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MASTER PLAN FOR PALAKKAD MUNICIPALITY-2041

Atal Mission for Rejuvenation and Urban Transformation

PALGHAT MUNICIPALITY

LSGD

Masterplan

for

PALAKKAD MUNICIPALITY

2041

Volume 2

MUNICIPAL OFFICE PALAKKAD
OFFICE OF THE CHIEF TOWN PLANNER THIRUVANANTHAPURAM

Atal Mission for Rejuvenation and Urban Transformation

പാലക്കാട് നഗരസഭ

LSGD തദ്ദേശ സ്വയംഭരണ വകുപ്പ്

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PALAKKAD MUNICIPALITY

LOCAL SELF GOVERNMENT DEPARTMENT PLANNING, GOVERNMENT OF KERALA

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GOVERNMENT OF KERALA

Masterplan for Palakkad municipality

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CHAPTER 25-GOALS AND OBJECTIVES

25. GOALS AND OBJECTIVES

Goals are the future vision of the town. This aims at the development prospect of the city in a planned manner. Goals are to be achieved through specific tasks called objectives, performed in series.

Objectives are the methods to achieve the goals. Objectives are specific in nature and are to be defined precisely. It should be able to explain the questions like "who, what, when, where, and how" from the society. Plans and actions based on clear goals and objectives are more likely to succeed in meeting the community's needs.

In the previous chapters, outcomes of various sectoral and settlement studies conducted in connection with preparation of Master Plan for Palakkad town were discussed. The development issues specific to the town, be it a problem or potential pertaining to various aspects were identified. Accordingly goals and objectives has to be derived for Palakkad master plan. A development vision for Palakkad town is framed as follows:

"To develop Palakkad as an economically vibrant and sustainable urban settlement with a compact urban core and series of urban sub centers equipped with higher order facilities with an efficient road network that ensure equitable accessibility and quality life for people at all levels, drawing economic momentum from agriculture, trade and tourism without compromising the culture, heritage and environmental aspects."

AMRUT in particular aims at providing basic services like water supply, sewerage, urban transport to households and build amenities in cities which will improve the quality of life of all, especially the poor and the disadvantaged in priority.

25.1 DEVELOPMENT GOALS AND OBJECTIVES

After the detailed analysis carried out over various sectors of the society, Goals and objectives of Palakkad Master plan can be summarized as follows:

Goal 1: To develop Palakkad town into an ideal district headquarters providing all the required first order facilities for the entire district.

Objectives:

1. To provide the required physical infrastructure facilities for all sectors.
2. To address the requirements of the floating population of the town, who access the town for a single day.

3. Providing adequate facilities in health sector so that the dependency on nearby districts and state for better treatment facilities may be reduced.
4. Provide access and support for health services to all citizens with an emphasis on weaker sections of the community
5. Ensure better connectivity of the region by strengthening the traffic network.
6. Provide adequate parking facilities in the town.
7. Develop enough permanent open spaces that can link and satisfy the recreational and institutional space requirements.
8. Strengthening trade and commercial activities of the town.
9. Provide higher order educational facilities that can serve the nearby local bodies also.
10. Framing policies and providing infrastructure to make Palakkad, a sports hub of the district which provides all the facilities for developing a healthy generation in future.

Goal 2: Increase the amenity value of cities by developing greenery and well maintained open spaces

Objectives:

1. Development of green space and parks with special provision for children, senior citizens and Divyang friendly components.
2. Providing walk ways and open gyms adjacent to each residential areas
3. Development of green corridors along important roads
4. Construction, effective maintenance and operation of public toilets.
5. Proper collection of degradable and non-degradable wastes from every parts of the town and implementation of its effective segregation and treatment
6. Renovation of ponds in the municipal area by providing walkways and greenery around it.
7. Providing a facelift for water front regions of Kalpathy and Kannadi rivers by providing recreational facilities and walkways.
8. Ensure the distribution of open spaces and recreational settings matching the current and future population characteristics

Goal 3: Reduce air pollution by switching to public transport or constructing facilities for non-motorized transport. Ensure safe and easy access and circulation to, from and within the town.

Objectives:

1. Ensuring safe pedestrian and vehicular movements by constructing footpaths/ walkways, sidewalks, foot over-bridges and facilities for non-motorized transport.
2. Providing multi-level parking for vehicles in each commercial zones.
3. Encouraging battery operated rickshaws for passenger as well as goods transport within the town.
4. Implementation of effective public transport systems such as CNG buses inside town limit, connecting satellite bus terminals.
5. Increase the width of existing roads to avoid congestion in the CBD areas and providing fly overs and under passes wherever required.
6. Providing sufficient parking facilities and upgrading existing transport infrastructure.
7. Develop a sidewalk plan prioritizing needed links between public facilities, schools, and other centers of activity and neighborhoods.
8. Improve traffic flow by improving signage, enforcing traffic laws, introducing traffic calming measures.
9. To minimize travel within the town by creating self-contained and self-sufficient communities
10. To provide ring roads and by passes though the outer corridors for deviating the vehicles passing by the town with different destinations, and thereby reducing conjunction of the core area.

Goal 4: Ensuring access of treated fresh water connection and sewerage connection for every household

Objectives:

1. Providing decentralized network of underground sewerage systems,
2. Recycling and reuse of wastewater.
3. Rehabilitation and retrofitting of old water supply systems including provisions of treatment plants.
4. Rejuvenation of water bodies specifically for drinking water supply and

recharging of ground water.

5. Creating a water self sustained community having enough ground water potential with quality and standards fit for human life.

Goal 5: Enhancement and protection of cultural resources within the community to reinforce its heritage value and historical importance.

Objectives:

1. Framing policies to protect the heritage sites and festivals.
2. Creating a heritage corridor connecting all the heritage settlements within the town
3. Promoting the art forms and related institutions to preserve the past.
4. Preserving and promoting the rich cultural traditions of the region.
5. Creating a worldwide market for the indigenous products and ethnic food varieties from the community.

Goal 6: Develop the town as a tourism facilitation center with state of the art eco -friendly amenities

Objectives:

1. Provide sufficient parking facilities and information centres at places of tourists attractions.
2. Formulation of tourism corridor connecting all the major tourist and important religious places within the town and its surroundings.
3. Providing budget as well as luxury accommodation facilities for tourists.
4. Preserving the fort and its surroundings by strictly enforcing the existing restrictions.
5. Linking the heritage sites with the tourism circuit, creating a venue for the display of authentic art forms and marketing the indigenous products among the foreign world.

Goal 7: Enhancement and protection of natural resources to reinforce its ecological importance within and outside the administrative boundaries.

Objectives:

1. Enforcement of the existing rules to protect the environment.
2. Designing an effective development control regulation.
3. Providing green infrastructure (network providing the "ingredients" for

solving urban and climatic challenges by building with nature) that is important to the health, welfare and the quality of life of residents and tourists

4. Create a green buffer strip around environmentally sensitive areas like water bodies, so as to prohibit encroachment and pollution.

5. Conserve the environmentally sensitive area and minimize the conversion of agricultural land use for other development purposes.

Goal 8: Developing the town into a center of Trade and Commerce duly considering rural manufactures and agro products.

Objectives:

1. Developing the existing market into a higher order trade centre which could attract the suppliers and buyers even from other districts and states.

2. Modernization of existing market with improvement in physical infrastructure facilities.

3. Creating centralized terminals for goods carriers by restricting their entry into the core areas of the town.

4. Providing adequate modern storage facilities.

5. Rehabilitation of the old market area by allocating area with modern safety precautions with due zoning for different sectors.

6. Second order markets to be developed in various residential clusters for reducing the movement of people for daily requirements to the town.

7. Promoting of agro- allied industries, MSMEs etc. and creating a market for their products as a solution for marketing issues of the farmers of the entire district.

8. Develop the town to act as an intermediate hub for Cochin- Salem trade corridor and also as a sub center for the developing industrial cluster along the national highway.



CHAPTER 26-DEVELOPMENT CONCEPT

26. DEVELOPMENT CONCEPT

The concept has been structured to be conducive to the realization of goals and objectives. The suggested form and structure of the town is influenced by its regional setting, geographical features and evolved through an extensive process of social, physical and economic sectorial analysis. Development objectives when spatially located, taking into account the existing spatial structure, provides the development concept of town. The development concept clearly indicate how the plan area will develop in future and it gives an overall idea of the location of determinant development proposals.

26.1 EXISTING SPATIAL STRUCTURE

Understanding the existing structure of the town is prerequisite to visualize future structure for accommodating projected growth, the core area of the town is a mixed land use where houses coexist with commercial establishments, but the major share is commercial along the roads. This area comprises markets, bus stands, banks and other commercial institutions etc. Basically the earlier residential land uses are being converted to commercial due to the pressure of development, resulting in the shift of Residential to peripheries. Major government offices and public institutions are concentrated in wards adjacent to fort area.

Even though the municipal areas having good road connectivity, there are some missing links in the town. Insufficient width of roads compared to traffic volume results in traffic congestion in roads. The major developments happening in the fringe or the outer portion of the town. The new commercial areas, automobile showrooms/service centers etc. are coming up along the major transport routes like Calicut Coimbatore bypass road. Multi-storied apartments also coming up in these bypass roads and Malampuzha 100 ft. roads, Chittur road and Mercy college road. The commercial activity which has primarily concentrated in the core of the city is now showing the signs of de-concentration which will help in easing out the traffic problems of inner town.

26.2 FORMULATION OF DEVELOPMENTAL CONCEPT

The resource base of the town and integration of core sectors plays a crucial role in the planned development of the town with envisaged traffic and transportation concept and proposed transportation plan has profound impact in the formulation of development concept. Obviously the impulses of ongoing / committed/ proposed projects within the municipality and surrounding region has to be given due consideration while formulating the development concept. The factors to be

synthesized to formulate the development concept are discussed in the following sessions.

Existing structure of the town and growth trends identified, expect 25% increase in urban population and around 150% floating population of the city should be considered. So while formulating a development vision, the Palakkad metropolitan area should be considered as a whole and the concept should be expressed in a big picture. The importance of Olavakkode Railway station, Medical College, Malampuzha Dam, IIT Palakkad, and the emerging urban centers like Yakkara, Chandranagar and Pirayiri should also be considered. The following pattern of development have been identified for the town.

- Being the **administrative Town and first order service provider**, Palakkad needs to be strengthened with more infrastructure and transportation facilities in equitable manner.
- Palakkad to become the **major trade center** along the Coimbatore – Cochin Industrial corridor and the proximity of the metro town Coimbatore. Establishing commercial decentralisation through the urban sub centers, which reduces the congestion in the central core area, developing certain commercial pockets, shopping destinations, IT offices/house hold industries etc.
- **Residential Sector development** – Palakkad is an important residential town, it can be divided as different sectors. These sectors are designed as self sustained ones, facilities are provided in each to serve the population of that particular sector. High density residential leads a compact urban form and leaves more open spaces.
- The culture and heritage of the Palakkad is very well-known. The cultural importance of the agraharams , cultural festivals, the importance of the Palakkad fort etc. have to be enhanced and the **rich potential of the cultural and heritage** tourism need to be explored.
- **Environmental importance** – owing its particular climatic conditions, geographic location to became the gate way to Kerala and its role as the rice bowl of Kerala, Palakkad holds a big environmental impact which definitely needs a conservation point of view.
- Palakkad town can act as **tourism service provider** to the surrounding tourist destinations.
- **Access to large green open spaces** - Increase the availability of public open spaces, improve the quality, inter linkages of open spaces including the water bodies brings the quality/harmonious environment in the city life.

- **Mixed use development** – the work and walk culture can be strengthened through mixed used development, and it brings vibrancy and sense of place.

26.2.1 Administrative Town and First Order Service Provider

Palakkad town acts as the administrative headquarter of the district. Being the district head quarters and taluk headquarters, and location of major administrative institutions of central and state government, makes the town dependent for the people from all over the district for various purposes. Apart from the administrative institutions educational institutions, markets, railway station, bus terminals, banking and other financial institutions, hospitals, hotels & restaurants etc. are there in the municipal limit.

Urban security is the foundation of urban development and the basic guarantee for residents' long-term survival. Infrastructure is the basic guarantee of urban public security, economic development is the driving force, and natural ecological environment is the quality improvement of urban safe life. In this way, the security of the whole social development can be guaranteed.

The floating population in the town is approximately 20% of the municipal population as per the NATPAC report. So the facilities to these population is also very

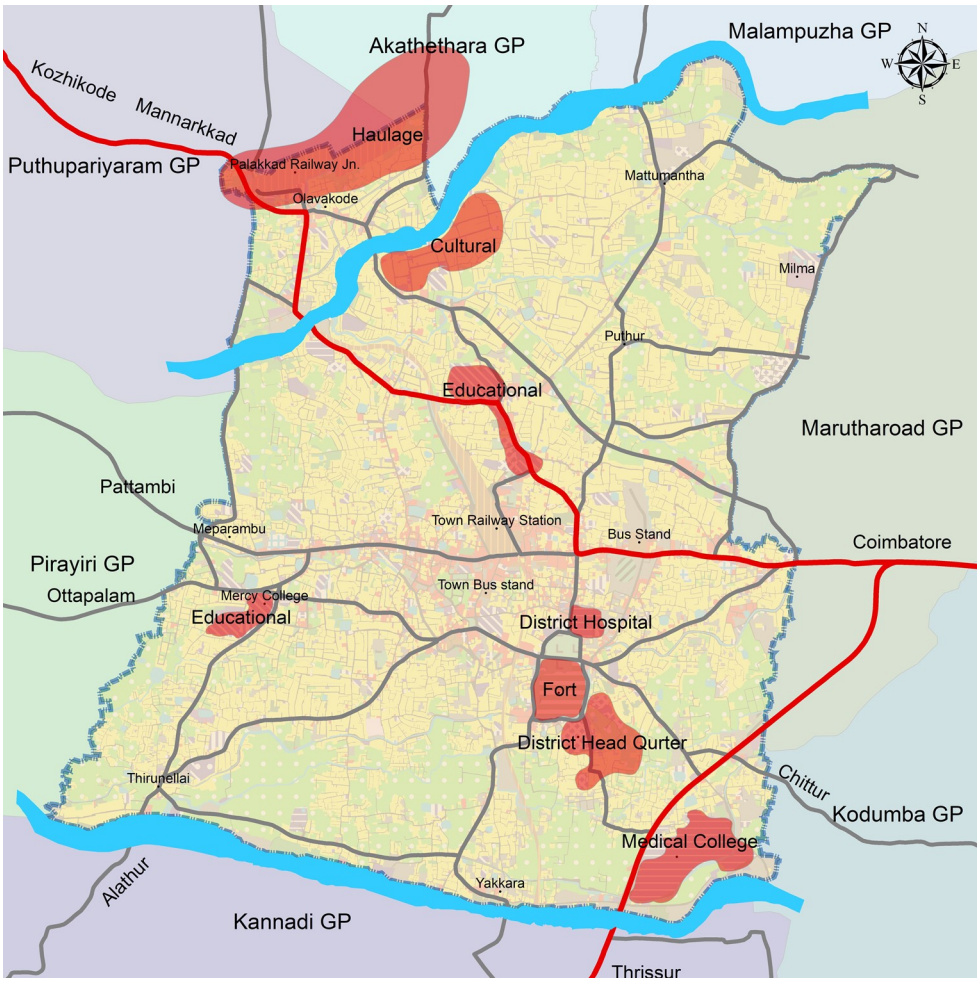


Fig. 26.1 Major institutional and other facilities in the town

important. So facilities like adequate comfort stations, waiting areas, recreational, restaurants & coffee shops etc. have to be developed in a planned manner with in the planning area.

26.2.2 Major Trade Centre

The Big Bazar in Palakkad town is the biggest market in the district where goods from different part of the district as well as from other districts and states are traded. Palakkad municipality lies along the Cochin-Coimbatore Industrial corridor and the proximity to the metro town Coimbatore is also important. So the zoning and land use can be formulated in such a way that it can be developed as a trade Centre and an industrial hub.

Town Centre- Core area of municipality locates on the sides of Shoranur-Coimbatore road which acts as the back bone of the town. Most of the commercial activity at present is concentrated in the core area of the town. The most important commercial node coming in this road is Sulthanpet Junction. Along the four arms of this junction of nearly 1.50 km length are having diverse array of compatible mixed uses .The vibrancy of the core area will continue to grow if the mix of uses within it continue to accommodate uses that currently exist – commercial, retail, residential, and institutional but have to be regulated for a healthy growth of the area. Redevelopment of existing big bazar area will arise tremendous opportunities and strengthen the character of the area.

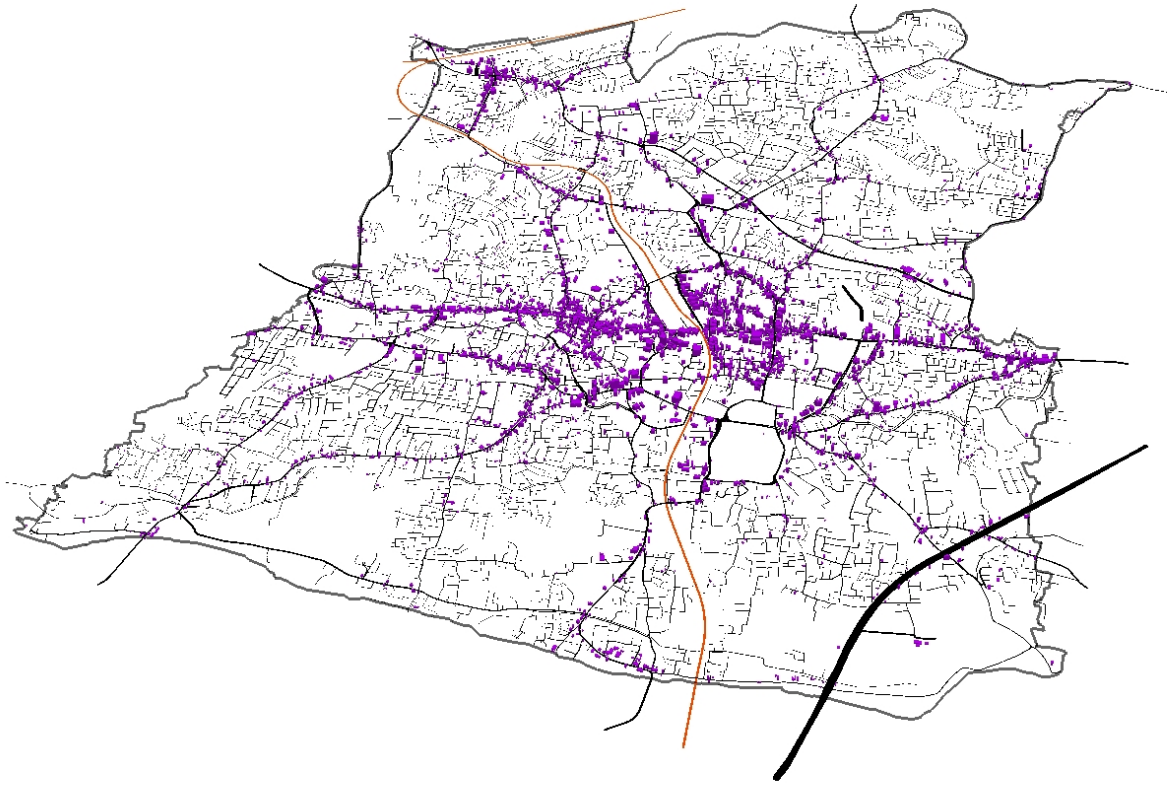


Fig. 26.2 Distribution of Commercial built up in the Town

Decentralized commercial sub-centers: In order to decongest the town center, commercial sub-centers are proposed in each residential sectors (discussed in the following sessions) including community facilities, weekly markets etc.

Walkable commercial streets - When we look at streets oriented towards people find that they are more economically productive than any other style of development. The plan also proposes measures like exclusive pedestrianization, scheduled pedestrianization, curtailing the street space allotted for vehicles etc. in selected localities or street stretches within the planning area.

Industrial zone - In addition to commercial, another supplementary activity of economic growth and creation of employment opportunities will come from industrial sectors. Large quantities of agricultural produces from its rich hinterland are being collected and distributed through the commercial establishment of town. The chance for industrialization is fair due to transportation facilities available and proximity to industrial city, Coimbatore. Also industrial sector can create tremendous employment opportunities across sectors. This plan envisages to tap the potentials for the development of industrial sector of the town. For these an industrial zone is proposed near Olavakkode since this area has good connectivity and is located away from the

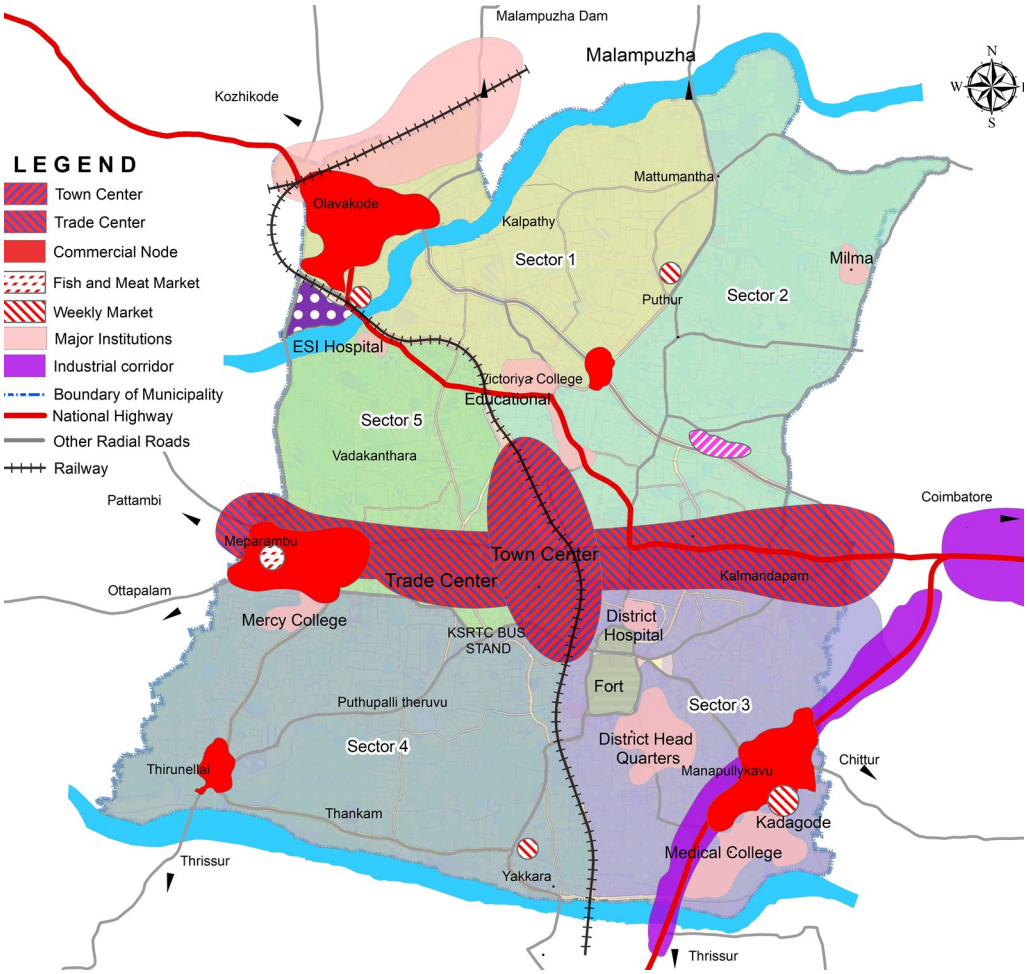


Fig. 26.3 Economic development areas (commercial and industrial) and residential sectors



Fig. 26.4 Distribution of Residential Buildings

residential areas. The recent developments in IT sector gives hope for the district, in specific for the planning area. The provision of facilities like ware house and export processing centre will also give momentum to the sustainable and employment oriented industrial development of the region.

26.2.3 Residential Sector Development

Town is described as a grid iron pattern, major roads have been planned vertically in north south direction. While few major roads crossing them are running in north west and south east direction perpendicular to north south roads forming a grid and dividing the total municipal area in to five to six sectors. These sectors are designed as self-sustained ones, facilities are provided in each to serve the population of that particular sector. In each sector community facilities in the form of schools, dispensaries, shopping center, open spaces, parks and play grounds have been provided in a hierarchical manner. Work and walk culture is proposed in this residential sectors, so facilities for offices/work spaces, MSME units are also provided in this residential sectors.

According to smart growth, density is beneficial for neighborhood livability and vice versa, provided that the capacity of each transect is respected. Higher residential densities favor mixed uses, which in turn improve neighborhood livability, and makes density acceptable. As we have already seen, the peculiar feature that distinguishes Palakkad town from other towns is its pattern of human habitation, which is mostly in

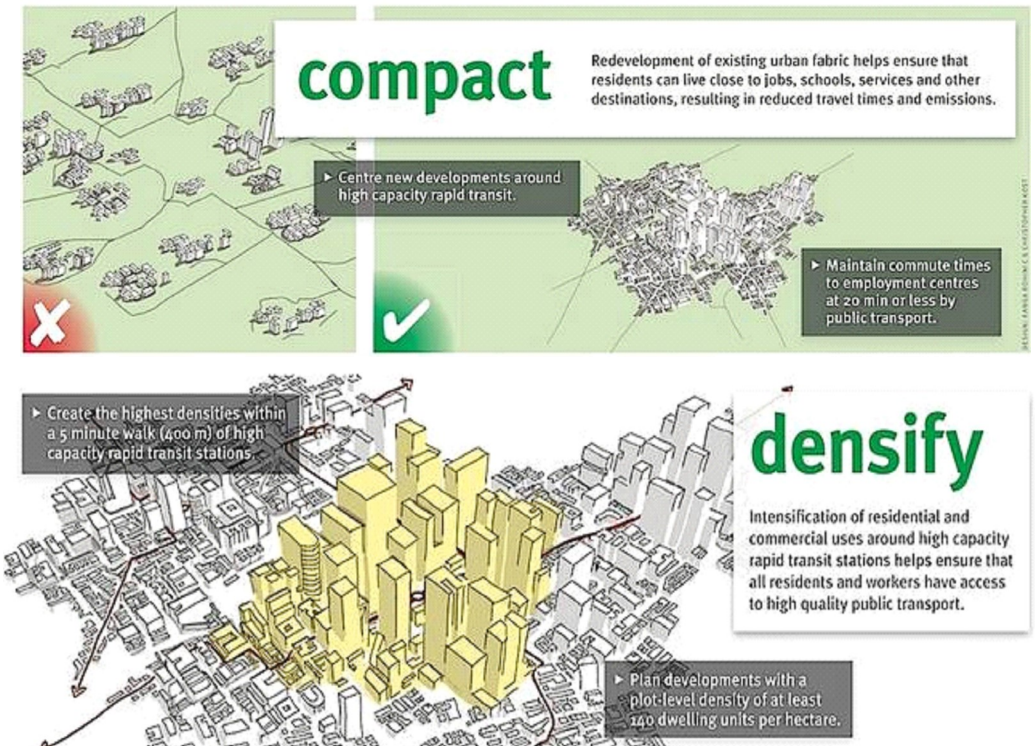
closed and compact row settlements or gramams. And areas surrounding those settlements are also found to be densely populated. Hence further densification will lead to the deterioration of the living environment and putting the sustainability of the residential areas at stake. Hence the developments in those areas are to be regulated which in turn helps to maintain the character and uniqueness of these settlements.

For residential development to accommodate an estimated population of 1.5 lakhs by 2041, two density ranges are proposed. Provision of **high density residential** zone is ensured on northern sides of NH-966 and eastern side of Malampuzha 100 ft. road in sector 2, northern side of NH-544 in sector 3 and also some parts of sector 1 and sector 4 because of good accessibility and availability of developable land.

26.2.4 Compact Urban Form

Urban form refers to the pattern of development in a city, considering aspects like density, use of land, transportation, degree to which development is scattered or contiguous. Thus it encompasses not only the space, but also the processes and function. An urban area can achieve its form from the manner in which it has grown, i.e. whether developed in a planned manner or without any planning interventions or both.

Palakkad today has under gone massive change in the character of the city in terms of built-up area, shape, density, compactness etc. One can identify wide variations in urban form across the city like the gradual degeneration of the core, tendencies towards sprawl etc. The difference in urban form also somehow coinciding with the varying socio– economic landscapes which make it imperative to understand the inter-relationships.



The Residential and Commercial fabric of Palakkad municipality is scattered and occupies more land. The residential density is high but it is not compact. The scattered development consumes more land and require more fund for developing the infrastructure facilities like roads, drainage, sewerage, electricity and drinking water. The idea of compact and densified urban form consumes less land space and it leaves more areas open. The areas with less population now, but which is prone to further densification in future due to land availability, are thus proposed with further vertical development to make the already occupied space more compact and further leaving more open spaces for the community. Whereas on the other hand, the land which is already densified and further large scale development is impossible, have to be

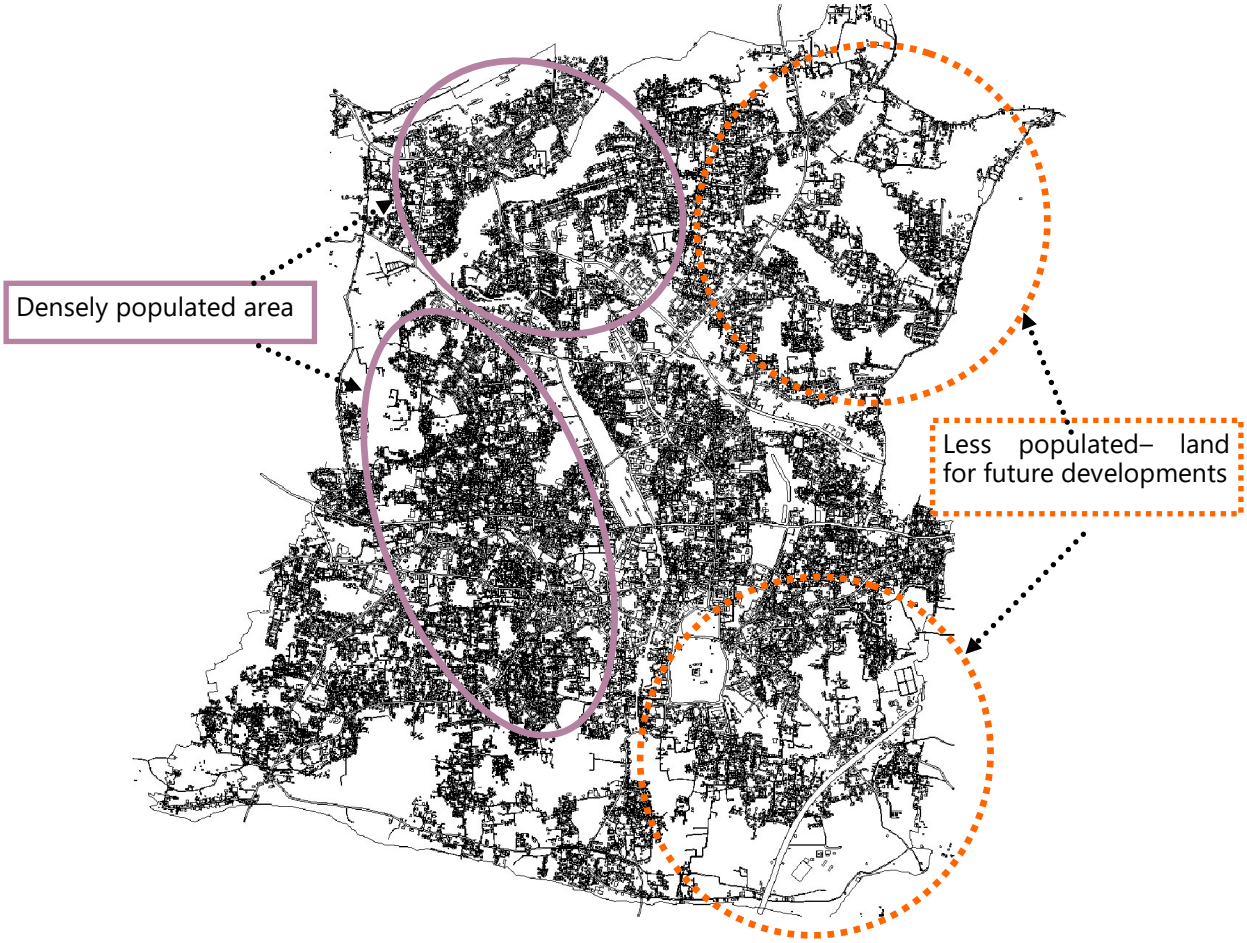


Fig. 26.5 Varying urban form

provided with more opportunities for keeping the balance available spaces open and thereby facilitating maximum usage of the existing infrastructure by the already occupied community. Same in the case of commercial utilizations, the existing commercial built up area must be provided with compact land use.

26.2.5 Culture and Heritage

Kalpathy and other Agraharams in Palakkad are historic land of culture, tradition and heritage. The Brahmin settlement from Thanjavoor and the cultural heritage of the place, will take you back in time. You can catch a glimpse of the

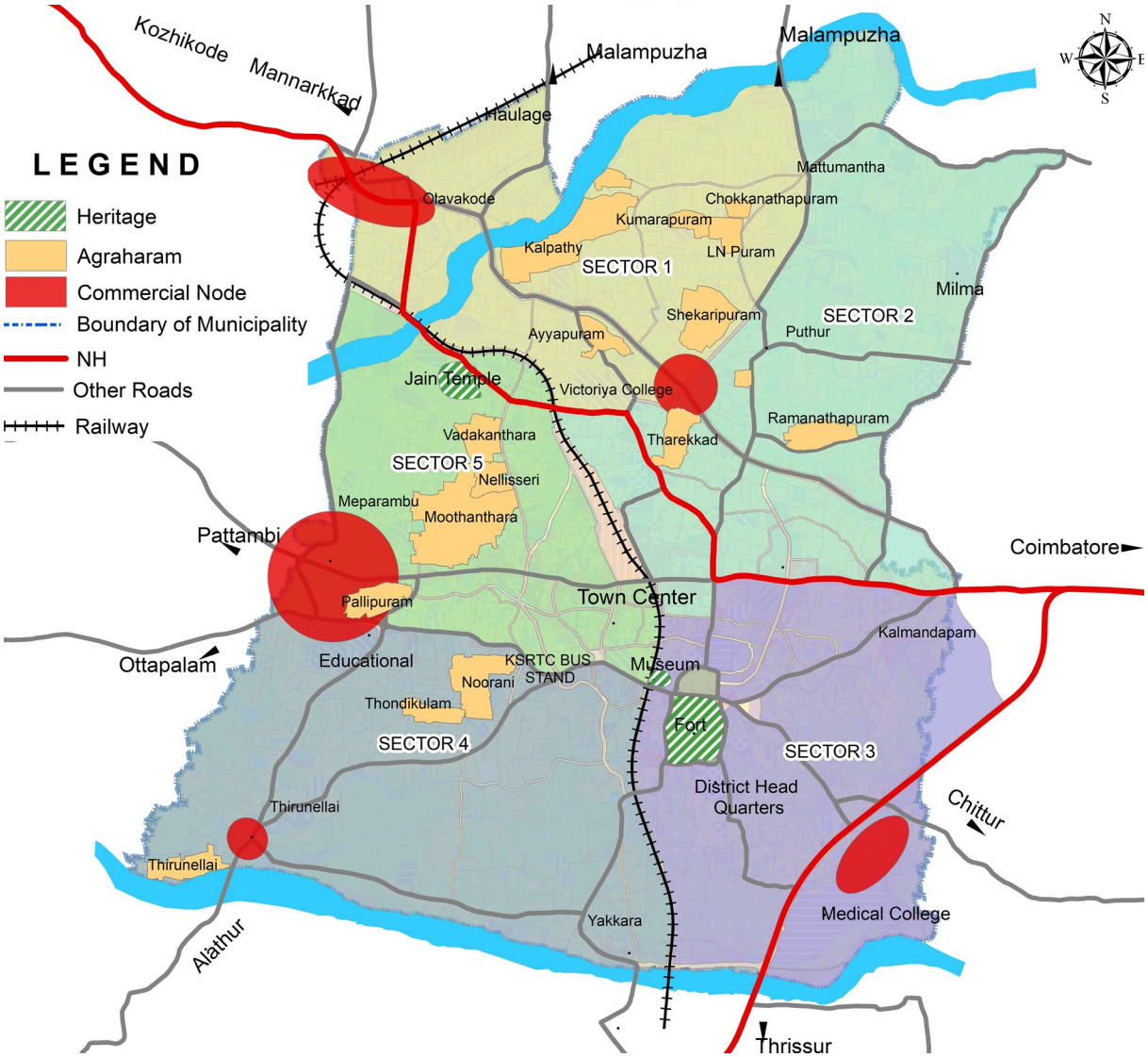


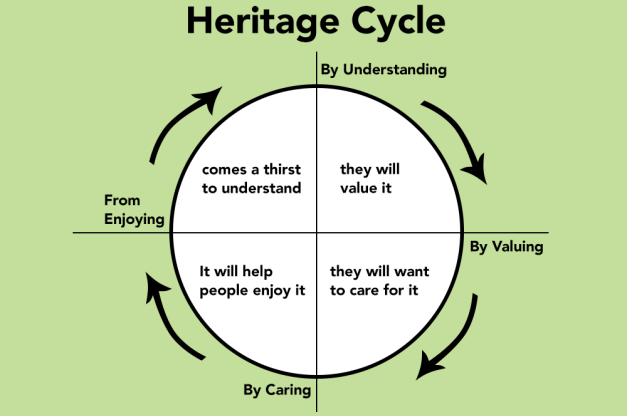
Fig. 26.6 Concept for culture & heritage

traditions that are passed down generations, probably over thousands of years and still going strong. Chariot festival celebrates the Vedic culture of the place centuries ago. Presently only Kalpathy is recognized as heritage village and remaining agraharams within the planning area has been exposed to many problems like old housing stock, delay in rehabilitation and the weak cultural and civilizational awareness of the new age residents

It is necessary to find ways to rehabilitate it and ensure the continuity of its preservation, without being a physical and organizational burden on the local body or the inhabitants. Therefore, this plan envisage tourism as a tool/mechanism in place to provide a financial return that will ensure the continuous preservation of those heritage buildings.

The Palakkad fort is said to have existed from ancient times in 1,766AD. Archeological Survey of India has declared Fort and environs in the list of protected monuments under Ancient Monuments and Archaeological Sites And Remains Act of

1958. Apart from this, the ancient Jain temple which was built 500 years ago, Manappullikavu temple, Vadakkanthara Temple and Matha Church, St. Sebastian's Church also have heritage value. This plan gives emphasis on conservation and intergenerational knowledge transfer of the heritage and culture of the planning area.



Heritage corridor/ Heritage walk - Present days "monument cantered" approach ultimately destroy significant relationships between the buildings and landscape, indoors and outdoors. Our plan therefore aims to extend the visitor's experience to include the area's rich context. Its main feature would be a movement promenade that would link the remaining historic sites/ museum and bring the riverfront landscape into the civic realm. This would not only encompass all the heritage sites on the riverbank, but also green spaces between and around them — including parks, nature trails, nurseries farmlands etc.

26.2.6 Tourism Service Provider

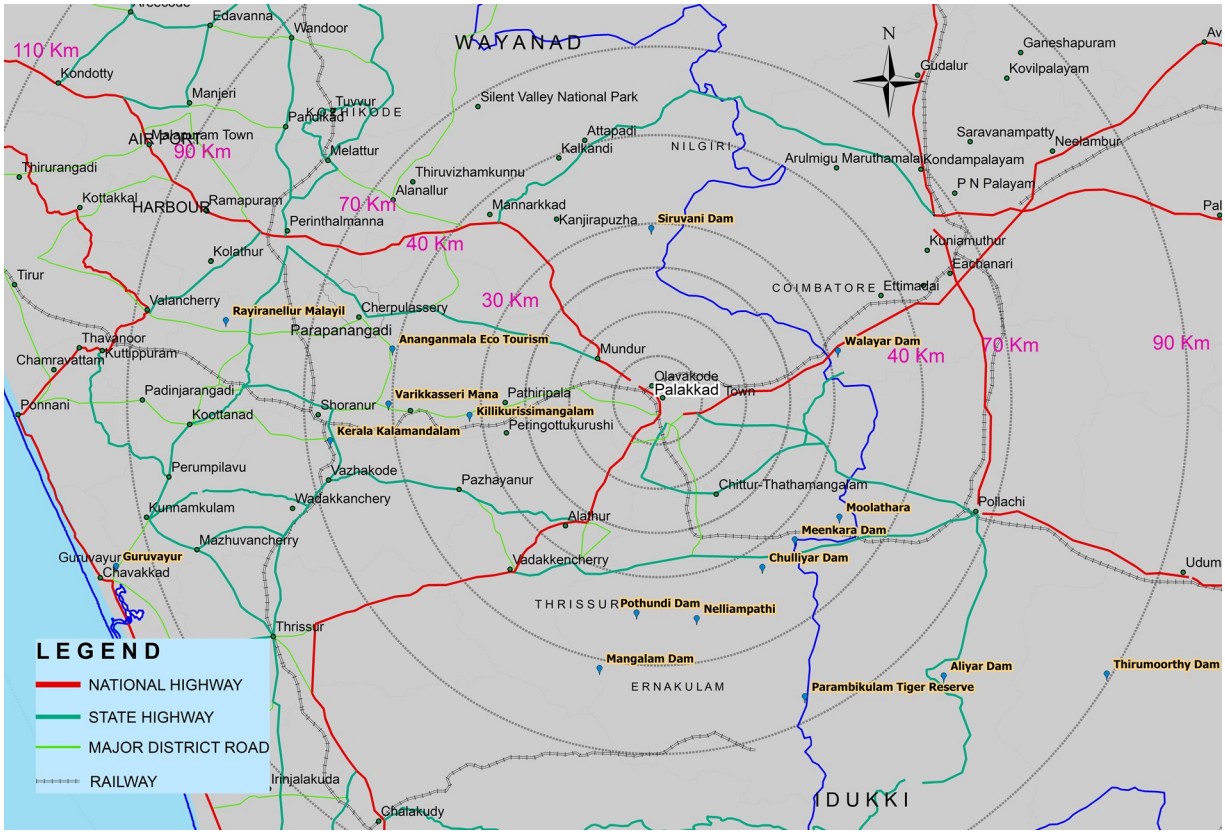


Fig. 26.7 Concept for tourism service provider

Tourism, Heritage and Culture are linked sectors and most of the tourist spo ts are heritage centers also. Palakkad Town is famous for Palakkad fort, Jain temple, Heritage Agraharams and several cultural events like Kalpathy Radholsavam, Manapullikkavu vela etc. which altogether bestows possibilities for the promotion of cultural tourism in the planning area.

This plan also intend to use Kannadi river front area to create a tourism development zone, in view of providing facilities like - tourism facilitation centre, budget accommodations etc. tying the city closer together. By adding pedestrian, cycling routes, and creating plenty of green spaces, it aims to tap Palakkad's unrealized potential to be a river-front town, while encouraging geographical and social closeness amongst its communities.

Apart from these destinations Palakkad town is surrounded by a number of other tourist destinations in the district like Malampuzha, Nelliyampathi, Ottappalam, Siruvani dam, Pothundi dam, Dhoni Water falls, Attapadi, Parambikulam Tiger Reserve and Silent valley national Park. The location and heritage aspects dictate that certain higher order leisure and recreational centers are to be developed around fort. Palakkad town can function as an intermediary tourism destination and also as a tourism service provider with world class facilities. Hotels, restaurants, resorts, tourism facilitation centers, etc. can be provided within the city.

26.2.7 Public Open Spaces

Public spaces /open spaces are the breathing space of any city. The quality of the open spaces describes the quality of living in that city. Lots of open land is available in the city, but it is untouched and unattended in a proper way. Palakkad named as granary of Kerala, so a part of paddy land is still in the municipal area. A major share of the paddy land is converted for residential and commercial purposes. The measures should be taken to retain the remaining paddy and wet land areas. The interconnection of recreational open spaces, paddy and wet lands and the blue land covers the open spaces of the city. The percentage of public open spaces/recreation spaces is very less in the municipality as compared to URPDFI guidelines. Proper design and connectivity of these spaces is very important.

The plan foresees to improve the walking environment, mobility of urban citizens and access to green spaces through the development of green corridors. For this, areas wherever possible for development of opens paces and conservation of existing ones are to be proposed. It is intended to conserve the available open spaces in each residential layouts for further development. Along with that, numerous ponds

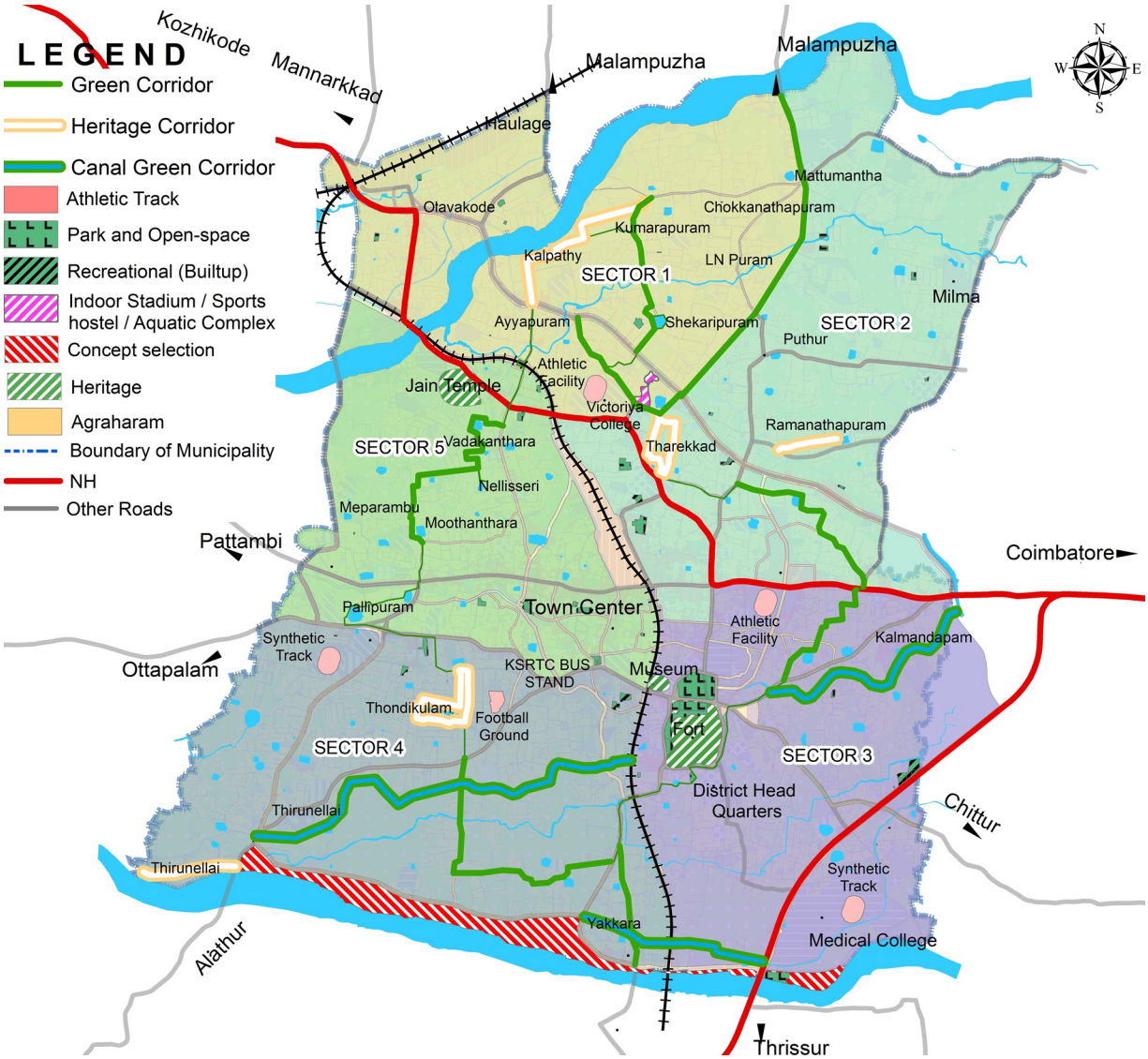


Fig. 26.8 Concept for green spaces

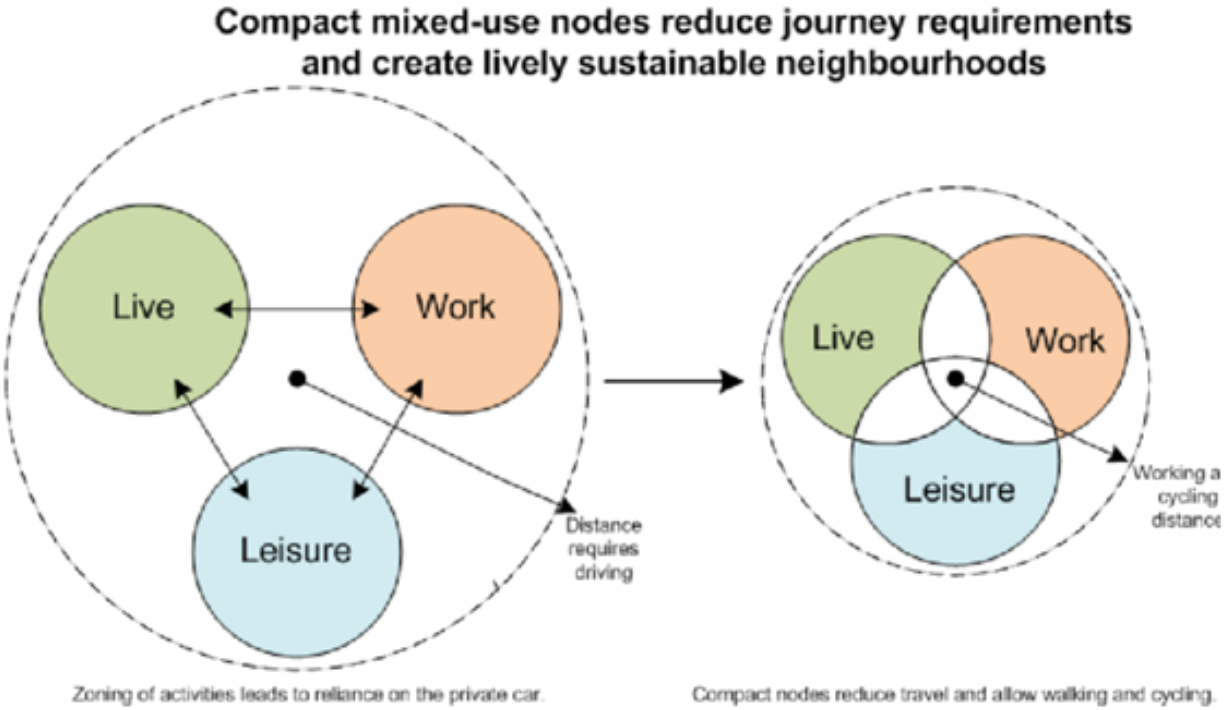
which are available inside the town are to be conserved and may be developed for recreational facilities. Canal bunds which are kept as such are also a great potential for green space development. In addition, the green areas are also planned to be interlinked with heritage corridors to increase walkability.

26.2.8 Mixed Use Development

The urban growth in the town leads to the conversion of large scale open spaces and environmentally sensitive lands for development purpose, expansion of low density scattered development, worsening traffic congestion and air quality caused by intensive private automobile use, more investment in providing infrastructure facilities like roads, sewers, water systems, and other structure outward

other than upgrading the existing facilities, inadequate public transport and lack of other public amenities and finally the isolated the neighborhoods which lack vibrancy and a sense of place. There comes the importance of the mixed use development. Mixed use development provide more than one use or purpose within a shared building or development of an area.

Mixed-use projects may include any combination of housing, office, retail, medical, recreational, commercial or industrial components, where those functions are to some degree physically and functionally integrated, and that provides pedestrian connections. It may be a building, complex of buildings, or new area that is developed



for mixed-use by a private developer, (quasi-) governmental agency, or a combination thereof. A mixed-use development may be new construction, reuse of an existing building or brownfield site, or a combination. The appropriate combination of mixed use brings vibrancy and life to the area. Apart from this, the plan gives provisions for mixed Residential - Commercial zones which blends both uses and it increases the density of land use in addition to integration.

26.2.9 Proposed Hierarchy of Nodes

Decentralization of activities, services and facilities will decongest the city centre there by reducing the traffic blocks and the unnecessary travel to the city centre to meeting the day to day shopping requirements. Establishing hierarchy through the urban sub-centers, encourages equitable distribution of services among residents and

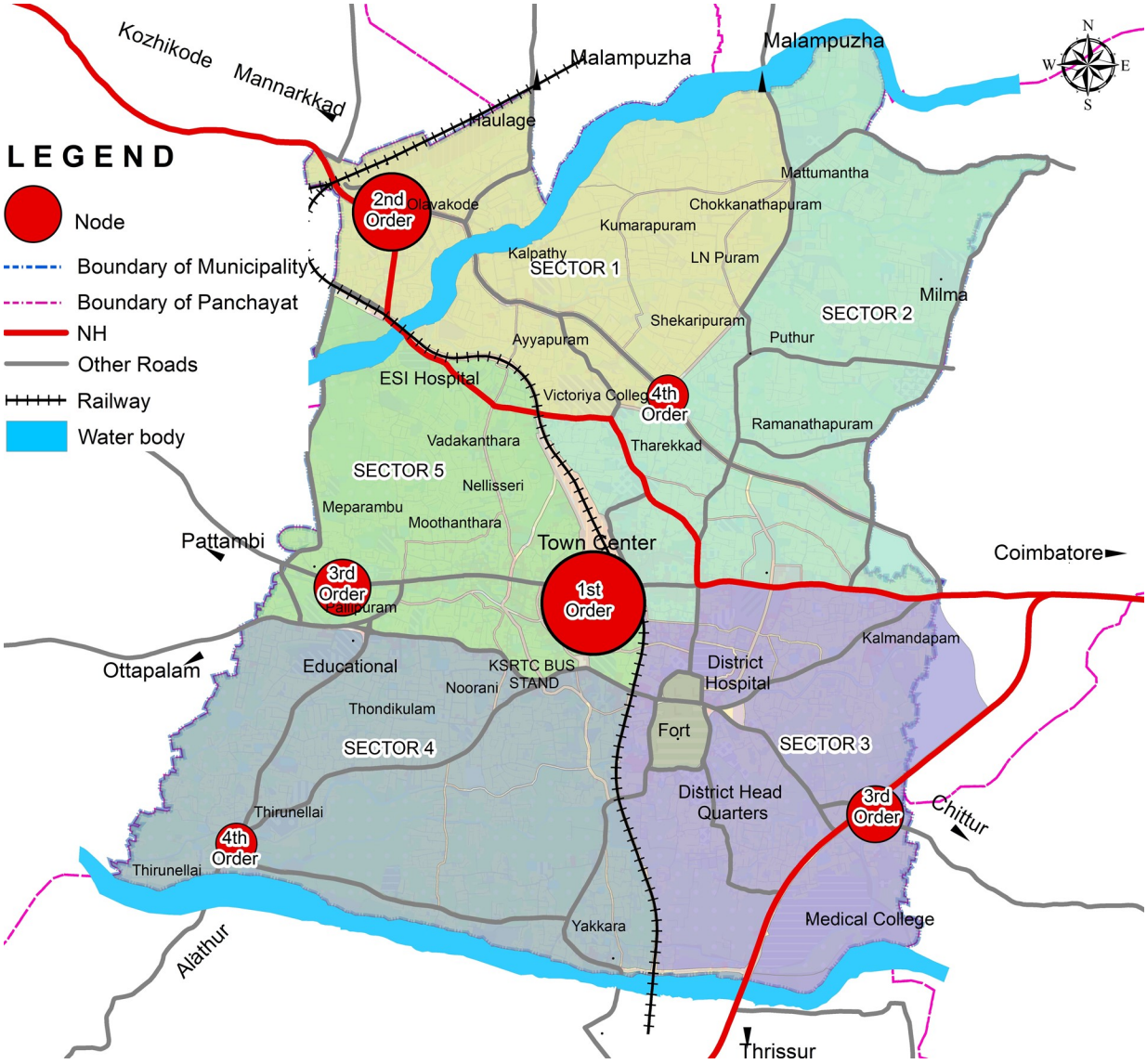


Fig. 26.9 Proposed hierarchy of nodes

helps the town to function in an organized manner. Hence decentralized commercial facilities with local/sector level markets, godowns, cold storage facilities are provided in each residential sectors. Town centre is taken as first order. Second order node is proposed at Olavakkode and third order nodes at Manappullikavu and Mepparambu. Thirunellayi & 100 ft. bypass junction are proposed as fourth order nodes of the planning area.

26.2.10 Environment and Topography

There is a total of 619.810 Hectare of land to be conserved due to environment sensitiveness and which is shown in Fig 26.10. The land under paddy is 21.68% of total land area of municipality, forest land is 0.012 % and water bodies at 5.242%. Sacred groves and tree clads comprise 0.227%. A total of 27.161 % of land

has to be conserved. New infrastructure, especially roads, increases development pressures on agricultural land.

Concept of Sponge city as a Mitigation measure for Flood and Drought

To cope up with both floods and droughts we need to make our grounds more permeable to water at least in some regions. This forms the basic principle of promoting sponge city. Technically, sponge city implies contiguous open green spaces, wetlands, interconnected waterways, and channels and ponds across neighbourhoods that can naturally detain and filter water. It implies support for urban ecosystems and bio-diversity. As part of promoting the sponge city concept and understanding the importance of wetlands in controlling both flood and drought, the selective parts of the town area under wet agriculture, which we consider to be effective in regulating flood and promoting groundwater recharge

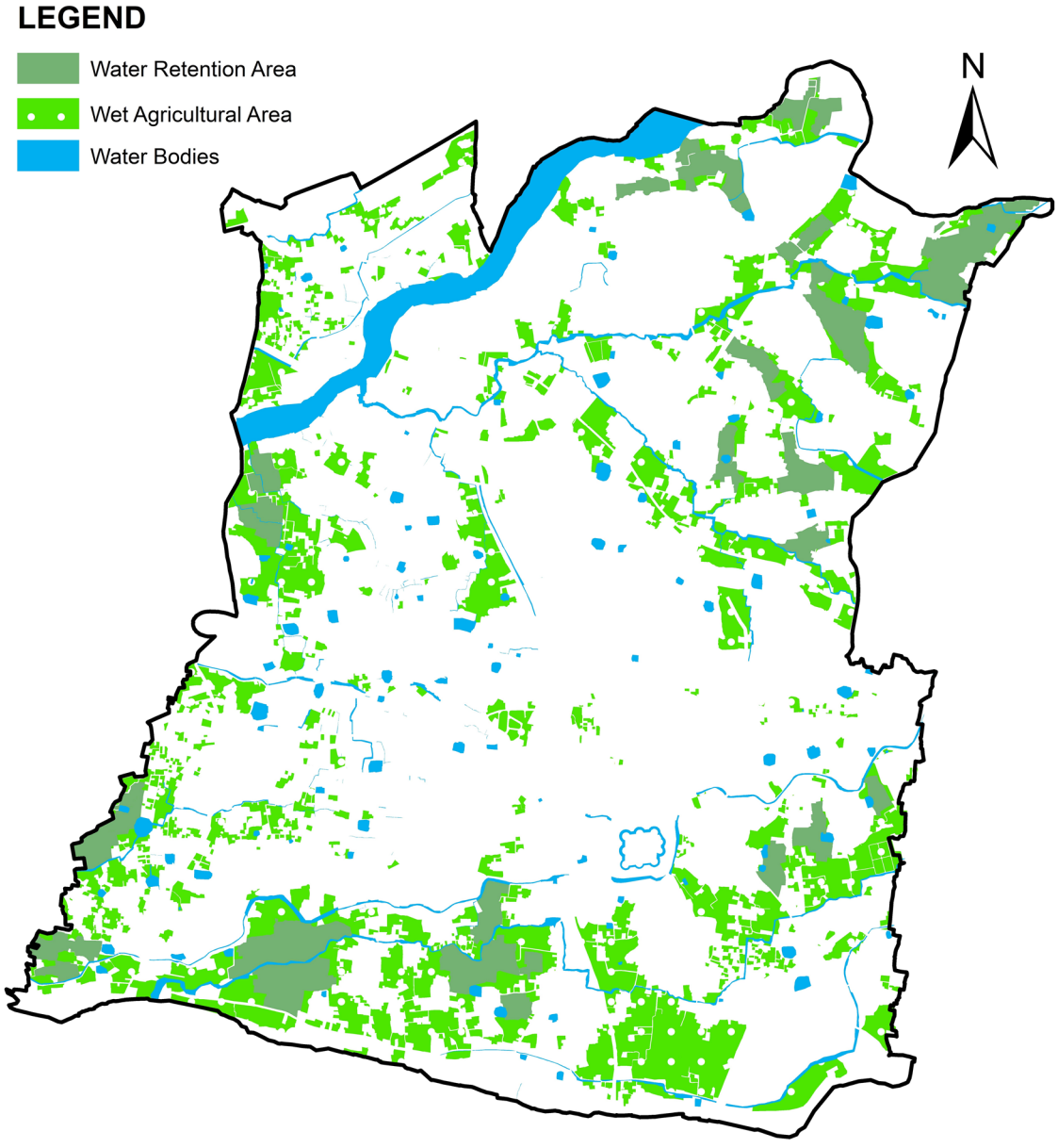


Fig.26.10 Conservable area under sponge city concept

26.2.11 Transportation Pattern

On the basis of the projected volume of traffic and alternative development schemes considered, a road development plan has been formulated for the town. As per the future road development plan for the town, the town will have a high capacity road network of well defined hierarchical pattern with widened roads, host of radial inner, intermediate and outer ring roads. Conceptual road development plan for Palakkad town is shown in fig 26.11.

A proposed inner, intermediate and outer ring roads divides the entire town in to different zones/sector. And each sector is subdivided using next hierarchy of roads so that connectivity of each sector is well balanced.

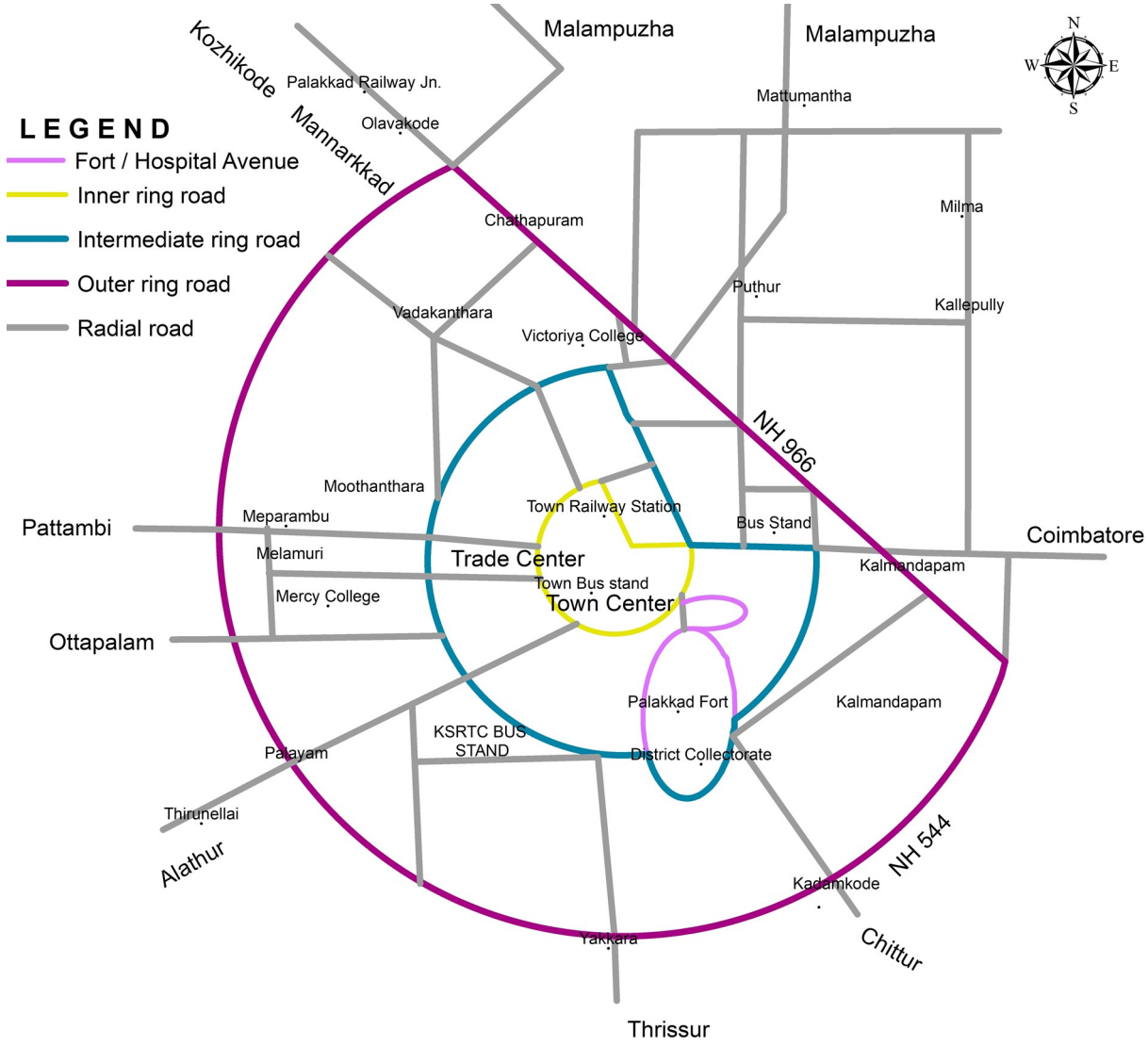


Fig. 26.11 Conceptual road development plan for Palakkad town– outer , intermediate and inner ring roads

26.3 FINAL DEVELOPMENT CONCEPT

The final development concept for Palakkad town is framed by integrating all the above factors with the development goals and objectives set for the local body. The aspect considered for formulation of the development concept are – optimum utilization of resources through the integration of various predominant potential resources, ensuring the local economic development and generation of better opportunities, protection of environmentally sensitive areas, conservation of potential agricultural areas, attain a certain level of self sufficiency and distribution of facilities in an equitable and balanced manner. The Desirable future development potential is depicted in figure 26.12.

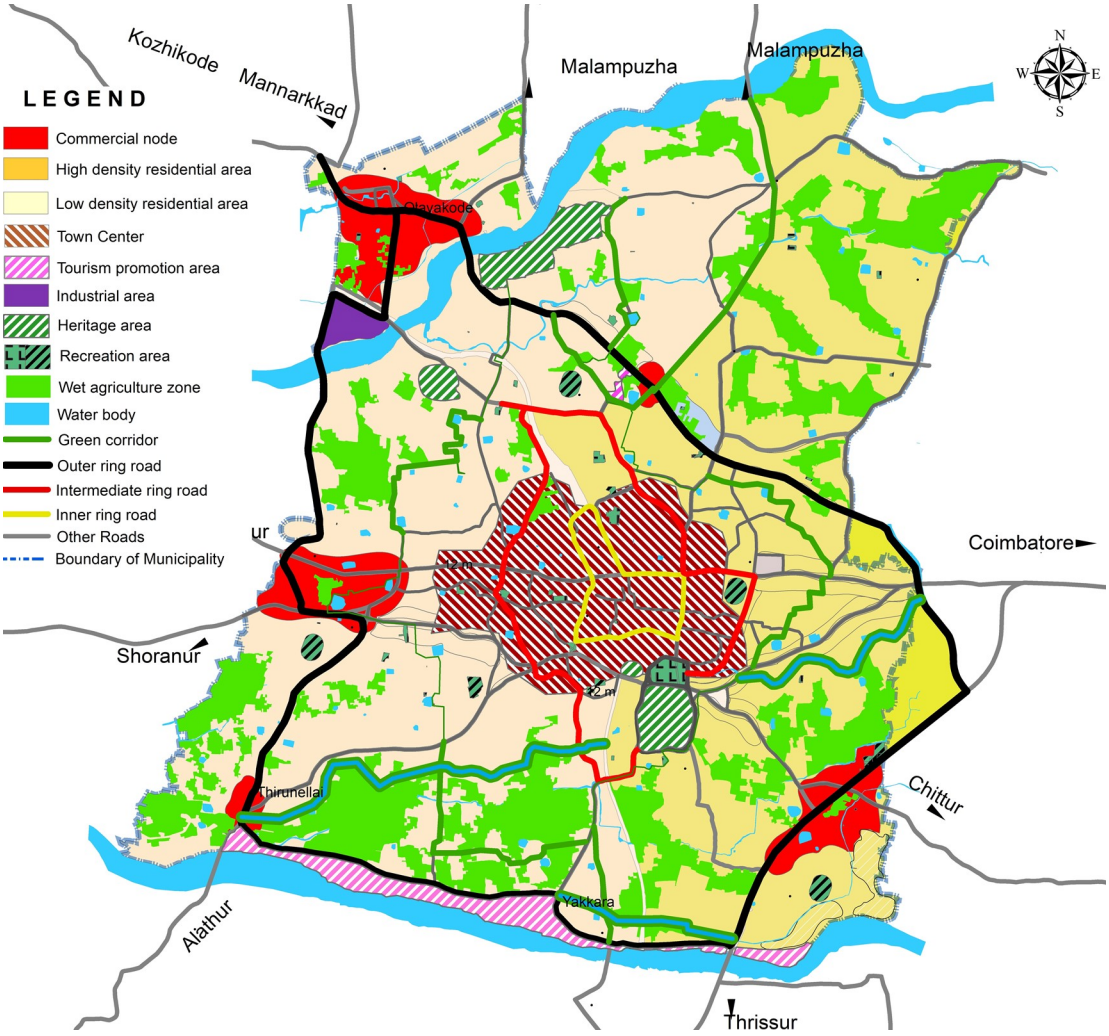


Fig. 26.12 Final development concept

With this development concept, the city will continue growing and developing in a way that is safe and environmentally sustainable. Ultimately, this will contribute to the well-being of residents of the town and better the quality of life for everyone. An effective set of policies and strategies have to be framed for complementing the development so as to make a vibrant town in the future.



CHAPTER 27-
DEVELOPMENT POLICIES AND STRATEGIES

27. DEVELOPMENT POLICIES AND STRATEGIES

The development policies have to be framed based on the development concept. On the basis of the issues, problems and potentials evolved from the study of settlements and sectors within the frame work of the goals and objectives, the key sectors, where planning interventions required are identified. The environmental aspects of the local body are also studied. Based on the above and incorporating the spirit of the development goals, development policies and strategies have been formulated.

The development strategies for urban local bodies have been formulated based on findings of analysis, development concept and the general development policy. The major policies and strategies that are incepted from the concept are as follows:

Policy

⇒ To compact the urban area and densification of settlements.

Strategies

⇒ Providing incentives in terms of , FSI (removal of high premium for additional FSI), set back etc.

⇒ Providing Incentives for Land pooling (bigger plots get more incentives)

⇒ Provide developments which attract people and ensure availability of facilities inside every cluster.

⇒ Institutionalisation that trigger development.

Policy

⇒ To provide redevelopment measures for down town

Strategies

⇒ To provide incentives in terms of parking .

⇒ To take care of the rent and ownership issues.

⇒ Identifying and providing common parking outside the markets.

⇒ Construction of prototypes for development with ULB initiation.

⇒ Enforce land pooling and combined redevelopment schemes.

Policy

⇒ To ensure the conservation of cultural and architectural character of the

town.

Strategies

⇒ Introducing heritage corridors that displays the heritage value of the town.

⇒ Enforcing specific character in roof, building, street scapes, street modification, foot path etc.

⇒ Allocating spaces for the display of art forms and probes having archeological importance.

Policy

⇒ To improve the imageability and permeability of places.

Strategies

⇒ Open up the interior plots through widening of narrow roads by increasing the accessibility.

⇒ Open up the inside pockets for parking /park/recreation in wards wise / neighborhood level.

⇒ To impart the development to isolated places through proposals that attract development.

⇒ Inserts that impart development in hinterlands.

Policy

⇒ To introduce mixed land use to promote work, live and leisure culture.

Strategies

⇒ Combining the interdependent sectors in each cluster.

⇒ Promoting work and walk culture by allowing office spaces in residential sectors.

⇒ Provision of park and open spaces in each residential clusters.

⇒ Developing well connected transportation network for creating self sustained livelihood.

⇒ Establish co working spaces and incubation centres .

Apart from this, sectoral policies and strategies are framed as follows for the sustainable development in each sectors:

27.1 TRADE AND COMMERCE

Policy

⇒ To develop town as a first order service provider and major trade centre by utilizing the potential of the nearby metro towns.

Strategies

⇒ Providing adequate infrastructure facilities such as truck terminals and redevelopment existing commercial areas.

⇒ Provide modern wholesale markets, cold storage facilities especially for perishable items like vegetables and fruits, exporting processing centre etc.

⇒ Ensure market facilities for agro-allied produces from the town as well as neighbouring local bodies.

⇒ Provide sufficient parking facilities, waste management system etc.

⇒ Storage, service, maintenance, and loading areas must be constructed at suitable locations.

27.2 INDUSTRY

Policy

⇒ Mobilize the establishment of Micro and Small Enterprises to achieve employment generation and utilization of local resources

Strategies

⇒ Develop a mutually beneficial link between industry, agriculture and allied activity to enhance the local economic development and penetration of the economy to the weaker sections of the community.

⇒ Enhance small scale and house hold industrial activities which support value addition of agricultural products.

⇒ Providing proper storage and marketing facilities for the industrial produces.

⇒ Strengthen and modernize traditional industries by diversification of products and implementing new technologies.

27.3 TOURISM & HERITAGE

Policy

⇒ To establish the heritage importance of the town and develop it as a tourism service provider

Strategies

⇒ Enhance the cultural importance of the town, establish heritage walk, heritage tour etc

⇒ Establish the town as a tourist friendly town with information centre, signage, greeneries, parks, parking etc

⇒ Establish tourism circuits by providing transportation facilities to the visitors.

⇒ Develop infrastructure for tourism promotion by providing all class lodging facilities including home stays to attract both domestic and international tourists.

27.4 PHYSICAL INFRASTRUCTURE

Policy

⇒ To enhance the maximum utilization of infrastructural resources by providing access to basic amenities for all.

Strategies

⇒ Providing adequate drinking water supply with priority to improve the existing schemes.

⇒ Establish projects to reduce the utilization of nonconventional energy and improve the usage of conventional energy.

⇒ Implement efficient waste management system with due regards to topography, waste reuse, waste recycle and waste reduction.

⇒ Improving the natural water drainage channel by desilting and preventing the mix up with sewage.

27.5 SOCIAL INFRASTRUCTURE

Policy

⇒ Maintain high standards of health, educational, recreational, institutional, religious facilities and ensure the equitable distribution of social infrastructure.

Strategies

⇒ Identifying ideal sites for developing various social infrastructure facilities.

⇒ Improving the existing social facilities and make provision for new facilities.

⇒ Providing quality space for recreation, leisure and more park and open

spaces.

⇒ Provide training and awareness programs for teachers and students for skill development.

⇒ Involving private and corporate sectors for providing, developing and maintenance of social infrastructure.

⇒ Promoting community participation in maintenance and upkeep of social infrastructure.

⇒ Providing higher order health and education facilities not only to cater the demand of the municipality but also to the adjoining areas so as to ensure the public health and quality education to all.

⇒ Creating institutions such as night shelters, rescue home, working employees hostel, BUDS schools etc for women and child care development.

27.6 TRAFFIC AND TRANSPORTATION

Policy

⇒ To improve safety, mobility and efficiency of traffic within and outside the city.

Strategies

⇒ Widening and strengthening of existing main roads and developing missing links.

⇒ Establishing a hierarchical order in the road network .

⇒ Provide opportunities for safe and effective non-motorised transportation including pedestrian access ways, cycle tracks wherever appropriate.

⇒ Providing adequate parking spaces to remove traffic congestion.

⇒ Improving the road geometry of existing roads.

⇒ Improvement of road junctions and providing proper signs and signals.

27.7 SPECIAL CONCERN AREAS

Policy

⇒ To make urban poor an integral part of the city planning, growth and development process.

Strategies

⇒ Improving access to basic services for the urban poor.

⇒ Providing better living environment for urban poor.

⇒ Creating enough employment opportunities for improving financial status of poor.

⇒ Providing adequate opportunities for creating affordable shelter duly supported by basic services.

27.8 ENVIRONMENT

Policy

⇒ To sustain environmentally sensitive areas and ensure clean, green and hygienic living environment.

Strategies

⇒ Renovate and conserve ponds, water bodies and paddy fields in the municipality

⇒ Increase green cover in town.

⇒ Develop iconic parks, neighbourhoods parks, riverside walkways.

⇒ Ensure proper waste disposal and effective waste management system.

⇒ Creating awareness among local people about the importance of environmental conservation and protection.



CHAPTER 28- FUTURE PROJECTIONS

28. FUTURE PROJECTIONS

After formulating the development concept and evolving the development policy and strategy in tune with the development, in order to derive the proposed land use and sector wise proposal we have to analyze the future demand and requirements. Visualizing critical information about how cities and urban environments might develop in the next one or two decades is an effective tool for analyzing impacts of today's planning decisions on future environments.

Since the future is always associated with uncertainties, precise projection is extremely difficult. In this chapter the population is projected based on development concept and future requirements of various sectors and calculated based on existing standards.

28.1 POPULATION

The population projection for the years 2021, 2026, 2031, 2036 and 2041 of the Municipality are made by assuming that the same trend in the population growth continues. The methods used for projecting population are

1. Arithmetical Increase Method
2. Geometric Increase Method
3. Decreasing Rate of Growth Method
4. Exponential Method
5. Incremental Increase Method

Average of the five methods is considered as the projected population for planning purpose, so that the variation in population projection by various methods can be eliminated. Table 28.1 shows the projected population for the years 2021, 2026, 2031, 2036 and 2041. Projections have been done to implement the proposal in short term and long term basis. Fig. 28.1 shows the population projection of Palakkad town.

Table 28.1 Projected population of Palakkad town

Sl.No.	Method	Projected Population				
		2021	2026	2031	2036	2041
1	Arithmetic mean method	1,39,747	1,44,143	1,48,539	1,52,934	1,57,330
2	Geometric increase method	1,41,815	1,47,579	1,53,576	1,59,817	1,66,312
3	Decreasing rate of growth method	1,21,031	1,11,527	99,796	86,639	72,908
4	Exponential method	1,42,278	1,48,302	1,54,581	1,61,125	1,67,947
5	Incremental increase method	1,34,657	1,34,599	1,33,269	1,30,667	1,26,792
	Average Population	**1,35,906**	**1,37,230**	**1,37,952**	**1,38,237**	**1,38,258**

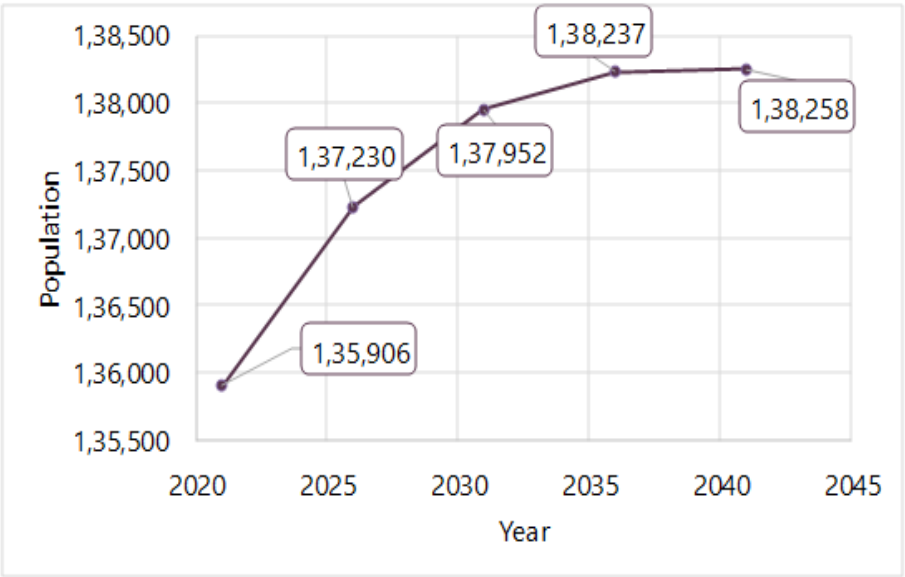


Fig. 28.1 Projected population of Palakkad town

28.2 WORK FORCE PROJECTION

The expected number of projected workers of Palakkad town in the horizon year 2041 is 56,285. As per the projection of workforce shown in Table 28.2, the average WPR targeted for the town by 2041 is 40.71%. With the introduction of new development projects, economic base will be increased, which will further result in the increase of job opportunities in the town. The projected WPR of Palakkad town shows an increasing trend.

Table 28.2 Projected Work force and WPR for Palakkad town

Year	1981	1991	2001	2011	2021	2026	2031	2036	2041
Population	1,11,245	1,23,289	1,30,767	1,30,955	1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
Workers	32,610	37,710	42,932	45,696	49,809	51,770	53,526	54,956	56,285
WPR	29.31	30.59	32.83	34.89	36.65	37.73	38.80	39.76	40.71

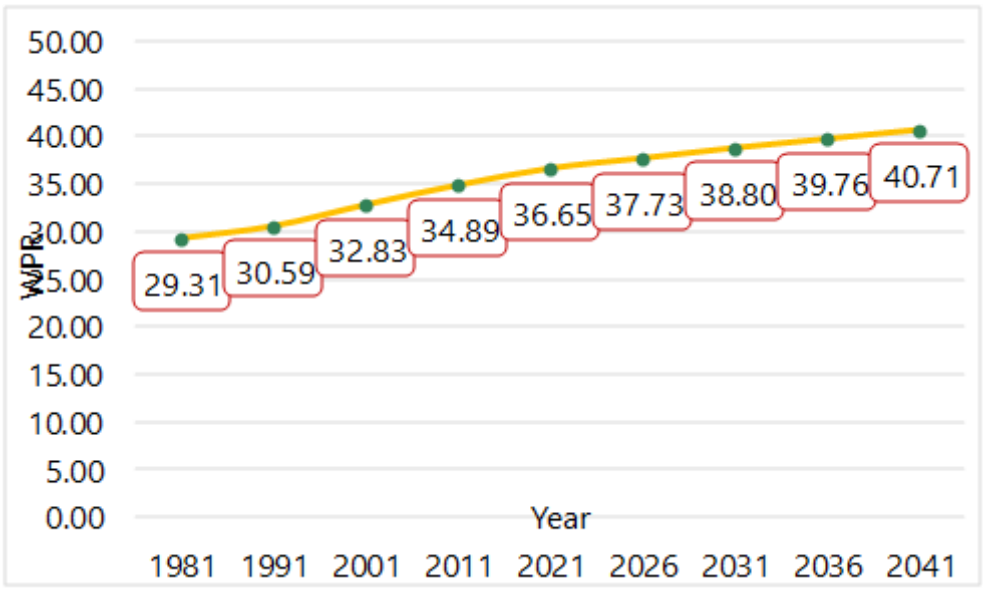


Fig. 28.2 Projected WPR in Palakkad town

Table 28.3 shows the projected main workers in Palakkad town. The ratio of the main workers to the total workers in the planning area as per 2011 census is 89.75%. Projected main workers for the horizon year 2041 is 47,829. The percentage of main workers shows a decreasing tend. By creating more employment opportunities, this percentage can be increased.

Table 28.3 Projected Main workers for Palakkad town

Year	1981	1991	2001	2011	2021	2026	2031	2036	2041
Total workers	32,610	37,710	42,932	45,696	49,809	51,770	53,526	54,956	56,285
Main workers	31,153	36,458	39,227	41,011	43,940	45,162	46,223	47,065	47,829
Percentage of Main workers	95.53	96.68	91.37	89.75	88.22	87.23	86.36	85.64	84.98

28.3 PHYSICAL INFRASTRUCTURE

Physical infrastructure is the combination of basic facilities which is helpful in economic development of a town. It includes facilities of water supply, drainage, sewerage system, telecommunication, electricity, transportation, energy etc. The infrastructure backlogs and demand has been calculated on the basis of projected population and standards given in URDPFI guidelines.

28.3.1 Water Supply

As per URDPFI guidelines desirable standard of water for domestic use for a medium size town is 135 - 450 lpcd. As per Central Public Health and Environmental Engineering Organization (CPHEEO) manual, the domestic water requirement is 135 lpcd, and this value is taken for assessing the future domestic water requirement of the town. Table 28.4 shows the estimated water demand for the Palakkad town. The total water requirement for the town in 2041 is 26.18 MLD and storage capacity required is 34.82 MLD.

Table 28.4 Estimated water demand for Palakkad town

Year	Unit	2021	2026	2031	2036	2041
Population		1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
1. Domestic water demand @ 135 l/	MLD	18.35	18.53	18.62	18.66	18.66
2. Non-domestic water demand @ 20.8% of (1)	MLD	3.82	3.85	3.87	3.88	3.88
3. Fire demand 1% of (1)+(2)	MLD	0.22	0.22	0.22	0.23	0.23
4. UFW @ 15% of (1) + (2) + (3)	MLD	3.36	3.39	3.41	3.42	3.42
5. Total water demand @ (1)+(2)+ (3)+(4)	MLD	25.75	26.00	26.13	26.18	26.18
6. Storage capacity required @ 33% of supply	MLD	8.50	8.58	8.62	8.64	8.64
7. Total storage capacity required @ (6) + (5)	MLD	34.24	34.58	34.75	34.82	34.82

28.3.2 Sewerage

As per CPHEEO manual 80% of water supply may be expected to reach the sewers. 135 lpcd water supply is considered for waste water generation. A peak factor should be considered for the total discharge to be generated for the STP. Peak factor depends upon the density of population, topography of the area, and hours of water supply for the design based on contributory population recommended by CPHEEO manual. Population of Palakkad town comes under the range of 50,001 to 7,50,000 and the peak factor is taken as 2.25.

Requirement of sewerage system is shown in Table 28.5. There is no public sewerage system in Palakkad town. It is estimated that total waste water generated will be increased from 33.03 MLD in 2021 to 33.60 MLD in 2041. By 2041, a treatment plant of 33.60 MLD capacity is required.

Table 28.5 Requirement of sewerage system for Palakkad town

Year	Unit	2021	2026	2031	2036	2041
Population		1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
Per capita demand	MLD	18.35	18.53	18.62	18.66	18.66
1. Waste water @ 80% of per capita	litres/ day	1,46,77,813	1,48,20,839	1,48,98,857	1,49,29,552	1,49,31,852
2. Peak factor		2.25	2.25	2.25	2.25	2.25
3. Total waste wa-	MLD	33.03	33.35	33.52	33.59	33.60

28.3.3 Solid Waste Management

The waste generation of Palakkad town is taken as 250 g/h/d. An additional 30% provision is made for waste from other institutions. The requirement of solid waste treatment system for the town in the horizon year is shown in Table 28.6. it is estimated that about 44.24 tonnes of solid wastes will be produced in 2041. Area requirement for solid waste composting is calculated @ 400 sq. m/t and it is expected that 5.68 acres of area will be required in the year 2041 for the solid waste composting.

Table 28.6 Requirement of solid waste treatment system for Palakkad town

Year	Unit	2021	2026	2031	2036	2041
Population		1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
1. Solid waste generation @ 250 g/h/d	tonnes/day	43.49	43.91	44.14	44.24	44.24
2. Including 30% extra for other institutions	tonnes/day	56.54	57.09	57.39	57.51	57.52
3. Area required for Com-posting plant @400 sq.m/t	Acres	5.59	5.64	5.67	5.68	5.68

28.3.4 Traffic and Transportation & Street lights

The road length available in Palakkad town is sufficient as per standards. Projection is made taking the view point that only two types of roads should be built with major share of 85% to bituminous roads and the rest 15% to concrete roads. Earthen road and WBM roads are proposed to be converted to bituminous or cement concrete roads. Among various categories of street lights, priority is given to power lamps (70%), followed by tube light and high mast lamps (30%). Street lights are seen sufficient as per the standards. The table 28.7 depicts the projection of traffic & transportation and street light.

Table 28.7 Projection of Traffic & transportation and street lights in Palakkad town

Year		Unit	2021	2026	2031	2036	2041
Population			1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
1. Road length @ 0.96 m per capita		km	130	132	132	133	133
Road Surface	Concrete (km) @ 15% of total road length	km	20	20	20	20	20
	Bituminous (km) @ 85% of total road length	km	110	112	112	113	113
2. Lamp poles @ 30 m c/c			4333	4400	4400	4433	4433
Street Lights	Tube Light/CFL / Ordinary bulb @ 30% of lamp poles	Nos	1300	1320	1320	1330	1330
	High power lamps @ 70% of lamp poles	Nos	3033	3080	3080	3103	3103
	High Mast Lamps @ 0.1% of lamp poles	Nos	4	4	4	4	4
4. Parking facilities @ 0.4 Ha of land per 10000 population		Ha	5.44	5.49	5.52	5.53	5.53

Methods of Traffic Projection

For projecting the future demand, various methods of traffic projection including statistical, econometrical and mathematical models are available. These could be judiciously utilized depending upon the level of accuracy warranted and the extent of database available. Various methods of traffic projection employed in the transport planning include;

1. Growth factor methods
2. Regression method based on economic indicators like population, per-capita income growth rate and growth rate in industrial sector and land use parameter.
3. Interpolation method based on past trend in traffic growth rates

The relationship established between the various economic indicators for passenger and goods traffic movement can be used to estimate the future demand in an area. Also the growth rate of vehicular population in the area over the years will give a good estimate of the future trips. The traffic volume on links from the past years can be used to establish a growth rate for prediction of the future volume on links.

Techniques adopted for projection

In the case of Palakkad town, traffic projections were carried out according to the growth rates worked out on the following basis:

- Growth rate based on realistic estimates using influencing parameters.
- Studies conducted by NATPAC in different towns of similar size in Kerala in the past, and
- Growth rate of vehicular population in Palakkad over the years. The growth rates estimated as per the above basis are;

Table 28.8 Growth rate estimated

Methods	Annual growth rate
Studies conducted by NATPAC in similar towns in	3 to 6
Growth rate of Motor vehicles registration in Palakkad district during 2014 -18	1.8

The impact of annual traffic growth on peak hour traffic was estimated based on the peak hour factors on daily traffic. On the basis of a critical evaluation of the above growth rates and also factors such as moderation in traffic growth over the years due to development of Information Technology in transportation sector, the following growth rates were adopted for Palakkad study area for different categories of roads viz. arterial, sub-arterial and collector roads.

Table 28.9 Growth rate adopted for traffic projection in Palakkad town.

Sl. No.	Hierarchy of roads	Traffic growth rate (%)	
		upto 2030	Beyond 2030
1	Arterial road	5	4
2	Sub-arterial road	4	3
3	Collector road	3	2

Projected link volume on existing network

Table 28.10 presents the estimated daily traffic for different horizon years on various road stretches in Palakkad study area. Volume-capacity ratio for the horizon years is also given in this table. It can be seen that almost all the major road corridors in Palakkad town would be severely congested in the horizon year with the anticipated traffic more than the capacity of the roads under "do-nothing scenario".

Major locations like Shakunthala Junction, IMA Junction, BEM Junction, Olavakkode junction, Kalmandapam junction and Sulthanpet junction will carry heavy traffic. Similarly, many minor roads leading to the main roads will be chocked with traffic as it is already heavily burdened due to low road width availability.

Table 28.10 Projected volume capacity ratio of major road stretches in Palakkad town (NATPAC).

Sl. No.	Name of homogeneous section		Capacity (PCU)	2020		2030		2040	
				Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity
I	**NH 966: Palakkad to Kozhikode road**								
1	Thanavu Junction (Municipal border)	Olavakkode junction	1,500	4,514	2.11	7,353	3.43	10,884	5.08
2	Olavakkode junction	Kalpathy junc-tion	1,500	3,378	1.58	5,502	2.57	8,145	3.80
3	Kalpathy junction	Sekharipuram junction	3,600	1,796	0.35	2,925	0.57	4,330	0.84
4	Sekharipuram junction	Kalmandapam junction	3,600	2,190	0.43	3,566	0.69	5,279	1.03
II	**College road (Sultanpet junction to Kalpathy junction)**								
5	Sultanpet junction	Victoria college junction	1,500	2,668	1.24	4,345	2.03	6,432	3.00
6	Victoria col-lege junction	Kalpathy junc-tion	1,500	1,823	0.85	2,969	1.39	4,396	2.05
III	**Court road & Yakkara road (Sultanpet to Yakkara)**								
7	Sultanpet junction	Anjuvilakku	1,500	1,850	0.86	3,013	1.41	4,461	2.08
8	Anjuvilakku	SBI junction	1,500	3,662	1.71	5,964	2.78	8,828	4.12
9	SBI junction	Palattu junction	1,500	2,903	1.35	4,729	2.21	7,000	3.27
10	Palattu junc-tion	Yakkara bridge	1,500	2,161	1.01	3,520	1.64	5,211	2.43
IV	**Gandhi bazar road**								
11	Sultanpet junction	Municipal bus stand junction	900	729	0.57	980	0.76	1,194	0.93
V	**Market road**								
12	Municipal bus stand junction	ROB	900	1,826	1.42	2,453	1.91	2,991	2.33
13	ROB	Sakunthala junction	900	2,589	2.01	3,479	2.71	4,241	3.30
VI	**Ponnani road**								
14	Sakunthala junction	Melamuri junc-tion	900	649	0.5	872	0.68	1,063	0.83

Table 28.10 Continued..

Sl. No.	Name of homogeneous section		Capacity (PCU)	2020		2030		2040	
				Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity
15	Melamuri junction	Mepparamba junction	1,500	2,344	1.09	3,817	1.78	5,651	2.64
VII	**Coimbatore road**								
16	Sultanpet junction	Stadium Junction	1,500	2973	1.39	4,842	2.26	7,167	3.34
17	Stadium junction	Kalmandapam junction	3,600	2909	0.57	4,738	0.92	7,013	1.36
18	Kalmandapam junction	Chandranagar (Municipal border)	3,600	5,193	1.01	8,460	1.64	12,522	2.43
VIII	**Malampuzha 100" road**								
19	Victoria college junction	Sekharipuram junction	1,200	876	0.51	1,297	0.76	1,743	1.02
20	Sekharipuram junction	Puthur road junction	1,200	1,258	0.73	1,861	1.09	2,502	1.46
21	Puthur road junction	Mattumantha	1,200	1,258	0.73	1,861	1.09	2,502	1.46
22	Mattmantha	Mukkai bridge (Municipal border)	1,200	1,255	0.73	1,857	1.08	2,496	1.46
IX	**Chittur road**								
23	IMA junction	Karinkarapully	1,500	4,189	1.96	6,824	3.18	10,101	4.71
24	Karinkarapully	Kadamkode (Municpal border)	1,500	1,588	0.74	2,586	1.21	3,829	1.79
X	**Shornur road**								
25	Mepparamba junction	Mercy college (Kottayi road junction)	1,200	1,151	0.67	1,704	0.99	2,289	1.34
26	Mercy college (Kottayi road junction)	Mercy college	2,400	1,535	0.45	2,271	0.66	3,053	0.89
27	Mercy college	Noorani junction	1,200	2,453	1.43	3,630	2.12	4,879	2.85
28	Noorani junction	KSRTC junction	1,200	2,138	1.25	3,164	1.85	4,252	2.48
29	KSRTC junction	BEM junction	1,200	2,440	1.42	3,612	2.11	4,854	2.83
XI	**English church road**								
30	BEM junction	SBI junction	1,200	3,804	2.22	5,631	3.28	7,567	4.41
31	SBI junction	IMA junction	1,200	3,243	1.89	4,800	2.8	6,450	3.76

Table 28.10 Continued..

Sl. No.	Name of homogeneous section		Capacity (PCU)	2020		2030		2040	
				Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity
XII	**IMA to Kalamandapam**								
32	IMA junction	Kalman-dapam junc-tion	1,200	2,190	1.28	3,241	1.89	4,356	2.54
XIII	**Kottayi road**								
33	Melamuri junction	Mercy col-lege	1,200	2,523	1.47	3,735	2.18	2,019	2.93
34	Mercy college (Kottayi road junction)	Pirayiri (Municipal border)	1,200	1,749	1.02	2,589	1.51	3,479	2.03
XIV	**Stadium bypass**								
35	Stadium	IMA junction	2,900	1,781	0.43	2,636	0.64	3,542	0.85
XV	**Malampuzha road**								
36	Soorya junc-tion	Railway gate (Municipal border)	1,200	652	0.38	965	0.56	1,297	0.76
XVI	**Olavakkode to Chunnamputhara**								
37	Olavakode junction	Chunnam-puthara junction	900	4,428	3.44	5,951	4.63	7,254	5.64
38	Chunnampu-thara junction	Victoria col-lege junction	900	959	0.75	1,288	1.00	1,570	1.22
XVII	**Mercy College to Thirunellayi bridge**								
39	Mercy college	Thirunellayi bridge (Municipal border)	1,200	1,794	1.05	2,656	1.55	3,569	2.08
XVIII	**Puthur road**								
40	Seshadri na-gar junction	Koppam junction	900	787	0.61	1,058	0.82	1,289	1.00
41	Koppam junction	Puthur junc-tion	900	1,080	0.84	1,451	1.13	1,768	1.38
42	Puthur junc-tion	Kallepully junction (Municipal border)	900	989	0.77	1,328	1.03	1,619	1.26
XIX	**Stadium road to Gandhi bazar road**								
43	Stadium by-pass road	Coimbatore road (Vivekanand a colony	900	162	0.13	217	0.17	265	0.21
44	Stadium road	Court road	900	736	0.57	989	0.77	1,206	0.94

Table 28.10 Continued..

Sl. No.	Name of homogeneous section		Capacity (PCU)	2020		2030		2040	
				Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity	Traffic Volume (PCU)	Volume/ Capacity
XX	**Other roads**								
45	KSRTC junction (Puthupally theruvu)	Thirunellayi bridge	900	2,226	1.73	2,991	2.33	3,646	2.84
46	BEM junction	Thottumkal junction (Erumakkara St)	900	2,307	1.79	3,100	2.41	3,779	2.94
47	Noorani	Vadakkumthara St)	900	404	0.31	542	0.42	661	0.51
48	Syndicate bank (Big bazaar)	Aswathy marriage hall (Vadakkumthara road)	900	1,735	1.35	2,331	1.81	2,842	2.21
49	Mission school	District hospital (Robinson road)	900	2,383	1.85	3,202	2.49	3,903	3.04
50	Moyans school	Town railway station via overbridge (VH road)	900	1,835	1.43	2,466	1.92	3,006	2.34
51	Mission school	Manjalikuma (Manjalikulam road)	900	1,475	1.15	1,982	1.54	2,416	1.88
52	Anjuvilakku junction	IMA junction	1,900	1,505	0.55	2,023	0.75	2,466	0.91
53	IMA junction	Palattu junction (S fort road)	900	156	0.12	209	0.16	255	0.2
54	KSRTC link road		2,900	2,147	0.52	2,885	0.7	3,517	0.85

28.3.5 Power

As per URDPFI guidelines the power consumptions works out to be 2 KW per house hold. The average house hold size as per the census data is 4.20. The power requirement of Palakkad town is shown in Table 28.11. As per URDPFI guidelines, one substation of 11 KV is required for every 15,000 population. There is one 110 KV substation at Vennakkara.

Table 28.11 Power requirement for Palakkad town

Years	2021	2026	2031	2036	2041
Population	1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
Household	33,976	34,307	34,488	34,559	34,564
Power consumption	68	69	69	69	69
1. Sub-stations required @ One 11 kV substation / 15000 population	9	9	9	9	9

28.4 SOCIAL INFRASTRUCTURE

Social infrastructure includes facilities and spaces where the community can access social services. These include health-related services, education and training, social housing programs, police, courts and other justice and public safety provisions, as well as arts, culture and recreational facilities.

28.4.1 Education

Future educational requirements for Palakkad town is projected based on the URDPFI guidelines. Projected requirement of educational facilities for Palakkad town is shown in Table. 28.12. The number of nurseries in Palakkad town are way below URDPFI standards. The number of primary and high schools are satisfactory. Existing arts and science colleges are satisfactory to meet the needs. There are 6 professional colleges in the town which are sufficient.

Table 28.12 Requirements of educational facilities in Palakkad town

	Existing	2021	2026	2031	2036	2041
Population		1,35,906	1,37,230	1,37,952	1,38,237	1,38,258
1. Nursery: 1 for every 2,500	16	54	55	55	55	55
2. Primary: 1 for every 5,000	53	27	27	28	28	28
3. HS: 1 for every 13,000	16	10	11	11	11	11
4. HSS: 1 for every 13,000	10	10	11	11	11	11
5. Arts and Science College: 1 for every 80,000	5	2	2	2	2	2
6. Polytechnic College :1 for every 36,000	3	4	4	4	4	4
7. Professional College : 1 for every 2,50,000	6	1	1	1	1	1
8. ITI/ITC : 1 for every 35,000	20	4	4	4	4	4
9. TTC : 1 for every 1,20,000	2	1	1	1	1	1
10. School for handicapped: 1 for every 45,000	1	3	3	3	3	3

28.4.2 Health

Future health requirements for Palakkad town are projected based on the URDPFI guidelines and is shown in table 28.13. The existing facilities are found to be satisfactory. At present there are 4 super specialty hospitals in the town. Govt. medical college is also functioning in Palakkad municipality. The district hospital is present in the town with a bed capacity of 544 which is satisfactory.

28.4.3 Recreational Facilities

According to URDPFI standards, one community room is required for every 5000 population and one community centre is required for every 15000 population. 37 community rooms/ centres would be required by the planning year 2041 which is already achieved by the town. There are 13 libraries in the town which are satisfactory.

There are 7 movie theatres and 48 halls in Palakkad town that are sufficient to meet the requirement. Each of these facilities are required as per URDPFI standards and the numbers required for the planning year are shown in the below table 28.14.

Table 28.13 Requirement of health facilities for Palakkad town

	Existing	2021	2026	2031	2036	2041
Population		**1,35,906**	**1,37,230**	**1,37,952**	**1,38,237**	**1,38,258**
1. Nursing home: 1 for every 45,000 -1,00,000 of 25-30 beds	2	3	3	3	3	3
2.PHC Sub centre: 1 for every 20,000	5	7	7	7	7	7
3. General hospital: 1 for every 2.5 Lakhs	1	1	1	1	1	1
4. General hospital (number of beds): (500 beds for 2,50,000 population)	544	272	274	276	276	277
5. Super speciality hospital : 1 for every 1,00,000	4	1	1	1	1	1
6. Multi speciality hospital : 1 for every 1,50,000	-	1	1	1	1	1

Table 28.14 Requirement of recreational facilities for Palakkad town

Year	Existing	2021	2026	2031	2036	2041
Population		**1,35,906**	**1,37,230**	**1,37,952**	**1,38,237**	**1,38,258**
1. Community Room: 1 for every 5,000	49	27	28	28	28	28
2. Community centre: 1 for every 15,000, 2000 sq. m.		9	9	9	9	9
2. Library: 1 for every 15,000, 2000 sq. m.	13	9	9	9	9	9
3. Recreation club: 1 for 15,000 population, 2000 sqm	5	9	9	9	9	9
4. Music, dance & drama centre: 1 for every 50,000	0	3	3	3	3	3
5. Meditation and Spiritual centre: 1 for every 50,000 popula-	0	3	3	3	3	3

28.4.4 Other Civic Amenities

As per the URDPFI guidelines, one petrol pump is required for 15,000 population. At present there are 19 petrol pumps in the town. URDPFI guidelines implies that one LPG godown is required to serve 40,000 population. Presently there are 4 LPG godowns. The number of petrol pumps and LPG godowns in the town are sufficient to serve the future population.

As per the URDPFI guidelines, 1 police station is required to serve 90,000 population. There are 6 police stations in the Palakkad municipality. There is one fire station in Palakkad municipality.

Table 28.15 Requirement of other civic amenities for Palakkad town

Year	Existing	2021	2026	2031	2036	2041
Population		**1,35,906**	**1,37,230**	**1,37,952**	**1,38,237**	**1,38,258**
1. Petrol pump: 1 for every 15,000	19	9	9	9	9	9
2. LPG godown: 1 for every 40,000	4	3	3	3	3	3
3. Police station: 1 for every 90,000	2	2	2	2	2	2
4. Fire station: 1 for every 2,00,000	1	1	1	1	1	1
5. Post office: 1 for every 10,000 -15,000	13	14	14	14	14	14
6. Telephone ex-change: 1 for every 40,000	7	3	3	3	3	3



CHAPTER 29- PROPOSED LAND USE

29. PROPOSED LAND USE

29.1 PROPOSED LAND USE

The proposed land use plan for the Palakkad town has been prepared for the year 2040. The proposed land use plan was derived on the basis of studies and analysis of work force pattern, population structure, existing land use forms; various sectors belong to economic, social, and physical of the planning area.

The category of land use proposed in line with the development concept is listed as follows and the spatial distribution of various land uses is shown in Fig 29.1. The proposed land use break up (in terms of area and percentage of composition) is shown in Table 29.1.

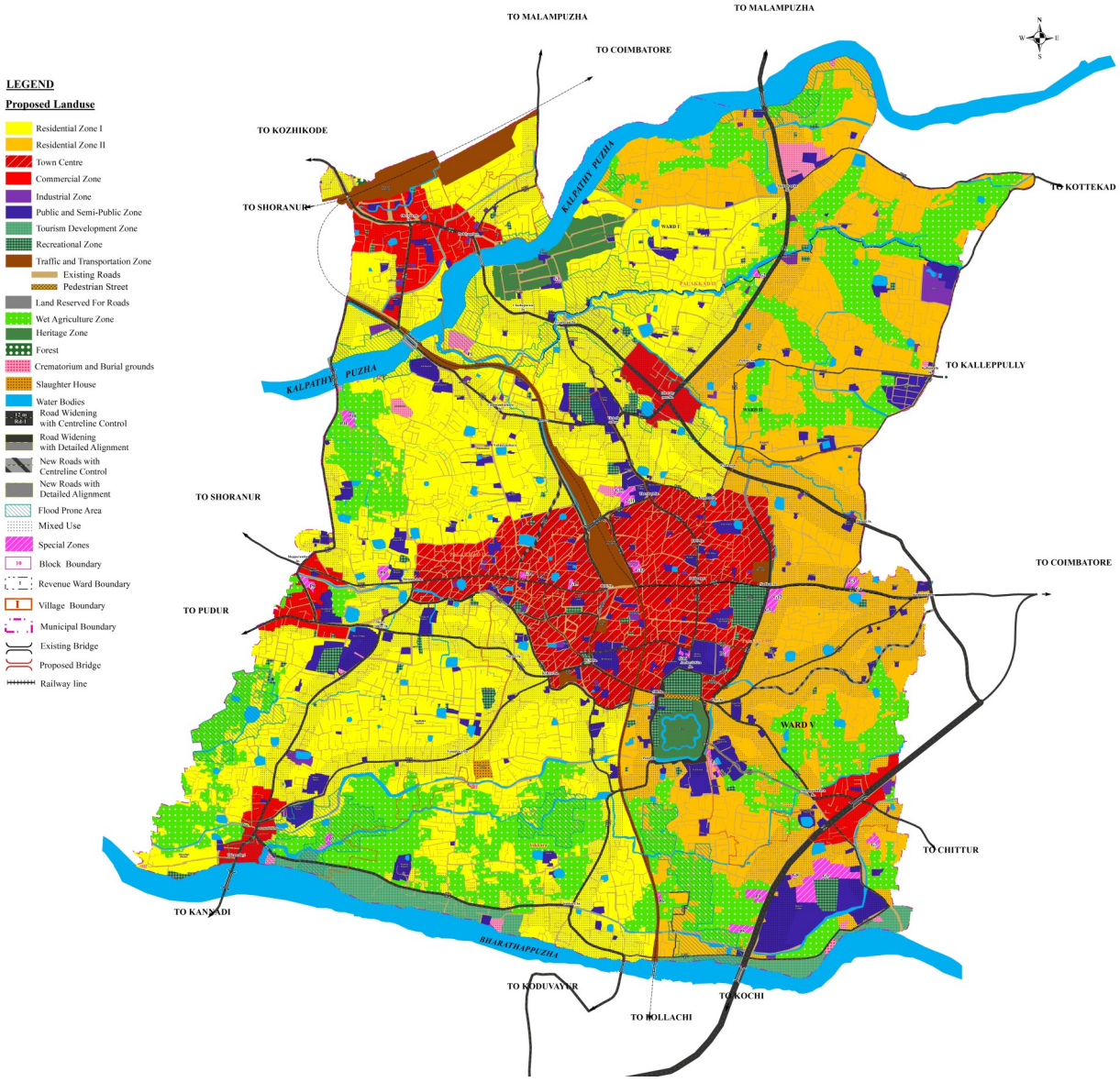


Figure 29.1 Proposed land use of Palakkad town

Table 29.1 Proposed Land use split up of Palakkad town

Sl. No.	Proposed Landuse	Area (Sq.Km)	Area (Hectares)	Percentage of area
1	Residential Zone I	7.43	742.53	27.91
2	Residential Zone II	4.72	472.08	17.75
3	Town Centre	1.74	174.38	6.56
4	Commercial Zone	0.83	82.73	3.11
5	Industrial Zone	0.13	12.85	0.48
6	Public and Semi-Public Zone	1.33	133.47	5.02
7	Tourism Development Zone	0.34	33.99	1.28
8	Recreational Zone	0.36	35.94	1.35
9	Traffic and transportation Zone	3.48	347.79	13.07
	Existing Roads	*2.92*	*291.85*	
10	Wet Agriculture Zone	4.08	407.55	15.32
11	Heritage Zone	0.30	29.92	1.12
12	Forest	0.00	0.31	0.01
13	Land Reserved For Roads	0.16	15.63	0.59
14	Crematorium and Burial grounds	0.14	13.75	0.52
15	Slaughter House	0.02	1.56	0.06
16	Water Bodies	1.38	137.93	5.19
17	Flood Prone Area	*1.97*	*196.63*	*0.00*
18	Special Zones (Each special zone is detailed in table 29.2)	0.18	17.60	0.66
	Total	**26.60**	**2660.00**	**100.00**

Note: *Flood prone area is overlaid over other land uses and hence will not contribute to the percentage of land use area. Contribution of existing roads to traffic and transportation zone is also shown separately.*

29.1.1 Residential Zone I

The proposed residential area in the Palakkad municipality is divided into two zones, namely, **Residential Zone I** and **Residential Zone II**. The total area under residential zone is 1214.61 hectares i.e., 45.66 % of the total municipal area. Residential Zone I is delineated with an area of 742.53 hectares which is about 27.91% of the total land area of the municipality. Fig 29.2. shows the proposed residential zone I of Palakkad town.

At present, the more populous wards lies in North-West and South-West regions of the planning area. Residential Zone I includes highly densified settlements including Agraharams, Moothanthara, Sundaram colony etc where further densification is found to be difficult. Here predominant consideration is given for ensuring better living conditions than intensifying the settlement character, since the land availability is almost saturated. To improve the quality of life and to provide a better livelihood for the living population, priority is given for providing more open spaces and efficient circulation in this zone. Measures to arrest further densification is also considered here so as to keep up the good living environment for the existing community.

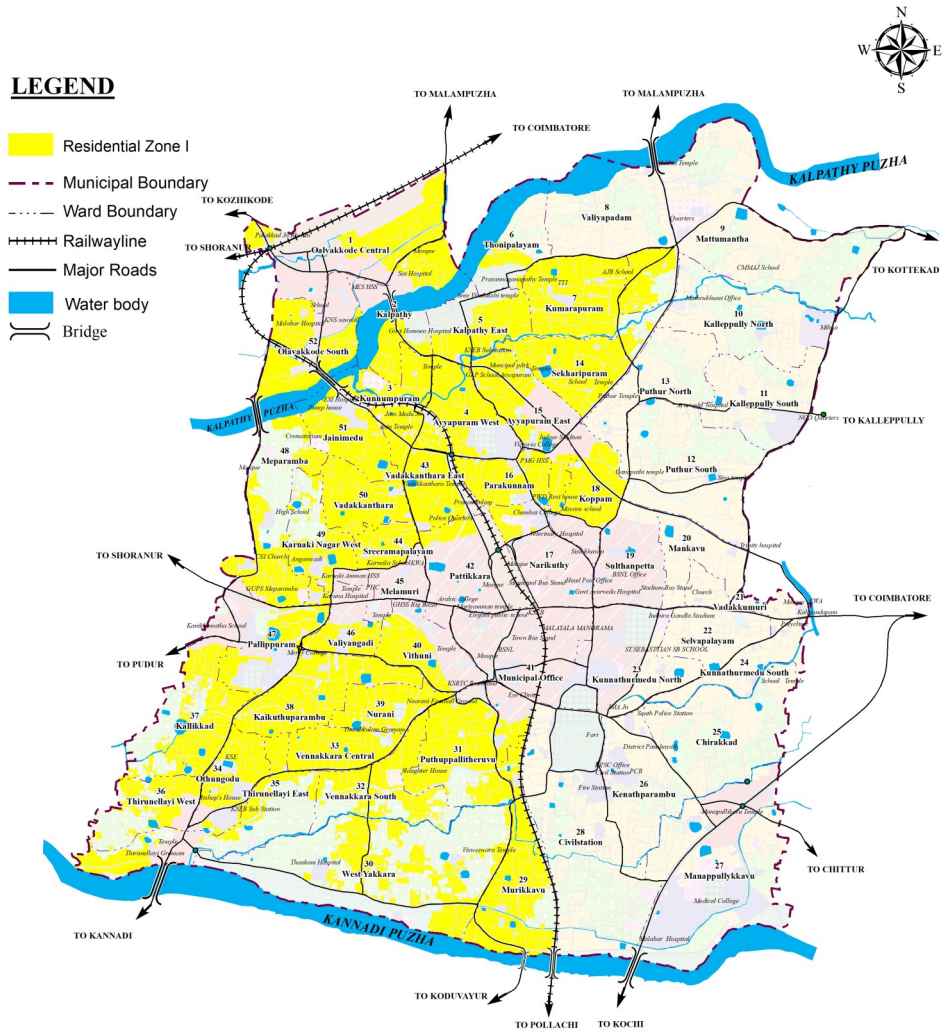


Figure 29.2 Proposed Residential Zone I of Palakkad town

29.1.2 Residential Zone II

Residential Zone II of Palakkad municipality is delineated with an area of 472.08 hectares which come to 17.75% of total municipal area. In Residential Zone II, there are enough land available for further development. So this zone is prioritized to provide better transportation network that trigger development and attracts settlements. As a developing zone, a planned and sustainable development is aimed here with sufficient open spaces and greeneries. Figure 29.3 shows the proposed residential zone II of Palakkad town.

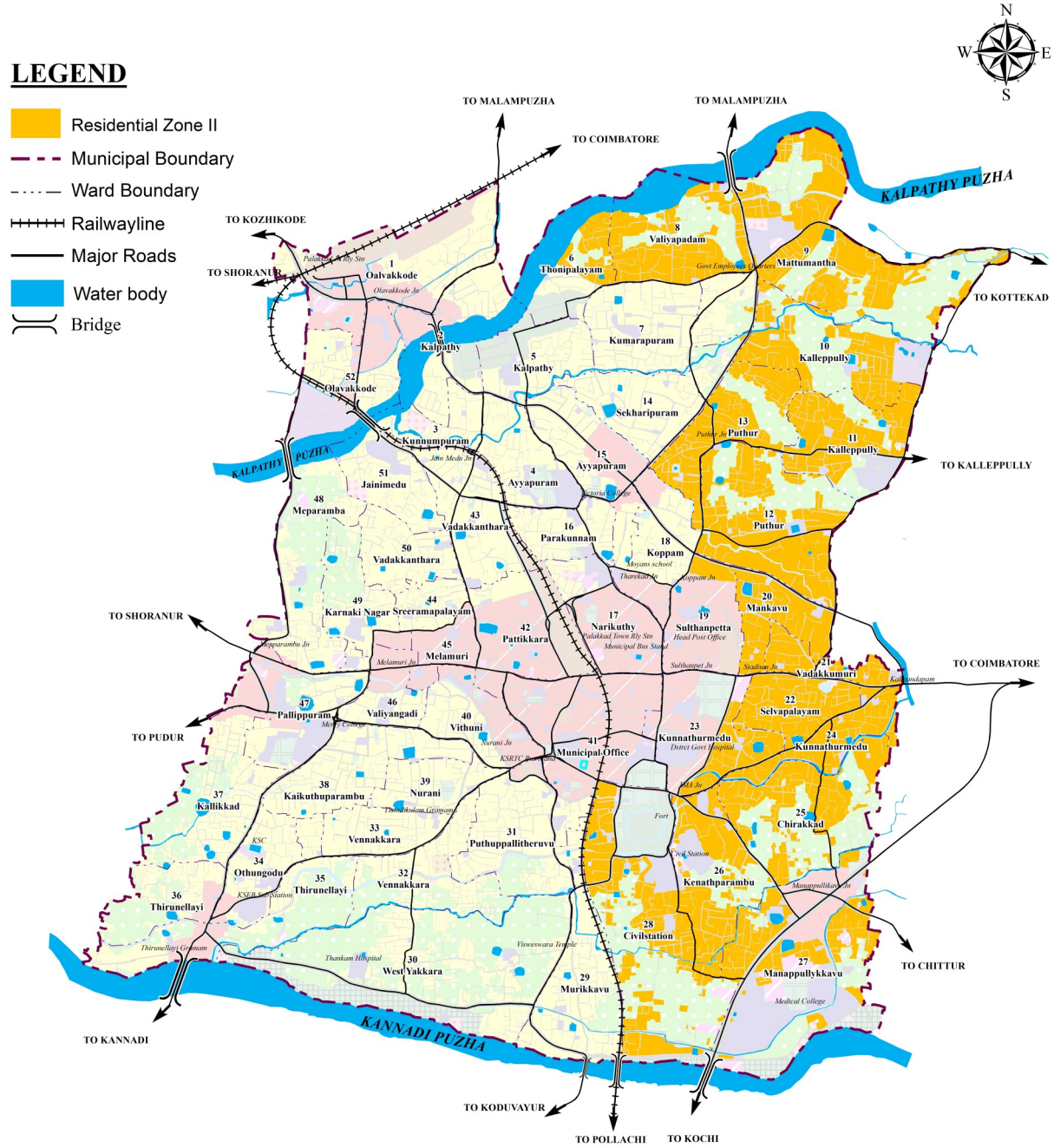


Figure 29.3 Proposed Residential Zone II of Palakkad town

29.1.3 Town Centre

Open space availability in the CBD of Palakkad is decreasing due to the uncontrolled and unplanned developments happening over the years. The space available for providing further higher order facilities in terms of transportation as well as other service and commercial sectors are very minimal. Narrow roads are bounded by old buildings and space for open areas, parks or parking spaces are very limited.

Thus the already developed core commercial area within the town is proposed as Town Centre where the growth is to be restricted for higher order residential developments and massive commercial structures, enabling a planned redevelopment by time. Figure 29.4 shows the proposed Town Centre in Palakkad town, having an area of 174.38 hectares which constitutes 6.56% of the municipal area.

29.1.4 Commercial Zone

Existing commercial activities are concentrated in the town centre and along the major traffic corridors of the town. So the shifting of urban activity to the subcentres with higher order facilities and efficient road network are required to ensure the quality of life for all the people in the planning area. The new commercial areas are proposed to be developed so as to cater the entire municipal area through a well defined system of hierarchy of nodes in order to make all residential areas self contained and self sufficient in terms of basic day to day needs of commercial uses.

Higher order commercial centres are proposed in these areas to meet the demand and fill the gap of major commercial activities. 5 major nodes are selected to be developed into commercial zones to cater the demands of nearby residential clusters as well as the demands of other regions and local settings of its periphery. Olavakkode will serve the purpose of 2nd order commercial centre by providing higher order facilities for the adjoining panchayaths such as Puduppariyaram and Akathethara as well as the regions of Kongad - Cheruppulassery area and Mannarakkad taluk.

Mepparambu and Kadamkode will serve as third order centres where the former one feeds the demands from Ottapalam and Pattambi taluks as well as the densely populated residential areas of its periphery both inside the municipality as well as adjoining Pirayiri grama panchayath and Kadamkode will be developed as an intermediate hub for the commuters in the NH, the needs and amenities related with the medical college and as well as the second order facilities for the population of Chittur taluk.

On development of the proposed outer ring road and Kannanur bypass, the importance of Thirunellayi junction will get elevated and thus it is proposed to be

developed as a 4th order centre for commercial activities. This will serve the residential clusters of the locality which includes high density zones along Vennakkara.100 feet road junction in Kozhikode bypass could serve the Malampuzha, Puthur and Kalpathy residential clusters is also proposed as 4th order commercial centre. The proposed area under this land use is 82.73 Hectare which is about 3.11 % of total municipal area. Fig. 29.4 shows the commercial zone in Palakkad town.

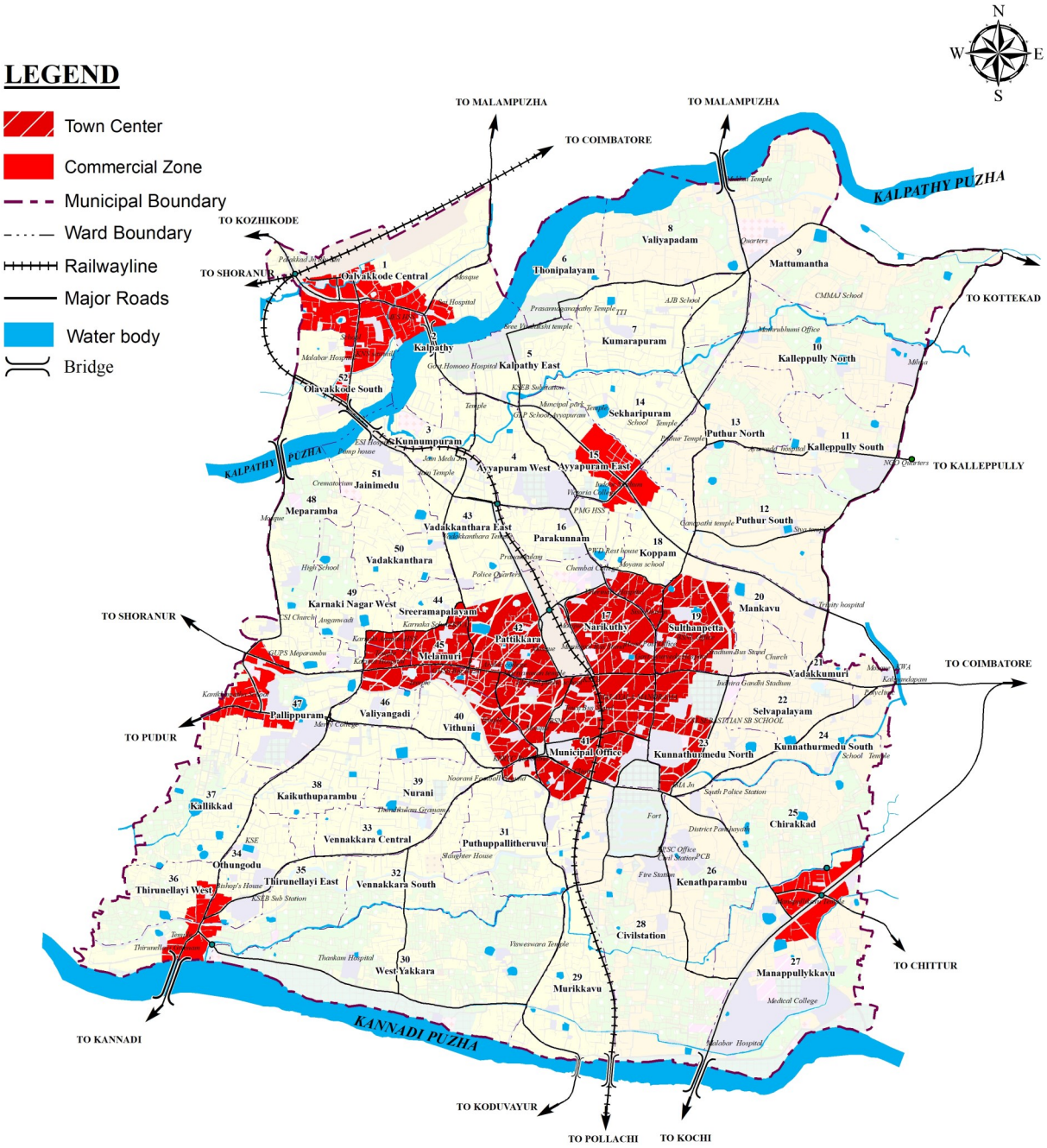


Figure 29.4 Proposed Town Centre and commercial zone of Palakkad town

29.1.5 Industrial Zone

Household industries are the main industrial base of Palakkad municipality. The spatial distribution of the industrial land use is seen scattered throughout the town. Service industries are located in various parts of the town. There are no hazardous industries in the municipality. As per this plan, only existing industries are proposed to be retained. The proposed industrial zone of Palakkad town comes to around 12.85 Hectare, (0.48 %) of the total area. Fig. 29.5 shows the industrial zone in Palakkad town.

29.1.6 Public and Semi Public Zone

Public and Semi-Public land use accommodate government offices, education institutions and health related, religious institutions etc which are spatially distributed throughout the town. The proposed Public and Semi public zone includes these areas along with some additional land for proposed public and semi public use near civil station. The proposed zone constitute 133.47 Ha, (5.02 %) of the municipal area as shown in Fig. 29.5.

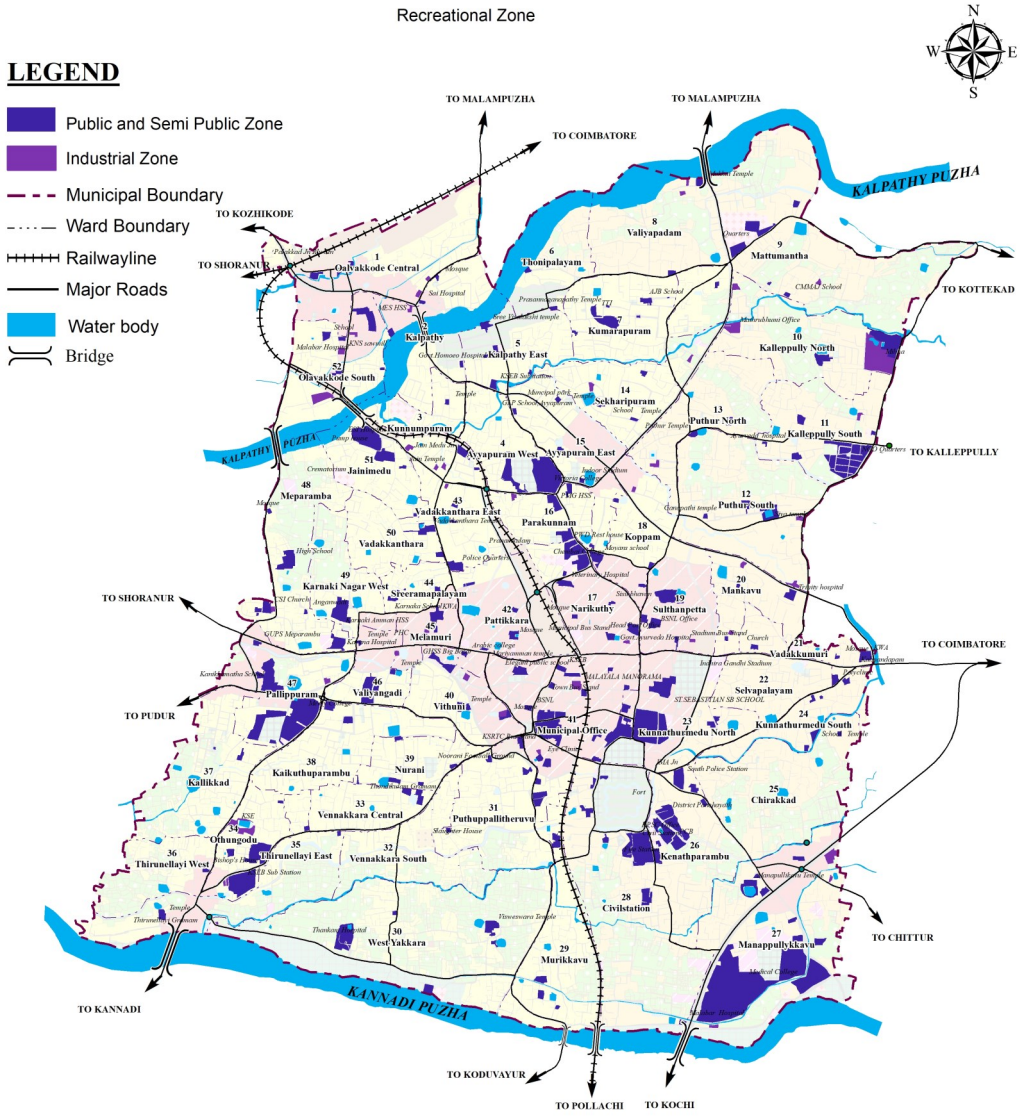


Figure 29.5 Proposed Industrial zone and Public and Semi public zone of Palakkad town

29.1.7 Tourism Development Zone

33.99 hectares of area in Palakkad municipality is proposed as tourism development zone. This constitutes 1.28 % of the municipal area. This zone is located along the banks of Kannadi puzha at the southern boundary of the town for activities that could boost the tourism sector of the town and its peripheral areas. Figure 29.6 shows the proposed tourism development zone of Palakkad town.

29.1.8 Recreational Zone

An extend of 35.94 Hectares (1.35 %) of the total municipal area is coming under the recreational zone, where recreational activities such as parks, playgrounds and other recreational amenities are permitted. All the main parks inside the town and other parks associated with residential colonies are included in this zone. (Figure 29.6).



Figure 29.6 Proposed Tourism Development zone and Recreational Zone

29.1.9 Traffic and Transportation zone

The major share of this zone is area covered by roads and railway. The municipal road network has good coverage. Widening of existing roads and providing a few missing links only are attempted along with junction improvements. The land under this zone also covers existing bus stands, bus bays, parkings etc. which continues. Railway stations and other area under railways are also included in this zones. An extend of 347.79 Hectares (13.07%) is coming under the traffic and transportation zone. Figure 29.7 shows the proposed Traffic and Transportation zone of Palakkad town. Part maps with detailed alignment are provided along the proposed land use map for some roads and it is to be followed for enforcing land use regulations.



Figure 29.7 Proposed Traffic and Transportation Zone

29.1.10 Wet Agriculture zone

The extent of wet agriculture and paddy zone in Palakkad town comes to 407.55 Hectares (15.32 %). This zone includes existing paddy areas as well as non cultivated paddy land which are cultivable. This area is having a great significance in conserving the ecology of the city. Since, the prevailing data bank in the town is undergoing frequent updates, not all the areas in it is included in this zone considering isolated patches. But most of the land under this zone is included in the data bank for Palakkad Municipality.

Paddy field aids ground water recharge. Conservation of paddy is proposed wherever it is essential to maintain environmental quality and the land use in these areas are to be strictly regulated. However, Constructions/land developments in this zone must be in conformity with the Kerala conservation of Paddy land and wetland act 2008 and its amendments in force in the state. Certain public projects are proposed in uncultivated paddy land near the core area. Fig. 29.8 shows the proposed wet agriculture zone.

29.1.11 Heritage Zone

The proposed heritage zone in Palakkad town has an extend of area of 29.92 hectares which constitutes 1.12 % of the total municipal area (Figure 29.9). This zone includes Palakkad Fort and its environs and Kalpathy area and its environs.

29.1.12 Forest

0.313 hectares of land in Palakkad town is under forest (Figure 29.9). It is located at Olavakkode central (Ward 1).

29.1.13 Land Reserved for Roads

An area of 15.63 Ha(0.59%) which is reserved for road widening comes under this zone. Only road and incidental uses are to be permitted in this zone and the detailed alignment wherever given as in the part maps have to be strictly followed.

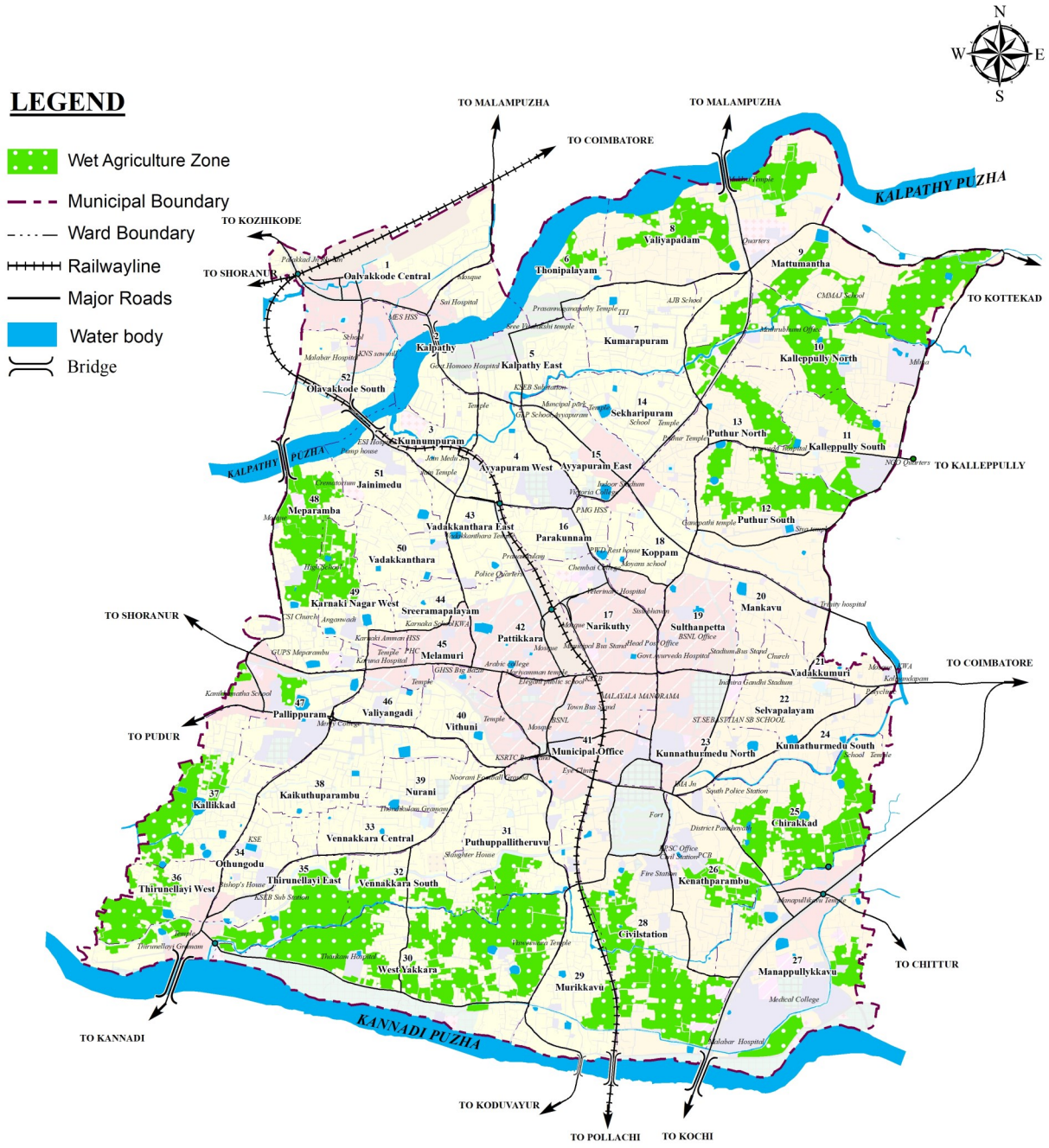


Figure 29.8 Proposed Wet agriculture zone and Water retention zone of Palakkad town

29.1.14 Crematorium and Burial grounds

This zone includes existing Crematorium and burial grounds in the Palakkad town which includes 13.75 hectares (0.52%). There are 21 crematoriums/burial grounds within the town (Figure 29.10).

29.1.15 Slaughter House

There is a modern slaughter house in the Palakkad town with an area of 1.563 hectares, which constitutes 0.06 % of municipal area at ward 32 - Yakkara which is proposed to be modernized (Figure 29.10).



Figure 29.9 Proposed Heritage Zone and Forest

29.1.16 Water Bodies

Land use under water bodies constitutes about 137.93 Hectares which is 5.19 % of the total municipal area (Figure 29.10). This zone includes ponds, rivers, rivulets and canals.

29.1.17 Flood Prone Area

An area of 196.633Ha of land in the town, which comes under various other land uses comes under flood prone area also. This is a layer overlaid on other land uses to indicate flood proneness depending upon the flood hazard probability of Kerala based on RCP 8.5 climate change scenario (100 years), Hazard map published by KSDMA Here some restrictions to overcome flood and facilitate evacuation are proposed to save the life and assets of the people.



Figure 29.10 Crematorium and Burial grounds, Slaughter house, Water Bodies

29.1.18 Special Zones

Special zones include the areas specifically demarcated for certain projects, details of which are given in chapter 31 sectoral proposals. No other activity other than the specific project and its incidental uses shall be permitted in such zones. Detailed descriptions of each project are included in sectoral proposals section. Table 29.2 gives the details of proposals in Palakkad town. Special zones occupy an area of 17.60 Ha covering 0.66% of the proposed land use.

Table 29.2 Details of Special zone

Sl. No. (1)	Special Zones		Area in sq. km (4)	Area in Ha (5)	Ward number and name (6)	Block and Survey no. (7)
	Zone Name (2)	Projects (3)				
1	**G1**	**Kalpathy Heritage Centre**	0.00162	0.162	Ward 5-Kalpathy East	Block 39, Survey number 1526,1527
2	**G2**	**Sewage Treatment Plant, Puthur**	0.00311	0.311	Ward 7-Kumarapuram	Block 71 survey number 565 and block 12, survey number 2907
3	**G3**	**Open Market Mankavu**	0.00185	0.185	Ward 21-Vadakkumuri	Block 83 survey number 3591
4	**G4**	**Employees Hostel, Working womens hostel and Community Kitchen**	0.00496	0.496	Ward 21-Vadakkumuri	Block 83 survey number 3591
5	**G5**	**Co working Space and Start up Incubator**	0.00464	0.464	Ward 23 - Vadakkumuri	Block 74 survey number 3612&3613 and Block 75 survey number 3614&3627
6	**G6**	**Tourist Information Centre**	0.00131	0.131	Ward 28 -Civil station	Block 33, survey number 1
7	**G7**	**Housing project at Mannarkkattu parambu**	0.00644	0.644	Ward 27 - Manappullykkavu	Block 178, survey number 18
8	**G8**	**She Lodge& Nirbhaya shelter home**	0.00097	0.097	Ward 27 - Manappullykkavu	Block 181, survey number 4
9	**G9**	**Sports Complex**	0.05769	5.769	Ward 27 - Manappullykkavu	Block 181, survey number 4
10	**G10**	**Mini Civil Station**	0.00809	0.809	Ward 17-Narikuthy	Block 79 Survey no 12, Block 80, survey number 73, 74,77, 78

Table 29.2 continued

Sl. No. (1)	Special Zones		Area in sq. km (4)	Area in Ha (5)	Ward number and name (6)	Block & Survey no. (7)
	Zone Name (2)	Projects (3)				
11	**G11**	**North Police Station**	0.0046	0.462	Ward 17-Narikuthy	Block 79 Survey no 12, Block 80, survey number 79
12	**G12**	**Multi level Parking near Stadium**	0.0095	0.946	Ward 23-Kunnathurmedu North	Block 74 Survey no 3609, 3610, 3611, Block 75, survey number 3627, Block 76, survey number 3628
13	**G13**	**Multi level Parking near Town Railway Station**	0.0061	0.61	Ward 17-Narikuty	Block 62 Survey no 2565, 2566 Block 63, survey number 2606, 2607, 2608, 2609, 2610, 2623, 2624, 2625, 2626, 2627
14	**G14**	**Parking Ground at Old Police station**	0.0025	0.246	Ward 42-Pattikkara	Block 152 Survey no 126
15	**G15**	**Parking Ground at Old fish market**	0.0023	0.233	Ward 42-Pattikkara	Block 147 Survey no 15
16	**G16**	**Parking Ground at Municipal office compound**	0.0021	0.211	Ward 41-Municipal Office	Block 48 Survey no 2464, 2465
17	**P1**	**Housing Project at Sundaram Colony**	0.0011	0.106	Ward 3-Kunnumpuram	Block 30 Survey number 1068
18	**P2**	**Parking Ground near District Hospital**	0.003	0.287	Ward 23-Kunnathurmedu North	Block number 63 survey number 3152, 3155,3149
19	**P3**	**Parking Ground near Civil Station**	0.0046	0.461	Ward 26-Kenathparambu	Block number 29 survey number 1726, 1732, 1733
20	**P4**	**Inter state Bus Terminal near Medical College**	0.0121	1.212	Ward 28-Civilstation	Block number 163 suvey number 6,7 and Block number 164 survey number 1,2,3,9

Table 29.2 continued

Sl. No. (1)	Special Zones		Area in sq. km (4)	Area in Ha (5)	Ward number and name (6)	Block & Survey no. (7)
	Zone Name (2)	Projects (3)				
21	**P5**	**Truck Terminal on NH**	0.0096	0.959	Ward 28-Civilstation	Block number 162 suvey number 29, 30, 31, 37
22	**P6**	**Sewage Treatment Plant, Yakkara**	0.0022	0.218	Ward 28-Civilstation	Block 134 survey number 37, 39
23	**P7**	**Sewage Treatment Plant,Thirunellayi**	0.0034	0.341	Ward 35-Thirunellayi East	Block 247 survey number 21
24	**P8**	**Fish and Meat Market at Mepparambu**	0.0053	0.53	Ward 47-Palliipuram	Block 113 survey number 41,53,59
25	**P9**	**Ware house, Cold Storage and Loading & Un loading space**	0.0078	0.776	Ward 48-Meparamba	Block 123 survey number 22, 23 & Block 126 survey number 9
26	**P10**	**RRF and E waste Collection centre, Pezhumkara**	0.0045	0.453	Ward 48-Meparamba	Block 53 survey number 4
27	**P11**	**Sewage Treatment Plant and FSTP, Pezhumkara**	0.0046	0.457	Ward 48-Meparamba	Block 53 survey number 3



CHAPTER 30-
TRAFFIC AND TRANSPORTATION PLAN

30. TRAFFIC AND TRANSPORTATION PLAN

30.1 PROPOSED ROAD DEVELOPMENT FOR PALAKKAD

Road development plan is the key factor for the development of mobility corridors. Mobility corridors focuses to maximize the throughput of people. It also gives priority to public transit systems, ensuring the integrated travel modes. On the basis of the projected volume of traffic and alternative network development schemes, a road development plan has been formulated for Palakkad. The roads are broadly classified into four, based on their importance, function and cross section.

30.1.1 Primary Distributor Road

These are major roads connecting different parts of the district and state with the district HQ.

i) Proposed to be developed as 4 lane roads with 30 m ROW, which may further be developed into six lane in future.

ii) More emphasis is to be given for by passing vehicles. Road must be designed to ensure the smooth traffic of heavy vehicles also.

iii) Adequately wide footpaths which are protected with barricades on both sides to be provided.

iv) Pedestrian crossings to be restricted and proper zebra crossings must be provided wherever needed.

v) To be developed with fly overs in junctions to minimize the traffic signals as far as possible. Dividers must be continues in nature as far as possible to minimalize "U" turns and crossings.

vi) The design standards stipulated by IRC or NHAI must have to be followed, and can be implemented under BOT if required. Speed of Vehicles may be allowed as per NH standards

vii) Continuous footpath cum drain have to be ensured and provision for service roads can be provided where ever required

viii) Restriction or preferably prohibition of parking on the carriageway/shoulders. Parking must be shifted to off street parking locations or cross roads.

ix) Proper Bus bays and street lighting.

Figure 30.1 & 30.2 Shows typical cross sections proposed for primary distributor roads

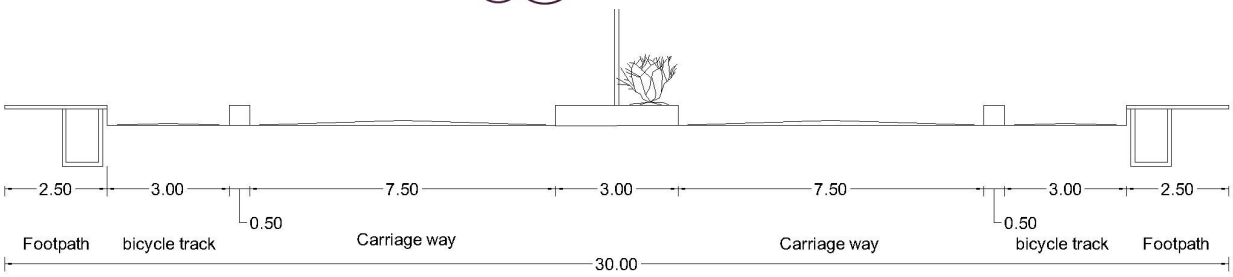


Fig. 30.1 Typical cross section of primary distributor road proposed for Palakkad (Option1)

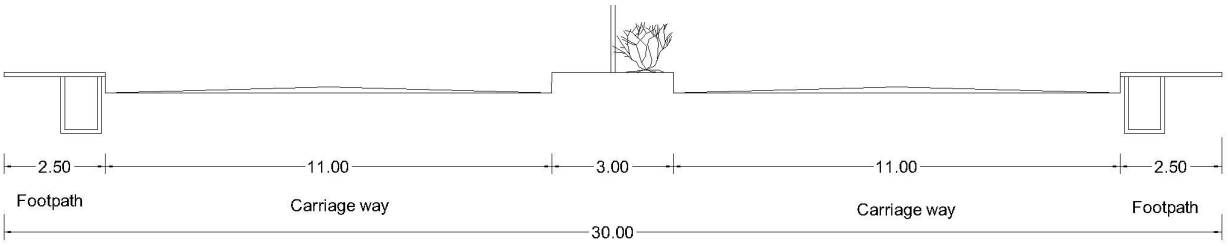


Fig. 30.2 Typical cross section of primary distributor road proposed for Palakkad (Option 2)

30.1.2 Secondary Distributor Road

i) These roads acts as an intermediate roads connecting primary distributors with the roads interconnecting the outskirts with the core area.

ii) It aims to restrict the entry into core area by providing necessary second order facilities.

iii) Equal emphasis for vehicles and pedestrians have to be provided.

iv) Proper foot paths and pedestrian crossing locations with assembly area and signals.

v) Providing foot over bridges at required locations.

vi) Proposed to be developed into four line 22 m wide ROW with divider and footpaths. Speed of Vehicles may be allowed as per SH standards

vii) Cable ducts along with drainages and foot paths to be provided on both sides.

viii) Restricted road side parking and provision of parking lots wherever required are to be provided.

Figure 30.3 shows typical cross section of secondary distributor roads of Palakkad.

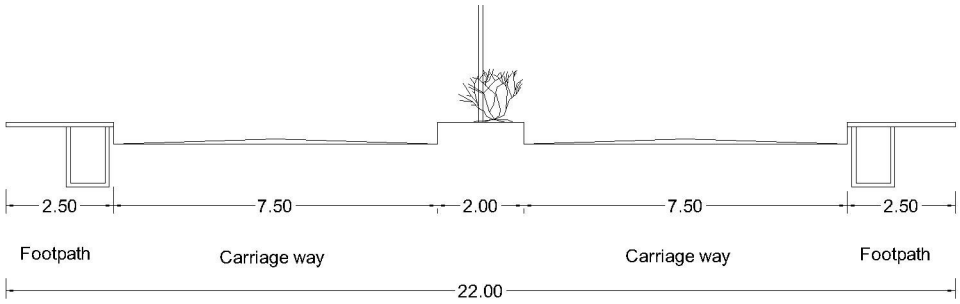


Fig. 30.3 Typical cross section of secondary distributor road proposed for Palakkad

30.1.3 Tertiary Distributor Roads

Class 1:-

i) Aims in providing connectivity to urban core and growth centers.

ii) These include core area roads with limited scope for expansion.

iii) Pedestrian friendly roads with wider footpaths and specially designed crossings.

iv) Proposed ROW of 16m/12m with site specific footpath and carriage way width.

v) One-way traffic is proposed with on street parking and Heavy vehicles entry may be restricted

vi) Proper bus bays and auto taxi stands.

Class 2:-

i) Connecting residential areas with the above categories of roads.

ii) Two way two lane traffic with provision for public transport.

iii) The 'right of way' width of minimum 16m with footpaths over covered drainages on both sides.

iv) Proper bus bays and auto taxi stands to be marked wherever required.

Figure 30.4 & 30.5 shows typical cross sections of tertiary road of Palakkad.

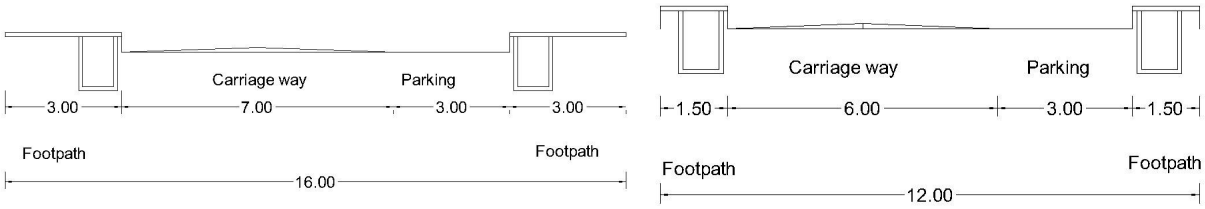


Fig. 30.4 Typical cross sections of tertiary distributor road proposed for Palakkad (class I)

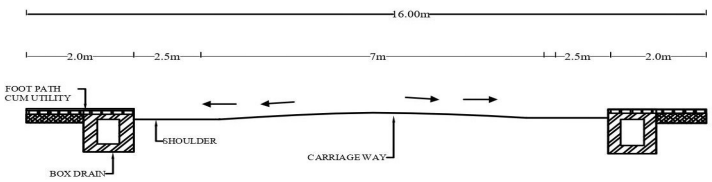


Fig. 30.5 Typical cross sections of tertiary distributor road proposed for Palakkad (class II)

30.1.4 Local Roads

Class 1:-

i) Roads which connects the link roads and Interconnects residential areas

ii) Develops the grid nature of the region by maintaining the continuity

iii) Two way two lane with ROW of 12M with shoulders

iv) Enables circular traffic inside the grid

v) Public transport permitted

Class 2:-

i) All other roads which doesn't falls in any of the above categories shall be developed under this category

ii) Streets which runs inside the residential areas

iii) Two way two lane traffic with no provision for public transport

iv) The 'right of way' width of minimum 8m as shown in figure 30.6.

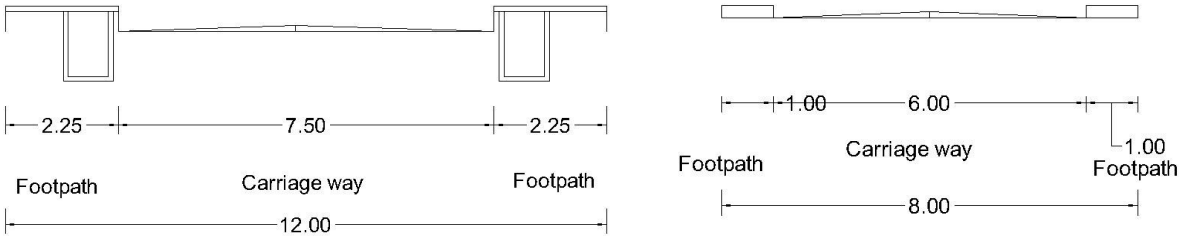


Fig. 30.6 Typical cross section of local roads

Two more road cross sections that can preferably be adopted for 18m ROW and 24m ROW is shown in figure 30.7. Even if the preferred greater width for roads cant be achieved and situation demands a lesser ROW, these standards may be adopted.

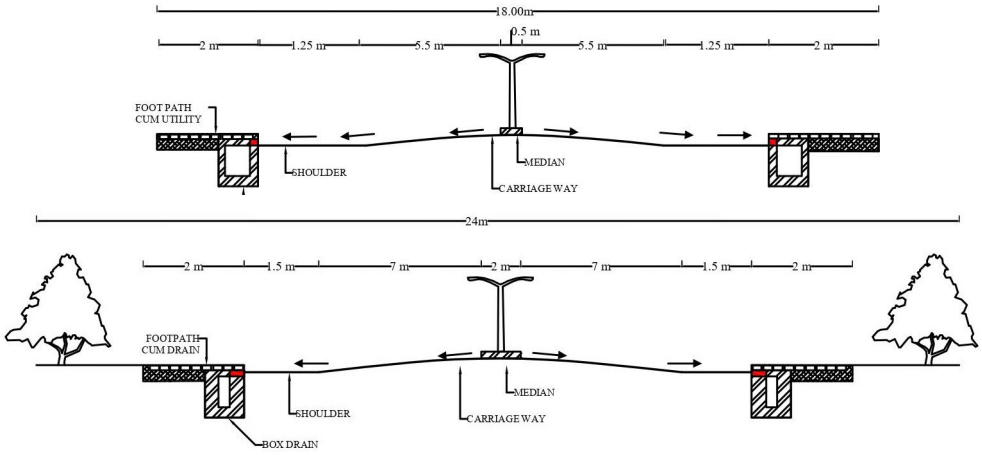


Fig. 30.7 Typical cross section of alternative road width

As per the future road development plan for the town, the proposed network comprises of ring and radial pattern of urban road network. Three ring roads are proposed around the core area of the town with link roads interconnecting them.

30.2 RING ROADS OF PALAKKAD

Since the growth and development of Palakkad has been in a radial pattern, it is deemed necessary to develop a ring road network so that by passable traffic does not come into the core of the town.

Outer Ring Road - is formed on the periphery of the study region by linking Thirunellayi Junction - Mercy College Junction - Mepparamba Junction - Kavilppad bypass - Old Tile factory - Olavakkode Junction - Sekharipuram Junction - Calicut By-pass- Kalmandapam Junction - Canal road - Kadamkode Junction - NH 544 - Kazchaparambu junction—West Yakkara Junction - Yakkara- Thirunellayi Road as shown in Figure 30.8.

In this, a railway over bridge would be required at Kavilappadu junction and all the other junctions will have to be developed to handle the proposed width. Connection from Kalmandapam to NH may be done by developing the canal road upto NH and the service road along NH up to Kadamkode Junction. Efforts are to be made to develop this road into the standard of a primary distributor in a phased manner

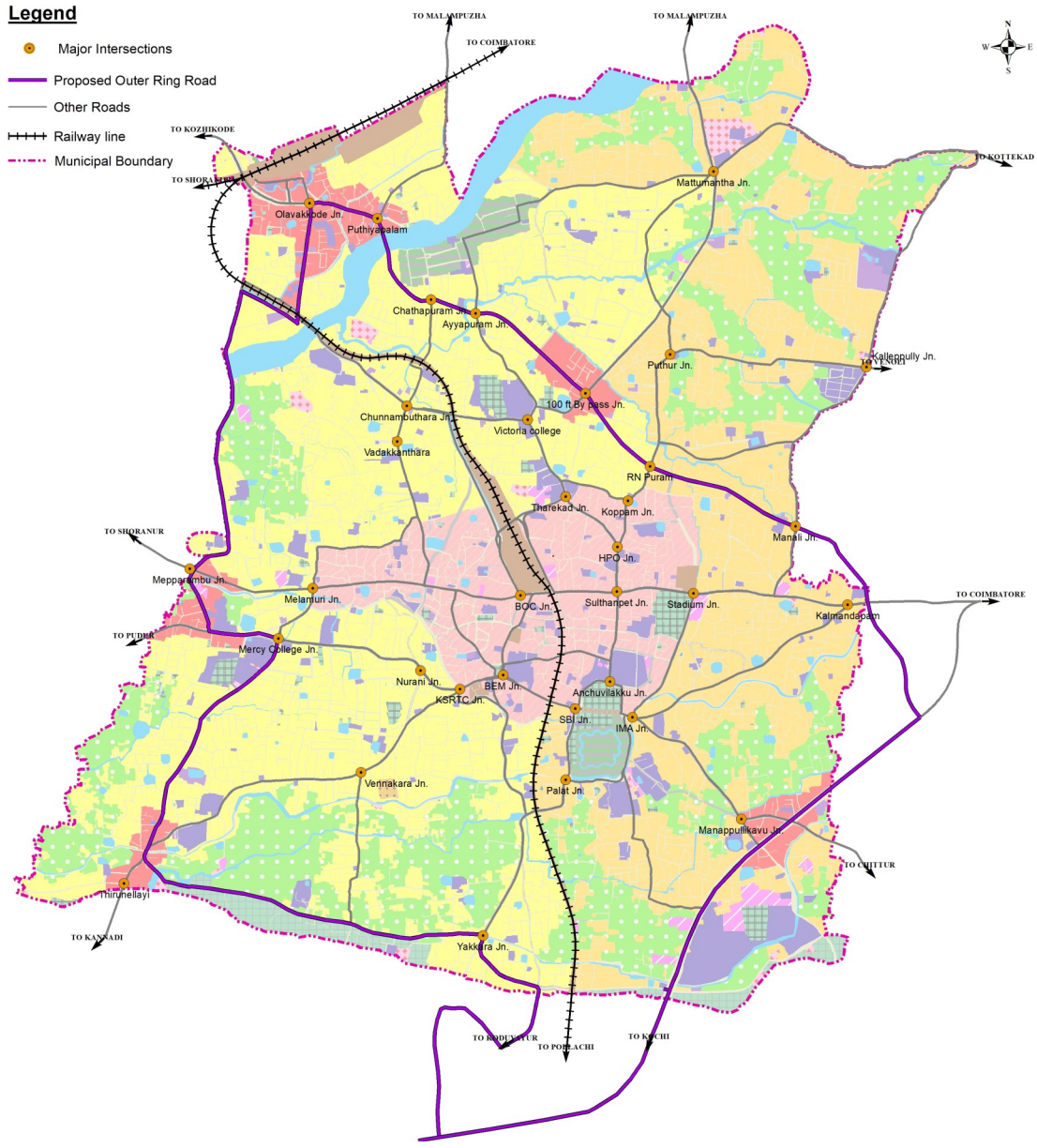


Fig. 30.8 Proposed outer ring road for Palakkad

Intermediate Ring Road is proposed from Thottumukal Junction - DPO road - KSRTC Link road - Aboobacker road - Golden palace Jn at Big Bazar– Chunnambuthara road- BOC road - ROB at Chunnambuthara - Victoria College Junction - Moyans School Junction - College Road - Sultanpet Junction- Stadium Junction - Niranjan Road- S Fort road - Palattu Junction and connecting Thottumukal Junction as shown in Figure 30.9.

In this, Aboobacker road - Golden palace Jn - Chunnambuthara road stretch may be developed along with a fly over crossing market road a new road stretch that connects it BOC road., which can be further ramped up to connect to the existing ROB. More flyovers will be required in future at major junctions like Sultanpet. Intermediate ring road shall preferably be developed into a secondary distributor standard road in a phased manner, since development of junctions and road widening will be requiring extensive funding and land procurements.

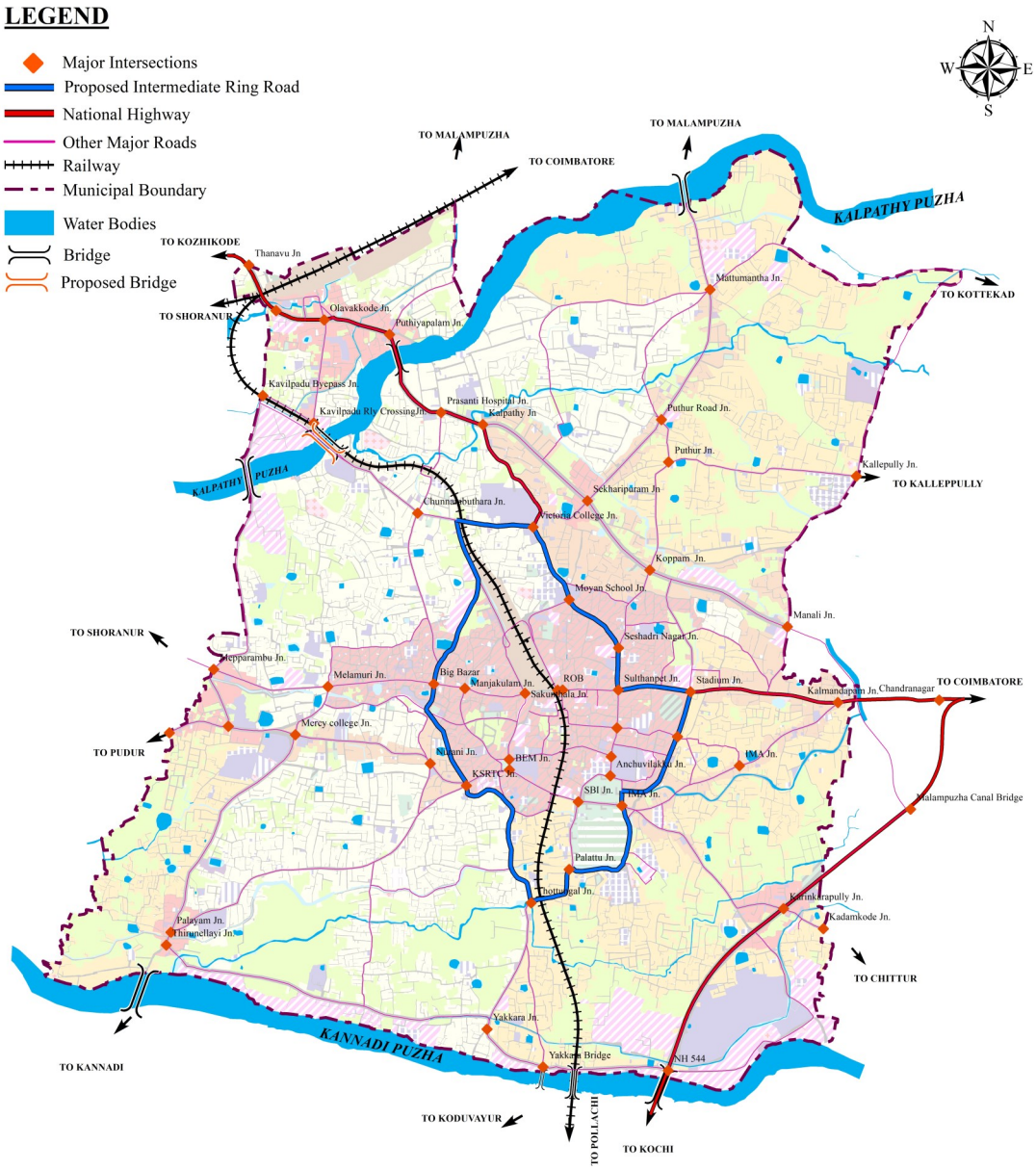


Fig. 30.9 Proposed intermediate ring road for Palakkad

Inner Ring Road is a circular stretch of road interconnecting the major interior corridors within the core of the city. It is proposed through the commercial centers of the town which makes convenient for the commuters by providing a better shopping experience. Inner ring road is proposed to connect Sultanpet Junction - Court Road - Robinson road - BEM junction - New link to BOC road- Rail over bridge—town railway station and Gandhi bazaar road as shown in figure 30.10. Efforts are to be made to develop this road in Class 1 Tertiary distributor standards in a phased manner. However this may be subject to the development of other ring roads and connection roads also. An over bridge may also be required at Robinson road to cross the Palakkad - Pollachi railway line .

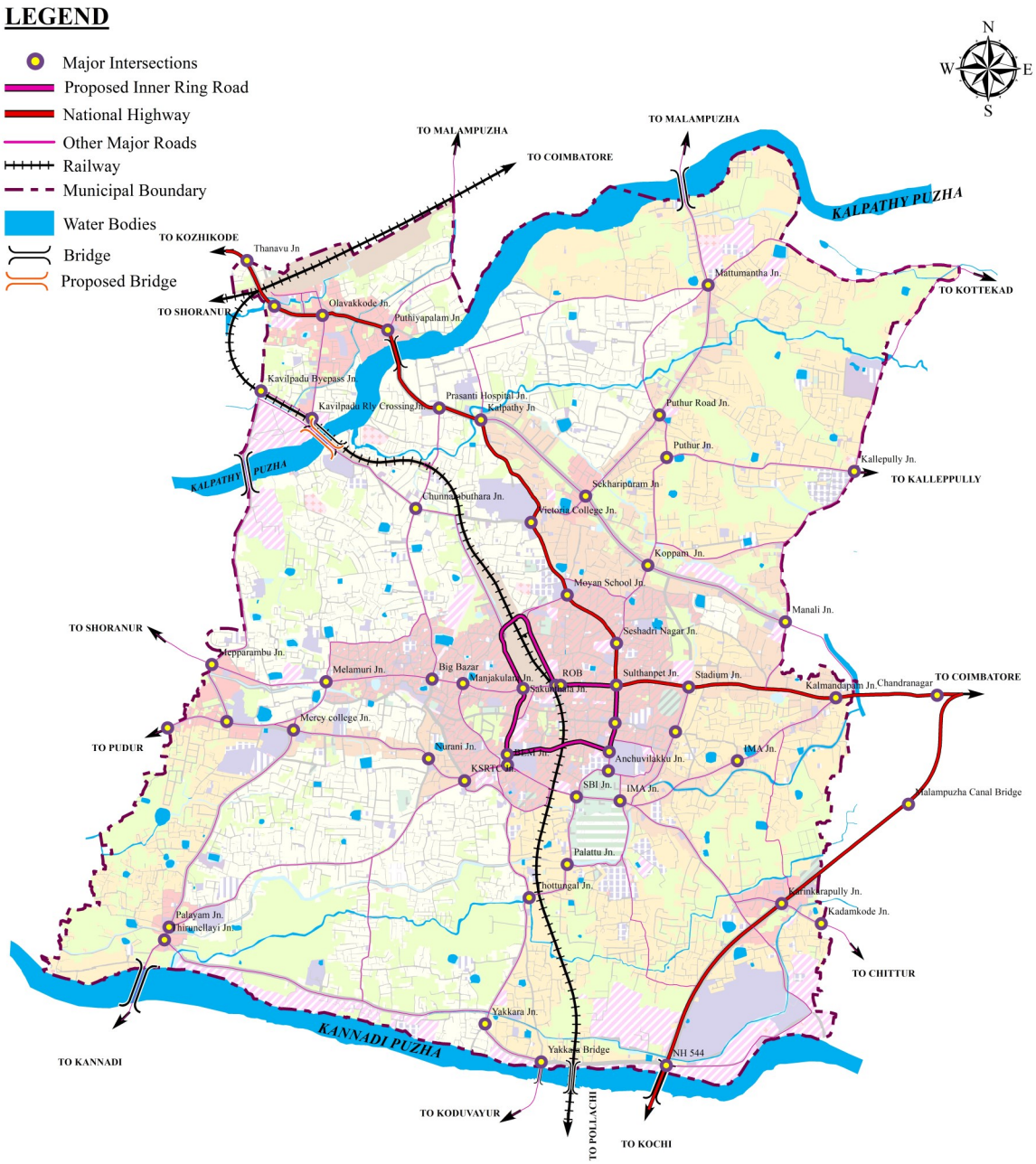


Fig. 30.10 Proposed inner ring road for Palakkad

30.3 NATIONAL HIGHWAYS OF PALAKKAD

NH544 and NH966 are two national highways passing through the town creating major corridors for connecting the town with other parts of the state and country. NH 544 connects Kochi, the major commercial city of the state with Salem, an industrial city in Tamilnadu, whereas NH 966 connects NH 544 at Palakkad with the coastal city of Calicut via Malappuram, thus making Palakkad a major node that connects two important National Highways and thereby takes a lead role in making an access to the whole of northern Kerala with other parts of the country

NH 544 - This road passes through the eastern periphery of the municipality. This is already a well-developed four lane road which is proposed to be developed to 6 lane road and may attain it in near future. Considering the aspect of traffic growth and the development of Kochi-Salem Industrial corridor. Industrial hub growing along the Kanjikode-Pudussery region along with the rising of educational institutions like Govt. Medical College and IIT this development will be very much necessary. Hence a 45 m ROW is proposed for this road. New junctions arising due to the connection of outer ring road in the NH is also to be considered during this road development. Development of service roads in complete along the municipal limit is also a need of the hour, as the highway is directly in use by a lot of residents along it, which otherwise would be matter of safety and security to the local people.

Palakkad-Kozhikode (NH 966) road: This road connects Palakkad to Kozhikode via Malappuram covering a distance of 125 km and it passes through Kalmanadapam - Sultanpet– Victoria college– Chunnambuthara and Olavakkode. Being a part of proposed ring roads and link roads, the road has to be developed accordingly. The existing road has two lane undivided carriageway with less scope for widening to standards that a National Highway demands due to the presence of intensively dense area through which it passes. But, being a major freight and transportation corridor connecting the northern Kerala with the major industrial areas of the country, there is a need for wider road.

Hence, a **new green field alignment** is proposed for NH 966 by NHAI as a part of Bharathmala project. This alignment passes through the north eastern corner along the peripheries of the town as shown in figure 30.11. A major road that could connect this proposed project with the town will be the Victoria college– Malampuzha 100 feet road. As this road is already regulated in 30m width, and maintained so in most of its stretch, it have to be standardized throughout as probably it will be a major corridor connecting outer ring road and new highway thereby extending the connectivity of the town without getting lost due to realignment.

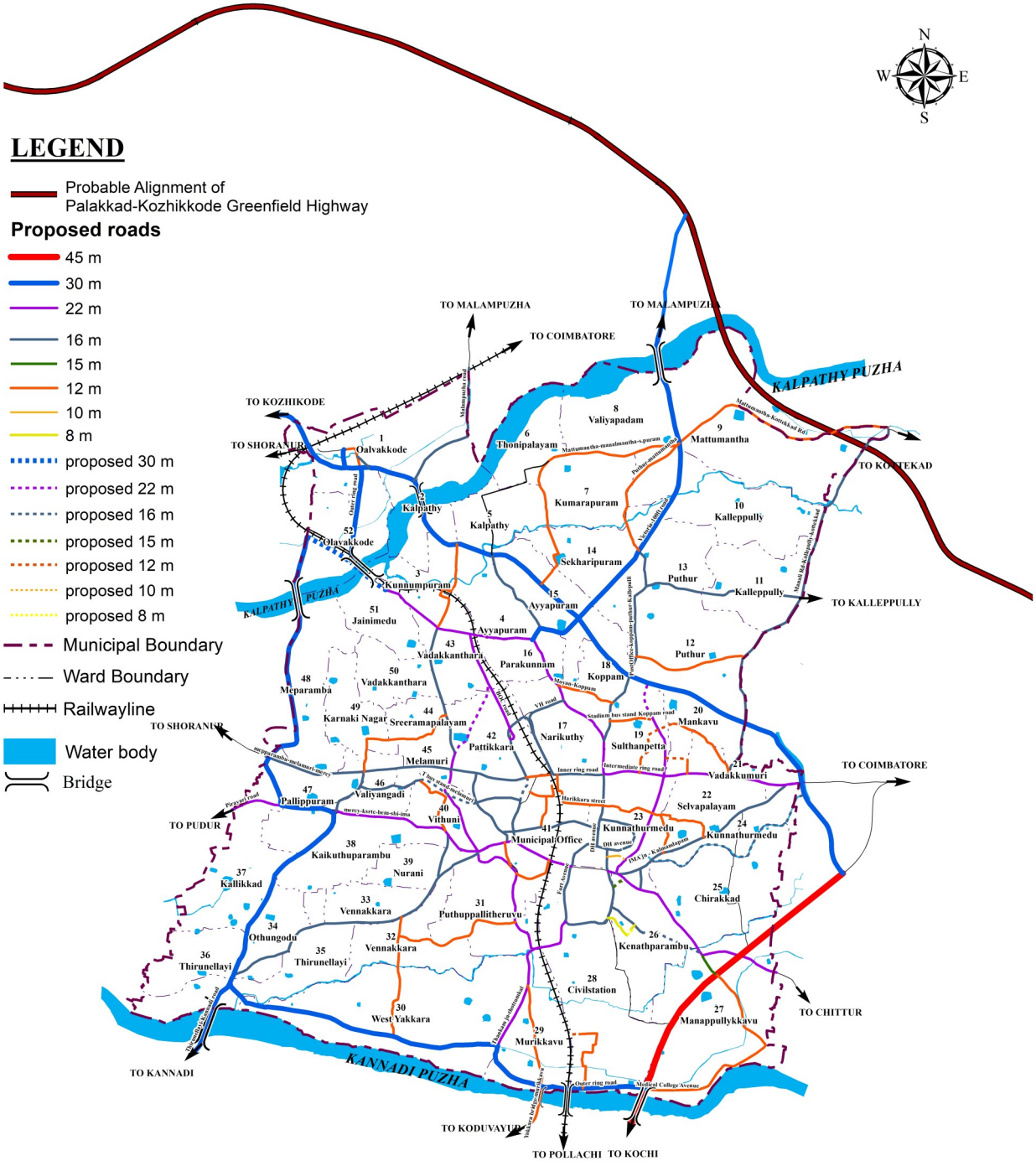


Fig. 30.11 Probable Alignment of Palakkad-Kozhikode Greenfield Highway

30.4 LINK ROADS

Link roads connect the ring roads with each other and also with the municipal boundary. Here the roads other than National Highways and roads classified as ring roads are categorized according to their importance and a standard is preferred for them so that a radial pattern also develops in the town along with the ring roads and the overall transportation facilities of the town gets better. Unifying the road standard and better connectivity will not only provide hazel free traffic, but also a better safe walkable environment for the pedestrians including children and seniors.

30.4.1 Primary Link Roads

Roads which radiates out of the outer ring road towards various parts of the district are classified under this category. These roads also connects the outer ring roads with the intermediate ring roads. These major roads that brings the people across the district in and out of the district Head quarters uses this road, and hence are carrying a huge amount of regular traffic that happens in the town. Secondary distributor standard is the most preferable standard for these roads, however that must be implemented only considering the people's aspirations also. Some of the major roads which comes under this category are as follows.

i) **Yakkara road** is a radial road of Palakkad in North-South direction and connects Palakkad with Meenakshipuram (TN border) via Thathamangalam. This road also connects other major towns like Kollangode, Koduvayur, Pudunagaram etc. The existing road has two lane carriageway with ROW width of about 12m. It will connect the outer ring road at Thankam hospital Junction with Intermediate ring road at Thottunkal Junction.

ii) **Palakkad – Coimbatore road** (Stadium- Kalmandapam Junction – Chandranagar Junction) is another primary radial road in North East - South West direction. It has two lane undivided carriageway with about 9m ROW. It will connect the outer and intermediate ring roads between stadium Junction and Kalmandapam Junction, and extends towards the NH at Chandranagar.

iii) **Palakkad-Shornur road** is a radial road of Palakkad in East - West direction. This road passes through the municipality from SBI Junction to Mepparamba Junction via Mercy College Junction. This road has a two lane undivided carriageway with 12m ROW. It connects SBI Junction, intermediate ring road at KSRTC Junction with outer ring road at Mercy college Junction. It further extends beyond the municipal border towards Shoranur from Mepparampu. Pirayiri road also connects with this road at Kanikkamatha Junction.

iv) **Chittur road** runs from intermediate ring road at IMA junction till the municipal boundary after crossing Karinkarapally junction at outer ring road on NH 544. This road has an average two lane undivided carriageway with 10m ROW.

v) **Olavakkode Road** :The Olavakkode road from Victoria College junction to Old tile factory junction shall also be proposed to a higher standard as it connects a major area along north west side of the town. A new bridge in place of old Kalpathy bridge which can be planned along with an ROB would also ease out the traffic congestions due to the railway level crossing and lesser width of the old bridge

30.4.2 Secondary Link Roads

These roads connects the intermediate ring roads with the inner ring roads. It passes through the urban core of the town. These roads carry a higher concentration of commercial activity in its periphery with a predominant pedestrian usage. Hence, along with the inner ring road, these roads are also to be developed into higher standards. Class 1 tertiary distributor standard is the maximum preferred standard for these roads.

Market road starts from Sakunthala Junction in inner ring road, crosses the intermediate ring road and extend towards outer ring road upto Melamuri. This road is facing severe parking problems and goods traffic. Being a dense commercial hub, this road is to be developed to higher standards.

One way traffic pattern is also suggested here with adequate parking facilities. A new road connecting Town bus stand with Melamuri is also proposed to be developed in this standard to ease out the existing traffic density.

Mercy college - Melamuri - Mepparambu road stretch also to be developed to higher standards, considering their commercial importance.

30.4.3 Tertiary Link Roads

These roads aims in connecting major residential areas with the above categories of roads. A two way two lane traffic with provision for public transport is proposed in this road with a preferable Class 2 tertiary distributor standards**.** Since these roads will have a higher concentration of residential activity in its periphery, proper bus bays and auto taxi stands are to be marked wherever required. This would also ease out people's difficulties in commuting in and around the town for their daily needs.

The roads which have to be developed as tertiary link roads are Olavakkode-Malampuzha road, Moyans Junction - Koppam - Puthur road, Puthur Junction-Kalleppully road, Manali- Kottekkad road, IMA Junction - Kalmandapam road, KSRTC - Vennakkara - Thirunnelayi road, Sekharipuram - Victoria college road, Manjakkulam road and road around Dr. Krishnan park at BEM junction.

Figure 30.12 shows the proposed link roads for Palakkad.

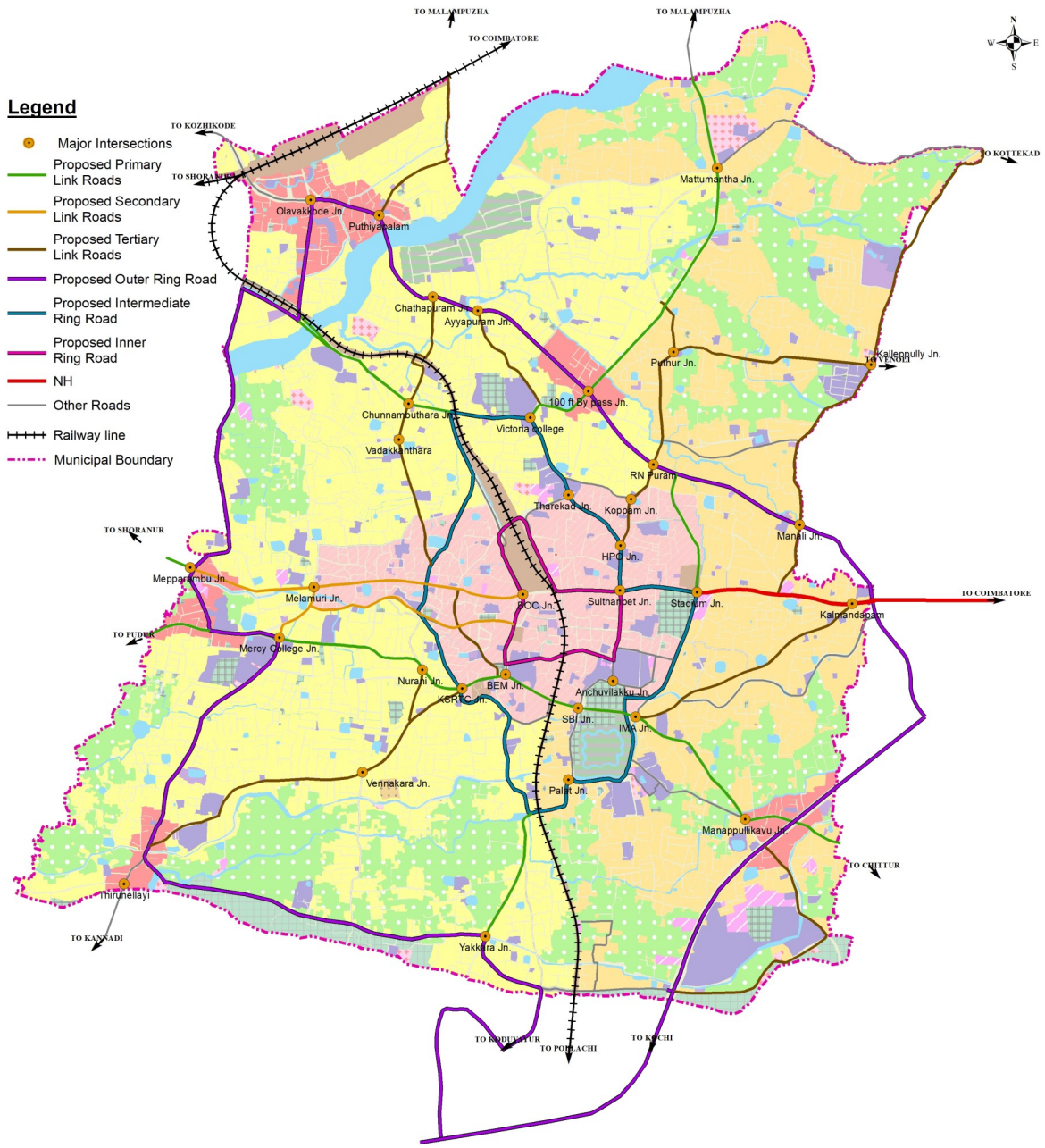


Fig. 30.12 Proposed link roads for Palakkad

30.5 NORTH SOUTH PERIPHERAL BYPASS

Since the growth of towns has not been taking place in a planned manner, the road network does not follow any set pattern. This leads to long travel by road to reach locations which have a shorter aerial distance. This can be solved to an extent by developing bypass roads so as to shorten the travel distances.

The route proposed for this approximately 10 km long bypass is shown in figure 30.13 which starts from Kannanur on NH 544 and traverses north through Thirunellayi, Mercy College, Mepparamba, Kavilpad, Olavakkode to reach Thanavu. The road is proposed to be developed preferably in Primary standards as discussed earlier with footpath on each side and a central median.

Outer ring road will be a part of this bypass in its Thirunellayi - Kavilpaadu stretch. The main benefit of this bypass road would be that it would connect the north and south of Palakkad municipality thereby diverting traffic to the periphery of the town. This would help in decongesting the core area of the town. Between Mercy college junction and Mepparamba junction, it would be better to have a flyover that connects the traffic coming from Thirunellayi and moving north towards Kavilpad so as to avoid the zigzag movements. As it involves land beyond the scope of this master plan , the feasibility and success of the project lies in discussions with adjacent local bodies also.



Fig. 30.13 Proposed alignment of north south peripheral bypass

30.6 GREEN RING ROADS

Tree lined roads are always delightful for the passengers. In Palakkad it is proposed to develop two ring roads in the core of the city surrounded by a green belt.

30.6.1 Fort Avenue

This ring road is proposed to circulate around the Palakkad fort and Fort maidan and is proposed with Class 1 tertiary distributor standards. One way system is the most suited one for this road and tree covered avenue could be attained in future by planting trees on both sides of these roads to form a green belt. The outer circle must have wider covered foot paths and grade separated cycle track with continuity throughout the circle with necessary pedestrian user subways in major junctions like SBI Junction and IMA Junction.

The road in between Fort maidan and the Fort will be part of this ring road but without permitting traffic movement and completely left out for pedestrians. Presently Stadium bypass connecting to IMA Junction creates traffic congestion. To decongest this junction, it is proposed to divert this road before IMA Junction and gets connected to the Anjuvilakku - IMA Junction road as given in the proposed alignment of intermediate ring road. Similarly, the Chittur road will also get diverted to South fort road, avoiding IMA Junction thereby making Kalmandapam road, the only road getting connected to the IMA Junction. Necessary on street parking may be permitted in the outer circle by extending the ROW wherever space is available.

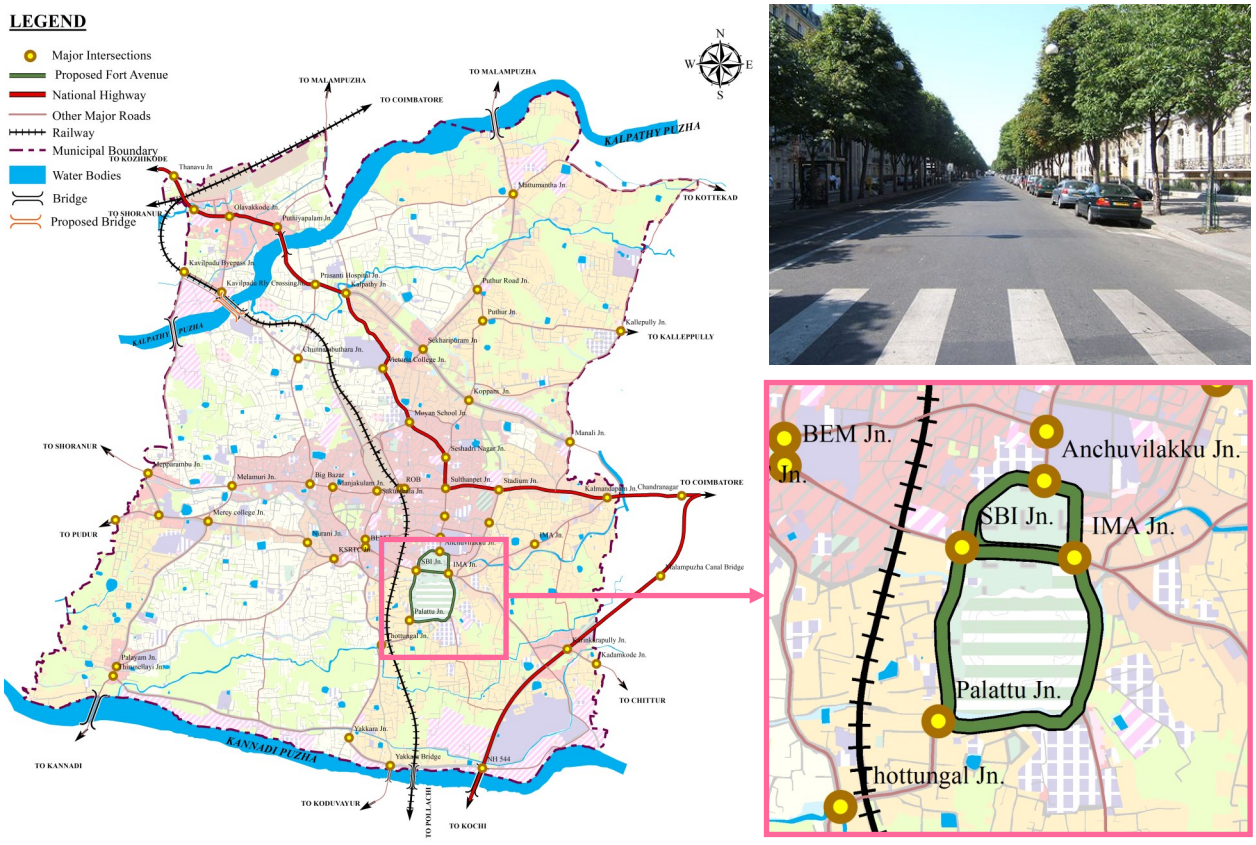


Fig. 30.14 Proposed alignment for Fort avenue with model

30.6.2 District Hospital Avenue

District Hospital Avenue (DH Avenue) circulates around the government district hospital, Palakkad. At present the district hospital entry is from the court road which creates a congestion there. To avoid this, the road that leads to women and child hospital is extended as a proposed new road and is connected to the road connecting stadium bypass and court road. Thereby a one way traffic can be implemented here with a preferable tertiary distributor standard.

But the on street parking is to be completely restricted here for the easy access for emergency vehicles like ambulances. The road stretch in between district hospital and women & children's hospital may be brought under the hospital premises with gated entrances on its both ends.

Vacant land is available near Women and Children's hospital for the new proposed road and off street parking. The existing entry may be either closed or may be restricted as open for emergencies only. Trees are to be planted on both sides of the road which acts as a green belt.

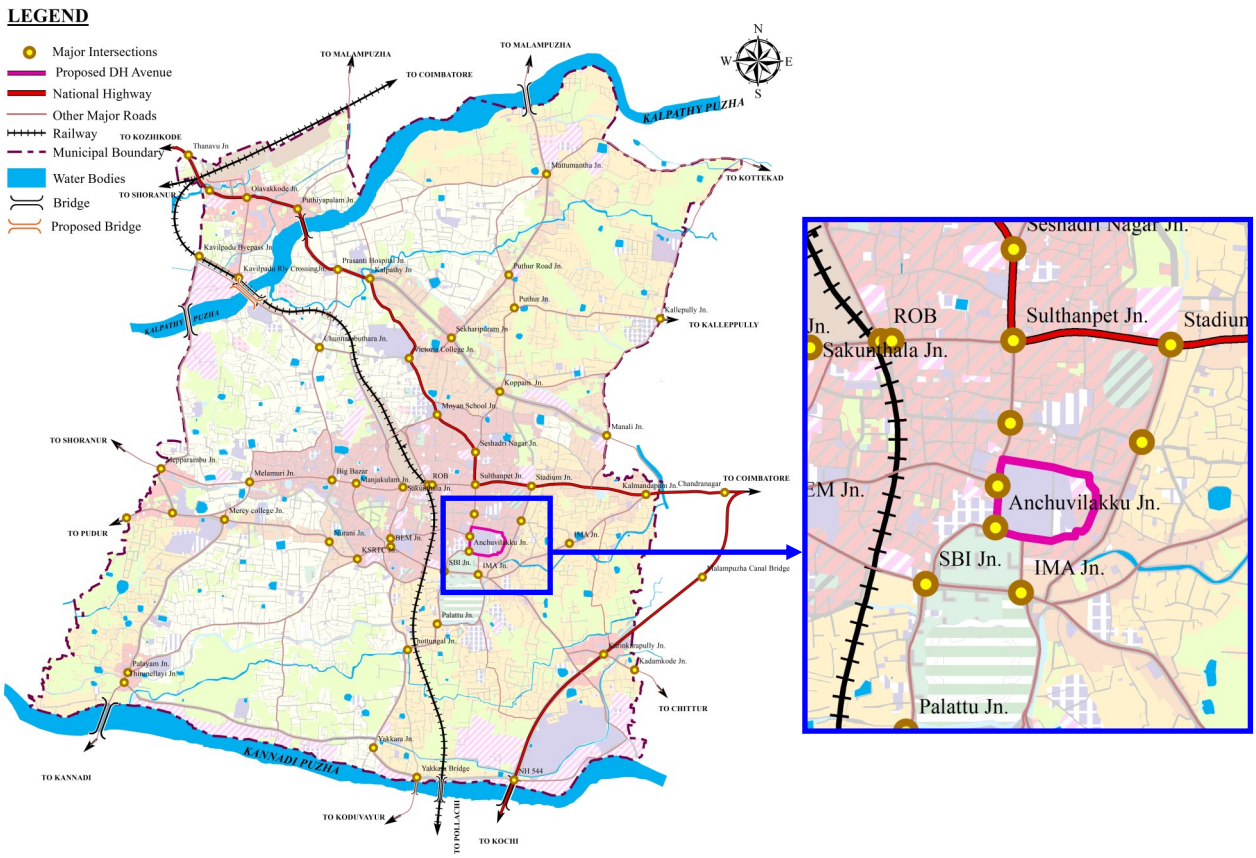


Fig. 30.15 Proposed alignment of DH avenue

30.7 MAJOR NEW ROADS

Following are the new roads, proposed at various parts of the town to have a better connectivity and junction improvement (Fig 30.16)

1. **Fort avenue - stadium by Pass Link road:** A new road connecting fort avenue and IMA– Stadium by pass is a necessity to deviate the traffic from fort avenue without entering IMA junction which is already the most congested junction in the town. Through this, vehicles shall move in one way traffic and deviates towards Kunnathurmedu and Stadium bus stand from the bypass. Vehicles entering to fort avenue from the above directions shall only be entering the IMA junction.

2. **Manappullikavu– Civil Station road**: The heavy traffic coming from NH and Chittur side is creating chaos at IMA junction. Hence a new road as proposed in the development plan of 1986 is still marks its importance. A road connecting Manappullikkavu junction in Chittur Road and the Civil Station will crate an easy access from national highway to reach the civil station without much hindrance.

3. **Hospital Avenue:** A new link road of will be required to complete the hospital avenue between women child hospital road and to the road connecting hospital and Stadium by pass. This is proposed to maintain the continuity of this avenue, to keep the one way traffic flow and easy access to parking space.

4. **Big Bazar—Melamuri parallel road and TB road BOC junction link road** : Big Bazar- Melamuri Parallel road was envisaged to be developed in 16m ROW in the DTP scheme for Big Bazar to create better connectivity and ring road pattern for existing market road. It would also solve the constraints in widening the existing road. Road proposal between TB road and BOC junction as envisaged in the DTP scheme for central area is also retained as a part of the inner ring road for better connectivity.

5. Other proposed roads include, Stadium– Kalvakulam by pass link road, Big bazar—BOC proposed link in intermediate ring road and Kunnathurmedu—Kalmandapam Canal link road. Another possible road which marks the solution to the traffic issues of IMA junction is a small link to connect the Chittur Road with the fort avenue without entering the IMA junction. A major part of it may be achieved through cut and cover of the existing irrigation canal and a small stretch of 100 meter through the available vacant lands would ease out the congestion at IMA junction to a great extend. It would shift the entrance and exit of the Chittur road thereby diminishing the complexity of IMA junction in a better way.

Details of all roads with new and widening proposals are given in table 30.2 also.

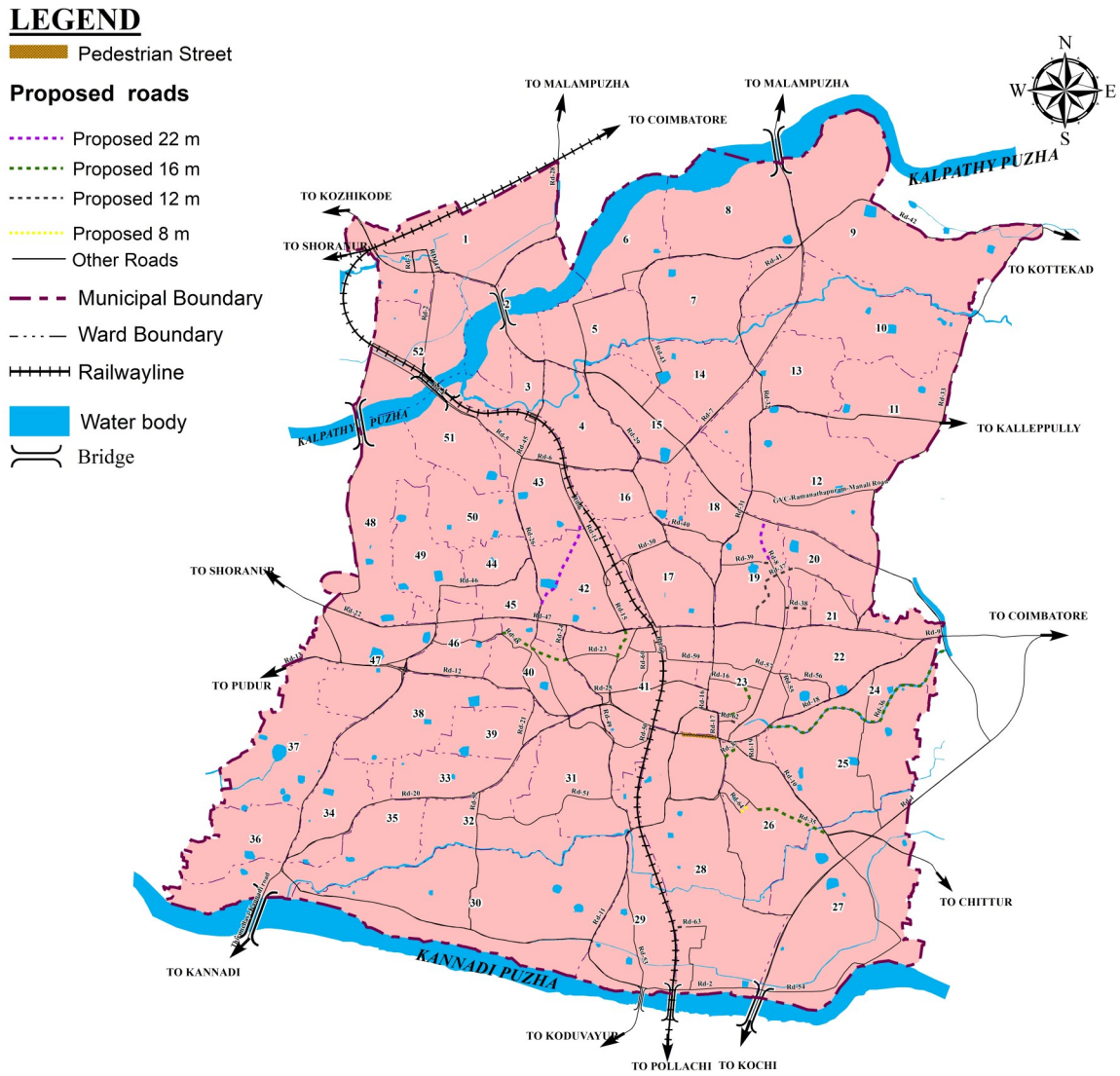


Fig. 30.16 Proposed new roads

30.8 INTERSECTION IMPROVEMENT PROPOSALS

Intersection is a major factor to decide the capacity of urban traffic. With lots of turning movements, it creates traffic conflicts and congestion in a transportation system. Accident rates are usually higher at intersections than at other sections of the road. Many factors affect accident occurrence at intersections including traffic volume, geometry of the intersection, traffic control measures, number of access/ egress points, number of legs, speed limit, lighting level, visibility as well as human factors. Many of the road intersections in Palakkad have approaches meeting at an acute angle or staggered junctions accompanied by non- standard geometrics.

The Palakkad core area houses many commercial establishments which are avenues of trade and commerce. AMRUT master plan forecasts the city development for 20 years and all the proposals are to be made according to this. The road structure was proposed duly considering the projected growth, the city is about to achieve in

this period. Therefore, adequate junction improvement needs to be carried out at all main junctions of all major roads. The ring roads and link road pattern of the proposed structure demand to rebuilt many junctions. Some of the major junctions which require redesign/ improvement are given below:

1. **Olavakkode:** Olavakkode is already a busy Junction in NH 966. Entrance to Palakkad Junction railway station also leads to this junction, making it further conjunct. Narrow roads with commercial cluster and lack of adequate parking facilities further increases the problems.



Fig. 30.17 Typical junction improvement after widening

As per the proposed road structure, the 4 line outer ring road meets the NH 966 here. Thus, the junctions is to be developed to accommodate the traffic carried by 4, four lane roads and the railway station. Thus **a fly-over** is proposed here to lead the traffic from outer city (Calicut side) towards the Palakkad side of the outer ring road without getting disturbed by the city traffic coming from the Chunnambuthara and Mepparambu side to Olavakkode. Also this will make an easy path for the vehicles diverting towards calicut side also. Widening of roads must also be done along with this.

2. **Sekharipuram Junction**: In order to cater the additional traffic coming from Kalpathy, and to ease off the deviating traffic towards Victoria collage side, a better designed round - about would solve the issue here.

3. **Kalmandpam Junction**: This junction will became one of the busiest junction of Palakkad, where the 4 lane outer ring road meets with the 4 lane Coimbatore road. The proposed alignment of outer ring road makes the junction five armed with the Kunnathurmedu road also meeting the junction nearby. So a under pass – over bridge combination or a properly designed flyover with sufficient arms will be necessary here for uninterrupted traffic flow.

4. NH 544 will also be requiring more flyovers in the proposed 6 lane road to

accommodate the new junctions created due to the connection of outer ring road.

5. **Tile factory Junction:** Railway gate present in the current Pezhumkara - Kavilpadu—Olavakkode road creates much conjunction for the traffic here. So an ROB is required at this location. It is better to have a **three armed bridge having a roundabout in its centre** with one arm each leading towards Meppa-rambu, Olavakkode and Chunnambuthara respectively. Since Kalpathy River

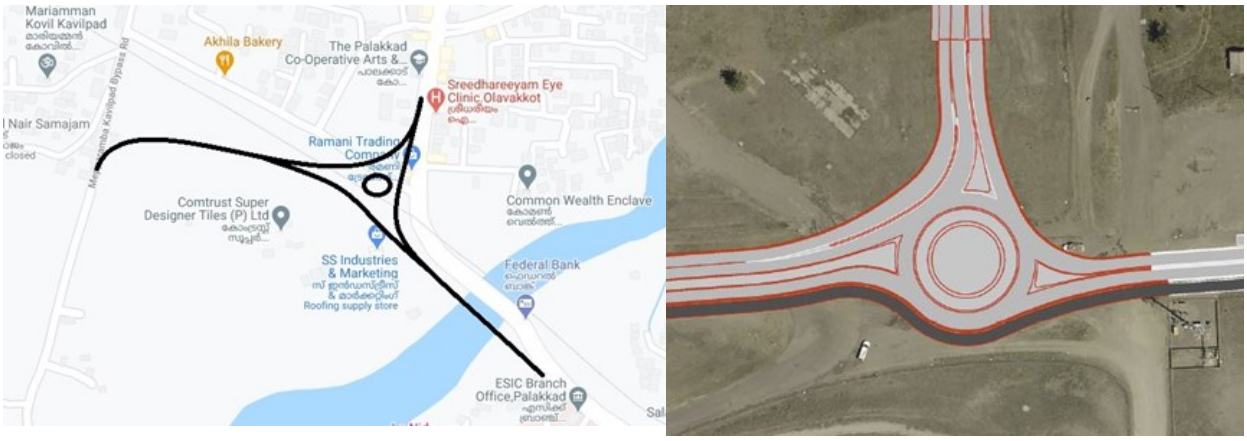


Fig. 30.18 A model flyover cum roundabout for Tile factory Junction

bridge in Chunnambuthara road is very old and narrow, a new bridge is proposed to be built along with this ROB (Figure 30.18).

6. **Mercy College - Kanikkamatha convent Junction - Mepparambu junctions** are the other major junctions coming under outer ring road. The existing roundabout at Mercy collage Junction will have to be redesigned once the proposed four lane roads came to exist. Kanikkamatha convent Junction and Mepparambu junctions may also require flyovers in long run, to make the traffic flow at the outer ring road uninterrupted.



Fig. 30.19 Typical junction improvement of Kanikkamatha junction and Mercy College Junction

7. **Sultanpet Junction**: Sultanpet, one of the most important junction of Palakkad is a part of the intermediate ring road. This junction will also require a flyover along college road- stadium road stretch to minimize the traffic conjunction in near future.

8. New Railway Over Bridge will be required at Yakkara Thottupalam with a new alignment that could straighten the dangerous curves and another one at Robinson road is also a need of the town.

9. **IMA Junction:** At present this junction is connecting Stadium by-pass road, Kalmandapam road, Chittur road, South fort road, Hospital road and SBI road making this a 5 legged junction and a complete solution to this junction preserving the architectural beauty of the region is difficult. Different roads entering the junction at different locations and at different angles makes it more complicated to provide signals. Hence two probable solutions are proposed for this junction, of which the first one founds to be a permanent solution which makes the junction completely signal free with one way free movements, whereas the second one makes the junction into a signalized intersection by providing proper road geometry.

Option 1:

In this option, it is proposed to decongest this junction by diverting the connecting roads. New links are thus proposed to connect the fort avenue road from District hospital side to Stadium ByPass and Chittur road to fort avenue, thereby connecting Kalmandapam road only to the IMA Junction. The entry to Stadium By pass and Kunnathurmedu roads will have to be only through the newly proposed link connecting Hospital road and stadium bypass whereas these roads exits towards IMA Jn. Similarly once the entry and exit to Chittur road is also diverted, there will be a considerable reduction in the traffic volume in this junction.

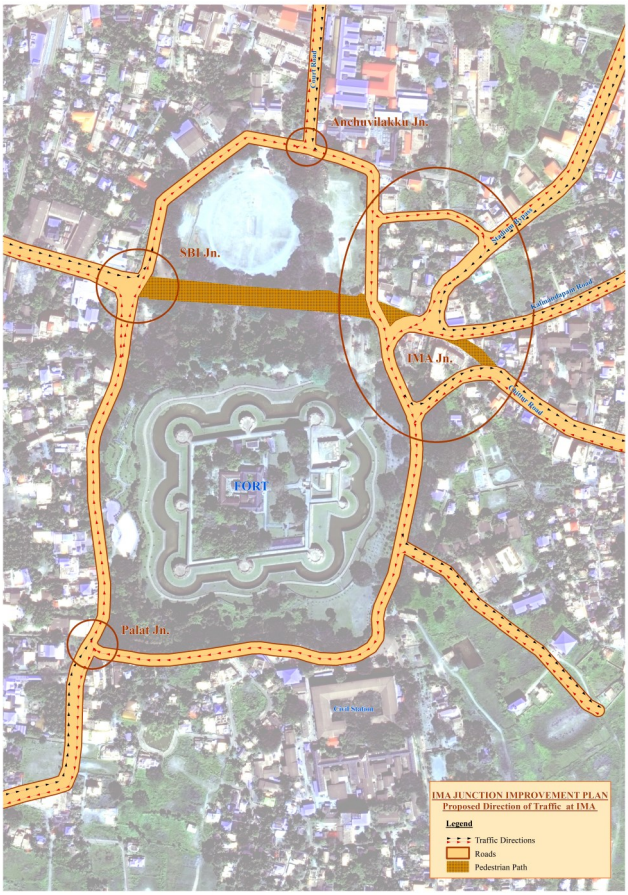


Fig. 30.20 Fort avenue and IMA junction proposal 1

Along with this, entire Fort avenue will have to act as a one way road and proposal to keep the road stretch between fort maidan and fort exclusively for pedestrians and transforming it into a walkable commercial street also matches here perfectly. Even though, an emergency lane may be kept free for such uses, where it will act as a cycle track during rest of the time. In addition to the IMA junction, this option makes the SBI junction also a signal free junction with free one way movements only allowable. A typical drawing depicting the proposed traffic flow of fort avenue and both SBI and IMA junctions are shown in fig 30.20 .

Option 2:

In this option, the geometry of the roads are getting improved by providing proper dividers and turning splays. For this, the existing irrigation canal in the side of IMA—civil station road (South fort Road) is also proposed to be a part of fort avenue through cut and cover. This road will be entering at right angles to this junction so that signalization would control the traffic easily. Necessary drive way, bus and taxi parking bays and pedestrian paths will also have to be provided in the canal cut and cover region. Even though this solution is practically easy, chances of having prolonged waiting time at the signals during peak hours may become an issue in long run. A junction improvement diagram making the junction signalized as prepared by the KRFB is as given in figure 30.21.

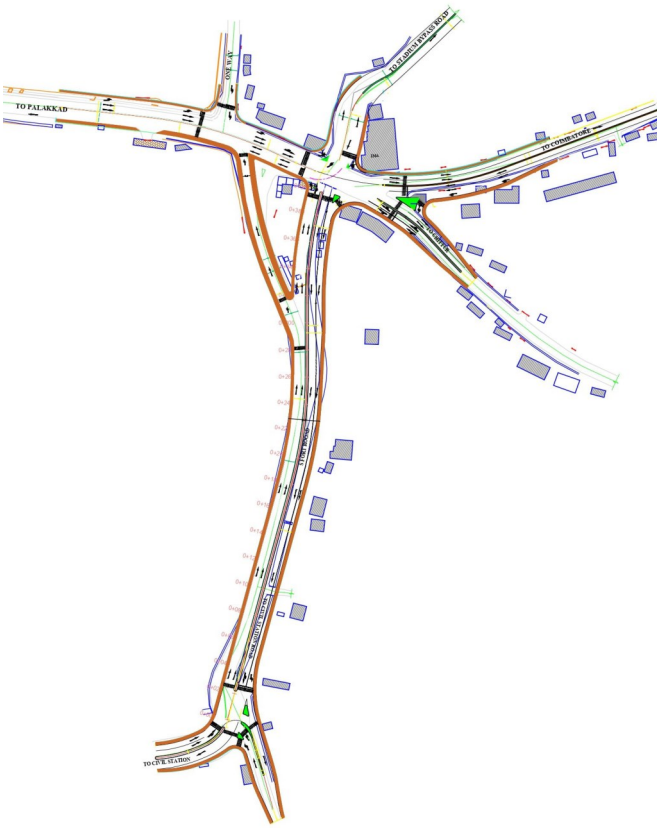


Fig. 30.21 Fort avenue and IMA junction proposal 2

10. **KSRTC Junction:** Proposed 4 lane intermediate ring road via KSRTC link road – Aboobacker road is crossing the Shoranur road and Vennakkara road here, making it a complicated junction. A roundabout is to be designed by restricting Vennakkara road as an entry point diverting vehicles going to Shoranur side and vennakkara side and Shoranur road as an exit point receiving vehicles from both the roads. Puthuppali theruvu Junction - Noorani road will have to be widened to accommodate this single line traffic by providing proper dividers at both these junctions with additional corner radii for hassle free traffic along this route.

11. Market road Junction and Chunnambuthara: The intermediate ring road connects the Aboobacker road to Erumakkara street from there it is proposed to divert this towards B.O.C road by crossing the market road. A new over bridge is required over here, starting from erumakkara road, crossing market road and ending near KRK auditorium to reach the approach road connecting with BOC road. Connection to the ROB from BOC road also to be ease out by widening the service roads on both sides of the ROB and extending it until Chunnambuthara Junction after redesigning the Junction by providing a wider roundabout or ramping in the approach from BOC road directly to the ROB. .

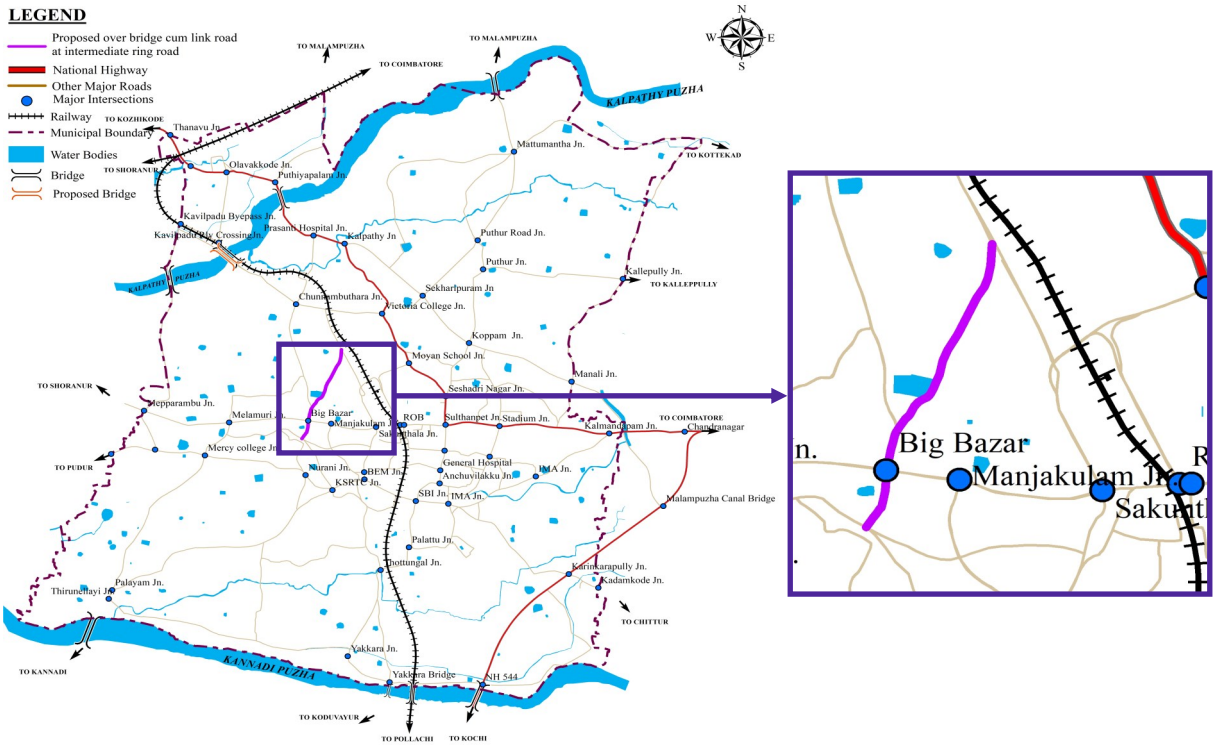


Fig. 30.22 Proposed over bridge cum link road at intermediate ring road

Apart from this, all other minor junctions created out of the proposals and existing junctions which are not mentioned here must follow the following common directions for their improvement.

- Providing adequate corner radii
- Providing sufficient turning radii
- Flaring approaches towards intersections
- Providing channelizers / traffic islands
- Providing traffic signs / road markings / street lighting
- Providing adequate median width, adjustment of median opening/ closure
- Prohibition/ allowing of specific turning movements etc.

- Proper integration of pedestrian crossing and related facilities at the junction
- Proper integration of PT and IPT facilities at the junction

Proper design of intersection is required to enable smooth, safe and efficient flow of traffic. A well designed intersection can increase the capacity of the same and also adds on to the aesthetics of the area.

30.9 PUBLIC TRANSPORT PLAN FOR PALAKKAD

Sustainable mobility for all is a coveted goal of a developing country, like India. Public Transport System should therefore be efficient, safe, competitive and financially sustainable. A strong public transport system not only helps to address problems of traffic congestion and reduce pollution levels but also promotes safe and sustainable environment for citizens. A Robust public transport system brings about positive change in traveler behavior who then readily switches from personalized transport to public transport system.

The public transport system of Palakkad consists of bus as well as rail transportation. Bus operation in Palakkad is served by both private buses as well as KSRTC buses. Both private buses and KSRTC buses have separate bus stands. KSRTC buses cater to long distance operations while the private buses focus on local transit routes. The railway station at Olavakkode can be accessed through buses plying in that direction.

30.9.1 Public Transport Proposals

There are four bus stands within the heart of the town namely KSRTC, Town, Municipal and Stadium bus stand. Ideally there should be no bus terminal within the CBD of any urban area as this would reduce the unwanted clogging and congestion of the urban road network by the plight of large vehicles. These should be shifted to the periphery of the town from where only those routes which service the internal destinations should enter the CBD area and the others should use the peripheral bypasses to move to other destinations. Hence two new bus terminals are proposed in the outer ring road.

An **Inter State Bus terminal (ISBT)** near Medical College **(Special Zone P4)** is proposed on NH 544. An area of 1.212 Ha in Yakkara village in survey numbers 1,2,3,9 of block 164 and 6,7 of block 163 is earmarked for this project at ward 28 (Civil Station). This new bus stand shall operate KSRTC/ long route private buses that will act as a satellite bus terminal that caters all the commuters of within and outside the town. It also could boost up the development potential of the whole area and increases the connectivity to the Medical college. Location of the bus terminal at NH 544 is shown in figure 30.23.

A Bus stand is also proposed on the north western side of the town preferably near Olavakkode, considering the proximity to railway station so that it would serve as a hub, creating better rail road connectivity . The site is to be determined later after checking the suitability conditions. It should be well equipped with sufficient value capture mechanisms and parking facilities for its sustainability. This can be planned in BOT manner also.

These proposed bus stands will be functional with the following amenities:

1. Separate idle bays for inter-city, mofussil and city buses
2. Separate drop off/ pick up bays for intercity buses.

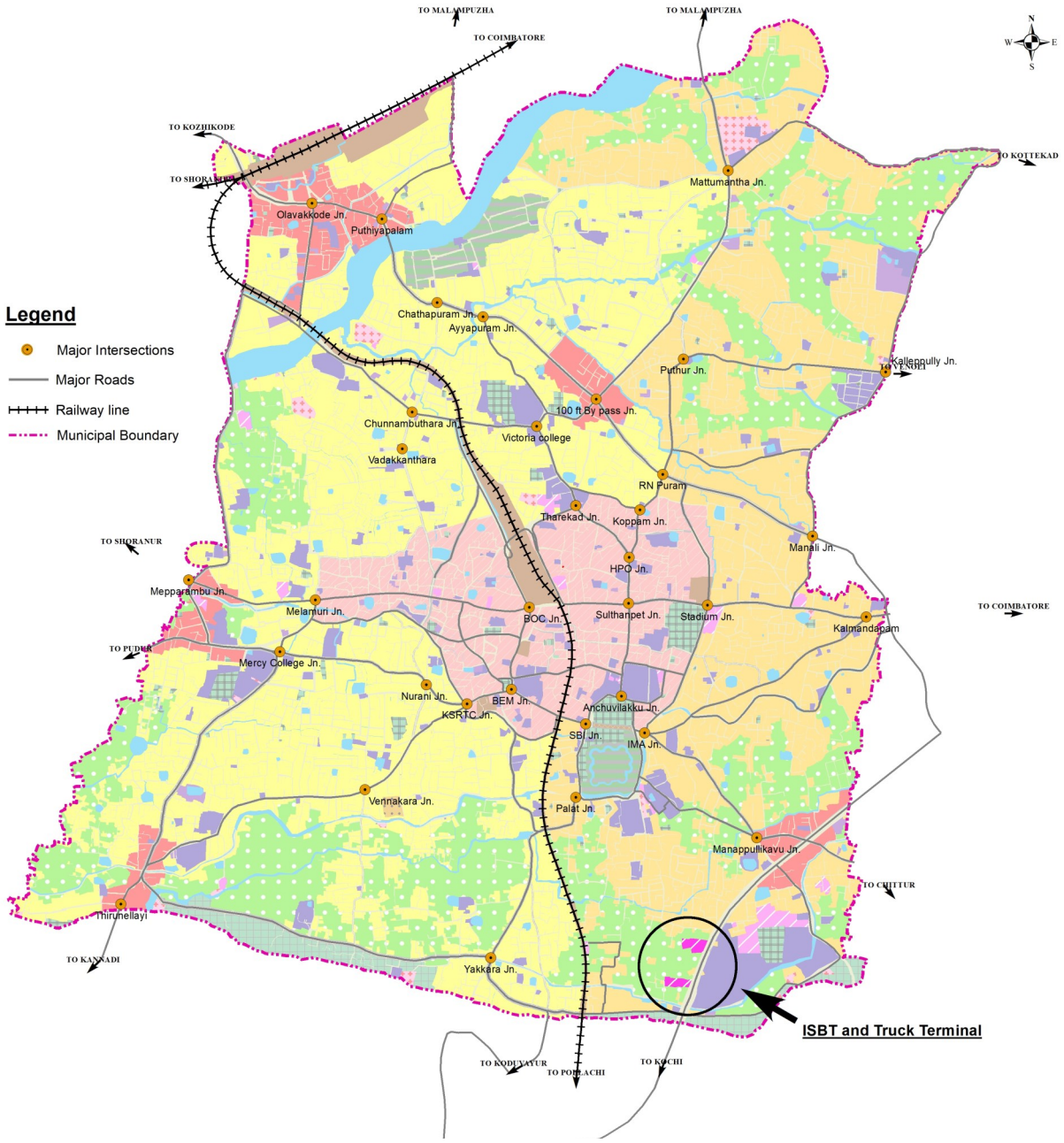


Fig. 30.23 Proposed location for Inter State Bus terminal and Truck terminal

3. Paid parking space for private vehicles
4. Paid night shelters/ she lodges/ Dormitories
5. Information centres and police outposts
6. Pre-paid auto taxi stands
7. Circulation area with Wi-Fi facilities, commercial shops, restaurants, etc.
8. Paid A/C waiting lounges and non ac waiting lounges
9. Separate rest rooms for bus staffs (Drivers/ Conductors etc.)
10. Beautifully landscaped frontages with kids playing area.
11. Pay and use toilets with drinking water facility.
12. Escalators and lifts wherever required
13. Divyang friendly amenities
14. Breast feeding cubicles for women

Existing stadium bus stand at intermediate ring road shall continue to be operational for intra district buses. Bus bays also to be constructed along with these proposed bus terminals, town buses could operate. In addition to this, existing town stand and municipal bus stand are to be converted to such bus bays with basic amenities including shelter, paid parking, auto/taxi stands, pay and use toilets etc. They will be built with separate areas for pick up and drop with park and ride designs as shown in figure 30.24 & 30.25.

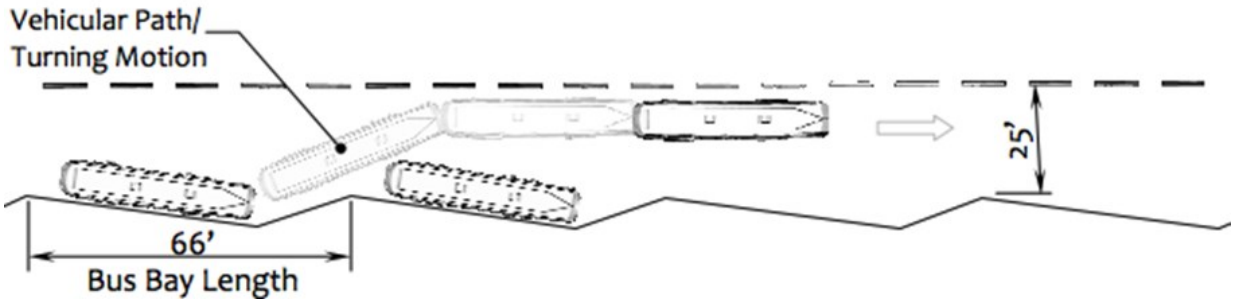


Fig. 30.24 Model for major bus bays



Fig. 30.25 Model for other bus bays

This shall have proper display boards and indications and their bus positions will be well defined. These bays will also have clear demarcation lines for restricting the parking for a given time. These bus bays will also be enabled with time limit ticketing system in which entry ticket will be supplied with exit timings on each time buses enters the bay, which must be adhered to ensure timings and unwanted clogging.

Fining may be imposed for violators in such cases. All other enroute bus bays are to be designed with drive through facility and waiting shelters with proper road markings to avoid hindrance to other road users.

30.9.2 Bus Transport Plan

A colour code is already in force in the state for buses depending on their route pattern. Light blue for mofussil buses, green for city buses and pink for limited stops is the prevailing colour code. So it is proposed to regulate the bus movement through the city according to this. All pink buses will be using only outer ring road to enter the bus stand. Buses coming from Shoranur, Calicut side should use the proposed bus stand at Olavakkode as their terminal, whereas the buses from Thrissur side and other routes from eastern area of Palakkad, will be using the Inter state bus terminal near medical college as their base of operation.

Blue colored intra district buses will have stadium bus stand as their point of operation. Entry of Blue colour buses which connect the rural areas will be restricted beyond intermediate ring road. These buses will use the primary link roads, Kalvakulam link road etc. to enter the intermediate ring road. Bus bays are to be built around the outer and intermediate ring roads at adequate locations with proper standards.

Inner ring roads will be used only by green buses with stoppage at bus bays only. Existing Municipal bus stand shall be their base point. They could use all link roads, ring roads and local roads. In addition, number system is to be introduced for blue and green colored buses for each route. The routes and their numbers will be displayed in waiting shelters and bus bays for public information.

The existing KSRTC stand is situated at intermediate road and the same could be used for mofussil trips. Long route KSRTC buses are to be shifted to the new interstate bus stand terminal proposed near Medical college.

"Ottananayam padhathi" which envisages to connect all the bus stands with a single circular trip paying one coin, may be planned by Municipality with the help of KSRTC. Mini buses may be used for this purpose with the privilege of town service . A model route is shown in figure 30.26 which would take approximately 20 minutes



Fig. 30.26 Ottananayam - KSRTC bus planned to connect all bus stands

for a trip including the boarding/ alighting time. However, if the route could be slightly modified to cover the civil station as well then it would take approximately 25 minutes to complete one trip. Other sample bus routes on introduction of this transportation pattern are also shown in figures 30.27 & 30.28.

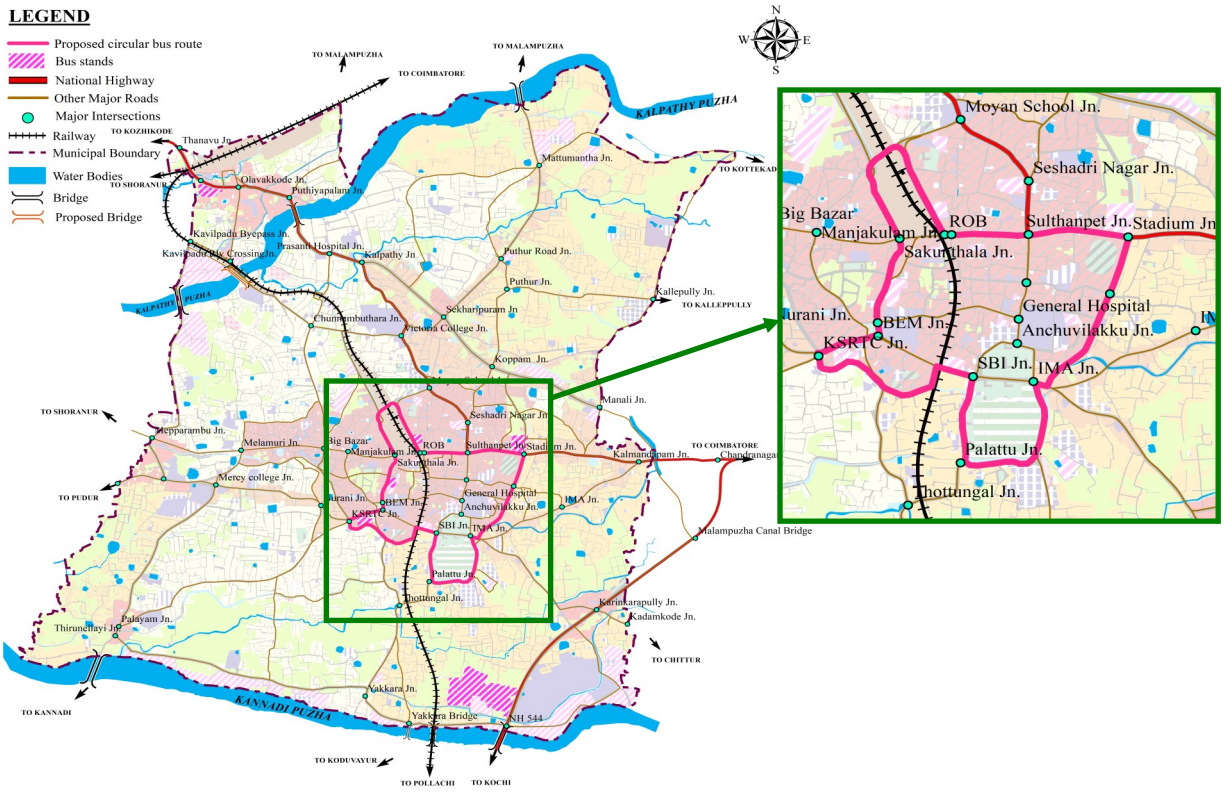


Fig. 30.27 Circular bus route of Ottananayam

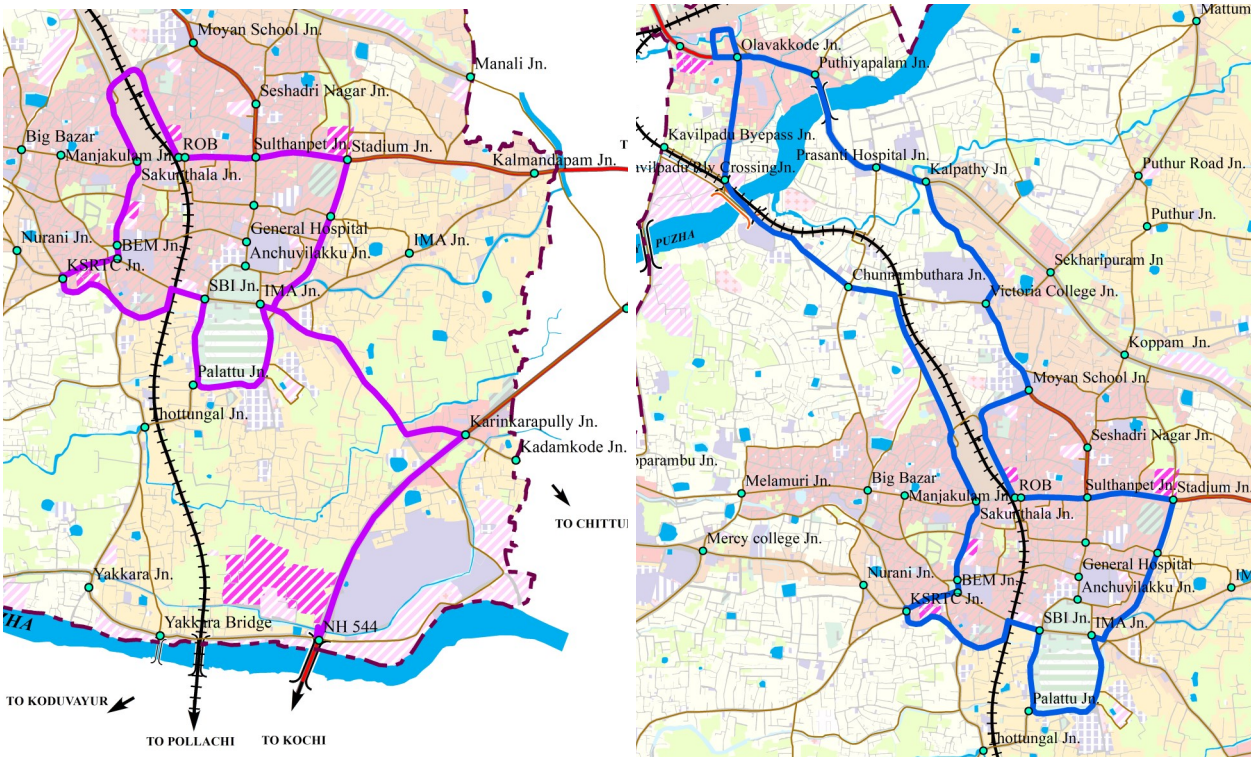


Fig. 30.28 Circular bus route covering all bus stands

30.9.3. Auto -Taxi Plan

Taxi service is a part of wider public transport network. It has been seen that, in an urban setting, an individual's travel journey is multi-modal. If we want to have transit oriented cities, we need high quality, door to door service that allows spontaneous travel for commuters. Since origins and destinations have a geographical asymmetry in an urban setting, people prefer to use taxis to reach destinations, which are outside the fixed route public transportation system. This clearly outlines the importance of taxi service as being a critical aspect of a transit system.

Taxis enable car-less travelers to switch modes in the middle of the journey. This "asymmetrical mode shares" is a hallmark of transit - oriented cities - which allows people to use transit, share rides and otherwise travel without a private car. In this way taxis potentially act as complement to other modes and help discourage auto ownership and use. In general, the public transportation plan of Palakkad aims at providing means that could achieve these facts.

The report of the committee constituted to propose taxi policy guideline to promote urban mobility by Ministry of Road Transport and Highways has formulated the following guidelines for adoption by the States

⇒ Facilitating public convenience with regard to mobility

⇒ Ensuring safe and secured environment for passenger mobility. The taxis must conform to all the regulations laid down by the transport department including fuel.

⇒ Reducing pollution and consequent stress on environment.

⇒ Simplifying the transport systems by removing artificial restrictions in the mobility trade.

⇒ Reducing congestion on streets and emphasize more on creation of infrastructure for parking.

⇒ Recognition of right to conduct business including taxi operations.

⇒ Promoting shared mobility and a shift from personalized transport to public transport.

⇒ Ensuring optimal asset utilization

Keeping in view of these guidelines, the public transportation plan of Palakkad may be formulated as follows: -

1. Taxi permits are to be classified as City Taxi and All India Taxi permit.
2. All the AITP taxis will be operating only intercity trips with specially designated

parking spaces.

3. AITP drivers will be following national guidelines regarding fare, uniform, taxes, permit and other standards as implemented by state/ central governments from time to time.
4. City taxi will be operating within the city limit and to a limited extend outside the limit and will have a standard colour code for vehicles and uniform code for drivers.
5. All city taxis must be eco-friendly by promoting electric vehicles or must be converted to CNG fuel within a specified time.
6. To provide cheaper travel solutions to the common man and to maximize utilization of vehicles in an eco-friendly way, it is recommended that seat sharing should be permitted in the city taxis operated subject to the express consent of the passengers.
7. All the taxis should have a fire extinguisher of at least 1 kg capacity and required medical kits
8. The taxis may be allowed to carry advertisements on all sides except right side so as not to distract the opposite vehicular movement.
9. Vehicles plying as taxi should have a valid PUC, fitness certificate as well as a valid insurance.
10. The Driver's identification along with the photo and registration number of the vehicle should also be prominently displayed in the taxi.
11. The city taxis may be required to pay annual or one-time permit fee as fixed by the State Transport Department.
12. She Taxis are to be promoted by encouraging more lady drivers.
13. **City Auto rickshaws** may also follow the above guidelines as that defined for the city taxis including colour code, uniform code, sharing etc. There will not be any limit beyond the city limit for rickshaws. E-rickshaws must be promoted and all the current vehicles must be converted to CNG fuel within a time period.
14. Online and app based taxi/rickshaw services are to be encouraged.
15. Provision of Divyang friendly Rickshaws / Taxis
16. Each parking area will be numbered and specific boards will be displayed
17. Number of vehicles that could be parked in each parking space will be limited.
18. In case of on street/off street parking locations, there will be boundary lines in

the lot with definite starting line, ending line and lane demarcations for restricting the vehicles being spread or extended beyond the limit. This is to be adhered strictly.

19. Parking full boards in the end are to be depicted in each stands, and vehicles coming afterwards will have to be moved on to the nearest empty stand.
20. Pre-paid facilities are to be encouraged
21. Resting area and toilet facilities for drivers must be arranged in larger stands like bus terminals and important bus bays.
22. Fixing of Taxi shelter notice boards and other information boards.
23. Divyang friendly taxi pickup/ drop points.

In addition to the above guidelines more and more electric vehicles and electric charging points must be encouraged within the city even by providing parking fee incentives to reduce carbon emission

30.10 TRUCK TERMINAL

The major truck transit into the city is concentrated in its movement towards the market. Entering of vehicles to the narrow roads of the market for goods unloading especially vegetables is a major concern during the morning hours. So, in order to cater the needs of the market, a truck terminal with loading and unloading space is proposed in the available vacant land between Mepparambu and Melamuri located in ward 48 - Mepparamba along with the proposed Ware house and Cold storage **(Special Zone P9)**. Here facility for loading and unloading with platforms and modern machineries like forklift shall be constructed.

A **truck terminal on NH** 544 is proposed near the Medical College at ward 28 - Civil station **(Special Zone P5)**. An area 0.959Ha in Yakkara Village in survey numbers 29, 30, 31, 37 of bloc number 162 is earmarked for this project as shown in figure 30.26. This would be beneficial for loading/ unloading of larger consignments to light commercial vehicles to operate within the district and also will be place for resting and refreshment for the long route freight transporters. This would also help in alleviating traffic congestion within the town due to lesser number of heavy vehicles plying on its main roads.

A typical truck terminal layout is shown in figure 30.29. In addition to the parking area, space shall also be provided for commercial activities like restaurant, retail shops, dispensary, fuel station etc. along with amenities like dormitory, rest rooms etc.




Fig. 30.29 Typical truck terminal layout and loading/unloading bays

30.11 PARKING FACILITIES

An appropriate parking policy can address a number of objectives thereby benefiting the transport network of a city in a number of ways. Such objectives are:

- To discourage the use of private vehicles thereby encouraging public transport.
- To remove obstacles from carriageways thereby improving the steady flow of traffic and increasing carriageway capacity.
- To contribute to a city's economic activities by ensuring a 'turnover' of different vehicles rather than long stay vehicles in commercial areas.
- To satisfy social objectives of supplying adequate parking space at certain locations for certain social groups e.g. residents, mobility disadvantaged.
- The following list provides a summary of components of a parking strategy that are typically utilized by cities worldwide. The design of parking measures should conform to the adopted strategy of the city.
- Utilize parking controls to regulate car usage.
- Minimize the impact of on-street parking and encourage off-street parking (particularly for long-term parkers, such as commuters)
- Optimize existing parking capacity, before creating new parking facilities.
- Prioritize parking in the following order: physically disadvantaged, residents, short-term visitors or commercial activities, long-term parkers such as work commuters.
- Improve safety for pedestrians by reducing illegal parking and opening additional public space for pedestrians and cyclists.
- Introduce paid parking as a method to dissuade car use and/or raise revenue.
- Utilize fees and fines from parking to invest in the building of car parks and to

improve public transport.

- Develop public-private partnerships (PPP) for the operation of either on-street or (more often) off-street parking facilities.

Parking remains a problem in Palakkad town, a considerable road space is utilised for parking which causes hindrance to smooth flow of traffic. This causes inconvenience to pedestrians. Inadequate off street parking spaces and lack of strict enforcement has resulted in the existing right-of-way being used for parking, thereby creating higher levels of congestion in the town's core area. A parking policy is therefore essential to utilize the vacant spaces within the town and take a collective effort to reduce the ill effects of this necessary evil.

Another solution is to utilize the vacant space in **school/ educational institutions** for parking on public holidays/ weekends so that it becomes a win-win situation for the society at large as well as a revenue generation for these institutions.

To restrict on street parking, it should be charged with a nominal fee for short duration and higher fee for longer duration. The **parking fee** can be regulated such that it becomes a self-sustained model for meeting the expenses of the parking wardens and other activities involved in the same.

The inner ring road is already proposed to allow on street parking on one side, with provision for one-way traffic. But due to the higher concentration of commercial activities here, and the uncertainty for the user about the availability of the space, off street parking is proposed at various locations in inner ring road.

A **multi level car parking near town railway station (Special Zone G13)** is proposed at the 0.610Ha land available with the municipality, on Village III at survey no. 2565, 2566 of block no. 62 and survey numbers 2606, 2607, 2608, 2609, 2610, 2623, 2624, 2625, 2626, 2627 of block 63 at ward 17 - Narikuthy along the proposed bus bay, which can be tolled and revenue can be generated using Public Private Partnership (PPP) mode .

Another **Multi-Level Car Parking** is proposed opposite to the stadium bus stand **(Special Zone G12)** in the available vacant space located in an area of 0.946Ha of Village III at survey no. 3627 of block 75, survey number 3628 of block 76 and 3609, 3610, 3611 of block 74 at ward 23 - Kunnathurmedu north to cater the demand from bus stand and municipal stadium users.

The existing vacant land near the municipality building, behind the municipality shopping complex may also be utilized for off street parking with entrances to both court road and Robinson road as a solution to the parking over this commercial area **(Special Zone G16)**. It is located at survey no. 2464, 2465, 2552 & 2572 of block no. 48 of ward 41 - Municipal office.

Another parking area is proposed near the district hospital **(Special Zone P2)** to cater the demands of visitors to the hospital in area of 0.287 Ha located at village III in survey no. 3152, 3155, 3149 of block 63 of ward 23 - Kunnathurmedu north. A foot over bridge connecting the parking area and the district hospital will be beneficial for the users to commute without much difficulty. The public coming to Civil station, district panchayath and the courts also needs a favorable parking location. Keeping in view of the proposed court complex also, a parking area is proposed in the vacant land near civil station with a provision of foot over bridge to the civil station premises in an area of 0.461Ha in village III located at survey no. 1726, 1732, 1733 of block no. 29 of ward 26 - Kenathuparambu **(Special Zone P3)** . Spatial distribution of proposed parking is shown in figure 30.30.

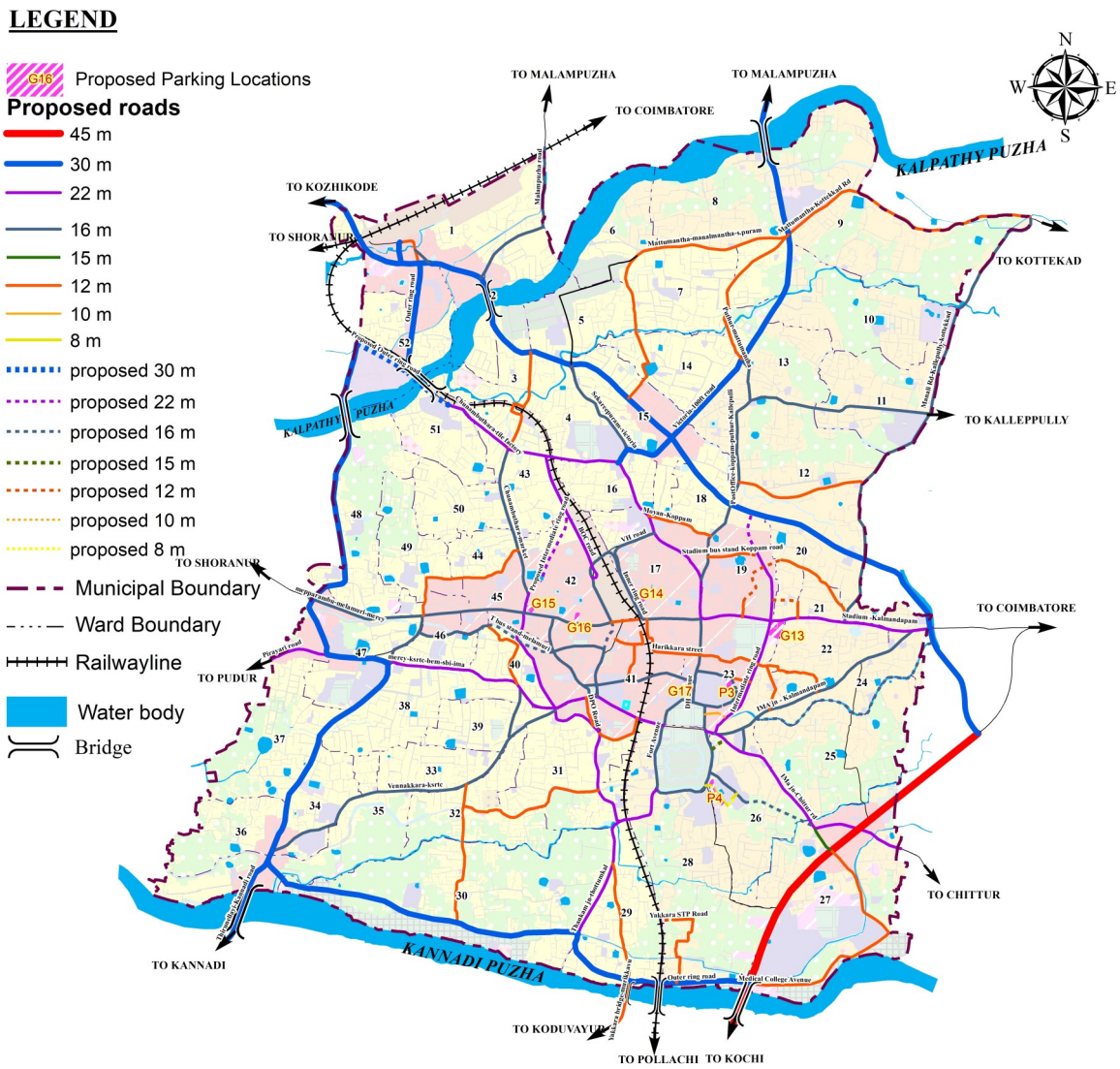


Fig. 30.30 Proposed location for parking

30.12 NON - MOTORISED TRANSPORT FACILITIES

Non-motorized trips in Palakkad include walk trips and cycle trips. Past studies reveal that nearly 40% trips in medium sized towns in Kerala are non- motorized trips. Walking is the start and end phase of all motorized trips. There are several schools functioning in the municipal limits and considerable number of school trips is performed by cycles (Figure 30.31).

The traffic and transportation master plan should give focus on planning of NMT facilities such as provision of foot path, safe pedestrian crossing facilities and slow moving vehicle lanes. As per AMRUT completed works, paved walkways from Shakunthala Junction to BEM Junction (0.47 Cr), walkways from BEM Junction to SBI Junction (0.34 Cr) and improved walkways around Fort maidan (0.51 Cr) have been completed.

However, it is proposed to develop **pedestrian track with grade separated cycle track** all around the Fort and maidan and 100 Ft road as shown in figure 30.44. It has been an emerging practice to adopt **pedestrian only streets**, at least on public holidays, to encourage walking where cycles can also be used. The road between **SBI Junction and IMA Junction** can be utilized so.

In addition to the above, it is proposed to develop a **foot over bridge** to connect Gandhi bazaar road and Shakunthala junction. It is also suggested that when pedestrian crossings are provided near junctions then it should be kept in mind that it functions as a network connecting the footpath on both sides and should not be a stand-alone crossing. Pedestrian crossings along with 2m wide footpath (at least on one side) is required at locations where there exists heavy pedestrian movement such as District hospital, entry of Fort, Civil station, KSRTC bus stand, Stadium bus stand, Olavakkode etc.



Fig. 30.31Typical pedestrian cum cycle track around Fort and Maidan

30.13 INTELLIGENT TRANSPORTATION SYSTEM (ITS) APPLICATIONS

ITS is a wide area and has many applications which focuses on specific fields like Enforcement, Emergency care, Road Safety, Road user information etc. Some of

the useful ITS applications which can be adopted in the study area are:

- Traveler Information System on board the buses and at bus stops for knowing the expected time of arrival of buses.
- GPS equipment on public transport buses for fleet management.
- Vehicle actuated signals or synchronized traffic signals to decrease overall delay.
- Red Light Violation Detection System (RLVDS)
- Speed violation detection system (SVDS)
- Helmet/ Seatbelt compliance checking system
- Wrong side/ triple ride detection system
- Emergency Vehicle Prioritisation System

30.14 AREA SPECIFIC IMPROVEMENT PROPOSALS

30.14.1 Olavakkode

This intersection handles peak hour traffic to the tune of 7,438 PCU/hr. There is unauthorized parking at this junction which also sees considerable pedestrian movements. At present the bus stops are placed right at the junction which causes chaotic situations. The ideal location for bus stops is at the downstream side of the junction in the direction of movement. This would ensure that they are staggered as well. Pedestrian crossing facilities need to be provided along with segregated parking spaces for auto/ taxi. Visibility from approaching arms is also required to be ensured by removing any hindrances to visibility at the junction. Regulating the new entry road to the railway station, an exclusive entry point and the existing road leading to the junction as the exclusive exit.

30.14.2 Market Road

Due to market related activities, this road experiences hindrances to smooth flow of traffic. Parking for loading/ unloading activities also creates hurdles. It is proposed that only smaller commercial vehicles will be allowed to operate on this road. For this, heavy vehicles can be parked at peripheral locations (truck terminals/ temporary holding areas) as mentioned in section earlier.

One-way traffic movement towards Melamuri- Shakuntala junction can be implemented by utilizing the parallel road via TB stand – Melamuri Junction. All the roads entering into these roads are also to be restricted with one-way system having alternate entry and exit provisions. Temporary parking can be restricted to one side of the road and loading/ unloading activities can be restricted by time (off peak/ night) so that movement of other traffic does not get unnecessarily blocked.

30.14.3 Sultanpet

The presence of a temple right at this junction is causing congestion and difficulty in smooth flow of traffic. Currently some of the traffic movements are restricted to regulate the vehicles plying through the junction. The temple needs to be relocated and junction needs to be redesigned along with widening of the road to cater to traffic expected in future.

30.14.4 Sekharipuram

This junction and surrounding area on NH 966 has been classified as a moderate risk priority crash black spot in a recent study conducted by NATPAC for the entire state of Kerala with crash data from 2016-18. As a remedy the redesign of the junction needs to be looked into along with the provision of channelizers/ traffic island, street light, removal of hindrance to visibility, traffic signs and road marking etc.

The Volume - Capacity ratio of major roads in the 'Full development scenario' when they would be developed, as proposed above, is given in table 30.1. The carriageway configuration required to handle the projected traffic is also mentioned in this table.

Table 30.1 Volume-capacity ratio for the horizon years for 'Full development' scenario in Palakkad

Sl. No.	From node		Design service volume (PCU/ hr)	2020		2030		2040		Proposed Carriageway configuration
				Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	
	1. NH 966: Palakkad to Kozhikode road									
1	Thanavu Junction (Municipal border)	Olavakkode junction	5,400	4,514	0.59	7,353	0.95	10,884	1.41	3+3D
2	Olavakkode junction	Kalpathy junction	5,400	3,378	0.44	5,502	0.71	8,145	1.06	3+3D
3	Kalpathy junction	Sekharipuram junction	5,400	1,796	0.23	2,925	0.38	4,330	0.56	3+3D
4	Sekharipuram junction	Kalmandapam junction	5,400	2,190	0.28	3,566	0.46	5,279	0.68	3+3D
	2. College road - Court road - Yakkara road									
5	Kalpathy junction	Victoria college junction	3,600	1,823	0.35	2,969	0.58	4,396	0.85	2+2D
6	Victoria college junction	Sultanpet junction	3,600	2,668	0.52	4,345	0.84	6,432	1.25	2+2D
7	Sultanpet junction	Anjuvilakku	3,600	1,850	0.36	3,013	0.59	4,461	0.87	2+2D
8	Anjuvilakku	SBI junction	3,600	3,662	0.71	5,964	1.16	8,828	1.72	2+2D

Table 30.1 continued

Sl. No.	From node		Design service volume (PCU/ hr)	2020		2030		2040		Proposed Carriageway configuration
				Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	
9	SBI junction	Palattu junction	3,600	2,903	0.56	4,729	0.92	7,000	1.36	2+2D
10	Palattu junction	Yakkara bridge	3,600	2,161	0.42	3,520	0.68	5,211	1.01	2+2D
	3. Palakkad - Coimbatore road									
11	SBI junction	IMA junction	3,600	3,243	0.63	5,282	1.03	7,818	1.52	2+2D
12	IMA junction	Kalmandapam junction	3,600	2,190	0.43	3,566	0.69	5,279	1.03	2+2D
13	Kalmandapam junction	Chandranagar (Municipal border)	3,600	5,193	1.01	8,460	1.64	12,522	2.43	2+2D
	4. Palakkad - Shornur road									
14	SBI junction	BEM junction	3,600	3,804	0.74	6,196	1.2	9,172	1.78	2+2D
15	BEM junction	KSRTC junction	3,600	2,440	0.47	3,975	0.77	5,883	1.14	2+2D
16	KSRTC junction	Noorani junction	3,600	2,138	0.42	3,482	0.68	5,154	1.00	2+2D
17	Noorani junction	Mercy college	3,600	2,453	0.48	3,995	0.78	5,913	1.15	2+2D
18	Mercy college	Mercy college (Kottayi road junction)	3,600	1,535	0.3	2,500	0.49	3,700	0.72	2+2D
19	Mercy college (Kottayi road junction)	Mepparamba junction	3,600	1,151	0.22	1,875	0.36	2,775	0.54	2+2D
	5. Malampuzha 100 feet road									
20	Victoria college junction	Sekharipuram junction	1,200	876	0.51	1,297	0.76	1,743	1.02	1+1D
21	Sekharipuram junction	Puthur road junction	1,200	1,258	0.73	1,861	1.09	2,502	1.46	1+1D
22	Puthur road junction	Mattumantha	1,200	1,258	0.73	1,861	1.09	2,502	1.46	1+1D
23	Mattmantha	Mukkai bridge (Municipal border)	1,200	1,255	0.73	1,857	1.08	2,496	1.46	1+1D
	6. Sultanpet - Kalmandapam road									
24	Sultanpet junction	Stadium Junction	3,600	2973	0.58	4,842	0.94	7,167	1.39	2+2D
25	Stadium junction	Kalmandapam junction	3,600	2909	0.57	4,738	0.92	7,013	1.36	2+2D
	7. Chittur road									
26	IMA junction	Karinkarapully	3,600	4,189	0.81	6,824	1.33	10,101	1.96	2+2D
27	Karinkarapully	Kadamkode (Municpal border)	1,500	1,588	0.74	2,586	1.21	3,829	1.79	1+1D
	8. Puthupalli theruvu - Thirunellayi road									
28	Puthupallitheruvu	Thirunellayi	2,400	2,226	0.65	3,294	0.96	4,427	1.29	2+2D

Table 30.1 continued

Sl. No.	From node		Design service volume (PCU/ hr)	2020		2030		2040		Proposed Carriageway configuration
				Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	
	9. Mercy College to Thirunellayi road									
29	Mercy college	Thirunellayi	4,300	1,794	0.29	2,656	0.43	3,569	0.58	3+3D
	10. Sultanpet - Melamuri road/Ponnani road									
30	Sultanpet junction	Municipal bus stand junction	1,200	729	0.43	1,079	0.63	1,450	0.85	1+1UD
31	Municipal bus stand junction	ROB	2,900	1,826	0.44	2,702	0.65	3,632	0.88	2+2D
32	ROB	Sakunthala junction	2,900	2,589	0.62	3,832	0.93	5,150	1.24	2+2D
33	Sakunthala junction	Melamuri junction	1,200	649	0.38	961	0.56	1,290	0.75	1+1UD
34	Melamuri junction	Mepparamba junction	2,400	2,344	0.68	3,469	1.01	4,662	1.36	2+2UD
	11. Olavakkode - Chunnamputhara road									
35	Victoria college junction	Chunnamputhara junction	1,200	959	0.56	1,419	0.83	1,907	1.11	1+1UD
36	Chunnamputhara junction	Olavakode junction	2,900	4,428	1.07	6,555	1.58	8,809	2.13	2+2D
	12. Malampuzha road									
37	Soorya junction	Railway gate (Municipal border)	900	652	0.51	876	0.68	1,068	0.83	1+1UD
	13. Puthur road									
38	Seshadri nagar junction	Koppam junction	1,200	787	0.46	1,165	0.68	1,566	0.91	1+1UD
39	Koppam junction	Puthur junction	1,200	1,080	0.63	1,598	0.93	2,147	1.25	1+1UD
40	Puthur junction	Kallepully junction (Municipal border)	1,200	989	0.58	1,463	0.85	1,966	1.15	1+1UD
	14. Kottayi road									
41	Melamuri junction	Mercy college	2,400	2,523	0.74	3,735	1.09	5,019	1.46	2+2UD
42	Mercy college (Kottayi road junction)	Pirayiri (Municipal border)	2,400	1,749	0.51	2,589	0.76	3,479	1.01	2+2UD
	15. Stadium bypass									
43	Stadium junction	IMA junction	2,400	1,781	0.52	2,636	0.77	3,542	1.03	2+2UD
	16. Stadium road to Gandhi bazar road									
44	Stadium bypass road	Coimbatore road (Vivekananda colony road)	900	162	0.13	217	0.17	265	0.21	1+1UD
45	Stadium road	Court road	900	736	0.57	989	0.77	1,206	0.94	1+1UD
	17. Other roads									
46	BEM junction	Thottumkal junction (Erumakkara St)	2,400	2,307	0.67	3,415	1	4,589	1.34	2+2UD
47	Noorani	Vadakkumthara St)	900	404	0.31	542	0.42	661	0.51	1+1UD

Table 30.1 continued

Sl. No.	From node		Design service volume (PCU/ hr)	2020		2030		2040		Proposed Car-riageway con-figuration
				Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	Volume (PCU/ hr)	VC ratio	
48	Syndicate bank (Big bazaar)	Aswathy mar-riage hall (Vadakkumthar a road)	2,400	1,735	0.51	2,567	0.75	3,450	1.01	2+2UD
49	Mission school	District hospital (Robinson road)	1,800	2,383	0.93	3,202	1.25	3,903	1.52	2+2UD
50	Moyans school	Town railway station via overbridge (VH road)	1,800	1,835	0.71	2,466	0.96	3,006	1.17	2+2UD
51	Mission school	Manjalikuma (Manjalikulam road)	1,800	1,475	0.57	1,982	0.77	2,416	0.94	2+2UD
52	Anjuvilakku junction	IMA junction	1,800	1,505	0.59	2,023	0.79	2,466	0.96	2+2UD
53	IMA junction	Palattu junction (S fort road)	900	156	0.12	209	0.16	255	0.2	1+1UD
54	KSRTC link road		1,800	2,147	0.83	2,885	1.12	3,517	1.37	2+2UD
	Road Category- Colour band		Arterial			Sub-Arterial			Collector	

Source: NATPAC survey 2020

30.15 SHORT TERM PROPOSALS FOR IMMEDIATE IMPLEMENTATION

Here are some proposals which could be implemented immediately for the rejuvenation of the traffic structure of the city without much financial implications. This could be achieved mostly by administrative reforms, management methods and proper decision making by the governing body.

I. Regulation of staggered on street parking and permitting the same with parking fee by earmarking specific locations in the sides of wider roads.

II. Regulation of goods vehicles during busy hours inside the city. Loading and unloading to be permitted during specific hours only. Entry ticket to market may be introduced with specific time period and penalty may be imposed for extra time. This will make the vehicles to wait in the outskirts until it is ready for loading/unloading.

III. Augmentation / Synchronization of traffic signals.

IV. Implementation of one-way traffic, closure of problematic turns, improving the turning radii, removing the obstacles/street vendors etc. which cause hindrance to the passenger's vision.

V. Introducing specially trained traffic managers with distinguishing uniforms by the municipal authority for effective traffic control.

VI. Fixing of necessary sign boards such as Regulatory signs, Cautionary signs, Informatory signs, Destination signs etc. and road marking such as pedestrian crossing, stop line, edge line, centre line, direction arrow, chevron, diagonal marking, kerb marking etc. also to be done at required locations.

VII. All auto taxi stands to be marked with start line, end line and edge line. No auto/ taxi shall be allowed to park outside the marking and should move on to the next available stand.

VIII. All bus bays to be marked properly with road lines and parking in the dedicated bay to be strictly adhered. All the bus shelters must be provided with information display boards.

IX. All parking locations are to be marked and parking areas are to be designated with boundary lines.

X. Vacant lands available with the government or municipality must be temporarily converted to parking spaces. Locations marked in this plan may be developed in BOT basis.

XI. Town bus permits must be liberalized for mini buses with minimum charge (Ottananayam) ensuring connectivity to all the parts of the city.

XII. Holiday walking street with permission to authorized street food vendors may be promoted.

XIII. Encroachments over foot paths to be removed immediately.

XIV. One-way system may be introduced in narrow roads.

However, Owing to the present development scenario and also considering the built up density and peculiar development pattern of the city, the road hierarchy was thoroughly revisited by the Master plan Committee and the Municipal council duly considering the objections and suggestions made by the public after the publishing of this master plan. A more practical approach was thus taken while finalizing the road widening proposals and new road proposals. Hence, whatsoever road width, be it a new road or widening of an existing road, or any proposals mentioned in this chapter before may be considered as a conceptual or preferred width and need not be considered as the proposed one. Even though site specific sectoral proposals and named as special zones wherever mentioned above must be considered as such along with the road hierarchy hereunder. Table 30.2 details the proposed hierarchy of roads for Palakkad town and Figure 30.32 shows the Map showing the proposed road network of Palakkad municipality.

Table 30.2 Proposed hierarchy of roads of Palakkad town

Sl. No.	Road no.	Length in Metres	Existing width	Status	Road Name
R1 - 45 m Roads					
1	Rd-1	2920	42 m	Widening	NH/ Outer ring road
R2 - 30 m Roads					
2	Rd-2	1805	20-30 m	Widening	Malampuzha100ft road
		630	11-16m	Widening	Mattumantha– Mukkai Bridge
R3 - 24 m Roads					
3	Rd-3	3451	20 m	Widening	Sekharipuram - Kalmandapam Road
		881	7 - 15 m	Widening	Kalmanadapam—NH Canal link
R4 - 22 m Roads					
4	Rd-4	560	20 m	Widening	Stadium-Kalvakulam-by pass link road
		307	-	Proposed	Stadium-Kalvakulam-by pass link road
		944	8-21 m	Widening	Niranjan road (Stadium By Pass)
5	Rd-5	604	8 - 21 m	Widening	Victoriya - Tharekkad road
		508	11 -16 m	Widening	Victoriya - Bypass signal road
R5 - 18 m Roads					
6	Rd-6	2446	6 -15 m	Widening	Thanavu - Sekharipuram Road
7	Rd-7	1226	11m-21 m	Widening	Stadium - Kalmandapam Road
8	Rd-8	3022	6 - 22 m	Widening	Yakkara - Thirunellayi Road

Table 30.2 continued

R6 - 16 m Roads					
9	Rd-9	1803	7 - 22 m	Widening	Thirunellayi - Mercy college Road
		3009	6 - 22 m	Widening	Mercy College –Mepparambu- Kavilpad Road
		1266	12 m	Widening	Kavilpadu - Olavakkode Road
		448	6 - 22 m	Widening	Pudur Road
10	Rd-10	1404	8 - 21 m	Widening	Victoriya College- Chunnambuthara road
		394	-	Proposed	Proposed Road to tile factory ROB
11	Rd-11	7416	7 - 22 m	Widening	BOC road
12	Rd-12	700	-	Proposed	Proposed Road conncecting Chunnambuthara road and BOC road-Near KRK Auditorium
13	Rd-13	1469	7 - 15 m	Widening	ROB - Municipal stand - Tharekkad Road
14	Rd-14	505	8 - 21 m	Widening	Tharekkad - HPO Road
15	Rd-15	1693	-	Proposed	Proposed Town bus stand-Melamuri road
		320	13	Widening	Melamuri - Mercy road
16	Rd-16	2254	10 - 20 m	Widening	Mercy college - KSRTC – SBI Jn Road
17	Rd-17	1044	8 - 14 m	Widening	KSRTC Bypass - Aboobakkar Road
18	Rd-18	284	8 - 14 m	Widening	BEM Jn-Ring road
19	Rd-19	1918	12	Widening	Fort Avenue
20	Rd-20	1373	7 - 14 m	Widening	Palat jn. - Yakkara Thankam jn. Road
21	Rd-21	1816	10 - 15 m	Widening	IMA - Chittur Road
22	Rd-22	320	12 m	Widening	IMA to Kunnathurmedu-Canal Link Road
		1761	-	Proposed	Kunnathurmedu-Canal Link Road
23	Rd-23	338	5 - 6.5m	Widening	Manappullikkavu-Civil station Road
		539		Proposed	Manappullikkavu-Civil station Road

Table 30.2 continued

R7 - 12 m Roads					
24	Rd-24	1964	5 - 10.5 m	Widening	Medical College Avenue
25	Rd-25	2500	7 - 15 m	Widening	Vennakkara - Thrunellayi Road
26	Rd-26	737	8 - 14 m	Widening	DPO Road from Thottunkal to KSRTC By Pass
27	Rd-27	387	9 - 12 m	Widening	English Church road - KSRTC By pass link
28	Rd-28	388	12 m	Widening	Town bus stand - Robinson Road
29	Rd-29	1064	6.5 - 12.5 m	Widening	Court Road - GB Road
30	Rd-30	1065	8 - 21 m	Widening	HPO - Stadium road
31	Rd-31	2417	10 - 13 m	Widening	Mepparambu - Melamuri - BOC road Jn Market Road
32	Rd-32	499	10 m	Widening	Moyan-Koppam
33	Rd-33	789	10 -12 m	Widening	Victoria - Sekharipuram
34	Rd-34	1224	10 m	Widening	Malampuzha road
35	Rd-35	1357	7.5 - 12 m	Widening	IMA - Kalmandapam Road
36	Rd-36	101	4.5 - 5 m	Widening	Fort avenue-Stadium Bypass Link Road
		74	-	Proposed	Fort avenue-Stadium Bypass Link Road

Table 30.2 continued

R8- 8 m Roads					
37	Rd-37	106	6.5 - 12 m	Widening	District Hospital avenue
		269	-	Proposed	District Hospital avenue
		409	4 - 10 m	Widening	District Hospital avenue
38	Rd-38	234	3m	Widening	DP office- civil station parking ring road
		51	5m	Widening	DP office- civil station parking ring road
		71		Proposed	DP office- civil station parking ring road
39	Rd-39	712	8 - 14 m	Widening	Manjakkulam road
40	Rd-40	2823	8 m	Widening	Post Office - Koppam - Puthur - Kallepully
41	Rd-41	959	6 - 12 m	Widening	Ramanathapuram Road
42	Rd-42	3578	6 - 15 m	Widening	Manali -Kallepully - Kottekkad Road
43	Rd-43	2013	5.8 - 10.5 m	Widening	Mattumantha-Kottekkad Rd
44	Rd-44	906	6 - 13.5 m	Widening	Yakkara - Malabar Hospital Road
45	Rd-45	753	3 - 4.5m	Widening	Yakkara STP Road
		62		Proposed	Yakkara STP Road

Part maps with detailed alignment in a scale of 1:1600 is provided along with the proposed land use map for easy enforcement of roads Rd4, Rd 12, Rd 15,Rd 23, Rd 36, Rd 37 and Rd 38. Hence constructions along the sides of these roads have to be regulated based on the part maps provided as C1, C2, C3, C4, D1, D2, D3, D4, F1, F2, F3 and F4.

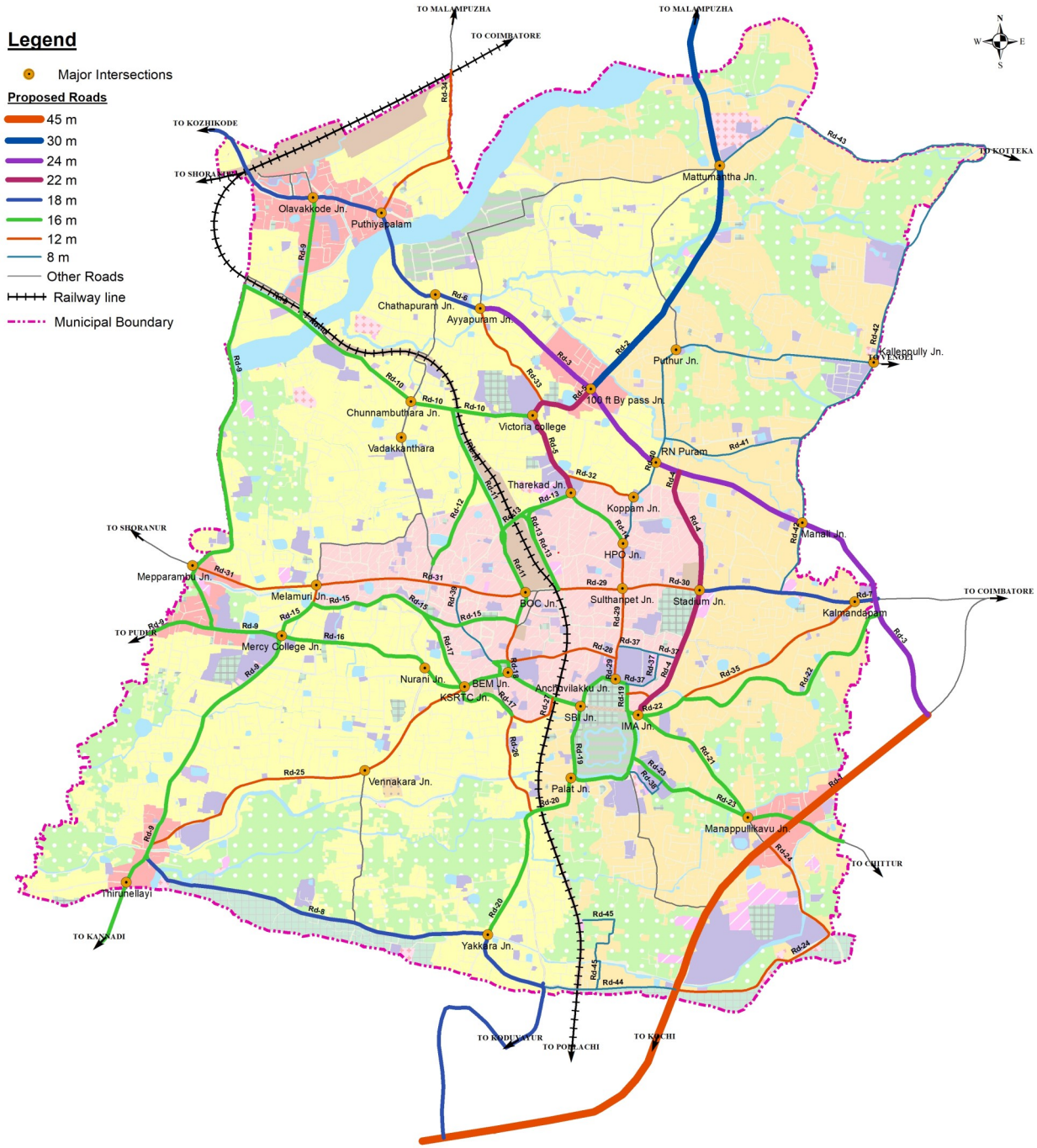


Fig. 30.32 Proposed road network of Palakkad municipality



CHAPTER 31- SECTORAL PROPOSALS

31. SECTORAL PROPOSALS

Palakkad is the only first order settlement which provide services to the entire district as per integrated development plan for Palakkad. Based on the primary and secondary data collected, local level analysis, spatial analysis of the data and discussions and suggestions of special committee, the following proposals are made in various sectors.

31.1 TRADE & COMMERCE

As Palakkad is an important commercial and trade centre at both local and regional level and is proposed to function as a much larger regional centre serving the population even outside Palakkad district. Therefore, the city requires development of new commercial centres or area and redevelopment of existing area with world-class facilities.

31.1.1 Revitalisation of Big Bazaar Area

The Big bazar Market needed complete redesign. This includes reconstitution of the land for wholesale and Retail Market and developing a Town Market with sufficient parking spaces and new buildings to accommodate more shops. The vegetable market area need to be redesigned to accommodate a modern market by providing all infrastructure facilities for storing vegetables, packing facilities and bio methanation plant for waste management.

A land pooling scheme / Redevelopment scheme with special controls has to be implemented to utilise the potential of the prime commercial locality. Municipality has to take the lead role to prepare these schemes and establish a modern market with all facilities.

There are some short term remedies to improve the quality of the market until the land pooling/Redevelopment schemes has come in to exist, which are described below.

1. The loading and unloading time in the market is strictly restricted from 8 pm to 9 am, after that no heavy vehicles are allowed in the market.
2. The market road from Sakunthala Jn to Melamuri (Ponnani Road) is proposed with one way traffic, and the pocket roads connecting to this road should also be alternately limited to one way traffic as shown in the figure 31.1.
3. The Two wheeler and four wheeler parking in the market should change left and right in alternate days.

4. Land acquisition and construction of proposed town bus stand - Melamuri road is to be completed at the earliest , which in turn may be developed as an oppositely directional one way as that of the market road.

5. Hand carts to be replaced with battery operated goods carrier.



Clapped-out buildings of Big bazar

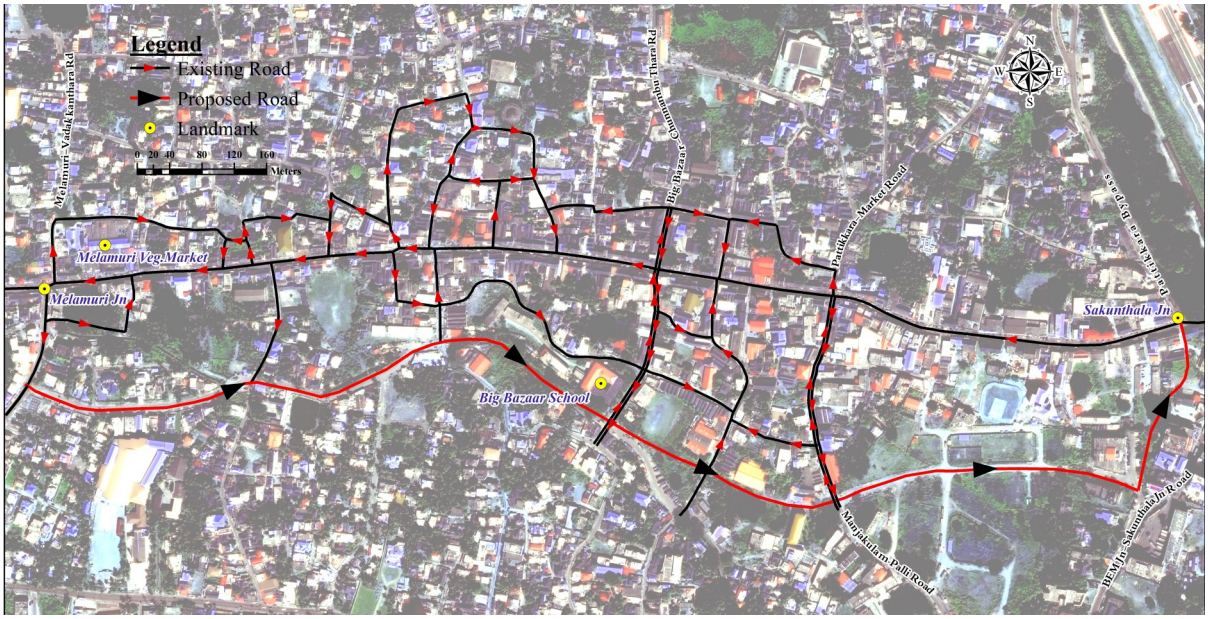


Fig. 31.1 Proposed traffic pattern of Market area

Big bazar market is very much prone to Fire and Safety issues. Presence of old and weak buildings with wooden elements, godowns with improper ventilations, storing and handling of inflammable materials etc. increases the risk factor. Hence these issues must be studied in detail during market rejuvenation. In the meantime some interim measures may be taken to use in case of emergencies. Provision of common fire hydrants, imposing the availability of fire extinguishers in each shops, ensuring proper parking of vehicles to allow entry of rescue vehicles during emergencies, organising a trained team of local people to act in case of emergencies are some of them.

At present the fish market is working with in the market, it need to be shifted outside the market with modern facilities. The town north Police station working in a congested old building is also need to be shifted to the identified vacant land near veterinary hospital. Two wheeler and Four Wheeler parking is proposed inside the market at the existing town north police station area. A truck loading and unloading bay with limited user truck terminal and cold storage warehouse is also proposed near the market at Melamuri.

31.1.2 Develop Decentralized Commercial Centres with Modern Markets in Residential Sectors

It is proposed to decentralize the commercial activities in order to decongest the Town centre area and develop self-sustained residential sectors. Suitable nodes are identified for sector level commercial clusters in all residential sectors except those consisting of main markets (Big Bazar and Olavakkode) so as to serve a population of 25000-30000. The following facilities are to be provided at each centre and those can be developed on PPP basis also.

- Loading and unloading bays
- Storage facilities including cold storage
- Ripening chambers
- Sanitation and drinking water facilities
- Garbage disposal system
- Systematically arranged trader shops
- Bank with ATM

31.1.3 Informal sector- Proposals

The national policy on urban street vendors 2009 observes that street vending is not only a source of self-employment to the poor in cities and towns but also a means to provide affordable as well as convenient services to majority of the urban population.

Large sections of unemployed and underemployed population look forward to the cities for employment. This brings forth petty trading activities in the informal sector.

To ensure the free flow of traffic, smooth movements of pedestrians and maintenance the cleanliness and public hygiene while facilitating vendors/hawkers to sell the goods/services at convenient locations frequented by the public, the policy also recognizes the need for the regulation of street vending by way of designated

restriction free vending, restricted vending and no vending zones based on certain objective principles.

According to this, the master plan proposes designated vending in TB stand – Shakunthala Jn- Old Railway gate, IMA Jn- Stadium by Pass, Mercy collage JN- Kanikkamatha Jn, 100 Ft road between Victoria college and NH By pass, Olavakkode Old RS road areas etc.



Street vending activities

31.1.4 Open Market

Palakkad town and its surrounding areas are having a lot of agricultural cultivators producing fruits and vegetables. In earlier days, such produces were brought by them to the weekly markets being organised on major residential areas where people were able to purchase their household needs in budget price. Other than agriculture produces, these markets were selling items for daily use such as utensils, handicrafts, tools, kitchen equipment and so on. As time passed, due to rapid commercialisation, such practises decreased but still a weekly at Puthur is functioning every Monday evening with huge gatherings. Hence, this Masterplan put forth a suggestion to carry out this weekly market to other residential sectors such as Murikkavu, Kadamkode, Olavakkode etc also. Meanwhile, an open market that could serve a part of the population to meet their daily needs in budget price and also a space for the peasants and local gardeners to present their product at reasonable rates every day in a week is proposed at Manakavu (**Special zone G3)** at survey number Village III 3591/1 of Block 83 at Ward number 21, Vadakkumuri over an area of 0.185Ha land available with municipality and with the following facilities.



Concept of Open weekly market

- Provide provisions for solid waste disposal and Public toilets.
- Aesthetic design of mobile stalls/ push carts with Provision for electricity and drinking water
- Covered infrastructure facility with proper fire fighting installations and risk reduction mechanisms

31.1.5 Fish and Meat Market

The existing fish market inside the Big bazar is very congested and functions in unhygienic conditions. This must be shifted to an ideal location outside the market with access to vehicles of both wholesalers and retailers.



Concept of Fish and Meat market

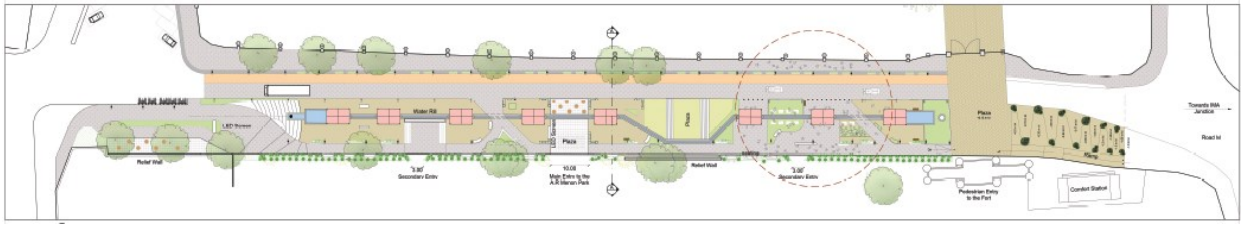
A suitable location for modern fish and meat market (**Special zone P8**) is identified in Mepparambu By-pass on area of 0.530 Ha in Village 1 , Block 113 survey number 41,53,59 of ward 47 (Pallippuram) There are lot of meat stalls functioning inside the municipality without proper licenses and hygiene measures. The modern market provides facilities for those stalls to work with modern facilities in hygienic conditions.

31.1.6 Walkable Commercial Streets

For a commercial area to be attractive, it should be safe for the customers, the current shift in the nature of shopping in the planning area, from small retail shops to big shopping malls reflect the change in choice and taste of customers and demand for more safe cosy shopping environments. However many of the commercial areas in the planning area are often unattractive and unsafe for the general public, due to congestion, created by vehicle passing crisscross through the streets.

The road between Palakkad Fort and fort maidan connecting IMA Junction and SBI Junction can be converted as a pedestrianized street for informal activities with the above concept. This road showcases the history and tradition of Palakkad but lacks a delightful appearance due to un organised street vending and parking. Hence it is proposed to transform this area with exclusive pedestrianisation, curtailing the street space allotted for vehicles, providing a suitable character design to street vending vehicles that resembles any idol of Palakkad etc. and brings in harmony with the iconic structure and recreational space available nearby. Provision for vehicle parking have to be provided along with by cycle tracks and emergency lane where people can walk , sit, gather and spend some time which would rather create a happiness destination within the town .

A detailed urban design proposal regarding this proposals is attached as **Annexure IV** in this report. Provision for rehabilitation of existing street vendors, auto taxi stands, fountains and water rills, relief walls, photo points etc. are also provided in the proposal with each component designed without loosing the character of the city.











31.2 INDUSTRY

Large quantities of agricultural produces from its rich hinterland are being collected and distributed due to the commercial establishment of town. The location of town at the point of convergence of a large number of important routes from all parts of district, state and neighbouring state is a positive sign for industrial development.

The chance for industrialization is fair due to transportation facilities available and proximity to industrial city, Coimbatore. But at the same time, polluting and heavy industries are to be avoided considering dense population of town and land constraints. The town can utilize the potential of nearby Industrial areas like Pudussery and Kanjikode much better. It could also be developed to cater the administrative and commercial needs of the upcoming Kochin– Bangalore industrial corridor, which passes through the outskirts of the city. Hence, the following types of non-polluting and service industries are to be encouraged for creating more employment opportunities and for strengthening the economic base of town.

- Agro-based industries and value addition of the agro-products
- Fodder production units for fish

- Service industries like IT and ITES
- Less polluting ancillary units related to major and medium scale industries of Pudussery Panchayat and Coimbatore
- Engineering and electronic based industries which acts as a sub unit of Major Industries in the nearby Industrial corridor

A special emphasis to MSMEs which would serve the following industrial sectors are also aimed in future.

31.2.1 Agro Processing Industries

Value addition to the agro products may be brought through Food Processing Units, since the food processing industry is growing at a rapid pace and it offers lot of scope to entrepreneurs for sustainable development. The development of agro based industries can be proposed like fish processing units, dairy units, ,milk processing units with chilling plant, food processing units and flour mills and curry powder manufacturing units, food parks etc. Agro food processing units such as pickles, fried food products etc of women entrepreneurs and other SHG groups may also be developed for their empowerment.

31.2.2 Development of Multi storied Private Industrial Parks

In order to develop the Industrial potential of the town, multi storied private industrial parks are proposed in the Industrial Zone at Olavakkode. Such Industrial parks are already being aided by the government for providing basic infrastructure facilities with the help of KINFRA and KSIDC. This park will develop subsidiary units to serve the major units of the neighbouring Industrial areas. Administrative, design, R&D wings of the factories may also be made functional here so that the officials and staff of such companies will get better stay, conveyance facilities and working atmosphere away from the industrial disturbances.

There are numerous electronic based units working inside the municipality at scattered locations. These units may also be developed to work as a subsidiary units of various public sector companies and other electronic industries of Industrial hub nearby. Hence, the proposed Industrial zone will also act as an axis for such scattered units

31.2.3 Ware houses, Cold storage, Loading & Unloading space

Proximity to the metro town Coimbatore is very important. To utilise this marketing and export potential, the space for collection and processing of various products from different parts of the district is required. Considering the safe storage of perishable goods like vegetables collected from all over the district and its trade, a cold storage facility must also be provided along with this.

Also, location of the existing ware house of ware housing corporation and BEVCO in English church road is insufficient considering the heavy vehicle traffic in that road and the space available now is not suitable for any further expansion. So a modern ware house with cold storage facility and loading & unloading space (**Special zone P9**) is proposed at land in Survey no.22,23 in block no 123 & Sy no.9 in block no 126 of ward number 48 (Mepparambu) with an area of 0.776 Ha near Melamuri catering the needs of nearby market also. This would also have a time and number restricted truck parking facility to serve the market for its goods movement.





Concept Image of cold storage facility and modern ware house

31.3 TOURISM

31.3.1 Fort as a centre of attraction

The Fort is the main tourist attraction of Palakkad city. For conserving this monument and enhancing tourist attractions ongoing project of beautification of fort will be needful.



Palakkad Fort

Renovation of existing open air auditorium, opening a Heritage awareness centre, Lighting and modification of walkways and Protection of the lawns are some of them. A light and sound show is also proposed to attract people. Possibility

of utilization of the moat around the Fort for boating may be explored. Existing government offices inside the fort must be shifted outside the fort premises. Old buildings like jail and other office buildings can be renovated to use as ASI Museum in Palakkad Fort. A detailed study report must be prepared by the Municipality for this and should reach out to ASI to convert it into a modern museum by implementing this either under their charge or under collaboration. A Sound and Light Show at Fort would be a welcome initiative of the municipality to be done in association with ASI.

31.3.2 Conservation of Jain Temple & Surroundings

Jain temple which is centuries old and of historical importance has to be conserved. The temple is currently well managed by a trust. But the same is to be brought to the lime light of the tourism sector of Palakkad.



Jain temple

Proper information boards and signal boards are to be installed at all the major roads and junctions. To identify the presence of the temple, an entrance in Jain architecture style may be constructed in the temple road. Sufficient parking and refreshment facilities for the visitors are also to be provided nearby the temple.

31.3.3 Heritage Corridor/Heritage Walk

Palakkad town is rich in its heritage value. There are a number of old settlements called Agraharams in the city which hold a great heritage value and culture. They are very famous for giving birth to great artists and scholars, providing abundance of music and dance, various indigenous food items, traditional festivals and unique customs and calisthenics.



Sitting platforms around trees

These heritage villages and their values are to be reflected in its streets so that it may be developed into a Heritage Walk programme for the visitors and tourists. For this, some of these streets are to be uniquely transformed with various depictions and probs.

The selected streets will be free from any sort of advertisements. Unique colour and texture must be enforced for buildings and any boards, writings, signs etc. must be in abidance with this. There will be wall paintings and other depictions reminding the traditional art forms like Karnatic Music, bharatanatyam and festivals like Kalpathy car festival.



Mural paintings on walls



Art work on well

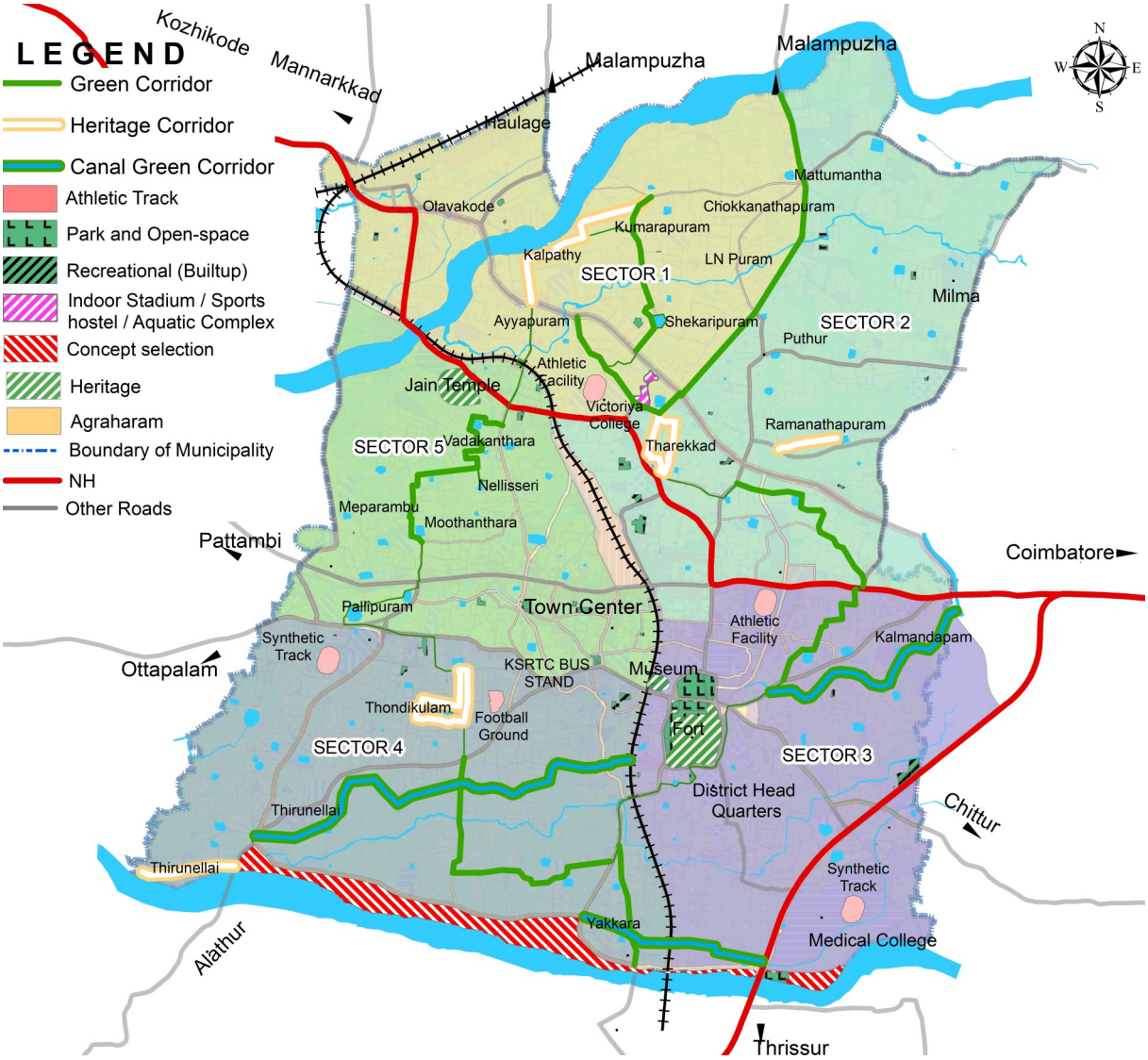


Fig. 31.2 Locations of heritage corridors, green corridors etc.

Any open area and junction, grade separators and dividers must be filled with various probs of traditional and indigenous nature. Vehicles other than that of the locals must be restricted here and guided heritage walk programmes must be implemented which in turn could help the locals to open up their markets with various traditional food varieties etc.

A history circuit may be developed connecting different spots of historic importance and idols of protest against foreign tyranny, like Kottamaidanam and Anjuvilakku, various streets and heritage buildings like Kalpathy heritage village, Jain temple etc. Buildings like North police station and RDO office have to be conserved considering its architectural and historical importance and if possible to be turned out into museums.

A one day tourism programme connecting the above destinations and also the nearby areas like Kodunthrapulli agraharam, Chembai gramam, Thasrak, Malampuzha, Thenari theertham (Elappullly) etc. may be planned in coordination with DTPC and Budget Tourism Cell (BTC) of KSRTC, thereby turning out the town into a tourism service provider.

The locations of heritage corridors/ heritage walks are shown in figure 31.2.

31.3.4 Kalpathy Heritage Centre

Kalpathy and other Agraharams of Palakkad are centres for various cultural and art forms such as Carnatic music, Bharathanatyam etc. Art is a part of their lifestyle and thus have produced numerous famous musicians and artists from this land. The community is also very rich in wide varieties of traditional cuisines also. To promote these culture and open up this to the community outside, Kalpathy Heritage Centre is to be started at Kalchetti theruvu (**Special zone G1)**. This can be conceived as a music and dance academy, heritage information centre to know all about Palakkad and its cultural heritage, leaders from Palakkad, demography of Palakkad, festivals and rituals etc. This could also act as a facilitation centre for tourists, providing home stays and traditional food inside the heritage village to let them stay there in the traditional row houses and enjoy the culture, activities and heritage values that the community beholds. An area of 0.162Ha of land in Village II on Survey number 1526&1527 of block 39 at Ward 5 Kalpathy East is ear marked for this.

31.3.5 Park and Tourist facilitation centre

Even though the district is having number of tourist destinations and attractions, those are very less within the town. But the town can act as a service provider to the travellers who are visiting nearby tourist destinations.

The planning area lacks quality tourism infrastructure, hence in the view of proposed tourism developments in the planning area & surrounding local bodies, international quality tourism facilities are proposed, including the tourism facilitation centre, hotels & resorts and budget accommodations, taxi pick up and drop service etc. Tourism facilitation centres may be promoted with private participation in any suitable location identified in the proposed tourism development zone on the banks of Kannadi river, near Medical college at NH 544. Here budget accommodation facilities,

dormitories, comfort stations, clock rooms etc may be made available. Guided Tourism Packages may also be arranged from here so that the tourists could get hazel free enjoyment. Travel facilities like taxis, guide cum drivers on daily basis may also be made available thereby contributing towards self employment opportunities in tourism sector as well.

In the space near to medical college, with the support of private investors, a park may also be proposed along side the river to increase the recreational facilities within the town. It could also act as a place of stress relief for people and their by standers to spend some time in a peaceful atmosphere away from the city rush. With these facilities, the place would also became an active centre for entertainment.

31.3.6 Tourism Information centre and Art Gallery

A Tourism information centre for tourists providing location details, facilities available , timings, online ticket bookings etc is proposed near SBI junction (**Special zone G6)**. Here, tourists taxis will be made available along with guided tour packages if required. An art gallery is also proposed here displaying various tourist attractions within the district. A sale counter for traditional artefacts, foods etc may also be opened here. Souvenirs and photo-cards of tourist/ heritage attraction may also be kept here for sale here. The project comprises a total area of 0.131 Ha in Yakkara village on survey number 1 of block 33 at ward 28 civil station.

31.3.7 Cultural Tourism

The culture and tradition of Palakkad is world famous, the Agraharams in Palakkad is rich with its tradition. The Kalpathy Radholsavam is a major cultural event. The annual ten-day chariot festival conducted here during the month of November is one of the most remarkable festivals of Kerala. Vedic recitals and cultural programmes are held in the temple during the first four days of the festival. This is believed to be over 700 years old. On the last three days, thousands of devotees gather together to draw decorated temple chariots through the streets.



Manappullikavu vela

Manapullikavu Vela is a festival honouring the deity at Manapullikavu called 'Manapulli Bhagavathy'. The festival is celebrated between last week of February and first week of

March based on the Malayalam Calendar year. The celebration starts with 'Kodiyettam' (flag hoisting on a bamboo pole) which declares the 'Vela'(Festival) has started. After the Kodiyettam, a week full of pooja ceremonies and evenings with colourful cultural programmes are organized by the 'Vela Committee' (Festival Committee) which all ends with the grand day 'Manapullikavu Vela'. Many devotees from throughout Kerala and other southern states of India come to worship Bhagavathy on this auspicious day.



Kalpathy Radholsavam

Many other are festivals celebrated in Palakkad district. Jain festival, Chittoor Koganpada, Nenmara Vallanghy Vela, Chinakathur pooram, Puthussery Vedi, Mannarkkad pooram, Ottapalam Nercha, Navarathri Festival, etc. are some of them. Vallanghy Nenmara Vela is considered as the top of these festivals. These can be promoted and made as calendar events in Palakkad. Since most of these festivals occur between the months of December and May. In order to attract tourists from all over the world, a festival season circuit may be designed and carried out with the help of DTPC. Arrangements may be made for wide publicity for these festivals to attract more tourists by providing facilities for them to stay and visit all these events and participate and feel the actual spirit and beauty of our festivals, thereby experience the rich cultural tradition it holds.

31.3.8 Palakkad Heritage Museum

Palakkad is a land of deep rooted tradition of classical, tribal & folk music. The challenge was the production of a design to conserve the unique and exquisite collection of over 1900 instruments left behind by Musical Maestro Mani Iyer, while nourishing the space with the very essence of Palakkad's heritage and culture. This could be transformed into a space which explains the world, the richness and tradition held by Palakkad. This is to be included in tourism circuits and heritage trips organised by DTPC also.



Heritage Museum

31.3.9 Heritage Conservation

Tippu's fort is declared as protected monument by Archelogical Survey of India under the "Ancient & Historical Monuments and Archaeological sites and Remains Act, 1964". This act provides for the Preservation of Ancient and Historical Monuments and Archeological sites and remains of national importance, for the regulations of Archeological excavation and for the protection of sculpture carvings and other like objects, which are in existence for not less than 100 years.

The Archaeological Survey of India deals with actions or processes that are aimed at safeguarding the character-defining elements of Tippu's Fort so as to retain its heritage value and extend its physical life. A ticket system is adopted here recently for the visitors. A hanuman temple is also there inside the fort, it attracts number of devotees in morning and evening.



Protected monument (Palakkad fort) by Archaeological survey of India

There are a number of old but architecturally and historically important buildings and objects in the town which require urgent conservation and facelift. RDO office, north police staion Buildings, and other government buildings, various sign boards including Calicut– Madrs sign board available inside the town itself,, Athanis at various locations are some of them.

Agraharams are always a part of Palakkad's culture and heritage. The heritage value of such streets and buildings are to be protected for further generation. At present Kalpathy is the only agraharam protected by The State Art and Heritage commission. It is proposed to consider similar heritage conservation measures in other Agraharams like Ramanathapuram, Kumarapuram, Sekharipuram, Noorani, Pallipuram and Thirunellayi. An action plan is made to be framed through a detailed study to protect them.



Kalpathy Village (declared as heritage area by the Kerala Government)

31.3.10 Health Tourism

The state & district is all set for a leap in medical tourism. More and more hospitals are joining hands with the tourism industry to benefit their services. The high priority for health in Kerala is bound to make this relatively new aspect of tourism into a multi crore industry in future.

Kerala is ideally suited for medical tourism because of its moderate weather throughout the year, advanced hospitals with world class facilities renowned doctors specialized in major disciplines, trained para medical staff and technicians, and international connectivity. Besides, Kerala also enjoys definite advantages such as high standard of hygiene that is maintained, the already well developed tourism industry with its high quality resorts and hotels, competitive costs for packages of medical treatment, and ideal locations for a relaxing holiday.

Palakkad is land of Ayurveda and health treatment. Provision of authentic Ayurveda treatments and services to patients from all over the world is available here now. So more and more facilities can establish in the municipality in this sector. The proposed tourism development zone near Medical college and Yakkara may be utilised to attract tourists from all over the world by promoting ayurvedic treatment resorts and wellness retreats.

31.4 AGRICULTURE

31.4.1 Conserving existing paddy fields for ensuring food security and flood control

As per the existing land use plan of 1971, the active paddy cover of the planning area was more than 1200 Ha. Land use survey conducted in 2010 shows that nearly 210 ha of land is under paddy cultivation. But the land use survey conducted in 2019 shows that the paddy area under cultivation decreased from 210 ha to 155 Ha, which accounts to be only 5% of land cover. When compared with the current total cultivable area of 630Ha, this sharp decline in the agricultural land use is more alarming. The proposal aims at conservation of existing paddy area and increase its production and productivity using HYV seeds and farm mechanisation. More fallow land is to be brought under *Subhiksha keralam* scheme to promote cultivation and transform back to farms. Incentives and interest free loans may be arranged to SHGs and



Conservation of existing paddy fields

Padasekhara samithies to combat food scarcity. The portion of cultivable area which is left uncultivated due to urbanisation of surrounding areas may be turned into vegetable cultivation and farming activities also.

Conservation of Paddy fields which are kept inactive without cultivation is inevitable not only to enhance the food security but also considering the ecological importance of the terrain. Palakkad, being a land with a very narrow slope, couldn't make the runoff easier. Paddy fields in the town generally lies in the low lying areas, and hence are acting as water catchments. This creates a basin for the excess rain water to retain itself and thereby avoiding flooding during heavy rainfall. Thus to retain the sponge effect of the land, all existing paddy fields must be retained as such.

31.4.2 Conservation of Ponds & Risk Reduction Mechanism

Palakkad gets about 2600mm of rain annually, 60% of which is obtained from the south west monsoon rains. North east monsoon yields another 25% and the balance 15% is obtained through occasional summer rains. In spite of the fact that town gets enough rainfall annually, it is experiencing water scarcity and ground water table is depleting year after year. This has forced us to take a holistic and continuous approach towards extraction, use, conservation and management of the water resources.

The existing land use survey 2019 shows that there are 126 ponds with in the municipality. There are 3 ponds which having surface area more than 2 acres, 33 ponds with surface area in between 1 and 2 acres, 39 ponds with surface area in between and 0.50 acres, 51 ponds with surface area less than 0.50 acres. The total area is about 38.18 Ha with a storage capacity of 7,63,000 m^3.

Most of the ponds are Thalakkulam and were used for irrigation during second crop cultivation in the earlier days. But due to urbanisation of the city, gradually paddy fields got depleted and irrigation ponds became inactive. But in the increasing trend of ground water depletion and flooding happening each year, these ponds could be used as a potential recharge centre as well as act as water storage tanks during excess rainfall and could be effective in regulating the flood water. However it is noted that most of the tanks area encroached along the bunds and weeding is observed in most of the tanks. They have to be protected and renovated at any cost. Schemes like *HKKP (Hark Khet Ko Pani)* under *Pradhan Manthri Krishi Sinchayee Yojana (PMKSY)* may be implemented with the help of central ministry for water resources for the Repair, Renovation and Restoration of ponds.

There are large number of ponds in the municipality. One or two large ponds in each residential sector can be identified and it can be rejuvenated. This can be used for the irrigation purpose for terrace farming.

This rejuvenated ponds can also be used as a leisure centre for the inhabitants. It can be designed with walkways, seating areas, landscape etc. The maintenance of the ponds can be done through neighbouring residential associations/Kudumbasree units.

Scientific cultivation of lotus, lilly may help to earn significant income for local people apart from conserving wet lands. All parts of lotus plants is used for various purposes like medicine, food etc. There are 19 ponds adjacent to temples can be utilized for lotus cultivation employing women self-help groups. The list of ponds identified for lotus/Lilly cultivation is given in the table 31.1.

Table 31.1 Ponds which are suitable for Lotus /Lilly cultivation

Sl.No.	Municipal Ward	Pond name
1	29	Athi Kulam
2	29	Ayyappan Kulam
3	26	Bagavathy Kovil kulam
4	45	Cheriyapatha kulam
5	19	Kalva kulam
6	45	Lakshmananayan Devasthana kulam
7	14	Neerathu kulam
8	37	Nurani kulam
9	34	Parai kulam
10	35	Pond
11	47	Puthan kulam
12	35	Puthiya kulam
13	10	Ramanathapuram kulam
14	13	Saginipuram kulam
15	14	Simhanathabagavathy kulam
16	7	Tank
17	49	Thamara Kulam
18	36	Thondikulam
19	38	Vithunni Devasam kulam

31.4.3 Integrated vegetable farming (Terrace Garden, Poly House)

Roof tops are underutilized and rarely-considered urban spaces with great potential for creative development. Roof top gardens overcome the problem of restrictive land costs and the pressure that many urban gardens face from competing land uses like housing developments. There are essentially three options for rooftop gardens. The first is container gardening, a less formal, cheaper form of roof gardening. In container gardening, few to no modifications are made to the existing roof structure; containers anything from plastic swimming pools to recycled-wood planters – are placed on a rooftop and filled with soil and plants.

The second type of roof garden, in which the rooftop actually becomes the planting medium, involves more intensive investments, but comes with its own set of advantages, including greater storm-water retention, building insulation, and the formation of patchwork urban "stepping stone" ecosystems, which work to reverse the fragmentation of ecosystems that follows urbanization by offering temporary habitats to fauna such as birds and butterflies during their long migrations. The third rooftop garden possibility is rooftop hydroponics, in which plants are grown in a soilless medium and fed a special nutrient solution. Roof top hydroponics can be the lightest of the three options and may offer the possibility for faster plant growth and increased productivity. Poly house cultivation is emerging as a new generation agro technology. Cultivation of vegetables and other specific crops can be successfully done during entire year. Homestead cultivation using small scale tunnel type structure at a cost of approximate 1lakh in 5 cents of land can also be encouraged. Precision farming technology can be adopted to cultivate vegetables like banana, chilli, brinjal, capsicum, cucumber, etc during the off-season period also. Nutrients were supplied in required quantities at critical phases of crop growth to maintain the vigour of the plants. The uniform field stand of the crop will help farmers to obtain 45 to 50 per cent increased marketable yield compared to the conventional system of cultivation.



Terrace gardening

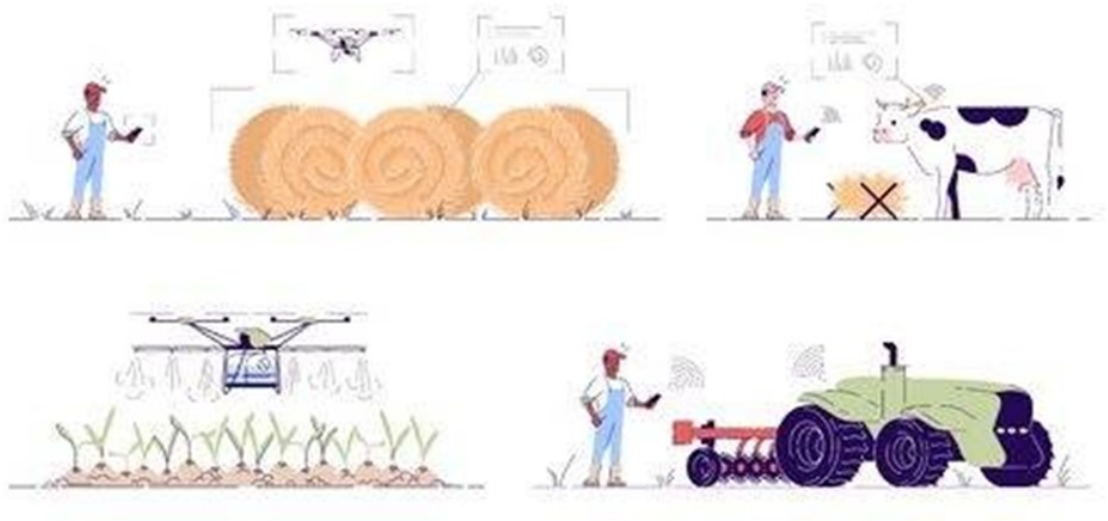
Weekly open market proposed in each sector may be utilised to sell and buy the vegetables produced by the terrace farming/kitchen garden to the local peoples and also from outside the municipality.



Open weekly market

31.4.4 Hi-tech Precision Farm/Mechanisation and Sustainable Agriculture Techniques

Hi-tech farming is an alternative to derive high incomes from small sized holdings using the modern technology. The sustainable agriculture practices like crop rotation, terrace farming, cover crops, soil enrichment programme, use of natural predators, bio intensive integrated pest management etc. can be promoted.



Hi– Tech farming

31.4.5 Farm tourism

A large area of paddy is kept unused inside the planning area which is to be used or conserved for restrictive uses. Hence, an alternate use for such land considering its ecological importance is that it can be used for Agro farm/inland fisheries/ farm tourism activities with limited constructions.

Suitable areas at Mattumantha, Thirunellayi and Kottekkad may be identified for this purpose. This land comprises fodder fields, paddy fields, pisciculture ponds, dairy farms etc. Responsible tourism activities and learning and experiencing of traditional farming activities may be promoted through this sector.



Farm tourism

31.5 ANIMAL HUSBANDRY

31.5.1 Slaughter House

There is a proposal for modern slaughter house by Palakkad municipality. The existing slaughter house is situated at Puthupally street, Kundukad in a land owned by municipality, with a total area of 1.4 acre and is well connected with motorable road. The plant is now proposed to be developed into a modern slaughter house under *Re-build Kerala initiative project*.



Sewage treatment plant at slaughter house

The total project cost is estimated to be 11.5Cr with facility to dispose 100 small animals and 50 large animals per day. The detailed project report for the same is already prepared under this scheme which also includes ETP for waste water treatment, rendering plant for slaughter waste and an R.O. plant for water recycling. There is also proposed compost unit in the plant. The plant will put an end to the waste generation and disposal problem in that area. A green buffer around the compound may also be proposed along this. The project is proposed to be funded by KIIFB.

31.6 FISHERIES

31.6.1 Paddy cum Fish Culture

The rice farmers withdrawing slowly from the rice cultivation because of low income from the field. Introduction of fish as a supplementary component, which offers three fold increase in economic returns per unit area, is an attractive way to sustain paddy cultivation.



Paddy cum fish culture

Farmers may be provided with incentives and loans for fish farming with the help of fisheries department and Matsyafed. The schemes like Matsya samrudhi may be introduced in a large scale. The products can be easily sold through proposed weekly markets or through proposed fish and meat market.

31.6.2 Inland fishing in ponds and Aquaponics farming

Planning area having abundant inland water sources, and ponds and thalakkulams, water logged areas and having good scope for aquaculture which needs to be potentially utilized with modern techniques like cage culture and export quality ornamental fish hatcheries. There are nearly 36 ponds having more than one acre area.

The ponds which are suitable for inland fishing activity need to be renovated and protected. There are centrally sponsored schemes like "Development of Inland Fisheries and Aquaculture" and state sponsored schemes like "Matsyasamrudhi" by Fisheries department, which can be implemented to promote these activities. The ponds which are suitable for inland fish farming are given in table 31.2.

Aquaponics farming: A method of growing fishes and vegetables together can also be practised widely in these water bodies. These practises can be materialised with the help of self help groups and Kudumbasree. This could also create self employment opportunities among the unemployed youth .

Hence, the conservation of ponds, which is an ecological need of the area can be made effective with the help of community participation.



Conservation of ponds

31.6.3 Carp seed rearing units

The Indian and Chinese major carps viz catla, rohu, mrigal, silver carp and grass carp generally breed in riverine conditions. Though they show maturation up to a point in captivity in ponds, yet the final phase of maturation do not normally take place in pond ecosystem. Hence rearing units of these carp seeds can be established in the municipality to create more revenue income and economic development.



Carp seed rearing units

31.6.4 Fish feed production units

Since there is shortage in the availability of fish feeds, a fish feed manufacturing unit is proposed. The proximity to National Fish seed farm at Malampuzha is a positive factor and the inland fishing activities within district shows an increasing trend.

Table 31.2 Ponds which are suitable for inland fish farming

Sl.No.	Name of Pond	Municipal Ward
1	Attai Kulam	23
2	Kachanan Kulam	46
3	Kandan Kulam	44
4	Murugani Kulam	7
5	Nainar Kulam	26
6	Near Canal Kulam	35
7	Near Cattle Feed	33
8	Pranan Kulam	41
9	Sudai Kulam	21
10	Tank	31
11	Tank	8
12	Tharaganat Kulam	41
13	Thrara Kulam	21
14	Valia Kulam	40

31.7 ENERGY

31.7.1 Street Lighting Proposals

Energy savings in street lighting could be achieved through replacement of existing conventional tube lights with energy efficient retrofit tube lights/LED lights, installing power saver devices and privatizing the operation and maintenance of street lighting. A lighting retrofit is the practice of replacing components in the system with counterparts that make it use energy more efficiently.

A lighting upgrade is any strategy that reduces the system's energy use. To reduce energy consumption, therefore, we can either reduce the input wattage or reduce the hours of operation. Input wattage can be reduced by replacing lamps and ballasts with more-energy-efficient counterparts or outright removal of lamps and ballasts. The hours of operation can be reduced using sophisticated controls and other methods.

By opting the energy saving methods about 40% of energy is saved by lumen by replacing it with retrofit tube lights/LED lights and power saver switches with dimmer control can also be used to save energy.

The dimming system may follow the below mentioned timings.

i) 9 PM to 11 PM reduce to 20 % of LUX

ii) 11 PM to 4 AM reduce to 50 % of LUX

iii) 4 AM to 6 AM and 7 PM to 9 PM provide with 100 % LUX

The power saver devices save energy, by regulating voltage after peak hours. The built in timer automatically reduces voltage from 240V to 180 V after 10 pm. It also can reduce voltage stepwise up to 110 V in different time slots. This action optimizes the illumination level after peak hours. The programmable timer switch also controls street lighting operating hours as per desired timings. Power savers also act as protection devices, which increase the life of lamps and luminaries.

The replacement of existing lights proposed to replace in a phased manner for next two years. Separate cash flow for street lighting was prepared to ascertain the savings due to the replacement of new energy efficient lights and installing power saver devices.

Other proposals in this sector are-

- Usage of non-conventional energy shall be encouraged. Establish small-scale solar energy plants as well as on grid and off grid projects.
- Convert govt. offices, public areas etc to solar friendly offices and each houses could be converted as a self-sustained nonconventional energy units.
- More trees should be planted to make availability of firewood.
- All conventional lights must be replaced with low energy consuming LED lights.
- Chimneys with low consumption of fire wood as initiated by ANERT shall be introduced among the community.
- The power distributing system shall be strengthened to reduce distribution loss.
- A data base of the consumers shall be prepared and the billing system shall be modernised.
- Necessary steps are to be taken to reduce energy consumption to meet the demand from existing resources.
- Promote Solar power plants and Implementation of street lights using solar energy
- Electrification of houses constructing under Life Mission Program
- Permanent measures for Implementation, maintenance and monitoring of street lights
- Implementation of substations and transformers in suitable places to avoid voltage fluctuations.

31.8 SOCIAL WELFARE, WOMEN / CHILD CARE

31.8.1 Senior Living and Buds School

Senior living is a home away from home with a multi- residence housing facility intended for the elderly. This can include facilities for food, palliative care, gatherings, recreation activities and forms of health and hospice care.

BUDS school, as a concept, are not substitutes to other special schools that work in the state. It is more of a gap filling institution catering to poorest of the poor. They offer free education, free food and free transportation to all its students. They open schools where parental participation is encouraged. This can be set up with the support of Kudumbasree mission.

A BUDS school and rehabilitation centre for differentially abled in municipality level along with a senior living may be considered in the near future itself by the municipality at any suitable location that can be identified either in municipality owned land or with the help of private social welfare organisations.

31.8.2 She lodge and Shelter Home

A night shelter/women empowerment center and women rescue home is proposed **(Special Zone G8)** at ward 27 (Manappullikkavu) in survey number 4 of block no 181, at Yakkara Village near medical college in a land area of 0.097 ha.

This would also include She lodges, working women's hostels etc. A rehabilitation/ rescue home in connection with Nirbhaya project is also proposed in this location. Location of she lodge, night shelter and working women's hostel is shown in figure 31.3.



Fig. 31.3. Location of She lodge and Night shelter

Other proposals in this sector are:

- Strengthening of activities and infrastructure of Anganwadis.
- To extend the activity of Kudumbasree in more areas
- Motivation of Women Industrialists
- To establish micro enterprises for women groups
- Women friendly municipality-ladies toilets, women rest rooms and special facilities for feeding mothers
- To introduce self-defence measures for Women
- Priority shall be given for women in the proposed export processing zone, Group enterprises, etc.
- Provide training in Floriculture and Mushroom Cultivation etc.
- Construction of kids park in the municipality
- Measures to establish 'Pakalveedu', Old age care centers, Old age friendly park, Old age homes etc.
- Strengthen the activities of Pain and Palliative care centres.
- Permanent measures to diagnose life style diseases, Cancer and its remedial measures
- To establish kids friendly Primary schools, Pre-primary schools, etc.
- Nutritious food through Anganwadis and ensuring facilities to supply food at home for bedridden patients
- Anganwadis with modern facilities and training centre for Anganwadi teachers
- Buds school and rehabilitation centre for differentially abled in municipality level.
- Establish Mother & Child Specialty hospital in the municipality.
- Establish Health club, One day home or "She" lodge for ladies
- Stress management /Counselling, help line centers for unmarried mothers/ Widows
- Pre-marital courses for all communities in the society
- Establish authorized crèches for children of working parents during peak time
- Establish registered centres to recruit home nurses
- Promote Floriculture through Kudumbasree units

- Permanent measure to ensure the safety of women in their workplaces
- De-addiction centres
- Improvement of quality control measures
- Training centres for Women self-employment

31.9 EDUCATION

Palakkad has the potential to be developed into an educational centre. Many ancient educational institutions are there dating back to the formation of the municipality itself. The govt. Victoria College and the Music College are examples of a long history of education and culture, which have produced many famous citizens. Another famous private college is the Mercy College. At the School level also, there are institutions of repute, like the BEM School, Moyans' School, etc.

Some of the high schools and UP schools are integrated schools having L.P sections. The number of schools is more than sufficient as per the prescribed norms, 159 in URDPFI Guidelines. However the facilities at govt. and some aided schools in the municipality are much below the requirements.

All schools within municipality are having water supply and toilets, but for hygienic point of view more E–toilets must be promoted. It should be made mandatory for all educational institutions to provide sanitary napkin vending machines and disposal systems.

Post covid world is changing dramatically. In the era of digitalisation, all schools must be well equipped with digital class rooms and provisions for online training. Class rooms must be equipped to broadcast online classes, while it must be ensured that all the students get necessary gadgets and internet connectivity in their home.

31.10 SPORTS & RECREATION FACILITIES

31.10.1 Socio-Cultural Centre

Socio cultural facilities indicate cultural life of the local people hence they shall be respected and further developed. Socio cultural centre can accommodate:

- An air-conditioned and fully equipped auditorium for arts performance
- A large Foyer in the Centre used for gatherings
- A multipurpose hall
- A Seminar & Exhibition Hall
- Central public library and Art Township
- Open air theatre

- An Office space, canteen
- These facilities are to be included in the proposed VT Bhattathirippadu cultural complex near medical college under construction with in a land measuring 5.76 acres at Yakkara village area in Palakkad municipality. The cultural centre would serve the community as a venue for cultural events with focus on recreation, training and education. It is envisioned as a facility for use during daytime and evening hours with a variety of activities and experiences offered to a diverse group of users.

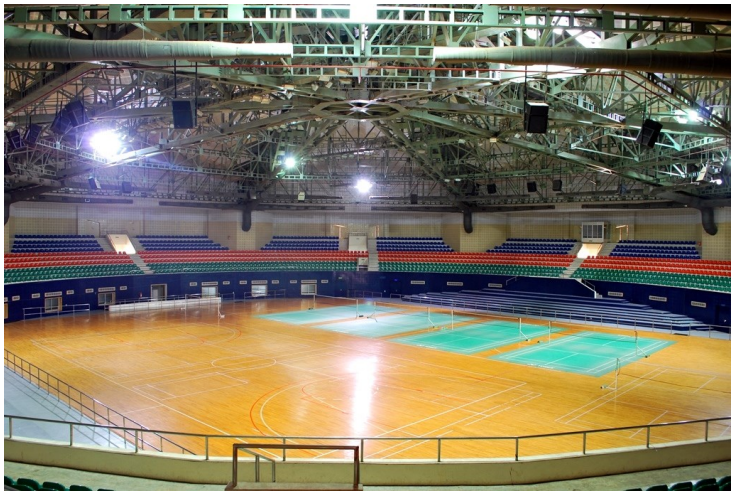
  The key components proposed in the centre are:

  i) Performance block (5550.27 sqm),

  ii) Exhibition block (5056.92 sqm), and

  iii) Open Air theatre.

31.10.2 Stadium Renovation and Completion of Indoor Stadium



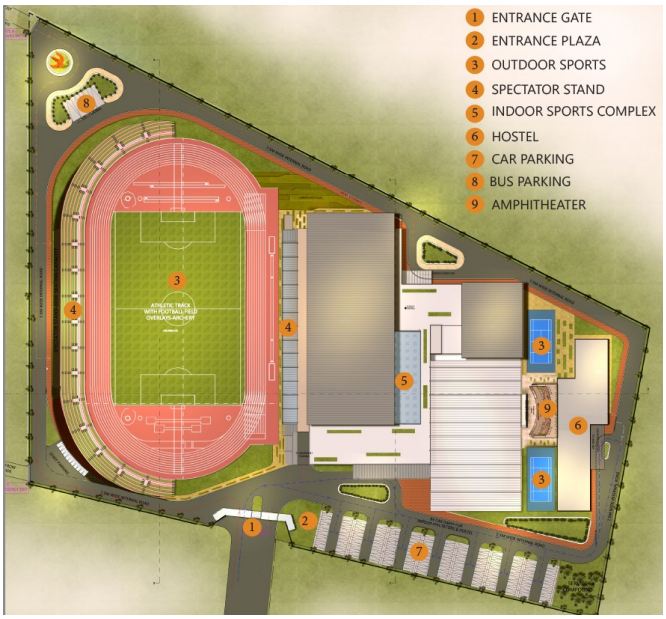
Concept image of indoor stadium (Hyderabad)

The Indira Gandhi Stadium partly built in a 4 acre site should be completed with modern facilities. The entire area including vacant lands adjacent to the stadium complex must be well protected and must be retained as a part of the complex. The 800 M track should be developed to international standards. A modern stadium will be of 40000 capacity with-two truck entries, galleries with 22 tiers, and utilizing the space under the galleries for 3 floors of shops are proposed by the Municipality. Practise grounds must be provided outside the main gallery. The land available on the east side of the by-pass road can be utilised for parking. The stadium and environs should be beautified.

The existing indoor stadium near Government Victoria college must be complete at the earliest with most modern facilities must be provided there for the players for competition and practise. On completion, this must be a centre for all sort of indoor sports and games. Games like archery and shooting may also be incorporated in the complex itself.

31.10.3 Sports complex

Concept image



Conceptual image of a sports complex

A synthetic track is available near the medical college but with limited facilities . Hence, a **sports complex(G9)** with all modern practicing facilities including gym and swimming pool, are proposed to be provided nearby the track itself.

At present the sports hostel of Palakkad is working in a rented building. The land available nearby medical college may be utilised for constructing a well facilitated sports hostel also. An area of 5.769Ha in Yakkara Village is earmarked for bringing all these facilities in Survey number 4 of block number 181 at ward 27 Manappullikkavu.

31.11 PARKS AND OPEN SPACE

The net population density of Palakkad municipality is high compared to the other towns. The city is lacking parks and opens spaces according to the population.

So Parks and open spaces are proposed in each sector for recreation purposes as well as for healthy living environment to cater the population of the municipal area. All the park is supported with internal walkways and sitting areas. A police aid post and E toilet facility will be attached to all the parks.

Parks in each sector can be run by Kudumbasree units in that area, an entrance fee also can be collected for the maintenance purposes. Kudumbasree stall also can be incorporated in the park for the earnings of Kudumbasree clusters.

Some of the existing parks in the municipal limit are uplifted using the Amrut fund. However there are lot of lands reserved for park in each residential layout, which can be developed so that a minimum recreational facility can be ensured on residential sectors. Ownership of many of these lands are already transferred to the local body for development. The list of parks as found out from various residential layouts and also from municipal asset register are given in the table 31.3.

In addition to this, AR Menon Park near fort, Dr. Krishnan Nair park at BEM junction, Municipal Park at Manalmantha (Village 1, Block no 70, Sy number 2881) and Municipal Park at Vithuni (Village 1, Block no 157, Survey number 40) are marked

for recreational facilities in this plan. The Football turf near old Nurani school (Village 1, block 172, survey number 28) and vacant land of municipality near Victoria college Ladies hostel (Village 1, block number 78, survey number 13) which are currently being used for recreational facilities are also marked as such for this use. A land behind the stadium bus stand which is proposed to be acquired for park as per Kalvakulam DTP scheme (Village3, Block 70, Survey number 3031, 3032) are also provided under recreational use. Recreational use of Subix merry land (Village 1, block 168, survey number 18) is also proposed to be continued in this plan. In addition to this, land near Thirunellayi river is also marked (Village 1, Block 228, survey number 87 and block 229, survey number 56, 62) for recreational zone as a part of the proposed river front development project of this region

Table 31.3 List of Parks and open spaces in layouts

Serial No	Village	Revenue Ward	Block No.	Survey No.	Remarks
1	I	0	6	28	Aishwarya Colony
2			12	29	Muthu Garden
3			12	50	Ramadevi Nagar
4	1	0	23	22	Dasharadha Lay out
				24	
5			24	44	Nila Nagar layout
6			25	30	
7			27	9	
8	1	1	42	1618	Ganesh Nagar
9	2	1	54	2121	Sreemathi c/o Mohanan layout
10	2	1	70	2887	Prashanthi Nagar
11	2	1	70	2889	Municipal park, Kumara-puram
12	2	1	61	2379	Venugopal layout
13			61	2399	Eco Village layout
14			71	2909	Jalada Nagar
15			71	2914	
16	2	2	13	578	Oceanus Layout
17			16	715	Indiranagar
18		1	71	2907	Rose Garden
				2914	
19	2	2	20	808	Housing board Layout
20	3	2	75	3234	Shri Ram Nagar
21	2	2	27	1085	Vandana Layout
22	2	2	1	32	Ishwar Garden layout
				34	
23			1	34	Ishwar Garden layout
24			38	1600	Venugopal layout

Table 31.3 Continued....

25	3	5	79	3694	Meena nagar layout
				3695	
26	3	5	63	3155	Stadium complex PDA lay-out- Municipal parks
27				3162	
28			66	3276	
29	3	5	70	3418	Aiswarya nagar layout
30				3419	Evergreen Ave
31	3	5	29	1731	TK Mohanan Babu layout
32	Yakkara	0	31	25	PS Ashok layout
				28	
33			32	6	
			32	22	
34			40	4	TV Sreedharan & TS Sureshkumar layout
35			41	24	Salamat Nagar
36			44	32	layout near Mukkananth Parambu
37	Yakkara	0	75	20	layout near Munavara na-gar
38	1	0	210	19	K Rajan & Others (Anjali Garden) layout
	1	0	212	2	
	1	0	116	109	
	1	0	209	8	
39	1	0	165	1	Ayodhya Nagar
40				35	
41	1	0	166	63	Venkatesa Garden
42	1	0	204	1	Srinivasa Garden
43	1	0	178	58	Choodamani Iyer layout
44	1	0	178	59	Maitri Nagar
				68	
				69	
45	Yakkara	0	1	26	Jaihind street Turf
46	3	5	52	2560	AR Colony
				2571	
47				2566	
48	1	0	146	5	Commercial layout Park
49	1	0	85	7	Virupakshan Nagar layout
50	1	0	45	97	Indrani Nagar
51	1	0	130	57	Tirupurakal Colony
52	1	0	114	1	Rajiv Nagar layout
53	1	0	119	40	PVR Nagar
54			120	9	
				11	
55	1	0	107	35	layout near Kalampuzha
56	1	0	51	3	layout Near Qasim Colony

31.11.1 Iconic Park

Develop one iconic park, which is the land mark of the city where every resident and tourist who visits the city would wish to visit. Most of the Indian cities have one or more than one such park. It can be done in Palakkad by developing a big park combining the Palakkad fort, A R Menon Park, Sila Vatika, Childrens Park and Rappadi Open Air Theatre. Now, these parks situated in and around the fort are owned and operated by Municipality, DTPC and ASI. These must be brought to be operated under single institution. In a single ticket, people must be able to enjoy the whole park and spent a reasonable time here. Events like flower show, exhibitions, town festivals etc can be conducted in a calendar year basis to ensure the tourist fall.

On implementation of pedestrian commercial street as designed as per annexure, this iconic park will be on limelight, becoming a part of the daily life of local community

31.11.2 Development of Kottamaidan

The Kottmaidan which is situated in the heart of the town is proposed to be developed with world class facilities with pavilions, parking etc**.** At present this is being used as a cricket ground by DCA. The open gallery around the maidan are to be developed into international standards with beautiful lawns.

An Open Gym is already in the Kottamaidan is in good condition and lots of people are using it. The volleyball court in the small fort maidan may be shifted to the municipal stadium complex. Since an walkable commercial market, the small fort maidan may be utilised for operating temporary display stalls and for small exhibitions along with parking space.



Open Gym in Palakkad kotta Maidan

31.12 ENVIRONMENT CONSERVATION AND RISK REDUCTION

The major natural features of town are in a state of considerable degradation and it is of vital importance to conserve and rejuvenate these eco systems. The major source of pollution is discharge of untreated liquid and solid waste. The ecological sensitiveness of Palakkad is deeply associated with the paddy fields and water bodies present in the area. Palakkad, once a rice bowl is now being undergoing large scale land conversion and is badly hitting the ecological balance of the area. The flood proneness studies reveals that the paddy fields were present in the low lying areas of the town occupying almost 45% of the land cover . Besides, there were more than 150 ponds too, acting as water catching basins and were closely associated with the daily life of the community for day to day needs and moreover to irrigate these fields. Streams were passing through these areas, well below the paddy, to collect the excess rain water during monsoon and avoid flooding by leading them to nearby bounding rivers. But, as the urban sprawl spread out of the town core area towards the nearby rural areas, paddy fields were slowly converted to residential settlements and the existing flow lines and drainage patterns were disturbed. The water that could be collected in the low lying paddy areas began to reach these streams much faster. Depletion of ponds and encroachment of water bodies, reduced the room for water adding on to the quick flooding of the region. The scenario has badly affected the ground water recharge potential of the land, resulting large scale depletion and contamination of ground water. Palakkad is already the hottest city of the state and the above findings are adding on to temperature rise of the region over the past decade.

Hence, it is very important to conserve the greenery and enrich the same with the help of actions and regulations that this Master Plan aims to provide. For this, It is very important to conserve these water bodies and low lying paddy fields to ensure water catchments so that flooding may be controlled and ground water recharge may be increased. Measures must be taken to control the land conversion, check encroachment of water bodies and banning discharge of untreated sewage and solid waste. In this master plan, we consider the green factor as a major component and thus it is aimed to have the following proposals in this sector to cover up the deficiency in this sector to develop a balanced eco system for the region.

31.12.1 Green corridors

Green corridors in cities can be defined as linear natural infrastructure, such as trees and plants, that link up other green and open spaces to form a green urban network. These networks provide both ecological services, such as habitats and resources for urban wildlife; whilst also providing services to urban populations such as mobility networks and access to green spaces through the provision of sustainable

education, recreation etc) and open spaces. Green networks that link parks, green open spaces and mixed land in cities can bring the following benefits:

- Increase in level of walking, cycling and public transport use as modes of transport and that promote physical activity
- Enhances the social interaction in urban populations which is more likely to occur as they link green spaces
- Green corridors can protect pedestrians from harmful pollution on open roads if planted strategically
- Increase positive levels of interaction for urban citizens with nature
- The shade of tree canopies in tropical and temperate climates provides much needed walking infrastructure and protection from the sun
- Whilst trees planted in close proximity to each other can reduce both air pollution and the urban heat island effect
- Providing a natural network for wildlife to move through urban areas and by joining up green spaces has shown to increase biodiversity

For green corridors to add the most value they need to provide connections between existing green spaces, community, commercial or transport hubs or all of the above; be large enough and provide opportunities for people and wildlife to utilise their services and reap the benefits.

As already mentioned a key part of the planning is looking at how the walking environment, mobility of urban citizens and access to green spaces can be improved through green corridors. These corridors link with wider public transport networks (both existing and planned), provide accessible and well signed walking and cycling routes for people to use.

Green cover in Palakkad is very minimal. Lack of availability of public land, narrow roads, unplanned development system and scattered growth of commercial centres are some of the major reasons for this. Increase in urbanisation trend along with uncontrolled development of residential clusters added on to the decrease in the available green cover as well as the natural eco sensitive systems such as ponds and paddy lands.

31.12.2 Rejuvenation and maintenance of ponds

Ponds are one of the major water source in Palakkad. While a majority of this acts as Thalakkulam for the irrigation purpose of paddy fields on its downstream, some of them are connected with religious importance to any of the nearby temples. These ponds were once used for various purposes by the people in their locality for their daily means like bathing, washing etc.



Kids play area



Open Gym

But due to urbanization, better water supply schemes with household connections and large scale conversion of agricultural lands in the core area of the town due to increased ground value marked a large scale depletion of these water bodies. Many of them left unprotected and on its verge of extinction. These major ground water recharge resources are now turned out to be collection chamber of waste water and thus becoming a breeding ground for vectors causing communicable diseases. Thus it is very much needed to rejuvenate such water bodies for protecting the environment as well as water conservation, ground water recharge, public health and most importantly flood control. Flood proneness analysis indicates that the depletion of ponds was a major reason for uncontrolled flood water rise in the city during previous years.

There are lot of ponds inside Palakkad town which can be rejuvenated and developed into activity centres. Tree canopies are to be ensured throughout the circumference of pond. These may preferably be developed in a polygonal shape by constructing protection walls over its sides. Efforts should be given to construct a pathway with cycle tracks around the pond for better accessibility. Entry to the public inside the water body may be restricted and their activities may be promoted around the pond. Each side may be earmarked for activities of different nature. For example, one side of the pond may be completely to be developed into a park with fountains, lawns and gardens with provision for benches and resting areas. In each ward, one such pond may be identified so that a park can be confirmed at each residential area.

Trees around the ponds may also be protected with plinth walls with provisions for the entry of rainwater. Another side of the pond is to be developed into a fitness centre having provisions of an open gym whereas the third side is to be

transformed into a kid's park. The protection wall in this side may be constructed higher than the other sides for ensuring safety. The fourth side is to be developed into a commercial open market and food courts.



Provision of benches & resting area

Weekly markets may be encouraged here along with evening food courts. The weekly market can function in ponds of each zone in particular day so that the vendors may get a daily business. The maintenance of this entire activity centre is to be handed over to a committee with the members from nearby residential associations.



Food court

The above structure is just an idea which may be varied suitably according to the location adopting the basic ideas only. Also activities like musical fountains, boating etc. may also be encouraged in some of these locations as per demand





Weekly Markets

The following ponds may be considered for rejuvenation:

1. Sekharipuram Ayyappa temple pond
2. Neerttuganapthi temple pond-100ft road
3. Venkateswara temple pond puthur
4. Kalvakkulam
5. Kunnathurmedu Sri Krishna temple pond
6. Kunnathurmedu pond
7. Igloo hostel Pond

8. Yakkara Maha vishnu Temple pond
9. Thondikulam Sastha temple pond
10. Noornai vishnu temple pond
11. Othungodu Nambiar Kulam
12. Pallipuram pond near Lakshmianarayana Temple
13. Karnaki Amman Pond
14. Nellissery venkitachalapathy pond
15. Tharavanatte kulam, Vadakkanthara

The locations of the ponds to be rejuvenated is shown in figure 31.4.

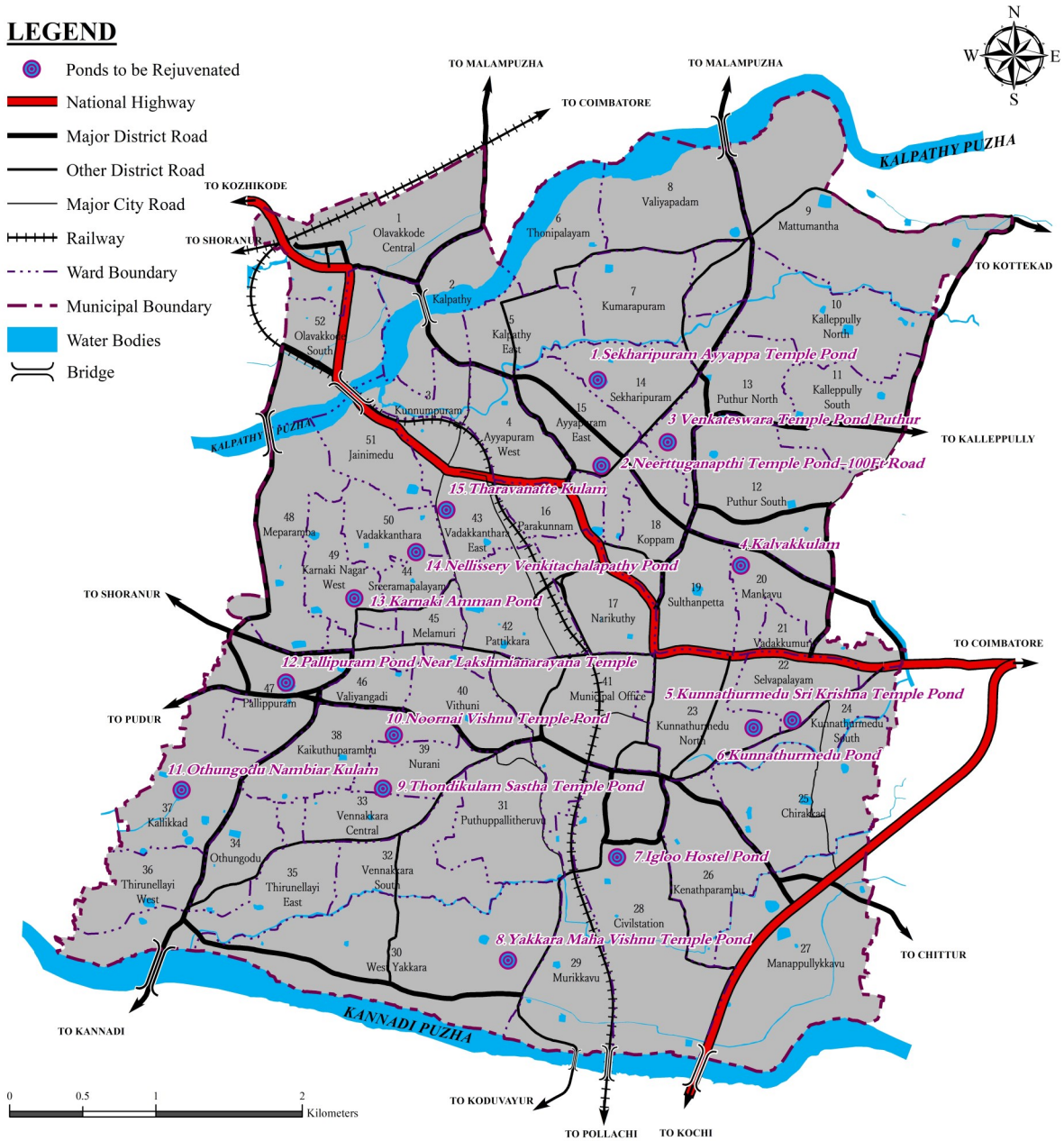


Fig. 31.4 Location of Ponds to be Rejuvenated

31.12.3 Development of Sankhuvaara Thodu and its banks

Another major location where it is proposed to be developed as a green corridor is the banks of Sankhuvaara Thodu. This is a narrow tributary to the Kalpathy river passing across the major residential clusters of the city and is very much obsessed with lot of encroachments. The sewage from most of the residential clusters along its banks ore open to this water body, thereby contaminating the river too. Flood proneness study of Palakkad indicates that, this tributary was made to collect the excess water from the paddy fields along its catchments during rainy season. Now, the banks of sankuvaara thodu inside the municipality area is completely flood prone and is hardly affected due to encroachments, resulting heavy flooding in the nearby residential settlements.



Green Canopy

The banks of this stream is proposed to be developed from 100 feet road up to Kalapathy as green corridor. Both sides of the stream must be planted with trees, bamboos, garden plants and other ornamental flowers for a green canopy throughout the stretch. Both the banks will be provided with paved walkways and exclusive cycle tracks. Available vacant lands and puramboke lands may be developed as kids play areas and open gymnasium which also prevents further encroachment . Non concrete designer bridges may be built at one or two locations for pedestrian and NMT crossings.

31.12.4 River side developments

Palakkad is bounded by Kalpathy river and Kannady river on north and south respectively. These river frontages are also to be developed into green corridors. For this the river front on the north side between bridge and check dam at Thirunellayi is proposed to be developed with access from Kannanur road. The whole stretch is to be protected with side walls and reed beds, over which tree canopies and garden shrubs are to be planted.



Paved walkways

The river front should have resting areas, well paved walkways, cantilever bridges towards water body, open gym etc. An Amphi theatre is also proposed here. An area is reserved for recreational activities near the check dam.



Amphi theatre

The stretch between Puthiyapaalam and Viswanatha temple along the Kalpathy river bank was earlier developed by DTPC. But due to lack of proper maintenance activities, these areas turned out to be breeding ground for anti social activities and waste dumping. The sewage treatment mechanisms which were developed earlier became inundated and the liquid waste from nearby areas are now openly pushed out into the water body. This stretch must be reworked to make it an active centre for recreation. The dumped waste be properly removed and further dumping must be prevented. Technologies such as DEWATS may be tried here for efficient treatment of household sewages. Walkways must be paved, jogging and other activities may be made sure on morning and evening time with the help of walkers clubs. Open gyms may be provided here as well.



Ukkadam Lake Front development (Model)

31.12.5 Transforming canal bunds into recreational spaces

A potential area for the development of green corridor inside the city is the Canal bunds. Malampuzha irrigation canals are passing through various locations inside the city. The canal bunds are now either unutilized or utilized as roads. These locations are to be made greener by planting trees on both sides. The shades may be developed as resting places and the pathways may be converted as paved walking tracks also. Few metres of the canal can be identified depending on the proximity to habitation and this stretch can be developed into Senior Citizen Parks, Children's Park, Walkways, Cycle tracks etc.



Canal sections transformed

Development of river banks, streams and canals could act as a very good measure to prevent flooding. The development of banks will create a room for river to accommodate the excess water during rainy season. The riparian zones could be protected and the banks may be made free from encroachments.

While developing these stretches, it must be ensured that any encroachments into the water body is removed and the water flowing area is recouped. The side protection or any other construction works must be carried out duly ensuring the risk proneness. Materials used for construction must not hinder the free flow of water in and out of the area. For this, the sides of banks may be protected with coir logs, geo textiles, gabions, trap bags etc.



Bank protection

31.12.6 Green Paths with NMT

These redeveloped area are to be the major activity centres of that particular residential zone. It is thus proposed to connect these locations with each other by means of special corridors. The existing parks in the core area will also be connected to these corridors along with the proposed DH avenue and Fort avenues. These are meant to be developed as location specific green corridors and heritage corridors with predominance to non motorised transport system. All these roads will have special cycle tracks and pedestrian pathways.

Sections having heritage values like Kalpathy and other heritage villages will be preserved as such, while at other locations, the pathways will be transformed into green canopies by providing trees on both sides of the roads. If there is not much space available in the shoulders, it must be made mandatory for the households along these roads to develop at least one tree inside their plot to conserve the greenery.



Pathways

These roads will have cycle tracks with areas marked for pick and drop facilities. The proposed green corridors, river side developments, canal bunds for recreational space and green parks with NMT is shown in figure 31.2.



Green canopies



Cycle parking areas marked

31.12.7 Town beautification

- The footpaths and hand rail are the essential parts of the town beautification. The unconnected paths ways need to connect properly with handrail for the pedestrians. The handrails can be decorated with colour, plants potteries etc.
- Canopies and resting place can be provided wherever possible along this path ways
- The land pockets available in the road junctions can be converted as green arrears with trees and flowering plants.
- Protect the existing trees in the town with basement cover, remove the boards and nails from the trees.
- Natural sitting spaces under the trees in the town to increase the sitting spaces and improve the walkability.
- Plant the tree saplings where ever the area is available. The tree saplings of Neem, Ashoka Thechi, Gulmohar, Pavizhamalli, Ilanji, Chembakam, Kadamba etc can be planted and protected
- The statue and art forms can be placed in the major junctions/parks etc to increase the beauty of the town.
- De silting should be carried out periodically.
- Greening with plantation of evergreen trees to form a buffer strip of 30 m width
- The solid waste dumped should be removed and shifted to designated treatment plant site of municipality.

31.12.8 Proposals for practising the concept of Sponge city

Paddy Field Dams: The regions in the water retention zone can be transformed into paddy field dams that can be used to intentionally store water temporarily at times of intense rainfall by installing runoff control devices in the paddy field plots. Paddy field dams have been proved not to impose any threat to the crops that are being cultivated if the cultivation is done in proper ponding conditions (fig 31.5.). Although paddy fields are not so deep, usually surrounded by a levee 15–30 cm high, the areal extent over which they spread is large and they, therefore, provide ample water storage potential.

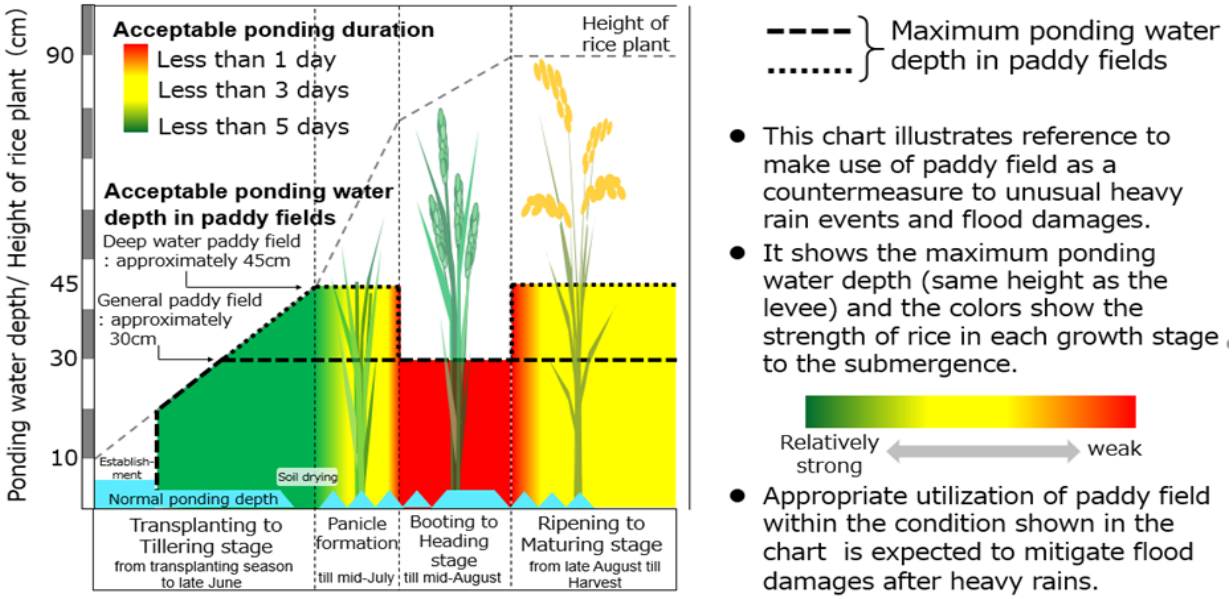


Fig 31.5 Ponding duration for paddy field dams. Source: NARO, 2020

Community Farms :Community farms can be endorsed on vacant lands and uncultivated paddy. Such identified lands can be divided into plots. Farmers may be given a water connection and the monthly rent for each plot may be set by the municipality. Leasing these plots for farming is an option for landless persons. The beginning of backyard farming and terrace farming in residential communities leads to develop the urban green cover. Forest gardening could be a useful practice of the agronomic system including mixed plantings of trees, shrubs and perennial plants to provide a balanced and continual type of ecosystem. Community farming can be adopted for non active regions which can make soil sustainable

Riparian zone conservation: Riparian zones are regions of interface between land and river. These regions also include floodplains and are characterized by high moisture content compared to surrounding land facilitating the growth of coarse vegetation. Riparian vegetation has many benefits like they help in reducing the velocity of floodwaters, lessening the erosive force of the flood and capturing nutrient-laden sediment. Due to severe encroachment activities, The riparian zone

along the Kalpathy and Kannadi rivers following the curves and high velocity flow areas must be utilized to plant suitable riparian vegetation that can withstand and reduce the flooding power of the river. Creation of Miyawaki forest and tree parks along the banks of the river may also help in the conservation of riparian zone.

Storm Water Parks and Rehabilitation of flood affected areas: Storm water parks are recreational spaces that are designed to flood during extreme events and to withstand flooding. By storing and treating floodwaters, storm water parks can reduce flooding elsewhere and improve water quality. The combination of permeable pathways and paved open space with bioswales appears commonly applicable combinations of park facilities and storm water management due to relatively low cost of construction and maintenance, fewer requirements on existing infrastructure, and less need for space, and hence it is proposed at all possible suitable locations across the selected sites at multiple scales. In addition to this, artificial lakes that could occupy the excess storm water is also proposed at the available vacant lands at all residential areas prone to flooding. This concept would prevent further conversion of land uses as well and has great potential to address storm water management challenges, the provision of public park and open space, and ecological restoration and in the addresses of the multiple objectives of managing and treating stormwater, providing for critically needed public park and open space resources, and remediating ground-water and riverine pollution. The concept must be ensured while planning rehabilitation of flood affected areas across the town.

Proposal for culverts and Water balancing canals: Cross checking the flow accumulation and present land use shows that some transportation pathways run disrupting the ephemeral flow of water. Roads may act as drainage divide blocking the natural water flow from one side to the other thus creating a localized pool of water. To rectify this issue, culverts should be proposed in suitable locations, especially in the Kozhikode-Palakkad highway running through the wards of Ayyapuram East, Koppam and Puthur South. The road isolates a linear stretch of low elevated land nearby the canal from the adjacent regions. When the canal overflows, this isolated patch will get easily inundated due to its low elevation and absence of proper drainages and culverts. Culverts may help to distribute the excess water accumulating in this region to the opposite side of the road thus reducing the flood effect. For carrying out excess flood water to water retention zones and water bodies nearby, some of the lost water balancing canals have to be rejuvenated and recreated if required as shown in figure 20.45. This will carry out the excess water from one pond to another and also to the nearby paddy lands and water retention zones easing out the excess runoff to drain into the soil as much as possible. In addition to this, all the lost natural drains that where once the carriers of excess storm water must be founded out after detailed examinations and site investigations to ensures its rejuvenation.

31.13 OTHER CIVIC AMENITIES

31.13.1 Camera surveillance

All the junctions and important residential/commercial areas should be controlled by CCTV camera. All the camera should be connected with the nearby traffic police station to ensure the safety of the pedestrians and general public. The awareness of camera surveillance will reduce the chance of crime in several areas.

31.13.2 Crisis management team in the Town area

Establish a crisis management team in the town area to support the general public in urgency. It can help in accident area, traffic block, pull and push the vehicle, emergency medical care etc. it can coordinate with the police, fire force and medical team. A toll free number may be allotted for this and a control room facility may be arranged inside the municipality complex for better coordination.

31.13.3 Public Poster Sticking Boards

All advertisements and posters are to be removed from the roads, trees and footpaths. Instead of sticking posters in public spaces, allocate them public poster boards in all roads of town. For those sticking in public spaces need to be penalized.

31.13.4 Road naming and demarcation

Road names with stand detailing from where and where a road start and ends, it will help public and people in town to know their places. The road map of the town also can be placed

31.13.5 Water dispensing units & Water ATMs

Install purified drinking water dispensing unit, Water ATMs in public places so that dependency on bottled drinking water is reduced. Each road required to give at least one water tap.

31.13.6 Employee's hostel, Working women's hostel and Community Kitchen

Even though there are a large number of government servants working at Palakkad from within and outside the district, the accommodation facilities for the working employees is deficient in the town. Hence, an Employees hostel for Men and Working women hostel is an urgent requirement. This is proposed in the municipal land available at Mankarvu. A Kitchen is also proposed here that would act as commonly for both the hostels as well as serving the purpose of a Community kitchen (**Special zone G4**). Community kitchen is intended to feed the poor and make the city hunger free. This could be used as a canteen in subsidised rate for outsiders too. Sponsorships may be collected for its functioning. Other objectives of this kitchen are

1. To serve food to bed ridden patients and old aged persons with the help of

pain and palliative care.

2. To serve hygienic food to anganwadis those having no facilities to cook.
3. To feed the homeless and poor people residing in temporary shelters.
4. To serve food in case of emergencies, pandemics and to relief camps opened during natural calamities.
5. To provide subsidised food to the patients and bystanders in government dispensaries, hospital and medical college.

An area of 0.496Ha in Village III, on survey number 3591 of block number 83 at ward number 21 Vadakkumuri is earmarked for this project.

31.13.7 Public Comfort Stations

The town lacks in public comfort stations to cater to the large no of commuters. Cost effective aesthetically designed odour less toilets needs to be done in all roads of the town.

From the consultative process, it could be gathered that public comfort stations are needed at Olavakkod, Sultanpet Area, BOC road, BH road, Chunnambuthara and Pattikara. E toilets can be proposed at these locations and newly proposed Bus terminals, truck terminals and markets. A dormitory, and cloak room facilities are also proposed along the comfort station at Olavakkode.

31.13.8 Mini civil station

The number of government offices are staggered in the planning area and some of them are working in rented buildings. An office complex is proposed to accommodate all the public offices in one place for the convenience of general public.

The land is available in the existing civil station complex to accommodate the offices working outside in private buildings. Palakkad town acts as a Taluk Headquarters too. Hence large number of taluk level offices such as RDO office, Sub treasury, Taluk Supply Offices etc need a space out of the main civil station. Hence, a Mini civil station with all amenities is proposed in the existing RDO office compound, where all the Taluk level offices functioning at various places and private buildings may be relocated here. An area of 0.809 Ha in Village 1 on Block number 79, survey number 12 and Block number 80, survey number 73, 74, 77, 78 is earmarked here for this project on Ward 17, Narikuthy **(Special Zone G10)**

Court complex: The land adjacent to the District Panchayath in survey no.1725 in block no 29 of ward 5 ,where state PWD have a proposal to build a court complex is marked as Public and Semi public zone.

31.13.9 Police station

The following are the proposals in connection with the improvement of police forces in the municipality.

1. Relocation of Town north police station (**Special zone G11**) to VH road with adequate facilities in a land area of 0.462Ha in survey no 12 of block no.79 and survey number 79 of Block 80 at Ward 17, Narikuthy as shown in figure 31.6.
2. Ceased vehicles parking ground along the area available for vehicle test ground.
3. Renovation of Town South Police Station & control room buildings with adequate facilities.



Fig.31.6 Location of proposed mini civil station and Police station

4. Indoor Badminton court in Town South Police Station compound
5. Modern training centre in District Police Office compound

31.13.10 Co working space and Start up incubator

Start up incubators are institutions that help entrepreneurs to develop their business, especially in the initial stages. Incubation function is usually done by institutions who have experience in business and technology world.

Co-working is an arrangement in persons in different field can share an office space, allowing cost savings and convenience through the use of common infrastructure, such as equipment, utilities, and receptionist and custodial services, and in some cases, refreshments and parcel acceptance services. It is attractive to independent contractors, independent scientists, telecommuting and work-at-home professionals, and people who travel frequently.

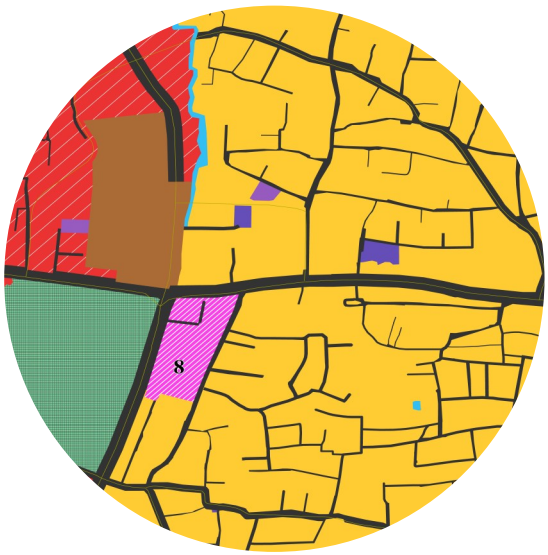


Fig 31.7 Location of start up incubator

Hence a start up incubation centre cum co working space is also proposed along the land available with municipality near stadium bus stand at an area of 0.464Ha in Village III of survey number 3612 & 3613 of block 74 and 3614 & 3627 of

block 75 at ward 23 Kunnathurmedu **(Special Zone G5)** as shown in fig 31.7.

31.14 HOUSING/POVERTY ALLEVIATION

Multi-storeyed high density residential development is preferred in Palakkad both to accommodate more families and to save the valuable land. Compact and densified residential development is preferred. The land use plan clearly mention the proposed densified area of the town.

31.14 .1 Housing project at Sundaram Colony:

The landless and houseless population in the town is to be addressed. Also, many people are staying in dilapidated buildings in slums like Sundaram colony. Major slums in Palakkad town such as Sundaram colony and Sankhuvaramed were very badly affected during 2018 flood. Hence, while planning a rehabilitation measure for them, that must be done in a flood resistant manner. A housing complex is thus proposed in the land available at sundaram colony for the landless people of the community. This can be built as a multi storied apartment complex, where the ground floor may be kept as open space as a room for water. A land area of 0.106Ha in Village 1 at Block 30, survey number 1068 at ward 3 Kunnumpuram **(Special Zone P1)** is earmarked for this project.

31.14 .2 Housing project at Mannarkkattu parambu:

Municipality has a land at Mannarkkattu patambu at ward 27 Manappullikkavu. An area of 0.644 Ha in Yakkara village survey number 18 of block 178 is marked for this housing project **(Special Zone G7)** to accommodate the municipal workers staying in dilapidated buildings at Mankavu, where the employees hostel is proposed. This project may be planned in a manner that the houseless people may also get accommodated along with commercial viability.

31.14 .3 Other proposals in housing sector area:

- Houses for all -within 3 years -through Life Mission
- Special consideration to Minority Category in construction of houses
- Rain water harvesting and ground water recharging to reduce climate change and environmental imbalance
- Permanent measures to ensure the availability of building materials such as 'Kalavara' for BPL Category
- Priority to eco-friendly construction activities
- Promotion in Home Stay construction by considering the scope of tourism
- Long term projects for replacement of moderate buildings which needs

reconstruction in future

- Scientific measures for the Rehabilitation of Street vendors
- Measures to protect destitute persons and those who resides in foot paths
- Measures to eradicate unemployment by providing less interest loans and proper training
- Small scale industries at each ward to develop industrial sector
- Provisions to protect land less families by providing housing and livelihood facilities in the municipal area itself
- Include rain water storage facilities, well recharge and waste disposal facilities in housing scheme

31.14.4 Social backwardness

There are 23 slums within municipality. Proposals for slums are detailed below

- Resettle existing dilapidated colonies to modern multi storied apartments.
- Providing toilet facilities to everyone either through individual units or by constructing common toilet blocks.
- Ensuring availability of proper drinking water facilities to everyone.
- Implementing well connected sewer lines for carrying sewage and septage to a centralised treatment plant. One such project is already in process at Sundaram colony. This has to be extended to other slum area also.
- Ensure proper housing through various state and centrally sponsored schemes such as Rajiv Awas Yojana.
- Repair and maintenance of existing dwelling units to get proper lighting and ventilation
- Implementing revenue generation schemes by creating SHGs within the slums, giving various skill acquisition trainings for the inhabitants and creation of infrastructure within their area to practise the same.

31.15 WATER SUPPLY

- Implement mandatory rain water harvesting design for all Residential and Commercial Buildings while approving building plans. Municipality could consider to incentivise by way of lower stamp duty, property tax etc., to encourage citizens to voluntarily follow these rules;

- Prepare a digital map of all water bodies like open wells, ponds and increase the capacity of the same by dredging in a time bound manner. The dredged water body has to be maintained by scheduling dredging as an on-going annual activity. These water bodies, which may number in 100s, if economically and technically feasible, be connected with the city main water system. In fact, these existing assets, should be developed as Strategic Water Reserves of the Municipality.
- The town now heavily depends on water supply from Malampuzha dam for all its potable and non potable water requirements. Any sort of disturbances or restrictions that may arise in future to this water supply scheme may hardly affect the requirement of the community. Hence, a parallel plan to reduce the dependence over Malampuzha water for non-potable needs is to be worked out. As a pre-requisite to this, a system to treat and recycle water which will be used for non-potable may be planned. In the coming years, pipelines that will be laid should factor this aspect, so that each household, commercial establishments and public water dispensing systems, have provisions for supply of potable and treated water through separate lines.
- Construct check dams in a phased manner on city rivers like Yakkara, Kalpathy etc. to augment water table in the rivers' trajectory.

A complete water supply rejuvenation project with a total project cost of 109 crores is already under implementation in Palakkad Municipality under AMRUT scheme.

31.16 DRAINAGE

Preparation of a drainage master plan and its implementation is already ongoing in the municipality under AMRUT project. The rehabilitation of secondary and tertiary drains which need priority consideration are to be taken up in the first phase with priority and the rest subsequently based on the drainage master plan. In addition to this, the canals and streams are to be made free from siltation and they are to be deepened, widened & side protected. Encroachments to be removed from the sides and free flow water must be ensured.

Efforts should be made for the complete implementation of the drainage master plan. Care must be given to maintain the drains to its standards and capacity. Pre monsoon measures such as de silting, removal of obstructions etc. must be carried out each year to address the key areas by preparing a detailed action plan.

31.16.1 Storm water drainage to prevent flooding

Connect all the existing old water bodies like lakes and ponds, these existing water bodies can then facilitate in receiving the storm water and can be one more way to prevent flooding. New construction technologies and guidelines are to be adopted in the flood prone areas. Ban conversion of agriculture land for commercial or residential purposes with in municipal limits and of especially in low lying areas.

31.17 SANITATION AND SEWERAGE

Sewerage is the core element of physical infrastructure that determines the environmental status of any city and requires proper planning, development and management. Development of appropriate sewerage system with efficient sewage treatment is vital to facilitate balanced and harmonized development.

There has been no planned sewerage system in Palakkad town. Sewerage network should be extended to cover entire urbanized area by 2040. A comprehensive Sewerage Master Plan should be prepared in the first phase. The proposals are given below. Planning of the city must incorporate land at appropriate location for Sewerage Treatment Plants (STPs) and FSTPs.

31.18 SOLID WASTE MANAGEMENT

For the management of solid waste a comprehensive scheme considering all the following components has to be formulated.

Primary Collection

The domestic waste bins are being collected through the door to door collection system. Harithakarmasena are entrusted to collect the bins by three wheelers and hand carts. It is strongly recommended that methods have to be evolved to reduce the quantum of waste to be transported to disposal site. Decentralised system of treatment at house hold, neighbourhood level, source level decomposition of waste etc has to be promoted.

Segregation and storing at source

The entire house hold and commercial establishments are to be equipped with two bins for collecting the waste. Larger capacity bins are proposed for storing trade/ hotel waste. Hotels also will have to adopt the two bin system. The bins should be of standard sizes. The size and design should be decided by the municipality according to the size and standard of hotels. Other trade centers also have to keep their own bins in accordance with the quantity of their waste generation.

Use of bins in non-residential establishment has to be made compulsory and they should be at their own cost. This has to be implemented by the municipality

while issuing license to the non-residential establishments and has to be ensured by the municipality by continuous monitoring. At least a yearly examination is possible as these establishments have to renew their license every year. Large commercial establishments like marriage halls also have to provide their own containers matching the municipal transport system.

Construction debris /bulk waste should be stored with in the premises for direct transportation to disposal site. Apart from this, 26 hotspots of illegal waste disposal locations are identified inside the town. Proper surveillance system are to be implemented in these location to prevent unauthorised disposal. Waste bins for both bio and non bio wastes should be installed at these locations. Suitable fine may be levied, for storing such waste on roads or throwing waste to public places.

Secondary Collection and transporting

For transportation of waste to secondary collection centres, the Municipality has 12 tiller trailers and 3 three wheeler autos. 7 tractors and one dumper placer are being used for transporting waste to disposal yard. Debris and drain cleaning silt are being transported to disposal yard by trucks. As per standards, per capita waste generation is 500gms per/day. Considering this it is seen that the per capita waste generation taken by municipality has not included the unforeseen gap between collection and actual generation.

It is proposed that at least 25% of the waste generated in a day may be disposed at source itself. Secondary collection points may be well maintained with covered dumping containers. Segregated waste from institutions/Market/ hotels/ hospital etc. has to be collected directly by the Municipality at applicable rates fixed by Municipality. This waste is to be transported to the disposal yard directly.

Apart from this, large institutions and large scale developers may be directed to put up their own solid waste processing units so that the transporting of wastes can be reduced. This may be insisted while issuing building permit/license as in the case of R.W.H. tanks in all new constructions. They may be encouraged to put up Bio bins, Vermiculture Units/Bio gas units so that the O & M cost can be met.

Solid Waste treatment / Disposal – Proposals

The crude method of land fill may be stopped and the waste should be segregated and treated before disposal as per the procedure laid out in Municipal Solid waste handling Rules 2000. Non-Biodegradable waste should be segregated into plastic, glass, rubber, metals etc. by mechanical means.

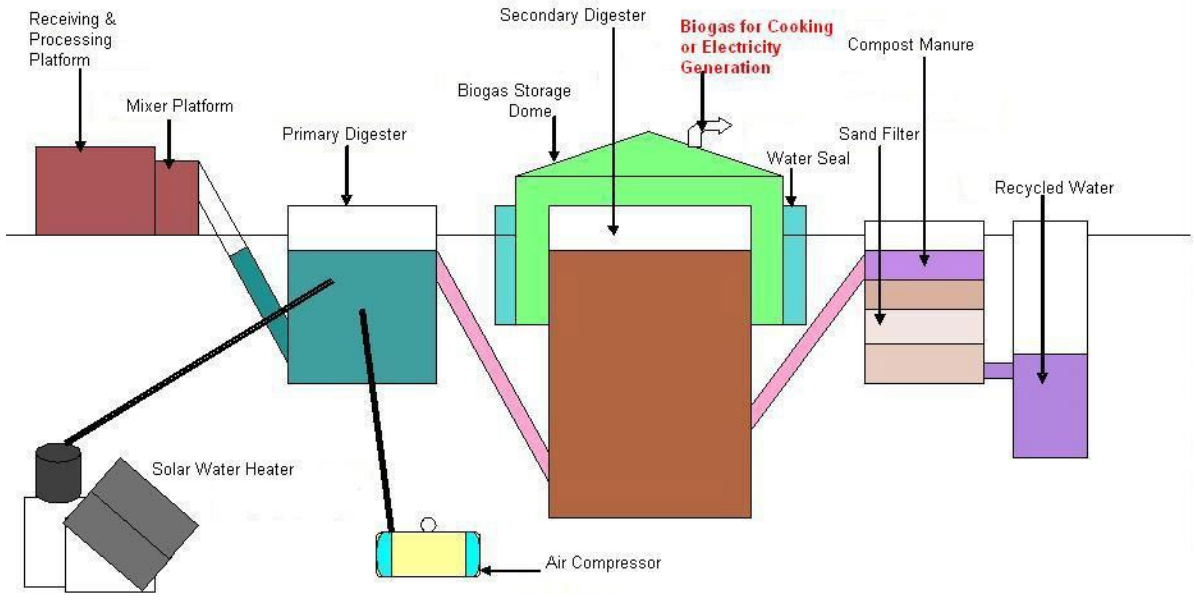
Bio Methanation Plant using Slaughter house waste and market waste can be proposed at the main disposal land in the long run. Power generated from this can be

used mainly to light up the locality. Apart from the biogas, the electricity generated can be utilized for recycling plants, utility buildings etc. A Bio Methanation plant cum power generation unit is proposed in the long run.

The Biomethanation plant is to be designed for treating 30 tonnes of mixed waste of slaughter house (10.75 tonnes at present)and solid waste of surrounding wards and market waste, organic loading rate of 2.5 kg of VS/day/m3 with biogas generation of 2500 m3 of biogas per day. The major significance of this plant is that, the biogas generated from this plant can be converted into electrical energy. The segregated wastes are transferred to the receiving platform.

The wastes are lifted by grab from the receiving platform and transferred into the hopper provided in the belt conveyor. The wastes are carried through the conveyor to the shredder to reduce the size of the wastes to a size of around 15-20 mm. The shredded waste is blended with screw press water or make-up water in a collection tank. The mixed waste is macerated and pumped into the digester by means of screw pump. Biogas Induced Mixing Arrangement (BIMA) digester has a unique mixing part which does not require mechanical moving parts and has the ability to control scum/ sediments while handling high solids concentration.

The biogas generated, as a result of stabilization of the waste, leaves the digester to a dry typed gasholder (530m3) made of a synthetic membrane (polyester). An in-situ biological desulphurization unit has been installed in the 220 digester to reduce the H2S concentration in the biogas below 500 ppm. A group of facultative bacteria which adhere to the walls of digester separating the upper and main chamber are utilized for biological de sulphurisation.



Schematic diagram of Biomethanation plant process

The biogas, after removal of H2S, is used as fuel in the engine to produce electricity. The gas is drawn from gas holder by gas blowers and fed into the gas engine and alternator is connected to the engine to produce electricity. The net power generated after in-house consumption can be sold to Kerala State Electricity Board grid.

In the case of maintenance of gas engine and when gas generation exceeds beyond the storage capacity of the gas holder, the biogas is burnt in the flare. The flare is an automatic type with an auto ignition arrangement. The residue from the digester is collected in the effluent buffer tank for dewatering.



Composting of waste

The digestate is pumped to a screw press by means of screw pumps. It consists of rotating screw fitted closely inside a curb. As the screw is rotated, the material is moved forward and consequently the pressure is increased. The press water is discharged through the openings in the curb and the dewatered cake is discharged at the other end of the press. The cake from screw press would be converted in to manure by composting.

The salient features of the project are :

⇒ Capacity- 30 tonnes per day

⇒ Average Gas Production - 2500 cum/day

⇒ Specific Power Generation -2.0-2.1 kwh/ m3 of biogas.

⇒ Power Generation- 5000 kwh/d

⇒ Power Consumption by the Plant- 470 kwh/d

⇒ Net power that can be sold – 4530 Kwh/d

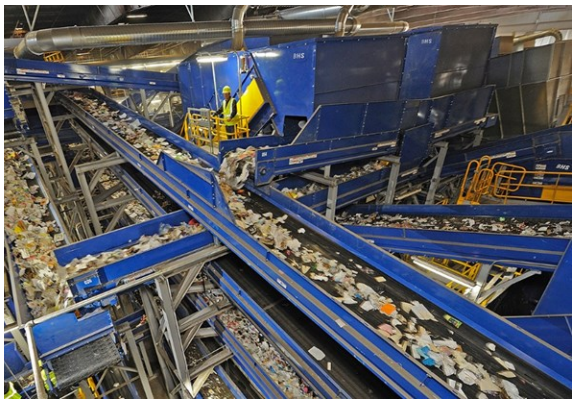
⇒ Organic Manure production per day 9-10 tonnes

31.18.1 Decentralized Waste Management Scheme & Modern Solid waste treatment plant

Decentralised solid waste management, the disposal of waste at the point of generation itself, needs to be highly promoted in the planning area. Wide campaign done to familiarize the bio gas plants /pipe composting/vermicomposting and to provide subsidy to setup the units.



Color coded bins for waste segregation



Solid waste segregation units

For treatment of waste at source itself, decentralized waste management schemes like biogas plants, mini sewage treatment plants, pipe compost, vermicompost etc. are proposed to implement at the source level itself. 8 numbers of "Thumburmuzhi model" aerobic composting units are already installed at different locations in the city. Their functioning is not proper.

Efforts should be made for the proper functioning of these plants. More staffs either through Kudumbasree units or on contract basis may be employed proper maintenance and segregation of wastes in these plants. The above model of de-centralised systems are to be extended to all the wards in municipality with 1 unit in each ward.

For waste collection, source segregation and colour coding must be strictly adhered. Each contributor must be given with an ID number and designated packets with this id number must be supplied to them for waste deposition so that the rule violators may be easily spotted out. Collection may be done with the help of kudumbasree units or harithakarma sena. The collected waste, that could not be treated with the existing units may be treated at the proposed Modern solid waste Management plant at KINFRA park at Pudussery. For this, an MoU must be signed between municipality and plant owners regarding the supply of solid waste, rate of treatment , collection mechanism etc. If this project comes into place, a major issue of solid waste treatment will be sorted out.

Large scale community bio gas plants is also proposed as per requirement. The vermi compost units may be encouraged in community level also, which in turn can be utilized for terrace farming etc.

31.18.2 Plastic Free Palakkad Project & RRF

Plastic and its usage is hazardous to health, earth and environment and a project named **'Plastic free Palakkad'**, is proposed for eradication of plastic in the

municipal area. A collection program to remove the existing plastic and awareness campaign to reduce the plastic usage in municipal area is also proposed in this project. Effective installation of MCFs and proper collection methods are important for this.

Resource Recovery Facility

The recycling of plastic wastes helps in environmental protection and making the city clean. A Resource Recovery Facility can be set up at ward 48 (Mepparambu) in Pezhumkara By-pass, which is located away from the residential area. The plastic waste collected through Harithakarmasena will be brought here for shredding and the shredded plastics may be utilised for road work.



E– waste

E- Waste management facility

Processing of e - waste is a major concern of the present, in an increasingly IT inclined society. An e - waste collection cetre is proposed in the planning area to accommodate recycling, reuse and disposal facilities of e - waste. This can be set-up along the proposed RRF mentioned above.

31.18.3 Sewage Treatment Plants (STP) and Fecal sludge treatment plant (FSTP)

At present the waste water from the Palakkad city is going to Kalpathy river and Kannadi puzha without any treatment. This ruins the water quality of the rivers. Since the total planning area is not connected with any centralized sewer system, it is proposed to provide waste water treatment system for each residential sectors separately. This could also reduce the size of the land as well as the sewerage system required for the treatment.

The treatment of septic waste is a major problem in every upcoming cities, at present these septic waste are disposed in the vacant lands. So scientific Septage treatment facility is proposed in the municipal area to treat the septic waste from the residential units from the town. A well connected sewer system with proper zoning in each residential sectors is required to collect the waste water and discharge the same at treatment plants. This is to be designed along with a detailed sewage master plan. Mobile feacal sludge collecting units are to be implemented to collect the septic waste from septic tanks and leach pits towards FSTPs. Septic tanks must be encouraged for this thereby avoiding normal leach pits in future. Hence the following lands are earmarked for STP serving each sectors as shown in figure 31.8

A land area of 0.311 Ha in Survey.no 565 of block 12 survey number 2907 of block 12 in Village II at ward 7 (Kumarapuram)(**Special zone G2**) is proposed for an STP to serve Sector 1&2

A land area of 0.218 Ha in Survey.no 37,39 of block 134 in Yakkara Village at ward 28 (Civil station)(**Special zone P6)** is proposed for an STP to serve Sector 3

A land area of 0.341 Ha in Survey.no 21 of block 247 in Village I at ward 35 (Thirunellayi east)(**Special zone P7**) is proposed for an STP to serve Sector 4

A land area of 0.457 Ha in Survey.no 3 of block 53 in Village I at ward 48 (Mepparambu)(**Special zone P10**) is proposed for an STP to serve Sector 5. Here a Faecal Sludge Treatment Plant is also proposed to serve the planning area completely.

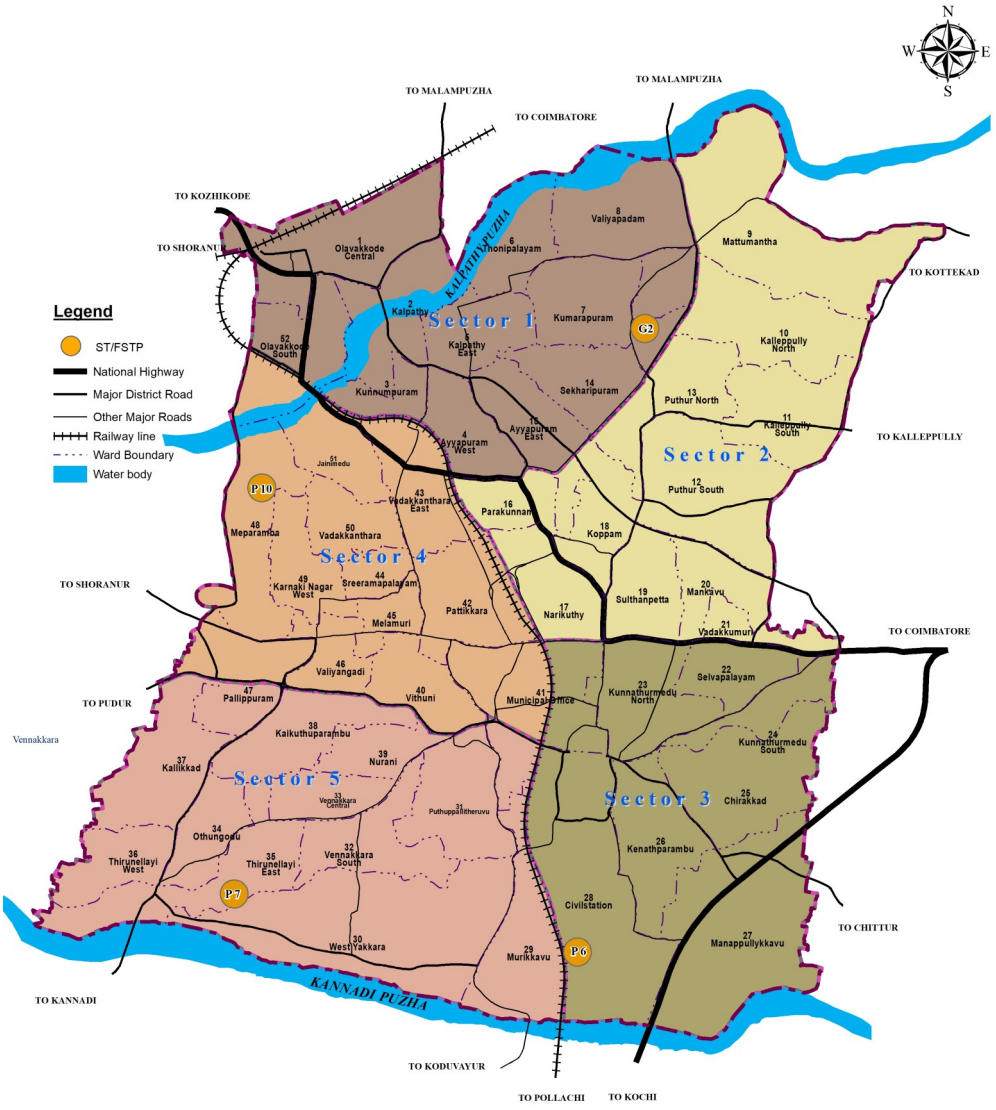


Fig. 31.8. STP/FSTP with serving sectors

31.18.4 Other proposals

1. Municipality should allocate sufficient amount from their annual budget for cleaning and maintenance of rivers and streams.
2. Repair/rehabilitation of existing drains with proper gratings.
3. Provide proper signages & cameras for proper functioning of drainages.
4. Avoid solid waste dumping in drainages by strict enforcement.
5. Preparation and implementation of sewerage master plan.
6. The drainage master plan may be implemented to tackle the future problems.
7. Necessary measures to reduce the contamination of river due to the wastewater from urban core.
8. Strengthening of "Haritha Karma Sena" formed as part of "Haritha Keralam Mission" to reduce, recycle and reuse of waste within the area.
9. Strict monitoring shall be made for the onsite disposal of waste by various establishments.
10. Building rule provision to make arrangements to treat waste water and to reuse the same shall be strictly enforced.

31.19 DISASTER MANAGEMENT

31.19.1 Life Line store and Rehabilitation Centre

Palakkad town is more prone to floods in the recent years. Being one of the most arid place in the state during peak summers, the city is now handling disasters of extreme nature. Hence, there must be permanent mechanism to act in case of such emergencies. A life line store is thus proposed in the land available opposite to the stadium bus stand where the ground floor of the proposed start up incubator may be used as. The life line store will be having all necessary rescue operation tools, food, clothing and other life line equipments that could be used in case of emergencies such as flood. This may be build in adjacent with the rehabilitation centre. The rehabilitation centre may be used as an auditorium on daily rental basis during normal days which in turn can be an additional source of income for the municipality.

31.19.2 Rapid Response Team

It is proposed to create a Rapid Response Team in the Municipality Level to act in case of emergencies. For this, the municipality should facilitate a control centre from where all the rescue operations may be handled and controlled. The

must have well trained volunteers who can be employed for emergency recue services. They must be well equipped for carrying rescue and rehabilitation operations. The control room must have a unique control room number and must be facilitated with enough contact numbers of rescue teams and emergency services such as hospitals, vehicles, Ambulances, technicians and equipment suppliers etc. Hence, the team can be very well coordinated and act accordingly during emergencies. Following are the other major proposals to be implemented on disaster management sector in the city.

⇒ Creation of **riverside fronts** in habitation zones can improve the stability of banks.

1. Riverside fronts can reduce damages in the event of inundation.
2. It can also reduce the loss of structures in the event of disaster.

⇒ **Buffer zones** along the flood plains

1. Agriculture tracts/wetlands along the banks could act as a first line of defence against floods.
2. Urban wetlands could also act as a sink reducing the impact of floods.

⇒ **Engineering measures**

1. Providing drainages like surface drains, shallow/deep trench drains, etc.
2. De-silting and widening of drainages, carrying out monsoon preparedness activities such as clearing the mouths of thodus and drains etc.

⇒ **Disaster management awareness**

1. To educate the community of the nature of risk in their locality and the measures to be taken for the effective response.
2. To make aware about do's and don'ts during emergencies
3. To teach the community about preparation of emergency kit
4. Display of public awareness boards in disaster prone locations

⇒ Establishment of disaster management information system and installation of **Early Warning System** (EWS).

⇒ Design and implementation of local disaster management plan.

⇒ Allocation of budget for disaster reduction.

⇒ Coordination of public, private, NGOs, local volunteers and social mobilizers to conduct disaster management activities.

⇒ Organizing a disaster action committee under the leader ship of ward members which includes persons trained under civil defence and NDRF.

⇒ Training about mock-drill

⇒ Implementation of building codes and standards/guidelines.

⇒ Formation of disaster preparedness committee at ward and community level.

⇒ Formation of a disaster management cell in the municipality with communication facilities to reach out to each ward level committees and transfer messages through mobile phones about early warning.

⇒ Management of rescue and relief at affected areas

⇒ **Strengthening of Shelter Facilities**

1. Existing relief camps are located mostly at schools with limited facilities. So these institutions must be strengthened with adequate infrastructure facilities like toilets, lighting, water supply etc. to functions as relief camps
2. Long term relief camps may be required in rare cases for which educational institutions could not be spared. Hence, this should be considered during the renovation of existing Municipal town hall.

31.20 GOVERNANCE

Major proposal of Governance is provision of electronic based one (E-Governance)

1. Application of e-governance through GIS support in Eight functional service areas of ULBs -registration and issue of birth & death certificate, payment of property tax & utility bills, management of utilities that come under the ULBs ,Citizen grievances & suggestions, Building plan approvals, procurement and monitoring of projects, health, accounting system and personal information system.
2. Providing Service Kiosks in each zone.
3. Digitalization of office records, online facilities for all the services.
4. Sub offices for municipality in all sectors for revenue collection and people service providing's.

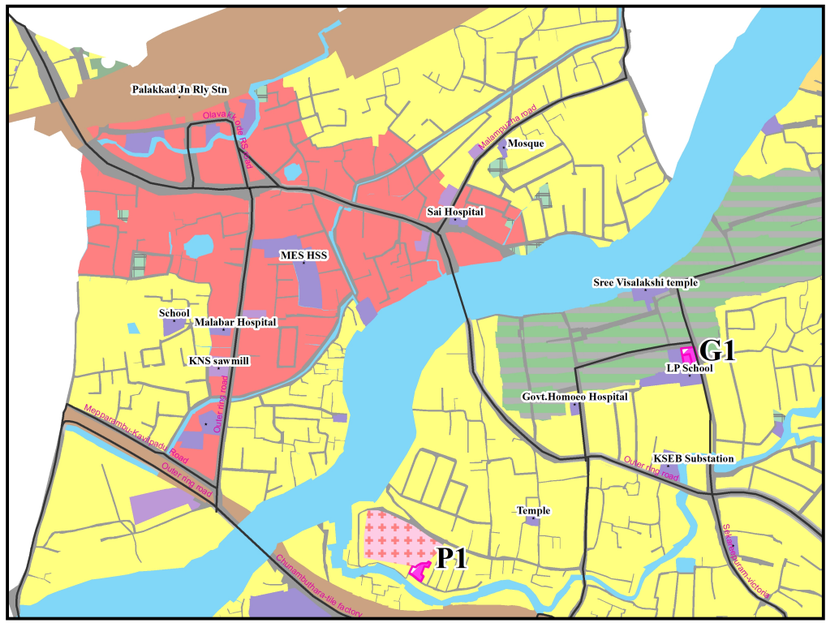
31.20.1 Financial resource planning and phasing

The town is seen as the major administrative headquarters for the entire region with thriving sustained economy based on wholesale trading activities, and tourism activities. These economic activities are expected to promote overall economic and social development of the entire region.

A structured questionnaire was administered to the cross section of the

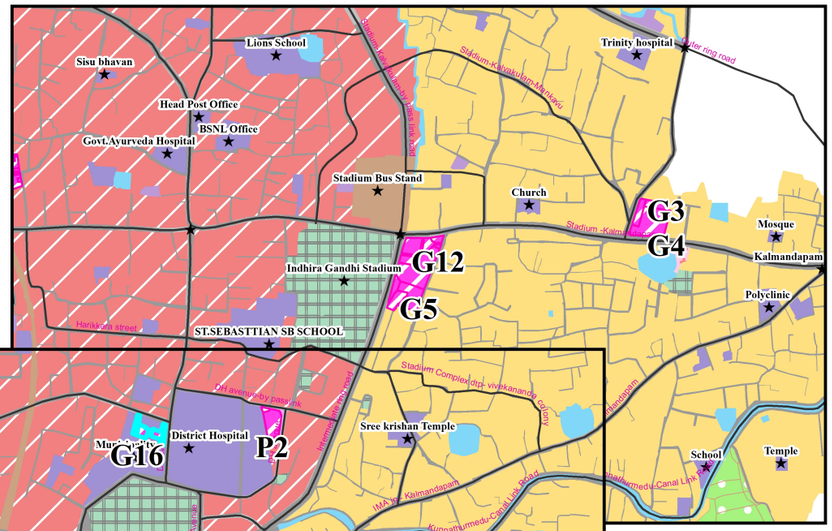
citizens of the town and elected representatives and informal discussions were held with officials and nonofficial with regard to the future development of the town. The main issues which emerged out during the public opinion survey and discussions were:

1. Management of Solid Wastes management needs urgent improvements
2. Need to widen the existing roads, formation of new roads with adequate footpaths
3. Improvement of traffic management
4. Need to create public awareness about improved sanitation practices
5. To ensure free and safe movement of people, the need for improved street lighting
6. Stressed the need for housing, improved living conditions in slums
7. The need for augmentation of water supply
8. Improvements in efficiency in municipal governance
9. Need for recreation facilities
10. Resident feedback on priorities for improvement at household/ neighbourhood, ward, town level shows that highest priority given to sanitation especially waste management both solid and liquid followed by road, house, water.



G1
Kalpathy Heritage Centre
0.162 Ha

P1
Housing Project at Sundaram Colony
0.106 Ha

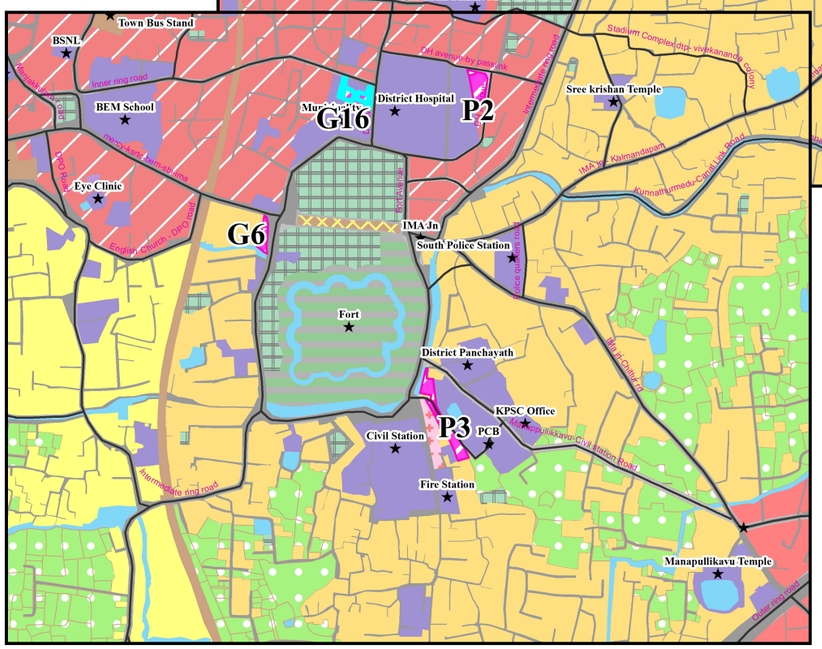


G3
Market,Mankavu
0.185 Ha

G4
Employees Hostel,WWH and Community Kitchen
0.496 Ha

G5
Startup Incubator
0.464 Ha

G12
Multilevel Parking
0.946 Ha



G6
Tourist Information Centre
0.131 Ha

G16
Parking Ground
0.211 Ha

P2
Parking Ground
0.287 Ha

P3
Parking Ground
0.461 Ha

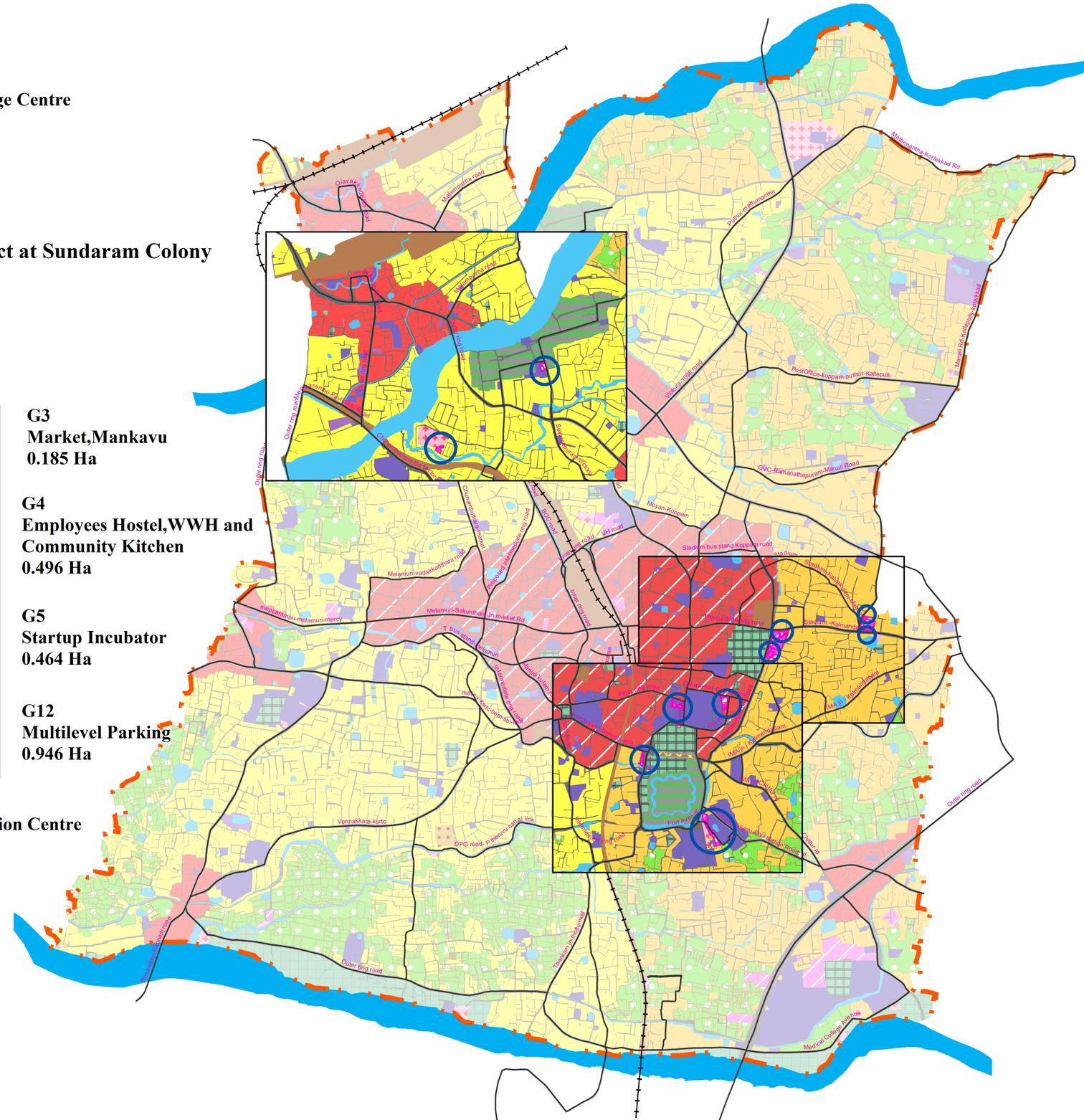
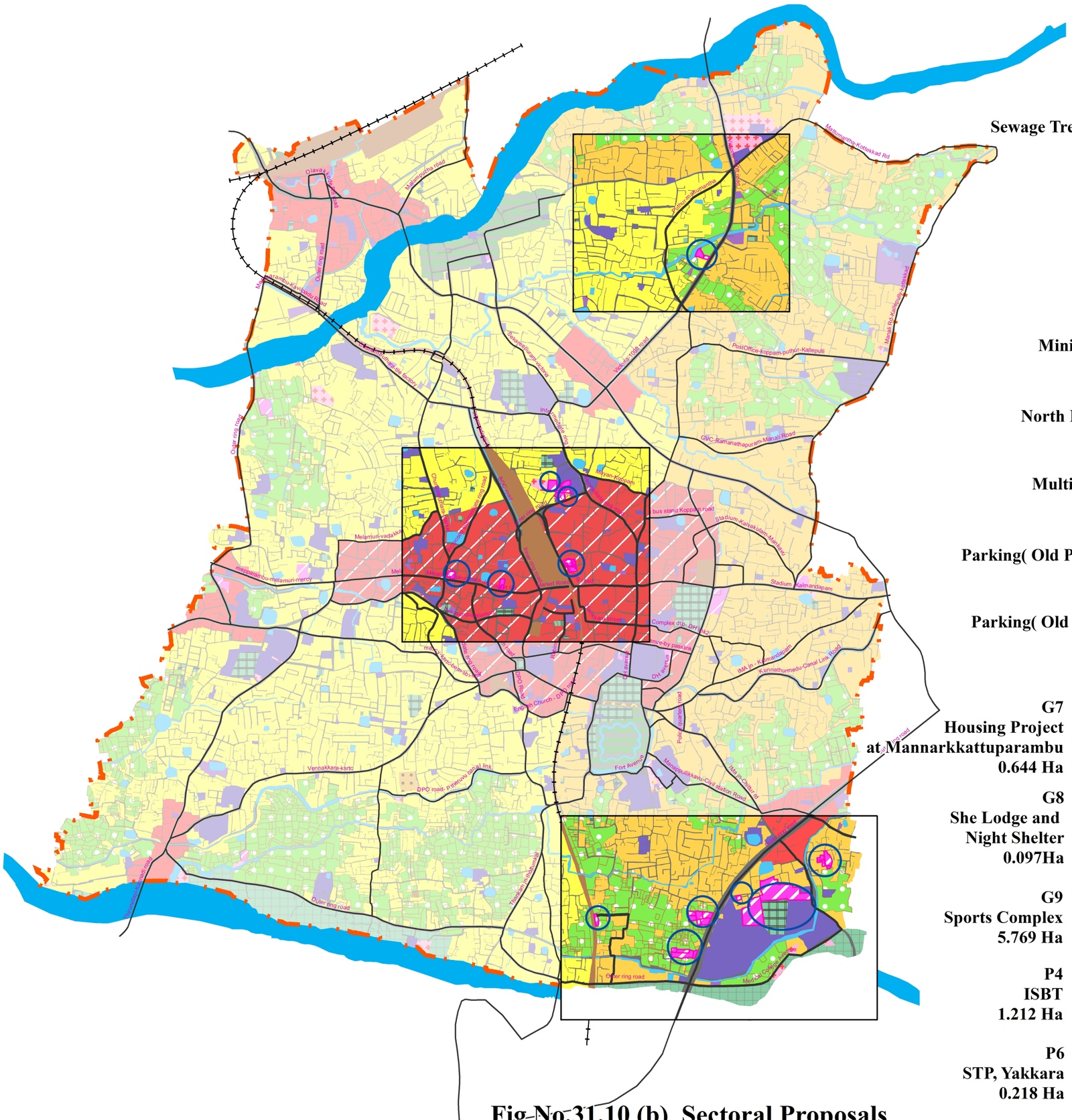
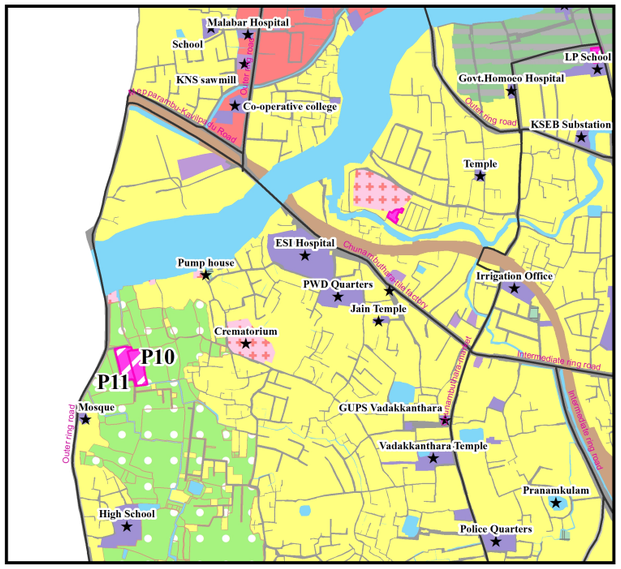


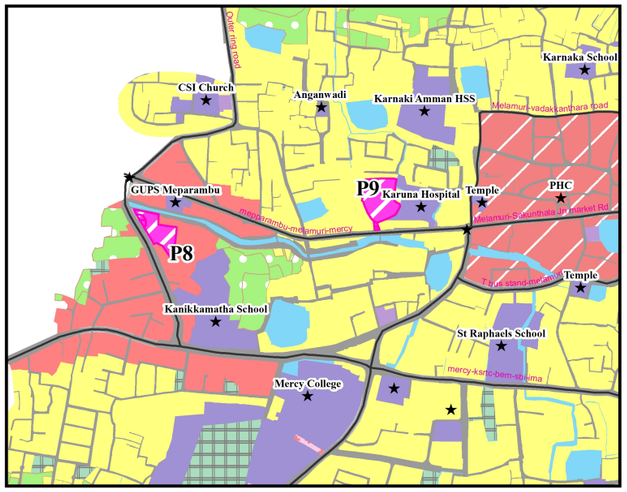
Fig No.31.10 (a) Sectoral Proposals


Mathrubhumi road
Olavakkot-Kanjikode road
Outer ring road
Kalpathy-Kanjikode road
Kalpathy-Mannarkkad road
Mathrubhumi-Kavilpad road
Kongampara-Kovilmedu road
Vadakkanthara-Kalpathy road
Yakkara-Kanjikode road
Vadakkanthara-Kalpathy road
Kanjikode-Kalpathy road
Kanjikode-Kalpathy road
Kanjikode



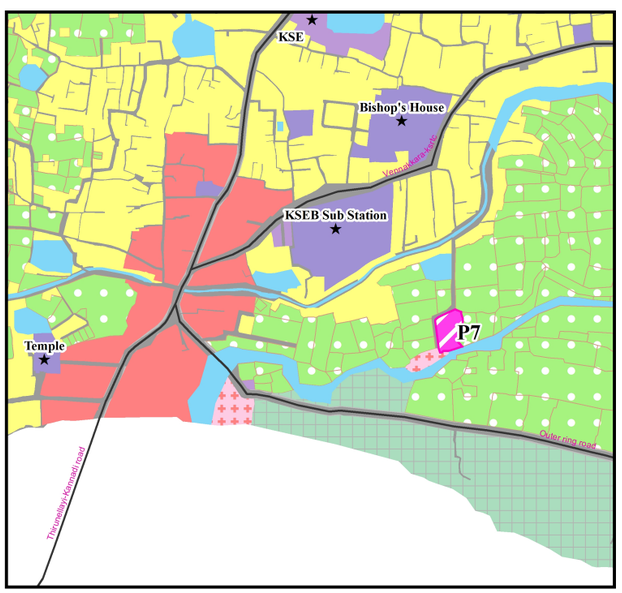
P10
RRF and Ewaste CollectionCentre
0.453 Ha

P11
STP and FSTP Pezhumkara
0.457 Ha



P8
Fish and Meat Market
0.530 Ha

P9
Cold Storage and Loading
& Unloading space
0.776 Ha



P7
Sewage Treatment Plant,Thirunellayi
0.341 Ha

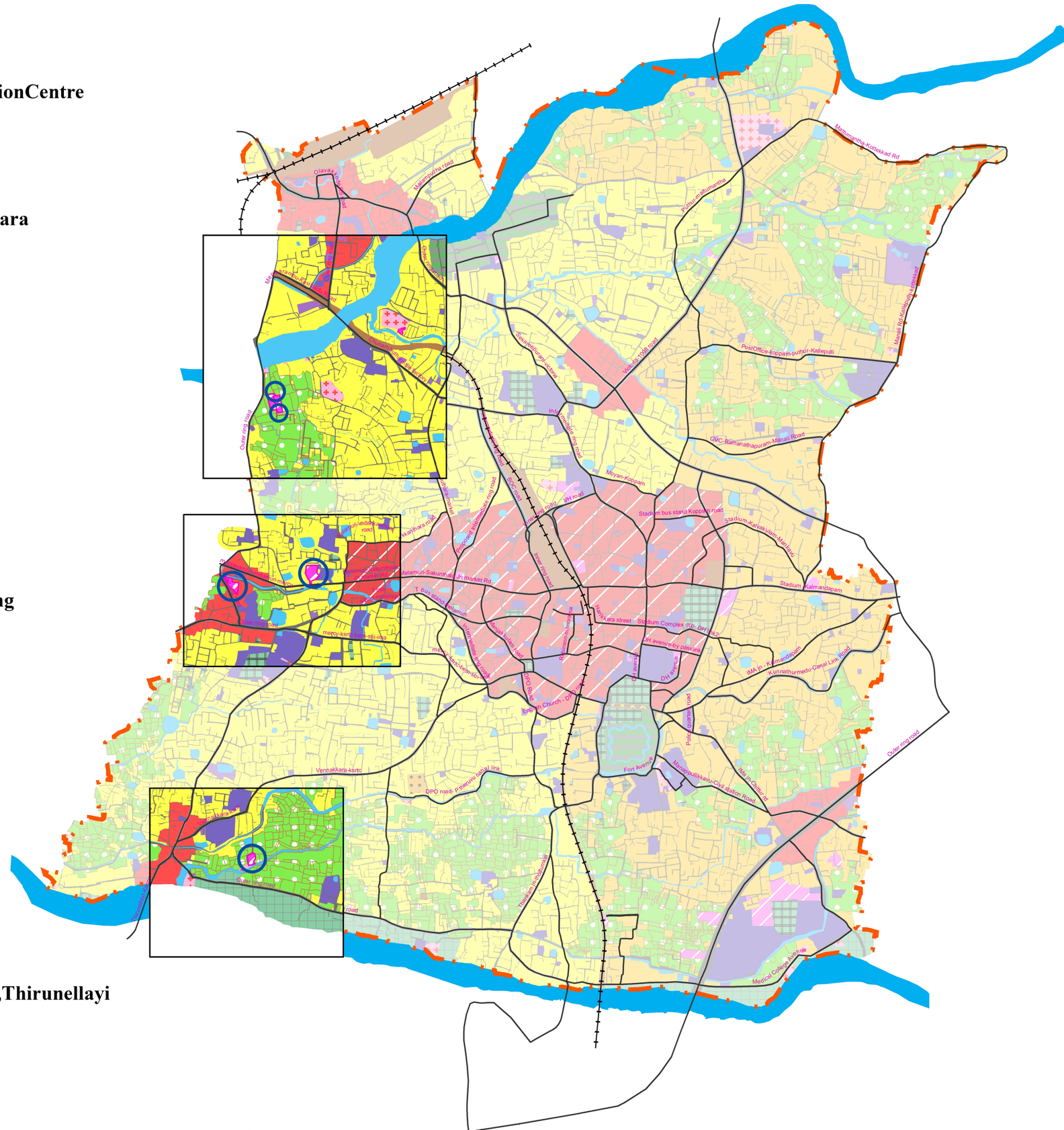
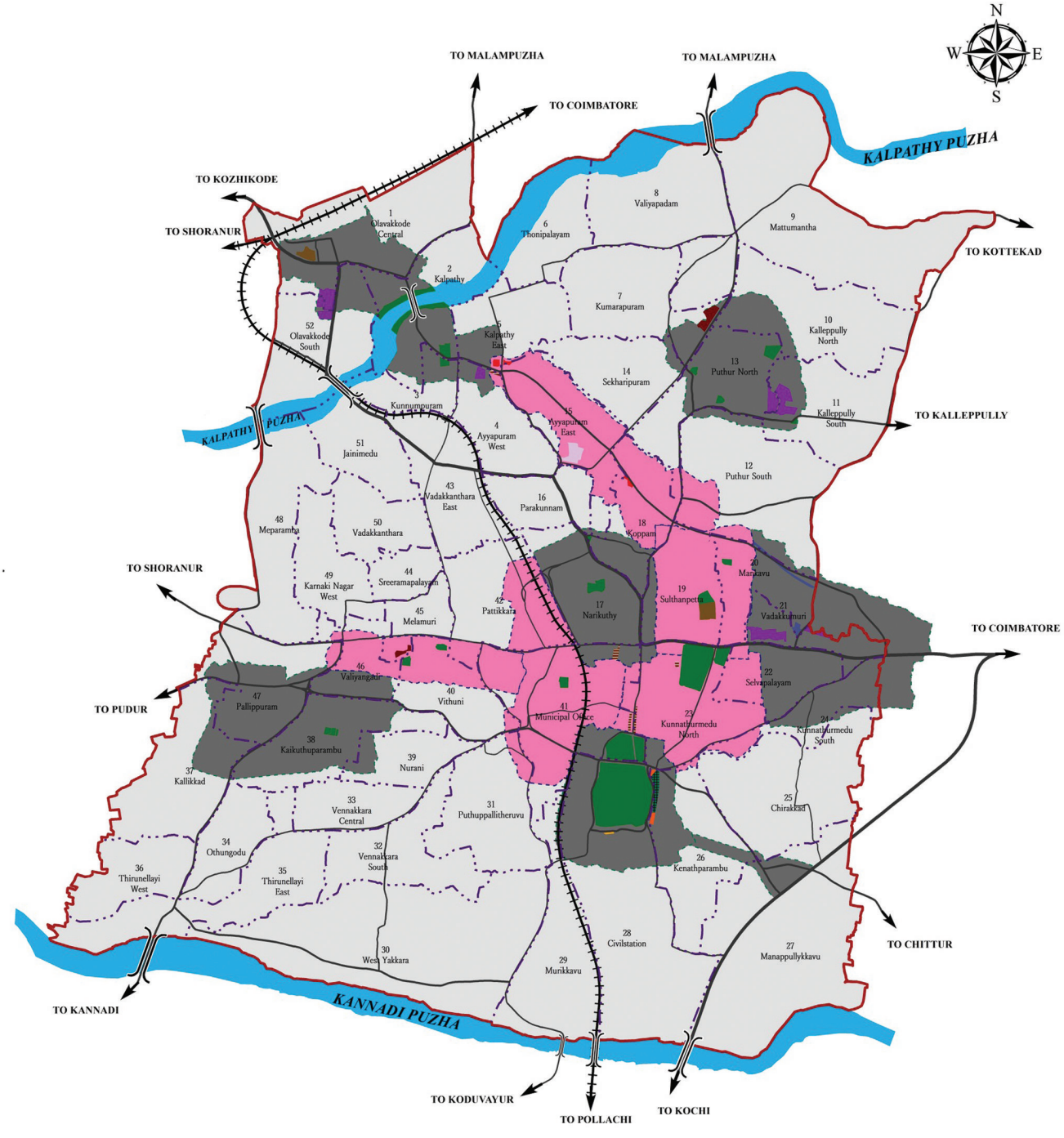


Fig No.31.10 (c) Sectoral Proposals



CHAPTER 32-
REVIEW AND REVOCATION OF DTP SCHEMES

32. REVIEW AND REVOCATION OF DTP SCHEMES

Based on the broad frame work of Sanctioned Development Plan in the year 1986, twelve Detailed Town Planning Schemes were prepared. Out of which five schemes were sanctioned by the Government. These schemes were prepared on priority basis and were mainly aimed at fulfilling the objectives of the sanctioned Development Plan. These DTP schemes mainly covers the core urban area of town and proposed sub centre areas. The details of the 12 DTP schemes are as follows

32.1 DTP SCHEME FOR STADIUM COMPLEX

As per G.O(M.S)No. 161/87/LAD dated 13/07/1987 the Government have sanctioned DTP Scheme for Stadium complex. An area of 60 hectare is included in this scheme. Stadium complex area is close to the central built up area of the town and has high potentialities for development. One of the main proposal in the scheme was development of stadium on the southern side of the existing Coimbatore road (NH-966). Even though the stadium is completed and is currently being used, the further development with modern facilities is envisaged in this master plan. The sanctioned scheme map of this DTP scheme is shown in figure 32.1

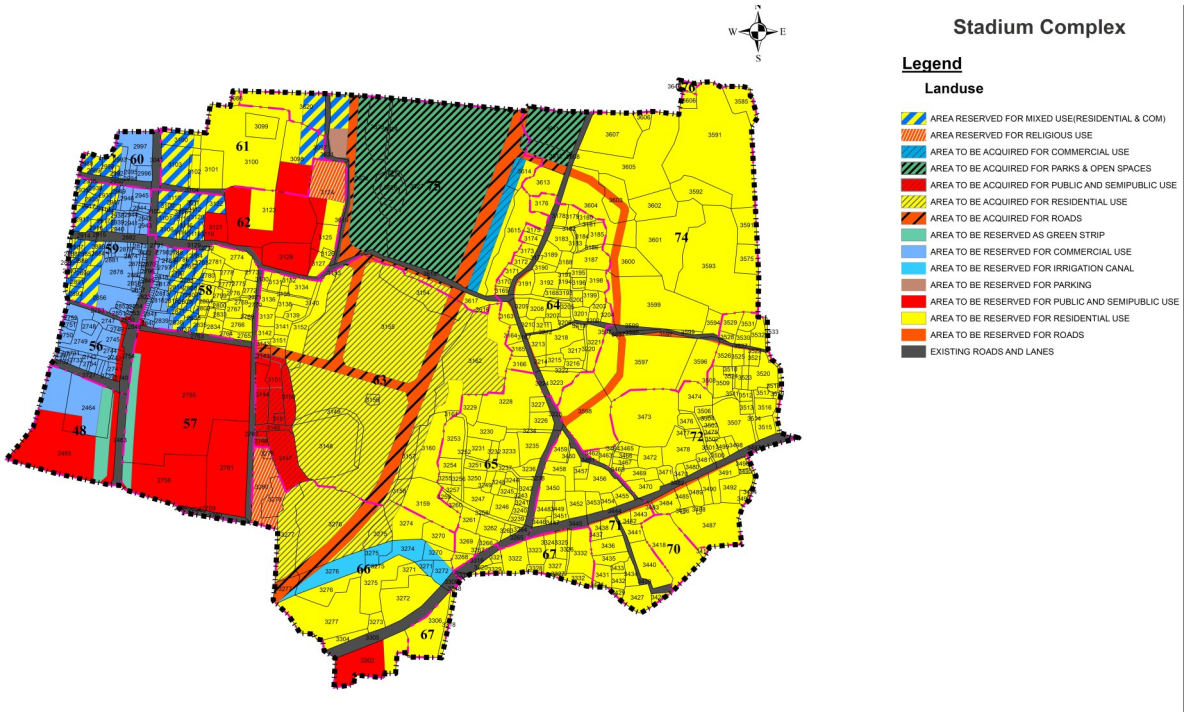


Fig. 32.1 Sanctioned scheme map of DTP scheme for Stadium Complex

32.1.1 Roads

Development of new roads and widening of existing roads had a great priority in this master plan. One of the major such proposal of this scheme was development of a 20 m wide four lane link road connecting Stadium bus stand and IMA Junction. But the road was developed with 16m width (average) only. In this master plan, this road is incorporated and 22m width is proposed as a part of intermediate ring road. Another proposal in the scheme was the widening of existing Court road from Anchuvilakku to Hospital junction with a width of 20m, which has an existing width of 12m only. It is a part of proposed hospital Avenue road in this Master Plan, which recommends to maintain the existing width through out this stretch..

The roads which were proposed to be widened to 12m in this scheme were, Court road from hospital Junction to Sulthanpet, 100 m stretch of Robinson road, road connecting Hospital Junction with Stadium-IMA Jn road and IMA Jn- Kalmandapam Road. First two roads are part of conceptual Inner ring road and third road is the part of Hospital Avenue and their width will be standardised as per this Master Plan. The Roads proposed for widening in the DTP scheme, but are not included in this Master plan are Vivekananda colony road, road starting from rear of Hospital and connects Stadium—Sultanpet road through the east side of Matha church and the road starting from Court Road and extending west wards to reach Harikara street, and the road passing via Sri Krishna temple and joins at IMA Jn-Kalmandapam Road.

32.1.2. Other Special Zone

Park and Open spaces. The proposed park and open space in survey numbers 3622, 3623, 3624, 3625, 3626, 3627, 3083, 3084, 3085 of the DTP scheme is having an extent of 4.190 ha which is proposed to be retained by including in a similar land use zone in this Master Plan. The 0.114 ha. of land included in the survey no. 3622 was set aside for parking under this DTP scheme, which is also considered for recreational activities as this land is a continuation of the park and open spaces mentioned above. The proposed park and open spaces in survey no. 3611, 3612 east of IMA-Stadium road having 0.48 ha under the ownership of the municipality in this scheme is also proposed for special zones such as Multi level Parking, co working space and start up incubator in this master plan. The envisaged green space on both sides of the road from Anchuvilakku to the Hospital Jn in the DTP scheme has became a part of green ring road proposed around the hospital.

The roads and proposals retaining in this master plan is shown in figure 32.2 and the details are given in table 32.1. Existing situation of land use in the DTP scheme area is shown in figure 32.3 and the proposed land use with road widening proposals and special zones is shown in figure 32.4.

Table 32.1 Details of road included and excluded from DTP Scheme for Stadium Complex

SL No	Code		Name of road		Proposed width in (m)	
	As per DTP scheme	As per this Master Plan	As per DTP Scheme	As per Master Plan	DTP Scheme	Master Plan
1	A-A	RD-4	Middle of the scheme North south	Niranjan road	20	22
2	A1-A1, B-B	RD-29	West end of the scheme	Court road	20	12
4	B1-B1	RD-37	Middle of the scheme starting from road A-A towards west	DH Avenue, DH Avenue- bypass link	12	8
5	B2-B2	Nil	Middle of the scheme starting from road B1-B1 towards north	Nil	12	Nil
6	B3-B3	Nil	Connecting road B2-B2 and Road A-A	Nil	12	Nil
7	B4-B4	RD-28	West end of the scheme starting from road A1-A1 towards west	Robinson road	12	12
8	B5-B5	RD-22, RD 35	South-Eastern end of the scheme	IMA jn.– Canal link, Canal link- Kalmandapam	12	16, 12
9	C-C	Nil	Eastern portion of the scheme connecting road AA and road B5-B5	Nil	10	Nil
10	D-D	Nil	Off-take from road A1-A1 at the north end towards west	Nil	7	Nil
11	D1-D1	Nil	Cross road of road CC	Nil	7	Nil
12	D2-D2	Nil	Off-take from road C-C towards east	nil	7	nil
13	D3-D3	Nil	Connecting road C-C and Road B5-B5	Nil	7	Nil

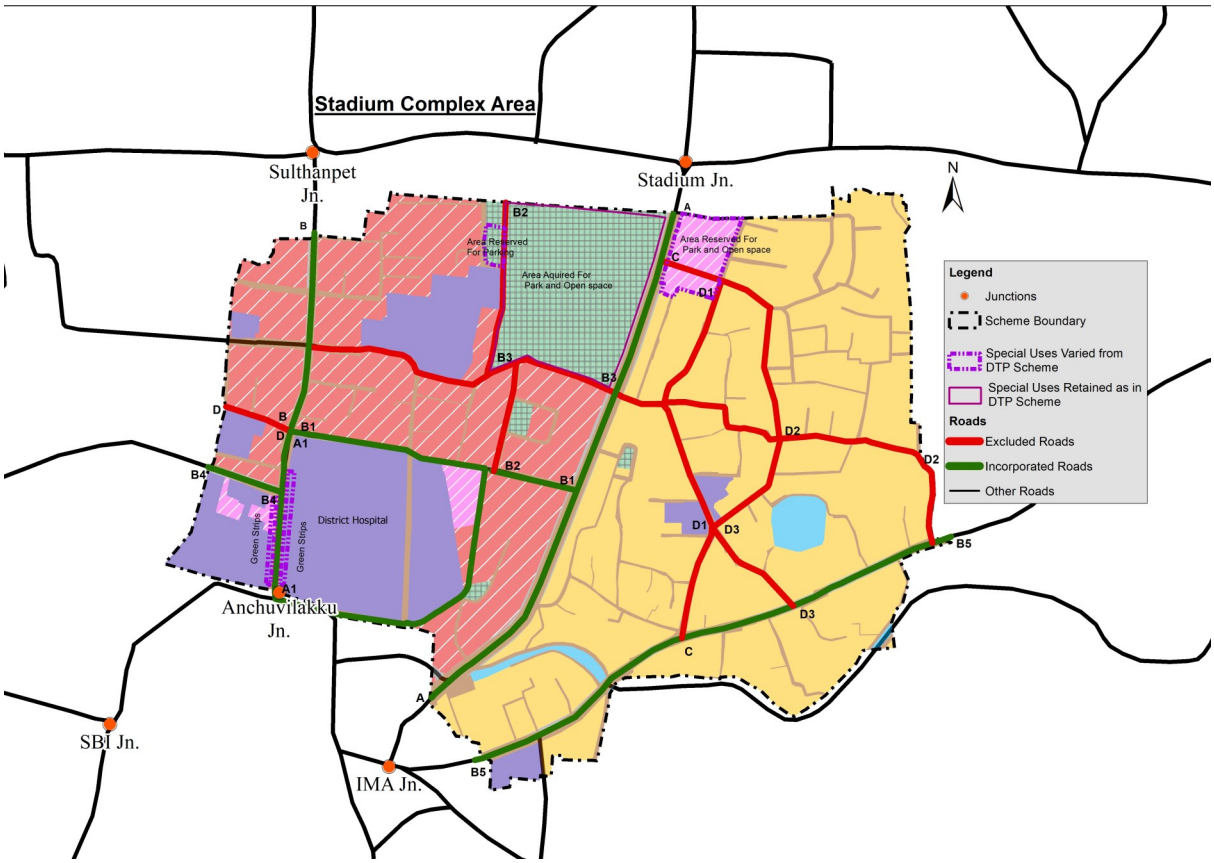


Fig. 32.2 Details of all proposals varied/ retained from DTP Scheme for Stadium Complex in this master plan

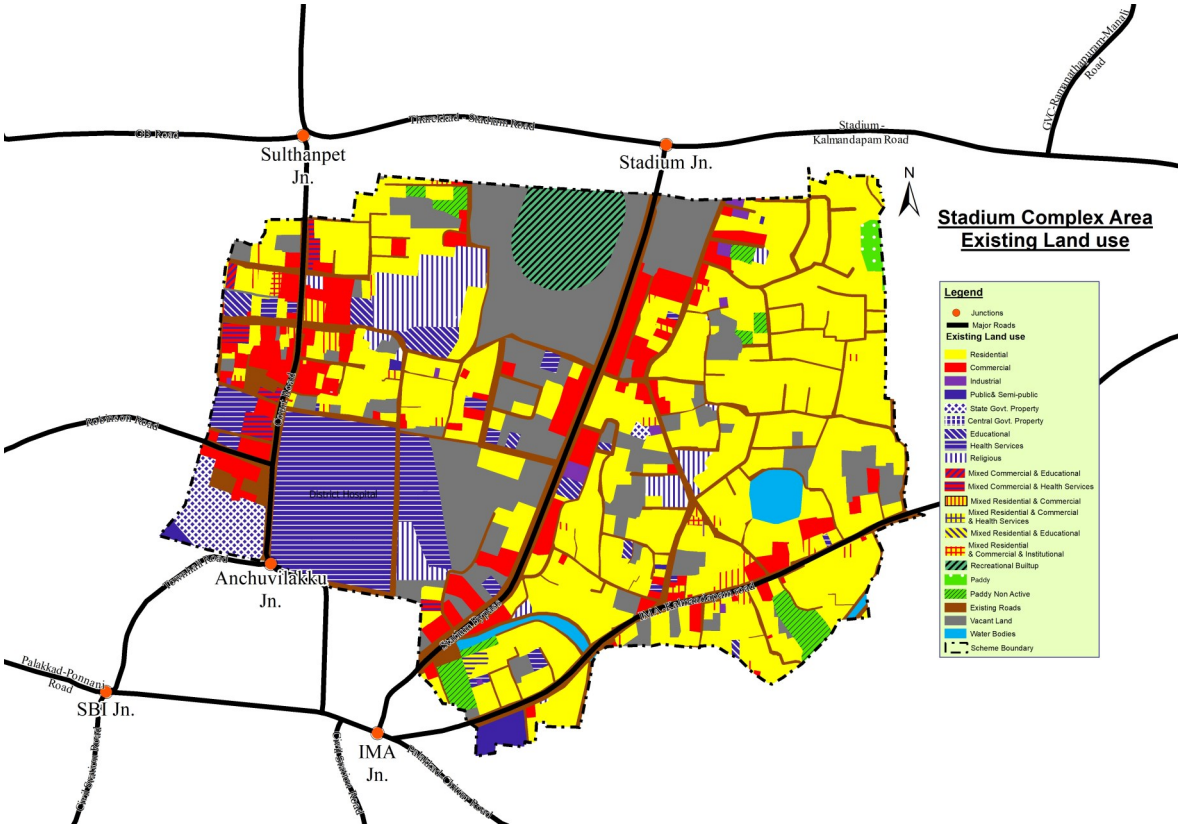


Fig. 32.3 Existing land use of area under DTP Scheme for Stadium Complex

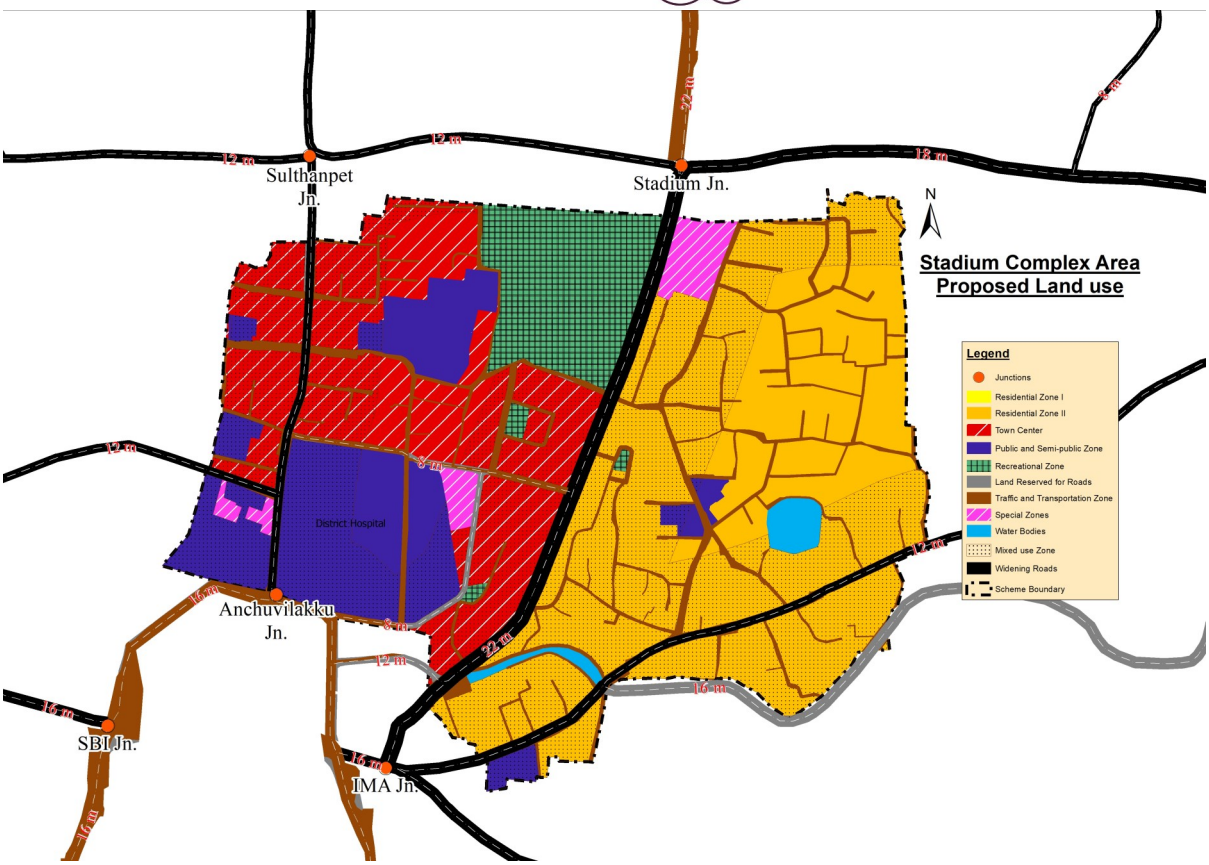


Fig. 32.4 Proposed land use of area under DTP Scheme for Stadium Complex

32.2 DTP SCHEME FOR CENTRAL AREA

The DTP Scheme for Central Area covers an area of 71.0 hectare in the busy central area of the town. This scheme was sanctioned by Govt. Vide G.O(M.S) No.141/93/LAD dated 16/07/1993. The sanctioned scheme map of this DTP scheme is shown in figure 32.5

32.2.1 Road

One of the major proposal in this scheme was to construct a 20m wide road parallel to the Telephone Exchange road, bypassing the Shakunthala junction and reaching the over bridge approach road. The land acquisition for this road development is not completed. However, this proposal is incorporated in this Master Plan also with a proposed road width of 16 m. The railway over bridge and approach road which connects BOC road and VH road was also a part of this scheme, which is completed and is a part of the proposed Inner ring road. A part of the Town bus stand-Melamuri bypass was also included in this scheme with a proposed width of 18m for which, considering the built up density of the region, a nominal standardization is only recommended .

The proposal for the construction of Pattikara Bypass with a width of 30m under the

flyover as envisaged in this scheme is not fully established to proposed width. This road is incorporated in this Master plan with a lesser dimension.

A part of SBI junction-KSRTC road is also proposed for widening in this scheme to a width of 20m. However, this Master Plan recommends to standardize the width throughout its length. A part of Melamuri-Shakunthala junction Market road, which was proposed to be widened to 18m as per this scheme, is proposed in lesser width in this plan. Two other roads proposed to be widened to 12m under this DTP scheme were Robinson road and DPO road. This Master Plan does not recommends further widening to such roads.

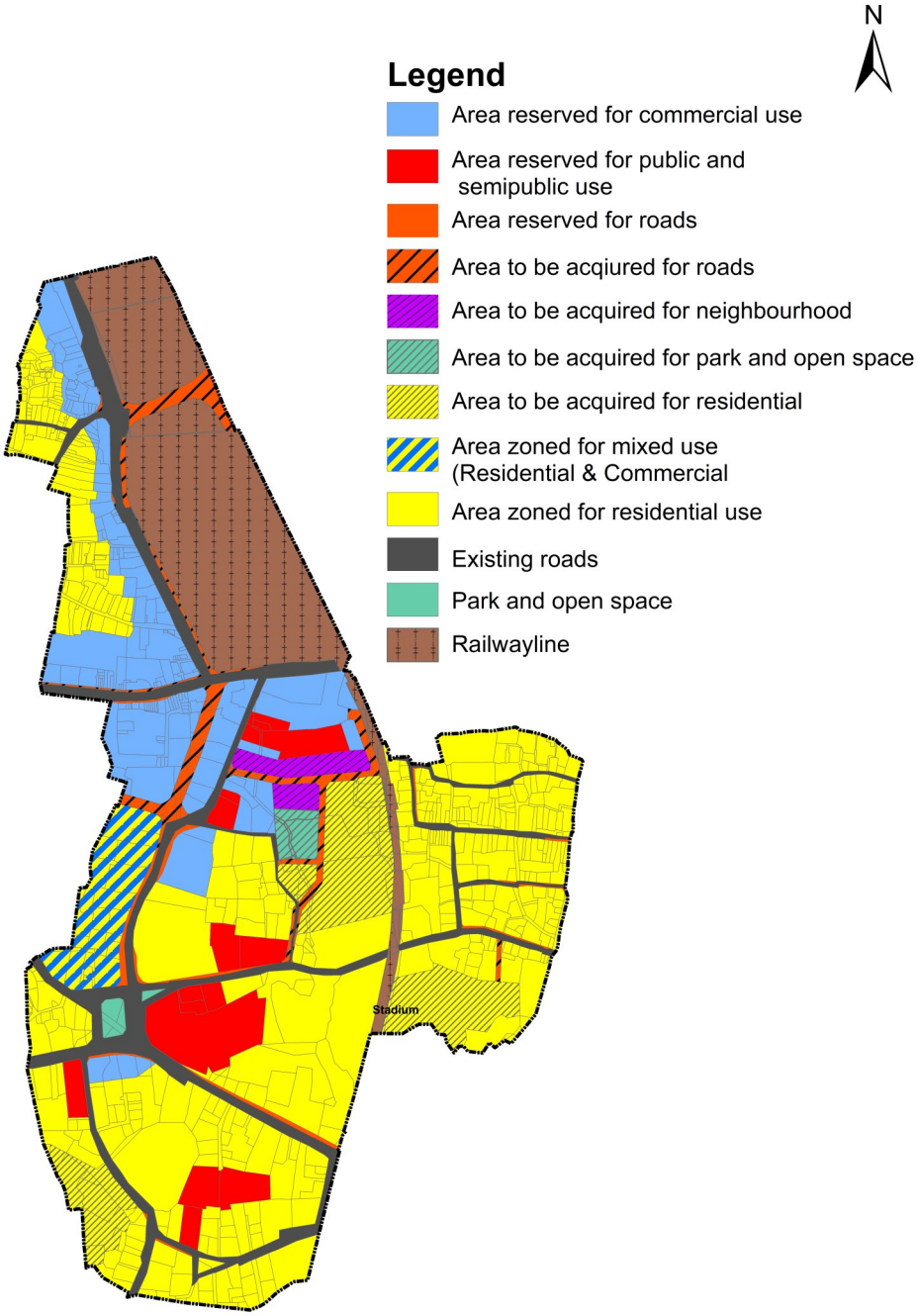
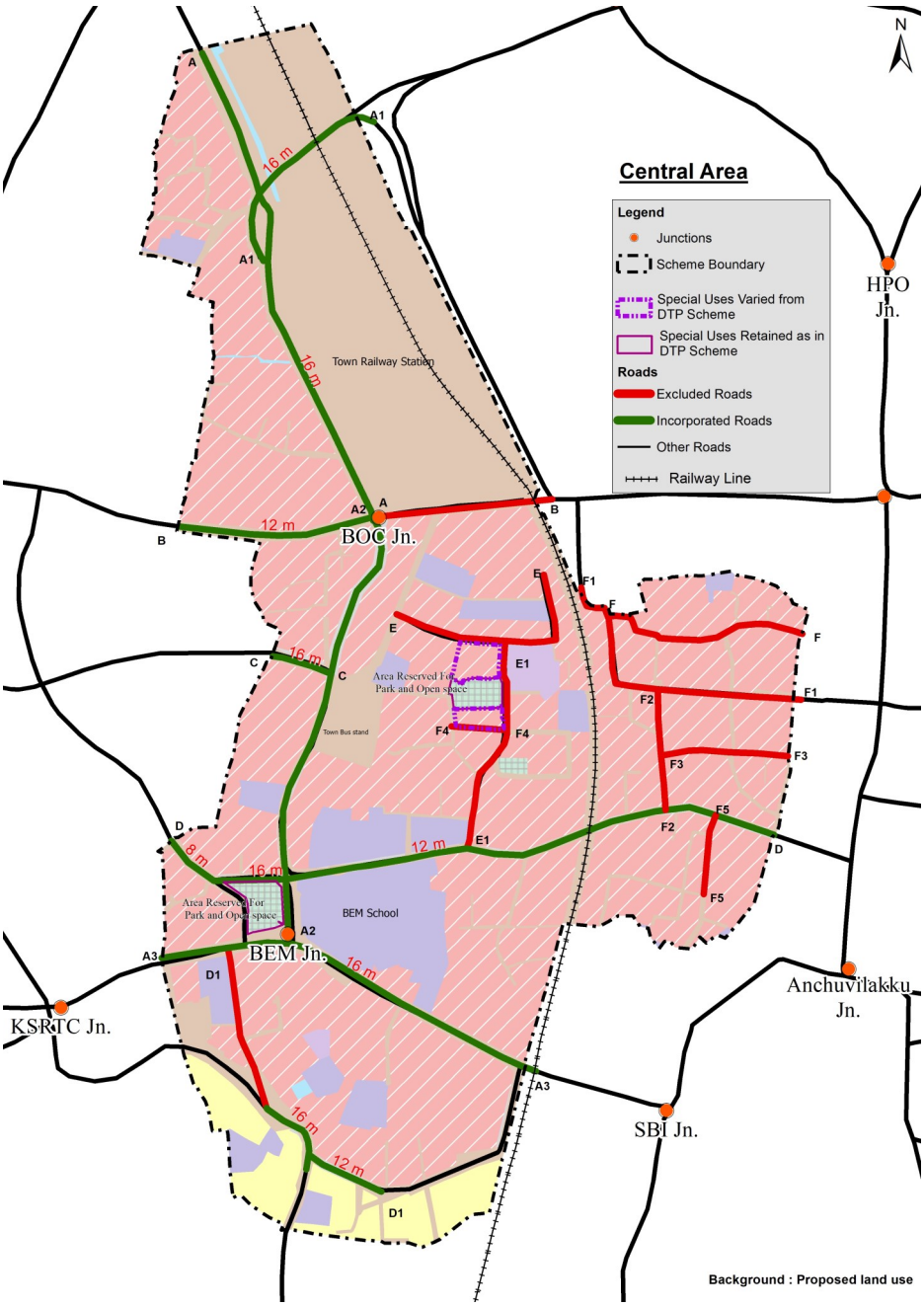


Fig. 32.5 Sanctioned scheme map of DTP scheme for Central area

The Robinson–Manorama and Town Bus stand-Manorama Roads were proposed to be widened to 10m and Harikara street and Taylor street which is to be developed to 7 m under this DTP scheme are not retained in this plan.

32.2.2 Other Special Zones

Park and Open spaces. The 0.446 Ha of land included in survey number 2541,2559,2560,2561,2571,2572 which was proposed to be acquire for park and open space in the scheme is not retained in this plan as such an acquisition is not found to be possible and hence the land is zoned under town centre zone whereas, the 0.1904 Ha area under the survey number 864, 865, 866, 856, 857 were earmarked for park and open space in the DTP scheme is recommended to be continued as such in this master plan as the park is already developed.



The roads and proposals retaining in this master plan is shown in figure 32.6 and the details are given in table 32.2. Existing situation of land use in the DTP scheme area is shown in figure 32.7 and the proposed land use with road widening proposals and special zones is shown in figure 32.8.

Fig. 32.6 Details of all proposals varied/ retained from DTP Scheme for Central Area in this Master plan

Table 32.2 Details of road included and excluded from DTP Scheme for Central Area

SL No	Code		Name of road		Width proposed (m)	
	DTP Scheme	Master Plan	DTP Scheme	Master Plan	DTP Scheme	Master Plan
1	A-A	RD-11	Western side of Railway station	BOC road	20	16
2	A1-A1	RD-13	Off-take from road AA towards eastern side of the scheme	ROB - Municipal stand - Tharekkad Road	20	16
3	A2-A2	RD-28, RD-15	In between road AA and Road A3-A3	Robinson– Town Bus stand, Town bu stand—Melamuri	20	12, 16
4	A3-A3	RD-16	southern side of the scheme	mercy-ksrtc-bem-sbi	20	16
5	B-B	RD-31	South of Railway station	Mepparambu - Melamuri - BOC road Jn Market Road	18	12
6	C-C	RD-15	off-take from road A2-A2 towards south	T Bus stand-Melamuri	15	16
7	D-D	RD-28, RD-39,	Middle of the scheme	Robinson– Town Bus stand, Manjakulam road	12	12, 8
8	D1-D1	RD-27	Off-take from Road A3-A3 towards south	English Church road - KSRTC By pass link only retained.	12	12
9	E-E	Nil	South side of Railway station	Nil	10	Nil
10	E1-E1	Nil	In between road D-D and road E-E	Nil	10	Nil
11	F-F	Nil	Estern side of Railway	Nil	7	Nil
12	F1-F1	Nil	South of the road F-F	Nil	7	Nil
13	F2-F2	Nil	Between road D-D and F1-F1	Nil	7	Nil
14	F3-F3	Nil	Off-take from road F2-F2 towards east	Nil	7	Nil
15	F4-F4	Nil	Off-take from road E1-E1 towards west	Nil	7	Nil
16	F5-F5	Nil	Off-take from road DD towards south	Nil	7	Nil

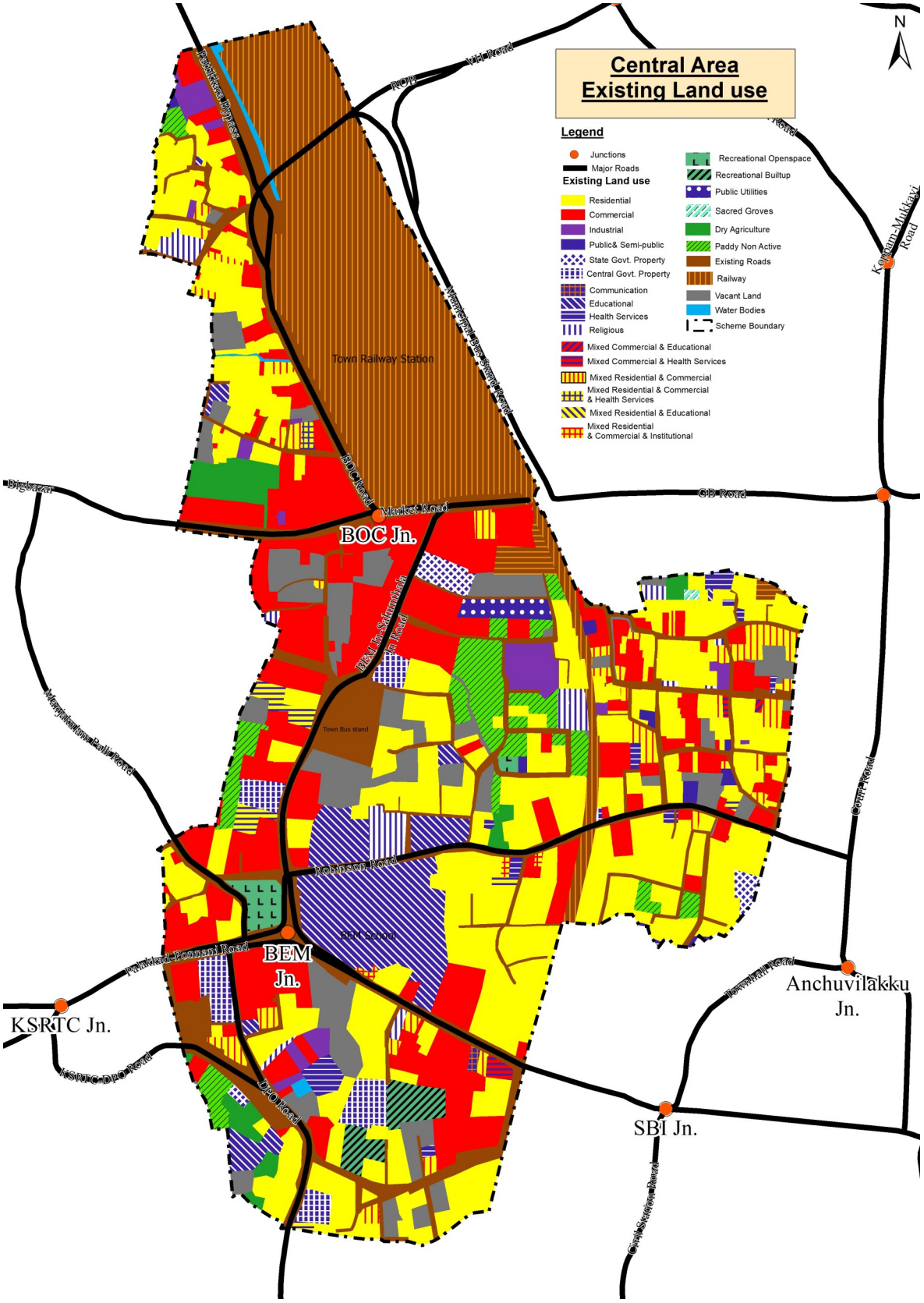


Fig. 32.7 Existing land use of area under DTP Scheme for Central Area

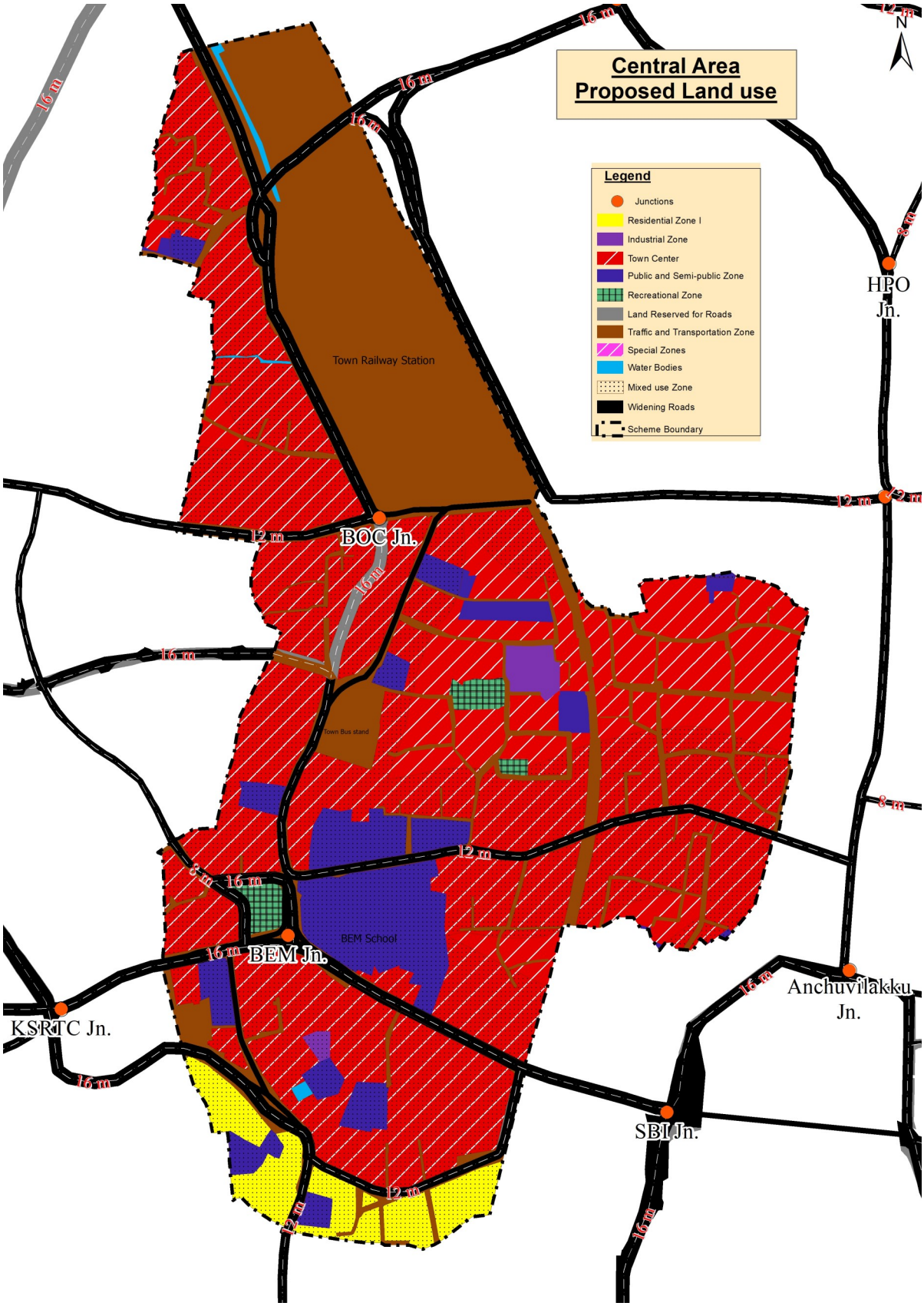


Fig. 32.8 Proposed land use of area under DTP Scheme for Central Area

32.3 DTP SCHEME FOR BIG BAZAAR

Big bazaar which is the focal point of commercial activities of the town requires redevelopment on account of the problems like heavy traffic, inadequate parking facilities, mixed nature of fast moving and slow moving traffic and pedestrian movements in the existing narrow road. The scheme aims at providing all infrastructural facilities for commercial activities of the area. An area of 39.84 Ha is included in the scheme. Government has accorded sanction for Big Bazar scheme vide GO(Ms) No 17/83/LAD dated 30/01/1988.The sanctioned scheme map of this DTP scheme is shown in figure 32.9

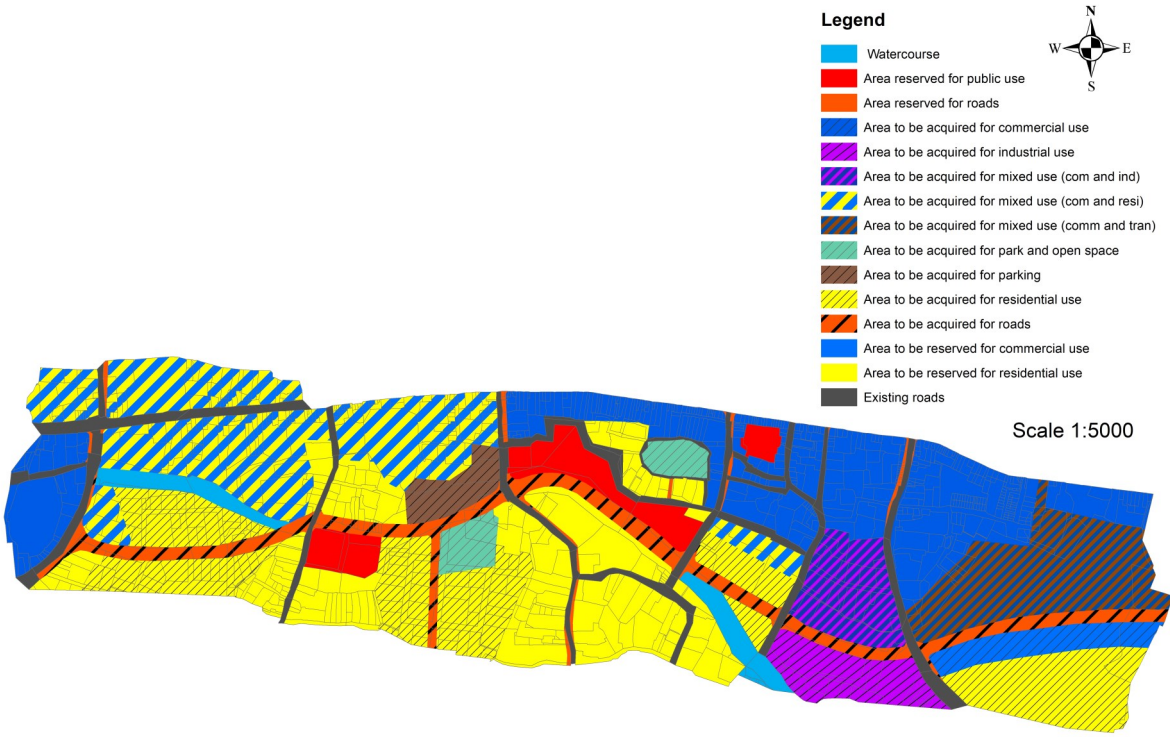


Fig. 32.9 Sanctioned scheme map of DTP scheme for Big Bazar

32.3.1 Road

One of the major proposal in this scheme was to construct a 15 m wide road parallel to the market road. This road starts from Town bus stand and continues parallel to Market road up to Melamuri. Development of the road from the beginning up to Manjakulam Road has been completed. Similarly, the stretch from Pattani street to Melamuri also has been completed. The construction of the road covering the irrigation canal at south side of the Big-Bazar School and acquisition of land from Vithunni Street to Erumakara street are yet to be completed.

In this DTP Scheme, four roads were proposed to be widened to 12m width of which, Manjakulam road and road from Melamuri jn. to Parallel road to market

are proposed to be retained in this master plan but with a different width. The widening proposal for Melamuri-Vadakkenthara road is not included in this plan. Similarly, widening of the Pattani street and widening proposal near the Anjaneya temple and Big-bazar School– Vadakkenthara road are also not considered in this master plan, considering the building density over these areas.

The roads and proposals retaining in this master plan is shown in figure 32.10 and the details are given in table 32.3

Table 32.3 Details of road included and excluded from DTP Scheme for Big Bazar Area

SL No	Code		Name of road		Width proposed (m)	
	DTP Scheme	Master Plan	DTP Scheme	Master Plan	DTP Scheme	Master Plan
1	A-A	RD-15	West-east middle of the Scheme	T bus stand-melamuri	15	16
2	B-B	RD-39	North-south, Eastern side of the scheme	Manjakkulam road	12	8
3	B1-B1	Nil	North-Middle of the scheme	Nil	12	Nil
4	B2-B2	Nil	Western side of the scheme	Nil	12	Nil
5	B3-B3	RD-31	Western side of the scheme	Part of Mepparambu - Melamuri - BOC road Jn	12	12
6	C-C	Nil	North-Middle of the scheme	Nil	10	Nil
7	C1-C1	Nil	Middle of the scheme	Nil	10	Nil
8	C2-C2	Nil	South, middle of the scheme	Nil	10	Nil
9	D-D	Nil	South, middle of the scheme	Erumakkara - pattani st	7	Nil
10	D1-D1	Nil	Middle of the scheme	Nil	7	Nil

32.3.2 Other Special zones

In this scheme, it was proposed to reserve 0.86 Ha of land for Park and open spaces. Since a major area of this land is now identified as settlements and the area around it is found to be a water body as per revenue records, the proposal for park and open spaces is not retained. However, the proposed park and open spaces on 0.3974 of land in Block No: 22, Survey No: 1140,1141,1149 and Block No:11, Survey No:460 (R.Sy.Block No: 157, R.Survey No: 36,39,40,41,42.59) as per the DTP scheme is retained for similar use in recreational zone (Now 0.1990 Ha. of land). The remaining area of that land is zoned as Town Center.

This scheme intended to set aside 0.22 Ha of land in ward 4, block 11, Survey no: 484 (Re.survey Block 154, Re. survey no:3,4,5) for the development of Big-Bazar School, but this land have not been acquired till now and commercial buildings are already in place in this land. So in this Master Plan it is zoned as Residential zone 1. The Big Bazar DTP Scheme had also earmarked an area of 0.94 ha in Ward no:4, Block: 10,11,22 and Survey No 455,456,458,459,1141 (Re Survey Block no:157 and Re survey no. 25,26,32,33,34) for parking. But this land was not acquired and are already converted for commercial purposes. Therefore this Master Plan proposed this area as Town Center Zone as well.

Existing situation of land use in the DTP scheme area is shown in figure 32.11 and the proposed land use with road widening proposals and special zones is shown in figure 32.12

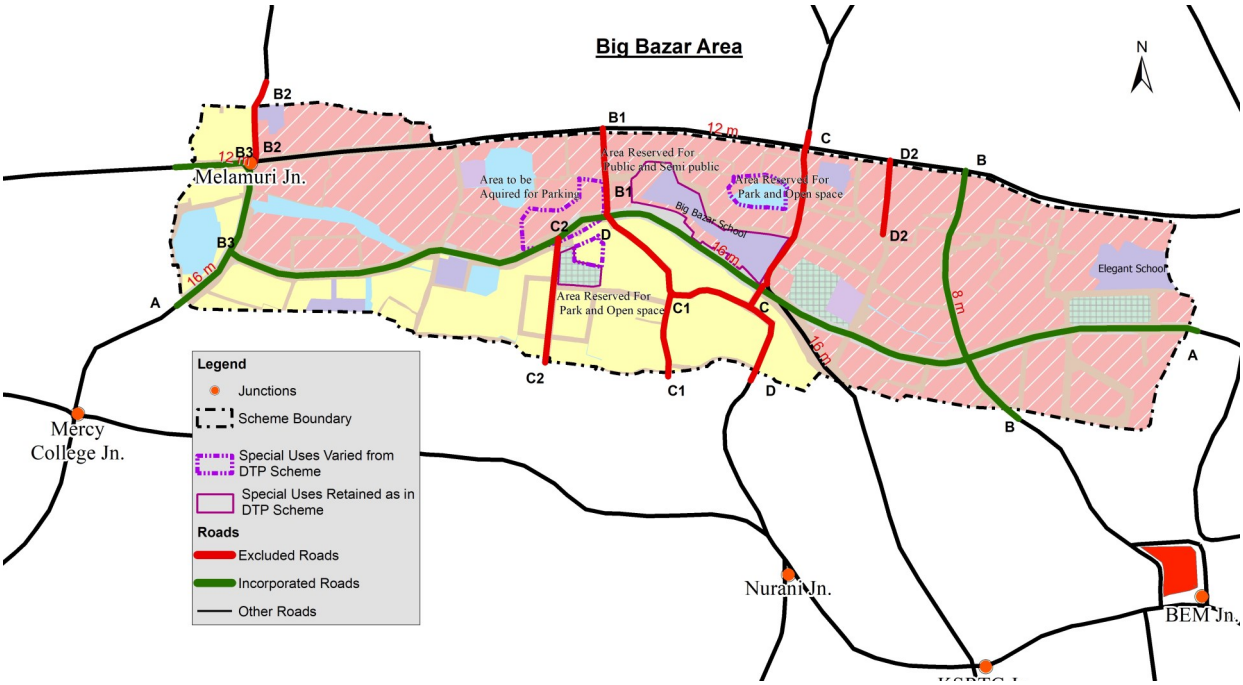


Fig. 32.10 Details of all proposals varied/ retained from DTP Scheme for Big Bazar Area in this Masterplan

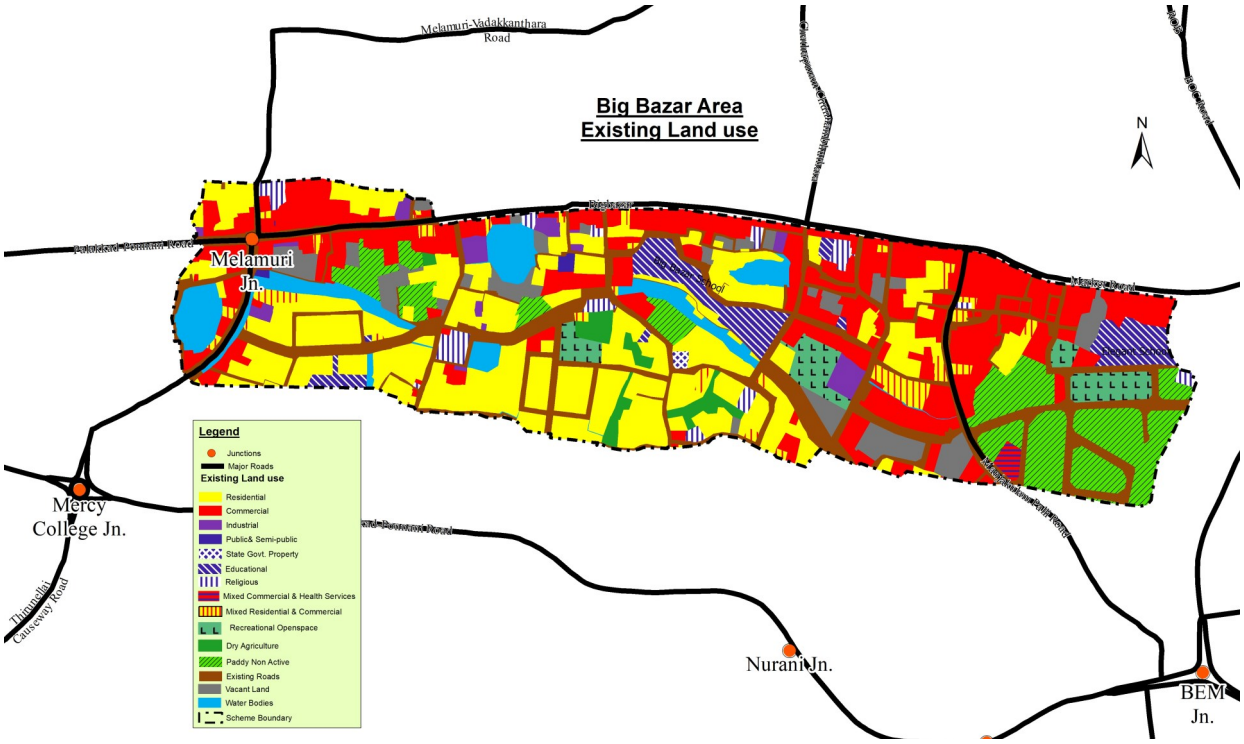


Fig. 32.11 Existing land use of area under DTP Scheme for Big bazar

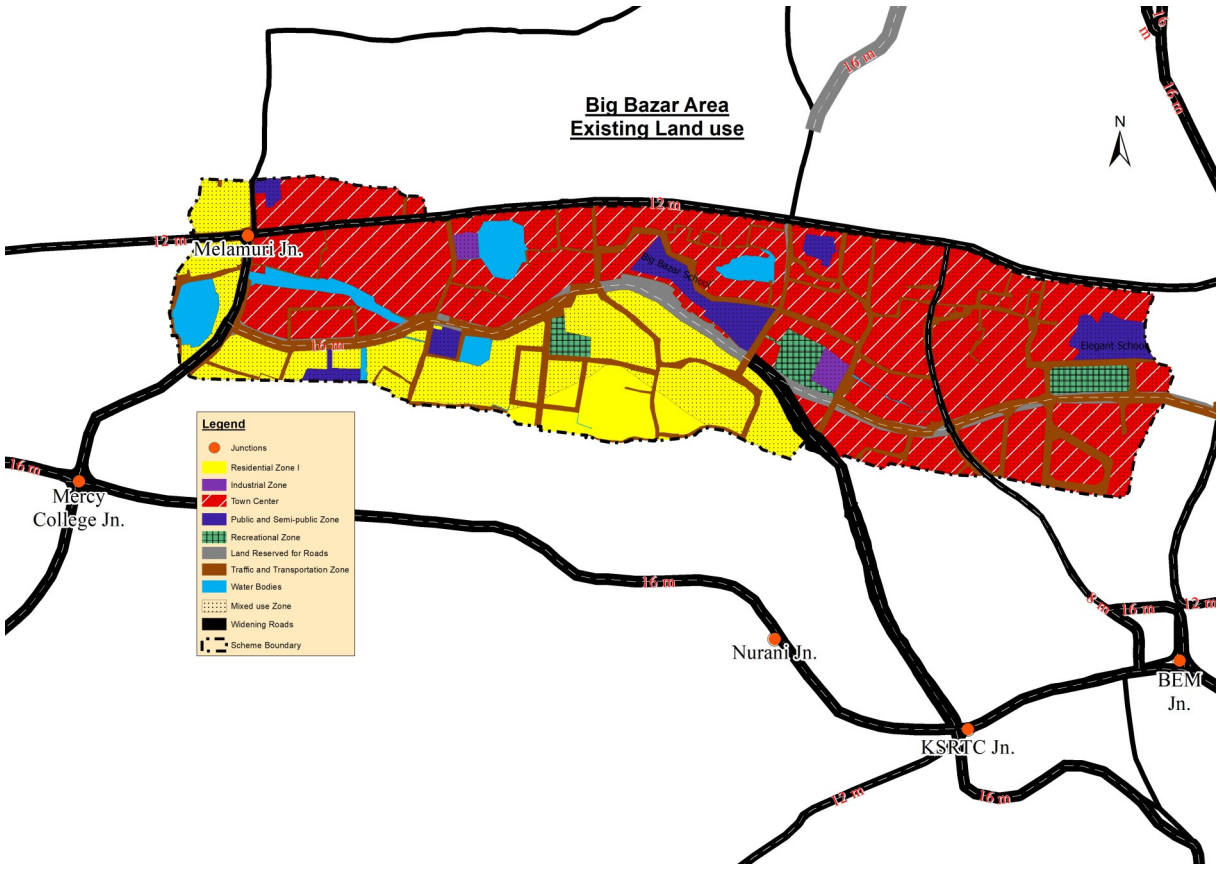


Fig. 32.12 Proposed land use of area under DTP Scheme for Big bazar

32.4 DTP SCHEME FOR AYYAPURAM - RAMANATHAPURAM

Ayyapuram - Ramanathapuram is a narrow strip of paddy field lying in between Kalpathy and Puthur and extends northwest from Malampuzha road near kopam. The built up area in the scheme is generally characterized by residential development mostly in the closed settlement pattern of agraharams or gramams. This scheme covers an area of 69.70 hectare and sanctioned by Govt Vide GO No (Ms) No 108/88/LAD dated 22/08/1988. The sanctioned scheme map of this DTP scheme is shown in figure 32.13

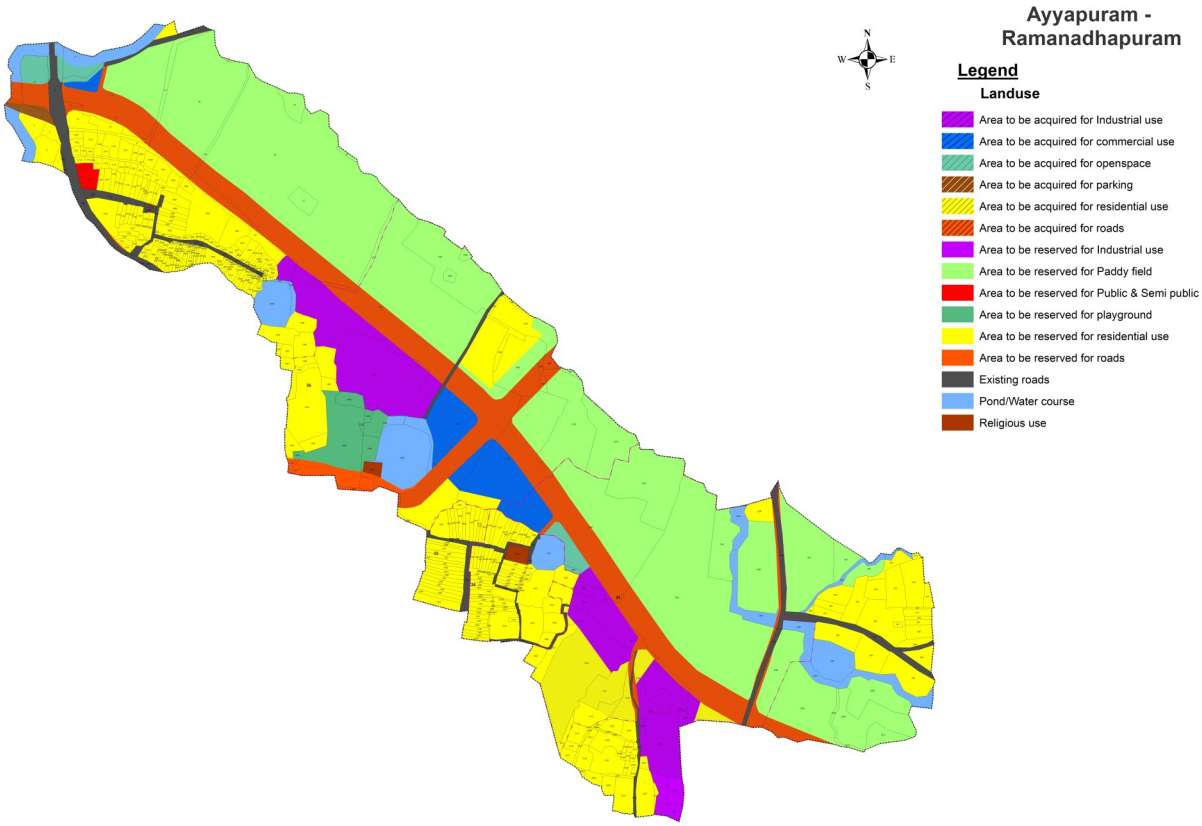


Fig. 32.13 Sanctioned scheme map of DTP scheme for Ayyapuram– Ramanathapuram

32.4.1 Road

One of the major proposal in this DTP scheme was to construct a bypass for the town with a width of 30 m connecting Kalmandapam and Sekharipuram. The project was implemented with a width of 20m. This master plan envisages to retain this proposal but with a better width. Another proposal of the scheme is to develop a 30m wide road from Victoria College which will cross the above Bypass and extends towards Mattumantha and is already completed. This DTP scheme also aims to widen the road from Victoria College premises to Chathapuram Jn in northern direction by 12m. The same proposal incorporated in this Master plan also.

Koppam-Puthur road and the Moyans School– Koppam road are the two roads proposed to be widened to 10m under this DTP scheme. The Amrut Master Plan intends to widen these roads but with a different width, considering the constraints in land availability. Two more roads of 7m width was also proposed in this DTP scheme, which was not considered in Amrut Master Plan due to land acquisition constraints.

The roads and proposals retaining in this master plan is shown in figure 32.14 and the details are given in table 32.4

Table 32.4 Details of road included and excluded from DTP Scheme for Ayyapuram Rama-nathapuram Area

SL No	Code		Name of road		Width proposed (m)	
	DTP Scheme	Master Plan	DTP Scheme	Master Plan	DTP Scheme	Master Plan
1	A-A	RD-3	Middle of the scheme	Sekharipuram - Kal-mandapam Road	30	24
2	B-B	RD-2, RD – 5	Road from Victoria college towards East	Victoria-100 ft. road	30	30, 22
3	C-C	RD-33	Road from A-A towards North	Sekaripuram-Victoria	7	12
4	D-D	RD-40	Road from Koppam junction to Puthur	Post Office-Koppam-Puthur-Kallepulli	10	8
5	E-E	Nil	Road from Moyan Girl's High School Junction to-wards North-East	Nil	10	Nil
6	F-F	Nil	Road from A-A to Sivan Ko-vil	Nil	7	Nil
7	G-G	Nil	Northern side of College Road	Nil	12	Nil

32.4.2 Other Special Zone

Under this scheme, it was proposed to acquire 0.84 ha land for park and open space in Block no: 1, Survey no: 2,3,9 along the north boundary of scheme. But this land could not be acquired completely for the said purpose. Also commercial and residential buildings are already constructed in this land. Hence, this proposal is not considered in this master plan and the prevailing land use is proposed to continue. Whereas, the land reserved for parking in this scheme is retained as transportation zone. This Scheme also reserved 1.37 Ha of land for park and open space, in Block No. 35 and Survey No. 1492,1493,1495,1498 and envisaged as play

ground where a new indoor stadium is constructed, which is included as such in this Master Plan.

The Scheme also envisaged 0.221 Ha. of land included in Block No 31 and Survey No 1298 adjacent to Shivan Kovil Pond to be acquired for park and open space, which was not carried out and hence, use of this land is thus changed to the use confining with the surrounding land use.

Existing situation of land use in the DTP scheme area is shown in figure 32.15 and the proposed land use with road widening proposals and special zones is shown in figure 32.16

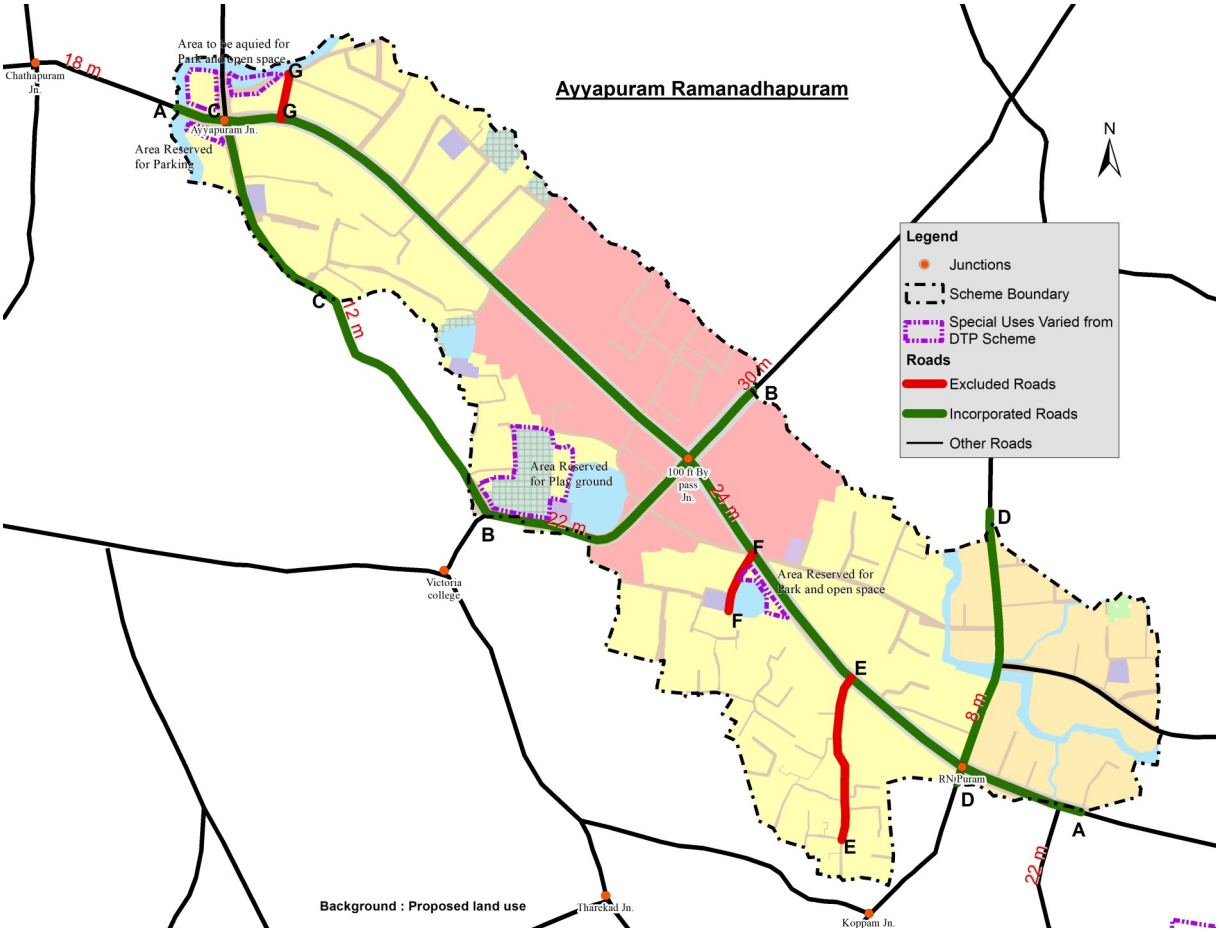


Fig. 32.14 Details of all proposals varied/ retained from DTP Scheme for Ayyapuram Ramanathapuram Area in this masterplan

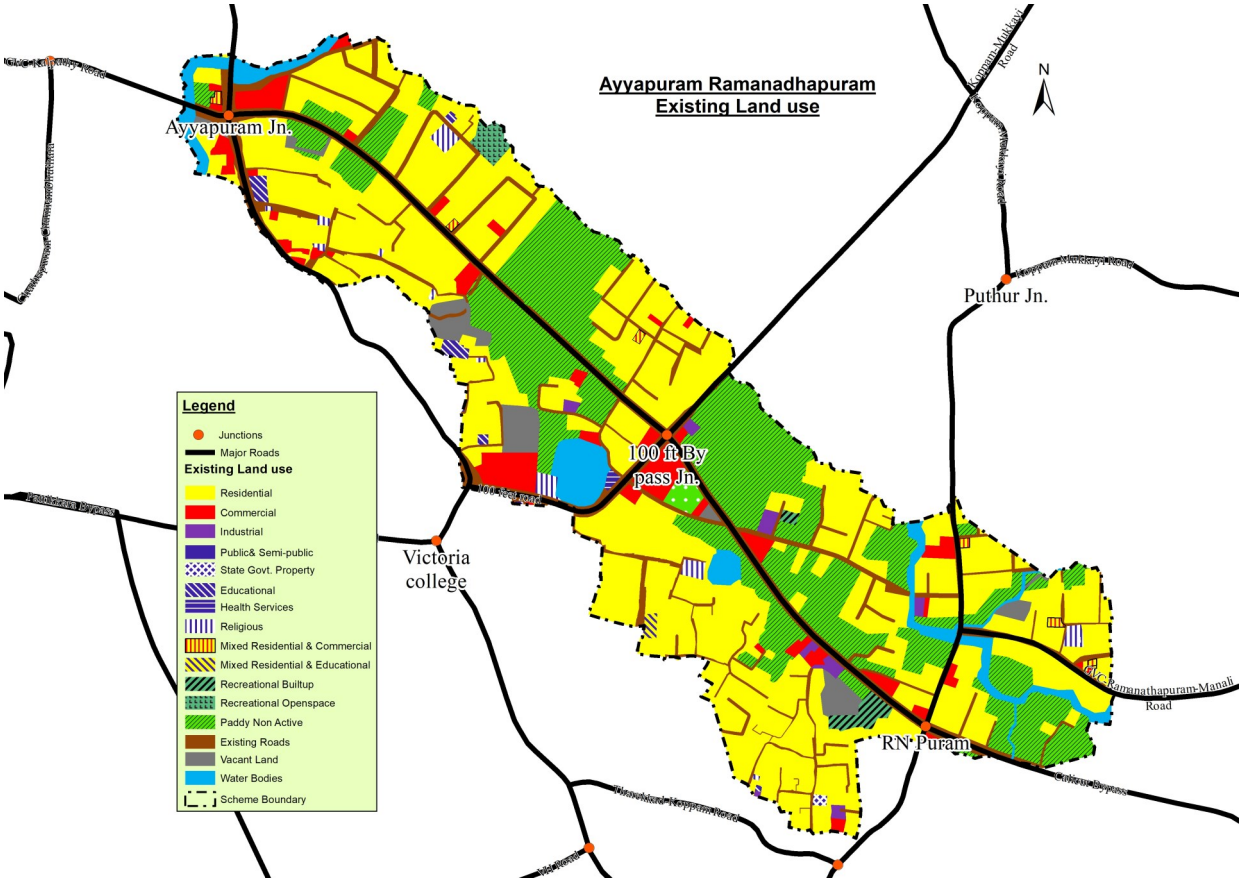


Fig. 32.15 Existing land use of area under DTP Scheme for Ayyapuram– Ramanathapuram

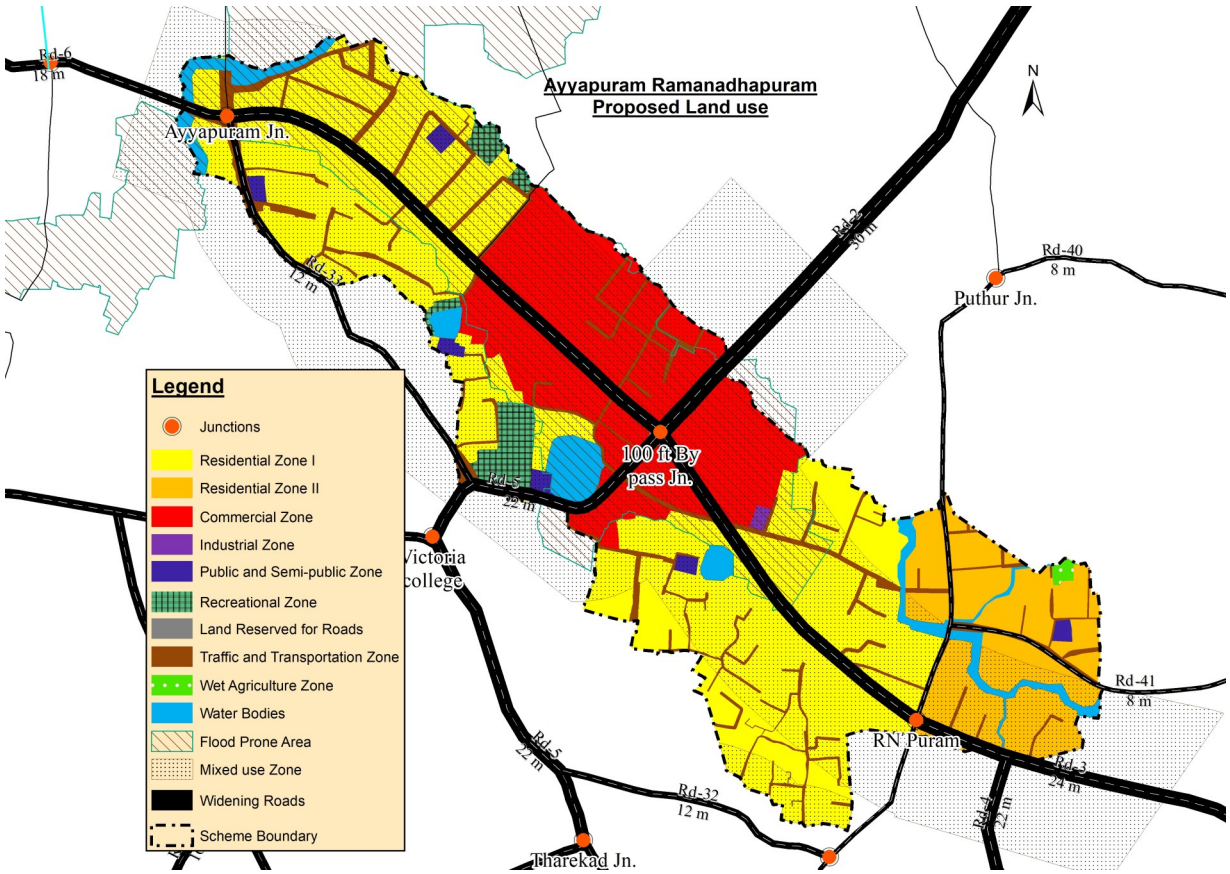


Fig. 32.16 Proposed land use of area under DTP Scheme for Ayyapuram– Ramanathapuram

32.5 DTP SCHEME FOR KALVAKULAM AREA

As per G.O.M.S.No. 33/88/LAD dated 09/03/1988 the Government have sanctioned the DTP scheme for Kalvakulam area. The area of scheme is 58.75 hectare and is skirted by the Coimbatore road on the southern side and proposed Calicut - Coimbatore bypass on the northern side. The sanctioned scheme map of this DTP scheme is shown in figure 32.17

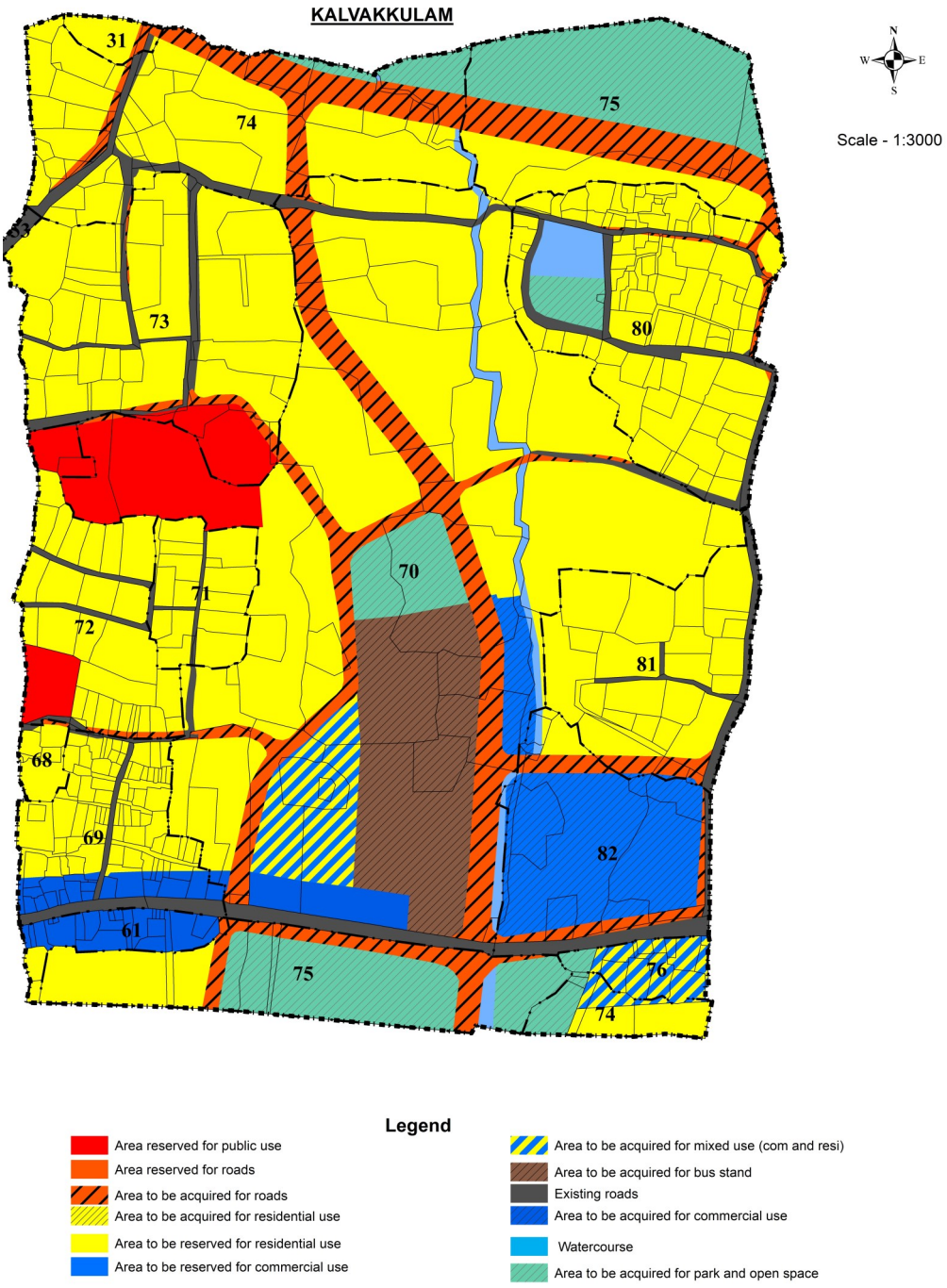


Fig. 32.17 Sanctioned scheme map of DTP scheme for Kalvakulam

32.5.1 ROADS

The objective of the scheme was to construct a bus stand and a new 20 m wide road for a length of 850m from there to connect to bypass. A part of this road stretch is already completed and land acquisition activities are pending at the remaining part. The proposal is retained in this master plan also but with a greater width and the detailed alignment is shown in the Part Map .

The Scheme also includes a part of Sekharipuram—Kalmandapam Bypass in a proposed width of 30m and already executed to 20m width, which is retained in this plan but with a lesser width. The part of National Highway 966 passing through this scheme was also proposed to be widened to 22m, but in this plan the road widening is not proposed to such width but to a lesser one.

This scheme aimed construction of a new road of 15m width on east of bus stand and upgrade the existing road to the same width to ease out the exit of the bus stand. But till date no acquisition has taken place. The scheme also aimed to widen the 244m stretch of the Koppam-Puthur road to 12m width, also to widen the existing road on the west side of the bus stand to 12m and extend it to join the new road constructed towards north of the bus stand and extend the same road towards east of the completed Bus stand to join at Kalvakulam-Mankavu road and raising the subsequent section to the same standard. Since, land acquisition has not taken place, and probability of getting these roads done are very low considering its diminishing importance, such proposals are not considered in this plan.

Under this scheme, five roads were proposed to be developed with a width of 7m. And none of them are considered in this plan, keeping the minimum standard road width to 8m

32.5.2 Other Special Zone

An area of 3.15 Ha has been marked as land to be acquired for bus stand in this DTP Scheme of which bus stand is constructed at an area of 1.74 Ha. An area of 1.93 Ha and 2.87 Ha of land are intended to be acquired and 0.26Ha to be reserved respectively for park and open spaces in this DTP scheme. In this, the land reserved for park actually belongs to a water body (survey no 3438) and hence retained as a water body in this Master plan.

Land to be acquired for park and open space on north of the land to be acquired for bus stand (survey no: 3031,3032) and the balance land for the expansion of bus stand area are not considered in this plan as the scope for expansion of bus stand and further acquisition of land is found to be impractical. Whereas land to be acquired for park and open space near the Indira Gandhi Stadium to the south of the Coimbatore

road (survey no. 3622,3623, 3624, 3627) is retained as recreational zone in this Masterplan also, considering its surrounding land uses .

Another land which forms part of the already acquired land for park and open spaces on the east side of Stadium-IMA road (at Survey no. 3609,3610,3611,3627,3628) in Kalvakulam DTP Scheme is proposed for Multi level parking, co working space and start up incubator in this master plan.

Details of all proposals included and excluded in this Master plan with in the boundary of DTP Scheme for Kalvakulam area are given in Fig. 32.18 and table 32.5.

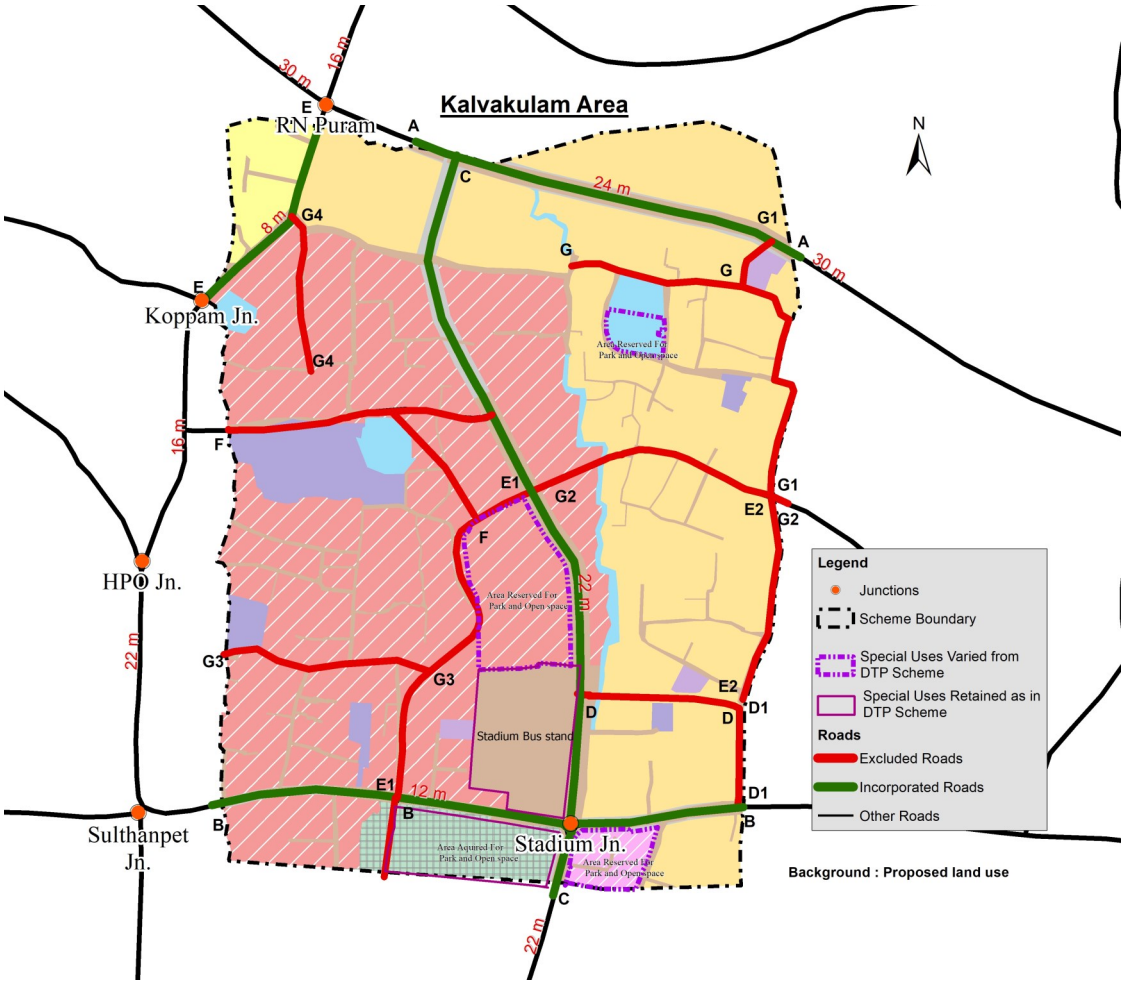


Fig. 32..18 Details of all proposals varied/ retained from DTP Scheme for Kalvakulam

Table 32.5 Details of road included and excluded from DTP Scheme for Kalvakulam Area

SL No	Code		Name of road		Width proposed (m)	
	DTP Scheme	Master Plan	DTP Scheme	Master Plan	DTP Scheme	Master Plan
1	A-A	RD-3	North side of the scheme	Sekharipuram - Kalman-	30	24
2	B-B	RD-30, RD-7	South side of the scheme	HPO - Stadium road, Stadium - Kalmandapam Road	22	12, 18
3	C-C	RD-4	Middle portion of the scheme (in between road A-A and Road B-B)	Stadium-Kalvakkulam Bypass link road	20	22
4	D-D	Nil	Between road C-C and Road D1-D1	Nil	15	Nil
5	D1-D1	Nil	Between road B-B and Road E2-E2	Nil	15	Nil
6	E-E	RD-40	North west corner of the scheme starting from A-A	Post office-Koppam-Puthur-Kallepulli	12	8
7	E1-E1	Nil	Road starting from midle por-tion of road C-C towards south	Nil	12	Nil
8	E2-E2	Nil	In between road G1-G1 and road D1-D1	Nil	12	Nil
9	F-F	Nil	Starting from the road E1-E1 towards western end	Nil	7	Nil
10	G-G	Nil	Portion of the road above Kalvakulam	Nil	7	Nil
11	G1-G1	Nil	North eastern end of the scheme starting from road A-A	Nil	7	Nil
12	G2-G2	Nil	Eastern side of the road CC connecting road CC and road E2-E2	Nil	7	Nil
13	G3-G3	Nil	Road to south western end of the scheme starting from road E1-E1	Nil	7	Nil
14	G4-G4	Nil	Western sid of the scheme starting for road E-E towards south	Nil	7	Nil

Existing situation of land use in the DTP scheme area is shown in figure 32.19 and the proposed land use with road widening proposals and special zones is shown in figure 32.20

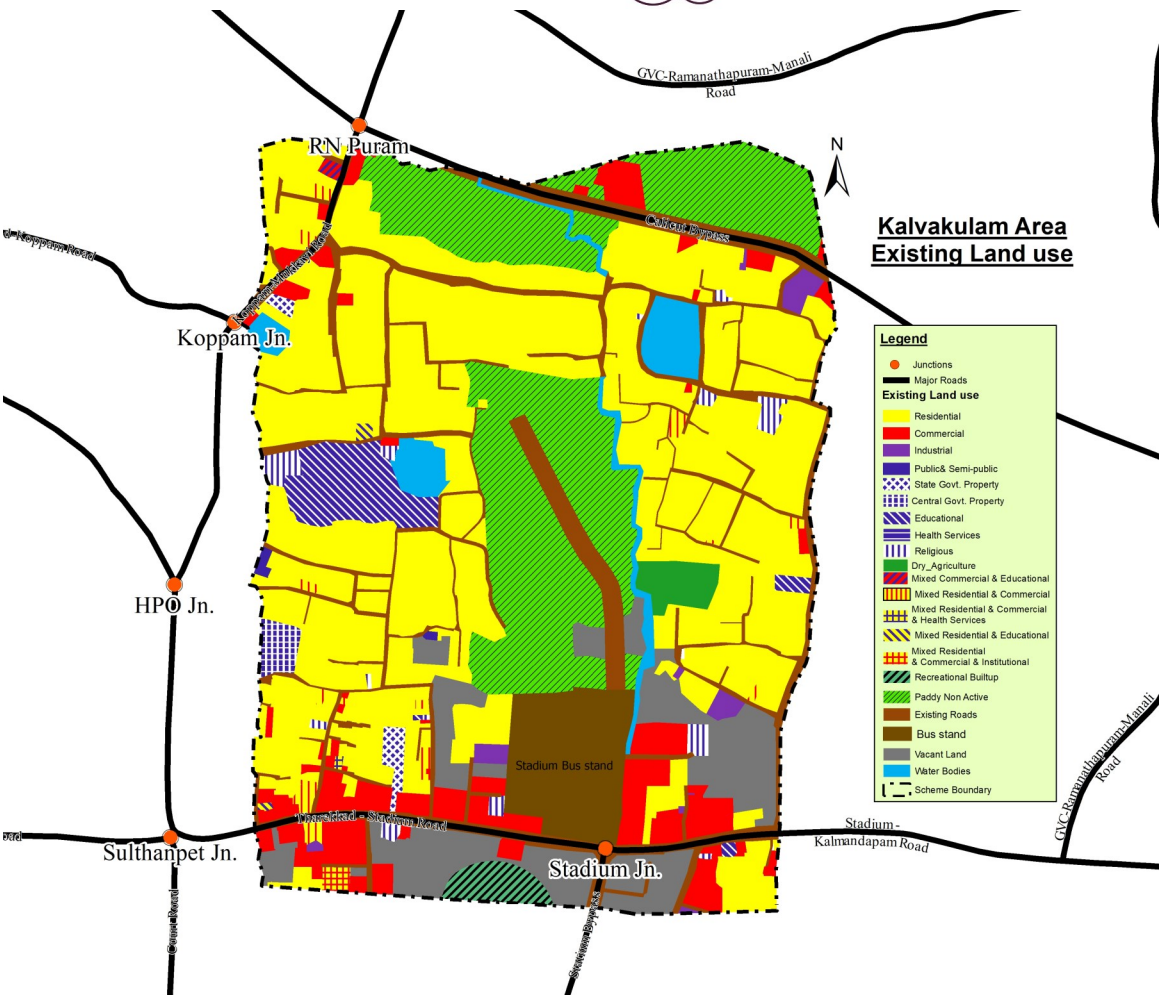


Fig. 32.19 Existing land use of area under DTP Scheme for Kalavakulam

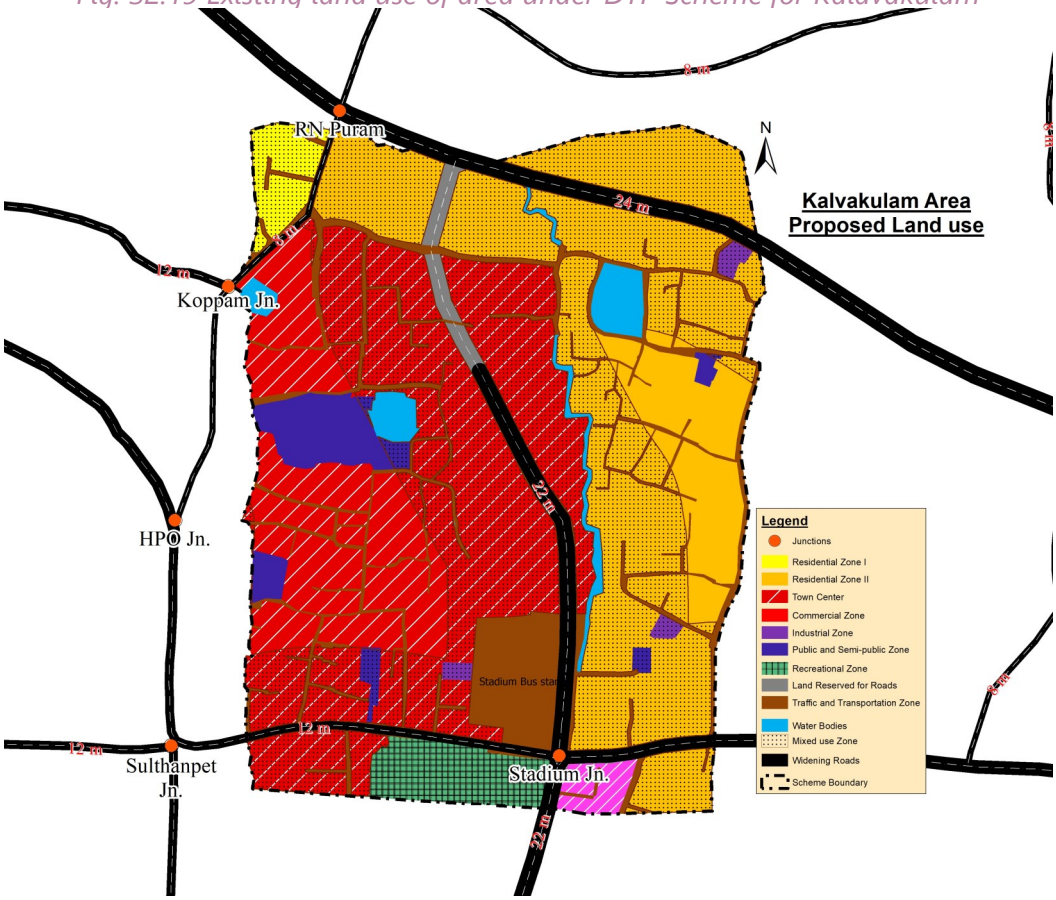


Fig. 32.20 Proposed land use of area under DTP Scheme for Kalavakulam

32.6 INFERENCE

Evaluation of DTP schemes in Palakkad have shown that some of the major proposals have been executed and some are on threshold of completion. Major achievement in the road sector are the completion of Calicut - Coimbatore bye pass road, Malampuzha road, link road between IMA Junction and Coimbatore road. These roads help to decongest the town area to certain extent.

The land acquisition and development of bus stand at Kalvakulam has partially completed. Decongestion of town centre is not yet fulfilled because of the incompletion of Stadium bus stand and connection road from Shornur Coimbatore road and Calicut Coimbatore bypass. Other main project of developing an indoor stadium ,the construction of structural work of building has completed.

Even though there are many obstructions and problems in the execution of schemes, almost 40 to 60% of the scheme proposals are fully completed or partially completed. Moreover these schemes controlled the development of the area in a planned manner and reserved the space for taking up the proposals in future.

Most of the roads proposed in five sanctioned DTP schemes of Palakkad town is included in this masterplan and these proposals were taken into account while planning the road network and sectoral proposals. However, to protect the detailed alignment already in force for such proposed roads, detailed alignments are provided in this master plan also as part maps of the proposed land use map in a scale of 1:1600. But, for the roads which are already completed and alignment is fixed, centre line control is only enforced. Roads with proposed width less than 7m in the sanctioned schemes and such roads including other roads which are not found suitable for further widening, are not included in this masterplan.

Hence, on sanctioning of this Masterplan, the five sanctioned DTP schemes will be revoked.

The location of the five sanctioned DTP schemes and the seven published schemes are available from the map shown in fig. 32.21.

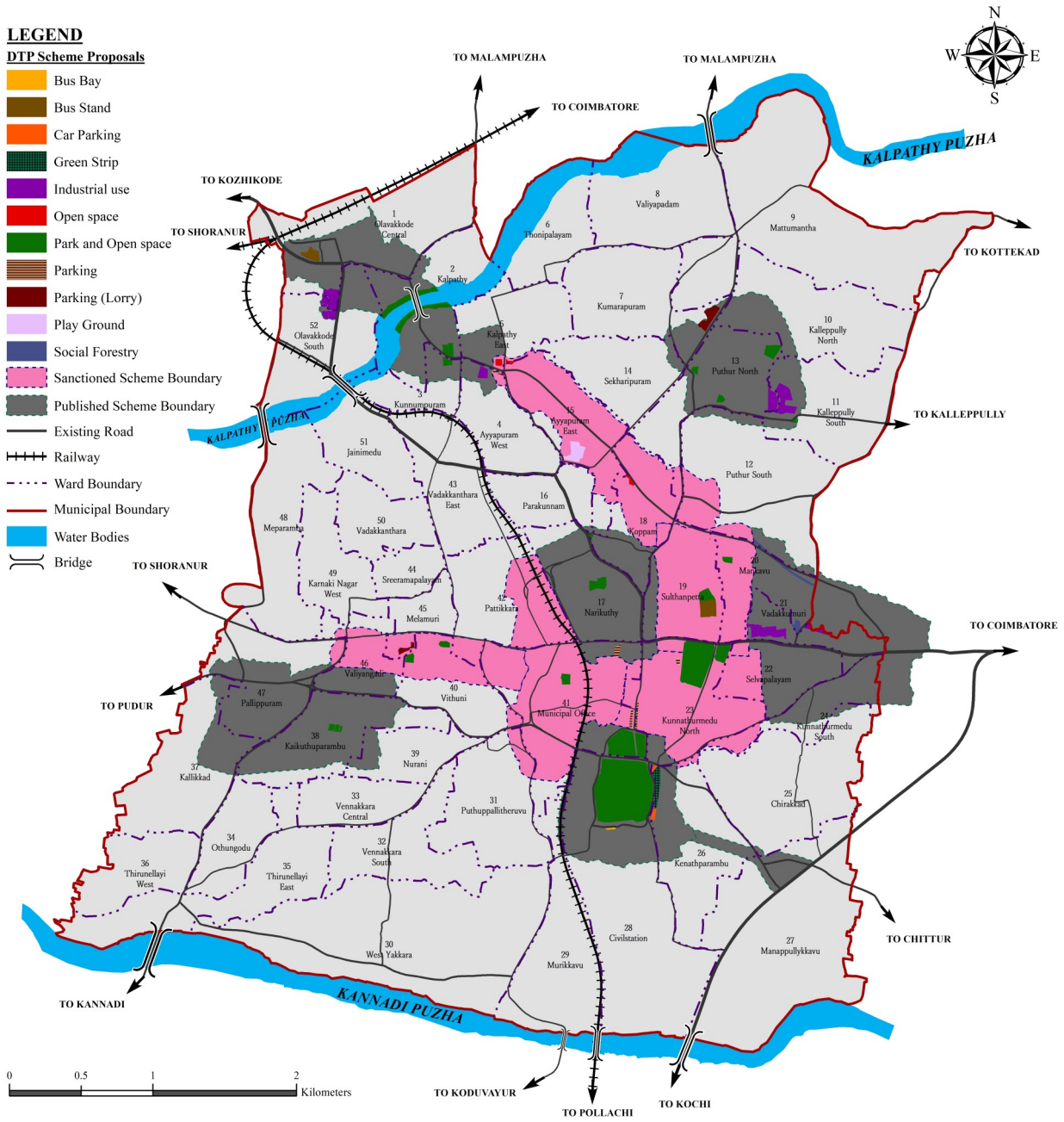


Fig. 32.21 Location of various DTP Schemes in Palakkad Municipality



CHAPTER 33-
PRIORITY ACTION PLAN , PHASING AND COSTING

33. PRIORITY ACTION PLAN, PHASING AND COSTING

In this chapter various projects proposed in various development sectors are prioritised based on their importance and urgency, the action plan to execute the projects and its scheduling or phasing is also described here. Probable fiscal requirement and resource mobilisation methods for each projects are also mentioned in table 33.1, which would serve as a reference for the implementation process. Even though detailed DPR and funding must be ensured before commencement of each project.

33.1. Feasibility of Implementation through SPECIAL PURPOSE VEHICLE (SPV) and PUBLIC PRIVATE PARTNERSHIP (PPP)

Various projects mentioned here under, are feasible to be implemented by the municipality through the formulation of a Special Purpose Vehicle. A special purpose vehicle (SPV) may be formed as a subsidiary institution of LSGI, to undertake these specific purposes and activities. Such SPV can be utilized in asset securitization, joint ventures, property deals, etc with its own assets and liabilities, as well as its own legal status without creating financial or operational risks to the LSGI. Here, the SPV may be created as a company of which the major share holder will be the Palakkad Municipality. It may also be operated in cooperative sector as a society that deals with infrastructure development and could also receive grants and aids from both central government, state government or local body or other supportive institutions to implement projects.

Creating an SPV is likely to ease out the PPP projects to get implemented. It will also attract more and more partners to get involved in these projects , which will help the municipality to get them materialised as soon as possible, without creating additional financial burden over them.

Listed below are the important projects including their Priority, Phasing, fiscal requirements and resource mobilisation techniques of which the major ones are further detailed afterwards.

Table 33.1 Phasing, Fiscal requirement and Resource mobilization

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
1.0	**Sewage Treatment Plant and FSTP, Pezhumkara**	TOP	0-5Years	52	Municipality to implement the project with the help of Suchitwa mission and KWA	Land to be purchased by Local Body. Project cost to be met from Central government assistance through AMRUT2.0 and GoK fund pooled from various missions
2.0	**Sewage Treatment Plant,Thirunellayi**	TOP	0-5Years	48	Municipality to implement the project with the help of Suchitwa mission and KWA	Land to be purchased by Local Body. Project cost to be met by Central government assistance through AMRUT2.0 and GoK fund pooled from various missions
3.0	**Housing project at Mannarkkattu parambu**	TOP	0-5 years	2.00	Special Purpose Vehicle, Municipality	Land available with Municipality. A residential aprtment to rehabilitate the staff residing at Mankavu quarters to be build here by the SPV with loans/ public funding from share holders. The remaining units may be rented out for additional revenue generation.
4.0	**Parking Ground near District Hospital**	Top	0-5 Years	0.10	Land owner, Municipality	Municipality could acquire the land through lease, and rent it out for Pay and Park
5.0	**Parking Ground near Civil Station**	Top	0-5 years	0.10	Land owner, Municipality	Municipality could acquire the land through lease, and rent it out for Pay and Park
6.0	**Housing Project at Sundaram Colony**	TOP	0-5 years	2	Municipality	Fund to be made available through Life mission, PMAY etc

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
7.0	Fort Avenue	TOP	0-5 years	2	Municipality and other line departments	Plan fund, AMRUT, Own fund, CSR fund etc
8.0	Fort Avenue- Stadium By Pass Link road	TOP	0-5 years	2.2	Municipality / other line departments along with funding agencies	Municipality to make available the land through suitable measures and may implement the project with plan fund , own fund, government funding agencies or other external funding agencies or in coordination with other line departments
9.0	Hospital avenue and stadium by pass link	TOP	0-5 years	12	Municipality / other line departments along with funding agencies	Municipality to make available the land through suitable measures and may implement the project with plan fund , own fund, government funding agencies or other external funding agencies or in coordination with other line departments
10.0	Big bazar- Melamuri parallel road and Managalam Tower-BOC junction link road	TOP	0-5 years	6	Municipality / other line departments along with funding agencies	Municipality to make available the land through suitable measures and may implement the project with plan fund , own fund, government funding agencies or other external funding agencies or in coordination with other line departments

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
11.0	**Stadium bus stand- Calicut by pass Link road**	TOP	0-5 years	1	Municipality / other line departments along with funding agencies	Municipality to make available the land through suitable measures and may implement the project with plan fund , own fund, government funding agencies or other external funding agencies or in coordination with other line departments
12.0	**Co-Working space and start up incubator**	Top	0-5 years	1.7	Municipality and SPV	SPV may construct a co working space/ start up incubator office space with commercial amenities in the ground floor with loans/ investors/ crowd funding/ and rent it for revenue generation
13.0	**Pedestrian commercial street**	TOP	0-5 years	3.5	Municipality/ Other line departments/ Consultant	The project can be implemented through consultants designed by urban designers and funded through MLA or MP LADs
14.0	**RRF and E waste Collection centre, Pezhumkara**	High	5-10 Years	1.56	Municipality to implement the project with the help of various missions	Land to be purchased by Local Body. funded through loans. Project implementation cost to be met by GoK fund pooled from various missions. Loan repayment can be met from the amount collected through sale of by products
15.0	**Fish and Meat Market at Meparambu:**	High	5-10 Years	2.09	Municipality and SPV	SPV can purchase land and construct a market with commercial amenities through loans/ funding from investors/ crowd funding/ and rent it for revenue generation

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
16.0	SHE lodge and Nirbhaya shelter home	High	5-10 years	2	Ministry of Women and Child development (MWCD), Government of India, State government, State DWCD/ Social Welfare Departments , state government, Women societies or SHG's, PWD	Since land is available with the government, fund can be made available from central government for the project
17.0	Sports Complex	High	5-10 years	70	Municipality, Sports Kerala Limited, District Sports Council	Land available with the Government, which may be made available for Sports kerala foundation or sports authority of india for construction of aquatic complex, indoor and outdoor coaching faciltiites and hostel facilities
18.0	Inter state Bus Terminal near Medical College	High	5-10 years	15	Municipality, SPV, Developer	SPV can purchase land and construct an inter state bus terminal with commercial amenities through loans/funding from investors/ crowd funding/ and rent it for revenue generation. Construcution of infrastructure may be done in BOT basis also, with a percentage of commercial area vested with the Muniaplity / SPV . Land may be made available through land pooling scheme also.
19.0	Multi level Parking near Stadium	High	5-10 years	10	Municipality, SPV	Land available with Municipality. A multi level car parking with pay and park facility may be built by municipality / SPV funded through loans. Funds available from AMRUT, other urbanm development projects, MP/MLA LADs etc may be user for this. Lower floors and frontage area may be utilised for commercial purposes also

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
20.0	**Multi level Parking near Town Railway Station**	High	5-10 years	10	Municipality, SPV	Land available with Municipality. A multi level car parking with pay and park facility may be built by municipality / SPV funded through loans. Funds available from AMRUT, other urban development projects, MP/MLA LADs etc may be used for this. Lower floors and frontage area may be utilised for commercial purposes also
21.0	**Parking Ground at Municipal office compound**	High	5-10 years	0	Municipality	Land available with Municipality which could be rented out for Pay and Park
22.0	**Sewage Treatment Plant, Yakkara**	High	5-10 years	25	Municipality to implement the project with the help of Suchitwa mission and KWA	Land to be purchased by Local Body. Project cost to be met by Central government assistance through AMRUT2.0 and GoK fund pooled from various missions
23.0	**Sewage Treatment Plant, Puthur**	High	5-10 years	90	Municipality to implement the project with the help of Suchitwa mission and KWA	Land to be purchased by Local Body. Project cost to be met by Central government assistance through AMRUT2.0 and GoK fund pooled from various missions
24.0	**Open Market Mankavu**	High	5-10 years	1	Municipality with funding agencies and CSR funds	Land available with Municipality. Infrastructure development may be done from Plan fund/ Own fund or through sponsorship

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
25.0	**Revitalisation of big Bazar area**	High	5-10 years	Initial cost of 10 cr	Municipality, SPV Developer, Land owners and tenants	A detailed re development scheme is to be prepared similar to a LPS. Municipality with the help of SPV should start re-building the market area from an end, rehabilitating the adjacent tenants to the completed buildings and extend the work. Additional shops may be sold or rented out for revenue generation and extension work
26.0	**Intermediate Ring road**	High	5-10 years	24	Municipality / other line departments along with funding agencies	Land acquisition and widening of existing roads, Junction re-development and construction over bridges etc must be done in a phased manner through plan funds and other urban reform grants
27.0	**Kalpathy Heritage Center**	High	5-10 years	1	Municipality / other line departments/ academies/ along with funding agencies	Land available with central government, which is to be transferred to municipality. Funds from Central or State department of cultural affairs, art and heritage commission, Sangeetha Nadaka Academy can be utilised. Association of Kalamanadalam may also be explored

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
28.0	**Employees Hostel, Working womens hostel and Community Kitchen**	High	5-10 years	4.5	Municipality and SPV	Land available with municipality. Initial fund to be made available by the SPV. Loans may also be obtained if possible. Rent from the building may be utilised for repayment of loans. Lower floors may be commercially utilised. Community kitchen may be built on BOT basis from caterers, which can be run as mess/ restaurant also.
29.0	**Police station**	High	5-10 years	0.7	Municipality, / other line departments	PWD or Police construction corporation must take initiation to built the infrastructure in the available land
30.0	**Truck Terminal on NH**	High	5-10 years	14.4	Municipality and SPV	May be built and operated by the SPV. Grants or funds may be sought from Urban transport ministry by the municipality also if possible for infrastructure development. Land may be made available through Land pooling schemes also.
31.0	**Ware house, Cold storage, Loading and unloading space**	High	5-10 years	1	Municipality, Private partner	May be built and operated by the SPV with the help of private partners. Funds, if available with ware housing corporation may also be sought if required. Possibility of partnership with E commerce companies can also be explored

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
32.0	**Manappullikavu- Civil station Link road**	High	5- 10 years	15	Municipality / other line departments along with funding agencies	Municipality / other line departments may carry out the work using plan funds. Possibility of Land acquisition through Land pooling schemes also may be explored.
33.0	**Tourism Information centre and art gallery**	Medium	10-15 years	0.6	Municipality/ line department/ corporations	This project may be materialised with assistance from line departments
34.0	**Parking Ground at Old Police station**	medium	10-15 years	0.10	Muncipality	Land available could be rented out for Pay and Park
35.0	**Parking Ground at Old fish market:**	Medium	10- 15 years	0.10	Municipality	Land available with Municipality which could be rented out for Pay and Park

Table 33.1 continued..

Sl no	Name of Project	Priority	Phasing	Fiscal Requirement (in crores)	Implementation mechanism	Resource mobilisation
36.0	**Inner Ring road**	Medium	10-15 years	11	Municipality, line department	Land acquisition and widening of existing roads, Junction re development and construction over bridges etc must be done in a phased manner through plan funds and other urban reform grants
37.0	**Mini civil station**	Low	10-15 years	5	Line department	Concerned department with the support of other departments must take initiation to built the infrastructure in the available land
38.0	**Outer ring road**	Low	15-20 years	50	Municipality, line department	Land acquisition and widening of existing roads, Junction re development and construction over bridges etc must be done in a phased manner through plan funds and other urban reform grants

33.2. SEWAGE TREATMENT PLANT/FEACAL SLUDGE TREATMENT PLANT

33.2.1. Location and Ownership Details

For the purpose of creating a liquid waste management plan, the municipality was divided into 5 sectors . The sectors 1 and 2 will be served by the STP at Puthur and Sector 3 will be served by STP at Yakkara. Sector 4 and sector 5 are served by STP at Thirunellayi and STP at Pezhumkara respectively. Septic tank waste generated in the entire municipality can be treated at FSTP in Pezhumkara. The location and ownership details of the proposed liquid waste management plants are given in table 33.2 and the location details of proposed liquid waste management plants are shown in figure 33.2

Table 33.2 Location and Ownership details of proposed liquid waste management plants

Technology	Sector covered	Location details	Area	Ownership
STP Puthur	1 & 2	Sy no.2907 of block 71 Rev–Ward No. 1, Sy. No. 565 of Block 12, Rev-Ward no. 2, at Ward 7 Puthur	0.311 Ha	Municipality Land
STP Yakkara	3	Sy no. 37& 39 of Block 134 at Ward 28 Yakkara	0.218 Ha	Private land
STP Thirunellayi	4	Sy no. 21 of Block 247 at Ward 35 Thirunellayi East	0.341 Ha	Private land
STP+FSTP Pezhumkara	5 (*FSTP covers whole municipality)	Sy no. 3 of block 53, at Ward 48 Pezhumkara	0.457 Ha	Private land

33.2.2 Project brief

Increased population density and use of leach pits and improperly constructed septic tanks for sewage disposal is polluting the ground water. The E-coli content in ground water samples are found to be dangerously high. Floods in 2018 and 2019 only worsened the situation by increasing the ground water pollution. In this context as a part of rebuild Kerala initiative liquid waste management plans were prepared by the LSGD planning department for all the municipalities in the state. A detailed sewage network plan should also be designed and prepared connecting all the sources to serve the sewage treatment plants.

Faecal sludge generated can be collected and transported to FSTP using vehicles with closable containers.

The technology selected for sewage treatment plant is rotating media bio reactor (RMBR). RMBR or Rotating Media Bio Reactor (Fig 33.1.) It is a highly intensified version of the attached growth aerobic biological treatment process. The RMBR is an eco-friendly process due to its lower energy consumption and complete absence of contaminated aerosol generation. In a residential environment, the microbial contaminated aerosols and foam generation by vigorous aeration is highly undesirable The RMBR can support a significantly denser population of microbes and therefore requires much shorter retention time compared to all other systems. The RMBR is silent and does not produce sound unlike other systems that depend on blowers for aeration. Also it requires lesser space compared to other technologies.

For the treatment of faecal sludge, Tiger Technology is selected. The Tiger FSTP treats sludge over 3 processes—the anaerobic waste digestion, vermification of organic matter, decontamination and polishing.

The project may be executed as a part of the AMRUT 2. Possibility of public private partnership and assistance from external funding agencies may also be made available.

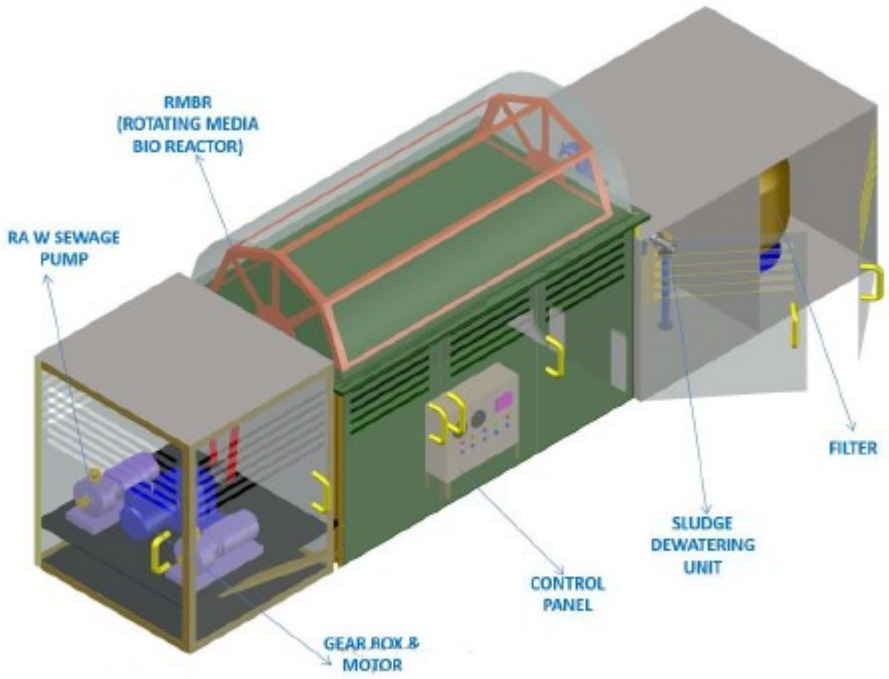


Figure 33.1 Rotating media bio reactor (RMBR)

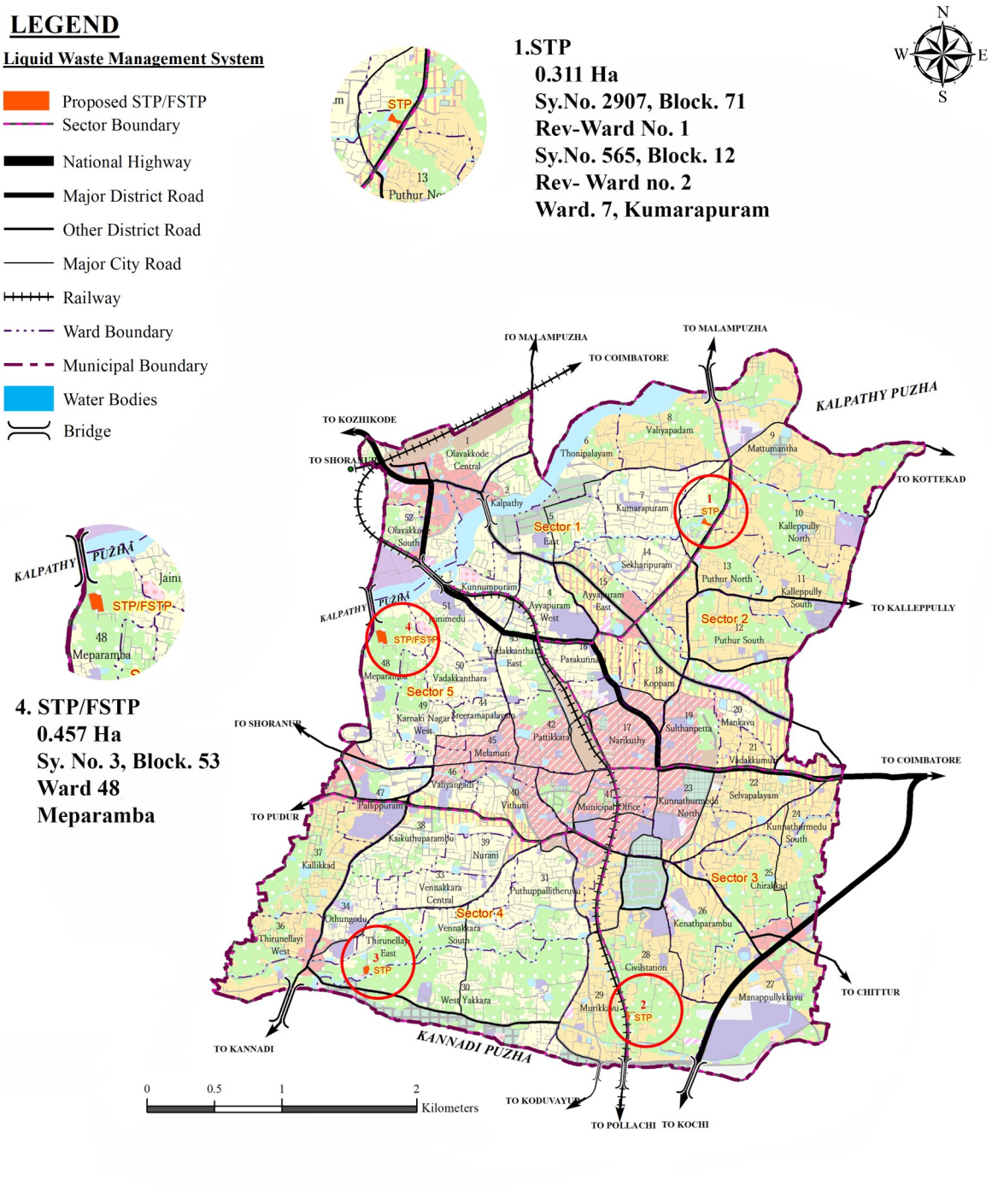


Figure 33.2 Location details of proposed liquid waste management plants in Palakkad Municipality

33.2.3. Responsible agencies

Table 33.3 shows the possible responsible agencies for the implementation of the project.

Table 33.3 Responsible agencies for the construction of Liquid waste management plants

Responsible agencies	Role
Revenue department	Land acquisition
KWA	Demand assessment, Planning, operations and maintenance, , Selection of consultant, Administrative approval, technical sanction, Contract management, Quality management, Monitoring
Municipality,	Land purchase, Public awareness, Facilitating the implementing agency, Arrange funds
State and central government, and their funding agencies	Finance
Consultants	Preliminary estimate, Functional design, Engineering design, Detailed estimate, detailed project report, Construction of infrastructure

33.2.4. Need for the project.

Currently there are no sewerage treatment facility in the Municipality. The sewerage generated in households and various establishments are disposed into on-site sanitation systems (septic tanks or leach-pits) where their partially treated wastewater and solids settle in on-site systems, leaching out under the ground polluting the ground water and posing severe risks to public health. The sullage (grey water) from the households directly flows into the roadside open drains and the waste water finds its way to Kalpathy river and Kannadi river without any treatment. This leads to wastewater stagnation, ground and surface water pollution, odour nuisance, insanitary conditions, mosquito breeding, and the spread of water borne & vector borne diseases. As per the size, class and hydro geological conditions as suggested in the world bank report "Human Excreta Management in Urban Kerala: Towards Sustainable Options State-Wide by World Bank" low network STPs+ FSTPs are the ideal solution for sewage treatment in Palakkad.

33.2.5. Suggested implementation mechanism

The power and responsibilities of constructing sanitation facilities rests with Local self government bodies. Sewerage systems, including sewage treatment plants and network of sewers, trunk mains, pumping stations, etc. come under the purview of the Kerala Water Authority (KWA) . Municipality can purchase the land or get it sponsored or acquire with the help of Revenue department. The local governments can be supported by GoK and Central government funds and funding agencies. Funding can be met from AMRUT mission also. The construction of Sewerage systems, including sewage treatment plants and network of sewers, trunk mains, pumping stations, etc. can be executed by selecting a suitable contractor through open tendering process by inviting competitive bids at national level. SPV's can provide technical assistance and supervise the project. The operation and maintenance of the treatment plant can be done by the municipality. Municipality can collect a fee from the sources for the plant's maintenance.

33.2.6. Other issues associated to be addressed.

- The selected location is near to the residential area. This can cause opposition from the locals, "not in my backyard" (NIMBY) or "not in my local area" (NIMLA) syndrome. Hence there is a need to engage with public to create awareness to gain their acceptance and support for the project.
- The core area of the town is developed haphazardly this could make the design of sewerage network difficult. Mostly the sewer lines will be laid under roads this can cause traffic problems and the roads may need to be re constructed.

Following are the clearances required for the implementation of the project

- Clearance from KSPCB for implementation and commissioning
- Clearance from KSEB
- Clearance from LSGD planning department
- Clearance from Electrical Inspectorate
- Clearance from fire and rescue department
- Building permits from municipality

33.2.7. Approximate project cost and funding.

- Detailed project report prepared by Ottapalam municipality is used as a base for calculating the cost for STP and guidelines given in world bank report on Human Excreta Management in Urban Kerala: Towards Sustainable Options State-Wide is taken as a base for calculating cost for FSTP. Proposed capacity for the

project is taken from Liquid waste management plan for Palakkad municipality prepared by the LSGD Planning, Palakkad. Proposed capacity is calculated by projecting the liquid waste generated by major establishments and population for the year 2040. The quantity of grey water generated for the population is considered as 75% of the total water consumption. Water consumption is calculated assuming a requirement of 70 lpcd. Table 33.4 shows approximate project cost for the construction of treatment plants. The total project cost for the implementation of project includes the cost for the preparation of sewerage master plan, development of sewerage network and construction of treatment plants etc. The development of sewerage network depends on various factors such as topography of the area, slope, road layout, soil conditions etc. Approximate project cost for the development of sewerage network which includes cost of laying sewerage lines, cost of providing connections to households/establishments, construction of manholes, pumping stations (if needed) etc. Comparing the project cost for similar project (Behind town) the project cost for development of sewerage system comes around 145 crores. Table 33.4 shows approximate project cost . Hence, the total project cost comes around 215 crores. The operation and maintenance cost need to be born by the ULB and can be recovered from households and other users on a monthly basis.

The programme can be implemented with funds from AMRUT Scheme or through funds pooled from various missions

Table 33.4 Approximate project cost for the construction of Liquid waste management plants in the municipality

Sl.No	Location	Type	Net covered area Ha	Proposed capacity (MLD)	Sewerage network development cost (in crores)	Treatment plant Project cost (in crore)
1	Puthur	STP	685.67	3.5	61	29
2	Yakkara	STP	325.5	1	17	8
3	Thirunellayi	STP	272.75	2	32	16
4	Pezhumkara	STP	342.69	2	35	16
		FSTP	1626.61	15(KLD)	-	1
				Total	145	70

33.2.8. Project Periods and Priority

Proposals on waste management sector are given highest priority but implementation of the whole project in first phase itself is not possible. Considering the population density of selected sectors, sector 4 has the highest population density and also the FSTP at mepparambu is proposed to cover the entire municipality. Hence the construction of STP at thirunelleyi and STP/FSTP at Mepparambu can be implemented in the first phase . The other two STP projects can be implemented in the second phase.

33.3. CO-WORKING SPACE AND START-UP INCUBATOR

33.3.1. Location details

A start up incubation centre cum co working space is also proposed along the land earmarked for multi level car parking proposed near stadium bus stand. In a 0.464 ha land under Sy number 3612, 3613 of block 74 and 3614, 3627 of Block 75 in resurvey ward number 5 ward 23 Kunnathurmedu North. The land is under the ownership of municipality.

33.3.2. Project brief



Co-working is when people assemble in a neutral space to work independently on different projects, or in groups on the same projects. Start-up incubators nurture start-ups and entrepreneurs by providing an array of resources and support in the most critical, vulnerable growth periods for early stage companies.

The project includes construction of a 6000 sqft multi-storeyed building for using as co-working space and start-up incubator. The building should have spacious and open working area, comfortable and functional furniture, Premium technology, Conference and call rooms and a Separate kitchen area. Table No 33.5 enlist various agencies responsible for the implementation of the project and their roles.

33.3.3. Need for the project and Suggested implementation mechanism

Co-working spaces are becoming increasingly popular in technology sectors. A co-working space is an open office space that's designed to foster a sense of

community. This is done when workers from many businesses are able to complete their work under one roof. Since these spaces are shared, costs are kept very low for any business that decides to become a part of the co-working space. Even though co-working spaces are similar to standard office spaces, they are notable for being more vibrant and energetic, which is why these spaces are considered to be highly beneficial for small teams, freelancers, entrepreneurs, and start-ups.

The project can be implemented on Public Private Partnership (PPP). The land for the project is owned by municipality, it can be handed over to a suitable private partner who can finance the project and do time bound implementation. Private partner can own and operate the facility for a specific period say 15-20 years under a contract and at the end of the period can be transferred back to the municipality.

Table 33. 5 Agencies responsible for the implementation of startup incubator and co-working space

Responsible Agencies	Role
Municipality	Initiation of the project, Coordination, Finding a
Developer, SPV, Private Partner	Financing, Development of infrastructure in PPP mode, Operation and maintenance.

33.3.4. Approximate project cost and funding.

Table 33.6 shows approximate project cost for the project and it comes around 1.7 crores. The total cost of the project must born by the developer. The project can be implemented in the first phase itself. Approximate project duration is one year.

Table 33. 6 Approximate project cost for the implementation of startup incubator and co-working space.

SI No	Item	Amount in Lakhs
	Development cost	
1	Construction of infrastructure facilities	150
	Overheads	
1	O&M charges @0.2% of (A)	0.3
2	Inflation at 6% of A	9
3	Miscellaneous	10
	Grand Total	169.3

33.4. PEDESTRIAN COMMERCIAL STREET

33.4.1. Location details

The street between Fort and fort maidan is an iconic pathway inside the city that depicts culture and character of the town with a historical significance. Thus it is proposed to be redesigned as a pedestrianized commercial street for informal activities with a holistic approach. This includes redesign of SBI junction and IMA junction and restricting the road between these junctions to be transformed completely as a pedestrian only street with an emergency lane for vehicles to be used in case of an urgency.

33.4.2 Project brief

It is proposed here that the measures like exclusive pedestrianisation, scheduled pedestrianisation, curtailing the street space allotted for vehicles, providing a suitable character design to street vending vehicles that resembles an idol of Palakkad etc. may be imposed. The parking can be provided both in small fort Maidan and the SBI junction, and people can walk freely and purchase without any fear of vehicles. The street will also act as a recreational space providing a gathering space as well as communal harmony so that the public could gather, travel and interact with each other without any disturbances.

33.4.3. Need for the project and Suggested implementation mechanism



Palakkad town lacks a space where the residents as well as visitors could gather and spent some time peacefully. Fort being the most iconic structure situated inside the city, the park and walking areas inside it needs a harmony with the space outside also. More over, being a busy street vending zone within the city, the street is to be showcased as an idol of Palakkad for the visitors coming from various places of the country to visit the place duly providing a sense of satisfaction in mind while leaving here. The project thus incorporates mobility elements such as foot paths and cycle tracks as well as additional elements such as trees, street furniture and organised vending spaces in an integrated design.

The project is to be implemented by transforming an existing road under PWD. The Municipality may take initiation for discussions with the concerned line

departments and traffic regulating authorities along with the peoples representatives so that the change in traffic pattern needed for implementing the project may be conveyed. The project needs a comprehensive urban design which is already included in this plan as Annexure. A detailed estimate is to be prepared before finding a suitable agency to implement the project. The funding will have to be met as a special assistance from Central or State government.

Table 33. 7 Agencies responsible for the implementation of Pedestrian Commercial Street

Responsible Agencies	Role
Municipality	Initiation of the project, Coordination, Finding a suitable developer
MP/ MLA, Line departments	Implementing the traffic regulation, Funding
Developer,	Development of infrastructure

33.4.4 Other issues associated to be addressed.

- Regulation of Traffic and change in traffic pattern
- Rehabilitation of street vendors
- Permission from Archaeological Survey of India if required
- Rehabilitation of Auto Taxi stands
- Redesign of Junctions, needed to be carried out simultaneously
- Re alignment of existing infrastructure facilities like water pipe lines, electric lines etc.

33.4.5. Approximate project cost and funding.

Table 33.8 shows approximate project cost for the project and it comes around 3.5 crores. The project can be implemented in two phases if required. Approximate project duration is one year.

Table 33. 8 Approximate project cost for the implementation of Pedestrian Commercial Street

Sl No	Item	Amount in Lakhs
1	DPR preparation cost	0.50
2	Construction of infrastructure facilities	350
	Grand Total	355

33.5. RESOURCE RECOVERY FACILITY (RRF) and E-WASTE COLLECTION UNIT

33.5.1.Location and ownership details

A total area of 0.453 Ha included in Sy no. 4 of block 53, at ward 48 (Mepparambu) near Pezhumkara By-pass is selected for the construction of resource recovery facility and E-Waste management facility. It is located near the Proposed STP/FSTP. (Fig 33.3). The location is owned by private parties.

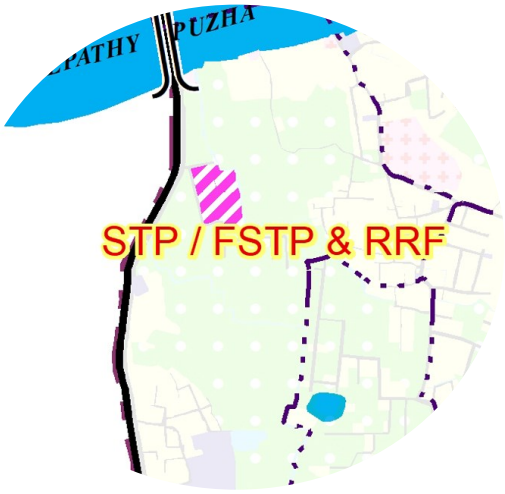


Fig. 33.3 Proposed location for Resource recovery facility, E-waste collection unit and STP/FSTP

33.5.2 Project brief

The project include

- Installation of mini-material collection facilities (MCF) in all wards
- Installation of resource recovery facility (RRF) which includes dust remover, Shredding unit and Bailing unit at Meparambu.
- The project includes the construction of 10000 sqft Building for E-waste management. The building should have space for unloading, sorting and storing, office space and space for common utilities.

The project can be implemented by the municipality in association with Suchitwa Mission and Clean Kerala Company. Table No 33.9 enlist various agencies responsible for the implementation of the project and their role.

Table 33.9 Responsible agencies for the installation of MCF and RRF in the Municipality

Responsible agency	Role
Municipality, Health department	Implementing agency, Monitoring, Operation,
Engineering department	Preparation of DPR, Technical sanction
Clean Kerala Company	Providing technical Guidelines
Suchitwa mission	Finance
Private partner	Construction and installation
Kudumbasree, Harithakarmasena	Collection and Segregation

33.5.3. Need for the project.

Proper management of waste is important for building sustainable and liveable towns. Due to increased population, mounts of waste is generated in the municipality everyday and illegal dumping can be seen in many locations creating insanitary conditions. Management of non biodegradable wastes like plastics, metals , fibre, rexin, rubber etc pose serious environmental threats as it can lay on land for years polluting soil and water. Burning of this waste can cause air pollution hence these needs to be collected and managed properly. E-waste comprises of wastes generated from used electronic devices and household appliances which are not useful for their desired and designed use. When we dispose of gadgets and devices improperly, these hazardous materials have a high risk of polluting the air, contaminating soil, and leaching into water sources. When it reaches natural groundwater, it introduces lethal toxicity. Health risks range from kidney disease and brain damage to genetic mutations. Due to rapid developments in technology, openness of market, industrialisation and increased consumerism the obsolescence rate of electronic and electrical waste are very high. And hence the amount of e-waste generated is also increasing rapidly. Therefore, proper management of E waste is also a necessity.

The existing system of waste collection involves door to door collection of segregated waste using harithakarmasena every week. Segregated wastes collected from sources are transported to the nearest MCF where they undergo second stage segregation into different types. And from there, it is transported to resource recovery facility (RRF) available 8 Km away from Municipality in Kodumbu Panchayath. In RRF, Recyclable wastes are bailed and send to recycling plants and non recyclable wastes are shredded and transferred to clean Kerala Company which is used for purposes like road tarring. Wastes which cannot be recycled or reused are bailed and transferred to cement factories or government authorised landfills through Clean Kerala Company. There are no system for the collection of E-Waste Door to Door collection from HH's and establishments in the municipality. E-waste can also be collected along with other wastes and can be temporarily stored in MCF itself.

The existing solid waste management system in the Municipality covers only 44% of the population. Waste generation in the Municipality is around 40 TPD and among it only less than 20 TPD are collected for waste management. Dry waste generated in the municipality comes around 1 to 1.5TPD Plastic. There are only 7 MCF and no RRF within the municipality. Shredding unit of RRF available in Kodumbu Panchayath is not up to the demand. Hence mini MCF's are proposed in all wards and a RRF and E waste collection unit is proposed in Mepparamba. The collected E-waste can be sold to recycling companies through various means such as auction, scrap sale or open bidding.

33.5.4 Suggested implementation mechanism

For setting up mini MCF, RRF units and E waste collection unit, a detailed project report can be prepared and technical sanction can be obtained through the engineering department. Municipality can act as the implementing agency. For those projects, which need Suchithwa mission fund the projects can be submitted to suchitwa mission after getting technical approval. LSGD plan fund, Finance commission grand, Swatch Bharath mission grand, can also be utilised for this purpose. For the installation of machines like dust remover, shredding unit, and bailing machine in RRF, Municipality can invite tender complying with the specification given by clean Kerala company. Clean Kerala company can provide technical guidelines for the implementation of the project. Municipality can operate and maintain the plant. A nominal fee can be collected as collection charges from households and depending upon the quantity of waste generated higher fee can be collected from commercial or other establishments

33.5.5. Approximate project cost and funding.

Table 33.10 shows approximate project cost for the project. The approximate cost required for the installation of 52 Mini MCF's and the construction of 2000 sqft RRF with plastic shredding unit and bailing machine comes around 59 lakhs.

Table 33.10 Approximate project cost for the installation of MCF and RRF in the Municipality

SI.NO	Facility and specification	Numbers	Unit cost	Cost in lakhs
1	Mini MCF	52	69000	36
2	RRF in 2000 Sq.feet including construction of building, necessary machineries, facilities etc	1	2260000	23
	E waste collection center with amenities	1	10000000	100
			Total project cost	156

33.5.6. Project Periods and Priority

Proposals on waste management sector are given highest priority. In the first phase, installation of 20 MCF and RRF can be completed. The rest 32 can be installed in the next phase. The locations for the MCF shall be selected based on the population density, availability of land etc.

33.6 FISH AND MEAT MARKET

33.6.1. Location and Ownership Details

Facilities available in the existing fish market situated in Valiyangadi is very limited and hence need to be shifted into new location. The selected location for the proposed modern fish and meat market is in Mepparambu by-pass on a Land in Sy.no 41, 53, 59 in block no.113 of ward 47 (Pallippuram) with an area of 0.530 Ha. (Figure 33.4) The area already has a number of small fish and meat stalls. The identified land for the fish market is under private ownership. Fig.33.4 shows the selected location of Fish and meat market.



Fig. 33.4. Location of Fish and Meat Market

33.6.2 Project brief

The project involves construction of infrastructure facilities for a modern fish and meat market for the municipality in the above selected location. Infrastructure facilities should include Roofing, flooring, cold storage, waste management facilities etc. It also aims at rehabilitating the unhygienic meat selling practises and stalls to the modern methods and facilities and thereby ensuring a quality in health and life of the people under hygienic conditions.

Table No 33.11 enlist various agencies responsible for the implementation of the project and their role.

Table 33.11 Agencies responsible for the development of modern Fish and Meat market.

Responsible Agencies	Role
Municipality	Purchase of land and identification of
Developer	Finance and develop the infrastructure
Matsyafed	Providing guidelines and technical support

33.6.3. Need for the project

The existing fish market inside the Big bazar is very congested and functions in

unhygienic conditions. This must be shifted to an ideal location outside the market with access to vehicles of both wholesalers and retailers. And also there are lot of meat stalls functioning inside the municipality without proper licenses and hygiene measures. The modern market can provides facilities for those stalls to work with modern facilities in hygienic conditions and ensure the availability of quality meat and fish to the people in the municipality. The existing fish market location can be used for parking.

33.6.4. Suggested implementation mechanism and Approximate project cost

The project can be implemented by the municipality through public private partnership. Municipality can purchase the land or get it sponsored by some agencies. The land can be handed over to a private partner who is competent to invest and execute the project. The private party can own and operate the project for a fixed period under contract and at the end transfer the assets back to the municipality.

Table 33.12 shows approximate project cost for the project. Approximately 2.1 crores is needed for the implementation of the project

Table 33.12 Approximate project cost for Fish and Meat market

Sl No	Item	Amount in lakhs
	Development cost	
1	Construction of infrastructure facilities (Roofing, Flooring ((10000 sqft)	150
2	Cold Storage	50
	Overheads	
1.	O&M charges @0.2% of (B)	0.3
2	Inflation at 6% of B	9
	Grand Total	**209.3**

33.6.5. Project Periods and Priority

The project may be implemented in the first phase itself. Activities involved are Land purchase/get sponsored, Identification of suitable developer, Development of infrastructure facilities etc. The project period is approximately one year. The project also can be materialize through PPP model.

33.7 SHE LODGE AND SHELTER HOME

33.7.1. Location Details

Approximately 0.097 ha area is selected for She lodge and Nirbhaya Shelter home. Near Medical college in a land of Survey Number 4 Block 181 Ward 27 Manapullykavu. (Figure 33.5) The selected land is already acquired by the revenue department for the project.

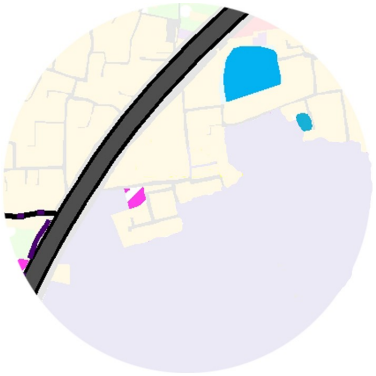


Fig. 33.5 Location of proposed She Lodge and Nirbhaya Night shelter.

33.7.2 Project brief

The project includes the construction of multi storied building with infrastructure facilities needed for SHE Lodge and Nirbhaya shelter homes. SHE Lodge aims to provide short stay for women travellers and their children and whereas Nirbhaya shelter homes aims to provide shelter to the victims of sexual abuse and human trafficking. The ground and first floors of the building can be used for SHE lodge and top floors can be used as Nirbhaya shelter homes and one stop crisis centre.

33.7.3. Responsible agencies

Table 33.13 Agencies responsible for the implementation of SHE Lodge and Nirbhaya shelter home

Responsible Agencies	Role
Ministry of Women and Child development (MWCD), Government of India, State government	Funding of the project
State DWCD/ Social Welfare Departments , state government	Formulation of proposal, Identification of land, Project implementation
Women societies or SHG's	Operation and maintenance
PWD	Construction of the building

33.7.4. Need for the project.

For women travellers, the first priority is to look for a safe place to stay. Whether staying overnight or for a few days, one needs that sense of security to be able to travel alone. Currently there are no such facilities available for accommodating exclusively women travellers in the Municipality. She Lodge is part of a 'women's empowerment' project by the state which aims to provide safe and affordable accommodation for travelling women and their children. The facility can be booked through their separate online booking service.

Nirbhaya shelter homes are constructed for the protection rehabilitation and reintegration of victims of sexual violence and trafficking. The shelter provide a safe and secure accommodation along with counselling and other therapeutic support for the empowerment of the victims. Presently there is one nirbhaya night shelter available in the municipality which is working in a rented building. It doesn't have adequate infrastructure facilities.

5 to 10 rooms in the building can be used for one stop crisis centre which is a central government initiative for initiative intended to support women affected by violence by providing accommodation for short duration, medical assistance, assistance to women in filing FIR/NCR/DIR, Psycho-social support/counselling, Legal aid and Video conferencing facility to facilitate speedy and hassle free police and court proceedings. Currently the one stop centre for Municipality is working in the first floor of women and child hospital Palakkad. .

The proposed building will have all women staff, including in the car service department. It will be covered with CCTV cameras and additional securities to provide a safer environment. It will also have a common kitchen, dining hall and other necessities.

33.7.5. Suggested implementation mechanism

The department of women and child development/ Social welfare department is the implementing agency. The project is funded by the central and state government in 60:40 ratio. The land development and construction of building can be done by PWD. Table 33.14 shows approximate project cost for the project which comes around

Table 33.14 Approximate project cost for She lodge and Nirbhaya Shelter home.

Sl No	Item	Area/Length	Amount in lakhs
1	Construction of building	650 Sqm	160
2	Residence for home manager	120 sqm	30
3	Miscellaneous and overhead		10
	Grand Total		**200**

33.7.6. Project Periods and Priority

Approximate project period is two years. The project shall be implemented in with high priority

33.8. SPORTS COMPLEX

33.8.1. Location and ownership details

Location selected for the proposed sports is near the Palakkad medical college in a land area of 5.769 Ha in Survey Number 4, Block 181 Ward 27 Manapullykkavu (Figure 33.6). A synthetic track is already available near this location. The land is owned by the municipality.



Fig. 33.6 Location of proposed sports complex

33.8.2 Project brief

The proposed project for the construction of sports complex includes

- A centralised sports hostel with facilities for food, accommodation and practices with a capacity to accommodate 100 students.
- An aquatic complex with Swimming Pool, Warm up Pool, diving pool, Wading Pool etc. With all amenities for practice and conducting of aquatic events .
- Other facilities like Gymnasium, foot ball turf, badminton/ Tennis courts, toilet complex, Parking, Administration building including offices, meeting rooms, cafeteria, cubical for coaches, medical and first aid room, storage room, changing rooms for players etc.

33.8.3. Responsible agencies

Table No 33.15 enlist various agencies responsible for the implementation of the project and their role.

Table 33.15 Agencies responsible for the construction of Sports Complex

Responsible Agencies	Role
Municipality	Project initiation
Sports Kerala Limited	Implementing agency, Finding suitable private partner for the construction of infrastructure facilities, finding funds
District sports council	Operation and maintenance

33.8.4. Need for the project.

There are many sports academies within and near Palakkad municipality. These academies and students from mercy college all depend on Kotta maidanam for sports activities. Kotta maidanam doesn't have enough facilities and area to accommodate all. The present condition of indoor stadium is very poor. There are no swimming pools, shuttle courts within the municipality.

Construction of the proposed sports complex aims to cerate state-of-the art facilities for imparting high quality training to aspiring sports talents and hosting events. This will greatly contribute in development of sports sector of the district and attract more and more students towards sports and bring more achievements in this field.

33.8.5. Suggested implementation mechanism

Land selected for the construction of sports complex is owned by the municipality. Municipality can select a suitable special purpose vehicle like Sports Kerala Limited , Kerala state construction corporation etc for the implementation of the project. Project can be implemented in BOT mode. The contract period, cost sharing, and profit sharing during contract period between municipality and private partner can be decided by the municipality. Municipality can use MP, MLA development fund for the project and financial assistance can also be sought from department of sports GOK, SAI fund, Kerala sports council , KIIFB, etc. After the contract period the assets can be transferred back to the municipality.

33.8.6. Approximate project cost and Priority.

Approximate project cost is 70 crores. Table 33.16 shows approximate project cost for the project. Approximate time required for the execution of the project is 2 year. The project is proposed to implemented in the second phase.

Table 33.16 Approximate project cost for the construction of Sports Complex

Sl No	Item	Amount in crores
1	Sports hostel	2
2	Aquatic complex	30
3	Gymnasium, foot ball turf, badminton/ Tennis courts etc	30
4	Other infrastructure facilities	8
	Grand Total	**70**

33.9. INTER STATE BUS TERMINAL

33.9.1. Location and Ownership Details

By preventing the entry of interstate and long route buses into the town the travel time can be reduced. Hence an ISBT is proposed along NH 544 in an area of 1.212 Ha in Survey number 1, 2, 3, 9 of block 164 and 6,7 of block 163 in ward number 28 Civil station. The land is owned by private parties.



Fig 33.7 Location of proposed Inter state bus terminal

33.9.2 Project brief

The project involves the construction of a modern interstate bus terminal with the following facilities

1. Bus, Car/taxi, two wheeler parking areas, auto taxi stands, idle bus bays
2. Circulation area with CCTV and WIFI facilities, commercial shops, waiting areas, tea stalls, hotels, dormitories, Public lobby, Breast feeding cubicles for women.
3. Fuel filling stations, work shop, sub station
4. Store room, clock rooms, security rooms, medical centre.
5. Resting facilities for staffs
6. Separate rest rooms for passengers and staffs.
7. Information centres, police out posts.
8. Ticket counter, ticket offices etc

33.9.3 Need for the project

There are no inter state bus terminal available in the Palakkad district. By the construction of ISBT along NH 544, entry of interstate buses and long route buses into the town can be prevented this will reduce travel time, traffic congestion in town, and the additional facilities available in the terminal will improve travellers satisfaction.

33.9.4 Suggested implementation mechanism and Approximate project cost

Similar to bus stand the project can be implemented by the Municipality. Funding can be done by KIIFB. Suitable developer can be chosen by KIIFB and Municipality through open tendering process. Table 33.17 shows the possible responsible agencies for the project. The constructed facilities can be given to private parties on the basis of annual tendering. Table 33.18 shows the approximate project cost excluding the cost of land and it comes around 6 crores. As a high priority project may be implemented in first phase itself.

Table 33.17 Agencies responsible for the construction of interstate bus terminal

Responsible agencies	Role
Municipality	Demand assessment, Administrative approval, technical sanction, Contract management, Quality
KIIFB	Funding
Consultant	Preliminary estimate, Functional design, Engineering design, Detailed estimate, detailed project report,
Developer	Construction of infrastructure

Table 33.18 Approximate project cost for the construction of interstate bus terminal

Sl No	Item	Amount in Lakhs
1	Architectural and structural works	900
2	Payment works	250
3	Electrical and lighting related works	70
4	Land scaping	50
6	Miscellaneous	230
	Grand Total	**1500**

33.10 OPEN MARKET, MANKAVU

33.10.1 Location Details

Recent events like COVID 19 Pandemic have imparted "shop local" mind-set and highlighted the importance of small business in the local area. During this time people had to depend completely on their nearest shops. To ensure the easy availability of essential items like fresh fruits, vegetables and food items, a weekly market is proposed in each residential sectors. Table 33.19 shows the location selected for the open market near Mankavu and figure 33.8 shows its location.



Fig 33.8 Location of proposed Open Market

Table 33.19 Location and ownership details of the proposed weekly markets

SI NO	Location details	Area	Ownership
1	Sy. No. 3591/1, Block 83, Revised Ward No. 2, Ward No. 21, Vadakkumuri	0.185 Ha	Government Land

33.10.2 Project brief

The project involves the development of land and creation of infrastructure facilities for open market for residents and facilitate to get the daily needs and products under one roof in a cheaper prize. It would also be a place for selling the products of vegetable cultivators within and outside the municipality

33.10.3. Responsible agencies

Table 33.20 Agencies responsible for the implementation of Weekly market

Responsible Agencies	Role
Municipality/ SPV	Develop infrastructure facilities
Line department	Guidance to setup the weekly market
SPV	Pooling of funds

33.10.4. Need for the project

Open Weekly market is a traditional exchange system which created the history of human civilization. It is an important place to fulfil the daily requirement of people through distribution of goods from seller to buyer. As the name specifies, the market works only on one specific day of a week. These markets do not have permanent shops. Traders set up shops for the day and then close them up in the evening. Due to the presence of a number of traders selling the same items weekly market offers many things at cheaper rate. It also provides a wide variety of products at one location.

Presently there is one weekly market in the municipality at Puthur which functions on every week during evenings, selling wide varieties of household items. The market is working along the sides of Malampuzha 100 ft road belonging to PWD Kerala. Such markets normally will not have roofing to protect the sellers and their goods from sun and rain. Toilets, drinking water facilities, electricity, dust bins, waste collection and management facilities are some of the amenities the market urgently need. Also by providing one market on each residential sectors which works on different days will. Hence, Municipality can develop an open market at the said location in their own land to help the consumers to get their daily needs in a cheaper prize. The amenities lacking at Puthur have to be provided here. The place may will also cater small exhibitions, mela's, expos, fairs, or gatherings on rental basis and paid parking.

33.10.5. Suggested implementation mechanism, Approximate project cost and funding.

Municipality can finance the project and execute it through civil contractors selected through open tendering. Funding can be made available through CSR fund of the companies, MLA/ MP LADs, sponsorships and advertisements etc may also be taken into account for fund generation.Truss roof structure and floor of approximately 4000sq ft (similar to the sample weekly market given in page 33-17) area is proposed

Table 33.21 Approximate project cost for weekly market.

Sl No	Item	Amount in lakhs
	Development cost	
1	Construction of infrastructure facilities (Roofing, Flooring etc)	50
2	Development of land, landscaping, provision of amenities (cold storage, toilets, dust bins etc.)	50
	Grand Total	**100**

33.11 REVITALISATION OF BIG BAZAAR AREA

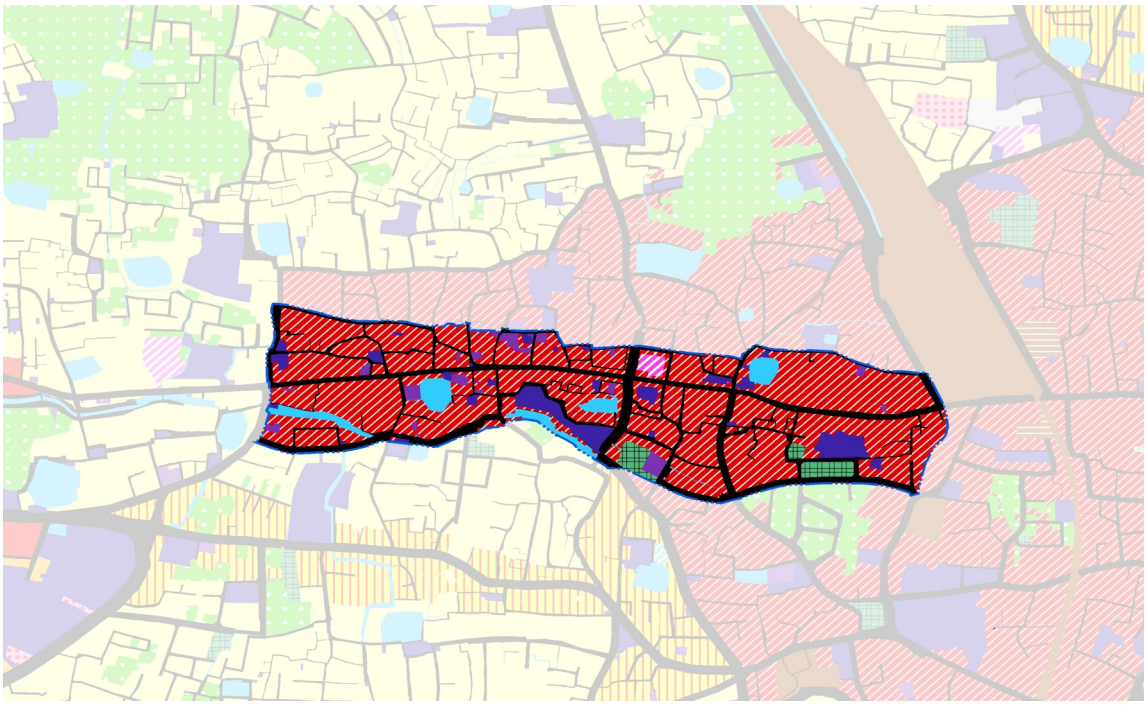


Fig. 33.9 Area selected for the revitalisation of Big bazar

33.11.1 Location Details

The Big bazar market is located at the west central portion of the municipality situated along the sides of Melamuri-Stadium road. The project covers an area of 41.594 Ha spanning in Melamuri(45), Pattikkara(42), Vithuni(40), and Valiyangadi (46) wards. Fig 33. 9 shows the area covered under the land pooling / revitalisation scheme.

3311.2 Ownership Details

The land and buildings in the project area is owned by private parties. Buildings adjoining the road are mostly used for retail shops and those behind it is used for wholesale shops. Most of the buildings have multiple owners.

33.11.3 Project brief

The project consists of complete redesign of the Big bazar market including reconstitution of the land for wholesale and retail market, provision of infrastructure facilities like cold storage, parking, waste management facilities etc through a **land pooling / revitalisation scheme** to utilise the complete potential of the locality for the area without affecting its heritage value. Until the implementation of such a scheme, enforcing short term measures listed in 32.1.1 can reduce the problems faced by the area to some extend.

33.11.4. Responsible agencies

Table No 33. 22. enlist various agencies responsible for the implementation of the project and their role.

Table 33.22 Agencies responsible for the implementation of revitalization scheme for Big bazar area

Responsible Agencies	Role
Municipality	Preparation of land pooling scheme
SPV/ Developer	Financing & developing the scheme area
Land owners and Tenants	Active involvement in the land pooling scheme

33.11.5. Need for the project

Valiyangadi or The Big bazar Market, one of the oldest market in the Palakkad district hasn't undergone any significant development for a very long time. The market is a major commercial centre of the district and contains majority of the wholesale shops in Palakkad. But these shops and their godowns are running in very old and dilapidated buildings which are very much prone to fire and other hazards. The market lacks space for storing commodities, loading and unloading facilities, parking space and suffers from traffic congestion problems and unhygienic road conditions. Even though it has high pedestrian movement there are no facilities for pedestrians. A detailed survey needs to be conducted to get a clear picture of the existing status of the market and plan shall be drafted meticulously to address the current issues and growing demands of the planning area. By proposing and successfully implementing a land pooling/ revitalisation scheme the market area can be given an overall face lift, enhance the trade and commercial activities of the market and hence boost the overall economy of the town.

33.11.6. Suggested implementation mechanism

The land pooling / revitalisation scheme shall be prepared by the Palakkad municipality and get it sanctioned from government. Growing development needs, Rehabilitation, infrastructure facilities to be provided, and the socio economic impact, and environmental impact etc should be given due regards while preparing the scheme.

In the land pooling scheme, parcels of land in the scheme area is pooled into one lot and is developed according to the scheme. The pooled land can be

reconstructed into plots with smart utilities and infrastructure facilities and returned to land owners with lesser extent. The project needs to be executed in a phased manner. Temporary rehabilitation should be arranged in a suitable location during the execution of the projects. After the completion of construction, the land owners included in the pooled land will be provided with built up space, equivalent to their present land holding and FSI fixed by concerned authority, in the new building. Tenants in the pooled land will be rehabilitated in the new buildings and liable to pay rent as fixed by the concerned authority. The scheme area development can be done in build finance operate and transfer mode by municipality and a suitable developer. The developer can finance the project and meet their expenses by operating the developed balance area after rehabilitation for a period fixed by the municipality.

33.11.7. Other issues associated to be addressed.

- Creating awareness among the people about the need for development
- Rehabilitation of the land owners and tenants during construction of project
- Retaining the heritage value of the area
- Finding suitable investors and finance

33.11.8. Approximate project cost and funding.

The project cost is calculated according to the extent of the area involved in the land pooling scheme. The developer can finance the initial cost of the development later he can sell some area to recoup the cost of the development.

33.11.9. Project Periods and Priority

Implementation of the project in a single stretch is not possible. The area need to be divided into different sections and has to be developed in a phased manner. Approximately 12 Ha area on the eastern end of the scheme area can be selected for the first phase with the sale of some of the plots for cost recovery and the distribution of remaining plots back to the landowners to develop or to sell for development.

33.12. KALPATHY HERITAGE CENTRE

33.12.1. Location and ownership details

Fig 33.10 shows the location of proposed heritage awareness centre. It is located in Sy No. 1526, 1527, Block 39, Ward No. 5, Kalpathy East. The selected location is owned by private parties.



Fig. 33.10 Location of proposed Kalpathy heritage centre

33.12.2. Project brief and implementation

Palakkad has an important role in the field of music. Many eminent musicians and dancers were born here. Due to the advancement in technology mobile phones and internet, and due to busy life style interest of people in classical art forms of dance and music is diminishing. These art forms are the quintessence of beauty, and power of our culture, and hence needs to be preserved. The project aims to attract more people towards traditional dance and music forms and help to preserve them for future generations.



The project involves the construction of building for Kalpathy Heritage centre to provide a stage for learning the classical art forms of dance, classical music and instruments. It should contain dance studios, theatres, ensemble rooms, office space, cafeteria, lobby, storage space and toilets. The centre can host various competitions, concerts, etc.

The project can be implemented by municipality, in consultation with archaeological department, department of arts and culture, Kerala Folklore Academy, department of education etc.

The approximate cost of the project is 100 Lakhs. Project can be completed in a duration of one year. As a phase two project this may be implemented in next 10 years.

33.13. EMPLOYEE'S HOSTEL, WORKING WOMEN'S HOSTEL and COMMUNITY KITCHEN

33.13.1. Location and Ownership Details

The location selected for the construction of Working Women's Hostel, Employees hostel and community kitchen are in a land area of 0.496 Ha Sy no.3591 of block 83 in ward no. 21 Vadakkumuri (Figure 33.11). As the location is near stadium bus stand it is easily accessible from any part of the district. The land is owned by the municipality.



Fig. 33.11 Location of Employees Hostel, Working women's hostel and Community Kitchen

33.13.2 Project brief

The project involves the construction of employees hostel for government employees, working women's hostel building and its associated facilities for women employees and the construction of 1500 sqft building for community kitchen. Each hostel should have facility to accommodate approximately 100 inmates. Associated facilities can include common lounge/recreation room, dining room/ hall, kitchen and store, etc. Accommodation for the warden, office, and any other staff if required, should be provided within the hostel building itself to facilitate supervision and guidance. The kitchen will act as a canteen for the hostel providing quality food in budget rate with associated facilities to feed the poor through donations and sponsorships and make the city hunger free. This may also include a restaurant where food is to be supplied in subsidised rate like janakeeya hotel. During emergencies like flood and epidemics, it would moreover act as a community kitchen.

33.13.3. Responsible agencies

Table No 33.23 enlist various agencies responsible for the implementation of the project and their role.

Table 33.23 Agencies responsible for the implementation of Community kitchen

Responsible Agencies	Role
Municipality/ SPV	Construction of building
Kudumbasree, Self help groups	Running and maintenance of the
NGO's, CSR, state government	Funding, Operations etc.

33.13.4. Need for the project.

Even though there are large number of government servants working here in Palakkad from other district, there are no working employees hostel in Palakkad town. Hence there is an urgent requirement of employees hostel for Men. With the progressive change in the socio-economic fabric more women are leaving their homes in search of employment in cities and towns. Palakkad town also has many working women from other parts of the district and state who are living away from their families due to professional commitments. One of the main difficulties faced by such women is lack of safe and conveniently located accommodation. The implementation of this project will provide a safe and conveniently located accommodation for working women, with day care facility for their children. This facility can be used by working women in the town and its neighbouring local body.

There is a need for constructing a permanent building for community kitchen in the Municipality for supplying food for the destitute and during periods of distress like a pandemic or natural disaster. The community kitchen is proposed in the same compound in which working women's hostel and employees hostel are proposed. Hence it can be used as kitchen for the hostels and also to feed the helpless people living on the street free of cost.

33.13.5. Suggested implementation mechanism

The project can be implemented by the Municipality with the help of SPV. Construction of hostel building, boundary wall and other infrastructure facilities can be done by SPV with commercial activities in the lower floors. Revenue from inmates rent, renting the ground floor for commercial purposes etc will add upon to the O&M cost.

There is a central government scheme for known as working women's hostel scheme for providing Grant-in-aid for construction/ expansion/ maintenance/ strengthening working women's hostels. Working Women with gross pay less than 50,000 (metropolitan cities and 35000 in other places area entitled to hostel facilities. The cost sharing ratio amongst the Central Government, States/ UTs (other than NE and Himalayan States) and Implementing Agencies will be 60:15:25 for construction of building for Working Women Hostel. Municipality can be the implementing agency and the work can be materialised through SPV. Registered civil societies, or public trusts having experience in working in the fields of women's welfare/ social welfare/ women's education can be selected for the operation and maintenance of the facility.

The implementation of the project for community kitchen can be done with the help

of Kudumbasree and SHG's. Fund for the project can be accumulated by finding sponsors like cooperative societies, voluntary organisations or companies as a part of their CSR initiative. Hostel inmates contribution will help for running day to day activities.

33.13.6. Approximate project cost, Project Periods and Priority

Table 33.24 shows approximate project cost for the project. The approximate project cost comes around 4.5 crores. Approximate time required for the execution of the project is 2 year . The project is proposed to be implemented in the second phase.

Table 33.24 Approximate project cost for Employees Hostel, Working women's hostel and Community kitchen

Sl No	Item	Amount(in Lakhs)
	Development cost	
1	Construction of infrastructure facilities for Employees hostel	200
2	Construction of infrastructure facilities for WW hostel	200
3	Construction of infrastructure facilities for Community	25
	Sub Total (A)	425
	Overheads	
1.	O&M charges @0.2% of (A)	0.85
2	Inflation at 6% of A	25
	Grand Total	**451**

33.14. TRUCK TERMINAL

33.14.1. Location and Ownership Details

Proposed location for the truck terminal is on the side of NH544 in a land area of 0.959 Ha in Survey Number 29, 30, 31, 37 in block 162 ward 28 Civil station. (Figure 33.12) The land is currently under private parties.



Fig. 33.12 Location of proposed Truck terminal

33.14.2. Project brief



The proposed project aims to prevent way side parking of truck along the NH 544 and entry of truck inside the town by the construction of a truck terminal near the highway with all the infrastructure facilities. The infrastructure facilities should include truck parking facility with loading and unloading platforms and required machineries, stacking yard, cold storage facility for perishable goods, dormitory for truck drivers to stay, toilets, bathrooms, washing, drinking water, ATM, dispensary, fuel station, service station, weigh bridge, and office for the maintenance staffs etc. The parking lots can be allotted based on vacancy availability through computerised reservation system.

33.14.3. Responsible agencies

Table No 33.25 enlist various agencies responsible for the implementation of the project and their role.

Table 33.25 Various agencies responsible for the Truck Terminal

Responsible Agencies	Role
Municipality and SPV	Standardization of performance standards, Providing collection of parking fees rights to developers
Developer	Design, finance, construct, operate, maintain and manage the facilities including supporting ancillary infrastructure, Meet the requirements laid down by the Competent Authority,

33.14.4. Need for the project.

Palakkad town is a major commercial centre in the district. Goods and commodities for various commercial centres inside the town are transported to the town in large trucks from various parts of the country. Plying of large vehicles like inside densely built-up with narrow roads can alleviate its traffic congestion problems. Hence movement of trucks into the town should be prevented by providing truck terminals and loading and unloading facilities at the periphery of the town. Goods and commodities from the trucks should be transported into the town only using smaller vehicles. By preventing entry of large vehicles inside the town the issues of congestion, road quality, noise/air pollution and accidents in and around the CBD area to some extend. Also due to the absence of any parking facilitates for trucks lorries near highway the truck operators tend to park their vehicles near roadways and this can result in accidents. By the provision of truck terminals near highways this can be avoided. Truck terminals should be provided with basic social amenities such as rest houses, communication facilities, eating, houses etc. Hence a truck terminal is proposed adjacent to NH544 at ward 28 civil station for loading and unloading of larger consignments to light commercial vehicles which can service commercial establishments inside the town.

33.14.5. Suggested implementation mechanism

The project can be implemented in built-own-operate-transfer (BOOT) mode. Municipality can purchase the land or get it sponsored. The land can be handed over to a private partner who is competent to invest and execute the project. The private partner can own and operate the project for a period of 10-15 years under a contract and then return the assets back to municipality.

33.14.6. Approximate project cost and funding.

Table 33.26 Approximate project cost for the implementation of the Truck Terminal

Sl No	Item	Land use	Area in hectare	Approximate development cost in lakhs
1	Truck parking space	50	1.185	285
2	Road and circulation	30	0.711	95
3	Green area and landscaping	10	0.237	5
4	Other infrastructure facilities	10	0.237	1050
	Grand Total	**100**	**2.37**	**1435**

33.15. WARE HOUSE, COLD STORAGE, LOADING AND UNLOADING SPACE

33.15.1. Location and Ownership Details

Facilities available for storing perishable goods in Valiyangadi market is insufficient. Hence a cold storage, loading and unloading space is proposed in a land area of 0.77 Ha in Survey number 9 block 126, Survey number 22,23 of block 123 ward number 48 Meparamba. The location is under private parties.



Fig 33.13 Location of proposed Cold Storage Loading &Unloading Space

33.15.2 Project brief

Cold Storages are essential for extending the shelf life, period of marketing, and maintenance of quality of products and also has an important role in reducing the wastages of the perishable commodities. The project involves the construction of cold storage with ware house, loading and unloading space and facility for parking small trucks for short duration, offices, toilets and parking facilities etc in the above mentioned location for the shops and markets in Big bazaar. The storage capacity envisaged for a multi purpose / multi commodity cold storage plant is 1000MT.

Municipality can implement the project in private public partnership mode. Table No 33.27 enlist various agencies responsible for the implementation of the project and their role.

Table 33.27 Agencies responsible for the implementation of cold storage, loading and unloading space

Responsible Agencies	Role
Municipality	Acquisition of land
Private partner	Financing, Project execution, Operation and maintenance

33.15.3 Need for the project

Valiyangadi market in Palakkad town is one of the major commercial centre of the district. Sale of all sorts of goods including perishable items like fruits, vegetables, fish and meat etc takes place here. Also this is one of the major location where the transfer of goods take place in the town. But the market doesn't have adequate

facilities for cold storage . Entry of trucks to this area can cause traffic congestion problems. To prevent entry of trucks into market and to meet the storage demands cold storage, loading and unloading space with space for parking of trucks is proposed with a capacity to accommodate a maximum of 20 trucks in a nearby available vacant land between Mepparambu and Melamuri. Trucks will be parked at truck terminal proposed adjacent to NH 544 and will be brought here as per vacancy availability through computerized reservation system or located to local delivery

33.15.4. Suggested implementation mechanism

Municipality can purchase/get sponsored the land. The implementation of the project can be done in private public partnership (PPP) mode in which the Municipality can select a suitable private partner for financing and execution of the project. The private partner can utilise central government's Capital Investment Subsidy Scheme For Construction/ Expansion/. Modernization of Cold Storage for horticultural produce and products which provide Back- ended subsidy at 40% of the project cost for general and 55% in case of hilly and scheduled areas for maximum storage capacity up to 5,000 per ton under the Govt. of India / NHB. The developer can own and operate the facility for a period fixed by the authority and transfer the assets back to the Municipality.

Table 33.28 shows the approximate project cost. It comes around 1 crore. The project can be implemented in the first phase itself. Approximate project duration is one year.

Table 33. 28 Approximate project cost for the implementation of cold storage, loading and unloading space.

Sl No	Item	Amount in Lakhs
1	**Building and civil works**	40
	Plant and machinery	30
2	Utilities	5
3	Parking and loading and unloading space etc	15
4	Micellaneous	10
	Grand Total	**100**



CHAPTER 34-ZONING REGULATIONS

34. ZONING REGULATIONS

34.1 GENERAL GUIDELINES

1. All future developments in the area covered under this plan shall be in conformity with the provisions of Master Plan for Palakkad Town.

2. For the implementation and enforcement of the proposal envisaged in the Master Plan for the town, areas have been zoned under various uses such as Residential zone I, Residential Zone II, Town centre, Commercial zone, Industrial zone, public and semi-public zone, Tourism Development zone, Wet agriculture zone, Traffic and transportation zone, Heritage zone, Recreational zone, land reserved for road, special zones etc. Details regarding the nature of uses 'permitted' and uses 'restricted' in each zone are given in table 34.1. These regulations shall be enforced in conjunction with other specific provisions if any mentioned elsewhere in the Master Plan.

3. Uses **'Permitted '** in a zone cover the uses that can be normally accommodated in the relevant zone. Such uses may be permitted by the Secretary of Palakkad Municipality (herein after referred to as Secretary) if in accordance with other relevant rules/orders concerned in force. In some cases it may be possible to permit some other uses also which are not likely to affect the quality and environment in a zone specified for a particular use. Such cases have to be individually studied based on their performance characteristics and special location factors. Such cases which come under this category are classified as "**Uses Restricted 1and Uses Restricted 2 "**.

   a. "Uses restricted 1 " category deals with the uses that shall be permitted by the Secretary, Palakkad municipality with the concurrence of the Town Planner of the District office of the Local Self Government Department (Planning), Palakkad. (hereinafter referred to as Town Planner)

   b. "Uses Restricted 2" category deals with the uses that shall be permitted by the Secretary, Palakkad Municipality with the concurrence of the Chief Town Planner concerned of the Local Self Government Department (Planning).

4. "**Uses prohibited"** enlists the various objectionable uses in each zone which shall not be permitted under normal circumstances.All uses which does not come under 'Uses Permitted' or 'Uses Restricted' will be considered as 'Uses *prohibited*'

5. Any use which is not specified either in the 'Uses Permitted', 'Uses Restricted 1'

and 'Uses Restricted 2' of a particular use zone, but is of similar, compatible or ancillary nature to the uses permitted or uses restricted in a zone, may be permitted in such zone with the concurrence of the District Town Planner.

6. Zoning regulations are not intended to prohibit existing uses that have been lawfully established prior to the enforcement of these regulations, unless otherwise specifically mentioned in this Master Plan. Zoning Regulations are essentially intended to help the competent authority in taking decisions regarding granting or refusal of permits for land development and construction of buildings/ structures.

7. If any portion of a zone is put to a *"Use Prohibited"* as stated in Para 4, before coming into operation of this Master Plan, such use shall be termed as *non-conforming use*. A non-conforming use may be allowed to continue in its existing location and essential repairs and maintenance for the structure may be permitted by the Secretary, provided that the said use create no adverse environmental influence in the zone. Addition, alteration or reconstruction, if found necessary as part of any mitigation measures may be permitted for such uses by the Secretary with the concurrence of the Town Planner. The total built up area of such non-conforming use shall not exceed 1.5 times the existing built up area.

8. Existing areas and structures of archaeological importance, agricultural uses and religious uses may be permitted to continue in all zones and shall not constitute non-conforming uses.

9. Subject to the zoning regulations of the respective use zones, more than one uses may be combined in a building, or as a group of building, provided that the floor area of any such use in the plot shall not exceed the maximum floor area permitted in that particular use zone for such use. For the purpose of these regulations, floor area means the total floor area of the building on all floors.

10. All future developments shall also be in conformity with the provisions of Kerala Municipality Building Rules, unless otherwise specified in these regulations or in any Detailed Town Planning Scheme in force.

11. (a) Provisions under The Disaster Management Act, Archaeological Sites and Remains Act, Coastal Zone Regulations, Aircraft Act 1934, Environment Protection Act 1986 and any other applicable statutes as amended from time to time will prevail over the respective provisions of this Master Plan.

(b) Provisions under the Kerala Conservation of Paddy Land and Wetland Act 2008, and its amendments from time to time, will prevail over the respective provisions of this master plan, but shall conform to widening of roads or new road alignments, Special zones, Water body zones and Recreational zone envisaged in this plan.

12. Silence Zone, as prescribed by the Noise Pollution (Regulation and Control) Rules, 2000 under the Environment (Protection) Act, 1986 and its subsequent amendments, shall be applicable to the area under this Master Plan.

13. Regulation of constructions and land developments on the sides of new roads or roads proposed for widening as per the Master Plan shall be governed by the distance from the centreline of the road, unless otherwise specified in this Master plan, Detailed Town Planning Scheme in force or any Detailed Road Alignment approved by Government. If widening on one side of any stretch of the road is constrained due to the physical barriers of water body zone, railway land and protected archaeological monuments/sites the road widening in that stretch shall be accounted from the other side . However, compound walls may be permitted in the land under road widening subject to the condition that the owner shall demolish it in his risk and cost during road widening.

14. In the event of change in alignment of *new road* proposal included in the Master Plan, after the commencement of land acquisition of the new alignment, the land parcels in stretches excluded from the original alignment may be changed to adjacent suitable land use zone with concurrence of the Town Planner. This provision is applicable only to new road development proposals and not to road widening proposal.

15. Operational constructions as defined in the Kerala Town and Country Planning Act, 2016 shall be treated as permitted use in the scheme area.

16. The Government shall have the power to issue clarifications in respect of technical interpretations, if any, required on any of the provisions of the Master Plan in consultation with the Chief Town Planner concerned of the Local Self Government Department (Planning).

17. Expansion of existing Public and Semi Public Institutions and existing Industrial units including their incidental uses to adjacent plots shall be treated as permitted use irrespective of the zone in which such adjacent plot lies, except in recreation zone, traffic and transportation zone, Heritage zone, wet agriculture zone, land reserved for road and water bodies and the development regulations imposed by such zoning, subject to the provisions of Paddy land and Wetland act in force, if applicable, or other applicable statutes.

18. Disaster mitigation projects by competent authorities shall be permitted in all zones.

19. Transmission / telecommunication towers, wireless station, ATMs, drinking water tanks, waste management units and public utility buildings/structures shall be treated as permitted uses in all zones except in water bodies

20. Projects of Central/ State Government, Local Self Government Institutions, Public Sector Undertakings and other Government Institutions may be permitted with concurrence of the Town Planner in all built up zones such as Residential zone I and Residential zone II, Commercial zone, Industrial zone, Public and Semi Public zone, Town centre, Traffic and Transportation zone and Tourism development zone if such uses are not included in the permitted uses or restricted uses as per the zoning regulations applicable but shall conform to widening of roads or new road alignments envisaged in the scheme.

21. No building construction other than mentioned hereunder shall be allowed **up to a depth of 5m** on the landward side of the following water bodies.

Sl. No	Name of Water Body	Permitted uses up to 5m on the land ward side
1	Kalpathy river and Kannadi River	Wells, compound wall, Pump houses, Road, Park, walkways and landscaping. repair/ addition/ alteration of existing buildings without exceeding 1.5 times the existing built up area. However, for KMBR provisions, this land may be considered in the plot area calculation and mandatory open spaces .

Heritage zone at Kalpathy is exempted from the above regulation.

22. In case of uncertainty in identifying the alignment and boundary or a change in alignment or shift in plotting of thodu, canal, river, existing public road, railway line and in the absence of survey boundaries for the same in the Proposed Land Use Maps, it shall be referred to the actual position on ground as well as revenue records and decision taken by the Secretary in this regard shall be final.

23. The areas specially demarcated for certain projects as Special Zones such as bus stand are to be procured as per the provisions of the Kerala Town and Country Planning Act 2016, by Palakkad Municipality or other agencies concerned. Initiation of land acquisition for special zones shall be started within a period of 7 years from the date of sanctioning of this plan. Otherwise the land use zone of that particular land shall deemed to be changed to adaptable zones as specified in table 34.1, by the Secretary based on the application for building permit received.

24. If different land use zones falls within a single plot, all uses permitted as per zoning regulations of such land use zones may be permitted by the Secretary in the plot. If application submitted includes any of the restricted uses and not included

in such permitted uses, the Secretary shall issue permit with the concurrence of the Town Planner/Chief Town Planner, as the case may be. However, for the part of the plot which comes under water body zone, heritage zone, special zones, Recreational zone, and wet agriculture zone, this provision shall not be applicable.

25. Electric charging stations for vehicles may be permitted in all zones

26. Large Scale development projects in an area 1 hectare or more, exceeding an investment of Rs.100 Crores, which provide direct employment (after commissioning of the project) to the tune of not less than 500 may be permitted in all zones other than water body zone and heritage zone, if not included in the permitted uses or restricted uses as per zoning regulation applicable. In such cases, the recommendation of a committee constituted as below shall be obtained, subject to satisfying the procedures laid out here under and the Secretary shall comply the same while issuing permit. Also, Adequate provision shall be made for supporting infrastructure such as water supply, sewerage, solid waste management, power supply etc. Separate systems for management of solid waste and sewage shall be provided and maintained by the developer at his cost. The project shall be completed within a period of 5 years or as suggested by the Committee.

Additional Chief Secretary/Principal Secretary/Secretary to Government, Local Self Government Department	Chairperson
The Director, Local Self Government Department (Urban)	Member
The Chief Town Planner, Local Self Government Department (Planning)	Convenor
The District officer of the LSGD (Planning) having jurisdiction over the district concerned	Member
Secretary(s) of Local Self Government(s) concerned	Member(s)

Procedure to be followed:

(a) The developer shall submit the project report, detailing the demand, feasibility and Environmental Impact Assessment aspects of the project, together with the approval, if necessary, obtained from the Ministry of Environment and Forests, Government of India to the Convener of the committee and the Convener shall make all arrangements for convening meeting of the committee at the earliest and the committee shall consider and dispose of the project report within a period of one month from the date of receipt of the same.

(b) The Convener shall fix the venue, date and time of the meeting in consultation with chairperson and shall be responsible for safe custody of records and communications thereof.

(c) The meeting shall be presided over by the Chairperson or in his absence by a member authorised by him.

(d) The quorum of the meeting shall be majority of the total number of members of the committee for the project.

(e) The developer shall also produce before the committee, all required clearances from the State and Central Government agencies concerned.

27. Any plot which falls in Industrial zone or Public and Semi Public zone or Crematorium and Burial grounds as per this master plan, and if the land use/ building occupancy is changed/ proposed to be changed from its original use or any addition/extension/alteration of existing building is proposed, then the Secretary may permit change in use or occupancy with the concurrence of the Municipal council by considering the uses permitted and restricted in the surrounding land use zones.

28. **PROVISION FOR MIXED USE:**

a) Uses permitted in Residential zone II, Commercial Zone and public and semi public zone shall also be permitted by the Secretary in Residential zone I and II, Commercial zone, Town Centre, Public and Semi Public zone and Industrial zone if not otherwise allowable as per zoning regulations applicable, on both sides to a certain depth of certain roads with proposed width as detailed in the table below.

b) Uses restricted in Residential zone II, Commercial Zone and public and semi public zone shall also be permitted by the Secretary in Residential zone I and II, Commercial zone, Town Centre, Public and Semi Public zone and Industrial zone if not otherwise allowable as per zoning regulations applicable, on both sides to a certain depth of certain roads with proposed as detailed in the table below, but with the concurrence of the Town Planner or The Chief Town Planner as the case may be.

c) For those roads which are not developed to such proposed width, the municipality may at any time levy development charges from the applicant for availing the above benefit. Such development charges shall be levied subject to the provisions of Kerala Town & Country Planning Act 2016 and rules made there under, and with the previous sanction of the government, by a notification published in the official Gazette.

Sl. No	Proposed ROW in Metres	Depth (in metres) on both sides of the road up to which above provisions are applicable
1	≥ 12 & < 18	100
2	≥18 & < 30	150
3	≥30	200

d) The above benefits may be extended to the whole plot, even if any part of it falls under the mandated depth.

e) Any new roads developed/widening of existing roads to such width mentioned in the above table shall also be eligible for the said benefits, even if it is not included in this plan.

29. Uses permitted/restricted in Residential zone II, Commercial Zone and public and semi public zone shall also be permitted by the Secretary in Residential zone I and II, Commercial zone, Town Centre, Public and Semi Public zone and Industrial zone if not otherwise allowable as per zoning regulations applicable, to any plot for which an access width of 8m or as demanded by prevailing KMBR, whichever is higher is available. In these cases, extra provision for 20% additional off street parking shall also be provided.

30. Both side yards may be exempted for Group F occupancy buildings (defined as per KMBR 2019) in commercial zone and Town centre zone, if the owner of the plot abutting the property under construction voluntarily agrees for the same in writing. Such buildings are also eligible for an excess coverage of 10% over and above the KMBR provisions. The municipality may at any time levy development charges from the applicant for availing the above benefit. Such development charges shall be levied after due notification of the same, published in the official Gazette, subject to the provisions of Kerala Town & Country Planning Act 2016 and rules made there under, and with the previous sanction of the government. However, this provision is not applicable to high rise buildings.

31. For lands which are classified as water body or similar use as per revenue records or as per data bank, zoning regulation of water body zone will be applicable, even if it is not included in water body zone as per proposed land use map.

32. In the case of construction, addition or alteration of a single family residential building in a plot, part of which comes under proposed road widening, the following provisions are applicable:

a. If the plot area is less than 5 cents, reservation of land for road widening

need not be mandated.

b. If the plot area is greater than 5 cents, excess plot area over and above 5 cent or the actual land required for road widening which ever is lesser shall be reserved for road widening.

33. For plots from which the land is surrendered free of cost for any new municipal roads as per this plan, mandatory open space on the side abutting that road as per prevailing KMBR may be relaxed subject to a minimum building line of 1m only, until the road is notified as per the respective provisions of Kerala Municipality Act. However, the surrendered land may be considered in the plot area for FSI and Coverage as per KMBR. If the road divides a plot, all such plots may be considered as a single plot in case of providing mandatory provisions as per KMBR. These benefits shall be applicable only if the land is surrendered for the implementation of scheme in total.

34. All area restrictions mentioned hereunder shall be considered as floor area, if not specified otherwise.

Table 34.1 Zoning Regulations

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted -2	Conditions
	(1)	(2)	(3)	
35	**Residential Zone - I**			
35.1	All Residential Buildings including flats/ apartments, Hostels and Boarding houses , Night Shelter, Orphanages/ Old age homes/ Dharmasala, Guest houses / Lodges/ Home stays/resorts with FSI limited to 3			
35.2	All places of worships & religious study centre and residential uses incidental to main use—All with Total floor area up to 1500 sqm	All places of worships & religious study centre and residential uses incidental to main use - Total floor area up to 3000 sqm		
35.3	All commercial establishments, IT/ Software units, Banking and Financial institutions, Non hazardous Godowns/ Warehouses/ storages/ Automobile showrooms. Weigh bridge, movie halls– All uses with total floor area of building limited to 2000 sq. m.			
35.4	Cottage Industries, Automobile workshops and service stations, , Service industries of non-nuisance nature (See Annexure-I) , Water and sewage treatment plants below 5MLD, IT hardware/ Electronic Industries, Total floor area of building limited to 500 sq. m.			
35.5	All educational institutions and research centres, Local, state and central government Offices, Hospitals and Health centre - IP up to 50 beds, All assembly buildings - Total floor area up to 1500 sqm	Hospital and Health centre inpatient (up to 100 beds),		
35.6	Recreational parks/Fair grounds, Open Air theatre, open grounds, walk ways, cycling tracks, Swimming pool, Tot lots, parking grounds, Gymnaseum, Yoga centre, Health club, Indoor Courts			
35.7	Taxi/Jeep/Auto rickshaw stands, Parking Plaza			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted -2	Conditions
	(1)	(2)	(3)	
36	**Residential Zone -II**			
36.1	All Residential Buildings including flats/ apartments, Hostels and Boarding houses , Night Shelter, Orphanages/ Old age homes/ Dharmasala, Guest houses / Lodges/ Home stays/resorts			
36.2	All places of worships & religious study centre and residential uses incidental to main use			
36.3	All commercial establishments, All Offices IT/ Software units, Banking and Financial institutions, Non hazardous Godowns/ Warehouses/ storages/ Automobile showrooms. Weigh bridge, movie halls Total floor area of building limited to 2000 sq. m.	Movie halls above 2000 sqm		
36.4	Cottage Industries, Automobile workshops and service stations, , Service industries of non-nuisance nature (See Annexure-I) , Water and sewage treatment plants below 5MLD, IT hardware/ Electronic Industries, Total floor area of building limited to 500 sq. m.	Spray painting workshops, IT hardware/Electronic Industries above 500 sqm		
36.5	All educational institutions and research centres, Local, State and Central Government Offices, Public Sector Offices, Hospitals and Health centre - IP up to 50 beds, All assembly buildings.	Hospital and Health centre		
36.6	Recreational parks/Fair grounds, Open Air theatre, open grounds, walk ways, cycling tracks, Swimming pool, Tot lots, parking grounds, Gymnaseum, Yoga centre, Health club, Indoor Courts			
36.7	Taxi/Jeep/Auto rickshaw stands, Parking Plaza			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted -2	Conditions
	(1)	(2)	(3)	
37	**Town Center**			
37.1	All Commercial establishments, All offic-es & establishments, Banking and finan-cial institutions, IT software units,		Multiplex	
37.2	Godowns / warehouse / storage of Non-hazardous materials, stacking yards.			
37.3	Gymnaseum, Yoga centre, Health club, Indoor Courts, Movie halls, All assembly buildings - Total floor area up to 1500 sqm			
37.4	Cottage Industries, Automobile work-shops and service stations, , Service in-dustries of non-nuisance nature (See Annexure-I) Water and sewage treat-ment plants , IT hardware/Electronic In-dustries, Total floor area of building lim-ited to 500 sq. m.			
37.5	Residential flats/apartments, Residential buildings, night shelters, orphanages, old age homes, hostels and boarding houses, hotels, lodges and guest houses. FSI limited to 2.5			
37.6	All educational buildings total floor area up to 5000 sqm			
37.7	Clinics, diagnostic centres, and hospitals with number of **beds limited to 100.**			
37.8	Swimming pool, Tot lots/Parks/Fair grounds, Open Air theatre, other recrea-tional facilities , Gymnaseum, Yoga cen-tre, Health club, Indoor Courts	Fuel filling stations	Transport terminals	
37.9	Plant nursery, Storage of agricultural produces and seeds, Pump House, Wells and Irrigation Ponds			
37.10	Taxi/Jeep/Auto rickshaw stands, Parking Plaza			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted -2	Condi-tions
	(1)	(2)	(3)	
38	**Commercial Zone**			
38.1	All commercial establishments, All Offices, IT/ Software units, Banking and Financial institutions,	Fuel filling stations	Multiplex	
38.2	Godowns / warehouse / storage of Non -hazardous materials, stacking yards.			
38.3	Gymnaseum, Yoga centre, Health club, Indoor Courts, Movie halls, All assembly buildings - Total floor area up to 3000 sqm			
38.4	Cottage Industries, Automobile work-shops & service stations, Service indus-tries of non-nuisance nature (See Annex-ure-I) Water and sewage treatment plants , IT hardware/Electronic Industries.			
38.5	Residential Building, Residential flats/ apartments, quarters Total floor area up to 1000 sq. m. Hostels and Boarding houses, Night Shelter, Orphanages/ Old age homes, Guest houses / Lodges, Ho-tels			
38.6	All educational buildings			
38.7	Clinics, diagnostic centres and hospitals			
38.8	Swimming pool, Tot lots/Parks/Fair grounds, Open Air theatre, other recrea-tional facilities , Gymnaseum, Yoga cen-tre, Health club, Indoor Courts			
38.9	Plant nursery, Storage of agricultural pro-duces and seeds, Pump House, Wells and Irrigation Ponds			
38.10	Taxi/Jeep/Auto rickshaw stands, Parking Plaza		Transport terminals	

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted -2	Conditions
	(1)	(2)	(3)	
39	**Industrial Zone**			
39.1	All industries other than obnoxious and nuisance type industries as per annexure I, Automobile Workshops and Service Stations, Spray Painting Workshops, Saw Mills, Timber Yard, Ice Factory, Fish and Meat Processing Units, Water Treatment Plants, Marble and Granite Storage and Cutting Centres, Hardware/Electronic Industries, Industrial Estates and Industrial Parks.	Obnoxious/ nuisance type industries.		
39.2	Public sector office incidental to main use, Clinics (Out patient), Public utility buildings and areas, Social welfare centres up to 500 sq. m.	hospitals and health centers up to 50 beds incidental to main use		
39.3	Godowns/Warehouses/Storage of non hazardous material, stacking yards, weigh bridge.	Fuel filling Stations.		
39.4	Dairy and Dairy Farms, Dairy related Industries, Poultry Farms, Piggery Farm, Smoke House.			
39.5	Tot lots/Parks/Fair grounds, Open Air theatre, Swimming pool, other recreational facilities.			
39.6	Autorikshaw stands, Parking grounds, parking plaza, Taxi/Jeep stand,			
39.7	Residential use incidental to industrial use, Restaurants/Canteen/hotels/shops up to 500 sq.m Single dwelling unit residential buildings	Dumping yard, Sewage treatment plants, storage of explosives of minor nature.		
40	**Public and Semi Public Zone**			
40.1	All offices and assembly buildings, Banking and Financial institutions	Cremation ground/ Crematorium, Burial ground, common vault		
40.2	Residential use incidental to Public and Semi public use, hostels and boarding houses, night shelters, Orphanages/old age homes/, guest houses /lodges,	Fuel filling stations		
40.3	All commercial establishments, - Floor area of all the above limited to 200 sq. m.			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses restricted -2	Conditions
	(1)	(2)	(3)	
40.4	All educational institutions			
40.5	Diagnostic Centres, Hospitals, Geriatric & Palliative care centres			
40.6	Cottage Industries associated with public utility, Service industries of non - nuisance nature (See Annexure- I) Spray painting, Automobile work shops & service station, IT hardware and electronic industries, Water treatment plants			
40.7	Tot lots/Parks/Play grounds, Taxi/Jeep/Auto rickshaw stands, Parking Plaza,	Indoor /Outdoor Stadium, Bus/Truck Terminals		
40.8	Plant nursery, Green houses, Agriculture and Horticulture, Pastures and Grazing Grounds, Fodder Cultivation, Pump Houses, Wells and Irrigation Ponds, Fish farms, Seed Farms, Storage of Agricultural produces and seeds			
41	**Tourism Development Zone**			
41.1	All accommodation facilities including single family residential buildings upto 300 sq.m, guest houses, resorts, home stays and assembly buildings up to 300 sq.m incidental to resorts			
41.2	Restaurants, Commercial buildings up to 500 sq.m incidental to main use			
41.3	Park and open spaces, open grounds, Tot lots, open air auditorium, Walkways, cycling tracks, museums			
41.4	Gymnasium, yoga center, health club, Indoor courts, Parking grounds	Parking Plaza		
41.6	Plant nursery, Green houses, Farms house Agriculture and Horticulture, Pastures and Grazing Grounds, Fodder Cultivation, Pump Houses, Wells and Irrigation Ponds, Fish farms, Seed Farms, Storage of Agricultural produces and seeds.			
42	**Recreational Zone**			
42.1	Open Air Stadium, Open Air Theatre,, Any construction/land development essential for the development/ improvement of open air recreational facilities.			
42.2	Amusement parks, Tot Lots, Park, Play Grounds, bath houses, Swimming Pools, Zoological & Botanical Garden, Bird Sanctuary, Indoor games and stadiums, Gymnasium, Pavilions and grant stands, radio & television station, Watch Towers, Eco Walk Ways, Cycling tracks, Water Sports Facilities, Fair Grounds, parking grounds , Parking plaza, etc.			
42.3	Public utility areas and buildings, People service centres, crèche and kindergartens , residential colony offices and its Incidental uses which will not affect the character of the area namely conference halls, restaurants, canteen, curio shops, retails shops, cyber café with total area limited to 100m2			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses re-stricted - 2	Condi-tions
	(1)	(2)	(3)	
43	**Traffic and Transportation Zone**			
43.1	Roads, walkways, cycling tracks, flyovers, over bridges and under passes, All buildings and uses connected with Transport and communication such as Transport terminals including Bus /Lorry Terminal, auto taxi Stand, Railway Station, essential repair and service shops related to the transporta-tion and communication use, Parking grounds, Parking plaza, Traffic park.		Multiplex complex-incidental to main use	
43.2	Any remunerating uses attached to the transport terminals as value capture mechanism such as re-tail shops, restaurants, canteen, movie halls, night Shelters, Guest houses, lodging and dormitory, Tot lots, Parks or Any other use which form an inte-gral part of transportation use			
43.3	Police post/ Station, Fire Post/Station, Post & Tele-gram office, Telephone Exchange, Electric sub-station, Clinics (Out Patient), Offices, storage, So-cial Welfare center, Public Utility and related build-ings incidental to main use.	,		
43.4	ATMs, Weigh bridges, Water& Sewage treatment plant	Fuel filling sta-tions		
44	**Wet agriculture zone**			
44.1	Paddy fields, All kind of Agriculture and Horticul-ture, Pastures and Grazing Grounds, Fodder Culti-vation, Fish and Seed farm, Well and irrigation ponds, Drying yard with out roof, Pump houses,up to 20 sq. m. Plant nursery, Green houses	Dairy & Poultry Farms. Minor Public Utility areas & Public utility buildings incidental to main use - Area up to 100 sqm.		
44.2	Constructions/ land developments in conformity with the Kerala Conservation of Paddy Land and Wet Land Act 2008 and its amendments in force in the State. For land which are legally converted to dry land by order of the competent authority, developments / constructions shall be permitted for the uses for which it was converted.			
44.3	In the cases where permitted uses are not speci-fied in the land conversion orders or In the case of land which are already classified as dry as per revenue records, the secretary may, considering the zoning regulations of surrounding land, per-mit constructions and land developments.			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses restricted -2	Conditions
	(1)	(2)	(3)	
45	**Heritage zone**			
45.1	Constructions/ land developments around Palakkad fort (ASI protected monument) shall be as per the provision of AMASR ACT 2010 and its amendments.			
45.2	**Kalpathy area and environs:** Not withstanding anything contained in the zoning regulations of the scheme and subject to modifications as prescribed hereunder, no development, redevelopment, construction including additions, alterations, repairs, renovations, replacement of special and architectural features, demolition of any part or whole thereof in respect of any objects or buildings in the area, **comprised in survey numbers 1223 to 1246, 1269 to 1275 of block number 34, survey numbers 1276 to 1354 of block number 35, survey numbers 1355 to 1375 of block number 36, survey numbers 1376 to 1428 of block number 37, survey numbers 1429 to 1461 of block number 38, survey numbers 1462 to 1528 of block number 39, survey numbers 1529 to 1576 of block number 40, survey numbers 1577 to 1601 of block number 41, survey number 1654, 1657 to 1685, 1688 to 1696, 1699 of block number 44, survey numbers 1701 to 1726 of block number 45, survey numbers 1727 to 1798 of block number 46, survey numbers 1799 to 1834 of block number 47 in Revenue ward I of Palakkad II village,** shall be allowed except with the prior written recommendation of the Art and Heritage Commission constituted by the Government under Rule 154 of the Kerala Municipality Building Rules 1999, in order to conserve the heritage character of the Kalpathy Area and its environs.			
45.3	Provided that, no area for buildings or objects, which in the opinion of the said commission have architectural, aesthetic, archeological, cultural or historic value, will be allowed to change from the existing condition without the recommendations of the commission.			
45.4	Provided also that new constructions and additions of alterations to existing buildings may be permitted in this area with the following additional regulations namely:- 1. The roof shall be hip or gable roof, and the floors shall be limited to two floors, excluding the basement floor. The height of the building shall be limited to the height for which hip or gable roof is proposed. The maximum height may be limited to 12 m 2. The architectural character of facades of the construction shall be as per the advice of Commission.			
45.5	Provided also that the use or reuse of any site or building shall be as per the recommendation of the Commission. The Local Self Government Institution concerned shall insist on any such recommendations of the commission.			
45.6	The Art and Heritage Commission, if found necessary, may entrust the above regulatory aspects to a committee constituted for the purpose by the commission. The concurrence shall be allowed by this committee, subject to the provisions and regulations of this Master Plan.			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses restricted -2	Conditions
	(1)	(2)	(3)	
46	**Forest**			
	Forest related activities of forest departments only are permitted			
47	**Land reserved for Road**			
	Roads, walkways, cycling tracks, flyovers, under passes and other uses which forms an integral part of the right of way			
48	**Crematorium and Burial grounds**			
	Cremation grounds, Burial grounds. Modern crematoriums, Buildings/ Structures incidental to the permitted use of the Zone.			
49	**Slaughter House**			
	Any Construction and development essential for the slaughtering, marketing, waste management, auxiliary structures to the slaughter house also permitted in this zone.			
50	**Water Bodies**			
	All water bodies shall be conserved. Bridges, Side protection walls, Walk ways and cycling tracks around the water body, Bathing Ghats, Floating jetty, boat docking facilities etc may be permitted based on community level requirements .			

Table 34.1 Continued

Sl. No.	Uses permitted	Uses restricted -1	Uses restricted -2	Conditions
	(1)	(2)	(3)	
51	**Flood prone area (based on Flood Hazard Probability of Kerala based on RCP8.5 Climate Change Scenario(100year), Hazard Map published by KSDMA)**			
a	**Land Use Regulations**			
51.1	All uses permitted in accordance with the Zoning Regulation of the respective Land Use Zone lying under the Flood Prone Area			All uses other than specified
51.2	Buildings for public purposes/ Public amenities & services/ Disaster mitigation projects/measures.			
51.3	Bridges, Side protection walls, Bathing Ghats, Constructions for drinking water and Irrigation schemes, Floating jetty, Pump house, Fish landings, Boat Jetties, Guided Boat rides, Watch Tower, Eco Walk ways, Water Sports Facilities, Fairground, park and open spaces, cycling track etc.			
51.4	Social forestry activities like bamboo cultivation, agriculture and horticulture, wells, ponds, ticket counter, Bird sanctuaries etc.			
51.5	The flood prone area is applicable to the complete area under the survey number over which it falls.			
b	**Built Form Regulations**			
51.6	New constructions shall have at least a balcony or an open verandah or an open terrace in the upper floor(s) or an open stair connecting the upper floor (s) to the ground. Such balcony or open verandah or open terrace or open stair shall face the yard abutting the adjoining street to facilitate easy evacuation.			
51.7	In the case of new buildings or constructions involving addition/extension of upper floor(s), at least 50% of roof terrace area so constructed, shall be kept open to the sky and made accessible to facilitate easy evacuation.			
51.8	The regulation cited above shall be adopted for addition/extension for upper floors to an existing building, wherever practical.			
51.9	Height of any newly constructed compound wall shall not exceed 1.2 m and no sharp edged projections shall be fixed on the compound walls or gates.			

Table 34.1 Continued

52	**SPECIAL ZONES: Developments in this zone may be permitted by Secretary of Palakkad Municipality. For the Projects proposed in paddy land or wet land, developments shall be subject to the provision of Kerala Conservation of Paddy Land and Wet land Act in force in the state. The proposals which are marked as G1, G2, G3etc... are proposed in government/ local body owned land. Municipality shall take initiation to get the project implemented by the respective department through proper intervention and if required, take necessary steps for transferring the ownership of such lands to the local body or concerned department/agencies implementing the project. Proposals which are marked as P1, P2, P3 etc.. are proposed in privately owned lands and shall be implemented by the municipality through land procurement by suitable means. For proposals *P2, P3, P4, P5, P8 and P9,* the project may also be implemented by the land owner or developer or by any other interested agencies but with the concurrence of the municipal council subjected to the conditions (if any) put forth by them. Initiation of land procurement if required for special zones shall be started within a period of 7 years from the date of sanctioning of this plan. Otherwise the land use zone of that particular land shall deemed to be changed to adaptable zones as specified in column 5. If more than one adaptable zones are included in column 5 of any special zone, then all uses included as permitted and restricted in all such zones shall apply.**

Number (1)	Zone Name (2)	Uses permitted (3)	Location and extend (4)	Adaptable zones (5)
52.1	**G1**	**Kalpathy Heritage Centre:** Heritage awareness activities, tourism facilitation centre, Music & Dance academy and all such incidental uses	0.162Ha in Village 2, Block 39, Survey number 1526,1527	Public and Semi public zone
52.2	**G2**	**Sewage Treatment Plant, Puthur :** Sewage treatment plant, office rooms, staff rest rooms, equipment rooms, godowns for material storing and other incidental uses	0.311 Ha in Village 2, Block 71 survey number 565 and block 12, survey number 2907	Public and Semi public zone/ Recreational zone
52.3	**G3**	**Open Market Mankavu:** Open weekly market, market complex, parking space, comfort stations, godowns and storage facilities and other uses incidental to the main use	0.185 Ha in Village 3, Block 83 survey number 3591	Public and Semi public zone/ Commercial zone
52.4	**G4**	**Employees Hostel, Working women's hostel and Community Kitchen:(a)** Residential apartments for employees and working women, kitchen, Hostels and Boarding houses , Night Shelter, Guest houses / Lodges, and other incidental uses **(b)** Restaurants, commercial establishments, Offices, IT/ Software units, Banking and Financial institutions and parking plaza limited to basement and ground floors	0.496 Ha in Village 3, Block 83 survey number 3591	Commercial zone/ Public and Semi public zone

Table 34.1 Continued

Number (1)	Zone Name (2)	Uses permitted (3)	Location and extend (4)	Adaptable zone (5)
52.5	**G5**	**Co working space and Start up Incubator: (a)** Office space for start up incubators, Offices, IT/ Software units, meeting halls and conference rooms, auditorium, lodging and dormitories and all other such incidental uses. **(b)** Banking and Financial institutions, Commercial establishments, restaurants and parking plaza limitted to basement and ground floors **(c)** Parks incidental to main use.	0.464 Ha in Village 3, Block 74 survey number 3612&3613 and Block 75 survey number 3614&3627	Commercial zone/ Recreational zone/ Traffic and Transportation zone
52.6	**G6**	**Tourism Information Centre:** Tourism information centre, art gallery, souvenir shop, retail outlet of handy crafts, comfort station, clock room all other such incidental uses	0.131 Ha in Yakkara village, Block 33, survey number 1	Traffic and Transportation zone
52.7	**G7**	**Housing project at Mannarkkattu parambu:** Residential apartments, single family residential houses or dwelling units for employees, park and recreational facilities, nursery schools and other incidental uses	0.644 Ha in Yakkara village, Block 178, survey number 18	Residential zone 2/ Recreational zone/ Public and Semi public zone
52.8	**G8**	**She Lodge and Shelter home:** Hostels and Boarding houses , Night Shelter, Guest houses, Dormitories, Lodges, and other incidental uses	0.097 Ha in Yakkara village, Block 181, survey number 4	Public and Semi public
52.9	**G9**	**Sports Complex:** All Indoor and Outdoor sports and games infrastructure facilities including Hostels, dormitories, boarding houses, swimming pools, gyms, assembly halls, auditoriums and all other such incidental uses	5.769 Ha in Yakkara village, Block 181, survey number 4	Public and Semi public/ Recreational zone
52.10	**G10**	**Mini Civil Station:** All Offices, meeting halls, conference rooms, Canteen and all other such incidental uses	0.809 Ha in Village 1, Block 79 Survey no 12, Block 80, survey number 73, 74,77, 78	Public and Semi public
52.11	**G11**	**North Police Station**: Police station, All offices and its incidental uses	0.462Ha in Village 1, Block 79 Survey no 12, Block 80,	Public and Semi public
52.12	**G12**	**Multi level Parking near Stadium**: **(a)** Parking plaza, parking grounds and other incidental uses **(b)** All commercial establishments, offices, assembly occupancies limited to Ground floor	0.946 Ha in Village III, Block 74 Survey no 3609, 3610, 3611, Block 75, survey number 3627, Block 76, survey number 3628	Traffic and Transportation zone

Table 34.1 Continued

Number (1)	Zone Name (2)	Uses permitted (3)	Location and extend (4)	Adaptable zone (5)
52.13	G13	**Multi level Parking near Town Railway Station**: **(a)** Parking plaza, parking grounds and other incidental uses **(b)** All commercial establishments, offices, assembly occupancies limited to Ground floor	0.610 Ha in Village 2, Block 62 Survey no 2565, 2566 Block 63, survey number 2606, 2607, 2608, 2609, 2610, 2623, 2624, 2625, 2626, 2627	Commercial zone/ Recreational zone/ Traffic and Transportation zone
52.14	G14	**Parking Ground at Old Police station:** Area earmarked for parking of vehicles of public coming to the market for shopping	0.246 Ha in Village 1, Block 152 Survey no 126	Commercial zone/ Public and Semi public
52.15	G15	**Parking Ground at Old fish market:** Area earmarked for parking of vehicles of public coming to the market for shopping	0.233 Ha in Village 1, Block 147 Survey no 15	Commercial zone/ Public and Semi public
52.16	G16	**Parking Ground at Municipal office compund:** Area earmarked for parking of vehicles of public coming to Municipality office and District hospital	0.211 Ha in Village 3, Block 48 Survey no 2464, 2465	Public and Semi public Zone
52.17	P1	**Housing Project at Sundaram Colony**: All residential uses and other uses incidental to main use are permitted here for the rehabilitation of slums, land less or house less residents within the planning area. Ground Floor must be kept vacant as recreational space or parking space	0.106 Ha in Village 1, Block 30 Survey number 1068	Residential zone 1
52.18	P2	**Parking Ground near District Hospital:** Area earmarked for parking of vehicles, Parking lot/ multi level car parking for public coming to District hospital.	0.287 Ha in Village 3, Block number 63 survey number 3149, 3152, 3155	Town Centre/ Public and Semi public zone
52.19	P3	**Parking Ground near Civil Station:** Area earmarked for parking of vehicles, Parking lot/ multi level car parking for public and staff coming to Civil Station.	0.461 Ha in Village 3, Block number 29 survey number 1726, 1732, 1733	Residential zone 2/ Public and Semi public zone
52.20	P4	**Inter state Bus Terminal near Medical College:** (a) Bus parking area with all incidental uses such as repairing shops, restrooms, commercial establishments, cafeterias, restaurant, Lodging and dormitories, visiting lounges, parking plaza. (b) Assembly buildings, all office buildings limited to first floor or above	1.212Ha in Yakkara village, Block number 163 suvey number 6,7 and Block number 164 survey number 1,2,3,9	Commercial Zone/ Traffic and Transportation zone

Table 34.1 Continued

Number (1)	Zone Name (2)	Uses permitted (3)	Location and extend (4)	Adaptable zone (5)
52.21	**P5**	**Truck Terminal on NH:** a) Truck parking area with all incidental uses such as repairing shops, restrooms, commercial establishments, cafeterias, restaurant, Lodging and dormitories, visiting lounges, parking plaza. (b) Assembly buildings, all office buildings limited to first floor or above	0.959 Ha in Yakkara village, Block number 162 suvey number 29, 30, 31, 37	Commercial Zone/ Traffic and Transportation zone
52.22	**P6**	**Sewage Treatment Plant, Yakkara :** Sewage treatment plant, office rooms, staff rest rooms, equipment rooms, godowns for material storing and other incidental uses to main use	0.218 Ha in Yakkara Village , Block 134 survey number 37, 39	Paddy zone/ Recreational zone
52.23	**P7**	**Sewage Treatment Plant,Thirunellayi :** Sewage treatment plant, office rooms, staff rest rooms, equipment rooms, godowns for material storing and other incidental uses to the main use	0.341 Ha in Village 1 , Block 247 survey number 21	Public and Semi public zone/ Recreational zone
52.24	**P8**	**Fish and Meat Market at Mepparambu:** Market complex, parking space, comfort stations, godowns and storage facilities and other uses incidental to the main use	0.530 Ha in Village 1 , Block 113 survey number 41,53,59	Commercial Zone
52.25	**P9**	**Ware House, Cold Storage & Loading and Un loading space:** Godowns, ware houses and other storage facilities, parking area, comfort stations, Offices, Rest rooms, lodging, dormitory and other uses incidental to the main use	0.776 Ha in Village 1 , Block 123 survey number 22, 23 & Block 126 survey number 9	Commercial Zone
52.26	**P10**	**RRF and E waste Collection centre, Pezhumkara :** waste collection and treatment areas, office rooms, staff rest rooms, equipment rooms, godowns for material storing and other incidental uses to main use	0.453 Ha in Village 1 , Block 53 survey number 4	Paddy zone/ Recreational zone
52.27	**P11**	**Sewage Treatment Plant and FSTP, Pezhumkara :** Sewage and septage treatment plants, office rooms, staff rest rooms, equipment rooms, godowns for material storing and other incidental uses to main use	0.457 Ha in Village 1 , Block 53 survey number 3	Paddy zone/ Recreational zone





Annexures

Annexure I

List of non-obnoxious and non-nuisance type of service or light industries

1. Aerated waters and fruit beverages
2. Apparel making
3. Assembly of air coolers and conditioners
4. Assembly of bicycles, baby carriage & other small non motorized vehicles.
5. Atta - Chakkies
6. Ayurvedic medicinal formulations, Ayurvedic health club
7. Bakery products ,biscuits ,confectionaries
8. Bamboo and cane products (only dry operations)
9. Block making for printing
10. Card-board box and corrugated paper and paper products
11. Carpet weaving
12. Cement and concrete products
13. Chilling plants and Cold storage
14. Coir (without bleaching /dyeing)
15. Concrete batching plants
16. Copper, brass and metal utensils
17. Cotton and woolen hosiery/Cotton and silk printing
18. Domestic electrical appliances
19. Electronics and electrical goods
20. Electroplating
21. Embroidery and Lace manufacturing
22. Engineering workshop and general fabrication works
23. Flour mills
24. Foam beds, Latex thread
25. Footwear (PVC and rubber)
26. Fountain pen

27. Furniture making
28. Garment stitching, tailoring
29. Gold and silver smithy
30. Gold and silver thread saree work
31. Ice cream or ice making
32. Insulation and other coated papers (Paper and pulp manufacturing excluded)
33. Jobbing and machining
34. Laundry, dry cleaning and dying
35. Light engineering
36. Manufacture and repair of musical instruments
37. Manufacture of soaps involving process without generation of trade effluents (Saponification of fats and fatty acids only
38. Manufacture of tobacco products
39. Manufacturing of formulated synthetic detergent products
40. Mineralized water
41. Oil ginning /expelling
42. Optical frames
43. Padlock
44. Paint (by mixing process only)
45. Paper pins and U- clips
46. Photo and picture framing
47. Power looms /hand looms (without dyeing &bleaching)
48. Pressure testing units
49. Printing press
50. Radio servicing and repairing
51. Rice mullors
52. Rope (Cotton and Plastic)
53. Rubber gloves other than that for surgical and medicinal purpose
54. Rubberized coir mattresses

55. Sanitary fittings and other similar industries
56. Scientific and mathematical instruments
57. Small foundries
58. Small foundries
59. Sports goods
60. Steeping and processing of grains
61. Tissue culturing
62. Toy making
63. Watch, pen and Spectacle repairing
64. Water softening and demineralization plants
65. Wooden and electrical accessories
66. Spray painting
67. Fertilizer depot

Annexure II

List of obnoxious or nuisance industries subject to objectionable odours, fumes, effluents or processes, located in hazardous zones.

(Grouped under Indian Standard Industrial Classification)

I. Manufacture of food stuff:

1. Slaughtering, preservation of meat and fish and canning of fish

II. Manufacture of Beverages:

2. Production of distilled spirits, wines, liquor etc., from alcoholic malt, fruits and malts in distillery and brewery
3. Production of country liquor and indigenous liquor such as toddy, liquor from malwa, palm juice.

III. Manufacture of wood and wooden products:

4. Sawing and planning of wood
5. Wood seasoning and creosoting
6. Manufacture of veneer and plywood
7. Paper, pulp and straw board

IV. Manufacture of leather and leather products:

8. Currying, tanning and finishing of hides and skins and preparation of finished leather

V. Manufacture of rubber, petroleum and coal products:

9. Manufacture of tyres and tubes
10. Manufacture of industries and synthetic rubber
11. Reclamation of rubber
12. Production of petroleum, kerosene and other petroleum products in refineries
13. Production of coal tar and coke in coke oven

VI. Manufacture chemicals and chemical produces

14. Manufacture of basic industrial chemicals such as acids, alkali and their salts not elsewhere specified (especially sulphurous, sulphuric, nitric, hydrochloric etc., acids) ammonia, chlorine and bleaching powder manufactures.
15. Manufacture of dyes, paints, colours and varnishes, printing ink

16. Manufacture of fertilizers (specially from organic materials)
17. Manufacture of disinfectants and insecticides
18. Manufacture of ammunition; explosive and fire works
19. Manufacture of matches

VII. Manufacture of non-metallic mineral products other than petroleum and coal:

20. Manufacture of cement and cement products
21. Manufacture of lime
22. Manufacture of plaster of Paris

VIII. Manufacture of basic metals and their products.

23. Manufacture of iron and steel including smelting, refining rolling and conversion into basic forms
24. Manufacture including smelting, refining etc., or nonferrous metals and alloys in basic forms
25. Manufacture of armaments

IX. Manufacture of machinery (other than transport) and electrical equipments

26. Manufacture of all kinds of battery

X. Miscellaneous items not covered above:

27. Incineration, reduction or dumping of offal, dead animal's garbage or refuse
28. Manufacture of gelatin and glue
29. Fat, tallow, grease or lard refining of manufacture
30. Bone meal, bone grist and bone powder and other similar types of nuisance industries.

Annexure III

Public Consultation

Even though Covid pandemic restricted a wide spread participatory process, efforts were taken to include the ideas and suggestions from the public in formulation of this master plan. Wide publicity was given through newspapers and social media for contributing ideas and knowledges and boxes were kept in Town Planning Office as well as in the Municipality office to collect the suggestions. Also a stakeholder meeting was conducted on 3rd of October 2022 in which representatives from various organisations and deaprtments were participated. The suggestions and opinions from each organization and the public are listed below.


നിർദേശങ്ങൾ സമർപ്പിക്കാം

2040 വരെയുള്ള പാലക്കാടിനായി


നഗരസഭയ്ക്ക് വേണം

ആശയങ്ങൾ

News published on local daily news papers inviting suggestions and aspirations from public





Stakeholder meeting conducted on 3rdOctober 2022

1. RENSFED

Flood management measures :

- The canals which flows from the northeast part of the municipality) and Murugani region flows to the Kalpathy river along with other small channels which flows from the northeast part of the municipality. These canals do not have enough capacity to carry the excess water flowing through it due to encroachment in these areas. The encroachments have to be vacated and partial walls has to be built to prevent further encroachments.
- Meena nagar, A R Nair colony, and the areas which lies next to the stadium which lies between the Sulthanpetta- Kalmandapam road and Kottamydanam- Kalman-

dapam road face flooding issues due to lack of drainage facilities.

- The houses which lies near to the Civil station is under flood threat due to insufficient drainage canals in the southern part of KSRTC bus station and due to the insufficient capacity of the canals that flows through Pandarakaavu region.
- Shekharipuram, Kalpathy, Ramanadhapuram, Andimadham and Shankhuvarathodu are the regions affected in 2018, 2019 floods. The level difference of the land and the river bed is very less wich might be the reason for flooding. This should be concerned seriously.
- The water which flows from Malampuzha dam, Walayar dam, Varattayar and Korayar is carried by Kalpathy river. Since the level or the land areas mentioned does not possess enough difference from the river, suitable planning solutions should be implemented. Also a benchmark should be established and for further constructions, suitable measures should be taken to avoid this situation.

Transportation

- The vehicles from Pattambi, Ottapalam moving towards the east should be diverted without entering into the town. The traffic congestion at Olavakkode, Puthuperiyaram, Shekharipuram, Kalmandapam and Chandranagar due to the vehicles from the northern region of Palakkad may be resolved urgently. Also the vehicles which move from the southern side to northern side or the vice versa, should be made able to move without entering into the town space. It seems like building road overbridges are essential to act as a solution for these problems
- The traffic congestion at the Kalmandam can be resolved by constructing an underpath in the right side of the Malampuzha main canal and an over bridge above that. The canal bund has to be demolished and a canal trough has to be constructed to flow water through it. Suitable solutions should also be made at DPO Link Road junction. The Puramboke land which lies in the west side of Yakkara Thottupalam railway gate should be considered for straightening the dangerous road bend.
- Since the railway crossing mentioned above lies at a comparatively lower level from the Palat hospital junction, a road over bridge can be considered
- If the branch canals from Malampuzha main canal that flows from east to west are made navigable by constructing 'cut and cover', roads can be widened without acquiring the land anymore and traffic problems can be resolved.
- A fly over may be constructed from the Palakkad head post office to Maidanam and the width of the road from Chunnambuthara to Vadakkanthara Valiyangadi road may be reduced to 12 m from 16m.
- Under paths may be considered instead of Foot over bridge. There are nearly 100 households which lack transportation facilities in the south side of the railway line next to the old Chunnambuthara railway gate. This should be resolved

Tourism, Sports, Recreation and Energy

- Since dams are constructed at the at the start of Kalpathy river and Yakkara river, the river bed get filled by water rarely and these areas are getting exploited by anti-social and criminal activities. This can be prevented by using this 10 km zone for tourism, sports, recreational and solar energy related activities without creating environmental issues.
- Considering the developmental opportunities of the upcoming Kochi- Bangalore industrial corridor, new proposals like swimming pools, walkways, play grounds, open theatres, LED Advertising screens can be proposed considering the total width of the river.

Security

- The residential colonies in the Municipality should be facilitated with CCTV surveillance on the responsibility of colonies and should be integrated and monitored by Janamaithri police 24x7.

Zonal Regulation

- Paddy conversion can be permitted at Kalampuzha- Kozhipparambu side since the population is more there.

Environment

- Necessary STP provisions should be made in the urinals provided at the KSRTC bus station which is under construction.
- Flat provisions should be encouraged than Villas or Individual houses since Villas and Individual houses consumes more land space. Also the waste generation will be minimal.
- The renovation of old houses may be promoted.
- New modern construction techniques which use minimal construction materials may be promoted considering the global environmental issues like carbon emission and climate change.

2. NATURAL HISTORY SOCIETY OF PALAKKAD

- Heronries: The trees in the municipality serves nests for 8 species of Heronries of which the Black Headed Ibis is a near threatened species as per IUCN red list. They prefer trees which is near to water bodies. These trees as well as the waterbodies should be protected
- Protection of Waterbodies: The Kalpathy and Yakkara river are getting extremely polluted due to the large-scale dumping of hotel waste. Invasive species like water hyacinth have taken up major portion of the waterbodies resulting in choking of flow of rivers, faster evaporation of water from ponds, lack of oxygen for the water

species resulting in the death of the water bod. A proper policy framework is needed to ensure a natural sustenance of all types of waterbodies

- Cutting of trees: Trees in the public land are cut for silly reasons which must be addressed and should be given adequate protection. Cutting of trees need to go through the due administrative process and there should be a compelling reason for cutting a tree.
- Waste Disposal: Poor waste management in the town make the town unattractive. Waste lying around the roadsides create unhygienic condition and also increase stray dog population in the area which is serious matter of concern

3. PALAKKAD HISTORY CLUB

A history tourism circuit has to be developed connecting the eleven spots of historic importance. The suggested historic spots listed below has to be developed as mentioned below

- Kottmaidanam: It is here that the democratic voices of dissent and agreement were raised after independence. This ground should be preserved so that there is no room for further development.
- Anjuvilakku: It is the monument of the protests against foreign tyranny. A protective wall should be built around Anjuvilakku.
- Streets: Palakkad is the land of streets. The streets are the reflection of social, economic and cultural life of people living there. The streets should be enhanced with suitable constructions and inventions. Streets should be made identifiable by installing name boards and they should be preserved and made suitable for street tourism.
- North police station: This station witnessed the presence many freedom fighters. It is the landmark of maintenance to law and order in the history. Also the possibility of police museum can be checked.
- Valiyangadi: Valiyangadi is one of the oldest bazaars in Kerala. The market area should be developed considering the historical importance of the area.
- RTO Bungalow: this building is noted for its colonial architectural excellence. This building can be used as a storage centre (mini archives) for municipal records.
- Heritage buildings like Moyans school, Victoria college and old court building of district hospital (current x-ray building) should be maintained without any modification. The possibilities of Victoria heritage may be used.
- The old bridge near to Shekharipuram petrol pump which is left barren without any development should be made usable by providing spaces to relax.
- The hundred-year-old directional sign on old Palakkad Kozhikode highway inscribed

'Route A4 Calicut- Madras' should be developed and maintained.

- Athanis in the town should be declared as protected monuments.
- Protests are as old as mankind and it sustains democracy in a society. A protest square should be developed near to stadium bus stand. This can be utilized for various cultural programs like dramas etc.

4. PALAKKAD MANAGEMENT ASSOCIATION

The suggestions divided into two sections:

i. Suggestions falling within the thrust areas as per AMRUT guidelines

i.a. Availability of water

- Make rainwater harvesting design compulsory while approving building for all residential and commercial buildings. This should be incentivizing by lowering stamp duty, property tax etc. to encourage people.
- A digital map should be prepared showing all the waterbodies in the municipality. These waterbodies should be dredged periodically to maintain a level and all should be connected with city main water system if it is feasible and economical. These assets should be developed as strategic reserves of the municipality.
- In order to cater the water demand expected in 2040, the water supply system should be modified in such a way that potable and non-potable water are supplied separately so that non potable water can be used for other purposes. A system which recycles the non-potable water should also be implemented to support this. Prepare a map for the same.
- Construct check dams in Yakkara river and Kalpathy river to augment water table.
- Install water dispensing units in public place to reduce use of bottled water

i.b Sewage and Septage

- <u>Wet waste management</u>
  - ◊Sewage (non- separate): Non septage water collected should be treated and recycled and should be used for non-potable purposes
  - ◊Septage: Modern low cost bio technology solutions like 'tiger worm septic management technology' can be implemented to manage sewage. This should be maintained once in every 10 years. This can prevent further contamination of ground water in the municipality.
- <u>Dry waste management</u>
  - ◊Food wastes are not manageable to the full extent. Therefore, effective systems to collect and process the same should be made.
  - ◊All categories of waste have to be collected and awareness campaigns to be done to do source segregation

◊Collection centres in the model of Thumboormuzhi collection centres to be started ideally one centre for every 5 wards

◊Provide incentives to citizens who deliver waste at the collection centres.

◊Consider ECOBOTS which are reverse vending machines located in shopping malls, public places etc. for collecting plastic bottles.

◊Make sure that the vendors that collect a particular category of waste have fa cilities to manage the waste using technology.

◊Indian municipalities have PPP model waste management systems which use machineries. The private agencies should be monitored if the wastes are man aged properly before reaching at an unmanageable levels leading to outbreak of some epidemic.

i.c Storm water drainage to prevent flooding

- Undertake a mapping exercise to identify the affected areas, find the reasons, and find whether there are other places with the same condition but not flooded and find the solutions for it.
- Categorize the area into three zones

  ◊ **Red –** high chances of flooding-this area should possess stringent rules for all construction work

  ◊ **Amber-** moderate chances of flooding- should have adequate controls to make sure that it will not turn into red zone

  ◊ **Green –** less chances of flooding – should have sufficient control to ensure that they remain green
- Desilt and connect all waterbodies in the municipality area and make them ready to receive the excess storm water.
- Stop giving permission for new construction in areas prone to flooding
- Ban conversion of agricultural land for other purposes

i.d Public Transport & Non-Motorized Transport

- Take efforts to reduce carbon footprint by encouraging CNG and Electric vehicles. Introduce CNG passenger buses in the municipality limit and provide supporting infrastructural facilities like gas refilling stations and electric charging stations
- Proposal to the state government to introduce CNG and Electric low floor buses in a phase manner so that by 2023-2024 the entire municipal limits is covered.
- To implement ring road by 2025-2026 so that heavy vehicles transit through the municipal roads if their destination is not Palakkad.
- Pedestrianize the main roads providing enough footpath
- Bus stands near the city entrances (at Olavakkode and near Medical college) to cater the buses from other states and other districts.

- The bus stands should accommodate private and KSRTC buses separately for easy transit. An outer ring road connecting these stations will also become a future requirement.
- Intra buses which connect these bus stands with all parts of the city to be introduced.
- Cycling should be promoted in the municipality by campaigns. To facilitate cycling tracks should be provided along the main roads with the footpath such that the footpath come inside. Cycling lanes cane be provided were cycling tracks cannot be provided.
- Multi-level parking should be introduced to avoid parking on the roads.
- Permission for commercial buildings should be granted only if adequate parking facilities are provided. The seating capacity should be equal to the parking capacity of the building
- An app where citizens can enter the complaints about the roads such as potholes should be developed which can be used in district level.
- 100% street lighting should be done preferably with solar powered lights. An app to report the complaints about the same also shall be developed.
- In general, a traffic rule complaint culture within the city should be promoted where the stronger vehicle has weaker vehicle, cyclists and pedestrians.

i.e Green spaces/Parks

- PMC should develop an iconic park within the limit which will act as a major landmark which attracts tourists, residents etc.
- A.R Menon park, Vatika, Silavatika, and Children's park together can be developed to a big park complex and events like flower show can be conducted regularly to attract citizens.
- Create an ongoing system to properly maintain existing parks; perhaps explore the possibility of reaching out private agencies to maintain these parks.
- Malampuzha canal from Kottekkad to Kalmandapam has to be modified to retain water in a specific identified stretch by changing the water release mechanisms. The strectch should be identified depending on the proximity to habitation and this has to be developed into Senior citizen parks, Children's park, Walkways and Cycle tracks etc.
- Banks of Yakkara river, Kalpathy river, The British aqueduct can be developed as a recreational space.

<u>Suggestions though not strictly within the thrust area but can help transform the City.</u>

- Create 'Farmer market place' in 2 corners of Palakkad entry points (Chandranagar

and Olavakkod) to sell their goods directly

- The weekly vegetable market near to Chandranagar roundabout should be discontinued.
- Football stadium and Indoor stadium should be completed.
- Guided KTDC trip connecting Kalpathy,Jain temple, Vatika, Chembai gramam, Malampuzha and Thennari should be set up.
- Fun fishing tourism to be promoted in the banks of Kalpathy and Yakkara rivers ina controlled eco system, so that it generates revenue to the municipality and create a recreational space .
- Palakkad Heritage Centre has to be set up to create awareness among the people about the history of Palakkad, the leaders and the cultural heritage. The ASI museum has to be modernized. A sound and light show at Fort would be attractive and it can be done by the PMC with the help of ASI.
- Name of the city which is suitably sized should be placed on top the Malampuzha hills and should be lighted using solar power which will attract tourists.

<u>Proactive policy interventions PMC can suggest to handle the challenges od providing efficient services in the coming decades</u>

WATER

- PMC may suggest to KWA for policy interventions in a phased manner, to stop the misuse and abuse of potable water
- Since the potable water consumption is only 20%, a policy on distribution network of potable water and treated water for all other purposes has to be formulated.
- To formulate long term policy on Apportionment of the limited water resource for domestic, commercial/industrial and agricultural purposes so that Water authority can monitor and manage the water resources as per the yearly catchment, in a calibrated manner which the end users are aware of in advance
- A policy for reinstallation of water meters in phased manner to cover all municipal limits, if not covered already. By 2023-24 to cover all the panchayats in the district where the primary source of water is water reservoirs outside the panchayat jurisdiction.
- A graduated enhancement of water tariffs over a three-year period of time sch that the weaker sections of the society will not have to suffer. The water quantity consumed if less that the threshold should be availed for free and if t is more, the tariff for the entire quantity of water has to be paid.
- A phased policy intervention to stop the supply of free water

5. PRINCIPAL AGRICULTURE OFFICER –PALAKKAD

Sl. No	Name of work	Padasekharam	Approximate Distance
1	Take soil from damaged canal from Kalippara Kottukulangara to Kunduka-du and construct a Cada canal	Murukani	500 Meter
2	Take soil from damaged canal (Alukulam-Cholodu Vasu's pond) and renovate canal side.	Murukani	750 meter
3	Construct a culvert by removing dam-aged drainge channel (Place -Thankam Hospital road ,2 nd sewis)	Thottinkal	Culvert
4	Reconsrtuct the damaged Cada canal between Thankam Hospital Road(First Sewis)	Thottinkal	250meter
5	Construction of shutter in Yakkara Thottupalam Checkdam	Thottinkal	Shutter
6	Reconstruct the damaged Cada canal (Below Yakkara Cemetery from Thai-land)	Vennakkara	1KM
7	Reconstruct the damaged Cada canal near Vennakkara Bishup House	West Yakkara	150meter
8	Reconstruct the damaged Cada canal behind Arabi's House ,Vennakkara	West Ven-nakkara	100 meter
9	Reconstruct the damaged Cada canal which is starting from Branch canal in front of Thirunellai Toddy shop	Thirunellai	250meter
10	Reconstruct the damaged Cada canal (Mepparambu Via Chunkam)	Vazhanjeri	1km

6. DAIRY DEVELOPMENT

It is very helpful for the public when the quality control office and chemical lab to test the quality of milk works in a same building. For that the depatment suggests a project.

- 10 cent land for office building and chemical lab
- Separate rooms for chemical lab and Microbiology in the lab
- Separate rooms for Quality Control Office, Dairy Development Officer ,Other staff (Lab technician, Clerk, Driver,Office attendant), welfare fund employees.
- Office building with Wash area

The details of Space required for Quality Control Office, Laboratory and KDFWFB

7. POLICE DEPARTMENT

The following proposals to be included in the AMRUT Project of Palakkad Municipali-ty:

- Modification of old Police station building of Town North
- Renovation of Town South PS & Control Room buildings

- Indoor Badminton Court in Town South PS compound.
- Modern training center in DPO compound.
- Standard Signal system to be installed in all points.
- Improved installation of Dividers to regulate traffic in town.
- CCTV camera surveillance all over the town and the same to be connected to a Police Control Room

8. DAIRY DEVELOPMENT DEPARTMENT

- The department office and the laboratory are in different places. It will be useful if a new building along with the laboratory is facilitated in the municipality area.

9. LOPAAMUDRA CHARITABLE TRUST

- Construct a ring road
- Expand Sulthanpetta junction
- A fly over in G B Road which connects telephone exchange, market road, B O O road and railway station road
- Raise the level of the road in front of the Municipal bus stand and provide adequate drainage facility
- Four bus stands have to be constructed on four sides of the municipality region which are facilitated with dormitories, washrooms, toilets, cleaning staffs etc.
- A metro train facility that connects all four bas stations which are connected by ring road.
- Mini buses to make shuttle services in the municipality area should be initiated
- Dedicated parking areas have to provided
- Street vendors need to relocated.
- Illegal constructions may be prevented by proper enforcements.
- Over bridges have to be constructed over railway lines and stairs should be provided for pedestrians.
- Olavakode bus station has to be developed. The autos and taxis parked on both sides of the roads should be provided with dedicated parking facilities.
- The waste water from Palakkad junction railway station overflows through Olavakode thottupalam which creates difficulties for people in the neighborhoods. The capacity of Meppady thodu from Nadakkavu railway gate to Muttikkulangara should be increased by increasing the depth and width of the canal.

10. PACHAPP

- Awareness boards on subjects like plastic waste, cleanliness, scope of reuse may be

placed in different parts of the town.

- Plant and protect tree saplings of Neem, Ashoka, Gulmohar, Pavizhamalli, Ilanji, Chembakam and Kadamba
- Install public taps on roads
- The road names should be displayed on the roads and the details like the start and end should also be mentioned.
- Sitting spaces near to the trees in the shades shall be provided.
- Create activities in the town for the public like filling water pots which are kept for birds, feeding them, etc.
- Food corners that provide hygienic foods have to be set up that vprovide early breakfast, lunch and dinner.
- Clean pay and use public toilets should be provided on every road in the town.
- To promote reusing, used cloth stores may be started
- Dedicated space for sticking posters on roadsides have to be provided.
- Inviting certification campains for schools and colleges for public works will create awareness.
- Aesthetic painting on public walls about Palakkad will keep the city attractive.

11. SUGGESTIONS FROM PUBLIC

- Healthy roads: improve the condition of roads considering the water table. Water absorption roads will be a solution.
- Drainage canals: The drainage canals if covered with slabs properly, can be used as pedestrian paths and disabled friendly walkways. To collect the plastic waste a waste collection net shall be fixed at periodic intervals which can be cleared periodically.
- Underground utility tunnel: Avoid digging already constructed road for providing water supply lines cables etc. instead a permanent underground utility tunnel which can carry these supply lines shall be constructed and the service provides should be charged for using this provision.
- Bus waiting sheds, e-toilet, aid post: Bus waiting sheds should be facilitated with solar powered light and fan. E toilets should be provided adjascent to the sheds with disabled friendly provisions. If space permits, an auto rickshaw stand will be helpful. Also a police aid post near to that will reduce crimes and can also act as an information Centre to the passengers.
- CCTV Camera: CCTV cameras should be placed in all roads and junctions such that any illegal practices in the area can be surveilled and can be solved.
- Crisis management: A crisis management team has to be set up which work 24

hours in the municipality for reporting and managing any kind of emergency in the municipality limit. Let it be traffic blocks, wrongly parked vehicles, accidents etc., they should be able connect with all the concerned departments and should be able to provide necessary service.

- Parks, police aid posts, e toilet: The existing parks in area should be renovated and should be made suitable for recreational purpose. An e toilet and a police aid post should be provided along with it. The maintenance of these parks can be given to Kudumbasree units.
- Cycle exclusive roads & Walk and Shop market: Some roads should be identified suitably for promoting non motorized transport. These roads should be facilitated with cycle paths and pedestrian friendly paths. Market can be set up weekly in these areas to shop for the people.
- Waste Management: A mini water treating facility should be set up in buildings were there is a chance of accumulating waste water such as hospitals, hotels etc. This water can be used for gardening or for ground water recharging. Secondary collection units for waste management has to be placed in important areas where plastics are collected separately. E waste should be collected once ina month from each house. Bio degradable wastes should be collected and composted to make fertilizer and this should be sold for generating income.
- Greenery: The main reason for the depletion of the green space is the depletion of ground water table, a rain water recharging system which collects rainwater and recharge ground should be compulsorily constructed in each house. All the waterbodies should be protected and quality should be checked. Gardens should be made around the ponds and benches to sit and relax should be provided.
- Solar powered lamps: Solar lights should be placed at important junctions as well as areas so that when the electric supply is lost this can be utilized.
- Parking provisions: Parking in the sides of the roads should be avaoided . A dedicated parking space with pay and park system should be facilitated. Also limited tie pay and park should be provided in main stretches
- Traffic U turn light: Traffic u turn lights or traffic beat staffs should be provided to make U turns easy.
- Bio clean circle: A land space around each institution should be provided to make it clean and tidy themselves thereby reducing waste management risks.
- Geographical information and direction boards: Geographical information and direction boards should be placed at equal intervals which are uniform size and type.
- City beautification and exhibition point: For the beautification purpose, stone sculpture can be placed in junctions. Permanent exhibition points that can be hired for

two or three days by artists to display their art works should be set up in the municipality area.

- Control of roaming animals: NGOs that work for animal welfare should be given responsibility for controlling the population of animals that roam around. A land outside the municipality area should be found to foster these animals. Initiatives like spaying of dogs should be considered on discussion with the public.
- Control of begging: The beggars which roam around the city should be rehabilitated and should be given treatments with the help of NGOs.

Suggested by Krishna Kumar C L
No 47, Gurukrupa, Aiswarya Nagar,
Noorani post, Palakkad

- The vacant plots which are under the ownership of people who are not in the premise create nuisance for the people living around due to snakes, mosquitos etc. This shall be taken seriously and solved permanently.
- The level difference between the main roads and the internal roads need to be solved
- Drainage problem in Snehatheeram colony has to be resolved in order to prevent flooding in this area

Suggested by K Rajashekhar
Karthika, Snehatheeram
West Yakkara, Palakkad

- The wastes get dumped on both sides of the roads by flat residents.
- Pblic toilets shold be provided and should be maintained properly
- The ongoing constructrion works of bus stands and townhall should be finished as soon as possible
- Municipality may take feedbacks from public after implementation of a project
- The fort area should be preserved to retain its beauty.
- The conversion of paddy should be controlled
- Public wells should be properly maintained so that it can be used when water supply discontinues.
- Waste management is a matter of concern and should find a suitable solution.

P M Ramaswamy
Upasana, Kumarapuram, Palakkad

- Incomplete tarring of the roads near Palat junction.
- Lack of drainage in the areas of Civil station and Salamath nagar is causing flood in Snehatheeram Colony.
- Lack of recreational space in residential colonies

Shahul Hameed K M
28/274, Nest, Snehatheeram,
West Yakkara, Palakkad

- An active commercial zone should be delineated. Palayappetta will be suitable zone since it is near to the hospital and people will not prefer to use this land for residential purpose.
- The residential colonies in the municipality were built over the paddy. Now there are individual plots which lie in between. These plots shall be provided with permission to build residential buildings.
- The width of the road which lies in the back of district hospital shall be increased
- The area around Indira Gandhi stadium should be developed as shopping area

Joy Mathew

- An alternative bus stand has to be made to park Palakkad-Kozhikode buses and Palakkad– Cherpulassery buses outside the municipality area near to Olavakkode.
- To attract tourists, the Agraharams in the district need to be included in a tourism circuit including the temples also.
- An exhibition centre which includes the traditional handlooms of Kuthampully and the various agricultural producrts my be set up to display the culture of Palakkad
- The residents in the flood affected region should be rehabilitated
- The existing indoor stadium may be renovated and used for coaching of cricket games. Also a botanical garden can be set up in the surrounding area of the Palakkad fort.
- A rescue centre for street animals has to be set up
- A vocal and instrument training institute to be set up in Kalpathy and Noorani

Muraleedharan K S
Mekhamadhavam, Garden street
College road, Palakkad

- The martyr's column in the Maidanam need to be replaced and the walkway through the Maidanam should be developed so that pedestrians can move comfortably.
- The municipal bus stand has to be developed giving importance to the travelers. Restrooms, toilets, etc should be provided along with it.

Ramachandran
Thapovanam, Dhoni
Palakkad

Annexure IV

Post Publication Works

The master plan committee was constituted as per section 32 of the Kerala Town and Country planning act on 12/07/2022. Chairperson of the municipality Smt. Priya Ajayan was the chairperson of the committee also. Secretary being the convenor and Municipal Engineer being the joint convenor of the committee, a member from district office of the town planning department was also a member of the committee. The other council members who were part of this committee are Vice Chairman Adv E Krishnadas, Smt. Prameela Sasidharan , Sri N. Sivarajan, Sri. Viswanathan KV, Sri Bhavadas, Sri Sajo Jhon, Sri Saidu Meeran Babu and Sri Muhhammad Bhasheer. The resolution for intention to adopt the prepared master plan with modifications was also taken in the same session of the council. The first meeting of the newly constituted master plan committee held on 29.09.2022 had decided to do a consultation seminar inviting all the major stake holders for their suggestions towards this master plan. Subsequent to the stake holder consultation held on 03.10.2022, the suggestions received there were consolidated and incorporated as possible in the report. In addition, the review report on revocation of 5 sanctioned DTP schemes and the chapters including sectoral proposals, traffic and transportation plan, zoning regulations, disaster management and priority action plan were discussed in detail and after incorporating certain suggestions put forth by the committee, the draft master plan report was approved by the committee on 25-10-2022 and was forwarded to



council for approving and forwarding to government for according sanction for publication.

The Palakkad Municipal Council later convened a special meeting for this purpose on 29/10/2022 and had passed the draft report along with suggestions to reduce the river buffer and to incorporate the parks available on approved lay outs as recreational zones and sent the draft report along with maps and other necessary docu-





ments to government for according sanction for publication of the master plan for obtaining objections and suggestions from the public.

Intention to adopt the master plan was later notified in official gazette vide EO no 3960 dated 24/11/2022 and also on daily newspapers including Mathrubhumi dated

16/11/2022 and Malayala Manorama dated 17/11/2022. All the related documents were submitted to government through Chief Town Planner for sanction for publishing. In addition to the existing land use map, proposed land use map and proposed road layout map prepared in 1:10000 scale, for better identification of land parcels and survey numbers and also for detailing the alignment of roads that are incorporated from DTP scheme and some new road proposals, module maps of 1:4000 and 1:1600 scale were also provided as part of the proposed land use map.

After being suggested by The Chief Town Planner (Planning), government had accorded sanction for publication of this master plan vide GO (Ms)No.32/2023/LSGD on 03.02.2023. The matter was published in form IV in official gazette number 1142 dated 27/03/2023 by the municipality and also on newspapers namely Mathrubhumi on 30.03.2023 and Malayala Manorama on 29.03.2023. The reports and maps were uploaded from the date of publication of gazette itself in the official web site of municipality along with relevant documents for accessing the same for public. The master plan committee held on 08.03.2023 had already decided to give wide spread publicity to the matter regularly through newspapers and social media. In addition to the regular office timings for checking the report and maps, It was also decided to open a help



ഫാറം-IV [ചട്ടം 19 (2) കാണുക]

പാലക്കാട് മുനിസിപ്പൽ കൗൺസിൽ

Malayala Manorama: 29.03.2023



ഫാറം-IV

[ചട്ടം 19 (2) കാണുക]

പാലക്കാട് മുനിസിപ്പൽ കൗൺസിൽ

Mathrubhumi: 30.03.2023



Help desk Activities

desk in the municipality were officers from LSGD Planning would also be available for helping the people to discuss the master plan and clarify their doubts.

As per the act, 60 days were given to public for submitting their objections and suggestions on the published plan. The days were counted from the date of publishing in official gazette, that is 27/03/20223 and hence the objections and suggestions were received up to 25/05/2023. Importance of master plan and various proposals, and the facilities provided to public for understanding the master plan were constantly updated through the media also. The national daily like Mathrubhumi had given a series of report on master plan during these days providing wide spread publicity for the master plan. Updates of working of help desk was also circulated through social media profiles of councillors also. Handles such as Whatsapp, Facebook etc were effectively utilised for this purposes. Banners regarding the final dates



News regarding Master plan on various dailies

for submission of objections and suggestions were also regularly circulated by such means.

The master plan was presented before District Planning committee on its meeting held on 27.04.2023. Members including President of District Panchayath was present in the meeting and a copy of the report and maps were handed over there for their



Presentation before DPC at DP conference hall

suggestions regarding the master plan. A copy of the brochure was also given to each member.

Within the last date, about 490 objections and suggestions were received in the municipality. Out of which nearly 160 objections had asked for a direct hearing also. Hence the Master Plan committee had decided to conduct hearing on 10.07.2023, 11.07.2023 and 25.07.2023 at Municipal Council Hall. Despite being informed individually through letters, publicity of the hearing was also given through newspapers. Master Plan committee members sat together to hear the objections and suggestions directly from the aggrieved persons during these days and around 111 people were participated in the process.



അമൃത് മാസ്റ്റർ പ്ലാൻ

അപേക്ഷകളിൽ തെളിവെടുപ്പ്

നോട്ടിസ് ലഭിച്ചവർ ഇന്ന് നടക്കുന്ന സിറ്റിങ്ങിൽ ഹാജരാകണം

തുടർ നടപടി ഇങ്ങനെ

നഗരസഭ കരട് മാസ്റ്റർ പ്ലാൻ: തെളിവെടുപ്പു പൂർത്തിയായി

പച്ചത്തേങ്ങ സംഭരണം: രേഖകൾ ഹാജരാക്കണം

Images of hearing process conducted at Muncipality

Once the Hearing process was completed, the committee decided to have their meetings to consider each objections separately based on its merit. For this, first of all the

objections were sorted out based on their subject and nature of objections. The meeting was held on 31.07.2023, 01.08.2023, 02.08.2023, 03.08.2023, 05.08.2023, 08.08.2023, 09.08.2023, 22.08.2023, 23.08.2023 and 29.09.2023 and each matter was discussed in detail and the opinion of the committee was noted against each. Serious discussions were taken place on certain subjects like water retention zone. There the committee observed that even though the intention of the zone was good, the prevailing laws and the existing settlement of Palakkad demands the relaxations of Paddy and Wet land Act and hence sustainability of such a zone is questionable. The proposed industrial zone at Olavakkode, where a lot of people had already purchased land for house constructions and mass petitions were received against such a proposal, the intent of the committee was more people centric and had decided to withdraw such proposals. Other major issue raised through objections were the road widening proposals. Even though the projected traffic volume of the city accounts for much wider roads, the existing built up density is also considered by the committee while re defining the proposed width. Road width was thus reduced to an extent where a uniform geometry with a considerable and practical width is possible for accommodating the up coming traffic. The committee also held a discussion with ward councillors who had objections so that their comments from a more people centric view will be available before providing the opinion. The committee, through its 10 days long discussions and considerations formulated the entire objections and suggestions along with its opinion in form 1 as stipulated in the respective rules, and was submitted for the consideration of the municipal council on its meeting held on 29.09.2023.



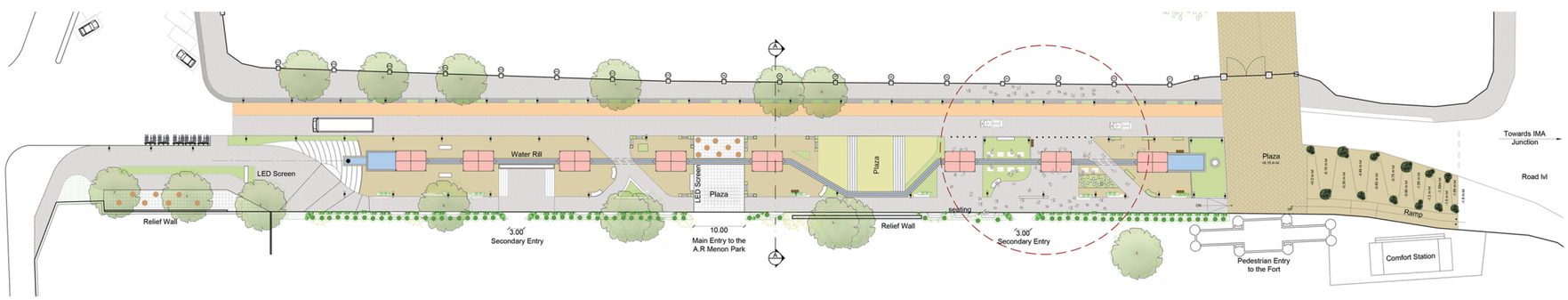
Master plan committee meetings conducted at Muncipality







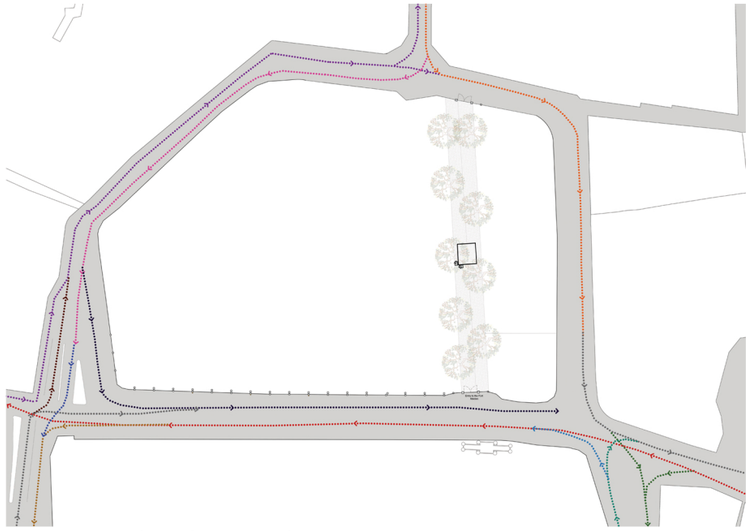
As part of the outsourcing of Urban design components for the preparation of AMRUT Master plan in Palakkad Municipality- 2021-22, by the District Town Planning Office Palakkad the street between Fort and the Fort Maidan is proposed to be redesigned as a pedestrianized commercial street for informal activities with a holistic approach to street design. The project incorporates mobility elements-e.g. footpaths and cycle tracks, as well as additional elements such as trees, street furniture, and organized vending spaces in an integrated design. The project envisages to provide a proposal for the detailed street designs for a 50m stretch of ring road circulating around the Palakkad fort to a minimum ROW width of 16m in one-way system.



A PLAN

PEDESTRIAN FRIENDLY COMMERCIAL STREET BETWEEN PALAKKAD FORT AND FORT MAIDAN

ARVIES GROUP



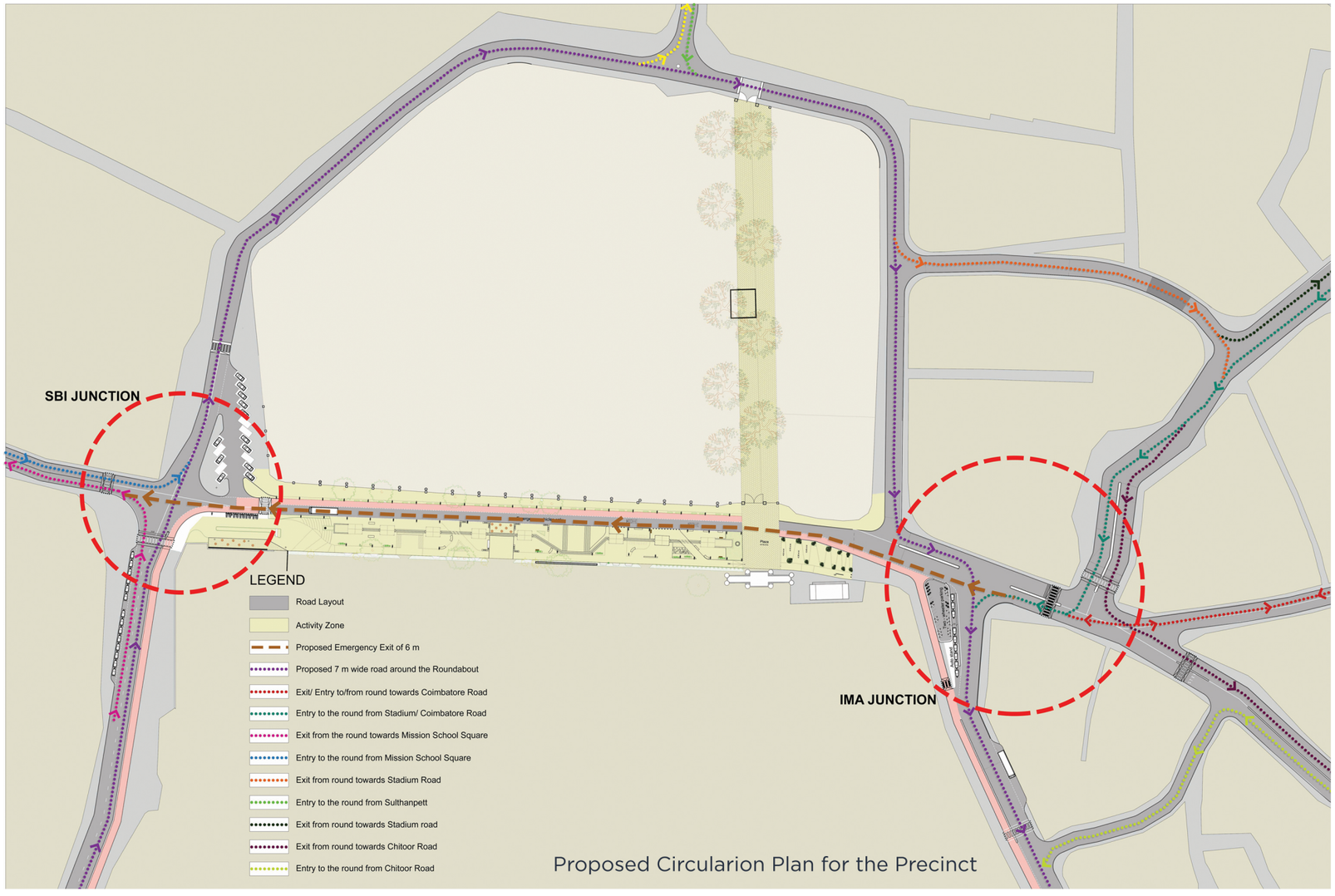
Existing vehicular circulation



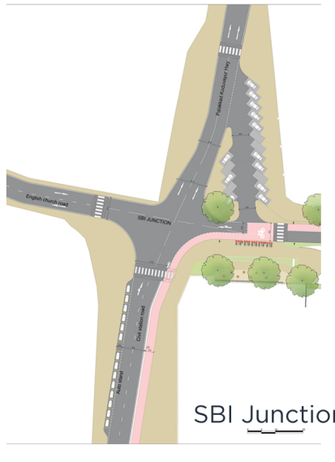
Entry to the street through a series of steps and ramps.
View from the IMA Junction



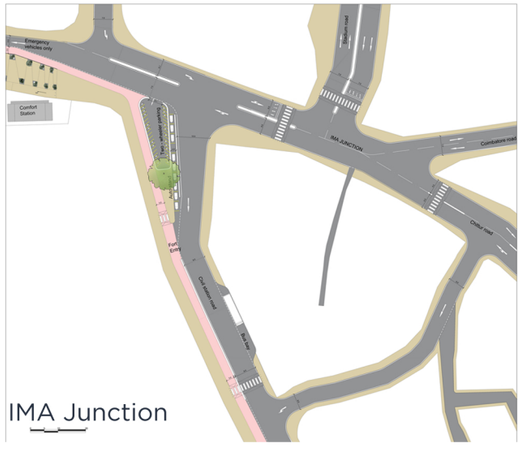
The 4 m pathway and the cycle track along with activity zone



Proposed Circularion Plan for the Precinct



SBI Junction



IMA Junction

The existing vehicular movement shows multiple conflict points where junctions have traffic signals guiding them. It could also be noted that few of the movements are restricted as a control measure for better circulation.

The proposed design shows vehicular movement in one direction (clockwise). The connecting roads to the round enables entry and exit which helps reduce conflict points mainly in SBI and Anjuvilakku junction. The pedestrianised street can also act as an emergency.

PEDESTRIAN FRIENDLY COMMERCIAL STREET BETWEEN **PALAKKAD FORT AND FORT MAIDAN**

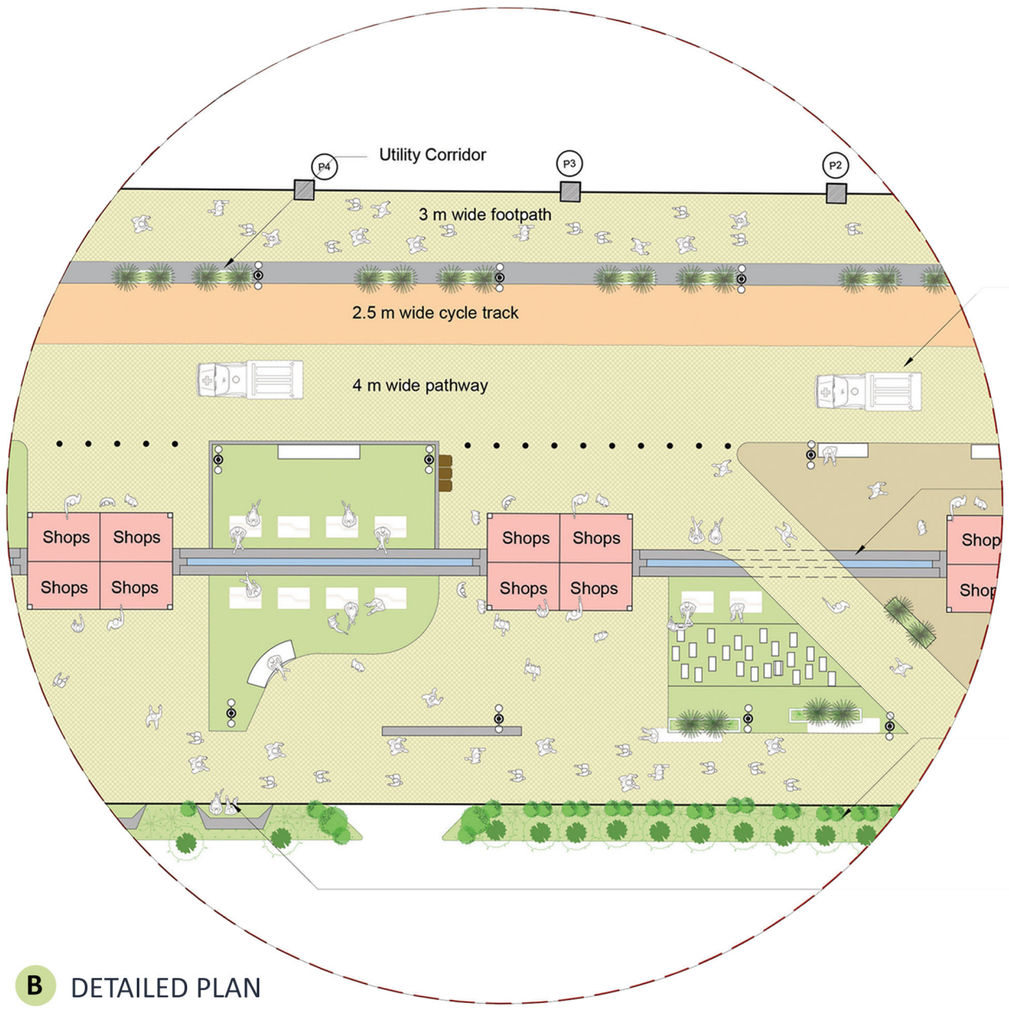
ARVIES GROUP



3D View & Section of the Seating space in the landscaped edge of the A.R. Menon Park



The shops ans the seating spaces



B DETAILED PLAN

4 m wide pathway acts as an emergency route for ambulance, fire rescue and police. It has enough width to accommodate a single lane traffic in case of any congestion in the round.

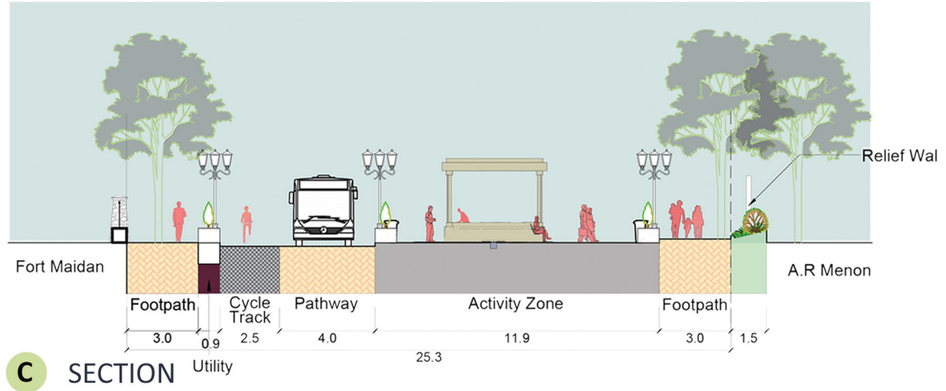
The Water Rill defines the center line of the street while maintaining a unified activity zone. The water evokes sentiments towards the climate of Palakkad symbolically and helps create a micro climate in the region.

The landscape buffer acts as a territorial boundary while distinguishing the two active zones. This design helps maintain the visual connect between the park and the street while preserving the edge. It also creates an interesting space for recreation.

Integrated seating spaces in the landscape buffer acts as an interesting and unique feature to the street design. The seating shall be designed according to the tool kit.



Water rill that emphasises the axis of the zone



C SECTION

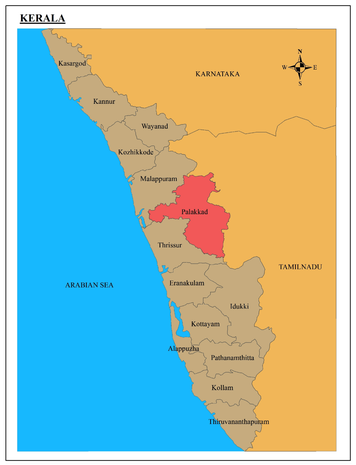
PEDESTRIAN FRIENDLY COMMERCIAL STREET BETWEEN PALAKKAD FORT AND FORT MAIDAN

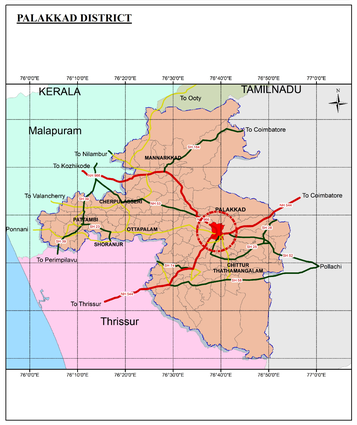
ARVIES GROUP

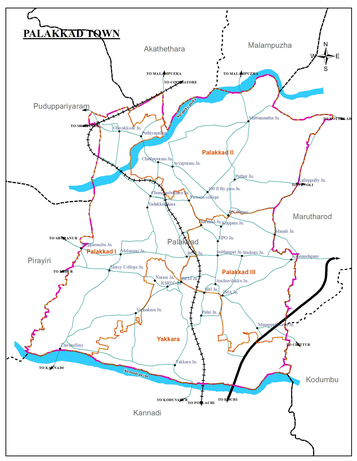
MASTERPLAN FOR PALAKAKD MUNICIPALITY
EXISTING LAND USE MAP - 2020 -- MP / 01

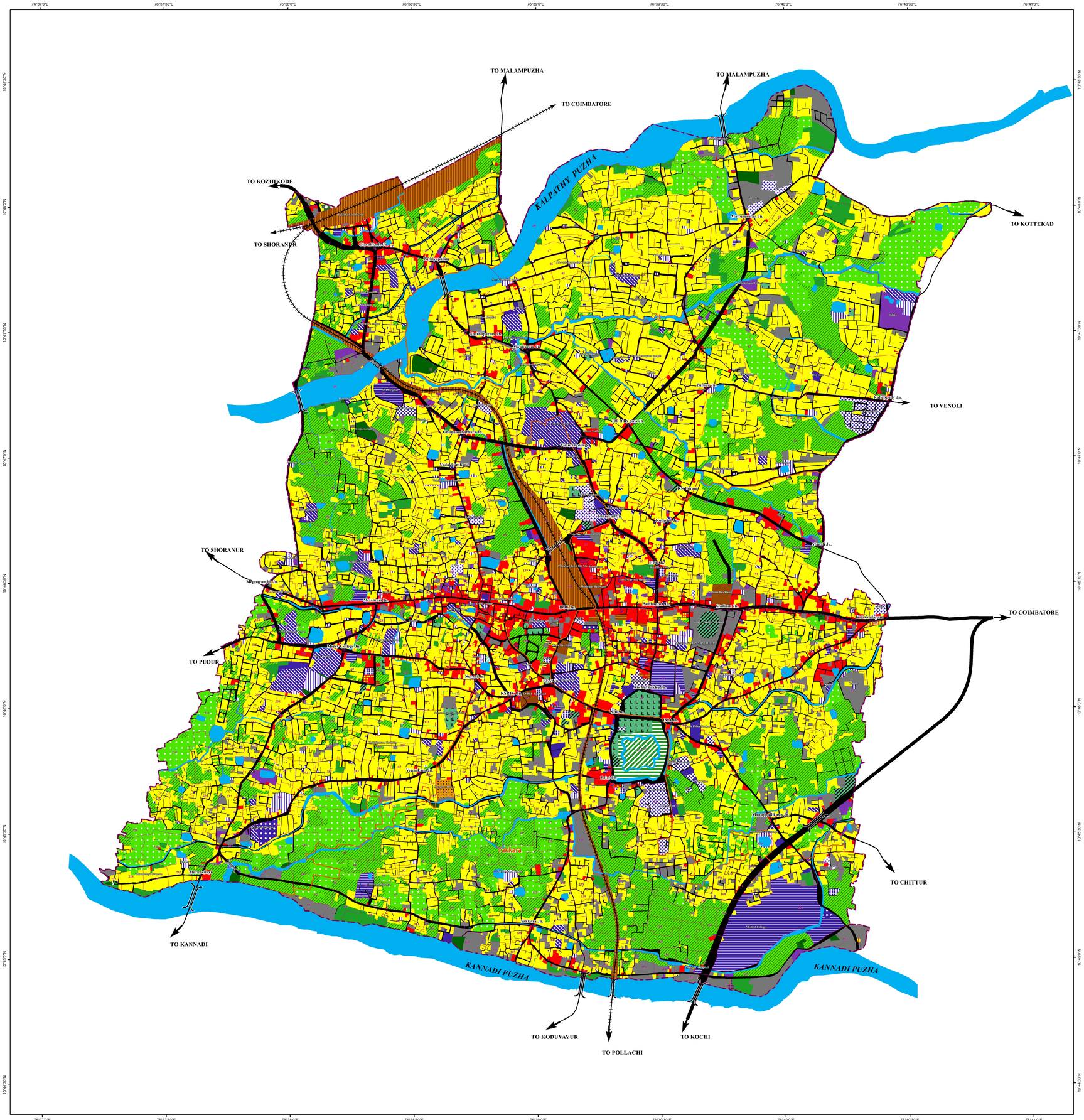
January 2024











LEGEND

Existing Land use Palakkad

- Residential
- Commercial
- Industrial
- Public& Semi-public
- Public Utilities
- Central Govt. Property
- State Govt. Property
- Educational Institutions
- Health Services
- Communication
- Religious
- Mixed Commercial & Educational
- Mixed Commercial & Health Services
- Mixed Commercial & Industrial
- Mixed Residential & Commercial
- Mixed Residential, Commercial & Health Services
- Mixed Residential, Commercial & Institutional
- Mixed Residential & Educational
- Mixed Residential & Health Services
- Mixed Residential & Household Industry
- Heritage Precinct
- Heritage Structure
- Recreational Builtup
- Recreational Openspace
- Paddy Active
- Paddy Non Active
- Forest
- Dry Agriculture
- Road
- Railway
- Transportation
- Traffic Related
- Solid Waste Management
- Slaughter House
- Sacred Groves
- Vacant Land
- Water Bodies
- National Highway
- Major District Road
- Other District Road
- Major City Road
- Railwayline
- Block Boundary
- Revenue Ward Boundary
- Village Boundary
- Municipal Boundary
- Bridge

SCALE : 1:10000

0 125 250 500 750 1000 Meters

N W E S

PALAKKAD MUNICIPALITY	LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) GOVERMENT OF KERALA
Secretary	Assistant Town Planner
Chairman/Chairperson	Deputy Town Planner
LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) PALAKKAD	Town Planner
Draftsman	Senior Town Planner
Assistant Town Planner	
Deputy Town Planner	
TOWN PLANNER	CHIEF TOWN PLANNER (Planning)

LOCAL SELF GOVERNMENT DEPARTMENT GOVERMENT OF KERALA

Principal Secretary to Government

MASTERPLAN FOR PALAKAKD MUNICIPALITY
PROPOSED LAND USE MAP-2041 --MP / 04 /Л

January 2024

Notes :

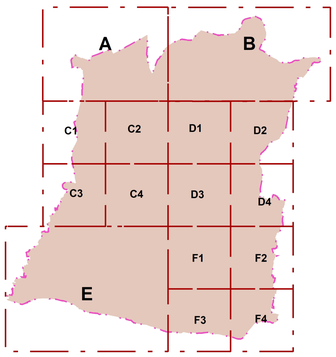
1. The detailed alignment is shown on part maps for the roads, namely Rd 4, Rd 15,Rd 19, Rd 23, Rd 36 and Rd 37.
2. Mixed use shown in this map is for indicative purpose only. Refer general guideline 28 of Chapter 34 - Zoning regulations for enforcement.
3. Resurvey data is used for Palakkad I and Yakkara villages.
4. Minor shifts in cadastral overlay for land use and road network are expected. It is recommended to confirm resurvey numbers through site inspection and verification of revenue particulars wherever necessary.

LEGEND

Proposed Land use

- Residential Zone I
- Residential Zone II
- Town Centre
- Commercial Zone
- Industrial Zone
- Public and Semi-Public Zone
- Tourism Development Zone
- Recreational Zone
- Traffic and Transportation Zone
  - Existing Roads
  - Pedestrian Street
- Land Reserved For Roads
- Wet Agriculture Zone
- Heritage Zone
- Forest
- Crematorium and Burial grounds
- Slaughter House
- Water Bodies
- Special Zones
- Flood Prone Area
- Mixed Use
- 12 m Rd-1 — Road Widening with Centreline Control
- Road Widening with Detailed Alignment
- New Roads with Centreline Control
- New Roads with Detailed Alignment
- Junctions
- 10 — Block Boundary
- 1 — Revenue Ward Boundary
- 1 — Village Boundary
- Municipal Boundary
- Grid Line
- Existing Bridge
- Proposed Bridge
- Railway line

INDEX MAP



SCALE : 1:10000

0 125 250 500 750 1000 Meters

PALAKKAD MUNICIPALITY

Secretary — Chairman/Chairperson

LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) PALAKKAD

Draftsman

Assistant Town Planner

Deputy Town Planner

TOWN PLANNER

LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) GOVERMENT OF KERALA

Assistant Town Planner

Deputy Town Planner

Town Planner

Senior Town Planner

CHIEF TOWN PLANNER (Planning)

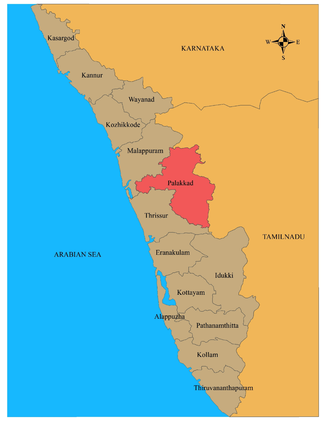
LOCAL SELF GOVERNMENT DEPARTMENT GOVERMENT OF KERALA

Principal Secretary to Government

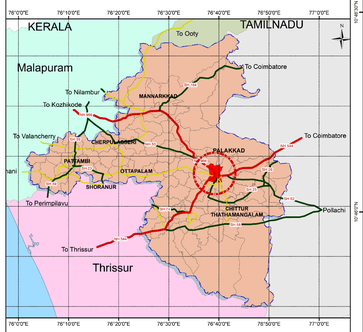
INDIA



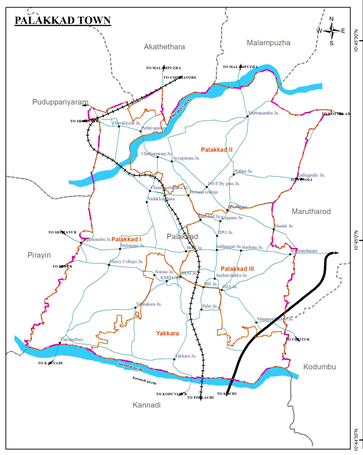
KERALA

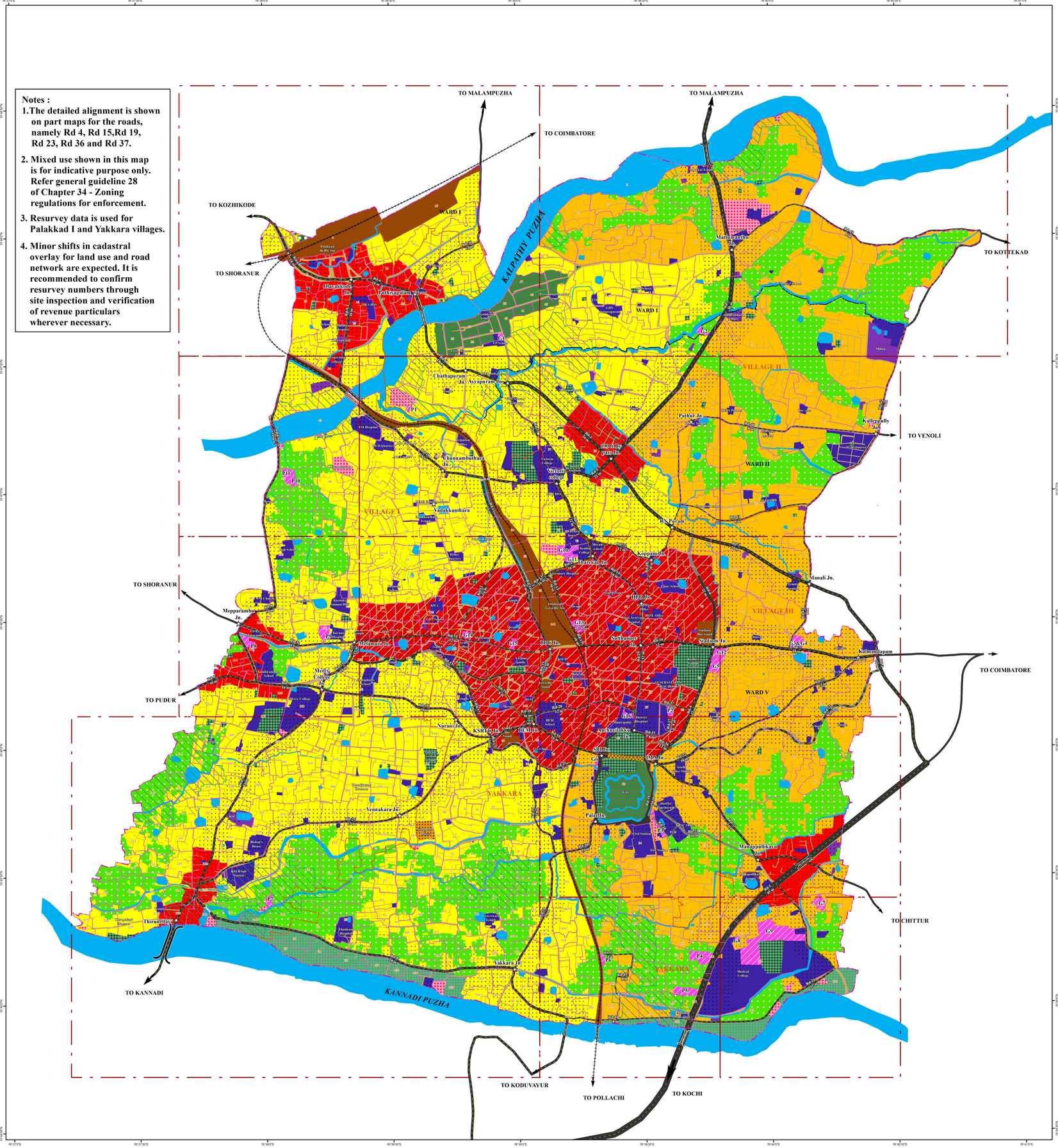


PALAKKAD DISTRICT



PALAKKAD TOWN





MASTERPLAN FOR PALAKKAD MUNICIPALITY
PROPOSED ROAD LAYOUT-2041 --MP / 04 / II

January 2024

Note :
1.The detailed alignment is shown on part maps for the roads, namely Rd 4, Rd 15,Rd 19, Rd 23, Rd 36 and Rd 37.

LEGEND

- Junctions
- Proposed Parking
- Existing Bridge
- Proposed Bridge
- Existing Bus stand
- Proposed Bus stand
- Proposed Truck Terminal
- Railway Station
- Proposals
- Proposed Round About
- Pedestrian Street
- Railway land
- Water Bodies
- Other Roads
- Railway Line
- Municipal Boundary

Widening Roads
- 45 m
- 30 m
- 24 m
- 22 m
- 18 m
- 16 m
- 12 m
- 8 m

Proposed Roads
- 22 m
- 16 m
- 12 m
- 8 m

SCALE : 1:10000

0 125 250 500 750 1000 Meters

PALAKKAD MUNICIPALITY	LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) GOVERMENT OF KERALA
Secretary	Assistant Town Planner
Chairman/Chairperson	Deputy Town Planner
LOCAL SELF GOVERNMENT DEPARTMENT (PLANNING) PALAKKAD	Town Planner
Draftsman	Senior Town Planner
Assistant Town Planner	
Deputy Town Planner	
TOWN PLANNER	CHIEF TOWN PLANNER (Planning)

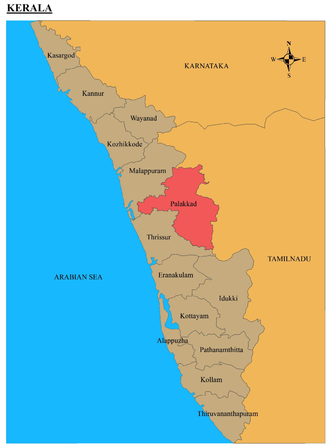
LOCAL SELF GOVERNMENT DEPARTMENT GOVERMENT OF KERALA

Principal Secretary to Government

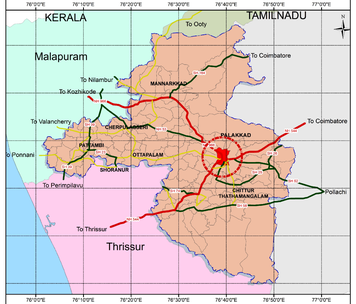
INDIA



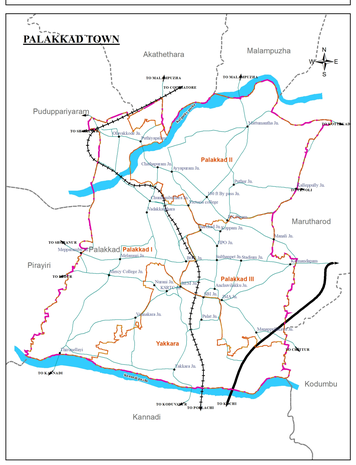
KERALA



PALAKKAD DISTRICT



PALAKKAD TOWN





Atal Mission for Rejuvenation and Urban Transformation

Palakkad Municipality
Local Self Government Department Planning, Kerala

January 2024