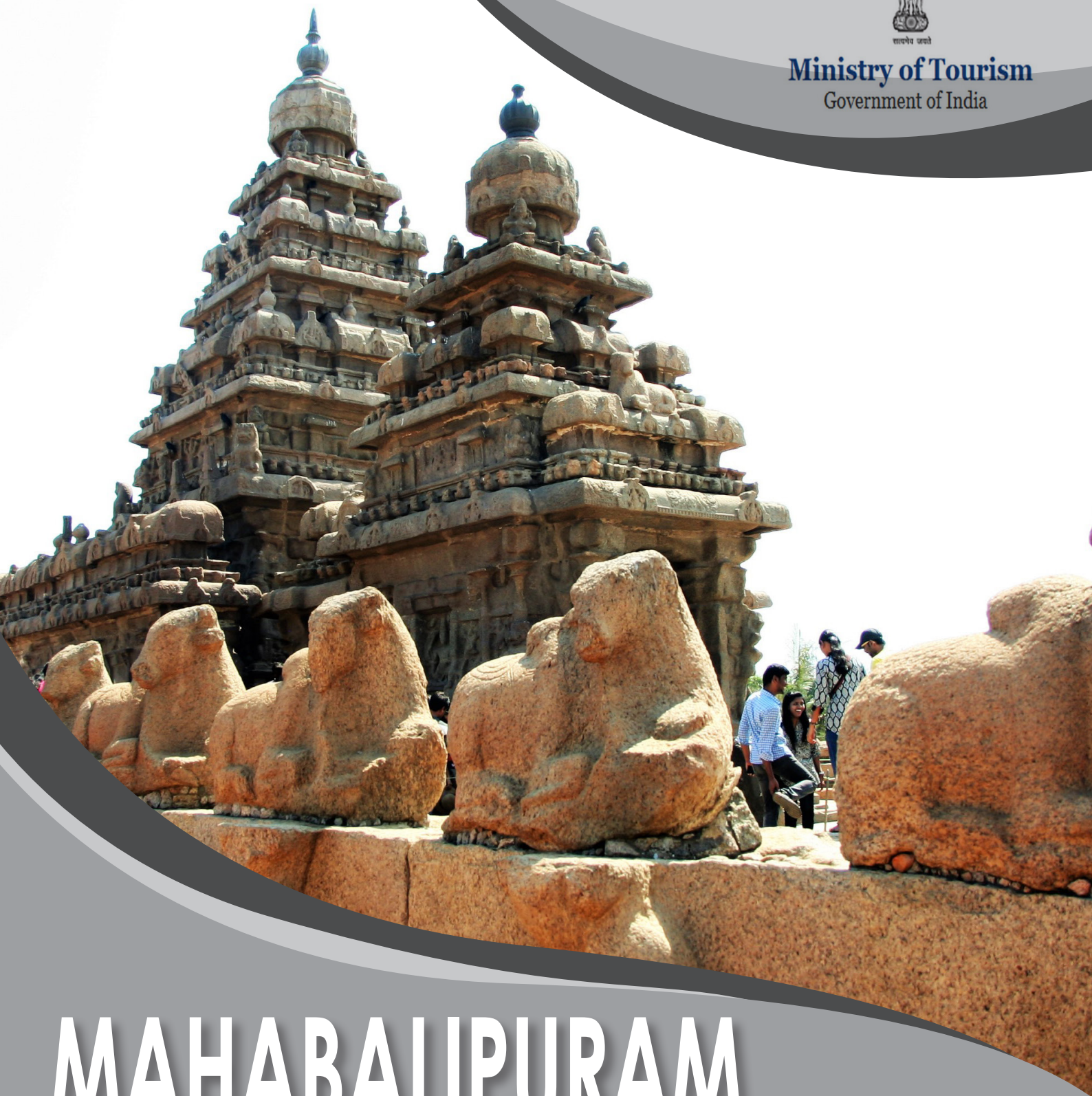




Ministry of Tourism
Government of India



MAHABALIPURAM

DEVELOPMENT OF ICONIC TOURIST SITES IN INDIA

FINAL REPORT –
MASTER PLAN INCLUDING THE SHELF OF PROJECTS
26TH DECEMBER 2018



INI DESIGN STUDIO
Formerly Stantec Consulting



PREAMBLE

INTRODUCTION TO THE PROJECT

The Government of India recognizing the potential of India's rich historical, religious and natural heritage for providing unique tourism experiences, supporting communities, and providing employment, launched the **Swadesh Darshan Scheme** in 2014-15. The scheme focuses on integrated development of theme-based tourist circuits in the country without comprising upon the environmental concerns.

Thirteen thematic circuits were identified, for development namely: North-East India Circuit, Buddhist Circuit, Himalayan Circuit, Coastal Circuit, Krishna Circuit, Desert Circuit, Tribal Circuit, Eco Circuit, Wildlife Circuit, Rural Circuit, Spiritual Circuit, Ramayana Circuit and Heritage Circuit.

Under the Swadesh Darshanscheme, the Ministry of Tourism, Government of India has identified sixteen sites to be developed as Iconic Tourist Destinations. These include:

1. Kaziranga (Assam)
2. Maha Bodhi (Bihar)
3. QutubMinar (Delhi)
4. Red Fort (Delhi)
5. Colva Beach (Goa)
6. Dholavira (Gujarat)
7. Somnath (Gujarat)
8. Hampi (Karnataka)
9. Kumarakom (Kerala)
10. Khajuraho (Madhya Pradesh)
11. Ajanta (Maharashtra)
12. Ellora (Maharashtra)
13. Amer Fort (Rajasthan)
14. Mahablipuram (Tamil Nadu)
15. FatehpurSikri (Uttar Pradesh)
16. Taj Mahal (Uttar Pradesh)

The selection of these sites was done based on their current footfall, regional distribution, potential for development and ease of implementation. The project shall involve thorough assessments of the existing scenario, site specific studies and market assessments to develop a vision and suggest a project shelf for development of **Mahabalipuram**. The overarching objective is to promote and implement holistic development, branding and marketing of **Mahabalipuram** such that it emerges as a tourist magnet and facilitates long-term and sustainable growth in the region.

INI Design Studio, in consortium with Jones Lang Lasalle (JLL), has been appointed to prepare comprehensive vision and development plan along with project shelf for **Mahabalipuram, Tamil Nadu** as an Iconic Tourist Site of global standards under the Swadesh Darshan scheme.

The specific project objectives envisaged are:

- Designing a framework for holistic development of site including identification of 'soft' and 'hard' interventions that shall enable Mahabalipuram to emerge as a global tourist destination.
- Facilitating the long –term growth and development of tourism in a sustainable manner along with creation of institutional framework that ensures adherence to development plan and the envisaged sustainable tourism planning principles.

- Publicity & Promotion of Mahabalipuram such that it helps appropriate Branding of the site as Sustainable eco- tourist destination
- Identifying priority projects and areas for potential development of specific social and economic drivers and supporting infrastructure.

The project shall have a three-pronged approach. At the first level, it will involve analysis of issues related to connectivity at the destination, improved tourist experience at the site, and creation of a holistic tourist experience through identification of hard interventions. Along with these, the project shall also involve identification of soft interventions that will enhance skill development, employment generation through involvement of local community, and overall improved socio-economic parameters. At the third level, the project shall look into promotion and branding strategy and by bringing in private investment, it will work towards development of a sustainable management framework.

Background of the Project

Given the vision for the development of Mahabalipuram as an Iconic site and the project goal as envisaged by the Ministry of Tourism, Government of India, the consultants have outlined the following broad objectives that shall be achieved in this assignment.

- Develop a comprehensive plan that offers Restoration, Redevelopment and Integration of the Temple Site with surrounding monuments and the Sea edge
- Identify the existing gaps and opportunities for enabling better connectivity and improved tourist infrastructure
- Identify measures that shall preserve, enhance and showcase the existing tourism products and surrounding ecological conditions
- Integrate the socio-economic and the spatial urban fabric through proposal of public activities and amenities with the landscape to achieve a cohesive development
- Use the information and communication technology to create a smart and self-sustaining tourism experience.

These objectives shall be achieved through various activities that are tasked to the consultants. The following section outlines the broad scope of services in the project.

Scope of Services

The scope in the project ranges from data collection to analysis, assessments, stakeholder consultations and preparation of Development Plan. The broad scope can be listed under four categories:

- Baseline Data Collection and Analysis

A detailed study will be conducted to assess the existing scenario at Mahabalipuram and its precinct. Intensive data collection shall be required to procure all necessary data including primary and secondary information. This will include but not limited to: -

- Tourism Scenario – Global and National
- Site Scenario – Current Infrastructure and Amenities; present tourism experience; connectivity and access
- Benchmarking – Case Studies and good practices from across the globe
- Current tourism product – existing circuits, tourist activities and programmes
- Market based
- Institutional Framework – the institutional arrangement for the site that is critical for implementation and administration of proposed program

The development plan for an iconic site that is also a major attraction of the state will base itself upon intensive research and background mapping. This shall include detailed social, economic and market assessments, along with the analysis of the current government programs for the sector.

- Infrastructure Gap Assessment
- Viability assessment
- Job creation and employment potential
- Skill Development & Capacity building
- Environmental sustainability
- Impact Assessment
- Wildlife Impact Assessment
- Design Scope

The development plan shall also entail a broad design scope, including the master planning, layout and zoning. The proposed plan shall work towards achieving an integrated tourism master plan for the entire site. This will include site planning, investigations and related infrastructure design and planning for the entire site. Based on the interventions identified, the design shall also identify the suitable location and micro-site planning for any new component.

Stakeholder's Consultation

Stakeholder consultations will be an integral part of all stages. A careful identification of stakeholders such that the process shall involve formal and informal stakeholder consultations throughout the length of the project. While formal stakeholder consultations will be conducted at the end of each stage, a continued stakeholder interaction based on the stage and requirements of the project shall be undertaken.

Preparation of Development Plan

The Development Plan shall be prepared as the final outcome of the project. Based on the analysis of the baseline situation, gap assessment, and stakeholder's consultations, a draft development plan will be prepared. This shall identify a project shelf, proposing the components that are required for developing Mahabalipuram into an Iconic Tourist Destination. These project components shall be proposed understanding the carrying capacity of the site.

The draft plan/ plan will be shared with all stakeholders to discuss the proposal and incorporate their views and suggestions. It will validate all the preliminary analysis done based on the information/ data collected. Once a detailed stakeholder workshop is conducted, the team shall prepare the final Development plan.

The Development Plan will bring out various projects for soft and hard interventions required to bring the site up to the level; with short – term, medium term and long-term project buckets. This shall have agreement from various stakeholders and expert committee.

Deliverables

The project deliverables will be completed in four stages as mentioned in the ToR:

Sr. No.	Timelines	No. of days
1	Inception Report	T + 10
2	Data Collection and identification of Stakeholders	T + 25

Sr. No.	Timelines	No. of days
3	Draft Report (Master Plan, including shelf of projects and presentation of the stakeholders @ T+45)	T + 30
4	Final Report (Master Plan, including shelf of projects)	T + 60

Inception Report:

The inception report carries the basic understanding of the project site and its surrounding region. The following components are considered as follows

- Team Mobilization
- Literature Review (secondary information):
- Case Study

Data Collection:

The Primary data collection is carried out with the discussion among the stakeholders, the government departments and Tourists.

Reconnaissance survey: The basic understanding of the site will be carried out for the further development. The Site features, its Natural characteristics, existing condition have to be documented. The documentation will be carried out by the photographs and Google Earth maps. The questionnaire survey will be carried out with the tourists, the local people, the street vendors, the department personnel and Hotel Association (Accommodation).

The Site visits will be conducted to understand the nature of activities happening at the site. The consultant shall identify, visit and document existing/ potential tourism site. The sites may include water features, scenic sites, beaches, forests, landscapes etc. and any other similar tourism products.

Draft Report:

The draft report is submitted with the basic understanding from the data collected, stakeholder's consultation, and findings from the study. The draft report is presented to the client and stakeholders for the further outcome of the development proposals.

Final Report:

The Final report carries the overall proposal prepared by the consultant for the development of the site and its surrounding region. The comments received from the stakeholder consultation is considered based on the requirements. The Final Report is presented to the Ministry for further approval of the Report for implementation of the project.

Purpose of the Report

This report forms the final deliverable of phase 1 of the project. The report encompasses the outcomes of all the studies and surveys conducted to arrive at the gaps and demand assessment of all civic and tourist infrastructure in the Mahabalipuram Heritage Area. The consultant has held an array of stakeholder consultations with various Government departments, industry players and the local community as well in order to gauge the requirements of the project, understand the major issues and concerns and develop the needs assessment framework and the potential areas of development. Further, a benchmarking

exercise that looked into select case studies of similar nature from across the globe and listed out the best practices that can guide the vision for the development plan for the project was conducted.

This has further been translated into the Vision and Goals which form the foundation for the project shelf. Each goal entails a list of projects, the components of which are discussed in depth in this report. The consultants have worked closely with all key stakeholders with the aim of discussing the tentative project shelf, gathering valuable suggestions and inputs to finalize the same. The report presents a comprehensive shelf of projects covering all aspects of the pillar goals envisaged to boost the Tourism scenario in Mahabalipuram while developing the World UNESCO Heritage site into an Iconic Tourist Destination. The report also entails the block cost estimates for each of the identified projects, along with the implementation plan for the same describing the proposed phasing of the projects while identifying the stakeholders and implementing agencies involved. This report will hence serve as the base document for further detailing of the proposals and translating them into Detailed Project Reports for implementation under Phase 2 of this Flagship Project under the Swadesh Darshan Scheme.

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EXECUTIVE SUMMARY

Introduction

The Ministry of Tourism has identified 17 prominent tourist sites including Mahabalipuram for development based on the criteria of footfall, regional distribution, potential for development and ease of implementation. The development of iconic tourist destinations is formulated with set objectives and aims and will be implemented under the ongoing Swadesh Darshan Scheme of Ministry of Tourism.

The set aims and objectives are to be achieved within the framework of a sustainable development which respects the natural and human environment whilst at the same time, maximizes the benefits to the national economy and society and protects the environment. As with regards to the local communities, economic growth and increased overall commercial and social activity are expected to have a positive impact on the quality of life of the indigenous population and on all aspects of their social and cultural activities. Mamallapuram, also known as Mahabalipuram, is a town in Kancheepuram district in the Indian state of Tamil Nadu, 58 km south of the city of Chennai. Mahabalipuram is located right on the Coromandel Coast next to the Bay of Bengal. It served as a 7th century port city of the South Indian dynasty of the Pallavas in Tamil Nadu. **The site is a UNESCO World Heritage site and spreads over an area of 27, 758 ha.** The destination is a well-known tourist hotspot and has developed as one of the first sites visited by tourists on entry to Tamil Nadu.

Mahabalipuram was declared a World Heritage Site by UNESCO in the year 1984 owing to the 40 sanctuaries found here.

A key strength of Mahabalipuram's tourism appeal is the overall diversity of resources. These include: the UNESCO designated World Heritage Site and nature-based tourism owing to the Coastal location. Commercial and cultural events keep the tourist excited and on their toes through their visit. Mahabalipuram's tourism sector has been visualised as a major potential engine of growth and development.

There are five basic categories into which these monuments can be divided:

1. The processional chariots or Ratha Temples
2. Mandapas or Rock Sanctuaries
3. Open Air – descent of Ganges to the Earth
4. Temples cut out from stone
5. Single to triple storied monolithic rathas

Apart from these, a total of 39 monuments in the form of sculptures, artwork, caves and smaller temples exist within the tourist area of Mahabalipuram.

Destinations and activities in Mahabalipuram –

- Mahabalipuram Beach
- Shore Temple
- Tiger's Cave
- Five Rathas
- Dakshinachitra

The tourists and visitors who take a trip to Mahabalipuram also indulge in Commercial activities, Bike Trips, Beach related activities, Surfing, Boat Rides, Fishing, Turtle Walks, Trekking and Yoga Camps.

Tourism plays a major role in social development of a place. Many of the locals are also tourist guides by profession. Tourism in Mahabalipuram is a seasonal business where most of the foreign tourist visits the place during November to March. The people of Mahabalipuram try to make most of the money during season time. There are over 45 residents at these heritage monuments who have been acting as guides for decades. Government has trained a few and provided identity cards for over 20 people.

It is observed that the growth rate of increase in tourists annually has dropped drastically. While there was an increase of domestic tourists at the rate of 84% during the period 2013-14, the growth rate of domestic tourists dropped to 13% during 2014-15. Similarly, the growth rate of foreign tourists dropped from 21% in 2013-14 to 8% in 2014-15. Also, as observed in 2017, the growth rate has further dipped to up to 1 % at Mahabalipuram. This reflects the need to re-vamp tourism related services and amenities in the area.

Scope & Objectives

To address the scope of work and achieve the enlisted objectives efficiently, a collaborative and integrated approach shall be used. Our methodology, driven by the five elements, shall guide the overall process and methodology. Approach towards the study will be comprehensive in nature. Increase in population, high inflow of tourist/pilgrimage population, floating population and rapid spatial expansion of the town, increase in demand for land, sustainable and efficient growth and an adoption of certain principles, approaches which are broadly outlined as below:

1. Tourism Assessment and Preliminary Infrastructure need for tourist
2. Economic and functional integration of extended jurisdiction with the core of the town
3. Formulating developmental strategies for the region which justify the spatial organization model (in line with regulations and restrictions prescribed by ASI, UNESCO and other relevant bodies)
4. Upgrading the infrastructure & public amenities, to enhance the tourist experience and widen the public benefits
5. To provide rural-urban continuum in the area
6. Conservation and management of natural resources which includes open spaces, green cover, erosion, hazard and water bodies
7. Conservation and management of heritage & cultural areas
8. To achieve the outlines project objectives, a multi-tiered methodology is adopted. This will include primary and secondary data collection and analysis.

The following are the broad stages of work;

- Baseline Assessment
- Benchmarking / Case Study Analysis
- Stakeholders Consultations – Defining Vision

This report is commissioned to comprehensively address the existing scenario, issues, gap assessment and proposals to overcome the gaps. The report provides a coherent and comprehensive presentation of the development of Mahabalipuram and position it as a branded iconic destination on the world map. The study is carried out by firstly carrying out the identifying the issues, assessing the potential areas of development and at last formulating thematic goals to achieve a holistic vision. The goals are translated into practical interventions which are mapped on available land to get the desired development. The interventions are back and forth discussed with all the stakeholders and revised and modified to bring a sense of subjectivity to each of the goals.

I. Baseline Assessment

Basic Infrastructure- Although ECR is well maintained and serves a smooth drive to visitors, the approach road to the UNESCO World Heritage site of Mahabalipuram calls for attention. The two-way road is characterized by small stores on both sides and is very congested during the weekends and peak season period (October - January). The destination is not currently universally accessible. Provisions must be made to render the site accessible to all. The area urgently needs to be equipped with street lighting provisions for enhanced safety and smooth entry and exit of tourists.

The source of water supply in Mahabalipuram is ground-water. Due to tourist floating population, there is an occasional scarcity in water supply. The Solid Waste Collection System in Mahabalipuram is a well-planned system with most of the waste being treated. Two dedicated parking areas have been demarcated for Tourist vehicle parking within the Mahabalipuram tourist area. On street parking is a common sight at Mahabalipuram. The existing information booth is in dire need of replacement. There is only one main information center located within the TTDC complex in the vicinity.

Tourist Infrastructure- The signage system within and around the heritage site is in need of upgradation. Though there are several signs that indicate the location of the main monuments, the area lacks a good number of directional and information signage systems. Drinking water taps are provided at ~10 points within the site. Mahabalipuram currently has 6 toilet blocks of which 3 are under the ownership of the Mahabalipuram Town Panchayat and 3 are owned and maintained by ASI. The public convenience unit located at the bus stand is under renovation currently and closed for use. There is no provision for storage facilities for the tourists and local visitors. The tourist site has approximately 10 benches, spread across the site. None of these have canopies and remain un-used by visitors and tourists. A total of 126 accommodation facilities exists in the Heritage town and surrounding areas of Mahabalipuram. The type of accommodation ranges from • Bed-and-breakfast to Guesthouses and lodges to luxury Hotels.

Tamil Nadu government has made it mandatory to install Closed Circuit Television (CCTV) cameras in all public places across the State. A police booth is located along west Raja Street within the tourist circulation area. One booth however seems insufficient. The Mahabalipuram area is equipped with approximately 928 street lights, of which ~ 60 Street lights are provided along the beach and surrounding areas. There is a lack of lighting facilities around the heritage site and monuments. The Mahabalipuram Town Panchayat area has 1 number of primary health care center and 3 numbers of Clinics (Allopathy, Homeopathy) catering to the residents of the town. There is also 1 private run clinic in the area. There is no provision for first aid facilities in the tourist area of Mahabalipuram.

II. Benchmarking from Case Studies

This assessment is undertaken by drawing parallels from successful case studies across the globe. The case studies have helped consultants to understand the relevant issues and strategies devised to overcome the obstacles of growth at these sites.

The Selected case studies include

6. Acropolis of Athens, Greece
7. Stonehenge, U.K.
8. Kazan Kremlin, Russia
9. Borobudur Temple Complex, Indonesia
10. Angkor Wat, Cambodia

The specific parameters that have been studied in each of the case study are:

- Access and connectivity
- Tourist profile, footfall, seasonality and patterns
- Presence of amenities and tourist facilities

- Ancillary activities and tourism products
- Policies and frameworks specific to the site
- Community involvement with respect to employment generation, direct and indirect

The following are the key takeaways from the benchmarking exercise:

11. Strong and definitive character that binds the multiple locations within the site
12. Efficient Connectivity and Accessible layout
13. Strong Regulatory Framework to maintain the sanctity of the site
14. Multiple tourism products supported by a strong branding strategy
15. Ancillary products that celebrate the regional or the national heritage and the traditions
16. Provision of amenities and tourist education about the heritage to enhance the tourism experience
17. Responsible tourism strategies

III. Stakeholder's Consultation

Consultants have met the following stakeholders

- Department of Tourism
- Mahabalipuram New Town Development Authority
- Mahabalipuram Town Panchayat
- Archaeological Survey of India

The key takeaways and key learnings from the above discussions are-

- Identity and Brand Creation
- Site Circulation and Parking
- Information Infrastructure
- Design for all
- Capacity Building
- Tourist Infrastructure and Tourist Experience

Report Structure- The report is strategically divided into 3 sections, wherein the 1st section is focused to understand the context, existing scenario in terms of history, landscape, local conditions, prevailing tourism products, economy etc. The understanding is also built upon by undertaking various on-site investigations, primary surveys, stakeholder discussions as well as secondary research.

To get a deeper insight on the impacts of tourism in the lives of the residents, a survey was conducted with a sample size of 100 vendors to get details like their place of origin, preferred mode of commute, the goods they sell, their monthly income, issues they face, etc.

The major issues that call for attention are as listed below:

- There is a need for an organized system of employment in the tourism sector within Mahabalipuram that the resident communities can benefit from
- Field surveys conducted reveal the need for capacity and skill building training programmes for tourist guides, locals involved in the surfing activities, staff in the hospitality sector, etc.
- Impact on daily life of locals - There is a need to monitor unregulated tourist activities and unrestricted entry of visitors in the town area
- Absence of a clear State policy framework on training and development for the public, private as well as the large informal sectors of the industry
- Poor quality of data on human resource development and employment
- Limited linkage of Information Technology with tourism human resource development

- Low public awareness of tourism employment opportunities
- No structured staff training policy
- Lack of professional, managerial, technical skills at the Mahabalipuram Special Grade Town Panchayat office, New Town Development Authority, TTDC office, and other agencies.
- Limited good quality hospitality and tourism training institutions in the region
- Scope to improve and implement national standards and certification of hospitality and tourism programmes

The second section of the report is well established to assess the areas of improvement in terms of site level conditions such as carrying capacity, physical and social infrastructure, tourist facilities like accommodation, quality of tourism products vis-à-vis the tourist profile. The most common issues and concerns of the tourists are Un-Planned Conservation activities, the quality of resources and weak system for interpretation, signage and information.

Issues, Gaps and Potential for Improvement

- Safety and security need to improve upon – Coast guards, Lighting, Security posts, CCTV cameras, fire station, first aid clinics, etc.
- Walkability - Pavements, traffic calming strategies, traffic management strategy
- Wayfinding - Signages, Pedestrian road markings, Defining walkable routes (heritage, food etc.)
- Convenience – The process of single ticket system for the entire complex, Multi lingual guides, Audio guides, Multi lingual guidebooks, Virtual tours etc.
- Amenities – Parking, toilets, Safe drinking water, Feeder system, battery operated cars, etc.
- Traffic management – Controlling the tourist vehicles during the peak traffic surge, providing alternative internal transport system.
- Quality recreation and open space for the locals need to be developed.
- Development of Children play area could be provided in parks and lawns next to heritage structures

With a background of key learnings from the best practices, the third section of report presents the framework for vision.

Vision

To strategically manage Mahabalipuram's Tourism and to realize the global competitiveness of Mahabalipuram Group of Monuments, its heritage, cultural, and natural resources through product development in sustainable manner consistent with economic goals, cultural values, preservation of natural resources, community desires, and visitor industry needs.

The following Focus areas will serve as the guide for achievement of holistic development of Mahabalipuram-

- Variety
- Enhanced Showcasing
- Seamless Access and Safety
- Authentic Experience
- Conservation

With the framework for Vision, Goals are formulated on the basis of an Underlying Theme;

Underlying Theme: Sustainable And Responsible Tourism

Responsible Tourism was defined in Cape Town in 2002, alongside the World Summit on Sustainable Development. In short, Responsible Tourism is about “making better places for people to live in and better places for people to visit.” Responsible Tourism requires that operators, hoteliers, governments, local people and tourists take responsibility, take action to make tourism more sustainable.

TO APPLY, RESPONSIBLE TOURISM NEEDS TO:

- **Minimize the negative economic, environmental, and social impacts;**
- **Generate greater economic benefits for local people and enhance the well-being of host communities, improve working conditions and access to the industry;**
- **Involve local people in decisions that affect their lives and life chances;**
- **Make positive contributions to the conservation of natural and cultural heritage;**
- **Provide more enjoyable experiences for tourists through more meaningful connections with local people, and a greater understanding of local cultural, social and environmental issues;**
- **Provide access for physically challenged people;**
- **Be culturally sensitive, create respect between tourists and hosts, and build local pride and confidence.**

The Goals formulated within the purview of this theme are presented as under.

- **GOAL 1:** Enhanced Image, Identity and Visibility
- **GOAL 2:** Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation
- **GOAL 3:** Development of Mahabalipuram as a Commercial and MICE Destination
- **GOAL 4:** Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life
- **GOAL 5:** Smart Mahabalipuram
- **GOAL 6:** Equipping Mahabalipuram with State-of-The-Art Tourist Amenities
- **GOAL 7:** Safe and Friendly Mahabalipuram

The proposed interventions to meet each of the goal with its block cost estimate is presented in the table below. The details of same are presented in the last chapter of this report.

S. No	Goal	Project
1	GOAL 1: Enhanced Image, Identity and Visibility	Creating an Identity for Mahabalipuram - The Logo Creating An International Marketing Network Positioning Mahabalipuram in the External Market Re-Branding Mahabalipuram Against A Larger Backdrop
2	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	Creating a Gateway / Vistas to the UNESCO World Heritage Site, State of the Art Toll Gate and Ticketing Booth at the Entrance
3		Beach front Development and Tapping into the potential of the Beach
4		Relocating Bus Stand and Development of New Bus Stand
5		Defined and Dedicated Tourist Route / Circulation - Trail

6		Improvement of Internal Streets
7		Decongesting Mahabalipuram - Parking Solution
8		Reconfiguration of Spatial Aspects - Creation of Open Breathing Spaces of Congregation and Development of Iconic Town Square within Mahabalipuram
9	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination	Developing Mahabalipuram as a Grand MICE destination
10		Heritage and Culture - Conservation and Tourist Awareness - Visitors Interpretation Centre
11		Wellness Centre for Meditation and Yoga
12	GOAL 4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life	Development of Cultural Village (Artisans Concept Village), Mobilization of NGOs to provide language and other training for a friendly Mahabalipuram
13		Enhanced Quality of Life (i) Development of Community Toilets in 7 wards
14		Enhanced Quality of Life (ii) Provision of Toilet blocks in 5 Govt. schools
15	GOAL 5: Smart Mahabalipuram	Smart Explorer App for Seamless Access
16		Unified Smart Traveller Card
17	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	Provision of Drinking Water Kiosks / Fountains at Identified Locations
18		Creation of Sheltered Resting Plazas
19		Provision of First Aid Kiosks
20		Provision of E-Toilets and Public Convenience for Tourists
21		Provision of SOS / Emergency Booths
22		SWM-Bins at Every 25m Interval
23		Provision of Wi-Fi Hotspots
24	GOAL 7: Safe and Friendly Mahabalipuram	Installation of CCTV Systems at Identified Locations
25		Watch Towers: Installation of Watch Towers on the Beach
26		Security and Increased Watch Guards in the Heritage Area
27		Development of Fire Station and related Amenities

Block Cost Estimate- Hard and Soft Components

Hard Components		
S. No	Goal	Project Cost (INR Lakhs)
1	GOAL 1: Enhanced Image, Identity and Visibility	NA
2	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	13436.16
3	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination	4765.58
4	GOAL 4: Conservation And Promotion Of Local Arts And Skill : Enhanced Livelihood And Quality Of Life	1361.69
5	GOAL 5: Smart Mahabalipuram	NA
6	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	451.96
7	GOAL 7: Safe and Friendly Mahabalipuram	377.60
	Sub Total (A)	20393.00
Soft Components		
S. No	Goal	Project Cost (INR Lakhs)
1	GOAL 1: Enhanced Image, Identity and Visibility	620
2	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	NA
3	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination	NA
4	GOAL 4: Conservation And Promotion Of Local Arts And Skill : Enhanced Livelihood And Quality Of Life	NA
5	GOAL 5: Smart Mahabalipuram	278.25
6	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	NA
7	GOAL 7: Safe and Friendly Mahabalipuram	NA
	Sub Total (B)	898.25
	Total (A + B)	21291.20
	Total In INR Crores	212.91

Way Forward

The last section of the report sets out the factors which are crucial to the success of this strategy through the development and implementation of an effective monitoring mechanism which sets out to monitor and appraise the implementation results, at all stages. It also describes about the phasing and prioritization of the projects to achieve maximum results and benefits.

It is evident that the implementation of this master plan will bring multiple benefits to Mahabalipuram, both directly to the tourism sector but also indirectly to the wider economic and social development of the Island. Therefore, the optimum and most viable implementation of the Strategy requires the creation of a suitable implementation mechanism. A provision should be made to set up a monitoring group to overview the progress of the projects being implemented. This group should consist of senior managers under the guidance, coordination and supervision of the Board of Directors from different departments. In addition, the implementation mechanism provides for a project manager for each action and clearly sets out the roles and responsibilities of the involved parties with the aim of ensuring that each party takes up their share of responsibility so that the combined efforts to achieve the objectives, strategic directions and planned actions of the master plan are achieved.



1 INTRODUCTION

Mamallapuram, also known as Mahabalipuram, is a town in Kancheepuram district in the Indian state of Tamil Nadu, 58 km south of the city of Chennai. Mahabalipuram is located right on the Coromandel Coast next to the Bay of Bengal. It served as a 7th century port city of the South Indian dynasty of the Pallavas in Tamil Nadu. **The site is a UNESCO World Heritage site and spreads over an area of 27, 758 ha.** The destination is a well-known tourist hotspot and has developed as one of the first sites visited by tourists on entry to Tamil Nadu.

1.1 INTRODUCTION TO THE SITE

1.1.1 Background

Mahabalipuram has various historic monuments built largely between the 7th and the 9th centuries, and has been classified as a UNESCO World Heritage Site. The unique monuments in Mahabalipuram present a fusion of religion, culture, and legends, all related to the Hindu religious pantheon. All these monuments located on the shores of the Bay of Bengal are built in the exclusive Dravidian style of architecture, imbibing the art and culture of Tamil Nadu. The monuments are: **Mandapas**, also called Cave Temples; **Rathas**, or chariots; the **open air bas-relief** depicting Arjuna's penance to Lord Shiva to obtain the Pashupata weapon; and **structural temples**. The architecture of the rock-cut temples, particularly the Rathas, became models for south Indian temple architectural style in subsequent periods. The architectural features, particularly of the sculptures, are widely adopted in South India and also in the building of temples in Cambodia, Annam and Java. Descendants of the sculptors of these shrines are active and involved artisans in Mahabalipuram's contemporary town culture.

The area attracts a lot of travelers every year especially for activities such as Sun bathing on the scenic beach. The beach gives an opportunity to completely unwind from the weariness of the city life. Windsurfers and Swimmers are seen hitting the shores of the beach playing with the rising tide. Mahabalipuram, to charm the visitors, also has a crocodile bank, a snake venom extracting center, and a school of Art and Sculpture. There are resorts all along the beach to serve as leisure points along the coast. The map below depicts the major monuments that form the World Heritage Site of Mahabalipuram.

1.1.2 Historical and Cultural Significance



It is speculated that it is the seaport of Sopatma mentioned in the 1st-century periplus of the Erythraean Sea or Ptolemy's port of Mélange in his 2nd-century Geographia. Another theory posits that the port of Nirppeyarvu mentioned in the Perumpanarrupadai from the early centuries of the common era may be Mahabalipuram or Kanchipuram.

In his *Avantisundari Katha*, the Sanskrit scholar Daṇḍin (who lived in Tamil Nadu and was associated with the Pallava court) praised artists for their repair of a Vishnu sculpture at Mamallapuram. However, Daṇḍin's authorship of this text is disputed. The medieval Sanskrit text mentions the Mamallapuram monuments, an early tradition of repairs, and the significance of Vaishnavism.



When Marco Polo arrived in India on his way back to Venice from Southeast Asia, he mentioned (but did not visit) "Seven Pagodas" and the name became associated with the shore temples of Mahabalipuram in publications by European merchants centuries later. It appeared in Abraham Cresques' 1375 Catalan Atlas as "Setemelti" and "Santhome", a crude map of Asia but accurate in the relative positions of the two ports; the former is Mamallapuram and the latter Mylapore. Venetian traveler Gasparro Balbi mentioned the "Seven Pagodas" and "Eight Pleasant Hillocks" in 1582, which Nagaswamy suggests refers to the monuments. According to Schalk, Balbi called it the "Seven Pagodas of China" (a re-interpretation of Henry Yule's reading of Balbi which considered Balbi unreliable, followed by a selective correction that it probably meant Mamallapuram).

Mamallapuram became prominent during the Pallava-era reign of Simhavishnu during the late 6th century, a period of political competition with the Pandyas, the Cheras and the Cholas and spiritual ferment with the rise of 6th- to 8th-century Bhakti movement poet-scholars: the Vaishnava Alvars and the Shaiva Nayanars. Mamallapuram's architecture is linked to Simhavishnu's son, Mahendravarman I (600-630 CE), who was a patron of the arts.

Mahabalipuram was the main city of the south-east Indian Pallava civilization. It is a major center of the Siva cult and is hence visited by people. The sanctuary is widely known especially for its mandapas (cave sanctuaries), rathas (chariot shaped temples), and gigantic open-air reliefs. The well-crafted sculptures that have a characteristic softness and graceful modeling have an influence even in Cambodia, annam and Java.

The Pallava rulers founded Mahabalipuram in the 7th century. Trade was carried out with various South-east Asian kingdoms of that time like Shrivijaya (Malaysia, Sumatra, and Java), the empire of Champa and Kambuja (Cambodia) through the harbor of Mahabalipuram. But now, it is more popular for its unique rock sanctuaries and beautiful Brahmin temples constructed and ornamented between 630 and 728.

During the reign of Narasimha Varman Mamalla, most structures, like the rock-cut rathas, Arjuna's Penance which consists of open rocks with scenes sculpted artistically on them, the Govardhanadhari and Ahishasuramardini caves, the sleeping sculpture of Mahavishnu or Chakrin at the back of the Shore temple or the Jala-Sayana Perumal temple are thought to have been built.

1.1.2.1 Heritage Status

Mahabalipuram was declared a World Heritage Site by UNESCO in the year 1984 owing to the 40 sanctuaries found here. The world's largest open-air bas-relief, the Descent of the Ganges is also located in Mahabalipuram. Mahabalipuram is famous for its grand architecture. The Pancha Rathas namely, Dharmaraja Ratha, Bhima Ratha, Draupadi Ratha, Ganesha Ratha, Arjuna Ratha and Nakula Sahadeva Ratha are architectures of the Pallava period in India. Several cave temples like Panchapandava Cave Temple, Varaha Cave Temple, Mahishasuramardini Mandapa and Krishna Cave Temple are also found in Mahabalipuram. Apart from cave temples, structural temples were built here. These structural temples include the Olakkannesvara Temple and the Shore Temple.

In the 7th century, this UNESCO World Heritage site was a flourishing and prosperous port of the Pallava Empire. Mahabalipuram got its name from the Great wrestler Mamalla who was also a Pallava king, Narasimha Varman I. The towering sculptures and beautiful intricate rock carvings showcase the creativity and talent of the highly skilled artisans of that period.

The breathtakingly magnificent Shore Temple surrounded by Nandi Bulls all around looking over the sea is main attraction of Mahabalipuram. After a strong cyclone in the sea washed away this Temple, it was re built stone by stone. The Shore temples were initially a group of seven temples known as the Seven Pagodas, but out of these seven, six have submerged in the sea.

The spectacular Arjuna's Penance is situated further inland. This is the world's largest bas-relief panel adorned by more than hundred figures of men, beasts, and gods. The five marvelous rock cut shrines are proof of how skilled the genius craftsmen and stone carvers of that era were. All the Rathas were carved out differently from single pieces of huge rocks.

With plenty of stalls showcasing and selling unique handicrafts and beautifully stone carved showpieces and the strikingly beautiful silver sand of beach enhance the charm of Mahabalipuram. This beautiful place must be visited to view the magnificent rock cut temples and the striking cave structures.

1.1.2.2 Unique Features

The structures here, mostly carved straight out of granite, are among the oldest existing examples of Dravidian (South Indian) architecture.

All Holy places of the Hindus at Mahabalipuram are extraordinarily unique. They display an impeccable fusion of art, culture, legends and religion. The Dravidian style of architecture that belongs to the state of Tamil Nadu can be seen here at its best. The Mandapas or Cave Temples, chariots known as Rathas; the wonderful structural temple and Arjuna's penance which is an open-air bas-relief can be seen here. The legend is that this penance was done by Lord Arjuna to get Pashupata weapon from Lord Shiva. This rock cut architecture later became the basis or inspiration for architecture of South Indian temples in the later periods. This kind of temple architecture can also be clearly seen in temples of Annan, Java and Cambodia. The descendants of the sculptors and craftsmen of these shrines are actively involved in this city's contemporary culture.

The monuments are a fusion of religion, culture and legend relating to the Hindu religious pantheon. They are expressions through rock or inside boulders, on a grand scale, integrating nature and sculpture. The site has about forty monuments, in varying degrees of completion, categorized into five groups:

- a. Rathas: chariot-shaped temples
- b. Mandapas: Cave temples
- c. Rock reliefs
- d. Structural temples
- e. Excavations

There are ten major rathas, ten mandapas, two rock bas-reliefs and three structural temples. The monumental plan is based on a square and circle, or stacked squares (producing a rectangle). The reliefs, sculptures and architecture incorporate Shaivism, Vaishnavism and Shaktism, with each monument dedicated to a deity or a character in Hindu mythology. The monuments are a source of many 7th- and 8th-century Sanskrit inscriptions, providing insight into medieval South Indian history, culture, government and religion.



Figure 1-1: The Shore Temple



Figure 1-2: Pancha Rathas



Figure 1-3: Excavation at Mahabalipuram

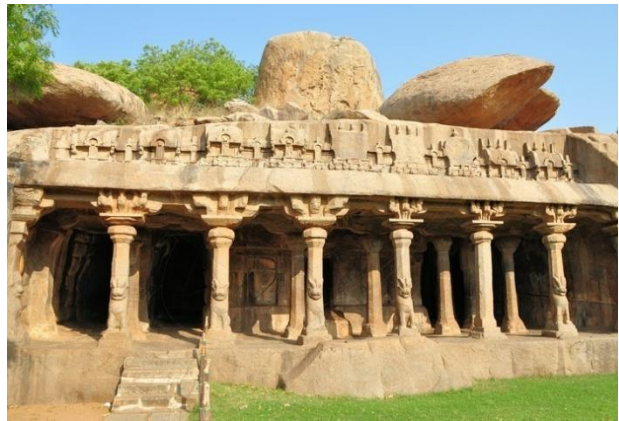
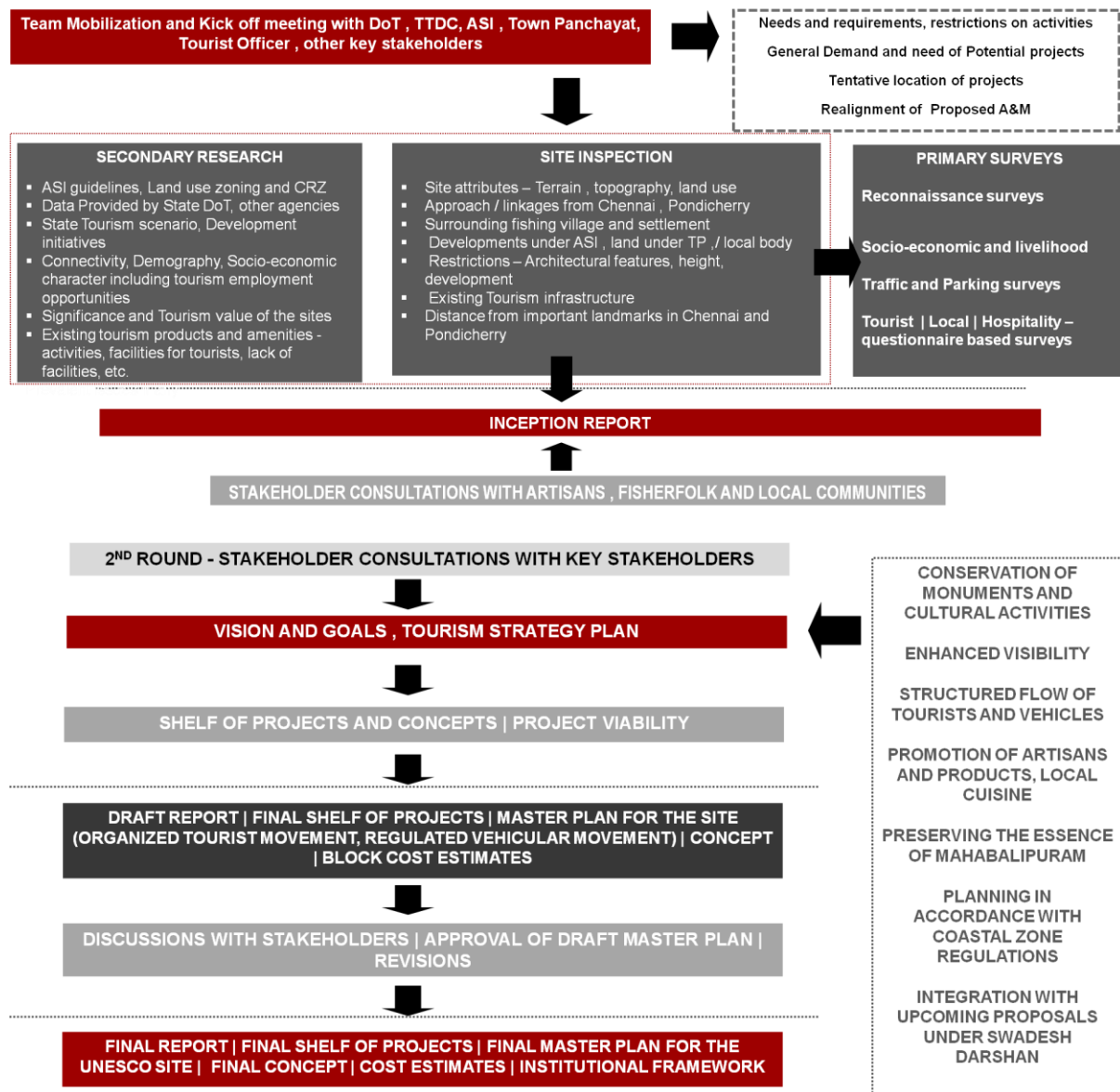


Figure 1-4: Varahamandapam cave temple

1.2 WORK PLAN AND METHODOLOGY

1.2.1 Work Plan

To achieve the outlines project objectives, a multi-tiered methodology shall be adopted. This will include primary and secondary data collection and analysis. A thorough and sequential work plan shall be followed in the project. The following section outlines the broad stages of work and the tools and method that shall be adopted in each stage.



1.2.2 Approach and Methodology

The level and depth of interventions proposed will be based on the prevalent cultural, environmental, socio-economic conditions, potential for further development to increase tourist footfall, and application of design principles that recommend a unified Design Language which shall enhance the uniqueness and value of Mahabalipuram as an iconic tourist destination.

To address the scope of work and achieve the enlisted objectives efficiently, a collaborative and integrated approach shall be used. Our methodology, driven by the five elements, shall guide the overall process and methodology.

Centre on the vision – jointly build a commonly held and inspirational vision about an intended future

Think Framework - Identify a strong ordering Design Framework as the issues of detail inevitably rise to the forefront and become consuming.

Know the place and its people - Build deep understandings of the physical, cultural and economic roots of the place where change is intended since it's the primary source of ideas that fit.

Use the process creatively - Strategize the process with Inclusive, Iterative and Integrative ways of working.

Build ideas with others - Work out frequent and spirited design exchanges with all those involved

With these principles, the design and analysis shall adopt a multi-disciplinary approach that will be location-specific; sustainable; integrated; efficient and enabling.

Location - Specific approach: A place-based approach is necessary to harmonize large-scale developments with their surrounding areas and to create an iconic character in line with the overall district vision. It is essential to examine the scale of the existing social and economic fabric before considering the site and the development scale. The plan will thus examine the existing density, connectivity, probable access, existing infrastructure adequacy & scalability and expansion possibilities.

The significance of Mahabalipuram as a UNESCO world heritage site will govern the interventions. The essence of the area, including the culture and livelihood of the natives will play a key role in planning the tourism and conservation strategies for the area.

Sustainable and Ecologically Safe: The coastal locations are eco-sensitive zones, prone to natural hazards. Further, these are under stringent regulations as given by the environmental authorities and frameworks such as CRZ. Given the high density and footfall that a site like Mahabalipuram experiences, these need special design interventions that ensure that the sanctity of the site is maintained, and it is safe from hazard and risks.

Integrated Plan: The plan shall strive to create an integrated fabric of tourism and local communities. The project components proposed shall focus on using the huge potential of an important heritage site as an iconic tourist space for the development and enhancement of tourism in the state and to facilitate socio-economic processes such as employment generation and infrastructure development.

Enabling Design: The design shall strive to provide enabling solutions for the various social groups that relate to the heritage precinct and the other related economic activities. **Thus, the design shall be inclusive of the traditional livelihood of the community including the sculptors, fisher folk, artists, etc. as well as the modern economic activities such as restaurants and hospitality.**

Efficient plan: Efficient utilization of available resources in form of the natural, cultural and religious heritage that the site offers and its integration with the smart and upcoming systems and trends such that the sanctity of the site is maintained but it becomes more user-friendly and technologically advanced. A tech- oriented approach can help run the tourist clusters as efficiently as possible. This will also be important in installing an efficient early warning system for the coastal areas that will greatly enhance the resilience of the people and place. An array of discussions with ASI, Department of Tourism and other key stakeholders will be required to gain an understanding on how technology can be intertwined into the interventions.

This section outlines the overall methodology and sequence of activities proposed to be taken up for achieving the objectives of the project. It also outlines the stages of work and tasks proposed to be undertake under each stage.

Approach towards the study will be comprehensive in nature. Increase in population, high inflow of tourist/pilgrimage population, floating population and rapid spatial expansion of the town, increase in demand for land, sustainable and efficient growth and an adoption of certain principles, approaches which are broadly outlined as below:

9. Tourism Assessment and Preliminary Infrastructure need for tourist

10. Economic and functional integration of extended jurisdiction with the core of the town
11. Formulating developmental strategies for the region which justify the spatial organization model (in line with regulations and restrictions prescribed by ASI, UNESCO and other relevant bodies)
12. Upgrading the infrastructure & public amenities, to enhance the tourist experience and widen the public benefits
13. To provide rural-urban continuum in the area
14. Conservation and management of natural resources which includes open spaces, green cover, erosion, hazard and water bodies
15. Conservation and management of heritage & cultural areas

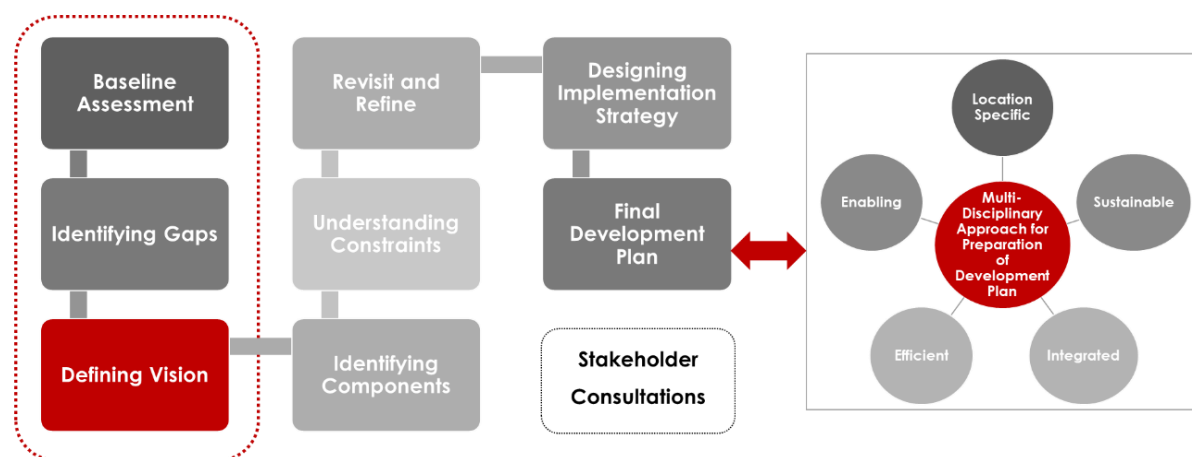


Figure 1-5: Approach and Process Diagram

STAGE OF WORK AND DELIVERABLES

The project entails three broad stages of work and deliverables. The Stage one involved detailed assessment of the baseline scenario at the site and its larger precinct. Detailed gap assessments and identification of strengths and opportunities in the site was also done at this stage. The Stage two focused on development of draft proposals and interventions that shall address the identified issues, and gaps on site. The Stage three presents the final master plan with the proposed project interventions for development of Mahabalipuram as an Iconic Tourist Site.

1.2.3 STAGE 1 – BASELINE ASSESSMENT

This stage shall involve detailed data collection and analysis to establish the baseline scenario at the site; identify the gap; and study the best practices that can be adopted in the present context.

1.2.3.1 Surveys and Data Collection

Data from various secondary sources and primary surveys shall be collected. The data gathered shall be structured in terms of type, characteristics, quality and quantity wise for the allocated project areas. Data will be collected for, but not restricted to the following parameters:

- National and State Tourism scenario
- Development initiatives
- Area Profile and characteristics
- Connectivity and access
- Demography and Socio-economic character including tourism-based employment
- Significance and Tourism value of the site and other potential locations in the vicinity
- Existing tourism products and amenities

- Ongoing and proposed programmes and initiatives on site
- Prevalent issues and concerns on the site

The secondary data shall be sourced from the relevant government departments including the Ministry of Tourism, state departments for tourism, transport, roadways, health and public welfare, skill development and other linked offices. Further, the relevant documents and books shall be studied to understand the site background, history, significance and past issues.

A detailed primary survey shall be undertaken on site. this will include physical mapping of the site precinct and questionnaire surveys and interviews with the tourists, employees, locals and temple administration.

The **physical mapping** shall detail out the location, condition and accessibility of Basic civic infrastructure including Drinking water facilities; Public convenience (public toilets); Solid Waste disposal and Management; Medical care; Illumination; Safety and security mechanisms; Cloak room; Rain and Cyclone shelters; Accommodation facilities; Seating plazas. It shall further detail out the approach and accessibility to the site precinct including the signages, width and condition of the approach road and accessibility through various modes of public transport.

The mapping shall be accompanied by **questionnaire-based surveys** of the visitors and tourist to the site. the surveys shall be conducted in phases – spread over different times of the day and on weekdays and weekends to get a comprehensive profile of the tourists and their perspectives. Questionnaire survey in each category shall be oriented to understand connectivity, mode of commute, need for amenities and proposed projects, etc. The survey shall focus on receiving feedback of users on the initial proposals listed for development of the tourist site.

Mahabalipuram, being one of a significant heritage and cultural tourist destinations, analysis shall be conducted with respect to the number of tourists coming every year, their demands and requirements vis-à-vis the existing infrastructure capacity. This shall help assess the gap between demand and supply and understand the future requirements for infrastructure.

User survey for Tourist and host population will be conducted in to understand connectivity, mode of commute, need for amenities and proposed projects, etc.), The survey shall focus on receiving feedback of users on the initial proposals listed for development of the tourist site.

All required site investigations shall be carried out to study the basic infrastructure such as road network, water supply and sewer arrangements, storm water drains and disposals, development of ground water source including rain water harvesting, electrical distribution network with adequate power supply for various operations of the projects and allied activities.

Analysis of Physical Infrastructure

This involves the analysis of physical infrastructure to understand level and status of infrastructure, to compare the available infrastructure with recognized norms, to carry out the demand supply scenario, gaps and to identify issues and stress areas/components. The study shall cover the physical assets as well as level of service of the infrastructure. It is also envisaged to study the regional infrastructure schemes, upcoming projects and investment analysis. Various components of physical infrastructure to be studied and analyzed are: Road, Railways, Water supply, Solid Waste Management, Sewerage & Sanitation, Strom Water Drainage, and Transportation.

Analysis of Social Infrastructure

This mainly involves the study of existing status of social infrastructure within the project area. This mainly includes health and education infrastructures. All existing and upcoming schemes/ proposals related to health and education infrastructure shall be reviewed. In addition, the other social infrastructure like socio-cultural facilities, banking facilities, transport and communication facilities, recreational open spaces shall also be studied to assess its spatial distribution, adequacy of provision, and qualitative measures.

1.2.3.2 Benchmarking / Case Study Analysis

A National and International Benchmarking Study will be undertaken to draw out the common elements and trends in successful concept and design of the potential projects around Asia and worldwide. The review will allow for best practices to be drawn out, for ensuring innovative, viable and efficient solutions and effective implementation of the project at hand. The case studies shall be selected based on the site-specific criteria such as:

1. An important tourist destination of global / international acclaim
2. Significant historical, cultural or natural heritage
3. Water front location and other UNESCO heritage sites

The identified case studies will be studied in detail with respect to their footfall, tourists' profile, connectivity, available infrastructure and amenities, links with the local social and economic fabric and the role in employment generation and facilitating regional growth. From the analysis, the key takeaways regarding each parameter and the good practices shall be drawn.

1.2.3.3 Stakeholders Consultations- Defining Vision

This project shall entail detailed stakeholders' consultations both formal and informal throughout the process of data collection and analysis. These shall be continuous, with regular engagement with the concerned authorities, experts from the subject and practice, local community, civic bodies and all the consultants involved in the project. The regular interactions will help in developing a commonly shared vision of the project, identified objectives and unanimously approved design concept and design strategy. The stakeholder engagements will be in various forms: Workshops; Presentations & Meetings; Informal discussions; Focused Group Discussions; and Seminars.

1.2.3.4 Identification of Key Issues

Demand assessment of each of the parameters will be carried out in order to arrive at existing gaps and future needs of each asset identified. All gaps identified will be classified into categories based on need, sector and priority in order to tackle and bridge the gap in the most efficient manner. This will serve as a base for project preparation and detailing of project components for the desired development plan.

Gap assessment shall be carried out to identify the infrastructure gaps in and around Mahabalipuram. An in depth understanding on the strengths of the site, its unique features, opportunities for tourism based activities and what the destination lacks as a tourist based spot (including social infrastructure for the host and the tourist population) can be developed. Any perceived threats such as environmental degradation, loss of value to the tourist site, prevalent crime rate, etc. will be looked into with the aim of proposing solutions to the same.

A **needs assessment** study will also be conducted to understand the demand of the particular potential project components in the proposed area. This exercise will help conceptualize tourism and developmental projects and sub projects that will best fit in the site vicinity or the destination.

Carrying capacity of each of the sites will be carried out to assess the level of infrastructure, extent of amenities available, and need of the area. Analysis of Land Development, Land Ownership and Land Values shall document development permissions of significant scale, issued by ASI, the Town Panchayat or other relevant concerned authorities. The details of lands owned by various public agencies shall be reviewed and appropriate maps shall be generated. Moreover, the land values as per the rates fixed by Govt. and as per the market rates shall also be mapped and assessed.

1.2.3.5 Projection of Requirements

The assessments shall help arrive at the understanding of the existing gaps and requirements that shall enable the development of Mahabalipuram as an Iconic tourist site. At this juncture, the consultant will frame a potential pool of projects and sub projects for each destination, for further discussion with all key stakeholders.

1.2.4 Stage 2 – Draft Development Plan

The development plan shall be developed focusing on certain key guiding questions:

- What will be the best **location and orientation** for the various facilities and structures within the site?
- How will an **efficient connectivity** be developed within the site and also with the external transport networks?
- What will be the impact of the proposed programme components on the **local community and environment**?
- What impact will it have on the **tourist footfall** of the region?
- What kind of **infrastructure** shall this development require?
- What will be **the interface between design, people and market**?

1.2.4.1 Preparation of Project Shelf

Based on these questions, a list of projects will be finalized in consultation with the key stakeholders. The consultant shall map each of the destinations and develop a draft master plan for the tourist site throwing light on the significance of the proposed developments, the potential and target for enhancing tourist footfalls, list of interventions and sub projects based on earlier activities (survey, demand assessment, infrastructure gap assessment, stakeholder discussions, etc.).

1.2.4.2 Viability Assessment

The Concept for development will be framed and highlighted to assign importance to elements suggesting environmental (principles of water conservation, use of non-conventional energy sources, energy conservation, and efficiency, low pollution, water recycling, zero discharge, Hazard/Disaster mitigation), social and financial sustainability, unique design language and the design/development philosophy that serves as a backdrop to the proposals. Key considerations such as Employment generation potential shall form a vital component of the Project. Concept plans and projects shall hence be identified taking into consideration the number and type of jobs each of the projects will create. This will ensure holistic as well as inclusive planning and development of the circuit and the influence area. The Master Plan shall also detail out areas and built up area requirements for the proposed components.

1.2.4.3 Impacts Assessment

A thorough assessment of any potential risks with respect to the environment, coastal zone regulations and social and cultural parameters from any identified potential interventions will be carried out. A

Detailed Risk Assessment shall be undertaken to analyze the impact interventions may have on the temple structure or its precinct.

Heritage Impact Assessment of any identified potential interventions will be carried out to analyze the impact it may have on the monument, other structures or its precinct. Based upon the understanding of the heritage structure, its unique architecture and the historical significance attached with it, the assessment shall be analyzed based on the characteristics of the Tourist site and the Environmental sensitivity of the area and region.

1.2.4.4 Institutional Framework

The Master Plan will also include suggestions for the optimum framework for the Institutional arrangements and the monitoring framework required for effective and efficient implementation of the projects.

1.2.4.5 Block Cost Estimates

The consultant shall also arrive at the Block Cost for projects proposed at each of the sites, considering the allocated funds that can be availed under the Swadesh Darshan Scheme, as well as avenues to tap into other Central and state government schemes for holistic development of the destinations.

1.2.4.6 Stakeholder Consultations

A detailed consultation with the stakeholders at all levels, including the center, state and the destination level (ULBs / Village or Town Panchayats, etc.) will be further conducted to discuss the proposal and get their insights on the same. It shall also seek to obtain NOCs from relevant authorities for the proposed projects. The format for the same will be as prescribed in the Swadesh Darshan guidelines and will cater to smooth implementation of the projects.

1.2.5 Stage 3 – Preparation of Final Development Plan

1.2.5.1 Finalization of Development Plan

Based on the outcomes of the stakeholder consultations, perceived constraints in implementation and the roadblocks, the Development Plan will be finalized. This shall be based on Future Projection for 2028, with respect to the population, tourist population, floating population, employment, and migration. The plan will identify alternative spatial development patterns in coherence with the various analysis and surveys carried out for the project area and adopt appropriate planning norms and standards to workout land requirement for road, open spaces & amenities. Based on these it shall finalize the proposed components with their locational and implementation strategy. Thereafter the program brief and activity structure would be finalized. The final development plan would thus be arrived to after consultation with the stakeholders.

1.2.5.2 Detailed Tourism Development Proposals

The plan shall include final project shelf. These shall be the proposed components that will be arrived at after detailed analysis and stakeholders' consultations. These will include components that shall:

- Provide a cohesive development
- Enhance connectivity
- Improve the tourism experience
- Generate employment and facilitate skill development at the local and regional level
- Improved provision of public amenities
- Public and commercial activities that shall enhance the tourism-based revenue

- Conservation of heritage and architectural monuments
- Enhancement of existing tourist nodes
- Proposal for development of future tourist locations

1.2.5.3 Implementation Plan and Financial Management Plan

The proposed development plan would be an outcome from the analysis of detailed financial management plan. The project shelf will be divided into three phases – Long term, Medium term and Short or Immediate term projects. The projects that shall have the ability to develop as anchors for growth in tourism and can trigger an immediate enhancement in the activities in the region shall be listed under the short-term project shelf. Similarly, those facilitating spread of tourism activity and consolidating the initial spurt will form the Medium-term block. The larger vision projects that will require development of ancillary facilities at the initiation will be taken under the long-term project shelf. Accordingly, the financial analysis with future block infrastructure assessment would be carried out at this stage.

1.3 REPORT ORGANIZATION

The project deliverables will be completed in four stages as mentioned in TOR is given below:

Sr. No.	Timelines	No. of days
1	Inception Report	T + 10
2	Data Collection and Identification of Stakeholders	T + 25
3	Draft Report (Master Plan, including shelf of projects and presentation of the stakeholders @ T+45)	T + 30
4	Final Report (Master Plan, including shelf of projects)	T + 60

Final Report:

The final report includes the final Shelf of Projects along with Block Cost Estimates and the Master Plan. This report contains the following chapters:

Chapter One, Project Background and Objectives, includes an overview of the project and the objective it aims to achieve. It also includes an introduction to the site and the work plan and methodology

Chapter Two, Site Characteristics, provides insight on details such as the location, physical characteristics, demography and land use

Chapter Three, Tourism Scenario, consists a detailed study of the current tourism scenario in the global level, state level and in the site

Chapter Four, Current State of Infrastructure, contains in detail the existing infrastructure for residents and tourists and the issues and gaps in the same

Chapter Five, Physical Assessment of the Site, includes the modes of access, circulation patterns, congregation spaces, details about the various primary surveys conducted and the carrying capacity

Chapter Six, Benchmarking, includes the selected case studies and the key learnings from the same

Chapter Seven, Stakeholders' Consultations, provides details about the various stakeholder meetings and the key takeaways from each of them

Chapter Eight, Key Takeaways from Current Scenario Assessment, Stakeholders' Consultations and Benchmarking, highlights the strengths and opportunities, the gaps and issues, the needs assessment, the potential areas for development and the projection of requirements

Chapter Nine, Vision, mentions the vision for development of Mahabalipuram as an Iconic Tourism Site and introduces the goals for development

Chapter Ten, Proposed Interventions with Cost Estimates, explains each goal in detail along with the projects to achieve each goal. All project and sub project components are described in depth in this chapter

Chapter Eleven, Project Block Cost Estimates, contains the goal wise costing of each of the projects while explaining the Hard and Soft interventions. The chapter also presents a summary of the costing along with the proposed phasing of the projects



2 SITE CHARACTERISTICS

2.1 LOCATION, ACCESS AND CONNECTIVITY

2.1.1 Location

Mamallapuram, also known as Mahabalipuram, is a town in Kancheepuram district in the Indian state of Tamil Nadu, 58 km south of the city of Chennai. Mahabalipuram is located right on the Coromandel Coast next to the Bay of Bengal. It served as a 7th century port city of the South Indian dynasty of the Pallavas in Tamil Nadu. **The site is a UNESCO World Heritage site and spreads over an area of 27,758 ha.**

The destination is a well-known tourist hotspot and has developed as one of the first sites visited by tourists on entry to Tamil Nadu.

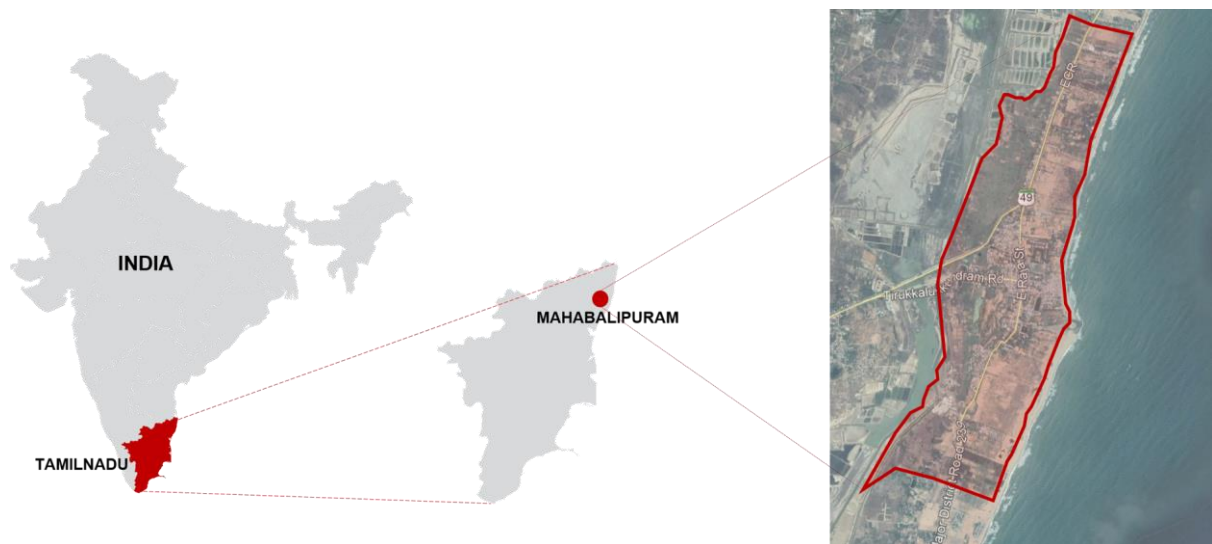


Figure 2-1: Location and Regional Setting

The table below shows the distance of Mahabalipuram from the major urban centers in the region

Urban Centre	Distance from Mahabalipuram
Chennai	60 km
Bangalore	350 km
Tiruchirappalli	286 km
Rameswaram	515 km
Puducherry	100 km

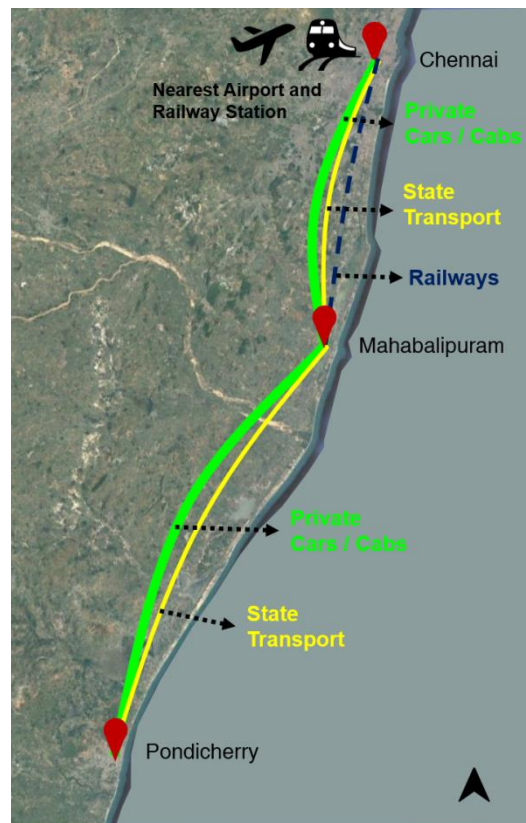
2.1.2 Connectivity

Road: Transport: Tamil Nadu has a well-established transportation system that connects all parts of the State. There are 28 National Highways in the State, covering a total distance of 5,036 km (3,129 miles). The state is also a terminus for the Golden Quadrilateral project that is 99.2% completed as of 31 July 2010. Chennai CMBT and Erode Central Bus Terminus are the largest and the second largest bus terminals in Tamil Nadu respectively. The State has a total road length of 167,000 km.



Mahabalipuram is a 1.5-hour drive from Chennai (58km south of Chennai) along the East Coast Road (ECR). It is 95 kilometres North of Pondicherry. Local buses, taxis and auto-rickshaws are other options to travel to Mahabalipuram from Chennai. Tamil Nadu Tourism also runs a one-day bus tour from Chennai to Mahabalipuram.

Rail: Tamil Nadu has a well-developed rail network as part of the Southern Railways. Headquartered at Chennai, the present Southern Railway network extends over a large area of India's Southern Peninsula, covering the States of Tamil Nadu, Kerala, Puducherry, minor portions of Karnataka and Andhra Pradesh. Main rail junctions in the state include Chennai, Coimbatore, Erode, Madurai, Salem and Tiruchirappalli. Chennai has a well-established Suburban Railway network and is in the process of developing a metro. The railway station closest to Mahabalipuram is Chengalpattu – 29 kilometers Northwest.



Air: Tamil Nadu has a major international airport, Chennai International Airport, that is connected to 19 countries with more than 329 direct flights every day. Chennai International Airport is currently the third largest airport in India after Mumbai and Delhi and has a passenger growth of 18%. It also has domestic airports at Tuticorin, Salem and Madurai, rendering several parts of the State easily accessible. Mahabalipuram is situated close to 65kms from the international airport.



2.2 PHYSICAL CHARACTERISTICS OF THE SITE

2.2.1 Topography

Topographically, this area is elevated in the center and slopes towards the east and west. The highest elevation was measured in the northeastern part of study area, about 7.5 m above the Mean Sea Level

(MSL). The sand dune is found in the northeastern side. Beach ridges or coastal plains consist of sand and silt occurring along the coasts towards inland. These units occur along the eastern part of the study area and have very good groundwater potential. The eastern side of this area is bounded by the Bay of Bengal, western side by the Buckingham Canal and southern side by backwater. Two small water bodies are found in the northwestern and southwestern parts of the study area.

2.2.2 Flora and Fauna

The Mahabalipuram beach lies on the stretch of coast with a presence of large number of species of coastal vegetation. Varied species of crab and prawn, Mullet, Liza, Milk Fish, Silago and Etroplus form part of the aquatic system along the beach. The southern stretches of the beach are favored by the endangered Olive Ridley turtles to lay their eggs every winter, as are other beaches in Tamil Nadu and Odisha. At that time, many conservation volunteers work on the beach during the night to protect the eggs or to remove them to a hatchery. Hatchlings are usually released to the sea in March or April.



2.2.3 Rainfall, Sun and Wind

Mahabalipuram lies along the coastline on flat land. It is located on 12° 38' north latitude and 80° 10' east longitude, at an elevation of 12m. It is situated in Kancheepuram District. It has a moderate and humid climate all through the year. The best time to visit the place is from October to March. Winters (November to February) have pleasant days and cool nights. The minimum temperature is usually above 16°C. This time is ideal for sightseeing, outings and other adventurous tourist activities. Summers (March to May) are hot and temperatures vary from maximum 42°C to minimum 21°C. It is characterized by hot climate making it difficult for tourist activities. Monsoons (June to September) offers a lot of rains and the place becomes very humid. November to February, the area offers a nice and pleasant weather and is thus the perfect time to enjoy sightseeing and adventure activities.

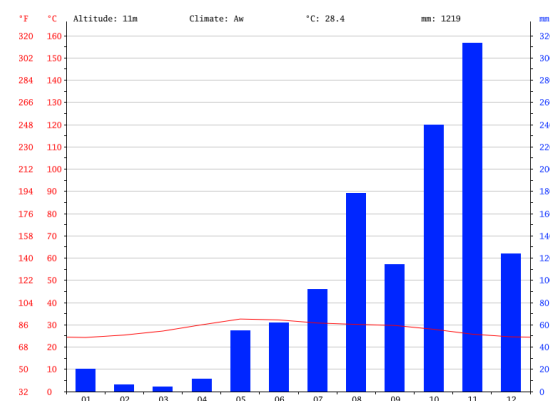


Figure 2-2: Graph showing temperature variation

The months from June to September are accompanied by very hot weather and rainfall, making it difficult for traveling and tourist activities.

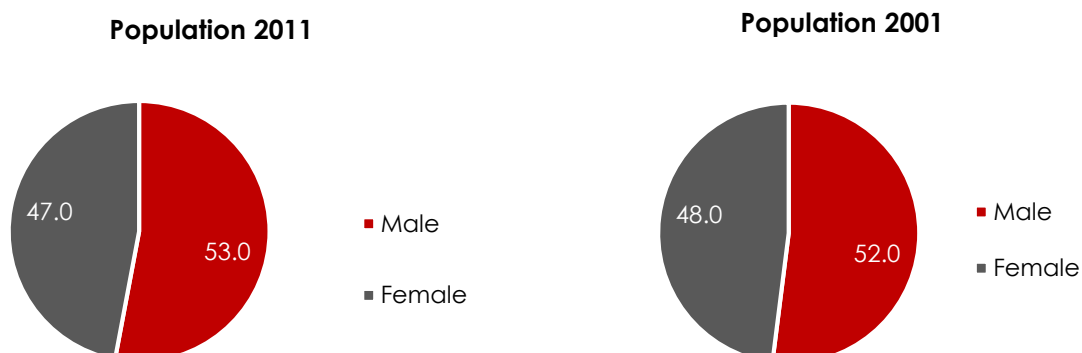
2.3 DEMOGRAPHY

2.3.1 Density of Population

According to the 2011 census, **the total population of Mahabalipuram is 15172, 53% of which are male and the rest 47% are female.** The sex ratio is 888 females for every 1000 males. There has been an increase in population from 2001 by more than 18%. The population in 2001 was 12,345 with 52% being male and 48% of the total population being female.

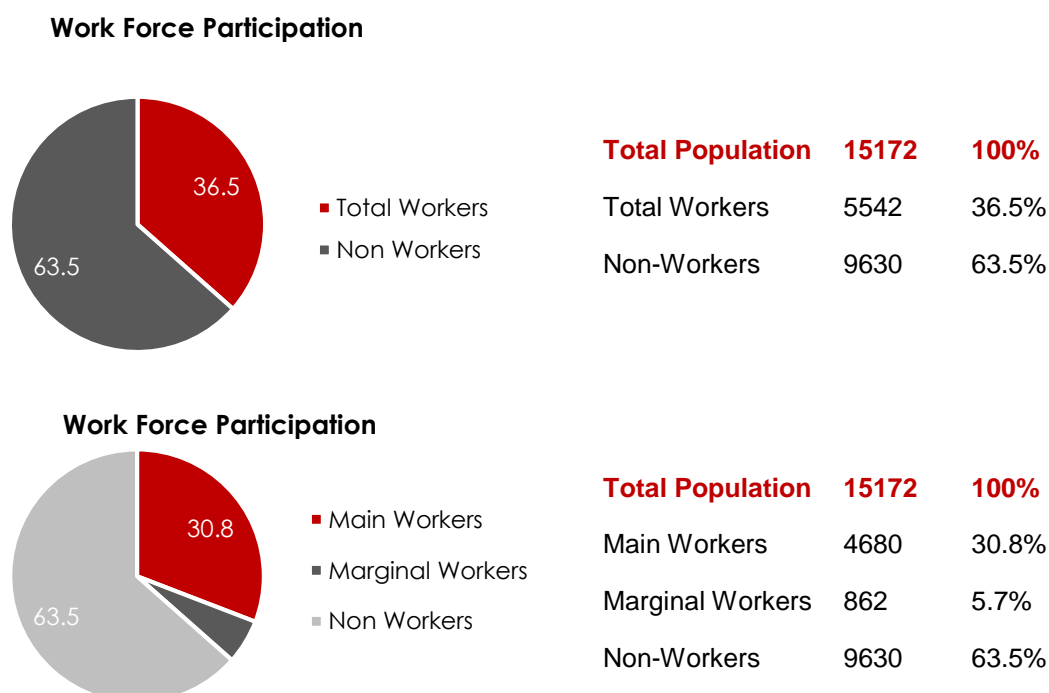
The average literacy rate in 2001 was 74% which has increased to 76% in 2011. Almost 82% males and 66% females were literate in 2001. In 2011, census indicates that the male literacy was 82% and

female literacy rate was 70%. This shows that though the male literacy rate has remained the same, the female literacy rate has gone up by 6% which is three times more than the total increase in literacy rate. **This can be attributed to the growing tourism sector in the Mahabalipuram area and the involvement of the native women in the sector.**

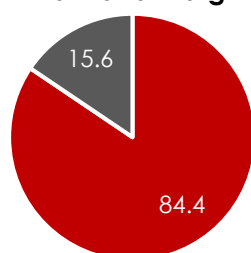


2.3.2 Occupational Details

Approximately 36.5% of the total population forms the work force, 30.8 % of which are main workers and 5.7% are marginal workers. This implies that most of the people working in Mahabalipuram have a permanent job. **The remaining 63% include non-workers who are unemployed people, retired people and children.**



Most of the workers are main workers, comprising of 84% of the total work force. There are **no agricultural activities** happening in Mahabalipuram, so the number of main and marginal agriculture workers and cultivators are negligible. Only 3.5% of the main workers and 5.1% of the marginal workers are household workers. **The other 95.5% and 84.9% of the main and marginal workers respectively would be involved in other activities like tourism, fishing, etc.**

Main and Marginal Workers

- Main Workers
- Marginal Workers

Total workers	5542	100%
Main Workers	4680	84.4%
Marginal Workers	862	15.6%

Main Workers	4680	100%	Marginal Workers	862	100%
Cultivators	17	0.4%	Cultivators	11	1.3%
Agriculture Workers	32	0.7%	Agriculture Workers	75	8.7%
Household Workers	162	3.5%	Household Workers	44	5.1%
Others	4469	95.5%	Others	732	84.9%

2.4 LAND USE

The Mamallapuram Master Plan 2021 has been created for Mahabalipuram town. The document explains the existing land use and the minor changes made to it in the form of the proposed land use map for the year 2021. The existing land use pattern is as explained below:

The new town area is co-terminus with the special grade town Panchayat area, which includes Mamallapuram & Poonjeri villages. The town extends over an area of 1256.8 hectares of the total area of Mamallapuram special grade Town Panchayat area. The existing land use for the above New Town area is given in the table below.

Existing Land Use

Table 2-1: Existing Land Use 1991

S.No	Land use	Extent in Hect.	Percentage to developed area	Percentage to Town Panchayat
1	Residential	69.52	30.71	5.33
2	Commercial	80.99	35.77	6.21
3	Educational	12.44	5.50	0.95
4	Public and Semi Public	29.45	13.01	2.26
5	Traffic and Transportation	33.99	15.01	2.26
	Developed area	226.39	100	17.36
6	Agriculture			
	Dry	423.41		33.09
	Wet	311.60		23.90
	Area under Agriculture	735.01		58.48
7	Water bodies	295.40		22.65
	Total area of the town	1256.8		100

Source: Master Plan for Mahabalipuram, 2021

The Total Town Panchayat area is 12.56 Sq.km of which 17.36% of area are inhabited (residential, commercial, public/ semi-public and roads/ parking). Remaining 82.64% falls under wet land and Agriculture use with an area of 735.01 hectares where wet land occupies 23% and dry land is 33%.

Commercial use

Developed area of 17.36% holds an area of 226.39 hectares, of which majority are commercial 35.77% as the town is based on the tourism industry. Retail shops are densely occupied around the ASI monuments and hotels/ resorts are sprawled along the coastal stretch.

Residential use

The percentage of residential is 30.71%, In terms of area, the residential covers an area of 69.52 hectares as against the total town panchayat area of 1256.8 hectares. The percentage is low compared to other town panchayat in the state, as the area is restricted with ASI, CRZ, Agriculture, wet land, etc.

Educational use

This land use holds area of 12.44 hectares which contributes 5.5% of total town panchayat. Institutes such as two engineering colleges, two panchayat middle schools, one government high school and three noon meal schools. Apart from the institute one reputed college of Architecture and Temple Arts is located within town panchayat.

Public and Semi-public

Temple monuments, Government buildings, Public sector buildings are falls under this category which contributes 13.01% with an area of 29.45 hectares which is more than education and almost equal to the traffic and transportation land use.

Traffic and Transportation

The land occupied by the roads and other uses connected therewith was 33.99 hectares which from 15.01 percentage to the developed area and 2.61 percentage to the special grade town panchayat.

There is a well-connected road network system to Mamallapuram from Chennai, Chengalpattu and other parts of the district and state. The Major routes to Mamallapuram from other places are as follows.

- i. Chennai – kovalam – mamallapuram – Kalpakkan – Marakkanam – Puducherry, State Highway 49 (East Coast Road)
- ii. Chennai – Navalur – Thirupporur – Mamallapuram (Old Mamallapuram road)
- iii. Chengalpattu – Thirukkalukundram – Poonjeri – Mamallapuram
- iv. Apart from these there is an access from the Atomic Power Station at Kalpakkam

The existing road in the settlement area are mostly narrow except the east coast road which is newly formed for a width of 30m. All the internal roads except the ECR is maintained by the special grade town panchayat.

The present bus stand located on East Raja Street, in front of Sri Sthalasayana Perumal temple doesn't have the capacity to handle the present trips generated. Regulated Parking are located in shore temple, Five Rathas and Arujna's Penance.

Agriculture

Most of the area is occupied by the agricultural use which is about 57% holds an area of 735 hectares of the town area. Of the total, wet land spreads over an area of 311.60 hectares which contributes 23.90% and dry land is 423.41 hectares which is 33.09%.

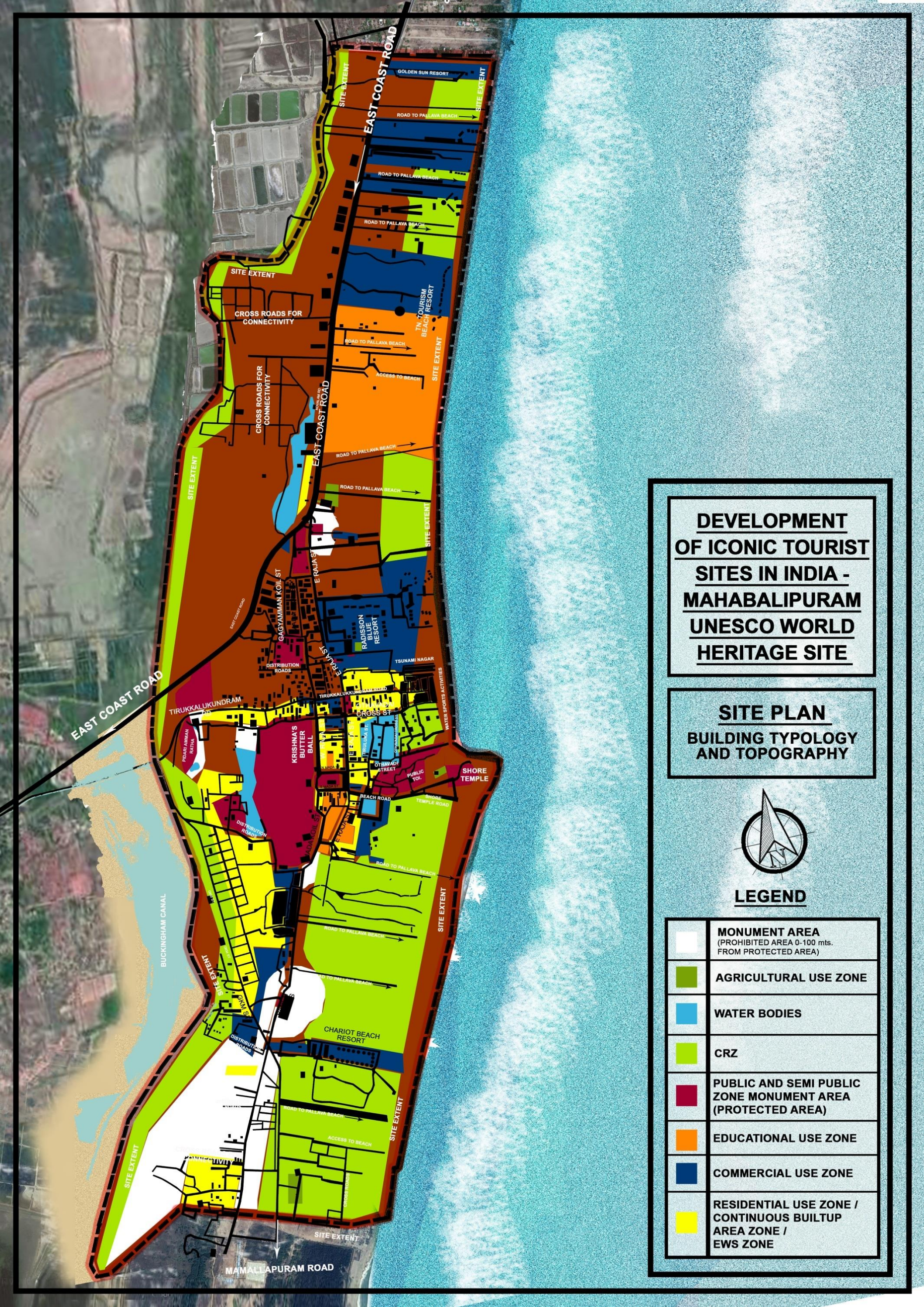
Water Bodies

Water bodies such as canal, tanks and other courses occupy nearly 300 hectares, and this constitute to 22.65% of the total extent of the town. The Buckingham canal passes through the town on the North-south direction and on the west of the main monument area.

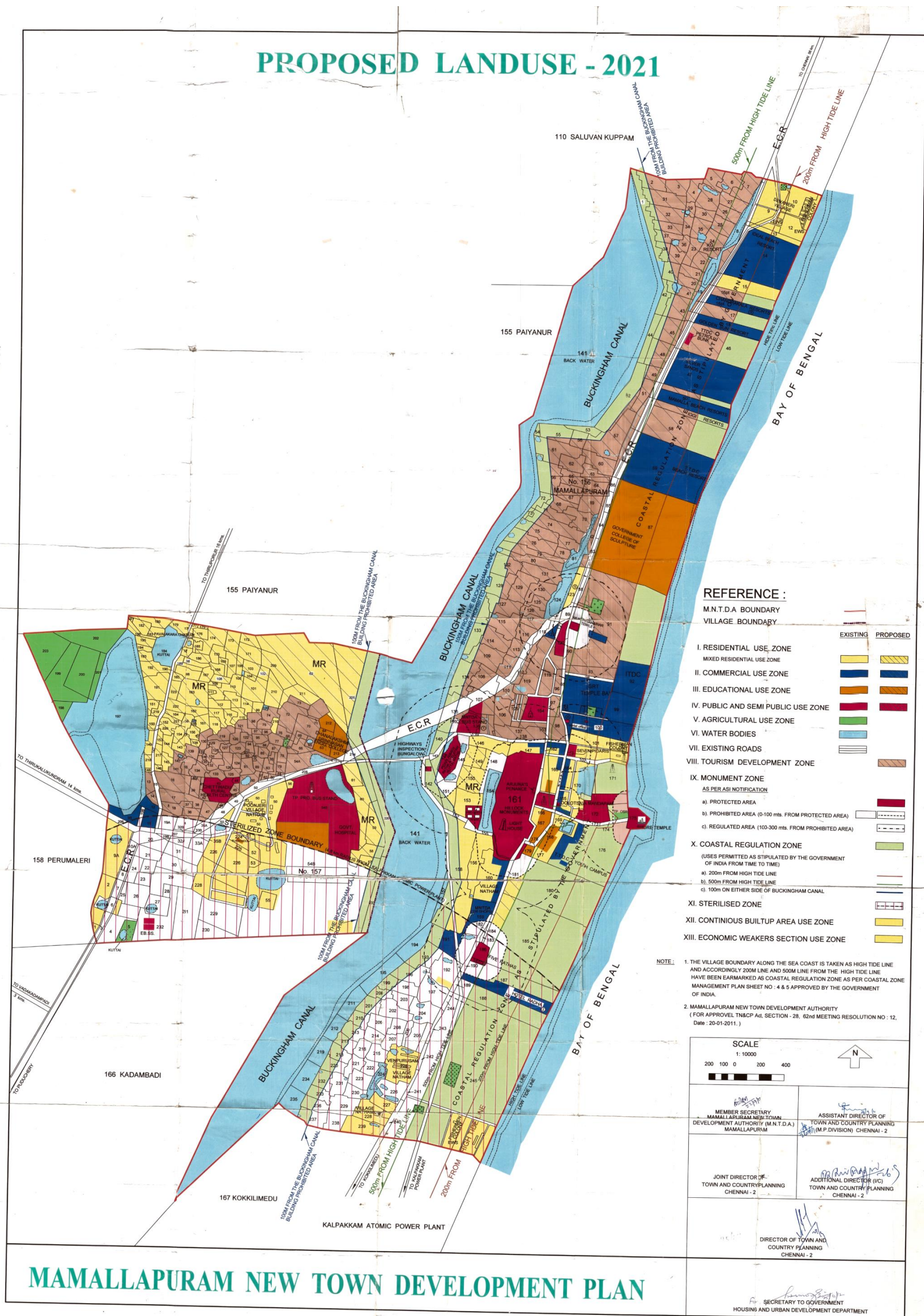
Maps showing the existing land use (generated based on satellite image and on-ground conditions by the consultant), as in built vs open ratio (showing large amount of open area as on this date) and proposed land use for 2021 (from the master plan) are attached below for reference.

2.5 CONCLUSION

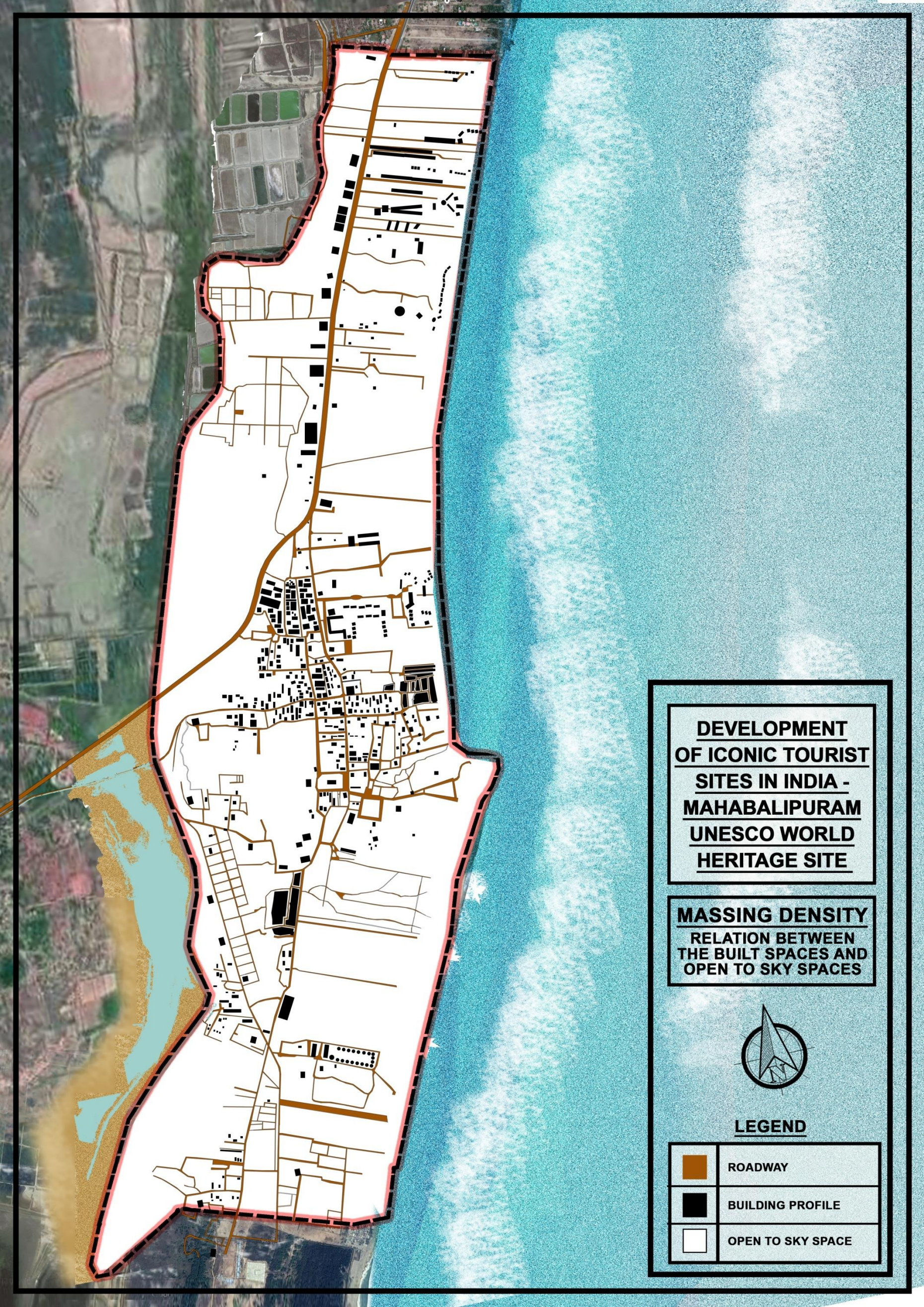
Mahabalipuram group of monuments strategically located between Chennai and Mahabalipuram is well connected with air, road and rail. Mahabalipuram, classified as a UNESCO World Heritage Site, hosts some of the unique monuments which depict a fusion of religion, culture, and legends, all related to the Hindu religious pantheon. Mahabalipuram has a huge potential to become an iconic – world class destination by strengthening and diversifying the product base.



Map 2-1: Existing Land Use Generated from on-ground survey, 2018
source: Primary survey, JLL, 2018



Map 2-2: Proposed Land Use Map, 2021 - Master Plan 2021



Map 2-3: Relationship between built and open spaces, 2018



3 TOURISM SCENARIO

3.1 TOURISM SCENARIO – GLOBAL AND NATIONAL

3.1.1 Marketing Strategy and the Brand Name Development

Today, with a rise in the purchasing capacity, aggressive use of information technology and faster means of transportation, Travel is sold like any other commodity. Travel and Tourism has been identified as a mainstream contributor in the world economy by generating manifold direct and indirect opportunities of growth. Tourism has become one of the largest industries as regards the economic contribution (direct, indirect and induced) of over **7.6 trillion U.S. dollars** in 2016. Countries such as **France and the United States**, are consistently popular tourism destinations, but other, less well-known countries are quickly emerging in order to reap the economic benefits of the industry. Worldwide, the tourism industry has experienced steady growth almost every year. Each year, Europe receives the most international tourist arrivals. It also produces the most travellers. In 2015, the region had more than double that of the second largest tourist origin, the Asia Pacific region.

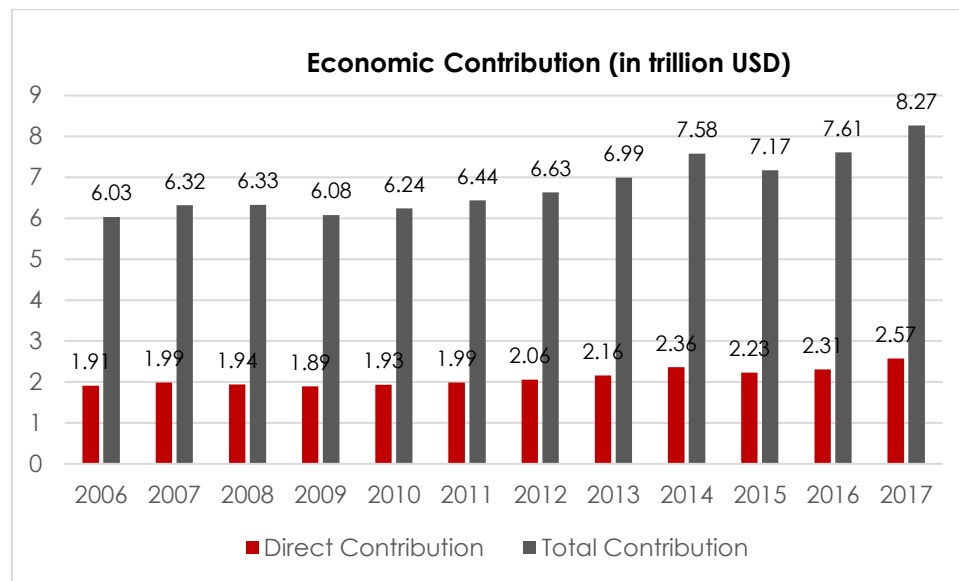
The same year, 2015, China had the largest international tourism expenditure, followed by the United States and Germany. The leading city in international visitor spending was Dubai, where tourists spent more than 31.3 billion U.S. dollars in 2016.



Figure 3-1 Showing favored destinations of the World. Source: World Tourism Organization, 2017

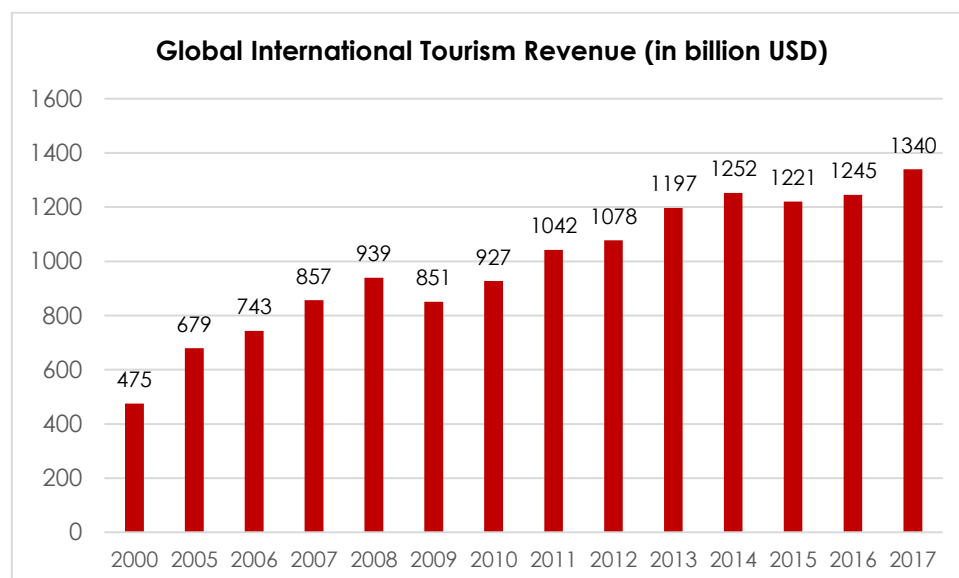
As an industry, the tourism has great impact on the global trade. It provides 6-7 per cent of the world's total jobs directly and millions more indirectly through the multiplier effect as per the UN's World Tourism Organization (UNWTO).

Economic Contribution to travel and tourism to GDP worldwide – 2006 to 2017



The graph above shows that the total contribution of T&T industry is steadily increasing. This can be attributed to the increased travel behavior amongst youths and increase in spending capacity of the people. Due to the significant contribution in the economy, T&T industry is getting its due attention and weightage in the Global Economy platform.

Global International Tourism Revenue – 2000 to 2017



The above graph shows that the Travel and Tourism industry is a highly valuable industry to the global economy and has grown steadily for over a decade. The revenue from the T&T industry is also increasing every year. The largest contributors to this industry are North America, European Union and North East Asia. Owing to their lesser developed tourism industries, countries like those in the North and Sub Saharan regions of Africa have a much lesser impact in the global economy. Although lately, African countries like Namibia, Zambia and Angola are some of the fastest developing tourism destinations according to the World Travel and Tourism Council. This might be either because the countries have realized the benefits of travel and tourism in their economy or because of the increasing popularity of less-traveled tourist destinations among global tourists. However, this doesn't imply that

tourists are losing interest to visit well-established destinations. The rapid increase in the number of tourists impacts both well-established destinations and those that are not so popular. In other words, it is not a shift of tourists to other destinations but a huge increase in the number of tourists and the frequency of their travel. An example to prove the above point, the number of overseas visitors to the United States is still increasing each year and is expected to exceed in the future.

Total contribution of travel and tourism to Global economy – **8.27 trillion USD**

Number of international tourist arrivals worldwide – **1.234 million USD**

Number of European tourist arrivals – **616.2 million USD**

Destination with the largest growth in luxury travel – **Kenya**

Global International Tourism Revenue – **1.34 trillion USD**

Global hotel industry total retail value – **495.17 billion**

JLL Research, 2018

Trends in Global Tourism- There are many interrelated factors that change over time affecting travel and tourism offerings. The coming decade and a half should see major shifts in the **leisure and tourism industry**, reflecting changing consumer values, political forces, environmental changes, and the explosive growth of information technology. No aspect of the industry will remain untouched. The challenge for tourism stakeholders in both the private and public sectors is to manage these changes to achieve and maintain a competitive advantage for their organizations.

- Technological Advancements have drastically changed the global tourism development.
- Artificial intelligence increases the operational efficiency of tourism
- VR/AR technology: tourism will be one of the main sectors for application
- Block- chains will change the payment system, credit system and service system of tourism
- Human-computer interaction techniques will affect the tourist industry development in many ways
- New energy revolution effectively supports the sustainable development of tourism
- GIS technology enables a scientific approach to tourism analysis and service delivery
- The Internet of Things will change the service processes and structure of tourism communications and distribution
- Cloud computing enhances the digital management and digital marketing of tourism

Globalization is a major international trend that accelerates access across borders, which for tourism means more foreign tourists as well as increased global competition among international destinations.

Tourism depends greatly on the **natural environment**. A region's attractiveness in turn depends heavily on climate and ecosystem type and integrity. Tourism development takes root near attractive natural features. Typically, tourism stakeholders, including researchers, have focused on how development may enhance management of environmentally sensitive areas and preserve unique environments, particularly when these become major attractions. In recent years, however, focus has shifted toward tourism's role in reducing environmental pollution and demands on resource use.

Tourism is highly dependent upon **information and transport technology**. The industry needs to take advantage of technological innovations to renew and develop products and services.

Source: US Aid Global Tourism Workbook

Top 10 trends in Global Tourism

Fast and comprehensive growth of the global tourism economy

The evolving balance of the global tourism tripartite pattern

The faster growth of tourism in emerging economies

The outstanding tourism development of BRICS countries

Tourism growth's contribution to global trade

Rapid growth in global tourism investment

Cities important roles in the global tourism economy

Good growth momentum of listed tourism companies

Eight new technologies changing global tourism development

Tourism faces challenges of human capital

3.1.2 Global Tourism Policy / Framework

Several countries have dedicated policies, strategies and plans for tourism for the medium to long term. The policies of all the countries are roughly similar, including focus on improving competitiveness, sustainability and inclusiveness, addressing seasonality of demand and enhancing the quality and appeal of the tourism offer. Over the last two years there has been an increasing recognition of the importance of the development, management and promotion of local destinations, supported by regional or local structures and funding, and the preparation and execution of destination management plans. Distinctive products and destinations in the industry are being developed and marketed. Marketing activities include examples of successful regional and thematic branding. Many countries use their natural and cultural assets as an advantage and establish new relevant offers and experiences to be unique and attract tourists. They also gain opportunities for year-round growth through the promotion of health and wellness tourism, business tourism, events and various niche products. Tourism policies give high priority to opportunities presented by digitalization in both creative and targeted communication and in the handling and analysis of data.

In order to improve connectivity and reduce barriers to travel, action like visa requirements and entry procedures have been taken, while also addressing growing concerns about security. Simultaneously, many countries have strengthened promotion in the domestic market including initiatives to extend holiday opportunities for all. To improve competitiveness, supply side policies like investment promotion and simplification of business regulations have been incorporated. However, it is necessary to recognize that there is a need to extend and clarify regulations in emerging areas such as informal tourism services promoted through online platforms. The main issue in many countries, however, seems to be the need to address the need for labor and skills in the sector. It is required to improve the awareness and attractiveness of careers in tourism and the availability of relevant training. As 2017 has been declared as the International Year of Sustainable Tourism for Development by the United Nations, a lot of attention has been drawn to the sustainable tourism agenda and the contribution of the sector to the Sustainable Development Goals. In their respective policies, many countries have taken action to improve the monitoring of tourism impacts, to extend certification schemes, to encourage the use of new technologies and green finance instruments and to promote environmentally sustainable and socially inclusive tourism growth.

The key messages of most of the policies are roughly the following-

Fostering an integrated policy approach

- Developing long-term strategies that consider the trade-offs and complementarities with related policy areas
- Identifying the roles, functions and interactions of key stakeholders
- Recognizing the value of strong dialogue and coordination between government, industry and civil society in the development, implementation and monitoring phases

Preparing for megatrends

- Building systemic and strategic approaches to adapt in an increasingly fast-moving, interconnected and dynamic environment
- Modernizing regulatory and legislative frameworks, broadly engaging with key stakeholders in their development and supporting predictive mechanisms in the policy and regulatory process
- Cultivating partnerships with industry, other governments, and civil society to address the cross-cutting impacts of megatrends and developing responses that account for new and innovative business approaches to service delivery
- Taking steps to future-proof tourism policy and promote a culture of innovation and change management within government to ensure that long-term megatrends are given due consideration, notably through robust data analysis and scenario planning

Promoting investment and financing for sustainable tourism

- Incorporating environmental and sustainability criteria into public financing and investment supports, and encourage the uptake of green financing instruments for tourism projects, notably by leveraging private investment
- Encouraging more responsible business practices in tourism through the integration of environmental and social criteria into tourism policies and programs, mobilization of green investors and uptake of sustainable practices by businesses
- Capacity building and better co-ordination of actions across different levels of government and policy areas including tourism, environment and innovation to support the shift to more sustainable tourism investment and financing practices
- Improving data collection and analysis on green finance and investment in sustainable tourism development to accurately integrate environmental risk into tourism financing and investment decisions and develop a better understanding of the economic, social and environmental outcomes of tourism investment

One thing that most of the countries need is to reframe tourism growth so that they can spread benefits better, address inequalities and improve resilience of economics. This can be achieved by moving towards coherent and comprehensive approaches to tourism policy making. Every country should aim to achieve sustainable and inclusive tourism growth – growth that takes into account current and future economic, social and environmental impacts, and also addresses the needs of visitors, industry and environment and host communities. Long-term strategies and policies focused on promoting quality employment and job creation, skills development, entrepreneurship, innovation, effective investment, and integrated regional development, are integral to achieving such growth.

In every country, the national (and state) governments should work towards developing integrated and coherent tourism policy responses that reflect the circumstances of individual countries and local communities in pursuit of shared goals to -

Governments should strive to further develop integrated and coherent tourism policy responses that reflect the circumstances of individual countries and local communities, in pursuit of shared goals to:

- provide access to high quality, reliable and safe tourism experiences for the tourists

- increase productivity in the tourism sector, particularly among small and medium scale enterprises (SMEs)
- protect, manage and enhance the region's natural and cultural resources
- improve competitiveness
- promote inclusive growth and development within and across countries

Global Tourism Policy- The UNWTO Tourism Policy Forum in 2005 marked the first time that donor agencies, developing countries, and civil society met at a high-level international conference to focus on how to cooperate and harness the economic power of tourism for sustainable development. The forum attracted 200 participants and more than 200 observers from 52 countries, including 20 tourism ministers and top-level government officials. Participating donor agencies included multilateral banks such as the World Bank and Inter-American Development Bank, as well as bilateral development agencies such as USAID America, DGSC/MAE Italy, AECI Spain, DGCID/MAE France, SNV Netherlands, GTZ Germany, CIDA Canada, and JICA Japan.

Forum participants agreed to the following (UNWTO, 2005):

- Build partnerships of equal opportunity and fair representation within destinations, and to strengthen their leadership
- Engender local community awareness of the tourism planning and its benefits • Foster buy-in for the concept of sustainability by all sectors including the sharing of guidelines and good practices
- Delegate authority for decision-making to the appropriate community level and build capacity there, and empower local development authorities
- Encourage and facilitate brand awareness and a collective image for a destination community
- Recognize the uniqueness of the business perspective as different from that of the public sector and to communicate effectively in business language
- Develop cross-sector demonstration projects that illustrate linkages, inter-relationships, and working partnerships
- Call upon governments, bi-lateral and multi-lateral institutions to facilitate access to capital of all kinds, and to provide guidance, training, and support on how to access such funding
- Develop land-use policies through a participatory process, and to provide policy incentives for private land owners
- Enhance communication and coordination between agencies including the use of advanced information communication technologies
- Develop educational programs directed to tourism policy stakeholders including local communities to promote understanding of cultural heritage resources, and the need for preservation and social responsibilities;
- Encourage the development of a regional network of researchers, practitioners, and donor agencies for sustainable tourism development.

(UNWTO, 2011)

Travel and Tourism Competitive Index (TTCI)- The TTCI measures “the set of factors and policies that enable the sustainable development of the Travel & Tourism (T&T) sector, which in turn, contributes to the development and competitiveness of a country.” Published biennially, the TTCI benchmarks the T&T competitiveness of 141 economies. It comprises four sub- indexes, 14 pillars, and 90 individual indicators, distributed among the different pillars. The index is compiled by the World Economic Forum (WEF). It measures set of factors and policies that enable sustainable development of travel and tourism sector, which in turn, contributes to the development and competitiveness of the country. It further reveals how well countries could deliver sustainable economic and societal benefits through their travel and tourism sector.

TRAVEL & TOURISM COMPETITIVENESS INDEX			
Enabling Environment	T&T Policy and Enabling Conditions	Infrastructure	Natural and Cultural Resources
1. Business Environment (12 indicators) 2. Safety and Security (5 indicators) 3. Health and Hygiene (6 indicators) 4. Human Resources and Labor Market (9 indicators) 5. ICT Readiness (8 indicators)	6. Prioritization of Travel and Tourism (6 indicators) 7. International Openness (3 indicators) 8. Price Competitiveness (4 indicators) 9. Environmental Sustainability (10 indicators)	10. Air Transport Infrastructure (6 indicators) 11. Ground and Port Infrastructure (7 indicators) 12. Tourist Service Infrastructure (4 indicators)	13. Natural Resources (5 indicators) 14. Cultural Resources and Business Travel (5 indicators)

Globally, advanced economies still hold the top slots, 12 of the top 15 most improved countries are emerging markets. Regionally, rise of Asia's giants shows that Asian Tourism Century is becoming a reality. To reach their potential, Asian countries still have more to do, from enhancing security, promoting their cultural heritage, building their infrastructure and creating stronger visa policies.

3.1.3 Leading Countries in Travel & Tourism

Most Tourist Friendly Countries

Austria



Austria is the world's most tourist-friendly country, with high scores across the board. In addition to having all seven major car rental companies, the European country places third for quality of tourism infrastructure and fifth for number of hotel rooms per capita.

Spain



Spain's tourist service infrastructure ranks second globally. They place fourth for quality of tourism infrastructure and ninth for number of hotel rooms per capita. Spain ranks first in the overall Travel and Tourism Competitiveness global survey, too, meaning it's an excellent place for a vacation.

United States



The United States is the third most prepared destination for tourists in the world. The availability of ATMs per adult is high and so is the quality of tourism infrastructure, both ranking fifth globally.

Portugal



Portugal ranks highly in every indicator under the tourist service infrastructure category, and especially so in ATMs, car rental companies and quality of tourism infrastructure. They also have high scores in other Travel and Tourism Competitiveness categories, including safety and security and international openness, making the country an all-around comfortable place to visit.

Croatia



Croatia ranks fifth for tourist service infrastructure, with plenty of hotel rooms and ATMs per capita. Although the quality of their infrastructure is comparatively low, ranking 65th, Croatia has plenty else to draw tourists, with high scores in natural resources and environmental sustainability.

After Croatia – Switzerland, United Kingdom, Australia, Germany, Canada, Italy, Luxembourg, Iceland, Bulgaria and Ireland

In 2016, there were 1.235 billion international tourist arrivals worldwide, with a growth of 4% as compared to 1.186 billion in 2015. The top 10 international tourism destinations in 2016 were-

Table 3-1 World's most visited countries in 2016

Sl. No.	Country	International tourist arrivals - 2016	International tourist arrivals - 2015	Change (2015 to 2016)	Change (2014 to 2015)
1	France	82.6 million	84.5 million	2.2%	0.9%
2	United States	75.6 million	77.5 million	2.4%	3.3%
3	Spain	75.6 million	68.5 million	10.3%	5.5%
4	China	59.3 million	56.9 million	4.2%	2.3%
5	Italy	52.4 million	50.7 million	3.2%	4.4%
6	United Kingdom	35.8 million	34.4 million	4.0%	5.6%
7	Germany	35.6 million	35.0 million	1.7%	6.0%
8	Mexico	35.0 million	32.1 million	8.9%	9.4%
9	Thailand	32.6 million	29.9 million	8.9%	20.6%
10	Austria	28.1 million	26.7 million	5.2%	5.7%

Source: UNWTO, 2016-2017

3.1.4 Economic Contribution

India's tourism industry has experienced an exponential growth. It is driven by the Indian middle class and high spending foreign tourists. The major steps taken by the Government are the **Atithi Devo Bhava** Campaign which gave a widespread message of "honor your Guest as he is always equivalent to God" and the **Incredible India Campaign** which was incredibly successful in creating a colorful and a gorgeous image of India as the perfect holiday destination. Tourism industry nourishes a country's

economy, stimulates development process, restores cultural heritage, and helps in maintaining international peace and understanding.

Travel and Tourism industry in India has proven to be a profitable industry. As per Travel and Tourism Competitive Report 2009 by the World Economic Forum, India has been ranked 14th for best tourist destination despite a constraint of adequate infrastructure.

India showcases various categories of tourism which includes-

1. Leisure Tourism- Travel with the purpose of relaxation
2. Business Tourism- Travel for the purpose of business
3. Eco- Tourism- Travel to explore the flora and fauna
4. Pilgrimage or Religious Tourism- Travel to a pilgrimage or a holy place
5. Historical Tourism- Travel to explore the history
6. Medical Tourism- Travel to avail medical facilities
7. Adventure Tourism- It is a type of niche tourism with a purpose to explore which involves a skill and or physical exertion.
8. Sports Tourism- It refers to the travel which refers to viewing or participating in a sport or event.

Owing to the cultural richness, historical legacy, architecture and the natural beauty, India is one of the most popular Tourism Destinations in the Asian continent. Research shows that there is an increase in both domestic and international tourists vis- a- vis the last two decades. About 10 million international tourists visited India in 2017, though, about, **90 percent** of tourists were domestic tourists. Observing these trends, the World Travel & Tourism Council expects that India will become a favored destination and in turn become the **4th largest** travel & tourism economy behind China, the U.S and Germany, in less than a decade.

India continues to enrich its cultural resources, protecting more cultural sites and intangible expressions through UNESCO World Heritage lists, and via a greater digital presence. India has seen continued growth in international arrivals over the past 15 years, reaching the 8 million mark in 2015. India was ranked 40th among the global economies across the world in 2017 Travel and Tourism Competitiveness Index (TTCI) released by the World Economic Forum (WEF). In this edition of index India has jumped 12 places from earlier 52nd position in 2015. But it lagged its other Asian peers like Japan (4th) and China (13th).

Some of the factors that helped India to improve its rank include international openness through strong policies such as implementing visa on arrival and e- visas, improvement of ground transport infrastructure. But still it needs to improve health conditions which are inadequate at present, similarly, ICT readiness, security concerns and human resources are improving. The T&T industry in India presents quite a significant opportunity that are yet to be reaped, especially in provision of tourist service infrastructure, and in terms of additional accommodation capacity and entertainment facilities.

India's relevance as business travel destination is increasing along with its economic growth, it remains a price-competitive destination (8th) and recent changes in its visa regime: not yet reflected in the data rankings—have the potential to boost international arrivals. However, longstanding infrastructure gaps remain, especially in tourism-specific infrastructure (109th) and the quality of roads. Despite some uneven progress, India also lags on health and hygiene (106th) and ICT readiness (114th). The safety and security situation are unsettling, with a perceived increase in the impact of crime and violence (97th), and India ranks only 139th for environmental sustainability.

3.2 TOURISM SCENARIO – TAMIL NADU

The State of Tamil Nadu situated in the southern part of the Indian Peninsula has over 20 centuries of cultural heritage and historic significance. Tamil Nadu is a State with multifarious tourist attractions. It has mountains, vegetation, beaches, monuments, temples and a reverberating rural life. The foremost of attractions in the state are its impressive temples, which are true edifices of a great and ancient culture vibrant and lively even today. Next only to the pilgrimage and heritage locations in Tamil Nadu comes the scenic beauty of nature in and around the state in the form of forests, wildlife sanctuaries, hill stations and the long bio-diverse coastline. These locations provide immense opportunities for sightseeing, pleasure and leisure, to the visitors of various categories including adventure tourists. Based on the importance, potential for attracting tourist population and uniqueness, the tourist destinations in the state of Tamil Nadu can be broadly covered under the following classifications namely:

18. Pilgrimage destinations;
19. Heritage locations and historical monuments;
20. Locations of scenic beauty – hill stations, beaches, and forests/ sanctuaries;
21. Tourist Festival locations;
22. Adventure destinations; and,
23. Leisure destinations.

Tamil Nadu is a forerunner in tourism sector in the country. The state is well connected with sea ports, best roads and rail connectivity and is also the only state with four international airports offering direct connectivity to many countries.

The state holds the credit of having a large number of UNESCO World Heritage Sites in India which includes the Great Living Chola Temples, Pallava Sculptures at Mahabalipuram and the Nilgiri Mountain Railway. There are presently 962 UNESCO Heritage Site all over the world. The state of Tamil Nadu has the distinction of having 5 of the 29 UNESCO Heritage sites in India. There are 29 well known destinations and 32 other destinations in Tamil Nadu. Over 10 million foreign tourists have visited India in 2017 and Tamil Nadu is a popular destination for many tourists.

The Tourist Destination that is taken up under this prestigious project, Mahabalipuram, is a purely tourist town listed among the top 10 best places for tourists to visit in Tamil Nadu and one of the most significant UNESCO World Heritage Site in the world. Also known as Mamallapuram, it is famous for its stone carvings dating back to the Tamil Pallava dynasty in the 7th – 9th century. The structures carved straight out of granite are among the oldest existing examples of Dravidian architecture.

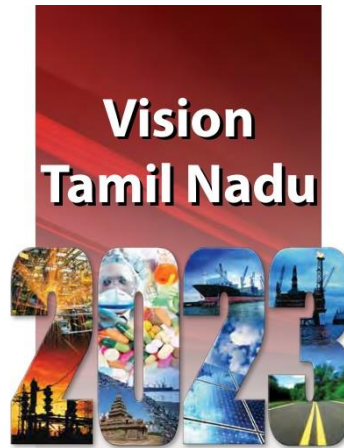
3.2.1 Policies and Development Plans

Master Plan for Conservation of Mahabalipuram

After a roughly 40-year delay, a master plan to beautify Mahabalipuram was implemented in 2003. The Union Ministry of Tourism and Culture is financing the multi-crore-rupee Integrated Development of Mahabalipuram project. The area around the monuments was cleaned up with fencing, lawns, paths, parks and the removal of hawkers and encroachments. During a Son et lumiere show, the monuments are illuminated at night.[113] The Archaeological Survey of India has laid the lawns and pathways around the monuments, and the Housing and Urban Development Corporation (HUDCO) has designed parks on both sides of the roads leading to the Shore Temple and the Five Rathas. A path from behind the Shore Temple to the Five Rathas and the conservation of more monuments is planned.

Vision Tamil Nadu or Vision 2023

Apart from national level schemes for tourism, the state of Tamil Nadu has formulated a Strategic Plan for Infrastructure Development called **Vision Tamil Nadu or Vision 2023**. It encourages strategic investments in infrastructure to place Tamil Nadu on a higher growth trajectory to secure the benefits of growth for all the people of the State. It covers all the major sectors of economy, including Tourism. The state has emerged as a preferred investment destination ranked high among the investors for fostering growth and empowering an efficient and competitive market. The state has always offered a climate of uninterrupted growth and economic resilience.



The vision for Tamil Nadu for 2023 is

“to become India’s most prosperous and progressive state with no poverty, and where its people enjoy all the basic services of a modern society and live in harmonious engagement with the environment and the rest of the world”.

The three outcomes of Vision 2023 are:

1. **The per capita income** of Tamil Nadu’s residents will reach US \$10,000 per annum (at 2010 prices) – the present median income of Upper Middle Income countries - by 2023
2. Tamil Nadu will attain a **high standard of social development**, with the Human Development Index of the state matching those of developed countries by 2023
3. Tamil Nadu would provide to its residents, **high quality infrastructure** all over the state comparable with the best in the world.

Vision 2023 Tamil Nadu identifies ten themes for the state as follows:

1. Tamil Nadu will be amongst India’s **most economically prosperous** states by 2023, achieving a six-fold growth in per capita income (in real terms) over the next 11 years to be on par with the Upper Middle Income countries globally.
2. Tamil Nadu will exhibit a **highly inclusive growth pattern**– it will largely be a poverty free state with opportunities for gainful and productive employment for all those who seek it, and will provide care for the disadvantaged, vulnerable and the destitute in the state.
3. Tamil Nadu will be India’s leading state in **social development** and will have the highest Human Development Index (HDI) amongst all Indian states.
4. Tamil Nadu will provide the best infrastructure services in India in terms of **universal access** to Housing, Water & Sanitation, Energy, Transportation, Irrigation, Connectivity, Healthcare, and Education.

5. Tamil Nadu will be one of the top three preferred **investment destinations** in Asia and the most preferred in India with a reputation for efficiency and competitiveness.
6. Tamil Nadu will be known as the **innovation hub and knowledge capital** of India, on the strength of world class institutions in various fields and the best human talent.
7. Tamil Nadu will ensure **Peace, Security and Prosperity** for all citizens and business, enabling free movement and exchange of ideas, people and trade with other Indian states and rest of the world.
8. Tamil Nadu will preserve and care for its **ecology and heritage**.
9. Tamil Nadu will actively address the **causes of vulnerability** of the state and its people due to uncertainties arising from natural causes, economic downturns, and other man-made reasons and mitigate the adverse effects.
10. Tamil Nadu will nurture a culture of **responsive and transparent Governance** that ensures progress, security, and equal opportunity to all stakeholders.

INITIATIVES

Tamil Nadu Tourism is working with an objective to promote Tamil Nadu as an attractive international tourist destination and sustain its leading position. This improves the economy of the State. The unlimited tourism potential of the State needs to be highlighted nationally and internationally to increase the tourist arrivals. The rich cultural heritage of Tamil Nadu is one of the important tourist attractions. The various tourism experiences offered by the State are presented in the following section.

Coastal Tourism

Coastal tourism is based on a unique resource combination at the border of land and sea environment: sun, water, beaches, outstanding scenic views, rich biodiversity, etc. Various tourism products have been developed based on these resources like well-maintained beaches, water sports, boat-trips, bird watching tours, etc. Other tourist attractions along the coastline like Temples, Forts and other historical monuments are also taken into consideration.

Introducing Cruise Ships

Two cruise ships have arrived at Chennai Port and Tamil Nadu Tourism has extended good co-ordination with Chennai Port Trust and other Departments for providing a warm welcome to Cruise passengers.

Enhancing Tourism Activities

The following are the proposed works to enhance tourism and provide a better and convenient tourist experience – Creation of Public Convenience, Wayside Amenities, Watch Towers, Development of Walkway, Upgradation of Beach Front Pockets, Installation of CCTV Cameras, Information Signages, Erection of First Aid Kiosks and development of Arts & Crafts Villages. To improve the development of Beach Tourism, activities like Para-sailing, Windsurfing, Water Scooter, Banana Boating, Water Skiing and Sand Art have been proposed.

Eco Tourism

Eco Tourism has to be developed on sustainable basis without causing damage to environment and wildlife by integrating facilities at hill stations, wild life sanctuaries and national parks for the benefit of tourists. While promoting eco-friendly destinations in Tamil Nadu, the carrying capacity of the destinations will be taken into consideration and the local community is to be made actively involved in all developmental activities, to ensure inclusive development.

Fairs and Festivals

Another initiative of conducting various kinds of fairs to showcase and highlight the culture, festivals and art and crafts of Tamil Nadu has been taken up to cater to similar interests of tourists. Tamil Nadu Tourism will also conduct various festivals every year which include Pongal Tourist Festival, Hot Air Balloon Festival and Sail and Surf Festival among many others.

Participation in Marketing Meets, Campaigns and Exhibitions

The state is also taking various steps to attract tourists from India and abroad by conducting Marketing Meets, Publicity Campaigns and Exhibitions at potential regions at domestic and overseas levels. The multifarious tourist attractions, excellent Law and Order, connectivity to destinations, tourist facilities for luxury and budget travel and tourist friendliness are highlighted in marketing activities.

To make the Tourist destinations prominent, Tamil Nadu Tourism has participated in the Government Exhibitions held at Madurai, Tirunelveli, Thoothukudi, Tiruvannamalai, Tiruchirappalli, Coimbatore, Salem, 21 Kanyakumari & Vellore and showcased the tourism attractions, which include lesser known centers.

To focus on inbound tourism and buyer seller meet with an objective to reinforce Tamil Nadu as world class tourism destination, opportunity to interact with foreign buyers and Indian sellers, policy makers, investors, members of media, Tamil Nadu Tourism participates in the Tourism and Travel Marts, Tourism Fairs organized by Tourism Departments of other States and reputed agencies to showcase the Tourism potential of Tamil Nadu.

Print Campaigns

Tamil Nadu Tourism has launched a series of Domestic and International print campaigns, which are released in various Domestic and International In-Flight Magazines. Advertisements are released in leading International and Domestic Travel Magazines as well.

3.2.2 Existing Policy Framework

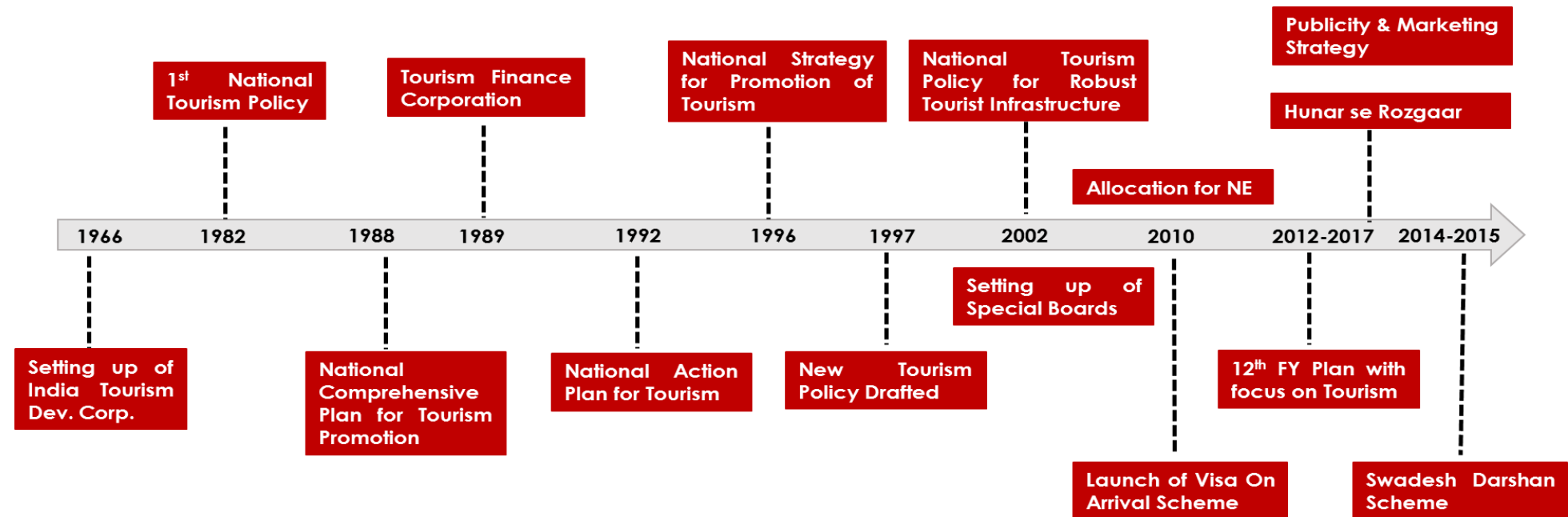


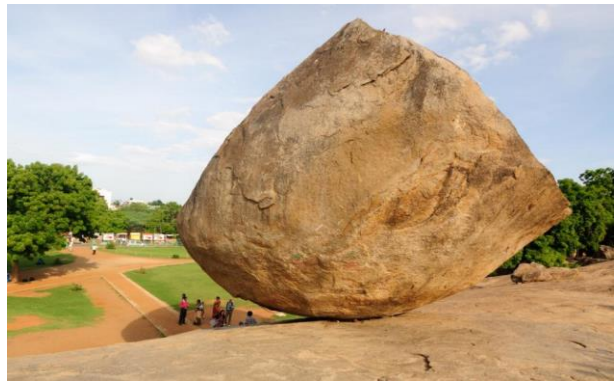
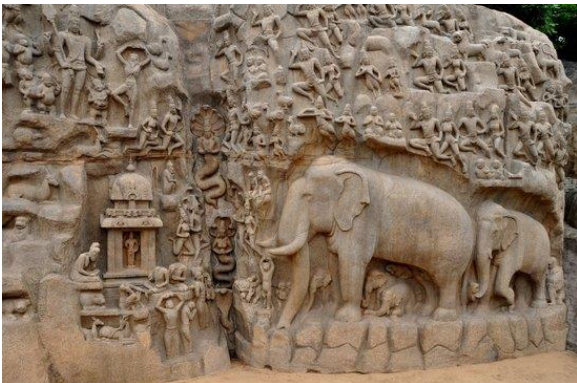
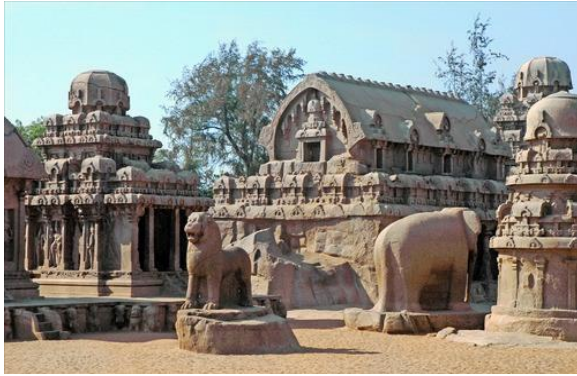
Figure 3-2: Various Initiatives taken by Gol to promote Tourism

Source: JLL Research 2018

3.3 TOURISM SCENARIO – MAHABALIPURAM

The name Mamallapuram is believed to have been given after the Pallava king Narasimha Varman, who took on the epithet Maha-malla (great wrestler), as the favorite sport of the Pallavas was wrestling.

It has various historic monuments built largely between the 7th and the 9th centuries and has been classified as a UNESCO World Heritage Site. The unique monuments in Mahabalipuram present a



fusion of religion, culture, and legends, all related to the Hindu religious pantheon. All these monuments located on the shores of the Bay of Bengal are built in the exclusive Dravidian style of architecture, imbibing the art and culture of Tamil Nadu. The monuments are: Mandapas, also called Cave Temples; Rathas, or chariots; the open-air bas-relief depicting Arjuna's penance to Lord Shiva to obtain the Pashupata weapon; and structural temples. The architecture of the rock-cut temples, particularly the Rathas, became models for south Indian temple architectural style in subsequent periods. The architectural features, particularly of the sculptures, were widely adopted in South India and in the building of temples in Cambodia, Annam and Java. Descendants of the sculptors of these shrines are active and involved artisans in Mahabalipuram's contemporary town culture.

The area attracts a lot of travelers every year especially for activities such as Sun bathing on the scenic beach. The beach gives an opportunity to completely unwind from the weariness of the city life. Windsurfers and Swimmers are seen hitting the shores of the beach playing with the rising tide. Mahabalipuram, to charm the visitors, also has a crocodile bank, a snake venom extracting center, and a school of Art and Sculpture. There are resorts all along the beach to serve as leisure points along the coast. The map below depicts the major monuments that form the World Heritage Site of Mahabalipuram.

Efforts to systematically provide the enabling environment for its development are on-going. This stage of the study focuses on establishing the baseline tourism scenario of Mahabalipuram and assessing

the same in order to establish the development requirements of the area. The impact indicators under review include:

- Tourist arrivals,
- Existing Tourism Products and tourism infrastructure
- employment creation and income generation

3.3.1 Existing Tourism Products and Infrastructure

A key strength of Mahabalipuram's tourism appeal is the overall diversity of resources. These include: the **UNESCO designated World Heritage Site** and nature-based tourism owing to the **Coastal location**. Commercial and cultural events keep the tourist excited and on their toes through their visit. Mahabalipuram's tourism sector has been visualised as a major potential engine of growth and development. This section gives an outline of the major tourism products that the destination offers.

Heritage Attractions:

There are five basic categories into which these monuments can be divided:

The processional chariots or Ratha temples

- **The processional chariots or Ratha temples** in the form of processional chariots are huge and immensely solid constructions made out of the blocks of diorite emerging from the sand. The Naharasimhavarman Mamalla's reign between 630 and 668 saw the construction of the five most famous Ratha of the south. The city has been called Mamallapuram in the Cholas texts.

The Mandapas

- **Mandapa or rock sanctuaries** were designed as rooms and covered with bas-reliefs. The acts of the Varaha avatar of Vishnu are represented by the Mandapa of Varaha. Also, there are Mandapa of the Pandavas, especially that of Lord Krishna and of Mahishasuramardini.

Open to Air Temples

- A very famous part of the iconography of Siva is represented by the **open air**. It was the episode of the descent of Ganges to the earth by the order of Siva to nourish the world. Siva did this when King Bhagirath requested him to do so. The wise and creative sculptors depicted this heavenly event by making use of the natural fissure that divides the cliff. This cosmic event is witnessed by numerous Gods, goddesses, animals as well as mythological creatures like Kinnara, Apsara, Gadherya, Gana, Nagini and Nag.

Rock Cut Temples

- **Temples cut out from stone.** An example of this architecture is the Temple of Rivage, constructed in the reign of King Rajasimha Narasimavarmn II (695-722). It depicts the glory and grandeur of Lord Siva with its pyramidal tower with several sculptures.

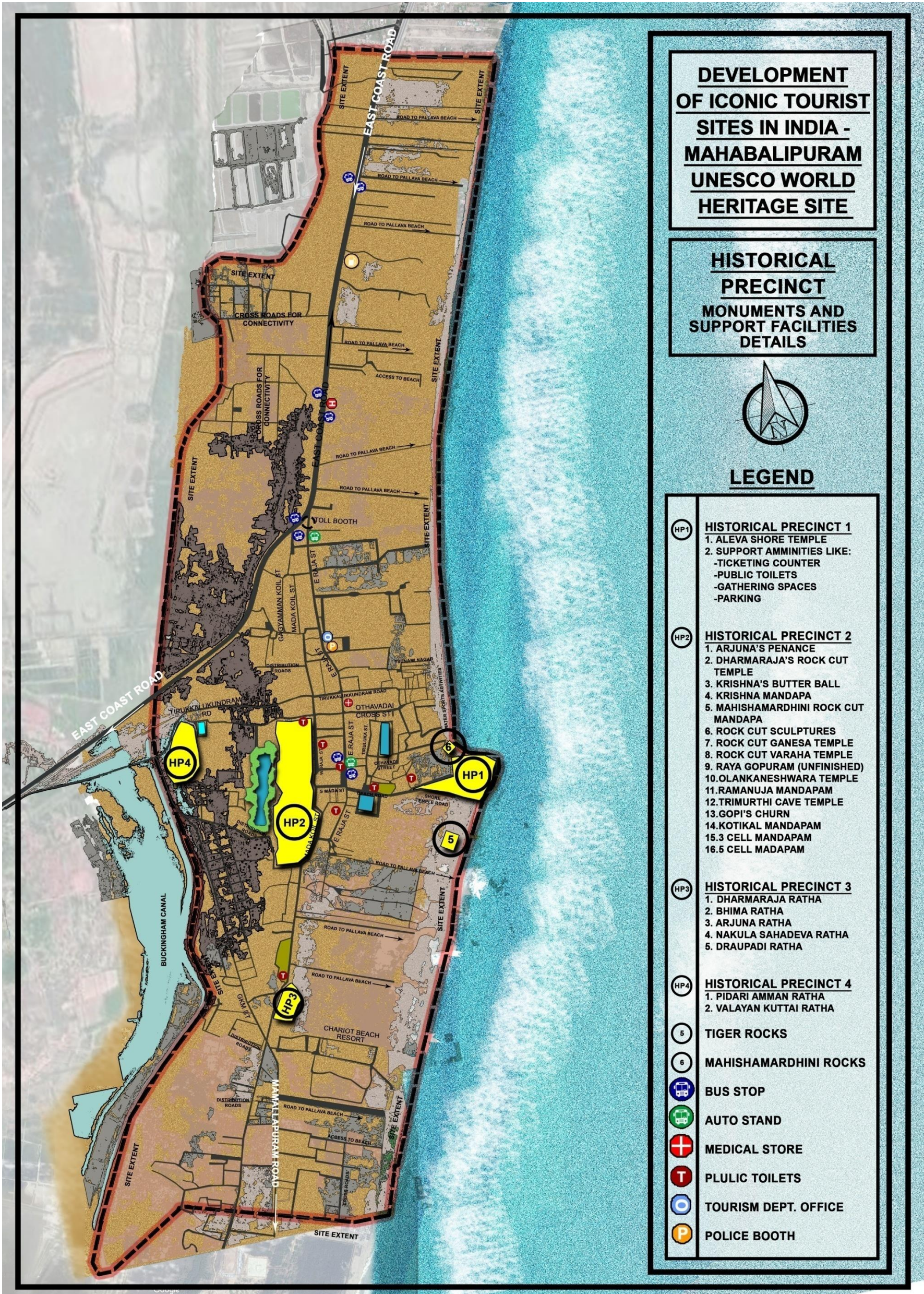
Other Ratha temples

- The single to triple storeyed Monolithic Ratha display a wide range of forms of architectures. The Draupadu, Arjuna and Dharmaja Ratha on the other hand have a square design. The Ganesa and Bhima Ratha have rectangular plan and Ratha of Sahadev is apsidal. Pallava Rajasimha introduced the Structural

and promoted it at a large scale during 700-728 when the construction of the Shore Temple was at its peak.

- Apart from these, a total of 39 monuments in the form of sculptures, artwork, caves and smaller temples exist within the tourist area of Mahabalipuram. These are depicted in the map no. 3-1 of this report.
- The map below shows the Tourist attractions that Mahabalipuram offers its visitors.

Map showing major tourist attractions in Mahabalipuram



Map 3-1: Map showing major tourist attractions in Mahabalipuram

3.3.2 Destinations and Activities in and around Mahabalipuram

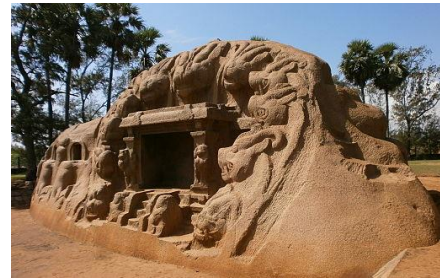
Mahabalipuram Beach: The area attracts a lot of travelers every year especially for activities such as Sun bathing on the scenic beach. The beach gives an opportunity to completely unwind from the weariness of the city life. Windsurfers and Swimmers are seen hitting the shores of the beach playing with the rising tide. Mahabalipuram, to charm the visitors, also has a crocodile bank, a snake venom extracting center, and a school of Art and Sculpture. There are resorts all along the beach to serve as leisure points along the coast



Shore Temple: This is one of the oldest temples in South India. It belongs to the 8th Century A.D. and is a good example of the first phase of the structure of temples constructed in the Dravidian style. The Shore Temple at the Mahabalipuram sea-shore is the ultimate expression of Mahabalipuram. A three-in-one abode of God - a Vishnu temple positioned between two Shiva temples, is a treat to the eyes with its surroundings plentiful in architectural grandeurs. On either side of it is the sea spreading endlessly and infinitely. The complex wall of this temple is decorated with charming sculptures of Nandi the bull, while the figure of Vishnu is present in the sanctum sanctorum.



Tiger's Cave: This cave it is located 4 km north of the main monument complex. It was built as an open-air theatre, where cultural programs could have been held during the Pallava period. Though it is very near the sea, the place is serene and calm.



Five Rathas: These rock-cut temples are rated as excellent examples of Pallava art. Shaped in different styles, the five structures are named after the Pandava brothers of the Mahabharata and Draupadi. These are monolithic temples, each created in a different style. They are also known as the Pancha Pandava Rathas, and the four of the Rathas are supposed to have been scooped out of a single rock formation.



Dakshinachitra: A heritage centre where traditional crafts are displayed and showcased from the states of the south India and folk artists performs cultural programs unique to their culture, displaying their rich heritage.



Tourists and visitors who take a trip to Mahabalipuram also indulge in the following activities:

- **Commercial activities:** The destination is popular for sculptures, arts and crafts shops. Art and crafts shops are located near the main beach. The sculptures shops are located along the main road and Five Rathas. Around ~180 hawkers are located along the beach road. The shops, even though permanent, are not well maintained. It is recommended that a sheltered, dedicated vendor zone be created near the Shore temple and at a suitable location around the site.
- Bike trips around Tamil Nadu's countryside organized by travel agencies in the town
- Beach related activities
- Surfing and surfing lessons through organized clubs and agencies
- Boat rides to in the Bay of Bengal with life guards
- Fishing trips to the sea
- Turtle walk at the sea shore
- Trekking to a nearby hill
- Yoga camps organized daily

Around Mahabalipuram

Architecture and Heritage based tourism continues to play a key role in the tourism development within the Mahabalipuram area. Mahabalipuram is well connected to several other places of interest that lie within a 5-15 km radius of Mahabalipuram. Few of these places of interest are listed below:

1. Golden Beach - Amusement Park
2. M.G.M - Amusement Park
3. Dakshina Chitra - Art museum and Artisans workshops
4. Muttu Kadu - Backwater boat house
5. Kovalam - Beach, surfing activities, Pilgrim center and sea side resorts
6. Crocodile Farm - Reptile park at Nemili
7. Tirukalukkundram - Pilgrimage center
8. Vedanthangal - Bird sanctuary

3.3.3 Circuits and Tour Packages

Several tour packages are offered by the Tamil Nadu Tourism Development Corporation (TTDC) in collaboration with various hotels and other tourist spots in the area

3.3.4 Events and Cultural Activities

The Annual Dance Festival

The Mamallapuram Dance Festival is held every year during the month of Dec-Jan in Mahabalipuram. This is organized by the Department of Tourism, TN. Exponents of Bharatnatyam, Kuchipudi, Kathak, Odissi, Mohini Attam, etc. perform against this magnificent backdrop of the Pallava rock sculptures.

Weekend Dance Events

In an attempt to keep the tourists visiting year round, the TTDC and Town panchayat of Mahabalipuram host dance events during the weekends with the aim to keep the spirit of the dance festival alive throughout the year. This is held at the Maragadai Poongai which has been rejuvenated by the Town Panchayat for use as a public congregation space.

Surf clubs and other activities

As mentioned above, beach and water related activities keep the tourists engaged and offer them the unique experience of enjoying adventure sports while visiting the Architectural marvel of Mahabalipuram.

3.4 TOURIST PROFILE

A tourist survey with a sample size of 100 respondents has been conducted by the consultant. The outcomes of the survey are outlined in the section below.

Tourist Profile

Out of the total respondents (100), 85% of respondents were Indians and 15 % were foreign nationals. The foreign tourists who visited are from Europe, Asia and America. About 23% were travelling with their families and 76% were travelling along with friends.

Purpose

More than 50% of the foreign tourists visited the place for leisurely beach activities. The other purpose of their visit was either business or pilgrimage tourism as Tamil Nadu hosts one of the oldest temples of India and attracts tourists for its history, faith and the grandeur. Another attraction is Auroville in Pondicherry which is just 120 km from Mahabalipuram and is connected by the East Coast Road.

100% of the respondents had self- planned their trip and didn't come through a tour operator. About 90% of the respondents confirmed that they have been to Mahabalipuram before and this was probably their second or third trip.

Mode of Travel

Of the 100 respondents, 58% arrived by their personal cars/ cabs. 27% resorted to the state transport bus and about 8% by train. This shows that there is a potential to establish organized group tours with a comprehensive visit-dine-stay arrangement. About 82% of respondents rated the ease to commute as average which means there is a huge scope of improvement.

Hospitality & Food

About 82% of respondents rated the accommodation facility and food outlets as average. That could be the reason why 97% of the respondents denied staying overnight. This is a very poor sign which indicates a huge gap of suitable facilities and activities to attract the tourists to make them stay and spend more time and money in the place.

Tourist Infrastructure

the tourist infrastructure like parking, toilets, facilities for elderly, babies and differently abled, changing rooms at the beach, etc., are all rated as 'average' by the respondents. The safety and security aspects have come across as a major concern amongst the tourists. This implies that there is huge scope of improvement in provision/ upgradation of the modernized facilities. The tourists also emphasized upon improvement of the up keep and cleanliness of the place.

Information Infrastructure

The respondents confirmed problems faced getting around the place. There is a dearth of proper signages and maps to orient tourists about the place. Installation of interactive kiosks will help solve this purposed as reported by the tourists.

Indigenous art & crafts

Almost all the respondents rated the art & craft available at the site as 'good'. The local art of sculpting and stone carving has attracted tourists from far and wide. Steps can be taken to propagate and preserve the indigenous art & craft of Mahabalipuram.

Literacy

Survey shows that more than 50% of the respondents are well educated upto college level. The respondents show a positive sign of literacy rate and give the confidence that Mahabalipuram has a potential to develop a pool of human resource.

Impact of Tourism

About 72% of the respondents said that tourism has an influence on their daily activities to a great extent. The impacts are attributed to both positive and negative. The positive ones being improvement in cleanliness and upkeep of the area and increased security and improved amenities in the area. The negative factors which disturbs their lives are- increase in traffic, pollution, illegal activities etc.

Tourist experience

About 35% of the respondents feel that there is a need to improve the transport facilities in the region to improve the tourist experience for Mahabalipuram. About 42% of the respondents were satisfied with the tourist amenities and facilities provided in the town. 13% of the respondents are also concerned about the safety and security of tourists especially female tourists.

Tourism Products

Almost 100% of people go to the beach and like the peaceful atmosphere offered by the place. They visit the place for recreation and leisure. The respondents also attributed tourism to many positive changes over the years, prominent ones being more hotels, shops, museums, accommodation facilities, security, art & craft galleries etc. These not only opened avenues for employment for local people but also improved their quality of living.

3.4.1 Trends in Tourist Footfall

There has been a substantial increase in the flow of tourists in the State, from 118.2 million in 2009 to 187.7 million in 2012, though there was a dip in the year 2010. The number of domestic tourists to Tamil Nadu increased 34.6% year-on-year in 2012, while foreign tourists increased 9.1%. The tourist arrivals in Tamil Nadu have increased rapidly over the years. In 2014 and 2015, Tamil Nadu was ranked first in domestic as well as foreign tourist arrivals in the country. A total of 3381.44 lakh tourists, both domestic and foreign arrived in Tamil Nadu in 2015. Tamil Nadu is ranked second among the States in attracting foreign tourists, the first being Maharashtra. Tamil Nadu is also the third-most attractive destination for domestic tourists, following Andhra Pradesh and Uttar Pradesh. An estimated 10% of foreign tourists to India arrive at the Chennai airport.

Mahabalipuram hosted a total of 1,46,30,512 tourists in the year 2015-2016 which increased up to 1,50,00,045 in the year 2016-2017. October to December is the peak season period where the number of tourists per month. The tables below show a steady increase in the number of visitors that gather at Mahabalipuram every year.

However, it is observed that the growth rate of increase in tourists annually has dropped drastically. While there was an increase of domestic tourists at the rate of 84% during the period 2013-14, the growth rate of domestic tourists dropped to 13% during 2014-15. Similarly, the growth rate of foreign tourists dropped from 21% in 2013-14 to 8% in 2014-15. Also, as observed in 2017, the growth rate has further dipped to upto 1 % at Mahabalipuram. This reflects the need to re-vamp tourism related services and amenities in the area.

The tourist footfall arriving at Mahabalipuram from 2011 to 2017 is tabulated below

Table 3-2: Domestic and Foreign Tourist Footfall at Mahabalipuram

Domestic & Foreign Tourist Footfall														
Destination	2011		2012		2013		2014		2015		2016		2017	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Chennai	12216881	668439	16640852	708778	23223278	771400	34237753	986721	35662677	1011275	36160323	821468	37734190	1362891
Mahabalipuram	2812568	434881	4335350	460282	6326899	499995	11690933	604461	13298023	651190	13955679	674833	14320540	679505

Source: Tamil Nadu Tourism Department, 2018

3.4.2 Proposed Tourism Based Components Under Other Schemes

3.4.2.1 Innovative Initiatives

Mobile App – Pinakin

Tamil Nadu Tourism in association with "Pinakin" offer free audio guides for tourists. The audio guide is available for Android phones as well as Apple iOS users. The audio guide is designed to give you a good 1.30 hours to 2 hours of tour time for the tourist spot and helps you rediscover India and better perspective on enchanting Tamil Nadu. Well researched and curated, this is first of its kind in India with multiple languages to choose from. Information about the place, the ticket details, parking, facilities etc are also included.



Online Membership Cards

Tourists can apply for Gold and Platinum Membership cards issued by the Tamilnadu Tourism Department. The cards are launched as part of customer loyalty programme for tourists to avail discounts and offers at TTDC's hotels, restaurants and boathouses along with other benefits.



3.4.2.2 Proposed Projects and their Status

1. Development of Coastal Tourism Circuit in Tamil Nadu

Mahabalipuram was recently taken up for Development as part of the Coastal Tourism Development project in TN. This project is funded under the Swadesh Darshan scheme as well. The project was initiated in the year 2016 and various components such as the below were proposed for development.

Status of the project: The components proposed under the projects have not been implemented on site yet. Two of the components proposed, i.e. the WiFi and provision of dustbins have been taken up for tendering for selection of contractor.

2. Renovation and Beautification of precincts

Apart from this, the ASI is currently carrying out beautification and renovation works in and around various parts of the site.

3. Augmentation of Solid Waste Management Infrastructure

The Town Panchayat has recently submitted a proposal for augmentation of **Solid Waste Management Infrastructure**. The details of this have been discussed in later sections of this report.

3.4.3 Impact of Tourism on the Destination and the Local Community

1. The on-going projects mentioned above are bound to have a positive impact on the overall aesthetics and cleanliness of the UNESCO World Heritage Site. If executed, the site will be better equipped to provide state-of-the-art public convenience services, Drinking water facilities, etc. to the tourists and local visitors. Augmentation of SWM services within Mahabalipuram Town Panchayat would translate into cleaner heritage precinct, better equipped SWM staff and a smoother system for the daily activities related to Solid Waste Management in the area.
2. Care needs to be taken while carrying out renovation and beautification works within the heritage site. Construction material if not stored or stacked in a proper manner will render the site less pleasing to the eyes of the tourists.

3.5 TOURISM AND THE RESIDENT COMMUNITY

3.5.1 Involvement and Role of the local community

According to 2011 census, the city of Mahabalipuram has a population of 15,172 with a good ratio of men to women. The literacy rate of the city is quite high, especially among the male members of the community at 91.27%.

Being a coastal city, today most of the population earns a livelihood through fishing. The city was once ruled by Pallavas, who were artistic and created new styles of art. The locals are also engaged in stone carving and handicraft, and local shops have the handmade crafts available readily. Mahabalipuram has seen a quick development socially as Tourism & handicraft industry provides several job opportunities to the people. The road that leads to and winds around the main site of monuments is adorned by several sculpture, mural and stonework stores. Tourism plays a major role in social development of a place. Many of the locals are also tourist guides by profession. Tourism in Mahabalipuram is a seasonal business where most of the foreign tourist visits the place during November to March. The people of Mahabalipuram try to make most of the money during season time. There are over 45 residents at these heritage monuments who have been acting as guides for decades. Government has trained a few and provided identity cards for over 20 people. Every two years, renewal is done. The Government, however, needs to put more effort into organizing training programmes for local guides for a better tourist experience.

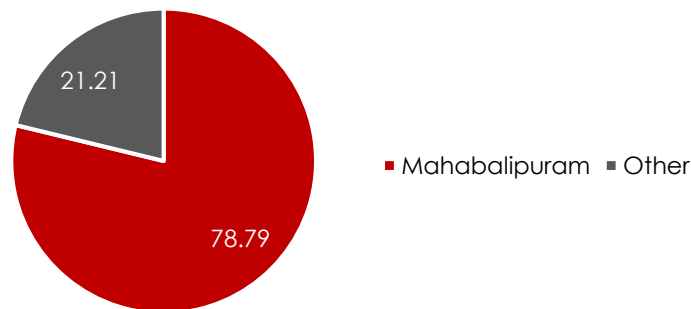
3.5.2 Employment in Tourism-Based Occupations

Employment of locals in tourism industry

Primary surveys have been conducted in order to study the trend of employment and the direct and indirect impact of Tourism on the livelihood and socio-economic status of the residents of the Town. This section bases the inferences on the surveys conducted with the vendors (artisans, sculptors, other shop vendors in the area with a sample size of 100 respondents) in Mahabalipuram. The survey reveals the following:

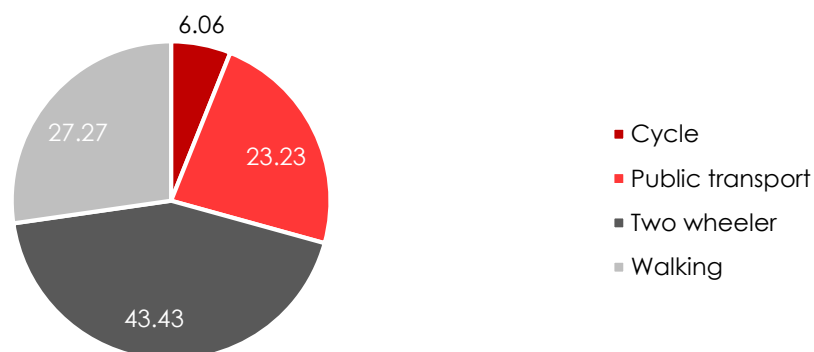
1. A majority of the vendors, around 79% are from Mahabalipuram and the rest are from surrounding areas like Poonjeri, Kanchipuram, Tirukalukkundram, etc.

Origin



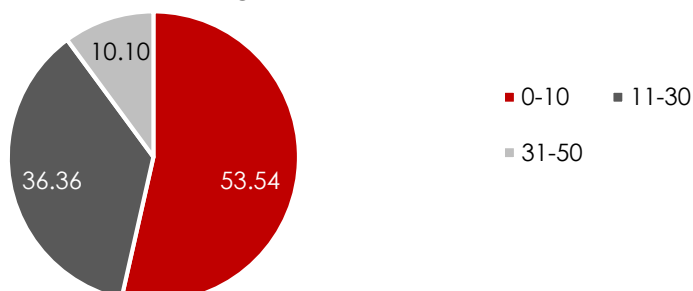
2. Approximately 43% of the vendors commute by 2-wheelers from their residence to their shops, which is the most preferred mode. The rest of the vendors prefer walking or using public transport. A small percentage of them also commute by bicycle. Around 56% of them live just 0-20 minutes away from their shops. 18% of the vendors live 20 - 30 minutes away and 13% of them live 30 – 40 minutes away. However, around 12% of the vendors travel for 40 - 50 minutes to their shops. These are the vendors who do not live in Mahabalipuram.

Daily Mode of Commute

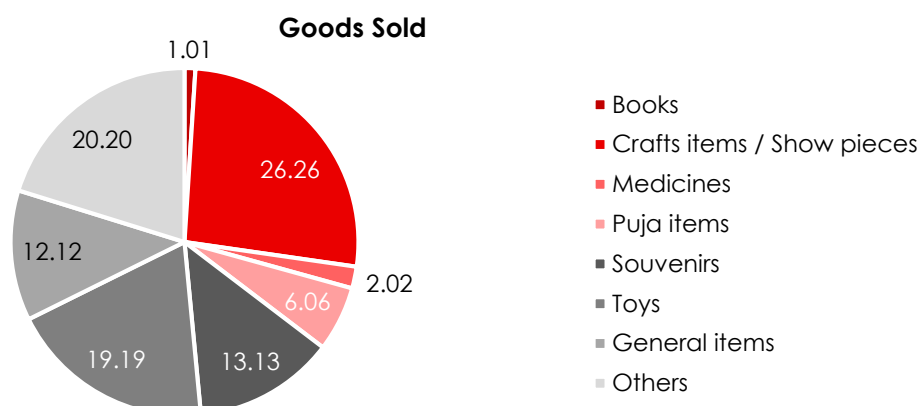


3. More than half of the vendors have been vending since comparatively fewer years. To be precise, almost 54% of the vendors are vending since the last 10 years or less. Only 10 % of the vendors have been there for more than 30 years.

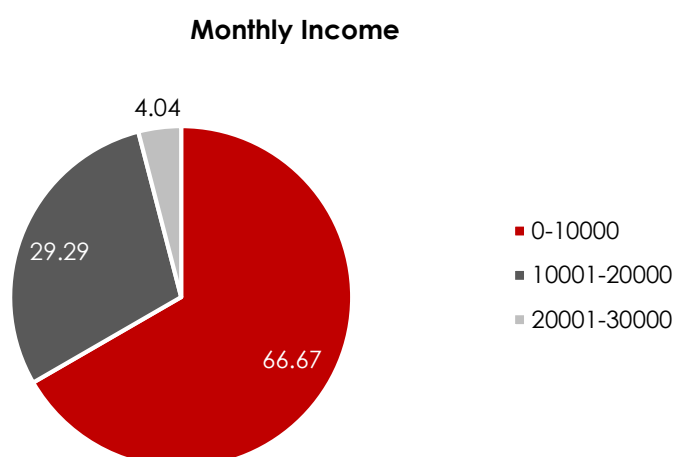
Vending Since



4. The most commonly sold articles are craft items, followed by toys, souvenirs and general items. A small percentage of the vendors also sell Puja items, medicines and other items.



5. According to the survey, 66% of the vendors have a monthly income of just INR 10,000 or less. For a lot of them, this is their only source of income. 4% of the vendors earn INR 20,000 – 30,000 every month. These vendors usually sell souvenirs. 30% of the vendors earn INR 10,000 – 20,000 on a monthly basis. Only about one-fourth of the vendors have another source of income. Also, 78% of these vendors pay rent for their shops with an average rent of INR 1300 per month.



Service Standards

The preliminary assessment of operational standards carried as part of the Master Plan fieldwork in the month of August 2018 indicates that hotel and other tourism industry staff were invariably friendly and helpful but lacked many of the essential skills needed to do their job to the standard that is required if Mahabalipuram is to compete successfully in the market for international tourism at par with other UNESCO sites. In-house training is carried out at the mid-range hotels, but generally not on a regular or planned basis to agreed criteria by professionally qualified trainers. Managers agreed that there was a serious training problem, both at entry level and for existing staff within the industry. All categories of staff require training: hotel and catering staff, tour guides, drivers, etc.

3.5.3 Impact of tourism on the Life and Livelihood

Tourism in Mahabalipuram has grown substantially over the years. Initially tourists were small in numbers and treated as guests but now hospitality has become commercialized. The host community of Mahabalipuram is enthusiastic and thrilled by the development of the tourism in the region. They welcome the strangers and there is a mutual feeling of satisfaction. There are job opportunities and money flows along with the tourist. However, organized community participation in the tourism sector and community-based tourism initiatives are yet to be well developed and many long-term projects are to be established in Mahabalipuram.

A survey was conducted with a sample size of 101 residents of Mahabalipuram to understand certain views and factors like primary occupation, education qualification, impact of tourism on their lives, issues they face and their suggestions. The following are the points derived from the surveys-

- Fishing and Art & Sculpting are the major occupations with 19.8% and 18.8% of the work force respectively. These are followed by Hospitality, Handicrafts & Weaving and Tourist Guides
- Over half of the respondents were qualified till college level, although a negligible number of the respondents were professionals
- When asked whether the activities in Mahabalipuram affect them or their daily routine, 72% of the respondents replied positively
- According to the responses, prostitution, drinking in the streets and other illegal activities are the major issues in Mahabalipuram
- Most of the respondents suggested to improve the connectivity by increasing the MTC bus facilities and encouraging sub-urban train facilities till Mahabalipuram. Improving security was another commonly mentioned suggestion
- The residents like the monuments and the peace in Mahabalipuram the most
- The respondents claim that security and cleanliness has improved over the years but complained that tourism activities have led to a lot of congestion and traffic

The section below captures in brief the major positive impacts of the tourism industry in Mahabalipuram.

Tourism as a vehicle for social development

The overall result indicates that the tourism is a vehicle of social development in Mahabalipuram. Out of 100 respondents 72% expressed positively about social development. The people who directly or indirectly involved in tourism related business, expressed there is growth in their economic level, community development and new job opportunities such as hotel jobs, self-employment like sculpture making, tourist guide etc. 90% of the respondents agreed that the tourism industry has increased job opportunities and economic development in the region.

Survey also shows that more than 50% of the respondents are well educated upto college level. The respondent shows a positive sign of literacy rate and gives the confidence that Mahabalipuram has a potential to develop a pool of human resource.

Tourism as a promoter of art and heritage

70% of the respondents agreed tourism is the promoter of art and heritage. Tourism has helped in taking the Richness & Uniqueness of Pallava dynasty heritage and the architectural grandeur of Shore temple, Five Rathas, etc. and the exquisite sculpture making to world. The UNESCO declaration of Mahabalipuram as a World Heritage site in 1984 symbolizes the richness of the region and the status helps in conservation and promotion.

Tourism as an indicator of higher quality of life

About one - fourth of the total respondents are found to be engaged in the primary activity other than both direct or indirect tourism related activity. However, the rest of 75% of people are either directly or indirectly related to Tourism based activity and have the same as their primary occupation. This result shows a positive influence of Tourism on the local residents benefitting their development and uplifting their social status.

85% of the respondents expressed that the tourism helped in improving their standard of living and through disposable income with better lifestyle and educational facility. The host community showed positive attitude towards tourism which in turn increased their involvement in the way they have treated tourist. They are enthusiastic and thrilled by the development of the tourism and increased tourist flow in the region. They believe there will be more opportunities for them and money flows along with the tourist. Tourism created a sense of mutual feeling of satisfaction.

Almost 100% of people go to the beach and like the peaceful atmosphere offered by the place. They visit the place for recreation and leisure. The respondents also attributed tourism to many positive changes over the years, prominent ones being more hotels, shops, museums, accommodation facilities, security, art & craft galleries etc. These not only opened avenues for employment for local people but also improved their quality of living.

Tourism & Infrastructural development

90% of the respondents agreed that tourism helped in enhancement of the local infrastructure with better accommodation facilities, better connectivity such as increased frequency of buses from nearby areas and especially from Airport, Central Railway Station and Chennai Bus terminal. The establishment of facilities such as restaurants, hospitals, entertainment facilities etc. has improved the quality of their life significantly.

Tourism inspire community pride

95% of the respondents expressed a sense of pride about their culture and history. The host community is so proud that the people from the various parts of the world come to the Mahabalipuram to see the richness and the heritage of the Pallava dynasty. This instill greater community pride that they belong to one of the prestige and unique society of the world. The host community is proud that the tourist appreciates their skills of sculpture making to the perfection and buys the same as a souvenir. This is one of the predominant reasons why sculpture making business is still alive and carried through the generation.

Summarized below are the impacts of Tourism on the Community in Mahabalipuram Town:

Growth in Economic Activities and Social Development	↑
Increase in quality of education	↑
Direct employment in the Tourism sector	↑
Enhanced Standard of living	↑
Enhanced Connectivity by road	↑
Sense of Community and belonging	↑
Skill development and avenues for enhancement	↔

3.5.4 Issues and Concerns

The major issues that call for attention are as listed below:

- There is a need for an organized system of employment in the tourism sector within Mahabalipuram that the resident communities can benefit from
- Field surveys conducted reveal the need for capacity and skill building training programmes for tourist guides, locals involved in the surfing activities, staff in the hospitality sector, etc.
- Impact on daily life of locals - There is a need to monitor unregulated tourist activities and unrestricted entry of visitors in the town area
- Absence of a clear State policy framework on training and development for the public, private as well as the large informal sectors of the industry
- Poor quality of data on human resource development and employment
- Limited linkage of Information Technology with tourism human resource development
- Low public awareness of tourism employment opportunities
- No structured staff training policy
- Lack of professional, managerial, technical skills at the Mahabalipuram Special Grade Town Panchayat office, New Town Development Authority, TTDC office, and other agencies.
- Limited good quality hospitality and tourism training institutions in the region
- Scope to improve and implement national standards and certification of hospitality and tourism programmes

3.5.5 Areas of Improvement

- **A destination assessment can go a long way in identifying Mahabalipuram's hidden gems and how to best conserve and promote them**
- **There is a need to tailor social media marketing strategies to showcase the destinations best colours**
- **Innovative ways of promoting the destination on a platform with wider reach must be developed**

3.6 CONCLUSION

Mamallapuram has been slowly showing signs of getting run down over the last decade with very patchy efforts at keeping the monuments preserved. This has changed in the last few years with the Shore Temple being included in the UNESCO heritage project. The surroundings have been made much nicer, but, there has been a lot of wind and water erosion on the temple carvings with many of them having undergone loss of detail over the years. Efforts need to be taken to assess the damage caused by natural and other causes. Development of a Heritage Conservation framework may be taken up to cater to organized, prioritized and planned conservation of the area.



4 CURRENT STATE OF INFRASTRUCTURE

4.1 INFRASTRUCTURE AND GAP ASSESSMENT

4.1.1 Roads and Connectivity

Highways and Condition of the Roads

Tamil Nadu has a well-established transportation system that connects all parts of the State. There are 28 National Highways in the State, covering a total distance of 5,036 km (3,129 miles). The State has a total road length of 167,000 km. Mahabalipuram is accessed via the East Coast Road (ECR), a 4 lane State expressway which connects Chennai city to Puducherry. Mahabalipuram lies to the east of the expressway at a slight detour from the Puducherry route, approximately 30 kms from the outskirts of the Chennai Corporation limits.

Although ECR is well maintained and serves a smooth drive to visitors, the approach road to the UNESCO World Heritage site of Mahabalipuram calls for attention. The two-way road is characterized by small stores on both sides and is very congested during the weekends and peak season period (October - January).

The destination is not currently universally accessible. Provisions must be made to render the site accessible to all. The area urgently needs to be equipped with street lighting provisions for enhanced safety and smooth entry and exit of tourists. The image below shows the road leading to the heritage site and the issue of unregulated parking in the area.

Way Side Amenities

Tourism infrastructure includes many services deemed necessary to meet the needs of tourists and create enhanced levels of satisfaction during their stay at the destination. The importance of tourism infrastructure is reflected in the fact that it can contribute to increasing the efficiency of production and distribution of tourism services, and, in some cases, such as remote destinations, even increase the supply of tourism services.

Mahabalipuram has numerous hotels and restaurants along the ECR and the beach side. The route to the destination is dotted by necessary way side amenities such as Petrol bunks, departmental stores, eateries and cafes, etc. The existing signage boards are insufficient and need replacement. Additional information as well as direction sign boards are required in order to be able to provide tourists with better guidance to and 'in and around' the destination.

There is however a need to enhance the provision of other tourist amenities such as ATMs, resting plazas, drinking water and public convenience facilities, en-route to Mahabalipuram. The status of the existing physical and social infrastructure supporting tourism activities in the destination is presented in the section below.

The area lacks directional and information signages. Despite being one of the UNESCO world heritage sites of high architectural and historic significance, Mahabalipuram lacks a map to the site entailing information such as location, importance of the monuments, and the route map to walk and explore this tourist hotspot.

The following map shows connectivity and access to the Mahabalipuram UNESCO World Heritage Site.

79

Modes of Transport (Bus / Car / Taxi)

Mahabalipuram is a 1.5-hour drive from Chennai along the East Coast Road (ECR). It is 95 kilometres North of Pondicherry. Local buses, taxis and auto-rickshaws are other options to travel to Mahabalipuram from Chennai. Tamil Nadu Tourism also runs a one- day bus tour from Chennai to Mahabalipuram

Buses

Buses arrive in the centre of the town from either Koyembedu (CMBT), T Nagar or Thiruvanniyur (in Chennai). There are direct buses from CMBT but one can also take any bus that has ECR written on the front, however some of these ECR buses don't go into the town proper. The same buses can also caught from Pondicherry since they usually ply between Chennai and Pondicherry. The Bus stand at Mahabalipuram caters to Tamil Nadu and Pondicherry State transport buses.



Other private bus operators make use of the bus stand as well. The bus stand is

A taxi from Chennai will cost Rs. 600-800 one-way though the rates are likely to be higher based on the season, cab operator. Visitors outside Chennai, even Indian nationals and most definitely from overseas are likely to be asked for higher rates. To or from the airport will cost Rs 800-1,200 and will take one hour off peak and 1 1/2 hours peak time. Please negotiate the cab fares at the beginning of the journey and remain firm if the operator asks for more.

4.1.2 Drinking Water Supply

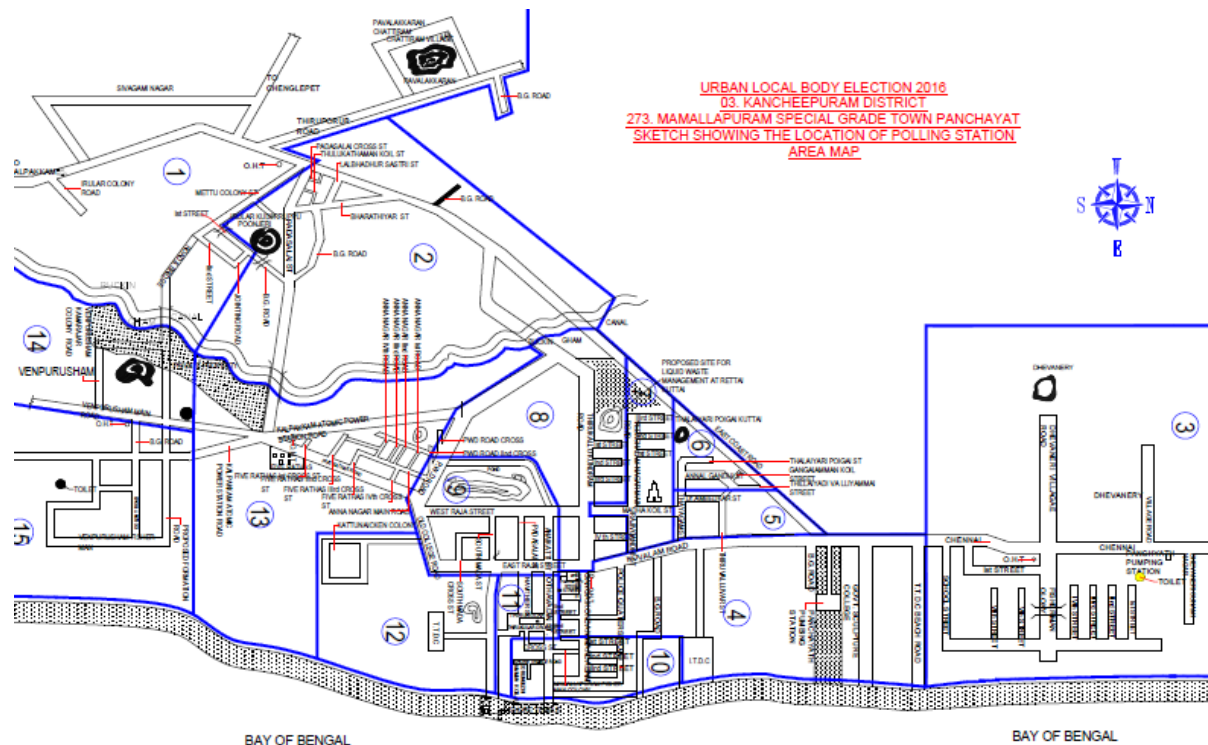


Figure 4-2 Water Supply Network

The source of water supply in Mahabalipuram is ground water and the network is shown on the above map. There is 24 hours water supply in all households. However, due to tourist floating population, there is an occasional scarcity in water supply which is catered to by the Town Panchayat by sending water tankers to the wards / regions where the water supply is scarce. The location of sumps and overhead tanks is also shown on the above map provided by the Town Panchayat.

Gap Assessment

A total of 8 water tanks and 2 OHTs have been installed in the Mahabalipuram area to cater to the town as well as the tourist population. An OHT with capacity of 2 lakh liters is installed near the Pancha Rathas and serves the heritage area. **Although the water supply is sufficient for the current population, water supply for provision of drinking water for tourists is inadequate. The gap assessment and drinking water requirement for tourists and local visitors is presented in section 4.2.5 of the report (Tourist Facilities).**

4.1.3 Solid Waste Management Framework

The Solid Waste Collection System in Mahabalipuram is a well-planned system with most of the waste being treated. The Waste Diversion is at 82% which means that 2% of the waste is diverted from the landfill and treated in a better, more productive way. The total amount of waste generated per day is approximately 6000 kg. This includes:

Type of Waste	Amount Generated per day
Bio Degradable Waste	4000kg
Recyclable Waste	250 kg
Meat Waste	250 kg
Food waste	500 kg
Non-Bio Degradable Waste	1000 kg

The Town Panchayat has a total of 10 vehicles of different types to collect waste from different sources. The following is the system of collection of waste on the Primary, Secondary and Tertiary collection levels:

Primary Collection:

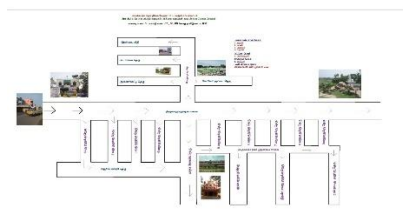
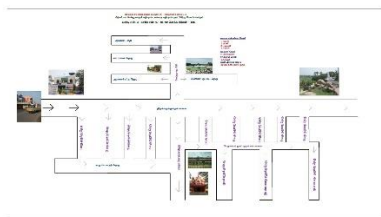
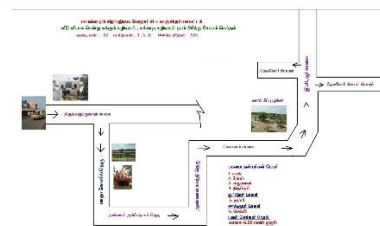
Primary collection of waste in Mahabalipuram includes door-to-door collection of waste that is segregated at source on a daily basis. The Town Panchayat provides every household with different waste bags with different categories of waste every month and collect waste from all 15 wards every day. This waste is collected in primary collection vehicles which have separate bins for each category. There are 7 such vehicles that travel along a particular route collecting waste from each household.



Figure 4-3 Door to door Collection



Figure 4-4 Orienting residents on Waste Segregation at source



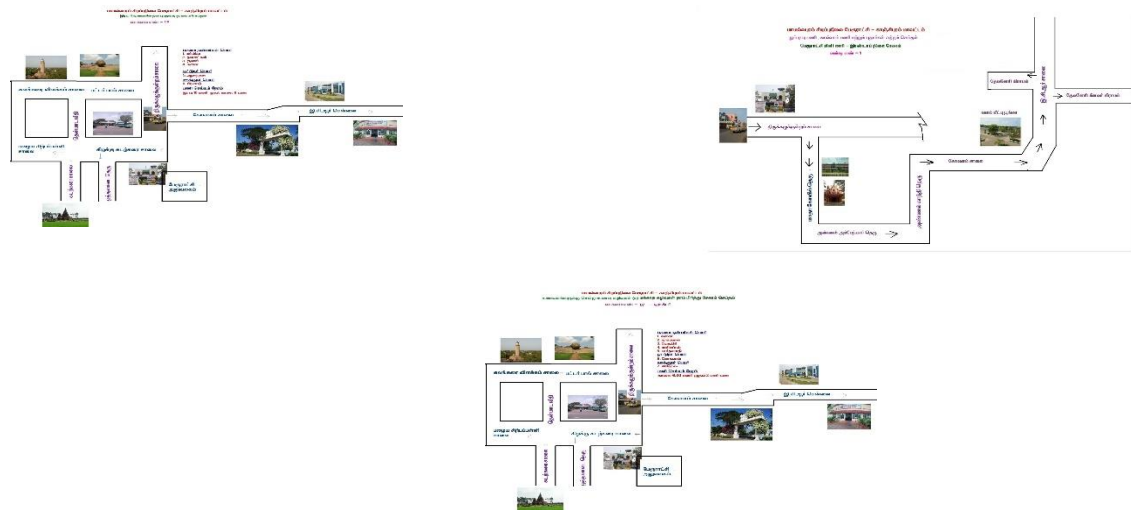


Figure 4-5 Route Map

Secondary Collection:

The waste collected from households is taken to a Resource Recovery Park where each category of waste undergoes treatment. Apart from collecting waste from households, the streets are swept thrice a day and the waste collected from the street is dumped into a collection van which transfers the waste to the Resource Recovery Park where it is segregated into various categories for further processing. A big tractor also collects food waste from every hotel and restaurant, which is also sent to the Resource Recovery Park for further processing. Almost 70% of the waste is segregated at source. The rest includes waste collected from the streets and food waste which is a separate category in itself



Figure 4-6 Sweeping Streets and Collecting Food Waste

Tertiary Collection:

All the waste collected is sent to the Resource Recovery Park where it is segregated and treated on a daily basis. A 100 cu. m. Bio-Gas plant treats 500 kg of food waste every day and a 50 cu. m. Bio-Gas plant treats the meat waste on a daily basis. The capacity of the Bio Gas generator is that it supplies 12.5 KW power and 4.4 KW of it is used to power street lights on the ECR and rest is used to power the resource recovery park.



Figure 4-7 Segregation of Waste



Figure 4-8 Resource Recovery Park



Figure 4-9 Bio Gas Plants

The rest of the food waste, which is not treated in the Bio-Gas plant is composted. The Town Panchayat has 24 Bio Compost Bins and 16 Vermi Compost Bins that generate 80 kg of bio compost and 40 kg of vermi compost per day. The generated compost is used to grow vegetables.



Figure 4-10 Composting



Figure 4-11 Using compost for vegetable farming

All the staff working for the solid waste collection are well trained and the residents, especially children are given awareness about the importance of treatment of solid waste and related aspects.



Figure 4-12 Education and Awareness

Issues and Concerns:

The existing infrastructure is insufficient for floating population that visits Mahabalipuram. For example, during Masimagam, people from nearby towns come to Mahabalipuram and stay for a week to perform religious rituals and for weddings by the sea. They set temporary shelters such as tents and live there over a period of 5 to 7 days. Mobile toilets are set up for them but there is still scarcity in infrastructure facilities. Post this, the area is filled with garbage and it takes the Town Panchayat more than 10 days to clean the area. A detailed gap assessment is carried out to arrive at the requirements for enhanced solid waste disposal facilities for the Tourist area. **As per prescribed standards, Solid waste bins are to be provided at every 50m along the main spine and internal streets of Mahabalipuram. Taking into consideration the existing infrastructure for waste disposal, this translates to a requirement of 40 bins within the tourist area.**

4.2 TOURIST INFRASTRUCTURE ASSESSMENT

This section gives an outline of the major infrastructure that caters to the tourists and visitors that throng Mahabalipuram for its architectural and natural splendor. Each of the infrastructure facilities have been studied with the aim of analyzing the quality and adequacy of the same.

The relevant outcomes of the Tourist surveys and Resident surveys (sample size of 100 respondents) conducted have also been indicated here. Gap assessment has been done of the facilities available at Mahabalipuram on basis of the secondary data collated and the primary survey conducted. The tourist, vendor and residents 'preference survey' was also carried out to determine quality and condition of existing infrastructure facilities at each in order to assess whether the services provided are of satisfactory nature.

4.2.1 Transportation Facilities

4.2.1.1 Buses (public and private operators) -

The bus stand at Mahabalipuram caters to buses operating between Chennai and Pondicherry and vice versa. Tamil Nadu and Pondicherry State transport buses operate from the bus stand in Mahabalipuram. The bus stand also caters to private buses as there is no other place for these vehicles to enter, circulate and turn within the heritage site area.

The consultant has conducted a vehicle count and parking survey in order to assess the situation of traffic on ground and quantify the observed traffic congestion and lack of regulated parking areas within Mahabalipuram. The survey was conducted during a weekend and a weekday to gauge the variation in traffic entry / exit / circulation pattern during peak and non-peak days. The findings and outcomes of the traffic and parking surveys forms section 4.2.13 of the report, further translating to the parking demand assessment and parking area requirement for the tourist site. Listed below are the observations with regard to available modes of transportation within Mahabalipuram:

4.2.1.2 Taxis and intermediate modes of transport (organized operators)

Given the popularity of the destination, Mahabalipuram is thronged by visitors who utilize private taxi services to commute either from Pondicherry or from Chennai. Autos are a common mode of transport as well.

4.2.1.3 Battery Operated Vehicles

Currently, no facilities for battery operated vehicles are provided. The destination presently does not cater to aged persons (lack of safe commutation around the site for aged persons) and is not equipped to manage situations of emergencies.

4.2.1.4 Observations / Issues

The major issues observed are listed below:

- The bus stand is crowded most of the time, with buses finding it difficult to maneuver within the area
- The bus stand is centrally located and contributes to the congestion created at the entry point of the tourist destination
- Unregulated parking of taxis, bikes and autos in the bus stand

- Single entry and exit point for buses, renders the street unsafe for pedestrians and bikers
- Unregulated on-street parking owing to lack of dedicated parking areas for taxis and autos

4.2.1.5 Areas of Improvement

- **There is an urgent need to relocate the bus stand so as to create a safe circulation space for the pedestrians and vehicles**
- **There is also felt a need to create NMT zone with no-go areas for vehicles beyond a point in the heritage site area**

4.2.2 Tourist Information / Interpretation Centre

The existing information booth is in dire need of replacement. There is only one main information center located within the TTDC complex in the vicinity.

4.2.2.1 Observations

The information box / booth is hidden within the TTDC complex and is easy to miss or be overlooked. This hence does not serve its purpose.

4.2.2.2 Potential for Improvement

- For a destination such as Mahabalipuram that caters to an average of 9,000 (weekdays) to 15,000 visitors a day over weekends, it is imperative to have a tourist interpretation center that caters to the curiosity and travel needs of the visitors.
- **Development of a tourist interpretation center that orients the tourists at or prior to the entry point, giving the tourist information on history and marvel of the UNESCO World Heritage site, the secondary and tertiary tourist activities, etc. is recommended.**
- **Provision of Tourist information kiosks at strategic locations in Mahabalipuram**

4.2.3 Signage Systems

4.2.3.1 Location and visibility

The signage system within and around the heritage site is in need of upgradation. Though there are several signs that indicate the location of the main monuments, the area lacks a good number of directional and information signage systems.

Despite being one of the UNESCO world heritage sites of high architectural and historic significance, Mahabalipuram lacks a map to the site entailing information such as location, importance of the monuments, and the route map to walk and explore this tourist hotspot.

The tourist survey conducted by the consultant reveals that 70 percent of the visitors find it difficult to spot the entry point to the site. 65 percent of the respondents feel that the area needs clearer directional signages that would guide them along the optimum circulation path around the site.

4.2.3.2 Observations and Potential for improvement

- **The existing signage boards are insufficient and needs replacement.**
- **Additional information as well as direction sign boards are required in order to be able to provide tourists with better guidance to and 'in and around' the destination.**
- **An efficient network of Signage systems that are bound to add value to tourism development, are strongly recommended to contribute to enhanced visitor experiences, longer stays and greater tourism activity in the area**

4.2.4 Drinking Water Facilities

4.2.4.1 Location | Type | Number of kiosks / taps

Drinking water taps are provided at ~10 points within the site.

4.2.4.2 Condition of facilities

These currently are not well maintained and will not cater to the peak tourist footfall at Mahabalipuram. State of the art drinking water kiosks is imperative here.

4.2.4.3 Needs Gap assessment and Potential for improvement

It is clear from the Primary surveys and tourist 'preference surveys' that the number and quality of drinking water facilities in Mahabalipuram are inadequate. The visitor head count survey conducted reveals a population of ~15,000 visitors over the weekend and ~9,000 visitors on a weekday. The peak population may be considered as 60% of the total visitors on any given day.

As per the UDPFI guidelines, public spaces of tourist interest or congregation need to be equipped with water facilities @ 500ml per person (considering peak population). This translates to a **minimum water requirement of 4500L per day.**

- Considering the peak hour population of 9,000, the gap assessment carried out indicates that a minimum of 35 number of drinking water taps (in the form of cluster of kiosks / fountains) with RO plant of capacity 2000L/hour at 5 locations are required for provision of quality drinking water in the Mahabalipuram Tourist area.
- The type and placement of the water facility may be finalized on further studies and investigations at the site level.

4.2.5 Public Convenience

4.2.5.1 Location | Type | Number

Studies reveal that **Mahabalipuram currently has 6 toilet blocks** of which 3 are under the ownership of the Mahabalipuram Town Panchayat and 3 are owned and maintained by ASI. The public convenience unit located at the bus stand is under renovation currently and closed for use.

4.2.5.2 Condition

The existing toilets are in need of better maintenance and need to be cleaned more frequently. As in the case of many tourist destinations in India, sanitation is an issue at Mahabalipuram as well.

4.2.5.3 Visibility and Observations

These existing toilet blocks are not easy to locate. The ones maintained by ASI are hidden within the heritage site complex and go unnoticed owing to its location towards the far end of the site. Moreover, the isolated positioning of the toilets renders the facility unsafe for use by women and children.

4.2.5.4 Needs, Gap Assessment and Potential for Improvement

This is one of the most vital amenities. The studies conducted reveal that the existing public convenience units call for immediate renovation and replacement. The quality of toilets and accessibility play an important role in the success of any tourist destination. Public toilet complexes must be designed for easy accessibility by children and the differently-abled. When provided, toilet facilities should be in a suitable location and adequate for the size of the attraction.

It is clear from the Primary surveys (count) and tourist 'preference surveys' that the number and quality of public convenience facilities in Mahabalipuram are inadequate.

- Although a total of 6 public toilet blocks exist, the number of WCs and Urinals provided lack regular maintenance and are insufficient. As per the UDPFI guidelines, public spaces of tourist interest or congregation need to be equipped with public convenience facilities **@ 4 for first 1000 persons and 1 for subsequent 1000 persons**. Considering the maximum population / hour, the assessment for the tourist area of Mahabalipuram reflects a **need for provision of 11 WCs and 13 urinals for men, 12 WCs for women visitors**.
- Safety plays a big role in the utilization of these facilities and measures to strategically locate and render the facility safe must be prioritized at the planning stage

4.2.6 Storage Facilities

4.2.6.1 Location Type and number

There is no provision for storage facilities for the tourists and local visitors.

4.2.6.2 Recommendations

The Lack of cloak rooms and storage facility may be considered a drawback when it comes to the destination and its capacity to attract bag-packers, cyclists, and visitors looking to spend a day at Mahabalipuram. The draft Master Plan will consider the need for provision of storage / locker and cloak room facilities with their strategic locations so as to enhance the sense of safety and ease of travel extended to the tourist.

4.2.7 Rain Shelter and Seating Facilities

The tourist site has approximately 10 benches, spread across the site (2 at the Light House, 2 at the Beach Road, 2 near the Krishna's Butter Ball Monument, 3 At Five Rathas, 1 At West Raja Street, etc.). None of these have canopies and remain un-used by visitors and tourists. Measures need to be taken to provide state-of-the-art canopied seating and rain shelters @every 50m along internal streets to cater to the tourists and visitors spending the day at Mahabalipuram.

4.2.8 Special Facilities for Children, Elderly and Differently-abled Tourists

4.2.8.1 Universal Accessibility

The destination is not currently universally accessible. The destination, owing to its Heritage and Architectural value, is thronged by tourists of all kinds from around the world. Provisions must be made to render the site accessible to all.

4.2.8.2 Potential Areas of Improvement

- **Implementing the concept of 'ACCESSIBLE BY ALL' and rendering the heritage area and the beach BARRIER FREE – the tourist area may be equipped with ramps where necessary, tactile warning surfaces, wheelchair assistance, beach buggies for emergencies, etc.**

4.2.9 Accommodation

4.2.9.1 Type and Number

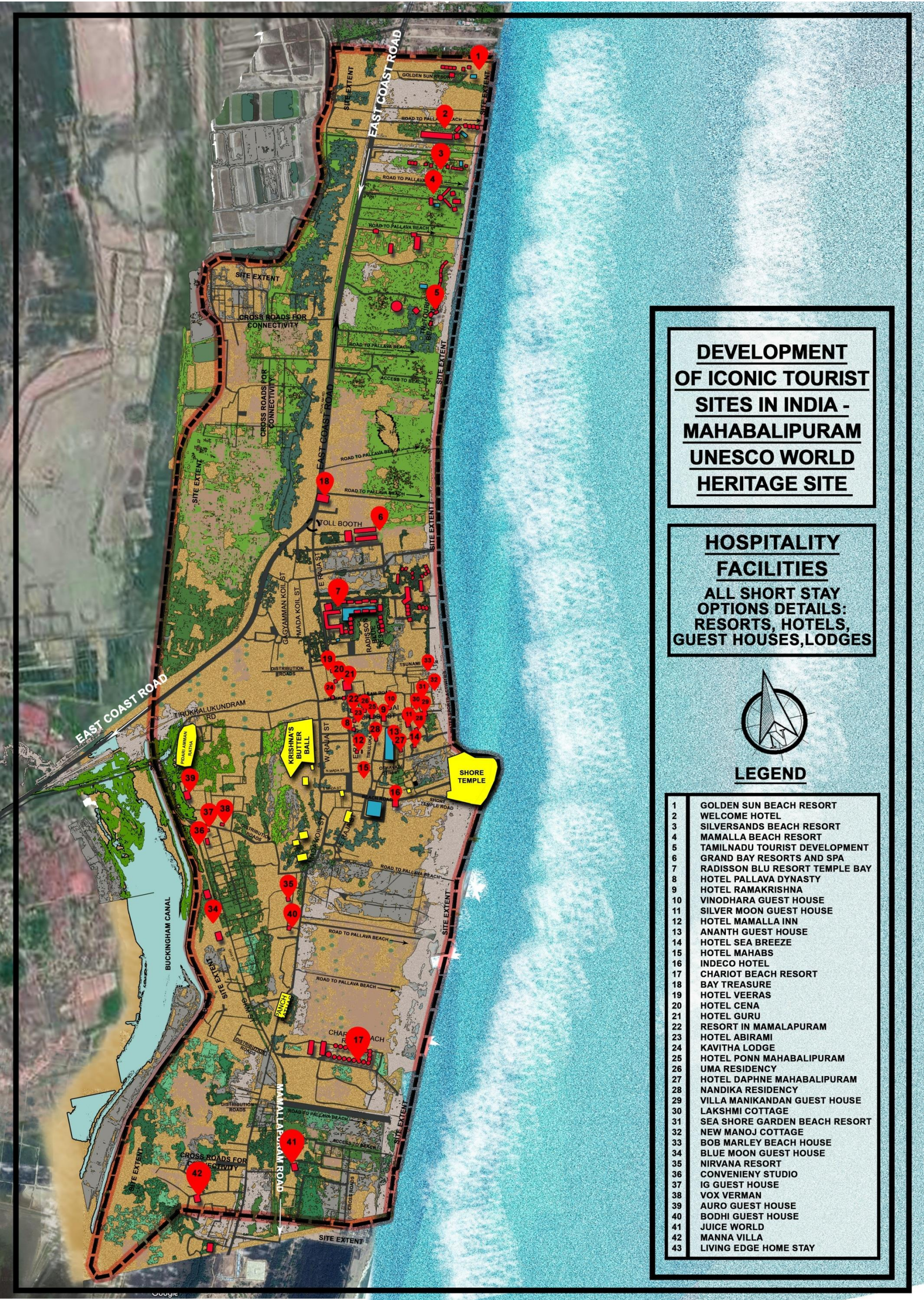
A total of 126 accommodation facilities exists in the Heritage town and surrounding areas of Mahabalipuram. The type of accommodation ranges from • Bed-and-breakfast to Guesthouses and lodges to luxury Hotels.

Of these, 35 hotels are listed as either 2-, 3-, 4- or 5-star hotels. Currently, the tourists have the option of choosing to stay in any of the three 4-star hotels and two 5-star hotels in the vicinity. The surveys conducted reveal that over 82% of the respondents are satisfied with the quality and service of these 3 - 5 start hotels in the area. Map above (map: 4-1) shows the registered accommodation facilities.

4.2.9.2 Potential suggestions for Improvement

The following measures may be taken to enhance the quality and experience of stay of the tourists:

- **Conducting regular training and capacity building programmes for the staff of all the registered hotels so as to bring about a uniform sense of courteous and high standard level of services**
- **The services provided by the 3-star hotels may be assessed and upgraded to include more tourist friendly services**
- **Arrangements are to be made for detailed assessment of the types of accommodation in order to be able to regularize the services and bring them under one umbrella for services such as online booking, etc.**



Map 4-1: Accommodation Facilities and types, Mahabalipuram 2018

4.2.10 Shopping

4.2.10.1 Typology of the Shopping areas around the site

As mentioned in the earlier sections, tourists enjoy their day walking through the street shops of Mahabalipuram. Types of shops include the following:

1. Souvenir shops
2. Craft items / show pieces
3. Pooja items
4. Clothing and accessories
5. Books
6. Toys and General items, Medicines

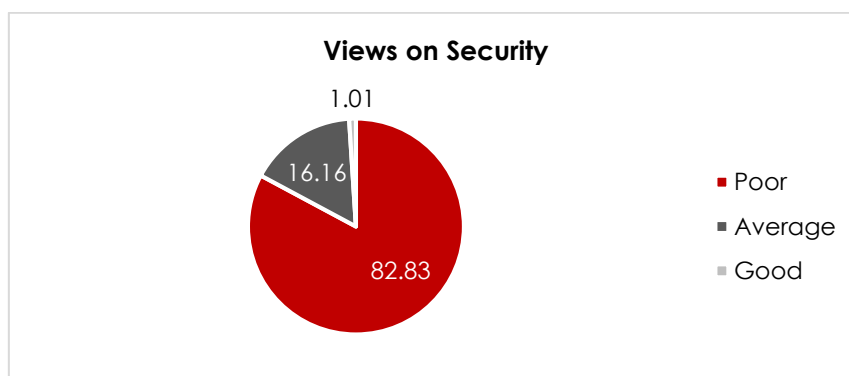
The survey conducted reveals that tourists find the vendors quite pleasant and friendly. The items that are shopped for the most include souvenirs, show pieces, sculptures and art work.

To regularize the vending activities in the tourist area of Mahabalipuram, the Town Panchayat and Mahabalipuram New Town Development Authority have made arrangements for provision of shops/stores ranging from the size of 15 to 18 square meter along the tourist route in the area. **A total of 744 units in the form of these formal shops dot the roads that winds around the tourist area of Mahabalipuram. Of these, 118 units (103 shops near the 5 Rathas which have been given on rent and 15 shops near the shore temple which are also given on rent) are owned by the Mahabalipuram New Town Development Authority (MNTDA).**

4.2.11 Safety and security

More than any other economic activity, the success or failure of a tourist destination depends on it being able to provide a safe and secure environment for visitors. The vendor, tourist and resident surveys strongly reflect the lack of security provisions in the precincts and surrounding areas.

The security in the area is poor, as expressed by 82% of the vendors. The rest of the vendors responded that the security is average. Only 1% of the vendors, which is negligible think that the security is good. When asked about their views on street condition, 86% of the vendors think it is average, while the remaining said the street condition is good.



4.2.11.1 CCTV systems

There are no provisions currently made for installation of CCTV systems within and around the tourist area. Tamil Nadu government has made it mandatory to install Closed Circuit Television (CCTV) cameras in all public places across the State. To enhance the safety and security of people and tourists,

the city should have one camera at every 300 sq m area. **This translates to a requirement of minimum 16 units of CCTV systems within Mahabalipuram Tourist area.**

It is imperative to provide safety and security to the tourists at all times of the day. Installing CCTV cameras at ideal locations in the network of tourist activities would ensure a sense of comfort and safety to visitors, especially women, children and the elderly. Studies need to be taken up to assess the number and type of CCTV systems the site requires for provision of optimum safety and security to the visitors as well as the locals of the area.

4.2.11.2 Police booths and Patrolling

A police booth is located along west Raja Street within the tourist circulation area. One booth however seems insufficient. Provision of more booths along with patrolling of police vehicles will render the tourist town a safer place to visit.

4.2.11.3 Illumination

The Mahabalipuram area is equipped with approximately 928 street lights, of which ~ 60 Street lights are provided along the beach and surrounding areas. There is a lack of lighting facilities around the heritage site and monuments. Interventions that do not interfere with the architecture and heritage of the site are recommended to be installed in the unlit areas to enhance aesthetics as well as the safety of the destination. **The requirement for illumination within Mahabalipuram tourist area forms part of the proposals under Goal 2 of the Proposed Project shelf for the Master Plan.**

4.2.11.4 Medical facilities

The Mahabalipuram Town Panchayat area has 1 number of primary health care center and 3 numbers of Clinics (Allopathy, Homeopathy) catering to the residents of the town. There is also 1 private run clinic in the area.

There is no provision for first aid facilities in the tourist area of Mahabalipuram. This is an important component and a tourist destination that caters to such high numbers of visitors annually (~15,00,000 during 2017-18) must be equipped to handle first aid and emergency medical services. **A minimum of 4 First Aid kiosks, based on identified strategic locations, need to be provided within the core tourist area for enhanced first aid services.**

4.2.11.5 Other arrangements

The coastal nature of the destination calls for other key provisions such as **watch towers** and appointment of **lifeguards** on the beach side for the safety of the visitors as well as the residents who venture onto the sands to enjoy beach related activities. This component of safety does not form part of the tourism infrastructure provided at Mahabalipuram currently.

4.2.12 Presence of Smart Tourism Services and Products

The destination and the services it offers are yet to be supported by interventions such as travel-apps, online booking of transportation and commutation within and around the town, etc. Web-based services include online booking of hotels that have their own websites and cater to tourists who are looking stay over a duration of 2 days at Mahabalipuram.

Smart facilities such as touch-screen kiosks on site that can cater to the needs of the tourist once he/she arrives at Mahabalipuram are absent as well. **There is a need to develop apps including those that facilitate self- guided tours and commute, stay, etc. within Mahabalipuram area.**

4.2.13 Parking Facilities

4.2.13.1 Number and Capacity

Parking lots: Two dedicated parking areas (1 acre parking space near Shore temple and 0.5 acre parking lot near Pancha rathas) have been demarcated for Tourist vehicle parking within the Mahabalipuram tourist area.

On-street parking: On street parking is a common sight at Mahabalipuram. This activity renders the tourist area and circulation paths congested and unsafe for pedestrians.

The traffic and parking surveys reveal that around 15,000 visitors travel to Mahabalipuram for a day trip where their cars and taxis remain parked in various streets around the heritage area while the visitors take a journey around the site and enjoy the beach and the commercial nature of the place. Autos are a common mode of transport as well.

Taxis and autos are usually found parked in the bus stand and the street around the monuments, thereby adding to the congestion on the area. Over weekends four wheelers other than buses are seen parked for a minimum of 5 hours through the day, rendering the area unsafe for pedestrian movement including the shoppers. Detailed survey analysis is presented in the following section of this report.

4.2.13.2 Parking demand and vehicular count - survey findings

Traffic Volume Survey & Parking study is one of the critical factors in estimating the requirement of transportation infrastructure for future planning, project formulation and capital investment estimation. Traffic management measures must be prepared in advance and evaluated, particularly in the case of planned or foreseeable disturbances to traffic caused by road restrictions, demonstrations, disturbances on the public transport system. The following steps are involved in the parking Analysis study

- Conduct Traffic Movement & Parking Surveys
- Estimation of current parking supply and demand
- Future demand forecast and
- Calculation of required parking facility

With the objective of arriving at the vehicular movement and parking requirements, Traffic Volume Survey and Parking Survey was carried out to analyze the number of vehicles plying in Mahabalipuram and assess their parking demand inside the city. The survey was conducted for a span of two days one on a weekend i.e. 2nd September 2018 & on weekday i.e. 3rd September 2018 and the duration of survey was from 7 AM to 8 PM.

The traffic data collected during field surveys is also interpreted and converted into equivalent Passenger Car Units (PCU) to determine the Average Daily Traffic (ADT). The table below depicts lists the adopted PCU equivalent for different vehicle types generally follows recommendations in IRC-64 with some adjustments based on consultant's experience.

Table 4-1: Adopted PCU equivalent for different vehicle type as per IRC 106

Vehicle type	PCU equivalent	
	5%	10% and above
Two-wheeler	0.5	.75
3-Wheeler/ auto rickshaw	1.2	2
Car/ jeep (private/taxi)	1.0	1.0
Standard bus/ deluxe bus	2.2	3.7
LCV	1.4	2.0
Tractor with or without trailer	4.0	5.0

Cycle	0.5	0.75
Cycle rickshaw	1.5	2.0
Animal drawn	1.5	2.0

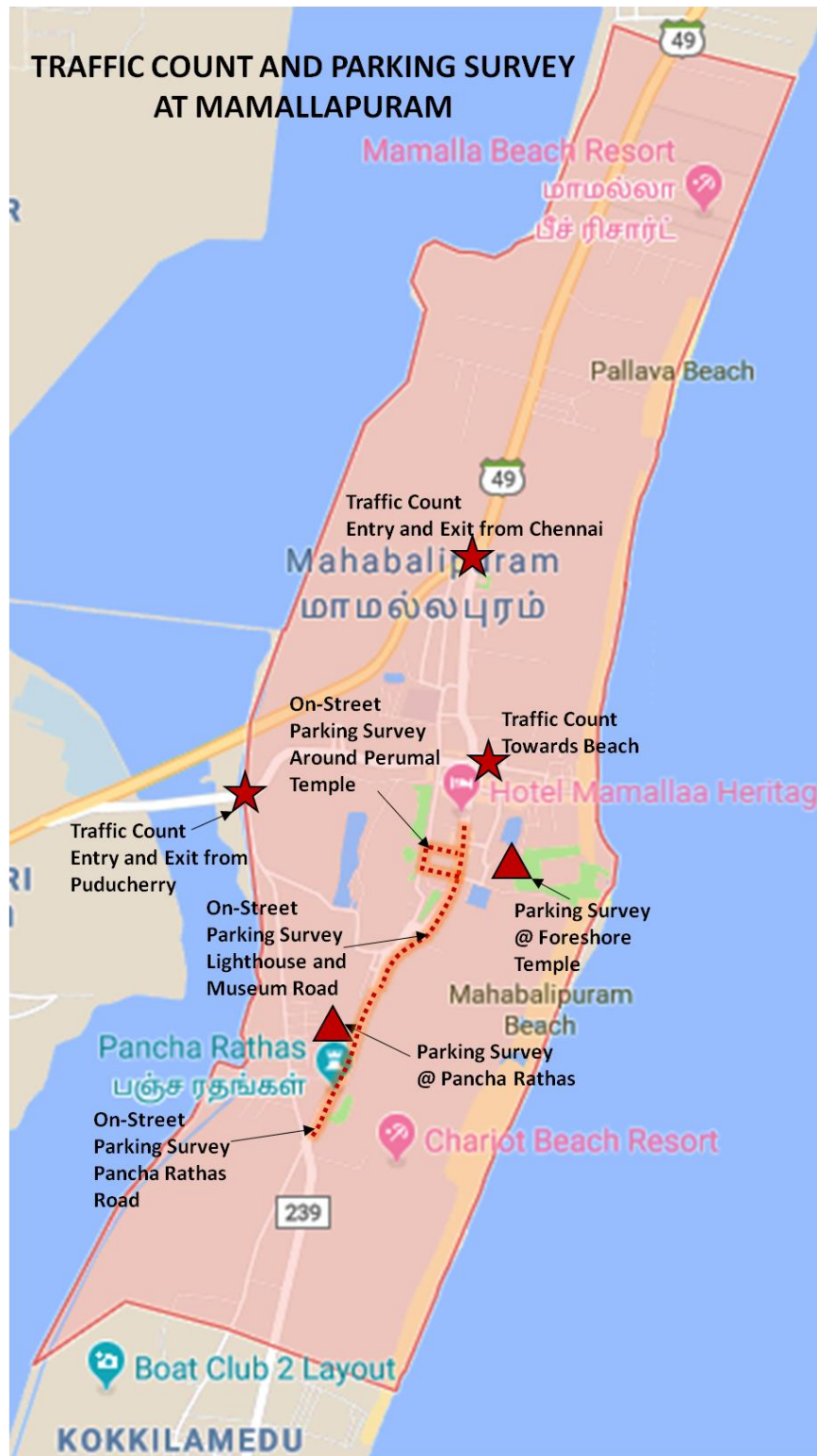
Survey Pictures



Traffic Volume Survey



Survey Location Map



Map 4-2: Map showing Traffic and Parking Survey Positions

4.2.13.3 Traffic Volume Survey

East Raja Street (Chennai – Mahabalipuram Road)

Users commuting from Chennai and other cities located to North and North West of Mahabalipuram including Bengaluru, Mysore, Hyderabad, Vijayawada and other parts of India use entry via East Raja Street predominantly. This is the primary road running across Mahabalipuram connecting all other major roads and tourist destinations in the city. The summary of traffic volume survey entering and exiting Mahabalipuram is as below.

Table 4-2: Survey Data - Vehicles entering via East Raja Street

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	7	122	214	33	376	4	43	141	18	206
8:00AM	9:00AM	9	153	291	52	505	4	27	166	49	246
9:00AM	10:00AM	11	147	312	58	528	4	46	192	52	294
10:00AM	11:00AM	8	138	279	78	503	5	78	132	43	258
11:00AM	12:00AM	6	107	237	73	423	4	64	106	37	211
12:00PM	01:00PM	10	184	298	96	588	3	126	132	51	312
01:00PM	02:00PM	4	132	248	91	475	2	111	162	44	319
02:00PM	03:00PM	7	119	211	72	409	4	78	177	66	325
03:00PM	04:00PM	8	139	252	73	472	3	91	142	40	276
04:00PM	05:00PM	6	147	197	72	422	3	94	146	54	297
05:00PM	06:00PM	11	132	178	80	401	4	66	134	65	269
06:00PM	07:00PM	6	113	142	60	321	3	72	105	49	229
07:00PM	08:00PM	7	52	111	38	208	4	41	71	31	147
Total		100	1685	2970	876	5631	47	937	1806	599	3389

Interpretation – Entry East Raja Street

- Movement of Bikes and cars account for around 52%& 30 % respectively with a deviation of up to 2% on week day and week end.
- Count of Bus on weekend is almost twice that on Weekday as there were additional trips by State Transport Corporation to cater to additional tourist demand and due to movement of higher count of Tourist Buses.
- Other vehicles including Cycle, Auto and Lorry contributes around 15% to 17% of traffic volume on this stretch
- Vehicle count on weekend was higher by more than 1.6 times of vehicle count on a week day.

Table 4-3: Survey Data - Vehicle exiting via East Raja Street

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	4	84	142	68	298	8	44	141	44	237
8:00AM	9:00AM	4	96	161	93	354	13	53	133	65	264

9:00AM	10:00AM	5	114	157	101	377	7	48	122	45	222
10:00AM	11:00AM	6	131	182	80	399	8	53	160	51	272
11:00AM	12:00AM	8	138	262	73	481	3	55	198	67	323
12:00PM	01:00PM	9	148	318	81	556	9	42	275	57	383
01:00PM	02:00PM	5	172	292	68	537	4	56	172	38	270
02:00PM	03:00PM	3	156	231	57	447	3	74	124	48	249
03:00PM	04:00PM	4	178	249	99	530	2	85	163	50	300
04:00PM	05:00PM	3	164	199	52	418	5	84	171	60	320
05:00PM	06:00PM	4	196	227	47	474	4	91	168	50	313
06:00PM	07:00PM	8	269	342	98	717	6	104	214	56	380
07:00PM	08:00PM	7	218	248	106	579	6	116	172	58	352
Total		70	2064	3010	1023	6167	78	905	2213	689	3885

Interpretation – Exit East Raja Street

- Bikes account for around 50% to 56% of vehicle traveling away from Mahabalipuram while Cars account for 33 % on Weekend and 23% on Weekday.
- Other vehicles contribute to 17% & 18% of vehicle movement on weekend and weekday of the week.
- Count of Bike travelling towards and away from Mahabalipuram is similar on weekend while on weekday the count of vehicle travelling towards Chennai is higher by 22%
- Count of Cars travelling away from Mahabalipuram is higher by 22% on Weekend and is similar on a weekday.
- Vehicle plying towards Chennai on weekend is higher by 1.6 than that of weekday

Inference – Entry & Exit East Raja Street

- This road shall isbeing classified as **Sub Arterial Road as per Indian Road Congress 106 – 1990**
- **Maximum PCU (Passenger car Unit)** is observed during **12 Noon to 1.00 PM with 1,026 Nos** and by considering additional seasonal traffic movement of 40%, the expected PCU is less than 1500 Nos. This would require a **Four-lane two-way road**, which shall handle a traffic of up to 2400 PCU with traffic movement on either side.
- The road shall have a **carriageway of 14M**, parking across the road shall be restricted and be provided at exclusive location if required at future and exclusive parking lane shall be provided for bus bay and for movement of other public transportation vehicle including Share Auto, Vans etc.

- The estimated vehicle movement by end of **2038** with an average annual escalation in vehicle count by 5% is around 3800 Nos and would require **Six Lane two-way road** with a carriageway width of **21 M**.

Tirukkalukkundram Road (Pondicherry Mahabalipuram Road)

Users commuting from Pondicherry and other cities located to South and South West of Mahabalipuram including Cuddalore, Chidambaram, Trichy, Thanjavur and other parts of Tamil Nadu would prefer to use entry via Tirukkalukkundram Road. The summary of vehicle count survey entering and exiting Mahabalipuram is as below.

Table 4-4: Survey Data - Vehicles entering via Tirukkalukkundram Road

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	0	25	69	26	120	0	14	42	18	74
8:00AM	9:00AM	1	23	155	44	223	2	13	94	30	139
9:00AM	10:00AM	0	67	102	56	225	0	37	62	38	137
10:00AM	11:00AM	2	94	72	72	240	1	52	44	49	146
11:00AM	12:00AM	3	106	109	95	313	0	59	66	65	190
12:00PM	01:00PM	2	88	107	80	277	0	49	65	55	169
01:00PM	02:00PM	2	94	125	92	313	4	52	76	63	195
02:00PM	03:00PM	0	54	102	66	222	0	30	62	45	137
03:00PM	04:00PM	0	86	97	66	249	0	48	59	45	152
04:00PM	05:00PM	0	54	45	25	124	2	33	27	20	82
05:00PM	06:00PM	0	32	42	12	86	0	23	31	6	60
06:00PM	07:00PM	0	26	34	11	71	0	12	52	16	80
07:00PM	08:00PM	0	32	49	13	94	0	21	34	13	68
Total		10	781	1108	658	2557	9	443	714	463	1629

Interpretation – Entry Tirukkalukkundram Road

- Bikes account for around 43% of vehicle count on weekend and 44% of total vehicle count on weekday
- Cars account for 31% & 27 % on weekend and weekday respectively
- Other vehicles including Cycle, Auto and Lorry contributes around 26% to 28% of traffic volume on this stretch
- Vehicle count on weekend was higher by more than 1.5 times of vehicle count on a week day.

Table 4-5: Survey Data - Vehicles exiting via Tirukkalukkundram Road

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	0	43	67	15	125	0	19	49	10	78
8:00AM	9:00AM	0	48	103	28	179	0	21	76	19	116
9:00AM	10:00AM	0	80	72	59	211	0	35	53	40	128
10:00AM	11:00AM	0	59	31	24	114	0	26	23	16	65
11:00AM	12:00AM	0	96	71	46	213	0	42	52	31	125
12:00PM	01:00PM	0	128	83	52	263	0	56	61	35	152
01:00PM	02:00PM	0	125	73	28	226	0	55	54	19	128
02:00PM	03:00PM	0	62	49	50	161	0	27	36	34	97
03:00PM	04:00PM	0	130	84	50	264	0	57	62	34	153
04:00PM	05:00PM	0	36	64	24	124	0	21	23	22	66
05:00PM	06:00PM	0	49	49	22	120	0	15	31	10	56
06:00PM	07:00PM	0	53	54	19	126	0	11	29	9	49
07:00PM	08:00PM	0	39	39	21	99	0	14	21	16	51
Total		0	948	839	438	2225	0	399	570	295	1264

Interpretation – Exit Tirukkalukkundram Road

- Bikes account for around 38% to 45% of vehicle traveling away from Mahabalipuram while Cars account for 43 % on Weekend and 32% on Weekday.
- Other vehicles contribute to 20% & 23% of vehicle movement on weekend and weekday of the week.
- Count of Bike travelling towards Mahabalipuram is higher on weekend and weekday by 1.3 times.
- Count of Cars travelling away from Mahabalipuram is higher by 21% on Weekend and count of car travelling towards Mahabalipuram is higher by 10 % on weekday.
- Vehicle plying towards and away from Mahabalipuram on weekend is higher by 1.7 than that of weekday

Inference Tirukkalukkundram Road

- This road shall is being classified as **Sub Arterial Road as per Indian Road Congress 106 – 1990**
- Maximum PCU** (Passenger car Unit) is observed during **12 Noon to 1.00 PM** and by **3.00 PM to 4.00 PM** with **526 Nos** and by considering additional seasonal traffic movement of 40%, the expected PCU is less than 750 Nos. This would require a **Two-lane two-way road**, which shall handle a traffic of up to 1200 PCU with traffic movement on either side.
- The road shall have a **carriageway of 7 M to 7.5M**, parking across the road shall be restricted and be provided at exclusive location if required at future and exclusive parking lane shall be

provided for bus bay and for movement of other public transportation vehicle including Share Auto, Vans etc.

- The estimated vehicle movement by end of **2038** with an average annual escalation in vehicle count by 5% is around 1900 Nos and would require **Four Lane two-way road** with a **carriageway width of 14 M.**

4.2.13.4 Parking Survey

Near Five Rathas

Count of vehicle parked in the designated parking area near five Rathas was counted on hourly basis. The summary and inference of same is as below.

Table 4-6: Survey Data - Parking Survey - Five Rathas

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	2	17	15	6	40	0	3	0	0	3
8:00AM	9:00AM	3	21	18	6	48	0	3	2	0	5
9:00AM	10:00AM	2	18	25	7	52	0	4	4	0	8
10:00AM	11:00AM	2	27	27	13	69	0	4	6	4	14
11:00AM	12:00AM	2	31	26	12	71	2	10	15	5	32
12:00PM	01:00PM	2	29	31	8	70	2	10	18	6	36
01:00PM	02:00PM	3	28	35	7	73	4	13	18	0	35
02:00PM	03:00PM	3	34	29	4	70	6	20	28	9	63
03:00PM	04:00PM	3	42	34	10	89	4	13	26	6	49
04:00PM	05:00PM	3	38	41	10	92	3	10	25	10	48
05:00PM	06:00PM	4	31	37	7	79	4	10	18	1	33
06:00PM	07:00PM	3	26	32	1	62	3	8	16	1	28
07:00PM	08:00PM	3	19	21	4	47	3	8	14	1	26
Total		35	361	371	95	862	31	116	190	43	380

Interpretation – Near Five Rathas

- Bikes account for 43% on Weekend and 50% on weekday on total volume on hours of parking
- Total Hours of car parking is 42% on Weekend and 31% on weekday
- Other vehicles are parked for around 11% of total parking duration of all the vehicles being parked
- Highest parking count of vehicle is seen between 4 PM to 5PM on weekend and between 3 PM to 4 PM on Weekday.
- Parking hours during weekend is higher by 2.2 times that the parking hours of weekday

Inference – Near Five Ratha

- **Current Peak parking demand is found to be 78 ECS** including 4 Buses, 42 Cars and around 40 Bikes
- **Parking demand is estimated at 206 ECS** comprising 11 Buses, 111 Cars including 105 Nos of bike by 2038
- Separate parking lot shall be provided with 16 No of slots for auto and Van individually

Beach Parking

Parking survey was carried out in Government designated parking lot near Mahabalipuram beach. The summary of the survey and the inferences are as below.

Table 4-7: Survey Data - Parking Survey - Beach

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	3	19	96	0	118	1	11	42	2	56
8:00AM	9:00AM	4	24	155	2	185	1	22	74	4	101
9:00AM	10:00AM	4	28	212	2	246	1	36	81	3	121
10:00AM	11:00AM	4	34	234	4	276	3	32	131	5	171
11:00AM	12:00AM	3	38	257	4	302	3	31	114	5	153
12:00PM	01:00PM	3	31	286	4	324	3	34	122	8	167
01:00PM	02:00PM	3	24	301	4	332	2	37	102	8	149
02:00PM	03:00PM	2	22	316	5	345	3	31	86	11	131
03:00PM	04:00PM	2	36	329	4	371	2	36	91	11	140
04:00PM	05:00PM	2	42	336	3	383	3	39	112	16	170
05:00PM	06:00PM	1	30	312	3	346	2	46	72	13	133
06:00PM	07:00PM	1	34	254	2	291	2	41	66	9	118
07:00PM	08:00PM	1	31	209	2	243	2	36	41	8	87
Total		33	393	3297	39	3762	28	432	1134	103	1697

Interpretation – Near Beach

- Bikes account for 88% on Weekend and 67% on weekday on total volume on hours of parking
- Total Hours of car parking is 10% on Weekend and 25% on weekday
- Other vehicle are parked for less than 7% of total parking duration of all the vehicles being parked
- Highest parking count of vehicle is seen between 4 PM to 5PM on weekend and between 10 AM to 11 AM on Weekday.
- Parking hours during weekend is higher by 2.2 times that the parking hours of weekday

Inference – Near Beach

- **Current Peak parking demand is found to be 130 ECS** including 4 Buses, 42 Cars and around 335 Bikes

- **Parking demand is estimated at 344 ECS** comprising 11 Buses, 111 Cars including 890 Nos of bike by 2038
- Separate parking lot shall be provided with 8 No of slots for auto and with 5 Nos of Van individually

Parking around Perumal Koil

Though there is a notified parking area, majority of the vehicles are being parked around the temple by encroaching the road in this stretch. The summary of on road parking along with inferences is as below.

Table 4-8: Survey Data - Parking Survey - Perumal Koil

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	24	39	61	20	144	13	3	61	9	86
8:00AM	9:00AM	21	45	52	30	148	6	3	33	10	52
9:00AM	10:00AM	17	32	62	38	149	12	16	52	16	96
10:00AM	11:00AM	15	37	69	37	158	7	16	33	15	71
11:00AM	12:00AM	28	48	65	30	171	7	12	28	12	59
12:00PM	01:00PM	39	44	68	27	178	11	23	32	18	84
01:00PM	02:00PM	24	39	60	29	152	8	21	36	20	85
02:00PM	03:00PM	17	37	43	24	121	9	18	32	25	84
03:00PM	04:00PM	21	38	62	28	149	11	23	34	18	86
04:00PM	05:00PM	16	41	64	31	152	12	22	28	22	84
05:00PM	06:00PM	18	57	58	23	156	10	27	39	24	100
06:00PM	07:00PM	21	41	47	28	137	8	17	47	20	92
07:00PM	08:00PM	19	28	32	16	95	6	9	41	13	69
Total		280	526	743	361	1910	120	210	496	222	1048

Interpretation – Parking around Perumal Koil

- Bikes account for 39% on Weekend and 47% on weekday on total volume on hours of parking
- Total Hours of car parking is 28% on Weekend and 20% on weekday
- Other vehicles are parked for less than 21% of total parking duration of all the vehicles being parked
- Highest parking count of vehicle is seen between 12 Noon to 1 PM on weekend and between 5 PM to 6 PM on Weekday.
- Parking hours during weekend is higher by 1.8 times that the parking hours of weekday

Inference – Parking around Perumal Koil

- **Current Peak parking demand is found to be 252 ECS** including 39 Buses, 57 Cars and around 70 Bikes

- **Parking demand is estimated around 668 ECS** comprising 103 Buses, 151 Cars including 185 Nos of bike by 2038
- Separate parking lot shall be provided with 75 No of slots for auto and with 19 Nos of Van individually

Parking near Light House

Majority of the vehicles are being parked around the Light House by encroaching the road in this stretch. The summary of on road parking along with inferences is as below.

Table 4-9: Survey Data - Parking Survey - Light House

Time		Weekend					Weekday				
From	To	Bus	Car	Bike	Others	Total	Bus	Car	Bike	Others	Total
7:00AM	8:00AM	4	6	21	13	44	2	4	3	5	14
8:00AM	9:00AM	3	9	34	21	67	1	7	5	5	18
9:00AM	10:00AM	2	14	36	21	73	0	6	11	3	20
10:00AM	11:00AM	5	11	31	16	63	0	12	7	5	24
11:00AM	12:00AM	16	26	66	57	165	0	8	6	3	17
12:00PM	01:00PM	15	51	76	73	215	0	11	8	6	25
01:00PM	02:00PM	18	76	67	96	257	0	12	16	3	31
02:00PM	03:00PM	19	91	93	55	258	0	9	12	4	25
03:00PM	04:00PM	24	78	96	61	259	0	7	14	6	27
04:00PM	05:00PM	29	69	64	34	196	0	7	22	13	42
05:00PM	06:00PM	13	103	59	37	212	0	6	14	9	29
06:00PM	07:00PM	17	114	85	35	251	0	2	7	7	16
07:00PM	08:00PM	14	58	42	17	131	0	3	9	9	21
Total		179	706	770	536	2191	3	94	134	78	309

Interpretation – Light House

- Bikes account for 35% on Weekend and 43% on weekday on total volume on hours of parking
- Total Hours of car parking is 32% on Weekend and 30% on weekday
- Other vehicles are parked for less than 25% of total parking duration of all the vehicles being parked
- Highest parking count of vehicle is seen between 3 PM to 4 PM on weekend and between 4 PM to 5 PM on Weekday.
- Parking hours during weekend is higher by 7 times that the parking hours of weekday

Inference – Light House

- **Current Peak parking demand is found to be 328 ECS including** 29 Buses, 114 Cars and around 100 Bikes
- **Parking demand is estimated at 870 ECS** comprising 77 Buses, 302 Cars and by including 250 Nos of bike by 2038

- Separate parking lot shall be provided with 200 No of slots for auto and with 62 Nos of Van individually as per demand analyzed by 2038.

4.2.13.5 Summary – Traffic Volume Survey and Parking Study

The summary of traffic volume count of vehicles plying towards and away from Mahabalipuram and the number of vehicles being parked in designated parking area and on road parking is as below

Current Demand (ECS)								
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	16	42	6	8	6	-	-	78
Beach Parking	16	42	2	67	3	-	-	130
Perumal Koil Parking	152	57	17	14	11	-	1	252
Light House Parking	113	114	46	19	35	-	1	328
Total	297	255	71	108	55	-	2	788

Current Demand (ECS) incl. seasonal variation								
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	25	65	9	12	9	-	-	120
Beach Parking	25	65	3	103	5	-	-	201
Perumal Koil Parking	235	88	26	22	17	-	2	390
Light House Parking	174	176	71	29	54	-	2	506
Total	459	394	109	166	85	-	4	1,217

Projected Demand (ECS - 2038 @ CAGR of 5% incl seasonal variation)								
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	65	172	25	33	25	-	-	320
Beach Parking	65	172	8	274	12	-	-	531
Perumal Koil Parking	622	233	70	57	45	-	4	1,031
Light House Parking	463	467	188	78	143	-	4	1,343
Total	1,215	1,044	291	442	225	-	8	3,225

Parking Space Requirement by 2018 incl. seasonal variation

(Sq.
Ft)

Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	5,000	13,000	1,800	2,400	1,800	-	-	24,000
Beach Parking	5,000	13,000	600	20,600	1,000	-	-	40,200
Perumal Koil Parking	47,000	17,600	5,200	4,400	3,400	-	400	78,000
Light House Parking	34,800	35,200	14,200	5,800	10,800	-	400	1,01,200
Total	91,800	78,800	21,800	33,200	17,000	-	800	2,43,400

Parking Space Requirement by 2038 with CAGR of 5% of Vehicle Growth incl. seasonal variation								(Sq. Ft)
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	13,000	34,400	5,000	6,600	5,000	-	-	64,000
Beach Parking	13,000	34,400	1,600	54,800	2,400	-	-	1,06,200
Perumal Koil Parking	1,24,400	46,600	14,000	11,400	9,000	-	800	2,06,200
Light House Parking	92,600	93,400	37,600	15,600	28,600	-	800	2,68,600
Total	2,43,000	2,08,800	58,200	88,400	45,000	-	1,600	6,45,000

The outcomes of the surveys will be used further to develop the proposals for parking in Mahabalipuram

4.2.13.6 Observations and Issues

The major issues observed are listed below:

- Unregulated parking of taxis, bikes and autos in the bus stand
- Unregulated and haphazard on-street parking owing to lack of dedicated parking areas for taxis and autos
- Streets and tourist circulation areas rendered unsafe for smooth pedestrian flow
- Heavy congestion in the core tourist site
- The fare for taxis and autos in the area are unregulated, and tourists are hassled by the taxi and auto operators

4.2.13.7 Areas of Improvement

- **There is a need to create parking facilities for ECS of approximately 2100 vehicles excluding buses (with provision for 2W parking and 4W parking space including autos and taxis and excluding buses, as per primary survey conducted) since the two available parking areas (at Shore Temple and the Panch Rathas) are inadequate and the on-street parking is difficult to regulate and monitor. Parking area for an**

approximate ECS of 1215 is required for parking of buses that ply and service Mahabalipuram area.

- **There is also felt a need to create NMT zone with no-go areas for vehicles beyond a point in the heritage site area**
- **Fee for parking to be regulated and monitored to enhance the quality of parking facilities**
- **Development of Multi-level / ground level parking facilities in and around Mahabalipuram to cater to the parking demand of the tourist site**

4.3 CONCLUSION

In order to develop Mahabalipuram as a Sustainable Tourist Destination, it is imperative that the Vision and Goals developed take into consideration the positive as well as the negative impacts of Tourism on Mahabalipuram and its natives and vice versa to an extent. The strategy for development must revolve around a holistic approach that will ensure inclusive growth that will further benefit the residents, tourists, the environment and the economy of the area.



5 PHYSICAL ASSESSMENT OF SITE

5.1 ACCESS AND SENSE OF ARRIVAL

The group of monuments have a distinct identity on the world map. It has gained more popularity after being declared as a world heritage site. The heritage site has the capacity to take a visitor back to an era of Architectural Marvel and mystery. For a tourist spot of such high acclaim, it lacks the visibility in term of a clear entry point. Site studied indicate the absence of billboards/ information boards that lead the tourists and keep the excitement of the visit.

As we approach the site from Chennai, one comes across a toll booth on the highway which lacks infrastructure such as a maintained toll booth, digital ticketing, receipts etc.

The site has 29 monuments & sculptures that visitors are unaware of throughout their visit. This can be attributed to the absence of informative maps and signages depicting the locations of these attractions. The circulation path to these attractions is also undefined so the visitors are not guided properly.

Sense of Arrival- all the above factors prove as a dampener to the visitor. Thus, the site calls for an immediate attention and steps need to be taken to improve their first impression of the site as regards visitor's perspective.

5.1.1 Access path

- The two-main entries to Mahabalipuram town are from the north through East coast road and from the West through Tirukalukkundram Road.
- Both the entry has a naïve sense of arrival.
- Temporary thatched roof shacks are installed for entry fee collection for all the tourist Vehicles. The charges are 125 for buses, 100 for vans, 75 for cars and 15 for motor bikes.
- An Auto stand is present only at the north entry, in proximity to the ECR Malappuram bus stand.
- High mast directional signage is provided near both the entry to aid the vehicular traffic, however the local town maps catering to the pedestrians is provided only at the north entry and found to be in dilapidated condition.

5.1.2 Character of the main access – width, walkability, accessible design, (vendors, encroachment)

- East Raja street is the town's main street running north to south facilitating the connectivity to various monuments, public amenities and government offices.
- The ROW is ~12m with ~6m wide carriage way.
- Road shoulders and other traffic calming and safety features are limited.
- The main town bus stand of Mahabalipuram is in the heart of the town equidistant from most of the monuments.
- West raja street runs Parallel to E. Raja Street, the entire hillock monuments are accessed through this street. The street has issues similar to E. Raja St., Additionally the ROW is uneven creating bottlenecks.



Character of the E. Raja Street



Character of the E. Raja Street



E. Raja Street during late evening



Town bus stop at night



Character of the W. Raja Street



Image 5-1: Entry to Mahabalipuram town from ECR (From North)



Image 5-2: Entry to Mahabalipuram town from Thirukalukundram Road (From west)



Image 5-3: Town Panchayat map near the entry

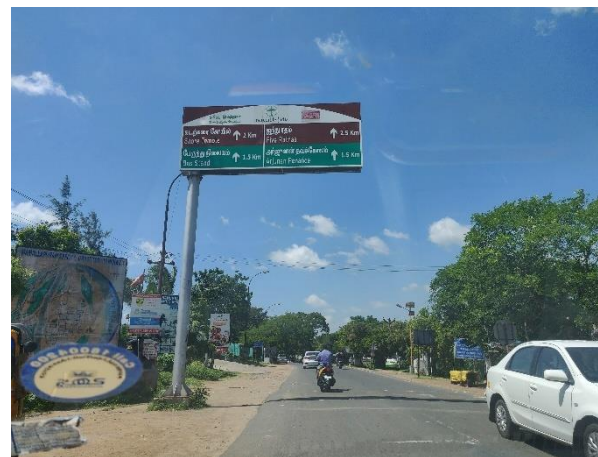


Image 5-4: High mast directional signage

5.1.3 Sidewalks and Road Side Character

- Paved sidewalks are absent. Parking, roadside vendors and spill out of retail shops are a common scenario along the residual space next to the carriage way.
- The issue of walkability persists due to lack of dedicated walking space for the pedestrians, thus they are forced to share the carriage way along with speeding vehicles.
- Street lights are inadequate and not functioning in certain main access roads. The ambient lights from the retail outlets lights up the street.



Retail spillover on footpath in shore temple road



Character of Othvada Street at night



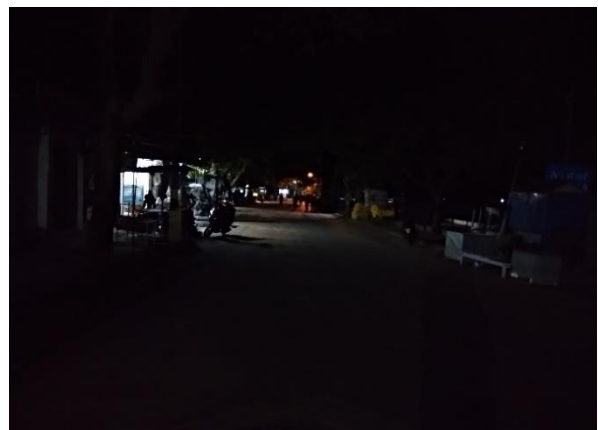
Encroachment of sidewalk in front of busstop



Retail spillover on footpath in E.Raja Street



Character of Shore temple road during day



Character of Shore temple road during Night



Character of East raja street

5.1.4 Entrance plaza – presence, character and amenities

- Entry plaza is provided for two monuments, shore temple and Pancha Rathas.
- The area outside the plaza is not well integrated. Thus, the character outside and within the plaza differs significantly. Moreover, the entry and exit points moderated by ASI are narrow unsafe during the times of peak footfall.
- Amenities such as parking, toilets and retail shops are present in the percent. However, the amenities are inadequate and the mismanagement of parking causes chaos around the entry of the plazas.



Entry to the shore temple plaza



Shore temple axis from the plaza



Handicrafts Shopping Zone around 5 ratha's plaza



Entry plaza around Pancha Rathas



Access street to beach on the north



Entry to the north beach

5.2 MOVEMENT AND CIRCULATION PATTERNS

5.2.1 Pedestrian Movement

- Paving and steps are limited to certain paths within the monument complex. Other areas are accessed through natural trails.
- Access to monuments is controlled by ASI and are available to visit between 6am to 6pm. There is no facility to visit the monuments at night, even though there is infrastructure for lighting provided for certain monuments.
- The precinct around the monuments are decently maintained by ASI, however signages are inadequate and information panels are missing for few monuments.



Pathways and trails within hillock monuments



Absence of a defined Pathways near Valiyan & Pidari Radham monument



Undefined trails leading to monuments within hillock complex



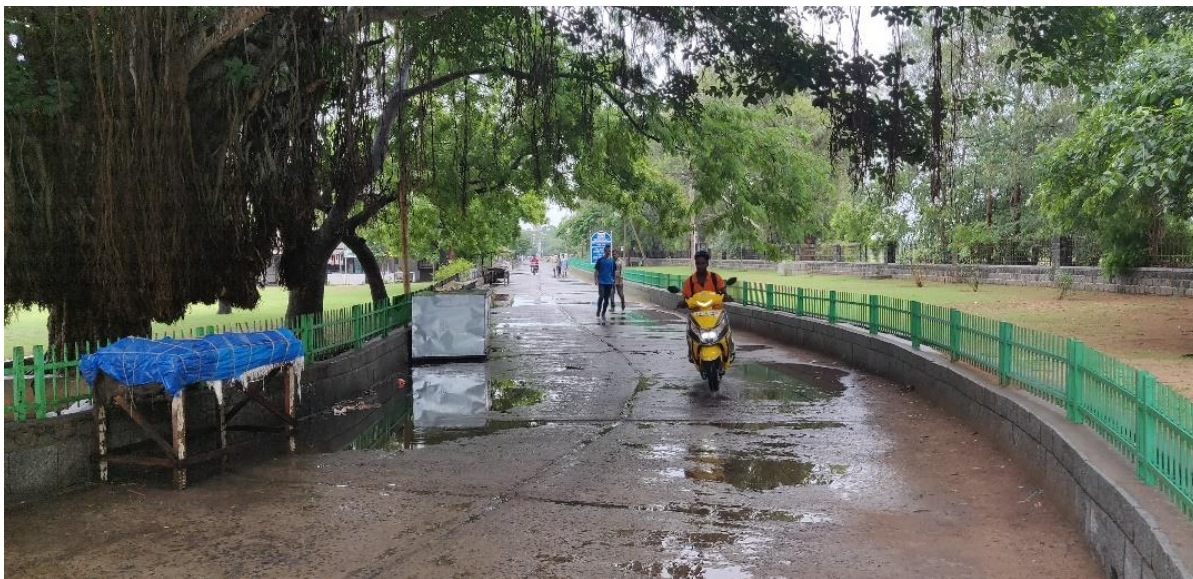
Lack of adequate signages for clear & efficient navigation

5.2.2 Circulation paths

- The ROW is inefficiently used at places thus creating narrow lanes in which both the pedestrians and vehicles are forced to navigate.
- Since the auto stands are located near the bus stops, transportation between one monument complex to other becomes a problem to the visitors.



Narrow lanes near Pancha Rathas



Shared pedestrian and vehicular street



Encroachment of lanes by hawkers near Pancha Rathas

5.3 CONGREGATIONAL SPACES

- The town Bus stop is one of the main congregation spaces with heritage structures on either side. The town bus stop precinct functions as a town square with temples monuments, retail shops, auto taxi stands in the vicinity.
- There are two Temple tanks at the heart of the town one is the large Vishnu tank, accessible throughout the year and open to public, it is accessed through shore temple road. The other temple smaller temple tank falls on the axis of Perumal temple and is accessed through Thirukula street, the public access to this tank is limited to few days in a year during rituals.
- The important festive rituals associated with the Perumal temple and the tanks are Masi Magam Theppa Utsavam which usually falls during the month of February and Vaikunta Ekadasi which happens during the month of December- January. To handle the huge footfalls during the time of festive rituals, the town Bus stop is made defunct and the ECR bus stop is used for public transportation, this causes inconvenience to the residents and employees who are dependent upon public transportation.
- Community water tank known as Kuranaadu Kuttai is located between the residential society. The tank has a poor edge condition, currently desilting of the tank is under progress.
- The West Raja street has varying road with hence causing bottle neck near Arjuna's penance.
- Krishna's butter ball attracts large number of visitors thus causing the issue of chaotic on-street parking and nuisance to the vehicular traffic in access road.



Mixed activities near bus stand



Poor condition of the community lake



Small Temple tank



Bigger Vishnu temple tank



Uneven ROW and roadwidths causing bottlenecks

5.4 CONDITION OF HERITAGE STRUCTURES AND NATURAL ENVIRONMENT

Condition assessment of Heritage structure and its precinct

Mukunda Nayanar temple complex—The temple complex is located near the entry of the town and it goes often unnoticed by the visitors since there is no defined access of plaza. The complex is found closed/locked most of the time. Routine maintenance is done by ASI.

Hillock monuments complex- The unpicketed complex has numerous small and large monuments. Pathways, wayfinding and amenities needs to be improved to aid the visitors.

Pancha Rathas— A common ticket is needed for Pancha Ratha and Shore temple complex. The complex is well maintained with parking and amenities in precinct. The entry plaza and the issue of on-street parking needs to be worked upon for the better experience of the space.

Shore Temple— The entry plaza and crowd management need to be improved for better experience and usage of the space. The complex within the limits of ASI is well maintained. The open space around the complex can be developed to accommodate better amenities catering to the visitors.

Other ASI monuments— There are around 39 monuments in and around Mahabalipuram as listed by ASI but only a few of them get highlighted to the tourist. The other monuments should also be integrated and showcased in a beater manner to the visitors.

Valain Kuttai, Pidari ratha complex - There is No defined entry plaza for Valain kuttai, Pidari ratha complex and Mukunda Nayanar Temple complex. Thus, the tourists are unaware about these monuments goes unnoticed during their visit.

Lighthouse, Maritime & Heritage museum complex- These monuments are seamlessly integrated with the hillock monuments, however facilities such as combined ticket, paved trails & signages need to be provided for the aid for the tourist.



Mukunda nayanar temple complex being locked and inaccessible



Shore temple Complex



Hilllock monument complex



Heritage & Maritime Museum complex



Panchratha complex



Valain kuttai, Pidari ratha complex

5.4.1 Issues, Gaps and Potential for Improvement

- Safety and security need to improve upon – Coast guards, Lighting, Security posts, CCTV cameras, fire station, first aid clinics, etc.
- Walkability - Pavements, traffic calming strategies, traffic management strategy
- Wayfinding - Signages, Pedestrian road markings, Defining walkable routes (heritage, food etc.)
- Convenience – The process of single ticket system for the entire complex, Multi lingual guides, Audio guides, Multi lingual guidebooks, Virtual tours etc.
- Amenities – Parking, toilets, Safe drinking water, Feeder system, battery operated cars, etc.
- Traffic management – Controlling the tourist vehicles during the peak traffic surge, providing alternative internal transport system.
- Quality recreation and open space for the locals need to be developed.
- Development of Children play area could be provided in parks and lawns next to heritage structures

Potential for Improvement

- Local community could be involved more for various tourist-based activities.

- Tourist circuits – Integrating and showcasing the other tourist spots (Muthukaadu, crocodile park, Tiger caves etc.) nearby through suitable transportation strategy.
- Heritage walks – Involving local guides for efficient heritage walk.
- Cycle tours – safe cycling paths, developing upon the existing cycle tours.
- Streamline of entry tickets – One entry ticket
- Vista points to be developed- Directional signages can be installed on vista points. k
- Night tourism, dedicated night heritage walks, night view from lighthouse can be organized.
- The branding and showcasing of Mahabalipuram should be done with a perspective of a heritage town. Thus, the town and the upcoming developments in the precinct could benefit out of it.
- Building upon the upcoming MICE facilities to make Mahabalipuram as a significant MICE destination in the map of Tamil Nadu.
- Local resources can be harnessed to develop water-based activities, lifeguards etc.
- Development of additional tourist attraction nearby can boost the overall tourist potential of the Mahabalipuram.
- Limitation for the usage of plastics bags and other plastic products needs to be introduced to curb the menace of littering and sea debris.

5.5 CARRYING CAPACITY

Assessment of tourism carrying capacity is essential to regulate and manage the visitors. The uncontrolled tourism activity is a major concern for the authorities to manage the destinations. In the recent past, the world has faced many miss-happening at a crowded tourist sites. The appeal of the concept of carrying capacity as a paradigm for addressing and limiting the amount of tourism development and use at a destination has clearly emerged, leading the call to establish carrying capacities in terms of specific numbers of tourists over a specified time period. Various tourism-related factors can be identified to have impact on resources, among which the number of tourists would be the most important one.

Increased interests in sustainability of tourism development have triggered expanding concerns about carrying capacity of both tourism destinations and protected areas, which can be called recreational carrying capacity, TCC, or simply carrying capacity. Mathieson and Wall (1982) defined TCC, in terms of the environmental and experiential impacts of tourism at a particular location, namely as **“the maximum number of people who can use a recreational environment without an unacceptable decline in the quality of the recreational experience.”** WTO/UNEP (1992) defined carrying capacity as **“the level of visitor use an area can accommodate with high level of satisfaction for visitors and few impacts on resources”**.

5.5.1 Objective

To estimate the maximum capacity a visitor site can receive without compromising its heritage integrity or visitors’ experiences.

5.5.2 Quantifiable Outcomes

- **Maximum number of visitors that the destination can accommodate, without negative impact on the visitors, heritage, environment and visual attractiveness of the tourist spot**

5.5.3 Assessment Of Physical Carrying Capacity

If the carrying capacity of Mahabalipuram is determined by the maximum number of visitor's presence at one point of time, it can help in management of the crowd during important events and festivals.

The study area is divided into different zones based upon its use or activity and quantum of tourists. For convenience sake, we have divided the study area into 5 zones as described in the table below.

The area considered for the estimation is taken by measurements on field and by demarcation of each zone. The assessment of head counts has also been undertaken to estimate the no. of visitors which can be easily accommodated in a given space at any given interval of time. We have conducted the study into different time zones during the day such as peak and non- peak hours.

To evaluate the physical carrying capacity of those zones which are used by visitors on different occasions, formulae applied by IUCN as mentioned in methodology below is adopted for each zone separately. Accordingly, physical carrying capacity is calculated for different zones as mentioned in the table below. The estimation is done in terms of unit of 'persons/day' respectively (shown in table below).

In turn, **the average number of pilgrims that Mahabalipuram Group of Monuments can physically accommodate and manage is estimated at about 19,53,785 persons per day.** The zone wise details are given in the table below.

5.5.4 Zoning of Precinct As Per Usage Of Space And Related Details For Estimation Of Carrying Capacity

Table 5-1: Zoning and average time required

Zone	Description	Area (sq. m)	Time Spent (hours)
		A	t
1	Beach	26000	3
2	Othavadai Street	2200	1
3	5 Rathas (Complex including Parking)	25600	2
4	Shore Temple Complex	38670	2
5	Arjuna's Penance & Krishna's Butter Ball group of Monuments	129440	2

Assuming that the site is open for visitors on an average for approx. 10 hours (T) every day from morning to evening. We calculate the rotation factor with the formula as under, for each of the zones.

Rotation Factor $R_f = T/t$

5.5.5 Calculation Of Physical Carrying Capacity

Calculation of Physical Carrying Capacity (PCC) of the destination as prescribed by the International Union of Conservation of Nature and Natural Resources (IUCN)

$$\text{Formula: PCC} = A \times U/a \times R_f$$

- Where: A = available area for public use
- U/a = area required per user
- Rf = rotation factor (open time/ avg. time spent)

Area suitable for tourism (A): A is determined by particular conditions of the considered area. In any conservation area, the available area can be estimated from the total area where tourists can move.

Appropriate space for displacement of tourists (U/a): The area needed for a tourist who can undertake activities comfortably.

Rotation factor (Rf): It is the number of permissible visits over a specified time (Usually calculated by daily open hours) and calculated through dividing the amount time usable in day for visitors on the mean time of a visit.

A is determined by particular conditions of the considered area. The tourist density or the area required per tourist U/a is the area needed for a tourist who can undertake activities comfortably. Rotation factor is the number of permissible visits over a specified time (usually calculated by daily open hours) and expressed by: $R_f = \text{Open period} / \text{average time of visit}$

Table 5-2 Carrying Capacity Estimation

Zone	Description	Area (sq. m)	Time Spent (hours)	Rf	Average Space per person (sq. m)	Usage	Carrying Capacity
		A	t	10/t	a		$A \times R_f \times U/a$
1	Beach	26000	3	3.33	2.5	Recreation	34667
2	Othavadai Street	2200	1	10	2	Commercial	11000
3	5 Rathas (Complex including Parking)	25600	2	5	2	Mixed	64000
4	Shore Temple Complex	38670	2	5	5	Mixed	38670
5	Arjuna's Penance & Krishna's Butter Ball group of Monuments	129440	2	5	5	Mixed	129440

- Where U/a is average area required for each person
- Rf is open time/ time spent by visitors

The above calculations reflect the following:

- **The total carrying capacity (PCC) for Mahabalipuram group of monuments is 4,84,275 persons at any given point of time.**
 - **The PCC for Beach is 30,000 persons at any given point of time.**
 - **The average time spent by a person on the site including the beach is about 5 hours.**
 - **It is observed that upto 15,000 visitors visit the site per day. Hence the site is sufficient to accommodate more visitors.**
-



6 BENCHMARKING ANALYSIS

The tourist sites across the world have been treated variedly. Using the best approaches in spatial and infrastructure planning and with an enabling policy and regulatory support, the global iconic tourist sites have developed at a sustainable and aesthetic manner. This chapter considers the select case studies from different countries to showcase the best practices that have enabled the representation of how tourism can help regulate, maintain and sustain the heritage, while also enhancing regional growth and helping employment generation.

6.1 CRITERIA FOR IDENTIFICATION

The case studies for Mahabalipuram were selected keeping in mind the specific character of the site, its heritage value and the vision for its development. With its proximity to mega city like Chennai, Mahabalipuram presents an interesting mix of parameters to be considered including its heritage and cultural value, the profile, density and seasonality of tourist footfall, the extension of the heritage zone into the adjacent community, and the impact of proximity to a mega city. Considering this mix, the criteria for selection of cases for benchmarking looked into sites that fulfill a mix of the following criteria:

- Site with global or regional importance
- World Heritage Site or of equivalent significance
- Located away from main the urban center
- Experiencing high footfall
- Recognizable social and economic impact

Based on these parameters, six case studies nationally and globally were selected and analysed with respect to specific criteria.

6.2 SELECTED CASE STUDIES

The Selected case studies include

1. Acropolis of Athens, Greece
2. Stonehenge, U.K.
3. Kazan Kremlin, Russia
4. Borobudur Temple Complex, Indonesia
5. Angkor Wat, Cambodia

These case studies have been studied with respect to parameters that enhance the tourism potential of the sites, build a better tourist experience and facilitate tourism-generated social and economic development. The specific parameters that have been studied in each of the case study are:

- Access and connectivity
- Tourist profile, footfall, seasonality and patterns
- Presence of amenities and tourist facilities
- Ancillary activities and tourism products
- Policies and frameworks specific to the site
- Community involvement with respect to employment generation, direct and indirect



Figure 6-1: Location of the Selected Case Studies

6.3 CASES

6.3.1 Borobudur Temple Complex, Indonesia

The Borobudur temple compounds is one of the greatest Buddhist monuments in the world. The monument is located in the Keda Valley, in the southern part of central Java, at the centre of the island of Java, Indonesia. The Borobudur Temple compounds consists of three monuments: Borobudur Temple, Mendut Temple and Pawon Temple. The three temples imaginary axis between them. Although the visual links are no longer open, function between the three monuments is maintained.

6.3.1.1 Access and connectivity

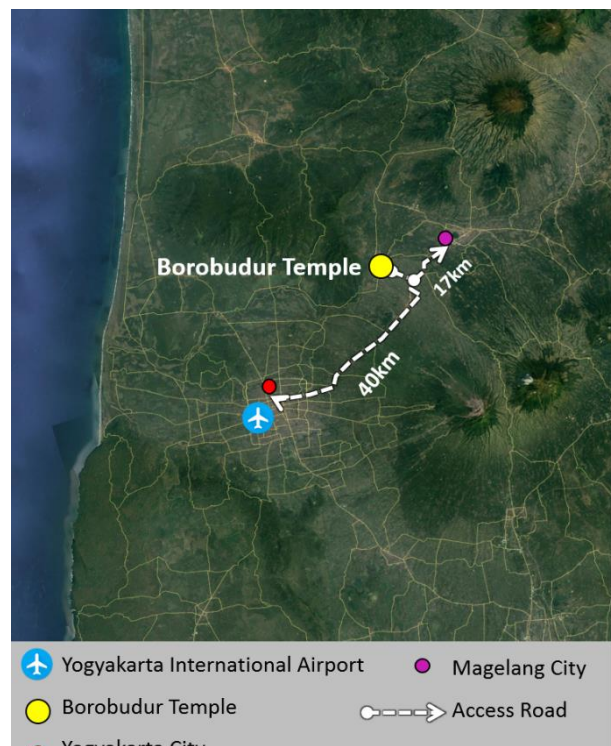
Borobudur temple complex is well connected to most locations in Indonesia through direct flights and road network.

By Air: The nearest airport to the Borobudur temple is Yogyakarta airport which is 40 km away. It receives daily flights from locations in Indonesia, Malaysia and Singapore, thus connecting to important centres globally.

By Road: The closest city is Magelang City, 17 km by road.

6.3.1.2 Brief details

The famous Buddhist temple, dating from the 8th and 9th centuries, is in central Java. The main temple is a stupa built in three tiers around a hill which was a natural centre: a pyramidal base with five concentric square terraces, the trunk of a cone with



Map 6-1 Location map of Borobudur

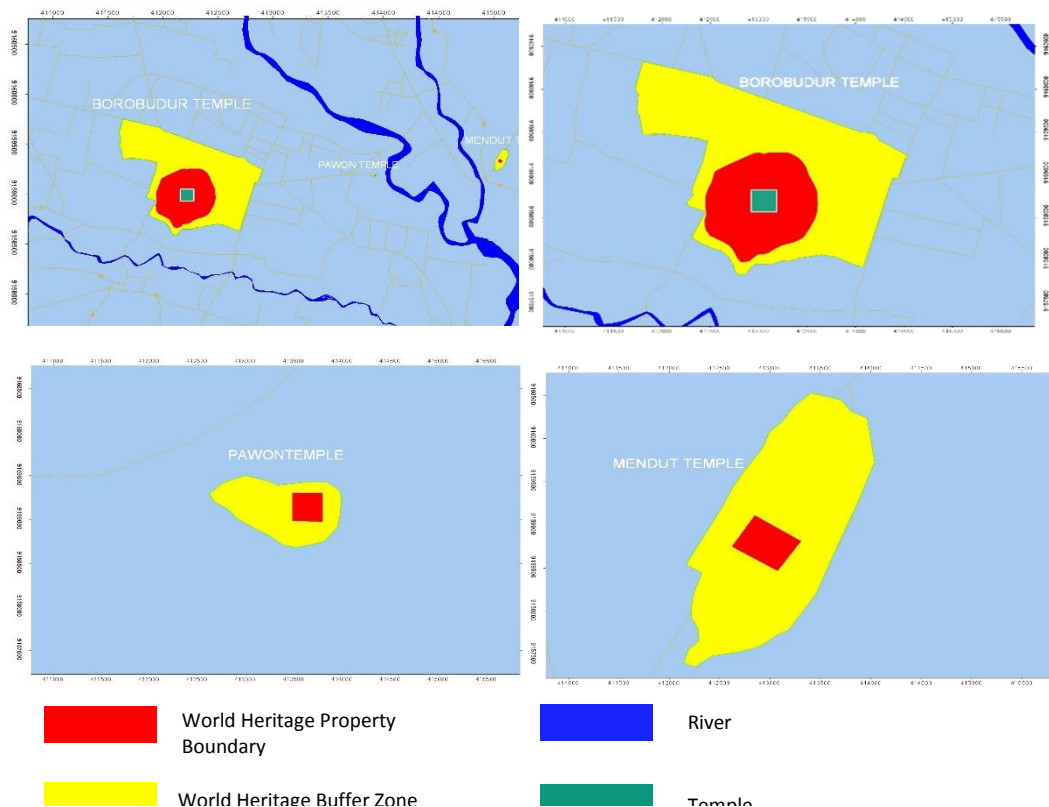
three circular platforms and, at the top, a monumental stupa. Around the circular platforms are 72 openwork stupas, each containing a statue of the Buddha.

6.3.1.3 Heritage status

Borobudur Temple was restored with UNESCO's help in the 1970s. It is listed as a World Heritage Site.

Date of Inscription	1991
Category	Cultural
Criteria (UNESCO)	<u>(i)(ii)(vi)</u>
Property	2.1 ha
Buffer Zone	64.31 ha

Given its heritage status, the complex is protected under a series of laws and regulations that restrict the type and density of activities in the complex and its precinct. Some of the important regulations include the Indonesian Law No. 11/2010 concerning Cultural Heritage and its surrounding cultural landscape. This law is executed under a National Strategic Area and the Spatial Management Plan by the Ministry of Public Works in accordance with the Law concerning Spatial Management No. 26/2007 and Governmental Regulation No. 26/2008 concerning National Spatial Planning and will be enforced further by another presidential regulation regarding the Management for the Borobudur National Strategic Area that is still being drafted by the Ministry of Public Works.



In addition, for ensuring an effective management of the site and the heritage precinct, a special law regulates its legal and institutional framework. The established zones within the World Heritage property

are respectively under the responsibility of the Borobudur Heritage Conservation Office under Ministry of Education and Culture, of state-owned institute PT.

6.3.1.4 Tourist footfall

The tourist population profile at Borobudur includes a mix of pilgrims who visit to worship and the leisure tourists. The annual tourist footfall is about 11.9 million. The foreign tourist population is 8.8 million and the domestic tourist population is 3.1 million. (Source: Journal of International Buddhist sites, 2013). The site experiences an average footfall of 7000-10,000 on the weekends, which escalates to 90,000 on the long weekends.

6.3.1.5 Tourism products

The site offers various tourist and religious attractions. There are a number of temples and points of interest in and around the site:

- Selogriyo Temple
- Mendut Temple / Candi Mendut
- Pawon Temple / Candi Pawon
- Chicken church
- Prambanam Temple

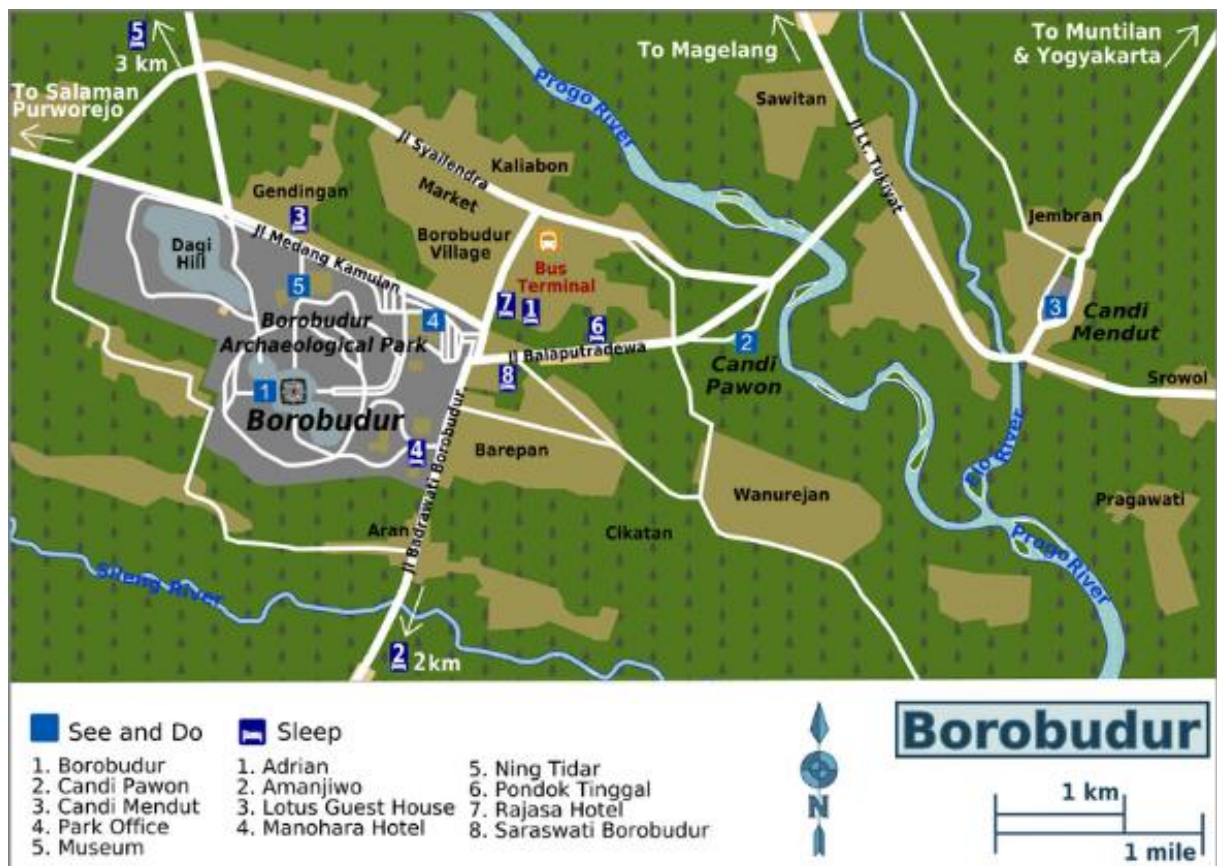


Figure 6-3 Points of Tourist Interest in Vicinity of Borobudur Temple Complex and Internal Connections

Further, the temple becomes a host to various other cultural events and festivals. Some significant events are:

- Borobudur International Arts and Performances Festival 2018 – The temple complex is hosting the festival that involves performances from world-class artists in music, classical dance, and a plethora of art presentations

- Waisak- The Buddha's birth, his enlightenment and his reaching of nirvana are all celebrated on the full-moon day of Waisak when a great procession of saffron-robed monks travels from Mendut to Pawon then Borobudur

6.3.1.6 Amenities

Borobudur has a conservation center that has all the related information on heritage monument. The site offers basic amenities like Ticket Counter; Parking; Café; Toilets; Retail shops; Homestays in Klipoh village. There is also a traditional handicraft market in the precinct selling local craft based products.

Klipoh, a nearby village in Borobudur, is a designated tourist village offering homestays and most tourist amenities to the visitors. It has benefitted from the tourism generated in the region. They offer activities like small scale industries and homestay to tourists. They promote the local craft like pottery, traditional and art of transportation and art of bamboo. With this, the tourist activities provide direct employment to the entire community.

6.3.1.7 Special initiatives

In addition to the existing facilities, various interventions have also been made to enhance the tourist experience in the Borobudur temple complex. A commercial street has been proposed along the northern edge of Borobudur Temple. A ship museum is also proposed in the vicinity.

The regulatory framework is further evolving that shall enable further protection to the monument by introducing measures such as

- Further widening of the buffer zone
- Development of appropriate regulatory & planning framework for the area surrounding the World Heritage property, with a view to preserving its rural character
- Upgrading the urban design, facades and infrastructure of the street and square leading to the site (where the existing village is developing in an unorganized manner), facades is in progress

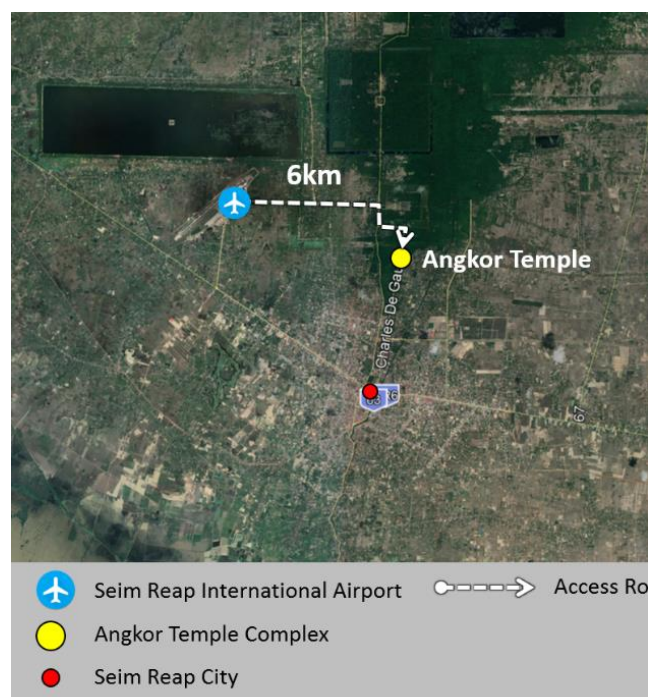
These initiatives shall enhance the sanctity of the heritage site and the tourist experience

6.3.2 Angkor WAT, Cambodia

Angkor Archaeological Park contains the magnificent remains of the different capitals of the Khmer Empire, from the 9th to the 15th century. They include the famous Temple of **Angkor Wat** and, **Angkor Thom**, the **Bayon Temple** with its countless sculptural decorations.

6.3.2.1 Access and connectivity

By Air: The nearest airport to the Angkor Wat is the Krong Seim Reap airport which is 5.5 km away. Seim Reap is an international airport which connects with most significant locations from Asian and South east Asian countries. From Seim Reap City, Angkor Wat approachable by road, lying at only 6 kms. Phnom Pehn City is 318 km by road. Night buses connect Phnom Pehn with Angkor Wat.



Map 7-6-2 Location map of Angkor

6.3.2.2 Brief history

Khmer architecture evolved largely from Indian sub-continent and soon it developed its own special characteristics, and some independently evolved. The Angkor included several indisputable artistic masterpieces. Temples such as Angkor Wat, the Bayon, Preah Khan and Ta Prohm, are closely linked to their geographical context as well as being imbued with symbolic significance.

6.3.2.3 Heritage status

Being a World Heritage Site, UNESCO has set up a wide-ranging programme to safeguard this symbolic site and its surroundings.

Date of Inscription	1992
Category	Cultural
Criteria (UNESCO)	<u>(i)(ii)(iii)(iv)</u>
Property	40,100 ha

Given the world heritage status, the site has a defined heritage and the buffer zone which restricts development type and density in the precinct. The Heritage Management Framework comprises of a Tourism Management Plan and a Risk map for all monuments and natural resources. The decision making is guided by physical, spiritual, and emotional accessibility to the site for all visitors.

6.3.2.4 Tourist footfall

The tourist population visiting Angkor Wat is about 2.4 million. Majority of the tourists are foreign tourists, totaling up to almost 2.24 million. (Source: Journal of International Buddhist sites, 2013)

6.3.2.5 Tourism products

The tourism department of Angkor offers six types of tourist circuits to discover Angkor and offers tourist varied opportunities to learn about the Khmer civilization. These tours are of varied durations and cover different points of interests.

- Circuit 1- Duration 7 days- Angkor Site-Panaroma Museum-Rulous Group- Old market area- Phnom kulen- Kon ker- Apsara dance performance-Angkor Wat-Angkor Thom-Seim Reap.
- Circuit 3- Duration 6 days- Angkorian Capitals
- Circuit 2- Duration 4 days- To understand the spirituality of the Angkorian time, circuit suggests three main groups of temples of religious practice in a chronological order:
 - from the 9th to the 11th century – Shiva,
 - in the first half of the 12th century – Vishnu (co-existing with Shiva, and sometimes with Buddhist images)
 - at the end of the 12th and beginning of the 13th century – Mahayana Buddhism.
- Circuit 4 – Duration 4 days- Chronological Circuit
- Circuit 5- Duration 3 days- Jayavarman VII Temples
- Circuit 6 – Duration 3 days- Cycling in Angkor
- Circuit 7- Duration 1 day- Temple material building
- Circuit 8- Duration 1 day- Eco-friendly tour to Angkor.

Within the site precinct, there are multiple points of tourist attractions, that can be covered through the pedestrian walkways. The various amenities dot the site, providing a comfortable tourist experience.

Figure 6-4: Attraction on the Site



- Tourist Attractions
 Angkor Site, Panorama
 Museum, Ruluos
 Group- Temple,
 Bakong- Fountain
 Temple, Preah Ko-
 Brick Temple, Lolei-
 Temple, Phsar Chas-
 Old Town
- Amenities
- Ticket Counter
 - Rest Rooms
 - Parking
 - Cafe
 - Homestays
 - Silk Farm- Seim
Reap
 - Old market- Seim
Reap



Figure 6-5 Circulation map for tourists

The temple also hosts cultural events and festivals which add to the tourist attractions.

- Pchum Ben day- Monks chant the suttas in Pali language overnight, continuously, without sleeping, in prelude to the gates of hell opening, an event that is presumed to occur once a year
- Water festival- The festival includes boat races, concerts and ceremonies.

6.3.2.6 Special initiatives

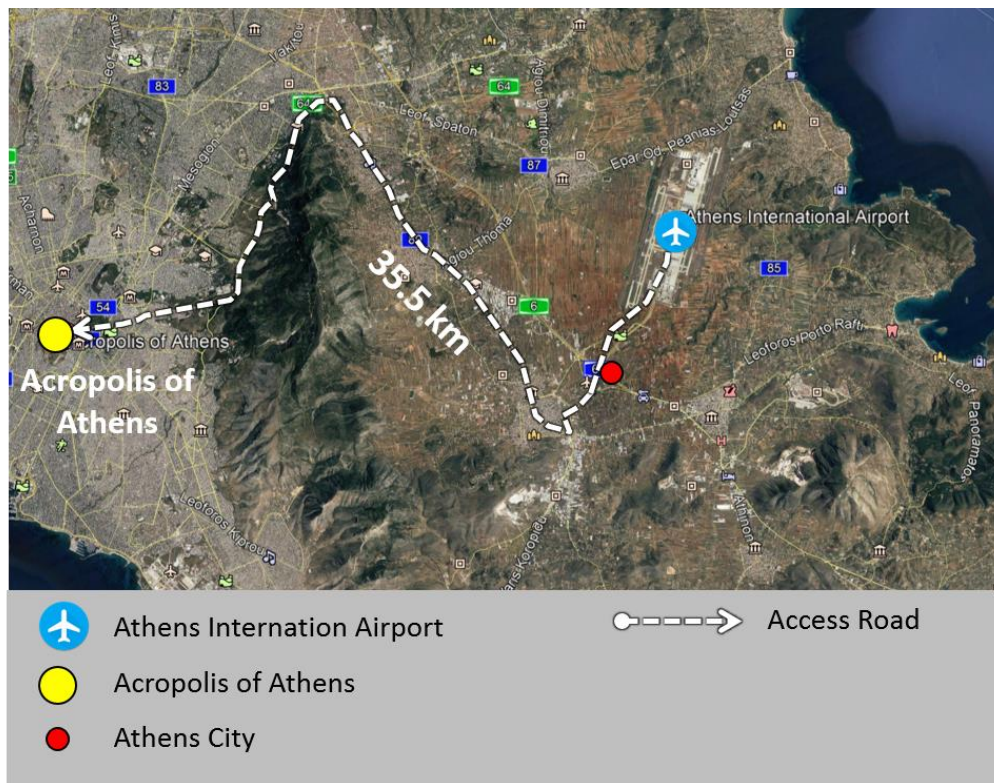
- There is a proposal for introducing E-vehicles to reduce pollution along with other initiatives to reduce the negative impacts of tourism.
- The authorities envisage to improve the tourist understanding of the local uses of Angkor, both as an inhabited area and as a place of continued religious significance and create a cohesive tourism industry that adheres to specific practice and standards.
- Local people obtain a small share through business like selling souvenirs, motor taxi tour guide and employment at hotels and restaurant. Government is taking initiative to encourage local community participation.

6.3.3 Acropolis of Athens, Greece

The Acropolis of Athens and its monuments are universal symbols of the classical spirit and civilization. This grand composition of perfectly balanced massive structures creates a monumental landscape of unique beauty. It is situated on a hill of average height 156m and overall dimensions are approx. 170 by 350m. The hill is rocky and steep on all sides except for the western side.

6.3.3.1 Access and connectivity

The historical center of Athens has very good physical accessibility and it is served by accessible public transport, enabling differently abled tourist to also experience



Map 7-6-3 Location map of Acropolis of Athens

By Air: The nearest airport to acropolis is the Athens airport which is 35.5 km away. It is international airport.

By Road: Accessible by public transport and tram is a good link between historic Centre and the coastline.

6.3.3.2 Brief History

During the second half of the fifth century BC, an exceptional group of architects and sculptors transformed the rocky hill into a unique monument of thought and the arts. The most important monuments were built during that time: the Parthenon, built by Ictinus, the Erechtheon, the Propylaea, the monumental entrance to the Acropolis, designed by Mnesicles and the small temple Athena Nike. The acropolis monuments are almost 25 centuries, survived through wars, explosions, bombardments, fires, earthquakes, sackings etc. and have adapted to civilizations.

6.3.3.3 Heritage status

Acropolis of Athens is a World Heritage Site

Date of Inscription	1987
Category	Cultural
Criteria (UNESCO)	<u>(i)(ii)(iii)(iv)(vi)</u>
Property	3.94 ha
Buffer Zone	116.71 ha

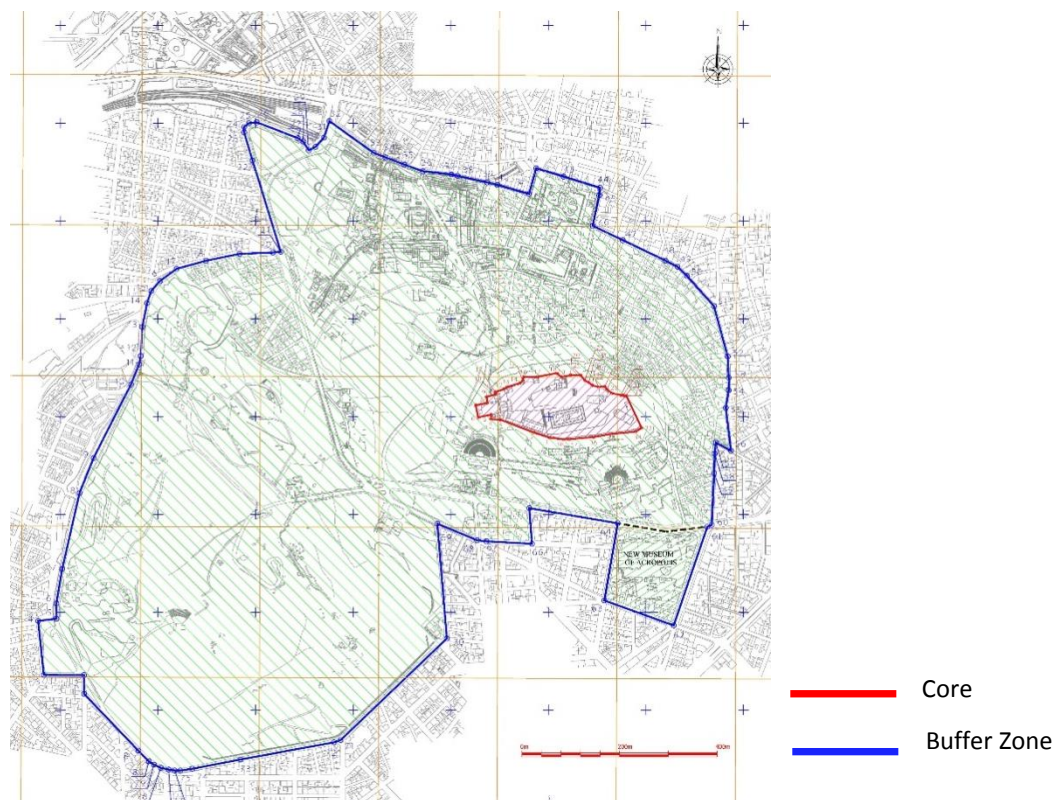


Figure 6-6 UNESCO World heritage map showing the core and buffer area

6.3.3.4 Tourist Footfall

The tourist population visiting is about 1 million. The foreign tourist population is 0.6 million. (This data has been recorded from *Visitor's museum footfall*, 2013).

6.3.3.5 Tourism products

Athens, having been inhabited since the Neolithic age, is considered Europe's historical capital and one of the world's emblematic cities. During its long, everlasting and fascinating history. The tour of Athens has been divided into stages:

- Stage 1 – Antiquities of Athens that covers the 3km pedestrian zone (Acropolis and area around)
- Stage 2- Byzantine Monuments in Athens
- Stage 3- Ottoman Monuments in Athens
- Stage 4 – Historic Centre 1
- Stage 5 - Historic center 2
- Stage 6- Historic Centre 3- THE PHILOPAPPOU HILL AREA
- Stage 7 – Kolonaki- The Rilillis Area, Metz
- Stage 8- From Lycabettus Hill to Strefi Hill
- Stage 9- From Syntagma sq. to Omonia sq.
- Stage 10- From Omonia sq. to Kypseli
- Stage 11- Night life
- Stage 12- Greek cuisine and Wine

The Key Tourist sites include Acropolis museum, National Archeological museum, Museum of Byzantine Culture, Museum of royal tombs of Aigai, Epigraphic museum, Archeological museum of Heraklion, and Archeological museum of Thessaloniki.

The site hosts important events such as Open film fare festival and the Athens and Epidaurus Festival

6.3.3.6 Amenities

The metro stations of Athens provide the necessary tourist information and maps. The **visitor's museum** helps the tourist finding the suitable tour guide agency. The visitor's Museum is about **8000 sqm**. There are other basic amenities in the vicinity like:

- Ticket Counter
- Toilets
- Parking
- Cafe
- Homestays in the vicinity
- Retail shops archeological resource
- Markets
- Lifts for wheelchairs, handicapped persons
- Theatre

There about 30,117 hotels in Athens as of 2002 (tourismos: an international multidisciplinary journal of tourism) out of which 14 are 1-star hotels, 53 are 2-star hotels, 172 are 3-star hotels, 93 are 4-star hotels and 16 are 5-star hotel (<https://www.expedia.co.in/Athens-City-Centre-Hotels.d6200220.Travel-Guide-Hotels>)

6.3.3.7 Special Initiatives

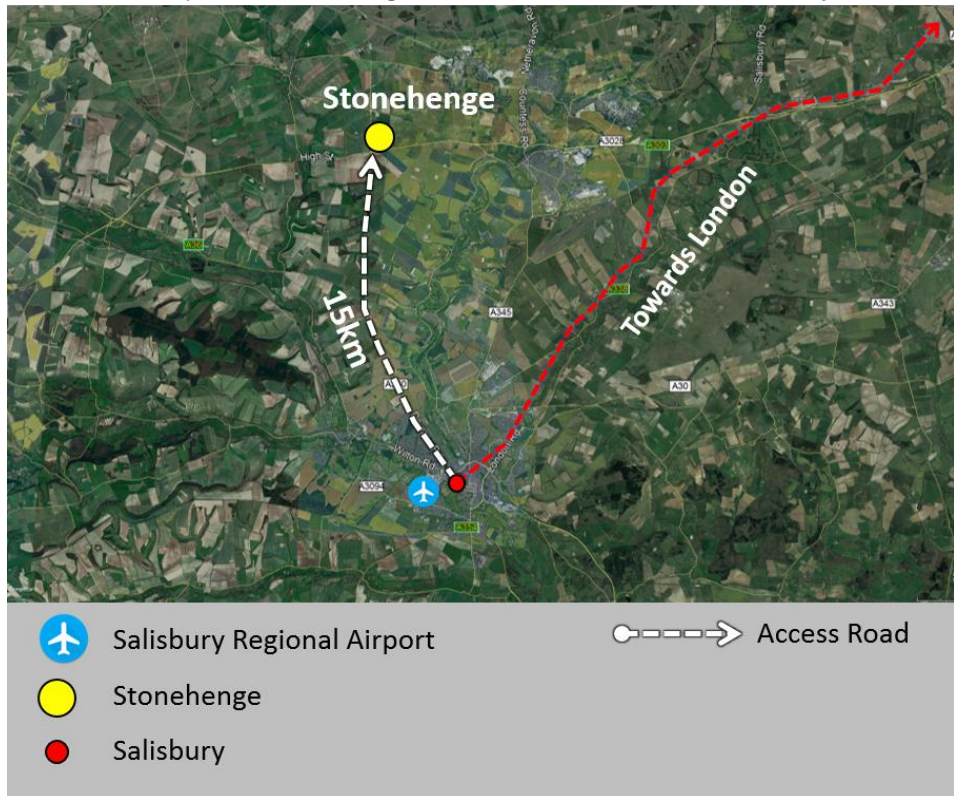
- Unification of archaeological sites by a pedestrian route is a game changer plan which created new accessible environ in the city that suffered from great traffic. It continues to give everyone a focal point.
- The accessible public transport is the key factor in enabling tourists and locals to visit any destination.
- Heritage tours also contribute in business development and new economic opportunities.
- The New Acropolis Museum is located below the Acropolis. It is a landmark for Athens and it is the 3rd most popular museum in the world.
- A specially defined path was constructed at the site to ensure a smooth tour meanwhile W.C. facilities for people with disabilities is provided.
- By constructing an elevator as the least disturbing and reversible intervention that covers 70 m. from the foot to the top of the site. To further facilitate access to the elevator, a special separate entrance north of the main entrance to the site, has been constructed, where a van can transport mobility impaired visitors to a conveyor platform, which can then transfer both wheelchair and person to the elevator.

6.3.4 Stonehenge, UK

Stonehenge is the most architecturally sophisticated prehistoric stone circle in the world. It continues to celebrate the Neolithic and Bronze age. The nearest town to the monument is Salisbury with a Population of 16,448 people (2011 data) (www.wikipedia.com)

6.3.4.1 Access and connectivity

By Air: The nearest airport to Stonehenge is the old Sarum Airfield, Salisbury which is 15 km away. It



Map 6-4 Location map of Stonehenge

is a regional airport.

By Road: There is a Stonehenge Tour Bus departing from Salisbury rail and bus stations at regular intervals. Other than the public transport, Bicycle tour is also available from Salisbury.

6.3.4.2 Brief History

Stonehenge is the most impressive prehistoric megalithic monument in the world. It is unrivalled in its design and unique engineering, featuring huge horizontal stone lintels capping the outer circle and the trilithons, locked together by carefully shaped joints. It is distinguished by the unique use of two different kinds of stones (Bluestones and Sarsens), their size (the largest weighing over 40 tons) and the distance they were transported (up to 240 km). The sitting of the monuments in the vast setting of landscape would have been a major significance to those who created them.

6.3.4.3 Heritage status

Date of Inscription	19876
Category	Cultural
Criteria (UNESCO)	(i)(ii)(iii)
Property	4958.9 ha

Given the world heritage status, the site has a defined heritage and the buffer zone which restricts development type and density in the precinct.

- The Stonehenge WHS is in a stable or improving condition. During the last decade, 520 ha of arable land (20% of the WHS) have been changed from arable land to pasture, with the help of government grants. This has directly benefited 105 archaeological monuments.

- **Heritage:** Reconnecting the World Heritage Site, helping to protect and enhance its unique value and improving understanding of our ancient heritage.
- **Environment:** Caring for, protecting and enhancing the environment and helping people connect with nature.
- **Community:** Listening, engaging and being an active part of community, seeking ways to maximize the benefits of the scheme.
- **Economy:** Boosting the economy of the South West and creating new opportunities for tourism, both locally and further afield.
- **Transport:** Providing a safe and efficient link between the South East and South West, making local and long-distance journeys quicker, more reliable and less stressful.

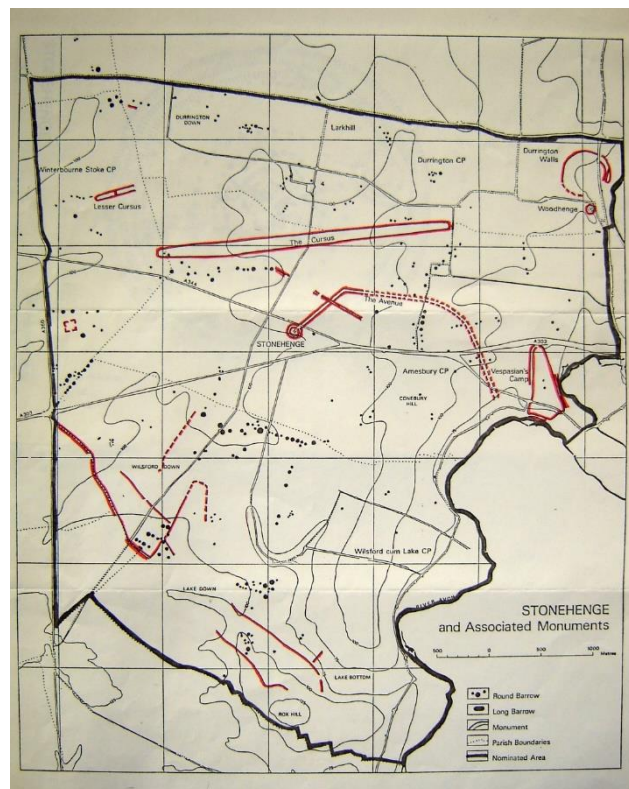


Figure 6-7 UNESCO map showing the core and buffer zones

6.3.4.4 Tourist Footfall

It is noticed that the tourist population of staying visitors was 1.7 million and day visitors was 18 million in 2013. (Source: *This data has been recorded from Economic Impact of Wiltshire's Visitor Economy*).

6.3.4.5 Tourism Products

Since Stonehenge is the iconic symbol of Britain, a well-planned itinerary is presented to the tourist which includes the following,

- Stone Circle,
- Neolithic Houses
- Ancient Landscape Salisbury Museum
- Wiltshire Museum
- Old Sarum- Prehistoric Fortress

The special Events organized around Stonehenge are given below:

- **Big Feast Weekend-** Discover the diet and lifestyle of the people who built Stonehenge and learn about the science behind what we know.
- Lectures regarding History, culture & Significance.

6.3.4.6 Amenities

The visitor's center provides with all the information and tickets are available for guided tours. Also, the tourist can enjoy exhibitions and experience virtual stones.

The basic amenities available in the vicinity is listed below:

- Parking
- Café
- Shops
- Toilets
- Museum
- Exhibition spaces
- Gardens
- Audio Tours
- Baby care facilities

There about 103 hotels near Stonehenge (booking.com)out of which 44 are 1-star hotels, 13 are 2-star hotels, 22 are 3-star hotels, 22 are 4-star hotels, 1 are 5-star hotel, 12 holiday homes and 11 apartments for rent.

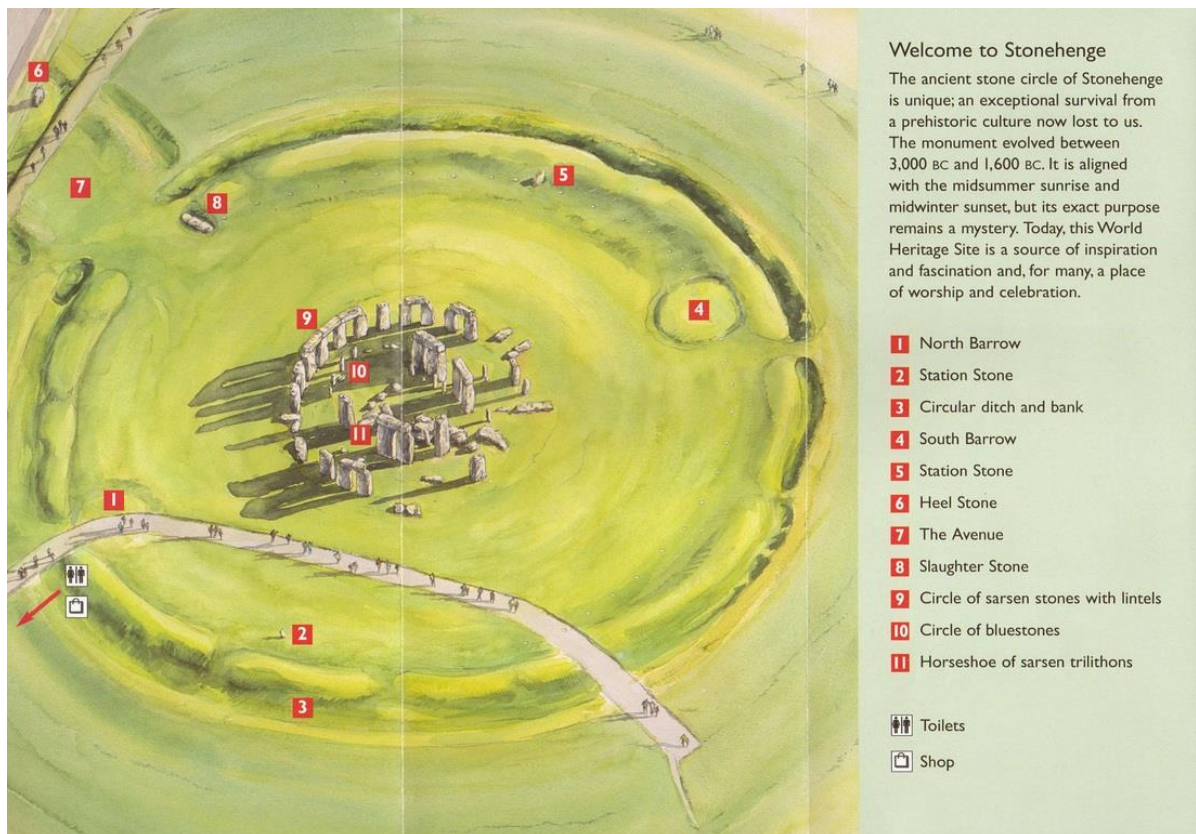


Figure 6-8 Circulation map for Tourist

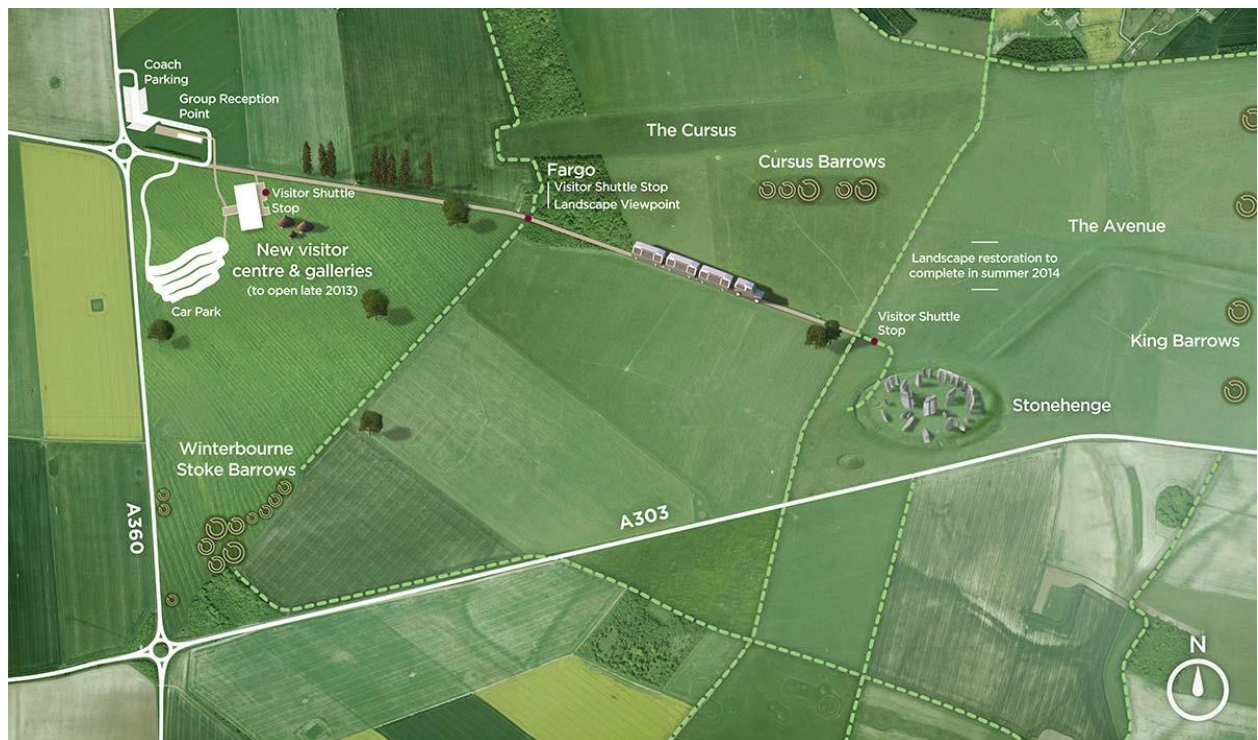


Figure 6-9 Circulation map for Tourist

6.3.4.7 Special Initiatives

- The section of highway passing through the World Heritage site has been reconstructed into a twin-bore tunnel which passes Stonehenge at least 1.8 miles (2.9 km) long.
- The value addition was made by converting existing Highway A303 passing through the World heritage site into a route for walking, cycling and horse riding.
- New 'green bridges' to connect existing habitats and allow the movement of wildlife, maintain existing agricultural access and provide crossings for existing and new bridleways and public footpaths were established.

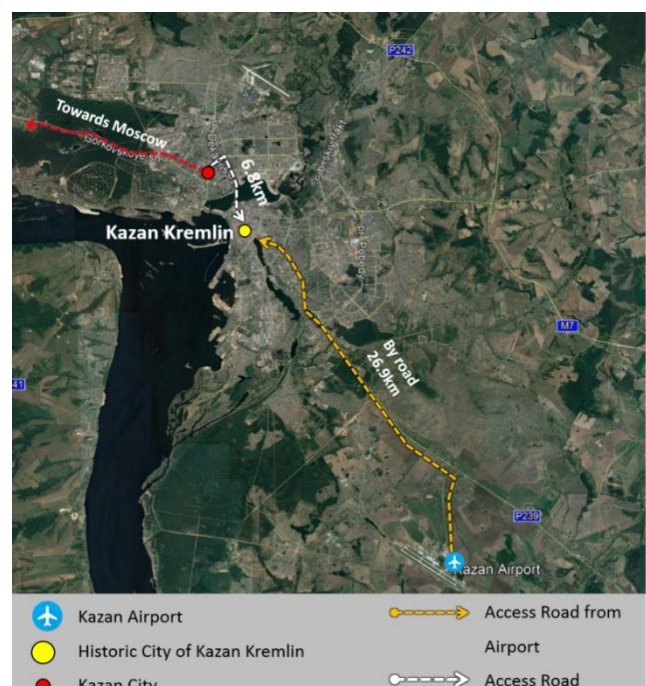
6.3.5 Kazan Kremlin

Built on an ancient site, the Kazan Kremlin dates from the Muslim period of the Golden Horde and the Kazan Khanate. Kazan Kremlin consists of historic buildings dating from 16th to 19th century integrating remains of earlier structure of 10th to 16th century. The archaeological layers range from 3 m to 8 m in depth.

6.3.5.1 Access and connectivity

The historic city of Kazan Kremlin is well connected to most locations in Moscow through direct facilities and road network.

By Air: The nearest airport to Kazan Kremlin is the Kazan International Airport, which is about 26.9km away.



By Road: Historic part of the city can be directly reached on foot by the pedestrian Bauman street. The buses are available from central stadium.

Map 6-5 Location map for Kazan Kremlin

6.3.5.2 Brief History

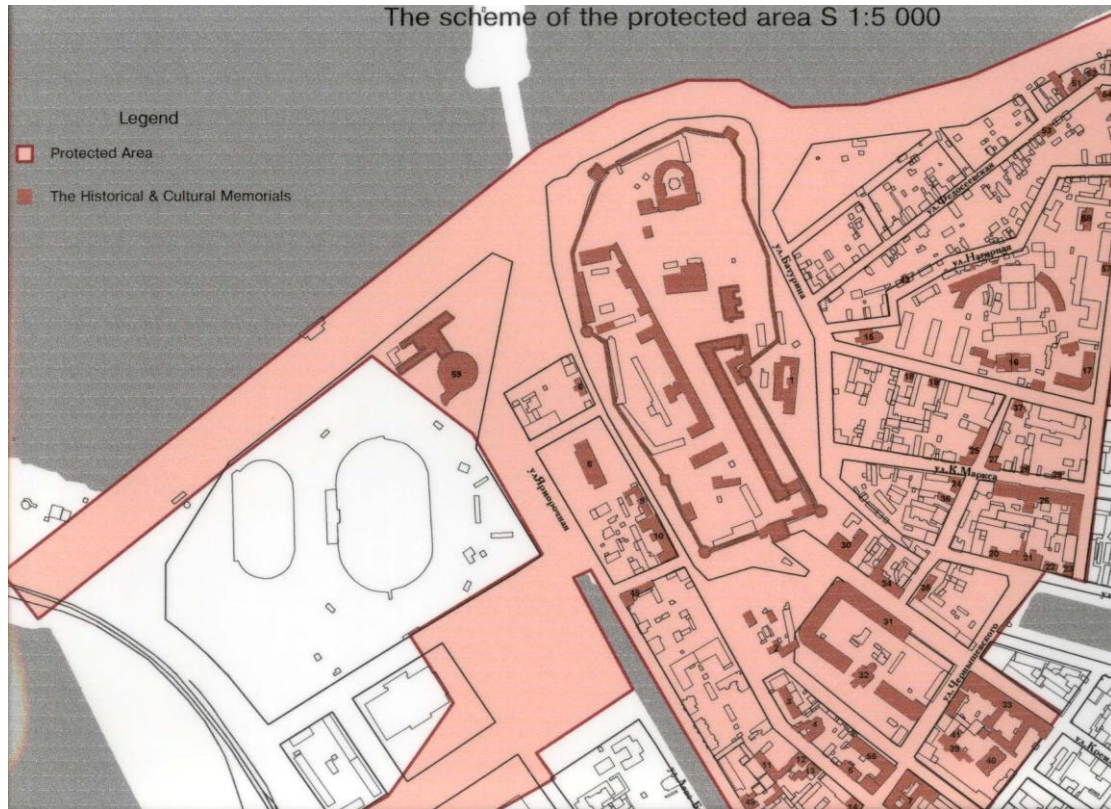
Kazan Kremlin dates to the Islamic period in the history of Volga Bulgaria. The citadel is an exceptional testimony of historical continuity and cultural diversity. The site has retained traces of its foundations in the 10th century, as well as from the Khanate period (15th to 16th centuries). At present, the Kremlin includes several historical, architectural, and archaeological complexes, including: the fortifications, the Governor's Palace and Syuyumbeki's Tower, the Annunciation Cathedral, the Public Offices, the Saviour-Transfiguration Monastery, the Cadets' School, and the Cannon Foundry.

6.3.5.3 Heritage Status

The historic city of Kazan Kremlin was restored with UNESCO's help in 2000. It is listed as World Heritage Site.

Date of Inscription	2000
Category	Cultural
Criteria (UNESCO)	(ii)(iii)(iv)
Property	115 Ha

- Given its heritage status, The Kazan Kremlin has showed the best resource management and the dialectic synergy of conservation, restoration, preservation, regeneration, and sustainable development of this area.
- The site has efficiently operated comprehensive legal system of administration and interaction between the key partners of the Kazan Kremlin, either municipal, republican or federal structures.
- The Strategy of Integrated Conservation and Development of the Historic and Architectural Complex of the Kazan Kremlin made it possible to implement further actions under the Action Program and to ensure the conservation of the Outstanding Universal Value of the Kazan Kremlin.
- Interaction and interdependence, the correctly chosen combination of restoration, rehabilitation, and preservation tied in a general concept, has allowed creating an integrated museum system.
- intensive introduction of cultural, scientific, and pilgrimage tourism, promotion of the Kazan Kremlin as a tourist brand and product – all this allowed a wide involvement of people in Tatarstan and Russia
- The combination of traditional (scientific conferences, museum events, tourist sightseeing, website development and updates, etc.) and innovative (information and navigation systems, QR codes, interactive booths and screens, historical reconstruction events, creation of “live” museums, holding of massive cultural festivals and projects, such as the Long Night of Museums and Kremlin Live) methods has made it possible to bring the work on the conservation and popularization of the Outstanding Universal Value of the Kazan Kremlin to a new level.



Map 6-6 Protected area demarcated by UNESCO

6.3.5.4 Tourist Footfall

Kazan easily combines the culture and traditions of the East and the West: next to the finely cut minaret towers there are old Orthodox churches. A prevailing feature of life in the city is the peaceful, creative coexistence of different religions and nationalities.

The total tourist population in 2010 was 1.06 million. Foreign tourists were .13 million and domestic tourist's footfall were .93 million.

6.3.5.5 Tourism Product

Kazan kremlin offers beautiful buildings raised in different architectural styles.

Kazan Kremlin open onto the river and the red bell tower of Bogoyavlenskaya church at the pedestrian Bauman street is especially adored by tourists. Mansions in the style of modernism coexist with Baroque monuments. Key tourist Sites are:

- Spasskaya Tower
- Cathedral of the Savior's Transfiguration
- Government Agencies Building
- Manege Exhibition Hall
- Hermitage Kazan Exhibition Centre
- Suyumbike Tower
- Annunciation Cathedral
- Museum of Statehood History of Tatarstan
- Presidential Palace
- Kul Sharif
- Taynitskaya Tower
- Canon Yard
- Transfiguration Tower
- Monument of Musa Dzhali

6.3.5.6 Amenities

The Visitor's Centre provides Information support of city guests in Russian, Tatar, English, Turkish, Japanese in TIC offices.

There about 71 hotels near historic city of Kazan Kremlin (booking.com)out of which 3 are 1-star hotels, 13 are 2-star hotels, 33 are 3-star hotels, 19 are 4-star hotels and 3 are 5-star hotel

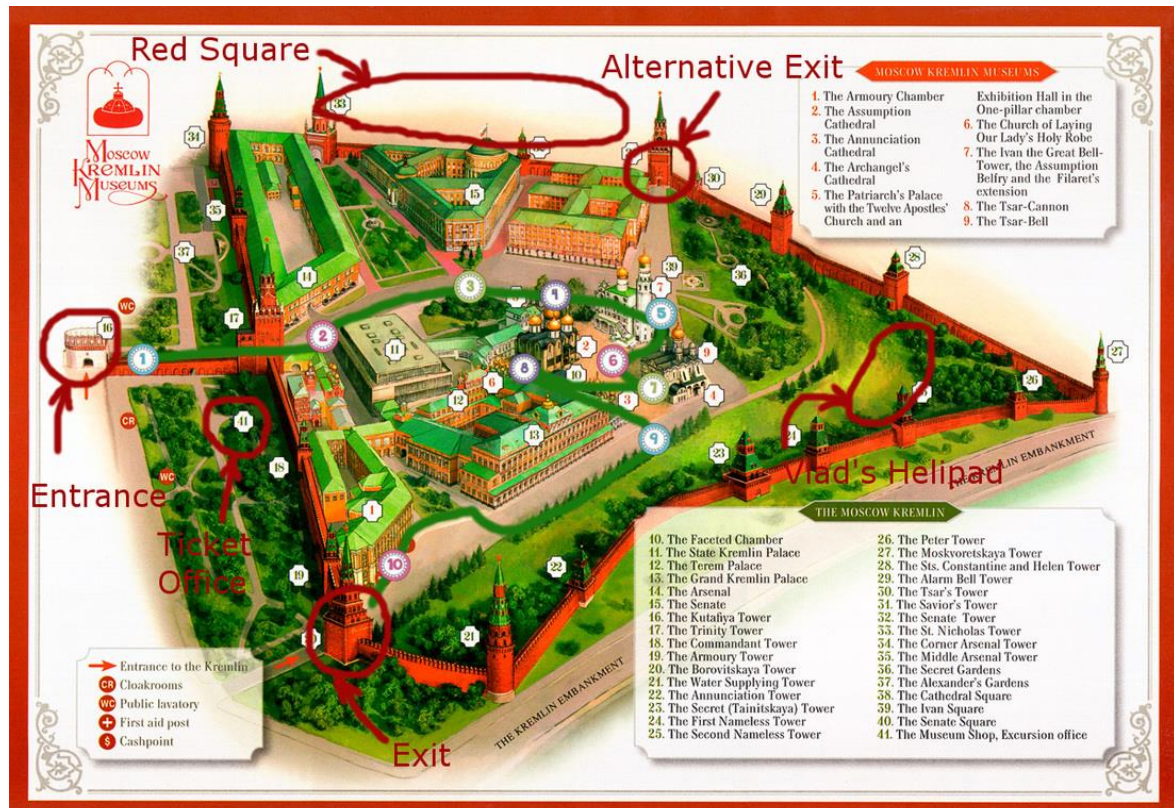


Figure 6-10 Circulation Map for tourist

6.3.5.7 Special Initiatives

- The Kazan Kremlin is an open space for work and collaboration of various municipal, state, federal, public, religious and non-governmental organizations. As the residence and the Administration of the President of the Republic of Tatarstan are located here, it helps to address financial, economic, restoration, maintenance and security issues.
- Four museums are being created with expositions being placed within the premises and in the surrounding area; i.e. there is a special designated area.

6.4 KEY TAKEAWAYS

From the above case studies, certain key takeaways can be identified. The best practices and specific initiatives taken in respective cases can guide the vision for development of Mahabalipuram as an iconic site, while also highlighting the probable interventions that can be made on site and in its vicinity. The following section lists out the key takeaways from the benchmarking exercise.

6.4.1 Strong and definitive character that binds the multiple locations within the site

A strong spatial character with clearly demarcated zones in the site and its vicinity helps build a definitive character and presents the site in unison with its context. It also presents a holistic tourist experience.

Elements such as pedestrian trails and other similar interventions like traditional markets along the street are critical binding factors that tie together the various sections and location of the site. As an example, the pedestrian trails developed in Acropolis of Athens and the defined internal circulation paths in the Borobudur Temple Complex integrate the site and provide enhanced visibility of all tourist products.

6.4.2 Efficient Connectivity and accessible layout

Most of the cases analysed have an efficient access and connectivity to important urban centers around them via road or rail. These also have air connectivity to cities internationally. Further, a systematic public transport system enables tourist to access the tourist locations and move around within it. Dedicated transport link in form of rail network as observed in case of Stonehenge provides a critical link enabling larger footfall because of easy connectivity. This specifically plays an important role when the site is at a distance from a major urban center.

6.4.3 Strong regulatory framework to maintain the sanctity of the site

A strong regulatory framework or set of development guidelines help maintain the sanctity of the tourist site. These are also critical for protection of the iconic heritage, and for enhancing the overall tourist experience. The case studies, being World Heritage Site, have a mandatory buffer zone that restricts and regulates the development and activity in the site and around it. Further, a host of laws and regulations control the development activities around the site. For instance, in Kazan Kremlin, the Strategy of Integrated Conservation and Development of the Historic and Architectural Complex ensure the conservation of the Outstanding Universal Value of the Kazan Kremlin.

6.4.4 Multiple tourism products supported by a strong branding strategy

Developing multiple tourism products that are built around the main attraction offers a wide range of activities and longer site engagement to the tourists. Acropolis of Athens showcases itself as one of the world's emblematic cities and offers a comprehensive tour that is divided into multiple stages. Kazan Kremlin has adopted a combination of traditional and forthcoming strategies that have popularized the Kazan Kremlin and taken it up to a new level. Similarly, Stonehenge has established itself as a national iconic site and offers a comprehensive sightseeing package. The tourist products are of varied in nature – ranging from historical to cultural and commercial. Further, it is also critical that all the tourism products are well maintained and receive significant identity and brand building. For instance, the Borobudur temple complex is equally known for the architecture and heritage structure as it is popular for the tourist village in the vicinity.

6.4.5 Ancillary products that celebrate the regional or the national heritage and the traditions

The activities often build around the main attraction and add on to the venue by showcasing the regional essence of culture or socio-economic character. Angkor Wat offers circuits spanning for different number of days and across varied locations to experience the Khmer civilization. Around Wat Pho, the presence of university and learning centers attract students of Buddhism that come to learn. The Kazan Kremlin houses residence and working government offices. The tourist village developed in vicinity of Borobudur Temple Complex provides an integrated network of tourist amenities in a distinct vernacular setting that not only integrates the community and helps employment generation, but also enhances the overall experience of the tourist site.

Such components are strong enablers for employment growth and overall regional development. It also adds a broad dimension to the tourist experience, bringing in a range of possibilities for the tourists to engage with and experience the regional heritage and character.

6.4.6 Provision of amenities and tourist education about the heritage to enhance the tourism experience

An effective network of tourist amenities is critical for the onsite tourist experience. This includes provision of drinking water faucets, seating spaces, rest areas, accommodation facilities and information centers along with a management framework that ensures a smooth flow of pedestrians and vehicles and avoid creation of bottlenecks. Most of the case studies showcase a strong network of amenities.

It is also seen that with the help of an informed management approach, the sites can develop an effective way to educate the tourist about the historical and cultural heritage. In Athens and Stonehenge, vast amount of tourist literature that is handed out at information centers in and around site and also on the connecting nodes such as the metro train stations helps engage the tourist with the various components right from the start.

6.4.7 Responsible tourism strategies

Adoption of practices that are environmentally, socially and culturally responsible has an important bearing upon the creation of distinct identity of the site. These include environment-friendly practices such as development of Green Bridges in Stonehenge, and e-vehicles in Angkor wat, and the socially enabling practices such as dedicated market space for the locals to sell their craft, integrating the local community as one of the tourism products, like in Borobudur helps development of the iconic site.

The takeaways highlight the important parameters that need to be considered while developing a tourist site and present some of the best practices that can be explored while developing Mahabalipuram as an Iconic tourist site. These along with the assessments done at the site and the regional level and the stakeholder's perspective help build the framework for the development plan for Mahabalipuram and its precinct.



7 STAKEHOLDER'S CONSULTATIONS

Detailed consultations with key stakeholders and community representatives have been conducted during various stages of the project. The consultations were held in the form of informal discussions, presentations, detailed meetings and through focus group discussions. The stakeholders were from these user groups: The government, administration related, tourism related businesses and professionals and the community. The meetings and discussions have helped to identify issue and concerns and also a vision for development of Mahabalipuram. This section provides an overview of consultations with varied stakeholders and user groups.

7.1 KEY STAKEHOLDERS IN GOVERNMENT AND ADMINISTRATION

The Consultants identified the key stakeholders from the government for the development of Mahabalipuram as an iconic tourist destination. The key identified groups are listed as-

- Department of Tourism
- Mahabalipuram New Town Development Authority
- Mahabalipuram Town Panchayat
- Archaeological Survey of India
- Kancheepuram District Collectors office
- State Public Works Department
- State Highways
- Coastal Authority
- Local Community
- Industry Players

Consultants have conducted several rounds of meetings with various stakeholders from the above departments to understand their perspective and take into consideration the issues and concerns raised by them. An elaboration of the meetings with the stakeholders and the points of discussion with them are presented in the section below.

S.No.	Stakeholder	Date of Consultation
1	Additional Chief Secretary to Government, Tourism, Culture and Religious Endowments, GoTN, Commissioner of Tourism, GoTN	6th December 2018, 1st September 2018
2	Superintending Archaeologist of Archaeological Survey of India, Chennai	30th October 2018
3	District Collector, Kancheepuram District	25th October 2018
4	State Highways Department, Public Works Department, Tourist Officer, Mahabalipuram, ASI (Mahabalipuram), Mahabalipuram Town Panchayat, Mahabalipuram New Town Development Authority	25th October 2018
5	Tourism Officer, Mahabalipuram	31st August 2018
6	Mahabalipuram New Town Development Authority	31st August 2018
7	Executive Officer, Mahabalipuram Town Panchayat	31st August 2018
8	Sanitary Officer, Mahabalipuram Town Panchayat	29th August 2018

Meeting with Principal Secretary, Commissioner of Tourism, Department of Tourism

The meeting was conducted to understand the overall scenario of Mahabalipuram and to understand the vision envisaged for the development of Mahabalipuram. Consultants presented a brief presentation to the officials covering the existing scenario, identification of stakeholders, existing legal framework, preliminary issues and gaps identified from the secondary sources. Consultants discussed about their vision framework and tentative projects which could be proposed in Mahabalipuram. Since it is a protected monument by ASI, special considerations such as DR for the surroundings, conservation and protection of monuments etc. were also discussed. The overall scenario, proposed projects and their convergence with Swadesh Darshan was also discussed.

The officials provided a 13 – point list encapsulating the following interventions under this assignment-

1. Development of Convention Facility (MICE Facility)
2. Development of Children Play area and activities
3. Deployment of Life guards near the beach
4. Adequate infrastructure and measures to handle the traffic congestion
5. Increasing toilet facilities in School
6. Introduction of boat races and water sports
7. Formalization of small vendors
8. Appointment of security guards at the light house during evening time
9. Development of fire station near the site
10. Introduction of Battery-Operated Vehicles service from parking to the monument
11. Development of aquarium
12. Ban on the usage of plastic
13. The entry of number of taxis in the area to be limited.

Meeting with Tourism Officer

The meeting was conducted to understand the ground realities of the site and vision for development. The following points were discussed during the meeting-

1. Implications of road blocks and issues on Tourism scenario of Mahabalipuram was discussed in detail
2. Officials shared suggestions for projects and needs for implementation
3. Details of open spaces and land availability and ownership were discussed briefly
4. A list of registered hotels in Mahabalipuram with contacts to identify unregistered accommodation like homestays was provided during the meeting
5. Information about bicycles and two-wheelers on rent and about privately-run cycle tours was also provided.

Following this meeting the consultants conducted primary and secondary data collection and were facilitated by the Tourism Officer to meet with the other stakeholders.

Meeting with Supervisor of Mahabalipuram New Town Development Authority

This meeting was conducted to understand the proposed land use and activities in Mahabalipuram. The following points were discussed-

1. The officers provided details of shops and commercial spaces which are owned by the MNTDA
2. The officials also provided the Proposed Land Use Map and Proposed Development plan for 2021.
3. A detailed discussion was undertaken to understand the key aspects of the proposed development plan.

Meeting with the Executive Officer of Town Panchayat

The meeting was conducted to understand the overall scenario of Mahabalipuram. The following are the points of discussion-

1. The issue of unavailability of land and how it prevented projects to be implemented was discussed.
2. The congestion of streets and lack of parking in Mahabalipuram which led to heavy on-street parking was highlighted.
3. The officials provided data in form of maps, reports and statistics for infrastructure services including Water Supply and Solid Waste Management and for amenities like public toilets, drinking water, street lights, etc.

Meeting with the Sanitary Inspector, Town Panchayat

The meeting was conducted to understand the waste management in town. The following are the points of discussion-

1. The entire system of solid waste management was explained in detail to the consultants, right from segregated collection of waste at source to treatment of various categories of waste.
2. Issues were raised about inadequacy in infrastructure like collection vehicles and bio-gas plants.
3. The concern was also expressed to maintain the up-keep of the group of monuments and the nuances involved around it.

The meetings with all the stakeholders provided a clear insight of the activities in Mahabalipuram and the issues faced. All the concerns and suggestions of the various stakeholders have been taken into consideration to arrive at a vision for the development of Mahabalipuram as an iconic tourist site, aiming to bridge all the gaps, address all the issues, provide for all the needs and overall, improving the tourism scenario in Mahabalipuram.

7.1.1 Identification of issues and concerns

After an analysis of the discussions and takeaways from the meetings, the key issues have been identified and listed below-

- Limitations in development due to Mahabalipuram being an ASI protected site
- Lack of availability of land with the Town Panchayat and the Department of Tourism
- Issues related to parking and congestion
- Congestion caused due to encroachment by street vendors
- Inadequate infrastructure services and facilities to suffice the floating population
- Lack of basic amenities for tourists
- Lack of open / recreational spaces

The above-mentioned issues and concerns were discussed in detail along with possible measures to overcome them.

7.1.2 Vision for development

The stakeholders also shared their vision for Mahabalipuram, how they envisioned it to be in the future and steps that can be taken to improve the current scenario. Considering the unavailability of land that can be developed as part of this project, the suggestions given by the stakeholders were based on soft proposals that did not require land and on existing areas to be developed. The elements of their vision are largely categorized as following-

- To improve the infrastructure facilities for both residents and tourists specially in solid waste management sector
- To enhance the existing open spaces
- To take measures to attract more tourists and to increase the stay duration of tourists

- To use smart technology and innovations for tourist-based facilities
- To make Mahabalipuram congestion free
- To develop MICE Facilities in Mahabalipuram
- To employ eco-friendly methods and reduce pollution
- To improve safety and security in all aspects for tourists as well as residents

7.2 STAKEHOLDERS IN TOURISM INDUSTRY

To get an insight of the tourism industry, the consultants conducted a meeting with the Manager of the Tamilnadu Tourism Development Corporation. The meeting involved discussion about the accommodation facilities in Mahabalipuram in brief and about employment in the sector. There are several registered hotels and lodges in Mahabalipuram and they are adequate to accommodate the current tourist population. The current facilities cater to tourists of all income groups as there are affordable hotels as well as luxurious resorts.

7.2.1 Identification of issues and concerns

Most of the people in Mahabalipuram are employed in tourism or related activities. There are artisans, shopkeepers, tourist guides, etc. and also people who work as staffs in hotels, guest houses, lodges, resorts, etc. Owing to the increasing number of tourist arrivals every year, the demand for accommodation facilities will rise and so will the employment opportunities. The issue lies in the lack of appropriate skills in people to work such profiles and quality service is highly valued by the tourists. No formal training is provided to the people employed in this sector. The following issues are exclusive to the Tamilnadu Hotel-

- The complex has lot of unused vacant land which can be put to use (48 Acres in total, 4.3 Acres given to Poombuhar, ~40-acre empty land)
- Upgradation of the existing building needs to be done. (originally built in 1984)
- The issue of sea erosion on the north side of Shore temple caused due to the shore temple's shore protection needs to be resolved

7.2.2 Vision for development

The meeting led to the understanding that Mahabalipuram requires

- A Skill Development Centre where training is provided for people that can help them get employed in the tourism sector as tour guides, artisans, etc. They can also be trained to work in hotels and resorts for various responsibilities.
- Auxiliary tourist attractions such as amusement parks can be developed for extending the stay duration of tourists.
- More conference halls to attract MICE activities
- More modern type of accommodations such as homestays and hostels
- A prominent visible entry to attract the visitors from the highway
- Subsequent upgradation of man power to be provided for effective maintenance
- Additional high end and state-of-the-art cafes and bars to meet the tourist requirement
- Facilities to arrange weddings and other ceremonies making Mahabalipuram a destination for weddings

7.3 COMMUNITY REPRESENTATIVES

In order to understand the perspectives of various communities and how tourism impacts them, the consultants identified three broad groups as stakeholders to interact with and identify their issues and needs. The key identified groups are listed as-

- **Local Citizens**

- **Tourists**
- **Vendors**

Through a series of interactions and surveys, the consultants have understood the perspective of the various communities. The outcomes of their surveys and interactions is as follows-

Local Citizens

Consultants interacted with the local citizens to understand their lifestyle, occupation, impact of tourism on their lives, their issues and concerns, etc. The following are the key takeaways

- Most of the people are employed in the tourist sector like Art and Sculpting, Fishing, Hospitality Tourist Guides, Handicrafts, Weaving, etc.
- This implies that there is a major impact of tourism in the lives of the residents
- The past decade has seen a rapid increase in accommodation facilities and tourism services which is beneficial to them as it has increased the number of tourists in Mahabalipuram
- The residents appreciate the cleanliness in the area as the Town Panchayat takes efforts to keep the town clean by sweeping the streets thrice every day and regularly collecting segregated solid waste from every household. The waste collected from households, streets and hotels is then treated to be recycled or to generate energy

The opinions of local citizens are important to make sure that in developing the tourism activities, the citizens are not affected in a negative way. The increase in tourism should be beneficial to the local citizens and their concerns and views will be taken into consideration while proposing projects and interventions in Mahabalipuram.

Tourists

Understanding the needs and experiences of tourists is one of the main aspects as the projects that are to be proposed are to cater to the tourists. Listed below are the key points understood after interacting with the tourists-

- The tourists majorly visited for leisure activities followed by business and pilgrimage
- Most of the tourists had been to Mahabalipuram more than once
- The tourists do not plan their trips through tour operators
- The most preferred mode of travel is personal cars / cabs. A few of them resort to state transport buses
- The tourists are interested in the art and crafts and the local art of sculpting and stone carving has attracted tourists from far and wide

The interaction with tourists gave a clear understanding of their requirements and their opinions will help in forming a broad vision for development of the tourism sector in Mahabalipuram

Vendors

Mahabalipuram has a lot of commercial activities as people sell the local products made by the artisans of pottery, carving, handicrafts, weaving, etc. The shopkeepers also play a role in guiding tourists to destinations and informing them about nearby amenities for their comfort. The tourists have a direct impact in the lives of these vendors and hence they have been considered as key stakeholders. The key takeaways from interaction with vendors are-

- Majority of the vendors are from Mahabalipuram. However, some of them travel from nearby villages and towns like Poonjeri, Kanchipuram, Tirukalukkundram, etc.
- The most common mode of transport for the vendors from Mahabalipuram is two-wheeler. Some choose to cycle / walk to their shops. The vendors from nearby towns commute by bus

- Although many vendors' businesses are new, a few of them have been there for more than 30 years
- The vendors sell articles like craft items, show pieces, souvenirs, toys, puja items, books, etc.
- Very few vendors earn a good income of 20,000 to 30,000 while most of the vendors' monthly income is less than 10,000
- A few of the vendors have another source of income to sustain themselves and their families
- Even the vendors complain about poor safety and security and street conditions

Since the vendors are highly impacted by tourist activities, their concerns need to be considered important and taken care of while proposing interventions in Mahabalipuram

7.3.1 Identification of issues and concerns

The interaction with the citizens, tourists and vendors has been highly beneficial in understanding perspectives of all the groups that will be impacted. The following are the issues and concerns raised by them-

- Traffic congestion, pollution and parking issues are a concern for the local people as well
- Since Mahabalipuram is a tourist destination, shopkeepers tend to generate more income from tourists and hence, local goods are also expensive. This causes inconvenience to the residents.
- Safety and security have come across as a major concern. A few of the stakeholders complained about safety issues, prostitution, crime and other illegal activities
- The tourists complained about the hospitality and food, claiming it to be average
- Even the amenities and infrastructure services for the tourists are inadequate or in poor condition
- Tourists confirmed problems in getting around the place
- Complaints about poor up-keep and cleanliness in the tourist region

7.3.2 Vision for Development

Based on the issues they face, and inconveniences caused to them, the stakeholders have repeatedly suggested the following to be taken into consideration while developing Mahabalipuram as a tourist destination.

- Sub-urban railway connectivity for Mahabalipuram
- Increase in MTC buses during weekends for tourists
- Good customer services and Skill Development to help the people get employment and increase their monthly income
- Improves security systems to avoid illegal activities and ensure safety
- Advertising about Mahabalipuram and its significance in the tourism industry
- Easier ways for tourist to locate and visit tourist attractions
- Proper signages and maps to orient tourists
- Installation of interactive kiosks
- Steps to propagate and preserve the indigenous art of sculpting and stone carving

All the opinions of the stakeholders are critical and need to be valued and their issues addressed while making Mahabalipuram an ideal destination for tourists while improving the livelihood of the residents.

7.4 KEY TAKEAWAYS

- **Meeting with P. Secretary, DOT, TN**
- Vision for development
- Received a 13- point note which includes the projects envisaged by the authority

- Land availability and allocation and related issues
 - Quantification of project components and confirmation of project shelf
- **Meeting with District Collector, PWD, State Highways, ASI Mahabalipuram, TO, Town Panchayat, Mahabalipuram Development Authority**
 - Quantification of project components
 - Major issues and concerns
 - Infrastructure status and requirement
 - Availability of land, allocation for projects
- **Meeting with ASI, GoTN**
 - Discussion on project shelf and feasibility
 - Required permissions and objections
 - Finalization of Tourist trail and related features
 - Clarity on buffer zones around monuments
- **Meeting with Tourism Officer**
 - Issues and Concerns of Mahabalipuram Tourism
 - Discussion on Land availability and need of improvement of infrastructure services
 - Vision for Mahabalipuram
- **Meeting with Supervisor of Mahabalipuram New Town Development Authority**
 - Land Use of Mahabalipuram
 - Details of commercial land use
- **Meeting with Town Panchayat Officials**
 - Over all issues and concerns perceived by the Town Panchayat
 - Base line data collection
- **Sanitary Inspector**
 - Base line data collection
 - Issues and concerns

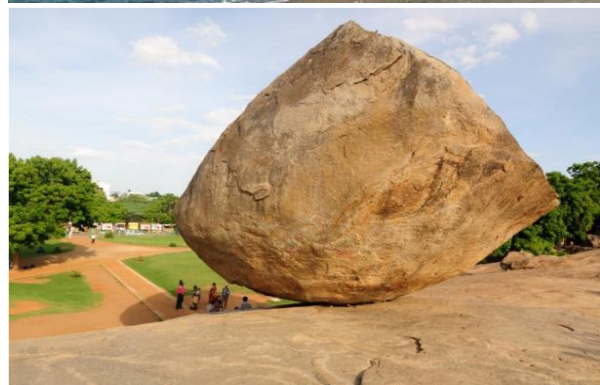
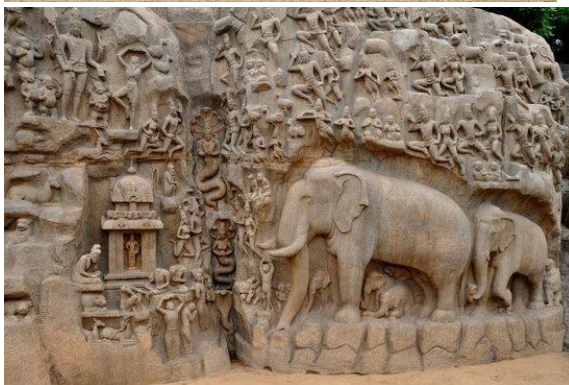
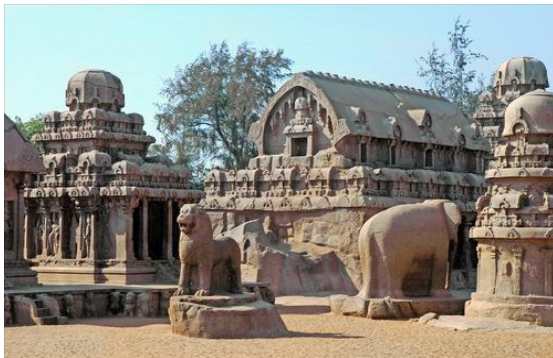


8 KEY TAKEAWAYS FROM CURRENT SCENARIO ASSESSMENT, STAKEHOLDERS' CONSULTATIONS AND BENCHMARKING

8.1 STRENGTHS AND OPPORTUNITIES

8.1.1 A Rich Cultural Backdrop

Mahabalipuram, classified as a UNESCO World Heritage Site, hosts some of the unique monuments which depict a fusion of religion, culture, and legends, all related to the Hindu religious pantheon. All these monuments located on the shores of the Bay of Bengal are built in the exclusive Dravidian style of architecture, imbibing the art and culture of Tamil Nadu. The monuments are royally historic as they were largely constructed between 7th and 9th Centuries. The monuments are: Mandapas, also called Cave Temples; Rathas, or chariots; the open-air bas-relief depicting Arjuna's penance to Lord Shiva to obtain the Pashupata weapon; and structural temples. The architecture of the rock-cut temples, particularly the Rathas, became models for south Indian temple architectural style in subsequent periods. The architectural features, particularly of the sculptures, were widely adopted in South India and also in the building of temples in Cambodia, Annam and Java. Descendants of the sculptors of these shrines are active and involved artisans in Mahabalipuram's contemporary town culture.



Efforts to systematically provide the enabling environment for its development are on-going. This stage of the study focuses on establishing the baseline tourism scenario of Mahabalipuram and assessing the same in order to establish the development requirements of the area. The impact indicators under review include:

- Tourism arrivals
- Existing Tourism Products and Tourism Infrastructure

- Employment Generation

8.1.2 Strategic Location & Connectivity

Mahabalipuram is strategically located on ECR, between Chennai and Pondicherry. The destination is a well-known tourist hotspot and has developed as one of the first sites visited by tourists on entry to Tamil Nadu.

Mahabalipuram is a 1.5-hour drive from Chennai along the East Coast Road (ECR). It is 95 kilometres North of Pondicherry. Local buses, taxis and auto-rickshaws are other options to travel to Mahabalipuram from Chennai. Tamil Nadu Tourism also runs a one- day bus tour from Chennai to Mahabalipuram. The nearest railway station is at Chennai. Chennai has a well-established Suburban Railway network and is in the process of developing a metro. The railway station closest to Mahabalipuram is Chengalpattu – 29 kilometres Northwest. Other main rail junctions in the state include Chennai, Coimbatore, Erode, Madurai, Salem and Tiruchirappalli. Chennai International Airport is currently the third largest airport in India after Mumbai and Delhi and has a passenger growth of 18%. It also has domestic airports at Tuticorin, Salem and Madurai, rendering several parts of the State easily accessible. Mahabalipuram is situated close to 65kms from the international airport.

8.1.3 Tourism Significance

Mahabalipuram Beach: The area attracts a lot of travelers every year especially for activities such as Sun bathing on the scenic beach. The beach gives an opportunity to completely unwind from the weariness of the city life.

Shore Temple: This is one of the oldest temples in South India. It belongs to the 8th Century A.D. and is a good example of the first phase of the structure of temples constructed in the Dravidian style. The Shore Temple at the Mahabalipuram sea-shore is the ultimate expression of Mahabalipuram

Tiger's Cave: This cave it is located 4 km north of the main monument complex. It was built as an open-air theatre, where cultural programs could have been held during the Pallava period. Though it is very near the sea, the place is serene and calm.

Five Rathas: These rock-cut temples are rated as excellent examples of Pallava art. Shaped in different styles, the five structures are named after the Pandava brothers of the Mahabharata and Draupadi. These are monolithic temples, each created in a different style. They are also known as the Pancha Pandava Rathas, and the four of the Rathas are supposed to have been scooped out of a single rock formation.

Dakshin Chitra: A heritage centre where traditional crafts are displayed and showcased from the states of the south India and folk artists performs cultural programs unique to their culture, displaying their rich heritage

Tour Packages: Several tour packages are offered by the Tamil Nadu Tourism Development Corporation (TTDC) in collaboration with various hotels and other tourist spots in the area

Cultural Events: Several events and cultural shows are organised every year at Mahabalipuram. This is organized by the Department of Tourism, TN. Exponents of Bharatanatyam, Kuchipudi, Kathak, Odissi, Mohini Attam, etc. perform against this magnificent backdrop of the Pallava rock sculptures. The weekly events are held at the Maragatha Poonga which has been rejuvenated by the Town Panchayat for use as a public congregation space. Some of the Important Events are-

- The Annual Dance Festival
- Weekend Dance Events
- Surf clubs and other activities

8.2 GAPS AND ISSUES

Un-planned Conservation activities: Mamallapuram has been slowly showing signs of getting run down over the last decade with very patchy efforts at keeping the monuments preserved. This has changed in the last few years with the Shore Temple being included in the UNESCO heritage project. The surroundings have been made much nicer, but there has been a lot of wind and water erosion on the temple carvings with many of them having undergone loss of detail over the years. Efforts need to be taken to assess the damage caused by natural and other causes. Development of a Heritage Conservation framework may be taken up to cater to organized, prioritized and planned conservation of the area.

The **quality of the resources** suffers, generally, from average standards of cleanliness and sanitation, particularly in the tourist and local visitor's congregation areas.

Information Infrastructure- Interpretation, signage and information are generally weak.

The other major issues that call for attention are as listed below:

- There is a need for an organized system of **employment** in the tourism sector within Mahabalipuram that the resident communities can benefit from
- Field surveys conducted reveal the need for **capacity and skill building** training programmes for tourist guides, locals involved in the surfing activities, staff in the hospitality sector, etc.
- Impact on daily life of locals - There is a need to monitor **unregulated tourist activities** and un-restricted entry of visitors in the town area
- **Absence of a clear State policy** framework on training and development for the public, private as well as the large informal sectors of the industry
- Poor quality of data on human resource development and employment
- **Limited linkage** of Information Technology with tourism human resource development
- Low public awareness of tourism employment opportunities
- No structured staff training policy
- **Lack of professional**, managerial, technical skills at the Mahabalipuram Special Grade Town Panchayat office, New Town Development Authority, TTDC office, and other agencies.
- Limited good quality hospitality and tourism training institutions in the region
- Scope to improve and implement national standards and certification of hospitality and tourism programmes

Site Circulation

- The bus stand is crowded most of the time, with buses finding it difficult to maneuver within the area
- The bus stand is centrally located and contributes to the congestion created at the entry point of the tourist destination
- Unregulated parking of taxis, bikes and autos in the bus stand
- Single entry and exit point for buses, renders the street unsafe for pedestrians and bikers
- Unregulated on-street parking owing to lack of dedicated parking areas for taxis and autos
- Unregulated parking of taxis, bikes and autos in the bus stand
- Unregulated and haphazard on-street parking owing to lack of dedicated parking areas for taxis and autos

- Streets and tourist circulation areas rendered unsafe for smooth pedestrian flow
- Heavy congestion in the core tourist site
- The fare for taxis and autos in the area are unregulated, and tourists are hassled by the taxi and auto operators

Tourist Infrastructure

- Safety and security need to improve upon – Coast guards, Lighting, Security posts, CCTV cameras, fire station, first aid clinics, etc
- Walkability - Pavements, traffic calming strategies, traffic management strategy
- Wayfinding - Signages, Pedestrian road markings, Defining walkable routes (heritage, food etc.)
- Convenience – The process of single ticket system for the entire complex, Multi lingual guides, Audio guides, Multi lingual guidebooks, Virtual tours etc.
- Amenities – Parking, toilets, Safe drinking water, Feeder system, battery operated cars, etc.
- Traffic management – Controlling the tourist vehicles during the peak traffic surge, providing alternative internal transport system.
- Quality recreation and open space for the locals need to be developed.
- Development of Children play area could be provided in parks and lawns next to heritage structures

8.3 PROJECTION OF REQUIREMENTS

In order to develop Mahabalipuram as a Sustainable Tourist Destination, it is imperative that the Vision and Goals developed take into consideration the positive as well as the negative impacts of Tourism on Mahabalipuram and its natives and vice versa to an extent. The strategy for development must revolve around a holistic approach that will ensure inclusive growth that will further benefit the residents, tourists, the environment and the economy of the area.

In depth study has been conducted to understand the character, strengths, challenges and opportunities that will drive the development plan for the Heritage area of Mahabalipuram. The needs assessment is based on the following vital parameters that have been studied closely and analysed:

- **Inventory of, and type of tourist attractions in Mahabalipuram**
- **Infrastructure and services inventory**
- **Visitor Profile**
- **Tourism industry in Mahabalipuram**
- **Market Potential**
- **Human and Institutional capacity**
- **Socio-economic and Cultural factors**

8.4 NEEDS ASSESSMENT

All the parameters mentioned above in the previous section have been studied at this stage and the understanding and analysis of the same form part of earlier chapters of this report. The summary of outcomes of the analysis forms the basis for the needs assessment and the same has been tabulated below:

Need / Type of Need	Priority	Timing	Synergies	Proposed Components
Enhancement of Access and Visibility	High	Short term	Tourism Local agencies Local communities	Need to develop vista points, entrance and exit plazas, signage systems and information boards, tourist interpretation center, with virtual heritage walk,
Enhanced connectivity and seamless access and circulation	Medium-High	Short - medium term	State agencies Local agencies	Improved way side amenities, transportation infrastructure, approach roads, last mile connectivity, way finding signage systems, resting plazas, etc.
Enhancement of Identity and Image	Medium-High	Medium term	State agencies Local agencies Tourism Private players	Branding and brand management, marketing strategies, presence along main roads approaching Mahabalipuram, heritage walks, etc.
Revamping basic tourist-state of the art infrastructure, making Mahabalipuram a safe destination	High	Short term	Local agencies Local communities NGOs	Renovation and Replacement of Public convenience units, installation of drinking water kiosks, sanitation, resting shelters, CCTV surveillance, Wi-Fi hot spots etc.
Improvement of Accommodation and related services	Medium	Short - Medium term	State agencies Local agencies Tourism Private players	Regulating and Monitoring facilities, online booking, quality services, enhanced safety, etc.
Avenues for Alternative tourism products which are commercially viable	Medium	Short - Medium term	State agencies Local agencies Tourism Private players	Enhanced beach and adventure related activities, artisans workshops and schools, etc.

Need / Type of Need	Priority	Timing	Synergies	Proposed Components
Enhanced Tourism related Employment and sense of pride	Medium	Medium - Long term	Local agencies Local Communities Tourism Private players NGOs	Formal capacity building, generation of jobs, etc.
Enhancing livelihood	High	Medium term	Local Craftsman, artisans, Art and Culture Department	Cultural Activities, Art and Craft Workshops, Cultural Village, Skill development centers etc.
Sustainable practices	High	Short - Medium term	Local agencies Local Communities Tourism Private players NGOs	SWM, recycling and reuse, ban on plastic, zero wastage of food - food for all concept, eco-friendly construction material in the area, zero littering, environmental preservation, etc.
Smart Tourism	High	Short- Medium Term	Tourism Department, Tour Operators, Transport Department, Local Players, IT Department	Smart Travel Card, IT based applications to synergise, ticketing, toll collection, availability of parking and parking charges to enhance revenue collection for the government.

Taking the above listed needs into cognizance, the goals are formulated in Chapter 9. To achieve the goals, the demand-gap analysis has been carried out in this chapter. The proposals to achieve these goals are elaborated in Chapter 10 of this report.

8.5 POTENTIAL AREAS FOR DEVELOPMENT

Identity& Brand Creation

- A destination assessment can go a long way in identifying Mahabalipuram's hidden gems and how to best conserve and promote them
- There is a need to tailor social media marketing strategies to showcase the destinations best colours
- Innovative ways of promoting the destination on a platform with wider reach must be developed

Site Circulation& Parking

- There is an urgent need to relocate the bus stand to create a safe circulation space for the pedestrians and vehicles
- There is also felt a need to create NMT zone with no-go areas for vehicles beyond a point in the heritage site area
- There is a need to create parking facilities for approximately 8700 vehicles (with provision for 2W parking of ~5000 numbers and 4W parking space for ~3000 numbers including autos and taxis and excluding buses, as per primary survey conducted) since the two available parking areas (at Shore Temple and the Pancha Rathas) are inadequate and the on-street parking is difficult to regulate and monitor
- There is also felt a need to create NMT zone with no-go areas for vehicles beyond a point in the heritage site area
- Fee for parking to be regulated and monitored to enhance the quality of parking facilities
- Development of Multi-level / ground level parking facilities in and around Mahabalipuram to cater to the parking demand of the tourist site

Information Infrastructure

- For a destination such as Mahabalipuram that caters to an average of 9,000 (weekdays) to 15,000 visitors a day over weekends, it is imperative to have a tourist interpretation centre that caters to the curiosity and travel needs of the visitors.
- Development of a tourist interpretation centre that orients the tourists at or prior to the entry point, giving the tourist information on history and marvel of the UNESCO World Heritage site, the secondary and tertiary tourist activities, etc. is recommended.
- Provision of Tourist information kiosks at strategic locations in Mahabalipuram

Design for All

- Implementing the concept of 'ACCESSIBLE BY ALL' and rendering the heritage area and the beach BARRIER FREE – the tourist area may be equipped with ramps where necessary, tactile warning surfaces, wheelchair assistance, beach buggies for emergencies, etc.

Capacity Building

- Conducting regular training and capacity building programmes for the staff of all the registered hotels to bring about a uniform sense of courteous and high standard level of services
- The services provided by the 3-star hotels may be assessed and upgraded to include more tourist friendly services
- Arrangements are to be made for detailed assessment of the types of accommodation in order to be able to regularize the services and bring them under one umbrella for services such as online booking, etc.

Tourist Infrastructure and Tourist Experience

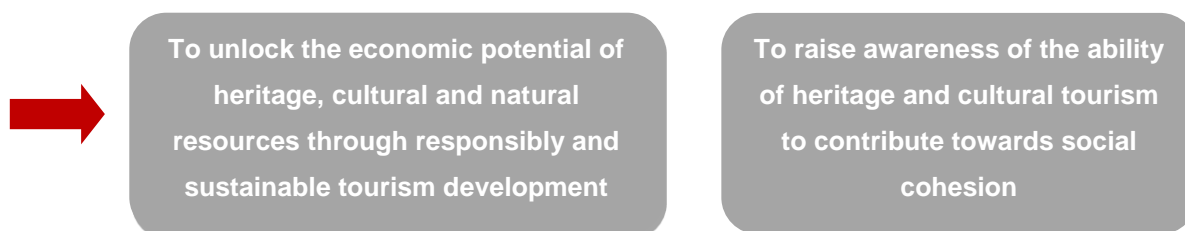
- Local community could be involved more for various tourist-based activities.
- Tourist circuits – Integrating and showcasing the other tourist spots (Muthukaadu, crocodile park, Tiger caves etc.) nearby through suitable transportation strategy.
- Heritage walks – Involving local guides for efficient heritage walk.
- Cycle tours – safe cycling paths, developing upon the existing cycle tours.
- Streamline of entry tickets – One entry ticket
- Vista points to be developed- Directional signages can be installed on vista points.
- Night tourism, dedicated night heritage walks, night view from lighthouse can be organized.
- The branding and showcasing of Mahabalipuram should be done with a perspective of a heritage town. Thus, the town and the upcoming developments in the precinct could benefit out of it.
- Building upon the upcoming MICE facilities to make Mahabalipuram as a significant MICE destination in the map of Tamil Nadu.
- Local resources can be harnessed to develop water-based activities, lifeguards etc.
- Development of additional tourist attraction nearby can boost the overall tourist potential of the Mahabalipuram.
- Limitation for the usage of plastics bags and other plastic products needs to be introduced to curb the menace of littering and sea debris.



9 VISIONING AND FOCUS AREAS

A key strength of Mahabalipuram's tourism appeal is the overall **diversity of resources**. These include: the **UNESCO designated World Heritage Site** and **nature-based tourism** owing to the **Coastal location**. Commercial and cultural events keep the tourist excited and on their toes through their visit. The potential of the coast remains untapped. The strength of the destination also lies in its beach that has the potential to be developed as a major water front destination. Mahabalipuram's tourism sector has been visualized as a major potential engine of growth and development. The vision and the development strategies defined here provide a framework for the coordination and integration of heritage (architectural and natural), culture into the mainstream of tourism.

The Mission:



The following problematic areas have been identified and served as the basis for the development of the strategy:

- There is poor alignment and integration of heritage and cultural resources into mainstream tourism; It is a recurring challenge that cultural tourism products are underrepresented in marketing Mahabalipuram as a tourist destination;
- The value and impact of this segment of tourism has not been fully realized, particularly the economic potential of heritage and cultural tourism products;
- There seems to be fragmentation and disparity between the conservation needs of heritage and the development requirements of tourism. This is due to a lack of comprehensive data and an integrated framework for heritage and cultural tourism products;
- There is lack of mutual beneficiation of revenue streams linking the domains of culture, heritage and tourism, accrued from the commercialization of heritage and cultural resources through tourism;

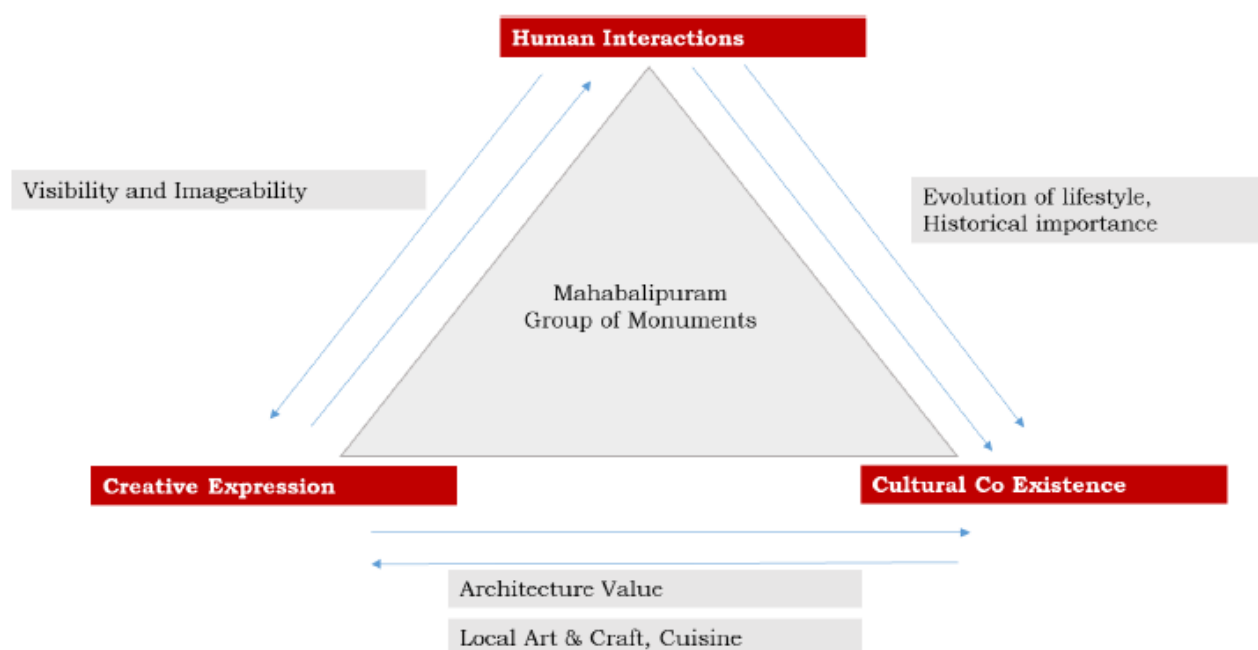
Among the reasons to develop Mahabalipuram as one of the Iconic Sites in India is to facilitate further creation of jobs, regional economic development, improvement of infrastructure, increasing domestic consumption and exports diversification. Focus will also be on nature-based tourism, cultural heritage and environmental preservation, empowerment of women, the youth and marginalized people, amongst others.

The following key considerations will play a major role in driving the interventions to completion in a successful manner:

- It is envisaged to recommend and adopt clear strategies to develop the intended proposals in the most efficient manner.
- Undertaking extensive stakeholder consultation – including with the local communities in the areas of development – in an open manner and in a spirit of co-operation.
- Interventions recommended are strictly to match on ground requirements at site for sustainability

Attempts shall be made to spread awareness of the life in Dravidian Dynasties and providing an opportunity for people to experience the lifestyle prevalent in the early 6th and 7th Century by enhancing tourism attractions and maintaining the lifestyle of the locals

To achieve the envisaged goals, the vision framework is exhibited as below:



9.1 VISION STATEMENT

The strategy provides a framework for the coordination and integration of heritage and culture into the mainstream of tourism.

To strategically manage Mahabalipuram's Tourism and to realize the global competitiveness of Mahabalipuram Group of Monuments, its heritage, cultural, and natural resources through product development in sustainable manner consistent with economic goals, cultural values, preservation of natural resources, community desires, and visitor industry needs.

9.2 FOCUS AREAS

The following Focus areas will serve as the guide for achievement of holistic development of Mahabalipuram:

- **Variety:** Mahabalipuram offers tourists a unique experience - to be amidst architectural marvels from times and tales untold. In order to enhance the flavour of Mahabalipuram, a good blend of activities must be introduced. It is intended to take advantage of the coastline and diversify the essence of Mahabalipuram to render it as a hotspot for beach front and water sport activities. Interventions to transform Mahabalipuram must cover important aspects - From accommodation (full-service hotels, condominiums, timeshare, bed-and-breakfasts, small inns, etc.) to activities appealing to a wider range of interests (culture and art seekers, adventure seekers, nature enthusiasts, etc.).
- **Enhanced Showcasing:** Showcasing the architectural marvels of the heritage site, against a grand backdrop with the help of technology and necessary interventions will be the focus here. This will ensure a wider reach. The concept of an interactive map for the heritage site, 4D walkthrough, and digital promotions will come in play here. Visibility of the destination is of foremost importance. Mahabalipuram will be adorned with a grand entry every tourist will remember.
- **Seamless Access and Safety:** Safety is priority to any traveller. This coastal destination will be rendered safe in all aspects - Barrier free. From illumination that compliments the Architecture of the area, to CCTV systems well camouflaged into the backdrop. Keeping the place alive at night via introducing camp sites, eat streets, creative workshops, etc. will ensure safety round the clock. All access and link roads will be taken up for improvement and beautification with introduction of 'no-go' zones for vehicles.
- **Authentic Experience:** The proposals will be oriented towards promoting local cuisine, music and other local activities. Engaging with the residents of the town via workshops and interactive sessions will help foster direct connect with the destination and at the same time will also provide an opportunity for the locals to engage in tourism activities for their livelihood.
- **Conservation:** All activities and interventions planned will have 'conservation' as the underlying theme. The green and the blue sheets of Mahabalipuram will be taken up for rejuvenation aiming at an enhanced heritage and urban fabric for the town. Regulatory measures will be proposed to ensure continued and long-term preservation of the natural and architectural heritage of Mahabalipuram.

9.3 OVERARCHING DEVELOPMENT STRATEGIES

The Development Plan for Mahabalipuram is proposed to build on the following four pillars of Destination Management:

Planning: Develop a Plan that is receptive to the interests of all key stakeholders with the aim of developing a Sustainable Development Plan.



Product: Development of products that resonate sustainability and attract tourists and a larger resource pool for further development of the area



Marketing: Develop a strategy that allows a collaborative model that helps the destination take advantage of other tourist hotspots in the region. Heritage and Cultural tourism could merit wider credibility, but only when the different actors involved avoid over-marketing, and control the overuse of its products by consumers. Responsible Marketing hence is one of the most important tools here.



Policy: Focus on products and innovations that catalyze growth at Policy level. Tourism is substantially dependent on an intact Social, Cultural and natural Environment and needs strategic planning to ensure sustainable and holistic development and growth of the region. Development of an area cannot be carried out in isolation of the existing Circuit of other destinations in the region.

9.4 GOALS FOR DEVELOPMENT

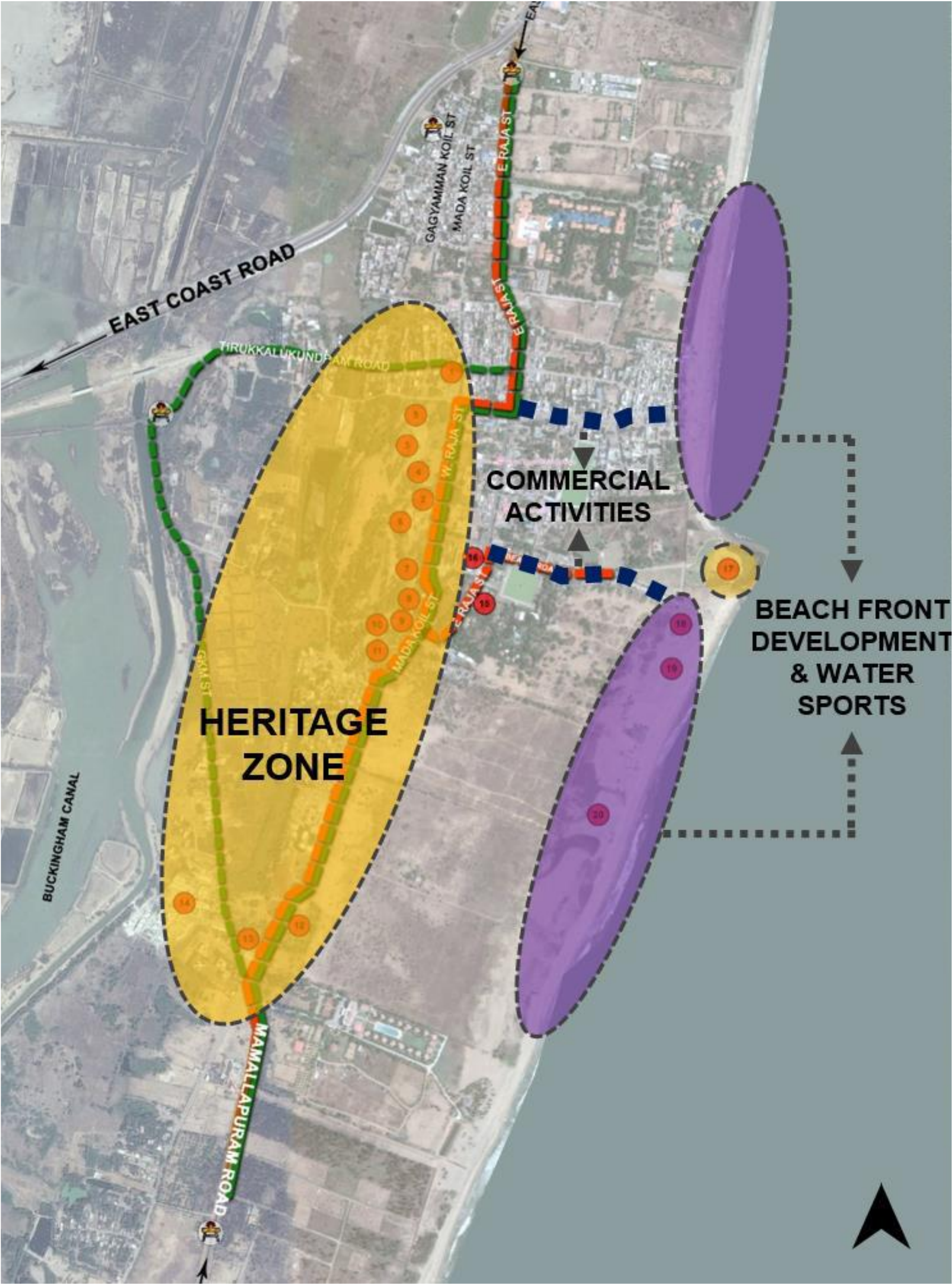
Realizing the Vision

Taking into consideration the diversity of resources and Mahabalipuram's potential to play host to multiple tourism products, the tourist destination has been zoned into 3 areas of focus namely, 'Heritage and Cultural', 'Beach Front' and 'Commercial activities'.

The main Goals developed (on basis of the needs assessment framework) for holistic growth of Mahabalipuram and its' tourism industry are presented below. These goals further identify a group of interventions proposed to achieve the objectives of the project. The underlying and governing theme for development of the proposed projects and sub components that define each goal is '**SUSTAINABLE AND RESPONSIBLE TOURISM**'.

- **Goal 1: Enhanced Image, Identity and Visibility**
- **Goal 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation**
- **Goal 3: Development of Mahabalipuram as a Grand Commercial & MICE destination**
- **Goal 4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life**
- **Goal 5: Smart Mahabalipuram**
- **Goal 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities**
- **Goal 7: Safe and Friendly Mahabalipuram**

Map showing tourist zones of Mahabalipuram



Map 9-1: Zoning of Tourist Activities

10 PROPOSED INTERVENTIONS WITH COST ESTIMATES

The creation of a new development plan for the Heritage town, offers the opportunity to reflect on past accomplishments, weigh present realities, and plan for the possibilities of tomorrow.

The UNESCO World Heritage Site of Mahabalipuram is unique by virtue of its history, architectural grandeur and attractive coastline. To achieve holistic development of the tourist destination, it must be borne in mind that the place forms part of a framework of circulation - an interwoven network of spatial connections and transfers (of visitors through individual and mass modes of commute). The historic destination, i.e. the heritage Precinct is connected spatially to the town (with high impact on the local economy and lifestyle) and the town lies connected to several of the surrounding towns and cities. The popularity and success of a precinct and its tourism industry is tied to its connect with the major towns and the region. The same applies vice-versa where the popularity of a single precinct has major impacts on the town and the region. Such is the case of Mahabalipuram.

A holistic framework for development of the precinct at the Regional, Town and local setting will ensure achievement of significant synergies via integrated planning of the strategies. Integrated planning will enable a more significant impact of the resulting strategies and projects as compared to the individual approach at precinct level.

Mahabalipuram is characteristic of not just its **natural** setting along the coastline, but also **its heritage elements**. It is imperative that these two very different elements of the Tourism spectrum, complement and enhance the significance of one another in order to achieve holistic development of an integrated, well designed and vibrant tourism scenario.

"The whole is greater than the sum of its parts". Although distinct from each other, the sector-specific needs assessments outlined in the earlier segment, have common threads and synergies that will be integrated into a sustainable development strategy.

The Goals bring in a sense of order to the development framework to ensure holistic and inclusive growth and conservation of Mahabalipuram

The framework of proposals presents **goals** to increase economic activity, sustain the positive net benefits of tourism, grow visitors spending, and promote effective conservation of the town and its tourism products. The framework described in the following section establishes **eight goals** that are envisaged to be accomplished by productive collaborations with partners and stakeholders.

The eight goals aim to achieve the overarching strategic goals, through sector-specific interventions, as presented in the section below. The needs defined under these goals respond to the perceived objectives of the project. The interventions designed in each goal are thus also strongly oriented towards the Vision of the project. Higher-quality heritage and nature-based tourism and environmental management will reinforce each other and will be supported by an orientation towards recreated heritage fabric and improved quality of life in Mahabalipuram. The spatial and functional integration is expected to secure a larger impact of the projects proposed under the goals.

The following table lists out the projects under each goal and their stakeholders and beneficiaries –

S. No	Goal	Project	Category	Stakeholder	Beneficiaries
1	G1: Enhanced Image, Identity and Visibility	Creating an Identity for Mahabalipuram - The Logo	Swadesh Darshan	DOT	DOT, Tourists, Residents
2		Creating an International Marketing Network	Swadesh Darshan	DOT	DOT, Tourists, Residents
3		Positioning Mahabalipuram in the External Market	Swadesh Darshan	DOT	DOT, Tourists, Residents
4		Re-Branding Mahabalipuram against a Larger Backdrop	Swadesh Darshan	DOT	DOT, Tourists, Residents
5		Leveraging the Destination's Strategic Location and Connectivity	Swadesh Darshan	DOT	DOT, Tourists, Residents
6	G2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	Creating a Gateway / Vistas to the UNESCO World Heritage Site with State of the Art Toll Gate and Ticketing Booth at the Entrance	Swadesh Darshan	NHAI / PWD / Panchayat	DOT, Tourists, Residents
7		Beach Front Development and Tapping into the Potential of the Beach	External	NHAI / PWD / Panchayat	Revenue for DOT
8		Creation of Iconic Town Square / Relocating the Bus Stand	Swadesh Darshan	Panchayat	Tourists, Residents
9		Defined and Dedicated Tourist Route / Trail	Swadesh Darshan	Panchayat / PWD / DOT	Tourists
10		Improvement of Internal Streets and creating a Barrier-Free Mahabalipuram	Swadesh Darshan	Panchayat / PWD / DOT	Residents
11		Decongesting Mahabalipuram - Parking	SD/ External	Panchayat/DOT	Tourists, Residents
12		Reconfiguration of Spatial Aspects - Creation of Open Breathing Spaces of Congregation within Mahabalipuram	Swadesh Darshan	DOT/ASI/Panchayat	Tourists, Residents
13	G3: Development of Mahabalipuram as a	Development of convention center, conference halls, banquets and ancillary facilities to develop Mahabalipuram as a MICE destination	External	DOT / Panchayat	Visitor / DOT

S. No	Goal	Project	Category	Stakeholder	Beneficiaries
14	Grand Commercial & MICE destination	Heritage and Culture - Conservation and Tourist Awareness - Visitors Interpretation Centre	Swadesh Darshan	DOT	ASI, DOT, Tourists
15		Wellness Centre for Meditation and Yoga	External	DOT	DOT, Tourists
16	G4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life	Development of Cultural Village (Artisans Concept Village)	Swadesh Darshan		Tourists, Residents
17		Centre for Alternative Skill Development and Capacity Building, Mobilization of NGOs to conduct Training Programmes to render the Tourist Spot Friendlier and Safer Mahabalipuram	Swadesh Darshan	DOT/ Panchayat/NGOs	Tourists, Residents, Vendors
18		Enhanced Quality of Life - Community and School Toilets	Swadesh Darshan	DOT	Residents
19	G5: Smart Mahabalipuram	Smart Explorer App for Seamless Access	Swadesh Darshan	DOT	DOT, Tourists
20		Unified Smart Traveller Card	Swadesh Darshan	DOT	DOT, Tourists
21	G6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	Provision of Drinking Water Kiosks / Fountains at Identified Locations	Swadesh Darshan	DOT	Tourists
22		Creation of Sheltered Resting Plazas	Swadesh Darshan	DOT	Tourists
23		Provision of First Aid Kiosks	Swadesh Darshan	DOT	Tourists
24		Provision of E-Toilets for Tourists	Swadesh Darshan	DOT	Tourists
25		Provision of Emergency booths for SOS calls and reporting	Swadesh Darshan	DOT	Tourists
26		SWM-Bins at Every 25m Interval	Swadesh Darshan	DOT	Tourists, Panchayat
27		Provision of Wi-Fi Hotspots	Swadesh Darshan	DOT	Tourists

S. No	Goal	Project	Category	Stakeholder	Beneficiaries
28	G7: Safe and Friendly Mahabalipuram	Illumination: Installation of Lighting on the Beach and Un-lit Areas, Illumination of Monuments as per Regulations	Swadesh Darshan	DOT	Tourists, Visitors, Vendors
29		Installation of CCTV Systems at Identified Locations	Swadesh Darshan	DOT	Panchayat / DOT, Tourists, Residents
30		Watch Towers: Installation of Watch Towers on the Beach	Swadesh Darshan	DOT	Tourists
31		Security and Increased Watch Guards in the Heritage Area	Swadesh Darshan	DOT	Tourists
32		Development of Fire Station and related Amenities	Swadesh Darshan	Panchayat	Tourists, Residents

A site visit was conducted in the presence of the District Collector, various stakeholders and the Consultants to finalize areas for the proposals. The following map shows the land parcels identified-



Map 10-1: Proposed Land Parcels

The following table contains the description of each parcel of land and the assigned projects:

Table 10-1: Land Parcel Details

S. No.	Land Parcel Number	Description	Area (acres)	Ownership	Use
1	1	Fisherman Colony	4.26	GRT - Mahabalipuram Hotel Pvt. Ltd	Visitors Centre in 1.5 acres for Visitors Centre. 2.76 acres for surface parking
2	2	A2B Land	2.05	Labor Welfare Association	Surface Parking in 1.47 acres
3	3	New Bus Stand	3.5	New Town Development Authority	New Bus Stand in 3 acres. Surface Parking in 0.5 acres
4	4	Existing Bus Stand	2.3	Thalasena Perumal Temple	Iconic Town Square
5	5	Temple Land	0.32	Bus Stand	
6	6	Land opposite Arjuna's Penance	0.87	Private Land owned by Yamini Krishnamoorthy	Under Dispute
7	7	Land adjacent to Shore Temple to the South	34	Tamilnadu Tourism Development Corporation	Open Space, Vending Zone, Open Air Theatre, Meditation and Yoga Center, etc.
8	8	Land near Shore Temple Parking	8	Jamindar Family	
9	9	Land near Pancha Rathas	0.3	Government	Access to beach. Land to be aquired
			1.4	Private Land owned by S. Martin	
10	10	Land owned by Animal Husbandry Department	91.8	Animal Husbandry Department	Conference Hall, MICE Facility, etc.



Goal 1: Enhanced Image Identity & Visibility



10.1 GOAL 1 – ENHANCED IMAGE, IDENTITY AND VISIBILITY

TOURISM AND BRAND MANAGEMENT

Need and Intent

People travel for a variety of reasons—to explore, to relax, to experience other cultures. But at the core of that experience lies the destination. The power of the destination lies partially in the way the State and Country brands and promotes the destination. This section evaluates the Marketing strategy and efforts made to project Mahabalipuram on a global platform against the following simple questions -

Are we Connecting with people?

TTDC conducts cultural events in the form of the Annual Dance Festival at Mahabalipuram to gain global presence of the World Heritage site. 1000s of tourists throng the area to witness this event. The State and local agencies need to take several such innovative steps in promoting the destination.

Is the content right?

60% of the sales process is over before a prospective buyer ever talks to a salesman or begins the process. What does that mean? It means that almost every single visitor will make a majority of their decision through online research before anything else. Destinations will have to create content that supports them in that online research phase. It is thus imperative for the State and National Tourism agencies to evaluate the content in the case of Mahabalipuram as well.

Is the destination marketed on the right Platform?

TTDC initiatives - Participation in Marketing Meets, Campaigns and Exhibitions

The state is taking various steps to attract tourists from India and abroad by conducting **Marketing Meets, Publicity Campaigns and Exhibitions** at potential regions at domestic and overseas levels. The multifarious tourist attractions, excellent Law and Order, connectivity to destinations, tourist facilities for luxury and budget travel and tourist friendliness are highlighted in marketing activities.

To focus on inbound tourism and buyer seller meet with an objective to reinforce Tamil Nadu as world class tourism destination, opportunity to interact with foreign buyers and Indian sellers, policy makers, investors, members of media, Tamil Nadu Tourism participates in the **Tourism and Travel Marts, Tourism Fairs** organized by Tourism Departments of other States and reputed agencies to showcase the Tourism potential of Tamil Nadu.

Social Media - A platform that has the greatest reach must be leveraged by the State and Local tourism agencies to promote Mahabalipuram. It is also important to know where to promote the destination. The State needs to find out who their target audience is, and where they spend their time in the online world. They could be on Instagram, Twitter, Pinterest, Tumblr, or maybe even all the above. There is more to social media than Facebook and one of the best ways to amplify a destinations uniqueness is to increase its reach through these different, targeted social media platforms.

Is the destination showcasing its personality?

Social media also offers a unique opportunity to be human. Nobody wants to talk to a salesman who is constantly pitching; they want to build relationships with real people. The same principle applies when it comes to creating brand loyalty, trust and eventually sales. Being relevant and not robotic is the key. If visitors to the social media site are kept in awe and engaged, they will want to make a visit to the actual physical site too.

The Tourism Department launched a marketing campaign in 2003 – 2004. It provided a theme that has paved way for the consistent efforts of the Tourism Department. The campaign has been popular and effective.



Tamil Nadu Tourism and BRAND MANAGEMENT

The “Enchanting Tamil Nadu – Experience Yourself” Campaign



Enchanting Tamil Nadu represents the rich and varied tourism wealth of Tamil Nadu

Experience Yourself advertises the core Heritage, History, Culture, Spirituality and Peace of tourism in Tamil Nadu.

What is the destinations unique ESP and are potential tourists aware of it prior to the visit?

Mahabalipuram has a diverse array of brilliant tourism products which have been overlooked. The aim should be to maximize an active audience of followers, generating stunning branding content and increasing revenue by presenting destinations at the very peak of their potential.

It is observed that visitors hardly get to see billboards or Digital Information boards en-route to Mahabalipuram, as one approaches the heritage site from either side of the East Coast Road (ECR), i.e, via Pondicherry or via Chennai.

Defining Parameters / metrics

Global Precinct, Tourist Footfall, Identity Creation, Tourism Experience

Proposed Interventions

Fostering an integrated policy approach

- Developing long-term strategies that consider the trade-offs and complementarities with related policy areas
- Identifying the roles, functions and interactions of key stakeholders
- Recognizing the value of strong dialogue and coordination between government, industry and civil society in the development, implementation and monitoring phases

Preparing for megatrends

- Building systemic and strategic approaches to adapt in an increasingly fast-moving, interconnected and dynamic environment
- Modernizing regulatory and legislative frameworks, broadly engaging with key stakeholders in their development and supporting predictive mechanisms in the policy and regulatory process
- Cultivating partnerships with industry, other governments, and civil society to address the cross-cutting impacts of megatrends and developing responses that account for new and innovative business approaches to service delivery
- Taking steps to future-proof tourism policy and promote a culture of innovation and change management within government to ensure that long-term megatrends are given due consideration, notably through robust data analysis and scenario planning

Promoting investment and financing for sustainable tourism

- Incorporating environmental and sustainability criteria into public financing and investment supports, and encourage the uptake of green financing instruments for tourism projects, notably by leveraging private investment
- Encouraging more responsible business practices in tourism through the integration of environmental and social criteria into tourism policies and programs, mobilization of green investors and uptake of sustainable practices by businesses
- Capacity building and better co-ordination of actions across different levels of government and policy areas including tourism, environment and innovation to support the shift to more sustainable tourism investment and financing practices
- Improving data collection and analysis on green finance and investment in sustainable tourism development to accurately integrate environmental risk into tourism financing and investment decisions and develop a better understanding of the economic, social and environmental outcomes of tourism investment

The re-branding and marketing initiatives include the following:

S. No	Goal	Project
1	G1: Enhanced Image, Identity and Visibility	Creating an Identity for Mahabalipuram - The Logo
2		Creating an International Marketing Network
3		Positioning Mahabalipuram in the External Market
4		Re-Branding Mahabalipuram against a Larger Backdrop
5		Leveraging the Destination's Strategic Location and Connectivity

10.1.1 Goal1.1. Creating an Identity for Mahabalipuram - The Logo

One of the vital factors in creating an Identity for any tourist destination is the Logo. A good Logo is what sticks in the mind of a tourist or a potential visitor. The Logo, especially in the international context, is pivotal to branding of a destination as this is what a traveler identifies with while searching for authentic information on the web and otherwise. **A catchy and apt Tagline that defines Mahabalipuram is what is required to take the first step towards re-presenting Mahabalipuram to the World.**

All major tourist destinations and regions. Destinations such as Angkor Wat in Cambodia and places like Vietnam and China have logos that pique the interest of the tourist (as shown below).



Logos should form an immediate connect between the reader and destination. One of the simplest and most effective way to achieve this is to ensure that the logo captures and mirrors the essence of the destination through the font, style and images that define the logo.

The State Tourism Department, Tamil Nadu can reap substantial heaps of benefits from a good Logo that says it all - One that entices potential tourists and urges them to plan their visit to Mahabalipuram.

10.1.2 Goal1.2 - Creating An International Marketing Network

It is envisaged to bring visitors from different parts of the globe by spreading the essence of Mahabalipuram around the World.

The aim here is to equip the State Tourism Department **to form a network of marketing partners around the globe to take Mahabalipuram to the World.** The Tourism Department will coordinate with its global marketing team, visitor industry partners, travel trade and community stakeholders to ensure that marketing and communications tactics are in line with Mahabalipuram's and Tamil Nadu's unique and distinctive products, including the UNESCO World Heritage group of Monuments, natural resources in the form of the beach and the coastline, the local culture and multi-cultures.

The Department of Tourism is envisaged to form contracts with leading marketing organizations beginning to promote Mahabalipuram in each of the global major market areas (MMA), geographic regions of the world that have roughly similar travel characteristics. With direct oversight of the Department and the Ministry of Tourism at the National level, the marketing team will be responsible for developing strategic marketing plans and cooperative programs for their respective areas.

Global level tie ups will also include **partnership with other sister destinations** of historic, cultural and natural value. The partnership will ensure enhancement of knowledge base on tourism strategies,

conservation practices, etc. Peer learning is key and the aim is to add to the various facets and in turn the tourist footfall of Mahabalipuram.

These partnerships of various kinds are envisaged to leverage information available at the global level and utilize the same to take Mahabalipuram to the World. Information on tourist footfall at other similar historic and cultural destinations will help analyse and evaluate the parameters Mahabalipuram can build on to achieve a wider reach and higher tourist footfall.

Brand Management Plan: The Brand Management Plan will act as the Departments annual action plan and details, initiatives and programs to achieve KPIs. The budget for the destination and its development and promotion will be formulated in conjunction with the Brand Management Plan.

10.1.3 Goal 1.3 Positioning Mahabalipuram in the External Market

The evolution of the Internet and communications technology has complicated the concept of positioning but also allows the prospect of positioning the destination to the specific needs and interests of various target groups. In the era of mass markets and mass media, it was previously necessary to choose a single position for the destination that would generally appeal to a broadly defined target audience. With the fragmentation of media and the explosive growth of the Internet, it is now possible to develop marketing positions explicitly crafted for the narrowly defined interests of specific audiences. In this environment, positioning operates on two levels. First, in order to maintain brand consistency overall, a general position for the destination requires a common base of universally appreciated (and unique) attributes. For Mahabalipuram, these undoubtedly include the variety of things to do, see and experience across the coast and the heritage town around which the commercial activities are intertwined.

Second, when applying this overall position to narrowly defined markets (based on consumer interests), additional attributes are included that link unique features of the destination to the specific interests of the audience. Mahabalipuram offers the following:

- **History/Culture:** A surprisingly rich heritage highlighted by a royal past and a culture formed through different eras
- **Cuisine:** Authentic ethnic foods and the Regional Cuisine
- **Business/MCI:** Existing and potential range to host meeting facilities and a culture of hospitality that sets Mahabalipuram apart from other potential business sites in the region
- **Leisure and Adventure:** Surfing, boating, exploring the waters and leisure activities in the coastal setting. Mahabalipuram is also home to luxury and high end resorts that host surfing and boating activities
- **Shopping:** Everything from authentic sculptures and products of stone work to craft fairs

With the ubiquity of the Internet, it is now possible to pursue micro-markets. An exclusive Website for Mahabalipuram with the right content, appealing to potential tourists including sculptors, quilters, artisans, tri-athletes, nature enthusiasts, architecture and history enthusiasts, etc. can effectively reach small target audiences that historically have been impossible to address in the past.

Designing the **tourism information infrastructure** is of utmost importance here. Content development for Websites and promotion of Heritage walks, Temple Trails and beach and leisure activities which can be further translated in Information brochures, maps etc. must be revamped to high global standards for a wider reach.



Image 10-1: Branding through travel brochures

- **OOH Billboards:** OOH campaigns like digital screens in all the international airports overseas and in India (like Mumbai, Delhi, Chennai, Bangalore, Hyderabad, Kolkata etc.) along with the regional airports like Ahmedabad, Rajkot, Diu etc. OOH Advertisement can also be displayed on regional railway stations, railways, similarly State Transport Buses, ISBTs etc. The exhibit of existing examples is shown as under

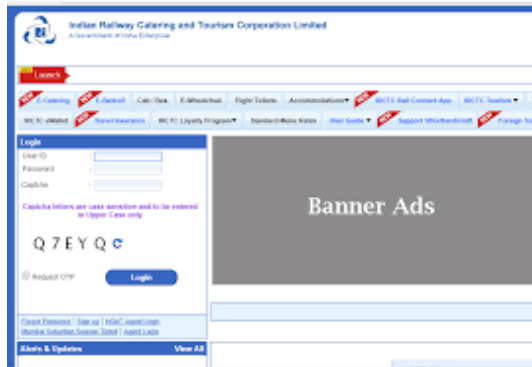


10.1.4 Goal1.4 - Re-Branding Mahabalipuram Against A Larger Backdrop

The objectives of this goal are envisaged to be achieved via the following:

- Digital presence on the web across various international travel websites
- Presence and traces of Mahabalipuram (large scale Sculptures, murals, etc.) in Chennai, Pondicherry and other surrounding town / cities as a promotional measure

- Hoardings and Digital boards on ECR for enhanced presence within Pondicherry and Chennai
- Brochures and Souvenirs of Mahabalipuram in various stores across cities promoting the circuit / packages

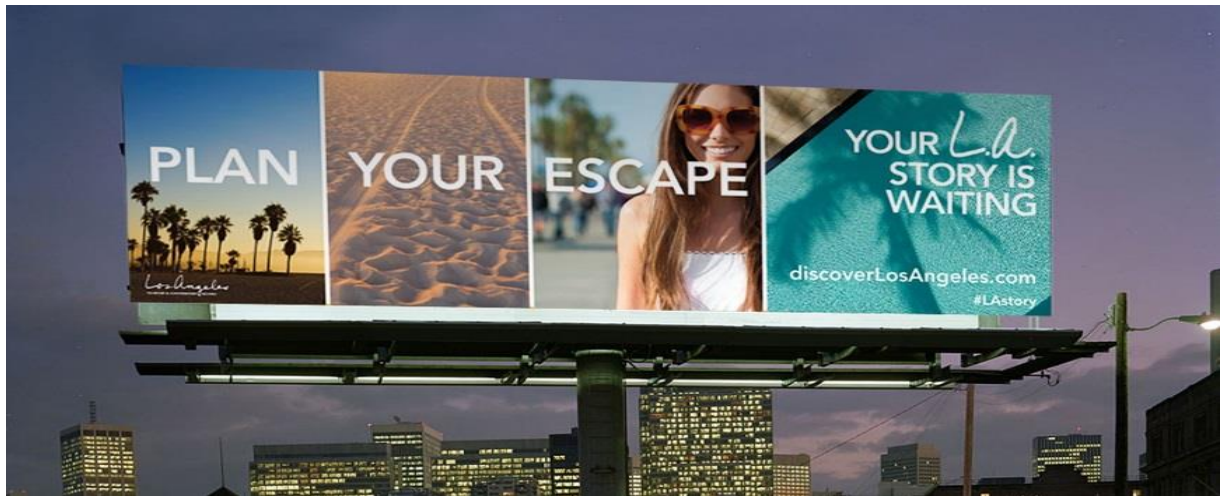


10.1.5 Goal 1.5 - Leveraging the Destinations Strategic Location And Connectivity

- Identification of **tourist circuits** in the neighbouring regions of Mahabalipuram (Macro)
- **Tourism Packages:** A range of packages of different durations and areas of interests (nature based, adventure based, history and architecture based, combination of either, etc.) that increase the stay duration of tourists and include all aspects like transport, accommodation, food, travel guide, beach activities, workshops, etc. in a single booking. Customizable packages to be made available for convenience of tourists.
- **Travel & Accommodation Partners:** Open doors to hospitality service providers like Air BNB. Recently, Sweden has recently formed a MoU with Air BNB for open tourism in an effort to promote the country's "freedom to roam" principle, or "allmansrätten," which gives people the right to freely explore all public spaces across the country.
- **Broadcast Media and Print Media Platform:** Tie up with Radio Stations, Newspaper, Travel Magazines etc. to regularly feature Mahabalipuram in their columns. It can be done through digital magazines also. For example, A no. of tourist destinations have already featured in Hello 6E, an in-house publication of Indigo Airlines a popular low-cost airline in India.

Expected Benefits and outcomes

1. Spreading the essence and uniqueness of Mahabalipuram globally
2. Wider reach and popularity
3. Increase in Footfall and Revenue Generation
4. Branding of all Tourism Activities
5. Enhanced levels of awareness and hence conservation of resources, heritage, architecture and local skill
6. Empowered women folk and improved employment opportunities





Goal 2: Master Plan Preparation-
Revitalizing the heritage destination and
the beachfront through enhanced
connectivity, seamless access and
circulation



10.2 GOAL 2: MASTER PLAN PREPARATION- REVITALIZING THE HERITAGE DESTINATION AND THE BEACHFRONT THROUGH ENHANCED CONNECTIVITY, SEAMLESS ACCESS AND CIRCULATION

An easily accessible tourist spot is key to the popularity and reach of the destination

The group of monuments have a distinct identity on the world map. It has gained more popularity after being declared as a world heritage site. The heritage site has the capacity to take a visitor back to an era of Architectural Marvel and mystery. The two-main entry points to Mahabalipuram town are from the north through East coast road and from the West through Tirukalukkundram Road. For a tourist spot of such high acclaim, it lacks the visibility in term of a clear entry point. Site studied indicate the absence of billboards/ information boards that lead the tourists and keep the excitement of the visit.

As we approach the site from Chennai, one comes across a toll booth on the highway which lacks infrastructure such as a maintained toll booth, digital ticketing, receipts etc. The site has 39 monuments & sculptures that visitors are unaware of throughout their visit. This can be attributed to the absence of informative maps and signages depicting the locations of these attractions. The circulation path to these attractions is also undefined so the visitors are not guided properly. The lack of a sense of Arrival and all the above factors prove as a dampener to the visitor.



Image 10-2: Entry to Mahabalipuram town from ECR (From North)



Image 10-3: Entry to Mahabalipuram town from Tirukalukkundram Road (From west)



Image 10-4: Town Panchayat map near the entry

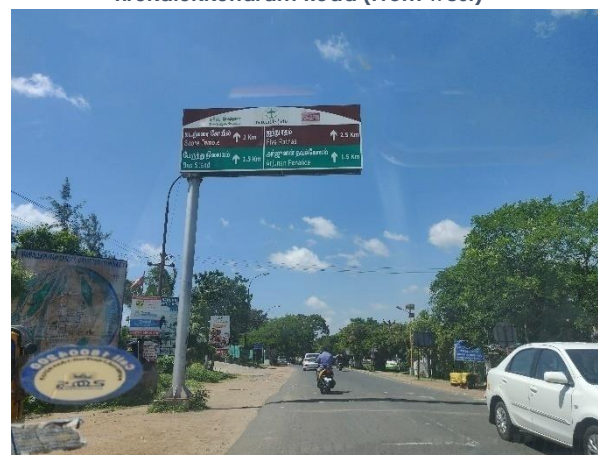


Image 10-5: High mast directional signage

PROPOSED INTERVENTIONS

S. No	Goal	Project
1	G2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	Creating a Gateway / Vistas to the UNESCO World Heritage Site with State of the Art Toll Gate and Ticketing Booth at the Entrance
2		Beach Front Development and Tapping into the Potential of the Beach
3		Relocating the Bus Stand and Development of New Bus Stand
4		Defined and Dedicated Tourist Route / Trail
5		Improvement of Internal Streets and creating a Barrier-Free Mahabalipuram
6		Decongesting Mahabalipuram - Parking
7		Reconfiguration of Spatial Aspects - Creation of Open Breathing Spaces of Congregation within Mahabalipuram

The proposed interventions have been represented in the following map.

Map Showing Proposed Interventions under Goal 2

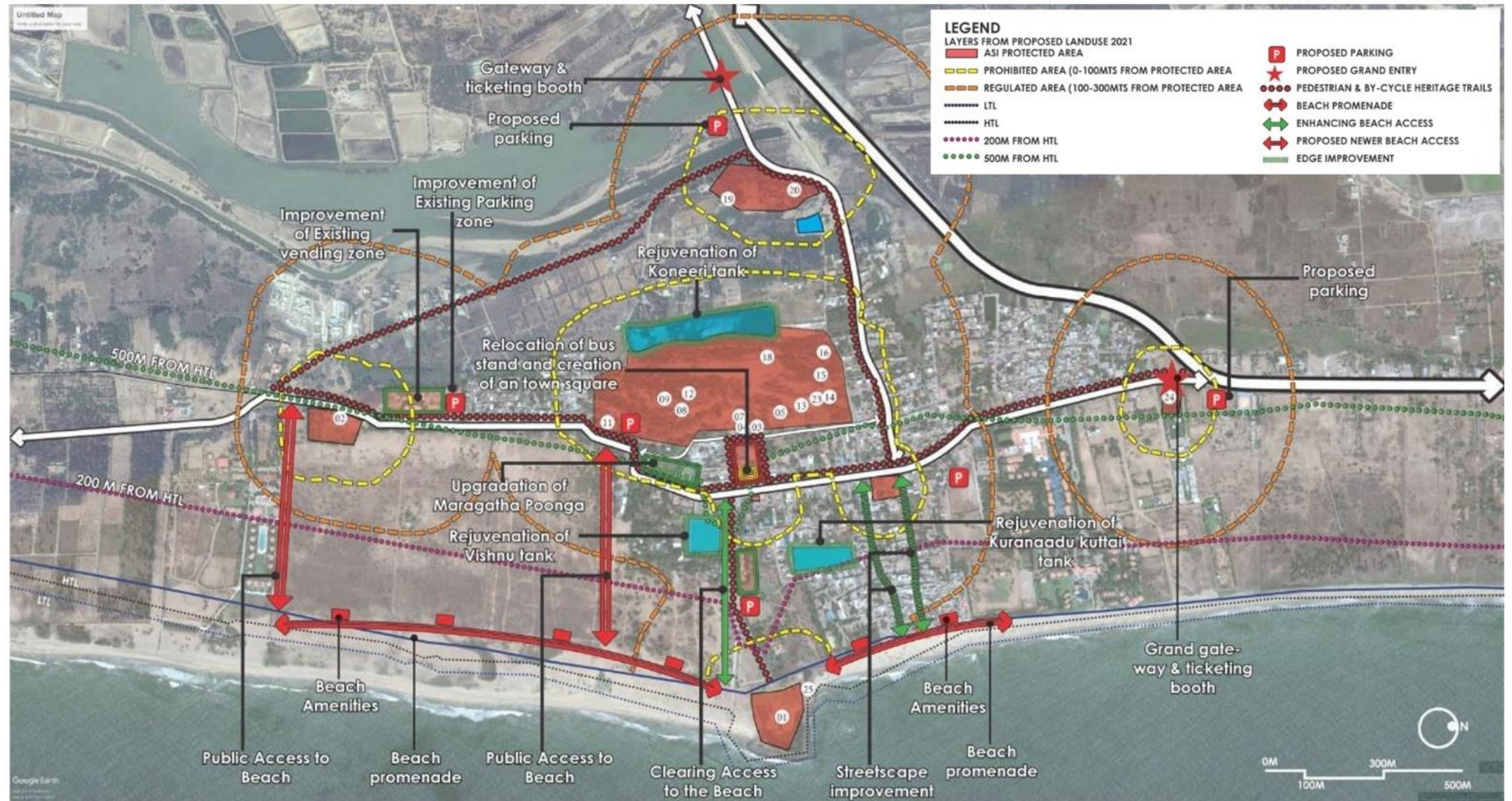


Figure 10-1: Map Showing Proposed Interventions under Goal 2

Proposed Master Plan for Mahabalipuram



Figure 10-2: Proposed Master Plan for Mahabalipuram

10.2.1 Goal 2.1- Creating a Gateway / Vistas for better sense of arrival to the UNESCO world heritage site, with a State of the Art Toll Gate and Ticketing Booth at the Entrance

Need and Intent

Cultural / Heritage tourism is one of the fastest growing segments in the Tourism industry. This can be attributed to the evolving interests of the tourists and their travel pattern. Mahabalipuram received the title of the UNESCO World Heritage Site in 1984. **The popularity of the heritage site has substantially increased over the decades, and the number of tourists have increased from ~68 Lakh to 1.5 Crore between 2013 to 2017.** While there was an increase of domestic tourists at the rate of 84% during the period 2013-14, the growth rate of domestic tourists dropped to 13% during 2014-15. Similarly, the growth rate of foreign tourists dropped from 21% in 2013-14 to 8% in 2014-15. Also, as observed in 2017, the growth rate has further dipped to upto 1 % at Mahabalipuram. This lays emphasis on the need to rejuvenate the attractiveness of the destination. One of the defining parameters of 'sense of arrival' is the visibility and Grand Entrance by which a tourist is greeted.

The entry to Mahabalipuram from the ECR expressway when one approaches from Chennai is controlled via an informal toll booth. Temporary thatched roof shacks are installed for entry fee collection for all the tourist Vehicles. The charges are INR 125 for buses, INR 100 for vans, INR 75 for cars and INR 15 for motor bikes.

Tourists visiting Mahabalipuram are required to pay at multiple locations to take a tour of the area. Apart from the entry toll, tourists further must pay separate entry charges at the Shore Temple as well as the Pancha Rathas monument.

Proposed features

Mahabalipuram is a destination worth a grand entrance gateway. It is proposed to create an Entry / Vista point at East Raja Street, that is visible from the ECR expressway (irrespective of whether one is approaching the destination from Chennai or Pondicherry). Designed to blend in with the natural as well as architectural heritage of the area, the entrance gateway will reflect the history and identity of Mahabalipuram. The gateway will be illuminated to enhance its visual appeal to the extent that the visitor begins to experience the mystery that Mahabalipuram is right at the point of entry. Creating a main entry point defined by a character specific to Mahabalipuram will not only instil a sense of arrival to the historical marvel that Mahabalipuram is, but also ensure regulated flow of tourists and local visitors to the site.

Development of well defined, secondary vista points at entries on the Tirukkalukkundram road and Gagyamman Koil street to the west, and Mamallapuram road to the South (access from Kalpakkam) are proposed. These will also reflect the culture and history of the area while ensuring that tourists are as far as possible, directed to the main entrance for a smoother and regulated flow. Map no. 5-1 shows the potential location for the main grand entry and secondary vista points to Mahabalipuram.

A world-renowned tourist destination such as Mahabalipuram calls for a **'Single ticketing system'** at one location where a tourist can make a one-time payment at the entry point and use the card / token to tour and experience the site hassle-free.

A state-of-the-art toll booth that facilitates operations of an innovative ticketing system for smooth access and flow to and within the heritage precinct is proposed to be developed on East Raja street.

10.2.2 Goal 2.2: Beach front Development and Tapping into the potential of the Beach

A. Beach promenade / plaza development and beautification of the shore

Proposed Interventions

The waterfront promenade project aims to turn the town into a significant urban coastal area for regional recreation and tourism. The concept also strives to rely on a theoretical background on waterfront space redesigning, and on the potential of their regeneration, as an instrument of economic development. The waterfront redevelopment scheme is a complex, multi-actor and long-term program that has to cope with changing economic and political conditions and the success of the project depends on the uniqueness of local environmental, tourism products proposed, physical, economic and political preconditions. The design philosophy adopted here is to create and develop interventions and tourism products that are minimally intrusive and least destructive in nature. To build using material that is found locally and to follow the vernacular style of architecture is what is envisaged here. The proposal focuses on use of sustainable and eco-friendly material in the design of Tourism products proposed to form part of the water front development.

Key considerations:

- It must be taken into consideration that the width of the Shore at Mahabalipuram varies from 70m to ~90m and keeping in line with the CRZ regulations, only soft trails and landscaping along with temporary kiosks can be proposed at the beach.
- The safety aspect of the water adventure sports must be assessed while proposing the activities. Ongoing activities as well must be assessed for provision of enhanced safety measures.
- On-going activities may be considered for regulatory control
- The disconnect between the North beach (north of the Shore temple) and the South beach (Pallava beach south of the Shore temple) will remain and care will be taken to maintain high levels of safety in this area.

Proposal Features:

- **Development of pedestrian trail with pergola seating:** A soft trail at the far end of the coast towards the inward side where people can walk / jog or simply leisure around serves as an ideal city level open space for tourists and citizens to spend time relaxing by the sea.
- **Board walks for safe access to the water:** A boardwalk is a walkway built with wood boards for tourists in the beach which could possibly prevent easy movement on foot from one place of interest to another. A path or pavement at certain intervals that lead to the water so that the tourists can access the water safely.



Amenities for Beach front activities: Encouraging activities like regularized vending stalls, beach sports, etc. to make the place more vibrant, lively and entertaining

- **Amenities** :Canopied resting shelters at every 50 meters; 8 Dustbins with provisions for segregation at every 100 meters, 3 Drinking Water Kiosks at every 250 meters and adequate lighting to keep the beach front clean, safe and convenient for the users.



About 16 pergola shaped for seating arrangement, cobble stone paved pathways about 1.5 m wide. 32 no. standalone solar lighting poles. 6 no. digital information boards.

- **Information Systems:** Digital Boards for information regarding activities taking place on



the beach, warning of danger, etc. to ensure safety of the users in times of possible calamities or regular high tides, sea currents, etc.

- **Coastal Safety:** Watch towers at regular intervals watching over activities on coast like surfing, swimming and other water sports. Life guards (10 no.) always equipped with all necessary tools to help people in danger.



B. Night tourism



Development of night Camping sites where visitors can enjoy the serene beach and the calming effect that natural and historical landscape of Mahabalipuram can have on a person once the commercial activities gives way to the quieter nighttime. The Area is also proposed to be well lit to facilitate enhanced safety.

Need and Intent

Owing to the nightscape lighting projects that extend the time of activities, night activities become more and more colorful. To respond the low-carbon energy economy, tourism can extend the time of activities with the help of nightscape lighting projects. The street lights as bright as daytime at the commercial districts, the buildings shading brilliance, the urban nightscape attract many people so that the night tourism becomes one of the hot topics of tourisms. To respond the low-carbon energy economy, the night tourism can extend the time of activities which with the help of nightscape lighting projects. It is not only increasing the tourism revenue, but also improve the competitiveness of urban tourism.

Defining Metrics: Revenue, Tourism Product, Tourist Experience, USP

Proposal Features

Known for its legacy and grandeur, Mahabalipuram can be explored as a Night tourism destination as well. With proper illumination in the town and high security standards for tourists especially women like night patrolling, emergency response service etc. night tourism can be a successful product. Night Tourism at Mahabalipuram can be attributed to various factors such as:

- **Suitable Climate** at night for Night Tourism Activities- The heritage tour and light and sound show can be undertaken even during the dark with proper lighting and illumination. Being a coastal destination, nights are favorable as compared to a bright, sunny hot day.

- **Night Tourism Attractions-** Exploring the attractions during night has its own charms. A Ferry or Cruise is proposed during night with provision of wine and dine along with some cultural performances.
- **Cultural Atmosphere-** Cultural Shows like traditional music concerts and traditional dance performances, plays, puppet shows can be arranged during the night.
- **Huge Tourism Markets-** Night tourism has a huge market demand as not all the tourist destinations offer night tourism and the activities are mostly restricted to the hotel and resort.



Light and Sound Show; Illuminated monuments



Art and Cultural Shows



Night Cruise



Puppet Shows

Paris is one of the iconic destinations when it comes to night tourism. The potential of night tourism was observed decades ago and the city has become vibrant every passing night. **Paris is shining at nightfall.** Every night visit Paris by night by double-decker bus with open roof (or closed roof in winter) with individual audio guides (**9 languages: French, English, Spanish, Italian, Russian, Japanese, Portuguese, German**).

Paris is one of the most visited cities of the world and welcomes every year around **25 million** tourists. Paris has around 276 monuments, churches, fountains, bridges and canals lit up at night. It also offers night cruise in the River Seine which flows through the heart of the capital city. The capital is also known for its night performances which largely include the music and dance shows.



Music and Dance Performances



Eiffel Tower at Night



Double Decker Bus



Seine River Cruise

C. Organized and safe water sport activities such as Surfing, safe boat rides, etc.

Being a coastal destination, the presence of water-based activity is imperative. With the increasing trend in Water sports activities, the challenges to have safe and regulated water sports activities have increased manifold in the absence of a comprehensive legislation in the State. The number of Water sports operators have increased considerably, proportionately increasing the risk and endangering the security and safety of tourists, due to the possible entry of unregulated, untrained and unscrupulous fly by night operators. **Formalizing the activities where fisher folk in Mahabalipuram take the tourists into the water for a unique experience is also proposed. The practice of diving into the water near the remains of the temple is to be regulated and formalized.**

Besides there is a lot of complexity in the entire process of operation of water sports activities. Unregulated and unauthenticated water sports operators are often seen charging exorbitant and unfair rates to the gullible tourists while openly bypassing the established safety standards thereby endangering the security and safety of tourists.

Taking cognizance of these issues, the following proposals are recommended:

1. Development of small-scale jetties for docking and water sport activities
2. Formation of a Tourist Safety Enforcement Team (TSET) to control, supervise and manage the water-based tourism activities
3. The activities shall take place only in the demarcated areas/ zones of the sea. The area demarcation to be carried out after in-depth study of water bed and aquatic eco-system.
4. Guidelines for Surface Adventure Water Sports shall be formulated which will define clearly the scope, provisions, Do's and Don'ts.
5. Proper support infrastructure like booking offices, safety equipment, life guards, watch towers, patrolling etc. shall be ensured.

The following Surface based activities are proposed:



Canoeing



Rowing



Parasailing where a person is towed behind a vehicle (usually a boat) while attached to a parachute



Jet Skiing



Sailing with wind propulsion



Cruising



Yachting



Boating - use of boats

D. Introduction of Organized Shacks and Restaurants to promote Local Cuisine

A shack is a type of small, often primitive shelter or dwelling. Like huts, shacks are constructed by hand using available materials; however, whereas huts are usually rural and made of natural materials (mud, rocks, sticks, etc.) shacks are generally composed of scavenged man-made materials like abandoned construction debris, repurposed consumer waste and other useful discarded objects that can be quickly

acquired at little or no cost and fashioned into a small dwelling. In Australian English shack can also refer to a small holiday house with limited conveniences, for instance it may not have running water or electricity.

Goa is also known for its excellent shacks. From the cozy ones to the bass-thumping ones, these shacks have changed the way people chill and party in Goa.

Similar shacks are also proposed on the Mahabalipuram Beach in a very regulated and organized way. Specific area to be demarcated for shacks activity, which will not cause harm to the fishermen folk and be away from the jetties and water sports area.

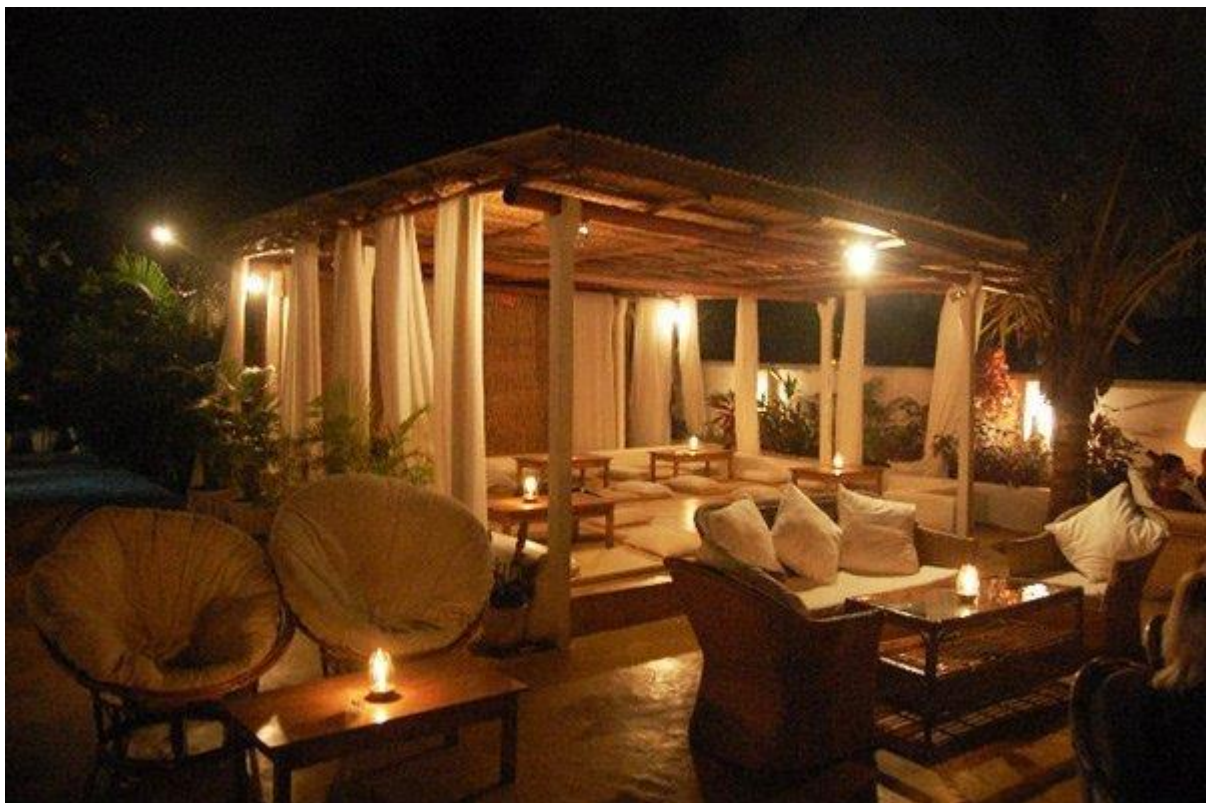


Image 10-6: Beach Shack

E. Introduction of Sea-plane / Hovercraft rides on and along the beach

India is home to several fun laden adventure sports which take place all across the length and breadth of the country. Seaplanes are powered fixed-wing aircrafts which are capable of taking off and landing on water. They offer a unique flying experience as you take off, not from a runway, but from a water body. Even the landing part has its own advantages as the landing is bumpy and wobbly.

The best part for all seaplane lovers in India is that one can avail the fun of riding a seaplane in the country. Seaplane as an adventure sport is not so popular in India yet. But seaplanes can be hired in different parts of India.

At present, Sea Planes can be hired in Kerala, Mumbai, Andaman & Nicobar Islands

Although seaplane rides aren't really popular in India. But like several other adventure sports, seaplane rides are making strides. On an average, a single seaplane ride would cost a tourist anything between 5000-10,000 INR per person. Efforts are being made in order to popularize seaplanes as a major tourist

attraction. As of now, new seaplane destinations are cropping up with old ones introducing fresh trips and rides. Hence, **an organized sea plane service is proposed at Mahabalipuram with ticketing and safety measures in place.**



Image 10-7: Proposed sea plane activities

The trip details and tickets of sea planes will be available both at the interpretation centre and the online applications proposed in this plan.

F. Development of Ferry Docks and a Cruise Terminal along the Mahabalipuram coastline

As part of creation of water-based tourism activities, Ferries and cruises are proposed along the beach. This will also generate revenue from the ticketing. Designated docks for ferries and terminals for cruise are also proposed.

Cruise Tourism is very popular worldwide. Cruise tourism is one of the fastest growing segments in the tourism industry and can make a significant contribution to a destination's economy and local communities. Cruise ships are organized much like floating hotels, with a complete hospitality staff in addition to the usual ship's crew. It is not uncommon for the most luxurious ships to have more crew and staff than passengers. Dining on almost all cruise ships is included in the cruise price.



Image 10-8: Ferry & Cruise Tourism

The trip details and tickets of ferry rides and cruise rides will be available both at the interpretation center and the online applications proposed in this plan.

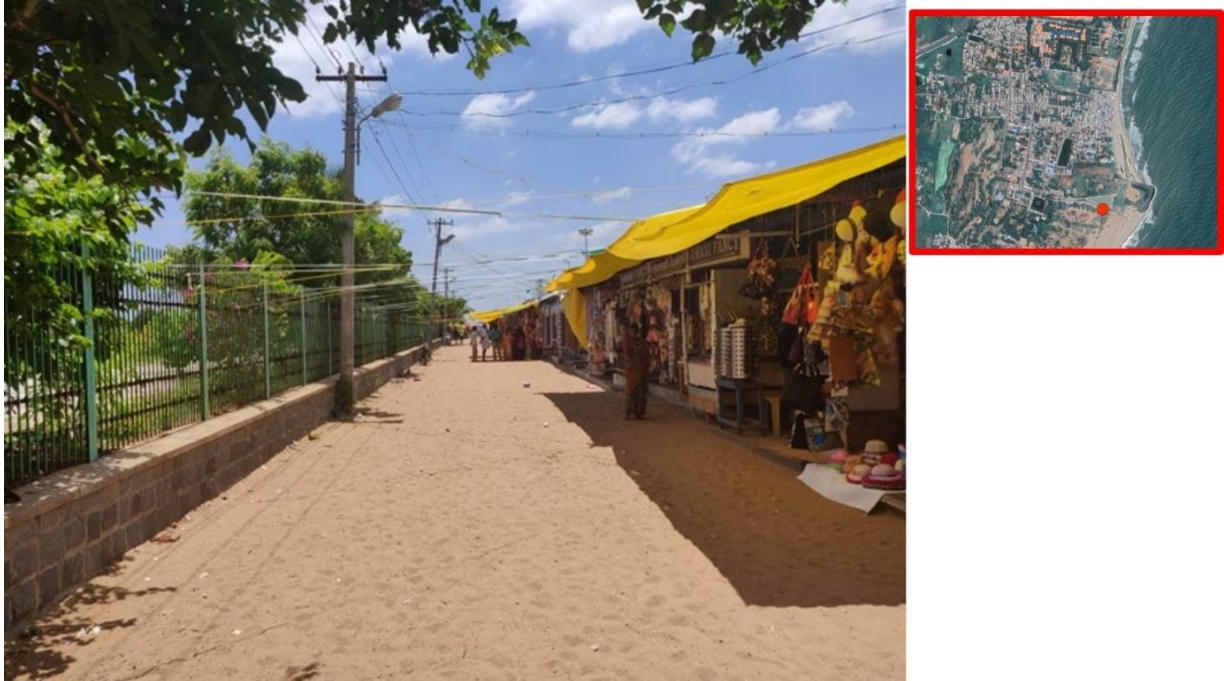


Figure 10-3: Existing street hawking area near Shore Temple

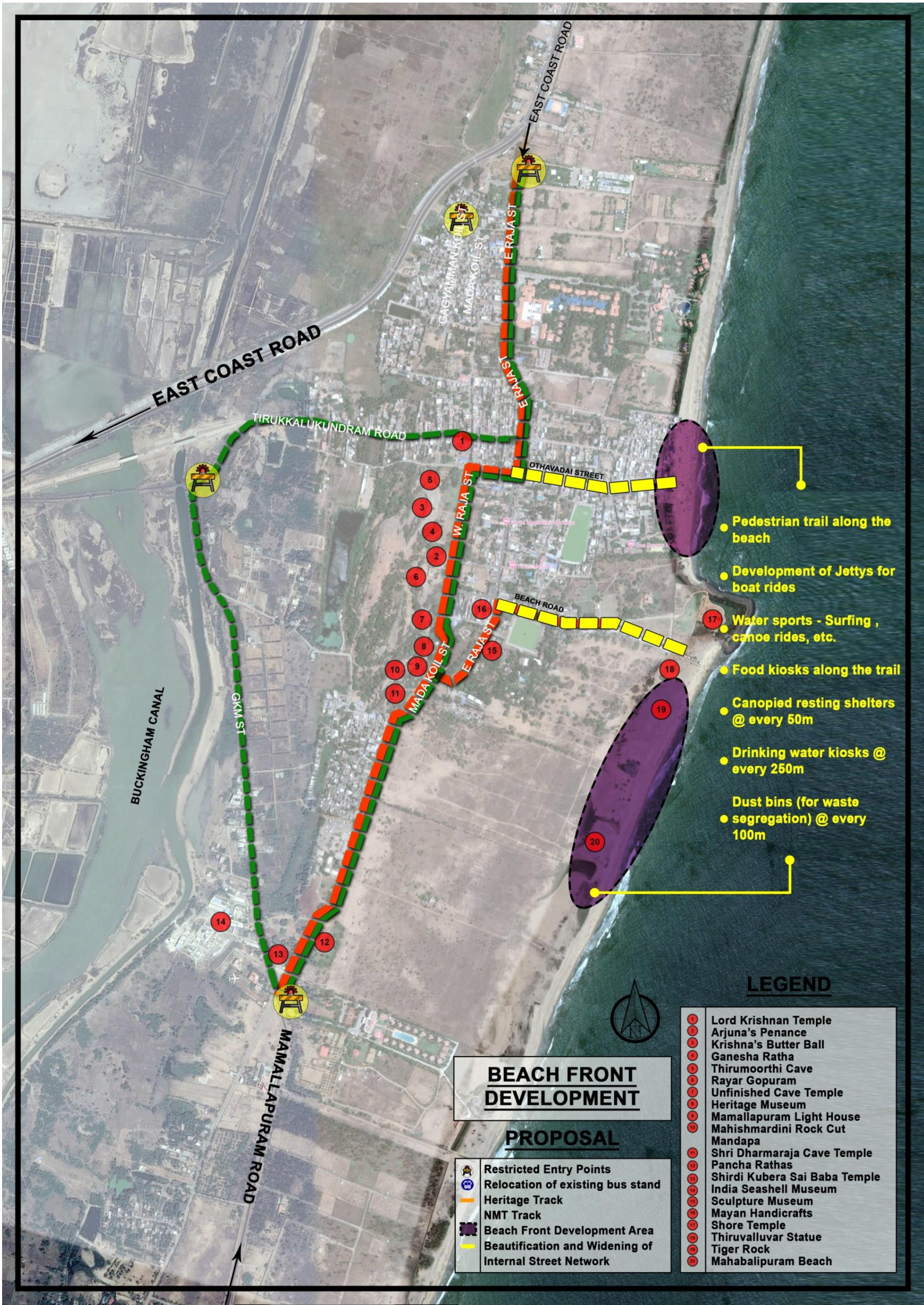


Figure 10-4: Proposed creation of Open Space for clear access to the beach

Expected Outcome / Benefits of the above projects include:

- **New avenues for Revenue Generation**
 - **New tourism products and diversified activities**
 - **Increased tourist footfall owing to wider product base**
 - **Unique Experience for Tourists**
 - **Options for relaxing, enjoying local and different cuisines**
 - **Luxury and diverse Products encouraging longer duration of stay**
 - **Creation of Recreational Space and reconfigured beach front**
 - **Low Carbon Products**
 - **Open and accessible by all**
-

Map showing Beach Front development and activities



Map 10-2: Map showing Beach Front development and activities

10.2.3 Goal 2.3 - Relocating the Bus Stand / Development of New Bus Stand

Need and Intent

Visitors using the public transport bus to commute to and from Mahabalipuram either have to de-board on the ECR expressway (SH 49) or disembark at the bus stand located within the Mahabalipuram Heritage area. While the bus stop on the expressway caters to buses plying from cities and towns north of Chennai and from Pondicherry, the bus stand caters to buses operating between Pondicherry and Chennai. The main town bus stand of Mahabalipuram is in the heart of the town equidistant from most of the monuments.

Buses operated by private parties, although not allowed to park at the bus stand, use the bus stand area to turn and idle before they can exit the area. The count of buses on the weekends is almost twice that on weekdays. This is attributed to additional trips are made by State Transport Corporation to cater to additional tourist demand and the higher count of tourist buses over the weekend. Relocating the bus stand towards the highway is imperative to smooth flow of pedestrians, Bi-cycles and battery-operated buggies on the proposed NMT route.

Project features

A total of ~31 buses operate out of the bus stand. Around 21 Metro Buses and 10 State Transport Corporation Buses ply to and from Mahabalipuram to Adyar & Tambaram in Chennai and to Chengalpattu & Kanchipuram in Tamil Nadu.

The bus stand is recommended to be transformed into a state-of-the-art bus terminal that will facilitate an enhanced and smooth travel experience for the visitors and tourists. The aim is to offer the visitors and tourists, high quality and comfortable travel experience.

The salient features of the bus terminal are briefly described below:

- **Efficient bus bays and parking systems**
- **State of the art integrated terminal facility**
- **Parking**
- **landscaped areas and safe waiting zones**
- **RO Drinking water kiosks**
- **E toilets**
- **Cafe and eateries**

These are the places with very high volume of pedestrians who might also be looking for another transport mode to continue their journey and reach their destination. There are various functions associated with bus terminals and a well planned bus terminal must cater to all the purposes listed below.

Terminals serve as a point of :

- Concentration
- Dispersion
- Loading/unloading of the passengers
- Interchange of mode
- Storage of passengers and vehicles
- Maintenance of vehicles
- Facilities and amenities for the users and crew
- Documentation of movement
- Information system
- Integration of various systems of transportation



The following is recommended towards development of a green bus terminal in Mahabalipuram

▪ **Sustainable building material:**

The bus terminal will be developed using only sustainable and green building material. Waiting and common congregation areas will have tensile roof canopies. Tensile fabric structures are high end constructions that create a visual statement whilst providing a means of covering for outdoor spaces such as passenger waiting area.



▪ **Green roof with solar panels:**

The bus terminal is proposed to be solar powered entirely. Solar panels are to be installed at the Bus Terminals, turning their rooftop into a clean power station. The installation is expected to be used to charge electric buses at the station and power the bus terminal and its amenities. Roof top shrubs and vertical greenery would be incorporated into the green roof of the bus terminal.



Enhanced Bus fleet: It is proposed to enhance the bus fleet by introducing state of the art public transport buses that cater exclusively to the Mahabalipuram area. These buses will fall in the category of luxury, air-conditioned buses, with wider and more comfortable seats, more leg space and will be

equipped with Digital information screens, TV monitors, provision for drinking water, wheelchair lifts, etc. An emergency / panic button for the safety of the passengers will be incorporated in the design.

Improved Hop on - Hop off services: Apart from these, the existing hop-on-hop-off buses that take tourists on a tour of all sites of interest in Chennai and in and around Mahabalipuram is proposed to be re-vamped as well. Purchase of a new, high-end fleet of coaches that tourists will want to take a ride on, is recommended. The buses will offer free Wi-Fi, audio guides, digital tourist maps (interactive mini maps showing details of the tourist site), etc. An emergency / panic button for the safety of the passengers will be incorporated in the design. The operator will maintain separate route packages for the convenience of the tourists. This will also ensure better frequency of buses on every route.



The bus stops for these tourist coaches will be equipped with Digital information / advertisement boards and a Passenger Information System showing bus routes, timings, etc.

10.2.4 Goal 2.4 - Defined and dedicated Tourist route / Trail

Need and Intent

Access to monuments is controlled by ASI and are available to visit between 6am to 6pm. There is no facility to visit the monuments at night, even though there is infrastructure for lighting provided for certain monuments. The precinct around the monuments are decently maintained by ASI, however signages are inadequate and information panels are missing for few monuments. Paving and steps are limited to certain paths within the monument complex. Other areas are accessed through natural trails.

A guided and well networked path of circulation best defines the attractiveness of a tourist destination such as Mahabalipuram. It is imperative to instil a sense of arrival and further direct the visitors on a well-planned trail for a fulfilling tourist experience.

- Cobble stones shall be laid on the surface from krishna temple at thirukkalakundram road till pancha rathas along mada koil street (~1500m) AND ~490M along shore temple beach road. The length of the trail is about 10 km.
-



Pathways and trails within hillock monuments



Absence of a defined Pathways near Valiyan & Pidari Radham monument



Undefined trails leading to monuments within hillock complex



Lack of adequate signages for clear & efficient navigation (there is no indication about the monuments to the left)

Proposed Interventions

CREATING A HERITAGE STREETSCAPE

Pedestrianizing Mahabalipuram and creating an NMT network



Despite the presence of an effective mass transportation system that connects Mahabalipuram to all the surrounding cities and towns, the Historic town still suffers from the pressures of an ever-growing and highly motorized region. Surrounding coastal streets such as Beach road, Othavadai street, Mada street, etc. carry especially high volumes of vehicle traffic. The demand for parking in the Historic town, even at its core heritage area, is accordingly high. The visual appeal of a tourist destination of such high acclaim depends on the ease of travel within the precinct and the streetscape of the town. **It is therefore proposed to reconfigure the vehicular flow to and from and within Mahabalipuram to achieve a de-cluttered heritage fabric via restricted vehicular entry and creation of an NMT network and a pedestrian friendly zone.**

- Laying of rough finish granite surface or paver blocks of similar design for sidewalk/cycle trail is also proposed for cycle trails is proposed along this trail. The length of the trail is about 9 km.

Creating a Defined Tourist Route. What would we do without 'Direction'?

As mentioned earlier, Mahabalipuram has the potential to offer tourists different unique experiences - Nature and adventure enthusiasts are pulled towards activities along the beach while tourists interested in the primary attraction of the precinct - the Heritage and architectural splendour, tour the monuments. Apart from this, locals and tourists interested in the local arts / handicrafts look for the streets buzzing with artisans, sculptors, street hawkers and vendors. **Orienting the tourists and visitors to follow a certain path and experience the town and the heritage area in an organized manner is imperative to how much and how quickly one can explore and experience all aspects of Mahabalipuram.**

One of the main elements that plays a pivotal role in orienting the visitors towards what they want to explore is a guided trail. As described above, restricting vehicular entry and creation of an NMT network within the heritage area is of prime importance.

Tactile paving for universal is proposed which shall be made of rubberized paver blocks to indicate important landmark, junction, turn ahead, change in direction, etc.

Heritage Trail: The first step to a guided trail is defining the most attractive route that will keep the tourists engaged and enraptured throughout their tour. While designing the 'Heritage Trail' proposed here it is borne in mind to cover not just the 5 UNESCO world heritage monuments but also the other 39 sculptures / caves / monuments.

The trail shall be equipped with illumination with ornamental fixtures with solar power, signage system of heritage style in stone to match surrounding rock cut architecture.

The NMT - Heritage trail is proposed to start at the Grand Entry Gateway on ECR leading to East Raja Street, where tourists will be guided westward onto Tirukkalukkundram street to first visit the Lord Krishna Temple before they can proceed to the UNESCO declared World heritage group of monuments including the Krishna's butterball, Arjuna's Penance, etc. All the unnoticed monuments such as the Mahishamardini mandapa and the Dharmaraja cave temple will be highlighted in this section of the trail for an assured visit by the tourists. The path will lead the visitors further south to towards the Pancha Rathas area, covering several other abandoned monuments that are smaller in scale but nonetheless

as important. The visitors will also be guided to the Sea-shells museum before they turn and head northwards towards the Shore temple. Enroute to the Shore temple, the tourists will be directed to visit the Sculpture museum and the Mayan Handicrafts centre. This forms Route 'A' of the heritage trail and is designed for those who want to explore Mahabalipuram on foot.

Tourists who want to explore the heritage area in an **eco-bicycle** may continue the trail from Pancha Rathas, northward towards the Konneri Tank (proposed to be rejuvenated) on GMK street and follow the route around the monuments on Tirukalukkundram road (including the entry point from Pondicherry on the Tirukalukkundram road), continuing past the Government Post Office to cover West Raja Street that winds around the ASI heritage site (covering Thirumoorti cave, Krishna's butterball, Ganesha Ratha, Arjuna's penance, Rayar Gopuram, Light house, Mahishamardini rock cut temple, and several other smaller monuments that go unnoticed due to lack of attention). Map no..1-1 shows the 29 monuments in the Mahabalipuram area. The route for the pedestrian and bicycle heritage trail is shown in map no. 5-1. Granite bollard along sidewalk/cycle trail is also proposed with ornamental benches at least 40 in number for seating at suitable interval.

The following elements are proposed to be introduced to compliment the Heritage and NMT trail within the precinct.

1. 'Story Trail' - Sculpture / mural walls and street art installations at strategic locations depicting the story of Mahabalipuram

The intent is to retain and refurbish the heritage fabric of the area while keeping the tourists inquisitive about the evolution of the precinct and what they are going to see next on their trail. Each element of artwork in the form of a mural or a sculpture will represent events from the history of Mahabalipuram while street art on walls will represent the culture and life of the residents.

With introduction of this element, Mahabalipuram is envisaged to offer **a kinaesthetic experience** for the visitor / tourist as they move through the trail, where the sculptures depict various historical and cultural events associated with the destination. The sculptures / murals will be woven into the urban fabric of the area and will form part of the footpath, walls of existing buildings on either side of the streets, lamp posts, proposed amenities such as the drinking water kiosk, etc.

The artwork will follow a chronological pattern thereby successfully depicting the story of Mahabalipuram. These will serve as platforms for information dissemination and act as guiding points to ensure well directed circulation of the tourists. The planning and placement of these guiding elements is key to the success of this initiative.



Image 10-9: Francis Marion Trail, General Marion in bronze



Street art can be found throughout Penang. Many walking art-trails in Georgetown, such as the "Marking Georgetown sculptures & Ernest Zacharvic murals keep visitors engaged during their tour of the city.

The statues of story trail with Rock cut design. The Statue will be designed in sandstone carved in Pallavan style of architecture. Statue material should be Hard, Compact, Fine grained, equi-granular homogeneous rocks of sedimentary nature (Sandstone) & metamorphic nature (Quartzite) Confirming to IS 3622-1977 etc., At least 50 such statues shall be installed at appropriate locations.

2. Redesigning the street edges and facades:

This proposal envisages redesigning the streets, edges and facades in the heritage area to make the place more interactive and unique. Building edges will incorporate street names and signage systems in an aesthetic manner along with the introduction of sculptures and murals along the dedicated route mentioned above.

Avenue plantation along all the streets (proposed under beautification of streets) is proposed to provide shade to the travelers and control the micro climate of the area.



Image 10-10: Redefining street edges

3. Colour coding street surfaces for direction

The heritage and NMT trail that connects all the tourist attractions of the area is proposed to be networked via colour coded streets (surface markings/ treatment of streets) to stand out and visually guide the tourists. Tourists will be able to use the markings on the street to find their way around the commercial area, access the beach activities and tour the heritage area smoothly.



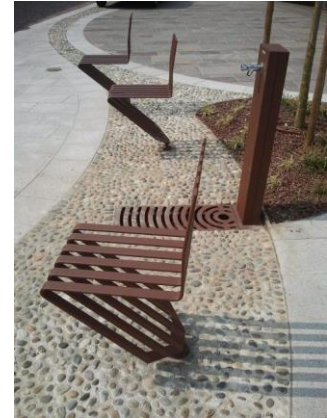
4. Provision of all necessary amenities

The design and style of the below elements will follow a uniform design language and will reflect the culture, heritage and the life of Mahabalipuram.

- Resting plazas will be installed to provide shaded resting spots along the proposed trails
- The streets will be well lit and illuminated via lamp posts that keep with the architectural setting of the area. These are envisaged to tap into the natural sunlight the region receives and hence will be solar powered.
- The area lacks directional and information signages. Despite being one of the UNESCO world heritage sites of high architectural and historic significance, Mahabalipuram lacks a map to the site entailing information such as location, importance of the monuments, and the route map to walk and explore this tourist hotspot. Way finding, and Information Signage systems will be installed at strategic locations and corners for smoother circulation of visitors
-



- Drinking water kiosks at an interval of every 100m along the trails and commercial areas of Mahabalipuram



- Solid waste management: Bins of 3 colours that encourage segregation of waste will be placed at an interval of every 50m



- Public Bike Sharing racks and mini-stations are planned at all important tourist spots within the area



Map showing Heritage trail and NMT streets in Mahabalipuram



Figure 10-5: Map showing Heritage trail and NMT streets in Mahabalipuram

10.2.5 Goal 2.5 - Improvement of Internal Streets

Need and Intent

East Raja street is the town's main street running north to south facilitating the connectivity to various monuments, public amenities and government offices. The ROW is ~12m with an ~6m wide carriage way. Road shoulders and other traffic calming and safety features are limited.

West raja street runs Parallel to E. Raja Street, the entire hillock monuments are accessed through this street. The street has issues like E.Raja St., Additionally the ROW is uneven, thereby creating bottlenecks.

Paved sidewalks are absent. Parking, roadside vendors and spill out of retail shops are a common scenario along the residual space next to the carriage way. The issue of walkability persists due to lack of dedicated walking space for the pedestrians, thus they are forced to share the carriage way along with speeding vehicles. Street lights are inadequate and not functioning in certain main access roads. The ambient lights from the retail outlets lights up the street. The images below reflect the character of these streets.

Streets identified includes East Raja street (~1300m) Othavadai street (~400m), Thirukkalukkundrum road (~550m), Shore temple road (~480m), North Mada street (~160m), South Mada street (~120m). Improvement of Internal streets within Mahabalipuram Heritage area including last mile connectivity to the beach, improvement of streets with commercial activity for tourist, etc. Improvement includes removal of encroachment, widening, surface treatment with paver blocks as per design to match traditional features of the heritage town, provision of sidewalk for pedestrian use, illumination (ornamental type and conventional solar LED lighting as per design), installation of statues as part of Story trail, etc. and excluding amenities such as drinking water fountains, etc.



Encroachment of sidewalk in front of busstop



Retail spillover on footpath in E.Raja Street



Character of East raja street



E. Raja Street during late evening



Town bus stop at night



Character of the W. Raja Street

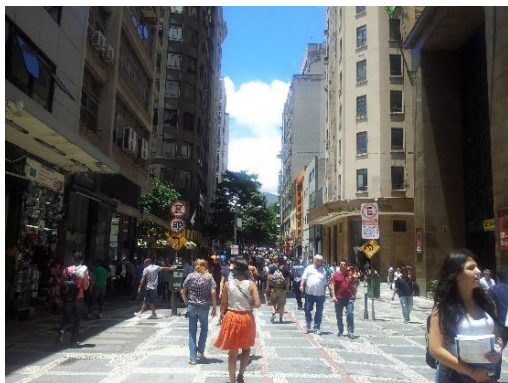
It is desirable that the internal roads function as high quality pedestrian-oriented streets that connect the heritage precinct for easier access and improved.

Proposed Interventions

A. Widening and Beautification of internal roads

The network of internal roads plays a significant role in guided, organized movement of tourists within the heritage precinct. The Mahabalipuram heritage area forms the centre of the Town and the main streets are used by the residents for their routine commute from and to Mahabalipuram. These internal roads hence cater to circulation of tourist as well as resident traffic. Reconfiguring the network for enhanced circulation is a difficult task owing to the strict norms of the ASI. There is however, a recognized need for enhancement of East Raja street (main spine that connects Mahabalipuram from north to south), Mada koil street, West Raja street and GMK streets for improved pedestrian function, amenity and heritage character. Important linkages such as the beach road, Othavadai street and Tirukkalukkundram road, carrying visitors to the beach, are proposed to be taken up for widening and beautification to cater to improved tourist movement towards the beach and other activities around the beach.

Recommended measures to achieve this need include **footpath widening, streetscape enhancement and the provision of continuous and interactive elements such as informative murals and art work, and increased pedestrian shelter** (elaborated in goal 4 above). Arrangements are proposed to be made to develop an efficient storm water drainage system in the area. These streets will act as natural water drainage and recharge points to avoid flooding and water stagnation in the area. The streets will be equipped with **paved footpaths (of minimum width of 1.8m) on either side (where permissible), with avenue plantation for development of canopies and shaded areas.**



B. Last mile linkages - Access to the beach

The approach road (beach road) to the shore temple and the Pallava beach calls for immediate improvement. The Othavadai street which is dotted by commercial establishments, mainly restaurants and handicraft / silverware and jewellery stores is in a bad state as well.



Access street to beach on the north



Entry to the north beach



Retail spillover on footpath in shore temple road



Character of Othvadai Street at night



Character of Shore temple road during day



Character of Shore temple road during Night

Approximately 700-900m of road length is proposed to be improved along with addition of urban design elements such as sheltered resting plazas, illumination (to fit the context), murals and art work that depict the history of Mahabalipuram. Othavadai street that also leads to the beach will be taken up for improvement and beautification under this project component. The proposal is depicted in map no. 5-2 for reference and will be taken up as one of the priority projects in the project shelf.



Image 10-11: Enhanced and attractive illumination of commercial area

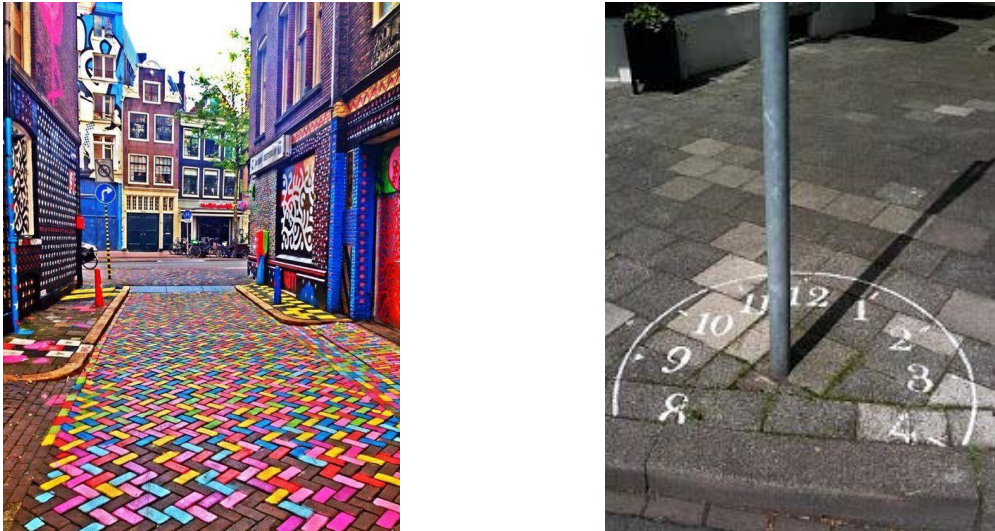


Image 10-12: Enhanced Character of the Street

Where streets such as south made street (4.5m wide) present very limited scope for widening, it is proposed to improve the quality of the streets via relaying of road and provision of necessary surface treatment, along with provision of permissible urban design elements and basic amenities such as drinking water kiosks, bins, etc.

Barrier-free Mahabalipuram

Introduction of ramps and wheelchair lifts at public and heritage spots for universal access to the heritage destination. The streets will also be treated with tactile warning surfaces to guide the visually impaired. Braille signage system and audio information boards will also be placed at strategic locations. Apart from this, the Battery-Operated Buggies will cater to the vulnerable section of the tourist and visitor population of Mahabalipuram. The project will ensure that all areas including the beach will be accessible by all.

Expected Benefits and outcomes

- **Enhanced, universal accessibility**
- **Increase in comfort levels of tourists in exploring Mahabalipuram**
- **Unbiased access to all public spots, tourist attractions and services**
- **Encourages inclusive designing and community**



Figure 10-6: Existing and proposed scenario of town square area



Figure 10-7: Existing and proposed scenario of temple precinct area (Arjuna's Penance)



Figure 10-8: Existing and proposed scenario of E.Raja street (Arjuna's Penance)

10.2.6 Goal 2.6 - Decongesting Mahabalipuram - Parking Management Need and Intent

Users commuting from Chennai and other cities located to North and North West of Mahabalipuram including Bengaluru, Mysore, Hyderabad, Vijayawada and other parts of India use entry via East Raja Street predominantly. This is the primary road running across Mahabalipuram connecting all other major roads and tourist destinations in the city.

Heavy traffic and vehicular flow: The traffic and parking surveys conducted reveal that around 15,000 visitors travel to Mahabalipuram for a day trip where their cars and taxis remain parked in various streets around the heritage area while the visitors take a journey around the site and enjoy the beach and the commercial nature of the place. Autos are a common mode of transport as well. The surveys reveal that vehicle count on weekend is higher by more than 1.6 times the vehicle count on a week day.

Narrow main spine: East Raja street which forms the main spine of Mahabalipuram is ~9m wide currently and caters to over ~1030 vehicles (entering and existing during peak hour between 12 noon and 1pm) on weekends (primary survey findings). If the road is to cater to smooth traffic movement, it needs to be widened to serve as a four lane with a carriageway of 14m.

Congested secondary entry point: Users commuting from Pondicherry and other cities located to South and South West of Mahabalipuram including Cuddalore, Chidambaram, Trichy, Thanjavur and other parts of Tamil Nadu would prefer to use entry via Tirukkalukundram Road (with width of ~8m).

On street parking: is a common sight at Mahabalipuram. Taxis and autos are usually found parked in the bus stand and the street around the monuments, thereby adding to the congestion on the area.

The survey presented in section 4.2.13 of this report reflects an ECS of ~2100 for vehicles other than buses and ~1215 ECS for buses as the minimum parking requirement for the year 2038.

The heritage area is not equipped to manage the current traffic situation. Only two dedicated parking areas have been demarcated for Tourist vehicle parking within the Mahabalipuram tourist area. The parking area at the Shore temple has the capacity to accommodate 50-60 vehicles. The parking lot near the Pancha Rathas is inadequate, with capacity of only approximately 30-40 vehicles. Neither of these parking lots have any scope of expansion and continuing to use these areas as parking lots would only mean higher levels of haphazard traffic movement, unregulated parking on the internal streets, low levels of safety for pedestrians, etc.

Proposed Interventions

The above section clearly points to the below recommendations:

A. Regulated vehicular access into Mahabalipuram - No-Go zones:

- Restricting entry of tourist vehicles / para-transit modes of transport into Mahabalipuram will help tackle part of the congestion within the heritage area. Vehicles of tourists with bookings of duration over a day at the hotels within the area will be allowed to enter on basis of an '**access pass**' that will form part of the booking. Local taxis, autos, etc. will be restricted from entering the heritage area. Residents will be provided a resident pass for smooth circulation within and in and out of the tourist destination.

B. Parking provisions for private vehicles and para-transit modes of transport:

Parking is one of the aspects in Mahabalipuram that needs immediate attention as the inflow of tourist vehicles is very high. Based on the primary survey conducted on the parking scenario in Mahabalipuram, the current parking demand is for 1045 vehicles which includes 76 buses, 255 cars and 540 two-wheelers along with autos, vans and cycles. This amounts to an Equivalent Car Space (ECS) of 1217 during the peak season. The projected demand has been calculated considering a CAGR of 5% on the current population for 2038. The projected demand for parking during the peak season in 2038 is a total of 4281 which includes 312 buses, 1044 cars and 2210 two wheelers along with autos, vans and cycles. This indicates a total ECS of 3225.

Using the ECS, the current and future parking space requirements have been calculated. The following table shows the current parking space requirement in Mahabalipuram during peak season

Parking Space Requirement by 2018 incl. seasonal variation								(Sq. Ft)
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	5,000	13,000	1,800	2,400	1,800	-	-	24,000
Beach Parking	5,000	13,000	600	20,600	1,000	-	-	40,200
Perumal Koil Parking	47,000	17,600	5,200	4,400	3,400	-	400	78,000
Light House Parking	34,800	35,200	14,200	5,800	10,800	-	400	1,01,200
Total	91,800	78,800	21,800	33,200	17,000	-	800	2,43,400

The future demand for parking space requirement has been calculated according to a CAGR of 5%. This means that it is assumed that the number of vehicles will increase by 5% of the current number by 3038.

Parking Space Requirement by 2038 with CAGR of 5% of Vehicle Growth incl. seasonal variation								(Sq. Ft)
Location / Vehicles	Bus	Car	Auto	Bike	Van	Lorry	Cycle	Total
Five Rathas Parking	13,000	34,400	5,000	6,600	5,000	-	-	64,000
Beach Parking	13,000	34,400	1,600	54,800	2,400	-	-	1,06,200
Perumal Koil Parking	1,24,400	46,600	14,000	11,400	9,000	-	800	2,06,200
Light House Parking	92,600	93,400	37,600	15,600	28,600	-	800	2,68,600
Total	2,43,000	2,08,800	58,200	88,400	45,000	-	1,600	6,45,000

These parking facilities will be developed on identified vacant parcels of land around and near the Mahabalipuram heritage area. It is proposed to develop the following:

(1) STATE OF THE ART MULTI LEVEL CAR PARKING FACILITY FOR 4Ws and 2Ws: with area of 4 Lakh sq. ft. excluding parking requirement of Buses. Total ECS demand for year 2038 considered @~2100

(2) STATE OF THE ART SURFACE PARKING SYSTEM FOR BUSES: of area 2.5 LAKH sq. ft. with parking capacity of ECS of 1215 with boom barriers for regulated circulation, paved parking area with markings as per IRC standards, signage system and illumination (solar powered LED lighting on 3.5m high poles as per design specifications)

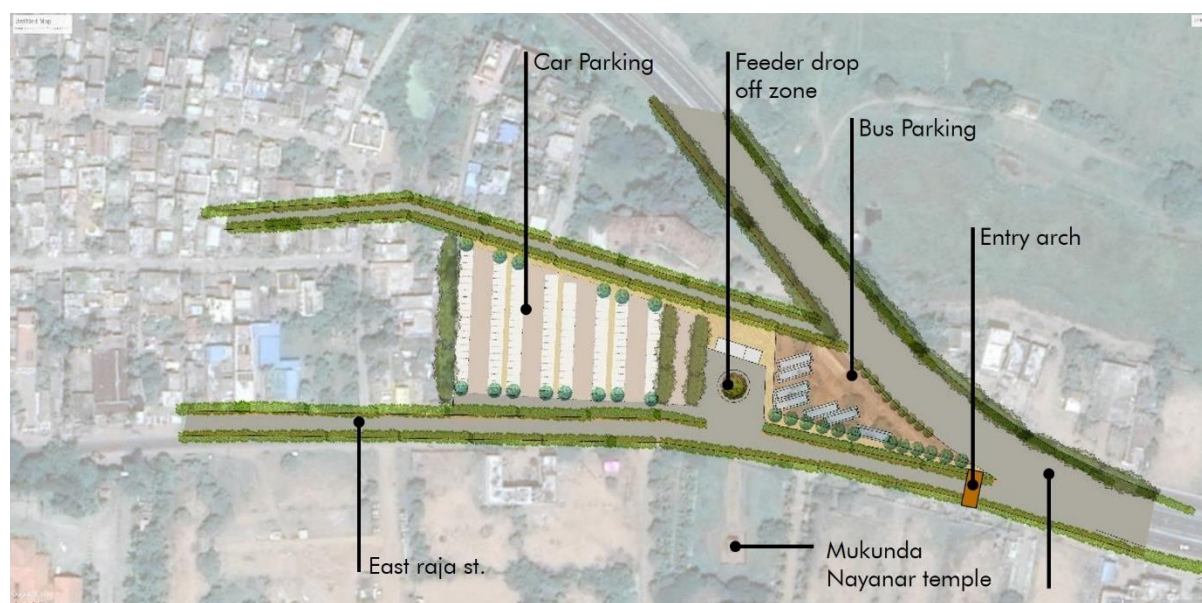


Figure 10-9: Proposed Parking along with entry gateway near Mukundanayanar Temple

C. Introduction of Smart Bi-cycle sharing system and Para-transit system (battery operated vehicles)

Need and Intent

Bicycle-sharing is the system of hiring, usually on a non-commercial basis, a bicycle from one of the automatically controlled stations, going on a journey, and returning the bicycle to any rental store located in the city. The fourth generation of bicycle-sharing system, prevalent today, is highly innovative – specifically about the availability of mobile and solar docking stations, provision of electric bikes, and the facility to use mobile phones to receive information about available bicycles. Emergence of electric bicycles has contributed considerably to the development of bicycle-sharing systems in urban areas, as such bicycles are attractive to elderly people.

Defining Metrics:

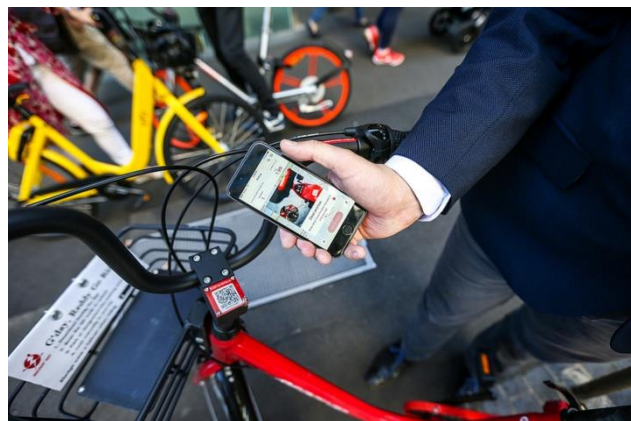
Low Cost Para- Transit, Reduced Carbon Emission, De-congested Site, Accessibility, Non-Motorized Transport

Proposal Features

To support **movement of Tourist inside Mahabalipuram Dock-less Cycle Sharing facility and Buggies** (Battery operated Car) shall be plied **between all tourist spots from the Parking Hub covering the entire heritage area**. This shall ensure **better outlook, shall change the entire experience and would facilitate every domestic and international tourist**.

Introduction of a public bicycle sharing system operated through a mobile application where tourists can pick up / drop off bicycles at PBS stands located strategically throughout the area
Providing access to para-transit vehicles running on solar powered batteries and NMT means for tourists to access Mahabalipuram.

Para-transit vehicles targeting large groups, senior citizens, children, etc. and NMT facilities for young travelers. This will reduce congestion and parking issues, improve safety and also keep check on pollution



Benefits and Outcomes

- Reduction in Vehicular Congestion
- Unique product of the site
- Reduction in Carbon Emission

- Sustainable environment
 - Last Mile Connectivity
-

C. Dedicated vending zones for unregistered vendors and de-cluttering unorganized vending areas



It is proposed to de-clutter the existing streets by shifting sections of the vending activities to the existing parking lots near Pancha rathas and Shore temple. Streets specifically to be taken up for this project are west raja street, othavadai street, north mada street, south mada street and mada koil street. Creation of plazas that serve as dedicated vending zones will not only have a positive impact on the streetscape of the area, but also benefit the vendors who can operate out of an organized shopping zone and the shoppers who would no longer have to walk up and down the streets to buy the best

of the lot at the best price.

The relocation activities are recommended to be taken up in line with the norms prescribed in the **Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014**.

MAP SHOWING BICYCLE STATIONS AND RACKS | PARKING FOR BATTERY OPERATED VEHICLES



Map 10-3: Map showing Bicycle Stations and Racks | Parking for Battery Operated Vehicles

10.2.7 Goal 2.7 - Reconfiguration of Spatial Aspects - Creation of open breathing spaces of congregation within Mahabalipuram

Mahabalipuram lies on the coastal line of Tamil Nadu and also lies in close proximity to the Buckingham canal. Many of the ancient temple tanks and green spaces have lost their value due to residential and commercial development in the area. The environmental assets need to be protected not only for their intrinsic existence value but also to foster the main comparative advantage of the area. Environmental assets in the study area need to be restored and protected as they play an important role in the conservation of biodiversity and ecosystems of the region.

Much emphasis has been laid on the heritage fabric of the town. The development plan for the Mahabalipuram UNESCO world heritage site will also recommend immediate rejuvenation of the water sheets and the green patches of the destination. The Heritage area lacks healthy open spaces and measures must be taken to identify all the open spaces, potential open spaces and develop a rejuvenation plan for each of the spaces. Connecting these through the proposed NMT network will ensure that these tanks and landscaped areas are well maintained and kept alive within the urban and heritage landscape of Mahabalipuram.

Proposed Interventions

A. Rejuvenation of existing tanks and green spaces in Mahabalipuram

Need and Intent

Fostering a sense of pride for not just the architectural but also the natural heritage is imperative and this can be achieved via restoration of the green patches and water bodies of Mahabalipuram.

There are two Temple tanks at the heart of the town one is the large Vishnu tank, accessible throughout the year and open to public, it is accessed through shore temple road. The other smaller temple tank falls on the axis of Perumal temple and is accessed through Thirukula street. The public access to this tank is limited to few days in a year during rituals.

Apart from this, the community water tank known as Kuranaadu Kuttai or the Koneri tank is located between the residential society. The tank has a poor edge condition, currently de-silting of the tank is under progress. The images below reflect the state of the water bodies in the heritage town.



Image 10-13: Poor condition of the Koneri tank



Image 10-14: Small temple tank to be restored



Image 10-15: State of bigger Vishnu temple tank

Proposed Interventions

The Koneri tank, the Vishnu temple tank and temple tanks on either side, towards the west of the Shore temple have been identified for rejuvenation. The East Raja Garden or the Maragadu Poongai and the area around the shore temple (from the parking area to the western edge of the temple) are proposed to be taken up for restoration as open spaces.

Studies will be undertaken to assess the environmental quality, health and biodiversity supported by the Maragadu Poongai and the water tanks. Based on the findings, appropriate steps are recommended to be followed for the scientific restoration of these natural patches of water and greenery. It is proposed to develop pedestrian trails along these natural landscapes, install pergola seating and shaded pathways to give new life to these long abandoned open spaces. The proposed NMT and heritage trail is planned with due consideration to these natural elements that will once rejuvenated, serve as the lungs of Mahabalipuram.



Map No. 10-2 identifies the water bodies and green patches that are proposed for rejuvenation.

B. Identification of potential areas for development of parks

The aim here is to increase the ratio of open spaces within Mahabalipuram. The existing land use map of the Town Panchayat reflects that approximately 60% to 70% is open and vacant. This includes wetlands, agricultural land and waste land. It is proposed to identify suitable vacant agricultural and other available land within the heritage area as well as the town area to create community parks, children's parks, etc. **Development of landscaped areas with pedestrian trails, acupuncture walks, seating and isolated meditation zones will appeal to the tourists who seek relaxation and a sense of serenity in this beautiful coastal destination.**



C. Development of Iconic Town Square:

Need and Intent

The important festive rituals associated with the Perumal temple and the tanks are Masi Magam Theppa Utsavam which usually falls during the month of February and Vaikunta Ekadasi which happens during the month of December- January. To handle the huge footfalls during the time of festive rituals, the town Bus stop is made defunct and the ECR bus stop is used for public transportation, this causes inconvenience to the residents and employees who are dependent upon public transportation. There is a need to cater to the commutation requirements of the residents and the tourists throughout the year. **The bus stand adds to the congestion in the area and is one of the main sources of pollution in the core tourist area as well. Creating a clear breathing space and decongesting the centre of the heritage area is a must.** The image below portrays the condition of the bus stand.



Image 10-16: Bus Stand area and unregulated parking in the vicinity

Proposed Interventions

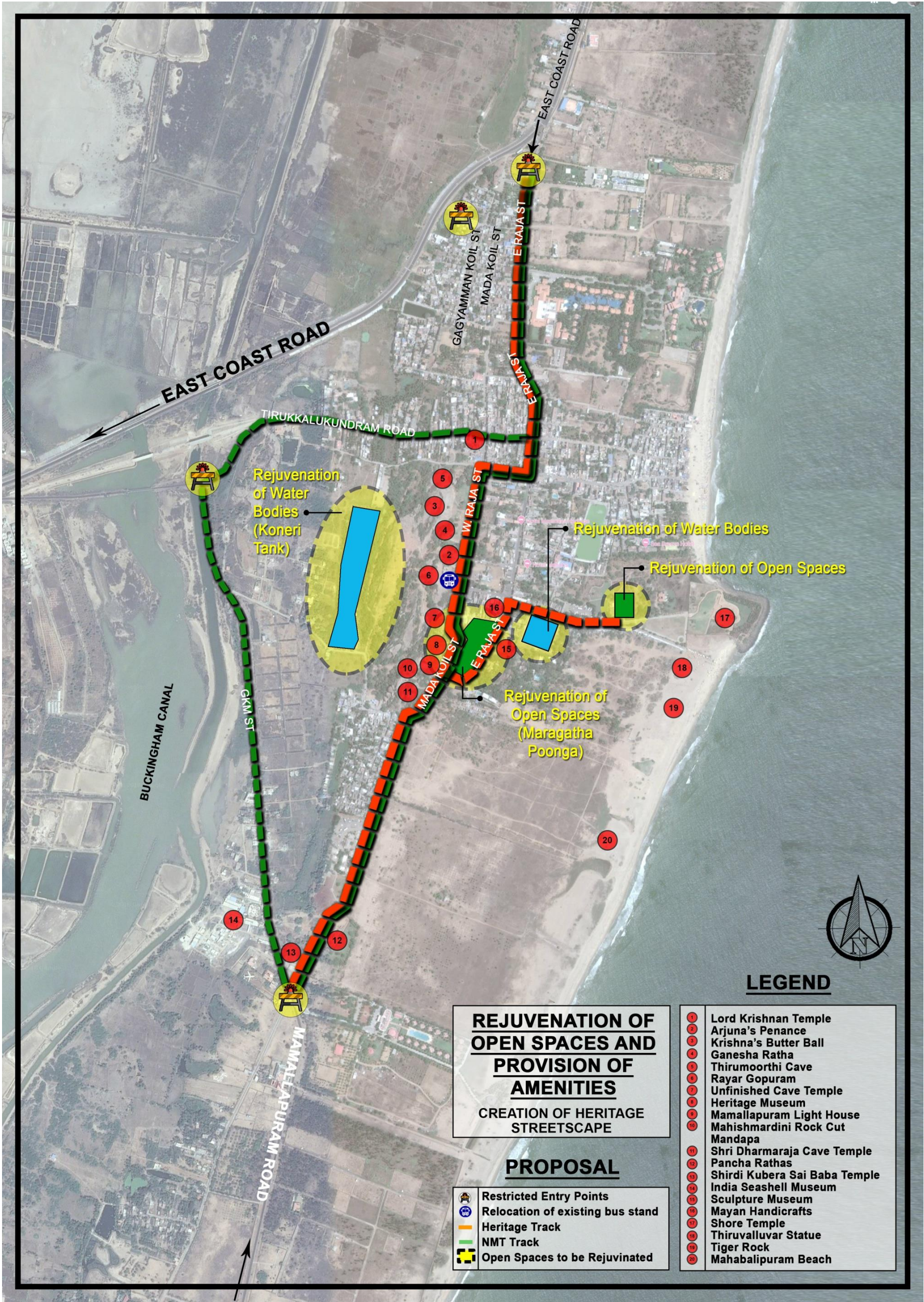
The shelf of projects proposed at this stage includes relocation of the bus stand to decongest the core heritage area. This area is located central to the heritage precinct. It's central setting and nature of site makes it an apt location for development of an Iconic Town Square that will redefine the urban fabric of Mahabalipuram. The square will take form of a congregation plaza (and will draw parallels with plazas in tourist destinations like Italy). Seating, food kiosks and drinking water fountains, decorative illumination, artwork and murals will form the main elements of the Iconic Town Square. Tourists travelling to Mahabalipuram will be able to experience a different essence of the heritage town with development of the town square. Map no. 5-2 shows the location of the existing bus stand that is proposed to be developed as the Iconic Town Square of Mahabalipuram.

The iconic square shall be laying of cobble stone surface, granite bollard, ornamental benches, illumination of town square with illumination of solar powered lighting with stone cut signages, water fountains, food kiosks and landscaping. The iconic square will be developed for approx. 7000 sqm.





Map showing open spaces and water tank identified for rejuvenation



Map 10-4: Map showing open spaces and water tank identified for rejuvenation

Concept for Rejuvenation of Open Spaces and Beach Front Development

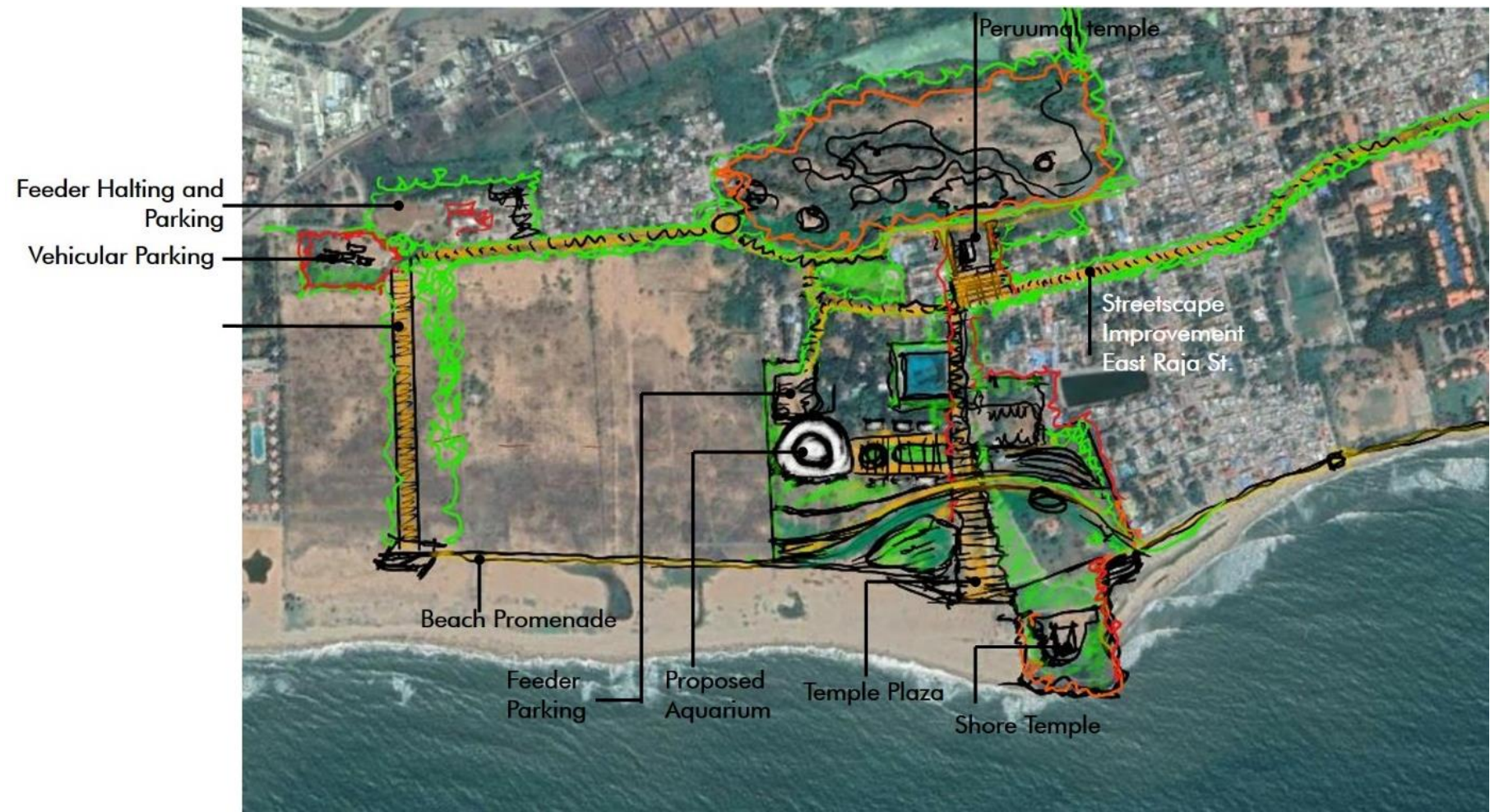


Figure 10-10: Rejuvenation of open spaces, Beach Front Development - Conceptual sketch

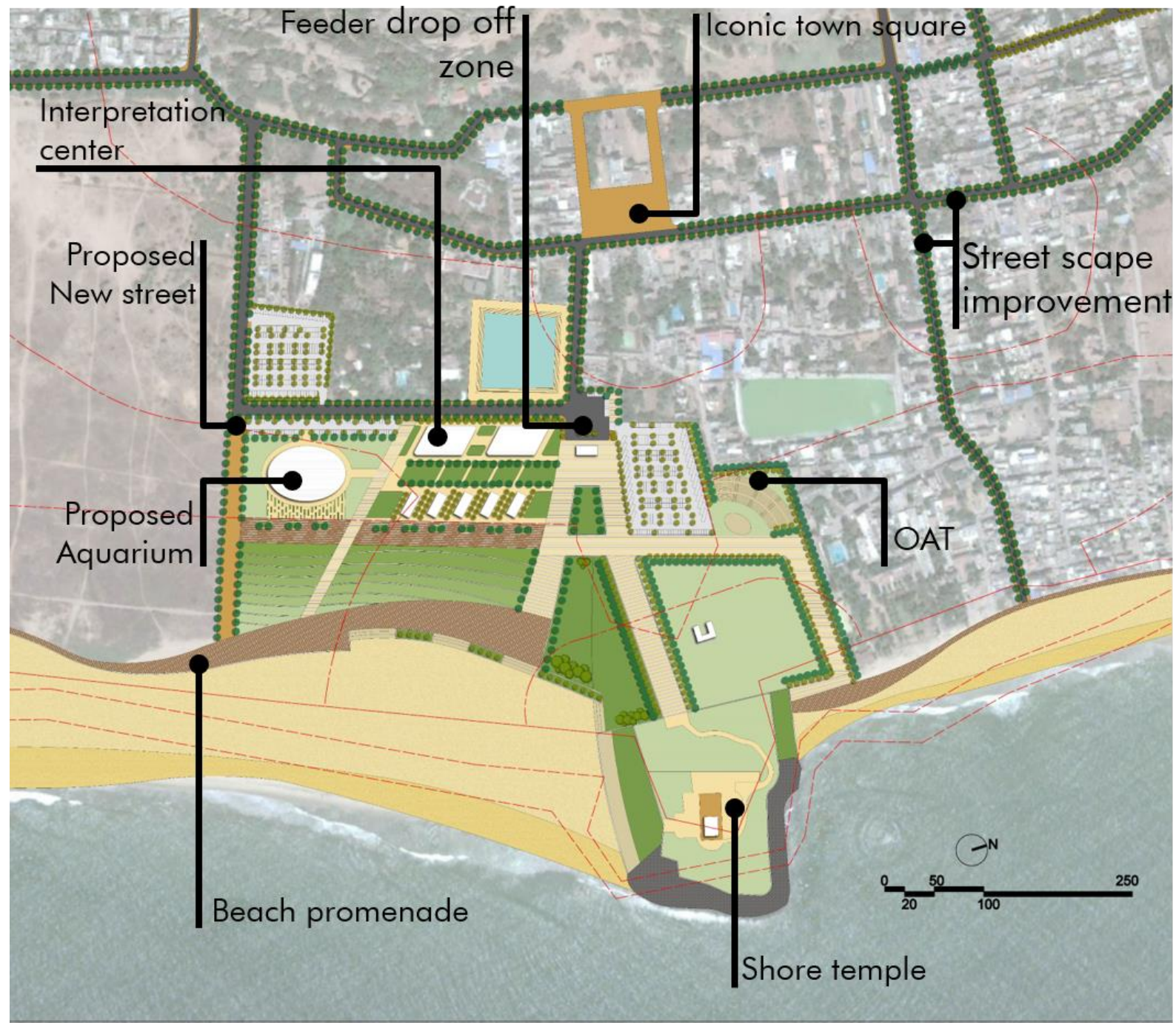


Figure 10-11: Conceptual plan - Streetscape improvement, beach promenade, Iconic Town Square



Goal 3: Development of Mahabalipuram as a Commercial MICE Destination



10.3 GOAL 3: DEVELOPMENT OF MAHABALIPURAM AS A COMMERCIAL AND MICE DESTINATION

Proposed Interventions

S. No	Goal	Project
1	G3: Development of Mahabalipuram as a Grand Commercial MICE destination	Development of convention center, conference halls, banquets and ancillary facilities to develop Mahabalipuram as a MICE destination
2		Heritage and Culture - Conservation and Tourist Awareness - Visitors Interpretation Centre
3		Wellness Centre for Meditation and Yoga
4		Introduction of alternative accommodation arrangements - Hostel and Service Apartments catering to tourists interested in the alternative tourism products

10.3.1 Goal 3.1: Mahabalipuram as a Grand MICE destination

10.3.1.1 Demand Assessment for MICE facility in Mahabalipuram area

Mahabalipuram is strategically located on **East Coast Road** and is approximately 60 Km from Chennai. Mahabalipuram being an important tourist destination can host a no. of imp events like cultural events, spiritual meets, small commercial and leisure events. The close proximity with Chennai and diversified product base in Mahabalipuram can be leveraged to introduce MICE segment in Mahabalipuram.

As a matter of fact, Chennai is the 5th largest MICE destination of India after Delhi and Mumbai and hosts a no. of events, conferences, meets, corporate events etc. As per JLL's market research approx. 40- 45 events of upper scale are hosted in the facilities located along ECR. ECR is declared as the "Entertainment cum Amusement Corridor". It is mainly dotted with theme parks, boat houses, beaches, tourist places, heritage monuments, 5-star hotels and resorts. It is a prime location for the new year celebration and other events. ECR is witnessing a positive growth in terms of tourist footfall in last 5 years. As per JLL's estimate 10%- 15% of these events can be hosted in Mahabalipuram.

Demand Generators

- The MICE market typically generates higher revenue than pure leisure guests, with a higher spend on both rooms and Food and Beverage
- These events boost the local tourism and generate a significant number of room nights even during the off seasons. The average duration of stay for people during these events goes to 2-3 nights.

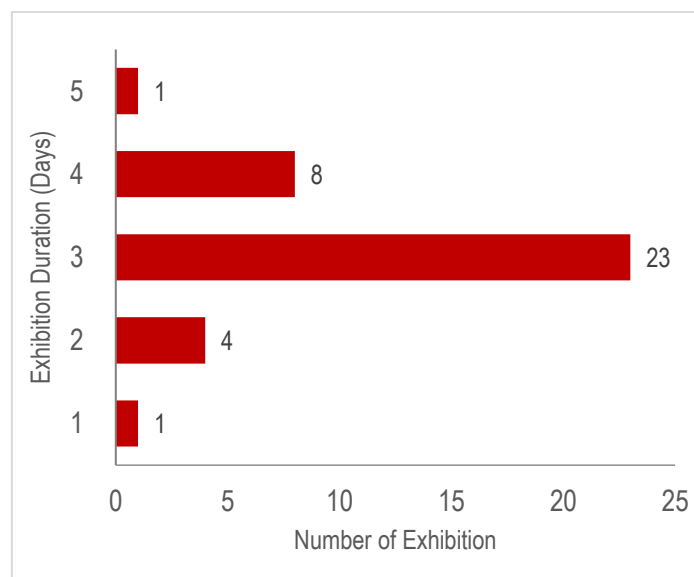


Figure 10-12: Trend of Duration and Number of Exhibition Events

Source: JLL, Research

- Staff off sites, corporate conferences, training sessions etc. are the major contributors to the Corporate MICE segment for ECR. Some industries such as IT/ITes, pharma and automobile manufacturing have their annual events, meets, trainings and conferences.
- There are approximately 16-20 Corporate MICE events / month in ECR
- The MICE demand is from companies in and around Chennai ranging from product launches, sales meets, trainings and reviews. The Average Cost Per Person for banqueting ranges from INR 1500-2000 plus taxes in Upper Upscale Hotels. The average capacity for Corporate MICE events has been close to 150-200 pax with a few larger events going up to. 750-1000 pax.
- The weddings and events market has seen a substantial increase, against the backdrop of increasing spending power in the domestic market.
- The wedding related activities and other respective Social Banqueting events account for almost 20 - 25% of room night demand among the branded hotels. The hotels generate a significant room nights' demand during weddings as this is the preferred choice of accommodation of the guests
- Mahabalipuram on ECR is picking up as a preferred location for weddings for people from other neighbouring regions due to the availability of quality event spaces, beach proximity, and picturesque resorts. There is weddings demand from neighbouring states as well with Tamil Nadu being the top feeder market.
- The average capacity for Weddings and Social Events is around 250-600pax. The wedding season sees approximately 14-18 social events per month per resort.
- For certain branded hotels on the stretch the wedding demand gets 15-20% of the resort's revenue annually.

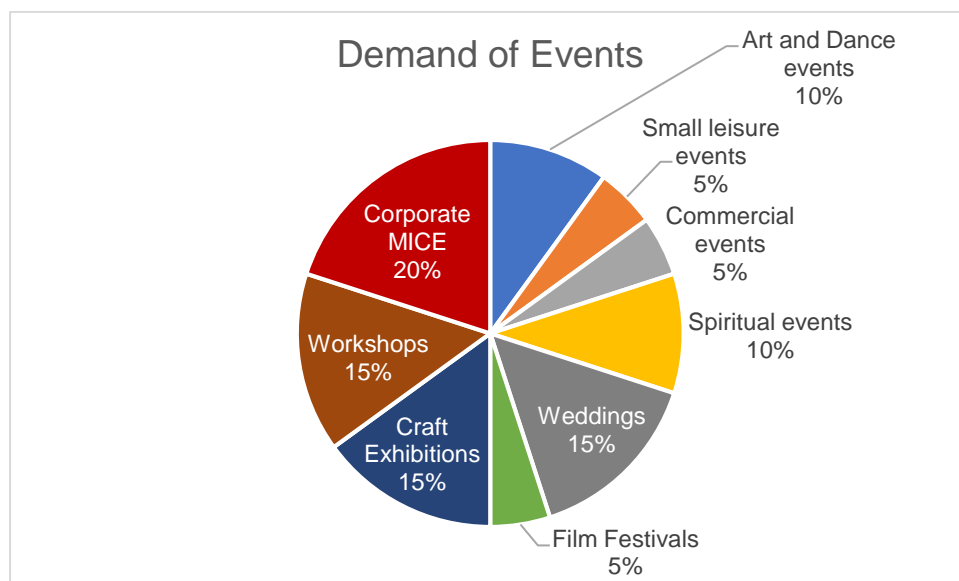


Figure 10-13: Demand of Events
Source: JLL, Research

Seasonality and Occupancy

The products in ECR range from Mid- segment, Budget and Luxury hotels. The average occupancy of these hotels is upto 30-40% on an average. Some of the popular resorts/facilities along the ECR are Taj Fisherman's Cove, Radisson Blu Temple Bay, Intercontinental. Four Points by Sheraton and Sheraton Grand are the latest additions to the market. The occupancy is affected during the weekdays, holiday season, weekends, wedding seasons etc. The average occupancy is 35 to 40 days in a year for MICE activities in these destinations.

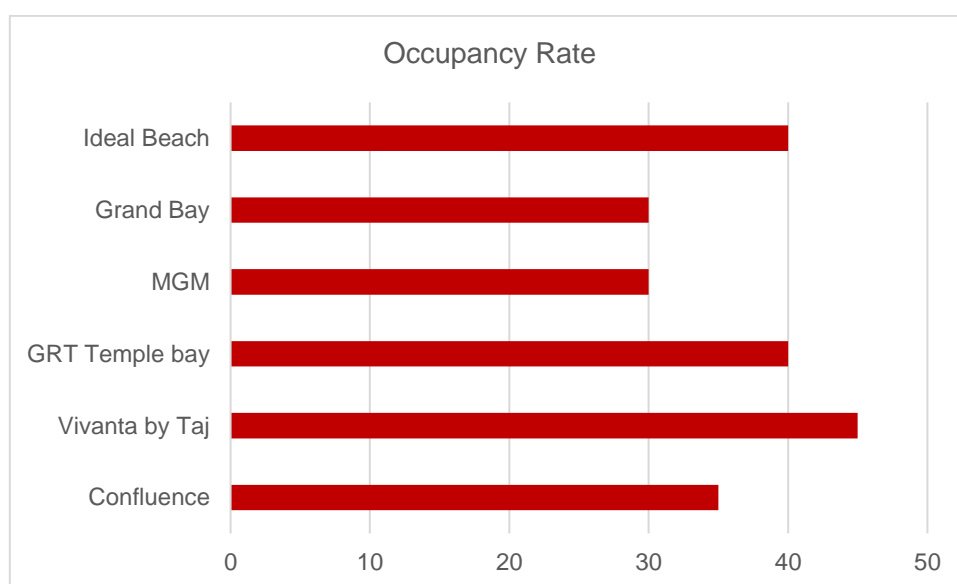


Figure 10-14: Occupancy Rate of Mid segment to Luxury hotels (2018)
Source: JLL, Research

Inference

The assessment shows that there is a demand of a mid-range MICE facility. It can help boost and expand the MICE industry. It will also help Mahabalipuram as a wedding and MICE destination with all the state of the art facilities. Also as ECR has emerged as a preferred destination for all types of events and celebrations, it is imperative to provide a MICE facility. Government can push to conduct the cultural events, corporate events, workshops etc. in the halls of the facility.

Need and Intent

As per the preliminary study there is a presence of small destinations which includes convention facility and conferences spaces in landmarks like Confluence & Latitude hotel. In-order to facilitate and expand the MICE industry, the research study also tends to emerge the need of one destination with all the State of the Art facilities which can be used to cater the demand and need of the National & International Congresses & Product Launch.

Defining Metrics: State of the Art Facility Centre, One Stop destination - Leisure, Corporate & Historical Tourism

Project Proposal and Features

- Leveraging the re-configured commercial landscape of the area, such facilities are proposed to be developed to cater to large social gatherings and business congregations
- Development of Conference Halls for TTDC

To boost the tourist footfall a State of the Art Convention Centre is proposed in 25 Acre of land. The Convention & Exhibition Centre will incubate multipurpose spaces making them the perfect venues for all types of events including Exhibitions, National & International Congresses, Business Conferences, Spiritual Events, Historical Shows, Tourist Trade Fair and Gala Events. The State of the Art services will be an addition to the one stop destination for world class services.

This tourism product will boost the economy and will also benefit the local residents in terms of creating employment opportunities. The concept and the planning shall be backed with the confluence of the city and the historical past in order to cater diverse culture, traditions and segments of the tourists.

The key features shall include

- **Exhibition /Convention Center**
- **Open Exhibition Areas**
- **Ballrooms & Conference Halls**
- **3 Star Hotel Property**
- **Breakout Room & Meeting Rooms**
- **Food Court /Zones**
- **In-house 5 Star banqueting services**
- **Parking (750 – 1000 Cars)**

MICE facility will be developed on a 1.3-acre land parcel. It will consist of Exhibition halls 1 & 2 (2000sqm), Outdoor exhibition area, Banquet hall (2 nos. 150sqm), Conference rooms (2 nos.

1000sqm), Accommodation (3500 sqm), Other Facilities including- Information Kiosk, Service Room, Safety and Security (200sqm), SPA facility, Pool and Lounge area, Workshops, Convention centre (capacity 5000, area 500sqm), landscaped area (11,000sqm), food court and fine dining (750sqm) and parking of an area 5000 sq m. accommodating 500 ECS.



Aerial view of the Exhibition Center – reference Image JECC Jaipur

Expected Benefits and Outcomes

- State of the Art Convention & Exhibition Facility
- Important attribute in the MICE industry
- Pivoting role in the investment boost
- Economic benefits and community participation
- Infrastructural addition and a boost in the Tourism& Hospitality sector





Convention Centre accompanied with the State of Art Facilities

10.3.2 Goal 3.2: Heritage and Culture - Conservation and Tourist Awareness

A. Development of state-of-the-art Visitors Interpretation Centre

Need and Intent

The existing information booth is in dire need of replacement. There is only one main information center located within the TTDC complex in the vicinity. The information box / booth is hidden within the TTDC complex and is easy to miss or be overlooked. This hence does not serve its purpose.

Interpretation centres are a kind of new-style museum, often associated with visitor centres or eco-museums, and located in connection to cultural, historic or natural sites. Interpretation centres use different means of communication to enhance the understanding of heritage.

- For a destination such as Mahabalipuram that caters to an average of 9,000 (weekdays) to 15,000 visitors a day over weekends, it is imperative to have a tourist interpretation center that caters to the curiosity and travel needs of the visitors.
- Given the rich history and heritage of the site, it is important to preserve the same for our future generations. The Interpretation centre will also act as an interactive mode of sharing information and knowledge to students and archaeologists alike.
Development of a tourist interpretation center that orients the tourists at or prior to the entry point, giving the tourist information on history and marvel of the UNESCO World Heritage site, the secondary and tertiary tourist activities, etc. is recommended.

The centre is developed with the following features and considerations.

Defining Metrics: Heritage Value, Preservation, Education, Tourism Product

Proposal Features

The centre will be iconic having its own style, competitive with international standards, a simple and unadorned architectural style that expresses classical structure through the use of modern materials. It shall be a simple, elegant design that will combine the warmth and richness of the existing design language. All along the way inside the centre, intricately carved murals, and painting depicting the saga of History of Mahabalipuram shall be installed. There will be open- to- sky spaces in between of the centre consisting of seating areas with pergola and benches. The entire center to be designed with proper ventilation and illumination.

The interpretation centre shall be developed with designated zones each having a specific function, as described below:

Zone 1- The first stop for tourists where they get route maps, pamphlets and suggestions

The 1st zone would be created at the entrance, where after the security check and deposition of the personal belongings, a self- guide containing route maps and pamphlets shall be handed over to the visitors.



Mural Walls depicting History





Zone 1 of the Interpretation Centre

Source:JLL Research, 2018

Zone 2- 3D walk through showing the history and evolution of the grandeur that Mahabalipuram is

The 3-D walk through will be designed with an aim to display the scale and craftsmanship of the grand historical monuments. The 3-D walk will ensure all minute details are displayed with sheer clarity and finesse.



Zone 3 - Miniature Mahabalipuram - Interactive Map showing information on each of the monuments and the dedicated route to experience the destination in an organized manner

A miniature model will be installed at the entrance of the zone- 3, depicting all the monuments of Mahabalipuram in its full glory. Interactive Map showing the timeline and locations will be installed in this zone, variable screens depicting the details of each- each monument will also be installed at various locations.

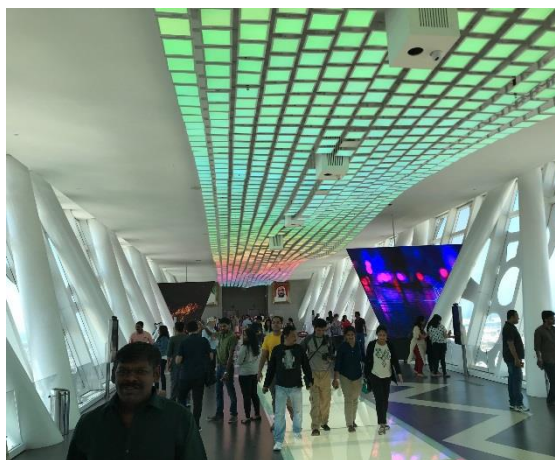
Similar features are installed in the “Dubai Frame” which was recently opened for visitors. JLL team conducted a visit to this site to understand the IT based features of this Interpretation centre.

The ground floor of the monument houses a museum that showcases Dubai's past through displays and presentations. The two towers of the Frame are installed with glass elevators and mechanical, electrical and plumbing (MEP) equipment.

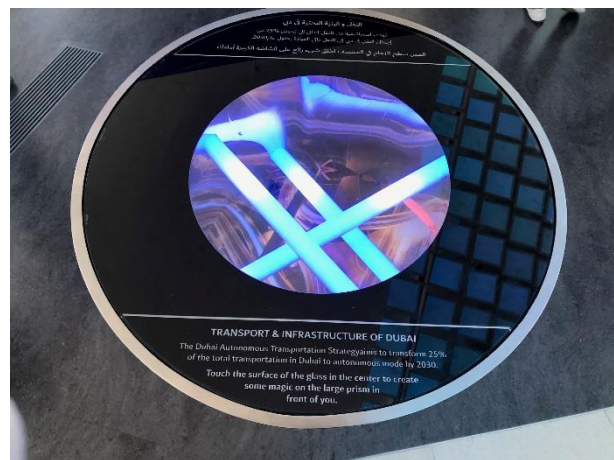
The bridge tower serves as a sky deck providing views of old Dubai to the north and those of new Dubai to the south. It will house interactive technologies such as augmented reality-activated screens, where visitors can view and observe buildings and landmarks in 3D.

The Frame uses, new technologies to display various facets of Dubai's architecture, economy and infrastructure. On the other side of the mezzanine level, the future of Dubai will be depicted as a virtual metropolis generated using interactive projections and virtual reality. Visitors will pass through a vortex to reach the mezzanine level. The vortex will be installed with special lights and sound effects, creating the illusion of time travel through a wrap vortex.

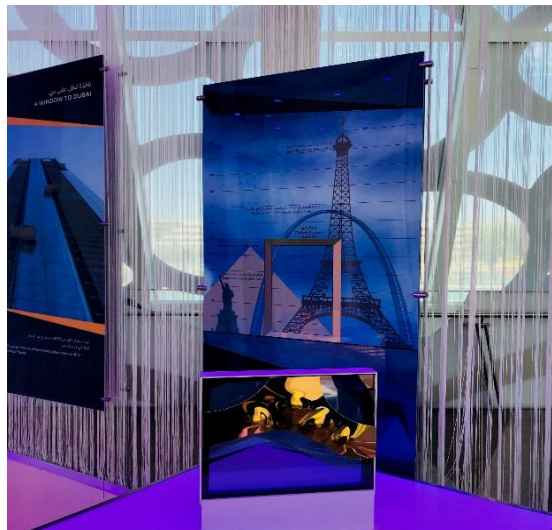
Below are some of the pictures of Dubai Frame depicting its Hi- Tech Features.



View of The Mezzanine Floor



Interactive Screens placed on the Mezzanine Floor



Hanging Screens depicting the story of
development of Dubai

Dubai Frame

Pictures of Dubai Frame
Source: JLL Site Visit 2018

Zone 4 - Digital board with maps and locations of monuments, information about all tourist related activities including transport, food and accommodation

This zone will be dedicated and developed as an information kiosk, where the visitors shall be oriented. This zone will also have small eateries, and amenities like drinking water, toilets, seating areas etc. Various kiosks will be set up to guide and educate people about all the information regarding the places of interest, activities for tourists at Mahabalipuram, appropriate food and accommodation facilities as per their likings etc. This will enhance the Tourist experience to a great deal.



Digital Board depicting information/ maps

Zone 5- Souvenir shop for tourists to take away a part of Mahabalipuram with them

Towards the exit would be the last zone with various art and craft shops selling souvenir of Mahabalipuram. This zone will not only provide a platform for the craftsmen to showcase their talent and skill but also will help in Brand Creation of Mahabalipuram.



Figure 10-15 Souvenir Shops

Expected Benefits and Outcomes

1. Tourists will have all information in one place
2. It will enhance livelihood of service industry and artisans and craftsmen
3. Revenue generation from the sale of entry tickets to the interpretation center and sale of information brochures and other literature.

10.3.3 Goal 3.3: Wellness Center for Meditation and Yoga

Need and Intent

In today's fast paced world, getting time to sit and relax one's mind and soul has become a luxury. Wellness tourism offers its customers a serene environment, proper physical and dietary routine coupled with some alternative medicated therapies. Recently, wellness tourism has become popular amongst all age groups of the society. It can support preservation of traditional, cultural and natural assets. It can also help in stimulating local economy and entrepreneurship opportunities.



Defining Metrics: Tradition and Culture, Well- being, livelihood opportunities

Proposed Features

The wellness center can be developed under **Ayushman Bharat Yojana** or National Health Protection Scheme is a program which aims to provide a service to create a healthy, capable and content new India. A typical wellness center is strategically located in the lap of nature, amidst natural landscape and greens. It is attributed by the vast open spaces and less built footprint. The Wellness center can be developed with following features:

- **Gymnasium**
- **Alternative Therapies like Naturopathy, Ayurveda, Aroma Therapy etc.**
- **Spa Facility**

- **Gardens and Parks**
- **Outdoor Seating and decks**
- **Outdoor Play areas such as Tennis, Volleyball courts**
- **Dining**
- **Cottages and Suites**
- **Special Yoga Training**
- **Meditation sessions**
- **Therapeutic Massage facility**

Several secondary services will also be provided to enhance the overall tourist experience like Beauty Care, ATM, Security System, Fitness Centers, Nutritional care etc.

The wellness center shall be developed on the 8-acre land parcel with a BUA of 4000 sq ft. only. The concept revolved around less of enclosed space and more of open to sky space enabling visitors a calming experience which is close to nature. The constructed space will be made with Gazebo type tents for yoga and meditation matching with the style of surrounding fabric.



Expected Benefits and outcomes

1. **Additional Tourism Product- Wellness Tourism**
2. **Prolonged Stay**
3. **Boost to local Economy**

4. Preservation of traditions and culture

5. Livelihood opportunities for local residents

10.3.4 Goal 3.4: Introduction of alternative accommodation arrangements - Hostel and Service Apartments catering to tourists interested in the alternative tourism products

Need and Intent

The primary survey and research show that there is a total of 126 accommodation facilities exists in the Heritage town and surrounding areas of Mahabalipuram. The type of accommodation ranges from Bed-and-breakfast to Guesthouses and lodges to luxury Hotels.

Of these, 35 hotels are listed as either 2-, 3-, 4- or 5-star hotels. Currently, the tourists have the option of choosing to stay in any of the three 4-star hotels and two 5-star hotels in the vicinity. The surveys conducted reveal that over 82% of the respondents are satisfied with the quality and service of these 3 - 5 start hotels in the area. Mahabalipuram alone accounts for a current average domestic and international tourist footfall of 41,096 per day.

The category of tourists ranges from individual backpackers, group travelers to luxury holiday travelers. Since the heritage areas in Mahabalipuram can be explored within a day, most tourists who travel from distant places prefer to stay over-night in low cost accommodations. Heritage explorers, who wish to learn the heritage of the place and who wish to have some hands-on training on the local sculpting techniques from the local sculptors, prefer to stay longer. Travelers who wish to have a luxurious vacation in the serenity of the place stay longer in any of the luxury hotels in the place. Others usually prefer to stay over the night as part of their tourism circuit.

Although, the accommodation facilities are of standard formats like lodges, Mid- segment hotels, some alternative types of accommodation can also be explored.

Defining Metrics: Quality Accommodation, longer duration of stay, varied hospitality services

Proposed Alternative Accommodation

A. Backpackers hostel

Backpackers hostel is a popular accommodation type for travelers who wish to travel cheap and socialize with their fellow travelers. This type of accommodation is fast increasing in India and can be seen in many heritage locations such as Varanasi, Pushkar, Jodhpur, Agra, etc. It provides comfortable dormitory rooms which can be shared with their fellow travelers and individual rooms for short stay. It has friendly common rooms, kitchen, dining areas and recreation areas for socializing. This type of hostels is famous for their short stay options among tourists and motorcycle enthusiasts, who wish to have a cheap and safe overnight stay during their journey. A well-designed hostel which depicts the heritage of the place can attract a lot of tourists who wish to stay economically.



Backpacker Hostels

Serviced Apartments: Serviced Apartments or Self-catering apartments and cottages are good options for group travelers or family who wish to stay for three days or longer. These types of accommodation provide one or more rooms with cooking, dining and toilet facilities. Although the cost of accommodation is more than the hostels, it provides much needed amenities for people who wish to stay longer such as laundry, sight-seeing arrangements, kitchen wares and cutlery. Some self-catering accommodations also provide Bed & Breakfast option, where all the essential breakfast ingredients are stocked in the apartment to cook and eat. Training centers and workshops to learn the local arts and handicrafts can also be provided within the premises for interested tourists who prefer to stay longer and can also boost the local economy.

Traveler's Inn: Travelers inn can be a good place of accommodation for large-group tourists travelling by private buses. It is a famous low-cost accommodation type which can be seen in many places in India and provides basic amenities such as large halls for accommodation, shared kitchen, toilets, etc. It also provides food according to the food preferences of various cultures (eg. Jain food). These inns are usually operated by non-profit organizations who charge very less for the services provided.



Image 10-17: Popular Service Apartment in Mumbai

Camping: Camping has become one of the most emerging accommodation trends which is even collaborated with other tourism products. Camping is an outdoor activity involving overnight stays away from home in a shelter, such as a tent. Generally, participants leave developed areas to spend time outdoors in more natural ones in pursuit of activities providing them enjoyment. To be regarded as "camping" a minimum of one night is spent outdoors, distinguishing it from day-tripping, picnicking, and other similarly short-term recreational activities. Camping can be enjoyed through all four seasons. Adventure Camping, Leisure Camping, Nature Camping, Luxury Camping are some of the popular forms of Camping availed by the tourists.

Recently, **Sweden has listed the entire country on Airbnb**. This initiative to promote the exploration and experience of tourists as the government believes, the natural beauty of Sweden should not be curbed to limited spots. The tourists now can camp at any desired location in the country be it woods, near water or anywhere and pay a rent to Airbnb.



HomeStays: Homestay is a popular form of hospitality and lodging whereby visitors sleep at the residence of a local of the city to which they are traveling. The length of stay can vary from one night to over a year and can be provided for free, in exchange for monetary compensation, in exchange for a stay at the guest's property either simultaneously or at another time (home exchange), or in exchange

for housekeeping or work on the host's property. Homestays are examples of collaborative consumption and sharing. In cases where money is not exchanged in return for lodging, they are examples of a barter economy or gift economy.

Farm stays are a type of a homestay, in which the visitor stays on a working farm.

The terms of the homestay are generally worked out by the host and guest in advance and can include items such as the type of lodging, length of stay, housekeeping or work required to be performed, curfews, use of utilities and household facilities, food to be provided, and rules related to smoking, drinking, and drugs.

One such Initiative is practiced in Orchha (M.P) near Jhansi. The homestay in Ganj, a neighbourhood of Orchha, gives travelers a chance to discover the daily life of the majority of Indians today, by living with a family of farmers or artisans. This unique experience allows the visitor to understand rural life in this colourful country.

In addition to discovering the architectural beauties of this ancient, royal capital with its 17th century palaces and temples, you can visit the town of Orchha, the nature reserve, swim in the river and ride a bike around the town and countryside.

The project was initiated in 2009 to give women the opportunity to practice an income-generating activity, while looking after their homes and families. Half of the rent for the accommodation goes to paying off the interest-free loan provided by the association for building the room and sanitary block, another part goes to cover the operational expenses and the rest, including all the money received for meals, is given to the host family. Friends of Orchha has also been able to build about twenty bathrooms and toilets for other families in the neighborhood. The accommodation package includes breakfast for 2 people.



Home Stay in Orchha

Other Options: Other Options like MICE centers, Wellness and Yoga Retreats proposed and detailed out in previous sections can also be plugged under this as they also provide accommodation facilities for Tourists.

Expected Benefits and outcomes

- **Prolonged / increased duration of stay**
- **Re-branding Mahabalipuram as an (i) adventure destination, (ii) centre for business conferences and social congregations**

- **Enhanced employment opportunities for the residents in-turn leading to higher skill levels and educational training**
 - **Re-branded international and national image and presence**
 - **Provision of High Quality and standard services for tourists**
 - **Substantial increase in revenue via increased employment and demand for local workforce**
-



Goal 4: CONSERVATION &
PROMOTION OF LOCAL ARTS AND
SKILL: ENHANCED LIVELIHOOD &
QUALITY OF LIFE



10.4 GOAL 4: CONSERVATION & PROMOTION OF LOCAL ARTS AND SKILL: ENHANCED LIVELIHOOD & QUALITY OF LIFE

Need and Intent

Tourism offers the greatest opportunities for locals to participate in and benefit from. Investments need not only be directed to critical infrastructure and service improvements, but also towards the people who are hosting, guiding and navigating visitors to Mahabalipuram. Traditional fisheries will remain important for most of the heritage Area's workforce, but they could reap higher returns if they are further aligned with the opportunities that tourism offers.

Involvement of local community in creating or managing the proposed products so as to ensure sustainability, local participation, generation of livelihood, and security of the products is recommended. It is intended to establish a local destination management organization that is based on active participation and ownership of local stakeholders. Thirdly, it is envisaged to enable local people to run small tourism businesses that meet quality and sustainability standards, and that are economically viable.

Tourism inspires community pride

95% of the respondents expressed a sense of pride about their culture and history. The host community is so proud that the people from the various parts of the world come to the Mahabalipuram to see the richness and the heritage of the Pallava dynasty. This instill greater community pride that they belong to one of the prestige and unique society of the world. The host community is proud that the tourist appreciates their skills of sculpture making to the perfection and buys the same as a souvenir. This is one of the predominant reasons why sculpture making business is still alive and carried through the generation.

Defining Parameters / metrics: Local livelihood, employment generation, local skill, conservation of arts and crafts

Proposed Interventions

S. No	Goal	Project
1	G4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life	Development of Cultural Village (Artisans Concept Village)
2		Centre for Alternative Skill Development and Capacity Building, Mobilization of NGOs to conduct Training Programmes to render the Tourist Spot Friendlier and Safer Mahabalipuram
3		Enhanced Quality of Life - Community and School Toilets

10.4.1 Goal 4.1: Development of Cultural Village (Artisans concept village)

Mahabalipuram is a town where the culture and skills developed around the history and culture of the heritage town is relatively well conserved and kept alive by the several artisans who dot the streets of the heritage area. The town was once ruled by Pallavas, who were artistic and created new styles of art. The locals are also engaged in stone carving and handicraft, and local shops have the handmade crafts available readily. Mahabalipuram has seen a quick development socially as Tourism & handicraft

industry provides several job opportunities to the people. The road that leads to and winds around the main site of monuments is adorned by several sculpture, mural and stonework stores.

Tourism plays a major role in social development of a place and this is taken into consideration while planning this intervention. Primary surveys conducted by the consultant reveal that majority of the vendors, around 79% are from Mahabalipuram and the rest belong to surrounding areas like Poonjeri, Kanchipuram, Tirukalukkundram, etc. More than half of the vendors have been vending since comparatively fewer years. To be precise, almost 54% of the vendors are vending since the last 10 years or less. Only 10 % of the vendors have been there for more than 30 years. Close to 60% of the vendors deal with art items and handicrafts, souvenirs, etc. It is also understood that 66% of the vendors have a monthly income of just INR 10,000 or less. This observation clearly lays **emphasis on the need to conserve, preserve and keep the local arts and handicraft skill alive.**

It is imperative to increase the level of skill and diversify the product base and technique used. It is envisaged to promote the local skill and give a boost to the products and their sale.

Proposed Features

It is proposed to develop a Cultural Village at Mahabalipuram to achieve the following objectives:

- **Showcase Mahabalipuram's rich culture and traditions through innovative products and top-class services.**
- **Give all visitors a memorable experience of Mahabalipuram's rich cultural heritage**
- **To promote the appreciation of Mahabalipuram's culture amongst the younger generation**
- **Promote conservation of the local skill and art work and train the younger generation to take the skill further to develop innovative and diversified products**

The Cultural Village is envisaged to act as the heart of the skill that has been passed through generations in Mahabalipuram - sculpting, weaving and creation of handicrafts. The concept revolves around promoting the art and artists / artisans of the region via tourist stay packages. Tourists will be offered a chance at staying at the Cultural Village to experience the history, culture and many colours of Mahabalipuram. The proposed culture village shall be developed with state of the art infrastructure and amenities on approx. 2- acre land parcel.

The village will house the following:

World Class Artisans workshop: The objective is to urge tourists to take their appreciation of the artwork to a higher level and join workshop packages where they will be offered first hand training and crash courses on various skills and techniques. The workshops will be equipped with state of the art tools and machinery to help enhance the skill levels of the artisans and encourage production of a wider product base. This will help take the art and its production to a new level.



Centre for promoting the History and Architecture of Mahabalipuram: This will particularly pique the interest of history enthusiasts and architecture / art students and teachers. The classrooms, Open Air Theatre, auditoriums will be built to be of world class standard and will be used for conducting lectures and sessions on the history, culture, architecture and art of Mahabalipuram. The centre will invite renowned experts in the field to stay at the village and conduct sessions on their subject of expertise. The centre can also be booked for utilization by schools of Art and Architecture for educational sessions. Educational events will be regularly promoted to keep the spirit of the grand architecture of Mahabalipuram alive.

The Sculpture Park: the Sculpture Park adds a new dimension to the Cultural Village. This park will display the works of the local and visiting International and Indian sculptors. This park will encourage tourists to truly appreciate the myriad and varied techniques used by the sculptors.

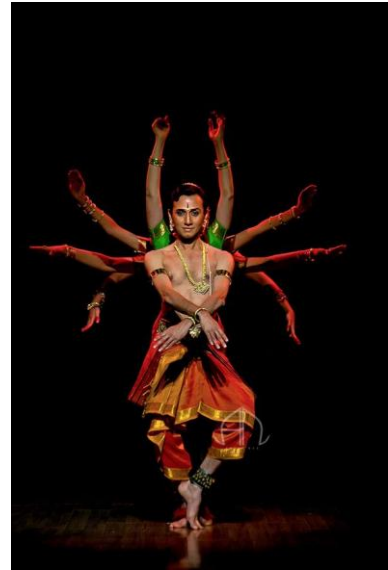
Eco-huts: For an authentic experience within the Cultural Village, Tourists will be offered stay at the Eco-huts where they will get the chance to experience the unique local cuisine and the various traditions and festivals of Mahabalipuram depending on the period of their visit. The Eco-huts will be constructed out of vernacular building material and in the local style of the artisans of the region. Each eco-hut will reflect the style of a particular era of Mahabalipuram and will promote the artwork of that era. Tourists will be given an option of choosing which style of art or sculpting to pick for the workshop. The package will also be developed to include a combination of the styles.



The Dance and Music House: The Village will also aim at promoting the local folk art - dance and music. Workshops on various forms of traditional and folk dance and music that are exhibited during the grand annual dance festival at Mahabalipuram will be conducted in this part of the village to keep the magic of the dance festival alive. The TTDC office at Mahabalipuram has recently started holding dance shows at the Maragatha Poonga , a rejuvenated landscaped area, every weekend at the Mahabalipuram heritage area. The activities of this Cultural house will be linked to the ongoing events. Dance workshops will form one of the attractions of the tourist packages.



The air-conditioned theatre will be where the regions dancers and musicians present their famous multi-cultural performances. Spectacular costumes and elegant dance routines will provide an entertaining and enjoyable introduction to the regions (and India's) ethnic groups and their cultures.



The Dance and Music house is also envisaged to place collections of musical instruments and traditional dance costumes from all over the world. The display hall, auditorium, congregation area and workshops will all be constructed in the vernacular style of architecture.

Food Village: A restaurant where the kitchen serves only healthy local cuisine and its delicacies will appeal to the taste buds of the tourists. This kitchen will act as a source of employment for the women of the Mahabalipuram town and is expected to play a key role in empowering the women folk in this region. The food prepared in this kitchen will serve the Cultural Village on a daily basis.

The Art and Handicrafts store: Tourists will be enraptured by the plethora of products at the handicrafts store. From miniature sculptures and souvenirs of Mahabalipuram caves and temple architecture to hand woven wall hangings, curios and other such articles. The store will draw parallels with the street shops of Mahabalipuram and help regulate the authenticity of the products sold in the Heritage area as well. Registered local artisans may distribute their products through this handicrafts store.



Skill Development Centre: The Cultural Village will also house a skill development center with state-of-the-art equipment, machinery, workshops and classrooms. Young sculptors will be trained, and their skills polished at the Skill Development Centre.



Accommodation for Artists and Artisans: The village will also house accommodation facilities with all amenities for the performing artists and the artisans conducting the workshops in the village. Temporary accommodation at nominal rates during festive and peak seasons and free accommodation during other periods of the year will be offered to the guest artists contributing to the various activities of the Cultural Village.

The Cultural Village will be designed for easy navigation and tourists will be guided by maps and way finding signs designed to reflect the local architectural style. The Mahabalipuram Cultural Village is envisaged to be created and built by local people and form a place of great pride and a way of preserving the regions rich heritage.

10.4.2 Goal 4.2: Centre for alternative Skill development and Capacity Building

Need and Intent

Tourism as a vehicle for social development

- The overall results of the primary surveys conducted indicates that the tourism is a vehicle of social development in Mahabalipuram. Out of 100 respondents 72% expressed positively about social development. **The people who directly or indirectly involved in tourism related business, expressed there is growth in their economic level, community development and new job opportunities such as hotel jobs, self-employment like sculpture making, tourist guide etc. 90% of the respondents agreed that the tourism industry has increased job opportunities and economic development in the region.**

- Survey also shows that more than 50% of the respondents are well educated upto college level. The respondents show a positive sign of literacy rate and gives the confidence that Mahabalipuram has a potential to develop a pool of human resource.
- Tourism in Mahabalipuram has grown substantially over the years. Initially tourists were small in numbers and treated as guests but now hospitality has become commercialized. The host community of Mahabalipuram is enthusiastic and thrilled by the development of the tourism in the region. They welcome the strangers and there is a mutual feeling of satisfaction. There are job opportunities and money flows along with the tourist. **However, organized community participation in the tourism sector and community-based tourism initiatives are yet to be well developed and many long-term projects are to be established in Mahabalipuram.**

Proposed Interventions

Tourism plays a major role in social development of a place. Many of the locals are also tourist guides by profession. Tourism in Mahabalipuram is a seasonal business where most of the foreign tourist visits the place during November to March. The people of Mahabalipuram try to make most of the money during season time. There are over 45 residents at these heritage monuments who have been acting as guides for decades. Government has trained a few and provided identity cards for over 20 people. Every two years, renewal is done. The Government, however, needs to put more effort into organizing training programmes for local guides for a better tourist experience.

The preliminary assessment of operational standards carried as part of the Master Plan fieldwork in the month of August 2018 indicates that hotel and other tourism industry staff were invariably friendly and helpful but lacked many of the essential skills needed to do their job to the standard that is required if Mahabalipuram is to compete successfully in the market for international tourism at par with other UNESCO sites. In-house training is carried out at the mid-range hotels, but generally not on a regular or planned basis to agreed criteria by professionally qualified trainers. Managers agreed that there was a serious training problem, both at entry level and for existing staff within the industry. All categories of staff require training: hotel and catering staff, tour guides, drivers, etc.

The above inferences point to the need of development of a 'Skill Development and Management Centre' (SDMC) which will provide vocational and professional training courses for the workforce that is already employed in the tourism sector (Capacity building) and for the younger generation who are looking for guidance for better employment opportunities in the industry. Training services will be provided for various skill and capacity building in the areas of:

- **Hospitality and hotels segment**
- **Tourist Guide capacity building**
- **Lifeguard and Security services**
- **Surfing and other water sports**
- **Artisans skill management and operations**

The (SDMC) will also maintain records of the employment base, vacancies, and manage placements of trained personnel. The proposed SDMC shall be clubbed with the development of proposed MICE facility on the same land parcel. The SDMC can be developed with a BUA of about 10,000 Sq.ft.

Mobilization of NGOs to conduct training programmes to render the tourist spot more friendly and safe

Local are an integral part of a tourist area to make the area safer and friendlier by providing natural surveillance over the area. Their local economy is in turn dependant on the tourists for local shopping and information. It is therefore required for the locals to be communicate with the tourists better for economy and safety aspects.

Defining Parameters / metrics: Local economy, ease of communication, friendly, safety

Project features



Image 10-18: Outdoor and indoor training classes for locals

Training programmes and workshops can be conducted to train the locals about the importance of the heritage areas and to create friendlier and safer environment with the tourists. Communication classes can also be conducted to train the locals to easily communicate with the tourists in various languages as per their preference. Special awareness classes to educate the locals about the heritage significances and history of the place can be conducted.

10.4.3 Goal 4.3: Enhanced quality of life

Adequate, affordable public services are fundamental for all, and a prerequisite for sustainable tourism development. To be a nature reserve where people live and work, safe water supply, sewerage, basic health services, etc. need to be ensured. Improved services are also a pre-requisite for a thriving small-scale tourism sector. Similar service improvements are needed in the heritage town area. They need to be aligned with the ability of the residents to pay for the services, supported by an appropriate subsidy policy.

A. Installation of bio-toilets and safe public convenience facilities in the town and schools for increased hygiene and health

Need and Intent

Mahabalipuram town Panchayat has 5 government schools comprising of 3 primary schools, 1 middle school and 1 higher secondary school. The total strength of the schools is 1,822 with 906 boys and 916 girls. All the schools have toilets for boys and girls separately and is being cleaned regularly (toilet and its premises cleaned at least once in ten days, as stipulated) by the sanitary workers. Out of the total

25 toilets, 10 are dedicated for boys and 15 for girls. Comparing with the desired standards of sanitation facilities, it can be seen that 13 more WC for boys and 23 more WC for girls are required to fulfill the sanitation requirements of the schools.

Proposed Interventions

(I) It is proposed to provide adequate toilet facilities in schools as per the prescribed standards with provisions of ablution taps, wash-basins, water closets, urinals and other electrical and mechanical provisions for lighting and ventilation as required. Provision of adequate drinking water fountains in schools as per the standards is also proposed. Adequate toilets and drinking water fountains for differently-abled users are also to be provided. **5 toilets each having 5 WCs each for boys and girls, 1WC for differently abled, 1 shower each, 1 Indian closet, 1 wash basin each with janitor store and electrical and water supply systems is proposed in each of the schools.**



Image 10-19: Bio toilet



Image 10-20: School water fountain

B. Improved water supply within the town area

Given the current water supply requirement of 2.05 MLD (at 135 lpcd) along with water requirement for floating population, the water supply in the region has to be almost doubled to satisfy the water requirement.

Proposed Interventions



Image 10-21: Community Overhead Tank



Image 10-22: Public RO water purifier

Augmenting the current water supply system in place to satisfy the water supply requirements for the residents as well as floating population is proposed to be taken up as part of the Development Plan. The plan also proposes provision of new OHTs to increase the storage capacity of water. It is also recommended to provide new RO water treatment facilities in wards where it was not already provided. Since the area lies on the coast of Bay of Bengal, ground water has to be treated before distributing.

About 35 water fountains with 5 RO plants of capacity 2000 LPH with adequate storage facility is proposed. The locations of these fountains and RO plants to be fixed as per the DPR of water supply.

C. Improved SWM facilities within residential clusters of Mahabalipuram Town

The existing solid waste management in the town panchayat has improved in the recent years. However, there is a need to provide solid waste disposal bins in the residential areas to improve source segregation and to prevent dumping of garbage in public areas. For the purpose, eco- friendly bins made of natural material of size 20L in 3 sets with color coding are proposed to be installed in about 40 locations.

Proposed Interventions

The following measures are proposed to be taken up for an effective SWM system:

- To provide solid waste disposal bins of various categories in the residential areas and tourist areas to improve source segregation
- Sufficient measures to be taken to prevent dumping of waste in the vacant land and in the open drainage network
- To augment the system to accommodate for the increase in population in the future

D. Installation of e-toilets and public convenience facilities within residential clusters

Mahabalipuram has been declared as open defecation-free town. The Town Panchayat has 4 public toilets and 8 community toilets. The public toilets have 17 latrines for men, 17 for women and 1 for differently abled. Community toilets are located within the residential neighborhood which are sparsely built and near the slum/slum-like settlements. There are total 33 latrines for men, 33 for women. All the community and public toilets are maintained by the Town Panchayat.

Proposed Interventions



Image 10-23: Bio toilet within town area



Image 10-24: Community toilet in residential area

Public toilets must be provided in all tourist spots, wherever necessary. Public toilets capacity in the existing tourist spots must be increased. There is an inherent need to provide better quality toilet complexes since it is a site of international importance. Currently only 8 out of 15 wards have community toilets. Community toilets must be provided in residential areas wherever needed.

The 7 remaining wards of Mahabalipuram will be equipped with one community toilet each with a separate block of 8m x 5m for ladies (with 3 WCs, 1 wash, 1 bath) and 8m x 5m for gents (with 2WCs, 6 urinals, 1 bath, 1 wash).

Expected Benefits and outcomes

- Improved hygiene and health condition of natives
- Clean and garbage free town
- 24*7 water supply for all
- Improved SWM services and awareness



Goal 5: Smart Mahabalipuram



10.5 GOAL 5: SMART MAHABALIPURAM

S. No	Goal	Project
1	G5: Smart Mahabalipuram	Smart Explorer App for Seamless Access
2		Unified Smart Traveller Card

10.5.1 Goal 5.1: Smart Explorer App for Seamless access

Need and Intent

These days we notice that many small businesses you interact with in your everyday life have their own dedicated mobile app — be it the corner coffee shop or the beauty spa in our town. These companies are ahead of the game when it comes to linking and promoting their products for a wider reach of consumers. The top 7 benefits of using app-based technology as listed by Forbes Magazine are-

1. **Be Visible to Customers at All Times:** Statistics show that on an average person spends more than two hours a day (!) on his or her mobile device. While probably only a handful of applications make up the bulk of this total usage, it doesn't change the fact that each user has to unlock, scroll, and scan their device for the apps they're looking for.
2. **Create a Direct Marketing Channel:** Apps serve many functions: they can provide general info, prices, booking forms, search features, user accounts, messengers, news feeds, and much more.
3. **Provide value to your customers:** Instead of sticking to the old point-collection card, make it possible for your customers to collect their rewards via your mobile app. More downloads and more return customers.
4. **Build Brand Recognition:** A mobile app for your business can greatly contribute to your brand awareness.
5. **Improve Customer engagement:** No matter whether you are selling flowers or spa services, your customers need a way to reach you. Having a messaging (or help desk) feature within your app can really make a difference in the way you communicate with your customers.
6. **Stand out from competition:** These days mobile apps at the small business level are still rare, and this is where you can take a big leap ahead of your competitors.
7. **Cultivate Customer Loyalty:** Making a true and sincere connection with your customers and making them a loyal lover of your product and/or service by ensuring a closer connection.

Defining Metrics- Tourist Friendly Experience, Brand, Recognition, Competitive, Smart Infrastructure

Proposed Features

A. An Easy - track Mahabalipuram - mobile application for tourists is proposed which will include Public Transport Information, Route Map with locations of Monuments and other attractions with a brief description, complaints and feedbacks, etc. will form a part of this app. This app will also allow to do

online booking of events, online booking for Interpretation center, transport facility, bicycle sharing, payment facilities for bookings and payment at restaurants. The app will have a unique QR code for hassle free payments.

This app can be accessed easily near the Wi-Fi hotspots in the city and near the heritage region for all online facilities. This app will also track real time data such as congestion, bicycle tracking etc. The app shall be made for both Android and Apple users.

Such initiatives are being taken all across the world. In 2014, **Australia Tourism** started providing Free iPad and iPhone App which acted as a tourist guide. The app is available for a free of cost. This app gives you an idea on where to stay, where to go and what to do in Australia. The app is packed with lots of incredible journey suggestions and destination ideas like nature, coastal, romantic, outback, food & wine and adventure.

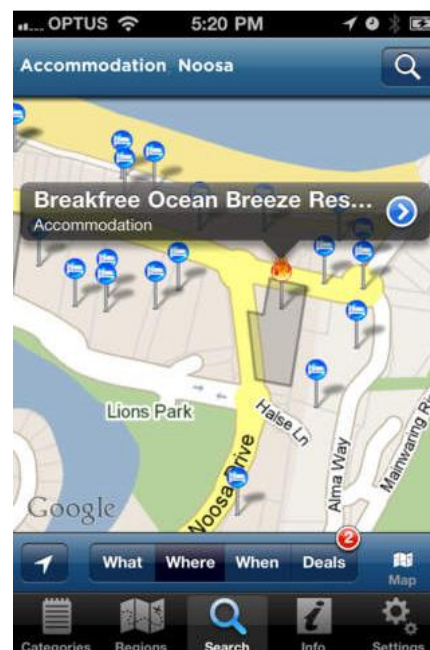
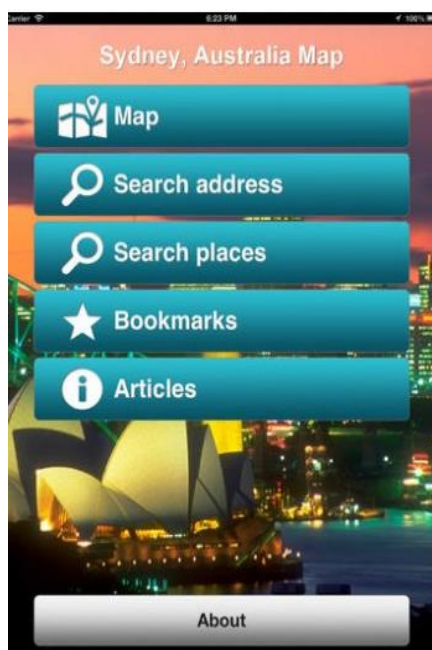
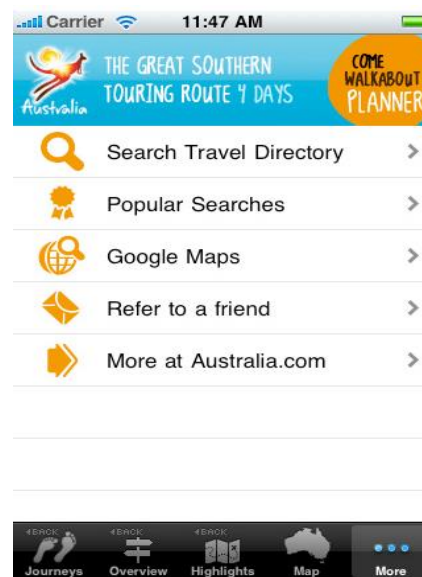


Image 10-25: Features of the Australia Tourism App

10.5.2 Goal 5.2 Unified Smart Traveler Card

Need and Intent

In the era of new age technology and smart infrastructure, the smart traveller card becomes lucrative. This will not only reduce the long queues but also will reduce the congestion near tolls, parking, bus stops etc. The smart cards have many benefits the prominent being:

- **Persistent, protected storage. Persistent storage is an obvious piece of the smart card, and one that makes it similar to an ordinary mag-stripe card. ...**
- **Processing power. Most smart cards have a small CPU, which means that they can do things other than parrot data stored in the card. ...**
- **Packaging**

It is customer friendly and will enhance the experience of tourists and residents alike.

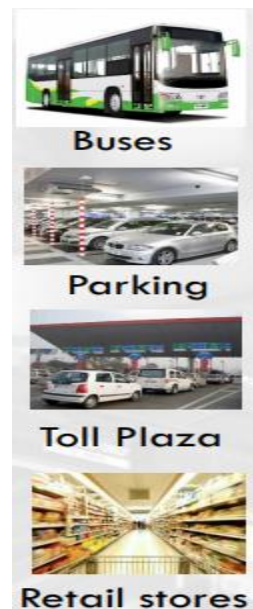
Design Metrics: User- friendly, Fast and Efficient

Proposal Features

A Single Card system for touring Mahabalipuram. The Card will act as the single mode of payment for tolls, hotels, parking, monument tickets, water sport activities and all other amenities at Mahabalipuram. The card can be generated online.

One card for all use • Inter-operability for multimodal transport • Quick transaction with contactless mode • Reduced cash holding • No need to stand in queue • Digital trail for all transactions • Offers on usage of cards

Unified cards with online/offline transaction • Savings on card lifecycle management cost • Reduced cash handling & operating cost • Higher customer loyalty & stickiness • Rich data insights.



Expected Benefits / Outcomes

- **Inter-operable across wide avenues of usage**
 - **Cost Effective Solution**
 - **A fully integrated contactless Smart Card IT-system linked with the Transport infrastructure**
-



Goal 6: Equipping Mahabalipuram with State of the Art Tourist Amenities



10.6 GOAL 6: EQUIPPING MAHABALIPURAM WITH STATE-OF-THE-ART TOURIST AMENITIES

S. No	Goal	Project
1	G6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	Provision of Drinking Water Kiosks / Fountains at Identified Locations
2		Creation of Sheltered Resting Plazas
3		Provision of First Aid Kiosks
4		Provision of E-Toilets for Tourists
5		Provision of Emergency booths for SOS calls and reporting
6		SWM-Bins at Every 25m Interval
7		Provision of Wi-Fi Hotspots

10.6.1 Goal 6.1: Provision of drinking water kiosks /fountains at identified locations

Need and Intent

It is clear from the Primary surveys and tourist 'preference surveys' that the number and quality of drinking water facilities in Mahabalipuram are inadequate. As per the UDPFI guidelines, public spaces of tourist interest or congregation need to be equipped with water facilities @ 500ml per person (considering peak population). This translates to a minimum water requirement of 4500L per day.

Proposed Interventions



Adequate drinking water kiosks with RO facilities have to be provided in important tourist areas. The design of the kiosks/fountain have to such that it blends with the architecture style of the region. Enough provisions must be made for children, old and differently-abled people. **Considering the peak hour population of 9,000, the gap assessment carried out indicates that a minimum of 35 number of drinking water facilities (kiosks / fountains) with RO plant 6 locations with capacity of 2000L/hour are required for provision of quality drinking water in the Mahabalipuram Tourist area.**

These are designed to blend with the environment. Water fountains proposed are of stone and wood. Apart from being vandal proof and low maintenance, these will reflect the identity of the destination. At the heritage area, the fountains will be designed to portray the history and culture of the region whereas at the beach front, these will be made to camouflage with the surroundings.

10.6.2 Goal 6.2 - Creation of sheltered resting plazas

Need and Intent

The tourist site has approximately 10 benches, spread across the site (2 at the Light House, 2 at the Beach Road, 2 near the Krishna's Butter Ball Monument, 3 At Five Rathas, 1 At West Raja Street, etc.). None of these have canopies and remain un-used by visitors and tourists. Measures need to be taken to provide state-of-the-art canopied seating and rain shelters to cater to the tourists and visitors spending the day at Mahabalipuram.

Defining Parameters / metrics: Comfort, weather protection

Project features

Sheltered resting plazas with adequate street furniture will be provided at every 100m along the guided circulation path to protect the tourists from sun, rain and exhaustion. The design could incorporate local architecture style for the structure and furniture to provide local employment opportunity. The resting plazas could also be provided with drinking water fountains at regular intervals. Canopied shelters with strong thatched roof and ornamental benches to match the local fabric is proposed in about 40 such locations.



10.6.3 Goal 6.3 - Provision of first aid kiosks

Need and Intent

The Mahabalipuram Town Panchayat area has 1 number of primary health care center and 3 numbers of Clinics (Allopathy, Homeopathy) catering to the residents of the town. There is also 1 private run clinic in the area. There is no provision for first aid facilities in the tourist area of Mahabalipuram. This

is an important component and a tourist destination that caters to such high numbers of visitors annually (~1,50,00,000 during 2017-18) must be equipped to handle first aid and emergency medical services.

Defining Parameters/metrics: Emergency facilities, accident addressing, emergency transport, safety

Proposed Interventions



First aid kiosks will be provided at all identified tourist spots in Mahabalipuram to treat minor injuries and sickness as required. The only government hospital in the area can become overcrowded for such a high tourist inflow. Adequate ambulances must be provided to transfer serious injury cases to the closest hospital. Currently only one ambulance is stationed at the government hospital.

This will be equipped with Wi-Fi connectivity, panic button for emergencies and contact with nearest hospital and police central control room, pull-down bed, equipment and medication, storage space, etc.

Steel mounted kiosks equipped with digital thermometer, digital blood pressure monitor, imported wheelchair (2), ICU fowler cot, bed side table, examination table, ambulance trolley, stretcher, basic first aid kit, hand sanitizer, etc. is proposed at 4 locations. Signages shall also be installed to direct to these kiosks.

10.6.4 Goal 6.4: Provision of E-Toilets for Tourists

Need and Intent

Studies reveal that **Mahabalipuram currently has 6 toilet blocks** of which 3 are under the ownership of the Mahabalipuram Town Panchayat and 3 are owned and maintained by ASI. The public convenience unit located at the bus stand is under renovation currently and closed for use.

Project Features

Modern e-toilet systems can be used in both the areas (heritage and coast). These are easy to install, maintain, uses less water in comparison with the conventional kind and are vandal free. They are equipped with bio-composting tanks, so the issue of disposal is taken care of. E toilets installed at the destinations can be camouflaged and made to blend with the surroundings by covering the units with a skin of locally available material (wood, mud, stone, etc). Toilets made of stainless steel with 2 units for general, 1 for differently abled, 1 for transgender is proposed. The toilet will be illuminated with a 225 liter capacity of water tank and bio digester. It will also have GPRS, alert systems and indications.

This is one of the most vital amenities. The studies conducted reveal that the existing public convenience units call for immediate renovation and replacement. The quality of toilets and accessibility play an important role in the success of any tourist destination. Public toilet complexes must be designed for easy accessibility by children and the differently-abled. When provided, toilet facilities should be in a suitable location and adequate for the size of the attraction.

It is clear from the Primary surveys (count) and tourist 'preference surveys' that the number and quality of public convenience facilities in Mahabalipuram are inadequate.

- As per the UDPFI guidelines, public spaces of tourist interest or congregation need to be equipped with public convenience facilities **@ 4 for first 1000 persons and 1 for subsequent 1000 persons.** Considering the maximum population / hour, the assessment for the tourist area of Mahabalipuram reflects a **need for provision of 11 WCs and 13 urinals for men, 12 WCs for women visitors.**
 - **A combination of E Toilets (3 units with 2 general, 1 differently abled and 1 transgender) and 2 conventional type public toilets each for ladies and gents is proposed to be developed.**
 - Although a total of 6 public toilet blocks exist, the number of WCs and Urinals provided lack regular maintenance and are insufficient. Further studies need to be conducted in order to be able to gauge the exact requirement of the type and location of the public convenience units.
 - Safety plays a big role in the utilization of these facilities and measures to strategically locate and render the facility safe must be prioritized at the planning stage.
-

10.6.5 Goal 6.5: Provision of Emergency Booths for SOS calls and Reporting

Need and Intent

There is a need to enhance the provision of tourist amenities for public convenience such a phone booth. It is a basic amenity for the public during emergency and since not all tourists are expected to carry mobile phones.

Defining Parameters / metrics: Communication, emergency facility

Project features



Image 10-26: Phone booth at tourist spots

Phone booths must be provided adequately at regular intervals for public convenience. It should be accessible 24 hours. It should be designed in such a way so as to prevent theft and vandalism. It should also be protected from adverse weather conditions. 2 Pay and use Telephone with related electrical works, and SOS button for reporting emergencies to command control centre; are proposed.

10.6.6 Goal 6. 6: SWM - bins at every 25m interval

Need and Intent

Although the existing SWM infrastructure is sufficient for the residents, the existing infrastructure is insufficient for the amount of floating population that visits Mahabalipuram. For example, during Masimagam, people from nearby towns come to Mahabalipuram and stay for a week to perform religious rituals and for weddings by the sea. They set temporary shelters such as tents and live there over a period of 5 to 7 days. Post this, the area is filled with garbage and it takes the Town Panchayat more than 10 days to clean the area.

Defining Parameters / metrics: Cleanliness, preservation of aesthetic appeal, awareness

Project features



Image 10-27: Proposed eco-friendly bins in the heritage area

Segregated solid waste disposal bins must be provided at regular intervals as required so as to keep the heritage area clean. The design of the bins must be such that it blends with the heritage elements of the place and not be isolated. Enough signage, hoardings and advertisements can be installed to spread awareness to keep the area clean and green.

10.6.7 Goal 6. 7: Provision of Wi-Fi hotspots

Need and Intent

Internet is one of the critical aspects for any tourist to reach, navigate and explore a new place and to gain important insights about the place. Since Mahabalipuram attracts a lot of domestic and international tourists outside Tamilnadu, it is important to provide Wi-fi spots for the tourists to access internet.

Defining Parameters / metrics: Communication, navigation, information

Project features

The heritage area could be facilitated with high speed Wi-Fi hotspot so that the tourists could be benefitted for navigation and other important purposes. The Wi-Fi hotspots could be offered free for a certain duration after which it could be charged nominally. Necessary infrastructure must be provided at regular intervals so that it could handle the high volume of traffic. Dedicated Wi-Fi zones can be provided to reduce misuse or overuse of Wi-Fi. provision dedicated leased line of Wi-Fi network service the user in the town at an average of 2000 users per day at 1000 Mbps speed on annual basis, with network tower and all sub station and other related works is proposed at 25 different locations.



Expected Benefits and outcomes

- Connectivity and access
 - Easy access to tourist services
 - Enhanced safety
-



Goal 7: Safe and Friendly Mahabalipuram



10.7 GOAL 7: SAFE AND FRIENDLY MAHABALIPURAM

Need and Intent

More than any other economic activity, the success or failure of a tourist destination depends on it being able to provide a safe and secure environment for visitors. The vendor, tourist and resident surveys strongly reflect the lack of security provisions in the precincts and surrounding areas.

The security in the area is poor, as expressed by 82% of the vendors. The rest of the vendors responded that the security is average. Only 1% of the vendors, which is negligible think that the security is good. When asked about their views on street condition, 86% of the vendors think it is average, while the remaining said the street condition is good.

Safety and security measures include planning and installation of **CCTV units** with central control stations to ensure safety of tourists visiting Mahabalipuram. **Watch towers** will also be installed at strategic locations to station staff to keep the area safe.

Defining Parameters / metrics: Safety, Vigilance, enhanced Accessibility

Proposed Interventions

S. No	Goal	Project
1	G7: Safe and Friendly Mahabalipuram	Illumination: Installation of Lighting on the Beach and Un-lit Areas, Illumination of Monuments as per Regulations
2		Installation of CCTV Systems at Identified Locations
3		Watch Towers: Installation of Watch Towers on the Beach
4		Security and Increased Watch Guards in the Heritage Area
5		Development of Fire Station and related Amenities

10.7.1 Goal 7.1: Illumination

10.7.1.1 illumination of monuments as per regulations

Need and Intent

The Mahabalipuram area is equipped with approximately 928 street lights, of which ~ 60 Street lights are provided along the beach and surrounding areas.

There is a lack of lighting facilities around the heritage site and monuments. Interventions that do not interfere with the architecture and heritage of the site are recommended to be installed in the unlit areas to enhance aesthetics as well as the safety of the destination.

Defining Parameters / metrics: Safety, aesthetics, tourist attraction, environment friendly

Project features



Image 10-28: Lighting along coastline



Image 10-29: Monument illumination

All un-lit and under-lit areas of public importance have to be identified and sufficient lighting has to be provided. The street lights could be fitted with solar panels as an environment friendly alternative. Flood lights/ other appropriate lights can be provided along the beaches as per the standards to improve the accessibility and safety. Monuments can be illuminated at night to impart a livelier atmosphere and attract the tourists.

10.7.2 Goal 7.2: Installation of CCTV systems at identified locations

Need and Intent

There are no provisions currently made for installation of CCTV systems within and around the tourist area. To enhance the safety and security of people and tourists, the tourist area should have one camera at every 300 sq. m area.

Defining Parameters / metrics: Surveillance, protection of monuments, security

Project features



Image 10-30: CCTV coverage in heritage and public areas



Installation of various CCTV systems with various cameras such as 360 degree and focussed cameras can be provided at strategic locations. The CCTV surveillance can be done at tourist spots, traffic prone areas and at areas requiring better safety and security. The CCTV cameras will be protected from weather and masked to blend with the surroundings .Installation of 16 High Speed PTZ camera (with

NVR - HDD), UTP and power supply, display units, Fibre optic cabling, and all other related works including cable laying and installation of cameras is proposed.

10.7.3 Goal 7.3: Watch Towers: Installation of Watch Towers on the Beach

Need and Intent

The coastal nature of the destination calls for other key provisions such as watch towers and appointment of lifeguards on the beach side for the safety of the visitors as well as the residents. The watch towers can also be used to restrict unauthorized entry into the sea during times of cyclone and high tide.

Defining Parameters / metrics: Safety, emergency addressal

Project features



Image 10-31: Watch towers along the beach for enhanced safety

Manned watch tower must be provided at enough intervals along the beaches to prevent any untowardly incidents happening to the tourists. Life guards with sufficient training will have to be stationed to provide safety to the tourists who enjoy water sports activities or who accidentally drown in water. These watch towers have to be equipped with first aid and emergency medical kits. The watch tower can be manned 24 hours to improve the safety along the beaches at night. 4 watch towers are proposed of 3 m height with life safeguards is proposed.

10.7.4 Goal 7.4: Security and increased watch guards in the heritage area

Need and Intent

The safety and security of the tourists and wanderers is a matter of concern during night time, during when there are reports of threats to them. Safety of women is of prime concern in non-illuminated areas

and unguarded areas. It is therefore important to improve the safety and security of such areas by deploying required watch guards.

Defining Parameters / metrics: Security to tourists and monuments

Safety and security in the heritage areas can be improved by installing enough CCTV cameras, sufficiently lighting the non-illuminated areas and by increasing the number of watch guards. Local community will be harnessed for providing security which in turn provides employment. Enough guards will also be deployed to safeguard the monuments from any potential damages caused by the tourists. Security guard towers can also be proposed at important location to keep an overall surveillance of the heritage area.

10.7.5 Goal 7.5: Development of Fire Station and related amenities

Need and Intent

It can be noted that the area of such historic significance does not have a fire station. The nearest station is in Tirukalukkundram which is 15 kms away. This calls for the need to provide a fire station within the town to immediately respond in case of any emergency. The heritage area should be protected from any fire accidents to avoid or reduce the damage.

Defining Parameters / metrics: Emergency services, protection to monuments and lives

Project features



Image 10-32: Fire station and Hydrant (representative)

A fire station with enough water storage capacity must be provided in the town to control fire accidents that may happen. The station must be provided with fire tender vehicles of enough capacity to immediately respond in case of emergency. Wherever required, firefighting provisions such as fire extinguisher, storage tank, fire hydrant, piping system, etc. have to be provided in major tourist areas.

10.8 UNDERLYING THEME: SUSTAINABLE AND RESPONSIBLE TOURISM

Responsible Tourism was defined in Cape Town in 2002, alongside the World Summit on Sustainable Development. In short, Responsible Tourism is about “making better places for people to live in and better places for people to visit.” Responsible Tourism requires that operators, hoteliers, governments, local people and tourists take responsibility, take action to make tourism more sustainable.

TO APPLY, RESPONSIBLE TOURISM NEEDS TO:

- **Minimize the negative economic, environmental, and social impacts;**
- **Generate greater economic benefits for local people and enhance the well-being of host communities, improve working conditions and access to the industry;**
- **Involve local people in decisions that affect their lives and life chances;**
- **Make positive contributions to the conservation of natural and cultural heritage;**
- **Provide more enjoyable experiences for tourists through more meaningful connections with local people, and a greater understanding of local cultural, social and environmental issues;**
- **Provide access for physically challenged people;**
- **Be culturally sensitive, create respect between tourists and hosts, and build local pride and confidence.**

10.8.1 Sustainable SWM practices

Identified areas within Mahabalipuram must be provided with vermi-composting raised beds to locally tackle the issue of organic waste produced by the tourists and visitors. A chain of staff consisting of men and women from the local community can be formed to manage and sell the soil that is produced in the vermi-composting beds. Solid waste disposal is one of the biggest issues in most tourist sites in the country. To ensure right and judicious usage of the bins provided at the destinations, care should be taken to make sure that dustbins are kept empty and neat so it doesn't drive visitors away.





Image 10-33: On-Site, decentralized vermi-composting beds for minimized waste disposal

10.8.2 Solar Powered, battery operated vehicles

As mentioned in the sections below, Mahabalipuram will be equipped with solar powered buggies to transport tourists in and out and within the tourist areas of Mahabalipuram. Tourist vehicles will be restricted into the Heritage precinct area. Development of the MLCP systems and parking lots will cater to the parking demand in the area.



10.8.3 Ban on Plastics

Plastics are at the core of solid waste management problems of today's society. Plastics in modern life are a preferred product for everyday applications from piping, bottling, packaging etc. However, as useful as society has deemed plastics to be, this has eventually ended in a huge menace due to their non-biodegradable nature. Plastics bags in particular have been a sore thumb worldwide. Plastic bags we use in our everyday life can take **10-1000 years** to breakdown. While ideally plastic bags should be reused a multiple of times, most are only durable for single use. The improper disposal of these bags have seen them end up strewn all over the streets, piled up in landfills and in the worst case eventually end up in water bodies where they affect organisms. In order to declare **Mahabalipuram as a zone of Responsible and Sustainable Tourism** - one of the first steps recommended to be implemented is

declaring Mahabalipuram as a 'Plastic - free zone' to enforce ban of non-biodegradable plastic in the area.

It is recommended to install **signboards** within Mahabalipuram to inform the public about the ban and **set up counters to collect banned materials at the entry and exit of the destination**. In case plastic materials, especially water bottles, are taken into the tourist spots, entries should be made in a register to confirm during departure that it had not been left behind at the destination. **The Panchayat officials concerned will be directed to prohibit the use of carry-bags made of virgin or recycled plastic which did not conform to the minimum thickness of 30 microns in the jurisdiction.**

Various measures can be employed by tourism accommodation facilities to minimize their dependence on plastic bags. These can include:

- **Alternative packaging**

Hotels/Camps could explore other packaging options, such as the use of reusable wooden crates to pack their fruits and vegetable supplies. Give away bags from the tourism accommodation facility could also be made from biodegradable material such as, sisal or papyrus.

- **Sacks for solid waste handling**

As opposed to using plastic bags to hold recyclable solid waste (plastic bottles, glass), facilities could use sacks that are biodegradable.

- **Bulk purchases**

Most solid products are packaged in plastic bags in quantities ranging from one Kilogram to at most five Kilograms. However, a purchase that is likely to amount to 20 KGs and above come in bulkier packaging materials like gunny sacks. These save up on plastic bag use and entrance to the destination.

- **Understanding and separating waste**

The first and most important aspect of waste management is learning the various types of waste, their production and disposal. Waste management as a process requires the knowledge of the major categories of waste i.e. food and dry waste. The dry waste could be separated further according to the needs. The key thing is to make sure food waste which is usually wet does not contaminate hence rendering useless the dry waste. Waste segregation at source will ensure more efficient and a more effective solid waste management system within the town and heritage area.

10.8.4 Eco-friendly material to be used in commercial and residential units

As in the case of Suneva Fushi in the Maldives and other such eco-friendly tourist spots, Construction material may include building blocks made from Styrofoam packaging, while all glass goes to the on-site studio/workshops proposed here, where it's turned into works of art. The solar-based system will provide all daytime electricity needs.

Solar power LED street lights (or a combination of solar and conventional type) and monument lighting is recommended for powering Mahabalipuram and transforming this destination into an eco-friendly and

Environment conscious town. An assessment of the requirement and style is recommended to be carried out to arrive at the placement, quantity and type of lighting to be used.

10.8.5 Active Community Participation

Employing local community: For vigilance and security - in order to instill a sense of ownership and accountability amongst the young locals. This will help in the maintenance and protection of modern amenities developed at the destination under the Swadesh Darshan scheme. For eg., local residents can be employed to manage the vermi-composting beds, public toilets, watch towers, water sport activities, guided trails, etc.

10.8.6 Regulatory Interventions

On the policy side, there is a need for an update of the legislation that governs the objectives of the local agencies and its institutional structures. Monitoring tools and capacity need to be strengthened in the Town Panchayat and other local Authority. The legislative update needs to entail a coordination mechanism, and measures that:

- **Strengthen the capacity and incentives of local communities to participate in the protection and management of the Mahabalipuram heritage area, and to diversify income sources away from dependence on consumptive use of the living natural resources.**
- **Regulate Single Ticketing System - Transparency and Knowledge of the applicable fares will help the tourist to plan better financial arrangements**

Apart from these, there is a need for the State to formulate a **Heritage Conservation and Management Plan for better inventory keeping and to keep track of conservation needs and measures.**

- Mamallapuram has been slowly showing signs of getting run down over the last decade with very patchy efforts at keeping the monuments preserved. This has changed in the last few years with the Shore Temple being included in the UNESCO heritage project. The surroundings have been made much nicer, but, there has been a lot of wind and water erosion on the temple carvings with many of them having undergone loss of detail over the years. Efforts need to be taken to assess the damage caused by natural and other causes. Development of a Heritage Conservation framework may be taken up to cater to organized, prioritized and planned conservation of the area.
-



11 PROJECT BLOCK COST ESTIMATES

The following sections present the Project Block Cost Estimates of the proposed shelf of Projects. **The identified list of interventions entails a total project cost of 232 crores.**

11.1 BLOCK COST ESTIMATES - HARD AND SOFT COMPONENTS

Hard Components		
S. No	Goal	Project Cost (INR Lakhs)
1	GOAL 1: Enhanced Image, Identity and Visibility	-
2	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	14,315
3	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination	5,848
4	GOAL 4: Conservation And Promotion Of Local Arts And Skill : Enhanced Livelihood And Quality Of Life	1,302
5	GOAL 5: Smart Mahabalipuram	-
6	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	441
7	GOAL 7: Safe and Friendly Mahabalipuram	300
	Sub Total (A)	22,206
Soft Components		
S. No	Goal	Project Cost (INR Lakhs)
1	GOAL 1: Enhanced Image, Identity and Visibility	677
2	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	-
3	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination	-
4	GOAL 4: Conservation And Promotion Of Local Arts And Skill : Enhanced Livelihood And Quality Of Life	10
5	GOAL 5: Smart Mahabalipuram	278
6	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	-
7	GOAL 7: Safe and Friendly Mahabalipuram	61
	Sub Total (B)	1,026
	Total (A + B)	23,232
	Total in INR Crores	232

11.2 PROJECT-WISE BLOCK COST ESTIMATE

Hard Interventions			
S. No	Goal	Project	Project Cost in INR LAKHS
	SUB TOTAL (A2)	-	-
1	GOAL 2: Master Plan preparation- Revitalizing the heritage destination and the beachfront through enhanced connectivity, seamless access and circulation	Creating a Gateway / Vistas to the UNESCO World Heritage Site, State of the Art Toll Gate and Ticketing Booth at the Entrance	253
2		Beach front Development and Tapping into the potential of the Beach (2 components)	Total 2,313
		A. Development of a Beach Promenade and Eco-Tourist village, wooden decks, board walks, walking trails, parking, and life guard towers and toilets	2,033
		B. Water Sports Activities with Floating Jeties	280
3		Reconfiguration of Spatial Aspects - Creation of Open Spaces of Congregation (6 components)	Total 2,042
		A. Revitalisation of Shore Temple as a landmark precinct with improved access to temple and streetscape development and visitor amenities	1,036
		B. Activating the public realm in the vicinity of the Shore Temple, including rejuvenation and revival of Vishnu tank, and development of an open-air amphitheatre	231
		C. Development of Iconic Town Square within Mahabalipuram	469
		D. Improvement of Maragadha Poonga	96
		E. Improvement of Konneri Tank Area	153
		F. Improvement of Small Temple Tank Area Near Shore Temple	57
4		Development of an Aquarium and Associated Amenities	2,424

S. No	Goal	Project	Project Cost in INR LAKHS
5		Relocating Bus Stand and Development of New Bus Stand	2,510
6		Defined and Dedicated Tourist Route / Circulation - Trail	995
7		Improvement of Internal Streets	630
8		Decongesting Mahabalipuram - Parking Solution	3,148
	SUB TOTAL (B2)		14,315
1	GOAL 3: Development of Mahabalipuram as a Commercial and MICE Destination62	Developing Mahabalipuram as a Grand MICE destination	3,570
2		Heritage and Culture - Conservation and Tourist Awareness - Visitors Interpretation Centre	1,838
3		Wellness Centre for Meditation and Yoga	440
	SUB TOTAL (C2)		5,848
1	GOAL 4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life	Development of Cultural Village (Artisans Concept Village)	735
2		Enhanced Quality of Life (i) Development of Community Toilets in 7 wards	336
3		Enhanced Quality of Life (ii) Provision of Toilet blocks in 5 Govt. schools	231
	SUB TOTAL (D2)		1,302
	SUB TOTAL (E2)	-	-
1	GOAL 6: Equipping Mahabalipuram With State-Of-The-Art Tourist Amenities	Provision of Drinking Water Kiosks / Fountains at Identified Locations	86
2		Provision of E-Toilets for Tourists and conventional toilets	112
3		Creation of Sheltered Resting Plazas	110

S. No	Goal	Project	Project Cost in INR LAKHS
4		Provision of First Aid Kiosks	35
5		Provision of SOS / Emergency Booths	3.5
6		SWM-Bins at Every 25m Interval	12
7		Provision of Wi-Fi Hotspots	82.5
	SUB TOTAL (F2)		441
4		Development of Fire Station and related Amenities	300
	SUB TOTAL (G2)		300
	TOTAL COST OF HARD COMPONENTS (A2+B2+C2+D2+E2+F2+G2) (IN INR LAKHS)		22,206
	TOTAL COST OF HARD COMPONENTS (A2+B2+C2+D2+E2+F2+G2) (IN CRORE)		222

Soft Interventions			
S. No	Goal	Project	Project Cost in INR LAKHS
1	GOAL 1: Enhanced Image, Identity and Visibility	Creating an Identity for Mahabalipuram - The Logo	677
2		Creating An International Marketing Network	
3		Positioning Mahabalipuram in the External Market	
4		Re-Branding Mahabalipuram Against A Larger Backdrop	
	SUB TOTAL (A1)		677

S. No	Goal	Project	Project Cost in INR LAKHS
	SUB TOTAL (B1)	-	-
	SUB TOTAL (C1)	-	-
1	GOAL 4: Conservation and Promotion Of Local Arts And Skill: Enhanced Livelihood And Quality Of Life	Mobilization of NGOs to provide language and other training	10
	SUB TOTAL (D1)		10
1	GOAL 5: Smart Mahabalipuram	Smart Explorer App for Seamless Access	95
2		Unified Smart Traveller Card	183
	SUB TOTAL (E1)		278
	SUB TOTAL (F1)	-	-
1	GOAL 7: Safe and Friendly Mahabalipuram	Installation of CCTV Systems at Identified Locations	61
	SUB TOTAL (G1)		61
	TOTAL COST OF SOFT COMPONENTS (A1+B1+C1+D1+E1+F1+G1) (IN INR LAKHS)		1,026
	TOTAL COST OF SOFT COMPONENTS (A1+B1+C1+D1+E1+F1+G1) (IN CRORE)		10
	TOTAL COST FOR DEVELOPMENT OF MAHABALIPURAM AS ICONIC TOURIST SITE (SOFT+ HARD)(A1+B1+C1+D1+E1+F1+G1+A2+B2+C2+D2+E2+F2+G2) (IN INR LAKHS)		23,232
	TOTAL COST FOR DEVELOPMENT OF MAHABALIPURAM AS ICONIC TOURIST SITE (SOFT+ HARD) (IN INR CRORE)		232

Way Forward

It is evident that the implementation of this master plan will bring multiple benefits to Mahabalipuram, both directly to the tourism sector but also indirectly to the wider economic and social development of the Island. Therefore, the optimum and most viable implementation of the Strategy requires the creation of a suitable implementation mechanism. Once the project shelf with an indicative master plan has been prepared and approximate costs have been worked out, the individual proposal will need to be assessed in terms of their implementation framework, funding mechanism and organizational setup.

A provision should be made to set up a monitoring group to overview the progress of the projects being implemented. This group should consist of senior managers under the guidance, coordination and supervision of the Board of Directors from different departments. In addition, the implementation mechanism provides for a project manager for each action and clearly sets out the roles and responsibilities of the involved parties with the aim of ensuring that each party takes up their share of responsibility so that the combined efforts to achieve the objectives, strategic directions and planned actions of the master plan are achieved.

These proposals will be discussed further with the key stakeholders in the government, Industry and residents to ascertain their feasibility and final implementation methodology. Once the frameworks are clearly drawn, the individual projects will be taken up for implementation in the Second Phase.

ANNEXURE

ANNEXURE - I MINUTES OF MEETING - STAKEHOLDER MEETINGS

Meeting with the Additional Chief Secretary to Government, Tourism, Culture and Religious Endowments, GoTN, Chennai, 06th December 2018

Location: TDC office, Chennai

A meeting was conducted with the Additional Chief Secretary to Government Tourism, Culture and Religious Endowments, GoTN and the Commissioner, Department of Tourism, GoTN in Chennai to discuss about the proposed shelf of projects for the development of Mahabalipuram as an Iconic Tourist Site.

The Consultants explained their Vision for Mahabalipuram and discussed about each proposal in detail and suggestions and inputs were received on the same

Comments on the proposals:

1. The revised CRZ regulation amendments has to be followed for planning purposes and compliance to the regulations have to be assured.
2. The project involves redesign of the roads sections and its infrastructure. Hence, TNEB should be involved as one of the important stakeholders. Department of Telecommunications has to be consulted to know about their future plans on installation of telecommunication towers.
3. Traffic police department has to be involved as a stakeholder for traffic and transportation related interventions. Department of Highways, Tamil Nadu should be involved for their comments on the proposed grand entrance structure.
4. Land parcel undertaking assurance from the District Collector has to be obtained for the projects proposed at the land parcels identified during the Collector's site survey on 25th October 2018.
5. Detailed quantification has to be done to assess the demand for the proposed transportation interventions such as feeder system, car, bus and two wheeler parking. Fleet size for the proposed feeder system has to be estimated.
6. Demand for the MICE segment and tourist flow quantification has to be done in detail.
7. Bus stand relocation has to be justified since it affects the ease of commuting of the locals.
8. Titles of the goals and sub-goals has to be rephrased to be simple and devoid of overlaps.
9. The proposed skill development training center and meditation center to be considered as a long-term proposals, since currently the region lacks competent authorities to run such facilities.
10. Major developments proposed such as feeder system, MICE segment, toll gate, MLCP cycle sharing, etc. has to be provided with operation models for implementation.
11. MLCP could be implemented to satisfy the land demand in areas where ASI does not hold authority.

Decision points:

1. The Additional Chief secretary has accepted the overall vision and the individual proposals after thorough review and has instructed us to address the above mentioned comments in the final master plan.

2. Land parcels to be demarcated for individual proposals and land undertaking assurance has to be obtained from the District Collector.
3. Detailed quantification has to be done for the proposed developments and interventions.

Meeting with the Superintending Archaeologist of Archaeological Survey of India, Chennai, 30th October 2018

A meeting was conducted with the Superintending Archaeologist of ASI in Chennai to discuss about the proposed shelf of projects for the development of Mahabalipuram as an Iconic Tourist Site. Following are the points of discussion-

1. The Consultants explained their Vision for Mahabalipuram and discussed about each proposal in detail and suggestions and inputs were received on the same
2. The proposal for a gateway or arch was explained and suggested to be located at all the entry points to create a sense of welcoming into the site (Grand gateway at the entrance from ECR on East Raja Street)
3. The Consultants proposed the location of the Tourist Information Centre to be at the entrance of the site with all facilities
4. A multi-level car parking was proposed near the access points for tourist vehicles
5. The Consultants enquired regarding the possibility of a basement level Tourist Information Centre
6. The relocation of the existing bus stop was discussed and the proposed location for the new bus stop was identified for approval
7. The proposed Heritage Trail and Cycle Trail were explained in elaboration as part of the Visitor Movement Plan
8. The Consultants proposed for the hawking area near the Shore Temple to be redesigned as an Open Space
9. The permissible activities along the beach around the Shore Temple were discussed
10. It was discussed that the ornamental Streetlights in the heritage area could be placed on ground level instead of on poles
11. The Consultants suggested that all material used for building structures and redesigning the roads and public spaces should match the historic language of the Pallava period
12. The Consultant has informed that the detailed designs would contribute to the next stage of the project and that the current requirement is only of the type of proposal, its location and feasibility

Points of Discussion

12. The ASI suggested that the Gateway should be at more than 100 meters from the MukundaNayanar Temple site
13. The name 'Tourist Information Centre' was suggested to be modified as 'Visitors Centre'
14. The ASI clarified that it is not feasible for the Visitors Centre to be underground because of the high water-table in the region and governing ASI norms
15. The ASI suggested to refer to the Visitors Centre in Ajanta and Ellora and the façade treatment in Badami Caves
16. The ASI suggested to allocate at least 3 to 4 acres of land for the Visitors Centre in Mahabalipuram
17. The ASI informed that the land allocated for the relocated bus stand would not be ideal as it is located across the road from an ASI protected monument
18. Land to be allocated for parking considering the surface parking demand and to avoid the proposal of a Multi-Level Car Parking
19. The Visitor Movement Plan to include multiple options to suit the preferences of all types of tourists in terms of their interests and the time they are willing to spend
20. The ASI advised that all the monuments in Mahabalipuram should be connected by the Visitor Movement Plan
21. The ASI indicated that the hawkers create a bad impression to the tourists and congest the space. It was suggested that all the hawkers should be relocated into organized hawking zones and the Visitor's Centre Area as souvenir shops

22. The area of land required for each component of the proposal is to be estimated – for example, the area of land required to build a gateway at the entrance and the same is to be submitted to ASI for consideration
23. The Consultant was asked not to propose any boardwalk or defined trail along the beach and to keep the layout natural
24. The ASI also suggested to draft a plan for the finances, operation and maintenance of all the proposals

Information required from the officials

1. A map with locations of all ASI protected sites in Mahabalipuram

Way Forward

4. A site visit to all the ASI protected monuments in Mahabalipuram with an official from ASI to get a better understanding of their protected and restricted zones and the limitations in the same
5. A Stakeholder meeting to be conducted in Mahabalipuram with all the stakeholders convened by the Commissioner of Tourism post the site visit and revision as suggested by the ASI
6. The land allocation for each proposal is to be finalized on receiving land data

Meeting with District Collector, Kancheepuram District and other Key Stakeholders in Mahabalipuram, 25th October 2018

A meeting was conducted with the District Collector of Kancheepuram District to discuss about the proposed shelf of projects for the development of Mahabalipuram as an Iconic Tourist Site. Various stakeholders were present during the discussion. The meeting was chaired by the District Collector who initiated an introduction and then a discussion on Mahabalipuram and his expectations from the project. Following are the list of stakeholders who attended the meeting and the points of discussion-

List of Stakeholders-

1. Mr. P. Ponnaiah, District Collector, Kancheepuram District
2. Mr. Narasimhan, Deputy Superintending Archaeologist, Archaeological Survey of India
3. Mr. P. Sakthivel, Tourist Officer – Mahabalipuram
4. Mr. Harsh Goel, INI Design Studio
5. Mr. Simon Thomas, JLL
6. Mrs. Aishwarya Prem, JLL
7. Ms. Pooja Hindocha, JLL
8. Mr. Krishna, JLL
9. Mr. Ravichandran, Junior Deputy Conservator, Archaeological Survey of India
10. Mrs. Kavita, (Director), Mahabalipuram New Town Development Authority
11. Mr. Anandan, Supervisor, Mahabalipuram New Town Development Authority
12. Divisional Engineer, Highways Department
13. Assistant Engineer, Highways Department
14. Mr. Dwarakanath Singh, Executive Officer, Mahabalipuram Town Panchayat
15. Assistant Engineer, Mahabalipuram Town Panchayat
- 6.
13. The Consultants explained the Vision and discussed about each proposal in detail in an interactive session where the Key Officials provided their views on the projects proposed by the Consultants.
14. The Consultants proposed a Single Entry Fees Collection System and the introduction of Unified Card System for improved convenience
15. The Consultants explained the need to restrict vehicle entry at the entrance of Mahabalipuram and proposed provision of Multi-Level Car Parking at identified locations
16. The Consultants have proposed Battery Operated Vehicles for Para-Transit and a Public Bicycle Sharing System
17. The relocation of the Bus Stand was discussed, and the area was proposed to be converted into an Iconic Town Square. The area is to be opened-up and made barrier-free to create a central plaza between the East Raja Street and the Arjuna's Penance. The existing temple to be a part of the Iconic Town Square. The proposal was presented using a 3-D view of the area after implementation.
18. The Consultants also explained the need and proposal that would help render Mahabalipuram Universally Accessible by implementing proposals such as Ramps, Tactile Paving, Signage in Braille, etc.
19. Urban Design interventions such as a uniform design language for the façade was also discussed.
20. The need of a Cycle Track along the proposed Cycle Route was mentioned
21. The proposal for last mile connectivity to the beach was discussed and a new access way to the beach from the PanchaRathas has also been proposed
22. The issue on Hawking was highlighted along with the importance of pedestrianization and pedestrian facilities. The Consultants presented a 3-D view of a street after the relocation of hawkers

23. The Consultants also suggested the relocation of hawkers from the Shore Temple Area and presented a 3-D view of the same. This proposal facilitates uninterrupted visibility and connectivity and improved the access to beach
24. The improvement of Social and Physical Infrastructure for the residents has been proposed and the Town Panchayat is to list the requirements for the same





Points of Discussion-

1. Regarding the existing scenario, the District Collector has clarified that the collection of fees by multiple local agencies has been stopped and is now being collected only by the Town Panchayat and the Archaeological Survey of India. The Consultant's proposal for Single Entry Fees will be considered (within Mahabalipuram and from the Chennai International Airport to Mahabalipuram) The introduction of a Unified Card System will also be considered.
2. The proposal for restricted vehicle entry and parking will be considered. The District Collector has suggested the provision of locker facilities at the parking lots.
3. The District Collector has agreed to support with the identification of land for development of a Multi-Level Car Parking based on the entry points and the parking demand
4. The proposal for Battery Operated Vehicles and Public Bicycle Sharing System will be considered
5. The Consultant's proposal of creating an Iconic Town Square in the location of the existing Bus Stand will be considered
6. The District Collector mentioned the issue of hawkers causing congestion and disturbing the flow of vehicles and pedestrians, thereby agreeing that the hawkers along the roads need to be relocated for smooth pedestrian flow.
7. The consultant's proposal for relocation of hawkers near the Shore Temple will be considered by the officials
8. It has been mentioned that all the proposals require the approval of the ASI

9. The Deputy Superintending Archaeologist, ASI suggested that while planning interventions, the required buffer zone around the ASI monuments need to be considered individually. Activities such as hawking and commercial and residential development must be restricted within these buffers
10. The officials of the Highway Department mentioned that the area lies under the Coastal Regulation Zone 4 and thus only soft proposals can be approved and implemented
11. The provision of a Cycle Track along the proposed Cycle Route requires the approval of the Highway Authority and the Public Works Department
12. The Collector suggested a site visit to identify land for the Tourist Interpretation Centre, Parking lots for Multi-Level Car Parking, Convention Centre, New Bus Stand and for other proposals



The following is the list of land parcels visited and their details

S. No	Location of Land Parcel	Details of Land Parcel	Image
1	Fisherman Colony		
2	A2B Land		

3	New Bus Stand		
4	Existing Bus Stand	Iconic Town Square	
5	Temple Land	Iconic Town Square	
6	Land Opposite Arjuna's Penance	Within ASI Buffer / suggested for relocation of hawkers outside Arjuna's Penance	
7	Land adjacent to Shore Temple to the South	Along the coast	
8	Land near Shore Temple Parking		
9	Land near PanchaRathas	For access path to the beach	
10		Land owned by Animal Husbandry Department	

Information required from the officials

2. Land details of all land parcels visited after the meeting on the 25th of October are to be provided to the Consultants
3. Any other projects that need to be considered under this scheme to be provided by the various officials

Way Forward

7. Consultants to work out details of the proposals once the land data has been received
8. Meeting with Principal Secretary and Commissioner of Tourism to brief them on the status of project and gain further approval

Preparation of Master plan for Mahabalipuram and mapping of all proposals with finalized location based on land availability

Meeting with Principal Secretary, Commissioner of Tourism, DoT, Chennai, TN- 01st Sep 2018

Consultants have appraised officers about the project commissioned by Ministry of Tourism, India. The meeting was conducted to understand the over- all scenario of Mahabalipuram. The following points were discussed during the meeting.

1. Consultants presented a brief presentation to the officials of DOT
2. The presentation covered the existing scenario, identification of stakeholders, existing legal framework, preliminary issues and gaps identified from the secondary sources.
3. The consultants also presented their vision framework and tentative projects which could be proposed in Mahabalipuram.
4. The discussion was also undertaken to understand the vision envisaged for the development of Mahabalipuram
5. Since it's a protected monument by ASI, special considerations such as DR for the surroundings, conservation and protection of monuments etc were also discussed.
6. Over all scenario, proposed projects, and their convergence with Swadesh Darshan was also discussed.

Decision Points & Way Forward

The officials provided a 13- point list encapsulating the following interventions under this assignment;

1. Development of Convention Facility (MICE Facility)
2. Development of Children Play area and activities
3. Deployment of Life guards near the beach
4. Adequate infrastructure and measures to handle the traffic congestion
5. Increasing toilet facilities in School
6. Introduction of boat races and water sports
7. Formalization of small vendors
8. Appointment of security guards at the light house during evening time
9. Development of fire station near the site
10. Introduction of Battery-Operated Vehicles service from parking to the monument
11. Development of aquarium
12. Ban on the usage of plastic
13. The entry of number of taxis in the area to be limited.

Meeting with Tourism Officer- 31st Aug 2018

Development of Iconic Tourism Sites in India for Mahabalipuram

Consultants have appraised officers about the project commissioned by Ministry of Tourism, India. The meeting was conducted to understand the ground realities of the site and vision for development. The following points were discussed during the meeting;

1. Implications of road blocks and issues on Tourism scenario of Mahabalipuram was discussed in detail.
2. The officials shared their suggestions for projects which could be implemented in the tourism sector. The needs of different project components were also discussed.
3. Details of open spaces and land availability and ownership to identify space for new projects were also discussed in brief.
4. For secondary data collection like reports and maps of infrastructure services in Mahabalipuram, a meeting with Executive Officer of Town Panchayat was also planned.
5. A list of registered hotels in Mahabalipuram with contacts to identify unregistered accommodation like homestays was provided during the meeting.
6. Information about bicycles and two wheelers on rent and about cycle tours was also conferred.
7. The consultants discussed about stakeholder consultation and requested to provide contacts of various stakeholders and facilitate the meeting
8. The consultants requested the VAO, to support in collecting the Revenue Map and land details from the Revenue Officer.

Way forward:

- Based on the above discussion, consultants have started the primary and secondary data collection related to tourism for Mahabalipuram.
- Consultants shall also meet various stakeholders involved in the process to gather information, data, reports, maps etc. necessary for the analysis.

Meeting with Mr. Anandan, Supervisor of Mahabalipuram New Town Development Authority on 31st Aug 2018

Consultants have appraised officers about the project commissioned by Ministry of Tourism, India. The meeting was conducted to understand the proposed land use and activities in Mahabalipuram. The following points were discussed during the meeting;

1. The officers provided details of shops and commercial spaces which are owned by the MNTDA
2. The officials also provided the Proposed Land Use Map and Proposed Development plan for 2021.
3. A detailed discussion was undertaken to understand the key aspects of the proposed development plan.

Way Forward

Consultants have collected the necessary details and understood the key aspects as discussed during the meeting. While preparing the development plan, these considerations will be taken into account.

Meeting with Executive Officer of Town Panchayat, 31st August 2018

Consultants have appraised officers about the project commissioned by Ministry of Tourism, India. The meeting was conducted to understand the over- all scenario of Mahabalipuram. The following points were discussed during the meeting;

1. Over all scenario of Mahabalipuram was discussed to understand the potential, issues, opportunities for development.
- 7.
2. The officials Provided data in form of maps, reports and statistics for infrastructure services including Water Supply and Solid Waste Management and for amenities like public toilets, drinking water, street lights, etc.

Way forward

The consultants have collected and shall present the observations and baseline assessment in the interim report.

Meeting with Sanitary Inspector, 29th August 2018

Consultants have appraised officers about the project commissioned by Ministry of Tourism, India. The meeting was conducted to understand the waste management of the town. The following points were discussed during the meeting

1. The officials explained the process of solid waste management of the town.
2. Issues and gaps in the waste management were also discussed during the meeting
3. The officials highlighted the need for better infrastructure to cater to the needs and provide better services to the residents.
4. The concern was also expressed to maintain the up-keep of the group of monuments and the nuances involved around it.

Way Forward

Consultants shall study in detail and take into account the issues and gaps in waste management. Suitable solutions to be proposed under the purview of the development plan with analysis.

Minutes of Meeting held on October 3rd, 2018 regarding Draft Master Plan to develop Somnath (Gujarat) and Mahabalipuram (T. N.) as Iconic Sites in India

1. The above-mentioned meeting was held under the Chairmanship of Sh. Suman Billa, Joint Secretary (Tourism) to discuss the draft master plan made by consultants' M/s INI Design Studio Pvt. Ltd. for development of Somnath and Mahabalipuram under the Iconic Sites Scheme of Govt. of India. List of members present in the meeting is given at ANNEXURE.
2. The meeting began with a detailed presentation by the consultants regarding their findings for the Somnath site in Gujarat. The points discussed to bring improvement in the interventions proposed for the site are as below:
 - **Branding and Promotion:** To position the site into the national and international perspective, a strong proposition is required about developing a brand for Somnath. In addition, factual understanding of visitors' profile and the circuits and trends followed by the visitors while exploring nearby monuments and destinations like Diu, seashore, other religious destinations etc. is required to be established in order to focus the promotional efforts to improve tourist footfall and retention in the area.
 - **Quantifiable impact:** It was suggested that likely impact of proposed interventions on tourist footfall, employment generation in the community, etc. will need to be quantified to bring objectivity into the plan to clearly reflect their impact on improving tourism in the area. Measuring the impact of various interventions would also build grounds to attract more of PPP and private investment in the area.
 - **Employment Generation:** It was recommended that employment generated as a result of proposed interventions be measured and certain employment generating components like haats, restaurants, souvenir shops, local art and craft shops, skill development/capacity building programmes for service providers etc. be introduced.
 - **Engaging Community:** Above all, the importance of community inclusion in the proposed plan was stressed upon as it is crucial for the success and sustainability of any such project. Moreover, community welfare and development is essential when it comes to improving the overall experience and the security of the tourists as it is the community which becomes the face of the state and the country for the tourists. As the community is involved in the service provision, it is necessary that it factors prominently in the proposed interventions as well.
 - **Assessment of carrying capacity:** Assessment of carrying capacity of the destination, monitoring the current scenario along with projected increase post the interventions to be measured.
 - **Improved wayside amenities:** It was also decided that attention will be given to assess gaps and to give suggestions regarding availability of tourist amenities on all the ways and approach roads leading to the destination. Such a measure is necessary to improve the overall tourist experience of the site.

- **Access to the area:** Present public access from nearby areas (airports, railway stations, main cities) would need to be improved. Dedicated coaches may be proposed to attract more tourists to the area.
 - **Mapping of annual rainfall and catchment areas:** The annual rainfall scenario must be mapped, and catchment areas should be identified where rain water harvesting can be done.
3. Afterwards, a detailed presentation was made on proposed interventions in Mahabalipuram. The following improvements were suggested in the plan:
- **Destination management and detailed parking plan:** It was discussed that thought will be given to develop the site as a single destination, taking into consideration the existing and ideal land-use for the area along with plausible community involvement to improve agreeability of the project. Overall improvement of basic tourist facilities will need to be assessed and basic facilities like water ATMs should be proposed. Breakthroughs like single ticketing system and facilities like HOHO buses, electric vehicles etc. may also be proposed for improved tourist circulation within the area along with containing vehicular traffic to strategically located parking spots. A detailed parking plan will be pivotal to contain private vehicles to allow freer exploration by the visitors. Tourist profiling to create distribution of visitors' day-wise and month-wise throughout the year, keeping under consideration the important days and periods of congregation and various modes of transportation used by them to reach the area will aid in ascertaining the size and numbers of such facilities.
 - **Accommodation:** The consultants informed that bed and breakfast units and other accommodations like guest houses were available for the convenience of the tourists. It was decided that the plan would include making such units more organised for better integration with the destination.
 - **Increased promotion, utilising locational advantages:** Regularisation/ organisation of water activities will also be required for integrated operation of the destination. The same will also attract more tourists from outside the state. A greater weight to be attached to theme- based promotional plans along with increased internet presence to attract tourists with specific interests in niche areas like Yoga, water adventure, beach tourism, night tourism etc. Impact of such interventions also be mapped.
 - **Safety and Security, role of community:** The issue of safety and security of tourists was highlighted. However, it is understood that with the development of the area along with proposed interventions like single ticketing system, night tourism, improved illumination, establishing camping sites, CCTV coverage and community engagement, such threats will be lessened.
 - **Tourist Information Centre (TIC):** The current location of the TIC was not found satisfactory. Since the consultant had proposed axial built of the area as one of the interventions, a proper planning must place the TIC at a favourable location to enable

provision of correct and timely information to the tourists. Improved information will also enable the tourists to visit all the monuments in the destination.

- **Longer Tourist stay:** Areas like night tourism, Illumination of monuments, extended visiting hours of the monuments, sound and light show etc. will be explored to retain the tourists for more days.
 - **Attract PPP investment:** It was recommended that measuring the impact of various interventions would also build grounds to attract more of PPP and private investment in the area.
 - **MICE destination:** The character of Mahabalipuram as a promising MICE destination is evident, due to its proximity to Pondicherry and Chennai and scope for much improvement in terms of high-end hospitality centres and construction of convention centres. It was decided that the area would be explored further.
 - **Skill development cum cultural centre:** Skill development cum cultural centre may be developed to train the local community in the local art forms/ crafts to impart skills into the community. The tourists may be allowed to visit the centre as a Centre for Culture to display the local art and craft including music, dance forms etc. for improved awareness and a wholesome experience of historical heritage for all the visitors.
4. The consultant informed that meetings with the stakeholders have been going on, with some planned for immediate future. The costing will be arrived at once the meetings are over. The changes suggested shall be incorporated along with stakeholders' take on the draft plan to arrive at revised master plan for the two destinations.

ANNEXURES

LIST OF PARTICIPANTS

In Chair – Sh. SumanBilla, Joint Secretary (Tourism)

List of Participants –

S. No	Name	Designation
1	Sh. Harsh Goel	Director, INI Design Studio Pvt. Ltd.
2	Ms. Meeta Goel	Head, Research and Publication, INI
3	Sh. Simon Thomas	Head, Urban Solutions, JLL Property Consultants India Pvt. Ltd.
4	Ms. Manasi Mangalgi	Senior Executive, JLL
5	Sh. Shubham Sharma	Senior Executive, JLL
6	Ms. Aishwarya Prem	Senior Consultant, JLL
7	Ms. Garima Kapoor	Assistant Director, Swadesh Darshan (SD) Division
8	Ms. Nikita Garg	Assistant Director, SD Division
9	Mr. Piyush Jain	Team Leader, PMC (SD)
10	Ms. PremaParida	Urban Planner, PMC (SD)

ANNEXURE II - SURVEY FORMAT - PARKING AND VEHICLE COUNT

Vehicle Count Survey

Surveyor Name:

Location No:

Date / Time:

C - Car / B - Bike / A - Auto / L - Lorry / O - Others							Bus	Time
Vehicle Type	Time	AM / PM	Vehicle Count					
Total Vehicle Count			Car :	Bike :	Auto :	Bus :	Lorry :	Others :

Signature

ANNEXURE III - SURVEY FORMAT - QUESTIONNAIRE SURVEYS

I. Tourist Questionnaire

Date:

Name of Surveyor:

Sr. No.	Question	Answer
1	Name	
2	Where are you from?	
3	Which are the other places of interest on your travel itinerary (<i>if tourist is not from India</i>)	
3	What is your primary purpose of visit to Mamallapuram?	a) Leisure (beach) b) Pilgrimage (temple) c) Business / Work d) Other, specify _____
4	Is this your first visit?	a) Yes b) No
4a	If no, how many times have you visited before?	8.
5	Have you come here with a tour operator or on your own?	a) Tour operator b) Self-planned
5a	If tour operator, please share name and contact number of the operator	
6	What is your mode of travel?	a) By train b) By state transport bus c) By private operating bus d) By taxi e) By personal car f) Combination , specify _____
7	With whom are you travelling?	a) Friends b) Family c) Other, specify _____

- 8 Are you going to stay overnight in Mahabalipuram?
- a) Yes
b) No
c) May be
- 8a If yes, where?
- 9 Are you going to visit other places around Mahabalipuram?
- a) Yes
b) No
- 9a If yes, where?
- a) .
b) .
c) .
d) .
e) .
f) .
g) .
h) .
i) _____
9.
- 10 How will you be going around the other destinations around Mahabalipuram (if yes to the above question)
- a) Hop on-Hop off bus Service
b) State Transport Bus
c) Private Vehicle
d) Taxi
e) Auto rickshaw
f) Other
- 11 Rate below given experiences from 1 to 5 (1 – very poor, 2 – poor, 3 – average, 4 – above average, 5 – good)
- 11a Ease of commute to and from Mahabalipuram
- Visibility of the Heritage Site (signages, information)
- Approach to the temple and monuments
- Upkeep of the Destination
- 11b Experience within Mahabalipuram
- Hospitality (Stay and accommodation)
- Friendliness and hospitality of destination
- Local Cuisine
- 11c Shopping experience
- a) Local craft items
b) Art and Sculptures
c) Clothing and accessories (stoles, etc.)
d) Daily needs
e) Others
- 11d Basic facilities – water, toilets, security checking etc.)
- a) Drinking Water
b) Toilets
c) Facilities for young children and babies

10. (changing rooms / feeding rooms)
11. Separate queues for children / elderly / differently abled
d) Security
e) Parking
f) Ticketing
g) Signages
h) Others
Did you visit the beach?
- 11e Beach and other activities there What are your suggestions for the improvement of the beach experience?
- 11f Information, Maps and signages Did you find problems getting around the destination on your own?
Is the signage or map clear in terms of language and understanding
- 12 What do you like most about this place?
- 13 What are your suggestions to improve tourist experience here?

12.

II. Localite Questionnaire

Date:

Name of Surveyor:

Location:

Name :

Sex: (1) Male ☐ (2) Female ☐

Age:

Are you a native of this place ? (1) Yes ☐ (2) No ☐

If not, from where have you migrated/shifted and why? _____

Primary Occupation: Are you employed in: (1) hospitality (hotels) ☐ (2) art and sculpting ☐
(3) Fishing ☐ (4) Tourist guide ☐
(5) Handicrafts and weaving ☐
(6) other, please specify _____

Please explain your nature of work as per the above response: _____

What are the other attractions in and around Mamallapuram you visit? How often and Site a reason

- a. Daily ☐ Weekly (any particular day) ☐
13.
b. Monthly ☐
c. Once in few months ☐

Reason _____

Sr.

No Question

Answer (Tick the appropriate)

.

- 1 Educational Qualification: (1) School Level (2) College Level
(3) Professional (4) Others

- 3 What other places in and around Mamallapuram do you visit for recreation? How often ?
- a. Location:
b. Location:
c. Location:
d. Location:
- 4 Which is your favourite location among these? And why?
- a. Daily
b. Weekly (any particular day)
c. Monthly
d. Once in few months
- 5 What is the reason for visiting?
- a. Recreation
b. Religious
c. Walk
d. Event
e. Educational
f. Any other
- 6 Do the activities in Mamallapuram affect you / your daily routine in any way?
- g. Yes
h. No
- 7 If yes, what is the impact?
- Parameter Negative / positive / no impact
- Traffic
- Amenities (water, electricity etc)
- Cleanliness
- Safety and Security
- Income
- Activities
- Noise
- Lack of Connectivity (buses, autos)
- Any other
- 8 What do you like the most about this place?
- 9 What are the positive changes in activities past 10 - 15 years ?

10 What are the negative changes in activities past 10 - 15 years ?

1.

2.

11 What are the major issues you would want the authorities to take up immediately ? List 5 of them

3.

4.

5.

12 What are your suggestions to improve tourist experience here?

Rank 1-14

What are negative factors of Tourism (Please: rank as per your order of preference)

- | | | |
|----|------|---|
| | (1) | Ecological degradation |
| | (2) | Environment pollution |
| | (3) | Stress on existing facilities |
| | (4) | Air and Noise Pollution |
| | (5) | Poor maintenance of historical/monuments/temples/places |
| 13 | (6) | Changing landscape |
| | (7) | Mushrooming of Establishments |
| | (8) | Poor Tourism Infrastructure |
| | (9) | Vandalism |
| | (10) | Poor Tourism Related Services |
| | (11) | Interference in community life |
| | (12) | Vanishing Traditional Culture |
| | (13) | Drug Abuse and Alcoholism |
| | (14) | Any other (Please specify) |

Any other Remarks: _____

III. Vendor Questionnaire

Date:

Name of Surveyor:

Vending Item:

Sr. No.	Question	Answer
1	Name	
2	Are you from Mahabalipuram?	a) Yes b) No
2a	If yes, how far is your home from the vending place/ market?	
2b	If no, where are you from?	15.
3	How do you come here daily?	a) Public transport b) Two-wheeler c) Walking d) Cycle e) Other, specify _____
4	Since when are you vending here?	16. Years 17. Or 18. months
5	What do you sell	a) Puja items b) General items c) Toys d) Medicines e) Books f) Souvenirs g) Crafts items / show pieces h) Others (specify)
6	Number of people employed in your shop?	
7	What is your monthly income?	19.
8	Do you have any other source of income?	20.
9	Is this a designated space for vending?	21.

- 10a If yes, how much is the monthly rent? 22.
- 10b Would you be willing to re-locate to a designated vending zone? 23.
- 11 What are the peak hours during the day? (visitors, sales)
a) Morning 7- 10 am
b) 10 am to 2 pm
c) 2 pm to 6 pm
d) 6 pm to 9 pm
- 12 What are the peak months during the year? (visitors, sales)
- 13 What type of tourists come to your shop?
c) Indians
d) Foreigner
e) All

- | | Parameter | Improvement / decline |
|----|---|-------------------------|
| | Parking | |
| | Access to Monument | |
| | Security | |
| 14 | What are the improvisation/changes you have observed over the period of time? (Positive/Negative) | Drinking water facility |
| | | Availability of toilets |
| | | Cleanliness |
| | | Street condition |
| | | Lighting |
| | | Any other |
| 15 | Is there any vendor association? | |
| 16 | What do you like the most about this place? | |
| 17 | What are your suggestions to improve the vending experience here? | |

ANNEXURE IV - DRAFT CRZ NOTIFICATION 2018

Dated: 18.04.2018

Extracted from: <http://envfor.nic.in/sites/default/files/press-releases/DRAFT%20CRZ%20NOTIFICATION%2020181.pdf>

Major amendment extracts from the notifications is as follows:

CRZ-III A areas: If the population density in CRZ-III areas is greater than 2161 per sq.km as per 2011 census, area up to 50mts from the HTL on the landward side shall be earmarked as the No Development Zone(NDZ). This holds good when the Coastal Zone Management Plan as per this notification, framed with due consultative process, have been approved, failing which, a NDZ of 200 mts shall continue to apply.

CRZ-III B areas: If the population density in CRZ-III areas is lesser than 2161 per sq.km as per 2011 census, the area up to 200 mts from the HTL on the landward side shall be earmarked as NDZ.

Land area up to 50 mts from the HTL, or width of the creek whichever is less, along the tidal influenced water bodies, shall also be earmarked as the NDZ in CRZ III areas.

CRZ- I B - THE INTER TIDAL AREAS

Existing fish processing units may utilize 25% additional plinth area for modernization purposes (only for additional equipment and pollution control measures) subject to the following:

- a) FSI of such reconstruction not exceeding the permissible FSI permissible as per prevalent town and country planning regulations.
- b) Additional plinth area is constructed only to the landward side.
- c) Approval of the concerned SPCB/ PCC.

CRZ-II

1. Buildings permitted for construction in this zone, shall be subject to the local town and country planning regulations as applicable from time to time, and the norms for the Floor Space Index or Floor Area Ratio prevailing as on the date of this Notification. It shall be the responsibility of the concerned Town Planning Authority to ensure that the Solid Wastes are handled as per respective SWM rules and no untreated sewage is discharged on to the coast or coastal waters.
2. Reconstruction of authorized buildings shall be permitted, without change in present land use, subject to the local town and country planning regulations as applicable from time to time, and the norms for the Floor Space Index or Floor Area Ratio, prevailing as on the date of this Notification. It shall be the responsibility of the concerned Town Planning Authority to ensure that the Solid Wastes are handled as per respective SWM rules and no untreated sewage is discharged on to the coast or coastal waters.

CRZ-III

1. Wherever there is a national or state highway passing through the NDZ of CRZ-III areas, temporary tourism facilities such as toilets, change rooms, drinking water facility and temporary shacks can be taken up on the seaward side of the road.
2. On landward side of such roads in the NDZ, Resorts / hotels and associated tourism facilities shall be permitted. Such facilities shall, however, be permitted only subject to the incorporation of tourism plan in the approved CZMPs as per this Notification and the conditions / guidelines at Annexure-III, as applicable.

3. Temporary tourism facilities shall be permissible in the NDZ of CRZ-III areas. Such temporary facilities shall only include shacks, toilets/washrooms, change rooms, shower panels; walk ways constructed using interlocking paver blocks etc., drinking water facilities, seating arrangements etc. Such facilities shall however be permitted only subject to the tourism plan featuring in the approved CZMPs as per this Notification.
4. For CRZ-III Areas beyond the NDZ, The local communities including fishermen can be permitted to facilitate tourism through 'home stay' without changing the plinth area/ design or facade of the existing houses.

CRZ CLEARANCE FOR PERMISSIBLE/ REGULATED ACTIVITIES- DELEGATIONS

1. All development activities/projects in CRZ-I and CRZ-IV areas, which are regulated/ permissible as per this notification, shall be dealt with by MOEF&CC for CRZ clearance, based on the recommendation of the concerned CZMA.

LIST OF PETROLEUM AND CHEMICAL PRODUCTS PERMITTED FOR STORAGE IN CRZ, EXCEPT CRZ-I A

- Acetic acid
- Mono ethylene glycol

GUIDELINES FOR PREPARATION OF COASTAL ZONE MANAGEMENT PLANS:

DEMARCATON OF HIGH TIDE LINE AND LOW TIDE LINE

1. Demarcation of High Tide Line (HTL) and Low Tide Line (LTL) as carried out by NCSCM for the entire coastline of the country, has been made available to the Coastal States / Union Territories and only such demarcation of HTL and LTL shall be applicable for all purposes under this Notification.
2. A 'Hazard line' has been demarcated by the Survey of India (SOI) taking into account the extent of the flooding on the land area due to water level fluctuations, sea level rise and shoreline changes(erosion/accretion) occurring over a period of time. The hazard line mapped by SOI has been shared with the coastal States/UTs through NCSCM. The hazard line shall be used as a tool for disaster management plan for the coastal environment, including planning of adaptive and mitigation measures. With a view to reduce the vulnerability of the coastal communities and ensuring sustainable livelihood, while drawing the CZMPs, the land use planning for the area between the Hazard line and HTL shall take into account such impacts of climate change and shoreline changes.