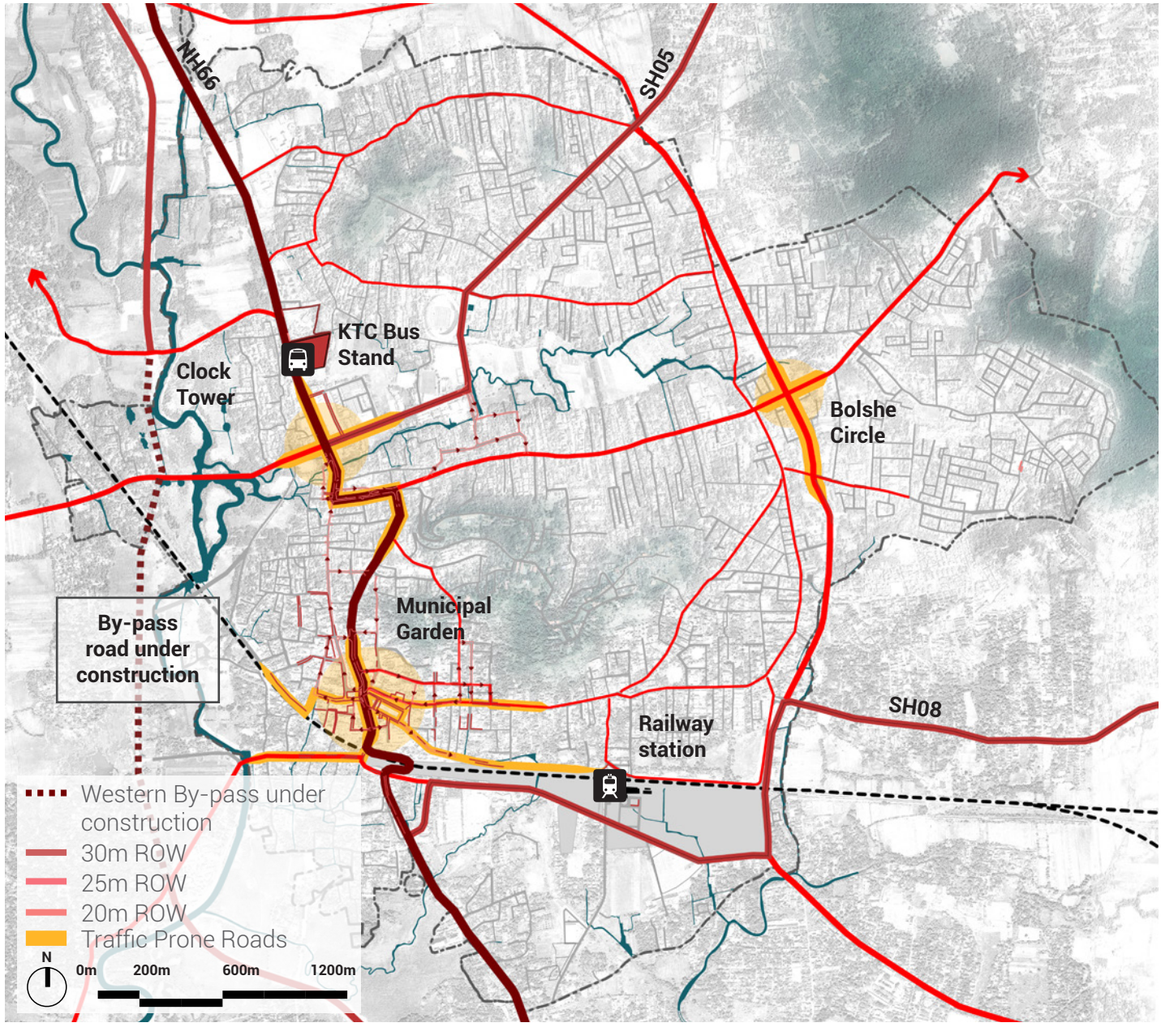




Fig.A.4.7 Local bus that connects different cities. Source: Author



Fig.A.4.8 Public transport and pedestrian priority, 16th street, Denver Source: Project for Public Spaces



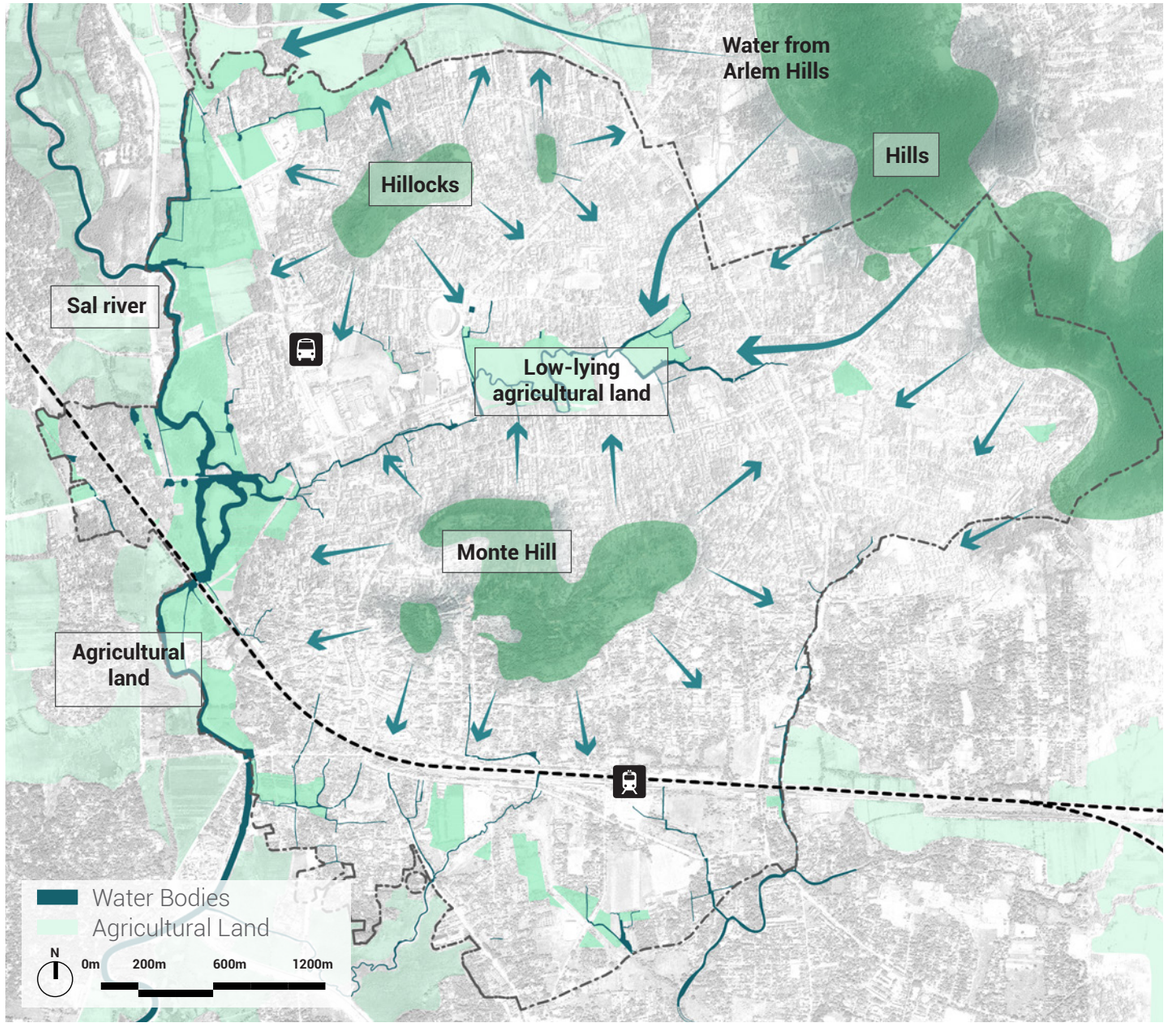
Fig.A.4.9 Low-lying area in Margao as natural catchment. Source: Author



Fig.A.4.10 Bishan Ang Mo Kio Park, Singapore. Source: Studio Dreiseitl

Embracing the natural topography

The natural topography and hydrology of the region, and the zoned open and agricultural spaces offer potential for flood mitigation. Undeveloped low lying areas can be transformed into active flood-able landscapes which can be used by the city's residents for recreation, and the hillocks can be developed as accessible public spaces which offer scenic views of the city.



Sal River as an eco-recreational corridor

The prominence of the Sal as a navigable channel and economic hub has diminished over time. There is potential to revive it as a recreational and revenue generating feature. Strengthening the banks and creating riparian landscapes along the river edge will help address flooding issues. Promenades and walking trails can rejuvenate it and provide incentive to clean and protect it.

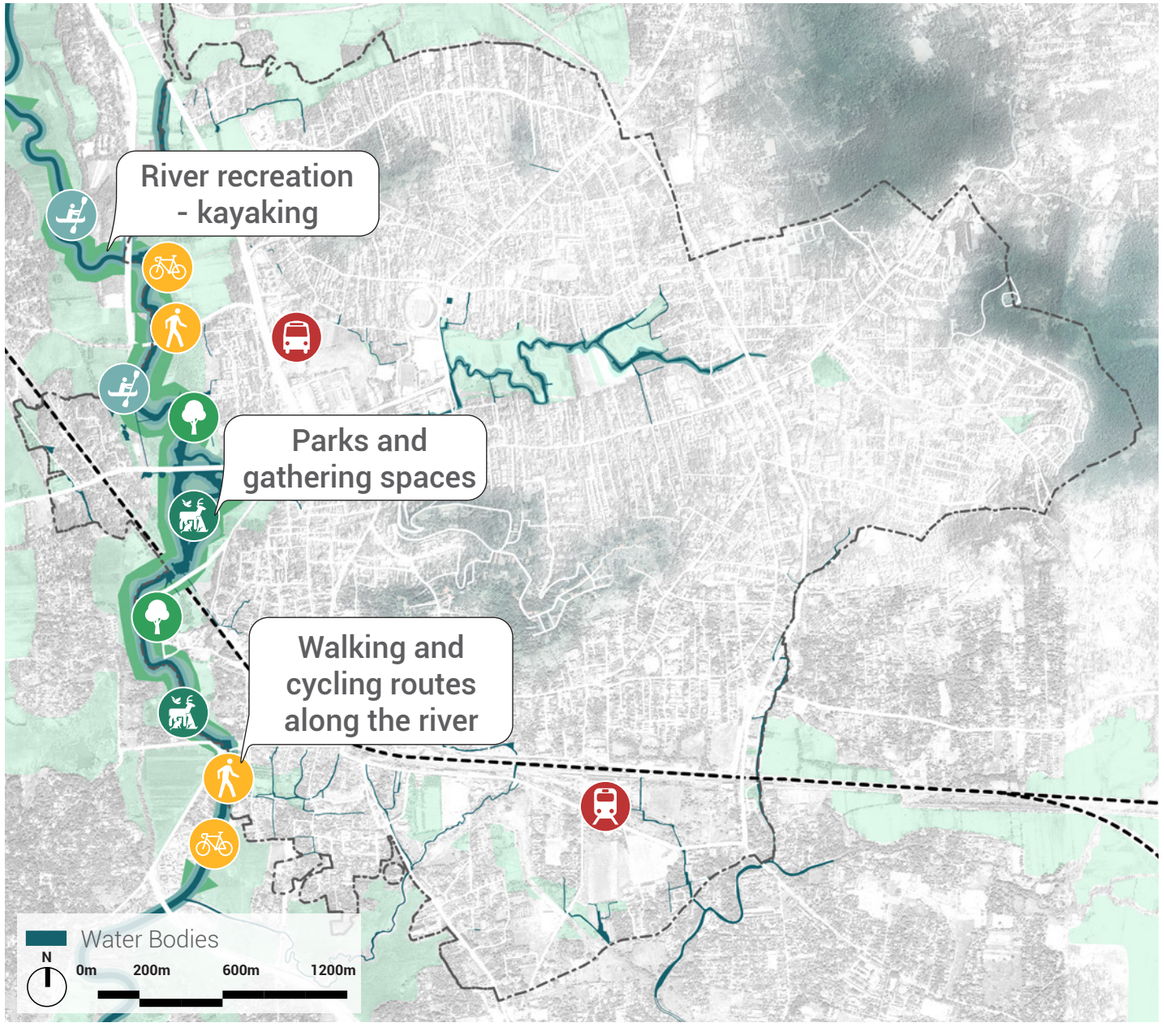




Fig.A.4.11 Kayaking along Sal river upstream from Margao. Source: The Great Next



Fig.A.4.12 Red Ribbon Park, Qinhuangdao. Source: ArchDaily



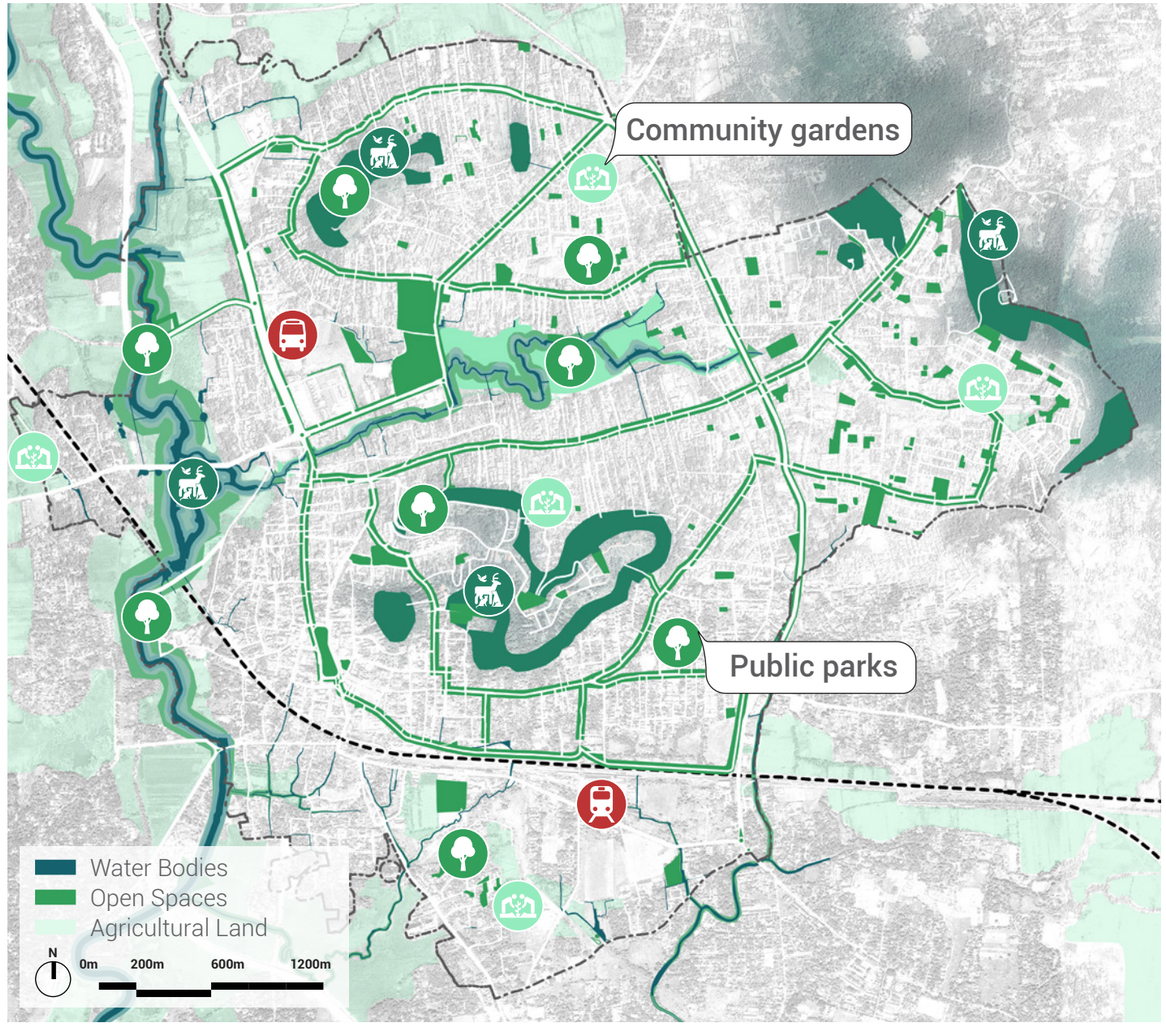
Fig.A.4.13 Agriculture farms in Margao. Source: Author



Fig.A.4.14 Community garden at Sporta Pils, Riga. Source: Public Space

Developing agro-tourism

Margao has the potential to be an agro-tourism node with the presence of farming activities as a significant economic driver. The rich ecology of the Sal river edge poses as the perfect setting for farm to table eateries/restaurants.



Strengthening heritage tourism

Margao has a rich cultural history and heritage that can be tapped into to generate more tourism and help Margao become a destination rather than a transient city.

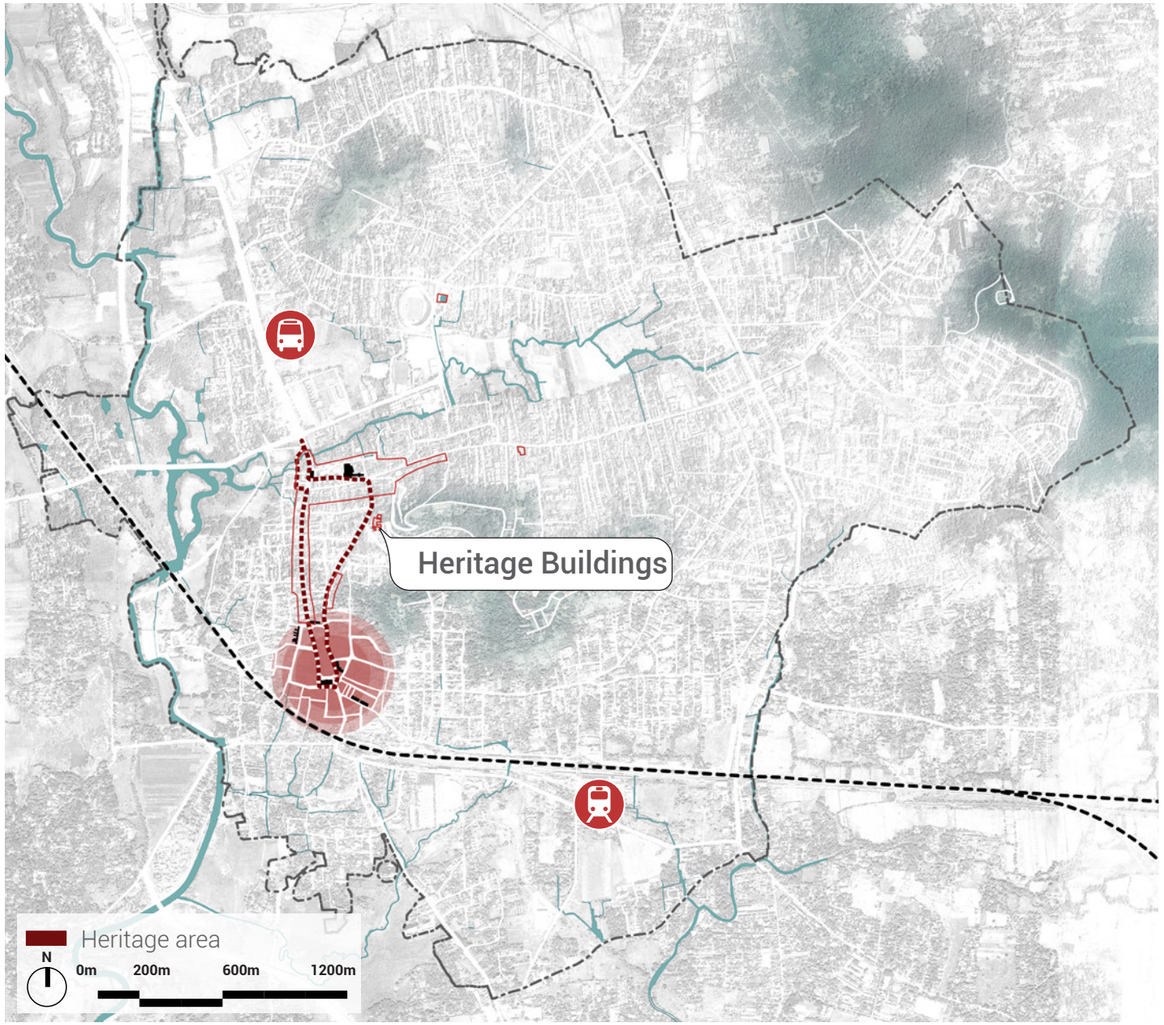




Fig.A.4.15 Abade Faria roas wiht heritage houses. Source: Author



Fig.A.4.16 Local bus that connects different cities. Source: Urban Heritage In Indian Cities, Compendium of Good practices, PEARL, NIUA



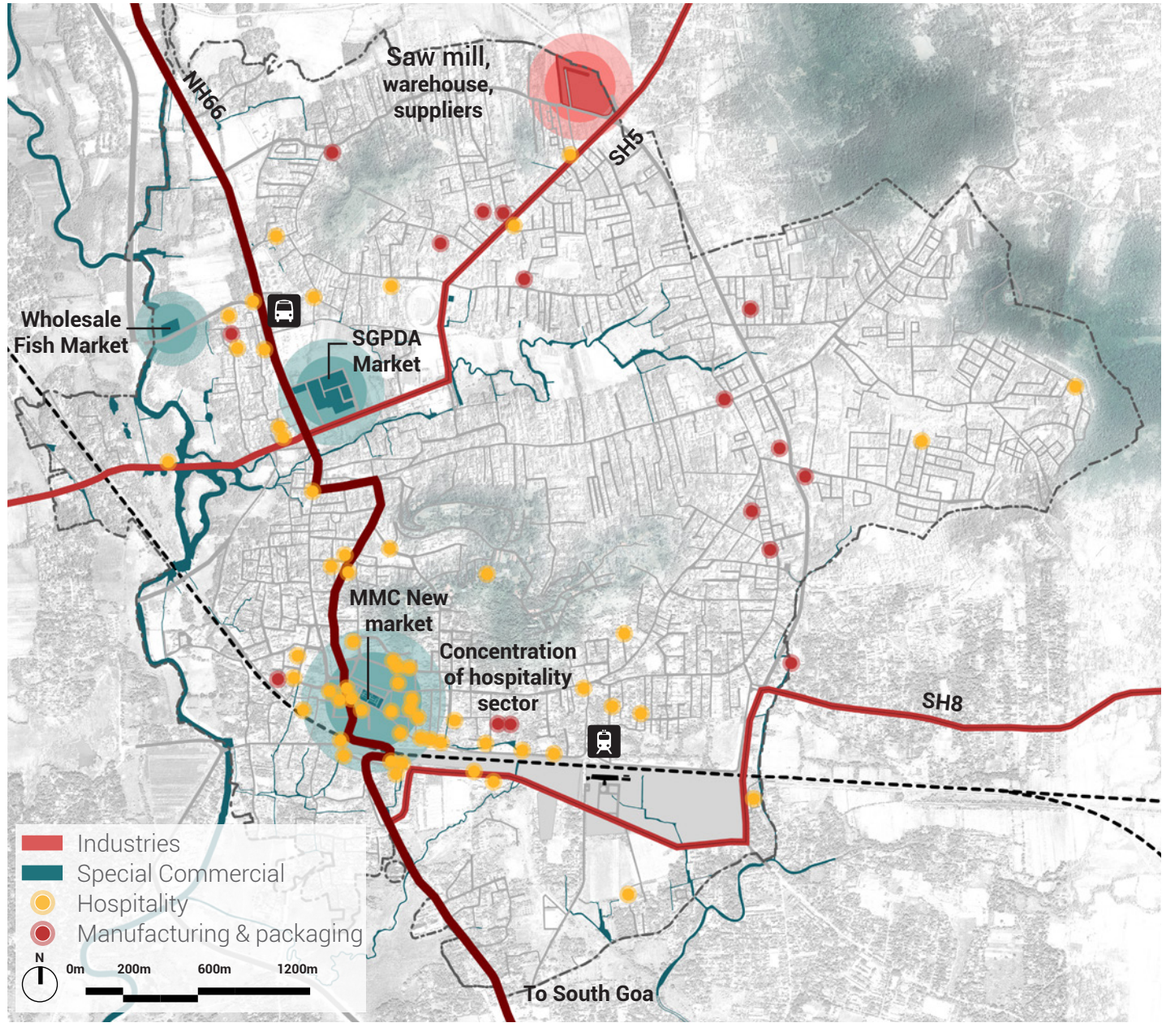
Fig.A.4.17 Administrative centre and municipal park of Margao. Source: Author



Fig.A.4.18 Songzhuang Micro Community Park. Source: ArchDaily

Creating new economic identities

The city has distinct commercial zones, each with their own specific characteristics. There is a potential to build on these to create strong local identities for Margao.



B

CONCEPT MASTER PLAN

B.1 Future Vision and Perspective

B.2 Flood Resilient Landscape

B.3 Active Public Realm

B.4 Integrated Public Transit

B.5 Diverse Economy

B.6 Inclusive Communities

B.7 Proposed Master Plan & Interventions

B.8 Implementation Process

Chapter 3

Future Vision & Perspective

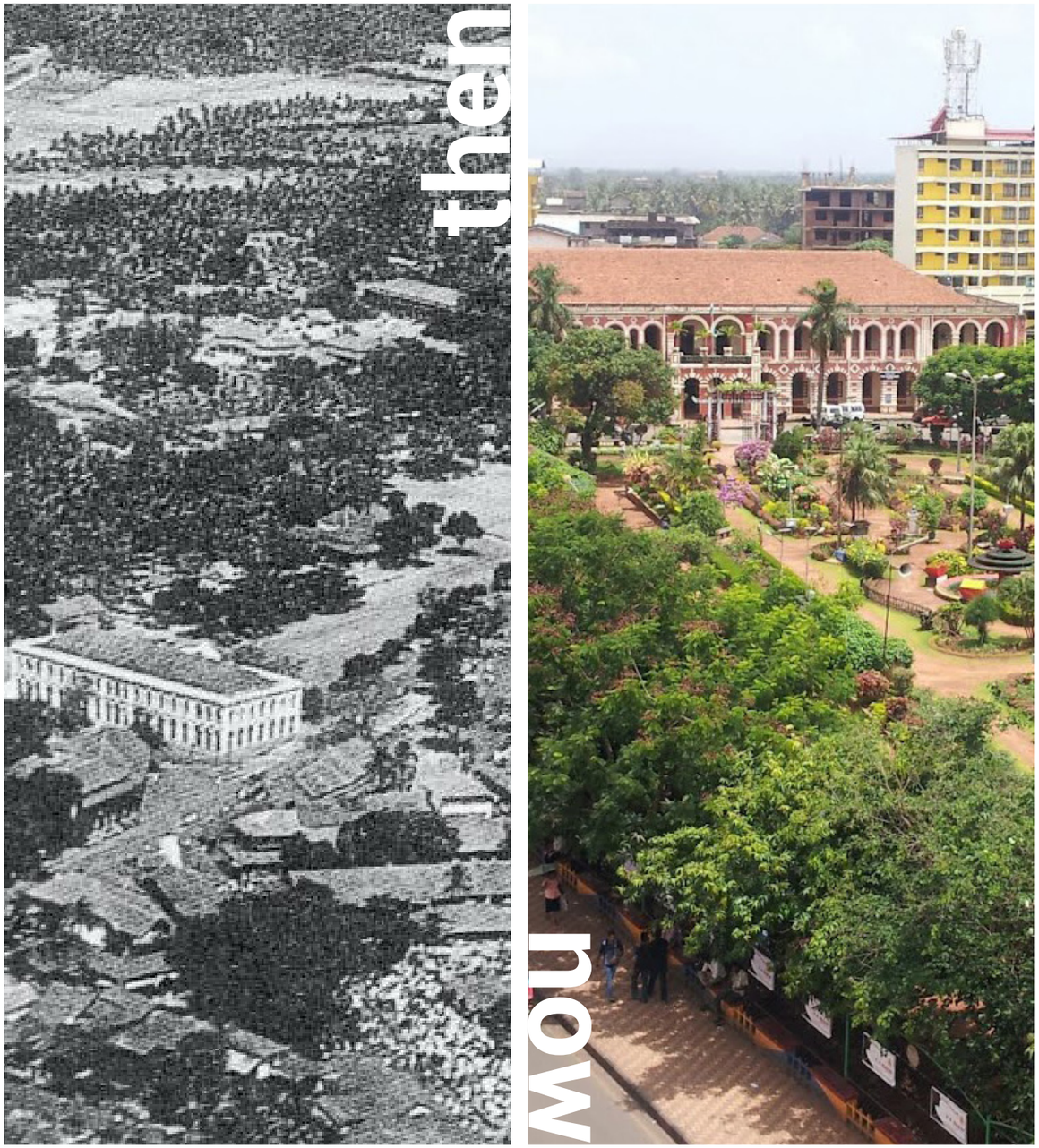


Fig.B.1.1 Old Margao and Margao Today. Source: Google

B.1.1. Identity of Margao

B.1.1.1. Margao Then vs Margao Now

Margao has evolved over time, from a small settlement to a town and hub of trade. It is now one of the largest cities in Goa. What was once a flourishing trade hub, characterised by an agro-based economy and rich cultural heritage, has now transformed into a commercial and administrative hub in the state characterised by large wholesale and retail markets, as well as industries, connecting to various destinations in and around Goa.

This also has made Margao a transient city, which acts more as a threshold or pause point rather than a destination. The city is well capable of being a destination city, given its many assets such as natural features, topography, location, connectivity, economic growth and heritage to name a few. This poses the question - What is the identity of Margao Now and what can be the identity of Margao in the future?

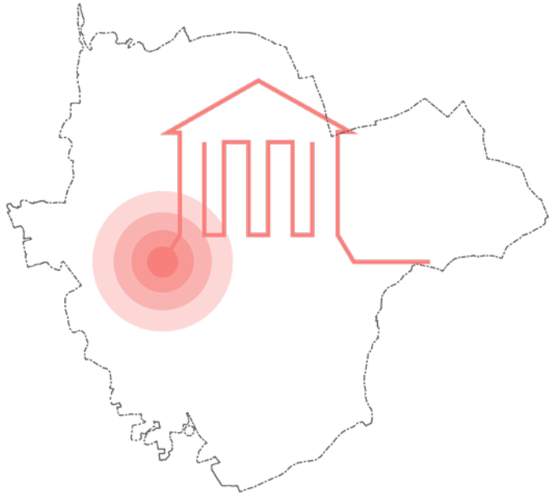
Margao Then



Hub of Trade



Agro-based economy



Culturally rich

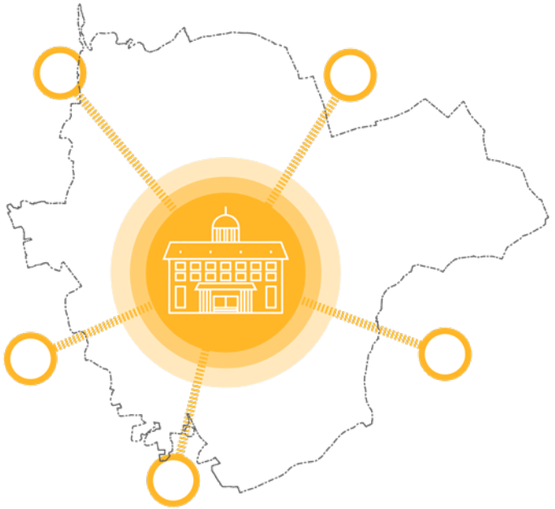
Margao Now



Commercial Hub



Transient City



Administrative Hub

B.1.2. Future Identity of Margao



B.1.3. Vision for Margao 2041

*"**Regenerate** public spaces, **Celebrate** heritage, and **Develop** a new socio-economic identity for Margao"*

B.1.4. Strategies



Flood resilient Landscape

Establish a resilient green-blue network in the city

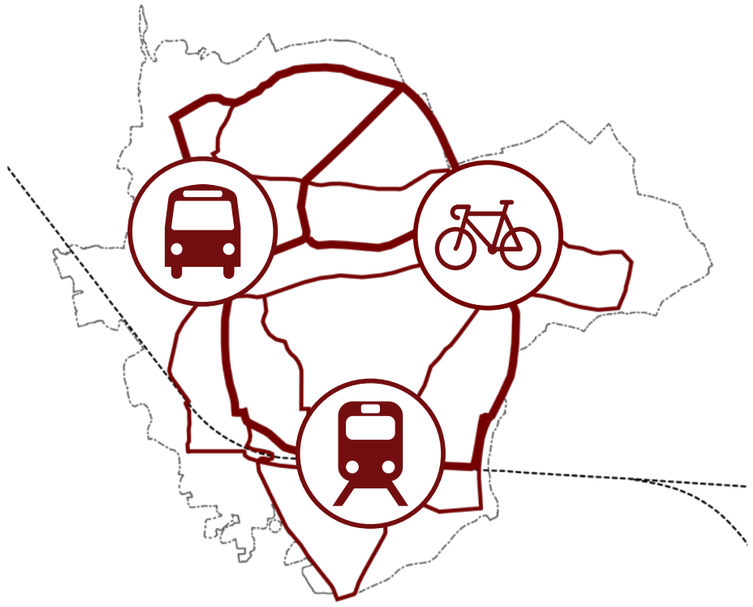
Outlines the landscape framework for Margao



Active Public Realm

Activate open spaces and create a public space network

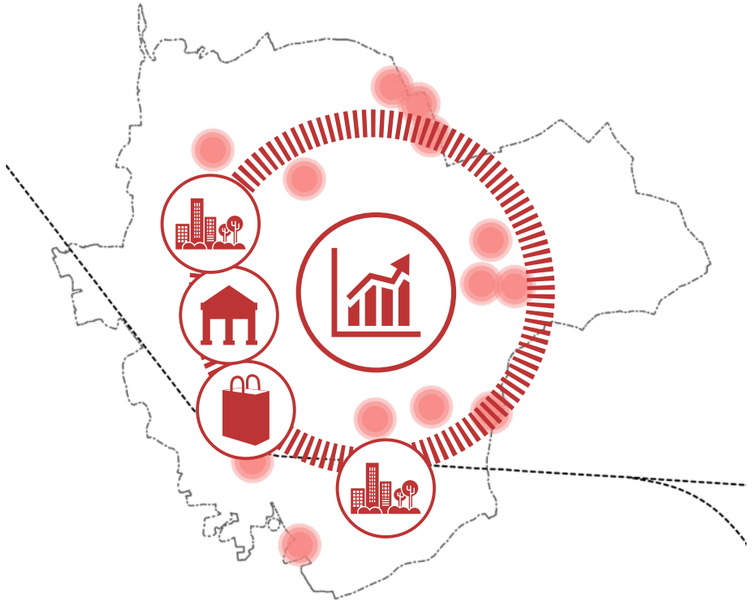
Delineates the public spaces within the landscape framework, proposes amenities and programming for the same, and activates view corridors



Integrated Public Transit

Create a well-connected and accessible transit system for the city

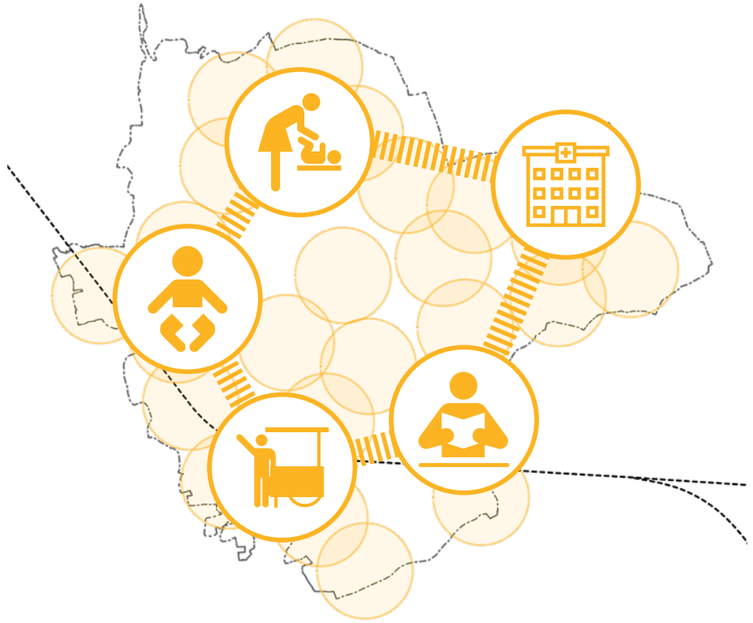
Outlines a transportation, circulation plan for Margao



Diverse Economy

Create diverse opportunities and unique identities in the city

Proposes economically diverse character zones within the city with specific land uses, programming and massing



Inclusive Communities

Introduce public amenities and strengthen communities

Proposes a network of social amenities within the character zones

B.1.4.1. Flood Resilient Landscape



Establish a resilient green-blue network in the city
Outlines the landscape framework for Margao

- Develop a flood resilient Margao by protecting and enhancing its natural assets
- Develop open space buffers along rivers and nalas to store excess run-off
- Create open spaces and streets that minimise rainwater run-off



Sponge and retention parks



River buffers



Natural drainage

Fig.B.1.2 Flood Resilient Landscape. Source: Google



Farm to Table



Parks and gardens



Play spaces



Hilltop viewpoints



Shared streets



Sports grounds



Picnic spots

Fig.B.1.3 Active Public Realm. Source: Google

B.1.4.2. Active Public Realm

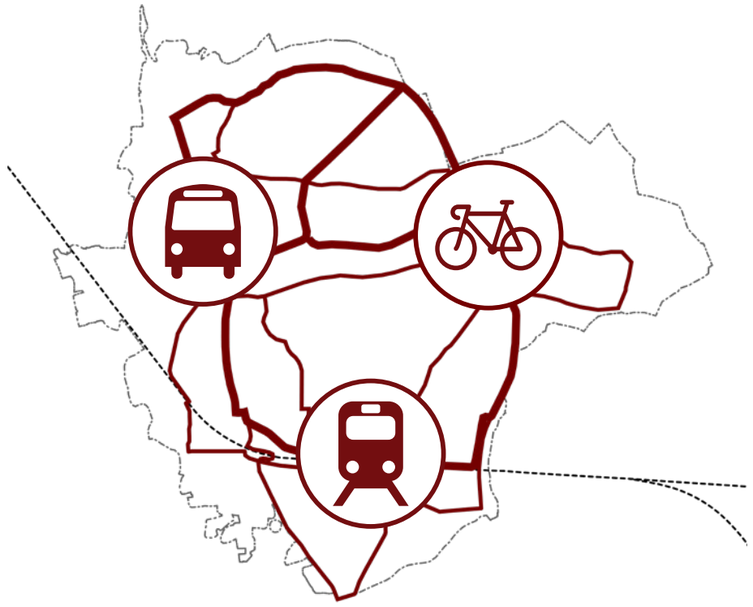


Activate open spaces and create a public space network

Delineates the public spaces within the landscape framework, proposes amenities and programming for the same, and activates view corridors

- Create a state-of-the-art public realm with well-programmed open spaces
- Create a network of integrated open spaces and a continuous public realm
- Develop public open spaces at different scale levels - from neighbourhood to the city

B.1.4.3. Integrated Public Transit



Create a well-connected and accessible transit system for the city

Outlines a transportation, circulation plan for Margao

- Introduce an integrated public transit system for the entire city of Margao
- Design streets for public transport and non-motorised transport
- Introduce a multi-modal transit hub for seamless movement through the city





Cycling infrastructure



Multi-modal transit hub





Tram / e-shuttle bus infrastructure

Fig.B.1.4 Integrated Public Transit. Source: Google



Heritage precincts for tourism



Market streets



Food streets



Museum of heritage



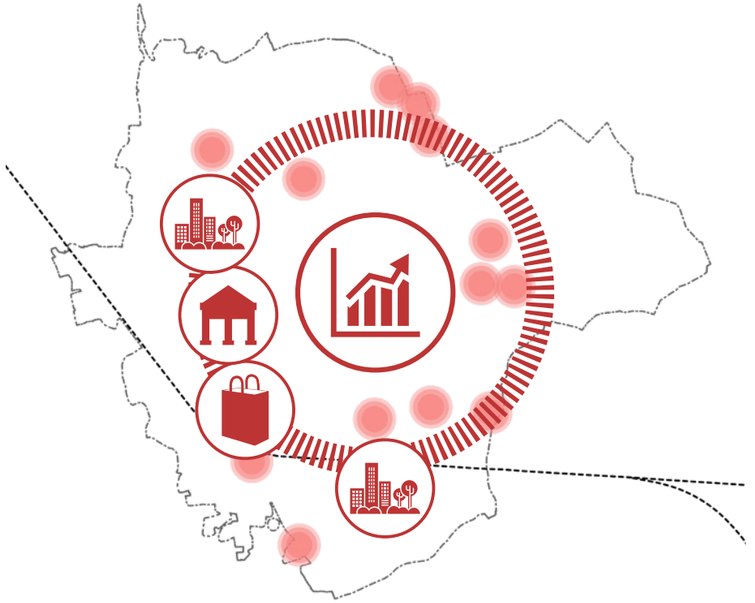
Start-up hubs and incubators



Large fairs

Fig.B.1.5 Diverse Economy. Source: Google

B.1.4.4. Diverse Economy

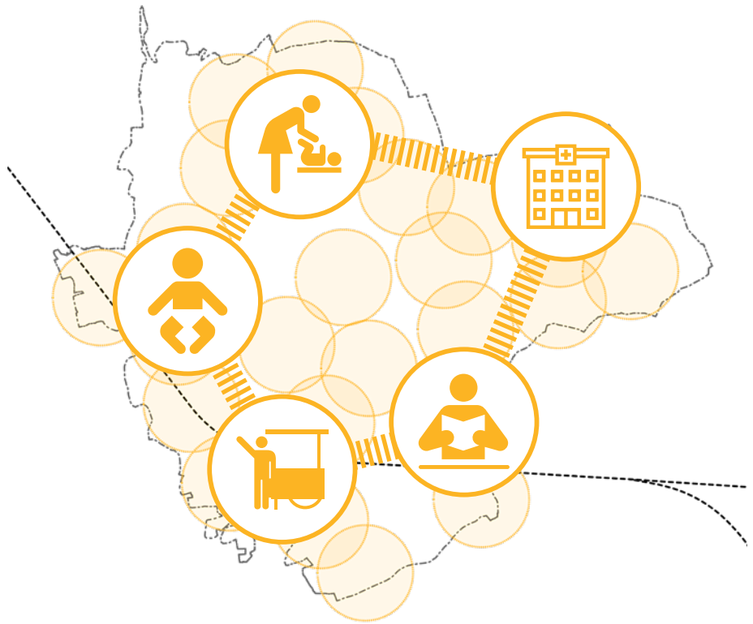


Create diverse opportunities and unique identities in the city

Proposes economically diverse character zones within the city with specific land uses, programming and massing

- Develop a new economic strategy for Margao-Fatorda: **Develop-Celebrate-Regenerate**
  - Develop new economic anchors within Margao
  - Celebrate the history and heritage of the city
  - Regenerate the centre of the city and activate public spaces

B.1.4.5. Inclusive Communities



Introduce public amenities and strengthen communities

Proposes a network of social amenities within the character zones

- Build on existing community amenities and develop a network of amenities within walkable neighbourhoods
- Create spaces for large gathering, events and festivals in the city
- Develop facilities that cater to cultural interests within each neighbourhood



Community halls and libraries



Recreational activities





Commercial district



Spaces for gatherings & festivals



Market streets



Convenience shopping areas

Fig.B.1.6 Inclusive Communities. Source: Google

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Chapter B.2

Flood Resilient Landscape

Flood Resilient Landscape



Establish a resilient green-blue network in the city

Outlines the landscape framework for Margao

- Develop a flood resilient Margao by protecting and enhancing the natural assets
- Develop open space buffers along rivers and nalas to collect storm-water
- Create open spaces and streets that prevent rainwater run-off



Fig.B.2.1 Rejuvenation of the Sal River. Source: Author



Fig.B.2.2 Old Station Road in Margao indundated. Source: The Goan



Fig.B.2.3 Comba subway inundated. Source: The Goan.

B.2.1. Summary of Issues in Margao

B.2.1.1. Flooding

The low-lying areas are, primarily around the Sal River and the valley between the Monte hill and Fatorda hill. These areas are prone to flooding during heavy rainfall events.

Due to developments and encroachments in these low lying areas, the natural flow and retention of water is hampered resulting in flooding at local and city level.

Additionally, the lack of a comprehensive storm-water drainage network in the city further exasperates the flooding situation.

The ongoing construction of the Western By-pass road and other new developments in the low lying areas, may increase the likelihood of flooding.

Lack of **planning strategies** *to combat flooding*



Fig.B.2.4 Flooding in Kudao Source : Author



Fig.B.2.5 Settlements on Sal river edge. Source: Author.



Fig.B.2.6 Condition of drain/nala in Margao. Source: Author.

B.2.1.2. Sal River and water body edges

The Sal River is currently is heavily silted and the flow of water is also low. The combination of the low flow as well as the discharge of nutrient rich effluent from the abutting farms has resulted in an increase in water hyacinth growth in the river. The water hyacinth is an invasive species which is detrimental to the water quality and depletes the dissolved oxygen in the water.

During heavy rainfall events the restricted capacity due to siltation results in the River bursting its banks and flooding the surrounding areas. This situation is further exasperated by the unchecked development inn the low-lying areas that abut the River.

To address the issues of low flow and water hyacinth build up, the River is currently being de-silted. This will assist in increasing its carrying capacity; however in addition to this buffer areas along the River edge will require to be developed to minimise the impact of flooding.

The situation in the nalas and other water bodies is similar to that of the Sal River. Similar measures of regular de-silting and development of buffer areas abutting them to minimise the flooding risk to the developed areas in their vicinity.

Unkempt & polluted
riverfront creating unusable spaces

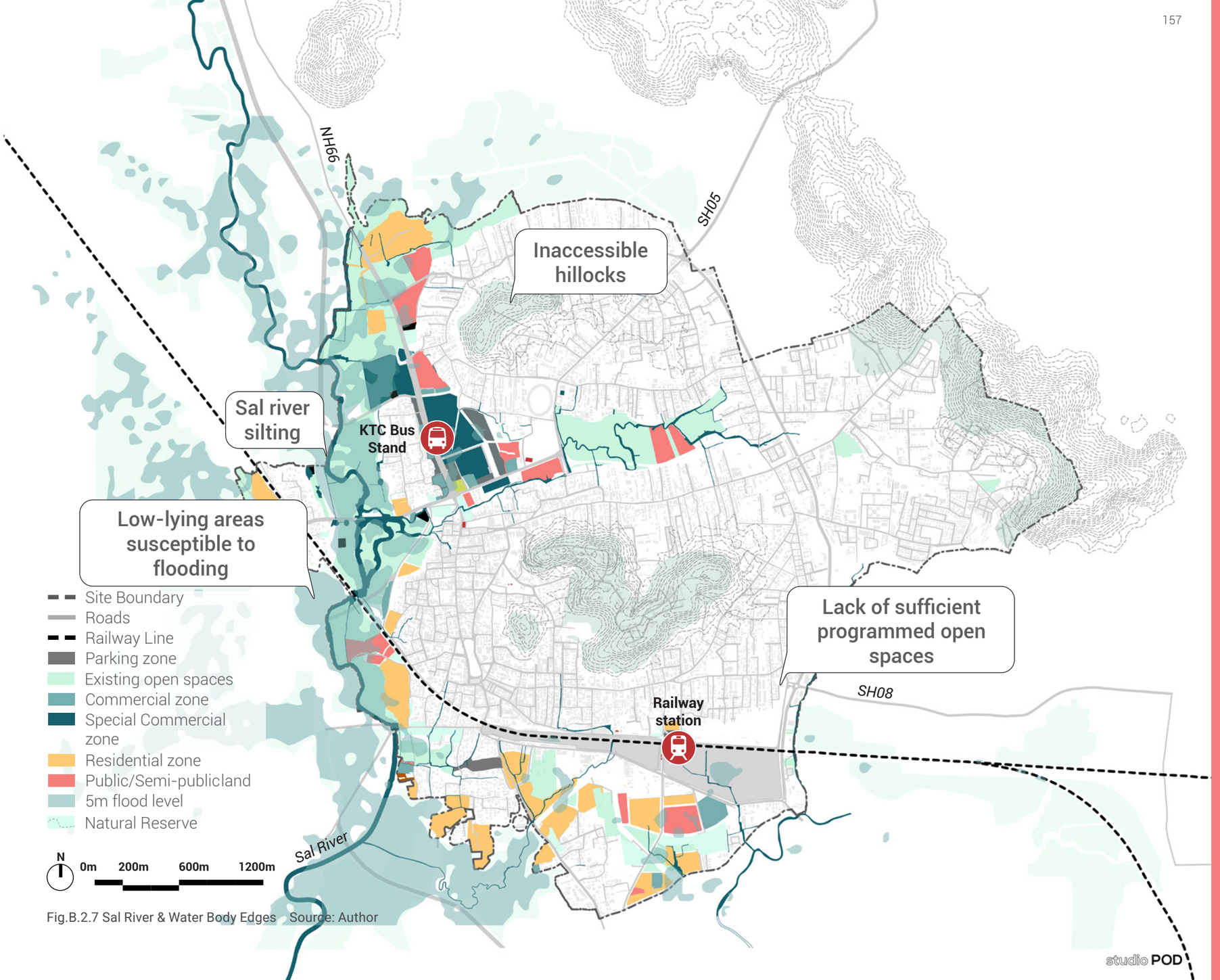


Fig.B.2.7 Sal River & Water Body Edges Source: Author



Fig.B.2.8 Red Ribbon Park. Source: Turenscape



Fig.B.2.9 Harbin Qunli stormwater park. Source: Turenscape



Fig.B.2.10 Bishan Ang Mo Kio Park. Source: Studio Dreseitl



Fig.B.2.11 Bioswale. Source: https://blog.landscapeprofessionals.org/effective-stormwater-management-installing-bioswales/

B.2.2. Resilient Green-Blue Framework

B.2.1.3. Flood buffers for water bodies

The flood management strategy has been derived after understanding the flooding issues & water-logging in Margao and then analysing case studies to help showcase how to build resilience into a river basin.
The slope, topographical and hydrological analyses point to the conclusion that the most susceptible areas to flooding are close to the river and other low-lying areas in the city. It is important to provide a green buffer of 20m along both edges of the river as they are identified as ecologically sensitive areas.

There are several other minor water bodies/nalas that also require a 5m buffer to provide room for the water to collect during rainfall. These buffers are also intended to prevent built structures on floodplains and ecologically sensitive areas.

80 acres *of Sal river buffer*
18 acres *of nala/other water body buffers*

B.2.2.1. Sponge parks & Green streets

As a part of the resilience strategy, some low-lying spaces of the city are identified as sponge parks and retention ponds. These are localised parks that Storm water drainage within the city is allowed to pass through ‘green streets’ to reach the river bed.

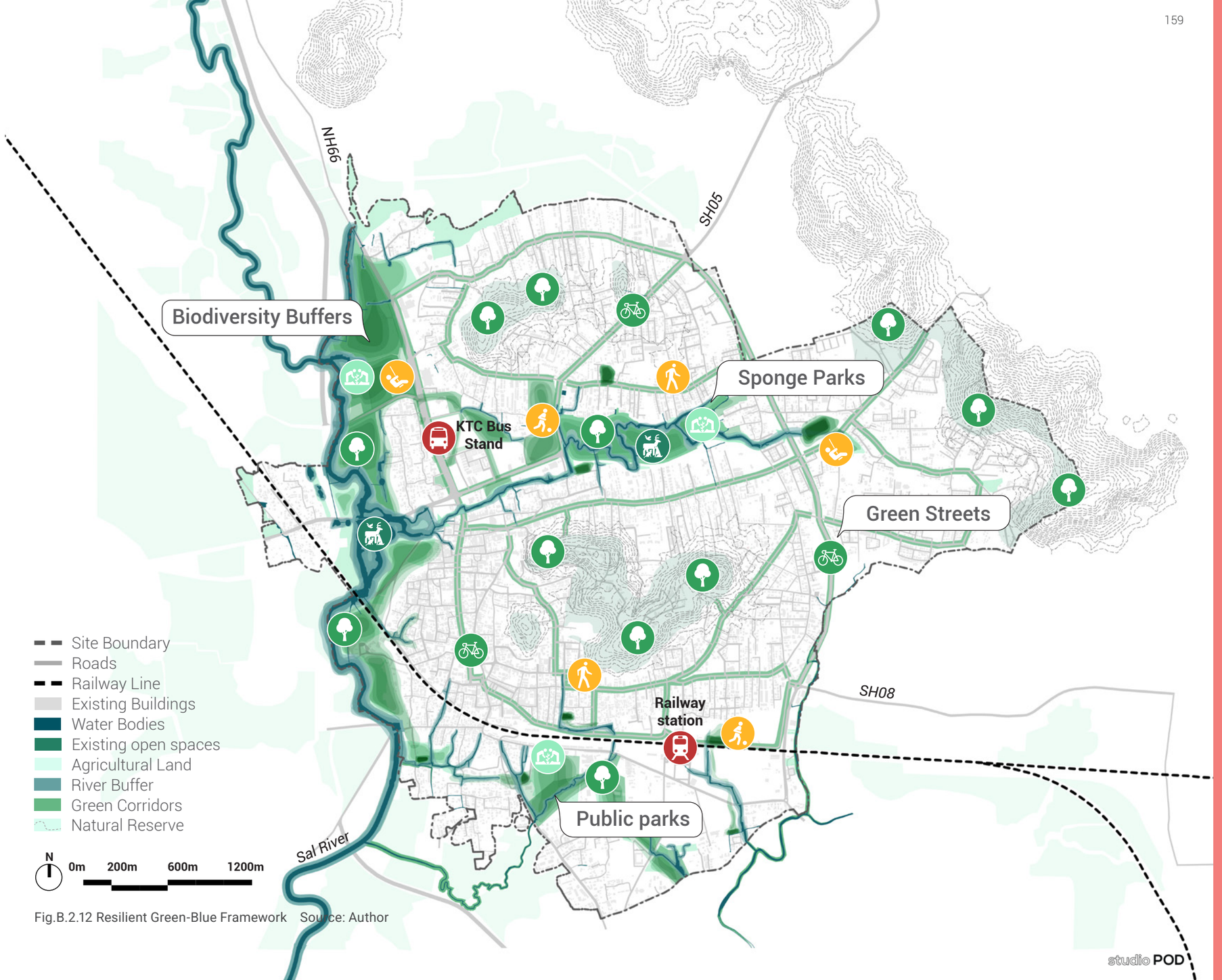


Fig.B.2.12 Resilient Green-Blue Framework Source: Author



Flood Resilient Landscape

B.2.3. Identified List of Projects

B.2.3.1. Priority Projects

- Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development

B.2.3.2. Other Projects

- Create a No-build Green Buffer of 20m along the Sal river to protect river edge with promenades, pavilions & leisure spaces
- Create a No-build Green Buffer of 5m along nalas to accommodate flood waters
- Integrate green streets in the city
- Identify and create sponge parks throughout the city of Margao
- Develop a Biodiversity Park for the heart of Margao that acts as a sponge park and city park

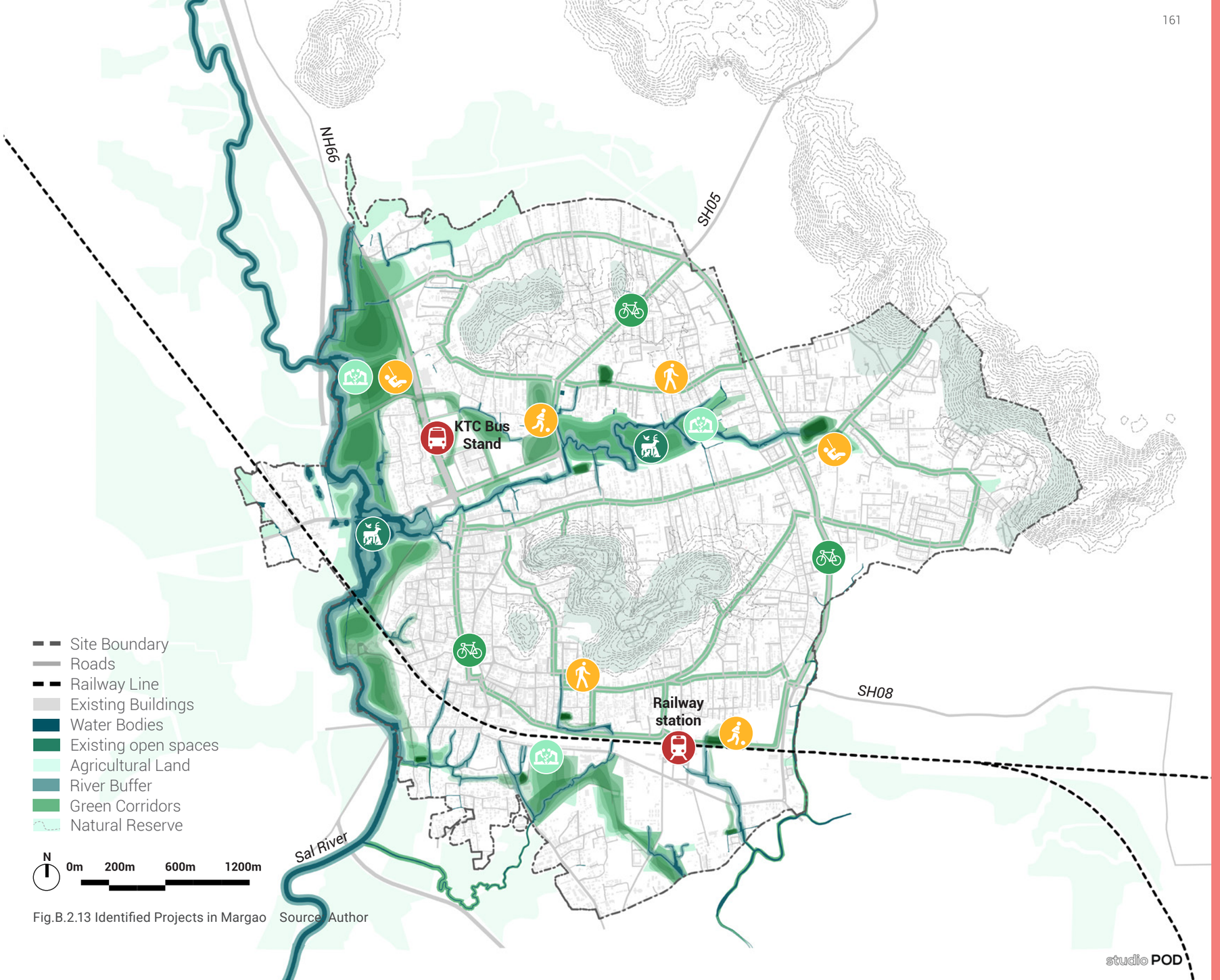


Fig.B.2.13 Identified Projects in Margao Source: Author

Chapter

B.3

Active Public Realm

Active Public Realm



Activate open spaces and create a public space network

Delineates the public spaces within the landscape framework, proposes amenities and programming for the same, and activates view corridors

- Implement a state of the art public realm with well-programmed open spaces
- Create a network of integrated open spaces and a continuous public realm
- Develop public open spaces at different scale levels - from street to the city



Fig.B'3.1 Active Public Realm : Source: Author

studio POD



Fig.B.3.2 Programed open space - Municipal Garden. Source: Author.



Fig.B.3.3 Unprogrammed open space in Margao being used by women and children. Source: Author.

B.3.1. Summary of Issues in Margao

B.3.1.1. Existing Open Spaces in Margao

Currently, there are only a handful of open spaces that have been programmed as parks or gardens in the city. These are not enough to cater to the entire population of Margao. While the ODP has demarcated several open spaces (roughly 2.97% of the land use) these are not evenly distributed throughout the city. Moreover, the amount of Open Space required per person according to WHO is 9 sqm. Currently in Margao only 4 sqm per person is available.
There are several unprogrammed open spaces in Margao. Some of these spaces are also being used by the residents of the neighbourhood. Currently, these spaces are left barren and have uninviting edges.

Lack of sufficient **programmed open spaces** *in the city*

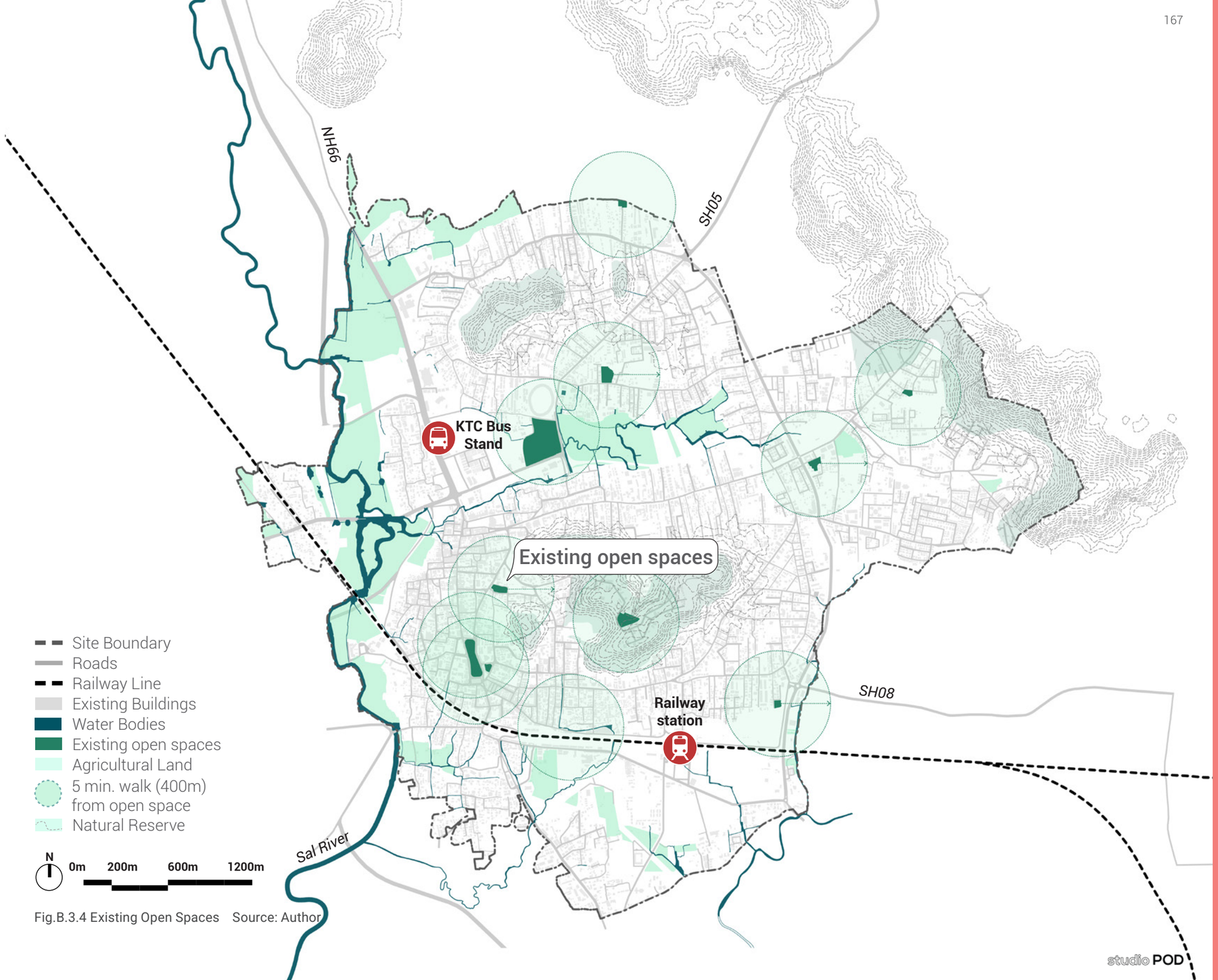


Fig.B.3.4 Existing Open Spaces Source: Author



Fig.B.3.5 Unprogrammed open spaces at neighbourhood level. Source Author



Fig.B.3.6 Unaccesible open spaces at city level. Source Author



Fig.B.3.7 Unkempt open spaces along Sal River. Source Author



Fig.B.3.8 Existing streets with potential to become green corridors. Source Author

B.3.2. Network of Programmed Open Spaces

B.3.2.1. Open Space Strategy

Open Spaces in Margao are programmed according to the scale of accessibility of the spaces. These are divided into City Level and Neighbourhood Level Open Space Strategies.

City Level Open Spaces include larger spaces that cater to the entire city and offer unique experiences such as riverfront and city parks and sports grounds, public spaces and view points on hillocks, and green corridors.

Neighbourhood Level Open Spaces include spaces that are accessible within a 5 minute walk from residential areas such as parks, play areas and community gardens. These also include shared streets with ample space for pedestrians in residential streets.

Open Space Strategy according to **scale and accessibility**

Open Spaces in Margao

City Level

- Riverfront Public Spaces
- Large City Parks
- Urban Forest
- Public Spaces on Hillocks
- Green Corridors

Neighbourhood Level

- Public Spaces in Commercial Areas
- Community Gardens/ Productive Greens
- Play Areas and Parks
- Shared Streets

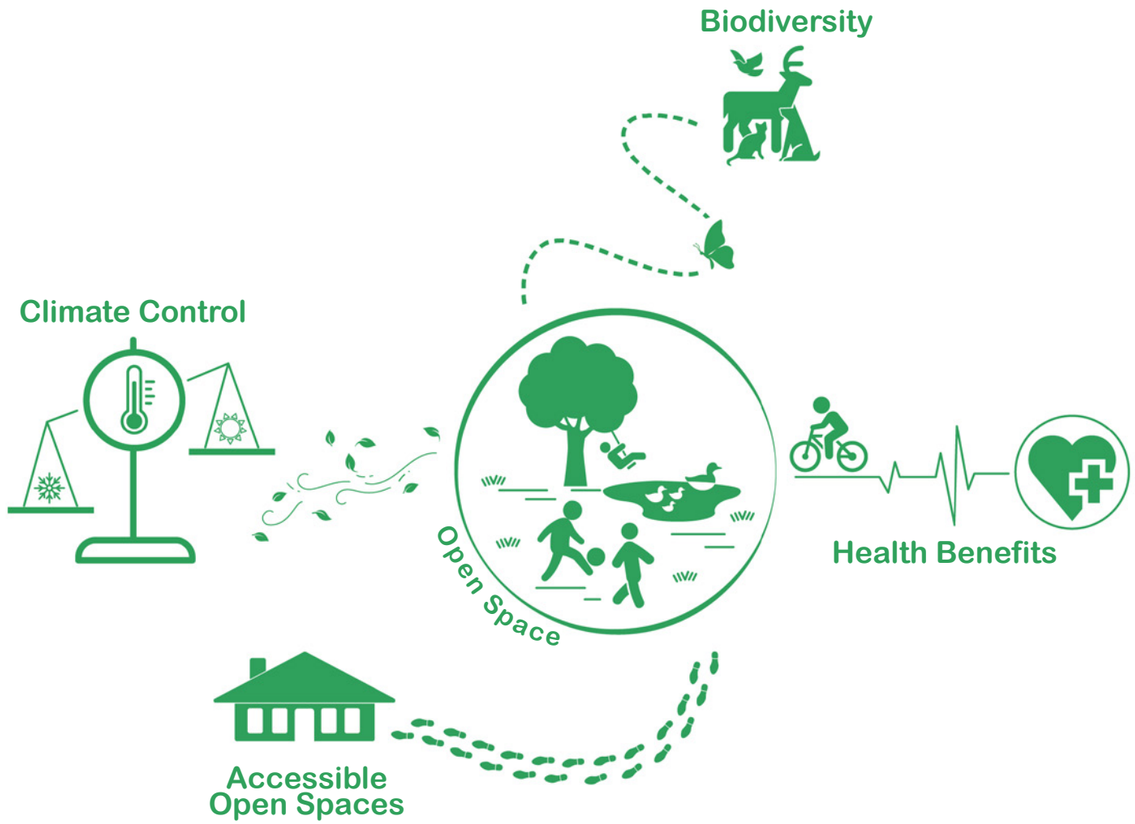


Fig.B.3.9 Benefits of Open Spaces. Source Author



Fig.B.3.10 Bishan Ang Park in Singapore. Source: Ramboll.



Fig.B.3.11 Red Ribbon Park. Source: ArchDaily



Fig.B.3.12 Meersbrook Park in Sheffield. Source: Welcome to Sheffield.



Fig.B.3.13 Ulu Pandan Park Connector. Source: Park Connector Network

B.3.2.2. City Level Open Spaces

City Level Open Spaces include larger spaces that cater to the entire city. These spaces are defined either by the necessity of creating city-wide gathering areas such as sports grounds, stadiums, city parks and public plazas, or by the unique experiences offered by the natural environment itself, such as riverfront spaces and public spaces on hillocks which provide panoramic views of the city and surrounding landscape.

Wide variety *of programmed City Level Open Spaces provided*

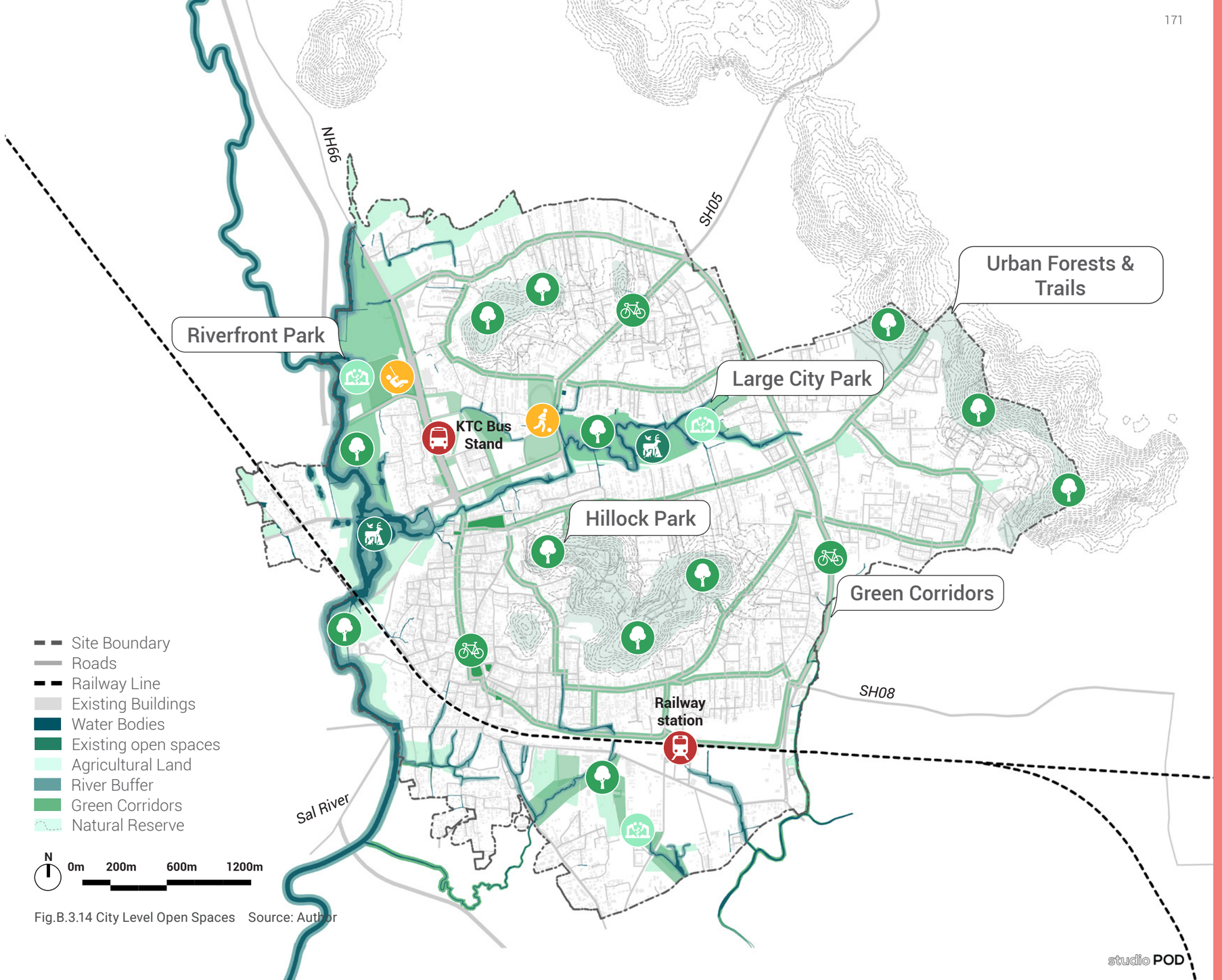


Fig.B.3.14 City Level Open Spaces Source: Author



Fig.B.3.15 Commercially owned public space at 1166, 16th Ave., NYC (POPS). Source: nyc.gov



Fig.B.3.16 Community Garden, Sporta pils, Riga. Source: Public Space



Fig.B.3.17 Songzhuang micro park, Beijing. Source: Design Boom



Fig.B.3.18 Woonerf in The Netherlands. Source: Urban Mobility Courses

B.3.2.3. Neighbourhood Level Open Spaces

Neighbourhood Level Open Spaces include spaces that are accessible within a 5 minute walk from residential areas such as parks, play areas and community gardens. These also include shared streets with ample space for pedestrians in residential streets. These spaces are defined by the necessity for public spaces to cater to everyday activities and public health. The emphasis at this level is on accessibility for all.

Programmed Neighbourhood Level Open Spaces within a **5 minute walk**

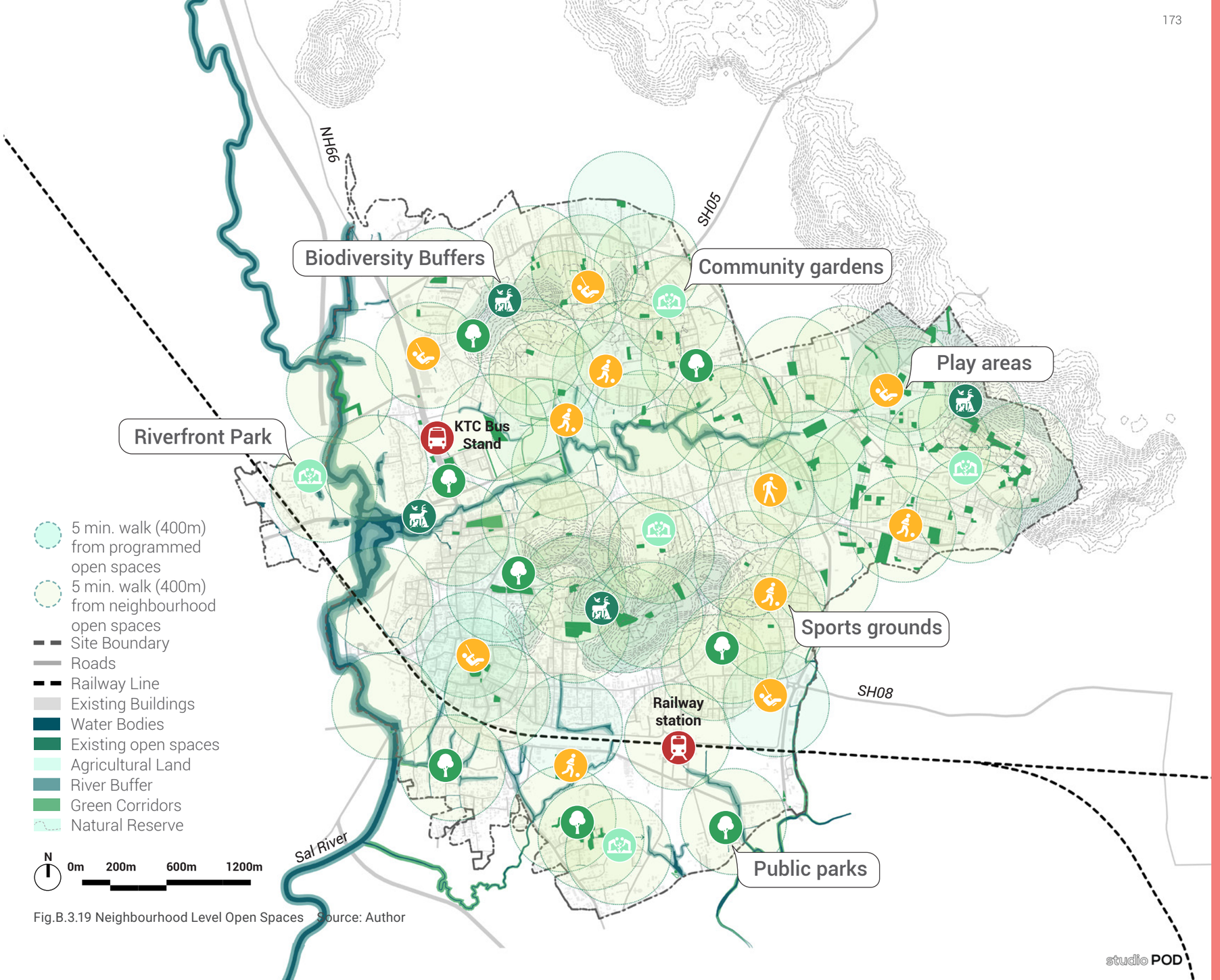


Fig.B.3.19 Neighbourhood Level Open Spaces Source: Author



Active Public Realm

B.3.3. Identified List of Projects

B.3.3.1. Priority Projects

- Rejuvenate the Margao Municipal Garden and Aga Khan Children's Park and the adjoining plaza to be more public friendly and inclusive
- Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development
- Develop the Sonsode Urban Forest Park.

B.3.3.2. Other Projects

- Program and design open spaces as an overall strategy that are easily accessible by all
- Create a No-build Green Buffer of 20m along the Sal river to protect river edge with promenades, pavilions & leisure spaces
- Develop a Biodiversity Park for the heart of Margao that acts as a sponge park and city park

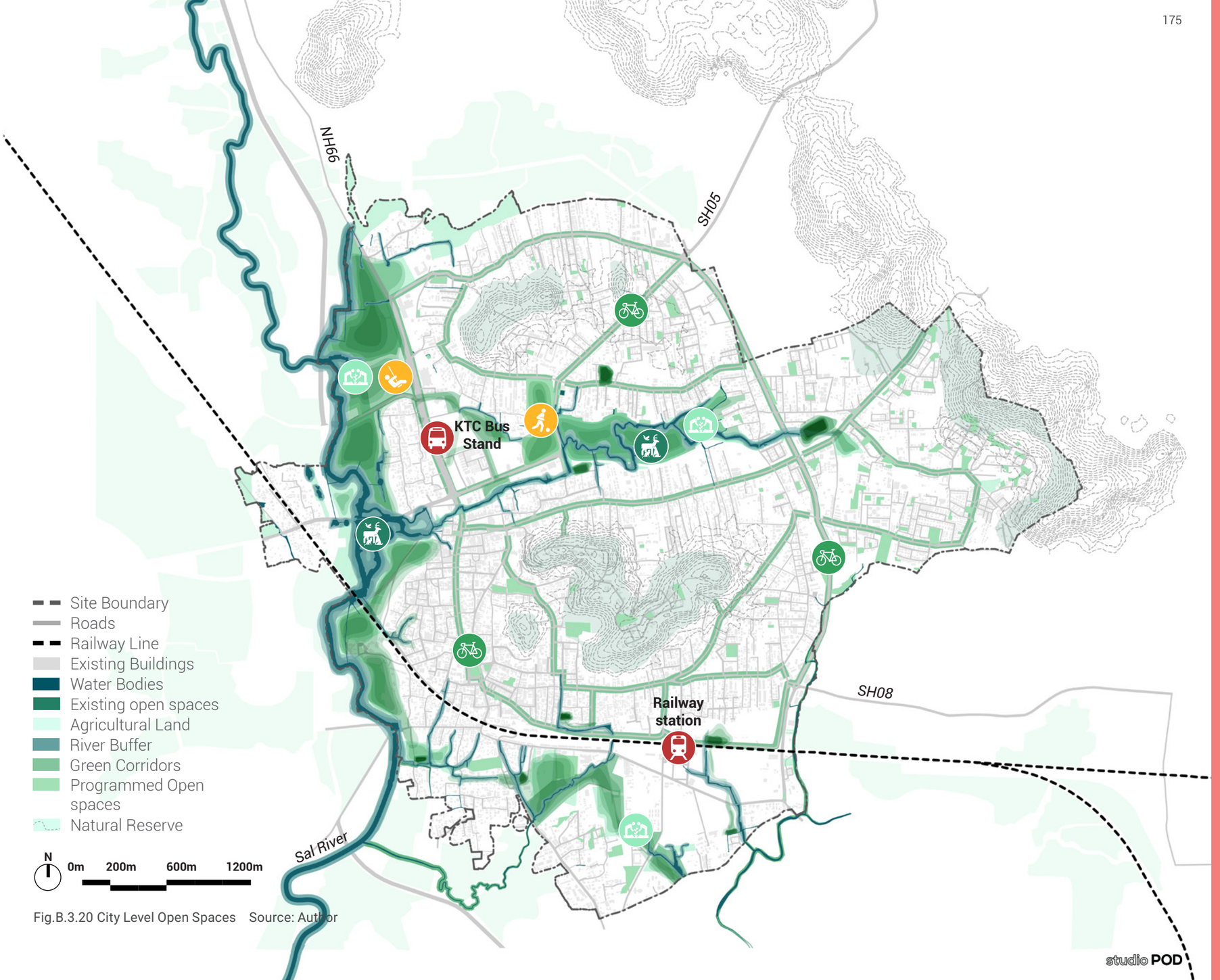


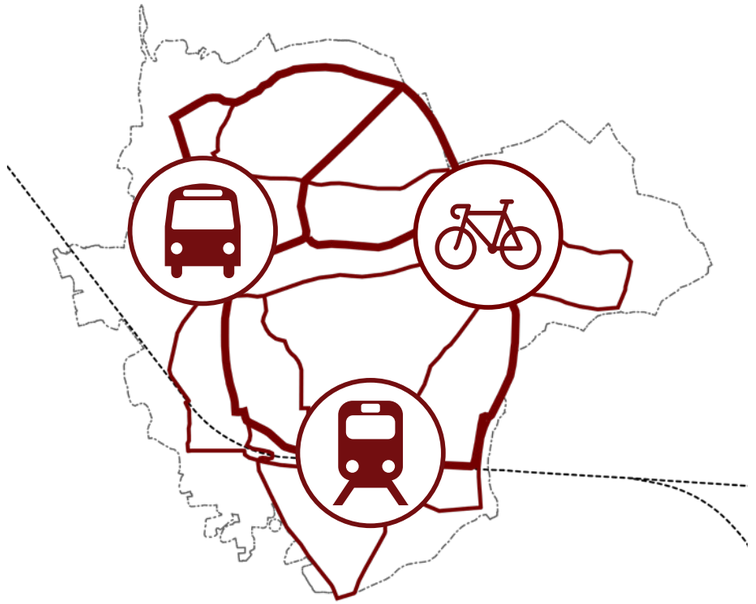
Fig.B.3.20 City Level Open Spaces Source: Author

Chapter B.4

Integrated Public Transit

studioPOD

Integrated Public Transit



Create a well-connected and accessible transit system for the city

Outlines a transportation, circulation plan for Margao

- Introduce an integrated public transit system for the entire city of Margao
- Design streets for public transport and non-motorised transport
- Introduce a multi-modal transit hub for seamless movement through the city



Fig.B.4.1 View through the Transit Station Source: Author



Fig.B.4.2 Traffic Congestion and Parking near the MMC New Market. Source: Author.



Fig.B.4.3 Large exapnse of private vehicle parking at the Railway Station. Source: Author.

B.4.1. Summary of Issues in Margao

B.4.1.1. Lack of Public Transport

While Margao is home to the main railway station in Goa and one of the major KTC Bus stands in the state, the intra-city public transport network is inadequate and does not cover all parts of the city. There is a lack of a robust and legible public transit system within the city, and between the KTC Bus Stand and Madgaon Junction railway station.

B.4.1.2. Private vehicle use and traffic congestion

Due to the lack of public transport, there is a heavy reliance on private vehicles for commuting within the city. This has resulted in large areas of parking being designated at the railway station and near the bus stand. Additionally, there is a lot of traffic congestion on the narrow streets of the city centre and lack of sufficient parking spaces for the number of vehicles on the road. This is also due to the NH66 carrying through traffic through the centre of the city.

Traffic congestion due to **lack of sufficient infrastructure**

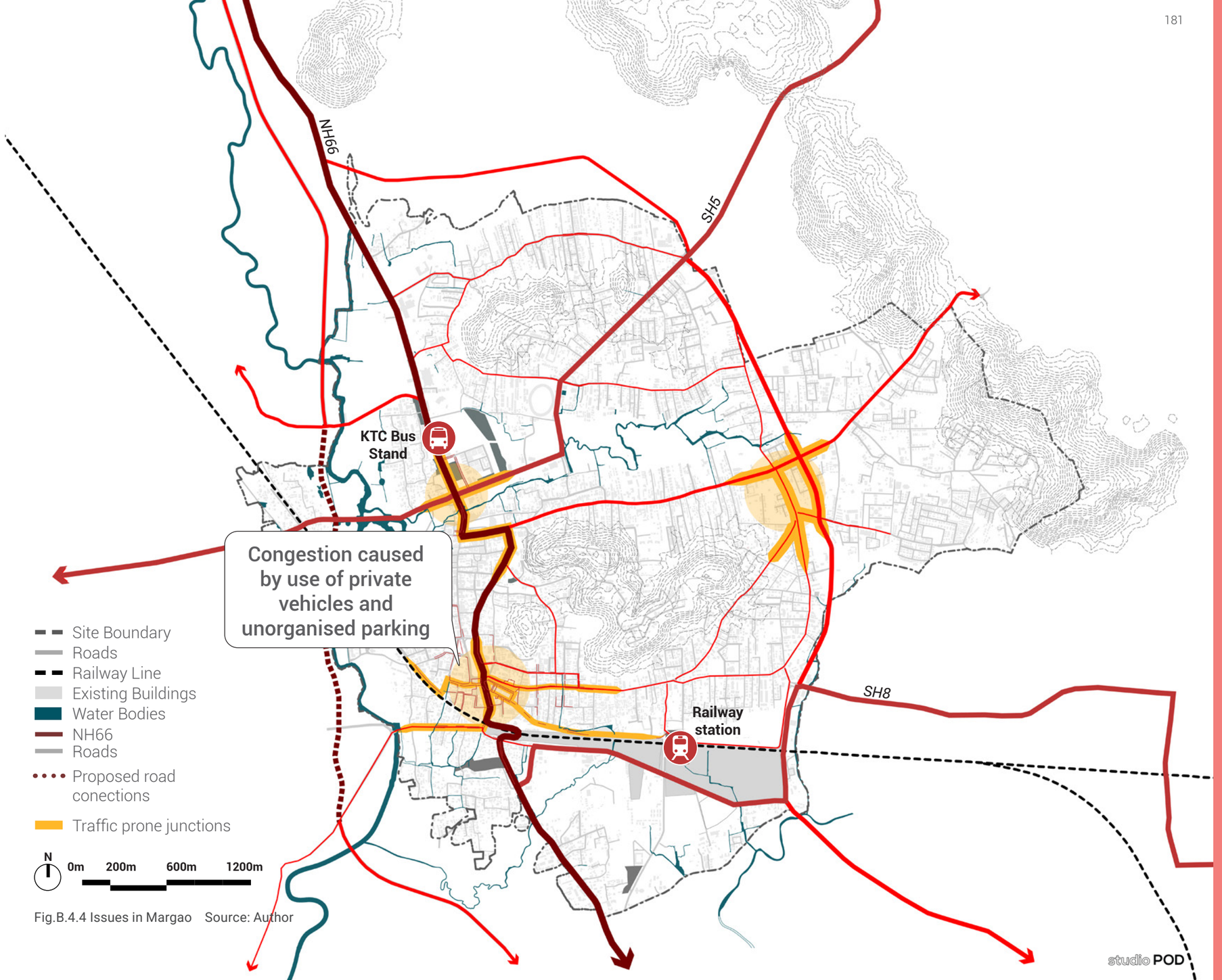


Fig.B.4.4 Issues in Margao Source: Author



Fig.B.4.5 Comba By-pass Road along the railway line. Source: Author.



Fig.B.4.6 Comba By-pass Road along the railway line. Source: Author.

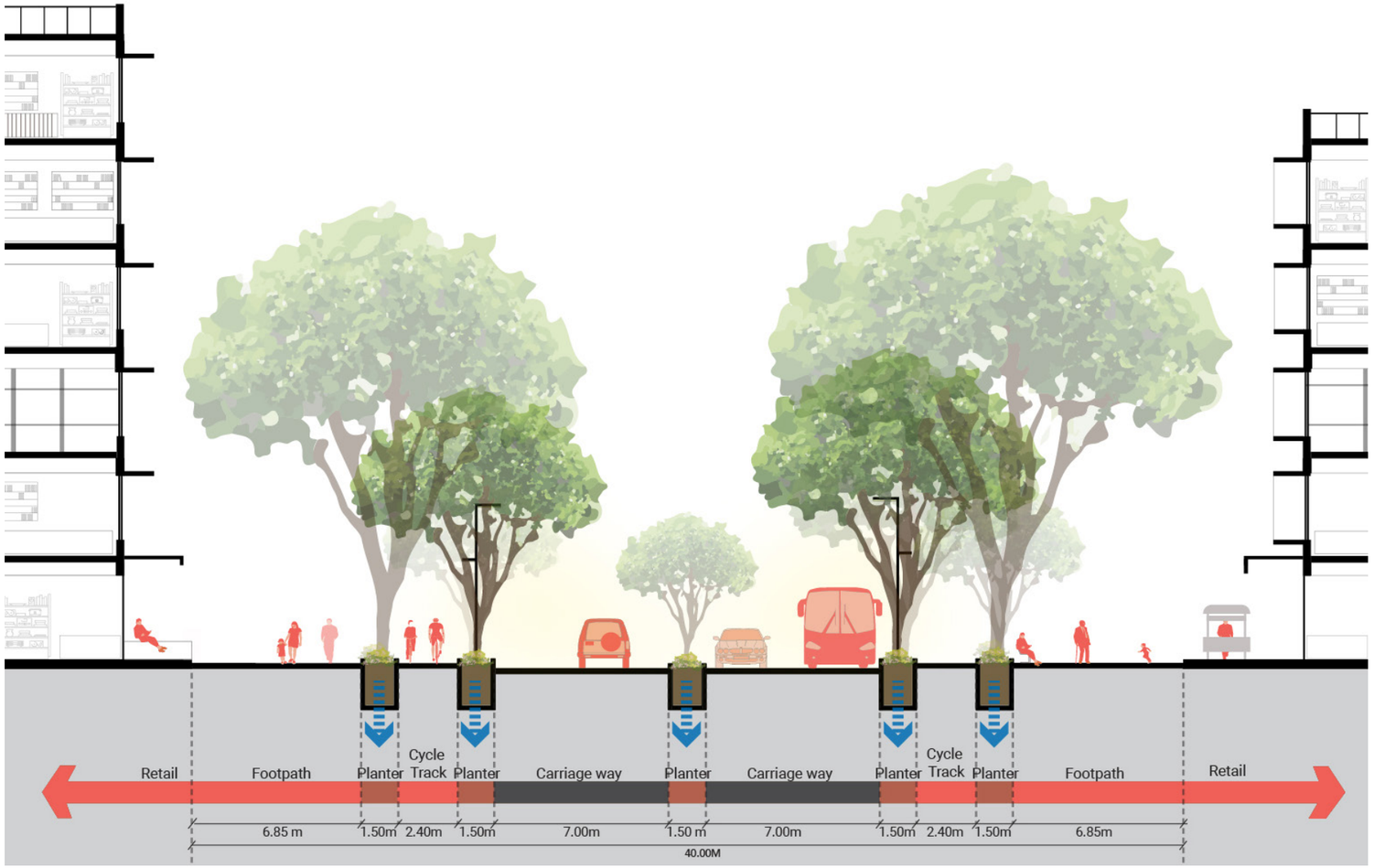


Fig.B.4.7 40M ROW Street Section for NH66. Source: Author.

B.4.2. Proposed Connections

The Western By-pass road is currently under construction along the Sal river. Once it is completed, traffic through the city will be relieved. Additionally, the Comba By-pass road is proposed to be linked with the road that accesses the station in order to further shift through traffic away from the burdened streets in the city centre. This will significantly reduce the number of private vehicles in the centre.
As the NH66 will get de-notified as a National highway it will be upgraded to become more pedestrian friendly

External connections *to relieve traffic congestion in city centre*

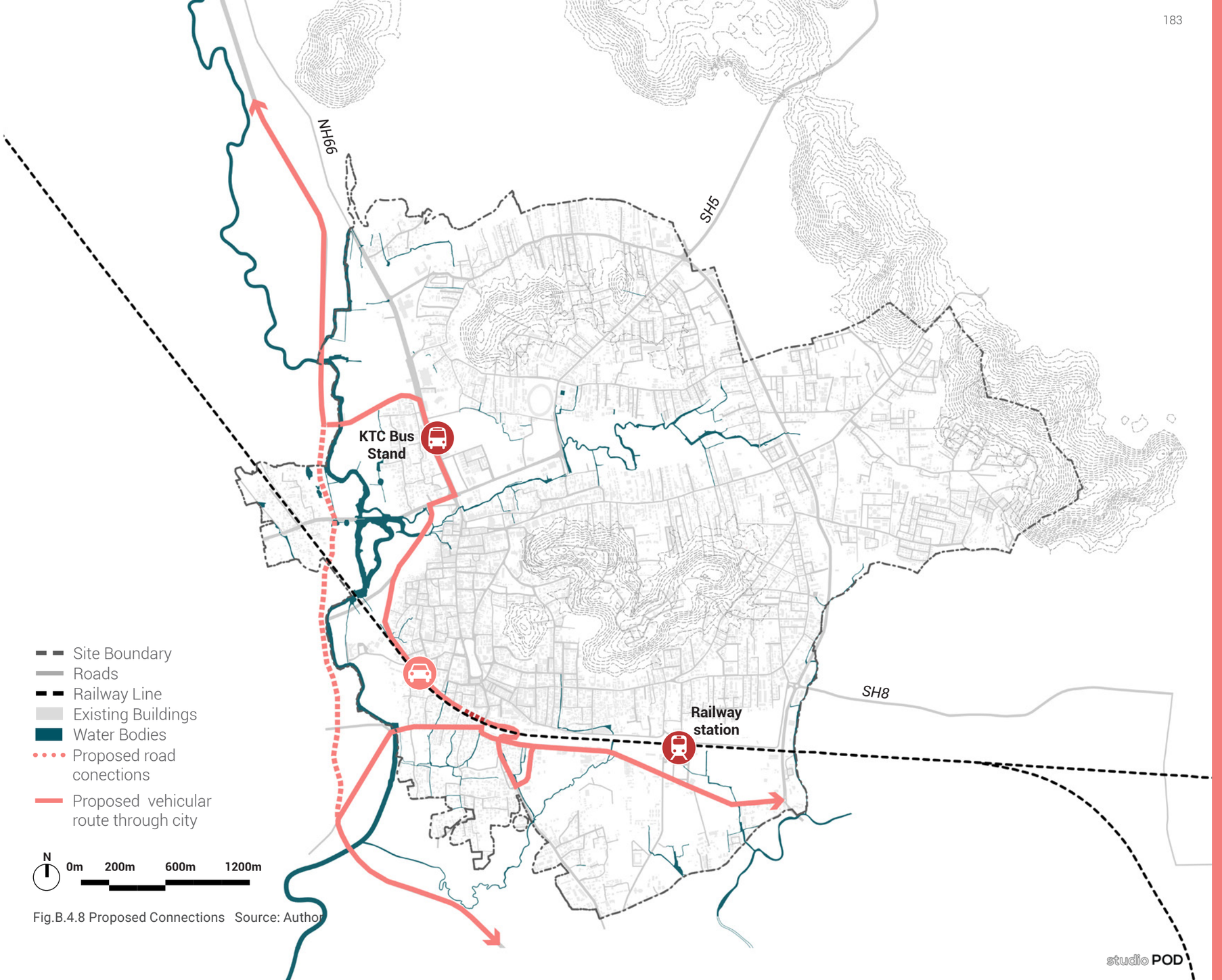


Fig.B.4.8 Proposed Connections Source: Author



Fig.B.4.9 Public Transit in Istanbul. Source: The Turkey Traveler.



Fig.B.4.10 Shuttle Buses in Male. Source: PSM News.

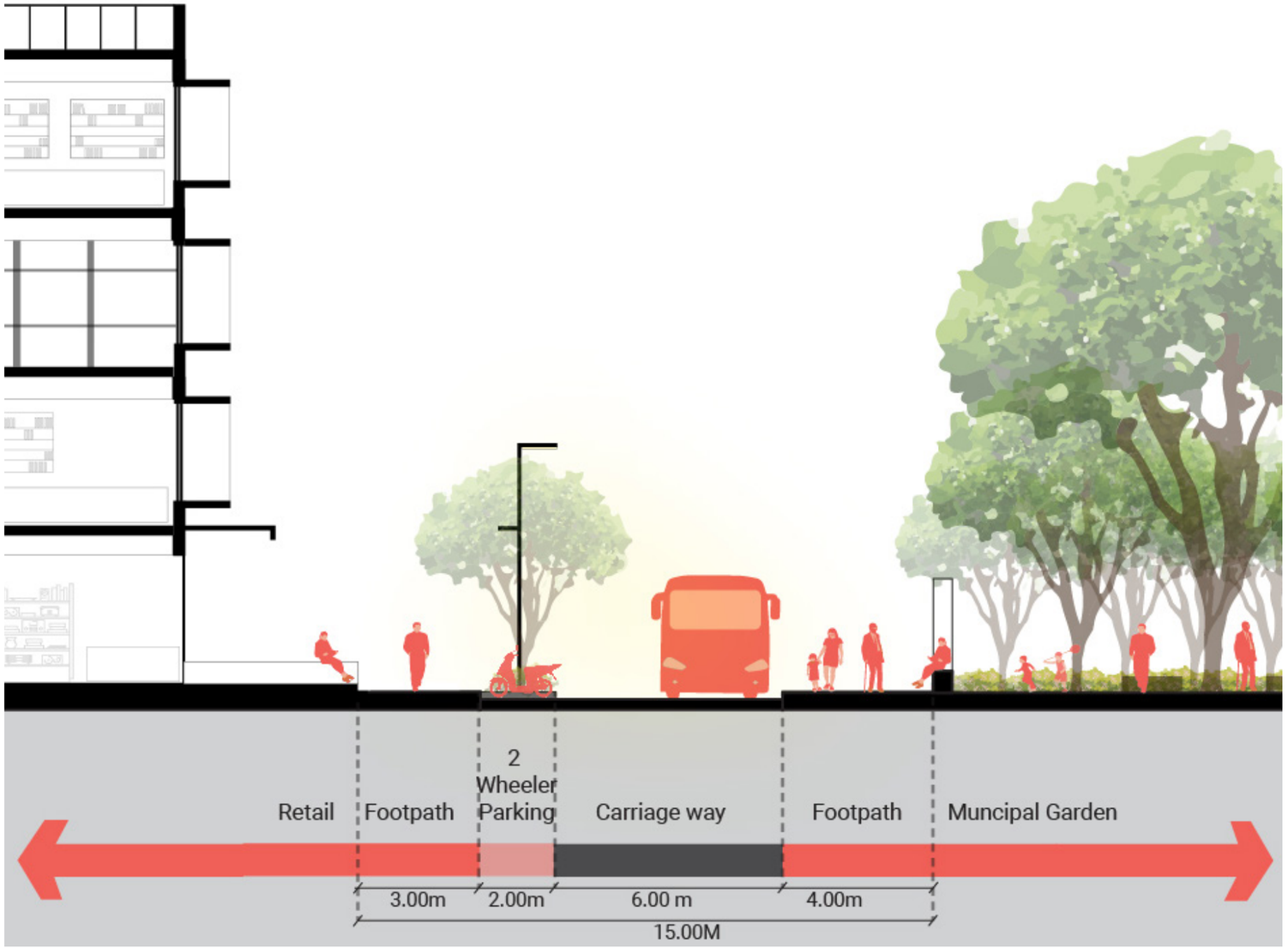


Fig.B.4.11 15M ROW Street Section for streets around municipal garden. Source: Author.

B.4.3. Public Transit Loops

In addition to the by-pass road link, a robust and hierarchical public transit network is proposed in order to connect the entire city and facilitate intra-city mobility. This includes buses and shuttles that connect major nodes and residential neighbourhoods, forming nested loops with bus/ shuttle stops every 750-800m in order to make them accessible within a 5 minute walk.
A dedicated Bus only lane will be created in the city centre along the Municipal garden that will pedestrians to use the public plaza and park without any danger from four wheeler traffic.

16.8 km *of primary public transit streets*

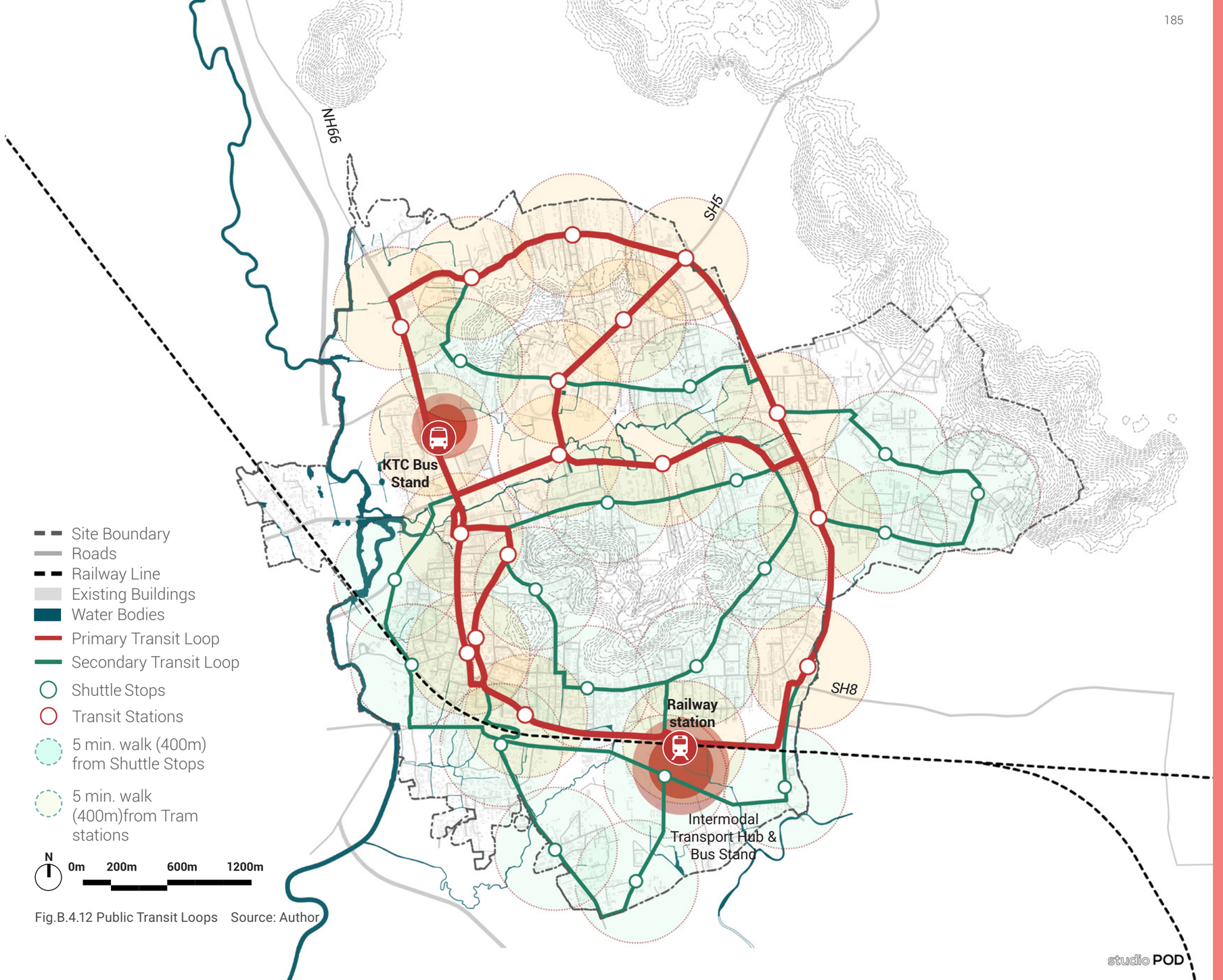


Fig.B.4.12 Public Transit Loops Source: Author



Fig.B.4.13 Cycle lane in Cambridge. Source: Simon MacMichael.



Fig.B.4.14 Ulu Pandan Park Connector. Source: Park Connector Network.

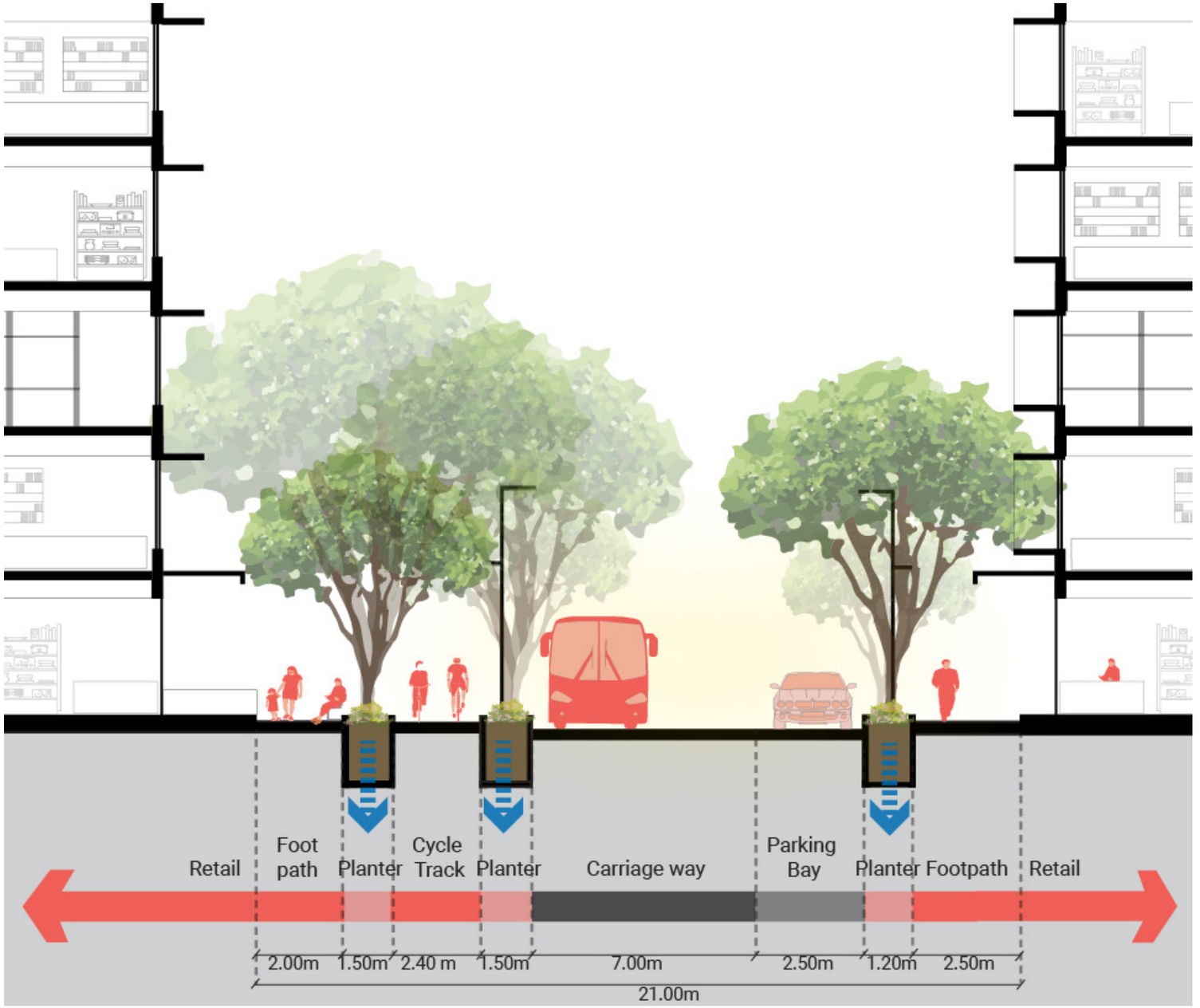


Fig.B.4.15 20M ROW Street Section for streets in south side of Margao. Source: Author.

B.4.4. Non-Motorised Transport Infrastructure

The major corridors are proposed to include Non-Motorised Transport infrastructure in order to better integrate different areas and offer alternative mobility options. Cycle lanes and walking tracks are also provided within large public spaces and recreational edges, eventually connecting to the larger mobility network to facilitate easy access to major destinations within the city.
Upgrading the street section with dedicated bicycle lane along carriageway will further reduce traffic congestion and make street pedestrian friendly

Integratingdedicated
bicycle tracks



Fig.B.4.16 Non- Motorised Transport Infrastructure Source: Author



Integrated Public Transit

B.4.5. Identified List of Projects

B.4.5.1. Priority Projects

- Creating a Heritage Loop with public transit access (e-shuttle buses) and pedestrian friendly streets
- Develop the Inter-Modal Transit Gateway at the Margao Railway Station
- Clocktower Circle, Damodar Circle and Sal-NH66 Junction as Margao Gateway.
- Rejuvenate the Margao Municipal Garden and Aga Khan Children's Park and the adjoining plaza to be more public friendly and inclusive
- Regenerate the Holy Spirit Church area by pedestrianising streets and restricting vehicular traffic
- Regenerate the Market Street

B.4.5.2. Other Projects

- Identify and develop gateways at the main entry points into Margao
- Connect the Comba By-pass with the Old Station Road to relieve congestion in city centre
- Introduce and develop a public transit system in the city of Margao
- Upgrade streets with dedicated bicycle lanes and pedestrian friendly footpaths

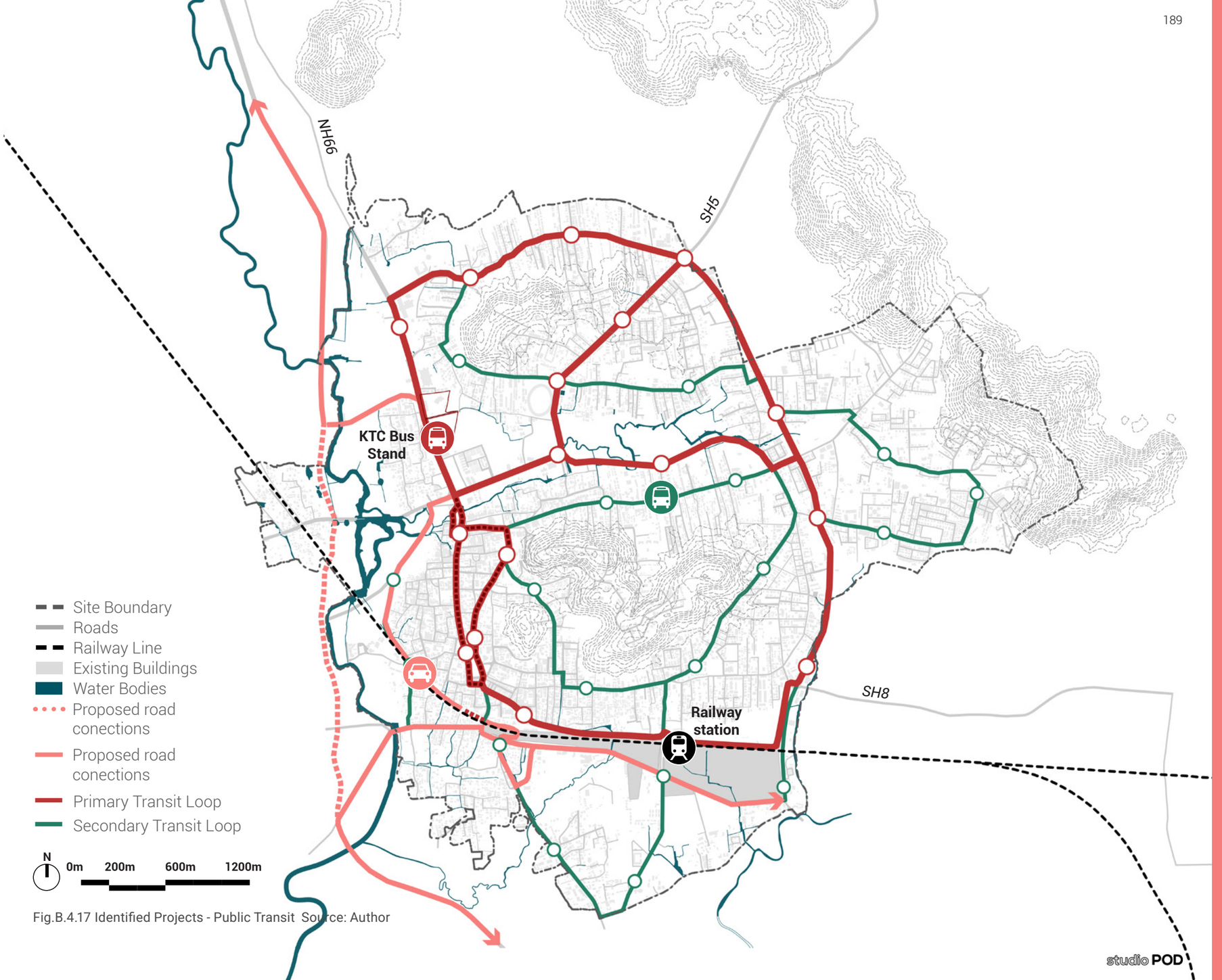
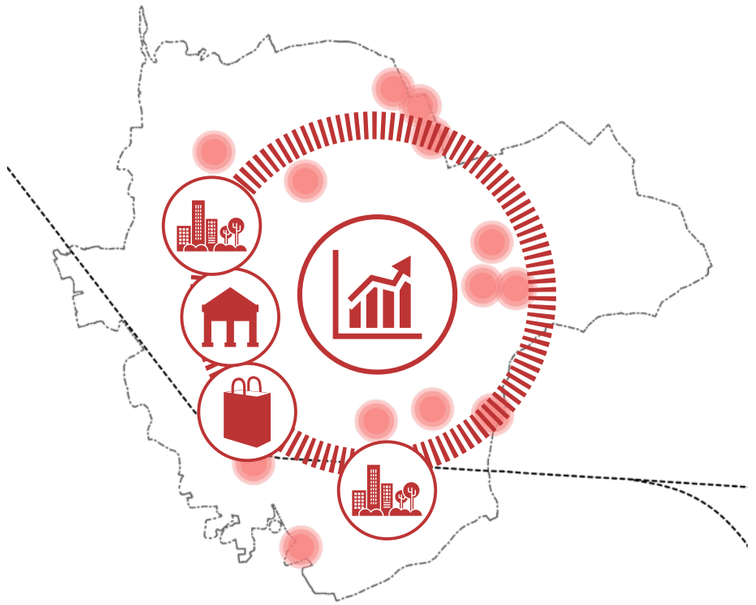


Fig.B.4.17 Identified Projects - Public Transit Source: Author

Chapter B.5

Diverse Economy

Diverse Economy



Create diverse opportunities and unique identities in the city

Proposes economically diverse character zones within the city with specific land uses, programming and massing

- Develop a new economic strategy for Margao-Fatorda: **Develop-Celebrate-Regenerate**
  - Develop new economic anchors within Margao
  - Celebrate the history and heritage of the city
  - Regenerate the centre of the city and activate public spaces



Fig.B.5.1 View through the Holy Spirit Church Area. Source: Author



Fig.B.5.2 Chaos in narrow streets, no segregation for pedestrian and vehicular movement due to street parking. Source: Author



Fig.B.5.3 Organized SGPDA market complex with dedicated parking space. Source: Author



Fig.B.5.4 Unorganized parking in front of new commercial complex. Source: Author



Fig.B.5.5 Steel works and repair shops streets present in the Southern zone of Margao. Source: Author

B.5.1. Existing Economic Nodes & Issues

B.5.1.1. Commercial Areas

- Old Market area is dense, historic, but is congested and deteriorating, and needs urgent strategic rethinking
- New market area has upgraded infrastructure around it, and has more potential to grow as an economic hub
- New commercial buildings in smaller neighbourhoods are haphazard in nature
- South of station area is under-developed and needs better integration with the rest of the city

Current economic generators & commercial areas are ***underdeveloped***

B.5.1.2. Economic Drivers

Main economic activity:

- Wholesale Market (fish, vegetables, meat) catering to different parts of the state
- Tourism - connection to Colva beach and other spots
- Secondary Industry (Margao Industrial Estate) manufacturing, packaging, processing industries

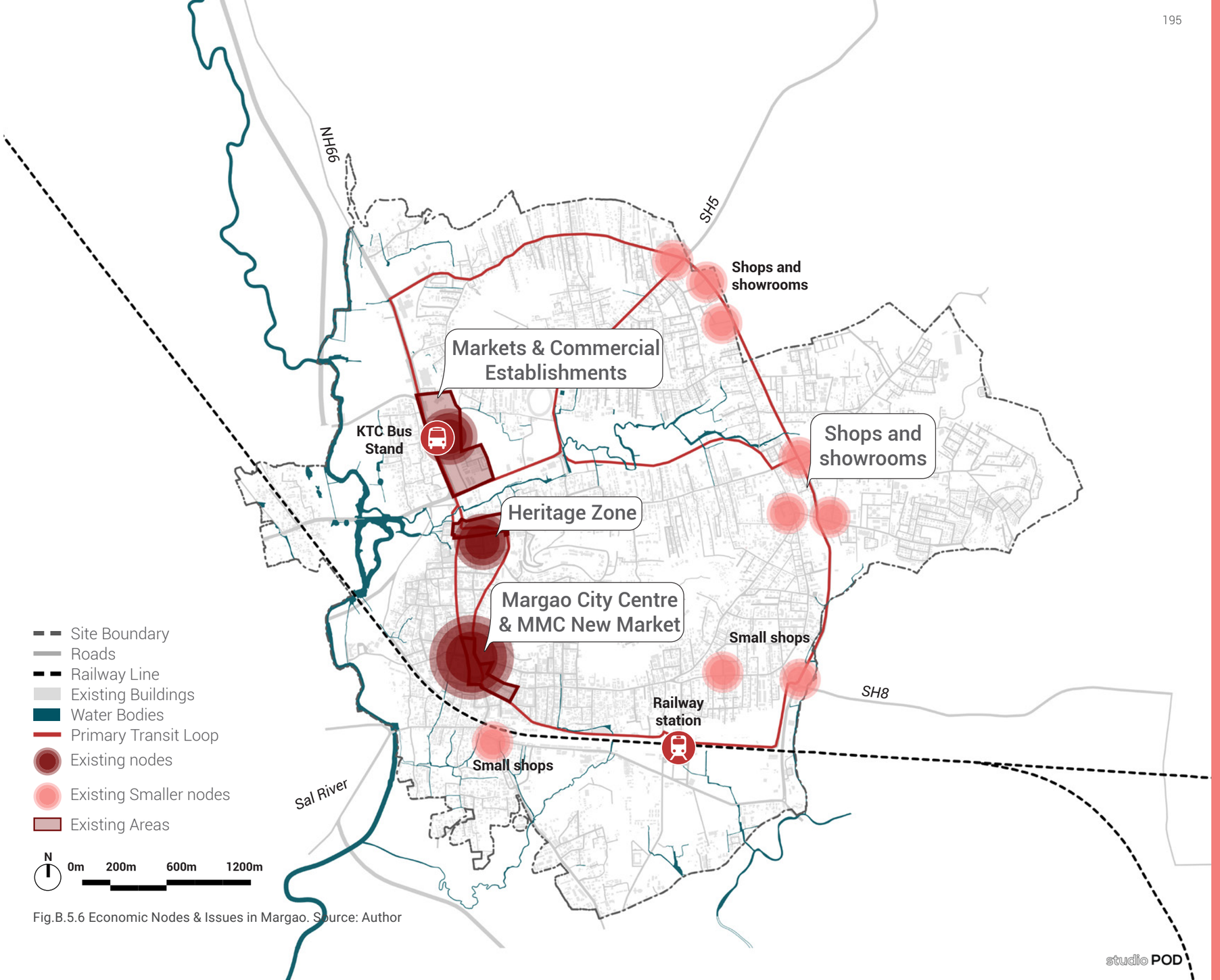


Fig.B.5.6 Economic Nodes & Issues in Margao. Source: Author



Fig.B.5.7 Farm to Table Restaurant, Noida. Source: LBB



Fig.B.5.8 Holy Spirit Church, Margao. Source: Author

B.5.2. Identifying economic opportunities

Margao's rich heritage, surrounding ecology, tourism and underdeveloped southern side possess potential to be explored for generating revenue and advancing the economy of Margao. With the help of planning strategies the following can developed and upgraded

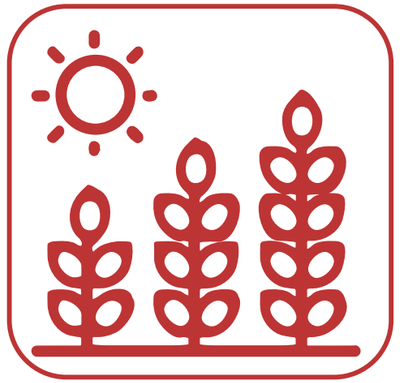


Fig.B.5.9 Chappan food street, Indore. Source: Mappls



Fig.B.5.10 Scion Innovation Hub. Source: Patrick Reynolds, ArchDaily

Using Margao's strengths to **generate and diversify economy**



Agro-tech and agro-tourism industry

Active promotion of agro-tech as an economy is beneficial to the existing agrarian economic ecosystem in Margao. Additionally, agro-tourism must be encouraged in order to make Margao a hub for innovation and growth in agriculture. This will generate more tertiary jobs in support of agriculture.



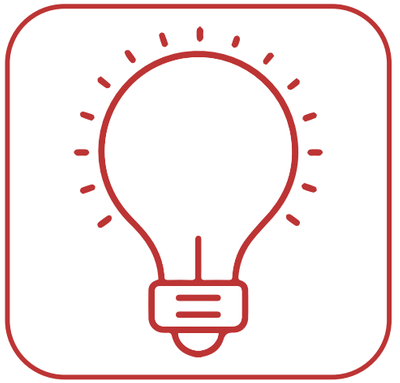
Heritage Tourism

Margao is rich in heritage and hosts over 600 heritage properties and sites according to INTACH. The city has immense potential to support heritage tourism in order to pull more visitors and transform Margao from a transient city to a destination city.



Local Commercial and Retail Businesses

To support the tourism industry several smaller industries and businesses such as restaurants, food shops, laundries etc. need to be developed overtime. Additionally, being the commercial capital of the state, Margao requires infrastructure for new commercial districts to be set up.



Innovation Hub

As a future vision for Margao, a new innovation district will be created in the south, which will support other industries and make Margao a destination for industrial innovation. The proximity of the railway station and industrial estates close to the city offer a lot of potential for the hub to thrive.



Fig.B.5.11 NH66 as a Civic and Commercial Corridor. Source: Author

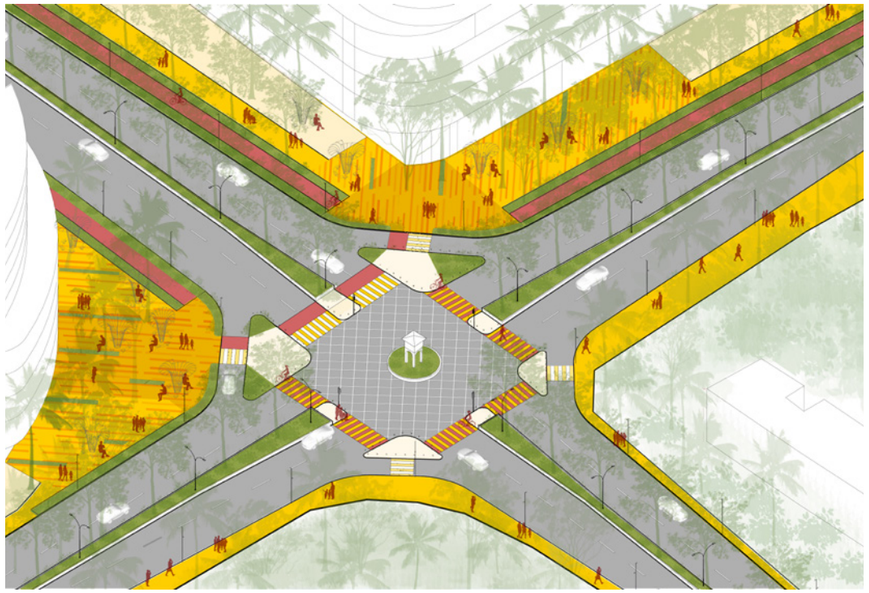


Fig.B.5.12 Upgrading clock tower intersection. Source: Author



Fig.B.5.13 Existing condition of NH66. Source: Author



Fig.B.5.14 Existing condition of clock tower intersection. Source: Author

B.5.3. Proposed Economic Nodes

B.5.2.1. Regenerate NH66 - Civic & Commercial Corridor

The NH66 is re-imagined from being a major highway within the city to being a civic and commercial corridor connected to the rest of the city via public transit. The bus stand area is envisioned to include retail and commercial uses.

Regenerate NH66
as a Civic & Commercial Corridor

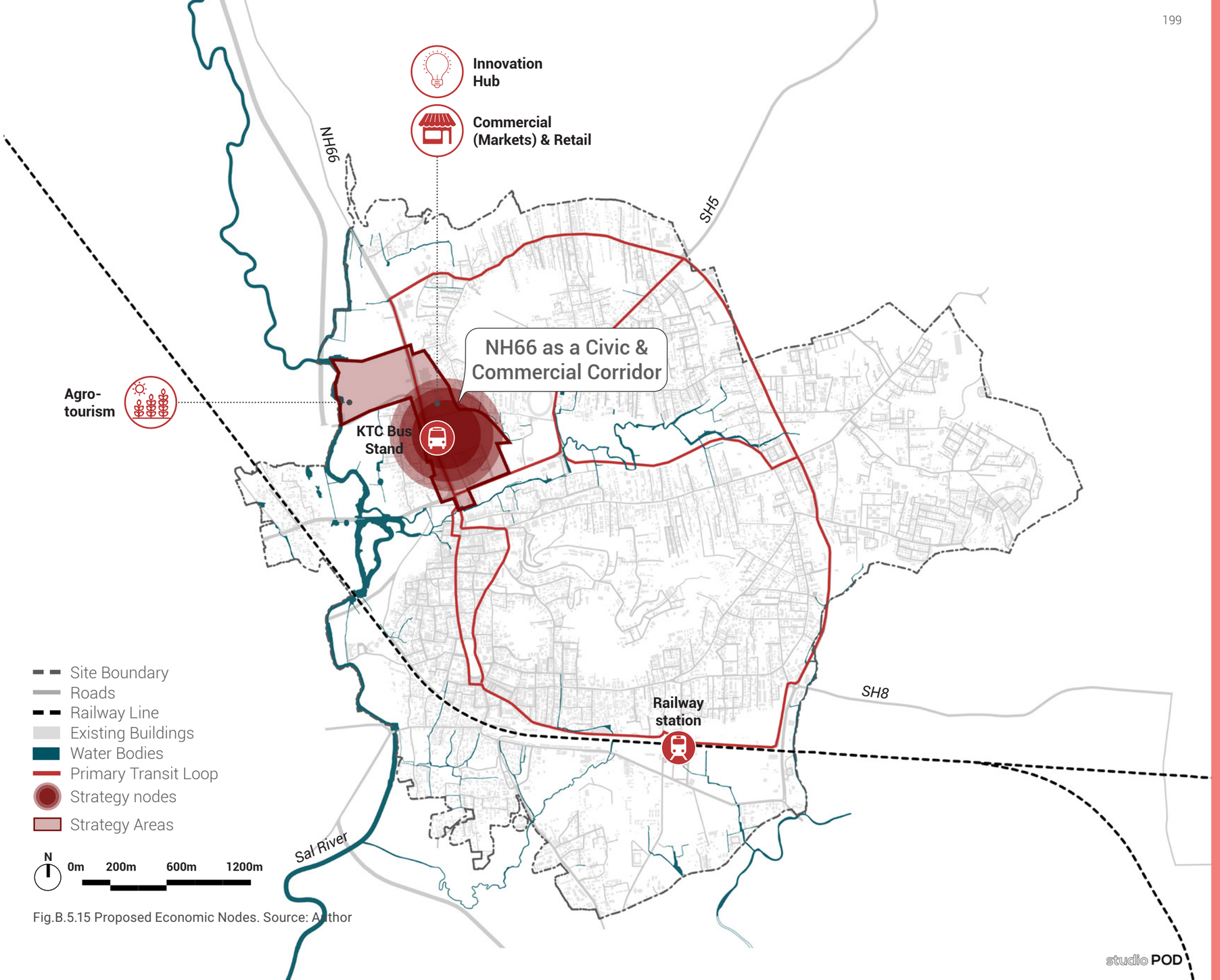


Fig.B.5.15 Proposed Economic Nodes. Source: Author



Fig.B.5.16 Margao City Centre and Market area as the Vibrant Heart of the city. Source: Author



Fig.B.5.17 Holy Spirit Church area as a Heritage Tourism Hub. Source: Author



Fig.B.5.18 Aga Khan Park. Source: Author



Fig.B.5.19 Holy Spirit Chirch area. Source: Author

B.5.3.1. Regenerate Margao Centre as a Vibrant Heart

The Margao Municipal Garden and MMC Market area are redeveloped to reduce private vehicles and encourage public transport use. In addition, pedestrian plazas and streets are created in order to facilitate movement in the area. A museum is proposed that will house the history of Margao and South Goa.

B.5.3.2. Celebrate Heritage in Holy Spirit Church Area

The Holy Spirit Church area, which is rich in heritage is celebrated by creating pedestrian plazas and streets in order to encourage people to best experience the rich heritage. The streets are redesigned to prevent dominance of vehicles.

Celebrate and regenerate
the centre of Margao

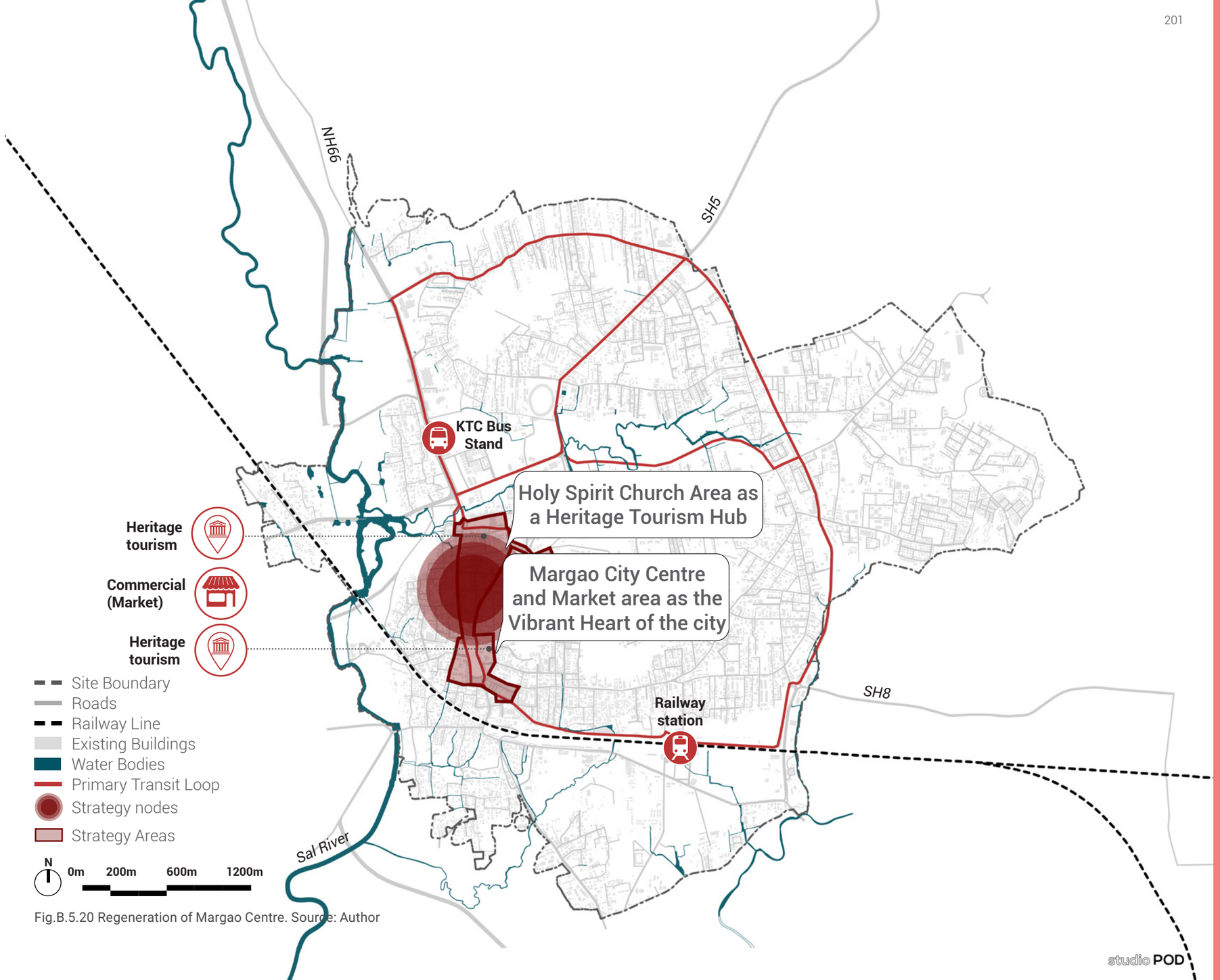


Fig.B.5.20 Regeneration of Margao Centre. Source: Author



Fig.B.5.21 Existing Commercial Commercial spine in Margao South. Source: Author



Fig.B.5.22 Railway Station to be developed as a Multi-modal Transit Gateway. Source: Author



Fig.B.5.23 Existing area marked for Public and Commercial use in the ODP. Source: Author



Fig.B.5.24 Existing area marked as SIP Pressure Conduit on the ODP. Source: Google Street View

B.5.3.3. Develop Margao South as an Innovation Hub

The area south of the railway station is proposed as an Innovation Hub with a new residential district. The railway station is re-imagined as an Inter-Modal Transit Gateway to Margao, connected to the rest of the city via public transit loops. Agro-tech and agro-tourism are proposed in this area.

Develop a new economic identity *for Margao South*

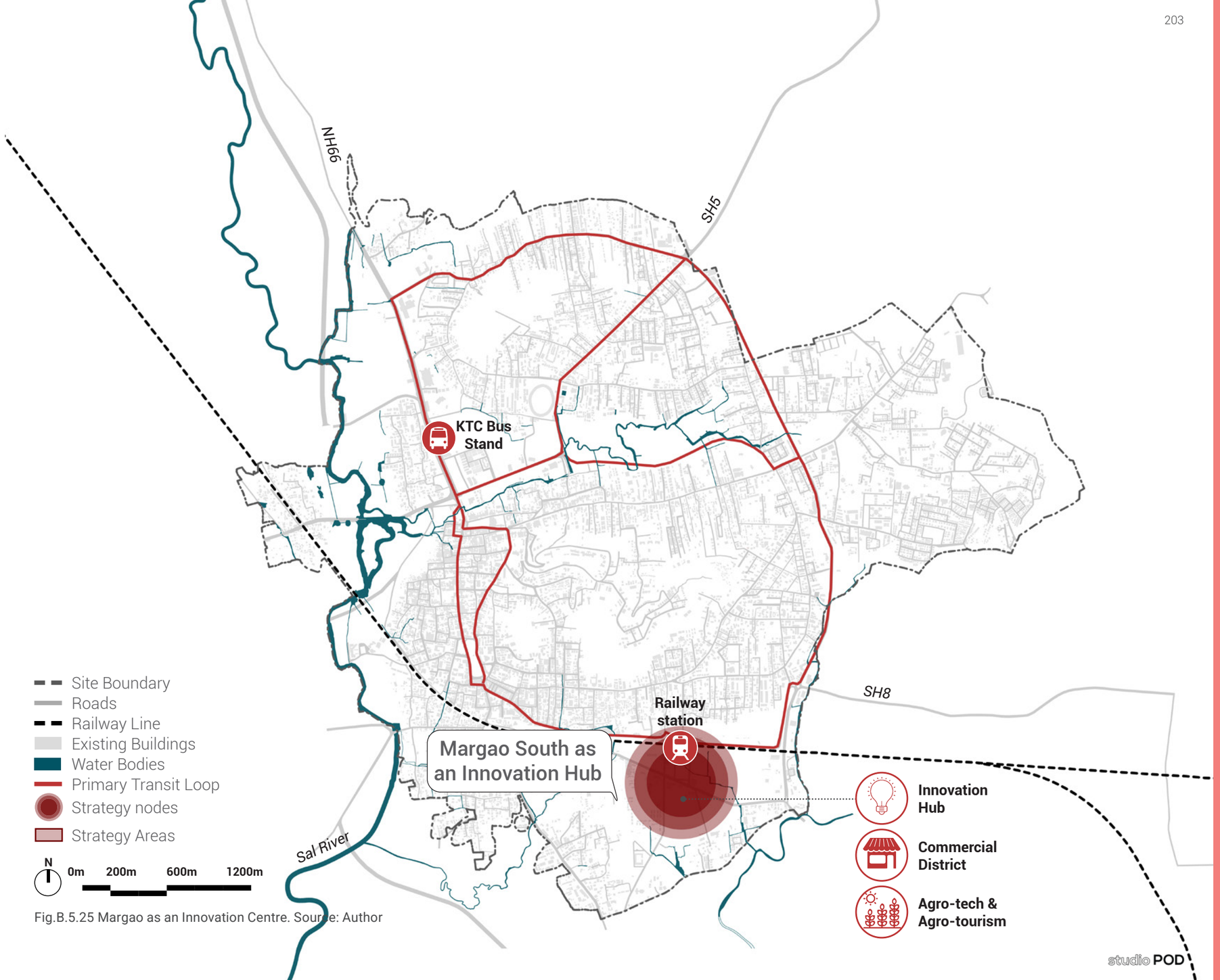


Fig.B.5.25 Margao as an Innovation Centre. Source: Author



Fig.B.5.26 Pedestrian friendly retail street. Source: Architecture and design



Fig.B.5.27 Retail street in Melbourne. Source: Rethinking the future



Fig.B.5.28 Margao Bypass circle existing condition. Source: Google Earth



Fig.B.5.29 Bolshe circle existing conditions. Source: Google Earth

B.5.3.4. Strengthen smaller economic nodes along transit route

The nodes along the primary transit route are imagined to be developed as economic nodes with retail, commercial activities.

Strengthen existing nodes *along the primary transit loop*

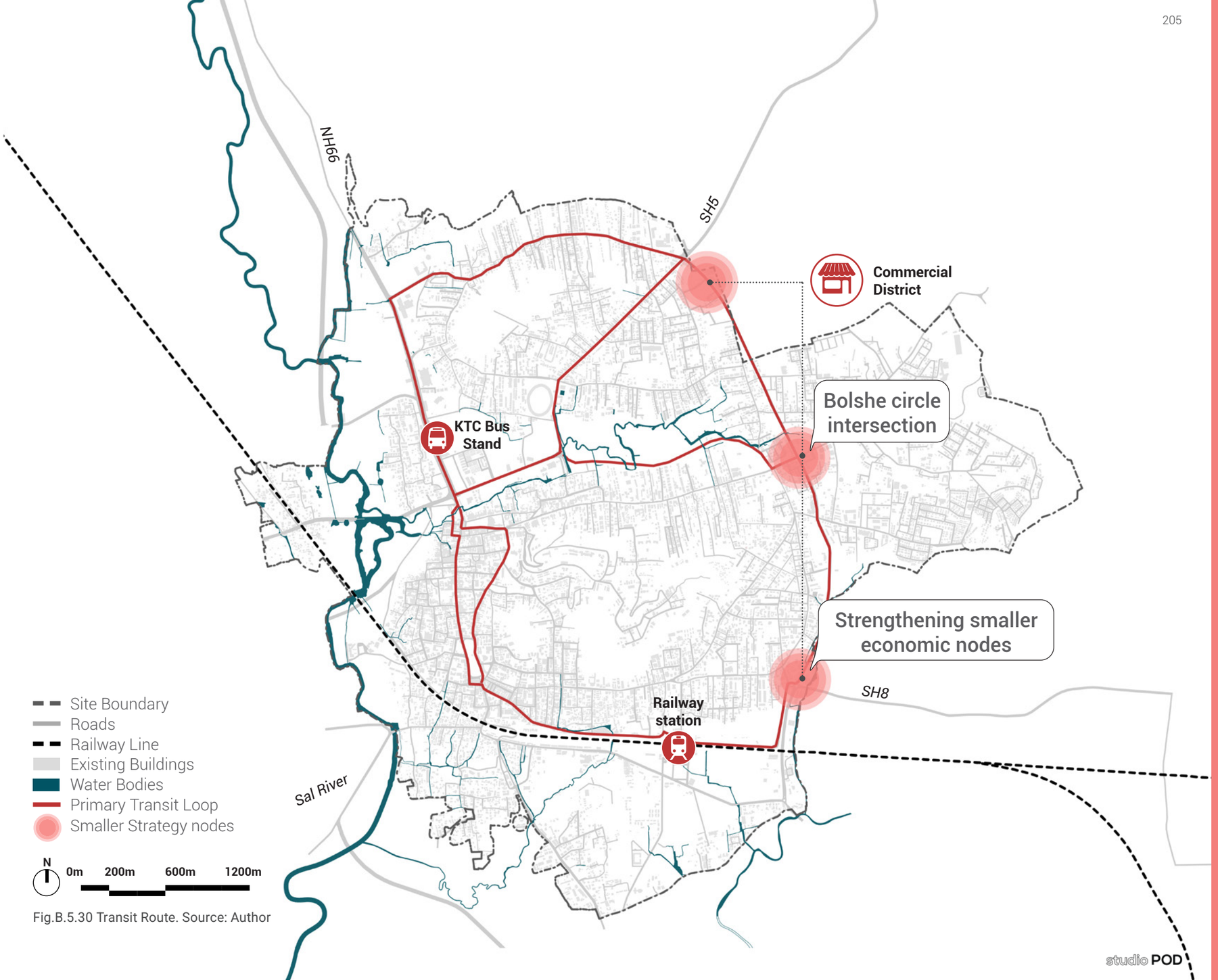


Fig.B.5.30 Transit Route. Source: Author



Diverse Economy

B.5.4. Identified List of Projects

B.5.4.1. Priority Projects

- Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development
- Rejuvenate the Margao Municipal Garden and Aga Khan Children's Paark and the adjoining plaza to be more public friendly and inclusive
- Develop the Museum of South Goa and adjoining plaza in the centre of Margao
- Regenerate the Market Building and Market Street
- Creating a Heritage Loop with public transit access (e-shuttle buses) and pedestrian friendly streets
- Regenerate the Holy Spirit Church area by pedestrianising streets and restricting vehicular traffic
- Develop the Clock Tower Circle as a gateway and entry point into Margao
- Develop the KTC Bus Stand area into a mixed use transit hub.

B.5.4.2. Other Projects

- Develop commercial nodes along the primary loop that promote retail development
- Regenerate NH66 into a Civic & Commercial Corridor

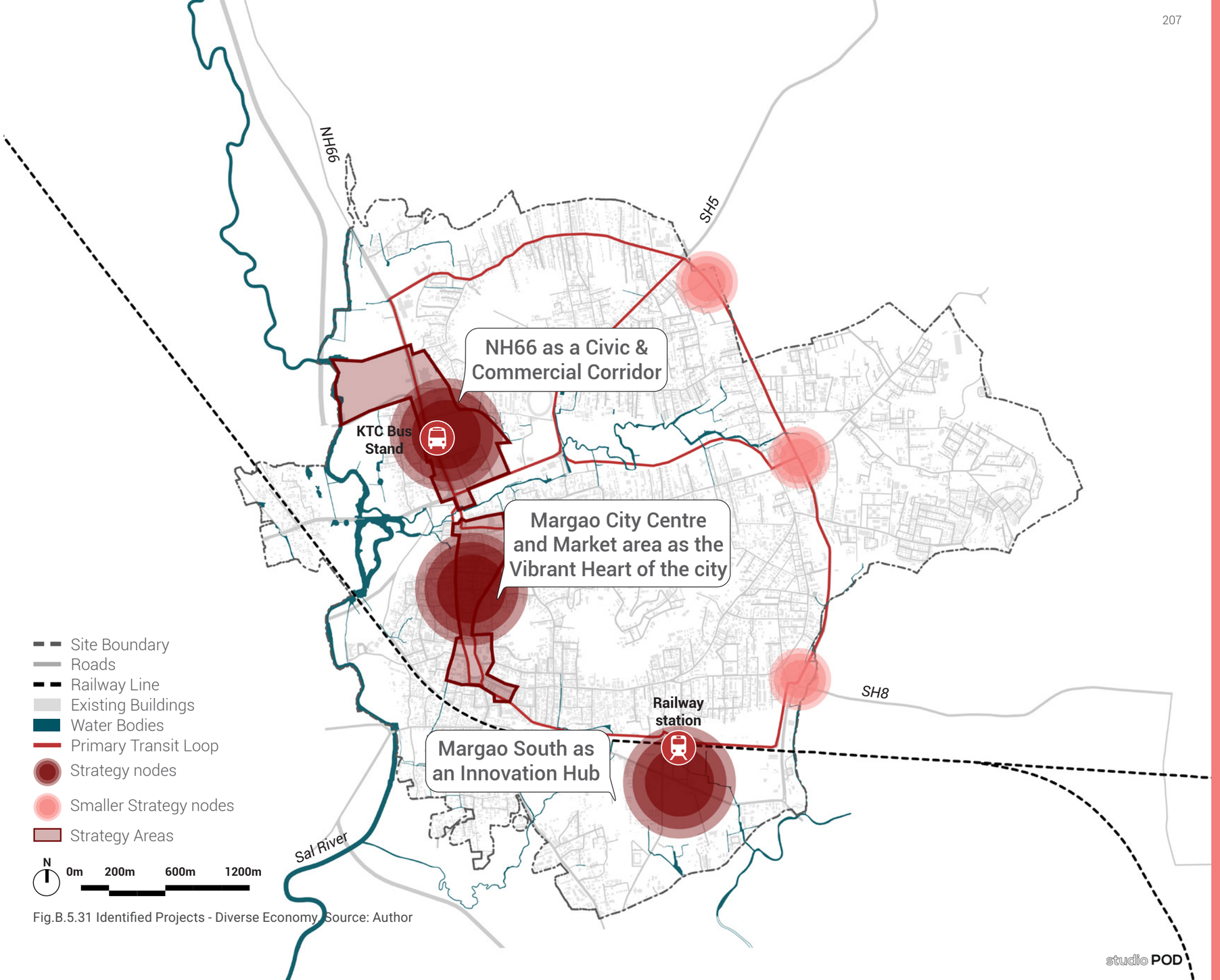
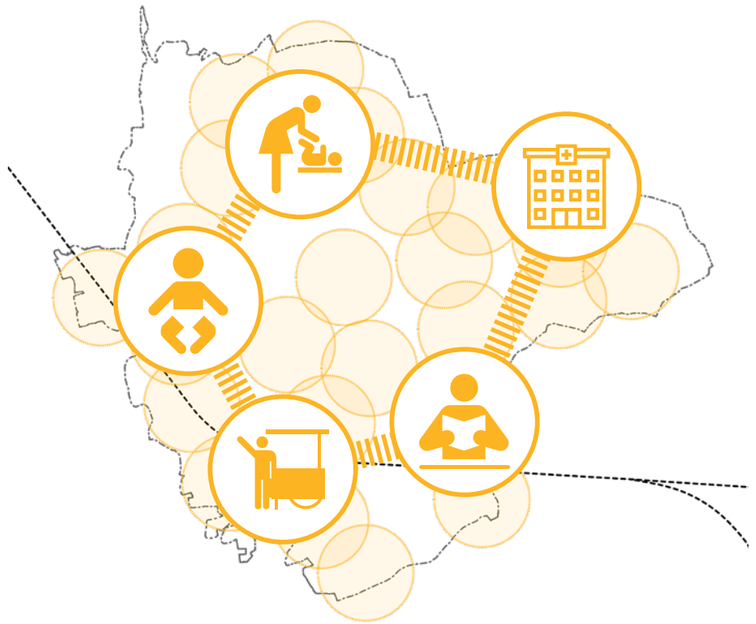


Fig.B.5.31 Identified Projects - Diverse Economy. Source: Author

Chapter B.6

Inclusive Communities

Inclusive Communities



Introduce public amenities and strengthen communities

Proposes a network of social amenities within the character zones

- Build on existing community amenities and develop a network of amenities within walkable neighbourhoods
- Create spaces for large gathering, events and festivals in the city
- Develop facilities that cater to cultural interests within each neighbourhood



Fig.B.6.1 Sectional View through the Musuem Plaza. Source: Author



Fig.B.6.2 TB Hospital. Source: Author.



Fig.B.6.3 District Hospital. Source: Author.



Fig.B.6.4 Vidya Vikas Academy. Source: Academy website.



Fig.B.6.5 Manovikas School. Source: School website.

B.6.1. Existing Infrastructure

Margao has sufficient healthcare and education amenities for its current population. The distribution of these amenities across the city differ with a higher concentration in the city centre area.

A few gaps have been identified in the distribution of these amenities. Healthcare amenities are lacking in the eastern part of the city (Gogol area) and there is a general lack of amenities in the southern part of the city.

The master plan proposes to create a new district in the south, following which, more amenities will be added to cater to the growing population.

Unequal distribution *of existing infrastructure*

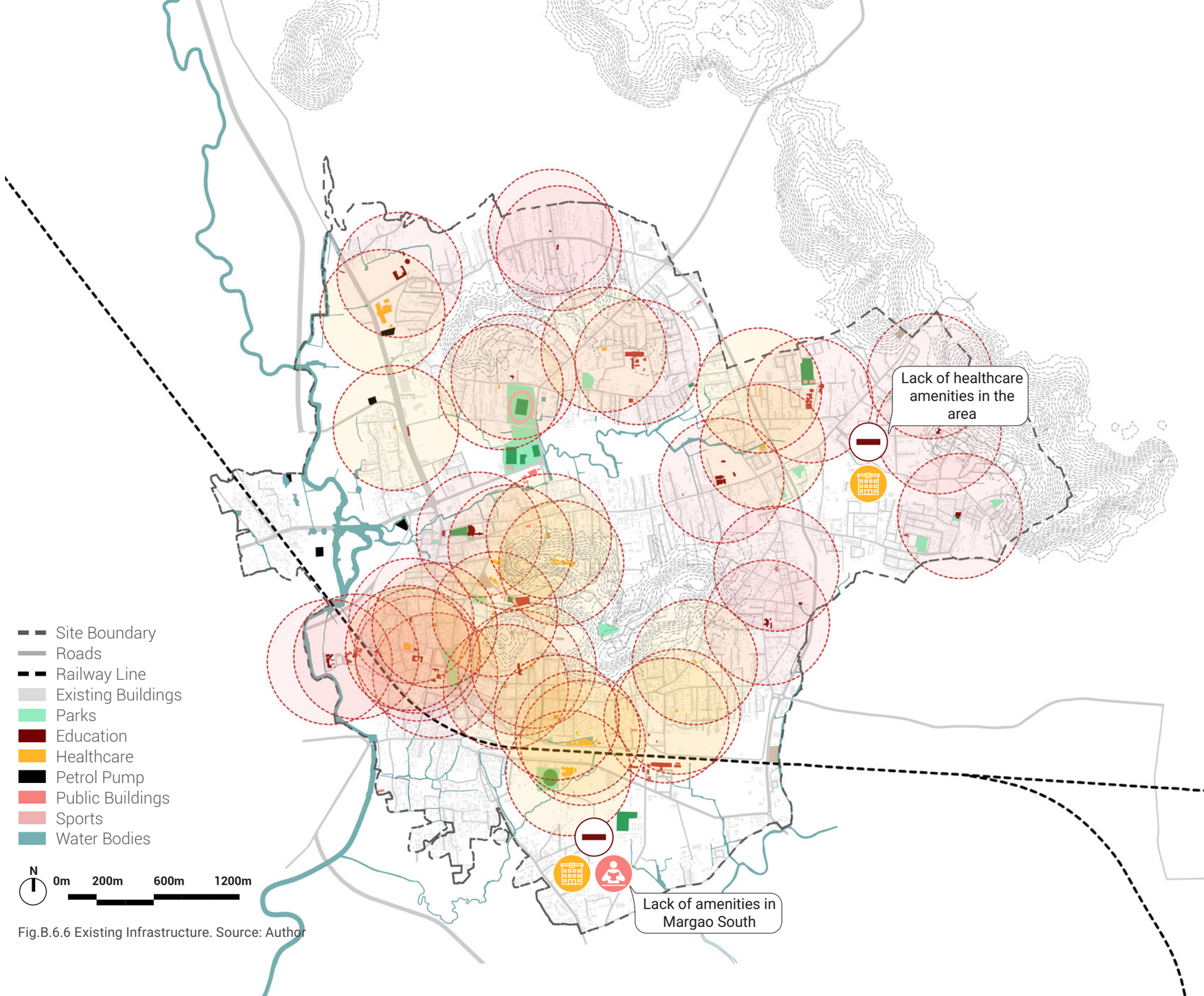


Fig.B.6.6 Existing Infrastructure. Source: Author



2011

Margao: 15.96 km²

Population: 87,650

Source: CENSUS Data



2023

Margao: 15.96 km2

Population: 1,19,000

Source: CENSUS Data



2041

Margao: 15.96 km2

Population: 1,79,000

Source: Author calculations from CENSUS Data



Fig.B.6.7 Vidya Vikas Academy. Source: Academy website.



Fig.B.6.8 Manovikas School. Source: School website.

B.6.2. Proposed Infrastructure

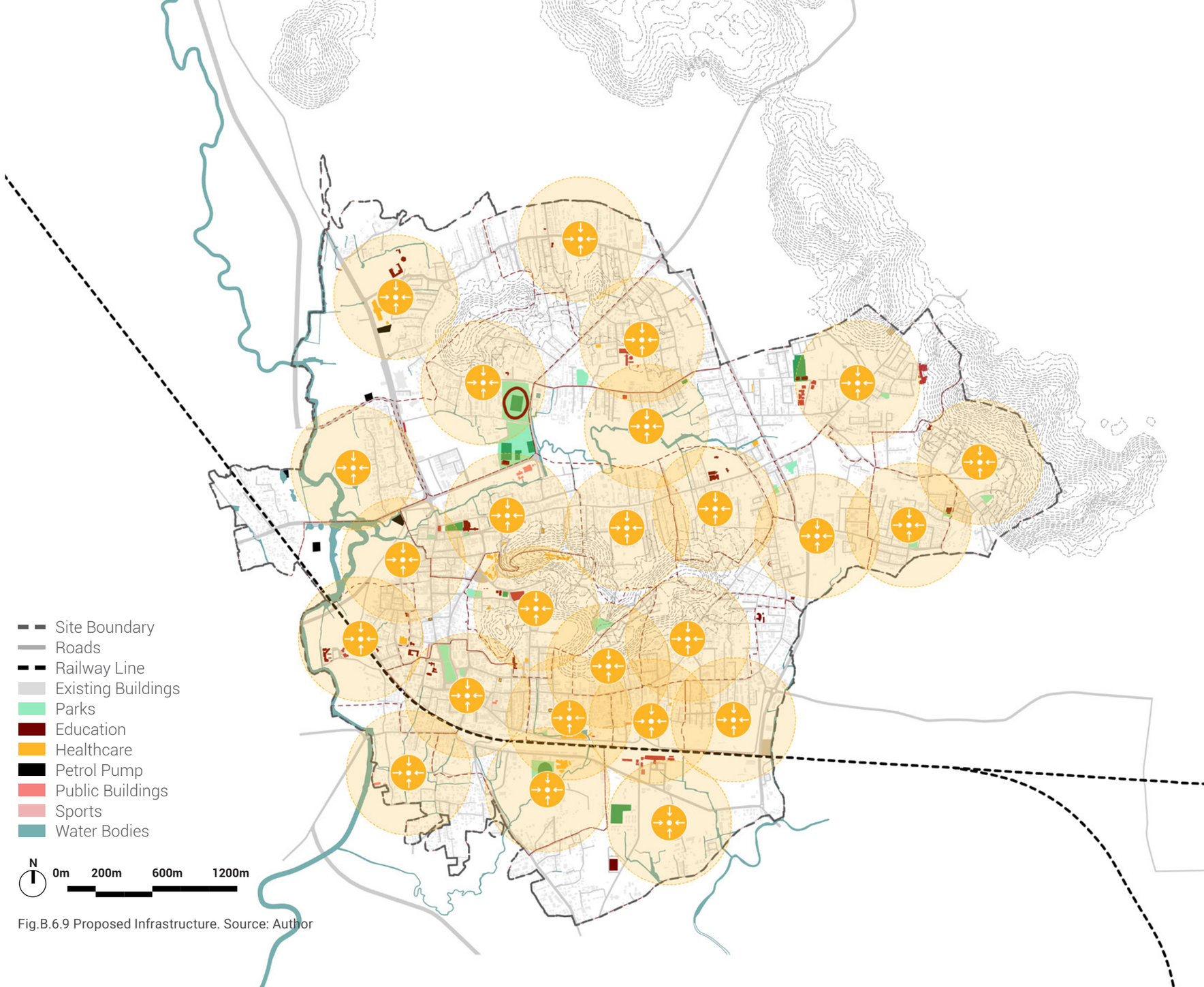
B.6.2.1. Projected Population

Using the Census data of projected population for Margao till 203, an average increase in population was calculated. Using this average value the projected population of Margao was calculated for years after 2031.

B.6.2.2. Social Infrastructure requirements for 2041

Based on the projected population for Valpoi in 2041, the social infrastructure required is calculated in reference to the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.

25 nos. *of proposed Community Hubs*



Comprises of one or more of:

- *Community Garden*
- *Childrens' Playground*
- *Community Hall/Centre*
- *Daycare/Nursery school*
- *Anganwadi*
- *Healthcare Centre*
- *Park*
- *Sports Ground*
- *Library*
- *Local Vendors*

Fig.B.6.9 Proposed Infrastructure. Source: Author

Projected Population for 2041 1,92,752

S. No.	Facility	Population Served	Units Req.
A	EDUCATIONAL FACILITIES		
1	Pre-Primary, Nursery School/Kindergarden	2,500	77
2	Primary School (I to V), Senior Secondary School (VI to XII)	5,000	39
3	Integrated School with/without Hostel	100,000	2
4	School for Physically challenged	45,000	4
5	College	125,000	2
B	AMENITY SPACES		
1	Convenient Shopping / Housing Cluster	5000	39
2	Local Shopping Centre/Sector Centre with Service Centre	15000	13
3	Working Women Hostel and Others	100,000	2
C	SOCIAL AMENITIES		
1	Anganwadi -Housing area/cluster, Community Room, Community Hall and Library	5000	39
2	Town\Administrative Centre, Town Hall, Central Library	1 per town	1
D	CULTURAL AMENITIES		
1	Museum and Art Gallery, Science Centre, Music, Dance and Drama Centre, Meditation and Spiritual Centre, Auditorium	100,000	2
E	SPORTS AMENITIES		
1	Sports Complex-City Level, Swimming Pool Complex, Indoor Stadium, Youth Center	1 per City Level	1
2	Health Club/Gymnasium, Recreational Club/Centre, District Park-Cum-Sports Centre	100,000	2

F	PARKS, GARDENS & PLAY GROUNDS		
1	Residential Unit Play Area	5000	39
2	Neighborhood Park	15000	13
E	HEALTH FACILITIES		
1	Dispensary	15,000	13
2	Nursing home, Child welfare and Maternity centre	100,000	2
3	Polyclinic, Intermediate Hospital (Category B), Intermediate Hospital (Category A), Multi-Speciality Hospital, Speciality Hospital	100,000	2
4	Family Welfare Centre, Diagnostic Centre	50,000	4
5	Dispensary for pets and animals	100,000	2
F	PUBLIC UTILITIES		
1	Electric Sub-Stations		
	i) 11 KV Sub-Station	15000	13
	ii) 66 KV Sub-Station	100000	2
2	Laundry Services (Dhobi Ghat)	100000	2
3	Electric Crematorium	Per Town	1
4	Post Office Counter	15000	13
5	Head PO with Delivery Office	250000	1
6	Police Station	90000	2
7	Fire Station	200000	1
8	Petrol Filling Stations	Per Town	9
9	Milk Booth	5,000	39
10	LPG Godown	50,000	4
G	TRANSPORT FACILITIES		
1	Three Wheeler/Taxi Stands	15000	13
2	Bus Terminal (Local)	100000	2

Based on the projected population for Margao in 2041, the social infrastructure required is calculated in reference to the Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.

The number of units derived for the following amenities can be combined when considering number of plots. For example, primary school units and secondary school units can be combined on the same plot. Therefore, the units mentioned does not equal to the number of plots required for the same amenity.

124

Educational Facilities

All types Combined

2

Cultural Amenities

23

Health Facilities

All types Combined

54

Amenity Spaces

All types Combined

3

Sports Amenities

All types Combined

87

Public Utilities

All types Combined

40

Social Amenity Spaces

All types Combined

52

Open Spaces

All types Combined

15

Transport Facilities

All types Combined



Inclusive Communities

B.6.3. Identified List of Projects

- Introduce Community Hubs with community facilities such as Anaganwadi, Community Hall, Library, Playground, etc. at a 5 minute walking distance from every neighbourhood and accessible to all.
- Develop City Community Hub on GSUDA Plot along SH05 next to Ravindra Bhavan.
- Introduce Healthcare Amenities in public land identifies in Gogol area.

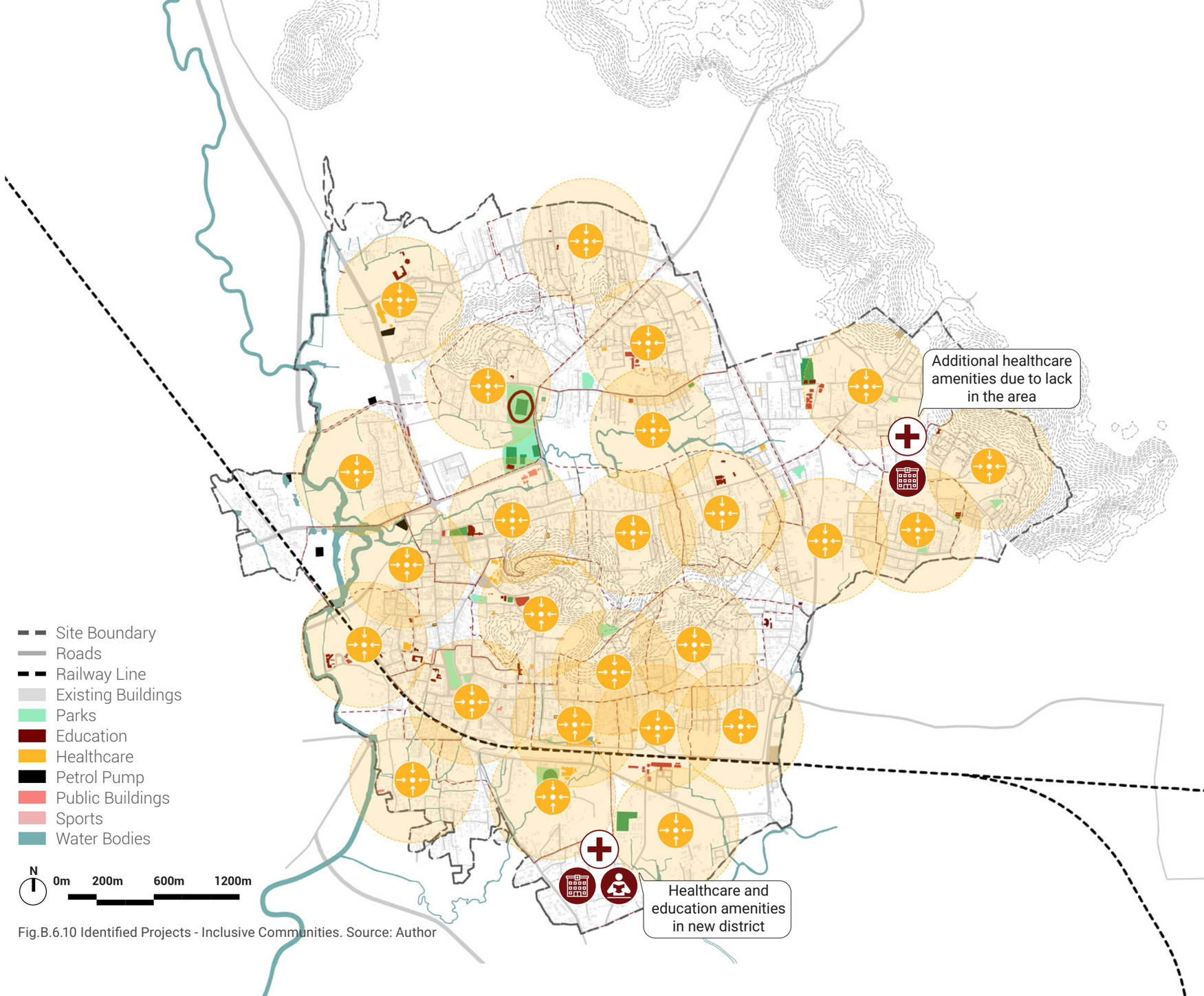


Fig.B.6.10 Identified Projects - Inclusive Communities. Source: Author

Chapter

B.7

Master Plan Alternatives & Interventions



Fig.B.7.1 Zone 1: Fatorda. Source: Author



Fig.B.7.2 Zone 2: Margao Centre. Source: Author

B.7.1. Zones of Proposed Interventions

The proposed master plan and interventions are introduced for each zone (Fatorda, Margao Centre), which detail out the proposed changes.

view corridors and other specific functions and characteristics of each intervention through plans, 3D visualisations and views.

B.7.1.1. Zone 1: Fatorda

Fatorda is characterised by settlements around hillocks. The main spine in Fatorda, the NH66, is imagined as a civic commercial corridor and a gateway into the city. The KTC Bus stand is renewed as a transit hub, and the open spaces

in Fatorda are proposed to follow the natural hydrology of the area, creating a network, eventually connecting the Sal river. The river edges are also activated to create an eco-recreational corridor for the residents of the city.

B.7.1.2. Zone 2: Margao Centre

Margao Centre is characterised by heritage areas and historic settlements adjacent to hillocks. The proposal introduces a heritage loop and the introduction/revival of public spaces and streets along the loop. Additionally, the problem of traffic congestion and parking is

addressed through the creation of designated vehicular loops and parking spaces, and the introduction of a bus-priority lane. The market is revamped to enable better movement of pedestrians.

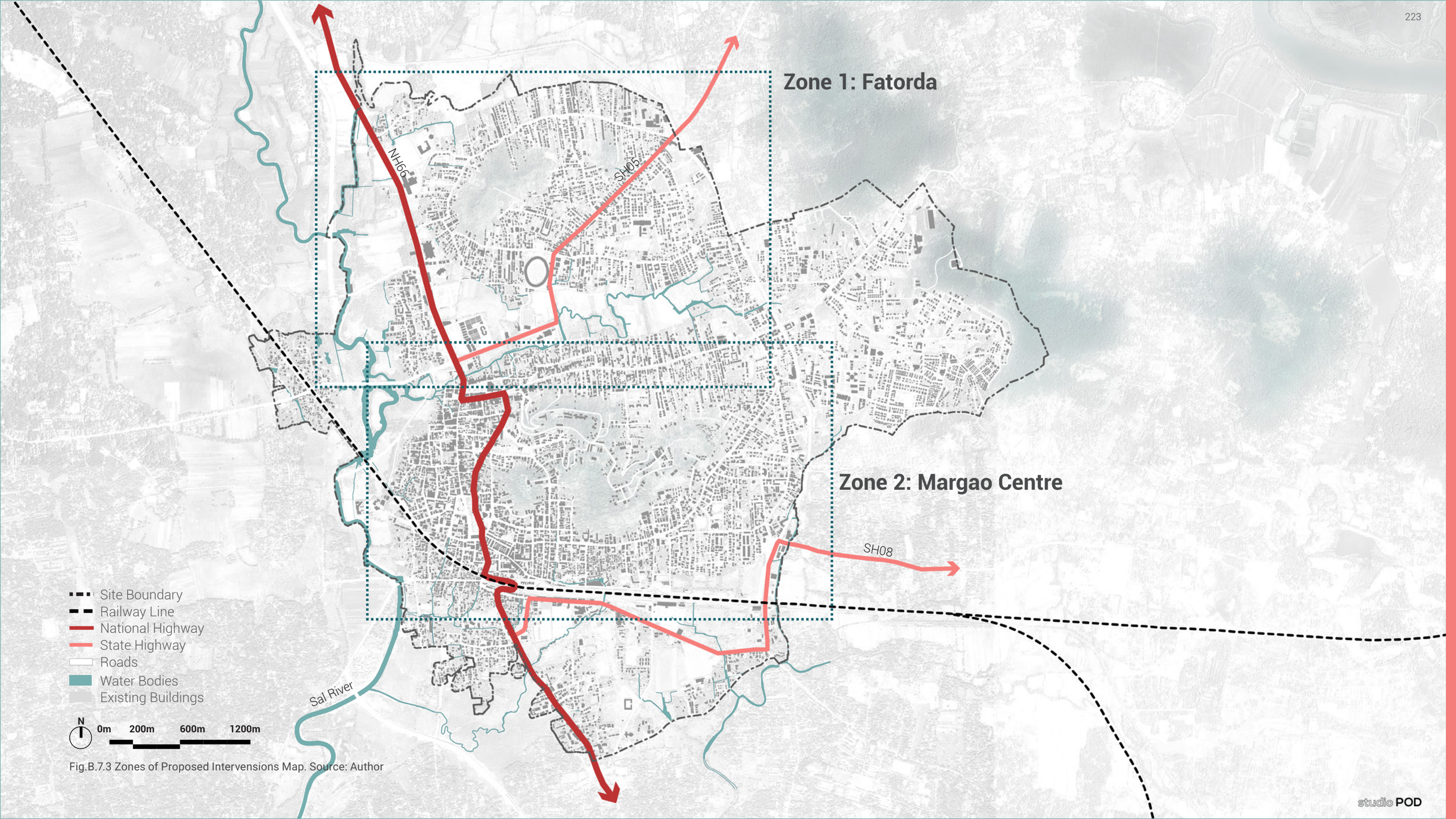


Fig.B.7.3 Zones of Proposed Intervensions Map. Source: Author

Zone 1

Fatorda

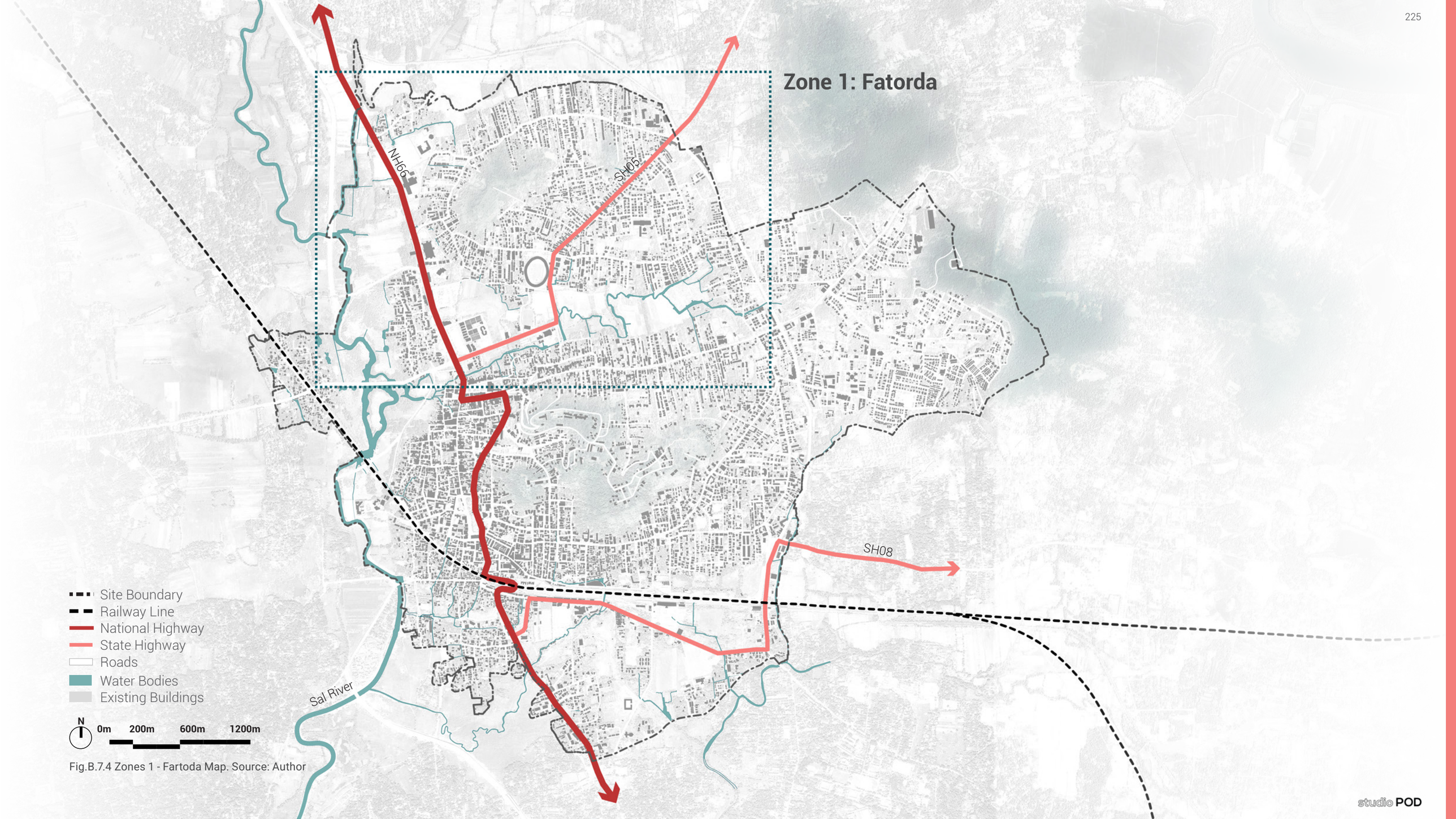


Fig.B.7.4 Zones 1 - Fartoda Map. Source: Author



Fig.B.7.5 NH66. Source: Google



Fig.B.7.6 Open Space. Source: Author



Fig.B.7.7 Low-lying area. Source: Author



Fig.B.7.8 Sal river. Source: Author

B.7.2. Existing Condition

- The NH66 currently functions as highway, carrying through traffic as well as local traffic through the city. It houses large markets and the bus stand and several parking plots have been proposed along the corridor.
- The ODP has allocated several open spaces in Fatorda; however, most of them have not been programmed.
- The Sal river, which runs along the city is polluted as sewage from the city drains into the river. It is currently being de-silted. The river acts more as a backyard of the city rather than something that is celebrated and a part of everyday life for the people of Margao.
- The low-lying area close to the Fatorda Sports Complex, in the middle of the hillocks in Margao and Fatorda, acts as a natural catchment area. However, the adjacent area has been zoned for development, without respecting the natural hydrology.

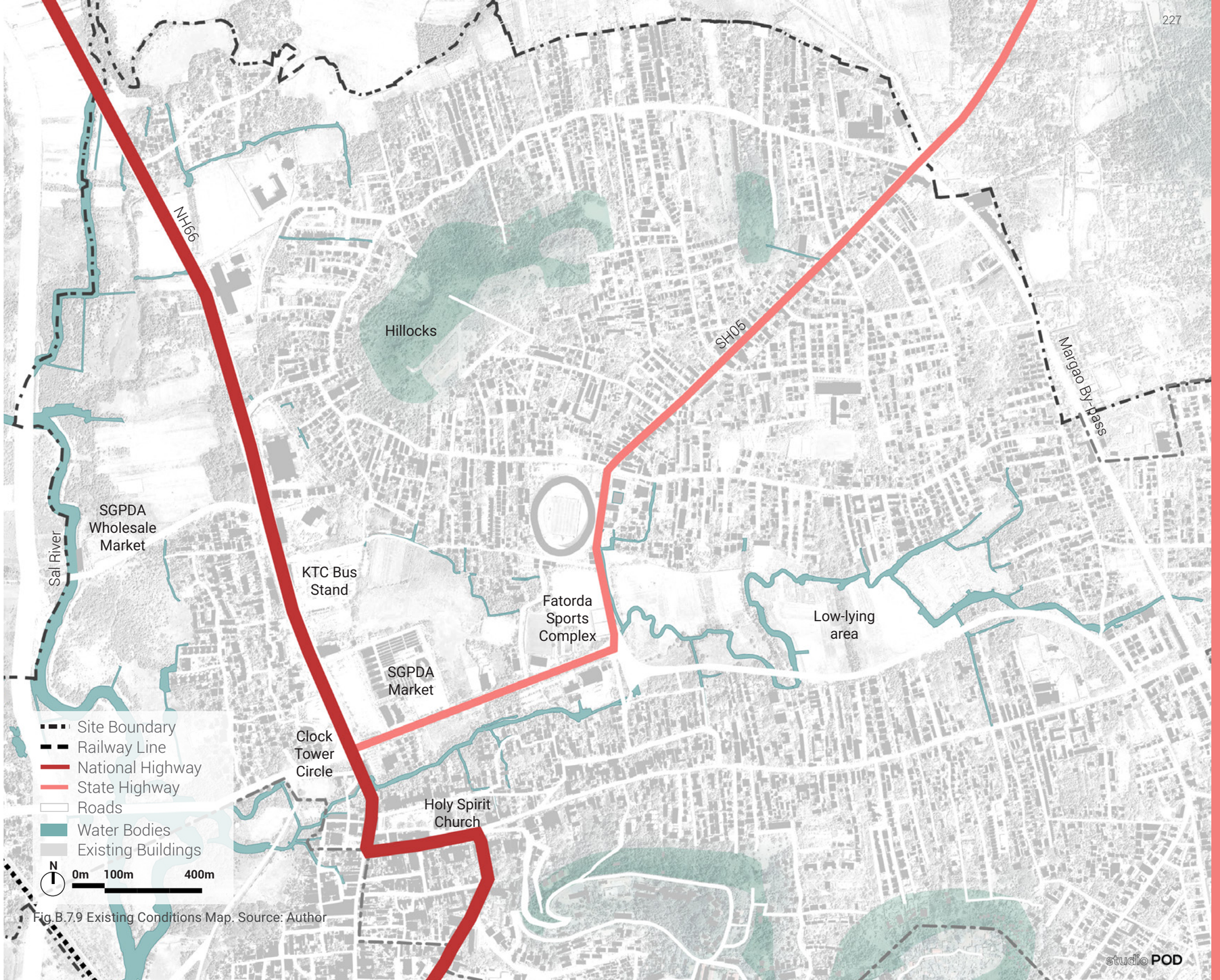


Fig.B.7.9 Existing Conditions Map. Source: Author

studio POD

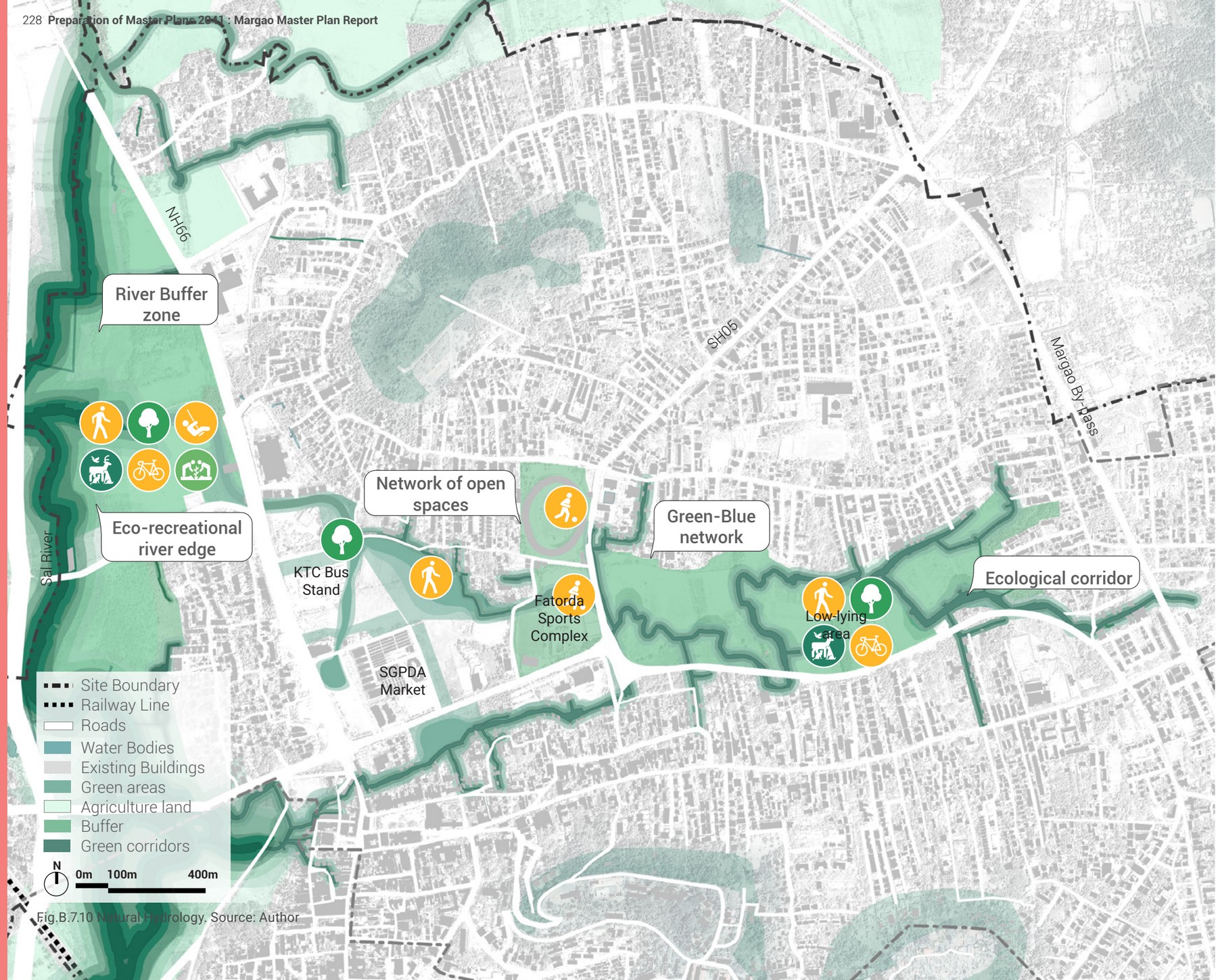


Fig.B.7.10 Natural Hydrology. Source: Author

B.7.3. Proposed Strategies

B.7.3.1. Respecting Natural Hydrology

The primary landscape strategy in Fatorda is to create an integrated green-blue network, respecting the natural hydrology in the area in order to allow storm-water drainage without flooding the surrounding area. This is done through green infrastructure and sub-surface drainage infrastructure.

B.7.3.2. Strengthening Public Transit

Following the larger transit loops proposed for the entire city, the NH66 is a part of the primary loop connected by bus transit, anchored at the current KTC Bus Stand. Surrounding this, a new street network is developed to support mixed-use commercial and residential uses.

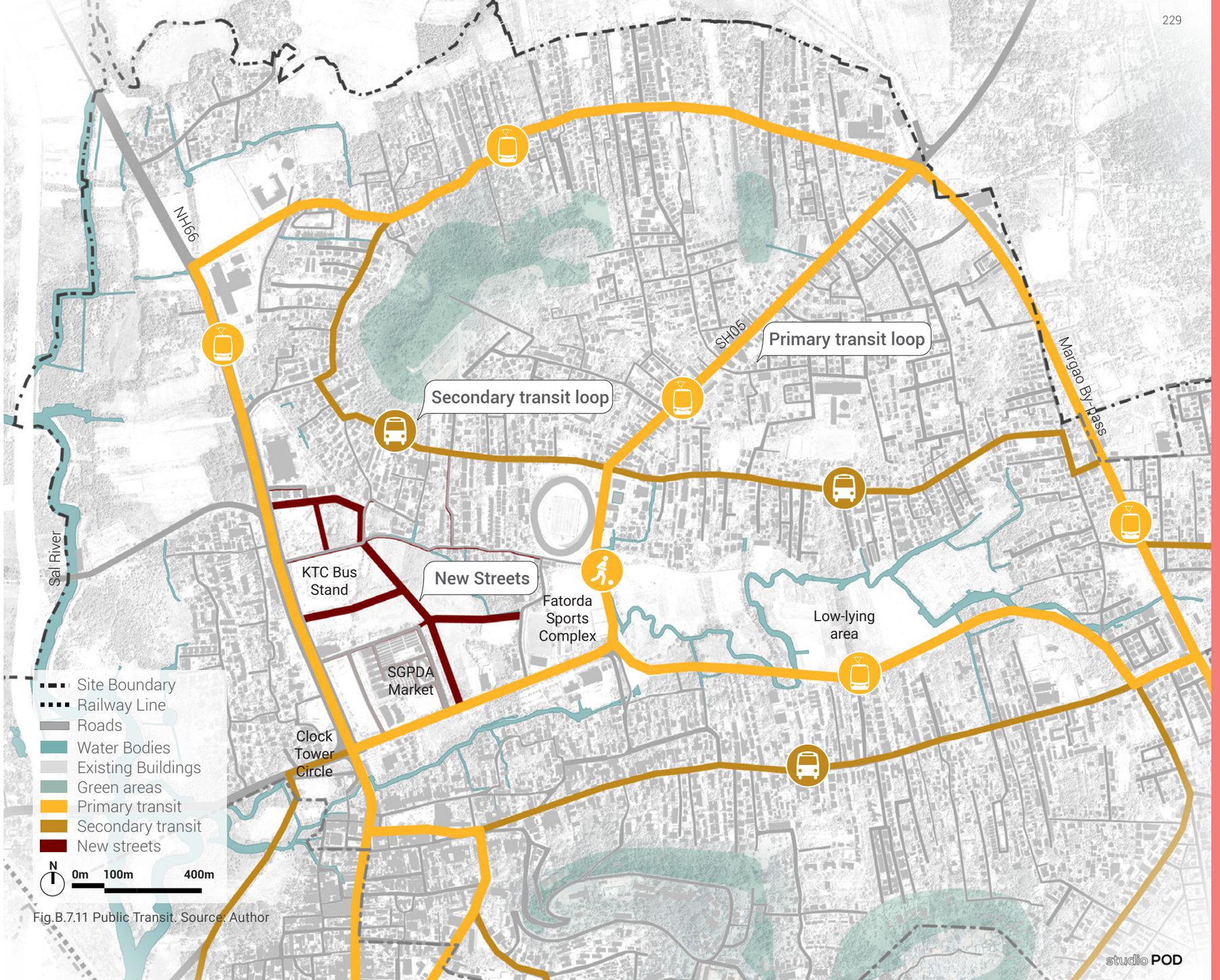


Fig.B.7.11 Public Transit. Source: Author

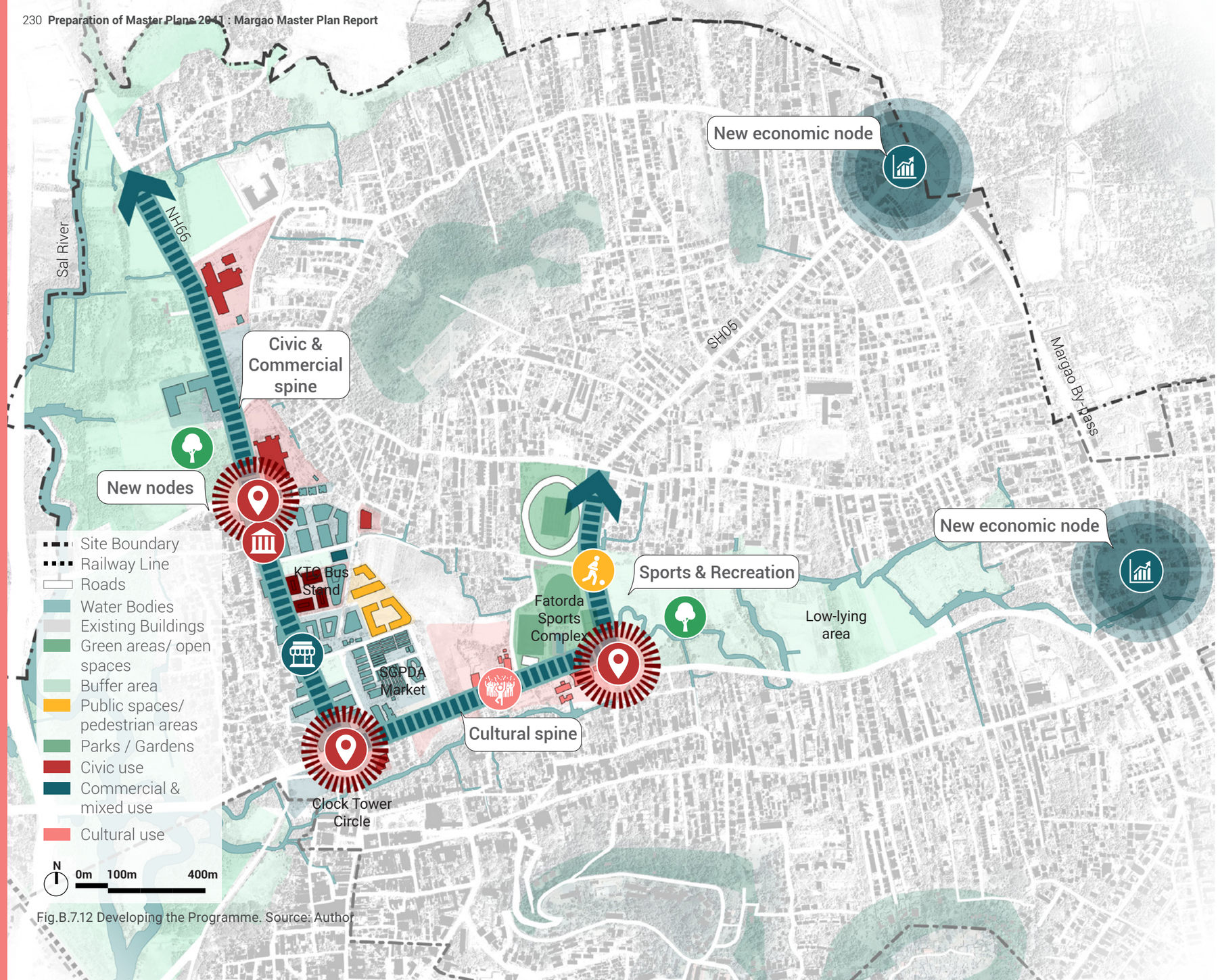


Fig.B.7.12 Developing the Programme. Source: Author

B.7.3.3. Developing the Programme

The NH66 currently houses the SGPDA Market, the South Goa district government office, the South Goa District Hospital and a few commercial complexes. This facilitates the creation of a civic-commercial corridor along the NH66. The Margao-Ponda highway which starts from the Clock Tower Circle and connects the Ravindra Bhavan, Fatorda Sports Complex and Stadium has the potential to support several other cultural and recreational activities and is therefore proposed as a cultural spine. New smaller economic nodes are also proposed along the Margao By-pass road.

programme & land use

B.7.3.4. Creating a Network of Open Spaces

There are several unprogrammed open spaces in Fatorda which are proposed as community gardens, sports grounds, play areas and parks for the surrounding residential communities within a 5 minute walking distance. These form a network of open space amenities connected by walkable shared streets, some of which open out to view corridors and panoramic views of the city.

open space amenities

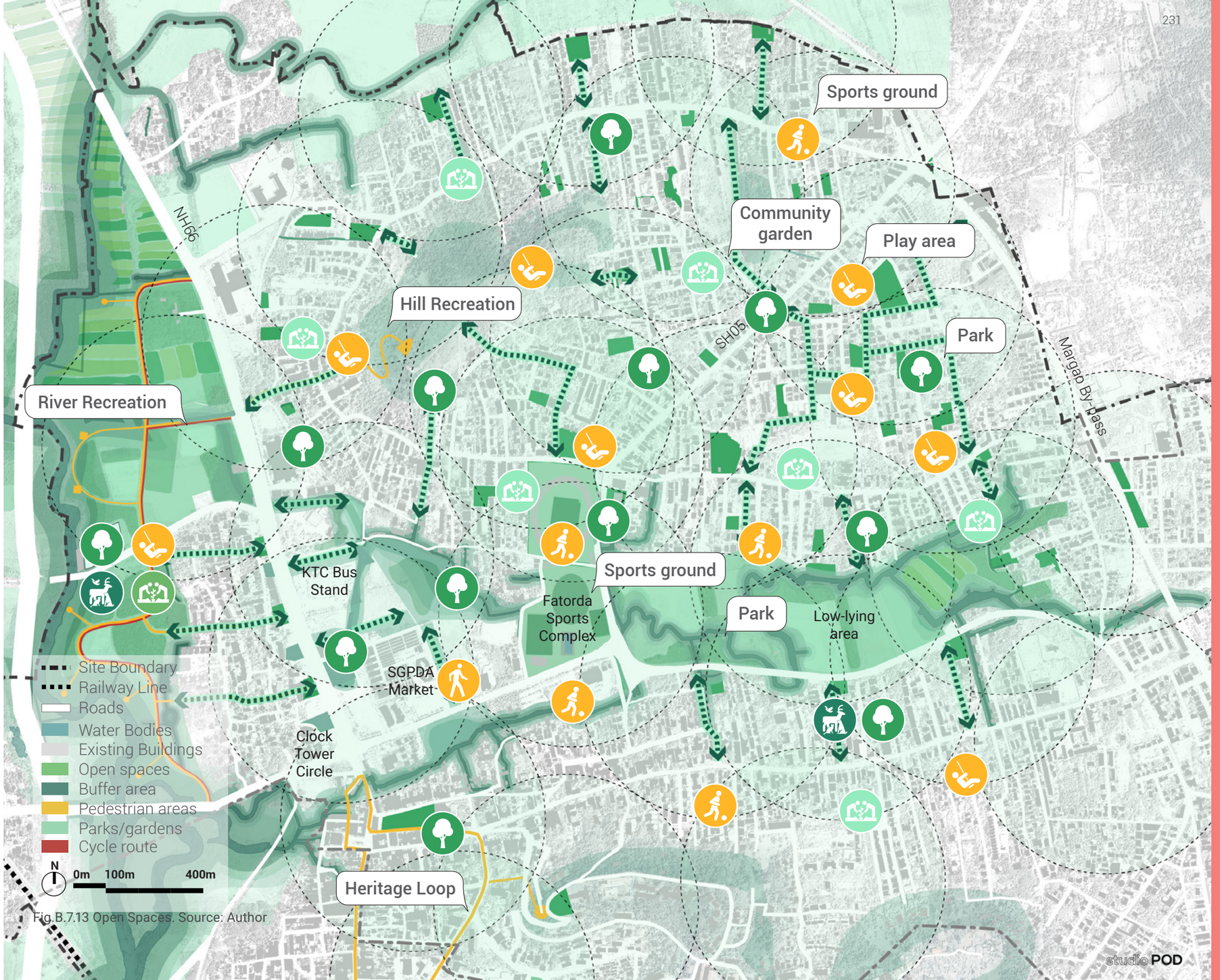


Fig.B.7.13 Open Spaces. Source: Author

Priority Interventions

- Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development
- Develop the Clock Tower Circle as a gateway and entry point into Margao

Other Interventions

- Create a No-build Green Buffer of **20m** along the Sal river to protect river edge with promenades, pavilions & leisure spaces
- Develop a Biodiversity Park for the heart of Margao that acts as a sponge park and city park
- Introduce and develop a public transit system in the city of Margao
- Develop commercial nodes along the primary loop that promote retail development
- Regenerate NH66 into a Civic & Commercial Corridor
- Introduce Community Hubs with community facilities at a 5 minute walking distance from every neighbourhood
- **Upgradation of streets with dedicated bicycle lanes and pedestrian friendly footpaths**
- **Identify and develop plots for parking in Margao**

B.7.4. Proposed Interventions

In the Fatorda zone, frameworks for landscape, circulation, and programme have been proposed. FSI and massing are detailed out according to the proposed programme and land uses. Additionally, open space amenities and view corridors are also proposed within an open space framework.

Following the larger transit loops proposed for the entire city, the NH66 is re-strategised as a civic-commercial corridor, anchored at the current KTC Bus Stand. The Margao-Ponda highway which starts from the Clock Tower Circle and connects the Ravindra Bhavan, Fatorda Sports Complex and Stadium is therefore proposed as a cultural and recreational spine. New smaller economic nodes are also proposed along the Margao By-pass road.

An integrated green-blue network which respects the natural hydrology is proposed to allow storm-water drainage without flooding the surrounding area. This is done in combination with a network of programmed open spaces across Fatorda connected by pedestrian networks within a 5 minute walk from each neighbourhood.

Some of the interventions proposed in the zone are to create a commercial district along with bus transit at the KTC bus stand, re-imagining the Clock Tower Circle as a gateway into Margao, and rejuvenating the Sal river with public spaces and riverside recreation.

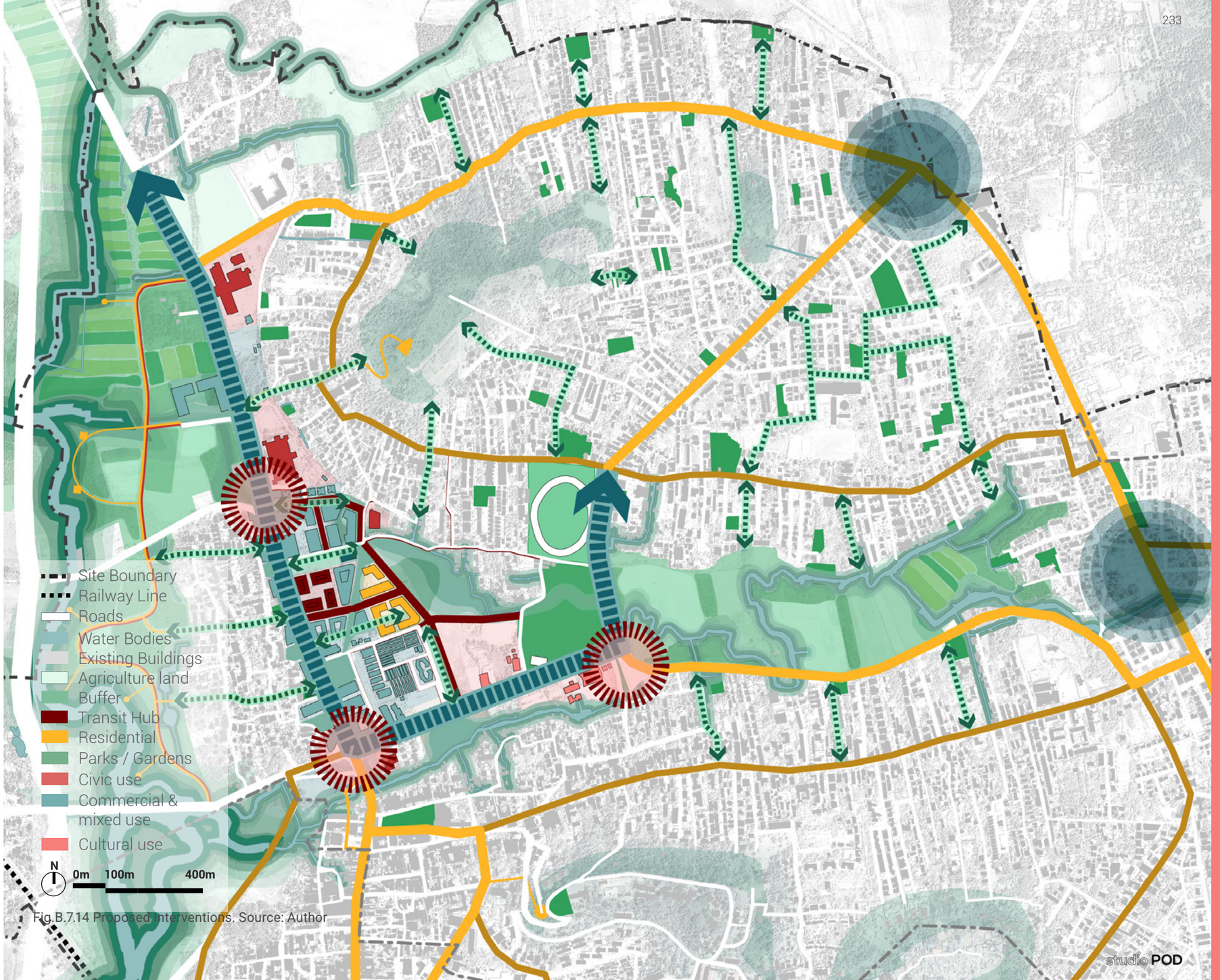


Fig.B.7.14 Proposed Interventions. Source: Author

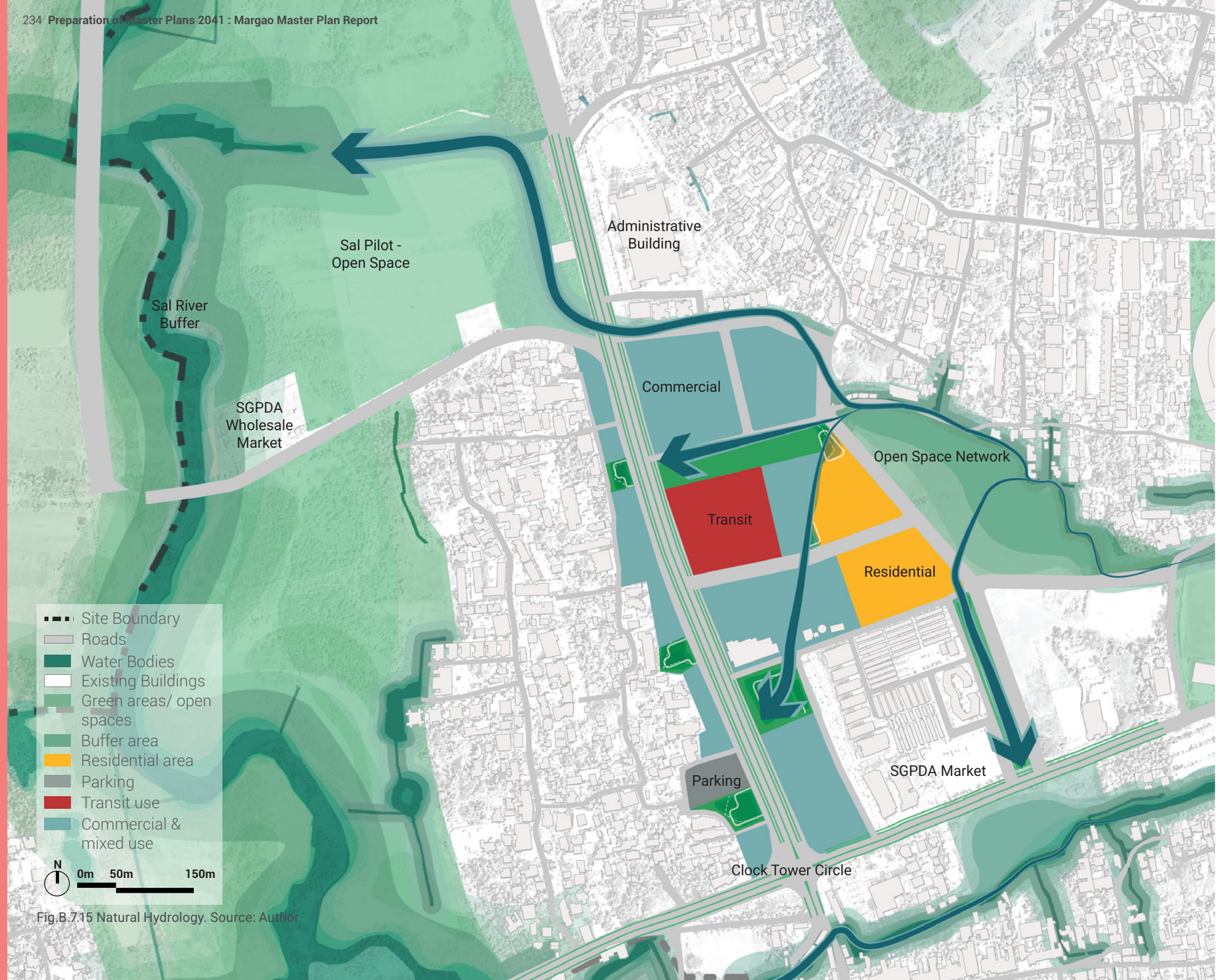


Fig.B.7.15 Natural Hydrology. Source: Author

B.7.5. Re-strategising NH66 as a Civic & Commercial Corridor

B.7.5.1. Respecting the Natural Hydrology

Being an area that is susceptible to flooding, the development of the plots requires an understanding of the natural drainage pattern. The storm-water drainage is facilitated through a network of open spaces and drainage infrastructure eventually leading to the Sal river. The parking areas that have been demarcated in the ODP have been converted to commercial use except one plot.

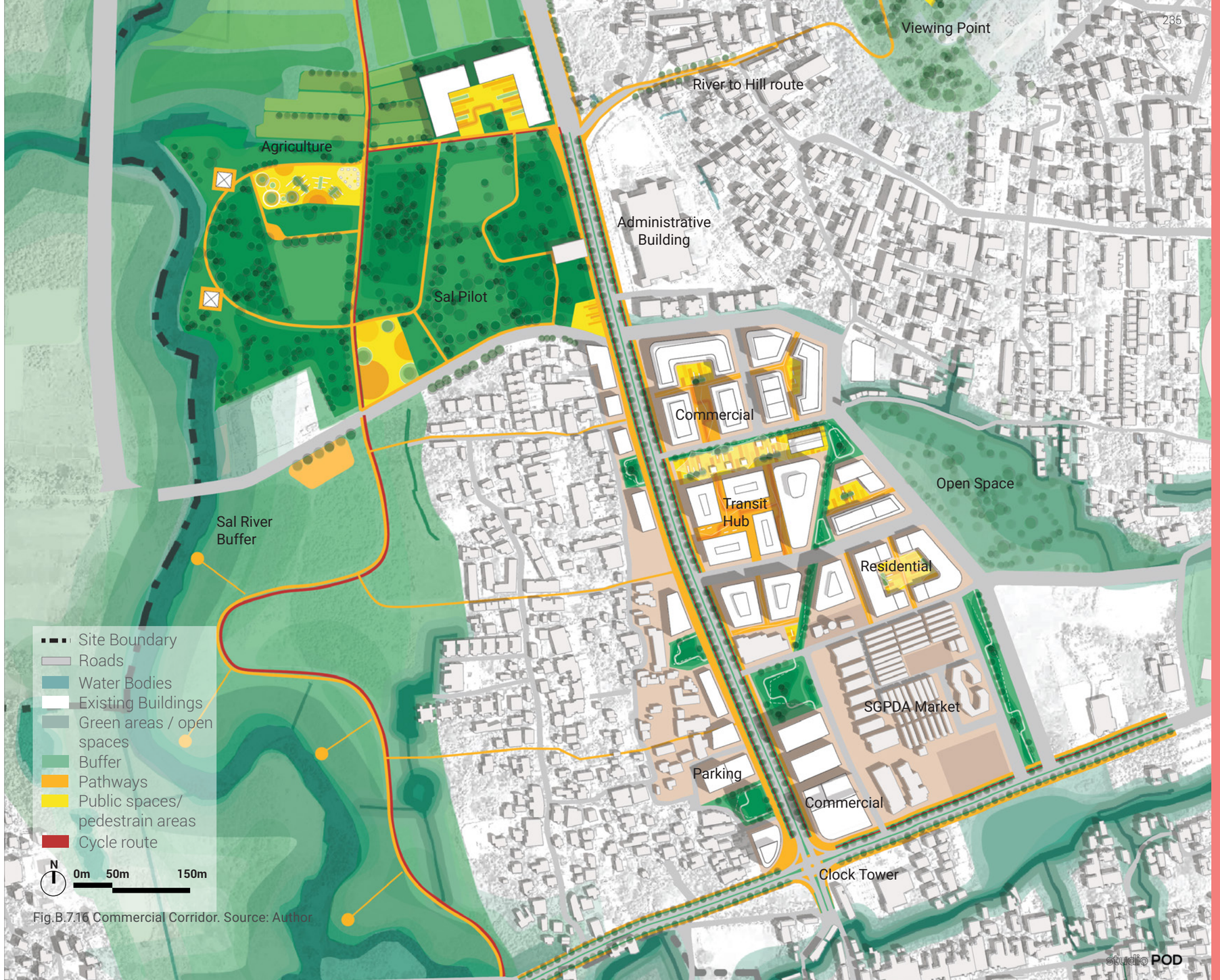


Fig.B.7.16 Commercial Corridor. Source: Author

	Land Use	FSI	Site Coverage	Floors	BUA / Worker
	Residential New	2.50	50%	5	
	Special Commercial	3.00	50%	6	10
	Commercial 2	1.50	50%	3	10
	Transport	2.00	50%	4	35
	Residential Land Use				
	Average Unit Size (sqm)	100			
	Residents/Unit	4.5			

Fig.B.7.17 Assumptions. Source: Author

Note: Land Use and FSI calculated according to the The Goa (Regulation of Land Development and Building Construction) Act, 2008 (Goa Act 6 of 2008) and The Goa Land Development and Building Construction Regulations, 2010 (Incorporating Amendments upto September, 2018)

B.7.5.2. Land Use & Assumptions

The mix of land uses in the area includes: Residential, Commercial, Parking and Transport. New blocks of commercial use are proposed on either side of the NH-66. The KTC Bus Stand area has been converted into a Transit Hub with commercial use surrounding it. Two new residential areas are also created next to the commercial hub along the corridor.

An open space network is carved out in order to address the hydrology of the region, while catering to the recreational requirements of the area. Additionally, one multi-level parking plot has been provided, while the rest of the plots that have been zoned for parking in the ODP have been converted into commercial plots.

The assumptions for the FSI calculation based on the proposed land use are provided in the table. Based on these assumptions, the estimated residential population and number of jobs have been calculated.

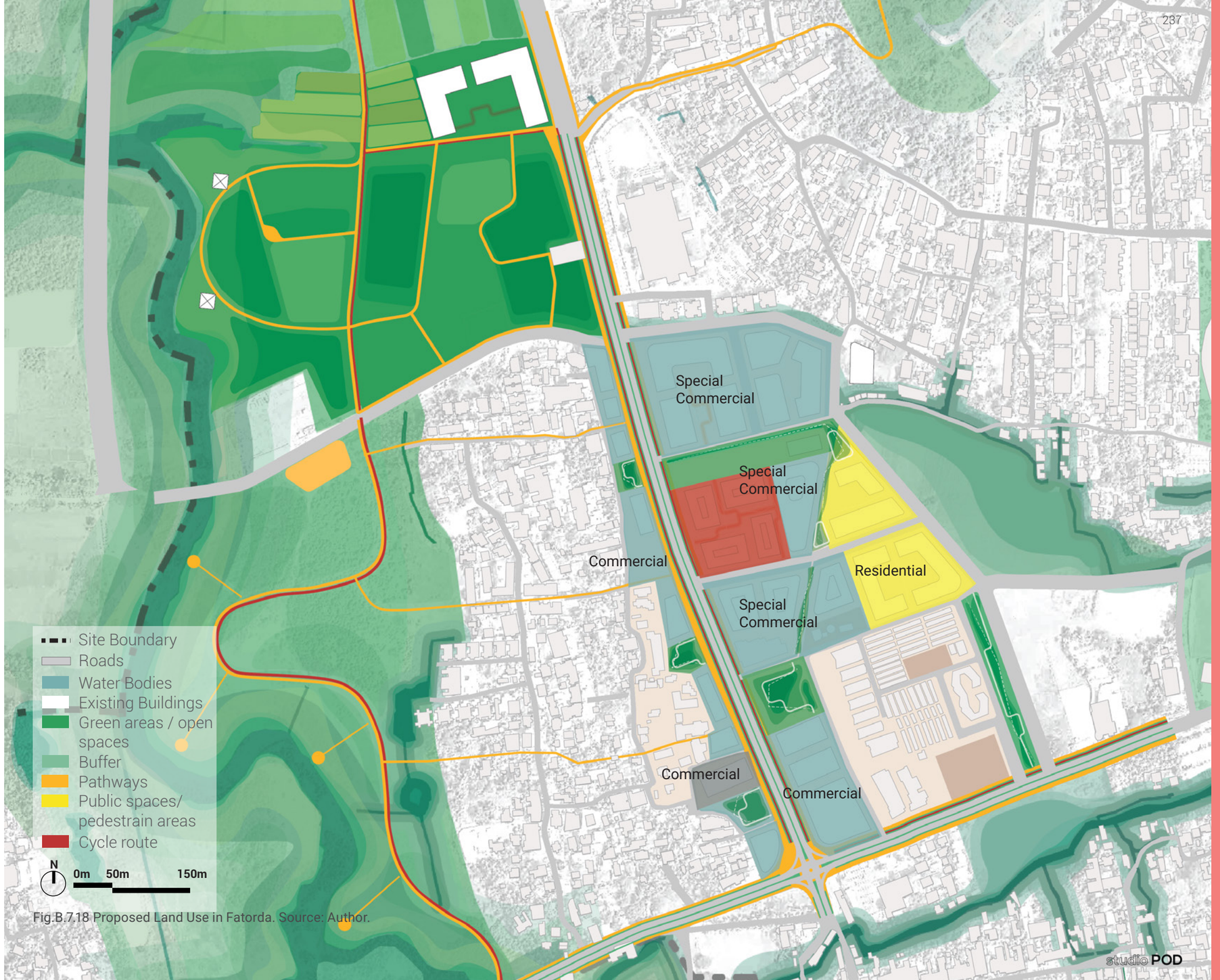


Fig.B.7.18 Proposed Land Use in Fatorda. Source: Author.

	Owner	Area	No. of Plots	Plot numbers
	Kadamba Transport Corporation (H)	32753	3	72/18, 73/5, 73/6
	The Director, Directorate of Transport, Junta House, Panaji, Goa (H)	2038	1	73/4
	Goa State Urban Development Agency	180447	4	66/5, 109/70, 138/107, 100/5
	South Goa Planning And Development Authority Margao Goa (H)	28356	3	139/28, 139/29, 109/75
	Department of Tourism Panaji Goa (H)	2385	1	41/5/4

Fig.B.7.19 Plot Ownership Details. Source: Bhunaksha.

B.7.5.3. Plot Ownership & Stakeholders Involved

The proposed plan for Fatorda is a vision for its future and requires the coordination and collaboration of various stakeholders for its implementation, as it covers both public and private land.

The privately owned land are located to the west of the NH-66, which have been proposed as commercial blocks. To the east of the NH-66, there are 3 or more parcels of land owned by the Kadamba Transport Corporation, where the Bus Stand currently exists. Adjoining the Retail Market, there are a few more parcels owned by the South Goa Planning and Development Authority. In addition to these, GSUDA also owns 3 parcels of land in the area. Therefore, with the availability of several publicly-owned plots, there is immense potential in the area to develop into a commercial hub.

The largest of all the publicly-owned plots belongs to GSUDA and is located in between the NH-66 and the Sal river. The Sal River pilot project is proposed here, with an aim of creating a recreational spot in the city adjoining the river, along with small commercial establishments towards the road.

stakeholders/departments

Government of Goa

GSUDA
GOA STATE URBAN DEVELOPMENT AGENCY

Goa State Urban Development Agency

Directorate of Transport

KADAMBA TRANSPORT CORPORATION LTD
KTCL

Kadamba Transport Corporation Ltd.

South Goa Planning & Development Authority
4th Floor,D Wing, Osia Commercial Arcade,Near S.C.P.D.A Market Complex, Margao-Goa Ph: 2731781 /2714495
Ref: SGPDA/ Date:-

South Goa Planning & Development Authority

Department of Tourism

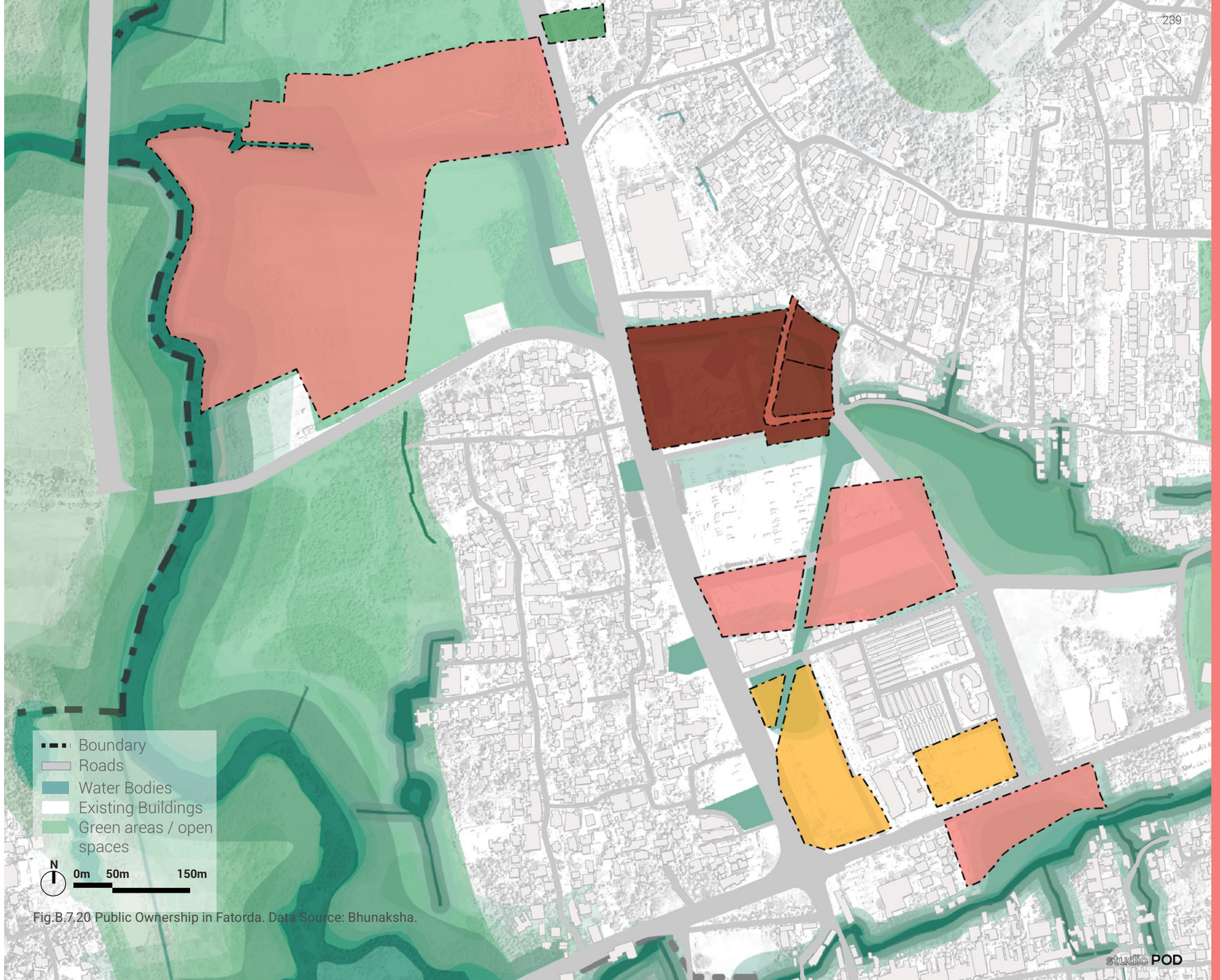


Fig.B.7.20 Public Ownership in Fatorda. Data Source: Bhunaksha.



Fig.B.7.21 Reimagined Downtown San Fransisco. Source: Gensler



Fig.B.7.22 Urban Chowk, Ahmedebad. Source: Wikimedia Commons



Fig.B.7.23 Bryant Park. Source: Secret NYC



Fig.B.7.24 Herma Parking Building. Source: Namgoong Sun, ArchDaily.

B.7.5.4. Programme

The new commercial district will have retail spaces and a public plaza, a food street, multi-level parking, multi-purpose public gathering space for festivals and events, residential blocks and an active public realm

B.7.5.5. View Corridors

The visual experiences of the commercial district is defined through the interaction of the landscape and the built form, which frame views and vistas that intersect each other within the fabric. These include the green corridor connecting large open spaces framed by diverse built fabric, and the view of the public plaza flanked by retail and commercial uses.





Fig.B.7.25 Land Use of NH66. Source: Author



Fig.B.7.26 Mahim Bus Depot and Kanakia Miami Heights, Mumbai. Source: Google

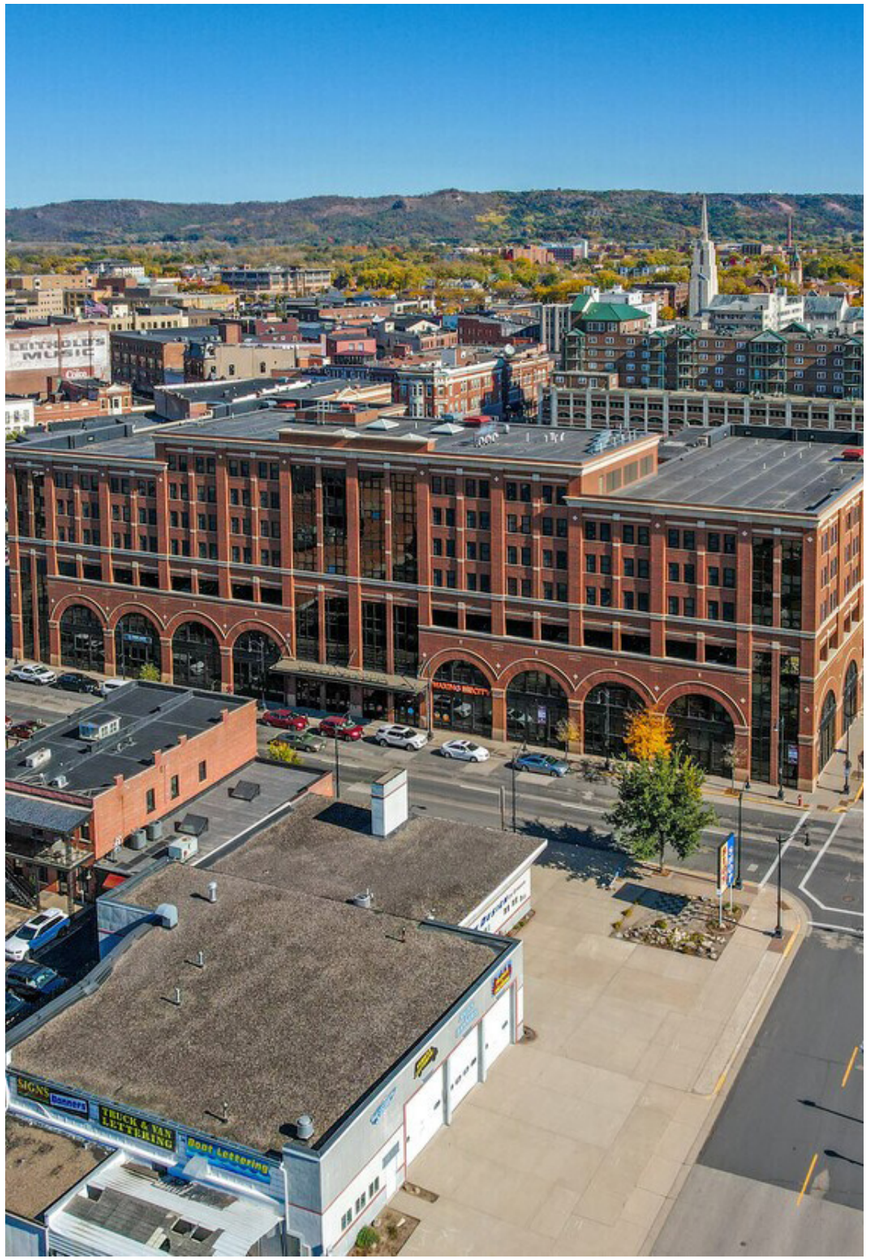


Fig.B.7.27 Grand River Station and residential apartments, La Crosse. Source: Apartments.com

B.7.5.6. Transit-Commercial

The current KTC Bus Stand is proposed as a mixed-use Transit Hub with commercial use. This allows for a greater variety of uses and density, reduces the distance between workplaces, retail businesses, and other destinations, strengthens neighbourhood character, and promotes pedestrian and bicycle friendly environments.





Fig.B.7.28 Land Use of NH66. Source: Author



Fig.B.7.29 Exsting view of NH66. Source: Google Street View



Fig.B.7.30 Proposed section of NH66. Source: Author

B.7.5.7. NH66 Transit & Commercial District

The new commercial district is characterised by a large pedestrian realm to accommodate heavy footfall. The network of open spaces punctures the district at an angle, creating interesting experiences.

The ROW of the NH66 is redesigned to give ample space to the pedestrians and cyclists, apart from supporting public transit.

The visual experience of the NH-66 is also transformed from that of a car-dominated highway with parking on the sides to a pedestrian-dominant and active commercial corridor.





Fig.B.7.31 View of the Transit & Commercial District. Source:Author



Fig.B.7.32 Sal River Proposal. Source: Author

B.7.6. Rejuvenating the Sal River

The river flowing through the city is currently a lost opportunity as it lacks any sort of programming or open spaces. The proposal aims to rejuvenate the river and revive agricultural activity around it. Parks, gardens, gathering spaces and sports grounds are proposed in the area, connected by pedestrian paths and cycle tracks that wind through the edges of the river, culminating at decks and canopies from which views of the river open up.

The Farm to Table concept is introduced in order to generate economy from agriculture. Recreational activites along the river could also generate revenue, increase footfall and activate the river edges.

B.7.6.1. Creating a Visual Experience

The imageability of the Sal river and the visual experience of it is defined by creating accessible points along river connected by walkways and cycle tracks that wind through the landscape, opening up different views of the Sal.

In addition to this, the programmed spaces activate certain edges of the river, offering dynamic experiences along the spine, from quiet and serene environments to active and bustling ones.





Fig.B.7.33 View from the Sal River. Source: Author



Fig.B.7.34 Entrance to Pedestrian Pathway for Proposed Sal- NH66 Gateway. Source: Author



Fig.B.7.35 Existing Condition. Source: Author

B.7.7. Reimagining the entry into Margao

B.7.7.1. Sal - NH66 Gateway

The Sal-NH66 Gateway is one of the major entry gateways into Margao from the North. The proposed intervention, which enhances the entry experience into the city through Fatorda, is located at the junction where a branch of the Sal river meets the NH66.

The proposal includes a pedestrian pathway that starts at the junction and follows the edges of the stream, creating walking/cycling trails and decks along the way.

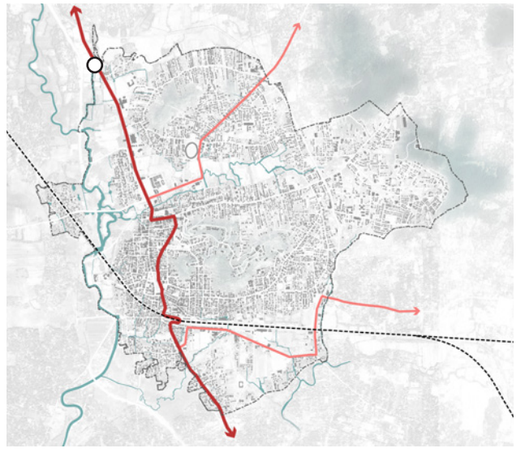






Fig. 6.2 Aerial view of Proposed Sal- NH66 Gateway. Source: Author



Fig.B.7.37 Intervention for Proposed Sal- NH66 Gateway. Source: Author



Fig.B.7.38 Trail along the Proposed Sal- NH66 Gateway. Source: Author

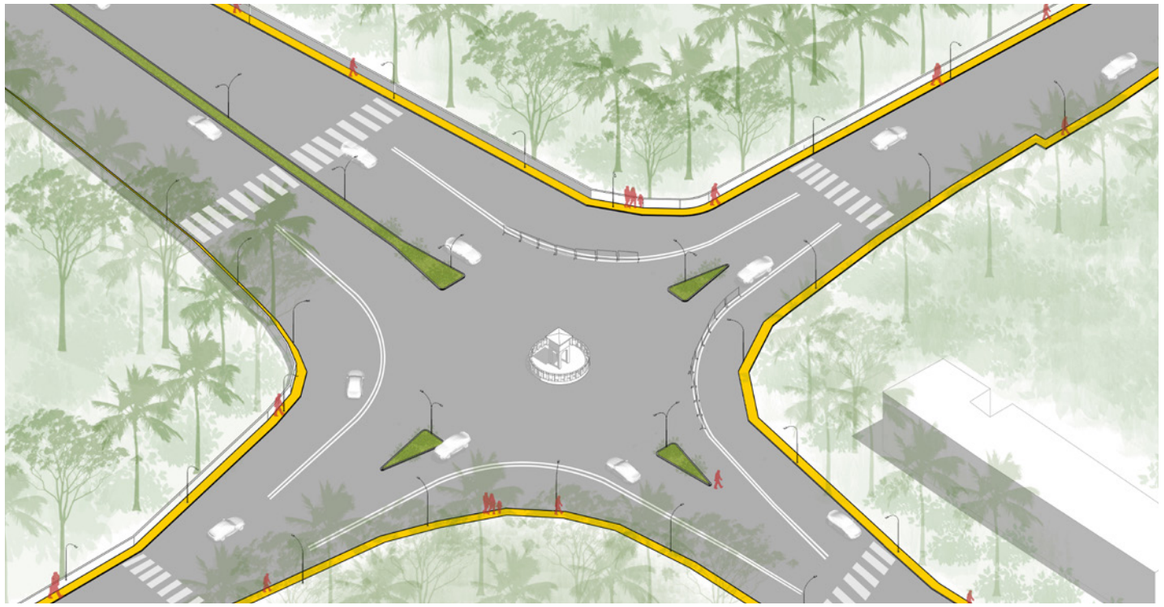


Fig.B.7.39 Existing Clock Tower Circle. Source: Author

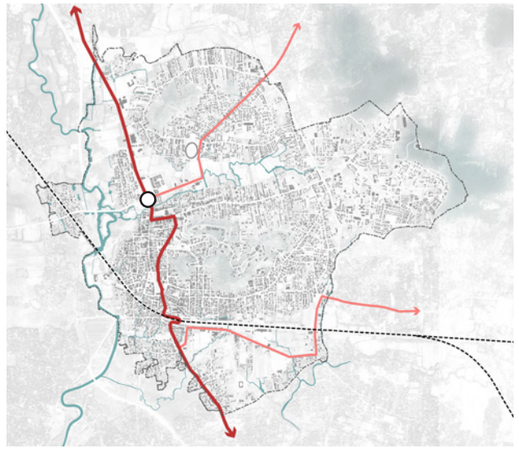


Fig.B.7.40 View of Clock Tower Circle. Source: Google Street View

B.7.7.2. Sal - Clock Tower Circle

The Clock Tower Circle is one of the major entry gateways into Margao from the Colva road to the west. With the proposed transition of the NH66 into a civic-commercial corridor, the Colva Circle is also redesigned to create a unique identity and image as an entry to the NH66 and the city.

The corner plots are proposed as commercial blocks with pedestrian plazas fronting the circle. In order to promote the use of non-motorised transport, cycle lanes are incorporated and islands are created to facilitate safe pedestrian movement and crossing.





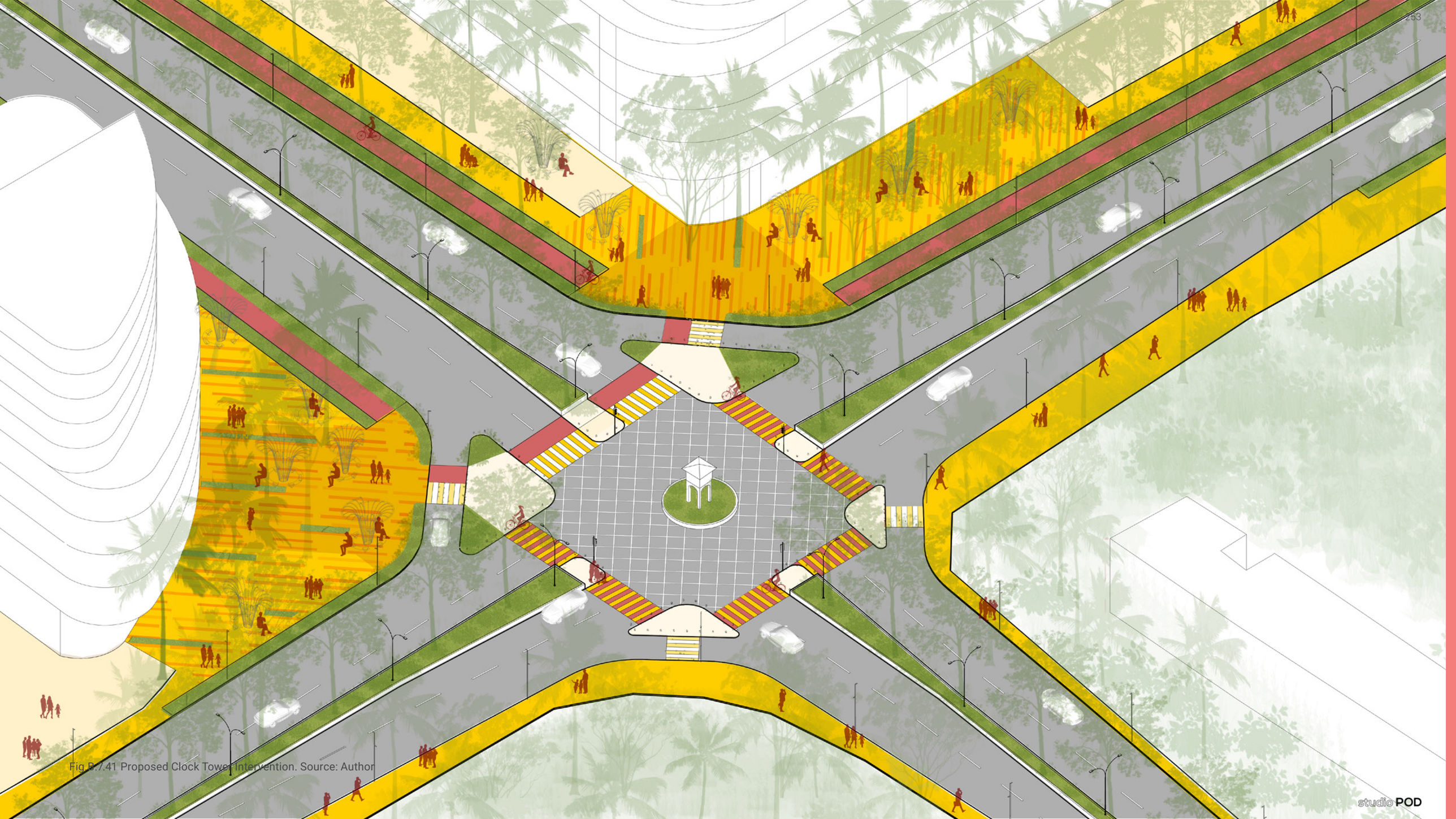


Fig.B.7.41 Proposed Clock Tower Intervention. Source: Author



Fig.B.7.42 Existing Damodar Circle. Source: Author



Fig.B.7.43 View of Damodar Circle. Source: Author

B.7.7.3. Sal - Damodar Circle

The Damodar Circle intersection is defined a circle with a bell tower surrounded by the Fatorda Sports Complex to the North, the Ravindra Bhavan to the South and a low-lying open space to the East. Additionally, an island next to the circle includes an abandoned structure adjoining the St. Sebastian Chapel. The proposal includes geometry correction of the intersection, the creation of a deck facing the low-lying area and the introduction of a public plaza in the island, thereby carving out more space for pedestrians.

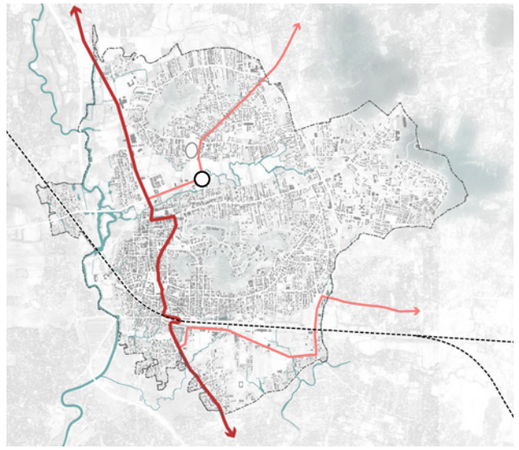






Fig B.7.44 Proposed Damodar Circle Intervention. Source: Author



Fig.B.7.45 Proposed Viewing Deck for Sponge Park. Source: Author



Fig.B.7.46 Existing scenario for Park. Source: Author

B.7.8. Developing a Sponge Park in Margao

The sponge park in the middle of the city, located within the low-lying area in Fatorda, aims to create a public space for the city that connects both the hillocks in Margao while respecting the natural hydrology of the region. The park has two entries and is accessed by the road as proposed in the Margao ODP. The proposal includes plazas and decks connected by walkways that cut through the landscape, offering multiple viewpoints and vistas while creating public gathering spaces, as well as retention ponds and bioswales.

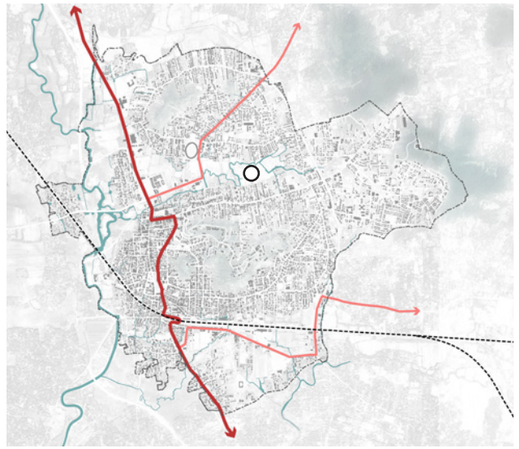






Fig.B.7.47 Proposed Sponge park Intervention. Source: Author



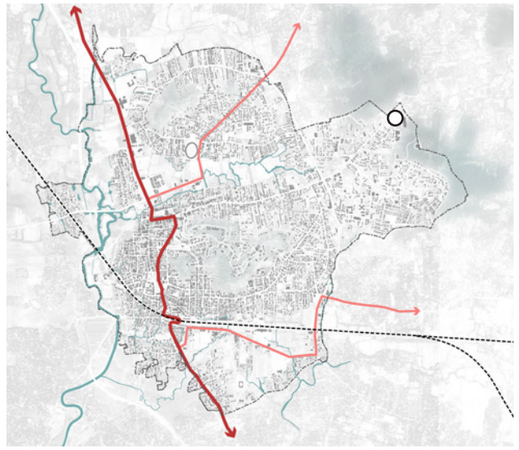
Fig.B.7.48 Proposed pause points along the Miyawaki Trail for Sonsodo Urban Forest Park. Source: Author



Fig.B.7.49 Existing Condition. Source: Author

B.7.9. Creating the Sonsodo Urban Forest Park

The Sonsodo Urban Forest park transforms a former dumpyard site into a dense forest by using Miyawaki technique. Over 35 native plant species is proposed to be planted to restore the degraded land. The proposal includes Miyawaki walking trail that connects through site to different zones of the site. The entry to the site is through a public park edge along the forest which offers open seatings and interaction zones creating a transition between public edge and the Miyawaki Forest. This intervention will become a benchmark for the urban lungs development across Goa.





The Miyawaki Forest

1.45
acres of Urban Greens for the city of Margao

Total Length

380 m
13% of Pathways and Hardsacpe

Total Area

5900 sqm
77% of Forest cover



Fig.B.7.50 Proposed Intervention for Sonsodo Urban Forest park.Source: Author



Pg 9/751 Proposed Miyawaki Trail for Sonsoddo Urban Forest park. Source: Author



Fig.B.7.52 Creating a welcoming edge along the Urban Forest Park. Source: Author

Zone 2

Margao Centre

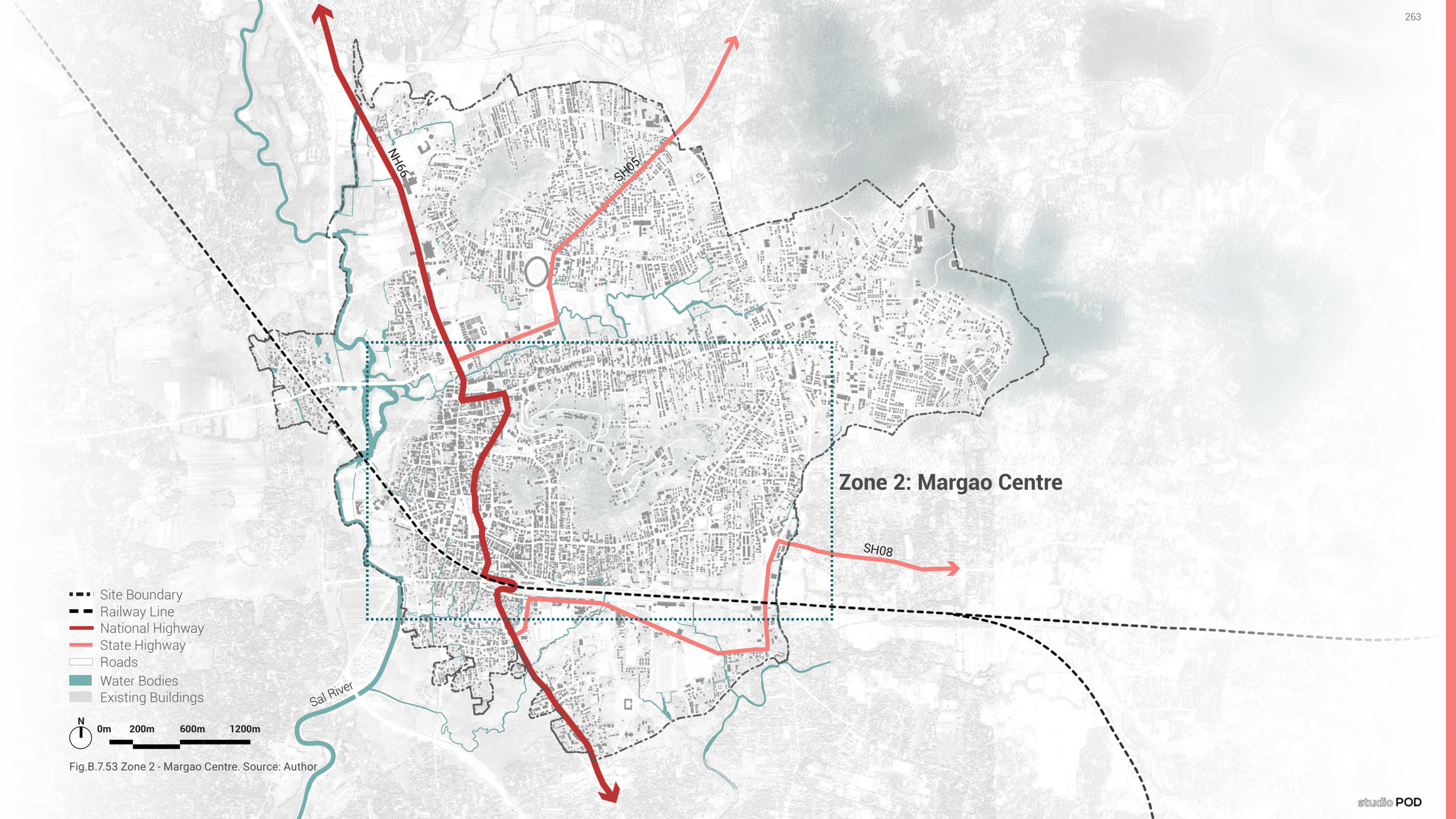


Fig.B.7.53 Zone 2 - Margao Centre. Source: Author



Fig.B.7.54 Heritage area acking sufficient space for pedestrians. Source: Author



Fig.B.7.55 Unprogrammed open space. Source: Author



Fig.B.7.56 Exsting Parking lot with waste dumped beside it. Source: Author



Fig.B.7.57 Market area traffic congestion. Source: Author

B.7.10. ExistingCondition

The streets in the heritage area are narrow and have insufficient space for pedestrians. The ODP has allocated several open spaces; however, most of them have not been programmed.
Due to heavy private vehicle use the traffic congestion in the city centre and market area are high. This is exacerbated by narrow streets and unorganised on-street parking. The parking lots that have been allotted are not efficiently used



Fig.B.7.58 Existing Conditions Map. Source: Author

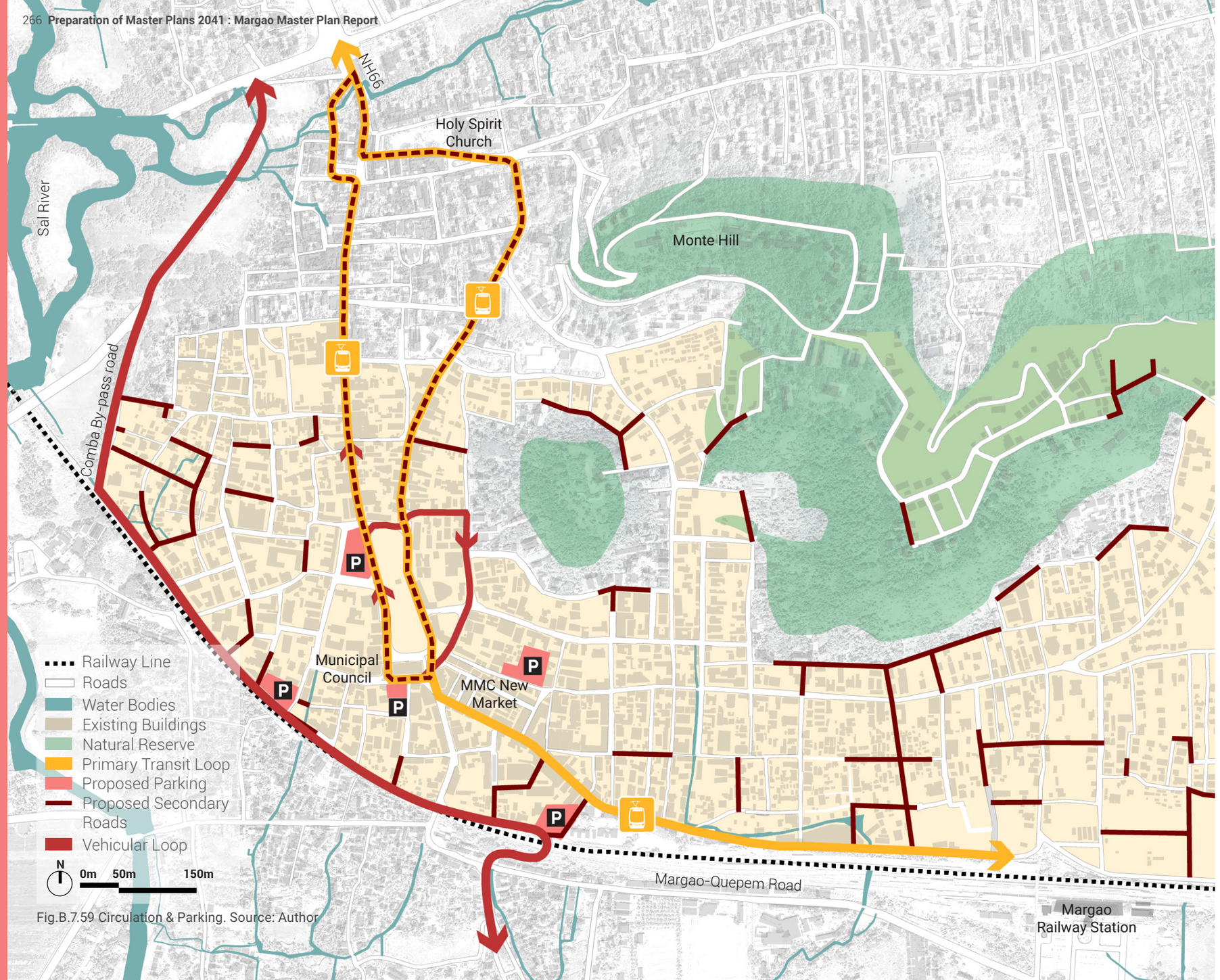


Fig.B.7.59 Circulation & Parking. Source: Author

B.7.11. Proposed Strategies

B.7.11.1. Rethinking Circulation and Parking

The proposed public transit loop follows the one-way route that exists currently. The through traffic is rerouted through the Comba By-pass road which connects back to the NH66. Within the centre, a distinct vehicular loop is proposed, away from the Municipal Garden. The street networks are completed to form complete loops and eliminate dead-ends.
Parking plots are identified along these major vehicular roads in order to facilitate better pedestrian access within the residential and commercial areas.

B.7.11.2. Creating a Network of Open Spaces

The Municipal Garden and Aga Khan Park are opened up to the adjoining street with public plazas carved out in between the buildings.
The Administrative Building of Salcete Communidade is converted into a Museum of South Goa and the plaza adjoining the building connects to the market street, which is also converted into a pedestrian street.
In addition to this, programmed open spaces are provided in each block.

open space amenities

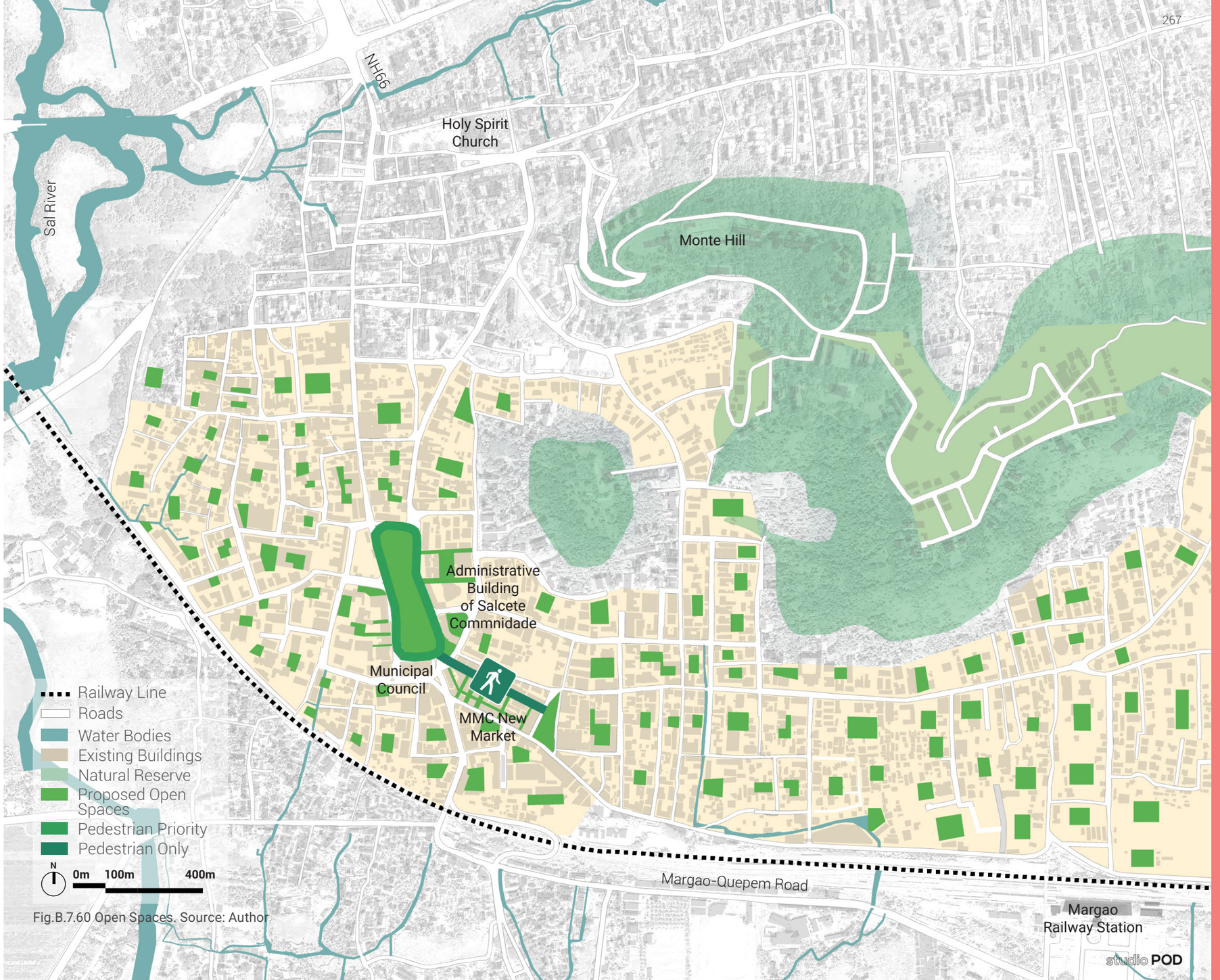


Fig.B.7.60 Open Spaces. Source: Author

Priority Interventions

- Rejuvenate the Margao Municipal Garden and Aga Khan Children's Park and the adjoining plaza to be more public friendly and inclusive
- Develop the Museum of South Goa and adjoining plaza in the centre of Margao
- Regenerate the Market Building and Market Street
- Creating a Heritage Loop with public transit access (e-shuttle buses) and pedestrian friendly streets
- Regenerate the Holy Spirit Church area by pedestrianising of streets and restricting vehicular traffic

Other Interventions

- Program and develop accessible open spaces such as the Temple Plaza and Monte Hill public space
- Create a No-build Green Buffer of 20m along the Sal river to protect river edge with promenades, pavilions & leisure spaces
- Create a No-build Green Buffer of 5m along nalas to accommodate flood waters
- Integrate green streets in the city
- Identify and create sponge parks throughout the city of Margao
- Introduce and develop a public transit system in the city of Margao
- Introduce Community Hubs with community facilities at a 5 minute walking distance from every neighbourhood
- Identify and develop gateways at the main entry points into Margao
- Develop commercial nodes along the primary loop that promote retail development
- **Upgradation of streets with dedicated bicycle lanes and pedestrian friendly footpaths**
- **Identify and develop plots for parking in Margao**

B.7.12. Proposed Interventions

In the Margao Centre zone, frameworks for parking and circulation, and open space have been proposed. Open space amenities and view corridors are also proposed within an open space framework.

Mobility is addressed through aligning the public transit loop with the existing one-way route in the centre of the city. This also becomes the Heritage Loop in the centre connecting various nodes. The through traffic is rerouted through the Comba By-pass road which connects back to the NH66 and the street networks are completed to form complete loops and eliminate dead-ends. Parking plots are identified along these major vehicular roads in order to facilitate better pedestrian access within the residential and commercial areas.

The Municipal Garden and Aga Khan Park are opened up to the adjoining street, the Administrative Building of Salcete Communidade is converted into a Museum of South Goa and the plaza adjoining the building connects to the market street, which is also converted into a pedestrian street. In addition to this, programmed open spaces are provided in each block.

The Holy Spirit Church area, which is a significant node along the Heritage Loop is revived and celebrated as a heritage area through pedestrianisation of streets and creation of plazas.

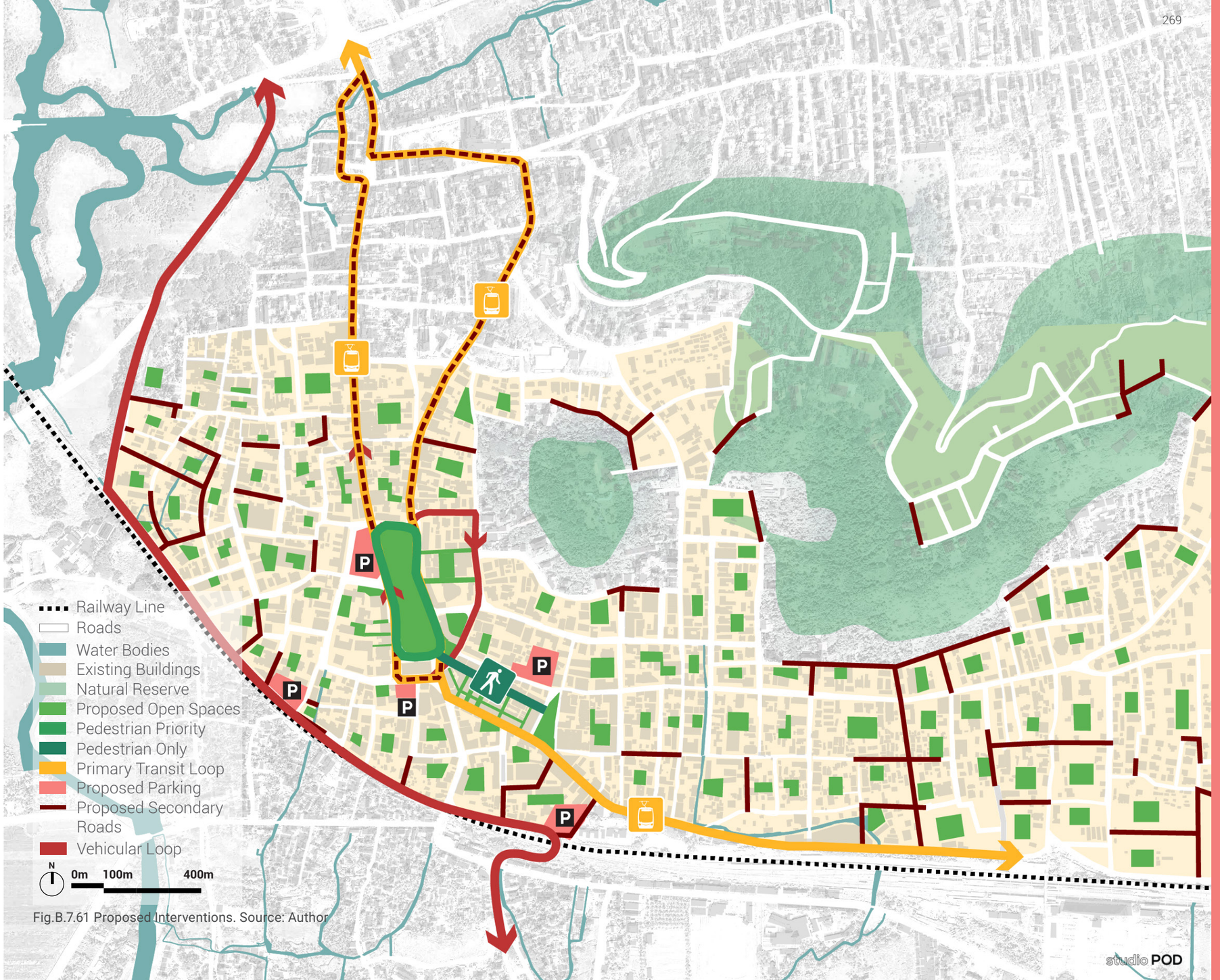


Fig.B.7.61 Proposed Interventions. Source: Author

	Owner	Area (sqm)	No. of Plots	Plot numbers
	Chief Town Planner, Government of Goa (H)	3095	1	239/8
	The Margao Municipal Council (H)	5838 *(Source: ODP)*	Several	Several
	1).M/S. Goa Tourism Development Corporation (H) 2).[Tourism Department] (H)	1890	3	238/482
	Cofre da Nossa Senhora da Piedade da Capela do Monte Filiala Igreja e Des Spirito Santa de Margao	22070	2	177/13, 152/81
	Fabrica da Igreja de Deus Espirito Santo de Margao (H)	14958	2	151/40, 151/116

Fig.B.7.62 Plot Ownership Details. Source: Bhunaksha

B.7.12.1. Plot Ownership & Stakeholders Involved

The proposed plan for the centre of Margao is a vision for its future and requires the coordination and collaboration of various stakeholders for its implementation, as it covers both public and private land.

There are several publicly-owned occupied plots surrounding the Margao Municipal Garden. The MMC New Market, which is one of the proposed interventions, is owned by the Margao Municipal Council. Additionally, there are publicly-owned plots coinciding with/adjoining the proposed parking plots in the framework. These are owned by the Goa Tourism Development Corporation and the Chief Town Planner, Government of Goa.

The other proposed interventions of street upgradation and public space creation include land owned by two churches - the Holy Spirit Church (Fabrica da Igreja de Deus Espirito Santo de Margao) and the Cofre da Nossa Senhora da Piedade da Capela do Monte Filiala Igreja e Des Spirito Santa de Margao.

stakeholders/departments

Margao Municipal Council

GSUDA
GOA STATE URBAN DEVELOPMENT AGENCY

Goa State Urban Development Agency

Department of Tourism

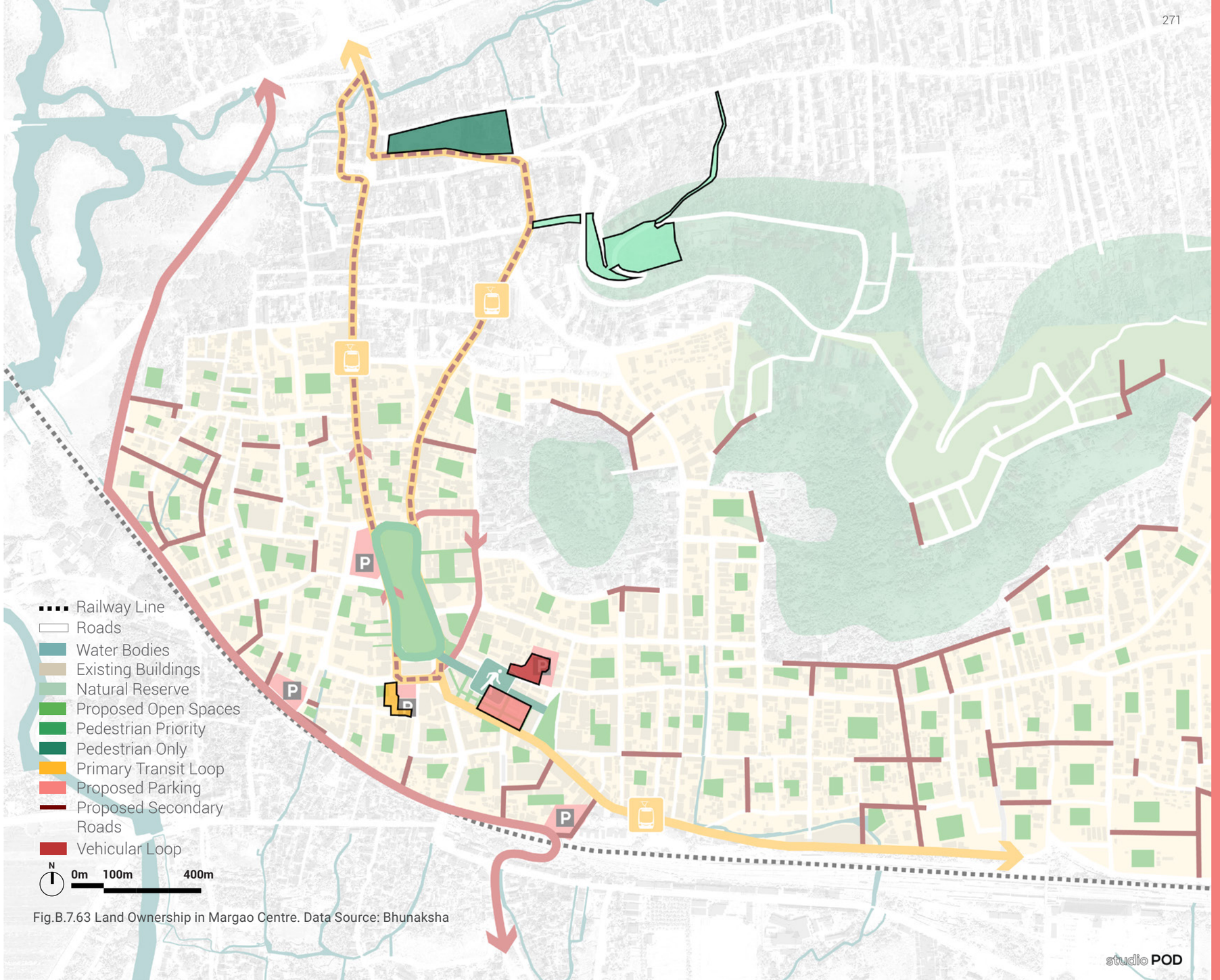


Fig.B.7.63 Land Ownership in Margao Centre. Data Source: Bhunaksha



Fig.B.7.64 Exsting view of the heritage street (Abade Faria Road). Source: Google Street View



Fig.B.7.65 Proposed section of the heritage street (Abade Faria Road). Source: Author

B.7.13. Creating a Heritage Loop

The proposed Heritage Loop connects the old historic centre (Holy Spirit Church area) and the new centre of Margao (around the Municipal Garden), connecting various significant nodes along the way such as the heritage buildings along Abade Faria road, the Ana Fonte Garden, the Capela de Nossa Senhora da Piedade on Monte Hill through the steps, the proposed Museum of South Goa, the MMC New Market and the Margao Municipal Council. The loop is characterised by e-shuttle buses and more areas for pedestrians to be able to experience the historic charm of Margao by foot.

B.7.13.1. Visual Experience

Currently, the streets around the Municipal Garden are characterised by an over-bearing presence of vehicles, while the streets around the Holy Spirit Church are narrow and have fewer vehicles passing through them. The aim of the heritage loop is to create a continuous and coherent visual experience of the historic parts of the city for pedestrians while enabling ease of movement throughout the area through the introduction of e-shuttles. A uniform visual language is reinforced through design elements.



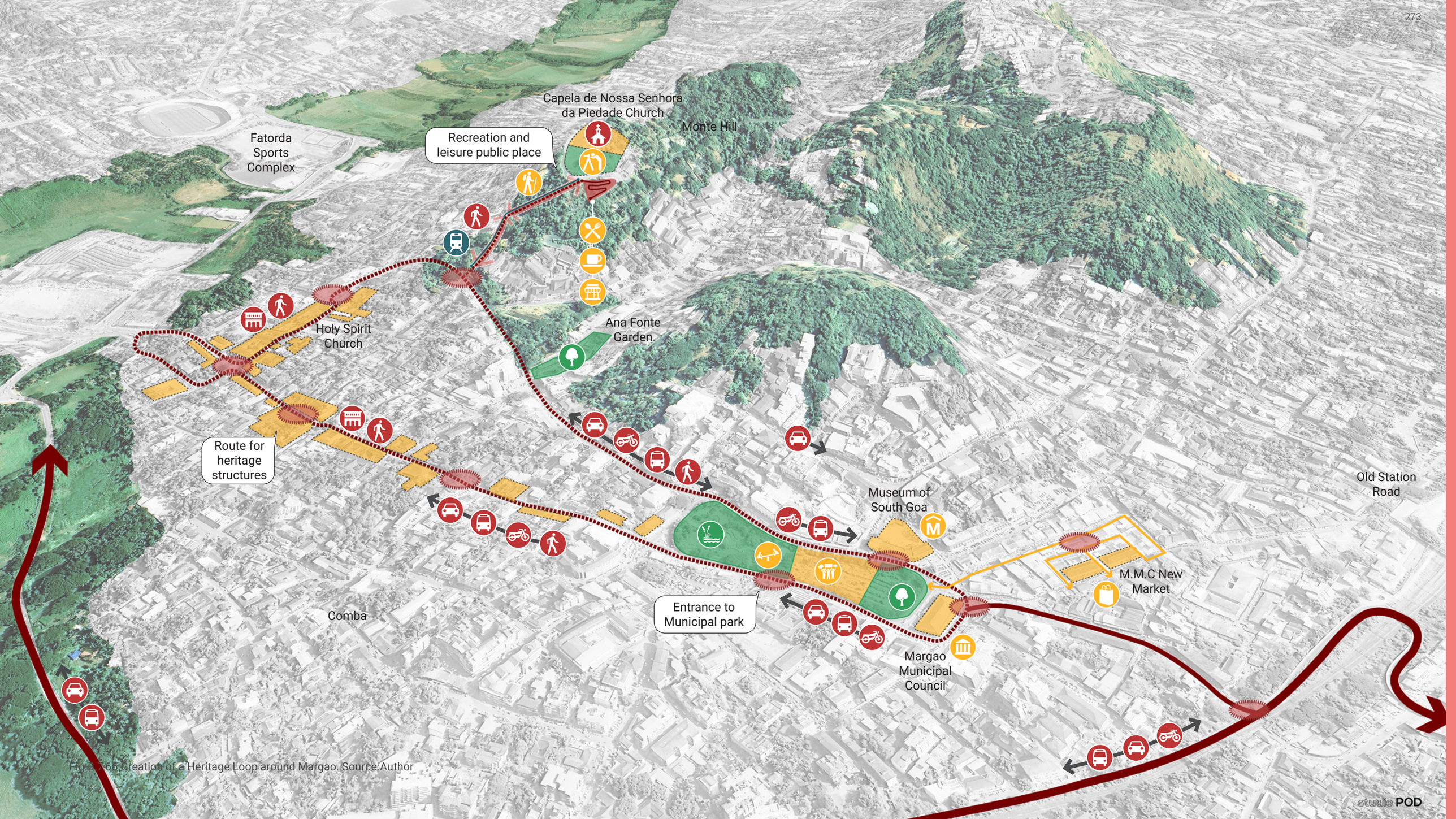


Fig 5.7.66 Creation of a Heritage Loop around Margao. Source: Author

studio POD



Fig.B.7.67 Traffic rerouting and creation of pedestrian zones in Karol Bagh, New Delhi. Source: Her Zindagi



Fig.B.7.68 Pedestrianisation and facade development in Golden Temple road, Amritsar. Source: Wikipedia



Fig.B.7.69 Reimagined Downtown San Fransisco. Source: Gensler



Fig.B.7.70 Urban Chowk, Ahmedabad. Source: Wikimedia Commons

B.7.14. Local Commercial and Retail Businesses

B.7.14.1. Case Study: Karol Bagh, New Delhi & Golden Temple Road, Amritsar

Karol Bagh, New Delhi

Traffic re-routing and creation of one-way streets
Parking garages at strategic locations
Pedestrianisation of inner market streets

Golden Temple Road, Amritsar

Amritsar - pedestrianisation, facade development and improvement of approach road to Golden Temple

B.7.15. Heritage Tourism

B.7.14.2. Case Study: The Asia Urbs Programme, Pondicherry

2002-2004

Model Street Restoration - The facades of 20 houses were restored to their former glory, and general municipal services, e.g. road maintenance, street lighting, were upgraded.
Heritage Walk - Guides were trained, and a brochure with a map of the old city and the various routes was published in different languages.
Grand Bazaar - 13 entrance gates were redesigned, the clock tower was repainted and a system for waste segregation-collection and disposal was introduced.



Fig.B.7.71 Before and After of restored houses in Pondicherry. Source: Urban Heritage In Indian Cities, Compendium of Good practices, PEARL, NIUA



Fig.B.7.72 Battery operated vehicles for heritage walk. Source: Urban Heritage In Indian Cities, Compendium of Good practices, PEARL, NIUA



Fig.B.7.73 Signages for Heritage Walk. Source: Urban Heritage In Indian Cities, Compendium of Good practices, PEARL, NIUA



Fig.B.7.74 Solid Waste Management. Source: Urban Heritage In Indian Cities, Compendium of Good practices, PEARL, NIUA



Fig.B.7.75 Holy Spirit Church area as a Heritage Tourism Hub. Source:Author

B.7.16. Reviving the Holy Spirit Church Area

The Holy Spirit Church signifies the origin of Margao as a town/city. The neighbourhood adjoining the church houses several heritage buildings including the Old Municipal Council building and the Old Sessions Court. Two pedestrian plazas are proposed - one abutting the church where the Saint Jose Vaz Park currently sits, and the other abutting the Old Sessions Court where an unused gated open ground is present. The Mons Ganganelli Rebello road and the Chris Perry road are designated as pedestrian streets.

B.7.16.1. Visual Experience

While creating a pedestrian-friendly historic core, the Saint Jose Vaz Park and the open space in front of the Old Sessions Court are transformed from being vehicle-dominant roads with parking to public plazas, creating a fitting foreground to the Holy Spirit Church and the heritage buildings surrounding them.





Fig.B.7.76 View of the Holy Spirit Church Area. Source: Author



Fig.B.7.77 Steps leading up to the



Fig.B.7.78 Funicular on Monte Hill. Source: Author.



Fig.B.7.79 Namsan, Seoul. Source: Google



Fig.B.7.80 Tunk Ka Cafe, Phuket. Source: Phuket 101

B.7.17. Creating a Vibrant Monte Hill

Monte Hill houses the Capela de Nossa Senhora da Piedade which has a large open space in front of it, which opens up views of the city and beyond. A public space with a viewing deck and small commercial and retail kiosks are proposed at the edge of the road that leads to the church.
The church can also be accessed by foot via the Calcada da Nossa Senhora de Piedade a set of steps leading up from the NH66. Along with the steps, a funicular is also proposed to take people up to the hill while facilitating views of the city.

B.7.17.1. Views

The funicular leading up to the Monte Hill opens up different views along the way, culminating in panoramic views of the city and surrounding landscape from the public space on Monte Hill. The commercial and retail spaces provide access to the view as well.



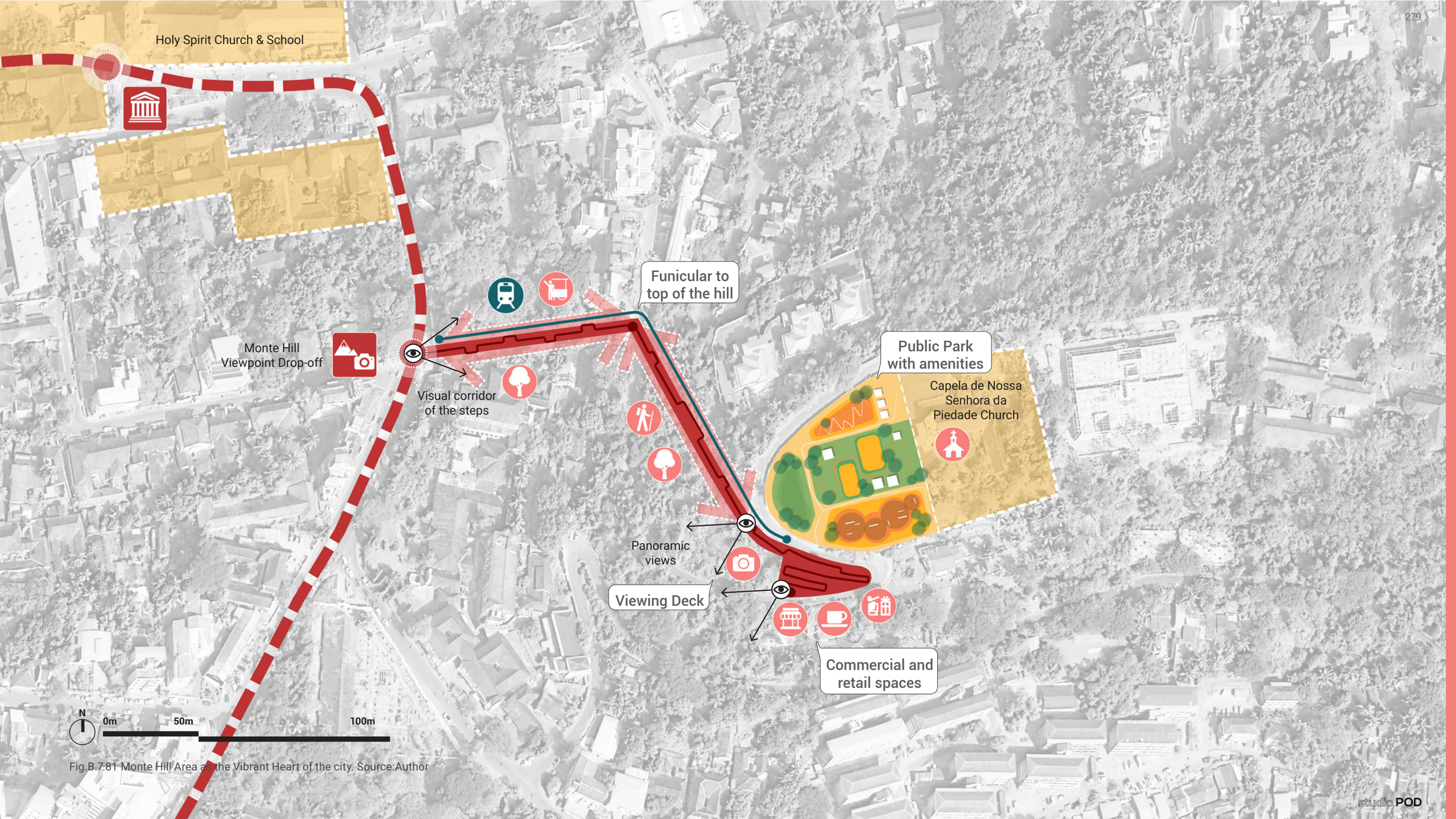
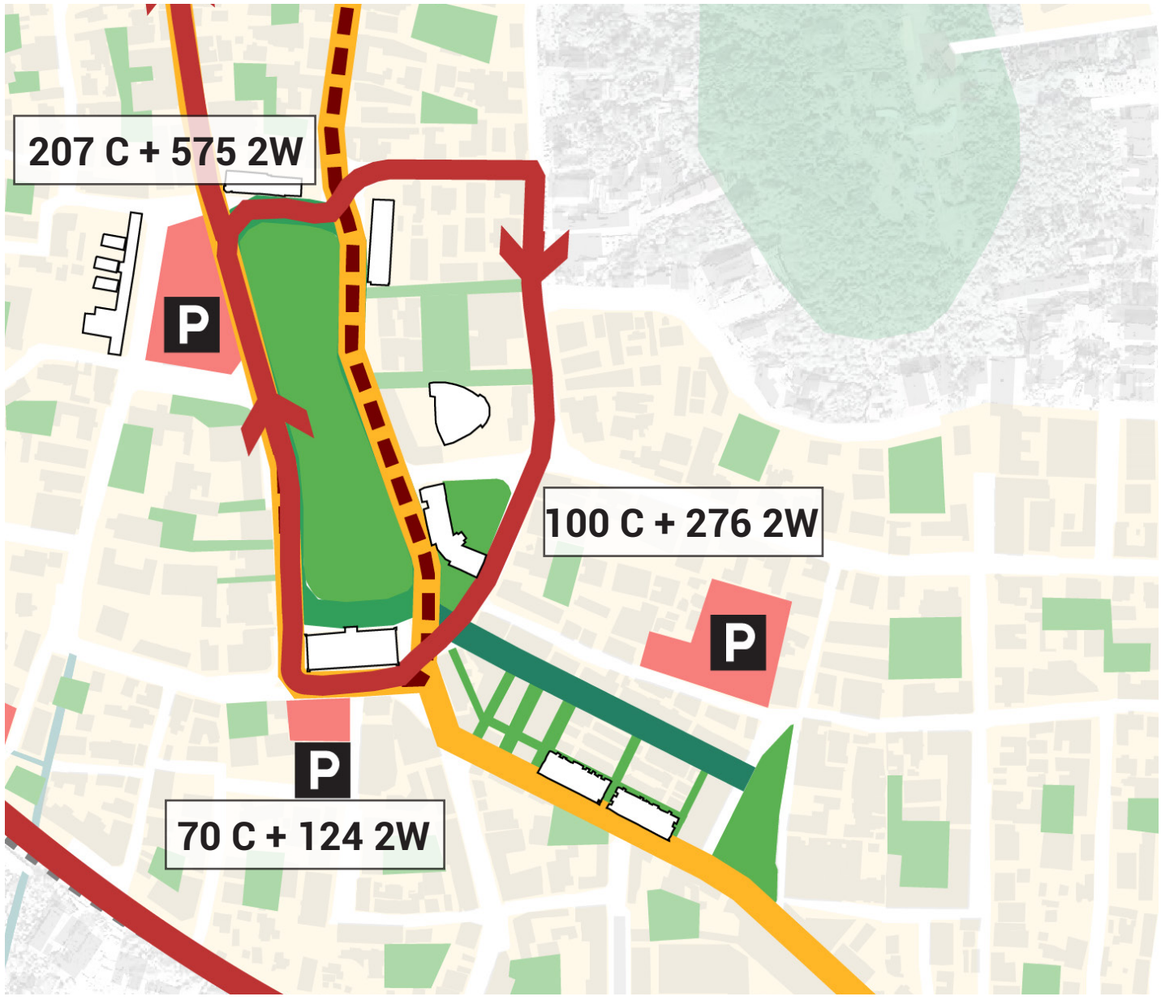


Fig.B.7.81 Monte Hill Area as the Vibrant Heart of the city. Source:Author

studio POD



Proposed Total Parking in MLCP:	Reorganised surface parking	Total parking provided
377 Cars	225 Cars	602 cars
975 2-wheelers	750 2-wheelers	1725 2-wheelers

Fig.B.7.82 Proposed Parkiing the City Centre. Source: Author

B.7.18. Regenerating the Municipal Garden & MMC New Market area

B.7.18.1. Creating a vibrant heart for the city

The Municipal Garden and Aga Khan Park are currently gated and disconnected from the street and surrounding buildings. The park is opened up and the street adjoining the park on the east is made into a public transit and pedestrian-priority street. The vehicular traffic is re-routed further away from the park. The parking is accommodated in 3 parking plots in the area. The main aim is to create a vibrant public realm in the city centre, from the market to the park.





Fig.B.7.83 View of Municipal garden & MMC New Market Area. Source: Author



Fig.B.7.84 Existing Street. Source: Author



Fig.B.7.85 View of Clock Tower Circle. Source: Google Street View

B.7.18.2. Pedestrian-friendly Street

The Municipal Garden and Aga Khan Park edges are made more permeable through low height seating and entry portals in order to facilitate easy pedestrian movement across the park and better visibility. The streets around the park are made more pedestrian friendly by introducing a transit system that eases traffic and connects the major attractions. While cras are restricted, two-wheelers are allowed on the street, with on-street parking provided.

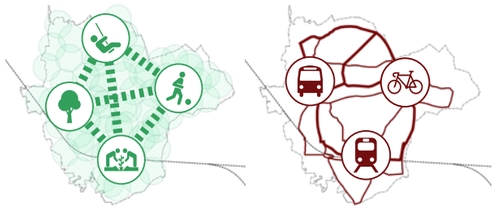




Fig.B.7.86 View of Pedestrian Friendly Street Source: Author



Fig.B.7.87 Existing view of the Municipal Garden. Source: Author



Fig.B.7.88 Community Hall in Aga Khan Children's Park. Source: Author

B.7.18.3. Municipal Garden

The Municipal Garden is programmed to include retail kiosks with shaded seating and public plazas with footpaths to enable large gathering for processions and festivals. The current Aga Khan Garden will be upgraded with greener edges and a toilet block with a plaza.

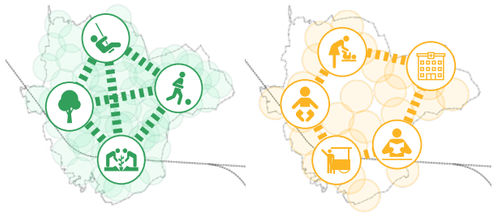




Fig.B.1.89 View of Municipal Garden - Second Option



Fig.B.7.90 Existing view of Administrative Building of Salcete Communidade. Source: Author



Fig.B.7.91 Existing view of parking in the plaza area. Source: Author

B.7.18.4. Museum of South Goa & Museum Plaza

The current Administrative Building of Salcete Communidade is re-imagined as a Museum of South Goa. The orientation of the building allows for the creation of an active public realm that can connect the plaza in front of it with the Lohia Maidan amphitheatre behind the structure, creating seamless pedestrian movement at the ground level. The Museum would showcase the history and heritage of Margao and South Goa with interactive exhibits and visuals.

B.7.18.5. Visual Continuity

Along with creating seamless pedestrian movement between the Lohia Maidan and the Museum Plaza throug the museum building, it is proposed to have visual connections as well, so as to make the space feel permeable.

Additionally, the roof of the building is made accessible, from which opens up views of the Margao Municipal Council and Municipal Garden, and the Lohia Maidan on either sides.



Fig.B.7.92 View of Musuem Plaza. Source: Author

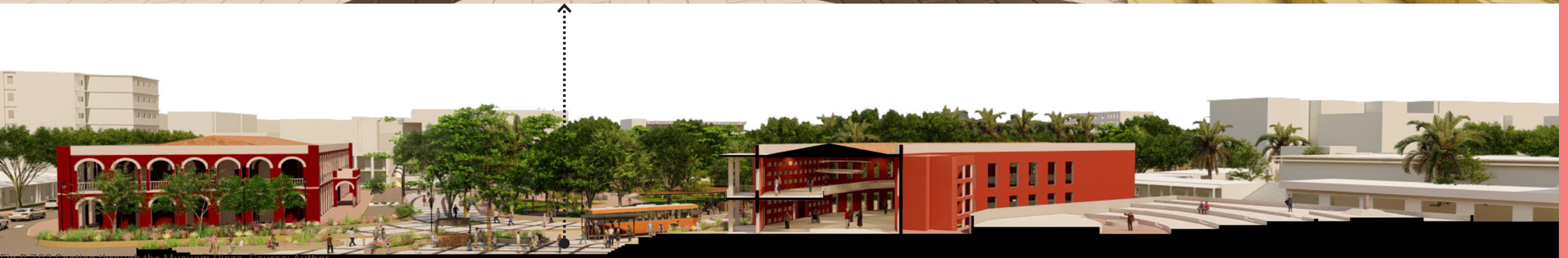


Fig.B.7.93 Section through the Musuem Plaza. Source: Author



Fig.B.7.94 Existing view of Market street. Source: Author



Fig.B.7.95 Existing view of Market street. Source: Author

B.7.18.6. Market Pedestrian Street

The current condition of the street is congested due to two wheeler parking on both sides, leaving limited space for pedestrians to walk. The prosed idea of a fully pedestrian street will allow the congestion to be relieved make the experience for pedestrians more friendly. The pedestrian nature of the street will also allow direct access to the municipal garden on foot.

B.7.18.7. Market Street Vista

The MMC New Market street frames a direct view towards the Municipal Garden. Currently, however, this area faces heavy congestion due to private vehicles taking over the street. The proposal aims to redefine the experience or journey from the market street to the garden as a safe and pedestrian-friendly one by restricting vehicles and connecting the street and garden at the pedestrian level, both physically and visually, through the museum plaza.





Fig.B.7.96 View of Market Pedestrian Street. Source: Author



Figure 6.17 View of the Ace Kiran Children's Park and Tree Arthor

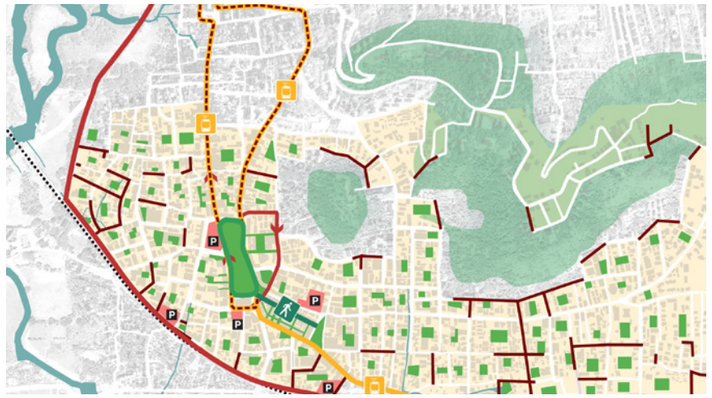


Fig.B.7.98 View of the Museum, the plaza and the Municipal Garden. Source: Author



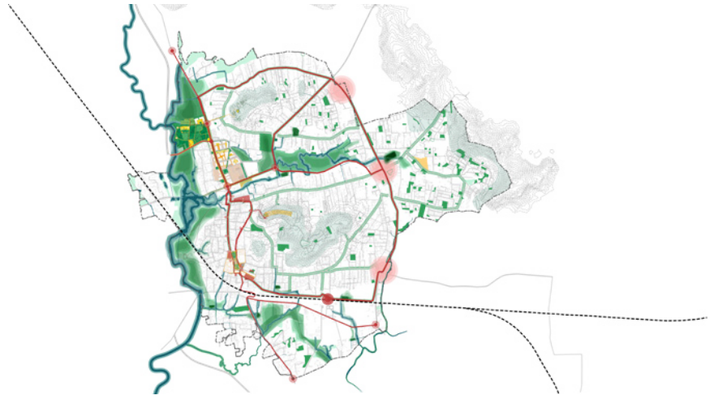
Zone 1

1. Develop the GSUDA Plot along the Sal river as a sponge park and public space integrated with commercial development
2. Develop the Seraulim Rd Intersection, Clock Tower Circle, Damodar Circle and Sal-NH66 Junction Development as Gateways and entry points into Margao
3. Develop a Biodiversity Park for the heart of Margao that acts as a sponge park and city park
4. Regenerate NH66 into a Civic & Commercial Corridor
5. Connect the Comba By-pass with the Old Station Road to relieve congestion in city centre



Zone 2

1. Rejuvenate the Margao Municipal Garden and Aga Khan Children's Park and the adjoining plaza to be more public friendly and inclusive
2. Develop the Museum of South Goa and adjoining plaza in the centre of Margao
3. Regenerate the Market Building and Market Street
4. Creating a Heritage Loop with public transit access (e-shuttle buses) and pedestrian friendly streets
5. Regenerate the Holy Spirit Church area by pedestrianising of streets and restricting vehicular traffic
6. Program and develop accessible open spaces such as the Temple Plaza and Monte Hill public space



Overall

1. Develop the Inter-Modal Transit Gateway at the Margao Railway Station
2. Create a No-build Green Buffer of 20m along the Sal river to protect river edge with promenades, pavilions & leisure spaces
3. Create a No-build Green Buffer of 5m along nalas to accommodate flood waters
4. Integrate green streets in the city
5. Identify and create sponge parks throughout the city of Margao
6. Introduce and develop a public transit system in the city of Margao
7. Introduce Community Hubs with community facilities at a 5 minute walking distance from every neighbourhood
8. Identify and develop gateways at the main entry points into Margao
9. Develop commercial nodes along the primary loop that promote retail development
10. Upgradation of streets with dedicated bicycle lanes and pedestrian friendly footpaths
11. Identify and develop plots for parking in Margao
12. Develop the Sonsodo Urban Forest Park

B.7.19. Summary of Proposed Interventions

As a part of the Flood Resilient Landscape strategy, a landscape framework in the form of an integrated green-blue network has been proposed, which also links to the creation of a network of programmed open spaces and amenities, which is a part of the Active Public Realm strategy. Within the Integrated Public Transit strategy, a transport and circulation plan has been put forward at the city level, as well as within each zone, to address local circulation challenges such as traffic congestion and parking. The Diverse Economy strategy identifies different character zones defined by the urban fabric which are delineated as economic zones with specific land use, programme, FSI and massing characteristics. The Inclusive Communities strategy proposes social amenities to address the gaps within the distribution of amenities and to cater to the projected population growth. The proposed master plan framework for each zone translates multiple city-level strategies to local interventions and priority projects. These projects have been identified based on the stakeholder engagements & immediate needs based on the analysis of the issues and opportunities. Ultimately, the proposed changes to the master plan are captured as suggestions to the Outline Development Plan 2028, as a first step towards the implementation of the projects in the city.

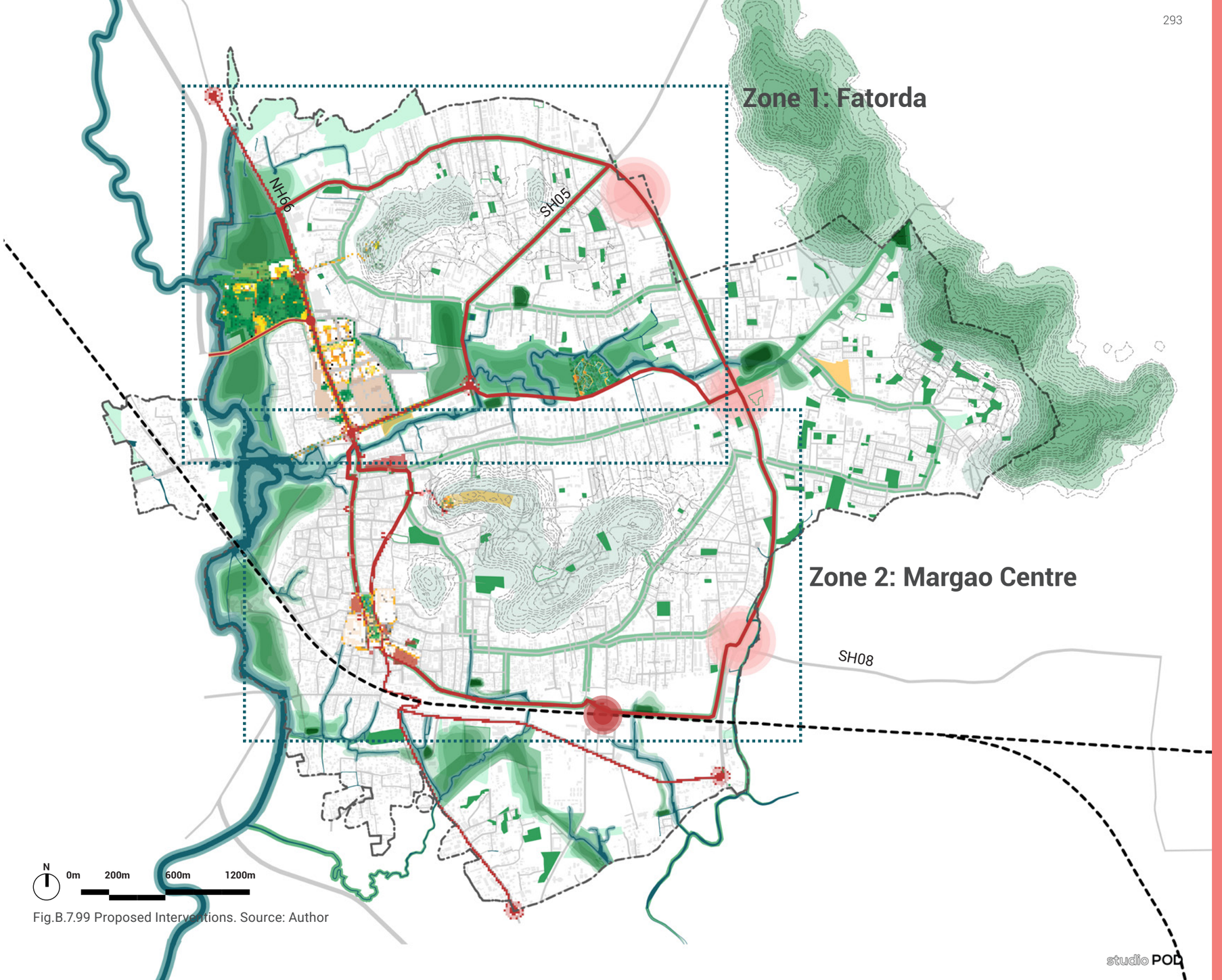


Fig.B.7.99 Proposed Interventions. Source: Author

Chapter B.8

Implementation Process

Master Plan & Vision for Margao



Flood Resilient Landscape



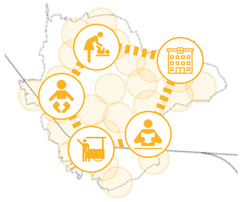
Diverse Economy



Integrated Public Transit



Active Public Realm



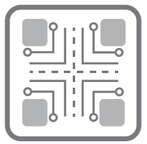
Inclusive Communities



Master Plan

Data collection
Study & Analysis
Site investigation
Visioning
Setting targets & indicators

Stakeholder engagements
Revision of Land Use Plan
Financial sustainability
Identification of priority projects



Design development

Data collection
Detailed design of projects
Stakeholder engagements
Preparation of Financial Plan
Preparation of phasing strategy



Implementation

Resource allocation
Assigning responsibilities and tasks
Coordination
Management

B.8.1. Implementation Phasing Plan

The Master Plan identifies a variety of projects to be developed in Margao to meet the vision. These projects have been catergorised under the following heads (i) Flood Resilient Landscape, (ii) Diverse Economy, (iii) Integrated Public Transit, (iv) Active Public Realm, (v) Inclusive Communities. The phasing plan for the implementation of these projects has been developed considering their priority. The implementation timeline has been estimated considering past experience in implementing similar projects in Goa and also includes time for design development and statutory approvals.

Depending on the scope of work, extents and estimated costs the projects will be taken up by the specific Government Agency / Department or GSUDA. As these projects are multi-faceted projects will require the close coordination of all these agencies.

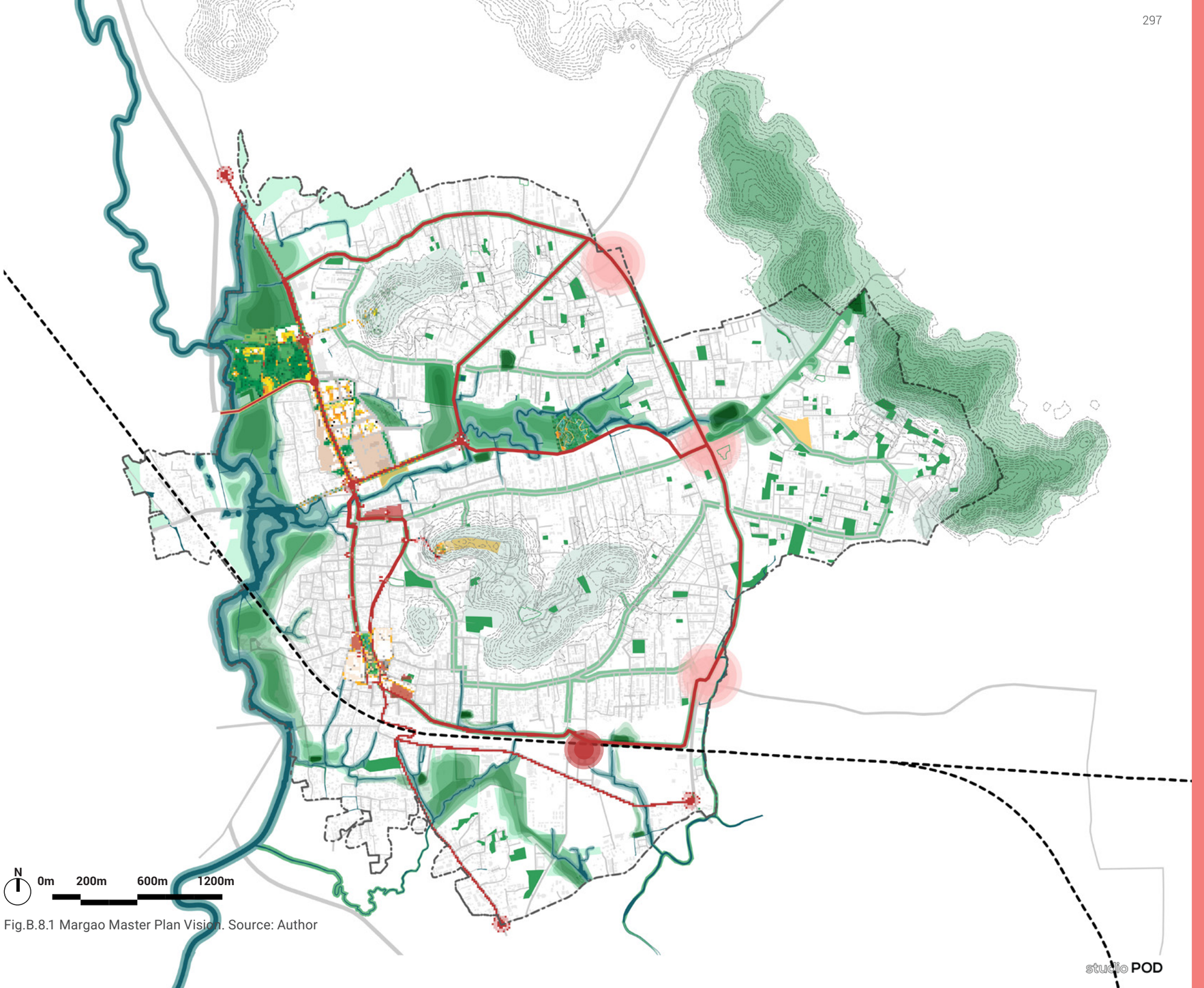


Fig.B.8.1 Margao Master Plan Vision. Source: Author

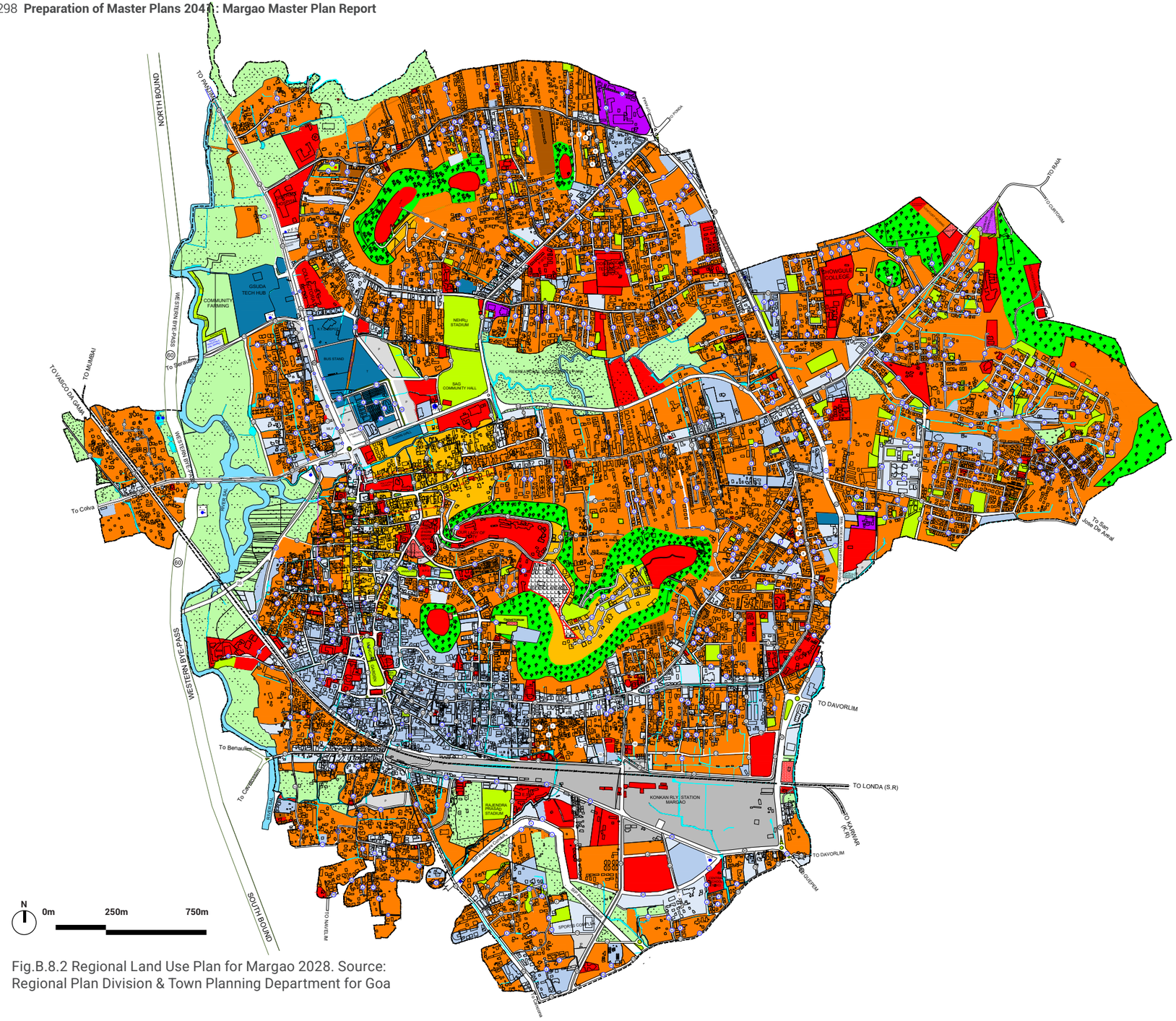


Fig.B.8.2 Regional Land Use Plan for Margao 2028. Source: Regional Plan Division & Town Planning Department for Goa

B.8.2. Current Outline Development Plan for Margao Planning Area 2028

The Master Plan identifies a variety of projects to be developed in Margao to meet the vision. These projects have been catergorised under the following heads (i) Flood resilient landscape, (ii) Diverse Economy and (iii) Integrated public transit.

The phasing plan for the implementation of these projects has been developed considering their priority. The implementation timeline has been estimated considering past experience in implementing similar projects in Goa and also includes time for design development and statutory approvals.

- Commercial C1
- Commercial C2
- Special Residential
- Residential S1
- Residential S2
- Public, Semi-public
- Agricultural
- Natural Reserve
- Open Space
- Special Commercial
- Conservation Area
- Parking Area
- Transport & Communication
- Industrial
- Defense
- Crematorium
- Proposed Road
- Water Bodies
- Municipal Boundary

B.8.3. Core Areas of Recommendations for the Outline Development Plan 2028 for Margao Planning Area

	1	2	3
			
STRATEGY As per Concept Masterplan 2041 for Margao Planning Area	Flood Resilient Landscape	Diverse Economy	Integrated Public Transit
IMPACT On current Outline Development Plan	Addition of River & Water Body Buffer	Change in Land Use	Alteration in Streets & Roads



Fig.B.8.3 Fish market built to edge of Sal River. Source: The Goan



Fig.B.8.4 Informal Settlements along the River edge. Source: Author



Fig.B.8.5 Flooding in the subway near the river. Source: The Goan

B.8.4. Flood Resilient Landscape

B.8.4.1. Existing Resiliency Issues

The low-lying areas in the city, majorly around the Sal river and the valley between the Monte hill and Fatorda hill, are exposed to flooding during rains. Due to encroachments on the flood plains of the river by a school in Comba, the District Hospital, the wholesale fish market and several establishments in Khareband, flooding occurs in these areas, as they block the flow of water.

Additionally, the lack of proper storm-water drainage abets flooding in areas within the city, like the old centre.

Due to the ongoing construction of the Western By-pass road, there is an increased likeliness of flooding in the peripheral areas around the river and other low-lying areas. It is, therefore, more crucial to prepare the Sal river and the nalas that flow into it for flood resiliency.

B.8.4.2. Current Outline Development Plan 2028 for Margao Planning Area

1. The Sal river is one of the major rivers in Goa; however, only a small stretch of the river has a buffer of **20m** marked in the ODP. A few establishments have been built to the edge of the river.
2. There are several water bodies/ nalas from the city that drain into the Sal river; however, there are no buffers marked in the ODP for the water bodies/nalas. These areas, as well as the areas around the Sal river are prone to flooding .

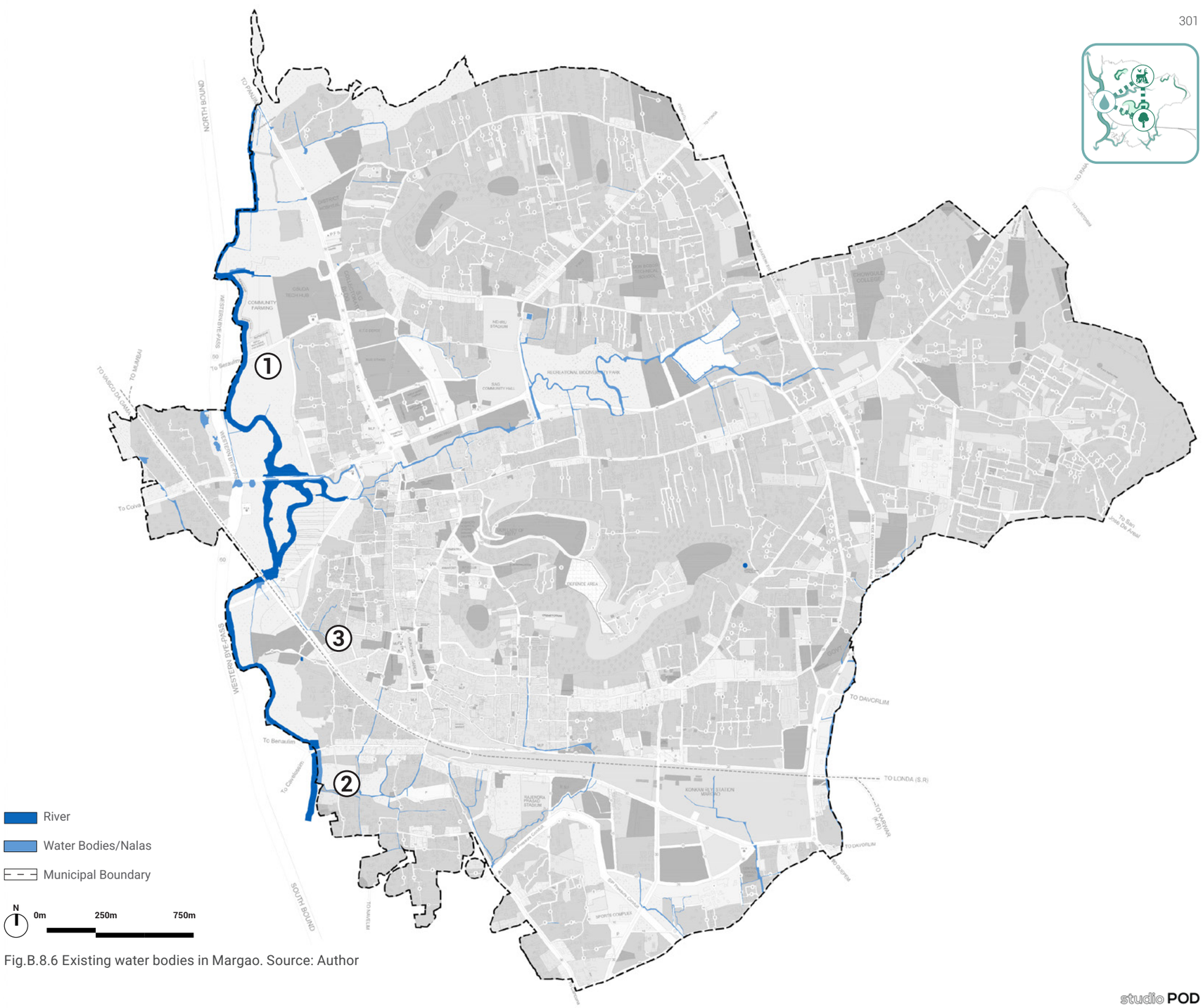


Fig.B.8.6 Existing water bodies in Margao. Source: Author



Fig.B.8.7 Bishan Ang Mo Kio Park. Source: Studio Dreseitl



Fig.B.8.8 Harbin Qunli stormwater park. Source: Turenscape

B.8.4.3. Proposed Resiliency Solutions

The flood resilience strategy for Margao emphasises the protection and enhancement of the natural assets, including developing open space buffers along rivers and nalas to collect storm water and creating open spaces and streets that prevent rainwater run-off.

Recreational Open Space in Green Belt

Such recreational open space may be allowed to be earmarked, partly or fully, in green belt area shown on the development plan after leaving distance of 15m. from river and 9m. from nallah, provided, such recreational space is sizable as required under these regulations. Provided that, the

A distance of 6 m. from the edge of minor water course (nallah) is to be left as marginal distance for construction of any building. A 3 m. strip of land from the edge of such water course out of this 6 m. distance to be left, shall be available for use as cycle track for general public. The

Excerpt from Unified Development Control And Promotion Regulations for Maharashtra State Chapter No. 3.4 Pg. 52 & 3.13 Pg. 61

B.8.4.4. Recommendations to the ODP 2028 for Margao Planning Area

1. Sal, being one of the major rivers in the state, requires a buffer that runs along the entire length of it in order to prevent encroachments and flooding, while also providing city-level public spaces along the river. Proposed Buffer for Sal river - **20 m**
2. Proposed buffer for water bodies/nalas-**3 m***

* Buffer regulations as per Unified Development Control And Promotion Regulations For Maharashtra State.

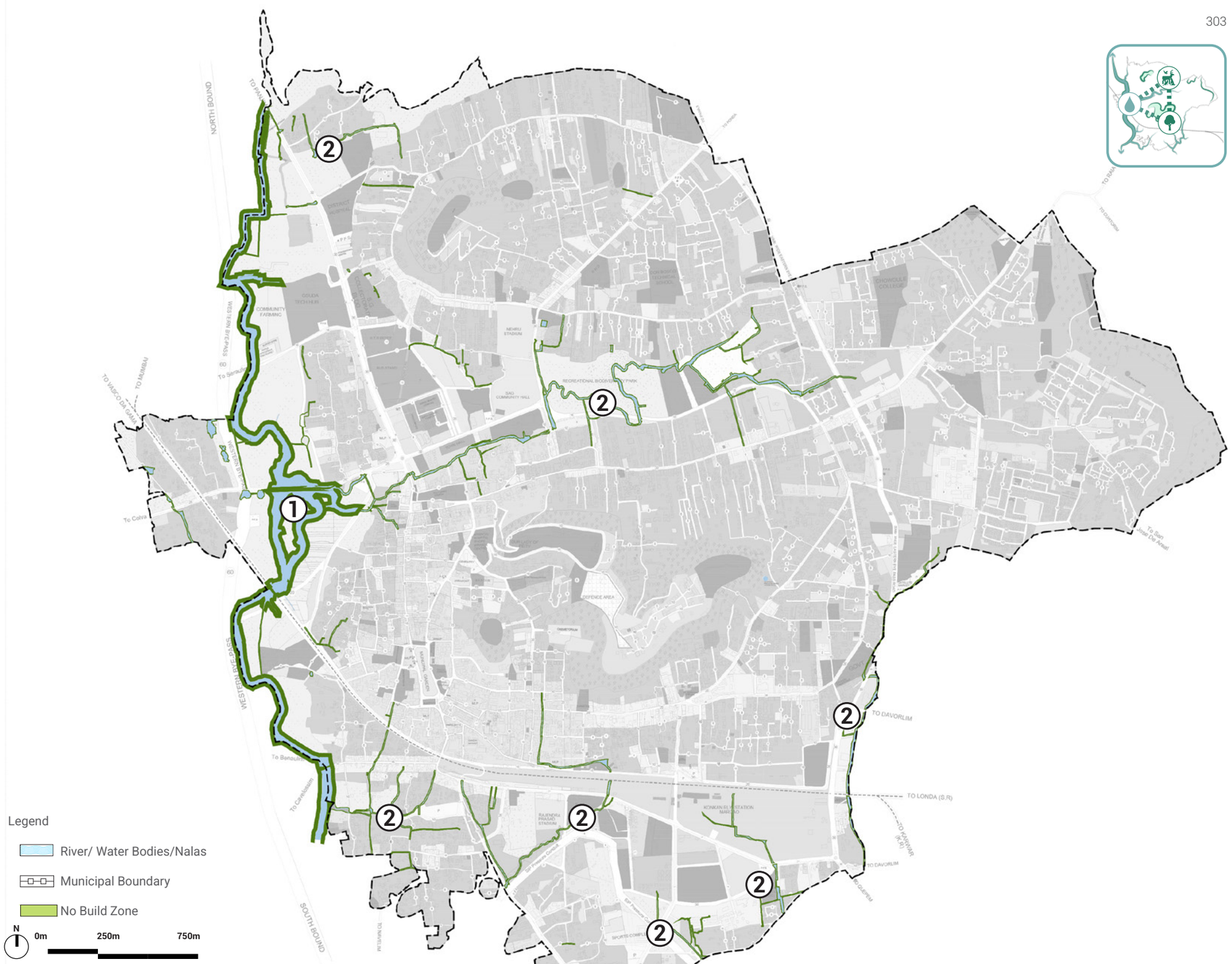


Fig.B.8.9 Recommended buffers for water bodies in Margao. Source: Author



Fig.B.8.16 Existing mobility issues in Margao Centre. Source: Author

B.8.5. Integrated Public Transit

B.8.5.1. Existing Mobility Issues

1. The Abade Faria road, which houses several heritage buildings and has been marked as conservation area in the ODP, is between **7** and **8m** wide. The buildings have been built to edge, with no room for expansion of road width.

1. The padre Miranda road which flanks the municipal garden to the east is currently less than **15m** wide. There is heavy footfall as well as high vehicular traffic on this road.



Fig.B.8.17 8m wide road in heritage area with buildings built to edge. Source: Author



Fig.B.8.18 Existing ROW is less than what is provided in the ODP. Source: Author

B.8.5.2. Current Outline Development Plan 2028 for Margao Planning Area

1. The main road in the heritage area (Abade Faria Road)has been provided a larger width (**15m**) in the ODP than what exists currently (**7-8m**).This area has also been marked as conservation area in the ODP.
1. The ROW of the roads around the Municipal Garden, which form a significant loop in the city, currently vary in the ODP.
2. The main roads in the south along the station and the Manohar Parikar Indoor Stadium have been provided as **30m** in the ODP.
3. The proposed roads in Fatorda have been provided varying widths(**15m** and **20m**).There is also a **7m** wide road in between the Bus Stand and the KTC Depot.

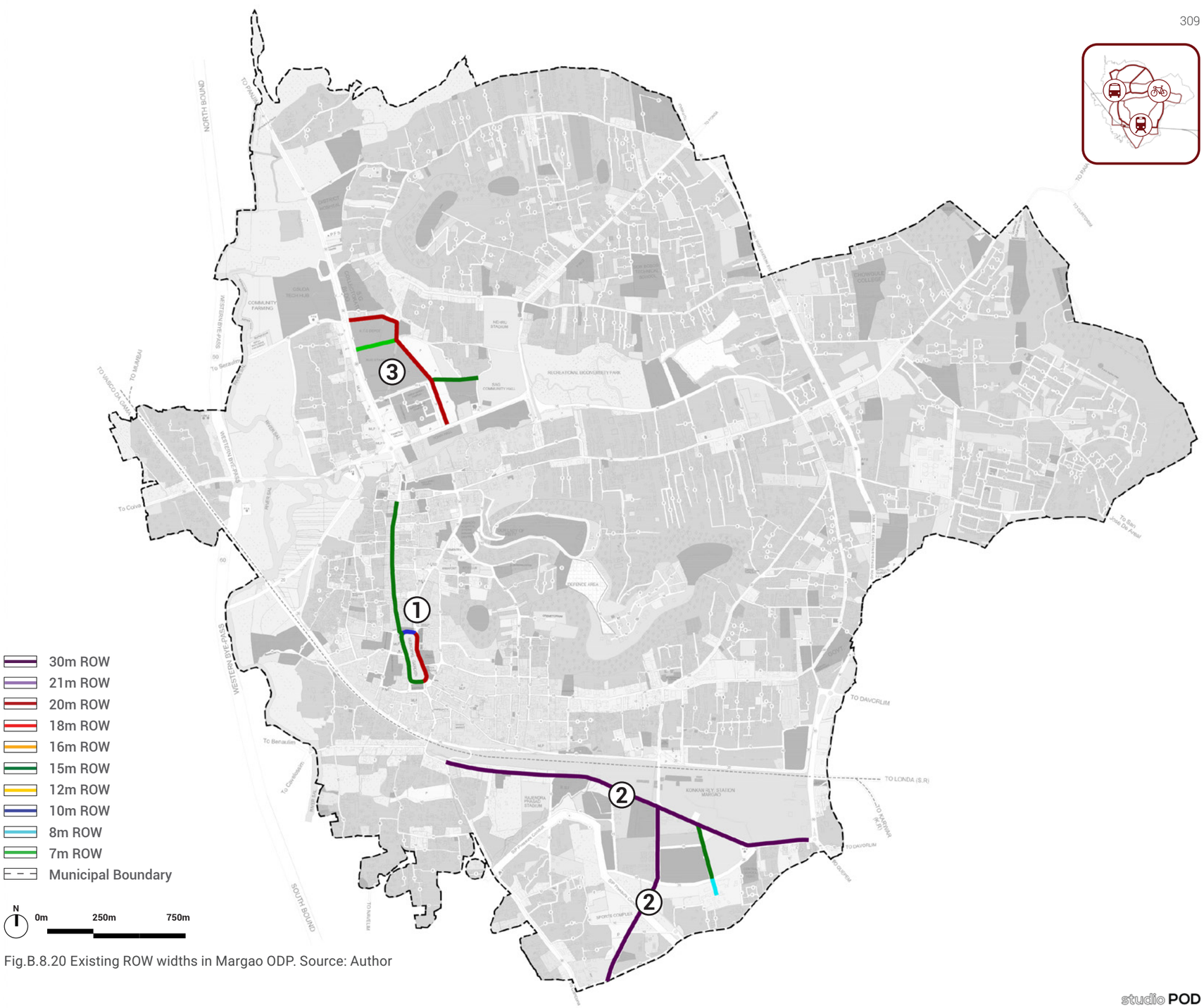


Fig.B.8.20 Existing ROW widths in Margao ODP. Source: Author

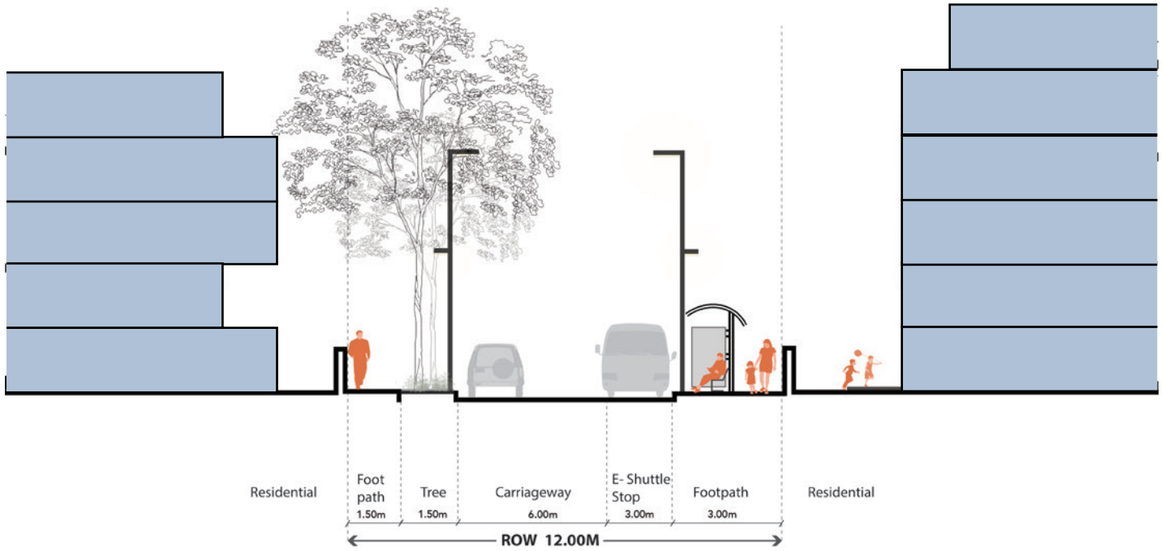


Fig.B.8.21 3M wide road in heritage area with buildings built to edge. Source: Author

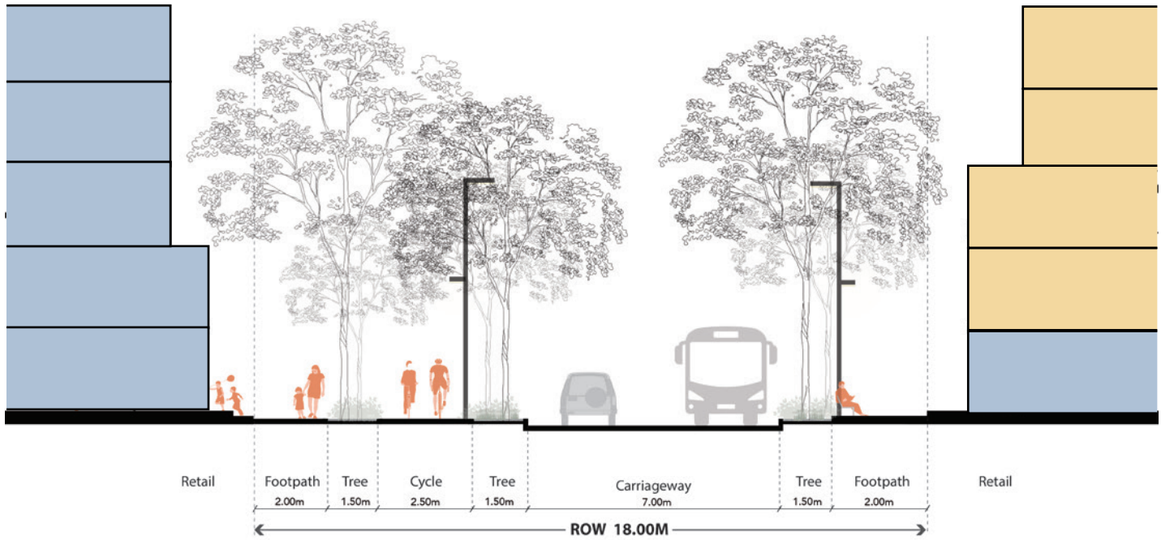


Fig.B.8.22 Existing ROW is less than what is provided in the ODP. Source: Author

B.8.5.3. Proposed Mobility Solutions

1. The proposals are based on the assumption that once the Western By-pass road is completed, **the NH66 will have to be de-notified** as it will no longer serve as a national highway for through traffic, but as an internal corridor and gateway into Margao. The total lengths of the proposed/updated roads are as follows:

   21m ROW: 4.7km
   18m ROW: 1.64km
   16m ROW: 0.69km
   15m ROW: 0.67km
   12m ROW: 0.15km
   10m ROW: 0.15km



Fig.B.8.23 View of proposed street with public transit and plaza next to Municipal Garden. Source: Author

B.8.5.4. Recommendations to the ODP 2028 for Margao Planning Area

Based on the overall strategies for Margao the following changes have been made to the ODP:

1. The ROW of the road connecting the Holy Spirit Church and the Municipal Garden area has been reduced in order to preserve the heritage buildings and the ROW around the Municipal Garden have been made uniform.
2. In the south, aiding the proposal of creating an Inter-modal Transit Gateway, the existing ROW have been altered and additional roads have been added to increase connectivity in the area.
3. In Fatorda, the ROW of proposed ODP roads have been made uniform and new roads have been added, reflecting the land use change as well as respecting the natural drainage through an integrated storm-water network.

Proposed changes in streets:

1. Abade Faria road: **10m**, Padre Miranda road adjoining Municipal garden: **15m**
2. Margao-Quepem road, road along Manohar Parikar indoor stadium & other Main roads: **21m**, Secondary roads: **16m**
3. Fatorda Main roads: **18m**, Secondary road: **12m**

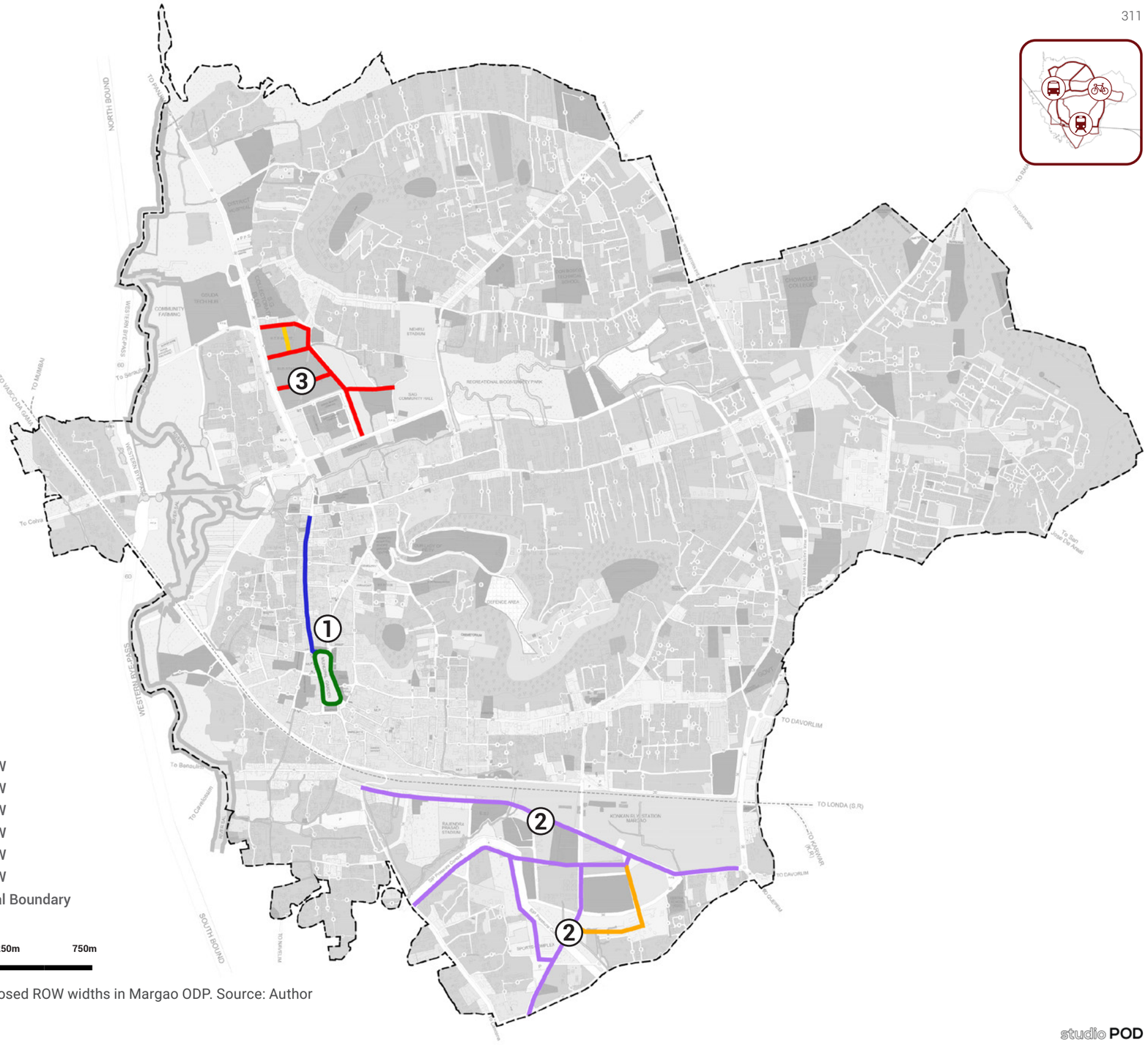


Fig.B.8.24 Proposed ROW widths in Margao ODP. Source: Author

B.8.6. Overall Summary for Recommendations for ODP 2028 for Margao Planning Area



As per current Outline Development Plan 2028 for Margao Planning Area

① Buffer of 20m along **small stretch** of the Sal river.

② **No buffer** provided for water bodies/nallas.



③ Abade Faria road: **15m**
Padre Miranda road adjoining Municipal garden: **20m**
Margao-Quepem road and road along Manohar Parikar indoor stadium: **30m**
Fatorda Main roads: **20m**

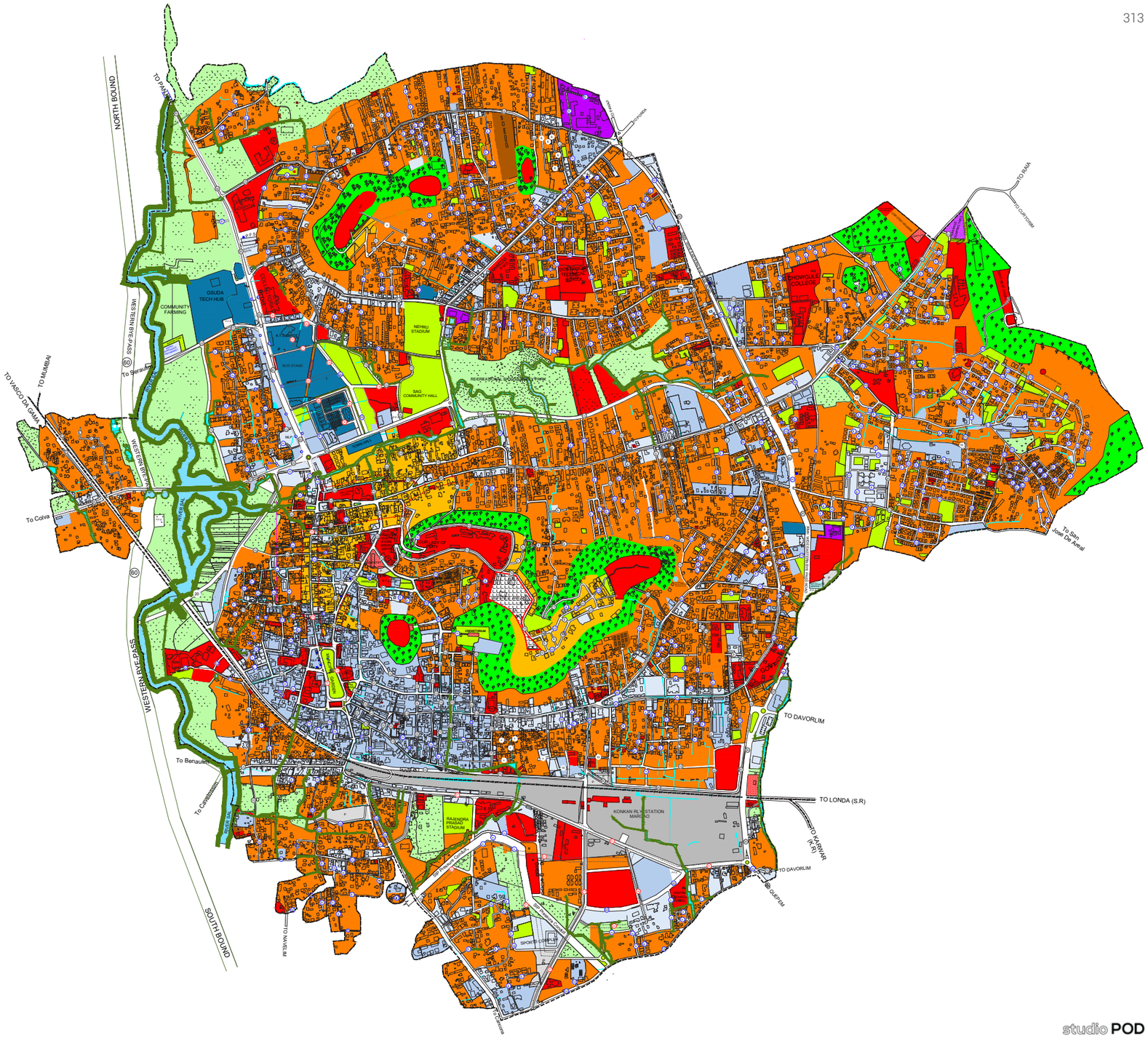
Recommendations to the Outline Development Plan 2028 for Margao Planning Area as per Master Plan Proposal

① Buffer of **20m** along the **entire stretch** of the Sal river.

② Buffer of **5m** provided for water bodies/nallas.

③ Abade Faria road: **10m**
Padre Miranda road adjoining Municipal garden: **15m**
Margao-Quepem road, road along Manohar Parikar indoor stadium & other Main roads: **21m**
Secondary roads in Margao South: **16m**
Fatorda Main roads: **18m**
Secondary road in Fatorda: **12m**

Total updated ROW Width:
21m ROW: 4.74km
18m ROW: 1.64km
16m ROW: 0.69km
15m ROW: 0.67km
12m ROW: 0.15km
10m ROW: 0.70km



Commercial C1
Commercial C2
Special Residential
Residential S1
Residential S2
Public, Semi-public
Agricultural
Natural Reserve
Open Space
Special Commercial
Conservation Area
Parking Area
Transport & Comm.
Industrial
Defense
Crematorium
Proposed Road
Water Bodies
Municipal Boundary
No Build Zone

Fig.B.8.25 Proposed Outline Development Plan for Margao. Source: Author



Fig.B.8.26 View of Pedestrian Friendly Street with bus priority adjoining the Municipal Garden. Source: Author



Fig.B.8.27 View of Museum Plaza adjoining the Administrative Building of Salcete Communidade. Source: Author

B.8.7. Priority Projects Budget

B.8.7.1. Municipal Garden Area

Project:

The Municipal Garden and Aga Khan Park are opened up and the street adjoining the park on the east is made into a public transit and pedestrian-priority street. The vehicular traffic is re-routed further away from the park. The parking is accommodated in 3 parking plots in the area. The orientation of the Administrative Building of Salcette Communidade allows for the creation of a plaza in front of it.

Scope:

1. Landscape, furniture and lighting of the Municipal Garden and Aga Khan Park (open space)
2. Streetscape including furniture, lighting and infrastructure around the park and the vehicular streets to the east and west of the garden
3. Plazas (open space) adjoining the Municipal Garden and the Administrative Building of Salcete Communidade

Total Cost:

49.34 Cr.

B.8.7.2. M.M.C. New Market Area

Project:

The current condition of the street is congested due to two wheeler parking on both sides, leaving limited space for pedestrians to walk. The prosed idea of a fully pedestrian street within the market will ease congestion and also allow direct access to the Municipal Garden by foot. In addition, the open space with a temple and parking next to the street adjoining the market entrance is upgraded to create a safe public realm.

Scope:

1. Streetscape including furniture, lighting and infrastructure within the market street and the adjoining streets to the north, south and east of the market.
2. Open Space with a temple on Old Station Road.

Cost (Streetscape around market):

9.09 Cr.

Cost (Open space with temple):

0.66 Cr.



Fig.B.8.28 View of Market Pedestrian Street. Source: Author



Fig.B.8.29 View of the Market street leading towards the plaza and the Municipal Garden. Source: Author



Fig.B.8.30 View of the Holy Spirit Church Area. Source: Author



Fig.B.8.31 Holy Spirit Church area as a Heritage Tourism Hub. Source: Author

B.8.7.3. Holy Spirit Church Area

Project:

Two pedestrian plazas are proposed - one abutting the church where the Saint Jose Vaz Park currently sits, and the other abutting the Old Sessions Court where an unused gated open ground is present.
The Mons Ganganelli Rebello road and the Chris Perry road are designated as pedestrian streets.

Scope:

1. Plazas (open space) next to the Holy Spirit Church and adjoining the Old Sessions Court
2. Streetscape including furniture, lighting and infrastructure around the Holy Spirit Church Ground and the Old Sessions Court Plaza

Total Cost:

12.35 Cr.

B.8.7.4. Heritage Loop

Project:

The proposed Heritage Loop connects the old historic centre (Holy Spirit Church area) and the new centre of Margao (around the Municipal Garden), connecting various significant nodes along the way. The loop is characterised by more areas for pedestrians to be able to experience the historic charm of Margao by foot with public transit (e-shuttles) and stops along the route.

Scope:

1. Purchase of buses (e-shuttles) for the heritage loop
2. Development of bus stops, signage, paint marking etc. along the loop

Total Cost:

3.64 Cr.



Fig.B.8.32 Proposed section of the heritage street (Abade Faria Road). Source: Author

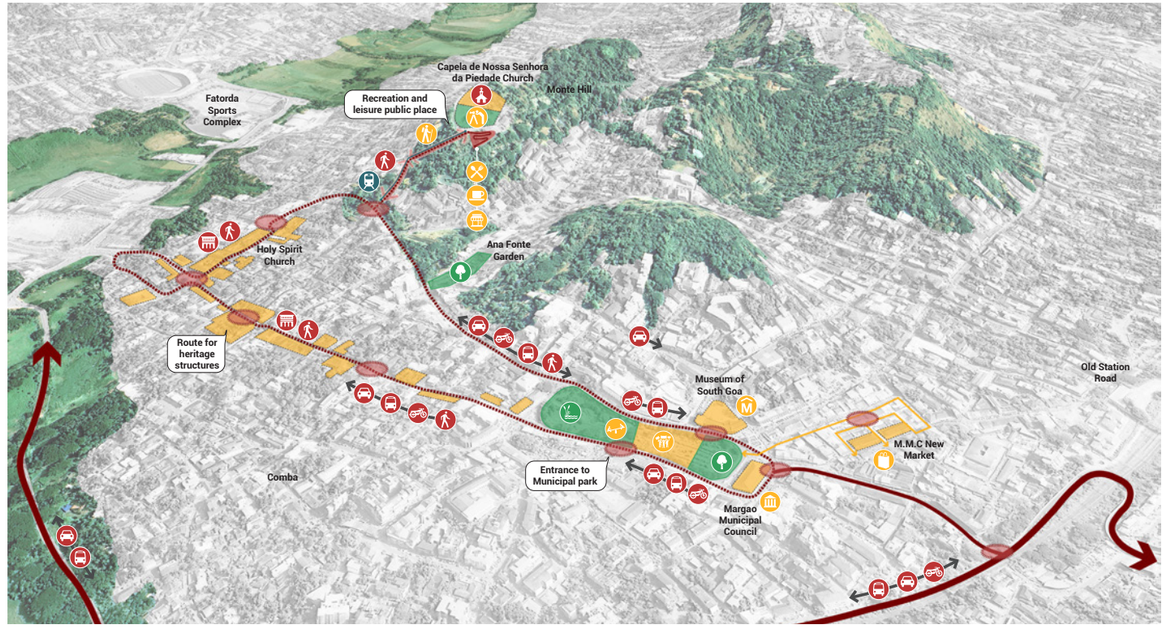


Fig.B.8.33 Creation of a Heritage Loop around Margao. Source: Author



Fig.B.8.34 View from the Sal River. Source: Author



Fig.B.8.35 Sal River Proposal. Source: Author

B.8.7.5. Sal Pilot

Project:

The proposal aims to rejuvenate the river and revive agricultural activity around it. Parks, gardens, gathering spaces and sports grounds are proposed in the area, connected by pedestrian paths and cycle tracks that wind through the edges of the river, culminating at decks and canopies from which views of the river open up.

Scope:

1. Development of the open space and landscape (on the land owned by GSUDA) adjoining the river inlcuding furniture and lighting.

Total Cost:

26.65 Cr.

B.8.7.6. Clock Tower Circle - Entry Gateway

Project:

With the proposed transition of the NH66 into a civic-commercial corridor, the Colva Circle is redesigned to create a unique identity and image as an entry to the NH66 and the city. The corner plots are proposed as commercial blocks with pedestrian plazas fronting the circle. In order to promote the use of non-motorised transport, cycle lanes are incorporated and islands are created to facilitate safe pedestrian movement and crossing.

Scope:

1. Streetscape of the intersection including infrastructure, furniture and lighting.

Total Cost:

6.68 Cr.

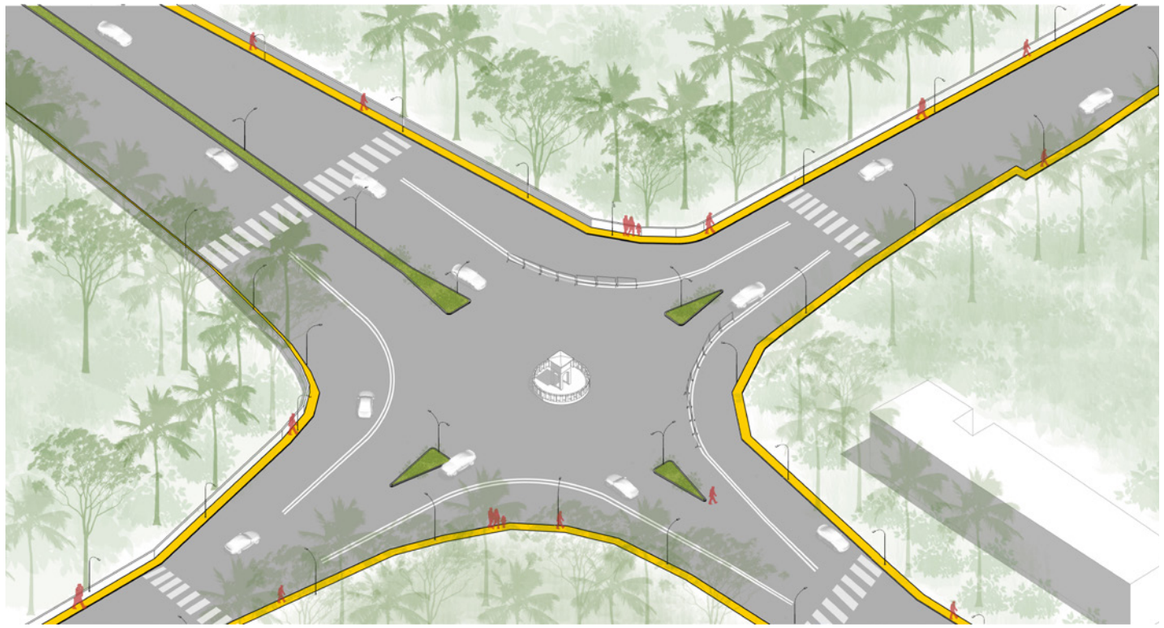


Fig.B.8.36 Existing Clock Tower Circle. Source: Author

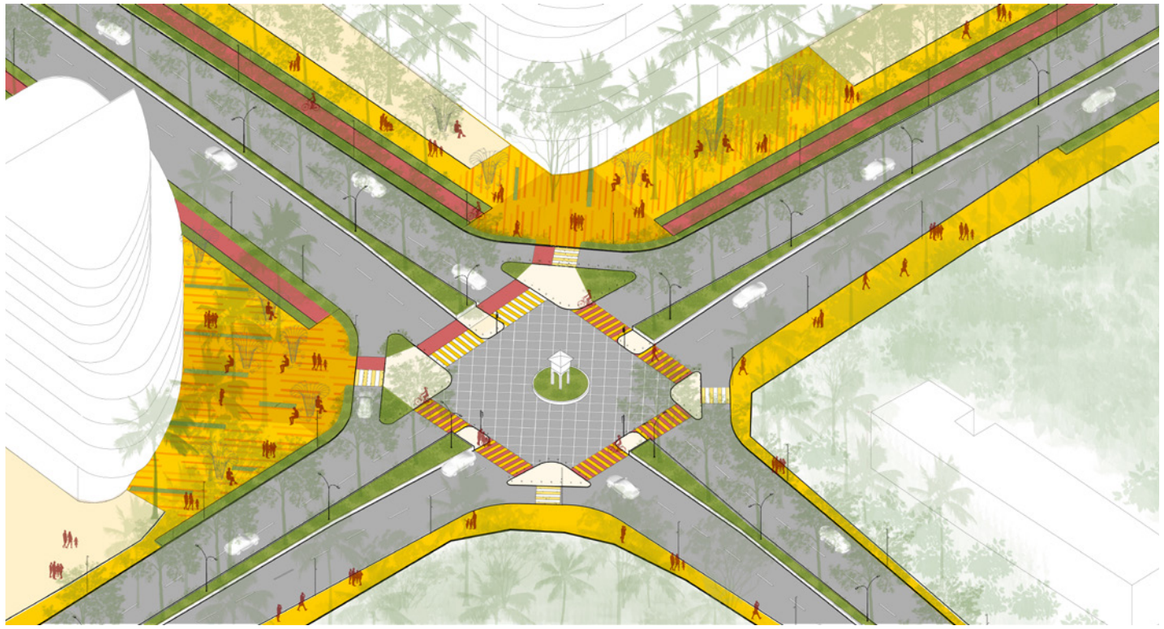


Fig.B.8.37 Proposed Clock Tower Intervention. Source: Author

B.8.7.7. Budget Summary

Sr No.	Area/ Jurisdiction	Projects	Type of Project	Area	Unit sqm/m	Unit Cost (Rs/sqm)	Unit Cost (Rs/Acre) in crore	Cost (Rs cr)
1		**Municipal Garden Area**						
	Centre	Streetscape including infrastructure, lighting and infrastructure around park (length 1.1 km)	Streetscape	11,897	sqm	12,000	5	14.28
		Streetscape including infrastructure, lighting and infrastructure east of the park (length 530m)	Streetscape	4,145	sqm	12,000	5	4.97
		Streetscape including infrastructure, lighting and infrastructure west of the park (length 526m)	Streetscape	5,505	sqm	12,000	5	6.61
		Landscape, furniture and lighting of Plaza 1	Open space	1,589	sqm	5,500	2	0.87
		Landscape, furniture and lighting of Plaza 2	Open space	735	sqm	5,500	2	0.40
		Landscape, furniture and lighting of the Municipal Garden and Aga Khan Park	Open space	16,649	sqm	6,500	3	10.82
		Design & PMC Consultancy fee				10%		3.80
		O&M (2% of capital cost p.a.)				2%		7.59
		Sub-total						**49.34**
2		**M.M.C. New Market Street**						
	Centre	Streetscape including infrastructure, lighting and infrastructure within the market (length 200m)	Streetscape	1,796	sqm	12,000	5	2.16
		Streetscape including infrastructure, lighting and infrastructure North of the market	Streetscape	1,433	sqm	12,000	5	1.72
		Streetscape including infrastructure, lighting and infrastructure South of the market	Streetscape	1,745	sqm	12,000	5	2.09
		Streetscape including infrastructure, lighting and infrastructure East of the market	Streetscape	854	sqm	12,000	5	1.02
		Design & PMC Consultancy fee				10%		0.70
		O&M (2% of capital cost p.a.)				2%		1.40
		Sub-total						**9.09**
3		**Temple Plaza**						
	Centre	Open Space with a temple on Old Station Road	Open space	926	sqm	5,500	2	0.51
		Design & PMC Consultancy fee				10%		0.05
		O&M (2% of capital cost p.a.)				2%		0.10
		Sub-total						**0.66**

Sr No.	Area/ Jurisdiction	Projects	Type of Project	Area	Unit sqm/m	Unit Cost (Rs/sqm)	Unit Cost (Rs/Acre) in crore	Cost (Rs cr)
4		**Heritage Loop**						
	Centre	E-shuttle bus route		27,896	sqm			
		Purchase of buses (e-shuttles) for the heritage loop		2		1,00,00,000		2.00
		Development of bus stops, signage, paint marking etc. along the loop		8		10,00,000		0.80
		Design & PMC Consultancy fee				10%		0.28
		O&M (2% of capital cost p.a.) - for a period of 10 years				2%		0.56
		Sub-total						**3.64**
5		**Holy Spirit Church Area**						
	Fatorda	Streetscape including furniture, lighting and infrastructure	Streetscape	6,877	sqm	12,000	5	8.25
		Plazas next to the Holy Spirit Church and adjoining the Old Sessions Court	Open space	2,274	sqm	5,500	2	1.25
		Design & PMC Consultancy fee				10%		0.95
		O&M (2% of capital cost p.a.)				2%		1.90
		Sub-total						**12.35**
6		**Clock Tower Circle - Entry Gateway**						
	Fatorda	Streetscape of the intersection including infrastructure, furniture and lighting	Streetscape	4,283	sqm	12,000	5	5.14
		Design & PMC Consultancy fee				10%		0.51
		O&M (2% of capital cost p.a.)				2%		1.03
		Sub-total						**6.68**
7		**Sal Pilot (GSUDA Plot)**						
	Fatorda	Development of the open space and landscape including furniture and lighting	Open space	41,000	sqm	5,000	2	20.50
		Design & PMC Consultancy fee				10%		2.05
		O&M (2% of capital cost p.a.)				2%		4.10
		Sub-total						**26.65**
		Total Cost		**1,31,764**				**119.17**

B.8.8. Summary

"Regenerate public spaces, Celebrate heritage, and Develop a new socio-economic identity for Margao"

The vision of transforming Margao into a liveable and resilient innovation hub is central to the Margao Concept Master Plan. The master plan has been developed as a collaborative effort, taking inputs from key stakeholders and representatives of the Margao and Fatorda constituencies. Margao will develop as a city that balances growth and environmental conservation by embracing its status as a commercial capital, and its cultural heritage, while celebrating its natural resources and adopting sustainable practices. The Margao Concept Masterplan for 2041 presents a transformative vision for one of the largest cities in Goa. This comprehensive plan aims to position Margao as a liveable and resilient innovation hub, based on five major strategies for the city - Flood Resilient Landscape, Active Public Realm, Integrated Public Transit, Diverse Economy, and Inclusive Communities.

As a part of the **Flood Resilient Landscape** strategy, a landscape framework in the form of an integrated green-blue infrastructure network has been proposed. By incorporating resiliency strategies, the master plan aims to improve the city's ability to adapt to and withstand the challenges of climate change and urbanisation. To create a climate-resilient urban environment, green and blue infrastructure, flood mitigation measures such as river buffers and floodable landscapes in open spaces, and sustainable building practices will be implemented.

The previous strategy also links to the creation of a network of programmed open spaces and amenities, which is a part of the **Active Public Realm** strategy. The plan emphasises the improvement of public spaces, resulting in more appealing and welcoming environments for residents and visitors. Parks, plazas, and recreational areas will be added and revitalised, at both the city and the neighbourhood scales, in order to encourage community gatherings, cultural events, and leisure activities, thereby fostering a vibrant and cohesive social environment.

Within the **Integrated Public Transit** strategy, a transport and circulation plan has been put forward at the city level with public transit loops that cover the entire city, as well as within each zone, in order to address the local circulation challenges such as traffic congestion and parking. The master plan proposes a comprehensive transport network that promotes accessibility, connectivity, and pedestrian-friendly streets in order to address the city's mobility challenges. Improved public transportation throughout the city, safe cycling lanes, and a robust traffic management and parking plan for the city centre to reduce congestion are all part of this plan.

Under the **Diverse Economy** strategy, different character zones are proposed, defined by the urban fabric along the NH66, the historic centre. These are delineated as economic zones with specific land use, programme, FSI and massing characteristics. The plan proposes to build on the strengths of Margao and its surrounding region to create a new economic strategy for the future.

Through the *'Regenerate, Celebrate, Develop'* model, the master plan aims to stimulate economic growth and job opportunities. To foster a diverse and resilient local economy, it proposes to celebrate heritage and enhance tourism, regenerate its existing local economies and develop agro-tech, innovation hubs, and infrastructure for local industries and small businesses to thrive.

As a part of the **Inclusive Communities** strategy, social amenities are proposed across the different zones to address the gaps within the current distribution of amenities and to cater to the projected population growth for each area. The development of community hubs with amenities such as playgrounds, anganwadis, library and community hall at every ward will foster and strengthen active community participation and increase well-being. In addition, the plan calls for an equitable distribution of healthcare and education amenities in the city.

The proposed master plan framework for each zone addresses multiple strategies, translating them from city-level strategies to local interventions and priority projects. Ultimately, the proposed changes to the master plan are captured as suggestions to the Outline Development Plan 2028, as a first step towards the implementation of the projects in the city.

The involvement of all stakeholders, including local governments, communities, and investors, will be critical in shaping the city's journey towards a thriving and environmentally conscious future by 2041.

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