

POLONNARUWA URBAN DEVELOPMENT PLAN

VOLUME I

BACKGROUND INFORMATION/ PLANNING PROCESS/ DETAIL ANALYSIS /PLANNING FRAMEWORK/ THE PLAN



Urban Development Authority
District Office
Polonnaruwa
2018-2030

DOCUMENT INFORMATION

Report title : Polonnaruwa Development Plan
Locational Boundary (Declared area) : Polonnaruwa MC (18 GN) and Part of Polonnaruwa PS(15 GN)
Gazette No :
Client/ Stakeholder (shortly) : Local Residents, Relevent Institutions and Commuters
Commuters :
Submission date :15.12.2018
Document status (Final) & Date of issued:

Author

UDA Polonnaruwa District Office

Document Submission Details

Version No	Details	Date of Submission	Approved for Issue
1	Draft		
2	Draft		

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FOREWORD

Minister's Foreword

Polonnaruwa Mayor's Foreword

Polonnaruwa Pradeshiya Sabha Chairman's Foreword

PREFACE

Cities are changing; therefore, the emerging trends of development requires to find innovative solution to meet the changes well. The urban development itself also means responsibilities for future generation through innovations. Polonnaruwa as world heritage city in Sri Lanka, the spatial structure and the antient value of the city also being subjected to changes over the time by expanding the growth towards outer city. This scenario has made significance changes in the city structure and the development. Therefore, in this context, Polonnaruwa development plan will be an instrument that offers visionary, Intelligent solutions for the future- oriented development of Polonnaruwa world Heritage city to the questions arise today and that will arise in the future.

ACKNOWLEDGEMENT

It is our proud privilege to express the feeling of our gratitude to our resource person who helped directly and indirectly to prepare the Polonnaruwa Development Plan 2030. First and foremost, we would like to thank the commissioner of Polonnaruwa Municipal Council Mr. K S Sugath Kumara and his staff and Mayor of Polonnaruwa Municipal Council Mr. L G Chanaka Sidath Ranasinghe for extending their fullest support to successfully complete the Polonnaruwa Development Plan 2030. We also express our heartfelt and deep sense of gratitude to the Chairman, Director General, Deputy Director General (Planning), Development Planning Division, and Research and Development Unit of the Urban Development Authority for the encouragement and support given to prepare and finalized Polonnaruwa Development plan. Finally, we thank all the people for their help directly and indirectly to complete the Polonnaruwa Development Plan 2030.

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1. INTRODUCTION

1.1 Background of the Development Plan

Urban Development Authority is the regulatory body of the urban development of Sri Lanka. Thus, it has been empowered to function as the key urban planning implementing agency in the country by Urban Development Authority act no 41 of 1978. And this Polonnaruwa Urban Development Plan has been formulated as per the powers and functions vested with the Authority under section 8 of the Urban Development Authority (Amendment) Act, No.4 of 1982. The authority's mission is to Promote Integrated Planning and implementation of the economic, social, environment and physical development of the declared urban areas. The above ambitious are framing the main objective of preparation of this development plan.

The study area of this development plan located in Polonnaruwa Municipal Council and selected GN divisions in Polonnaruwa Pradheshiya Sabha area of Polonnaruwa district in North central province of Sri Lanka. Polonnaruwa Town Council area has been declared as an Urban Development Area in extra-ordinary gazette notification no 38/16. June 10th 1979. In 2005 Selected 22 GN divisions of Municipal Council (56.7 sqm) have been declared as Urban Development Area by extra-ordinary gazette notification no: 1397/1 in 13/06/2005 from 2008 up to 2018 drafted development plan has been practiced for the area.

In 2016 by gazette notification of 19-12-2016 Thamankaduwa declared into two local authorities named "Polonnaruwa Municipal Council" (18 G N divisions) and "Polonnaruwa Pradeshiya Sabha" (remaining 37 G N divisions) by the Ministry of Local Government. Recently After analyzing urban development trend and development pressure total 34 Grama Niladari Divisions has been declared as Urban Development area in 2018 and that's became the Planning boundary of this 2018-2030 development plan.

Report contains the overall framework for planning physical development in Polonnaruwa urban area for the period of 2018-2030. Consequently, Polonnaruwa Urban Development plan 2030 is to promote and regulate the integrated planning and physical development of lands and buildings in Polonnaruwa urban area and to establish facilities, amenities and service related infrastructure for the betterment of residents and commuters of Polonnaruwa.

This urban Development Plan shall be reviewed in ten years for needy updates and amendments.

1.2 Planning Team

Main Stakeholders

- Polonnaruwa Municipal Council
- Polonnaruwa Pradeshiya Sabha

Main Consultancy Agency

- Department of Census and Statistics
- Central Cultural Fund
- Department of Archaeology
- Sri Lanka Tourist Board
- Department of Irrigation
- Department of Agrarian Development
- Department of National Physical Planning
- Presidential Secretary Office for “Pibidemu Polonnaruwa Development Program”.
- Department of Meteorology
- Board of Investment of Sri Lanka
- Central Environmental Authority
- Department of Agriculture
- National Water Supply & Drainage Board
- Department of Forest
- Department of Railways
- Road Development Authority
- Land Use Policy Planning Department
- Department of Wildlife Conservation
- Disaster Management Center Polonnaruwa
- Ceylon Electricity Board
- Hector Kobbkduwa Agrarian Research & Training Institute
- Mahaweli Authority of Sri Lanka
- Sri Lanka Police
- Department of Survey
- Industrial Development Board

Other Relevant Stakeholders

- District Secretary Office - Polonnaruwa
- North Central Provincial Council
- Municipal Council - Polonnaruwa
- Garamaniladhari Officers of Municipal Council Area
- Most Venerable Wendaruwe Upali Maha Thero, Galviharaya Temple, Polonnaruwa
- Most Venerable Udagama Dhammananda MahaThero, Isipathanarama Temple, Polonnaruwa
- Most Venerable Kanduruwela Dhammapala MahaThero, Jayanathi Temple, Kaduruwela, Polonnaruwa.
- Main Maulvi, Jumma Mosque, Kaduruwela
- The Very Reverend Father Norbert Marshal Andrade, Nirmalee Church, New town, Polonnaruwa.
- District Director, District Samurdhi office, District Secretariat, Polonnaruwa.
- Secretary, Chamber of Commerce Polonnaruwa Group, Studio Nalani, Main Road, Kaduruwela.
- President, Sanasa Society, Jayasewana, Kaduruwela, Polonnaruwa
- President, Pragathi three-wheelers society, Hospital Junction, Polonnaruwa.
- Manager, Peoples Bank, regional office, Polonnaruwa.
- Manager, Bank office, regional office, New Town Polonnaruwa.
- Manager, Sampath Bank, Kaduruwela, Polonnaruwa.
- Owners of Small Scale Rice Mills, located in Polonnaruwa urban area.

Urban Development Authority, Polonnaruwa District Office Planning Team

- Plnr.L.J. Liyanage - Director, North Central Province
- Plnr.D.B.S.K. Disanayake - Deputy Director (Planning)
- Plnr. T.J.K. Jayalath - Strategic Planner
- Ms. M.H.I.S. Gunarathna - Strategic Planner
- Ms. R.D.S. Sumathipala - Enforcement Officer
- Mr.H.M.G. Bandara - Enforcement Officer
- Plnr. W A R Ranjani - Supervisor

Urban Development Authority Head Office Supportive Teams

- Geographical Information System and Planning Support Division for preparation of Polonnaruwa Geo data base.
- Research and Development Division for spatial analysis works
- Development Planning Division for stakeholder meetings and overall guidance in preparation of Development Plan
- Landscape Planning Division for preparation of Supportive Sub Plans in Development Plan

1.3 Scope of the Work

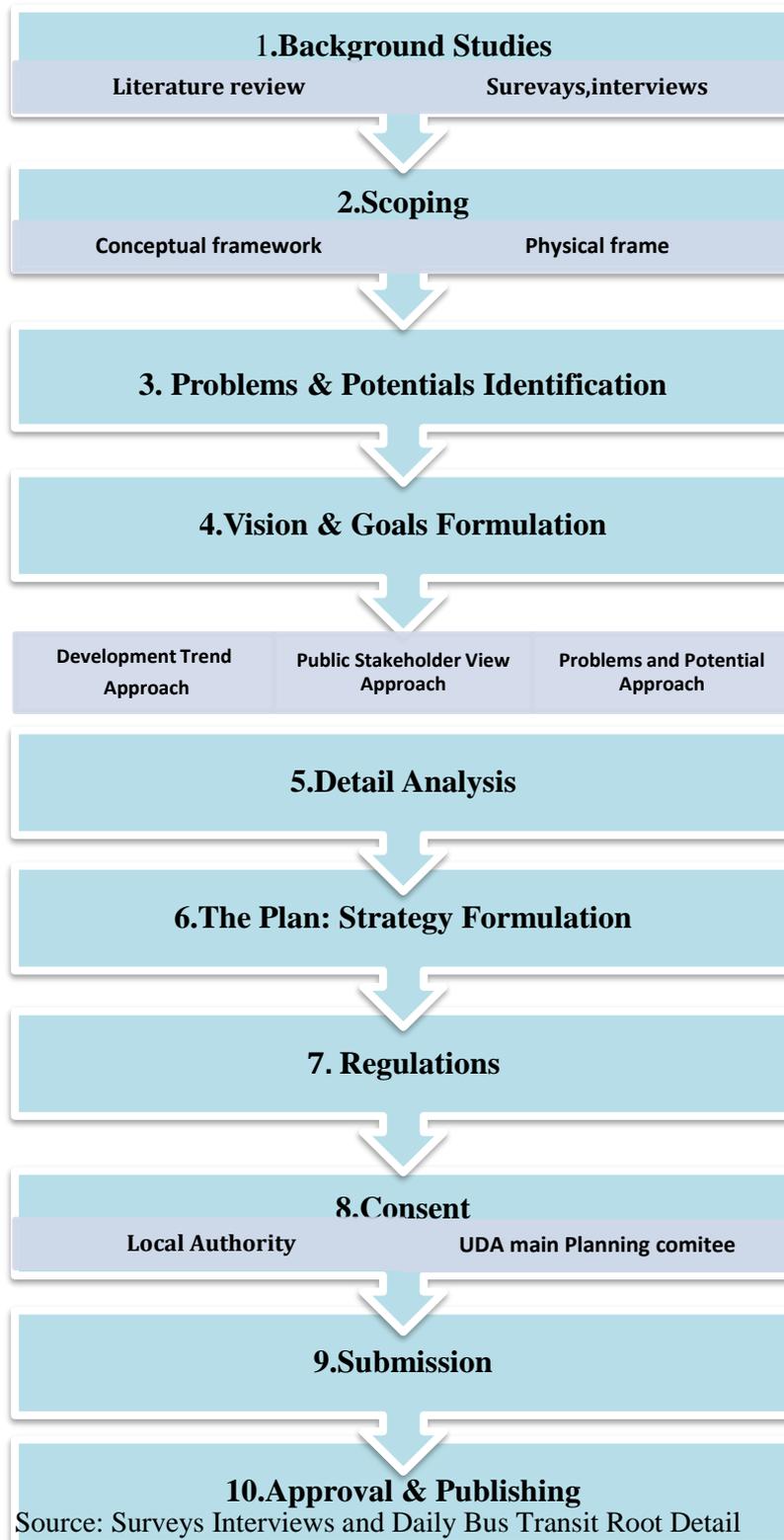
Urban Development Authority is promoting and regulating the urban development process in order to facilitate the growth of the economy, protecting the natural and built heritage and improving the quality of life of all inhabitants.

Accordingly, Polonnaruwa Urban development plan 2030 is aiming mainly at the physical development aspects of the area to achieve the integrated planning targets. The physical developments include changes in the land uses, establishment and extension of settlements, shifting and location of human activities installation and improvement of physical infrastructure, conservation and enhancement of any land-based heritage or resource, etc. Any other development which haven't direct implications upon the physical environment of the area may not be covered within the scope of this Development Plan.

When preparing urban development plan 2030, it has been considered development draft plan 2015. Some of the projects identified under 2015 development pan has been continued under pibidemu polonnaruwa programme. The ongoing "Pibidemu Polonnaruwa Development Programme" considered as a special situation and directly addressed issues and planned projects which are already at implementing stage by this programme have been incorporated in preparation of this development plan (Annexure 1). The programme itself planned district level social economical and physical infrastructure development projects and overall district level development. The direct impact and indirect impacts considered in preparation of this urban development plan and avoided repetition with the projects.

1.4 The Planning Process

Figure 1.1: Planning process



1. Background Studies

For the background studies in 2017 March we have collected Data on main 4 aspects as social, physical, environment and economy of Polonnaruwa through Surveys, Office visits, Internet, Drone Survey, Google maps, Satellite, Archives etc. It included information on Population, Land use, Economy, Industry, Agriculture, Housing, Health, Education, Roads, Transport, Infrastructure, Archeology and Heritage, Special Projects, Open Spaces, etc.

After collection of Satisfactory Level Primary Data & Secondary Data in 2017 July we have done Basic analysis using IT technology such as Excel, Arc GIS, Drone based software, Google maps, SPSS them to know the present states of the city.

2. Scoping

Conceptual framework

To scope up the development plan selected main three areas to address as historical background of the city, previous planning attempts and their gaps, Local, Regional, National & International Level Importance and Linkages and The National Physical Plan & Policy 2017-2050 in Sri Lanka.

Physical frame: Delineation of planning boundary

After analyzing urban development trend and development pressure total 34 Grama Niladari divisions has been declared as Urban Development area in 2018 and that's the Planning boundary of this development plan.

3. Problems & Potentials Identification

To deliver a practical and successful urban development plan it must identify the Problems & Potentials of the area intensely. We have done it in two ways as Identification of them in Planners view with analyzed information and identify the distinct perspectives of Problems & Potentials in stakeholders' view. We have Conducted Stakeholder meeting in 28th of September 2017 with NVIVO Analysis and series of interview with commuters, residents' and even grassroots level community.

4. Vision & Goals Formulation

Problems and Potential Approach

We have categorized total threshold population in to four groups to Frame the problems and potentials based on Context, Magnitude & Significance. Those are Polonnaruwa residents and Famers, Daily commuters, foreign tourists and Other Sri Lankans / Local travelers.

Then given weight to each problem as high, moderate and low based on the effects to selected Groups one by one. Then go the list of prioritize problems and potentials. It could identify some potentials could address the problems and accordingly finalized the problems and potentials to be address through Polonnaruwa Urban Development Plan.

Development Trend Approach

With the scope of National Physical Planning Policy 2030 and ongoing ‘Awakening Polonnaruwa Development Programme 2015-2020 and 2030 Agenda for Sustainable Development by the United Nations Sustainable Development Summit on 25th September 2015 identified the ways we should attend to the problems and potentials we have selected to address in development plan.

Public Stakeholder View Approach

Conducted interviews with all type of stakeholders to know “The image of the city which they like to see and space which they like to experience in 2030”.

With above three approached form the vision of Polonnaruwa urban development plan 2030. In order to achieve the vision separated it in to 3 goals.

5. Detail Analysis (based on Goals and Objectives to achieve the Vision)

For each goal identified Strength, Weakness, Opportunities and Threats and details on facts. Done some detail analysis with Strength, Weakness, opportunities and threatswith the support of Livability Analysis, Potential Analysis, Sensitivity Analysis. Then Finalized objective based on details of each goals.

6. The Plan: Strategy Formulation

Detailed analysis of Economic, Social, Physical & Environmental factors transforms in to urban development practical process as strategies to achieve the Vision.

7. The Plan Regulations

In 2018 June Made Zoning regulations with boundaries, Planning & Building Regulations, General Regulations, Special Regulations, Guide plan Regulations, establish in relation to above plans within relevant urban development area. Introduce new method in Categorized zones considering target development trend, expected efficiency of land use in the area.

8. Consent

Got consent in two ways. Draft Development Plan presented to UDA Professionals and got Final comments and views from UDA Professionals in 2018 November.

Forward the Draft Development plan to public comments and Local Authority consent by Keep the Draft Development Plan in Polonnaruwa Municipal Council and Polonnaruwa Pradeshiya Sabha from 2018 November 30th to January 30th (60 days) for Public Awareness. and Conducted Stakeholders Awareness Workshop (Workshop no. 2) to Public and both Local Authorities in 10th of October 2018.

9. Submission

The amended plan with UDA main planning Committee and two local authorities submitted to the development planning division of UDA in 2019 January 1st.

10. Approval & Publishing

The subject Minister approved and gazette the plan in three language in January 2018.

2. PRELIMINARY SURVEYS

2.1 The Study Area

Polonnaruwa urban area is located within Polonnaruwa Municipal Council and Polonnaruwa Pradeshiya sabha of Polonnaruwa district in North central province of Sri Lanka. Polonnaruwa is known as one of the cleanest and more beautiful cities in the country among the foreign tourists. The green environment, nourished paddy fields, amazing ancient constructions, huge lakes like Parakrama Samudra, makes an unforgettable and unique experience. For the locals the name Polonnaruwa memorize with ruins, Pulasthi statue, green paddy field with lakes and big channels, wild elephants and hot temperature or the droughts with suffered paddy farmers.

The planning area consists of total 34 Grama Niladari divisions and those are falling into two local authorities namely 18GN in Polonnaruwa municipal council and 16 in Polonnaruwa Pradeshiya Sabha area.

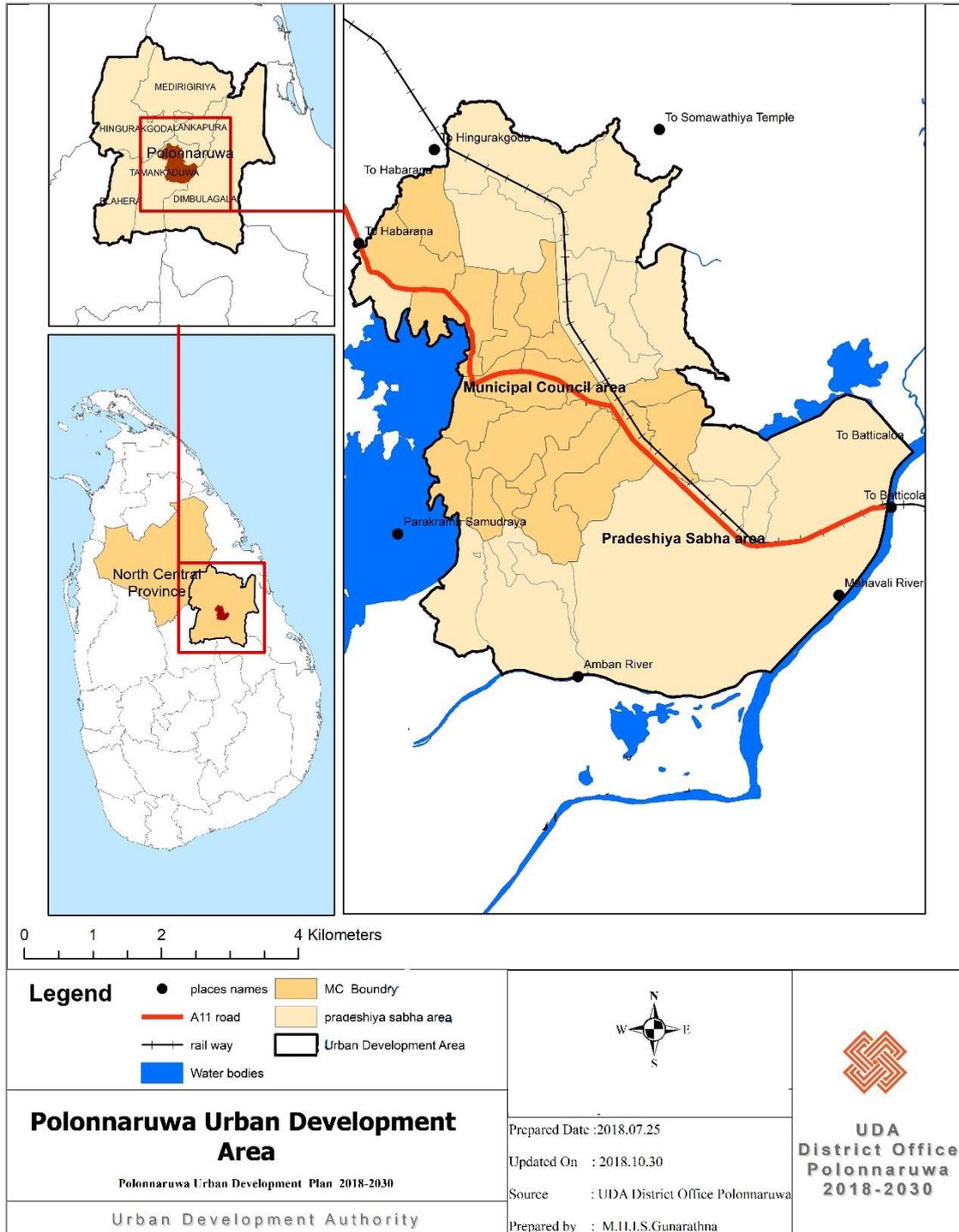
Polonnaruwa Town Situated in 216 Kms away from Colombo and 122kms from Kurunegala. The most popular rout to reach Polonnaruwa is to come to Habarana and then turning off along A-11 Road (Maradankadawala – Trikkonamadu) and 45 km to the city through Passing Minneriya National Wildlife Park. If comes via railway Colombo – Batticaloa rail route is located through the Polonnaruwa City since 1928 (Colombo, Maho Junction, Galoya Junction, Polonnaruwa and Batticaloa) and it resulted the Commercial capital of Kaduruwela from 1950's.

Although Polonnaruwa well Connect with *A class* Roads and rail route to surrounded district capital cities such as Dambulla, Anuradhapura, Batticaloa, Mahiyanganaya, Ampara, to enter to the city in any direction it needs to pass natural barriers like forests and rivers. Because of that, the city was a hidden kingdom throughout the history.

The district has Tropical climate characteristics and falls to dry zone of the country with average annual rain fall 1678 mm (Annexure 02). The average annual temperature is 27.3 °c and May is the warmest month with averages 30 °c. January has the 25.1 °c as lowest average temperature of the year (Annexure 03). The district topography varies from 50ft - 500ft average height from mean sea level and comparatively flat terrain with low slope (Annexure 04).

Location Map

Map 2.1: Location map of the Planning Boundary



Source: Urban development authority

2.2 Planning and situational context

Presently according to the North central province urban hierarchy, Polonnaruwa is the second order city while Anuradhapura City is a 1st order city (Annexure 05, figure 8.4). City has been declared as a town council from 1979 and changed the urban area boundaries consequently over the years.

At present according to the National Physical Planning Policy 2017-2030/2050 the role of the city altered. The National Physical Policy and plan has been formulated in 2006 and revised for the time of 2017- 2050 by National Physical Planning Department. According to the NPPP & plan, the physical developments of the country is expected to be concentrated into four ‘Development Corridors’, two ‘Metro Regions’ and the nine ‘Main Cities’. **Polonnaruwa is a one from nine Main Cities.** NP plan described main cities as follows.

A ‘Main City’ is a comparatively larger concentration of economic activities, urban facilities and residential population, and serves as the higher order service center to a reasonably large land area. Within this policy, a ‘Main City’ shall be defined as an area with a minimum population of 100,000, and a gross residential population density of more than 5,000 persons per square kilometer. (Section 2.3.1. / NPPD revised plan 2017-2050 /National Physical Planning Department)

With the natural growth (According to the Analysis) Polonnaruwa urban area will only reaches to 77000 populations in 2030 and density will not match with target of NPPP plan. But Polonnaruwa urban area will match other criteria’s as a main city. While preparation of an urban development plans the given target is needed to consider.

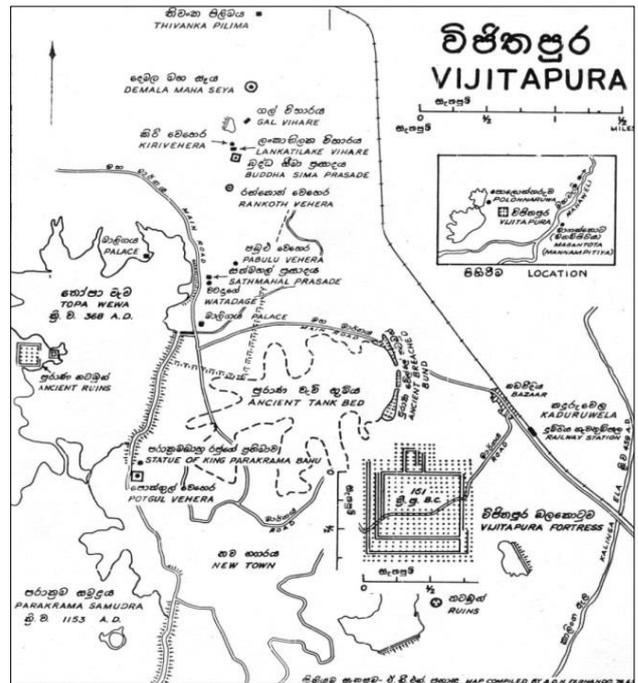
Whole urban area is mostly functioning at 6 am to 7 pm of the day. Although the city is a district capital and a bypass center for All road the night time activities and population are very less.

Historic evolution

Polonnaruwa is a famous ancient kingdom within Sri Lanka which can be clearly seen looking at all the ruins. The entire area consists of many historical places that you can explore by bike, foot or by tuk-tuk. Since the Polonnaruwa city is a historical land mark in the country and the existing formation of the city is a result of historical actions it needs to have profound understand in preparation of urban development plan.

The story of the area begins before arrival & settlement of Arians (13000 years ago) to Sri Lanka. There is evidence for the civilization with paddy cultivated people along Mahaweli River in king Rawana’s time. It’s a belief that the famous statue in Pothgulvihara can be the “Pulasthisi Rishi” the grandfather of King Rawana’s whom the principal of *Pothgul vihara ashram* located in river bank of Mahaweli. (*J. Balasooriya, 2007, 1st edition, Mahaweliya and historical Polonnaruwa, ISBN 955-96585-8-1*).

Figure 2.2.: conceptual drawing of Old city by A.D.N. fernando in 1978



The well written history started with arrival & settlement of Arians. Anuradhapura kingdom time “Baddhakachchya princess's brother settled in the Mahaweli river bank and made a village called “Vijithagama” (at present it’s nearby Kaduruwela town). There was a well-planned and sustainable fortress called “vijithapura” belongs to king Elara’s in 161 Bc. King “Dutugamunu settled to fight with Vijithapura, camping in a paddy field which presently known as Kaduruwela commercial city. It resulted the name of town as Kandawurubandiwele, Kandawuru –wela to Kaduruwella.

(*J. Balasooriya, 2007, 1st edition, Mahaweliya and historical Polonnaruwa, ISBN 955-96585-8-1*)

658 BC Polonnaruwa became the Second kingdom of Sri Lanka Started with king iv Agbo. The golden era of Polonnaruwa started with King Maha Parakrama Bahu in 1153-1186 Bc.

King Maha Parakramabahu’s time the city center was a well-planned and sustainable healthy city with three gardens inside namely Nandana Uyayan, Laksha Uyana, and Deepa Uyana. New Buddhist vihara constructions like Alahana Piriwena, Lankathilakaya, Thuparamaya, Kiriwehera, Jethawanaramaya made the cultural and educational richness. More than 2000 lakes, canals and irrigation systems made the famous named of Sri Lanka as “Granary of the east”. The story for above are still witnessing in the Polonnaruwa sacred city.

In 1187-1196 King Nishshankamalla build many beautiful buildings which made a unique identity within the city.

In 1214 BC Polonnaruwa kingdom abandoned with 'Kalinga Maga's 40 years activities. Then Polonnaruwa acted as a sub district in other kingdom times and played vital role as a battle ground when necessary for changes in kingdoms. 1815 Kandyan agreement signed by "Thamankaduwa Disawe" was the leader of Polonnaruwa at the time. Likewise, there are enough evidence throughout the history that Polonnaruwa wasn't fully abandoned.

Afterword Kandyan kingdom the British ruled period and Post-colonial period had a great influence in city evolution. It couldn't find any written documentation on overall planning of the city. But with closer look with establishment of several important organizations it can imagine how the city evolved to existing situation.

In 1870 British government Made a Circuit Bungalow for British government agents (GA) at the Bund of Parakrama Samudra Lake and presently it's converted to LKHO lake House hotel and one of 3-star hotel in Polonnaruwa hotel classification. In 1922 Manampitiya steel bridge was built to connect eastern part of the country with a railway line. It's the second longest steel bridge in Sri Lanka with 302 m. 1927 Railway station of Polonnaruwa and Post office started at Kaduruwela and it resulted the evolution of commercial center. in 1958 Polonnaruwa Hospital started as rural hospital controlled under Mathale health director's office and rapidly changed the land use in hospital junction. The evolution of administrative center started in 1961 with 'Thamankaduwa Kachcheriya' built for administrative purpose of Thamankaduwa pattuwa and Sinhala Pattuwa. The new town area highly influenced by construction of royal central college in 1959 with lager land extent and started its function from 1965. The Ceylon water board established in same year at new town. The Ceylon Transport Board started with 5 buses in 1969 and now the transport network function with 16 routs and more than 869 trips daily. There are SLTB 148 buses and privet 178 buses.

National Significance

Polonnaruwa has national significance in two ways.

- i. After declaration as UNESCO World Heritage city from 1982 it is a popular heritage tourist destination in Sri Lanka. According to Central Cultural Fund Statistic 180,000 foreign tourists arrived in 2016.
- ii. Polonnaruwa is the Premier Paddy producer in the country for centuries. District is producing 15% of row rice (2006 Maha) from the countries annual production and processing more than 55% of the total paddy production of country. (More than 1.48MTs)

Ongoing Development Programme

Currently the Polonnaruwa is undergoing a major development programme known as the "Pibidemu Polonnaruwa" under Urban Development Authority according to a concept of President Maitripala Sirisena. It envisions the development of all sectors in Polonnaruwa including roads, electricity, agriculture, education, health and environment will be developed comprehensively.

As Commercial Capital of District

The declared urban area is functioning as the main administrative and commercial capital to the district with a threshold population around 600000. (Annex 05. Figure 8.5: city catchment). All the district level administrative offices, educational and health institutes are located within this urban area (Annexure 06: figure 8.6 AND FIGURE 8.7). The roles as a higher order commercial center it's fulfilling primary (consumer goods & services) and secondary level commercial facilities (Agri based services, chemicals, automotive, construction industry, electric/ power) for total district and even beyond the boundaries.

Demographic Information

The existing residential population of planning area is 65329 (2016) and will reach to 76905 in year 2030 with annual growth. Total population of the district in 2012 is 419000. Population growth rate is 1.16 which is beyond national level (Annexure 07: figure 8.8 and figure 8.9). According to the natural growth the district population will reach 516,200 in 2030 which will consider as main threshold of the planning area.

Kaduruwela South, Parakum Pedesa, Kuruppuhandiya, Udawela, Nissankamallapedesa, Ganangolla shows the higher population density as more than 1600 per SqKm. When comparing 2001 and 2012 statistics it can be seen that the population density increasing along A11 road from Kaduruwela to Polonnaruwa junction and up to new town area. The lowest population density recorded in Kotaleeya and AluthwewaWest as less than 200 peoples for SqKm. Sinhalese are the

majority of population as 76% from total. 22% of Islam and 1% of, Tamil and 1% of Christian and other ethnicities are there.

Housing

There are 16684 households. From total population 93% own houses .92% of the houses are permanent and 7% semi-permanent and only 1 % is temporary. 12% of houses are multi storied houses. Currently city shows the 497-housing deficit and it's a 3% from total families. the highest Housing density recorded in Mahaweli Pedesa and Kaduruwela south.

Economy of the City

When considering economically active labour pool is (population above 15 years old) 46% from total below than national average (52%). The income of 76% families are below 25000 LKR per month. But for many years Polonnaruwa district beyond national level poverty index as well. (Annexure 08: figure10). When dividing employment sectors in agriculture, industries and services percentage goes as 40%, 20% and 40% respectively. Comparing national level, the situation is equal to Mathale, Mathara and Mulathiv Districts.

Water Supply

Pipe born water is the main source of water in this area and the National Water Supply & Drainage Board supplying it. Mahaweli River and Parakrama Samudraya are the Two water source used by water board. At present, 83% of the people are getting water from water board and 13% of the people receiving water from ground water wells. There is a trend with people to use filtered water for drinking purpose due to the threat in Kidneydiseases. one liter of water cost 2 Rs. Whole area is equipped with 6 fire hydrants (3 in Kaduruwela, 1 in hospital junction 1 in Pola junction and in new town.)

Electricity and Telecommunication

Considering electricity supply, according to the Ceylon Electricity Board report, people who are in Polonnaruwa urban area had enough connection by means 99% of the area gained electricity from the CEB. In telecommunication aspect Telecom (SLT) has been providing their service to entire town and CDMA, ADSL are available. The privet sector 8 telecommunication towers are located within the urban area and 4G coverage is available.

Health

In social infrastructure aspect, health and education sector take a prominent pace as the district capital city. The District general hospital located within urban area and equipped with 885 beds and 210 doctors with 22 wards and 46 units altogether. In addition to basic specialties including Anesthesiology it provides specialized care in Orthopedics, Eye, ENT, Cardiology, Dermatology, Rheumatology, Nephrology and Mental Health and also specialized services namely Radiology, Hematology, Microbiology and Histo-Pathology. Preliminary Care unit caters to medical casualties. According to 2012 statistics 80,222 admissions with 292,063 OPD Attendance and 223,849 Clinic Attendance recorded which shows the half of district population taken the benefits. There is ongoing national level hospital with kidney transplant facilities at urban area at 28-mile post of A11 road to treat the patients with the mysterious kidney disease that is striking mainly rice farmers in Sri Lanka's north central region. The project is a donation from China and kidney hospital will consist of 200 beds, 100 blood infiltration machines and modern surgery complex. This hospital which will be built at a cost of Rs. 12 billion. Other than national hospitals there are 4 government and 13 private Ayurveda dispensaries in the area and 1 private hospital and 3 channeling centers available.

Education

Polonnaruwa urban area belongs to Polonnaruwa educational zone and Thamankaduwa division. Total 30 schools spread within urban area. The royal central college is the only national level school in the area and it equipped with all facilities. For higher education purpose Pulathisi Adyapana Vidyapitaya, the technical college, the Open University, Bendiwewa and National Apprentice and Industrial Training Authority (NAITA), National Vocational Training Center is available within the area. Those institutes are admitting 200,500,470,100 students per year respectively.

Land Use of the City

The total land extent of Urban area is 103 Sq km. From that 31 % is paddy lands. 23% is residential lands and if consider paddy, forest, archeological sites, tanks, marsh and water bodies as an environmentally sensitive area more than 62% of land extent is in that category. The Flood Plains National Park is one prominent land use of the area situated along the Mahaweli flood plain. The park was created on 7 August 1984. The park is considered a rich feeding ground for elephants and it safeguard the elephants migrate between Wasgamuwa and Somawathiya national parks.

2.3 Delineation of the Planning Boundary

The delineation of the planning boundary is based on the following three aspects. After overlies all three areas and aspects finalized the planning boundary for development plan 2030 with the consideration of the futuristic perspectives as well.

2.3.1 The functional region

Polonnaruwa urban area concentrated in to main three nodes such as Commercial City Kaduruwela, Administrative City of New Town and heritage city at Polonnaruwa junction. There are emerging sub centers at hospital junction, Gallella, Bendiwewa and Sewagama. Have done several studies in order to identify the functional boundary of the city. Such as Connectivity & settlement pattern, Integration of the area and the Network Centrality Assessment and Development pressure analysis and surveys. It could identify that there's a necessity to expand the boundaries of the existing gazetted Urban Area.

The Development Pressure has extended into adjacent 12 GN divisions which are out of the declared urban area in 2005. In some GN divisions only 1/3 of total land had the high development pressure.

2.3.2 The geographic characteristic

The identifiable clustering of built up areas (human settlements) and their separation with natural boundaries, vegetation patterns and hydro catchment areas counted while finalizing the planning area. The Mahawali River and national flood plain reserves from east and Amban River at south and Parakrama Samudraya at west direction separate the settlements and their functions. The boundaries were finalized with those geographical characters in above said directions.

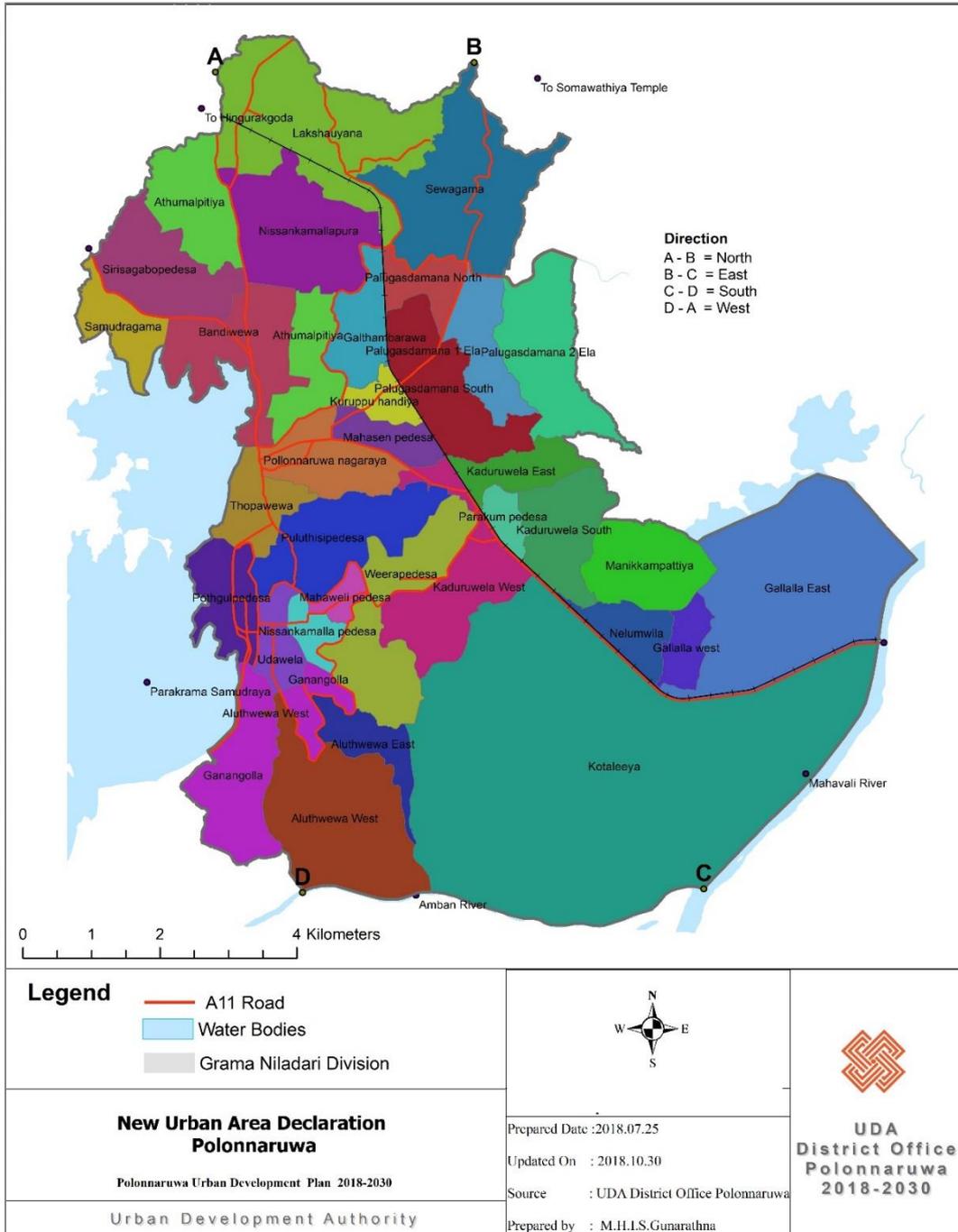
2.3.3 The administrative divisions

Early gazettes 22 GN divisions were belongs to the one local authority named 'Thamankaduwa Pradeshiya Sabha'. With the changes in local authority boundaries in 2016 Total 55 GN divisions divided in to two local authorities' namely "Polonnaruwa Municipal Council" (18 GN divisions) and "Polonnaruwa Pradeshiya Sabha" (remaining 37 GN divisions) by the Ministry of Local Government.

While finalizing the planning areato avoid complicated situation in Administrative functions, whole Grama Niladari division selected to be declared although functional area is 1/3 of total GN.

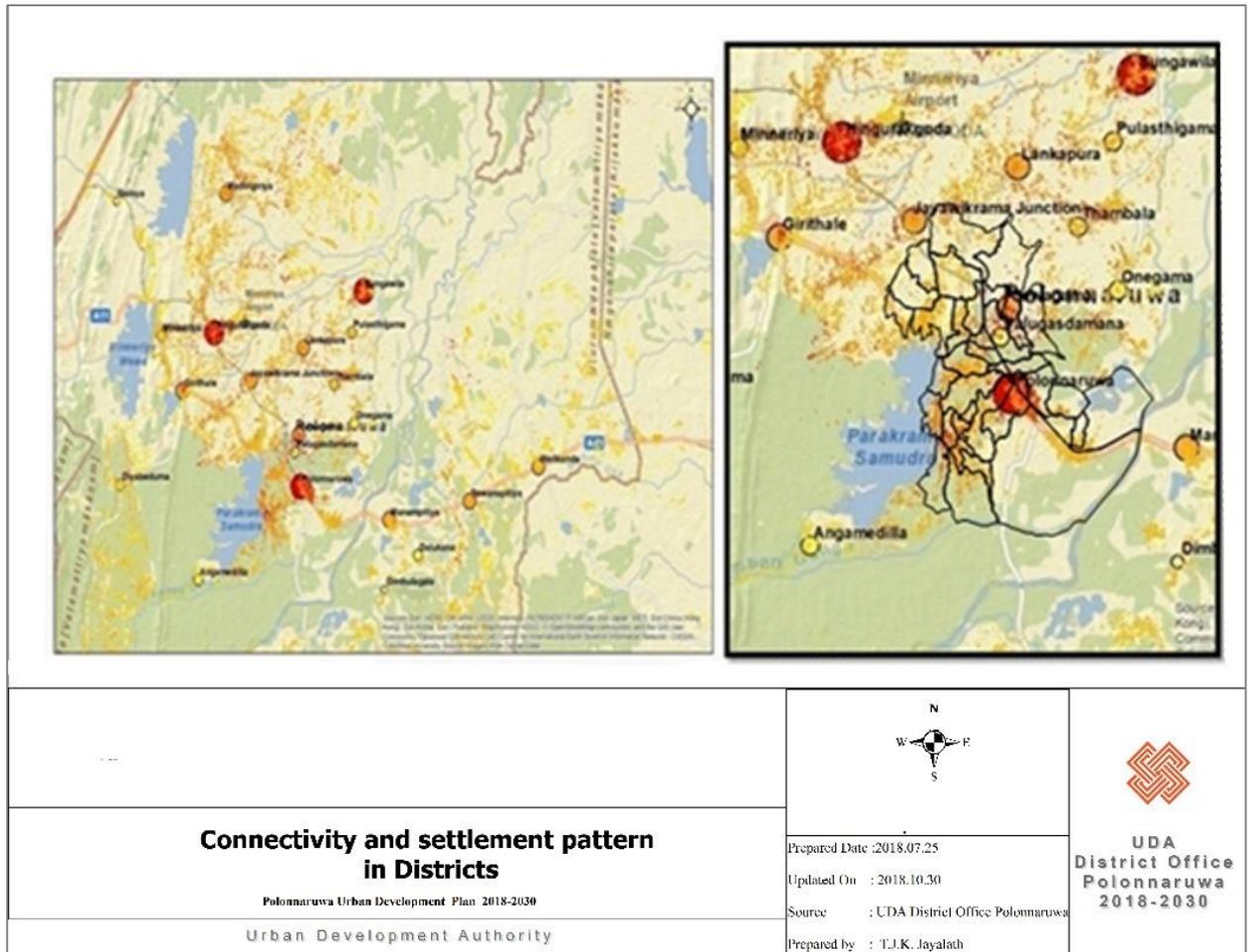
The finalized planning area boundary consisting 34 GN divisions (18 MC and 16 in PS) with total population of 65329 (2016) and 16684 families. The total land extent is 103sqkm.

Map 2.3: Planning Boundary Demarcation with GNs



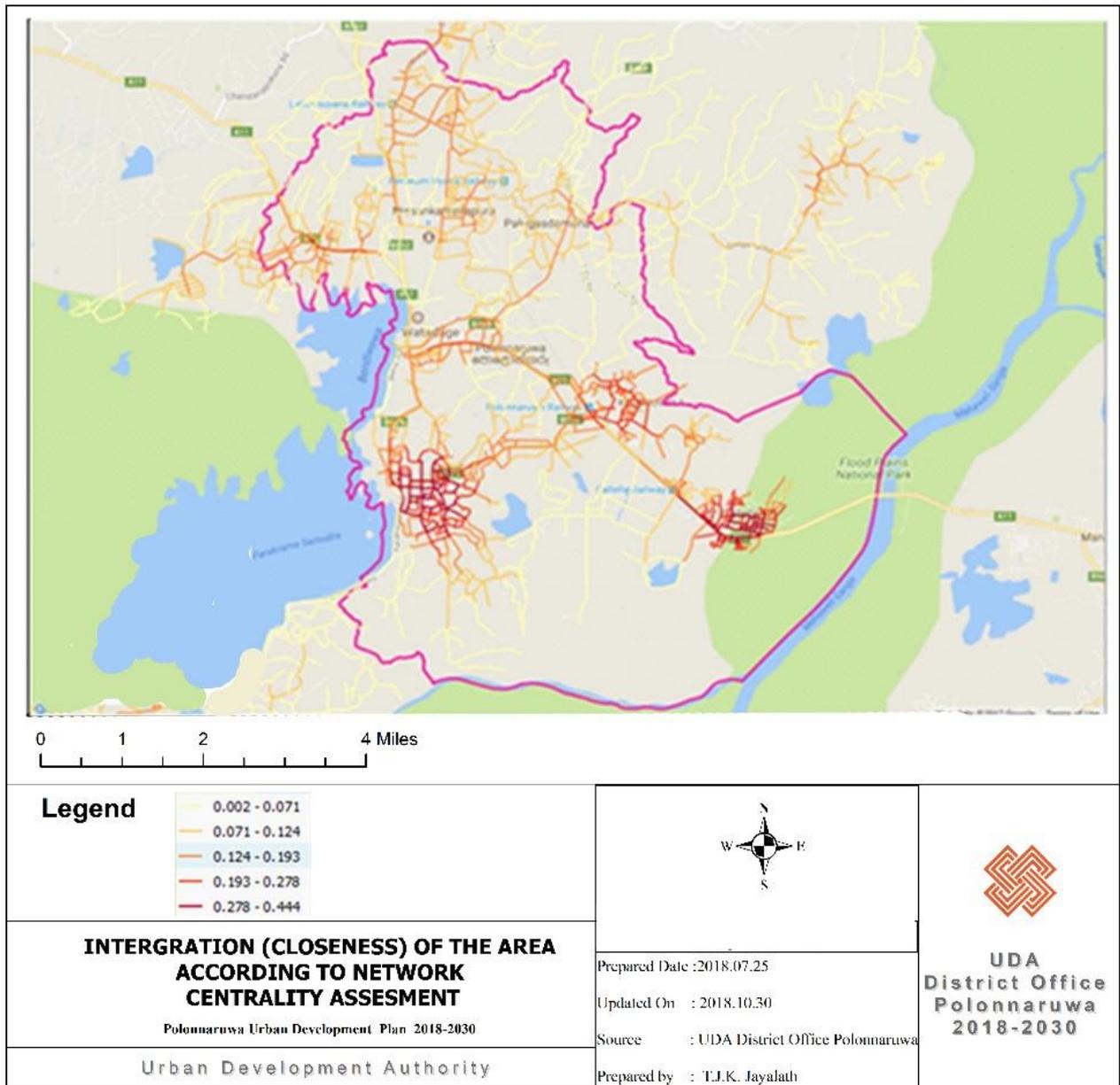
Source: Urban Development authority, Polonnaruwa District office

Map 2.4: Connectivity and settlement pattern of districts



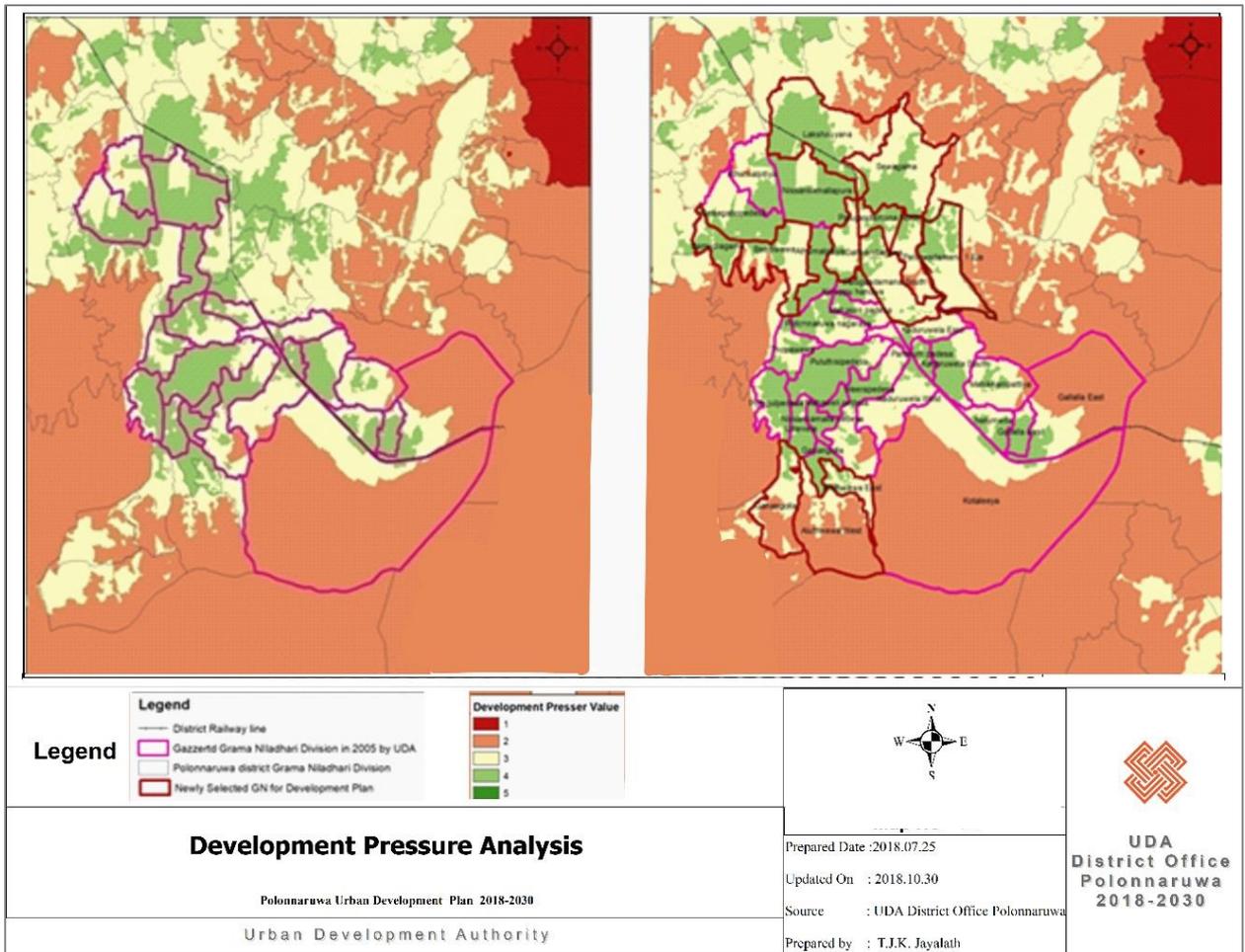
Source: Urban Development authority, Polonnaruwa District office

Map 2.5: Integration (closeness) of the area according to network centrality assessment



Source: Urban Development authority, Polonnaruwa District office

Map 2.6: Development Pressure Analysis



Source: Urban Development authority, Polonnaruwa District office

3. NEED OF THE DEVELOPMENT PLAN

Preparation of a development plan in a gazetted urban area is a legal requirement under section 8 of the Urban Development Authority (Amendment) Act, No.4 of 1982. And that plan must adjust the role of city in the National planning context (2030-2050) as well. The purpose of Preparation of such a plan is to provide better living environment for the people of the city. The better living environment is achievable through facilitating the growth of the economy, protecting the natural and built heritage and improving the quality of life of all inhabitants.

Usually unplanned development leads to several issues in environmental and other sectors and creating dilapidated settlement gradually. And sometimes planned development leads to undesired outcomes due to lack of understanding in special requirements of city's inhabitants with existing social, economic, physical and environmental situations. To avoid above said circumstance UDA have followed scientific way to find the real requirements of a development plan for the Polonnaruwa urban area.

Polonnaruwa urban area has a land area of 103 Sqkm with total residential population of 64299 (2016 Resource profile). After analyzing primary and secondary information with stakeholder consultations in each sector got a list of problems and issued to be addressed in 2030 plan. After analyzing the problems, potentials and stakeholders' views it could finalize the need of development plan for Polonnaruwa. In order to achieve sustainable and livable targets of the city this development plan has to address in mainly four fronts.

First, the city needs to **improve the Identity**. The Polonnaruwa city itself has a two type of identity. One is as a declared World Heritage city with historical evidences starting Anuradhapura Kingdom and even before arrival of Aryans. The other one is Paddy industry and related Culture build up over the 100 centuries. The country named as "Granary of the East" in King Parakramabahu's time and still processing more than 60% of Paddy production in national production. The both type of identities are not reflecting in city's physical structures and it's wasting away a huge potential to the inclusive development of the city with existing tourism base.

Polonnaruwa still not taken the advantage of being the main city center by passed in A11 road to connect with eastern region of the country. Recreation targeted tourist who pass the city for beach sides in east and even locals can be stopped with a strategic plan.

Second, **Protection & Conservation** of Historic elements and environmentally sensitive areas to ensure sustainable and uniqueness of the city. The Polonnaruwa became a world heritage city in 1985 due to main three criterions. Unusual dimensions of King Parakramabahu's city and because of very special relationship of its buildings with the natural setting is the first one. Polonnaruwa attest in an exceptional manner to several civilizations like Cholas, disciples of Brahmanism, and that of the Sinhalese sovereigns during the 12th and 13th centuries are the second. The area is a shrine of Buddhism and of Sinhalese history is the third one. The damages in to any of above will threaten to city as a world heritage and there are possibilities of delisted the city from world heritage list. This will affect not only the city but also Whole Country which benefit from tourism sector.

With increasing demand for lands at main three centers of the urban area and many ongoing development projects treating the uniqueness of city and natural environment gradually. In order to protect livability and sustainability of the city protection of eco sensitive areas and conservation is very important.

Third, **improve Beautification, Connectivity and Livability**. The tropical climatic situations such as high temperature and sudden high rains reduce the comfort level of the city. The Kaduruwela commercial city center is the worst place and walking is not possible in afternoon at all. It increases the uneasy traffic as well. There are no organized open and recreational spaces in the city center for relax and finding a green shade in Day time is challenge.

One of major problem is mentioned is a higher traffic in hospital junction and commercial city. It is resulted by many reasons such as lack of awareness about alternative roads, no proper public transportation circulation in three nodes and improper parking, no turning circles, less walker friendly environment. Due to Non-availability of well-planned drainage and waste water treatment method in town center resulted in polluting whole irrigation channel system. Untreated waste water with hard waste blocking channels and with sudden heavy rains and flat terrain is increasing the intensity of the problem. 3/5 houses are facing problems due to drainages. The better connectivity in drainage, irrigation system and transport will improve the livability of the city. Forth, **area needs more trade and industrial Opportunity**.

According to statistics economically active only 46% (national average 52%) from the labor pool of the area (above 15 years). At the same time 76% of families are below the average income of 25000.00RS per month (Annexure 14). The untapped potentials in tourism can use to increase the household income of the area. There is a world trend for agritourism and heritage tourism with cultural experience. With proper strategy with available physical infrastructure facilities can harness the potential of tourism without harming the environment.

An integrated and comprehensive physical development plan is the only solution to overcome above said main targets and Polonnaruwa to be a healthy wealthy and adorable Heritage city.

Minister' s approval

Gazette Notification

4. THE PLANNING FRAMEWORK

4.1 The Vision

The vision 2030 for Polonnaruwa urban area will be

“Green Glorious Heritage city in Kingdom of Rice”

4.2 Vision Statement

“Provide Comfortable living in tropical climate While achieving best advantages of been a heritage city and premier paddy producer of the country without losing uniqueness and nature of the city.”

Green explains Pleasant and Calm Green Environment in tropical climate & practice of eco city standers in future.

Glorious will refers to proud full, wealthy & Healthy city.

Heritage means to the Grate History and Protection of it while promoting tourisms.

City stands for the Polonnaruwa urban area.

In Kingdom of Rice is the uniqueness and Economy of City & District over the centuries.

4.3 The Goals

1. Polonnaruwa as the Best Heritage Tourism Destination in Sri Lanka by 2030 (Ruins & paddy based agro tourism).
2. Protection of Historic and Environmental sensitive areas.
3. To make a pleasant & comfortable living in the tropical environment for residents & the commuters.

4.4 Objectives

Goals	Objectives (Specific, measurable, achievable, realistic, timeframe)
<p>1. Polonnaruwa as the Best Heritage Tourism Destination in Sri Lanka (Ruins & paddy related agro tourism)</p>	<ol style="list-style-type: none"> 1. Rearrange each element to be identical as heritage Ruins or paddy culture along All roads from Hathamuna junction to Kaduruwela entrance by 2025. 2. Regularize all tourism related accommodation centers with tourist board by 2025. 3. Preparation of stakeholder inventory for tourism related activities and provide online access by 2020. 4. Construction of a Paddy museum and specialized paddy sales center by 2025. 5. Arrange more than one alternative tourist routes to cover ruins and paddy culture both by 2025. 6. Practice Traditional Agriculture methods in selected paddy land at city center before 2030. 7. Establish more than one industry for Value added paddy production by 2030.
<p>2. Protection of Historic and Environmental sensitive areas.</p>	<ol style="list-style-type: none"> 1. Survey and physically boundary demarcation of lakes, and all heritage reservations 100% in planning area by 2025.
<p>3. To make a pleasant & comfortable living in the tropical environment for residents & the commuters.</p>	<ol style="list-style-type: none"> 1. Reduce the real feel temperature to actual temperature at the city center by 2030. 2. Improve the connectivity of irrigation canals 100% by 2030. 3. Implement the Drainage master plan by 2030 for the Planning Area. 4. Increase the greenery of each plot more than 50% by 2025. 5. Provide one Organized open space or green shade for each 200 sqm² by 2025.

5. SWOT and detail analysis

5.1 Goal (1)

Polonnaruwa as the Best Heritage Tourism Destination in Sri Lanka by 2030 (Ruins & paddy related Agro tourism)

Strength	<ol style="list-style-type: none"> 1. Declared as a UNESCO world Heritage city, 2. Surrounded by other UNESCO world Heritage cities, 3. Ancient Ruins with a great history, 4. PibidemuPolonnaruwaprograme (infrastructure network, tourism facility center, and 3D museum.), 5. Existing tourism base and hotels, 6. Existing paddy production and processing units (Rice Industry), 7. Identical environmental hotspot in closer proximity to city, 8. Existing road network.
Weakness	<ol style="list-style-type: none"> 1. Non-availability of tourism routes connecting with the sacred city, 2. Unorganized tourism information center 3. 80% of tourism related accommodation centers are unauthorized, 4. Traditional paddy cultivation methods are not practicing widely.
Opportunity	<ol style="list-style-type: none"> 5. Political willingness, 6. Arrival of tourists to Sri Lanka, 7. Sri Lanka tourism strategic plan 2017-2020 by ministry of Tourism development authorityand Christian affairs 8. Local & International Demand for Rice 9. Agro tourism concept specialized for paddy culture, 10. Low probability of natural disasters.
Threats	<ol style="list-style-type: none"> 11. Decline of heritage tourists to Sri Lanka,

Goal 1: Strength

1. Declared as a UNESCO world Heritage city

World Heritage Site is a landmark or area which is selected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as having cultural, historical, scientific or other form of significance, and is legally protected by international treaties. The sites are judged important to the collective interests of humanity.

It can be delisted due to armed conflict and war, natural disasters, pollution, poaching, or uncontrolled urbanization or human development.

Report on world Heritage List No: 201 UNESCO ICOMOS, Paris, Mai 1982 mentioned the Following Criteria for declaration of Polonnaruwa City.

- The immense capital created by the megalomaniac sovereign, Parakramabahu 1, In the 12th century, is one of history's most astonishing urban creations, both because of its unusual dimensions and because of very special relationship of its buildings with the natural setting.
- Polonnaruwa attest in an exceptional manner to several civilizations, notably that of the conquering Cholas, disciples of Brahmanism, and that of the Sinhalese sovereigns during the 12th and 13th centuries.
- It is a shrine of Buddhism and of Sinhalese history. It is sufficient to recall that the tooth of Buddha, remarkable relic placed in the Atadage under Vijayabahu, was considered as the talisman of the Sinhalese monarchy: its removal by Bhuvanakabahu ii confirmed the decline of Polonnaruwa.

The heritage tourism definition itself giving a strength to the goal one. United States defines heritage tourism as "traveling to experience the places, artifacts and activities that authentically represent the stories and people of the past", and "heritage tourism can include cultural, historic and natural resources". The overall purpose is to gain an appreciation of the past.

2. Surrounded by other UNESCO world Heritage cities

There are 8 UNESCO World Heritage Sites of Sri Lanka.

01. Ancient City of Polonnaruwa (1982)
02. Ancient City of Sigiriya (1982)
03. Golden Temple of Dambulla (1991)
04. Old Town of Galle and its Fortifications (1988)
05. Sacred City of Anuradhapura (1982)
06. Sacred City of Kandy (1988)
07. Central Highlands of Sri Lanka (2010)
08. Sinharaja Forest Reserve (1988)

Seruwila Mangala Raja Maha Viharaya

Ancient pilgrim route Seruwila to Sri Pada (Sacred Foot Print Shrine) along the Mahaweli river in Sri Lanka

Figure 5.1: Heritage cites in Sri Lanka



Source: Archelological Department

From them Sigiriya, Dambulla, Anuradhapura are in surrounding and Kandy is in only 4hours away. The Seruwila Mangala Raja Maha Viharaya, and the Ancient pilgrim route Seruwila to Sri Pada (Sacred Foot Print Shrine) along the Mahaweli river had been submitted to the “Tentative List “of UNESCO which is in adjoining to the urban area. IN that sense Polonnaruwa town is the center for these world heritage cities.

3. Ancient Ruins with a great history

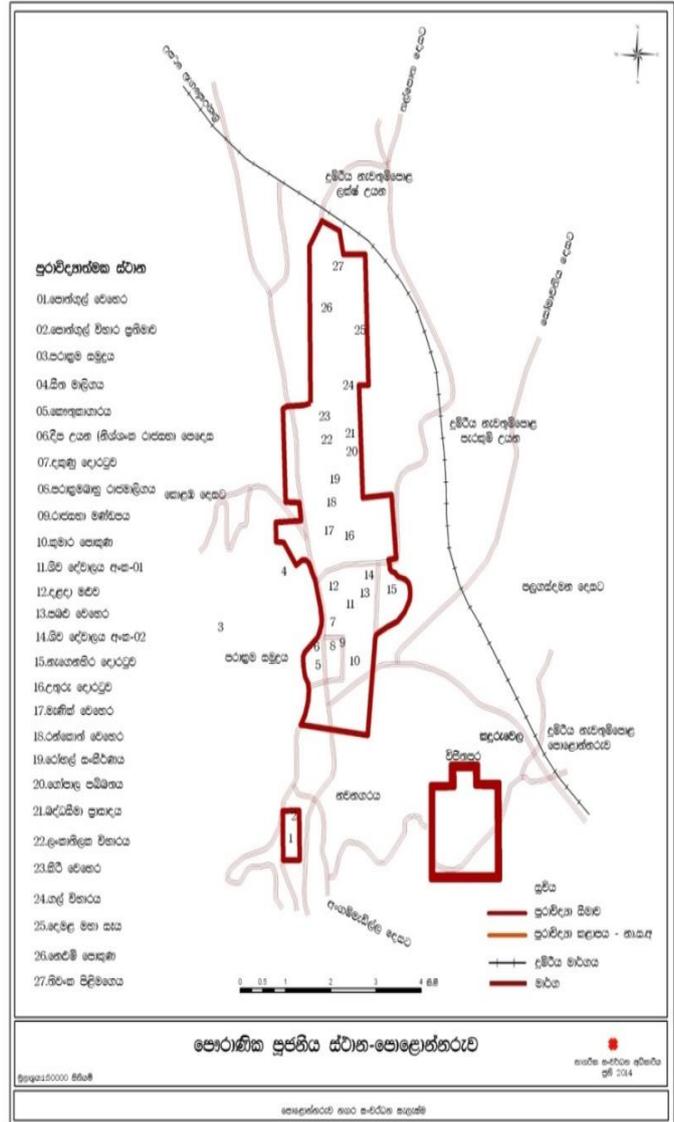
All the evidence for a great history can be seen in the Polonnaruwa sacred city and in the museum. The technology in building construction, irrigation systems, cultural combination, environmental balance, economic character, health sector, education facilities and several other Facts are still available of experience. The UNESCO heritage declaration is a result of this and one of great Strength that this city to become the best heritage tourism destination in 2030.

Polonnaruwa had been civilized and developed since BCE period, "Vijithapura", where "Dutugemunu, Elara" battle occurred may be present Polonnaruwa. The most ancient archeological

witness found in Polonnaruwa at present is in Gopala Pabbatha (Now spell as ‘Gal Viharaya’). It belonged to the 1st century (CE). King Upatissa's (365-406CE) regime in Polonnaruwa period was the first to be mention in Historic Books (Wansha Katha). He constructed Thopa Wewa. Maha Panadipa Viharaya was in Polonnaruwa built by King Aggabothi III (629-639CE).

Figure 5.2: Map of ruins in Polonnaruwa sacred city

Since 7th century, foreign invasions and inner struggles occurred many times. This could be the reason, for transferring kingdom from Anuradhapura to Polonnaruwa as a temporary control centre. King Aggabodhi IV (667-683CE) also transferred the Capital into Polonnaruwa as a temporary control centre and died there. King Aggabodhi VI transferred his government into Polonnaruwa, latter part of his regime. King Mahinda II (777-797CE) built a Pirivena for Dama Viharaya and Thambilitota Pirivena. King Udaya (797-801 CE) built hospital in Polonnaruwa.



Source: Archaeological Department

In 1017 AD. Soli People defeated King Mihindu V, transferred regime to Polonnaruwa changed its name to Jananathapura. Starting point of Polonnaruwa era indicates here according to chulawansa until king Vijayabahu the great freed the country; Soli people ruled the country destroying the culture as demons. During this period large numbers of buildings were built to satisfy Hindu ruling and religion, in Polonnaruwa. Present Shiva Devalas were constructed during that period.

Vijayabahu the great (1055-1110CE) freed the country; his coronation took place in the newly built palace in Anuradhapura, but he chose Polonnaruwa as a Capital of his kingdom. Since then more

than fifteen powerful and power less kings and queens ruled the country, choosing "Polonnaruwa" as capital. After Kalinga-Maga invasion, Polonnaruwa as a capital Collapsed forever.

Number of buildings within the ancient Polonnaruwa city were constructed by Parakkramabahu the great (1153-1186CE). Among those the Raja Maligawa (Palace), Auditorium. (Administrative buildings), religious buildings mainly Alahana Pirivena; The great Parakrama Samudraya, Angammadilla (Irrigation Technology) get together and formed a completed city. King Parakkramabahu the great claimed much honor for decorating and completing the City of Polonnaruwa. The second place goes to king Nisshankamalla (1187-1196CE). He added new buildings to the city while restoring the collapsed ones.

Resemblance can be seen in Sri Lankan arts and South Indian arts, due to fifty (50) year chola regime. Hindu devalas in Polonnaruwa city were built with the help of South Indian architecture. Even after Chola ruling and during Sinhalese ruling the good relationship between two cultures, Sinhala and Hindu could be seen, it is clearly indicated through the present buildings. The sign of cow in the Moon Stone removed as it is considered as the holy one because it is the vehicle of God Shiva. South Indian architectural tradition of "Gedige" used in building Image houses.

Figure 5.3: Royal Auditorium of King Parakramabahu



Figure 5.4: 7th story Palace of King Parakramabahu



Figure 5.5: The Polonnaruwa Moonstone



Figure 5.6: Nishshanka Latha Mandapaya

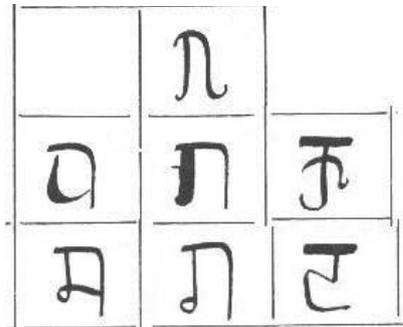


Source: <https://nerdnomads.com>

Collapsed irrigation technology regenerated during the period of Parakkramabahu the great. Sri Lanka renowned as "Eastern Granary" through the prosperity of Paddy Cultivation. The hospital built within "Alahana Pirivena", depicted the development in medicine during that period. The theatre tools found in this hospital were in much developed stage. When compared with today.

Letters used in Polonnaruwa era were in much developed stage too when consider today. Letter of Polonnaruwa "Kathikawatha" written by king Parakramabahu the great is in Galviharaya. Galpotha Lipiya (letter in stone) Puwaru Lipi (letter, written in board), Asana Lipi were written by king Nisshankamalla. Pana Kaduwa, Copper sannasa, Wellakkara Tamil inscription were belonged to King Vijayabahu the great. All those belonged to Polonnaruwa period.

Figure 5.7: Letters in King Parakramabahu's era



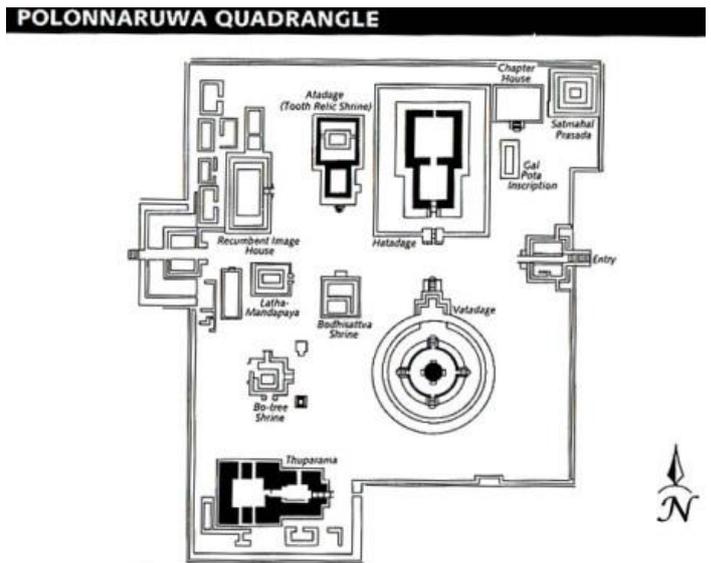
Source: <https://nerdnomads.com>

Vijayabahu the great was the first Lankan King to put his name on a coin. Earlier kings issued anonymous gold coins. Gradually the quality of gold in coins reduced, then silver coins, later on copper coins were issued. Since then centuries passed, without issue of local gold coins. Monarchs after King Vijayabahu followed his style and issued coins with their names on the coin.

Figure 5.8: Coins in King Parakramabahu time



Figure 5.9: Polonnaruwa Quadrangle

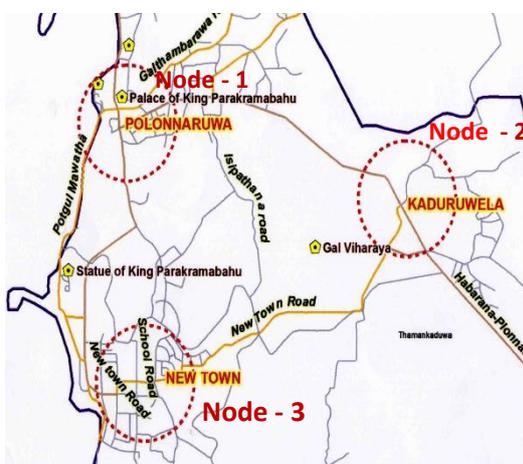


Source: Ancient Sri Lanka - Stamp Series /Polonnaruwa Era/2009.06.23/Philatelic Bureau Department of Posts, Postal Headquarters, D. R. Wijewardena Mawatha, Colombo 00100, SRI LANKA

4. **Pibidemu Polonnaruwa programe (infrastructure network, tourism facility center, and 3D museum.)**

Existing Development Concept for urban area in Pibidemu Polonnaruwa development programme is to develop three nodes in order to protect identity in heritage city, facilitate commercial activities in Kaduruwela as a commercial city and new town as the administrative city. Many projects have identified and some projects are already completed to achieve that goal. From total Pibidemu Polonnaruwa Programme 11 numbers of projects are directly support to goal 1.

Figure 5.10: Development concept for urban center



Source: Pibidemu Polonnaruwa programme

Figure 5.11: Photos of ongoing projects in Pibidemu Polonnaruwa Development Program

Administrative Complex



Quarters Complex



Kaduruwela Town Expansion Project



Tourism Facility Center and Public Fair



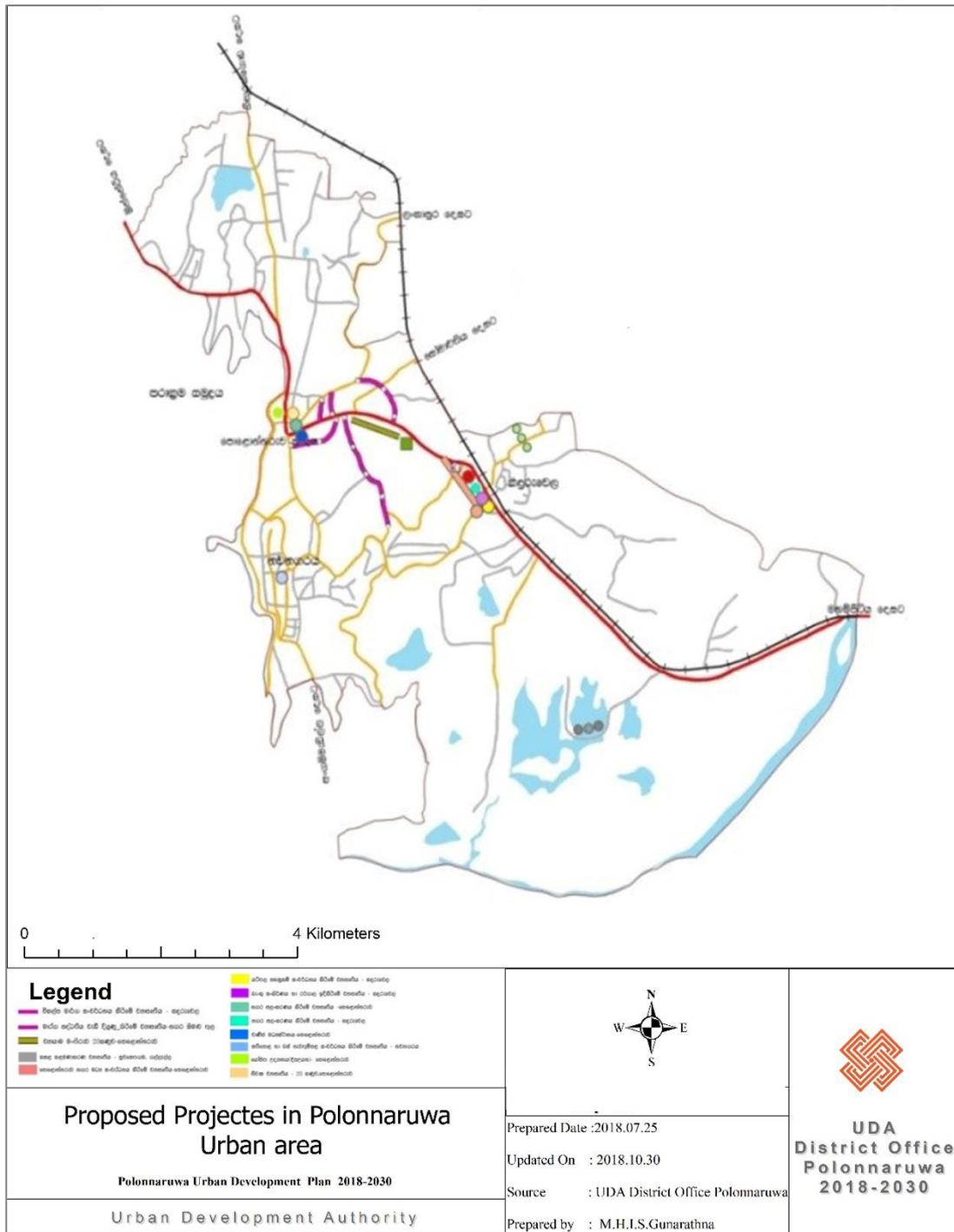
Source: “Pibidemu Polonnaruwa” programme

Table 5.1: Proposed and ongoing projects of Polonnaruwa urban area.

No	Type of Development	Approved Projects in 2017	Approved Amount in 2017 (Rs.M.)	Total Cost
1.	Health (District Hospital Development)	16	700.00	140.65
2.	Supply of Drinking Water	34	1700.00	69.99
3.	Urban Road Development (RDA)	9	2250.00	1700.82
4.	District Road Development	36	1300.00	632.58
5.	Rural Roads Development /Rural Roads Development (New Projects)	59 /551	725.00/259.7	
6.	Sports and Cultural	4	111.00	54.92
7.	Archeological Places Conservation	4	50.00	28.36
8.	Disaster Management	270	100.00	8.14
9.	Urban Development	6	1600.00	372.42
10.	Religious Places Development	41	100.00	46
11.	Construction of Museum and tourist Information Center	2	400.00	143.22
19	Installing accessories in theaters	4	200.00	119.05
20	Information Technology		5.00	-
22	Irrigation Development	25	84.15	9.97
26	wildlife reservation		4.00	
27	Small town Development		190.00	
28	Common Utilities	8	100.00	1.56

Source: UDA Polonnaruwa Office

Figure 5.12: Proposed projects of Pibidemu Polonnaruwa



Source: UDA, Polonnaruwa Office

05. Existing tourism base and hotels

Table 5.2: Tourist arrival to Polonnaruwa

As categorized by Tourist board annual report of year 2016 Polonnaruwa situated in the grand tour route. And it's an again a city in Buddhism and beach route.

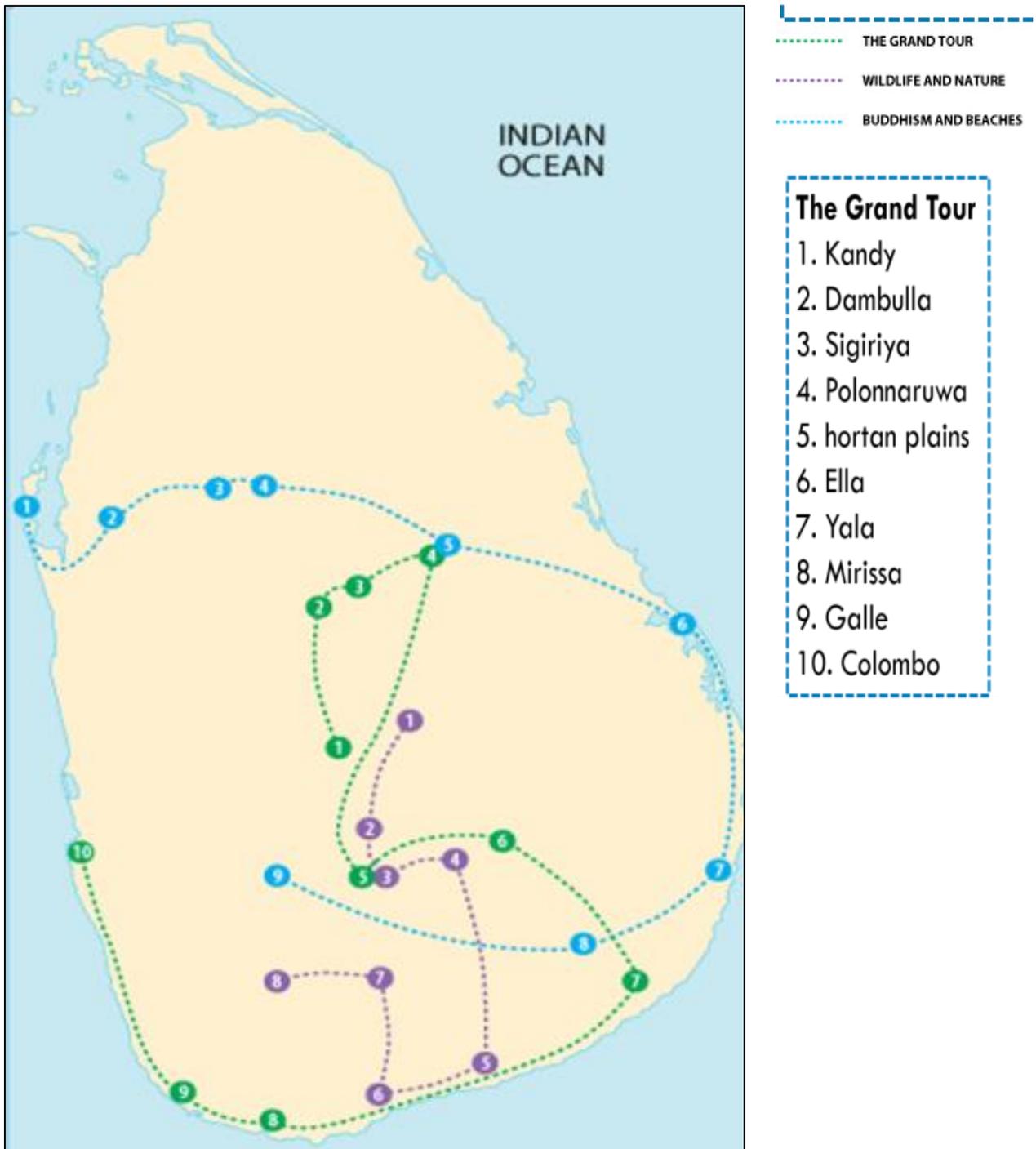
The Foreign tourist arrival to Polonnaruwa is higher than the locals. Approximately it's double than the locals. And it's beyond the tourist arrival for Anuradhapura as well. The peak time is February and August. (Annexure 1)

There area around five, star class hotels in the urban center and more than 50 middle scale hotels and guest houses and more than 100 home stay places advertising in the tourist web sites. (Figure 5.14)

Month	Foreign	Local
January	17386	3531
February	23661	7773
March	17899	13570
April	9740	7417
May	6301	3667
June	5910	6060
July	16885	11004
August	24489	11061
September	11992	6689
October	9921	3609
November	12948	2158
December	17035	7877
Total	174167	84416

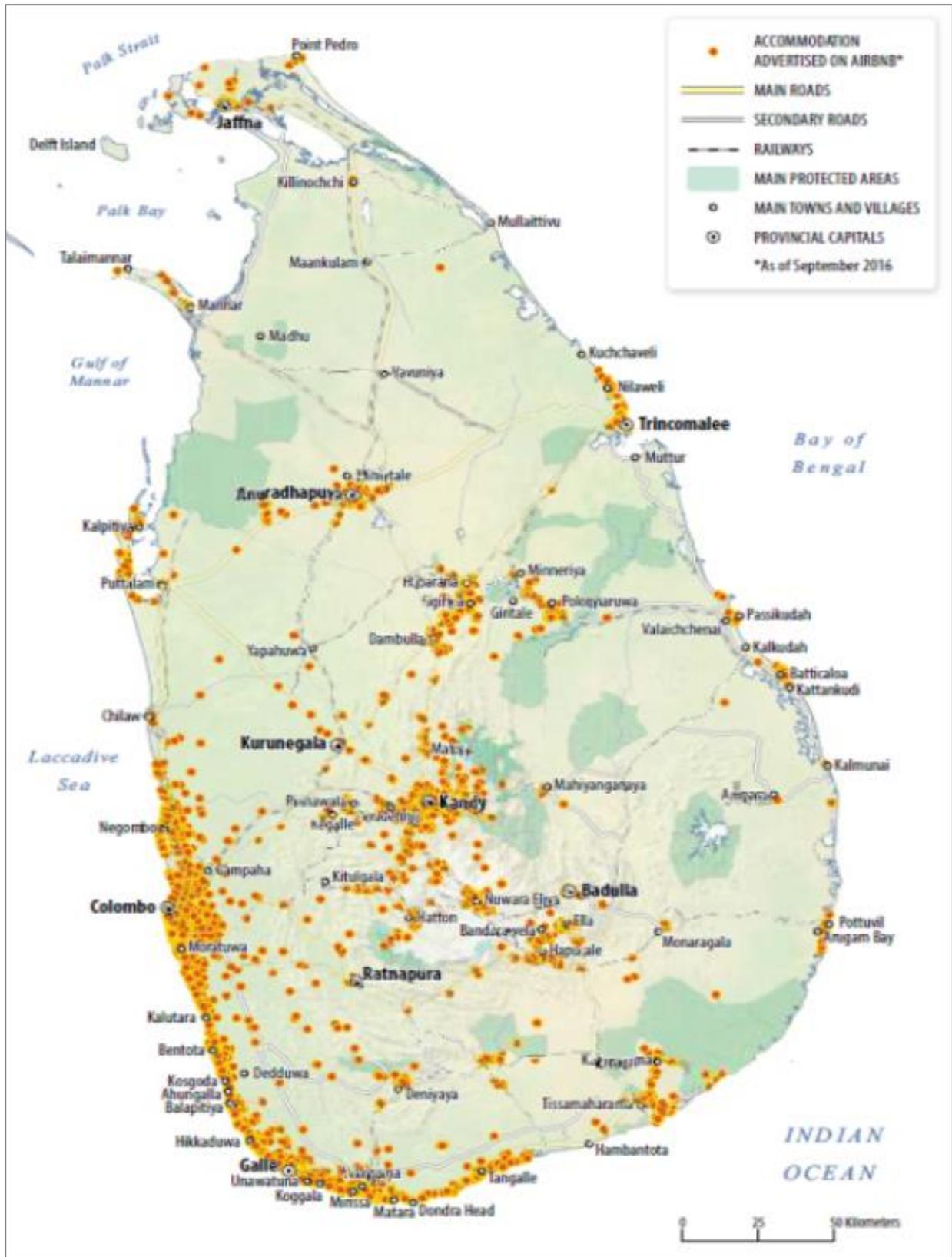
Source: SL Tourist Development Authority

Figure 5.13: famous travelling routes of Sri Lanka - Foreign Tourists



Source: SL Tourist Development Authority

Figure 5.14: Accommodation Concentration around Sri Lanka

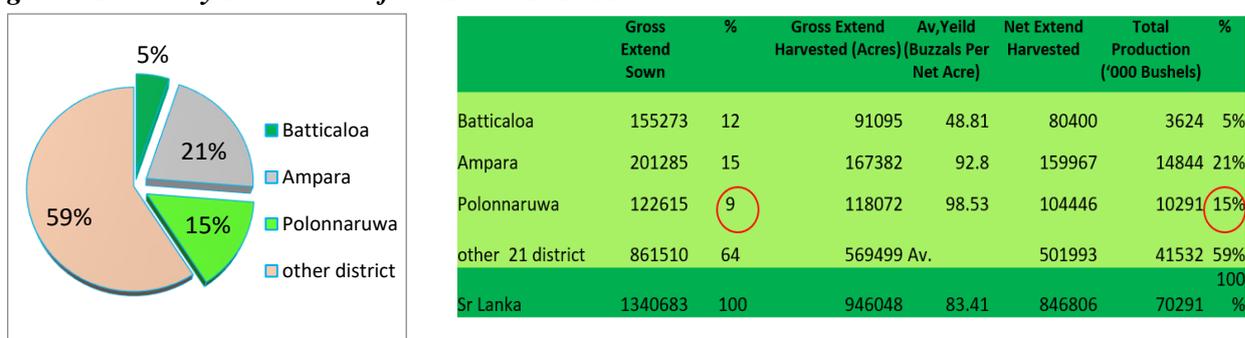


Source: SL Tourist Board

6.Existing paddy production and processing units (Rice Industry)

The beginning of Paddy cultivation in Sri Lanka roots back to the proud history between 161 B.C. and 1017 A.D. Paddy is the most staple crop occupying 34% of total cultivated area in Sri Lanka the total land devoted for paddy is estimated to be about 725,000 Hectares at present and average annual extent is about 870000 ha including two main reaping seasons Yala and Maha. Paddy crops are cultivated as a wetland crop in all the districts of Sri Lanka. From total paddy production of island Polonnaruwa district is producing 15%. And the Average yield per net hectare in Polonnaruwa is higher than the national average.

Figure 5.15: Paddy Production of Sri Lanka 2016 Maha Season



Source: District Statistical report 2015 - Polonnaruwa

Table 5.3: Average yeild per hectare

Average yield per net hectare (Kg)			
	District	Sri Lanka	Production MTs
2015 Yala	5131	4527	280476
2014/20150 Maha	5306	4364	349625

The Rice Factories of Polonnaruwa Processing more than 55% of the Paddy Production of Sri Lanka. There are 6 Large scale factories and 129 of Medium and small-scale factories in urban area. The government seed farm is within planning area and occupying 200 acres of land. And having main 3 paddy stores under government and total capacity is 12500Mt.

7.Identical environmental hotspot in closer proximity to city

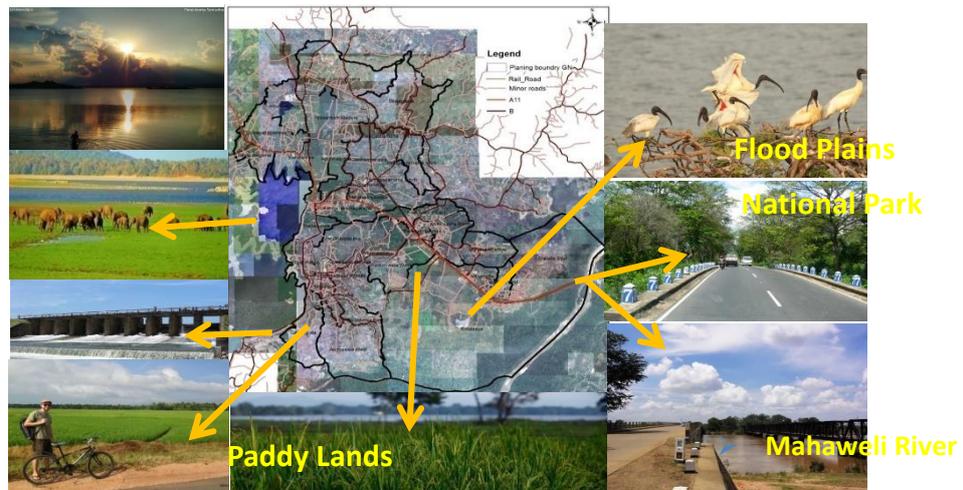
There are 6 National Parks under wild Life Conservation Department surrounding to the planning boundary. The urban area also rich in bio diversity and beautiful places to visit except the sacred city. Parakrama Samudraya Tank reservation and Mahavali flood plain with more than 20 wild elephants, and paddy lands and other wet lands are habitats for many birds, butterflies and many other fauna and flora. The tourist can be benefited with ruins and nature too.

Figure 5.16: National Parks at Closer proximity



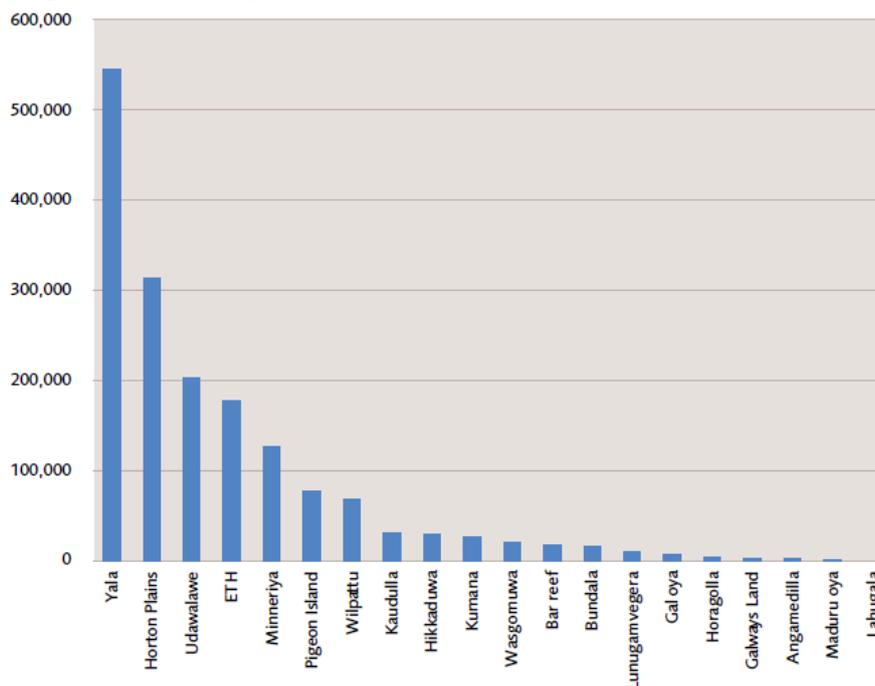
Source: Department of wild life

Figure 5.17: Beautiful locations within the urban area.



Source: Internet

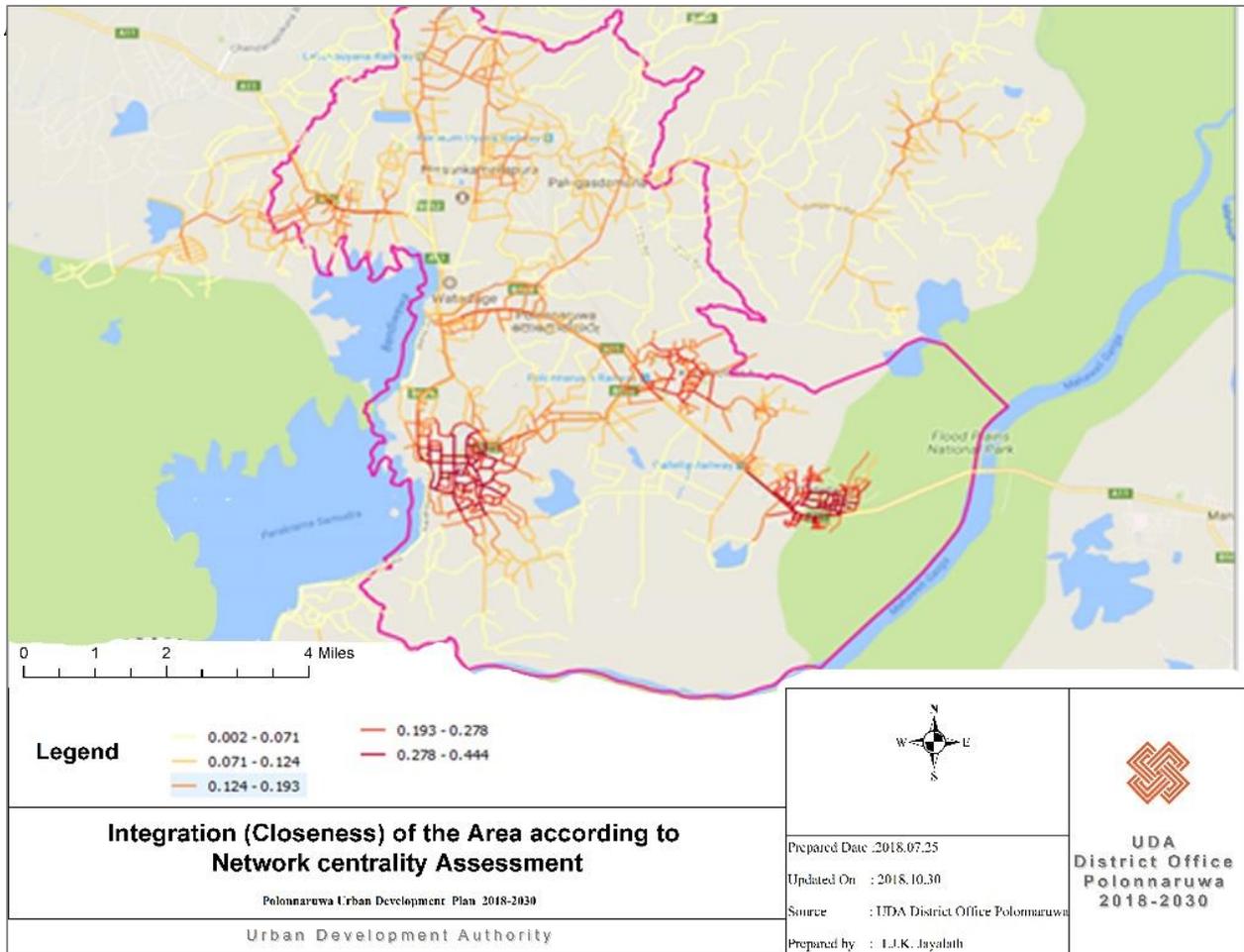
Figure 5.18: No. of visitors at National Parks in Sri Lanka



Source: Department of wildlife

8. Existing road network

Higher accessibility will grater the potentials for development. And Polonnaruwa urban area is well connected with sub urban centers and the integration is high in town centers.



Source: Urban Development Authority, Polonnaruwa District office,

Goal 1: Weakness

1. Not availability of tourism routes than sacred city

There are no any organized travelling routes for the foreign tourist except for watching sacred city. With the interviews held with foreign tourist 90% are not known about the history related paddy culture of the area. Only 40% is having cycling experience to the outer area of sacred city. There are no any display boards of showing the available potentials for enjoy by them.

2. Unorganized tourism information center

There was no any responsible place for tourist to have information regarding the city except central cultural fund and the museum. Those were covered information with the ruins and heritage city. To facilitate tourist with all other services Awakening Polonnaruwa development program constructed the Tourism information center in closer proximity to the heritage city. But the place is not well equipped by relevant organizations yet.

3. 80% of tourism related accommodation centers are not authorized by SLTDA

There are only 12 hotels and accommodation centers are registered in the tourist board from total planning area. There are more than 100 other places are advertising in the tourist web sites. These unregistered accommodation places and untrained staff will harm the future tourist arrival to the city.

4. Traditional paddy cultivation methods are not practicing widely

We have a more than 5000-year history in cultivating paddy lands. The traditional agricultural methods, equipment, seeds, non-chemical pest controlling methods were available. But none of the area is practicing those at the moment. to become a heritage tourism destination in paddy culture this point is considering as a weakness.

Goal 1: Opportunity

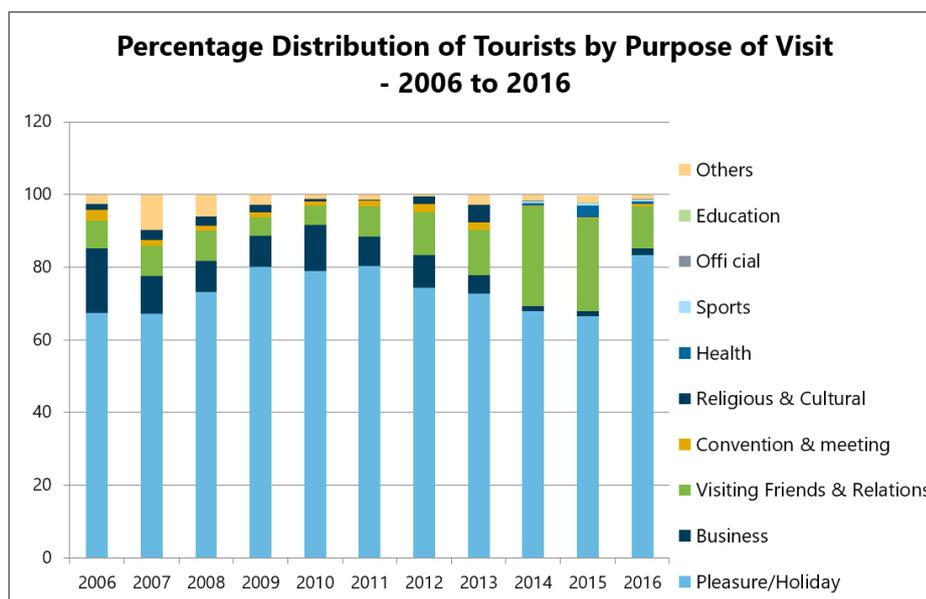
1. Political Willigness

The present president of the country Hiss Excellency Maithripala Sirisena is from the Polonnaruwa district. And his willingness is matching with the vision 2030. With the willingness it has a greater possibility of implementing many projects through different ministries. The “Pibidemu Polonnaruwa Development Programme” is a result of this willingness.

2. Tourist arrival to Sri Lanka

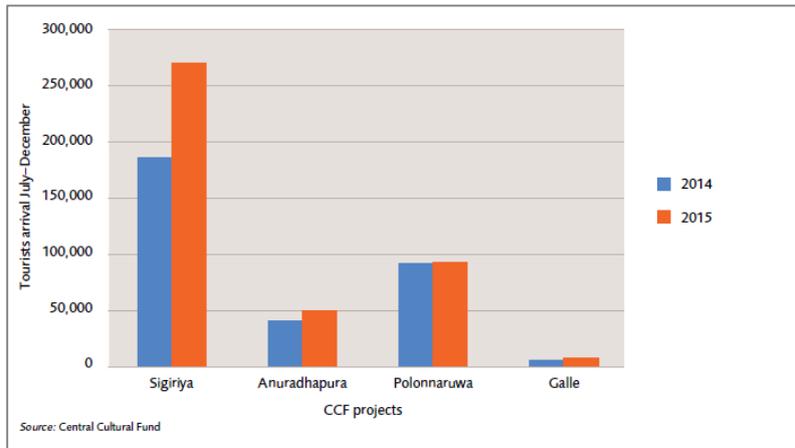
In Sri Lanka, tourism is the third largest export earner in the economy, after remittances and textiles and garments. In the past five years, growth in visitor numbers has been unprecedented, averaging more than 22% year on year, of which 80% to 90% was visitors coming to Sri Lanka on holiday. In 2015, 1.8 million international visitors came to Sri Lanka, stayed an average of 10.1 days, and generated an estimated US\$2.98 billion¹. In 2016, international visitor arrivals reached over 2 million and revenue generated was approximately US\$3.5 billion. (Annexure 9)

Figure 5.19: Distribution of tourist by purpose of visit 2006-2016



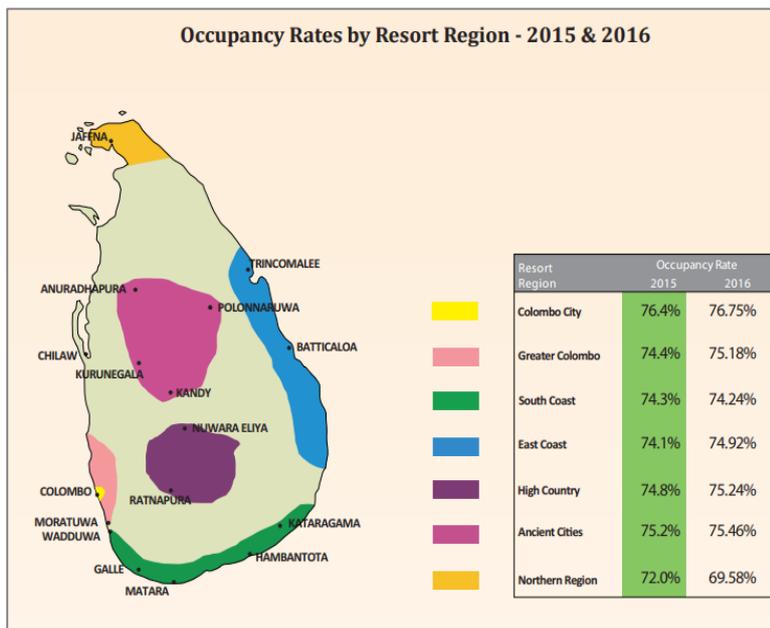
Source: SL tourism development authority

Figure 5.20: No of Visitors in main heritage cites



Source: SL tourism development authority

Figure 5.21 Occupancy rates by resort region 2015-2016



Source: SL tourism development authority

3. Sri Lanka Tourisms strategic plan 2017-2020 by Ministry of Tourisms Development and Christian Affairs

The context and rationale for this Tourism strategic plan (Tsp), which recommends actions and implementation mechanisms for the next four years, with a long-term view toward Tourism Vision 2025 and achieving the United Nations (UN) sustainable development goals. The target is to transform the tourism industry to make Sri Lanka competitive in the global travel market place.

Fundamentally, the ambitions of this TSP are to increase revenue for the country, support local communities, and increase tourism on a sustainable platform.

The plan will ensure that

- Visitors have more opportunities to spend on extraordinary experiences, with more value-added sites to visit and stay longer.
- Communities are active participants in delivering the memorable experiences.
- Investors have access to hassle-free opportunities and partnership prospects.
- A skilled, service-oriented workforce is better equipped to engage in higher-value tourism Services.
- Government is well coordinated and consistent, prioritizing sustainability and using reliable data to make decisions.

The whole plan is a big opportunity with goal 1 to achieve. By 2025, it is hoped that Sri Lanka will be identified as a place for memorable, authentic and diverse tourism experiences. And if this strategic plan succeeds for whole country the Polonnaruwa has a huge opportunity in achieving goal 1 in year 2030.

4. Local & International Demand for Rice

Demand for paddy in Sri Lanka increases by 1.1% per year and which requires production to be increased by 2.9% per year. Sri Lanka currently produces 2.7 million of rough rice annually and satisfies around 95% of the domestic requirement. Rice provides 45% total calorie and 40% total protein requirement of an average Sri Lankan. According to the statistics there is deficit of 5% from the national requirement and the district income source is having a higher potential in paddy production.

Unlike maize and wheat, most rice tends to be eaten where it is produced and so does not enter international markets. Yet, the volume of international rice trade has increased almost fourfold, from 7.5 million tonnes annually in the 1960s to an average of 28.5 million tonnes during 2000–2009.

In the international rice trade, a relatively small number of exporting countries must interact with a large number of importing countries. In the first decade of the 2000s, the top five exporters had 81% of the world market (up from 69% in the 1960s). Since the 1980s, Thailand has consistently been the world's largest exporter of rice, followed by Vietnam and India.

based on the projections made by the Food and Agricultural Policy Research, the global rice demand is expected to rise up to 496 million tons in 2020 and up to 555 million tons in 2035. Especially the demand on the Asian rice market is projected to account for more than 60% of the total rice demand increase, despite of decline of consumption in China and in India. Also, in Africa, 30 million tons more of rice will be needed to meet the increasing demand of more than 100%, compared to 2010. In addition, in the Americas the total rice consumption is projected to rise with more than 30% over the next decades.

All above explanation gives the evidence of continues demand for rice in internationally and shows that if produce more there is a huge market within island and the internationally.

Table 5.4: Demand for rice internationally

<u>Country</u>	<u>year</u>	<u>variable</u>	<u>source</u>	<u>value</u>	<u>unit</u>
Sri lanka	2017	Export quantity	USDA	5,000.00	Tonnes
Sri lanka	2017	Import quantity	USDA	400,000.00	Tonnes

Source: <http://ricestat.irri.org:8080/wrsv3/entrypoint.htm>

5. Agro tourism concept specialize for paddy culture

Agricultural tourism is a commercial enterprise at a working farm or ranch conducted for the enjoyment and education of visitors, and that generates supplemental income for the owner or operator. In the tourisms world there is a huge trend in this topic and can do with existing infrastructures as well. Only need the proper guidance.

Figure 5.22: Tourism activities for Agro tourism



Source: Internet

Goal 1: Threat

1. Decline of heritage tourists to Sri Lanka

Tourist arrival for Sri Lanka can be divided into 10 types. Pleasure/holiday take the higher percentage. When studying the statistics from 2006 there is around 9% decline at 2016 by religious and cultural related factors. Which shows the threat for the goal no 1. (Figure 1 percentage distribution of tourist by purpose of visit 2006-2016)

6.2 Goal (2)

Protection of Historic and Environmental sensitive areas.

Strength	<ol style="list-style-type: none"> 1. Heritage city Declaration 2. Ruins With a great History 3. Already protected Environmental sensitive areas 4. Central Cultural fund programmes
Weakness	<ol style="list-style-type: none"> 1. Infrastructure Development projects in eco sensitive areas 2. None availability of clear boundary demarcation of reservations
Opportunity	<ol style="list-style-type: none"> 1. Government trends towards environment protections 2. Political willingness 3. Arrival of tourists to Sri Lanka 4. list of Heritage cities 5. Agro tourism concept specialized for paddy culture 6. Low probability of natural disasters
Threats	<ol style="list-style-type: none"> 1. Drought situation

Goal: 2 Strength

1. Heritage city Declaration by UNESCO

Since the area declared as a world heritage city itself giving a protection of the area. The decline or change of the selected criteria can delisted as a world heritage city and it resulted a strong protection to the sites.

2. Ruins under Archeological Department and Central Cultural Fund programmes

The Polonnaruwa sacred city declared by Ceylon government gazette no 7831 of march 3 1931 and Ceylon government gazette no 10222 of march 9 of 1951. Total land area is 446 ha. From that 243 ha is developed to exhibition level. The area is already protected by law.

The ruins inside the site is conserved and maintain by Central cultural fund. Inner city north side wall conservation, inner city east wall conservation, Parakramabahu palace, Lankathilaka image house, paintings of Jayamaha temple, and many other ruins are included to CCF list.

3. Already protected Environmental sensitive areas

The total urban area consists of 31% of paddy land. Those are protected under agrarian development department. And 15% belongs to the Flood plain national park under the department of wildlife conservation.

Goal 2: Weakness

1. Infrastructure Development projects in eco sensitive areas

The development pressure is high in the Kaduruwela commercial city center and heritage city. Many surrounded land uses are low lands and paddy lands. In last 5 years around 2% of paddy lands filled to implement infrastructure projects. Ex: 100ft bypass road to A11 at Kaduruwela National Kidney Hospital etc.

2. Not availability of clear boundary demarcation for reservations

There are tank reservations, archeological reservations, wildlife reservations in the urban area. From them only archeological site has the clear physical boundary. The other reservations are easily encroaching due to the lack of awareness. And in Sirisangabo pedesa, Nishshankamalla pura and Ethulapitiya area has higher issue due to the encroachments of heritage site.

Goal 2: Opportunity

1. Government trends towards Environment Protections (2030 Agenda for Sustainable Development”).

The United Nations 2030 Agenda for Sustainable Development is the new agreement signed by the world. It has 17 goals, 169 targets to be achieved by 2030. Out of 17 goals 11,12,13,14,15 are directly about environmental protection.

Figure 5.23: Sustainable Development Targets



Source: Sustainable development 2030

6.3 Goal (3)

To make a pleasant & comfortable living in the tropical environment for residents & the commuters.

Strength	<ol style="list-style-type: none"> 1. Heritage city Declaration, 2. Ruins with a great History, 3. Already protected Environmental sensitive areas, 4. Central Cultural fund programmes, 5. Pibidemu Polonnaruwa programme, 6. Identical Environmental Hotspot, 7. Existence of Green environment, 8. Existing irrigation & Infrastructure Network, 9. Low probability of Natural disasters, 10. Existing Solid Waste Management system,
Weakness	<ol style="list-style-type: none"> 1. No proper drainage system, 2. Unbearable Temperature in city Centers, 3. Reclamation of the critical elements in the hydrological system, 4. Less awareness about alternative road network.
Opportunity	<ol style="list-style-type: none"> 1. Political willingness 2. Low probability of natural disasters 3. Town east of Polonnaruwa water supply project
Threats	<ol style="list-style-type: none"> 1. Drought situation

Goal 3: Strength

1. Pibidemu Polonnaruwa Programme

	Type of Development	Approved Projects in 2017	Approved Amount in 2017 (Rs.M.)	Total Cost
1	School Development	88	600.00	382.37
2	Construction of Indoor Stadium in Royal Collage	1	146.62	71.48
3	Construction of Swimming pool in Ananda girls Collage	1	59.00	-
04	Piriven Development	11	150.00	44.81
05	Health (District Hospital Development)	16	700.00	140.65
06	Health (Polonnaruwa Kidney Hospital Development)	14	375.00	-
07	Supply of Drinking Water	34	1700.00	69.99
08	Urban Road Development (RDA)	9	2250.00	1700.82
09	District Road Development	36	1300.00	632.58
10	Rural Roads Development /Rural Roads Development (New Projects)	59 /551	725.00/259.7	
11	Development of Livestock		12.00	11.02
12	Sports and Cultural	4	111.00	54.92
14	Disaster Management	270	100.00	8.14
15	Urban Development	6	1600.00	372.42
17	Religious Places Development	41	100.00	46
19	Installing accessories in theaters	4	200.00	119.05
20	Information Technology		5.00	-
21	Mahaweli Development	1	23.88	5.17
22	Irrigation Development	25	84.15	9.97
23	Agriculture development	2	100.00	0.06
24	Agrarian service	25	59.35	9.05
25	livelihood development	3266	600.00	7.95
26	wildlife reservation		4.00	
27	Small town Development		190.00	
28	Common Utilities	8	100.00	1.56
29	Administrative and management		5.00	3.97

Table 5.5: List of projects in Pibidemu Polonnaruwa development programme

The main purpose of the Pibidemu Polonnaruwa development programme is to upgrade the city dweller living condition and in several sectors. From total development Programme 27 numbers of projects are planned to provide social and physical infrastructure facilities to achieve that target. Table 5.5 shows the list of projects which directly support to goal 3.

2. Already protected Environmental sensitive areas

A tropical climate in the Köppen climate classification is a non-arid climate in which all twelve months have mean temperatures of at least 18 °C (64 °F). In tropical climates there are often only two seasons, a wet season and a dry season. Tropical climates are frost-free, and changes in the solar angle are small. In tropical climates temperature remains relatively constant (hot) throughout the year.

In order to achieve comfortability in tropical climate require more green spaces. And to absorb sudden heavy rain it requires much low land to bare surface water runoff. The urban area is having Prakrama Samudraya and around 4 small tanks, 15% wildlife forest area, 400 ha of heritage city with green forest, 31% paddy lands spread all over the city.

3. 90% of houses have Home gardens

Other than the commercial city center and Polonnaruwa junction, all other places have residential units with a home garden at lease consist of 2 large trees. It's a huge strength in to the goal 3.

4. Existing Solid Waste Management System

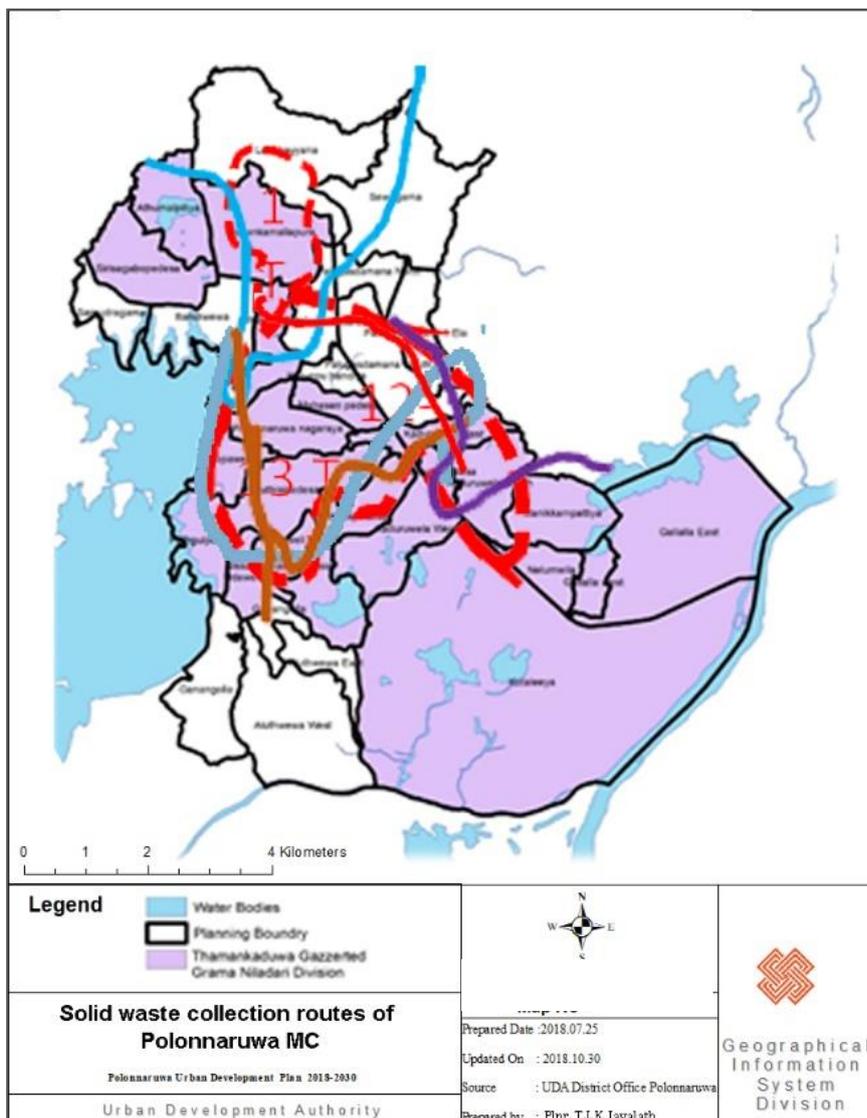
There is a well-planned solid waste collection method in the area. 12-13 Tones generated per day from town area and 1 Tons per day from sacred area. Waste is collecting from tractors daily. The local authority is only collecting waste if those are separated in degradable and non-degradable way. Comparatively 100% houses are separating in rural area, urban area is having common dustbins and only 50% in urban area waste is separated.

Figure 5.24: Type of waster colleting from Polonnaruwa



Source: Polonnaruwa MC

Map 5.2: Solid waste collection route of Polonnaruwa MC



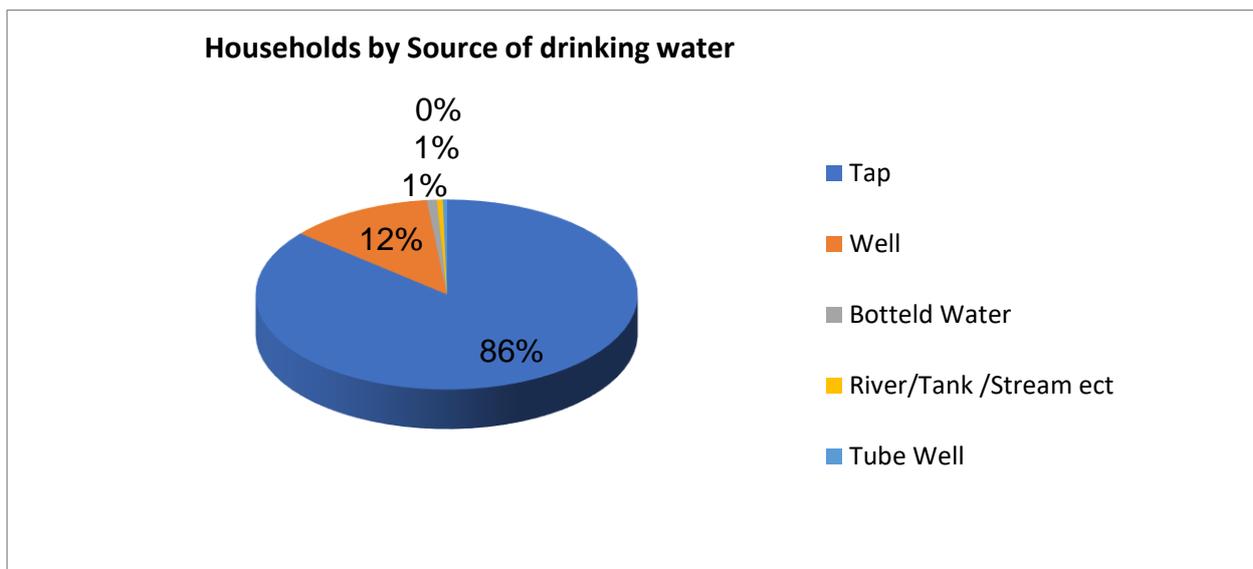
Route	Villages
Route 01	Bandiwewa, 23 post, Dobigama, Circular Road, Sewagama
Route 02	Paththini Pedesa, Govt Quarters, Akkara 500, New Town road, 4 th Cannel road
Route 03	Tourist Hotels, Beta 03 Rd, Hijra Mv, Bank place, Parakum Peadesa
Route 04	28 post, Kotalawala Rd, Coop Rd, Manik place, Muslim Colony, Manikkampattiya
Route 05 (Night)	Polonnaruwa Kaduruwela Main road

Source: Thamankaduwa MC

5. Existing irrigation & Infrastructure Network

The comfortable living in an urban environment is mainly depending on the level of infrastructure facilities, amenities in the area. In that sense the basic facilities already available in the urban area is strength for the goal 3. The well-connected road network is available within the city. The 86% of families use pipe bone water. All houses have 98% electricity supplies. From whole district the best services (educational, health, and other services) are available to residents of the city (Annexure 10). The irrigation system is spread whole over the area. In dry season water distributed from Parakrama Samudra main outlet to other irrigation channel network and it support to the ground water table.

Figure 5.29: Drinking water usage



Source: Divisional Secretariat

Goal 3: Weakness

1. No proper drainage system

According to the Field visit and Surveys done by UDA district office Polonnaruwa it has identified 2/5 housing units have some issues regarding Drainage. Concrete drains available only along Main roads. ongoing Road improvement increases the height of road and many Houses are now in lower level. All the other area covered by Earth drains and those are not well maintained and filled in many parts. Waste water drainages are not available and in commercial city waste water mixed with rain water and inundates the home gardens.

Map 5.9: Drainage Network

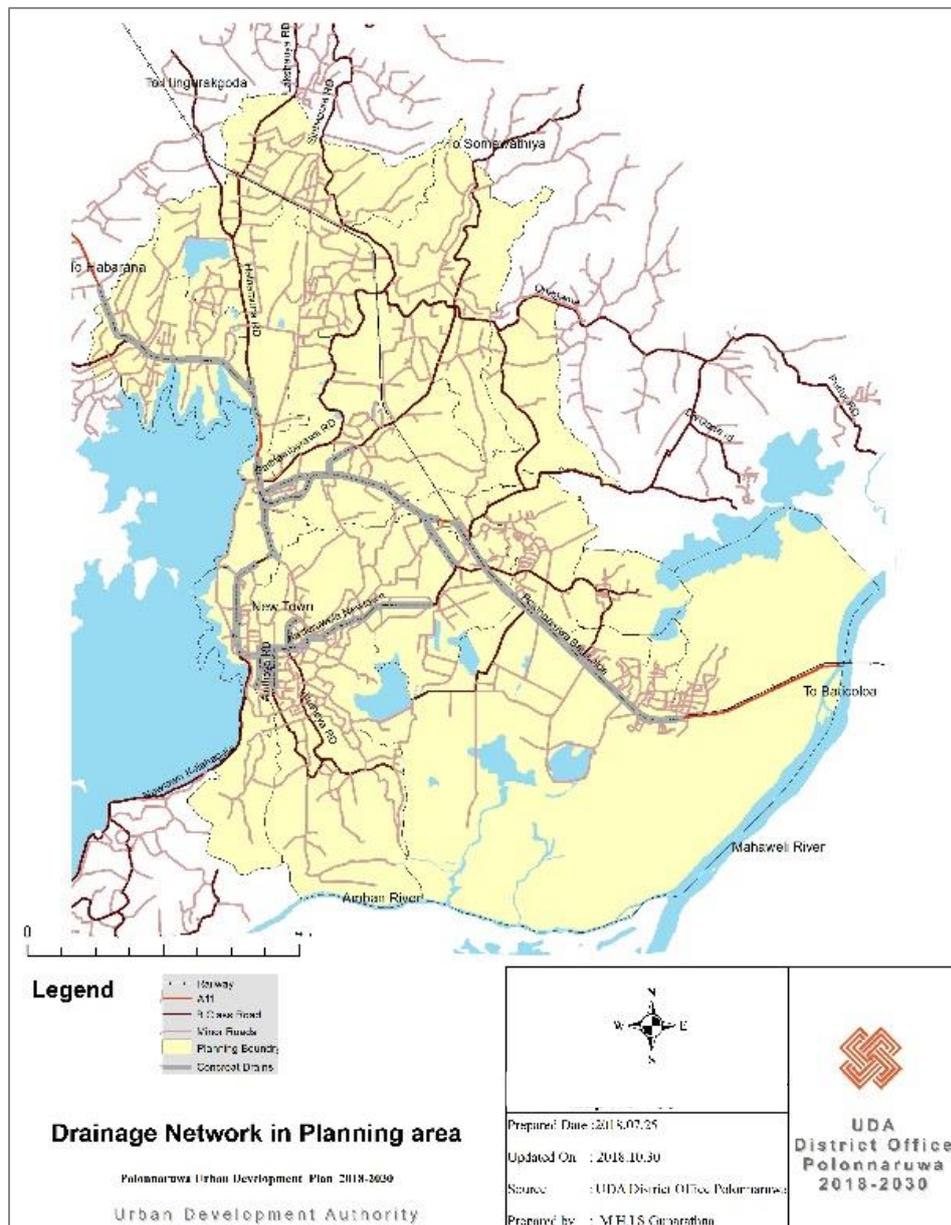


Figure 5.25: Photographs on existing drainage



Source: Field Visit

2. Unbearable Temperature in Town Centers

Since Polonnaruwa is belonging to the dry zone of Sri Lanka and naturally it has high temperature in day time such as 28c to 32C. But especially the Kaduruwela commercial center is having increased temperature around 5C due to several reasons and it created the urban heat island effect. The main reasons for this effects are,

- **The air ways blocked by buildings**

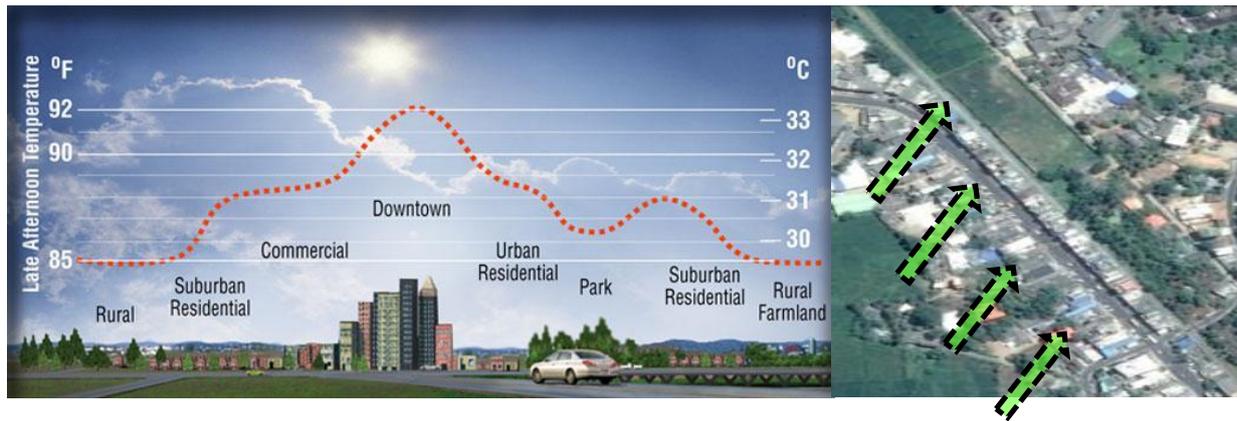
The wind direction fully blocked to Main Street throughout the year with its formation. Driest time of the area is yala monsoon May to August. And the North East monsoon is the same. The natural wind direction blocked with buildings and no any spaces between buildings. For an example the left side on A11 road having 1st cross street in 655m from starting point of Kaduruwela commercial city when comes from Polonnaruwa hospital junction. The blocking of wind by buildings also inhibits cooling by convection and prevents pollutants from dissipating. Waste heat from automobiles, air conditioning, industry, and other sources also contributes to this.

- **The building materials**

The main cause of the urban heat island effect is from the modification of land surfaces. Dark surfaces absorb significantly more solar radiation, which causes urban concentrations of roads and buildings to heat more than suburban and rural areas during the day; materials commonly used in Kaduruwela town for pavement and roofs, such as concrete and asphalt, have significantly different thermal bulk properties (including heat capacity and thermal conductivity) and surface radioactive properties than the surrounding areas.

Waste heat generated by energy usage is a secondary contributor to increase the town temperature.

Figure 5.26: The air direction of city in May to August (Yala monsoon)



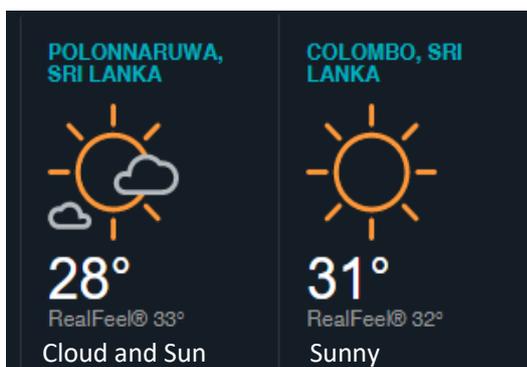
Source: Internet

- **No green shades**

Without having any tree Kaduruwela also lose the shade and cooling effect of trees, and the removal of carbon dioxide. Trees are a necessary feature in combating the urban heat island effect because they reduce air temperatures by 10 °F or 5.5 °C, and surface temperatures by up to 20-45 °F or 11-25 °C.

The heat island effect can be counteracted slightly by using white or reflective materials to build houses, roofs, pavements, and roads, thus increasing the overall green shades and wind alleyways of the city.

Figure 5.27: The Heat Island Profile



Source: <https://www.accuweather.com/en/weather-glossary>

- Sachindra, D. A., Ng, A. W. M., Muthukumar, S., & Perera, B. J. C. (July 2015). *Impact of Climate Change on Urban Heat Island Effect and Extreme Temperatures: A Case Study*. *Quarterly Journal of the Royal Meteorological Society*
- "Cool Pavement Report" (PDF). *Environmental Protection Agency*. June 2005. p. 14. Retrieved 2009-02-06.

3. Reclamation of critical elements in the hydrological system

The Polonnaruwa urban area located in comparatively flat terrain. And water flowing in very low slope. Because of that a small disturbance can damage whole hydrological system. Parakrama Samudraya and irrigation channels, rain water drainage, and paddy fields are playing main character in the system. The paddy field absorbs the water and spill over water going through the

small channels and collated in small tanks. The rainwater from urban area also flows to paddy fields. The ongoing infrastructure projects such as 100ft A11 road and town expansion project filed 32 acres near to commercial city and the effects of that still unpredictable.

4. Less awareness about alternative road network

High traffic congestion along A11 road can be seen throughout the day time. City bypassing vehicles and daily commuters are there. According to the surveys it identified that to take services from main three nodes 95% of vehicles using the main routes. When observing the road network of the area it can be seen many alternative roads to link main three nodes and avoid the nodes as well. The problem lies with the awareness about alternative routes. For an example there are 3 sub routes to avoid hospital junction and got commercial city. But only 5% of vehicles are using them.

Goal 3: Opportunity

01. Town east of Polonnaruwa water supply project by water supply and drainage board.

Accrding to the present water demand whole Thamankaduwa DS division needs 16 100m³ per day. Total Polonnaruwa district required 80000m³ per day. This calculation is based on the assumption of per capita water demand is 120l per day and from that 8% is industrial and 10% of Commercial demand from domestic requirement. IF consider population growth rate 1.5% from 2012 census Thamankaduwa DSD demand in 2030 will be 19500 m³ per day.

With this Town East Project Thamankaduwa DSD will cover 65% of the total requirement of the area and increase the capacity of the exsiting water treatment plants at Gallella upto 13500m³/day, Polonnaruwa 6500m³/day. Exsisting water supply and with Town east project water supply for future city will be fullfilled. And the water quality of distributed water by water board has proven the water source will not effect for increase the kidney diseases.

Table 5.6: Water Treatment Plants in Polonnaruwa urban area by NWS&DB.

Location	Present demand (m ³ /Day)	Supply (m ³ /Day)	Planned capacity in future (m ³ /Day)	Water source
Gallella	10100	8800	13500	Mahaweli river
Polonnaruwa	5000	3800	6500	Parakrama Samudraya

Source: NWS&DB

02.Low probability of natural disasters

The Polonnaruwa urban area recorded comparatively few disasters than other many cities of the country. Drought, Flood, High Wind and lighting are recorded as disasters in Polonnaruwa area (Annexure 11). But no any deaths are recorded. The flooding has high effect in urban function due to the blocking in Manampitiya by Mahaweli River. Each year in December recorded a flood situation.

In addition to that, droughts are affecting to the paddy cultivation of whole district in dry season. But since main water source is Mahawali river the water supplies to the area remain unchanged. With construction of Moragahakanda reservoir the parakrama samudraya is filled and it can continue the water supply for irrigation channels in dry season. It will increase the ground water table and droughts not effect to urban area in future.

Goal 3: Threats

1. Drought and high wind situation

The climate change of world can be a threat in Oder to achieve comfortable living in urban area. Since the area is situated in tropical climate whatever changes in reduce the temperature of the city can be low impact if global warming increases rapidly. The high winds recoded in once 30 years and after 1996 there is a potential of occurring it again at 2026 likewise the bad effects of climate change with have high impact on whole district social, physical, and specially economically. Polonnaruwa urban area as main service center of district will have higher impact accordingly.

6. THE PLAN

6.1 Concept Plan

To achieve the vision of “Green glorious heritage in kingdom of rice in 2030” developed the concept plan for the city. The concept plan is a vision on physical form and can be explained as future spatial structure of the city. To identify a proper spatial structure, it has been studied the evolution of town and existing spatial form of the town. The concept plan 2030 is based on,

- Preserve the Identity of city and sensitive areas.
- Achieve comfortable living in the tropical environment.
- More Space for industries.
- Optimum utilization of existing Infrastructure networks.

After analysis of advantages and disadvantages with available options, finalized the concept plan to Continue Existing Spatial Form with improvements. The proposed spatial structure will Preserve the sensitive areas and Facilitate the Commuters of the city for each use. It’s easy to utilize the existing Infrastructure networks in optimum way and it will create more spaces for industrial activities & comfortable residential spaces by 2030.

In this concept plan has been identified to continue the existing spatial form with improvements and the three main nodes and five sub centres are as follows. (Map 6.1)

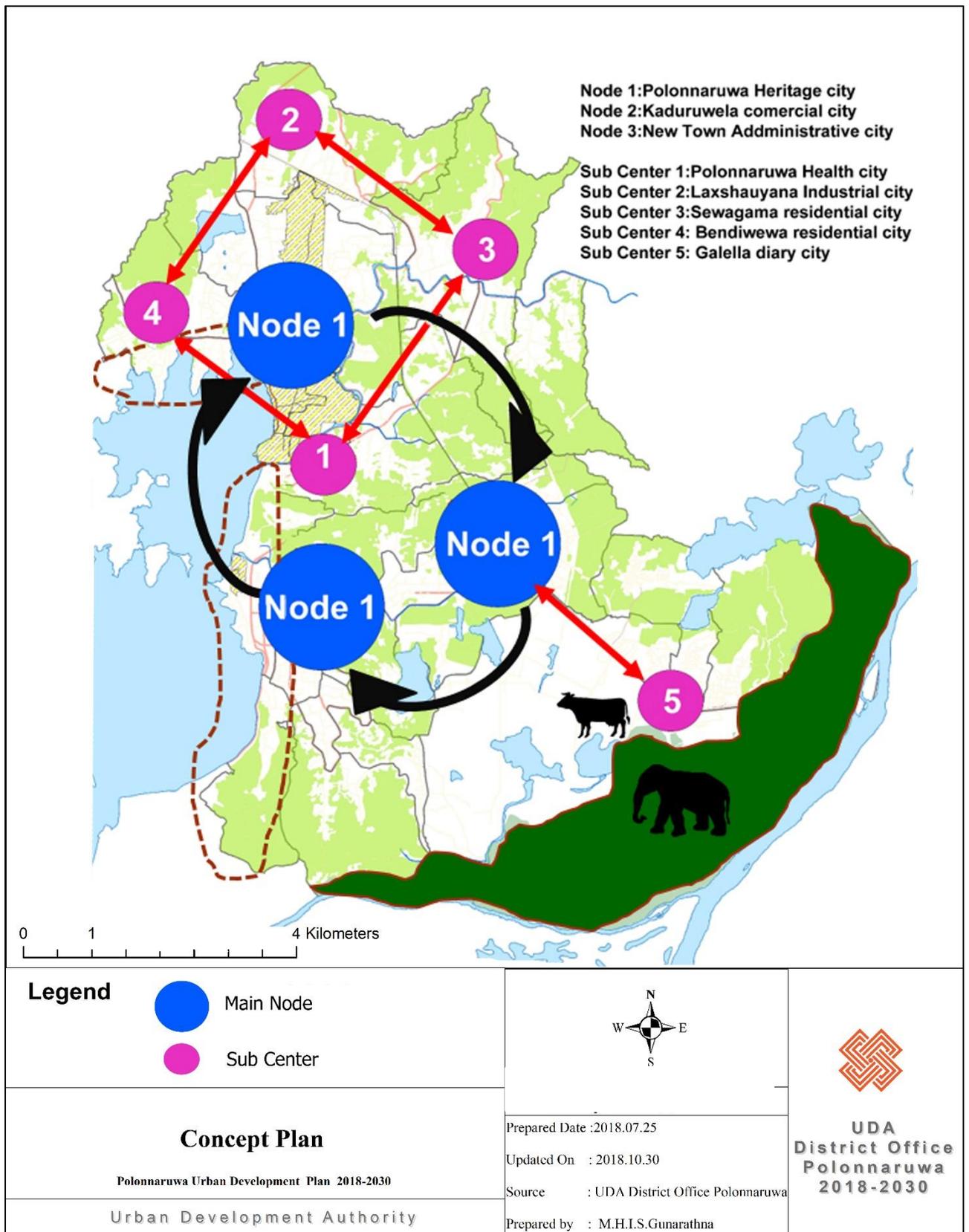
1. Main Nodes

1. Polonnaruwa Heritage city
2. Kaduruwela Commercial City
3. New Town Administrative city

2. Sub centers

1. Polonnaruwa Health city
2. Laxshauyana industrial city
3. Sewagama residence city
4. Bendiwewa residential city
5. Gallella diary city

Map 6.1: The Concept Plan



Source: UDA District office, Polonnaruwa

6.2 Proposed Land Use Plan

The proposed Land use plan of Polonnaruwa 2030 has finalized ensuring the identity and the character of the city. Target of this development plan is to achieve the vision, “Green Glorious Heritage in Kingdom of rice”, also relevant objectives and goals. When implementing this plan, it will be keeping the identity of the Local authority and the other ongoing projects like “Pibidemu Polonnaruwa”.

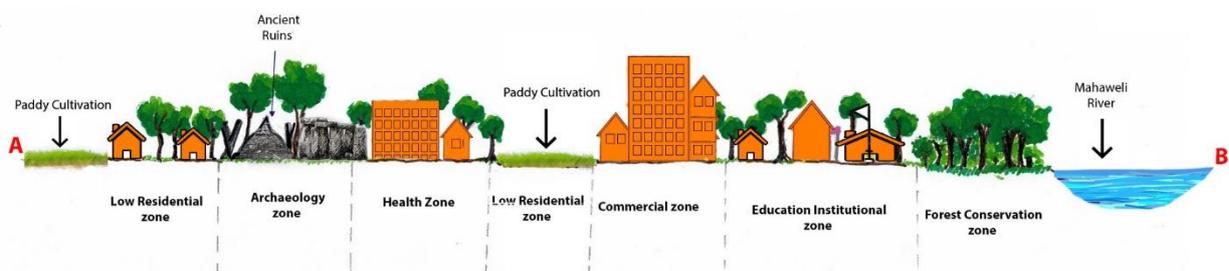
Considering the urban form and the natural environment of Polonnaruwa, it is must to arrange the city while protecting the natural environment and the cultural value of the city for its sustainability. Therefore, it has been identified the zones that need to densify while limiting the densification and protect the natural environment. Zones which are going to densify will be arrange according to the urban which gives a real meaning to the city. Landscaping, beautification, building heights and open spaces will be strategically identified to the certain locations. It will be decided the landuse pattern based on shape of the building, density and the physical space for recreation.

New town administrative city, Polonnaruwa Heritage city and Kaduruwela commercial city are the main nodes which have been identified. Those three centers having three different characteristics and this strategic plan will maintain those characters while developing them for the betterment of Polonnaruwa city.

Along the A11 road, there are different activities can be identified related to health, commercial, dairy, Industries and education. But those land uses have not optimally arranged in order to get the optimum utilization of it for the betterment of the city.

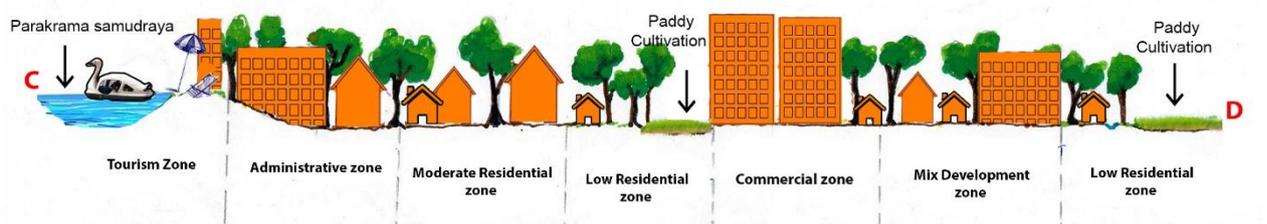
With the proposed zoning plan for Polonnaruwa urban development area 2030 it has been identified below spatial structure and different densities of each zones. It has been displayed using three separate sections (AB, CD, EF) within planning area (Annexure 12). By this sections it can be easily get the image of land use pattern and its spatial arrangement vary under respective zones in planning area. (figure 6.1, figure 6.2, figure 6.3)

Figure 6.1: Section AB



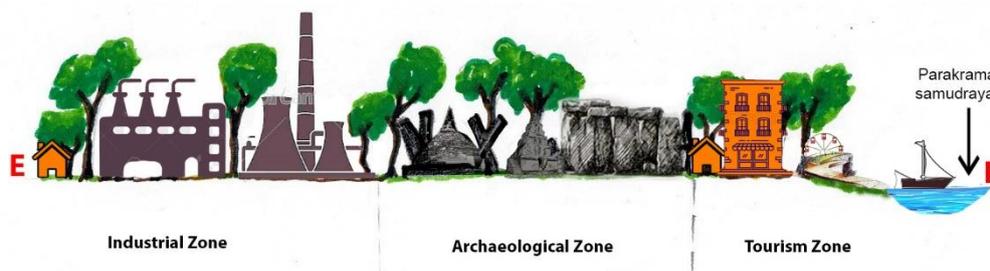
Section AB covers spatial arrangement starting from low residential zone, archaeological zone, Health zone, Low residential zone, Commercial zone, Education Institutional zone and end with Forest conservation zone. According to the buiding height of low residential zone with paddy lands it has less density as it shows in the figure 6.1. Inbetween health zone and commercial zone still there are conserved paddy lands. Commercial zone has the densified building pattern and when it become to institutional zone, there are moderate density of buildings which are mainly for institutional purpose. Forest conservation attached with Mahaweli river is protecting natural environment according to the plan 2030.

Figure 6.2: Section CD



Section CD (Figure 6.2) covers spatial arrangement of low Tourism zone, Administrative zone, Moderate residential zone, Low residential zone, Commercial zone, Mix Development zone and Low residential zone. Low residential zone with paddy lands next to commercial city will help to control the heat in the city center by opening wind corridors. Tourism zone around Parakrama samudraya will enhance the scenic beauty and the compatibility of the zone and it also attract tourists into the city. Indirectly it helps to open up the wind into the city and reduce the heat of the sacred city. Low residential zone identified at the D corner because of the flood disaster happes yearly.

Figure 6.3: Section EF



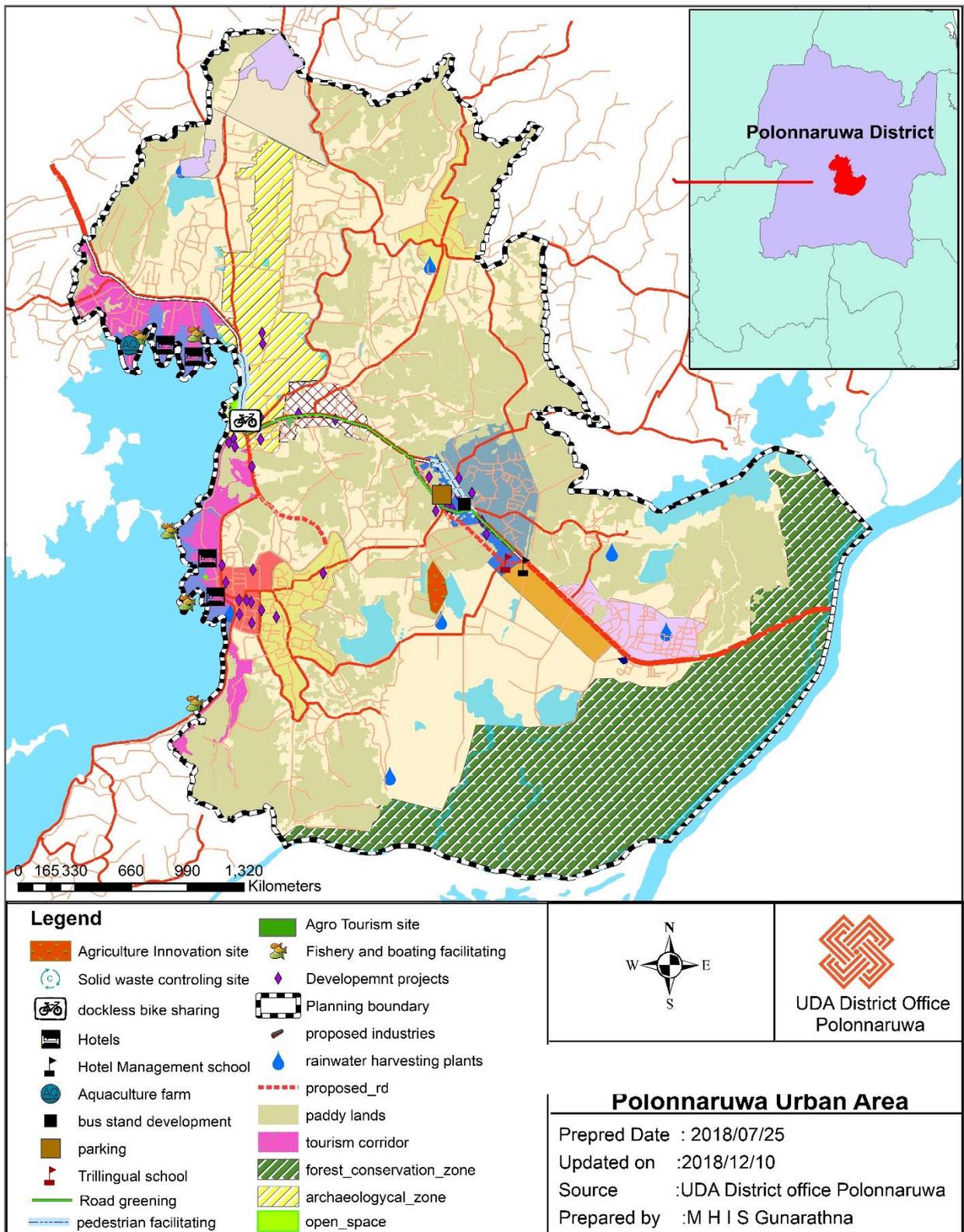
Section EF (Figure 6.3) covers spatial arrangement of Industrial zone, Archaeological zone and Tourism zone. Tourism zone attached to Archaeological zone will attract tourists into the city so that more priority on conserving natural environment and heritage value of those zones. Industry zone has densified with urban structure mix with natural environment.

Considering the planning boundary, 30% of the total area has been used for paddy cultivations, 15% for forest conservations and 4% for archeological site. Accordingly, 50% of land use allocated for greenery and sacred area which can be identify as the heart of Polonnaruwa city. The heritage city with the view of Parakrama samudraya is express the sense of Polonnaruwa city. With the limited attention on these sensitive areas, there can be seen a risky situation with declining trend of those landuses that will lead to harm for the character of the city.

Close to the Mahaweli river and it's attached natural forest cover area always inundate for once a year. Therefore, the strategies have formulated to minimise the population density for that areas and have identify potential and liveable areas that suitable for living.

There are separate FAR and Plot coverages identified for variety of urban landuses as a strategy. Therefore, different level of densities for each zone have been identified through rules and regulations.

Map 6.2: Proposed Landuse – 2030



Source: UDA, Polonnaruwa district office

6.3. Social and Physical Infrastructure Development Strategies

This section Analyze the strategies under the Social and Physical Infrastructure Development to acheive the Vision of “Green Glorious heritage city in Kingdom of rice”. Proposed Service plan, Proposed Transportation plan, Proposed Water supply plan, Proposed Electricity and Data lines plan, Proposed Drainage and Sewer Lines plan and Proposed Waste Management plan have been identified under the Social and Physical Infrastructure Development Strategies.

6. 3. 1 Service Plan

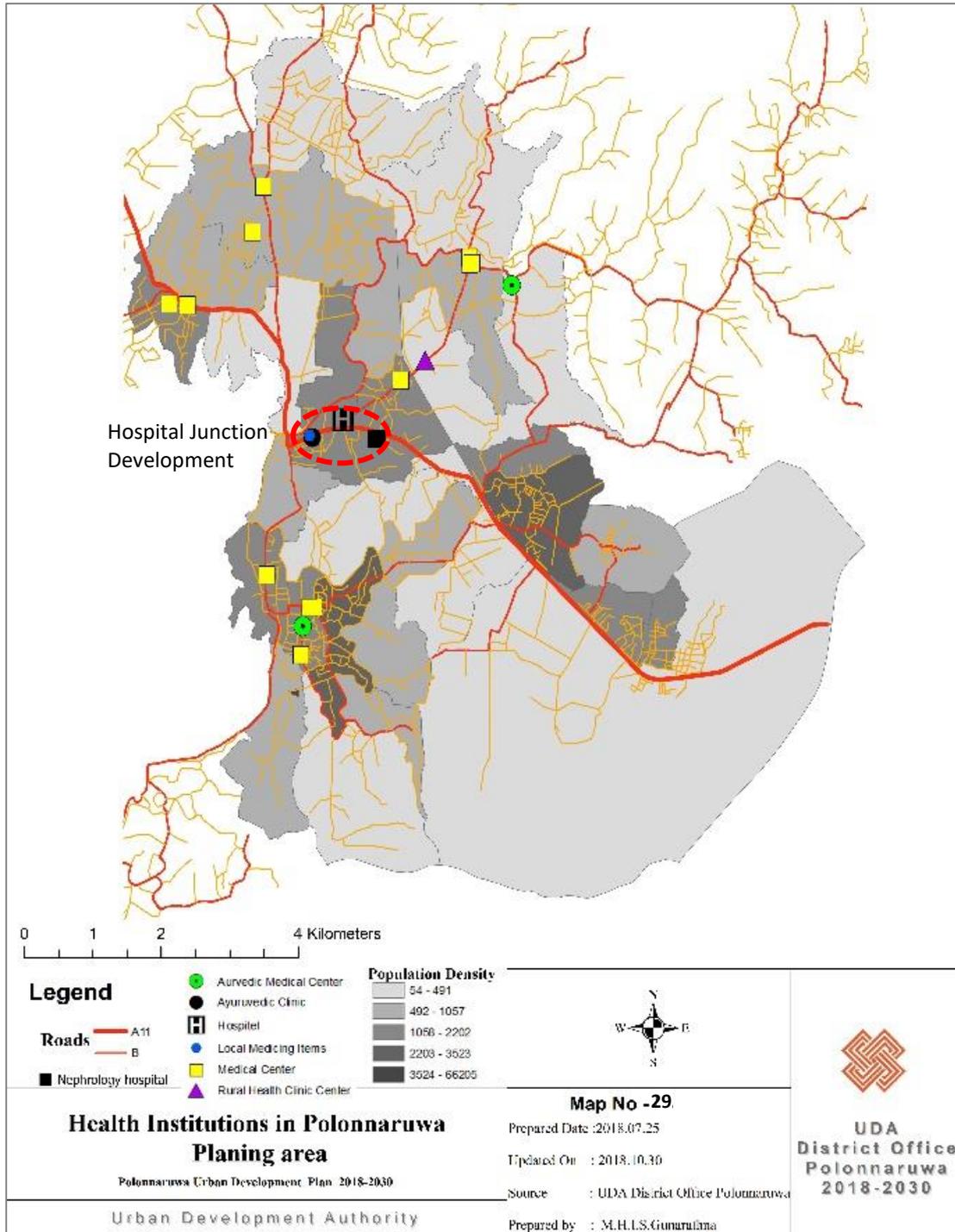
This Plan has been prepared to provide Health, Educational and Residential facilities, for the People, who lives in the Planning Area. The total land extent of the planning area is 103 Sq.km. and existing residential population of the area is 65329 (*Source: Sampath pathikada-2016*) and it has predicted to become 76905 in year 2030 with the annual growth.

In social infrastructure aspect, health facilities are important factor in Polonnaruwa district. The District general hospital located within urban area with the facilities of 885 beds and 210 doctors, 22 wards and 46 units 45altogether. In addition to this, the specialties including Anesthesiology provide specialized care in Orthopedics, Eye, ENT, Nephrology and Mental Health ect. According to 2012 statistics 80,222 admissions with 292,063 OPD Attendance and 223,849 Clinic Attendance are recorded and it shows the half of district population take the benefits. There is a Nephrology hospital (Under construction) with kidney transplant facilities at urban area to treat the patients with the mysterious kidney disease. The kidney hospital will consist of 300 beds, 100 blood infiltration machines and modern surgery complex. Other than national hospitals there are 4 governments and 13 private Ayurvedic dispensaries, 1 private hospital, 4 specialist channeling centers, more than 25 pharmacies and 9 laboratories. (Map 6.3)

According to the above potentials, the people who live in Polonnaruwa district get more benefits from health sector and it will also attract population from outside the planning area and the district too in the future.

Health facilities in Polonnaruwa, currently the health facilities are suffiecient for the existing population of the area and predicted population too. Only need the improvement

Map 6.3: Proposed Health sector development project



of the existing facilities. The Land area of the Polonnaruwa General hospital, about 22 Acres and Buildings have spread about 85% of the Land area. So there are no spaces for proper parking in the hospital land and it will create more traffic congestion around Hospital junction.

Accordingly, the hospital junction development project has been identified as health sector development strategy.

- Provide Parking facilities for the People who visiting General Hospital
- Re settlement of shops for Vendors
- Provide the Cafeteria facilities in the proposed commercial shopping center
- Mitigate the Traffic congestion in the Hospital Junction

Considering the number of primary and secondary Educational facilities in Planning area, there are enough facilities to serve the threshold population in the present and also in future. But Royal central college is the only national level school in the area with all facilities for students of larger Catchment area. So that considering the conditions of most of the schools, need to be improved by recruiting teachers for number of vacancies in areas beyond the urban area.

Considering the future need of hotel industry in Polonnaruwa, it is to be improved in to national level. Hotel Management School has proposed on the purpose of pushing unemployed young generation into the Hotel management industry which is currently not functioning parallel with national level.

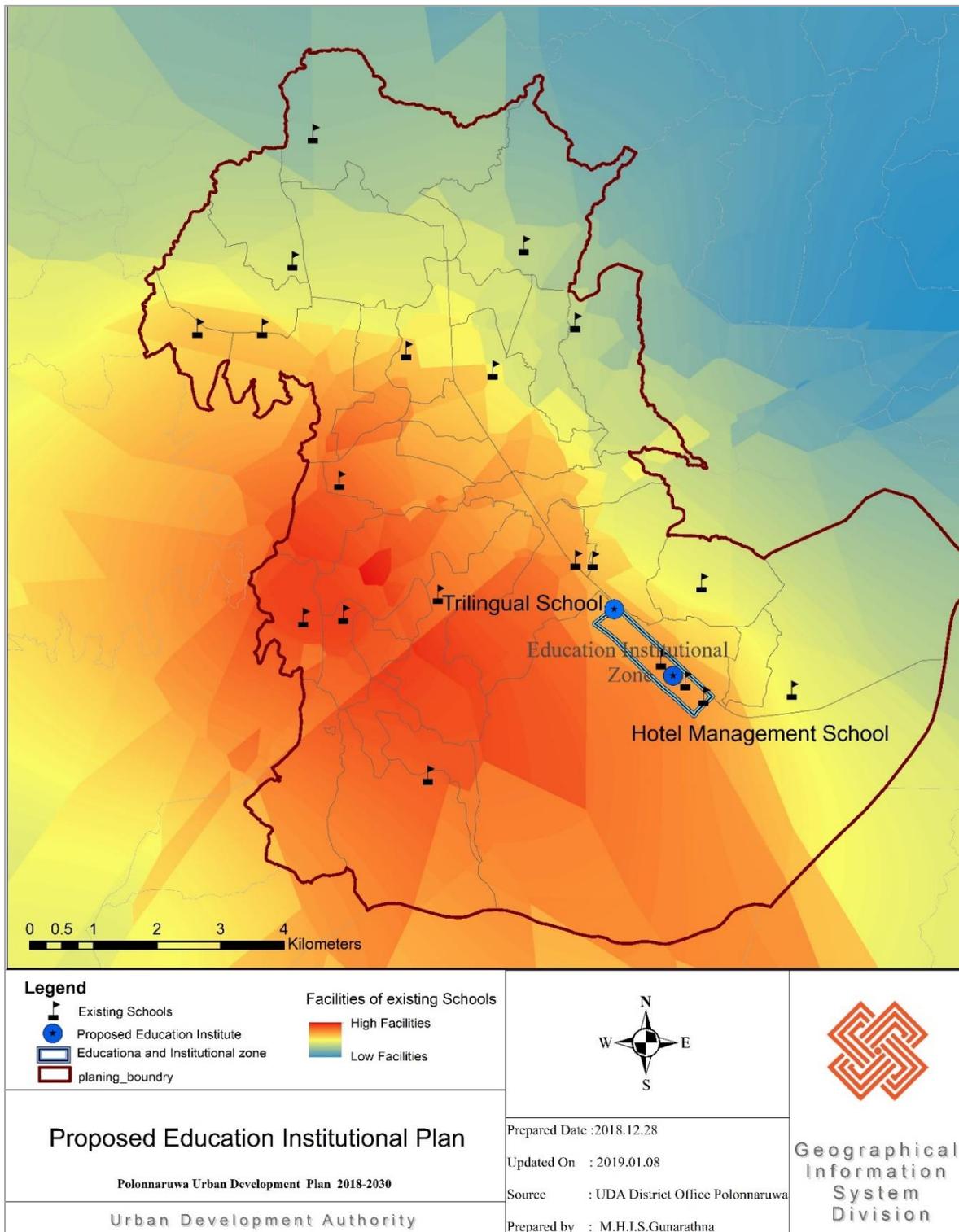
Trilingual school has been identified considering the ethnic group composition (table 6.1) of Polonnaruwa. Most of Muslim schools and Tamil schools in Polonnaruwa are not facilitated well. So this Trilingual school will give the opportunity to students of each and every ethnic group to study in a facilitated background. It indirectly makes the rest between ethnic groups in the city as well.

Table 6.1: Ethnic Composition

Language	Sinhalese	Islam	Tamil	Christian & Other
No of people	48786	14066	570	877

Map 6.1 has shows facilitated level of existing schools. Only red patched areas having enough facilities for schools and there are number of schools showed using yellow patches are still needs to be improved by facilitating.

Map 6.1: Proposed Education Institutional plan



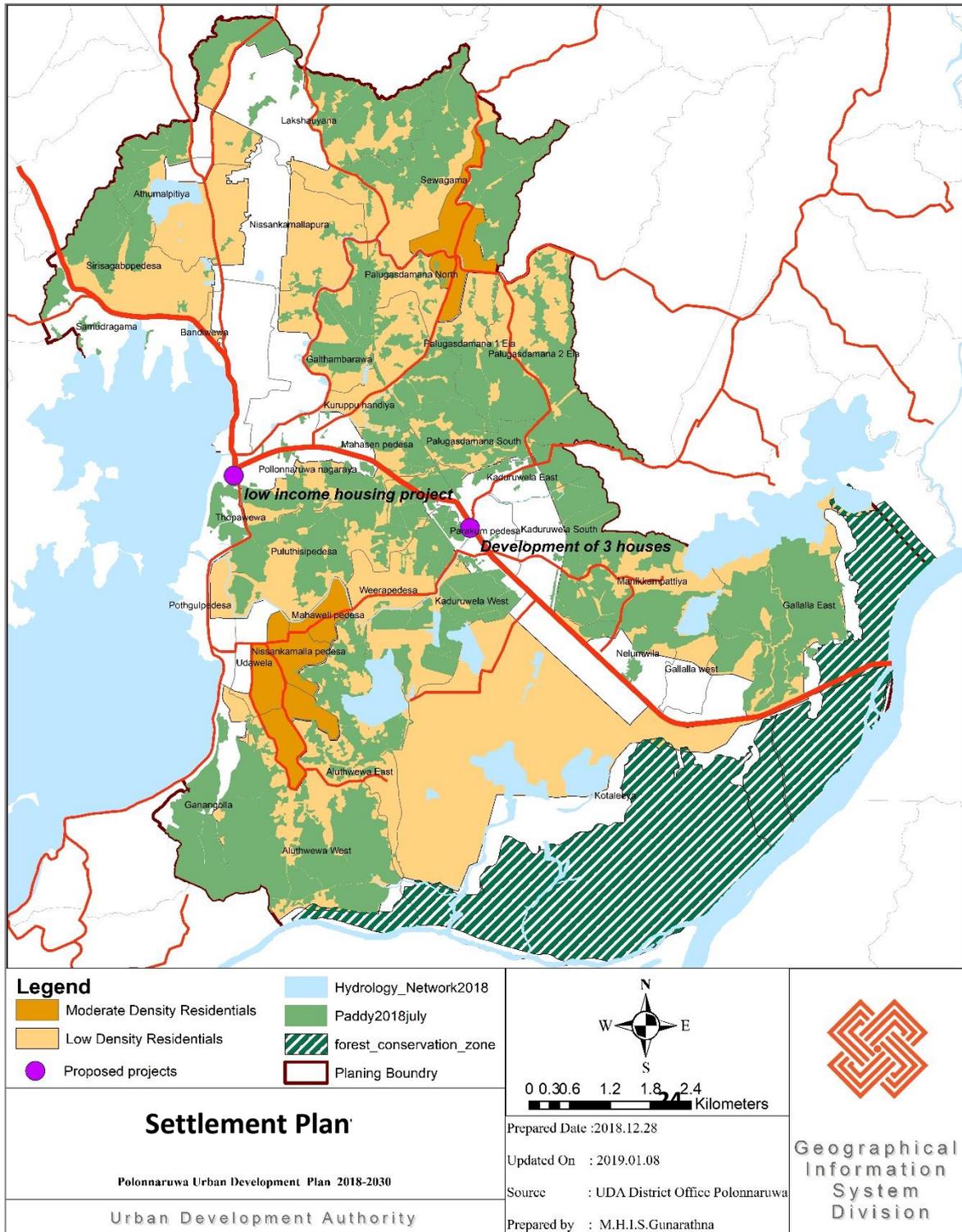
Source: Polonnaruwa UDA District office

When considering the housing sector of the area, the total housing units of the area are 16684. Apart from, Permanent houses 92% and semi permanent and temporary houses are 8%. From this total housing 12% are Multistoried. 93% of total population has the ownership for their houses. According to the predicted population the housing demand for the year 2030 is 17090.

There is a land scarcity within the planning area due to number of paddy lands within the boundary limit. In order to provide houses for the future demand, to fulfill the existing housing deficit and to address the pertaining issues, following strategies have been identified. (Map 6.5)

1. Two separate zones have been identified considering the future intensity
2. Introduce the density zoning
3. Identification of suitable lands for residential development
4. Clear the ownership of the lands
5. Develop the infrastructure facilities of residential areas
6. Low income housing project
7. Development of 3 houses for relocated families

Map 6.5: Settlement plan

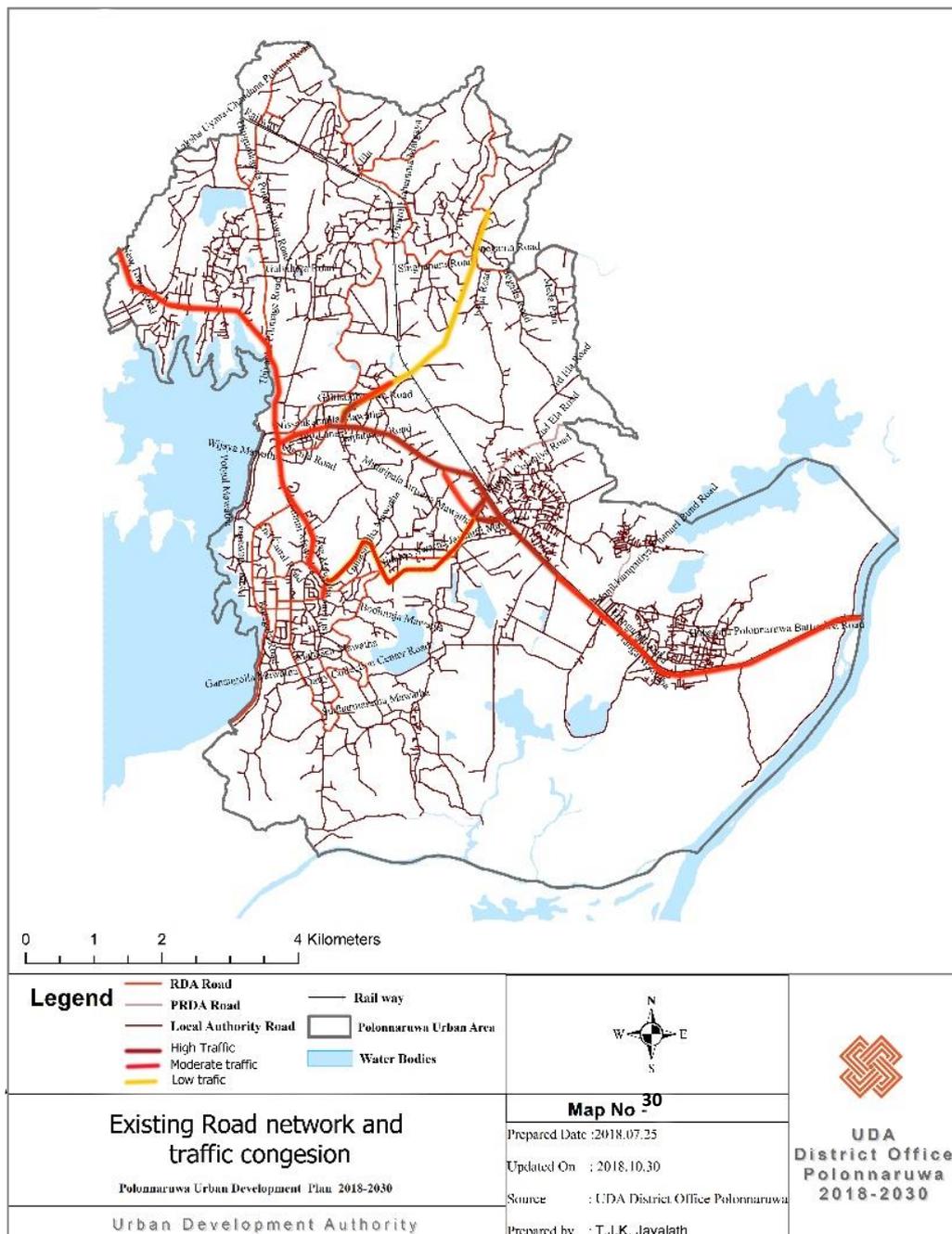


Source : UDA Polonnaruwa District office

6.3.2 Strategic Transportation Plan

According to the current situation of transportation in Polonnaruwa Planning area, there are 100,000 of commuters visit to the city per day and 15000 of vehicles running through the city per day. Consider the transportation pattern of Polonnaruwa planning area, there is high Traffic congestion along main arteries. Mostly at Peak hours such as 8am-9am, 12pm-2pm and 4pm-6pm it is getting more congested. On the other hand, Improper bus stand needs to be more compatible to daily commuters. Map 6.6 shows existing road network and traffic congestion at peak hours.

Map 6.6: Existing Road network and traffic Congestion



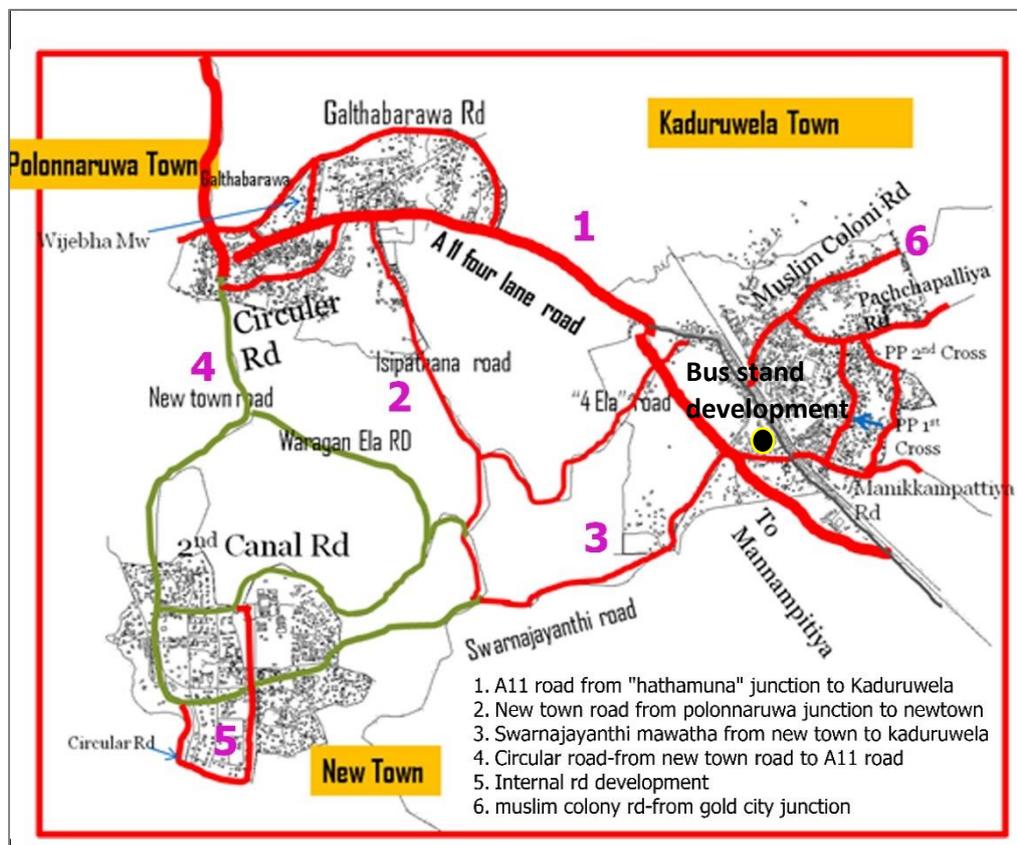
6.3.3 Proposed Strategic Transport plan

The transportation plan has been prepared to Improve the connectivity of three nodes, Achieve comfortable living in the tropical environment, Tourism target infrastructure Development and to Optimum utilization of existing Infrastructure networks. Accordingly following strategies are formulated.

1. Improve the interconnection between main three nodes while promoting outside town centers to grow with a particular aspect and Introduce Bus circulation directly between Administrative city and commercial city (Figure 6.1).
2. Development o-f Kaduruwela bus stand to facilitate daily commuters (Figure 6.1).

Three nodes such as Polonnaruwa town, Kaduruwela town and New town administrative city is to be connect via improving road network in order to enhance the interconnection between those three nodes. Current situation of Kaduruwela bus stand is, it is almost crumbled. Considering the number of daily commuters into the city (approximately 2000 commuters per day), existing bus stand need to be repaired, modified and develop to facilitate daily commuters. Figure 6.1 shows the overall picture of aforesaid strategic plan.

Figure 6.1: Improving the interconnection between main three nodes



Source: Continuing projects of UDA from pibidemu Polonnaruwa programme

3. Improve pedestrian facilities (figure 6.2)

People tend to come to visit Polonnaruwa sacred city because of its uniqueness based on the environment attached to heritage value. So, the physical surroundings and level of comfort which they expect should be rearranged by eradicating its uncomfotability with hostile public transport and crappy sidewalks. Because those things will demotivate people to walk on the streets and feel the heritage city and also they will try to use vehicles and it makes more traffic congestion surround the heritage city (Figure 6.2).

Not only tourists but also daily commuters who come to trade, commerce and other purposes also need to walk around Kaduruwela town to accomplish their day today works. Considering the number of commuters may come to the city in 2030 (2000 of commuters per day) there should be enough space for pedestrians and make sure the walkability within the town area. Improving walkability may also attract other travellers who use A11 road to pass through Kaduruwela town.

Ensuring walkability by improving side walks has proposed (Map 6.7),

- from sacred city upto parakrama samudraya bank along A11 road
- from hospital junction area along A11 road
- within Kaduruwela city along A11 road

Improvement of physical surroundings (Landscaping + tree planting) and level of comfort will lead people to walk instead of using vehicle and it will help to keep the sacred area clean air and less traffic congestion in a shady environment.

Bumps, broken pavement, obstacles (stray lamp posts), very narrow walkable sidewalks are common in Polonnaruwa. For most of us they represent a small annoyance, but for children, elderly, and especially people-with-disabilities, they are real barriers for getting around and feeling safe. In the long run, it will transform the city into a safer, healthier, more walkable, bikeable and a friendlier place to live for all walks of life.

Figure 6.2: Pedestrian Facilitating



Source: Siyudad PH fb Page

4. Improve parking facilities in kaduruwela

According to the Polonnaruwa Development Plan 2030, Kaduruwela Town is the main commercial center which attract number of commuters. Lack of parking facilities is the main bottleneck within Kaduruwela town which discourage daily commuters. As a solution for that, Polonnaruwa development plan 2030 has identified a reasonable location to provide and facilitate enough parking facilities as shown in map 6.7.

Considering current bottle necks along A11 road in Polonnaruwa planning area, there are two separate strategies has been identified to proceed with Polonnaruwa Urban Development plan 2030.

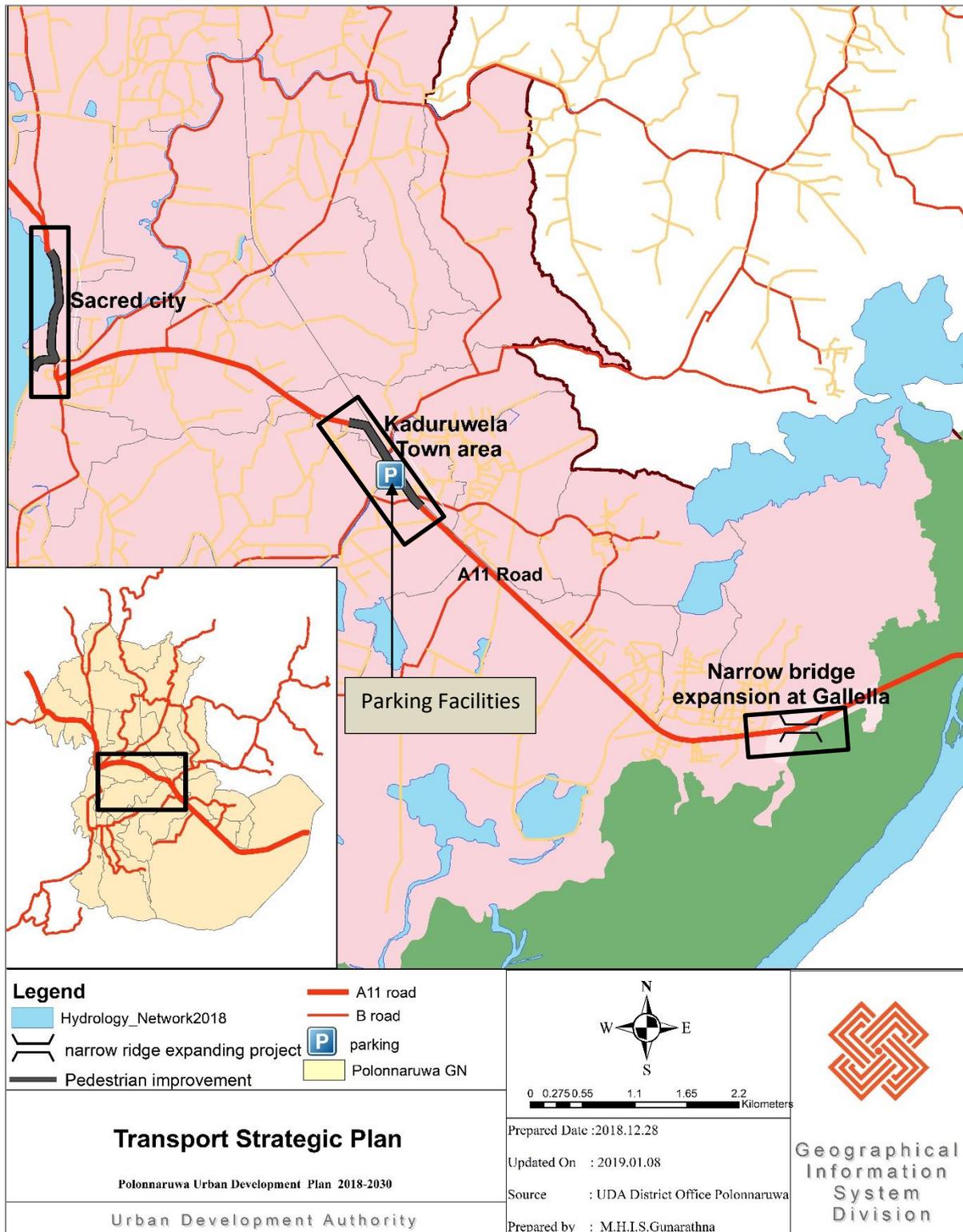
5. Widen up narrow bridge in Manampitiya

(map 6.8) The narrow bridge near Gallella is obstructing to the smooth vehicle flow along A11 road (Figure 6.3). The bridge only has nearly 5m minimum width which is letting in only one long vehicle at once. So it is a reason to increase the traffic congestion at peak times along A11 road. Considering accident records, there are considerable number of accidents has happened on this bridge mostly at night times too. In order to get rid of this situation, strategy has identified to widen up the bridge.

Figure 6.3: Gallella Narrow Bridge



Map 6.7: Strategic Transport Plan



Source: Polonnaruwa UDA District Office

6.3.3 Water supply Strategic Plan

Polonnaruwa district can be identify as an agro base economic city. It has good and bad returns as well. Although agriculture enhance the economy of local people, it also been affected by emerging lack of clean water for drinking purpose. Because there is a threat of mixing toxic into clean water and it cause for several illnesses. Parakrama samudraya serves dronking water for 20% Gallelle water plantation serves 80% of drinking water for the planning area. But there is no regular purification method with parikrama samudraya.

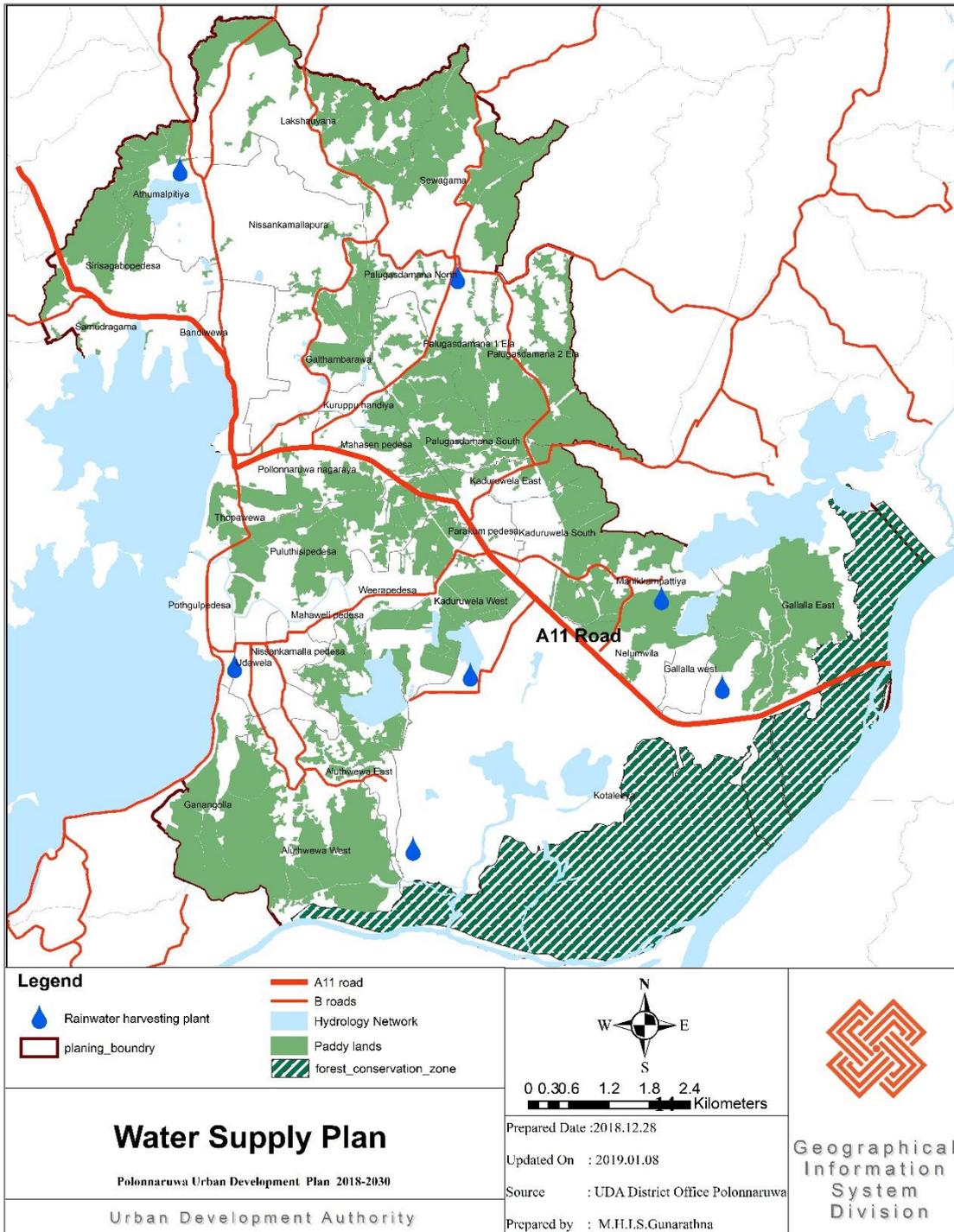
Addition to that, Polonnaruwa city meet the drought desaster as a natural effect once a year. Mostly it happens within June-September time period. In this time period, farmers have to face to lack of water issue for their cultivations. So, there are no any plan for such situations.

Accordingly following strategies have been identified to minimise thsesse issues.

1. Motivate the community to process the Rain water harvesting system.

Polonnaruwa development plan 2030 has identified places with large roofs to promote Rainwater harvesting system. This is also going to be practice within community level, by planning comitees. community will be advised to keep maintaining a rainwater harvesting plant within their dwellings. The rain water harvesting plant will be providing from the local authority by adding extra charge for COC. (Map 6.8)

Map 6.8: Strategic action projects for water supply

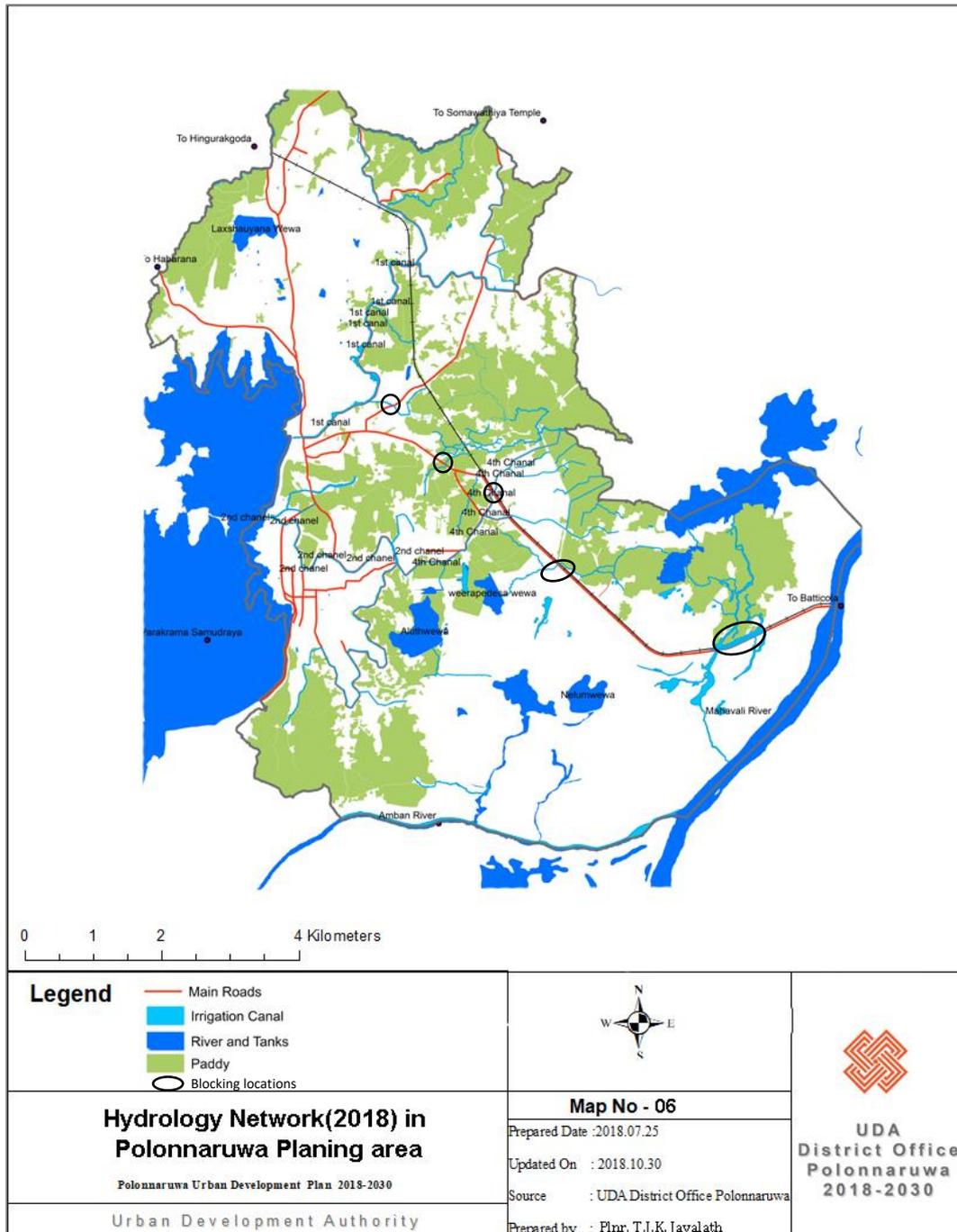


Source: UDA district office, polonnaruwa

2. Improve the connectivity of irrigation canals by regulating maintenance and technical improvements. (Map 6.9)

It is proposed to improve the connectivity of irrigation canals 100% in 2030. By removing the blocking areas of the existing hydrology network.

Map 6.9: Hydrology Network



Source: Urban developemnt authority, Polonnaruwa district office

6.3.4 Electricity and data lines

The electricity is provided by national grid of srilanka. It has covered the entire planning area. So currently there is no any issue related to capacity except national issue in capacity in drought season.

And the lines of the electricity supply laid in city will effect to the city beautification and safty of the people.

Accoordingly following strategies have been formulated.

- 1.Introduce the solor power system for indiviuals and compulsory for the government buildings.
- 2.Promote underground electrical line laying.

6.3.5 Strategic Plan for the Drainage and sewer line

As a city wich is mainly depend on agriculture sector, it is a must to ensure the cleanness of the water when it reach to main water bodies of the area.

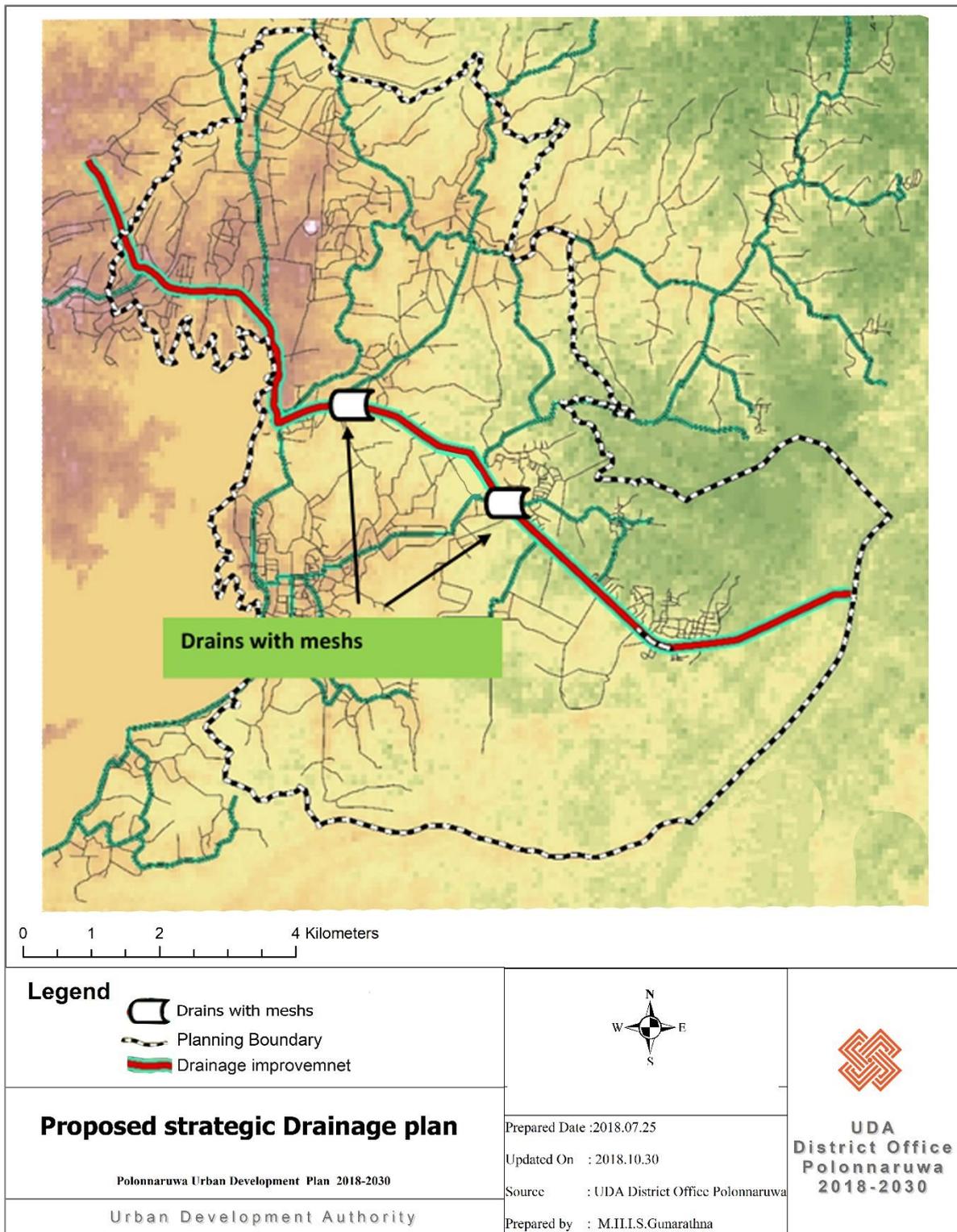
Considering main problems in Polonnaruwa planning area is the improper drainage system. There is enough drainage capacity in Polonnaruwa planning area to carry on storm water of the area. (Map 8). Although the capacity is enough still there being obstructs within existing drain line specially around Kadruwela and Polonnaruwa hospital junction.

Other thing is storm water of the city has mixed with waste water generated from Kaduruwela town due to unavaiable waste water purification plant.

Accordingly following strategies has been identified to minimise the issues related to the drainage system of the city (Map 6.9).

1. Regulate the maintenance of current drainage system for minimize drain obstructs (Introduce drainage network with mesh, figure 6.4).
2. Construct drainages for each and every road upto final discharge to Mahaweli and Amban river in Polonnaruwa planning area.

Map 6.10: Drainage Strategic Plan



Source: UDA, District office Polonnaruwa

Figure 6.3: drainage network with mesh



Source: “ecologicamente criativos” fb page

As a strategy for control the plastic and other polluting waste gather inside the drainages, Mesh can be use within existing drainage network, so that plastics and other polluting wastes do not reach to rivers and other water bodies.

This method can be introduced within Kaduruwela area and hospital junction area to minimise obstracles of drainages in 2030.

6.3.6 Waste management Plan

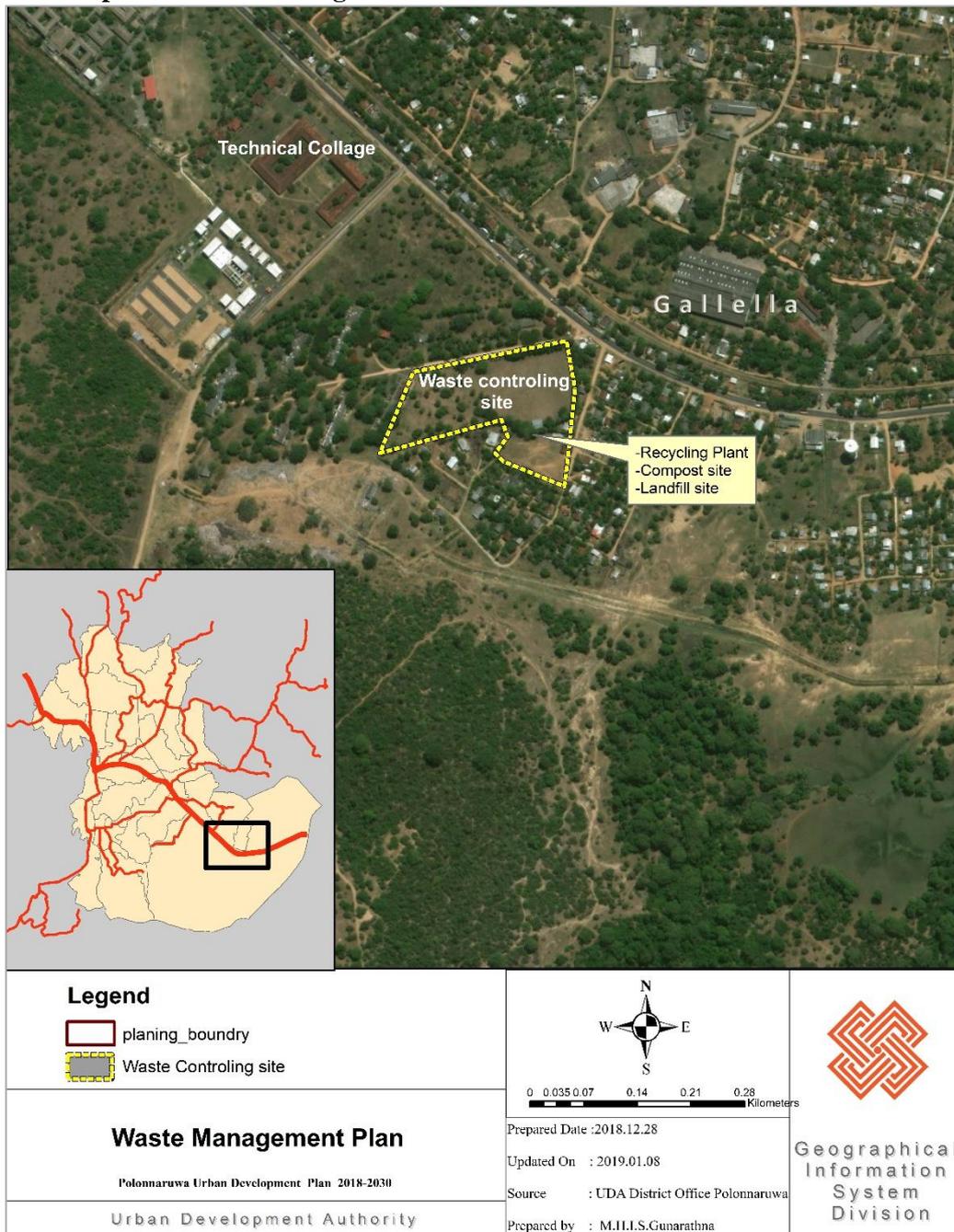
There are 13 MT of waste generate from Polonnaruwa planning area per day. Currently there is waste dumping site near Gallella and there is no any permanent solution. Although there is no much issues related to waste management in Polonnaruwa area. Considering the futuristic perspective, it will affect to the area by smelling and also can be effect to the health of inhabitants in future and also for ground water of the area.

Polonnaruwa identified as agriculture-based district, people are so much familiar with compost fertilizers. As a strategic way to control biodegradable waste from the small house units, it will be very much healthier and suitable in futuristic perspective.

Accordingly following strategies have been identified through this plan to overcome aforesaid circumstances (Map 6.11)

1. Introduce the collecting points within the city limits.
2. Aware the people regarding the separation of waste as biodegradable and non biodegradable.
3. Provide compost bins for each and every house and introduce a system to provide compost bins when obtaining the COC for the buildings to reduce the waste generation.
4. Construction of compost plant and recycle plant within dumpig site.
5. Promote the compost fertilizer for the cultivation.

Map 6.11: waste Management Plan



Source: Thamankaduwa MC

Gallella waste dumping site has selected as the location to introduce waste recycling plant and compost plant. It will control creating garbage mountains within the city and will be useful to reuse the garbage that throwing away.

6.4. Economic Development strategy

Economic Development strategy serves as a blueprint for the city's economy. It lays the foundation for sustained economy recovery and fiscal stability for the city. Also, will collaborate on employment, investment and quality of life initiatives. The purpose of Preparation of Economic strategic plan is to provide better living environment for the people of the city while getting untapped potentials into the economic process. The better living environment is achievable through facilitating the growth of the economy, protecting the natural and built heritage and improving the quality of life for all inhabitants.

North Central Province contributes 5.12% to national GDP. The contribution of GDP for each sector from North Central Province is separately Agriculture 8.73%, Industries 3.67%, Services 5.34 (Annexure 11). The labour force distribution in Polonnaruwa district by each sector is Agriculture sector 45%, Services 45% and only 10% for industries (Annexure 12). Unemployment rate of Polonnaruwa district is 2.5 in 2016 (Annexure 13). National unemployment rate of the same year was 4.4. Therefore, Polonnaruwa district has comparatively low unemployment rate. within the Polonnaruwa planning limit the employment percentage from total population is 55%. Therefore, the unemployment rate from total population is 45%. About 49% out of total families is only getting Rs. 5000-25000 income (Annexure 14).

6.4.1 Identification of main Economic Drivers

Following are the main economic drivers which can be identified in the Polonnaruwa city

1. Ancient Ruins with a great history which enhance the Tourism,
2. City Situated In between Grand tour route and Existing road network,
3. paddy production and processing units (Rice Industry),
4. Identical environmental (forests and hydrology network) hotspot in closer proximity to city,
5. Labour Force.

More details of aforesaid economic drivers have discussed in the chapter 5, detail analysis of the SWOT. Table 6.1 shows the predictions related to economy in Polonnaruwa.

Table 6.1: Predictions related to the economy

Activity	Existing	Proposed
Tourists arrival	697 persons per day	2154 persons per day
Paddy land	31.71 sqkm	32.02 sqkm
Harvesting extend	118072 acres	779600 acres

6.4.2. Proposed Economic Strategic Plan

The vision of Polonnaruwa Development plan 2018-2030 is “Green Glorious Heritage City in Kingdom of rice”. Heritage city and kingdom of rice are two goals highlighted here which can be achieved under economic strategy. According to the identity of the city these two terms are the key potentials which can use to boost the economy of the city.

According to the current threats, there are possibilities of delisted the city from world heritage list due to declining trends and the identity as a Heritage city.

An integrated and comprehensive physical development plan can overcome afotresaid threats and create Polonnaruwa city as a healthy wealthy and adorable Heritage city. The economic development Plan has been prepared to Upgrade City Dwellers economy with Paddy industry and tourism, More spaces for industrial Development and Optimum utilization of existing Infrastructure networks.

Demarcating separate zones for promote production industry and tourism industry will give a suitable environment for promote industries and upcoming industries in order to get the optimum deliverables. Also formulating regulation within those zones to minimize other development and encourage to promote industries of tourism and paddy related industries will also support to achive the vision and objectives under economic strategy.

6.4.2.1 Economic Plan (Trade/ Commerce/ Finance/ Services)

1. Kaduruwela town expansion project

1. Introduce Rice retail & large scale wholesale market in Kaduruwela town, in order to widen up the market for the farmers to expose their productions into national level
2. Implement a Trade & Commercial center to market agriculture products and other by products and also value added products of polonnaruwa
3. Construct public market to facilitate farmers, daily commuters and city dwellers in order to circulate the wealth within the city and motivate farmers for the agriculture and keep the city wealth within the city.
4. Redevelopment of existing shops in the commercial belt to widen up the pedestrian paths and enhance the compatibility within the city
5. Financial complex development (Improving financial facilities for tourism industry)

6.4.2.2 Industrial Plan (Manufacturing/ Fisheries/ Tourism)

Following are some main industries that will promote in Polonnaruwa development plan in 2030 (Map 6.11).

6.4.2.1 Identify separate zone for Non- polluting agriculture based green industries

1. Raw rice product industries
2. Value added product industry
3. Rice mills
4. Poliyer machine industry

Rice industry is most unique and key industry in Polonnaruwa city from decades back. Protecting and get involved paddy harvest in various mean for enrich the city economy is the main target of formulating this strategy.

6.4.2.2 Indentify separate zone for Tourism

Promoting tourism industry is one of greatest support for enhance the city economy. Polonnaruwa as one of world heritage city, it is necessary to highlight the uniqueness to get more tourists attraction. Considering their needs and interests, following strategies have been identified to enrich the city economy.

1. Introduce Dock less bike sharing programme through online system

Dock less bicycle sharing is a way which is reduce the traffic inside the sacred city and also increase the health of people while they enjoy the heritage city. Relevent Bike-Sharing Applications can use to track nearby bikes and scan their QR code in order to unlock them. Charges may apply per hour when the person start the jurney. This method will ensure the security and transperacy of both buyer and seller. Also this will encourage tourists to park their vehicles outside the sacred city and feel the antient ruins while enjoying the bicycle ride.(Figure 6.5)

Figure 6.5: Dockless bike sharing



Source :<https://altaplanning.com/dockless-bike-share/>:

2. Torism belt around parakrama samudraya (Recreational Facilitatng)

- Large scale Hotels

Although there are more than 100 of hotels around sacred city. (small sacale to large scale) But they still don't have legal base and regularized. Considering the existing bottlenecks of hotel industry, this strategy has identified to provide improved and secured accommodation facilities to the Tourists. Considering the demand and future tourist's arrivals four large scale hotels have proposed in this tourism plan near to parakrama samudraya.

3. Agro tourism programmes (Viewing deck point and paddy museum)

- ✓ Viewing Deck (map 6.11)

Paddy lands enhance the attractiveness of Polonnaruwa city and it is the key element of Polonnaruwa. Currently there is no space for feel the real feeling of relaxation of paddy lands on site. "Viewing deck" in paddy land will let visiors to get the opportunity to sense the nature on site.

Figure 6.6: Viewing Deck



Source: <https://www.thewilddeckcompany.co.uk/product-portfolio/viewing-platforms/>

- ✓ Agro Tourism recreational activities for tourists

Agro tourism is a commercial enterprise at a working farm or ranch conducted for the enjoyment and education of visitors, and that generates supplemental income for the owner or operator. In the tourism world there is a huge trend in this topic and can do with existing infrastructures as well. Only need the proper guidance (figure 6.7)

Figure 6.7: Tourism activities for Agro tourism



Source: Internet

✓ Paddy museum (map 6.11)

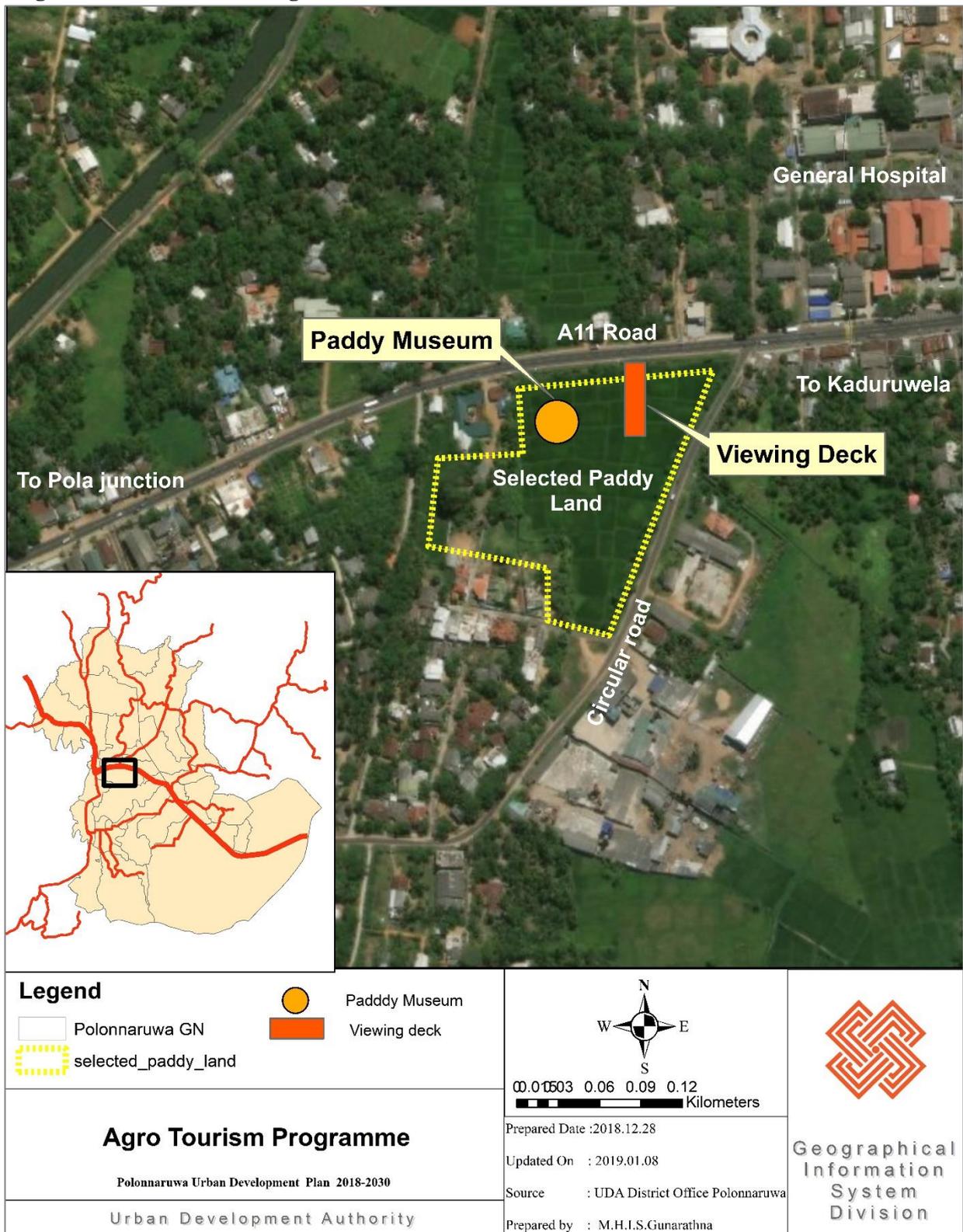
King Parakramabahu era, Polonnaruwa was a well bloomed city with paddy cultivation which supplied rice to entire country. But today, there is a declining trend of paddy industry which needs attention to be conserved. Paddy museum has proposed to recall important turning points and highlights of the paddy industry throughout the time. It also includes models of conventional methods used in Paddy cultivation in the past (Figure 6.8).

Figure 6.8: Paddy Museum



Source: Kedah paddy museum

Figure 6.11: Tourism Strategic Plan



Source : UDA Polonnaruwa District office

5. Recreational and commercial Fishery and boating services

Inland fishery is also a one of famous industry in Polonnaruwa which help to enhance the city economy by both commercial and recreational fisheries. So this strategy will promote Recreational fishery for tourists and commercial Fishery for local community by introducing fishing locations and facilitate those locations around parakrama samudraya (figure 6.9). Bay locations of Parakramasamudraya has identified to introduce recreational swan boat facilities (map 6.12)

Figure 6.9: Recreational and commercial fishery and boating services



Source: Internet

6. Aquaculture farm

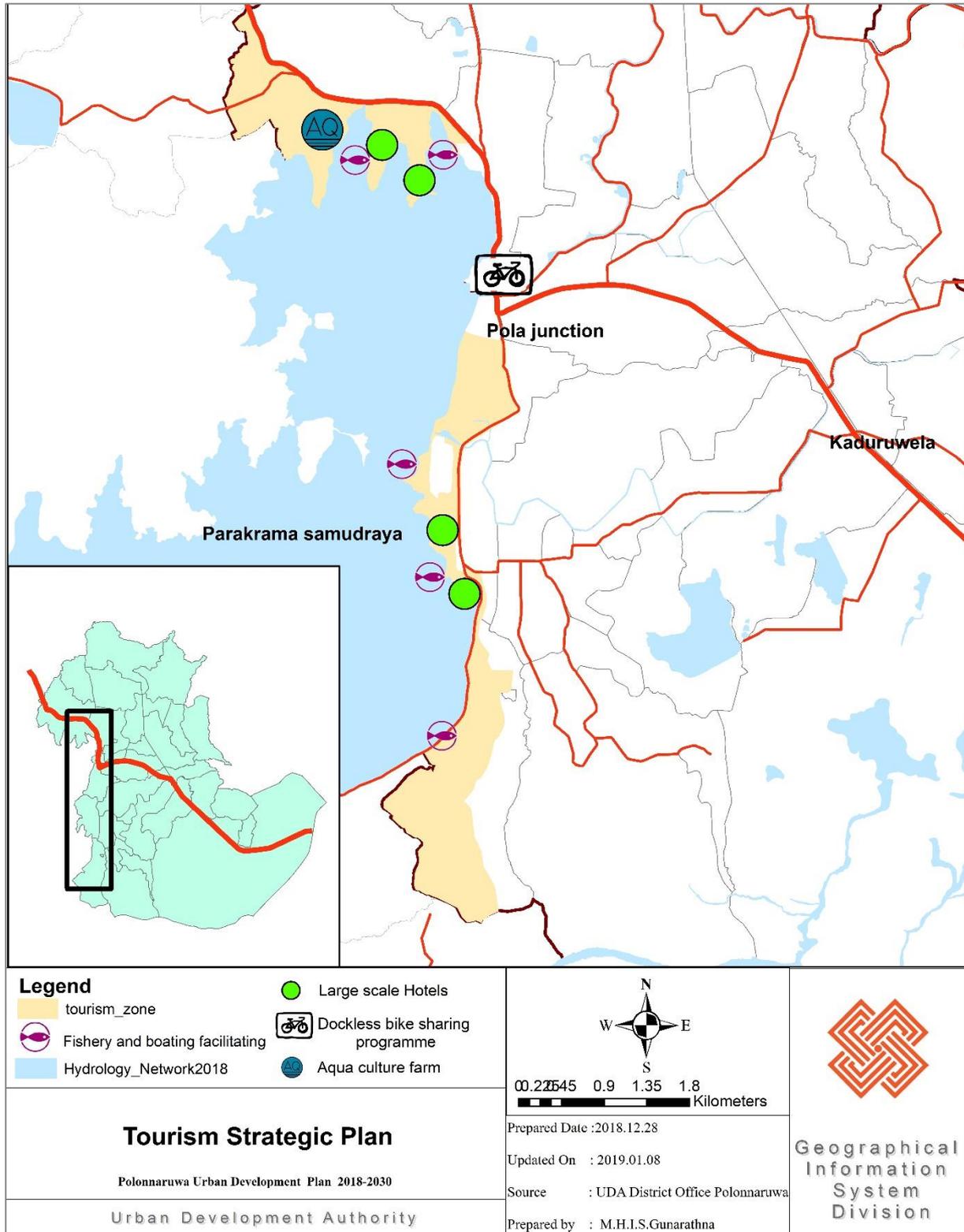
This strategy is to promote for sustainable and environment friendly farm for aquaculture fishraising to improve food security. Fish farming or pisciculture involves raising fish commercially in tanks or enclosures such as fish ponds, usually for food (map 6.12).

Figure 6.10: Aquaculture farm



Source: Internet

Map 6.12: Tourism strategic plan

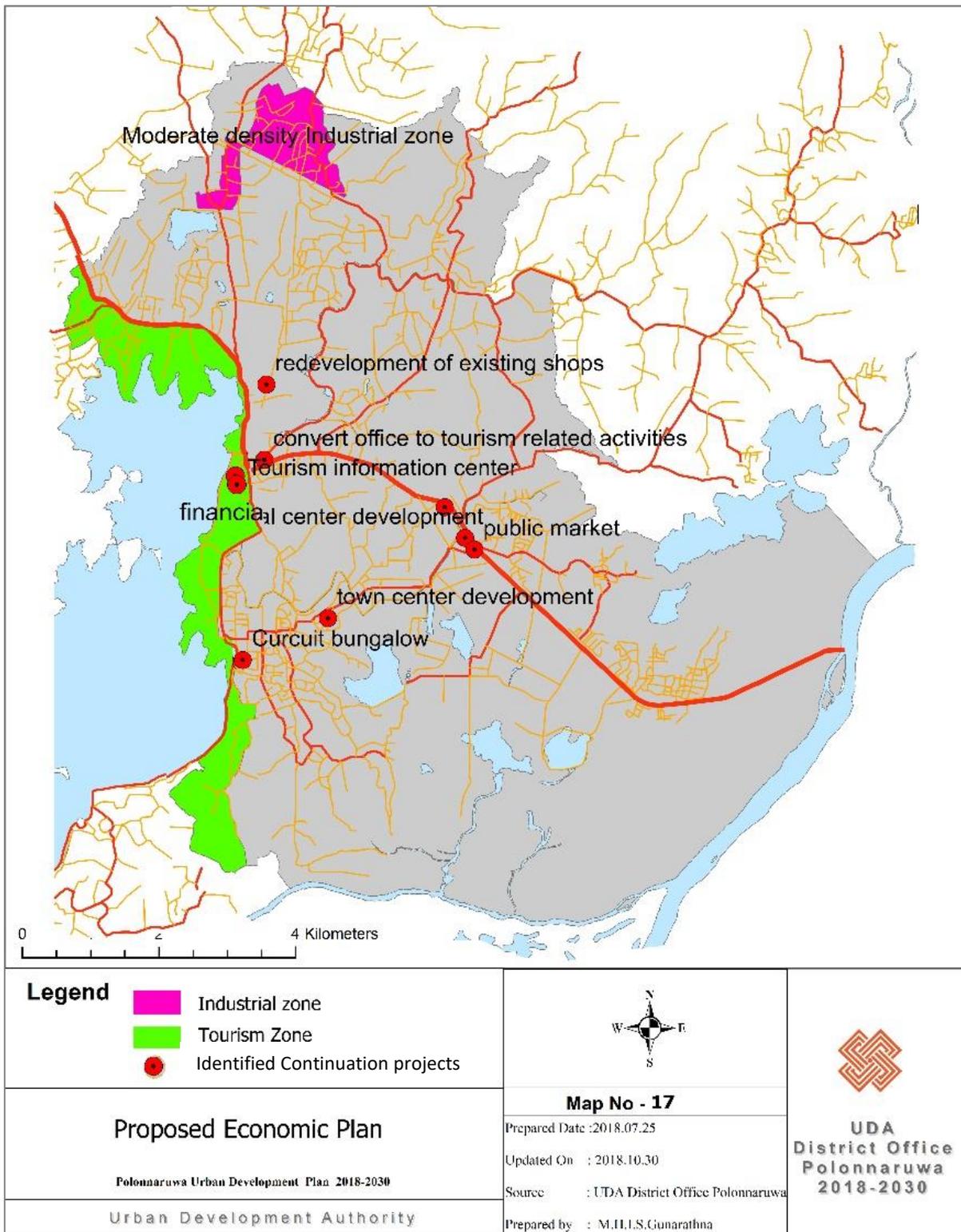


Source: UDA Polonnaruwa District office

Following are some other projects which have identified by UDA 2015 draft plan which is execute under pibidemu Polonnaruwa programme to enhance overall city economy (Map 6.13)

5. Convert office building in archeological zone into tourism related activities
6. Curcuit bungalow
8. Tourism facility center
9. Financial Center development
10. Improve fishery industry within tourism zone
11. Tourism Information center

Map No 6.13: Proposed Economic Projects



Source: UDA district office, polonnaruwa

The untapped potentials in tourism can use to increase the household income of the area. There is a world trend for agro tourism and heritage tourism with cultural experience. with proper economic strategy, can harness the potential of tourism without harming the environment.

Polonnaruwa still not taken the advantage of being the main city center by passed in A11 road to connect with eastern region of the country. Recreation targeted tourist who pass the city for beach sides in east and even locals can be stopped with a strategic plan

Non- polluting Industrial Zone in Laxauyana (Green Industries) will enhance the capabilities of inhabitants by optimally using resources within the city and drive them towards to gain economic benefits on that.

considering 54% of economically deactivate population, there will be commercial hubs targeting tourism industry within industrial zone, tourism zone and outer Archeological zone which will promote local productions industries which can be attract by tourists.

Also Infrastructure management strategy link with economic development strategy

introducing parking facilities from a distance will lead tourists to walk and it will indirectly enhance the city economy. Also the better connectivity in drainage, irrigation system and transport will improve the livability of the city.

These strategies will lead to fulfill the gap which is mentioned under Need of the plan.

Increase the production of paddy will perform to conserve current Paddy lands to protect the identity for paddy industry and boost the economy using zoning regulations. Also it has promoted low density residentials mostly for farmers.

6.5 Environment Sustainable Strategies

Environment sustainable strategies have been formulated to Achieve comfortable living in the tropical environment, Preserve the sensitive areas & Identity, Protection of Historic elements of the area.

6.5.1. Conservation Plan

In the sense of environment of the area, three major environmental sources have been identified in the planning area named flood plains National Park, Marshy area, paddy lands.

1. Flood Plains National Park

Flood Plains National Park is one of the four national parks set aside under the Mahaweli River development project. The park was created on 7 August 1984. The park is central to the integrity of the Mahaweli system of protected areas, both for its unique “villus” and as a corridor for wildlife migration between grazing lands in Wasgamuwa and Somawathiya Chithiya National Park. The area spans the Mahaweli Ganga in Polonnaruwa district in North Central Province. The township of Manampitiya lies just outside the eastern boundary of the park, a stopover in the Batticaloa-Polonnaruwa road and on the railway which pass through the park.

The Mahaweli Ganga flows the south to north through the centre of the park. The flood plains of rich alluvial soil flanking the river are characterized by numerous shallow marshy depressions known as “villus”. The prolonged periods of inundation of these low-lying areas, together with the nutrients carried in by the water are largely responsible for the exceptionally high level of net primary productivity. The area ranges from 20m to 60m with an occasional rock outcrop. Covering 17,350ha and lying in the Mahaweli protected area complex, the flood plains National Park links Wasgamuwa National Park 37,063ha to the south with Somawathiya Chaitiya National Park 37,762ha to the North. Being in the dry zone season, there is only northeast monsoon from October to late January. This is followed by a dry season lasting from May to September.

Saturated soils and flooding prevent tree growth and enhance the growth of water tolerant grasses and aquatic plants. The vegetation of the ‘villus’ shows definite pattern of zonation, with creeping grasses.

The rich vegetation in the villu attracts large number of grazing animals and birds and supports a higher annual biomass than any other type of habitat within the Mahaweli development project area. The Flood Plain, with their abundant supply of water and grasslands, mammals are commonly found in the Flood Plains and the marshes support large populations of reptiles are present in here. The Flood Plains are particularly important for the diversity and abundance of their avifauna, particularly migrant birds it is estimated that around 75 migrant species spend their winter time in the marshes of the Flood Plain.

(Sources)

2. Marsh areas

Marshes have been identified in surrounded area of Parakrama samudhaya and near **Flood Plains National Park**.

3. Paddy fields and abundant paddy fields

Paddy lands & abundant paddy lands in the Polonnaruwa Urban area should be conserved as flood retention and detention areas to mitigate flood hazards. And also paddy lands are the one of the main economic drivers in Polonnaruwa Urban area.

To conserve and promote the paddy cultivation of the area, the wetland zoning plan has been prepared within the conservation plan.

6.5.1.1 Wetlands Zoning Plan

The Goal of Wetland Zoning plan in the Polonnaruwa Urban area is to facilitate economically viable & environmentally sustainable use of wetlands considering their intrinsic potential, their ecology and the needs of the surrounding population, while maintaining essential flood storage capacity and other environmental benefits. Zoning and Permitted uses of those zones have described in Volume III (regulations)

6.5.2 Landscape Management Plan

Landscape plan is formulated to enhance the city beautification, to control the heat of the city, to minimise the carbon emission, to enhance the quality of life by improving the physical and mentality of the citizen. Based on that following strategies have been formulated to enhance the environment of the area.

1. City entrance developments
2. City beautification
3. Conserve the existing natural environment of the area
4. Development of road side landscape.
5. Reduse the heat emission of the city through
 - building materials.
 - By clearing the wind path
 - By shading a building and its outdoor spaces
 - Vegetation on roof tops
 - Vegetation cover at the building frontage
 - Green Screen concept for Industrial zones
 - Special permeable paving within the urban area
 - Provision of Open and Recreation spaces
 - Restrict unauthorized land reclamation and encroachments through community participation
 - Road greening (from Pola junction to NLDB Gallella) Figure 6.11

Figure 6.11: Tree plantation middle of the road



Source: <https://worldarchitecture.org>

6.5.3 Disaster Risk Management Plan

The main disasters in Polonnaruwa Urban Area are,

1. Lightning
2. Flood
3. Cyclone
4. Human – Elephant Conflict.

6.5.3.1 Guidelines for the disaster-prone areas in Polonnaruwa Urban Area

The guide line for the disaster mitigation has been prepared under the “**Planning Guidelines for Urban and Natural Disaster Mitigation**” prepared by Urban Development Authority, associated with Disaster Management Centre, and Ministry of Disaster Management in March 2003.

6.5.3.1.1 Lightning hazards

Guidelines for minimizing accidents in frequent and major areas of lightning strikes can be cited as follows

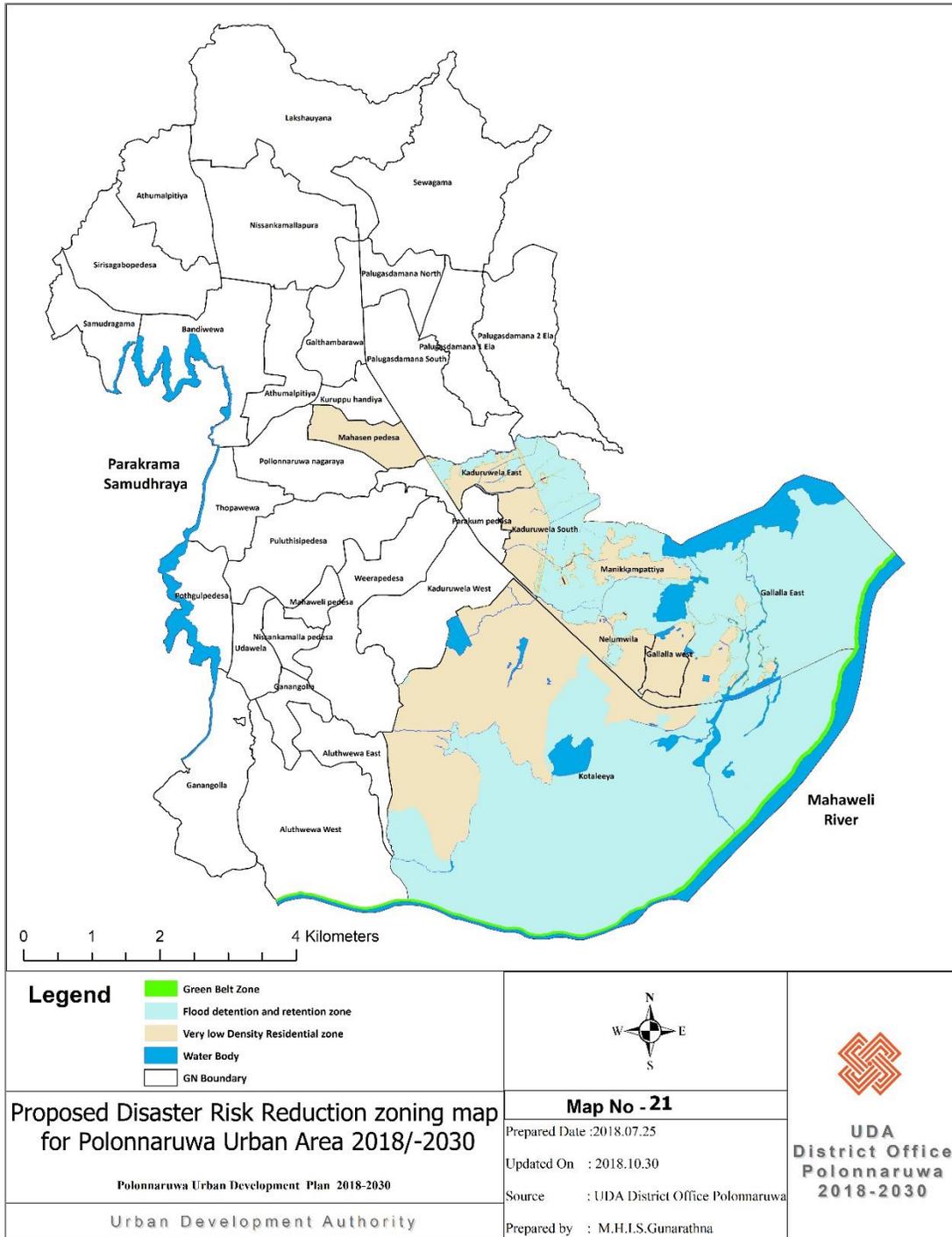
1. Installation of lightning conductors during construction
2. Promote to install under ground cable System.
3. Accident areas should be fitted lightning-protection facility in all building.

6.5.3.1.2 Flood hazards

According to the flood situation in Polonnaruwa Urban area, its observed that it occurs once a year. 192 houses are affected by this disaster in 2017. To minimise the disaster by flood to this area, it is proposed to

1. Discourage the constructions in low lying areas.
2. Construction of flood barriers
3. Rehabilitation of water gates on existing dams and canals
4. Construction of new water gates identified by identified canals and preventing damage to property on both sides of the property by means of channels through the canals of the river.
5. Construction of pumping stations to pump water into the river to allow for the addition of water collected in roads to the river where water is added to the water due to the construction of flood barriers.
6. The construction of flood detention reservoirs.
7. Reforestation of catchment area.
8. Increase water retention characteristics to reduce flood risk.
9. To improve river, channel River, Cannels can be deepened, widened or cleared of obstruction to improve it conveyance capacity to prevent flooding.
10. Prohibited of filling of paddy lands and marshy lands.
11. Prepare a proper rain water drainage system for the area.
12. prepare conservation plan for the Marshy land, paddy lands, Low lying areas and abundant paddy lands for flood detention and retention.
13. Declare the area for the reservations for Mahweli ganga 60m and Amban Ganga 30m.
14. Classification of the flood hazard area
 - High flood area – Minimum Plot size – 20P.
 - Low flood area – Minimum Plot size – 15P

Map 6.14: Proposed Disaster Risk Reduction Zoning



6.5.3.2.3 Cyclone

1. Propose to install under ground cable systems.

7.5.3.2.4 The Human-elephant conflict

In order to minimize the impact of wild elephant corridors, following strategies have been identified to control the Human-elephant conflict.

1. Create a separation corridor by planting huge trees to obstruct their path.
2. Promote bee-culture along the elephant corridor
3. Lay a power line along the elephant corridor

6.5.4 Public Open Space Plan

According to the accepted standards of Urban Development Authority, open spaces have to be provided at the rate of 1.4 hectares per 1000 persons. It has estimated that the population by the year 2016 is 65,329. According to the data analysis of the development plan it has forecasted that the population would be 76,906 by the year 2030. According to that it should be reserved 107.7 hectares as Public Outdoor Recreation in 2030.

6.5.4.1 Details of the Existing Public Parks & Playgrounds in Polonnaruwa Urban Area

There are 19.3 ha of Parks & Playgrounds of the whole Polonnaruwa Urban Area (Annexure 16). They have been categorized in Table 6.2 & Annexure accordance with UDA Public Outdoor Recreational Space.

Table 6.2: Existing PORS – 2018

No	Type of Parks	Extent (ha)
1.	Pocket Parks	0.3
2.	Mini Parks	5.4
3.	Local Parks	5.2
4.	Central Urban Park	8.4
	Total	19.3

6.5.4.2. Strategies for development of recreational spaces/ open spaces

1. Redevelop Existing Parks & Playground

Existing Parks & Playgrounds should be redeveloped according to the proper Landscape Plan under guidance with qualified persons.

2. Develop Linear Parks Concept

All the Ela, Parakrama Samudraya reservations should be developed as Linear parks and it helps to mitigate flood hazard in the area and increase recreation facilities distribution as much as among the population.

3. Conserve the Flood Retention & Detention and Paddy Cultivation Areas

This plan suggested reserving the existing paddy fields, abounded paddy fields as flood retention & detention areas according to the flood hazards of the area. Development activities of the adjacent areas must be done in compliance to the relevant laws & regulations under the recommendations of relevant institutes.

4. Prepare Public Outdoor Recreational Space (PORS) Plan in 2030

According to the forecasting population for year 2030 land requirement for the PORS for the Polonnaruwa Urban area for year 2030 is approximately 107.7 ha (Table 6.3 / Annexure 17/ Map No:6.13).

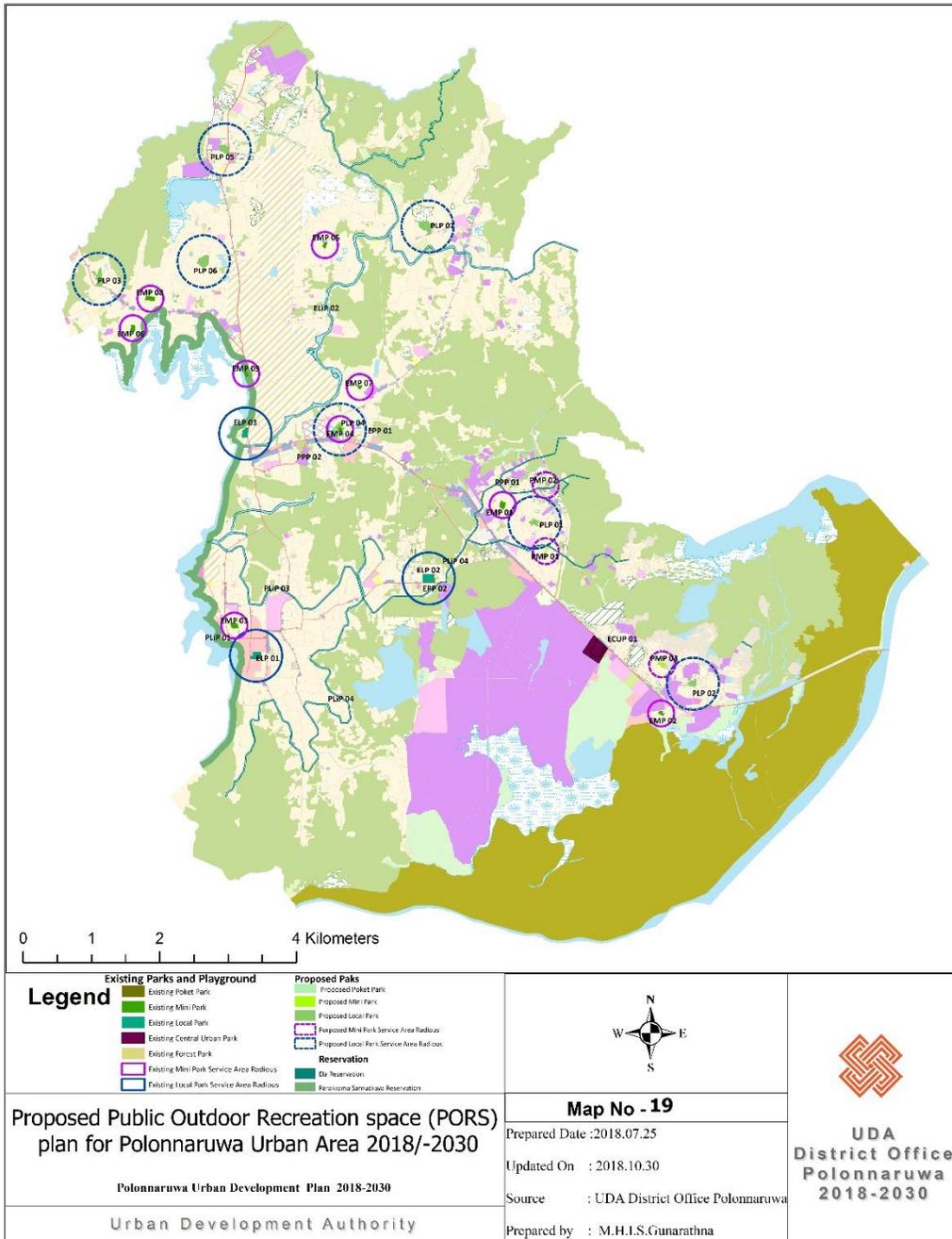
Table No 6.3: Proposed Public Outdoor Recreation Space Plan 2018 – 2030

No	Type of Parks	Allocated area (ha)	Permitted Uses	Minimum Plot size
1.	Proposed Pocket Parks	0.3	- Scattered play spaces - Rest areas	- 0.5 acre

			- Garden patches	
2.	Proposed Mini Parks	1.2	- Children's play area · Small grassed playground · Linear wood land Park - Rest garden	- 0.5- 2.5 A
3.	Proposed Local Parks	13.8	- Football pitch combined with Children Play area and informal relaxation space - Large informal grassed area with Children play area - Small Woodland Park and an informal running practice area	- 2.5 – 7.5
4.	Proposed Linear Parks	222.4	- Walking - Jogging - Cycling - Nature trails	- Ela reservations 1 st Canal (Ela Reservation- 10m) 2 nd Canal (Ela Reservation- 10m) 4 th Canal (Ela Reservation- 10m)
5.	Proposed Forest Park	1513.5	- Information Center - Nature trails - Canopy & walkways - Camping (Limited activities) - Research centers	- Flood Plains National Park

5.	Total	1751.2		
6.	Existing PORS	19.3		
	Grand Total	1770.5		

Map 6.15: Public Outdoor Recreational Space (PORS) Plan in 2030



6.5.5. Agriculture plan

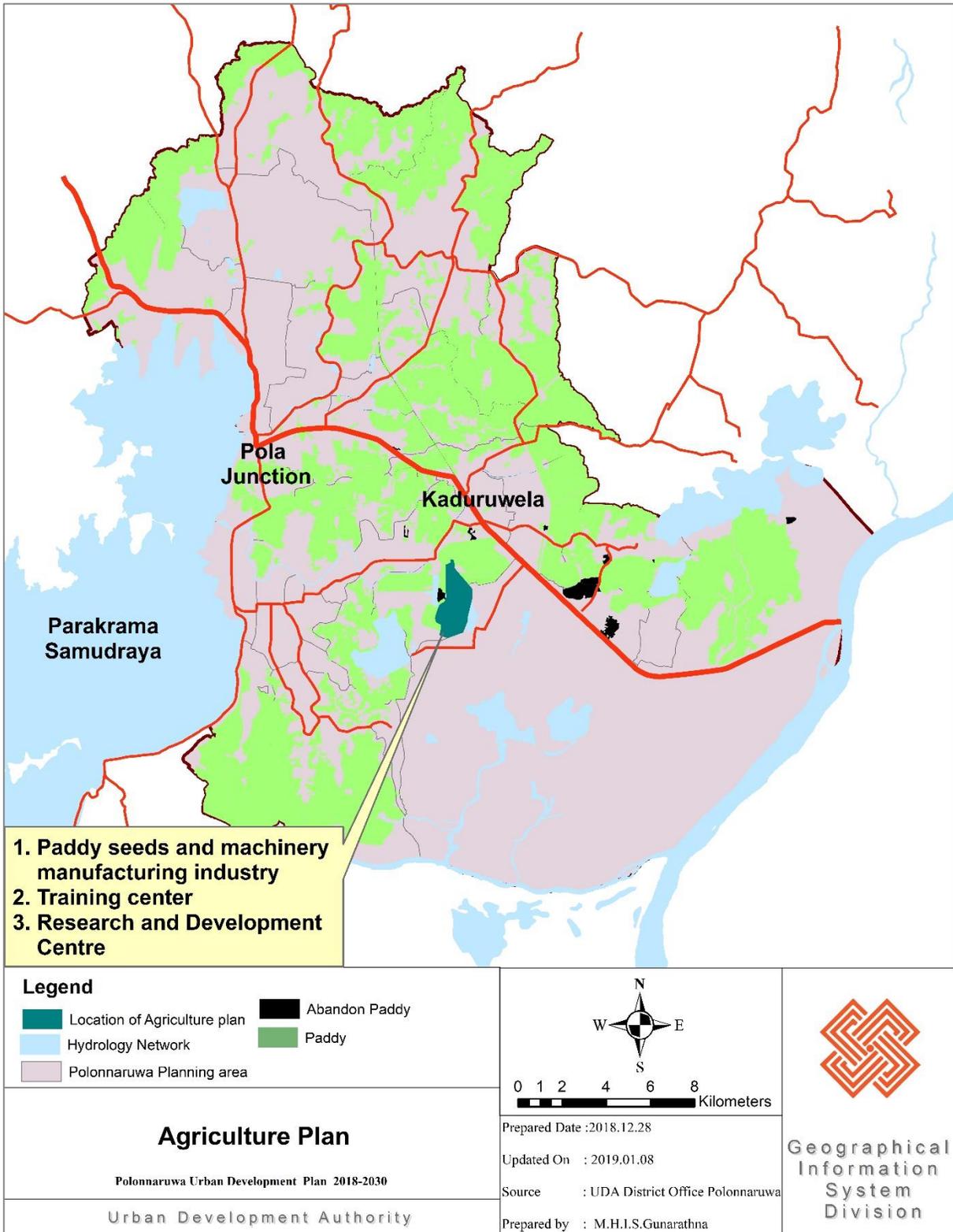
Paddy is the main agriculture product in Polonnaruwa. It gives proportion of 15% of total national paddy production in Sri Lanka. Polonnaruwa is one of most suitable area for paddy cultivation considering its climate condition, soil type and also other environmental needs for paddy cultivations. Paddy cultivation is the main livelihood of inhabitants in Polonnaruwa from earlier age. Once agriculture became national income source, government focused on improving irrigation system for sake of paddy cultivation years back. Today there is a declining trend of paddy cultivation can be identified because of less attention on farmers and no any innovations to encourage them.

Vision of Polonnaruwa development plan 2018/2030 has elaborate the need of improvements and conversions of paddy cultivation in Polonnaruwa as it is one of main element of Polonnaruwa which is enhance the identity of the city and economy. Following strategies has identified in order to enhance and keep alive and active of paddy lands in Polonnaruwa.

- ✓ Conserve and Convert abandoned paddy lands for paddy cultivations
- ✓ Introducing Paddy seeds and machinery manufacturing industry
- ✓ Training center for farmers to keep them trained in new technologies and innovations in paddy cultivation
- ✓ research and Development Centre for Seed and Planting Material

Main aim of formulating this strategy to encourage farmers to follow new and easy techniques to get increased their crops. Encouraging them to increase their harvest by following new healthier methods rather than using chemicals to increase their crops. See map.

Map 6.16: Agriculture plan



Source: UDA District office, Polonnaruwa

6.6 Culture and Heritage Management Strategy

6.6.1. Heritage Areas

Cultural and heritage types in Polonnaruwa can be identified under tangible and intangible categories as below.

a. Tangible

- I. Dalada Perahera (Poson Perahera)
- II. Wesak Perahera

b. Intangible

- I. Ancient Ruins (Archaeological zone)
- II. Hydrology network
- III. Paddy cultivations

As the Polonnaruwa city is one of historical land mark in the country, it has a significant identity mainly in two ways. First one is Polonnaruwa is one of UNESCO World Heritage Sites of Srilanka.

Second one is Polonnaruwa can be identified as the Premier Paddy producer in the country. According to the Current situation, the identity of the city has not optimally use for the benefit of the city. Also, the sensitive areas such as heritage sites and paddy areas of the city need to conserve and preserve in order to protect them and get those engaged into enhancing the city economy by improving production and tourism sector.

formation of the city is a result of historical actions it needs to have profound understand in preparation of urban development plan. Proposed Polonnaruwa Zoning plan 2030 have developed with including a separate zone for rchaeological sites. Paddy lands and hydrology network also identified as sensitive areas which are need to conserve to protect the identity of the city (map 6.17).

6.6.2 Goals related to culture and heritage management strategy

Green (Paddy and green environment) and Heritage are the main characters that are going to protect and promote to achieve the vision under heritage management strategy. 18 Archeological sites has been identified to develop by protecting the archeological value of those by promoting the tourism of the city to enhance the vision of the Polonnaruruwa Development Plan.

The vision of the development plan is “Green Glorious Heritage city in kingdom of rice”. Above goals will support to achieve the vision because it addresses the current need of the heritage city in a futuristic perspective. Vision it self highlight the Heritage city and rice industry because it is the identity of Polonnaruwa. So eventually these goals will lead to protect the identity of Polonnaruwa by following below strategies.

1. Improve the infrastructure facilities in Heritage city. (Annexure 18 and figure 6.11 and 6.12)
2. Conservation and preservation the Heritage sites. (Figure 6.15)
3. Regulate the constructions around the heritage city by maintaining it’s character (figure 6.13)
4. Hela bojun hala near sacred city (map 6.17)

Archaeological Department has identified several projects for improve the infrastructure facilities in Heritage city. Conservation and preservation of selected heritage sites also included in the project list. It has identified as a major objective to promote and protect the identity of Polonnaruwa heritage city by achieving the vision of Polonnaruwa Urban development plan 2018/2030. These strategies identified to maintain the character of Polonnaruwa heritage city while conserving it for tourism.

Figure 6.12: improvement of infrastructure facilities of sacred city



Source: Internet

Figure 6.13: Constructions near the sacred city



“Hela bojun hala” near sacred city will attract both local and foreign tourists into the sacred city. Traditional Srilankan foods which prepare using traditional cooking tools will enhance the feeling of cultural environment of the sacred city. It will be also a timely solution for absence of food shop near sacred area.

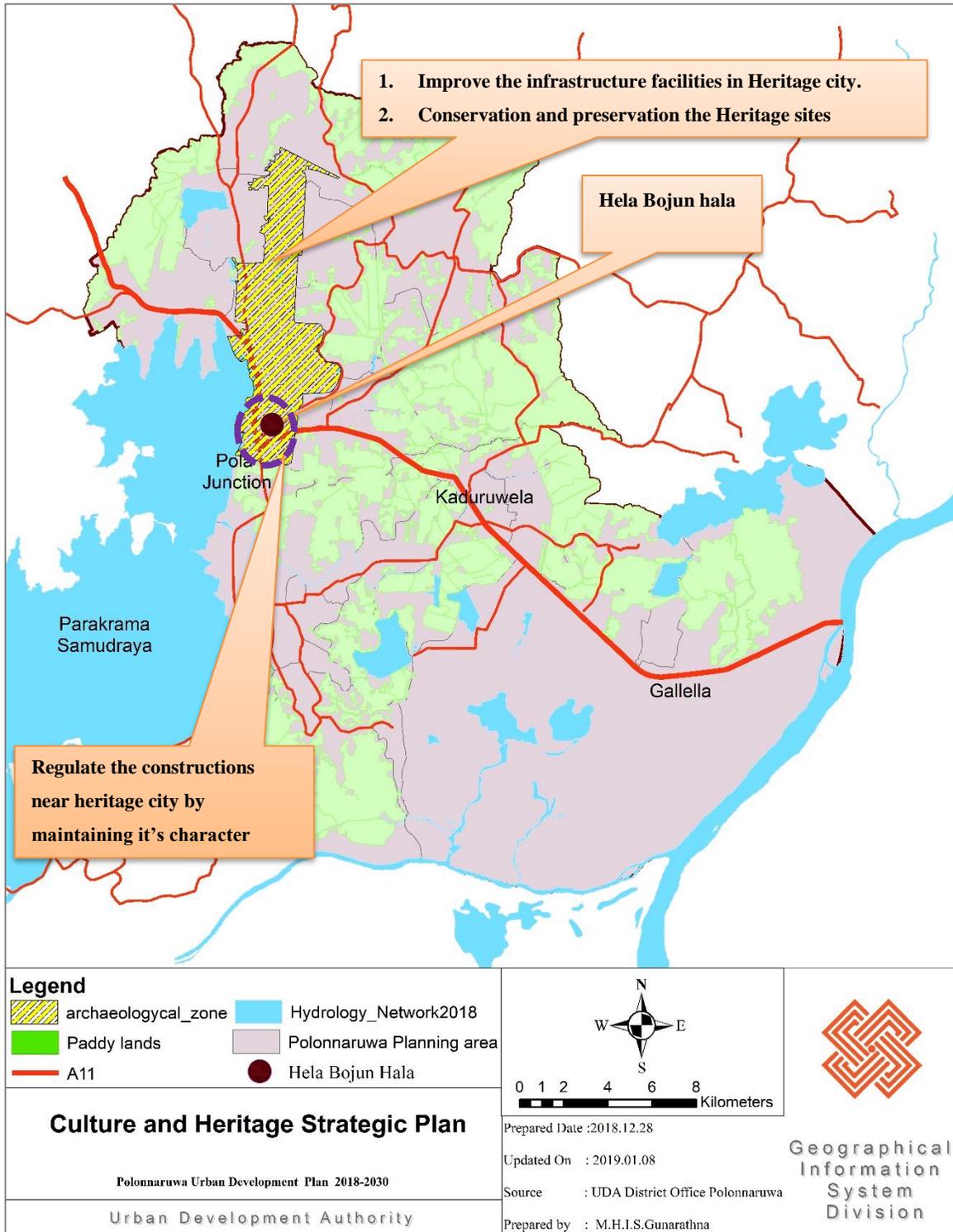
Figure 6.14: Hela bojun hala



Source: Internet

Finally, Culture and Heritage strategy will lead the city to enhance the cultural sense of the city while promoting its uniqueness to promote tourism of the area. Paddy has considered as one of a main element of culture and heritage of the city. Refer agriculture plan in the section of 6.5 for more details about agriculture plan.

Map 6.17: Culture and Heritage plan



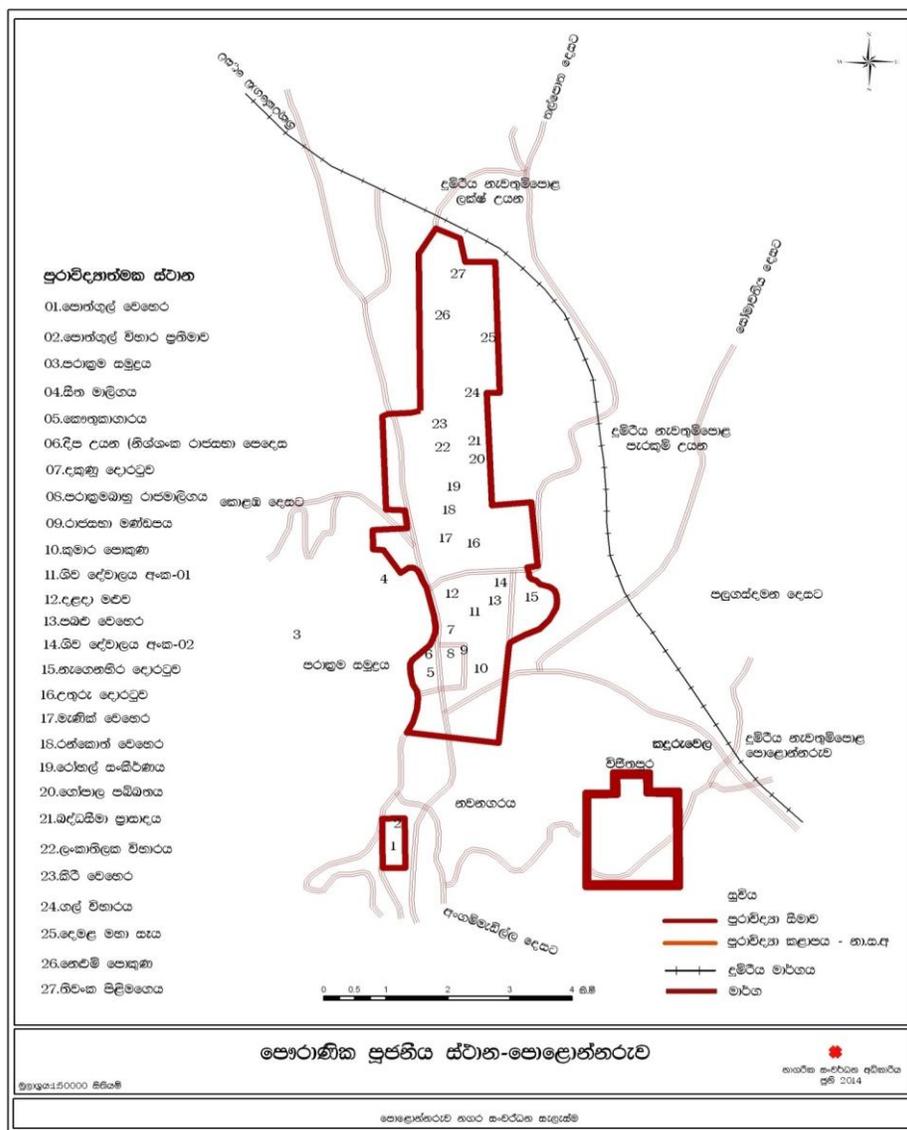
Source: UDA District office, Polonnaruwa

6.6.3 Culture and Heritage management guidelines

- Protection-Maintaining historical monuments and ruins by CCF together with Archaeological department to Protect and preserve heritage value
- Mitigation- strictly carry out laws and regulations within the archaeological zone to mitigate the negative impacts

Overall plan of Heritage Management strategy (Overall output of the proposals- Map including all strategic projects) (Annexure 19)

Figure 6.15: Ruins in Polonnaruwa sacred city



Source: Archeological Department

6.6.5 Linkages Between other strategies

Cultural and Heritage management plan is the most significant strategic plan in Polonnaruwa development plan, because it directly aligns with the vision of the plan. This strategy is always attached with tourism plan because tourism of Polonnaruwa city is based on it's culture and heritage value. So, it has linkages with infrastructure strategies, Economic strategies.

In order to facilitate tourists and well maintain heritage city, it is an essential objective to improve infrastructure facilities as described above. Uniqueness of the Polonnaruwa Heritage city is one of main reason to attract tourists into the city. So tourism is one of best income source which enhance the city economy. Paddy museum and agro tourism are two major strategies identified under economic strategy which is enhance the value of culture and heritage of Srilanka. So cultural and heritage plan also has a strong linkage with Economic strategic plan.

Polonnaruwa Culture and Heritage plan is Incorporate with national legislations and policies of UNESCO and Archaeological department

6.7 Implementation Strategy

Implementation strategies have been identified through this plan. Many action projects have been identified to implement the Polonnaruwa Development plan 2030 (Table 6.4). Accordingly, the projects have been arranged into a highrarchchal order by considering following factors.

Project benefits

- I. Environmental aspect
 - II. Social aspect
1. Project cost
 2. Vision of the plan
 3. Interconnection of projects

Accordingly, the projects have been prioraticed as follows.

1. First priority projects (Annexture 20)
2. Second priority projects (Annexture 21)
3. Third priority projects (Annexture 22)

Investemnt methods for implement those projects has been identified as,

1. Public capital investment
2. Private capital investment
3. Public and privete capital investment

Polonnaruwa urban development plan 2018/2030 has identified number of action projects align with its vision. Project Priority list also has included continuation projects from Polonnaruwa draft development plan 2015. Below identified priority list has seperatly metioned those action projects.

6.7.1 Strategic Action Projects

Table 6.4: Strategic Action Projects

Action Project	responsible institute	implementation time period
Introducing Paddy seeds and machinery manufacturing industry	Department of Agrarian Development	2 years
Training center for Agriculture	Department of Agrarian Development	1 year
research and Development Centre for Seed and Planting Material	Department of Agrarian Development	2 years
Viewing deck point	UDA	1 year
paddy museum	UDA & Department of Agrarian Development	2 years
Agro Tourism recreational activities for tourists	UDA & Department of Agrarian Development	1 year
Improve the infrastructure facilities in Heritage city.	Archaeological department	3 years
Recreational Facilitating in Torism belt around parakrama samudraya	SL Tourism Development Authority	2 years
Hela bojun hala near sacred city	Agriculture Department	within 1 year
city beautification Tree Plantation	UDA	within 1 year
City entrance developments	UDA	2 years
Development of road side landscape.	UDA	within 2 year
Recreational and commercial Fishery and boating services	UDA	1 year
Introduce Dock less bike sharing programme through online system	SL Tourism Development Authority	1 year
Hotel Management School	SL Tourism Development Authority	2 year
Improve pedestrian facilities	UDA & RDA	2 year
4 large scale Hotels in Tourism Zone	SL Tourism Development Authority	5 year
Waste controlling site	UDA	within 2 year
Impove parking facilities in kaduruwela	Water Board and PRDA	within 4 year
Motivate the community to process the Rain water harvesting system	Irrigation Department	1 year
Drainage meshes	UDA	within 1 year

Construct drainages for each and every road	PS	3 years
Improve the interconnection between main three nodes	UDA	within 1 year
Development o-f Kaduruwela bus stand	UDA	within 3 year
two raw rice products industris in industry zone	UDA	within 5 year
two value added product industries in industrial zone	UDA	within 4 year
Poliyer machine industry in industry zone	UDA	within 2 year
Aquaculture farm	Agriculture Department	2 years
Widen up narrow bridge in Manampitiya	UDA & RDA	1 year
Improve the connectivity of irrigation canals	Irrigation Department	2 years
Introduce the solor power system	Ceylon Electricity board	2 years
Promote underground electrical line laying	Archaeological Department	within 3 year
widen up pedestrians Around scared city and along A11 road	SLTDA	within 7 year
alternative tourist route to cover heritage site and paddy	SLTDA	within 10 year
Trilingual school	UDA	3 years
Install Underground cable systems for control cyclone	UDA	within 2 year
create wild elephant corridors in the forest reserves (planting trees and install electric fence)	Wildlife department	within 2 year
Rehabilitation of water gates on existing dams and canals	Water Board	within 2 year
Pibidemu Polonnaruwa Programme continuation project wish list (Identified under 2015 Polonnaruwa Development draft plan)		
Hospital Junction development Project	UDA	Within 3 years
Government Quarters Complex– New Town	UDA	Within 5 years
Administrative Complex – New Town	UDA	Within 5 years
Construction of MC Building - New Town	UDA	Within 5 years
Town Expansion Project – Kaduruwela	UDA	Within 5 years
Construction of Railway Quarters Building - Kaduruwela	UDA	Within 5 years
Financial Center Development - Kaduruwela	UDA	Within 5 years
Deepa Uyana	UDA	Within 3 years
Tourism Facility Center and Pola	UDA	Within 3 years
Tourism information Center	UDA	Within 3 years
Bus Stand & public fair Development – New Town	UDA	Within 5 years
Rainwater Harvesting plants	UDA	Within 1 years
Development Of Bus Deport – Kaduruwela	UDA	Within 3 years
Public Square Polonnaruwa	UDA	Within 3 years
Green Park – New Town	UDA	Within 3 years
Commercial and recreational fishery facilitating	UDA	within 2 years
Pedestrian Improvement and tree plantations for shade	UDA	within 3 years

Town Center Development (mini Shopping Complex And internal Road Development)	UDA	Within 5 years
Re Development of Existing Shops in Archeological City	UDA	Within 1 years
Public Market – Kaduruwela	UDA	Within 10 years
Circuit Bungalow – New town	UDA	Within 2 years
Children's and Women's Office - Kaduruwela	UDA	Within 3 years
Development of 3 Houses - Kaduruwela	UDA	Within 2 years
A11 Road from “Hathamuna” Junction to Kaduruwela Police Station.	RDA	Within 5 years
New Town Road –from Polonnaruwa junction to new town	RDA	Within 3 years
Swarnajyanthi Mw From new town to Kaduruwela	RDA	Within 10 years
Improvement of water Supply facility for the grater Polonnaruwa	Water Board	Within 7 years
Galthabarawa Cross Rd – From a11 Rd to “Galthabarawa Rd”	PRDA	Within 3 years
Wijayaba Mw – From A11 Rd to “Galthabarawa Rd”	PRDA	Within 1 years
Circular Rd – From New Town Road to A11 Road	PRDA	Within 1 years
Internal Roads (Archeological City)	Ps	Within 1 years
Galvihara Junction to A 11 Road	PRDA	Within 3 years
Commercial Complex - Archeological City	Ps	Within 10 years
Re- location of Aquaculture Development Project Office	Ministry of Fishery	Within 1 years
Aquaculture Development Center	Ministry of Fishery	Within 3 years
Muslim Colony Rd – From Gold city Junction to Project Boundary	PRDA	Within 10 years
Pachcha Palliya Rd –From Muslim Colony Rd to Project Boundary	Ps	Within 5 years
Manikkampattiya Rd –from Sawmill Junction to Project Boundary (two lane)	PRDA	Within 5 years
1 st Cross Rd – From Pachcha Palliya Rd to Manikkampattiya Rd	Ps	Within 5 years
2 nd Cross Rd From Pachcha Palliya Rd to A11 Rd	Ps	Within 10 years
“Shop Pedesa” internal Rds	Ps	Within 5 years
Extension of “ Maithreepala Sirisena” Mw from “4 Ela” Junction to A 11 Rd (near the police station)	RDA	Within 3 years
Internal Rd s	Ps	Within 3 years
2 nd Cannel Road	PRDA	Within 1 years
“Isipathana Mw” – From Hospital Junction to “Swarnajyanthi Mw”	PRDA	Within 1 years
“4 Ela Rd” - From STS petrol Shed Junction to A11 Rd (28 miles post, Cemetery Junction)	PRDA	Within 1 years
Low income housing Project	NHDA	Within 10 years

Improvement of irrigation play ground	Department of Irrigation	Within 3 years
Re – Location of RDHS Office	Ministry of Health	Within 5 years
Hospital Junction development Project	UDA	Within 3 years
Government Quarters Complex– New Town	UDA	Within 5 years
Administrative Complex – New Town	UDA	Within 5 years
Construction of MC Building - New Town	UDA	Within 5 years
Town Expansion Project – Kaduruwela	UDA	Within 5 years
Construction of Railway Quarters Building - Kaduruwela	UDA	Within 5 years
Financial Center Development - Kaduruwela	UDA	Within 5 years
Deepa Uyana	UDA	Within 3 years
Tourism Facility Center and Pola	UDA	Within 3 years
Tourism information Center	UDA	Within 3 years
Bus Stand & public fair Development – New Town	UDA	Within 5 years
Rainwater Harvesting plants	UDA	Within 1 years
Development Of Bus Deport – Kaduruwela	UDA	Within 3 years
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Green Park – New Town	UDA	Within 3 years
Commercial and recreational fishery facilitating	UDA	within 2 years
Pedestrian Improvement and tree plantations for shade	UDA	within 3 years
Town Center Development (mini Shopping Complex And internal Road Development	UDA	Within 5 years
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Development of 3 Houses - Kaduruwela	UDA	Within 2 years
A11 Road from “Hathamuna” Junction to Kaduruwela Police Station.	RDA	Within 5 years
New Town Road –from Polonnaruwa junction to new town	RDA	Within 3 years
Swarnajayanthi Mw From new town to Kaduruwela	RDA	Within 10 years

Improvement of water Supply facility for the grater Polonnaruwa	Water Board	Within 7 years
Galthabarawa Cross Rd – From a11 Rd to “Galthabarawa Rd”	PRDA	Within 3 years
Wijayaba Mw – From A11 Rd to “Galthabarawa Rd”	PRDA	Within 1 years
Circular Rd – From New Town Road to A11 Road	PRDA	Within 1 years
Internal Roads (Archeological City)	Ps	Within 1 years
Galvihara Junction to A 11 Road	PRDA	Within 3 years
Commercial Complex - Archeological City	Ps	Within 10 years
Re- location of Aquaculture Development Project Office	Ministry of Fishery	Within 1 years
Aquaculture Development Center	Ministry of Fishery	Within 3 years
Muslim Colony Rd – From Gold city Junction to Project Boundary	PRDA	Within 10 years
Pachcha Palliya Rd –From Muslim Colony Rd to Project Boundary	Ps	Within 5 years
Manikkampattiya Rd –from Sawmill Junction to Project Boundary (two lane)	PRDA	Within 5 years
1 st Cross Rd – From Pachcha Palliya Rd to Manikkampattiya Rd	Ps	Within 5 years
2 nd Cross Rd From Pachcha Palliya Rd to A11 Rd	Ps	Within 10 years
“Shop Pedesa” internal Rds	Ps	Within 5 years
Extension of “ Maithreepala Sirisena” Mw from “4 Ela” Junction to A 11 Rd (near the police station)	RDA	Within 3 years
Internal Rd s	Ps	Within 3 years
2 nd Cannel Road	PRDA	Within 1 years
“Isipathana Mw” – From Hospital Junction to “Swarnajyanthi Mw”	PRDA	Within 1 years
“4 Ela Rd” - From STS petrol Shed Junction to A11 Rd (28 miles post, Cemetery Junction)	PRDA	Within 1 years
Low income housing Project	NHDA	Within 10 years
Improvement of irrigation play ground	Department of Irrigation	Within 3 years
Re – Location of RDHS Office	Ministry of Health	Within 5 years

6.7.1.1 First priority Projects

Action projects identified from 2018/2030 Urban development plan	Continuation project wish list from 2015 draft urban development plan
1. Introducing Paddy seeds and machinery manufacturing industry	1.Hospital Junction Development project (Annexure 23)
2.Training center for Agriculture	2.Commercial and recreational fishery and boating facilitating
3. Research and Development Centre for Seed and Planting Material	3. Pedestrian Improvement and tree plantations
4. Viewing deck point	4. Tourism Facility Center and Pola (Annexure 24)
5. paddy museum	5. Tourism information Center (Annexure 25)
6. Agro Tourism recreational activities for tourists	6. Bus Stand & public fair Development – New Town
7. Improve the infrastructure facilities in Heritage city.	7. Development of Bus Deport – Kaduruwela
8. Recreational Facilitating in Torism belt around parakrama samudraya	8. Town Center Development (mini Shopping Complex and internal Road Development (Annexure 32) town expansion
9. Hela bojun hala near sacred city	9. Circular rd-from new town rd to A11 rd
10.city beautification Tree Plantation	10.Off grid power generation
11. City entrance developments	11. Rain water harvesting project
12. Development of road side landscape.	12. City entrance developments
13. two raw rice products industris in industry zone	13. Road side landscaping to improve identity
14. two value added product industries in industrial zone	14. Deepa Uyana (Annexure 26)
15. Poliyer machine industry in industry zone	

6.7.1.2 second priority Projects

Action projects identified from 2018/2030 Urban development plan	Continuation project wish list from 2015 draft urban development plan
1. Recreational and commercial Fishery and boating services	1. Rice retail & Wholesale market – Kaduruwela
2. Introduce Dock less bike sharing programme through online system	2. internal road development
3. Hotel Management School	3. extention of "maithreepala sirisena" mw
4. Improve pedestrian facilities	4. mini bus stands and public fair development
5. 4 large scale Hotels in Tourism Zone	5. muslim colony road-from gold city junction
6. Waste controlling site	6. Colombo-Batticaloa railway line, and is about 30km southeast of Gal Oya, where the line splits from the Colombo-Trincomalee line.

7. Improve parking facilities in kaduruwela	7. Improve the connectivity of Irrigation network
8. Motivate the community to process the Rain water harvesting system	8. Regulate Sewerage /waste water disposal system
9. Drainage meshes	9. Fiancial Center development (Annexure 27)
10. Construct drainages for each and every road	10. Circuit Bungalow (Annexure 28)
11. Improve the interconnection between main three nodes	
12. Development o-f Kaduruwela bus stand	

6.7.1.3 Third priority Projects

Action projects identified from 2018/2030 Urban development plan	Continuation project wish list from 2015 draft urban development plan
1.Aquaculture farm	1.Privet Vehicle parking areas behind high development zone
2.Widen up narrow bridge in Manampitiya	2.agro tourism programmes near tourim zone (Along Prakrama Samudraya /All other home steed area/ all paddy lands)
3.Improve the connectivity of irrigation canals	3.Paddy Related Tourism near tourism zone
4.Introduce the solor power system	4.Industrial Park –Laxsha Uyana
5.Promote underground electrical line laying	5.Improvement of irrigation play ground
6.widen up pedestrians Around scared city and along A11 road	6.Public square
7. alternative tourist route to cover heritage site and paddy	7.Green park
8. Trilingual school	8.Aquaculture development center
9.Install Underground cable systems for control cyclone	9.Construction of goverment quarters complex (Annexure 29)
10.create wild elephant corridors in the forest reserves (planting trees and install electric fence) Rehabilitation of water gates on existing dams and canals	10.Construction administrative complex (Annexure 30)
	11.Construction of MC building (Annexure 31)
	12.Railway quarters building
	13.Children's and woman's office

6.7.2 Institutional Setting

1. Department of Census and Statistics
2. Central Cultural Fund
3. Department of Archaeology
4. Sri Lanka Tourist Board
5. Department of Irrigation
6. Department of Agrarian Development
7. Department of National Physical Planning
8. Presidential Secretary Office for “Pibidemu Polonnaruwa Development Program”.
9. Department of Meteorology
10. Board of Investment of Sri Lanka
11. Central Environmental Authority
12. Department of Agriculture
13. National Water Supply & Drainage Board
14. Department of Forest
15. Department of Railways
16. Road Development Authority
17. Land Use Policy Planning Department
18. Department of Wildlife Conservation
19. Disaster Management Center Polonnaruwa
20. Ceylon Electricity Board
21. Hector Kobbkduwa Agrarian Research & Training Institute
22. Mahaweli Authority of Sri Lanka
23. Sri Lanka Police
24. Department of Survey
25. Industrial Development Board
26. District Secretary Office - Polonnaruwa
27. North Central Provincial Council
28. Municipal Council - Polonnaruwa
29. Pradeshiya sabha- Polonnaruwa
30. Garamaniladhari Offices of Municipal Council Area

8. ANNEXTURES

Annexures 1

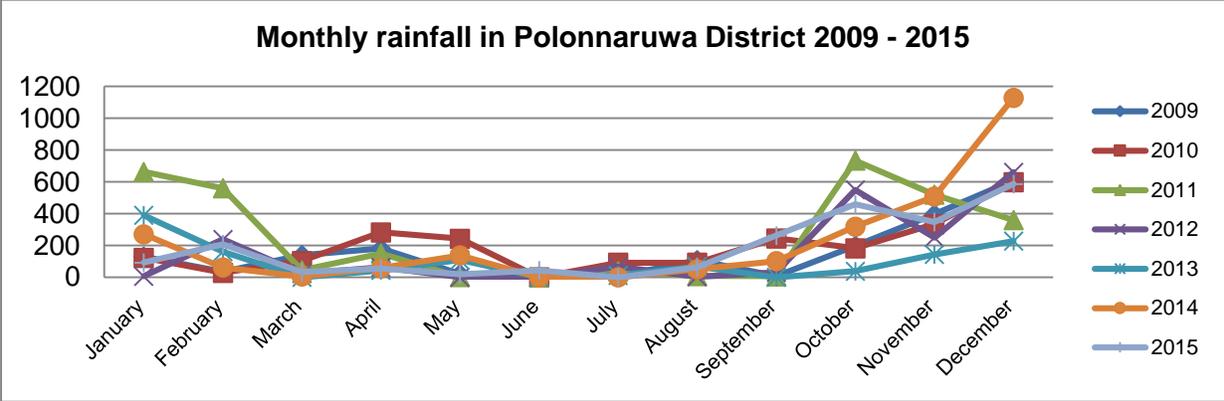
	Type of Development	Approved Projects in 2017	Approved Amount in 2017 (Rs.M.)	Total Cost
1	School Development	88	600.00	382.37
2	Construction of Indoor Stadium in Royal Collage	1	146.62	71.48
3	Construction of Swimming pool in Ananda girls Collage	1	59.00	-
04	Piriven Development	11	150.00	44.81
05	Health (District Hospital Development)	16	700.00	140.65
06	Health (Polonnaruwa Kidney Hospital Development)	14	375.00	-
07	Supply of Drinking Water	34	1700.00	69.99
08	Urban Road Development (RDA)	9	2250.00	1700.82
09	District Road Development	36	1300.00	632.58
10	Rural Roads Development /Rural Roads Development (New Projects)	59 /551	725.00/259.7	
11	Development of Livestock		12.00	11.02
12	Sports and Cultural	4	111.00	54.92
14	Disaster Management	270	100.00	8.14
15	Urban Development	6	1600.00	372.42
17	Religious Places Development	41	100.00	46
19	Installing accessories in theaters	4	200.00	119.05
20	Information Technology		5.00	-
21	Mahaweli Development	1	23.88	5.17
22	Irrigation Development	25	84.15	9.97
23	Agriculture development	2	100.00	0.06
24	Agrarian service	25	59.35	9.05
25	livelihood development	3266	600.00	7.95
26	wildlife reservation		4.00	
27	Small town Development		190.00	
28	Common Utilities	8	100.00	1.56
29	Administrative and management		5.00	3.97

Table 8.1: Pibidemu Polonnaruwa Development projects

source: Polonnaruwa Dev programme

Annexure 2

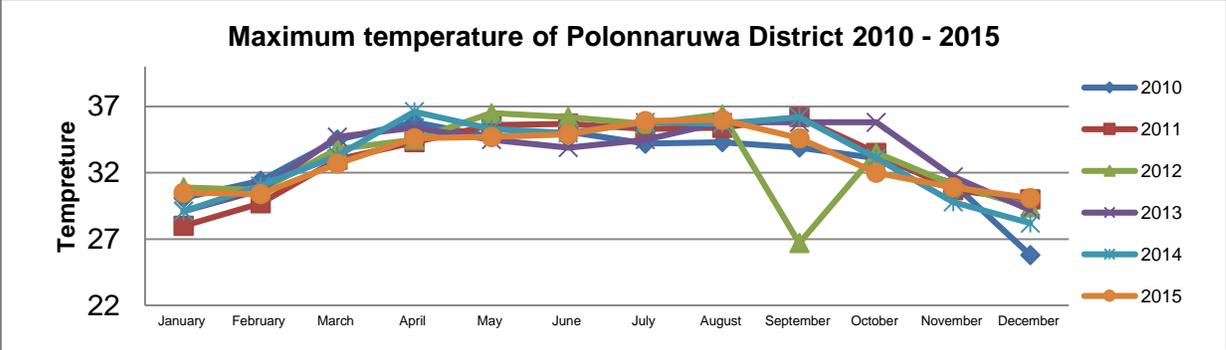
Figure 8.1: Monthly rainfall in Polonnaruwa District 2009-2015



Source: Department of Meteorology - Sri Lanka

Annexure 3

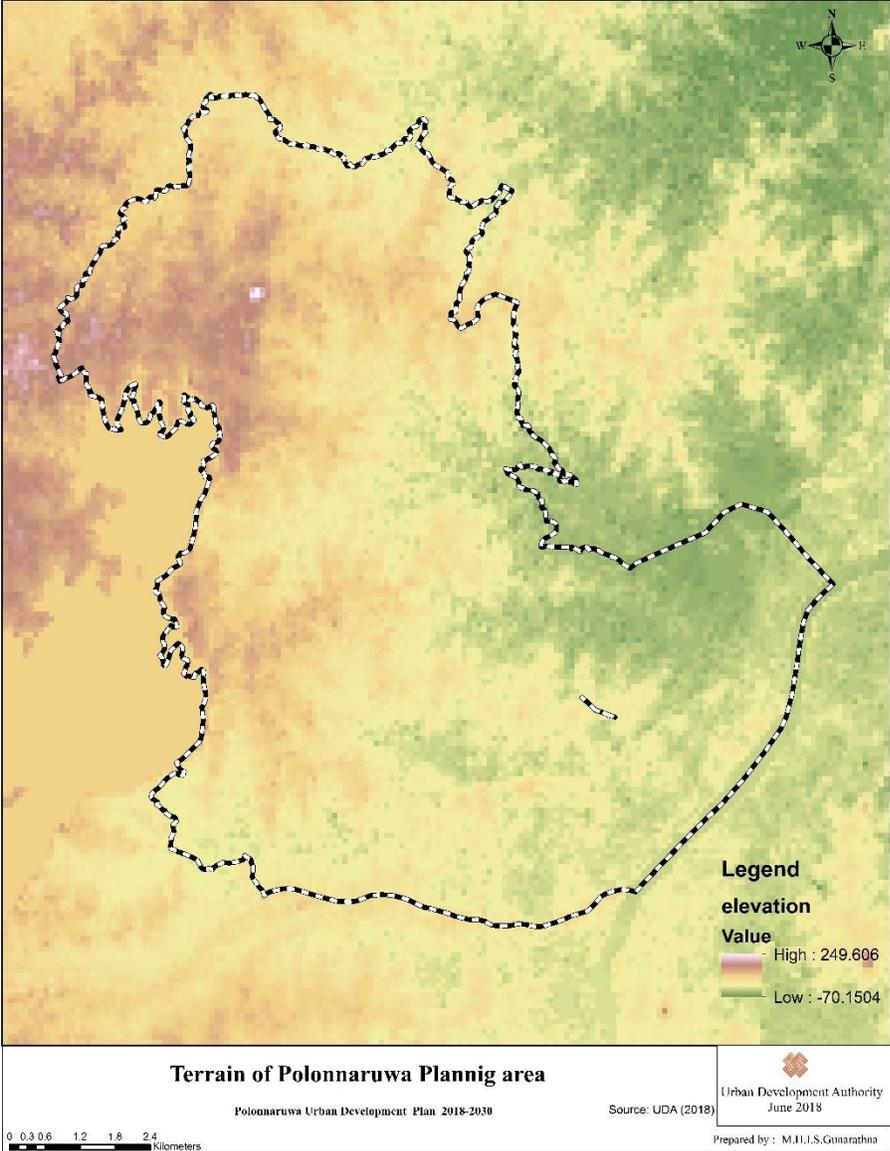
Figure 8.2: Monthly temperature of Polonnaruwa District 2010-2015



Source: Department of Meteorology - Sri Lanka

Annexure 4

Figure 8.3: Terrain map of Polonnaruwa Urban area



Annexure 5

Figure 8.4: Urban Hierarchy - North central province

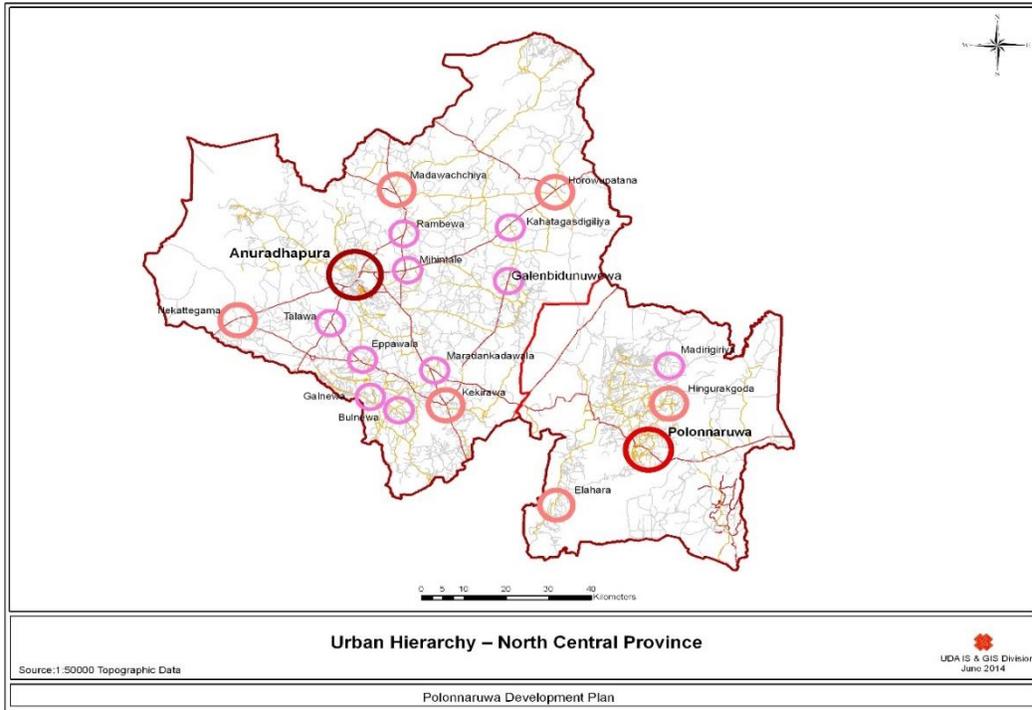
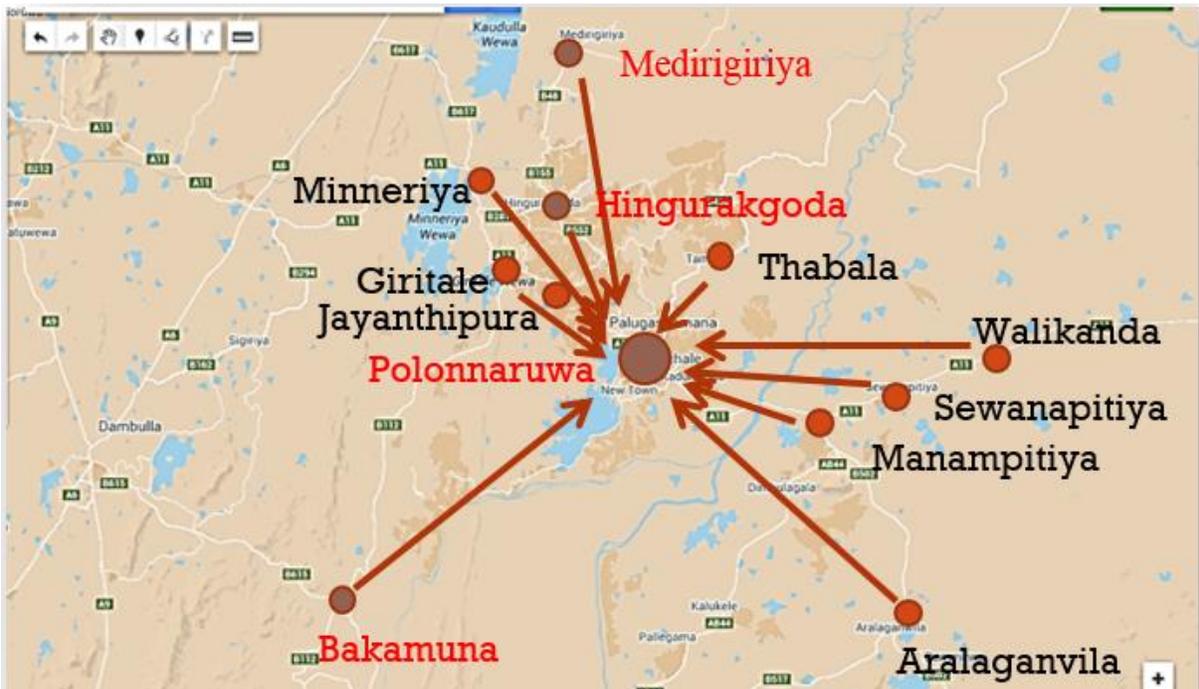


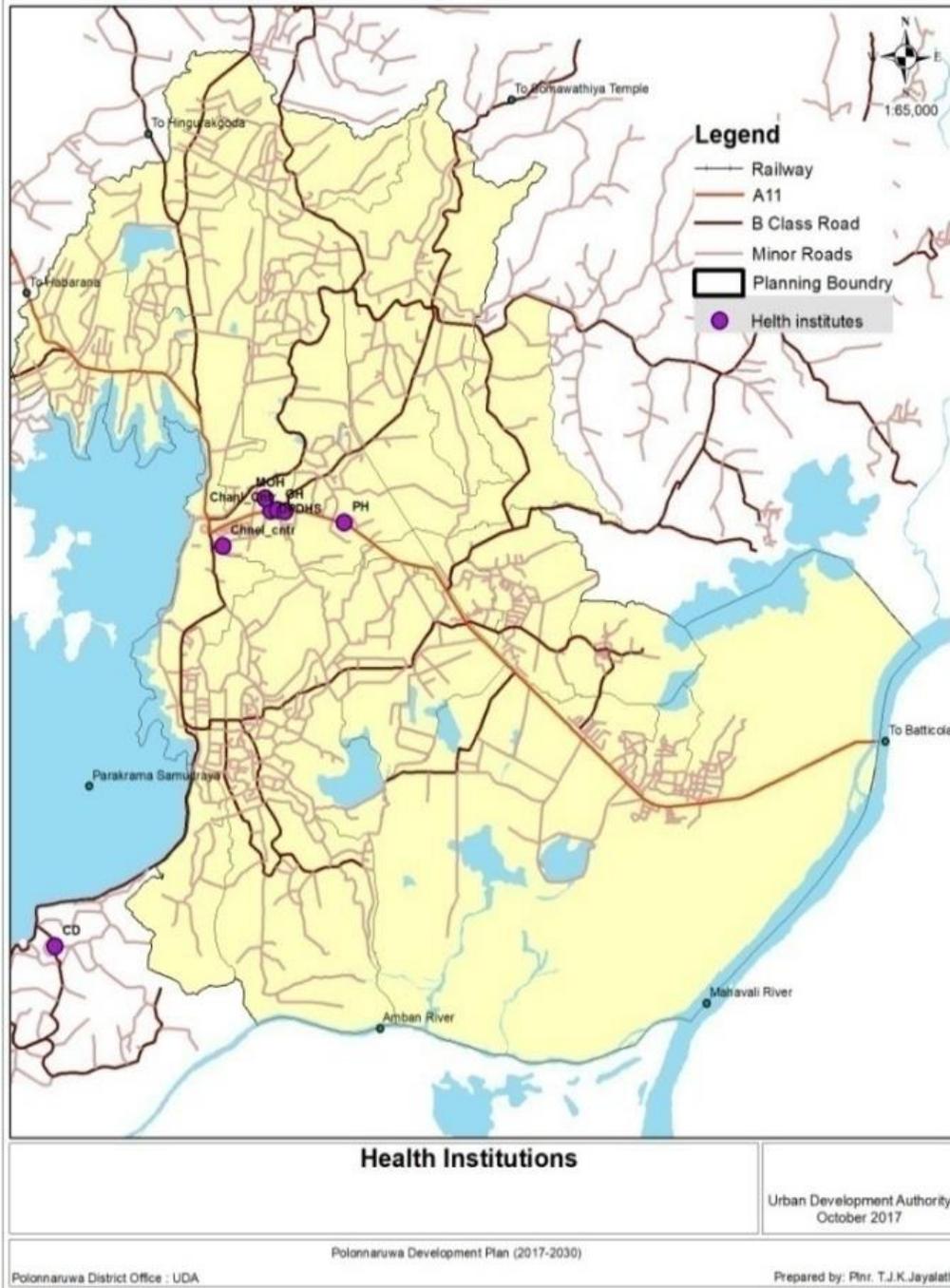
Figure 8.5: City Catchment



Source: surveys interviews and daily bus transit root details

Annexure 6

Figure 8.6: Health Institutions of urban area



Source: Field visit

Figure 8.7: Electricity supply in planning area



Source: Ceylon Electricity Board

Annexure 7

Figure 8.8: District wise Population distribution -Sri

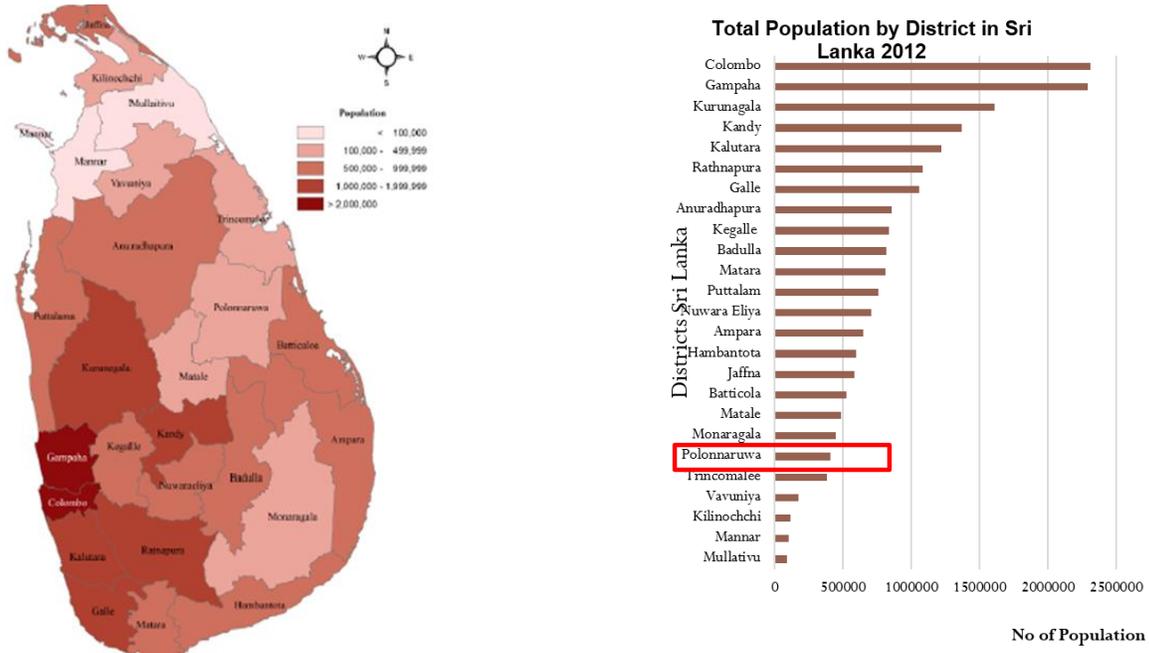


Figure 3: Poverty

Source: Population and Housing of Sri Lanka 2012 Department of Census & Statistics

Figure 8.9: Population growth by District 1981-2012

Table 3.3: Growth in population by districts, 1981- 2012

Districts	Total Population			Average Annual Growth Rate (%)		
	1981(1)	2001(2)	2012	1981-2001	1981-2012	2001-2012
Sri Lanka	14,846,274	18,797,257	20,359,439	1.16	1.02	0.75
Colombo	1,675,847	2,239,696	2,324,349	1.43	1.05	0.35
Gampaha	1,367,813	2,060,470	2,304,833	2.01	1.68	1.05
Kalutara	823,964	1,065,635	1,221,948	1.26	1.27	1.28
Kandy	1,032,335	1,276,202	1,375,382	1.04	0.92	0.70
Matale	352,860	439,031	484,531	1.07	1.02	0.92
Nuwara-Eliya	583,716	702,689	711,644	0.91	0.64	0.12
Galle	805,403	989,769	1,063,334	1.01	0.90	0.67
Matara	642,235	760,990	814,048	0.83	0.76	0.63
Hambantota	421,277	525,913	599,903	1.09	1.14	1.23
Jaffna	734,474	-	583,882	-	-0.74	-
Mannar	105,276	-	99,570	-	-0.18	-
Vavuniya	93,694	-	172,115	-	1.96	-
Mullaitivu	73,886	-	92,238	-	0.71	-
Kilinochchi	90,778	-	113,510	-	0.72	-
Batticaloa	329,343	-	526,567	-	1.51	-
Ampara	383,275	592,596	649,402	2.14	1.70	0.86
Trincomalee	250,771	-	379,541	-	1.34	-
Kurunegala	1,198,795	1,458,385	1,618,465	0.96	0.95	0.97
Puttalam	485,619	709,002	762,396	1.86	1.45	0.68
Anuradhapura	575,546	742,535	860,575	1.25	1.30	1.38
Polonnaruwa	253,411	358,804	406,088	1.71	1.52	1.16
Badulla	620,839	778,422	815,405	1.11	0.88	0.43
Moneragala	269,684	396,521	451,058	1.89	1.66	1.21
Ratnapura	779,927	1,016,221	1,088,007	1.30	1.07	0.64
Kegalle	678,456	784,371	840,648	0.71	0.69	0.65

Source: Population and Housing of Sri Lanka 2012 Department of Census & Statistics

Annexures 8

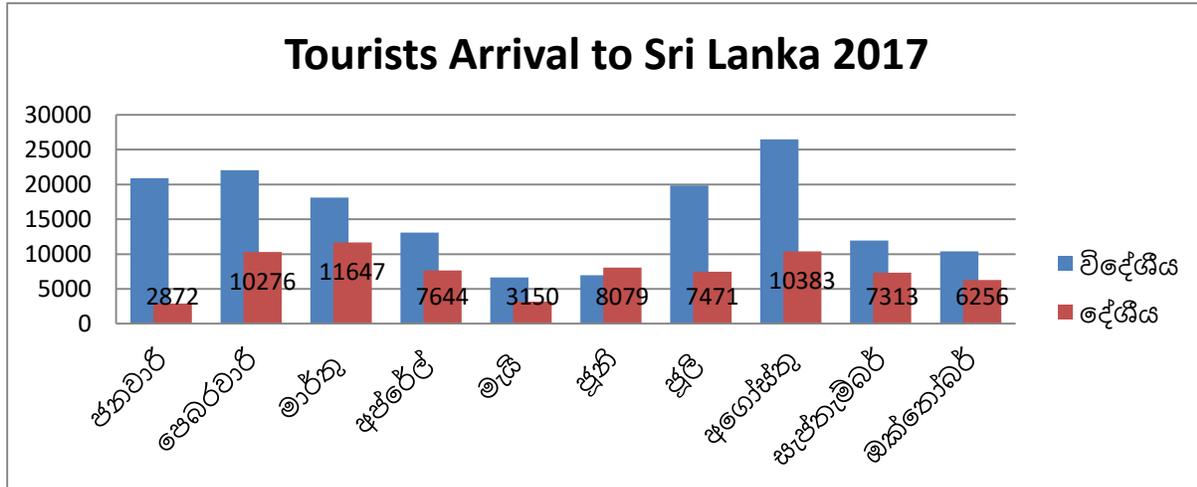
Figure 8.10: Indicator by sector, province and district

Poverty Indicators by Sector, Province and District										
Sector / Province / District	Poverty Head Count Index (Percentage) by HIES Survey Period						Poor Household Percentage		Poverty Gap Index (%)	
	1990/91	1995/96	2002	2006/07	2009/10	2012	2006/07	2009/10	2006/07	2009/10
Sri Lanka	26.1	28.8	22.7	15.2	8.9	6.5	12.6	7.0	3.1	1.7
Sector										
Urban	16.3	14.0	7.9	6.7	5.3	2.4	5.0	3.8	1.3	1.2
Rural	29.5	30.9	24.7	15.7	9.4	7.5	13.1	7.5	3.2	1.8
Estate	20.5	38.4	30.0	32.0	11.4	6.2	25.8	8.9	6.2	2.1
Province										
Western	19.1	16.3	10.8	8.2	4.2	n.a.	6.5	3.0	1.5	0.8
Central	30.7	36.2	25.1	22.3	9.7	n.a.	18.2	8.2	4.6	1.8
Southern	30.2	32.6	27.8	13.8	9.8	n.a.	11.0	7.5	2.6	1.8
Northern	n.a.	n.a.	n.a.	n.a.	12.8	n.a.	n.a.	10.0	n.a.	2.1
Eastern	n.a.	n.a.	n.a.	10.8	14.8	n.a.	9.0	12.4	2.1	3.2
North Western	25.8	27.7	27.3	14.6	11.3	n.a.	12.2	8.2	2.9	2.4
North Central	24.5	24.7	21.5	14.2	5.7	n.a.	11.8	4.6	2.8	1.0
Uva	31.9	46.7	37.2	27.0	13.7	n.a.	23.8	12.0	6.2	2.4
Sabaragamuwa	31.0	41.7	33.6	24.2	10.6	n.a.	20.2	8.7	4.9	2.1
District										
Colombo	16.2	12.0	6.4	5.4	3.6	n.a.	3.9	2.5	1.0	0.7
Gampaha	14.7	14.1	10.7	8.7	3.9	n.a.	7.2	3.0	1.4	0.7
Kalutara	32.3	29.5	20.0	13.0	6.0	n.a.	10.3	4.1	2.7	1.3
Kandy	35.9	36.7	24.9	17.0	10.3	n.a.	13.9	8.3	3.8	2.2
Matale	28.7	41.9	29.6	18.9	11.4	n.a.	15.7	9.3	3.7	2.0
Nuwara Eliya	20.1	32.1	22.6	33.8	7.6	n.a.	27.5	7.1	6.8	1.0
Galle	29.7	31.6	25.8	13.7	10.3	n.a.	10.7	7.9	2.9	2.1
Matara	29.2	35.0	27.5	14.7	11.2	n.a.	11.7	8.3	2.4	1.7
Hambantota	32.4	31.0	32.2	12.7	6.9	n.a.	10.5	5.4	2.5	1.3
Jaffna	n.a.	n.a.	n.a.	n.a.	16.1	n.a.	n.a.	12.4	n.a.	2.6
Mannar	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Vavuniya	n.a.	n.a.	n.a.	n.a.	2.3	n.a.	n.a.	2.0	n.a.	0.3
Mullaitivu	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Kilinochchi	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Batticaloa	n.a.	n.a.	n.a.	10.7	20.3	n.a.	9.5	17.0	1.5	5.1
Ampara	n.a.	n.a.	n.a.	10.9	11.8	n.a.	8.7	10.0	2.4	2.3
Trincomalee	n.a.	n.a.	n.a.	n.a.	11.7	n.a.	n.a.	9.0	n.a.	1.8
Kurunegala	27.2	26.2	25.4	15.4	11.7	n.a.	12.9	8.6	3.1	2.6
Puttalam	22.3	31.1	31.3	13.1	10.5	n.a.	10.6	7.5	2.3	2.0
Anuradhapura	24.4	27.0	20.4	14.9	5.7	n.a.	12.7	4.6	2.8	1.0
Polonnaruwa	24.9	20.1	23.7	12.7	5.8	n.a.	10.0	4.5	2.8	1.0
Badulla	31.0	41.0	37.3	23.7	13.3	n.a.	21.0	10.9	5.3	2.2
Monaragala	33.7	56.2	37.2	33.2	14.5	n.a.	29.2	13.9	7.8	2.8
Ratnapura	30.8	46.4	34.4	26.6	10.4	n.a.	21.5	8.5	5.3	2.4
Kegalle	31.2	36.3	32.5	21.1	10.8	n.a.	18.4	9.0	4.3	1.7

Source: Population and Housing of Sri Lanka 2012 Department of Census & Statistics

Annexure 9

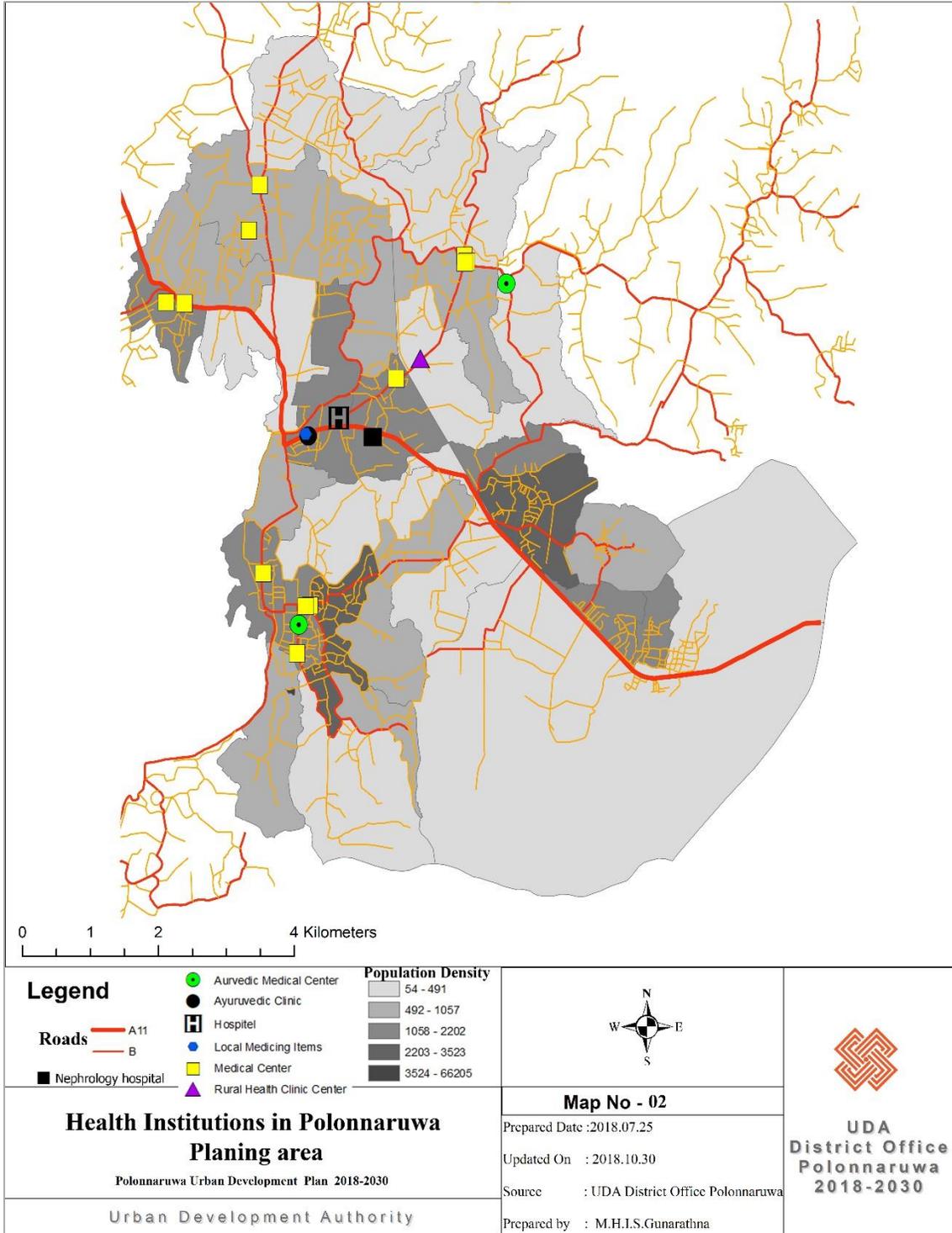
Tourist arrival to Polonnaruwa in 2017



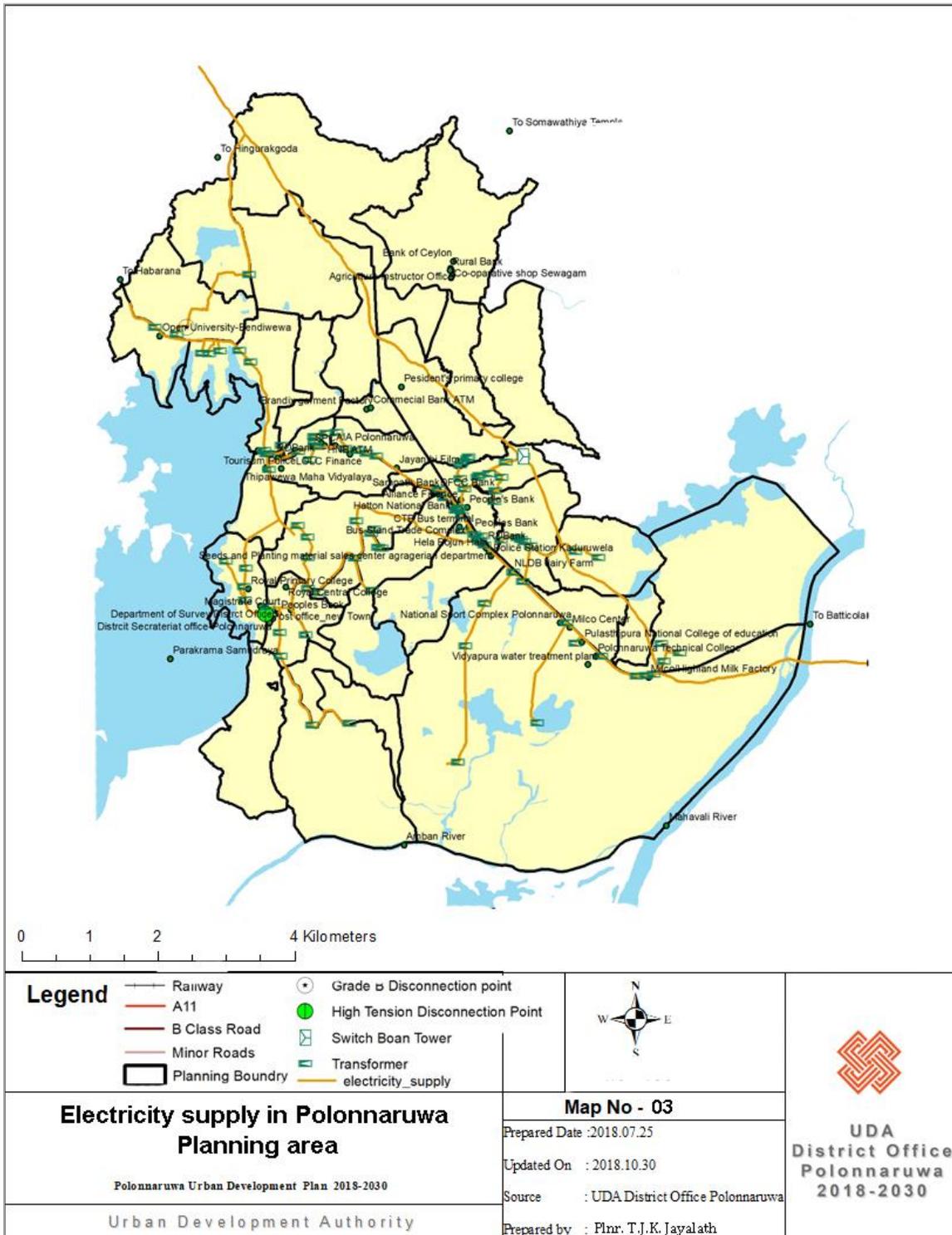
Source: Tourist Development Authority-Annual Report

Annexure 10

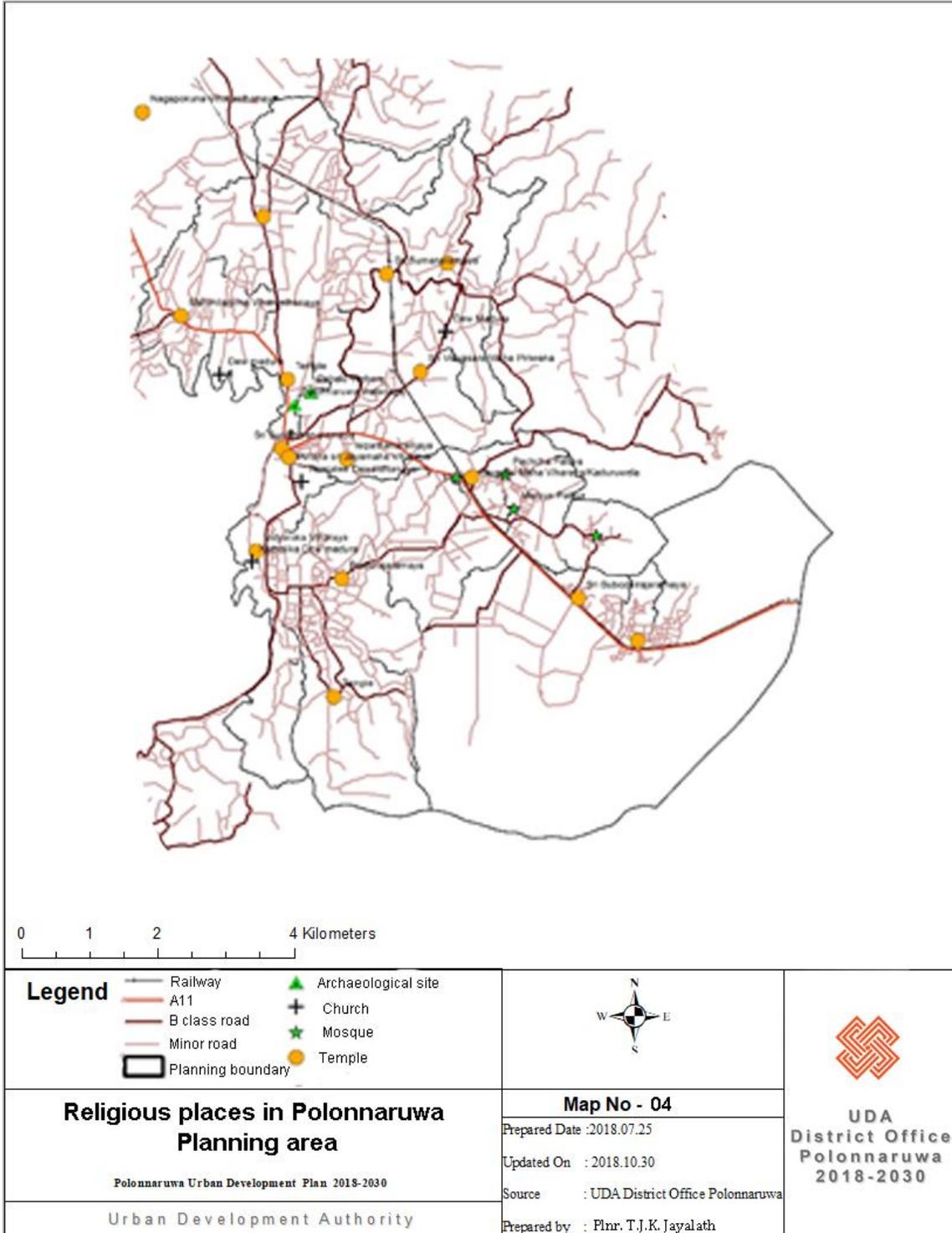
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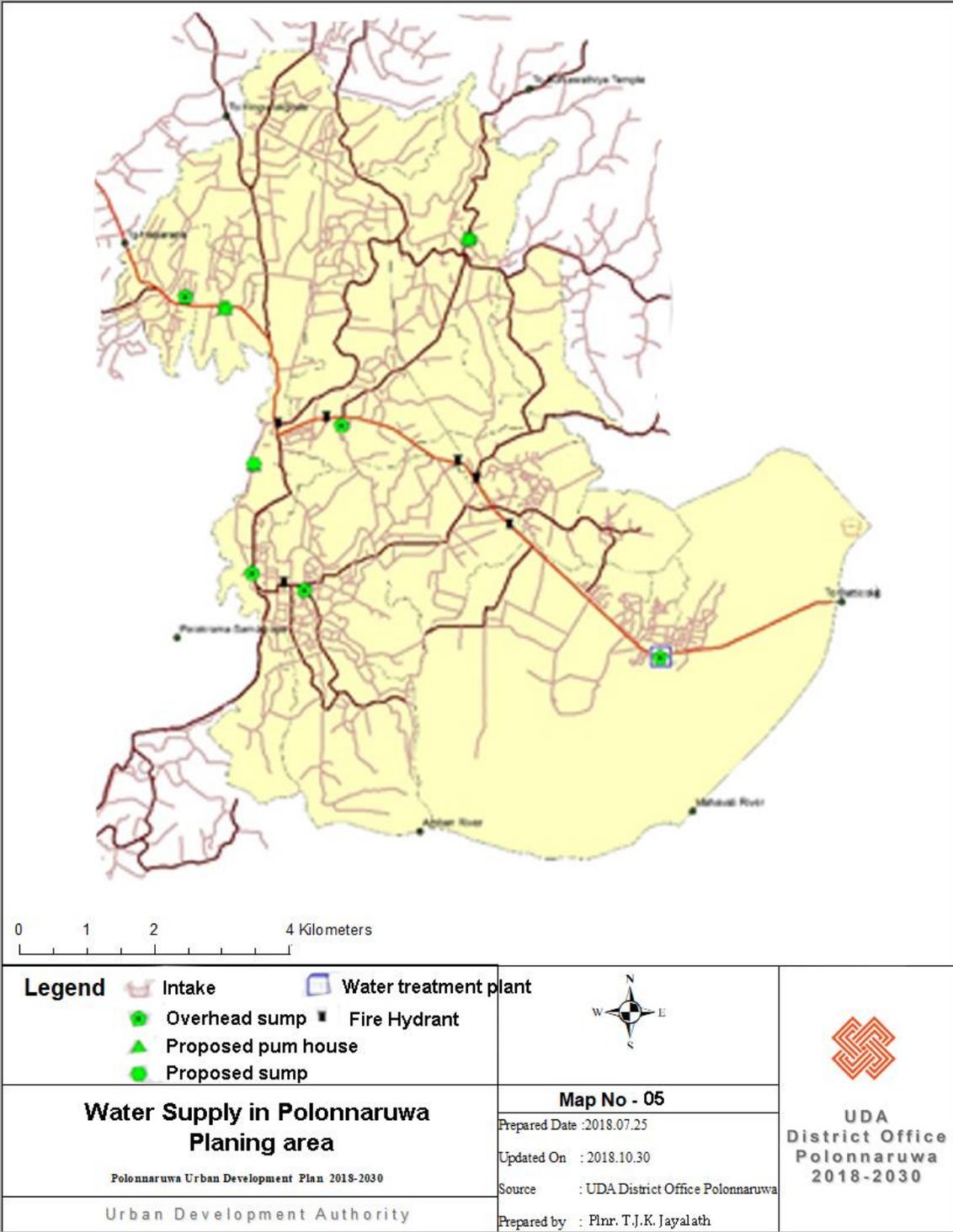
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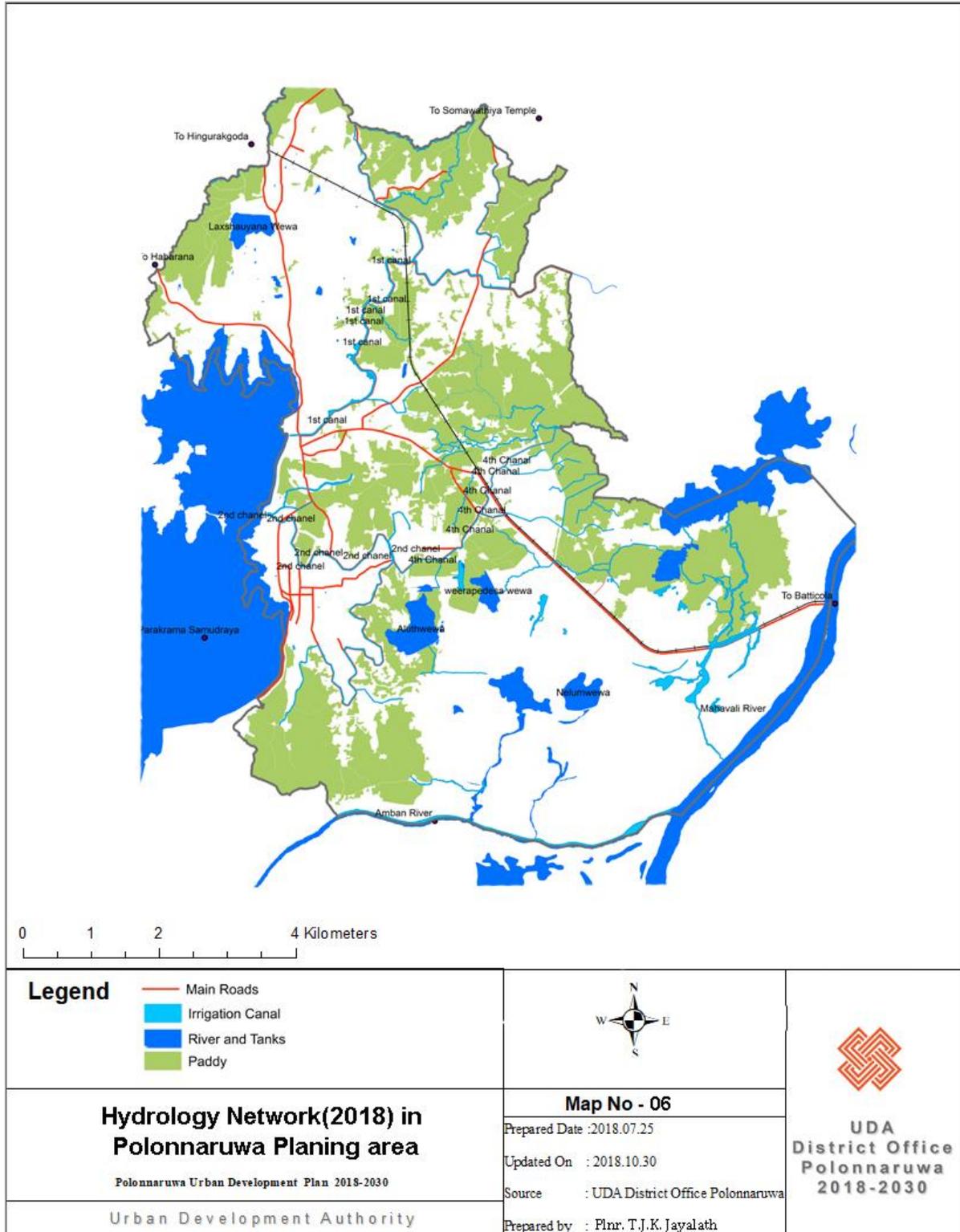
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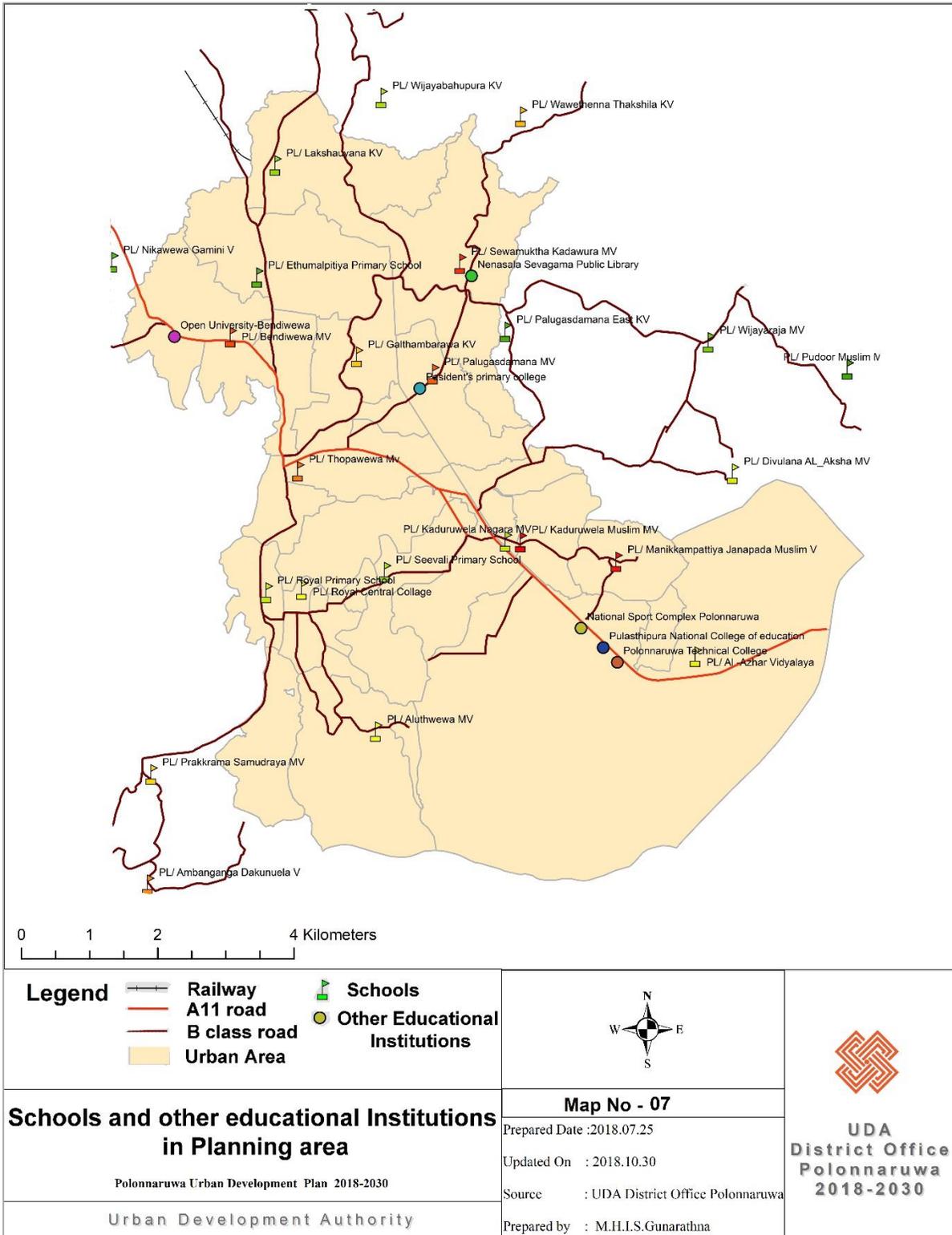
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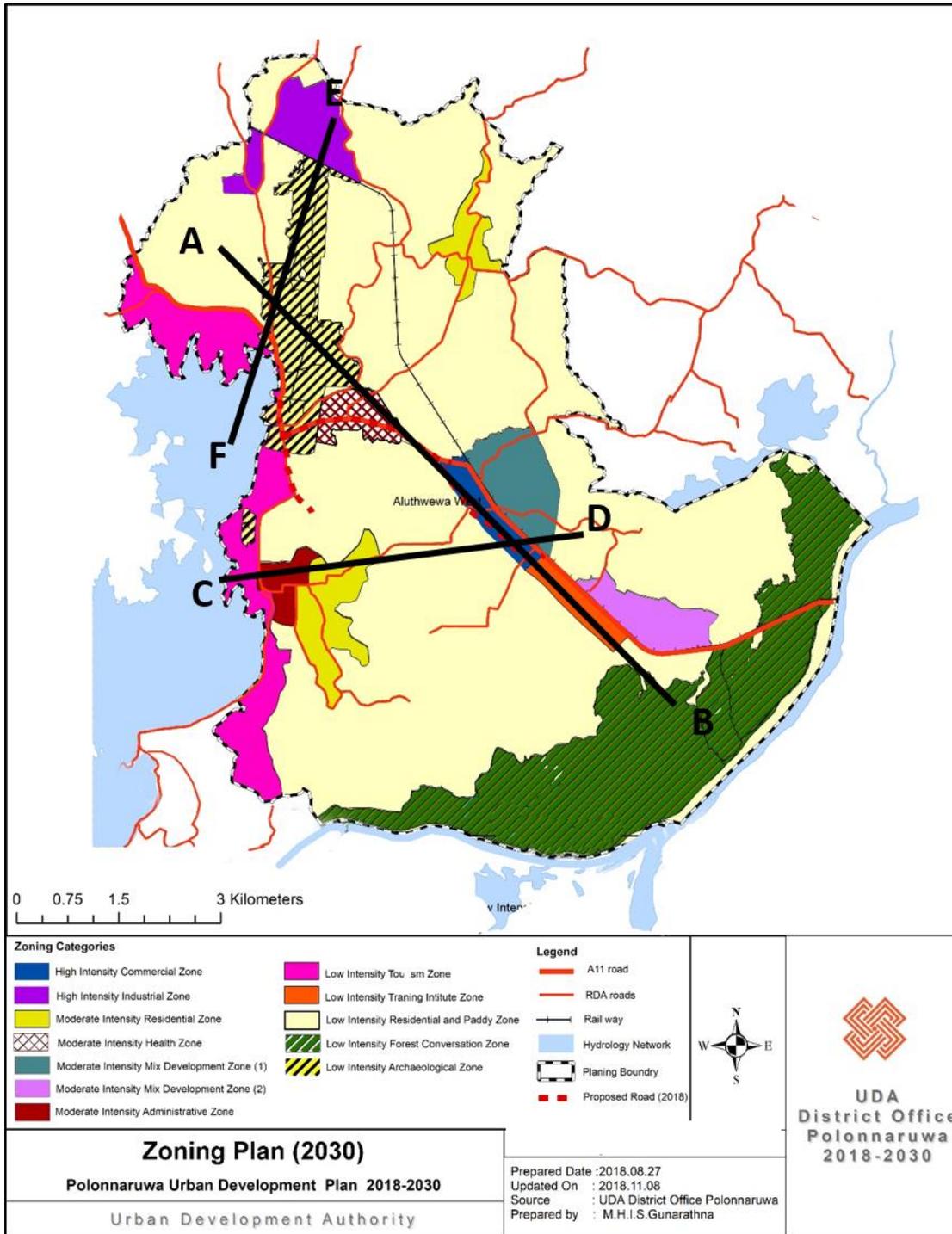


Annexure 10
Disaster Events

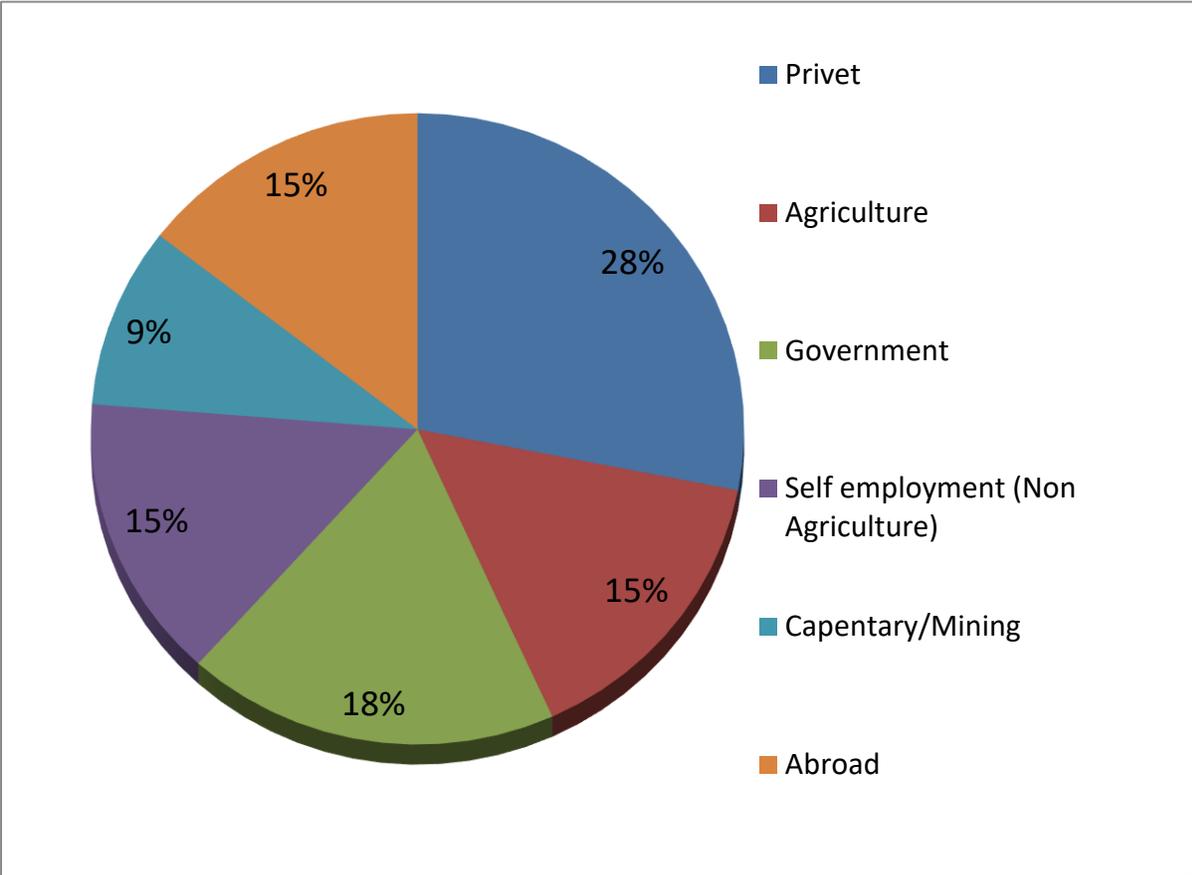
Disaster Events - Thamankaduwa DSD , Polonnaruwa District from 2006-2017									
Event	Year	Month	Events	Deaths	Injured	Houses Destroyed	Houses Damaged	Affected	Evacuated
DROUGHT	2012	4	1	0	0	0	0	2478	0
DROUGHT	2014	8	1	0	0	0	0	6174	0
DROUGHT	2016	8	1	0	0	0	0	9475	0
FLOOD	2006	1	1	0	0	0	0	683	683
FLOOD	2006	12	1	0	0	0	0	746	0
FLOOD	2007	12	12	0	0	0	1	3423	0
FLOOD	2012	12	1	0	2	26	53	6159	0
FLOOD	2014	1	1	0	0	0	0	48	0
FLOOD	2014	12	1	0	0	0	2	8929	0
FLOOD	2015	10	1	0	0	0	0	11	0
STRONG WIND	2008	3	1	0	0	10	12	110	0
STRONG WIND	2011	5	1	0	0	0	5	0	0
STRONG WIND	2011	10	1	0	0	0	5	0	0
STRONG WIND	2015	10	1	0	0	0	56	227	0
STRONG WIND	2016	4	1	0	0	0	44	220	0
STRONG WIND	2016	5	2	0	0	0	6	29	0
TOTAL			28	0	2	36	184	38712	683
*There is no any Cyclone reported during these date range									

Source: Divisional Secretariat Division-Annual Report, Thamankaduwa

Annexure 11



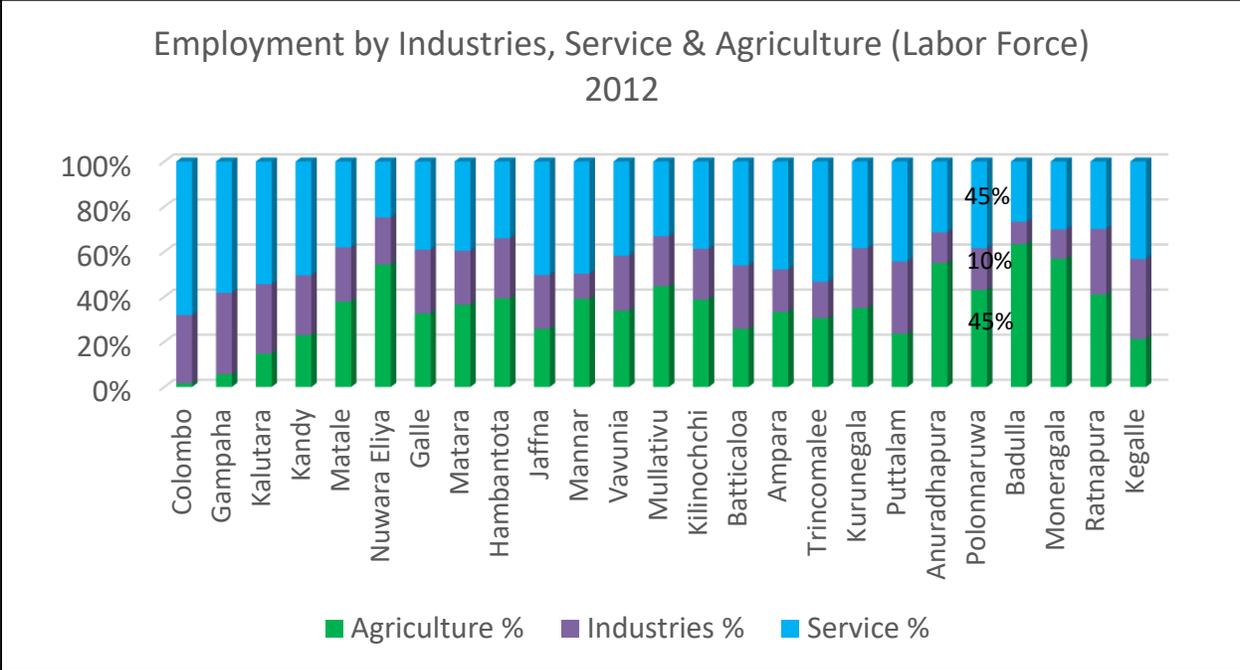
Annexure 12
Employment of each sector in Planning area



Source: Sampath Pathikada 2016

Annexure 13

Labor Force under each employment category



Source: Central Bank of Sri Lanka

Annexure 14

Unemployment rate in 2011-2016

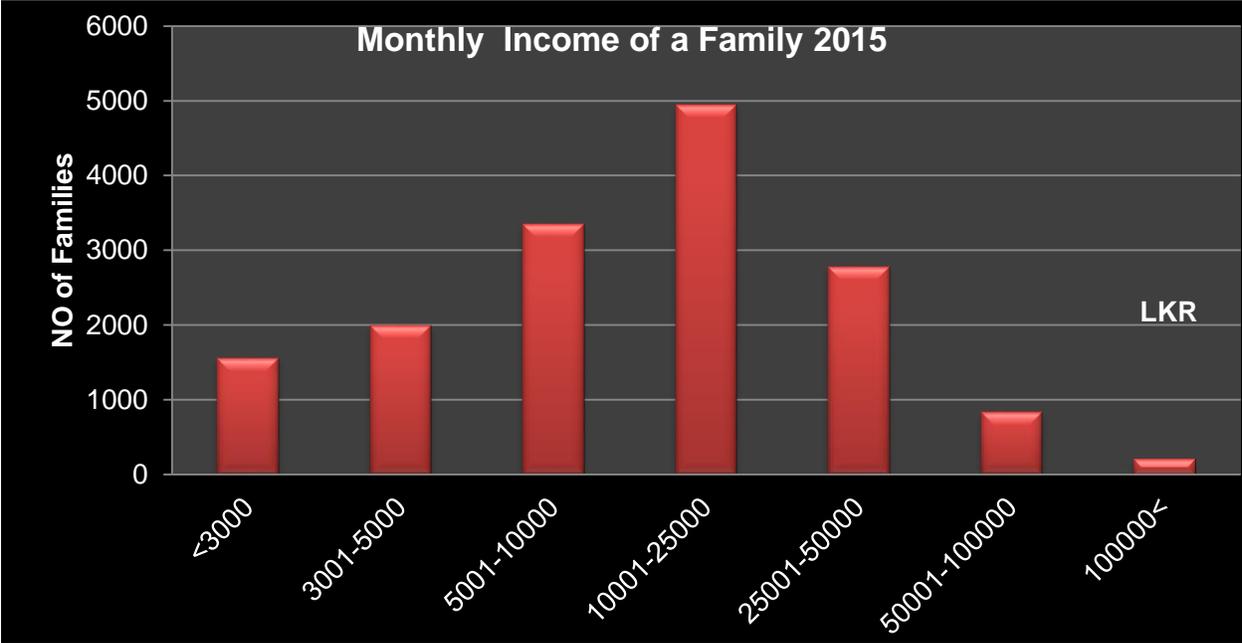
1.12 Unemployment rate by districts, 2011-2016

District	2011	2012	2013	2014	2015	2016
Total	4.2	4.0	4.4	4.3	4.7	4.4
Colombo	2.9	2.9	3.0	3.7	3.6	2.9
Gampaha	4.0	3.7	4.2	3.7	4.4	3.6
Kalutara	3.4	4.0	5.2	3.9	4.5	3.0
Kandy	8.1	7.2	4.7	5.0	5.4	4.4
Matale	*	2.8	6.7	5.2	5.3	7.6
Nuwara Eliya	*	1.8	3.4	2.9	3.2	4.6
Galle	3.8	2.3	4.9	4.6	5.0	5.1
Matara	6.0	7.0	7.1	6.9	6.5	6.5
Hambantota	6.6	5.3	5.1	6.7	6.3	5.2
Jaffna	*	5.1	5.1	5.6	5.7	7.0
Mannar	8.1	5.1	5.0	2.9	6.4	7.1
Vavunia	*	4.0	4.2	3.9	4.3	5.2
Mullativu	*	6.8	4.6	5.6	3.7	4.3
Kilinochchi	9.3	7.2	7.9	7.6	5.7	6.3
Batticaloa	*	5.1	3.7	3.9	4.8	5.2
Ampara	7.2	5.2	4.1	6.0	7.3	6.6
Trincomalee	*	4.4	5.7	4.3	4.3	3.9
Kurunegala	4.7	4.4	3.6	3.5	4.0	3.0
Puttalam	*	2.6	4.1	5.3	3.3	3.7
Anuraddhapura	*	3.0	2.1	3.1	3.5	3.8
Polonnaruwa	*	4.3	6.2	3.7	2.3	2.5
Badulla	3.3	3.7	3.9	3.0	5.3	3.9
Moneragala	*	1.8	2.2	2.7	3.5	5.8
Ratnapura	3.1	4.4	4.6	3.7	4.2	4.4
Kegalle	5.4	2.9	7.4	7.8	8.3	6.9

Source: census and statistic department

Annexure 15

Monthly income of Polonnaruwa Planning area



Source: Sampath Pathikada 2015

Annexure 16

Economically active population by Districts in 2016

District	Economically active population (%)		
	Total	Male	Female
Total	100.0	63.8	36.2
Colombo	100.0	65.7	34.3
Gampaha	100.0	66.9	33.1
Kalutara	100.0	64.2	35.8
Kandy	100.0	63.5	36.5
Matale	100.0	59.9	40.1
Nuwara Eliya	100.0	55.6	44.4
Galle	100.0	63.7	36.3
Matara	100.0	62.1	37.9
Hambantota	100.0	66.1	33.9
Jaffna	100.0	73.6	26.4
Mannar	100.0	76.6	23.4
Vavunia	100.0	62.5	37.5
Mullativu	100.0	65.9	34.1
Kilinochchi	100.0	71.0	29.0
Batticaloa	100.0	70.5	29.5
Ampara	100.0	74.8	25.2
Trincomalee	100.0	74.9	25.1
Kurunegala	100.0	59.5	40.5
Puttalam	100.0	66.2	33.8
Anuradhapura	100.0	58.3	41.7
Polonnaruwa	100.0	67.3	32.7
Badulla	100.0	60.1	39.9
Moneragala	100.0	63.5	36.5
Ratnapura	100.0	61.0	39.0
Kegalle	100.0	58.6	41.4

Source: Census and statistic Department-Labour Force Survey Annual Report – 2016

Annexure 17

Existing Parks & Playground in Polonnaruwa Urban Area - 2017

No	Type of Parks & Playground	Extent (ha)	Existing Use/Uses	GN Division
	Pocket Park			
01	EPP ₁	0.2	Playground	Mahasenpedesa
02	EPP ₂	0.1	Children's Park	Weerapedesa
	Total	0.3		
	Mini Park			
02	EMP ₁	0.9	Playground	Perakumpedesa
03	EMP ₂	0.4	Playground	Kotaleeya
04	EMP ₃	0.9	Playground	Pothgulpedesa
05	EMP ₄	0.3	Playground	Mahasenpedesa
06	EMP ₅	0.5	Playground	Nissankamallapura
07	EMP ₆	0.7	Playground	Samudragama
08	EMP ₇	0.3	Playground	Kuruppuhandiya
09	EMP ₈	0.9	Playground	Sirisagabopedesa
10	EMP ₉	0.5	Open Area	Bandiwewa
	Total	5.4		
	Local Park			
11	ELP ₁	1.6	Playground	Udawela
12	ELP ₂	2.4	Playground	Weerapedesa
13	ELP ₃ (Deepa Uyana)	1.2	Park	Bandiwewa
	Total	5.2		
	Central Urban Park			
14	ECUP ₁	8.4	Sport Complex	Kotaleeya
	Total	8.4		
	Grand Total	19.3		

Annexure 18

Proposed Public Outdoor Recreational Space Plan for Polonnaruwa Urban Area – 2030

No	Type of Parks & Playground	Extent (ha)	Present Use/Uses	Proposed Use	GN Division
Proposed Pocket Park					
01	PPP ₁	0.1	Vacant Land	Pocket Park	Kaduwela - East
02	PPP ₂	0.2	Vacant Land	Pocket Park	Polonnaruwa Town
	Total	0.3			
Proposed Mini Park					
03	PMP ₁	0.4	Vacant Land	Mini Park	Kaduruwela - South
04	PMP ₂	0.3	Vacant Land	Mini Park	Kaduruwela - East
05	PMP ₃	0.5	Abandoned Paddy	Mini Park	Kaduruwela - West
	Total	1.2			
Proposed Local Park					
08	PLP ₁	1.1	Vacant Land	Local Park	Kaduruwela-South
09	PLP ₂	1.4	Vacant Land	Local Park	Gallella - West
10	PLP ₃	2.5	Open space	Local Park	Sirisagabopedesa
11	PLP ₄	2.0	Open space	Local Park	Mahasenpedesa

12	PLP ₅	1.4	Scrub	Local Park	LakshaUyana
13	PLP ₆	2.2	Scrub	Local Park	Ethumalpitiya
14	PLP ₇	3.0	Scrub	Local Park	Sewagama
	Total	13.8			
Proposed Linear Parks (PLi.P)					
15	PLiP ₁ (Buffer Zone - - 100m)	132.7	Parakrama Samudraya	Linear Park	
16	PLiP ₂ (Ela Reservation- 10m)	34.0	1 st Canal	Linear Park	
17	PLiP ₃ (Ela Reservation- 10m)	15.7	2 nd Canal	Linear Park	
18	PLiP ₄ (Ela Reservation- 10m)	39.9	4 th Canal	Linear Park	
	Total	222.4			
Proposed Forest Park (PFP)					
21	Proposed Forest Park	1513.5	Flood Plains National Park	Forest Park	
	Total	1513.5			
	Grand Total	1751.2			

Annexure 19

Proposed Infrastructure development project in Sacred area

Heritage location	Parking facilities	Improving Accessibility	Electricity supply	maintenance	Description board	Sanitary facilities
<p>ඇතුල් නගරය සහිත භූමි ප්‍රදේශය</p>	<p>වර්තමානයේ ඇති රථගාල පරාක්‍රමබාහු රජමාලිගය ආසන්නයේම පිහිටීම නිසා සි වන අශෝභන භාවය ඉවත් කිරීමට ඇතුල් නුවර ප්‍රධාන දොරටුව ඉදිරිපසින් නව රථගාල ස්ථාපනය කිරීමට යෝජිත</p>	<p>පරාක්‍රමබාහු රජමාලිගය සඳහා දැනට ඇති පෙත් මංචලෙසම තැබීමට යෝජිත අතරල ඒවා නව රටන් විධිමත් කිරීමට යෝජිතය. කුමාර පොකුණ අසලින් ඇති මාර්ගය ඉදිරියේදී වසා දැමීමට යෝජිතය.</p>	<p>ස්මාරක සඳහා ස්ථිර විදුලි ආලෝකය සැපයීමේදී පරාක්‍රමබාහු මාලිගාව තුන්පසකින් විදුලිය ආලෝකය සැපයීමට යෝජිත අතරල රාජසභා මණ්ඩපය ඉදිරිපසින් එක් විදුලි පහණක් දල කුමාර පොකුණ සඳහා දැනට ඇති විලි පහණ ස්ථාවර කිරීමට යෝජනා කෙරේ.</p>		<p>අවශ්‍ය ස්ථානවල විස්තරාත්මක පුවරු මධ්‍යම සංස්කෘතික අරමුදල මගින් යොදා ඇතත්ලර් ට ගාලෙන් පෙන්මගට ඇතුල් වන ස්ථානයෙහි මෙම ස්මාරකයේ සංකීර්කඩණ සැලැස්ම සමඟ විස්තරාත්මකව පුවරුවක් යෙදිය යුතු වේ. එසේම ස්මාරකය අසල ස්මාරකය හැඳින්වීමේ කුඩා</p>	

					පුවරු මධ්‍යම සංස්කෘති ක අරමුදල මාසික යෙදීමට යෝජිත වේ	
ඇතුළු නගරයේ ප්‍රධාන දොරටුව හා අංක 01 ශිව දේවාල අවට ප්‍රදේශය		දැනට ප්‍රධාන පිටිසුමෙහි වූ මාර්කිත පද්ධතිය නවීකරණය සි කර ඇතනනමුත් අංක 01 ශිව දේවාලයට යාම සඳහා වන ප්‍රවේශ මාර්කිත ක්‍රමවත්ව සැකසිය යුතු අතරල දැනට ඇති අඩිපාරවල් වැසීම කළ යුතුය. ස්මාරකය වටා ප්‍රදේශයේ නණ කොළ වවා උද්‍යාන මට්ටමින් පවත්වාගෙන යාම කළ යුතු වේ. ශිව දේවාලයේ සිට දළඳා මාලිගාව දක්වා වූ මාර්කිතය නැවත ස්ථාපනය කර බටහිර දෙසින් වන පැරණි ප්‍රවේශ	ප්‍රධාන දොරටුවල ශිලා ලේඛනයල ශිව දේවාලය ආවරණය වන පරිදි එක ස්ථානයකින් මෙම ස්ථාන තුන සඳහාම විදුලි ආලෝකය සැපයීමට යෝජනා කෙරෙකි.		ශිලා ලේඛන සඳහා පරිවරකි තන පුවරුවක් යෙදීම සි කළ යුතු වේ.	

		<p>දොරටුව ස්ථාපනය කිරීමට යෝජිත යන දළදා මවේ දැනට නැගෙනහිර දෙසින් ඇති දොරටුව වසා දැමීමට යෝජනා කෙරෙකි</p>				
<p>දළදා මව හෙවත් පූජනීය වතුරුක්ෂය</p>	<p>වර්තමානයේ පරාක්‍රමබාහු මාලිගය අසල ඇති රටගාල එම ස්ථානයෙන් ඉවත් කර නව රටගාල ඇතුළු නුවර ප්‍රධාන දොරටුව ඉදිරිපිට දළදා මව හා අංක 01 ශිව දේවාලයට යන මාර්ගයට දකුණු පසින් ඇති විවෘත භූමියේ ස්ථාපනය කිරීමට යෝජිතය මීටරකි 82 x 30 ප්‍රමාණයේ ප්‍රදේශයක් මේ සඳහා වෙන් කිරීමට නියමිත අතර මේ</p>		<p>දළදා මව සංකීර්කභූතය ආවරණය වන පරිදි විදුලි බුබු 4 ක් දුල එහි මධ්‍යයයේ කුහක් මත එළිය සෑම දිශාවටම විහිදී යන සේ දැල්වෙන විදුලි බුබුලක් යෙදීමට යෝජිත අතර රටගාල සඳහා අමතර විදුලි ආලෝකය ලබා දීමට යෝජිතය</p>		<p>මධ්‍යම සංස්කෘති ක අරමුදල මගින් දැනට ස්ථාන සඳහා විස්තරාත් මක පුවරු යොදා ඇති අතර ගල්පොත ලිපිල නිශ්ශංකම ල්ල ලිපිල වේලක්කාර ලිපිල හැටදාගෙ යල වටදාගෙය ල බිත්තිවල ඇති ලිපි සඳහා</p>	<p>මෙම ප්‍රදේශයේ දැනට පවතින කඩ කාමර ඉවත් කරල යෝජිත නව රටගාල ආශ්‍රිතව එම වාණිජ කටයුතු නැවත ස්ථාපනය කිරීමට යෝජිතය</p>

	සඳහා වැසිකිළි හා ජල කරාම 4 කින් යුත් යටිතල පහසුකම් සැපයීමට යෝජිතය				පරිවර්තන පුළුල් කිරීමට අපේක්ෂිත වේ	
පබලු වෙහෙර හා ශිව දේවලය ආශ්‍රිත ප්‍රදේශ	මෙම ප්‍රදේශය සඳහා කුඩා රට්‍රාලක් ස්ථාපිත කිරීමට යෝජිතය	නැගෙනහිර වාහල්කඩ දොරටුවේ සිට මහවිදිය දක්වා වූ මාර්ගය නැවත සකස් කිරීමටත් එම මාවතේ සිට පබ වෙහෙරට සහ ශිව දේවලයට හරස් පෙත්මකක් යෙදීමටත් යෝජනා කෙරෙහි පැරණි පාරවල් වසා දැමීම සි කළ යුතු අතර මාර්ගය ස්ථාපනය කිරීමේදී පහත් ස්ථාන පුරවා සකස් කිරීමට යෝජනා කෙරේ	පබලු වෙහෙර සඳහා දෙපසට එළිය විහි වන වි ලී පහන් දෙකක් යෙදීමට යෝජනා කරන අතර ශිව දේවලය දෙපස (ඉදිරියෙන් හා පිටුපසින්) සහ වාහල්කඩ සඳහා එක් වි ලී පහණක් මුහුණ ආලෝකය ලබා දීමට යෝජිතය	ශිව දේවලයේ මව ජලයෙන් පිරියැමති සාල එහි තෙතමනය වැඩි වන බැවින් ශිව දේවලය දෙපස නීයුධ : ඔ * හැඩැති වතුර බැස යාමේ කාණුවක් යෙදිය යුතු වේ	පිට නගරයේ උතුරු දොරටුව සඳහා ස්ථානීය නාම පුළුල් කිරීමට යෙදිය යුතු අතර ශිව දේවලයට යන සෘජු මාර්ගයේ පබ වෙහෙර දෙසට ඇති පෙත්මක ආරම්භ වන ස්ථානයේ පබ වෙහෙර සඳහා ස්ථානීය	

					පුවරුවක් යෙදිය යුතුය අංක 02 ලිව දේවාලයේ බිත්තියේ අරභි සෙල්ලිපිය සඳහා පරිවරක නහ පුවරුවක් යෙදිය යුතුය	
මැණික් වෙහෙර සංකීර්ණය			මැණික් වෙහෙර සඳහා දෙපසට එළිය විහි වන විදුලි පහන් දෙකක් යෙදීමට යෝජිත වේ	මධ්‍යම සංස්කෘති ක අරමුදල මගින් මෙහි නඩත්තු කටයුතු සි කරනු ලබයි		මුර කුටියක් ස්ථාපනය කොට ඇත දිවා රාත්‍රී කාල සඳහා මධ්‍යම සංස්කෘතික අරමුදල මගින් මුර සේවාව පවත්වාගෙන යනු ලබයි
රන්කොත් වෙහෙර සංකීර්ණය	සියවස මාරකඩගයේ රක්ෂිතය දෙපස කොටසේ වූ යටි කැලය ඉවත් කොට රථ ගාලක් ලෙස ස්ථාපනය	රථගාලේ සිට රන්කොත් වෙහෙර දක්වා පෙත්මග නැවත සකස් කළ යුතු අනරල රන් කොත් වෙහෙර අසලින් ආදිත්‍ය ගොඩනැගිල්ලට	රථගාල සහ රන්කොත් වෙහෙර ආවරණය වන පරිදි විදුලි ආලෝකය ලබා දිය යුතුය			පානීය ජල පහසුකම්ද සැපයීමට යෝජිතය

	කිරීමට යෝජිතය	යන පෙත්මග සැකසිය යුතු අතරල ඒ නරහා පො මහජනතාව ගමන් කිරීම වැලැක්විය යුතු වේ				
ආලාහන පිරිවෙන් සංකීර්ණය			රන්කොන් වෙහෙරේ සිට ආලාහන පිරිවෙන් සංකීර්ණය දක්වා මාරය ආලෝකමත් කළ යුතු අතර ලංකාතිලකය සහ ආරක්ෂිත ගොඩනැගිලි හේවිසි මණ්ඩපය යන ස්ථාන සඳහා විදුලි ආලෝකය සැපයිය යුතුය			
ගල් විහාර සංකීර්ණය	වර්තමාන රටගාල පවතින ස්ථානයේ මධ්‍යයට වන්නට වෙළඳ කුටි 16 ක් ස්ථාපනය කිරීමට යෝජනා කෙරෙකිග ස්ථානයේ භූ දර්ශනයට හානියක් නොවන හෙයින් රටගාල ආසන්නයේ සෙවන සහිත	රටගාලේ සිට ගල් විහාරය දක්වා වූ පෙත්මග නව රටන් පවත්වාගෙන යනුලබන අතර ප්‍රධාන මාර්කිගයේ සිට ගල් විහාරය දෙසට ඇති සෘජු මාර්කිගයේ දැනට ඇති ගල් පඩි ඉවත් කර එම ස්ථානය සඳහා ගේට්ටුවක් යොදා දැනට වම් පසින් ඇති කුඩා මාර්කිගය වසා	රටගාලේ සිට ගල් විහාරය දක්වා වූ ප්‍රධාන පෙත්මග සඳහා විදුලිය ලබා දීමටත් ගල් විහාර ප්‍රතිමාව සඳහා යොදා ඇති වහලයට සම්බන්ධ කොට ප්‍රතිමා සහ මව දක්වා විදුලිය ලබා දීමටත් යෝජිතය වැව වටාද විදුලි ආලෝකය ලබා දීමට අපේක්ෂා කෙරේ	බටහිර සිට නැගෙනහිර දිවෙහ නරස් මාර්කිගය සහ ප්‍රධාන මාවතෙහි පාරෙන් ඉවතට වාහන ගැනීම නැවැත්වීම ටත්ල රක් රෝපණය කරන උද්‍යාන කොටසටස තුන් ඇතු	විශ්‍රාම ශාලා දැක්වීම සඳහා පුවරු වක් යෙදිය යුතු	වැසිකිලි කට්ටල තුනක් සෑදීමට යෝජිත අතර දැනට එහි එක් කට්ටලයක් ඉදිකර ඇති අතරල නවත් එවැනි කට්ටල දෙකක් ඉදිකිරීමට යෝජිත වේග

	<p>ප්‍රදේශ වල දිග සහ පළලින් අඩු රවුම් හැඩැති කොටස් හෝ සිල්බර් කොට ප්‍රමාණයේ කඳුන් යොදා ආසන සැකසීමට යෝජනා වේ</p>	<p>උද්‍යානය හරහා ගමන් කිරීම වැළැක්වීම කළ යුතුය. එය ආශ්‍රිතව භූමියේ රූක් රෝපණය සි කළ යුතු අතරල ගල් විහාරයට පැමිණෙන ගම් වාසීන් සඳහා මායිමේ ඇති කැරකෙන ගේට්ටුවේ සිට රක්ෂිතයට පිටතින් වූ ගමට ඇති පාර දක්වා අතුරු පෙත් මගක් යෙදීමටත්ල මෙම අතුරු මාර්ගයේ සිට සියවස් මාර්ගය තෙක් වූ කොටසෙහි ඇති අනවසර ප්‍රවේශ වසා දැමීමටත් ඒ වෙනුවට පිටවන දොරටුවේ සිට ගල් විහාරය දක්වා සෘජු මාවත දික් කොට ගමෙහි වූ පාරට සම්බන්ධ කිරීමටත් යෝජනා වේ</p>		<p>වීම වැළැක්වීම සඳහාත් නීියුධ: ඔ * හැඩයෙන් යුත් 4. 4 ප්‍රමාණයේ කොන්ක්‍රීට් රාමු සිටුවා ඒ මත සහ දෙපසින් කටු කම්බි යෙදීමට යෝජිතය ඇතුළත ඇති භූමි භාගයෙහි කුඹුක් ප්‍රධාන කොටගත් දේශීය බෝග ඇසුරින් රූක් රෝපණය කරනු ඇත</p>		
<p>දෙමළ මහා සඟය</p>		<p>මෙය විශේෂ ව්‍යාපෘති ස්ථානයක්</p>				

		<p>බැවින්ල දැනට ඇති ප්‍රවේශ මාර්ගය පෙන් මගක් ලෙසට පරිවර්තනය කිරීමටත්ල ගල් විහාරය අසල සිට නිවංක පිළිමගෙය දෙසට ඇති මාර්ගය අසල දෙමළ මහා සෑයට හැරෙන ස්ථානයේ කුඩා රට්ගාලක් ස්ථාපනය කිරීමට යෝජනා කෙරේ</p>				
<p>නෙම් පොකුණ (අංක 16)</p>	<p>කුඩා රට් ගාලක් ස්ථාපනය කෙරේ රට්ගාලඉදිරිපේ ඇතිපැරණි පවුර සෝදා යාම වැළැක්වීමසඳ හා සංරක්ෂණ ක්‍රම භාවිතා කළයුතු වේ</p>	<p>ප්‍රධාන මාර්ගයේ සිට පොකුණ දෙසට කුඩා පෙත්මගක් සැකසිය යුතුය</p>				
<p>නිවංක පිළිමගෙය ආශ්‍රිත ප්‍රදේශය</p>	<p>නිවංක පිළිම ගෙයට වම් පසින් ඇති බිම් කොටසෙහි රට් ගාලක් ස්ථාපනය කළ යුතුය</p>	<p>රට් ගාලේ සිට නිවංක පිළිම ගෙය දෙසට පෙත් මගක් සකස් කළ යුතුය</p>		<p>නිවංක පිළිමගෙය ඉදිරිපසින් බැවුමට ආසන්නයේ න් වන පාංශු බාදනය වැළැක්වීම</p>		

				සඳහා කුඩා බැමිමක් ඉදිකිරීමට න්ල ඉන් ඇතුළත ප්‍රදේශයට බොරයොද ා සකස් කිරීමටත් යෝජනා කරන අතරම නිවංක පිළිමගෙය ට පිවිසෙන මාරකඩගෙ ය් දකුණ පසින් ඇති ගොඩනැගි ල්ලෙහි බැමිසකස් කිරීමටත් යෝජිත වේ		
නෙලුම් පොකුණ (අංක 02)		ඇතුළුපිටිය ප්‍රධාන පාරේකඩ සිට නෙලුම් පොකුණ දක්වා ඇති මීටරකඩ 100 ක් පමණ වූ පෙන්මට සකස් කළ යුතු වේ		රක්ෂිතය වටා වැටමායිම් යෙදීමට යෝජනා කෙරේ	ප්‍රධාන මාරකඩගෙ ය් මාරකඩ සංඥා පුවරුවක් සහ ආරක්ෂිත ස්මාරක පුවරුවක් යෙදිය යුතු වේ	

<p>ශ්‍රී ලංකා දේවාල සංකීර්ණය (නයිපෙණ විහාරය)</p>		<p>ශ්‍රී ලංකා දේවාල අංක 5 සඳහා දැනට පවතින පෙත්මන ක්‍රමවත් කළ යුතු අතරම ප්‍රධාන මාර්ගයේ සිට දකුණු පසින් පිහිටි ශ්‍රී ලංකා දේවාලයට ප්‍රධාන වීම සඳහා නව පෙත්මනක් සකස් කිරීමට යෝජනා කෙරේ</p>			<p>ශ්‍රී ලංකා දේවාල අංක 5 ඉදිරිපස (ප්‍රධාන මාර්ගයේ සිට දකුණු පසින්) ස්ථානීය නාම පුවරුවක් ප්‍රධාන ප්‍රවේශය ඉදිරිපිට සවි කිරීමට යෝජනා කෙරේ</p>	
<p>හින්දු දේවාල සංකීර්ණය (නිශ්ශංක දාන මණ්ඩපය)</p>		<p>නිශ්ශංක දාන මණ්ඩපය සිට පරාක්‍රම සමුද්‍රය දෙසට ඇති ප්‍රීති දාන මණ්ඩපයට කුඩා පෙත්මනක් සකස් කිරීමට යෝජනා වේ</p>	<p>ප්‍රධාන මාර්ගයේ සිට මෙම ස්ථානට විදුලිය සැපයීම යෝජනා කෙරේ</p>		<p>නිශ්ශංක දාන මණ්ඩපයේ ඇති ශිලා ලේඛණය සඳහා පරිවරකඩ න පුවරුවක් සහ ආවරණ වැටක් යෙදිය යුතු අතරම මන්ම ප්‍රධාන මාර්ගයේ වම් පස පිහිටි කාලි කෝවිල සඳහා</p>	

					ස්ථානීය නාම පුවරුවක් යෙදීමට යෝජන වේ	
නිශ්ශංකම ලේල සභා ශාලාව සහ මාළිගා සංකීර්ණය				වාරිමාර්ග දෙපාර්තමේන්තුව සමඟ සම්බන්ධ වී දැනට නාන තොට වශයෙන් භාවිතා කරනු ලබන ස්ථානයල ස්ථානීය භූ දර්ශනයට ගැලපෙන අයුරින් සංවර්ධන නය කිරීමට යෝජනා කරන අතරලතිශ් ශංකමලේල සභා ශාලාව සහනානය මඅතර ඇති පැරණිපල උද්‍යානයද සංවර්ධන ය කිරීමට		

				යෝජනා කෙරේ		
පොත්ගුල් විහාර සංකීර්ණය			පොත්ගුල් විහාර සංකීර්ණයට සහ පරාක්‍රමබාහු ප්‍රතිමාව සහිත ප්‍රදේශය සඳහා ආලෝකය ලබා දීමට යෝජිත වේ			දැනට ඇති වැසිකිළි පහසුකම් ප්‍රමාණවත් නොවන බැවින් මෙම ස්ථානය සඳහා වැසිකිළි පහසුකම් ලබා දීමට යෝජිත වේ
පිට නගර බැම්ම				මෙම ප්‍රාකාරය සම්පුර්ණයෙන් පිරිසි කර සංරක්ෂණය කිරීමේදී විශේෂ ව්‍යාපෘතියක් යටතේ ගවේශණය කරල අනවසර පදිංචිකරුවන්හාගෙන් ඒ සඳහා නිවාස යෝජනා ක්‍රමයක් සකස් කර අනතුරුව ප්‍රාකාරය කැණීම් කර	සංරක්ෂණය කරන ලද සෑම ස්ථානයක් ම පිටත ප්‍රාකාර බැම්මට යන පුවරුවට යෙදීමට යෝජනා කෙරේ	මෙම ස්ථානයේ සංරක්ෂණය කළ හැකි කොටස් පොළව මට්ටම දක්වා සංරක්ෂණය කිරීම

				සංරක්ෂණ කටයුතු කිරීමට යෝජනා වේ		
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Annexure 20
Project summery

Proposed and currently implement project list in Polonnaruwa Urban area

S/No	Project Name	Implementing agency	TEC (M)
01	Hospital Junction development Project	UDA	67.2
02	Government Quarters Complex– New Town	UDA	2000.0
03	Administrative Complex – New Town	UDA	1500.0
04	Construction of MC Building - New Town	UDA	170.0
05	Town Expansion Project – Kaduruwela	UDA	533.0
06	Construction of Railway Quarters Building - Kaduruwela	UDA	408.0
07	Financial Center Development - Kaduruwela	UDA	450.0
08	Deepa Uyana	UDA	39.0
09	Tourism Facility Center and Pola	UDA	98.0
10	Tourism information Center	UDA	180.0
	Proposed		
11	Bus Stand Development – New Town	UDA	50.0
12	Development Of Bus Deport – Kaduruwela	UDA	300
13	Public Square Polonnaruwa	UDA	100
14	Green Park – New Town	UDA	75
15	Town Center Development (mini Shopping Complex And internal Road Development	UDA	50.0
16	Re Development of Existing Shops in Archeological City	UDA	30
17	Public Market – Kaduruwela	UDA	300
18	Circuit Bungalow	UDA	
19	Children's and Women's Office - Kaduruwela	UDA	35
20	Development of 3 Houses - Kaduruwela	UDA	20.2

21	A11 Road from “Hathamuna” Junction to Kaduruwela Police Station.	RDA	1400
22	New Town Road –from Polonnaruwa junction to new town	RDA	1000
23	Swarnajayanthi Mw From new town to Kaduruwela	RDA	800
24	Improvement of water Supply facility for the grater Polonnaruwa	Water Board	2528
25	Galthabarawa Cross Rd – From a11 Rd to “Galthabarawa Rd”	PRDA	20
26	Wijayaba Mw – From A11 Rd to “Galthabarawa Rd”	PRDA	60
27	Circular Rd – From New Town Road to A11 Road	PRDA	300
28	Internal Roads (Archeological City)	Ps	600
29	Galvihara Junction to A 11 Road	PRDA	150
30	Commercial Complex - Archeological City	Ps	350
31	Re- location of Aquaculture Development Project Office	Ministry of Fishery	30
32	Aquaculture Development Center	Ministry of Fishery	400
33	Muslim Colony Rd – From Gold city Junction to Project Boundary	PRDA	100
34	Pachcha Palliya Rd –From Muslim Colony Rd to Project Boundary	Ps	50
35	Manikkampattiya Rd –from Sawmill Junction to Project Boundary	PRDA	125
36	1 st Cross Rd – From Pachcha Palliya Rd to Manikkampattiya Rd	Ps	50
37	2 nd Cross Rd From Pachcha Palliya Rd to A11 Rd	Ps	150
38	“Shop Pedesa” internal Rds	Ps	600

39	Extension of “ Maithreepala Sirisena” Mw from “4 Ela” Junction to A 11 Rd (near the police station)	RDA	200
40	Outer circular Rds	RDA	600
41	Internal Rd s	Ps	1000
42	“Waragan Ela” Road	PRDA	300
43	2 nd Cannel Road	PRDA	400
44	“Isipathana Mw” – From Hospital Junction to “Swarnajayanthi Mw”	PRDA	500
45	“4 Ela Rd” - From STS petrol Shed Junction to A11 Rd (28 miles post, Cemetery Junction)	PRDA	800
46	Low income housing Project	NHDA	100
47	Improvement of irrigation play ground	Department of Irrigation	50
48	Re-Location of existing bus depot	SLTB	50
49	Mini Bus stand and public fair Development	PS	15
50	Re – Location of RDHS Office	Ministry of Health	600

Annexure 21
Comparrison Based on Priority on Vision

Annexure 22
Comparrison Based on Priority on implementation

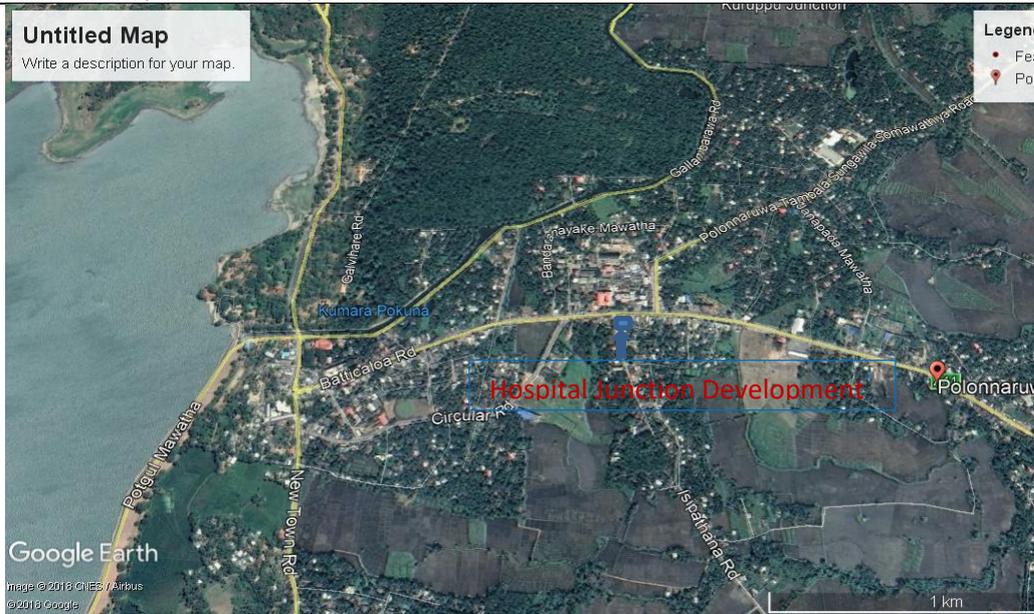
Annexure 23
Comparrison Based on Priority on Higesst Benefit

Annexure 24
Hospital Junction Development Project

PROJECT IDENTIFICATION

Project Title	Hospital Junction Development project
Project	Provide Parking and Commercial Activities
Project Proposal	Provide Parking facilities, Re settlement Jobs and Provide Cafeteria facilities

PROJECT LOCATION

Location	Province	North Central	District	Polonnaruwa
	DS Division	Thamankaduwa	LA	Polonnaruwa MC
Boundary	North	East	South	West
	RDA Road (From Habarana to Batticaloa)	Lot No: 1049 in F.T.P. 9	Road PS to Houses	Road PS to Isipathanaramaya
Access	PS Road (Isipathanaramaya Road)			
Location Map				
Adjacent Land uses (explain with map)	Adjacent land is situated in front of the Polonnaruwa General hospital at Hospital Junction and access to the Isipathanaramaya Road and Habarana-Batticaloa main road			

PROJECT JUSTIFICATION

Project Type	New	/	Improvement		Extension		Land Development only	
Project Category	Conservation	Commercial	Landscape & Recreation	Heritage	Housing	Relocation	Infrastructure	
Project Aspect	Environment	/	Economic	/	Social	/		

Project Objective	<ul style="list-style-type: none"> • Provide Parking facilities for the People who visiting General Hospital • Re settlement of shops for Vendors • Provide the Cafeteria facilities in the proposed commercial shopping center • Mitigate the Traffic congestion in the Hospital Junction
Rational of Project	<p>Polonnaruwa Hospital Junction is presently congested with many people who comes to the Hospital at peak times and with traffic on main road and with road side commercial activities providing needs to the people.</p> <p>UDA has proposed the Hospital Junction Development Project, to provide commercial spaces , parking facility for the people who visit the General hospital, under the draft town development plan and identified to implement under the “Awaking Polonnaruwa” development programme.</p>

PROPERTY DESCRIPTION

Present Land Ownership	Private		State	/	Other	
Free Encumbrances	Yes		No	/	If No give details	Vesting procedure is in progress for the UDA
Details of the Ownership		State land				
Survey plan Detail	Survey plan No.	Name of the surveyor	Date	Land Extent		
	2383	Nayana Bandara Ekanayake	26/11/2015	0 A	1 R	11.09 P

PROJECT DESCRIPTION

Project Period	Short term (1> Year)		Mid term (1-3 year)	/	Long term (3< year)		Total Estimated Cost	67.2 Mn	
Financing Method	Treasury Funded under the "Awaking Polonnaruwa" Town Development programme.								
Description of the Project (With map)	Developing the Hospital Junction Development Project construction of shopping complex with 22 shops for the relocation of road side commercial activities, Cafeteria, Public Sanitary block, construction of boundary fence, Landscaping and car park facilities that will contribute to enhance the commercial related activities to Hospital Junction.								
Infrastructure Availability	Water	Required Capacity Total: 6500 / per day			Electricity	Required Capacity		Volt	
		Drinking Purpose: Average Person * Required Liters 1500 * 2 Liters = 3000 /							540 per Day
		Wash room Average person * Required Liters 1500 * 2 Liters = 3000 /							
		Watering plants 500 /							
	Available Capacity		-		Available Capacity				
Solid waste Management system		Yes	/	No	If No give suitable SWM proposal				
Zone	Commercial	Zoning compatibility		Yes	/	No			

EXISTING SITUATION

Construction of the Hospital Junction project has already been completed and handed over to the Polonnaruwa municipal Council.

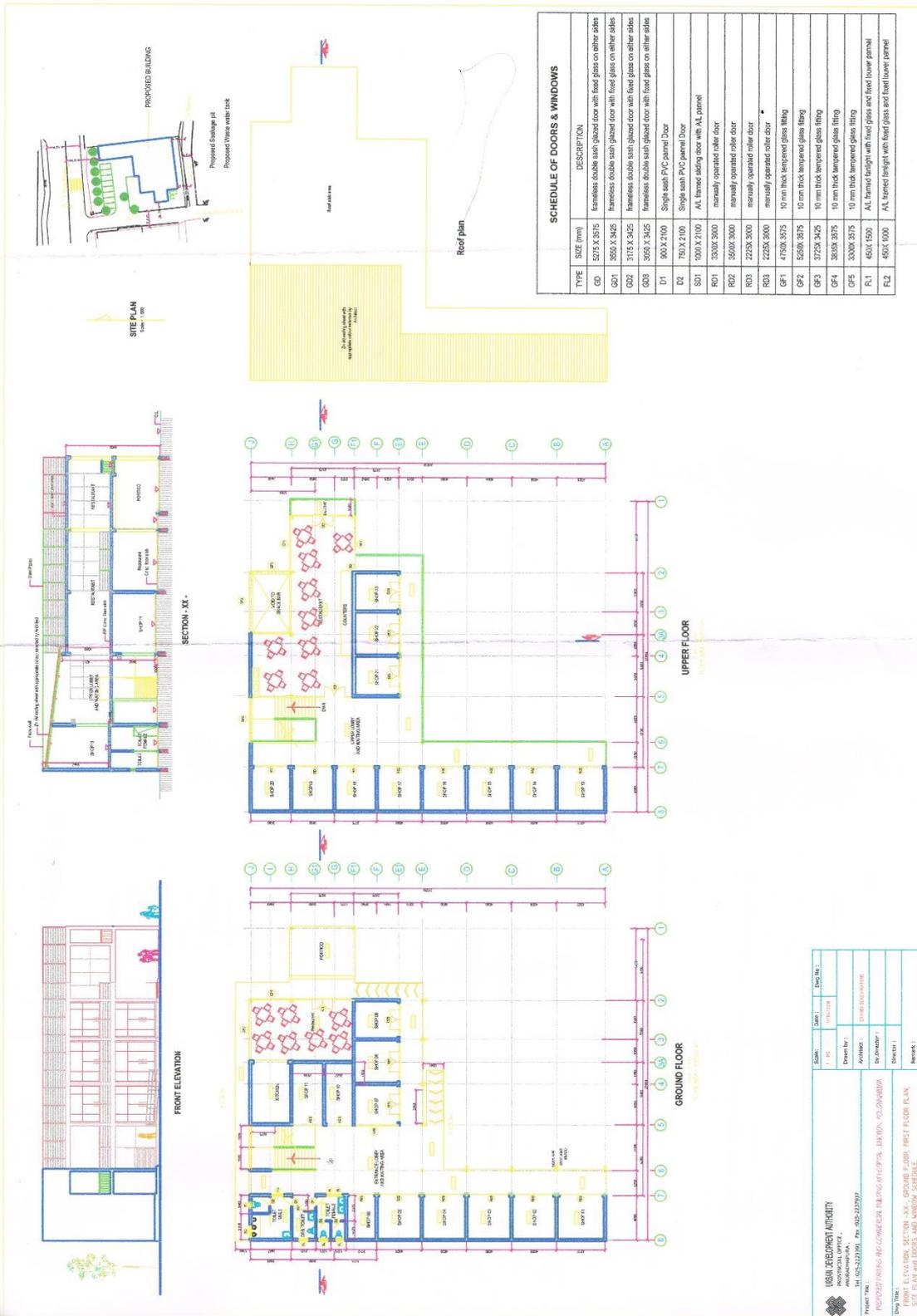
PROJECT BUDGET

ACTIVITY	COST (Rs.Mn)
1. Preliminaries	1,825,000.00
2. Demolishing of existing Buildings	1,797,500.00
3. Land Preparation	990,000.00
4. Foundation work	5,958,500.00
5. Ground floor	19,144,100.00
6. First floor	21,689,600.00
7. Electrical installation	9,311,700.00
8. Sewerage system	2,133,200.00
9. Parking areas and Landscaping	3,570,000.00
10. Sub total 1	66,422,600.00
11. Less provincial sum items	4,500,000.00
12. Sub total 11	61,922,600.00
13. Less Discount if Any (9.5%)	5,882,647.00
14. Sub total 111	56,039,953.00
15. Add provincial sum items	4,500,000.00
16. Total amount exclusive of VAT	60,539,953.00
17. Add: 11% VAT	6,659,394.80
18. Total Amount Inclusive of VAT	67,199,347.83

APPROVAL AGENCIES

ACTIVITY	RELEVANT AUTHORITY	AUTHORIZED PERSON
1. Land clearance (vesting for UDA)	From AGA to UDA	DD (planning) – Polonnaruwa
2. Preparation of Drawings	UDA	Architect (NCP Office)
3. Construction Works	Sooriya builders	Chief Engineer
4. Maintenance & Management	Polonnaruwa Municipal Council	The Mayor

Regulations and Guidelines	Regulations	Guidelines
	UDA planning and Building Regulations	<ul style="list-style-type: none"> Clearances obtained from the Urban Development Authority and Road Development Authority All development should be compatible with the relevant Zone.
Details of Attachments	<ul style="list-style-type: none"> Survey plan Design of the Project 	



URBAN DEVELOPMENT AUTHORITY		Scale:	DATE:	Draw No.:
100, Galle Road, Colombo 03, Sri Lanka		1:500	19/03/2018	18/03/2018
Project Name: PROPOSED MIXING AND COMMERCIAL BUILDING AT KOTIPPA, JALDEN, POLONNARUWA		Drawn by:	DESIGNED BY: SRI LANKA	
Drawn Date: 19/03/2018		Checked by:	18/03/2018	
Site Plan and Doors and Windows Schedule		Director:	18/03/2018	

URBAN DEVELOPMENT AUTHORITY

PLAN No:- 2383

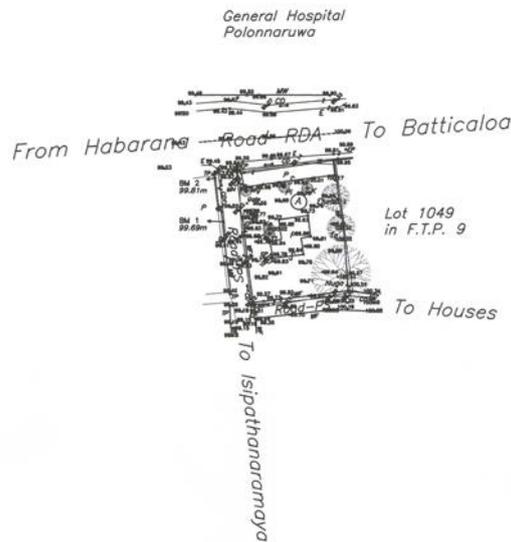
Existing Survey Plan of the Health Department Quarters
Polonnaruwa.

Nayana Bandara Ekanayake. (F.S.I.-Sri Lanka)
Registered Licensed Surveyor,
Court Commissioner & Valuer,
529/3, Bulankulama Disawa Mawatha,
Anuradhapura.

Registered No :- 19871181
Telephone 071-4195019



Final Topo Plan No; : 9
Village : Polonnaruwa Village
Grama Niladhari's Division:
Pradesheya Sabha : Thamankaduwa
D.S's Division : Thamankaduwa
District : Polonnaruwa
Province : North Central



REFERENCE

- L Land Mark
- BM Bench Mark
- P Permanent Building
- OHT Over Head Tank
- Cul Culvert
- MH Man Hole
- Sp Septic Tank
- Res Reservation
- WF Wire Fence
- MW Masonary Wall
- CD Cement Drain
- W Wall
- U Undefined
- PS Pradesheya Sabha
- RDA Road Development Authority
- EP Electricity Post
- TP Telephone Post
- P Permanent Building
- Ga Garage
- T Transformer
- Pi Pihimbiya
- Mg Margosa Tree
- Ke Katukala Tree
- Ko Kottamba
- To Tamarind Tree

Bounded As Shown Above

Scale:- 1:1000

Lot No	Extent		Name of Land	Present Land Use	Claimant' Name	Remarks
	A	R P				
Ⓐ	0	1 11.09	0.1292	Urannegala	Garden	state Land, claimed by Health Department
						Being a portions of lot 1047 in Final Topo Plan No 9 (Sheet No 14)

Date:- 26.11.2015.

Annexure 24

Tourism Facility Centre (Pola)

Objectives of the Project

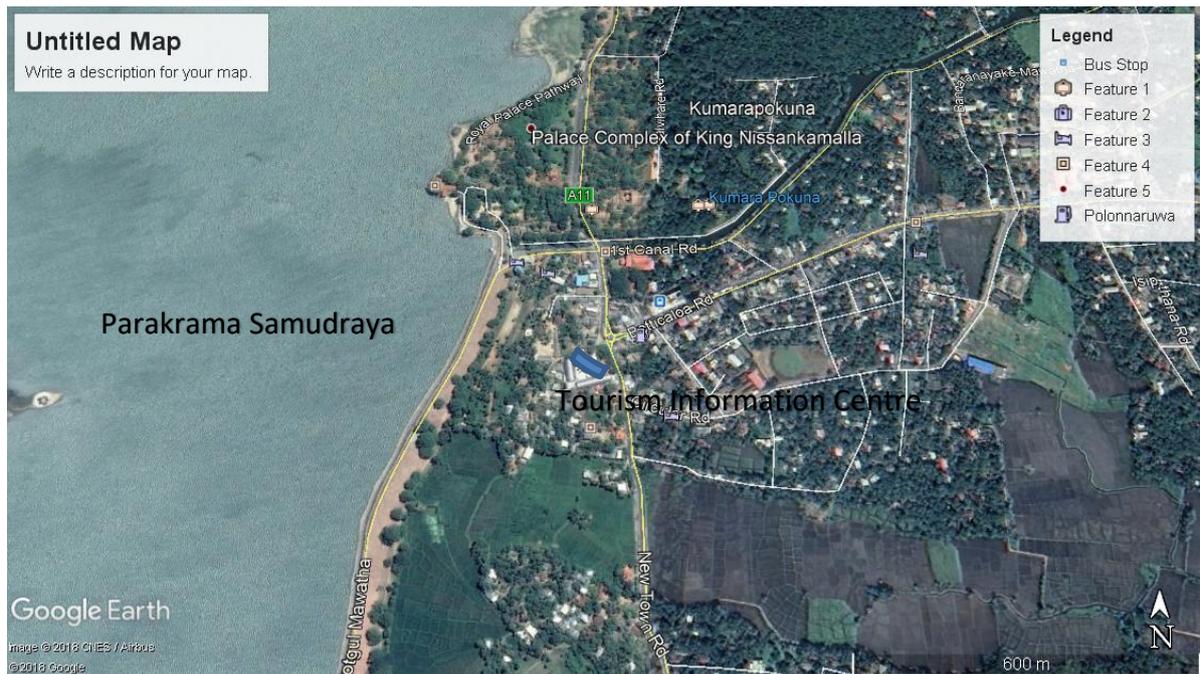
- Provide Commercial Facilities



Annexure 25 Tourism Information Centre

Objectives of the Project

- Provide Information for Tourists
- Provide Tourist related shopping Arcade



Annexure 26
Deepa Uyana – Polonnaruwa

Objectives of the Project

- Provide Recreational and Resting facilities



Annexure 28 Circuit Bungalow

Objective of the Project

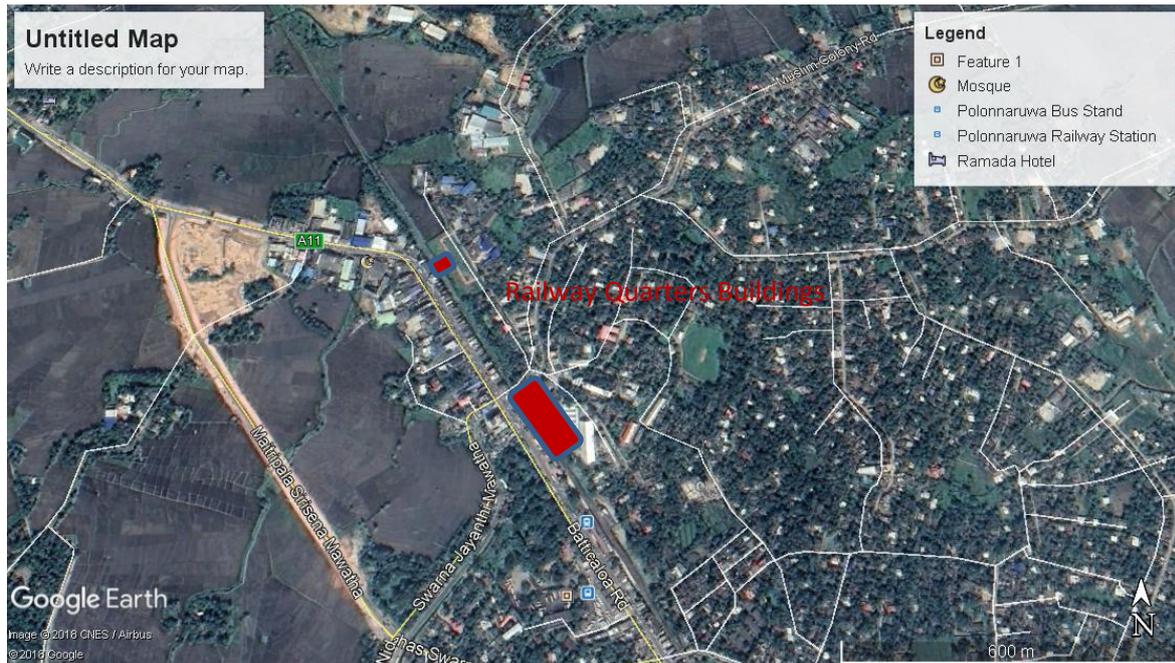
- For the benefit of UDA staff and other officials working for Polonnaruwa



Annexure 29
Construction of Railway Quarters Building - Kaduruwela

Objectives of the Project

- Resettle the Station Masters and Minor staff of Railway department



Annexure 30
Administrative Complex

PROJECT IDENTIFICATION

Project Title	Administrative Complex at New Town
Project	Provide Office Spaces
Project Proposal	Propose to build the Administrative Complex.

PROJECT LOCATION

Location	Province	North Central	District	Polonnaruwa
	DS Division	Thamankaduwa	LA	Polonnaruwa MC
Boundary	North	East	South	West
	Road PS	Road PS	Lot No :A1 in Same Plan.	Road PS
Access	PS Road			
Location Map				
Adjacent Land uses (explain with map)	Adjacent land is in front of the Quarters Complex (under construction) at Polonnaruwa New Town and Access to Pradeshiya Sabha Road.			

PROJECT JUSTIFICATION

Project Type	New	/	Improvement		Extension		Land Development only	
Project Category	Conservation	Commercial	Landscape & Recreation	Heritage	Housing	Relocation	Infrastructure	
							(Administrative)	
Project Aspect	Environment		Economic			Social		/

Project Objective	<ul style="list-style-type: none"> • Provide Office spaces in the Administrative complex, as per the Requests.
Rational of Project	<p>Administrative complex project was formulated by UDA under the direction of polonnaruwa town Development plan. In addition to his Excellency the President has given instructions to implement the Project under the “Awaking Polonnaruwa” Development programme.</p> <p>Polonnaruwa, New town is functioned as main administrative center in the Polonnaruwa District. At present Administrative institutions are scatterd in Polonnaruwa town and it has affected negatively to the efficiency of the people. Therefore UDA has planned to established as a Administrative village which concentrating all government and semi Government offices and Quarters in a identified locations in planned manner.</p>

PROPERTY DESCRIPTION

Present Land Ownership	Private		State	/	Other	
Free Encumbrances	Yes		No	/	If No give details	Vesting procedure is in progress for the UDA
Details of the Ownership		State land				
Survey plan Detail	Survey plan No.	Name of the surveyor	Date	Land Extent		
	2572 B	Nayana Bandara Ekanayake	25/03/2016	2 A	3 R	34 P

PROJECT DESCRIPTION

Project Period	Short term (1>Year)		Mid term (1-3 year)		Long term (3< year)	/	Total Estimated Cost	1227.2 Mn (without vat)
Financing Method	Treasury Funded under the "Awaking Polonnaruwa" Town Development programme.							
Description of the Project (With map)	<p>Developing the Administrative Complex Project, construction with 26 Office spaces for the Government Institutions as per the Requests of them.</p> 							
Infrastructure Availability	Water	Required Capacity Total: 65000 / per day			Electricity	Required Capacity	KVA	

		Drinking Purpose: Average Person * Required Liters 3000 * 5 Liters = 15000 /					2100
		Tea service purpose including Wash rooms Average person * Required Liters 3000 * 15 Liters = 45000 /					
		Watering plants 500 /					
		Available Capacity	-				
	Solid waste Management system	Yes	/	No	If No give suitable SWM proposal		
Zone	Administrative	Zoning compatibility	Yes	/	No		

EXISTING SITUATION

Construction work is in progress.

PROJECT BUDGET

ACTIVITY	COST (Rs.Mn)
1. Demolishing Existing buildings	6,264,500.00
2. Land Development	8,202,000.00
3. Civil works - substructure	87,345,700.00
4. Civil works - superstructure	573,385,721.94
5. Water supply and Drainage works	35,823,600.00
6. Electrical works	166,209,010.00
7. Mechanical works	340,932,516.00
8. Construction of Driver's Quarters	9,055,300.00
GRAND TOTAL	1,227,218,347.94

APPROVAL AGENCIES

ACTIVITY	RELEVANT AUTHORITY	AUTHORIZED PERSON
<ul style="list-style-type: none"> Land clearance (vesting for UDA) 	From AGA to UDA	DD (planning) – Polonnaruwa
<ul style="list-style-type: none"> Preparation of Drawings 	UDA	Unit Head (Consultancy), Northern Province.
<ul style="list-style-type: none"> Construction Work 	CECB	Deputy General Manager
<ul style="list-style-type: none"> Maintenance & Management 	UDA	DD (Planning)-- Polonnaruwa

Regulations and Guidelines	Regulations	Guidelines
	UDA planning and Building Regulations	<ul style="list-style-type: none"> Clearances obtained from the Urban Development Authority All development should be compatible with the relevant Zone.
Details of Attachments	<ul style="list-style-type: none"> Survey plan Board Approval 	

URBAN DEVELOPMENT AUTHORITY

Survey Plan - "Pibedemu Polonnaruwa" Project.

1000.00 N
1000.00 E
102.00 Z

Nayana Bandara Ekanayake. (F.S.I.-Sri Lanka)
Registered Licensed Surveyor,
Court Commissioner & Valuer,
529/3, Bulankulama Disawa Mawatha,
Anuradhapura.

Registered No ; - 19871181
Telephone 071-4195019

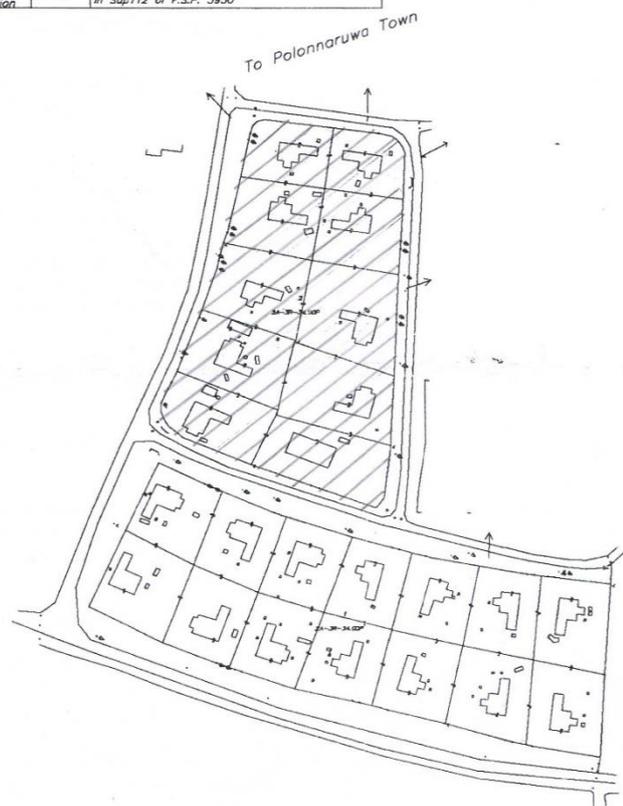
Scale:-1:1000

Bounded as follows

Lot No.	Extent			Name of Land	Present Land Owner	Claimant	Remarks
	A	R	P				
A ¹	3	2	18.0	1.4619	Pattiyamukalana Garden & Residential	State	Containing lots 635,637 to 644, 657 to 659,661 and 662 in Sup112 of F.S.P. 3950
A ²	2	3	34.0	1.1989	Pattiyamukalana Garden & Residential	State	Containing lots 645 to 649 and 651 to 655 in Sup112 of F.S.P. 3950
B	2	3	30.0	1.1888	Pattiyamukalana Road (P.S) & Reservation	State	Containing part of lots 650,656 and 660 in Sup112 of F.S.P. 3950
Total	9	2	02.0	3.8496			

Plan No; : 2572 B
Village : Udawela (Polonnaruwa Town)
Grama Niladhari's Division : 171-Thopawewa
Pradesheya Sabha : Thamankaduwa
D.S's Division : Thamankaduwa
District : Polonnaruwa
Province : North Central

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Surveyed & Drawn by :-

Nayana Bandara Ekanayake. (F.S.I.-Sri Lanka)
Registered Licensed Surveyor,
Court Commissioner & Valuer

Date :-25-3-2016

Confirmed Mts. of the BOM Meeting No. 24/2017 held on. 19.12.2017

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MINUTE BOOK

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Waters Edge	Tuesday, 19.12.2017	3.30p.m.

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Action by

- iii. To hand over the Project to the CECB for the construction works as per the Cabinet approval.
- iv. To allocate Quarters for the Government Officers as per the requests of them.
- v. To collect income, maintenance, works and handling by UDA.
- vi. To pay a monthly rental to existing occupants of the quarters located in the proposed site as per the Divisional Secretary's valuation report using funds allocated for the proposed Quarters Complex under "Pibidemu Polonnaruwa" Programme.

DDG(F&C)
DDG(P)
D(NCP)
D(LD&M)

04.25.02 BOARD PAPER NO.464/2017-19.12.2017 Agenda 24/2017 - Pg.170
Rajarata Nawodaya - "Pibidemu Polonnaruwa" Town Development Programme - Development of Administrative Complex - New Town, Polonnaruwa - North Central Province
File No.18/PL/03/14 Project No.5890004

The Board approved the following:

- i. To initiate the construction of Administrative Complex to provide offices to 18 Government Institutions Project by the UDA.
- ii. To request Rs.1,500.0Million from the Treasury funds for the Project.
- iii. To vest Government lands in extent of 02A-03R-34P in Lot No.A₂ depicted in Survey Plan No.2572B in the UDA.
- iv. To hand over the Project to the CECB for the construction works as per the Cabinet approval.
- v. To allocate spaces for the Government Offices at Administrative Complex as per the requests.
- vi. To enter into an agreement with the Government Organizations and collect the monthly rentals as per the UDA procedure.
- vii. To hand over the maintenance works of the building to a party selected out of competitive bidding procedure.

14

Action by

- viii. To pay a monthly rental to existing occupants of the quarters located in the proposed site as per the Divisional Secretary's valuation report using funds allocated for the proposed Administrative Complex under "Pibidemu Polonnaruwa" Programme.

DDG(F&C)
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D(NCP)
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CHAIRMAN'S
INITIALS

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Annexure 31
Municipal Council Building

PROJECT IDENTIFICATION

Project Title	Municipal Council Building at New Town
Project	Provide Office Spaces
Project Proposal	Propose to build the Municipal Council Building.

PROJECT LOCATION

Location	Province	North Central	District	Polonnaruwa
	DS Division	Thamankaduwa	LA	Polonnaruwa MC
Boundary	North	East	South	West
	RDA land	Road PS	Lot No : 9 in Same Plan.	Government Department Circuit Bungalow
Access	PS Road			
Location Map				
Adjacent Land uses (explain with map)	Adjacent land is near the RDA office land at Polonnaruwa New Town and Access to Pradeshiya Sabha Road.			

PROJECT JUSTIFICATION

Project Type	New	/	Improvement		Extension		Land Development only	
Project Category	Conservation	Commercial	Landscape & Recreation	Heritage	Housing	Relocation	Infrastructure	
							(Official)	
Project Aspect	Environment		Economic		Social		/	

Project Objective	<ul style="list-style-type: none"> Provide Office space in Municipal Council Building.
Rational of Project	<p>Municipal Council building project was formulated by UDA under the direction of polonnaruwa town Development plan. In addition to his Excellency the President has given instructions to implement the Project under the “Awaking Polonnaruwa” Development programme.</p> <p>Polonnaruwa, New town is functioned as main administrative center in the Polonnaruwa District. At present Administrative institutions are scatterd in Polonnaruwa town and it has affected negatively to the efficiency of the people. Therefore UDA has planned to established as a Administrative village which concentrating all government and semi Government offices and Quarters in a identified locations in planned manner.</p>

PROPERTY DESCRIPTION

Present Land Ownership	Private		State	/	Other	
Free Encumbrances	Yes		No	/	If No give details	Vesting procedure is in progress for the UDA
Details of the Ownership		State land				
Survey plan Detail	Survey plan No.	Name of the surveyor	Date	Land Extent		

	36/68/ B Lot No. 10,11,12	J.T. Galagedara	05,07-07- 2015	1 A	1 R	22.6 P
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PROJECT DESCRIPTION

Project Period	Short term 1>Year)		Mid term (1-3 year)		Long term (3< year)	/	Total Estimated Cost	136.8 Mn (without vat)
Financing Method	Treasury Funded under the "Awaking Polonnaruwa" Town Development programme.							
Description of the Project (With map)	Developing the Municipal Council Building Project, construction with two stories.							
								
Infrastructure Availability	Water	Required Capacity Total: 3000 / per day			Electricity	Required Capacity	KVA	
		Drinking Purpose: Average Person * Required Liters 200 * 5 Liters = 1000 /					70	
		Tea service purpose including Wash rooms Average person * Required Liters 200 * 10 Liters = 2000 /						
		Watering plants						

		500 /					
		Available Capacity	-				Available Capacity
	Solid waste Management system	Yes	/	No		If No give suitable SWM proposal	
Zone	Administrative	Zoning compatibility	Yes	/	No		

EXISTING SITUATION

Construction work is in progress.

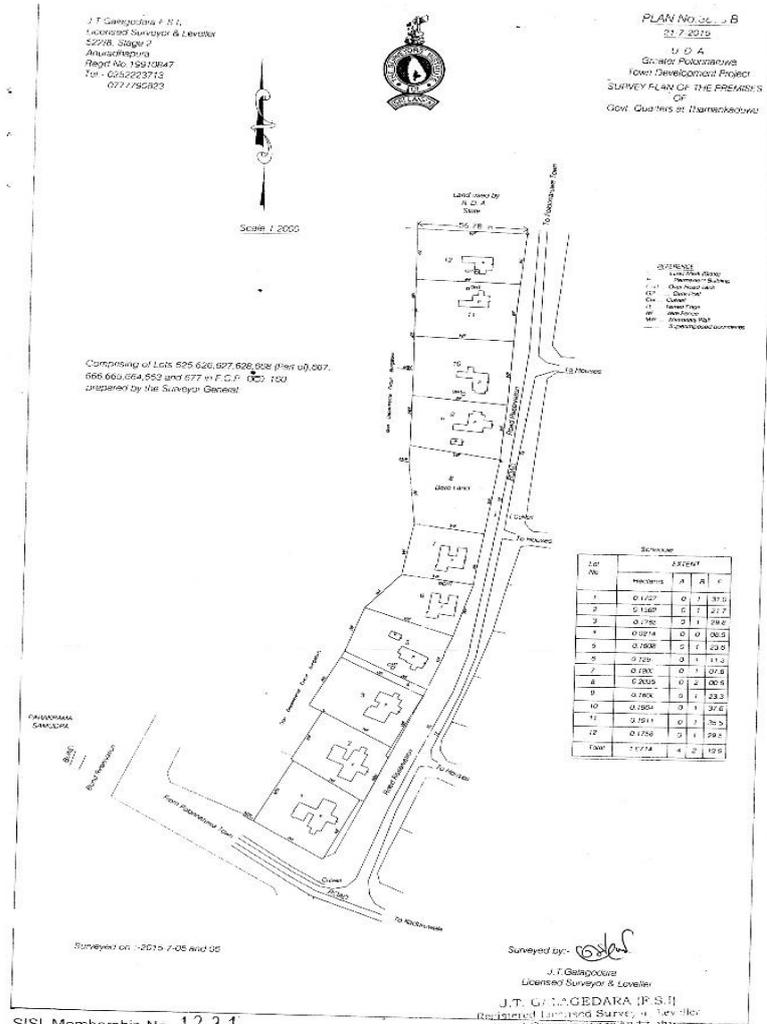
PROJECT BUDGET

ACTIVITY	COST (Rs.Mn)
1. Land preparation	4,384,000.00
2. Civil works - substructure	10,259,825.00
3. Civil works - superstructure	61,445,820.00
4. Water supply and Drainage works	5,435,370.00
5. Electrical works, Mechanical & IT works	27,465,020.00
6. Ancillary works	17,795,100.92
7. Toilet block	2,699,265.00
8. Boundary wall and Security Huts	7,323,425.00
GRAND TOTAL	136,810,825.92

APPROVAL AGENCIES

ACTIVITY	RELEVANT AUTHORITY	AUTHORIZED PERSON
<ul style="list-style-type: none"> Land clearance (vesting for UDA) Preparation of Drawings Construction Work 	<p>From AGA to UDA</p> <p>UDA</p> <p>CECB</p>	<p>DD (planning) – Polonnaruwa</p> <p>Unit Head (Consultancy), Northern Province.</p> <p>Deputy General Manager</p>

Regulations and Guidelines	Regulations	Guidelines
	UDA planning and Building Regulations	<ul style="list-style-type: none"> Clearances obtained from the Urban Development Authority All development should be compatible with the relevant Zone.
Details of Attachments	<ul style="list-style-type: none"> Survey plan 	



SISL Membership No. 1231

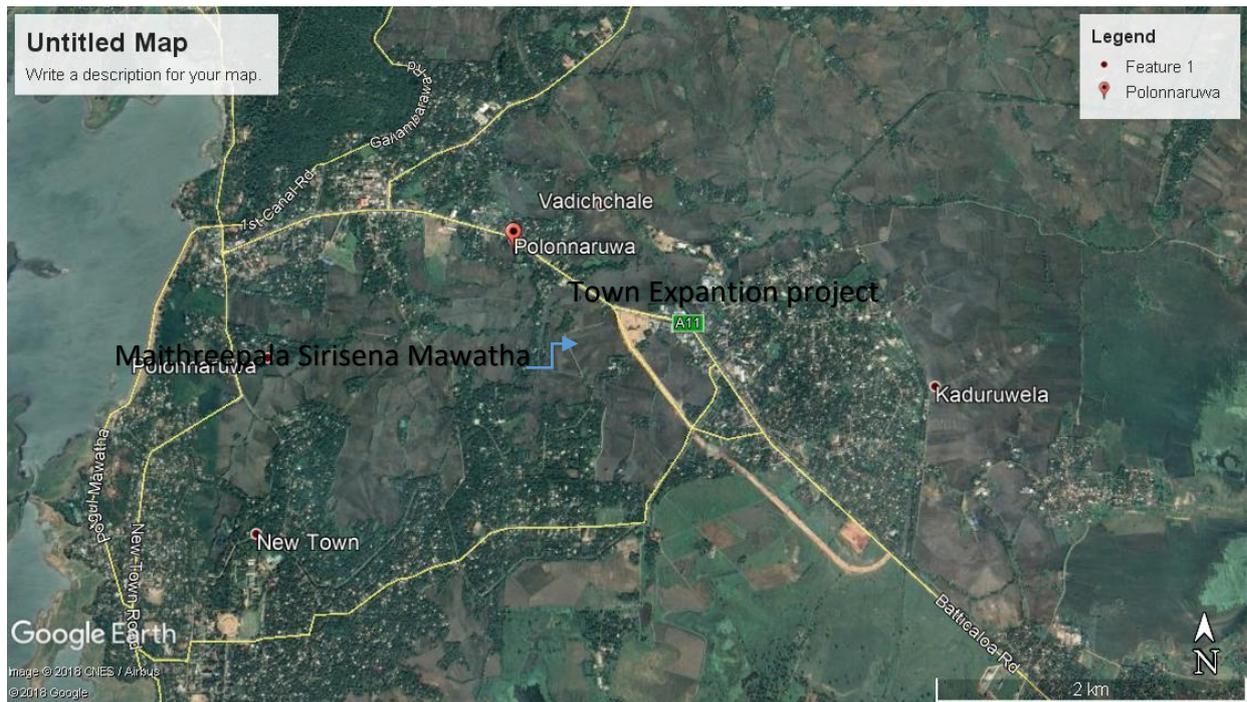
Pradesaya Sabana,

Annexure 32

Town Expantion Project – Kaduruwela

Objectives of the Project

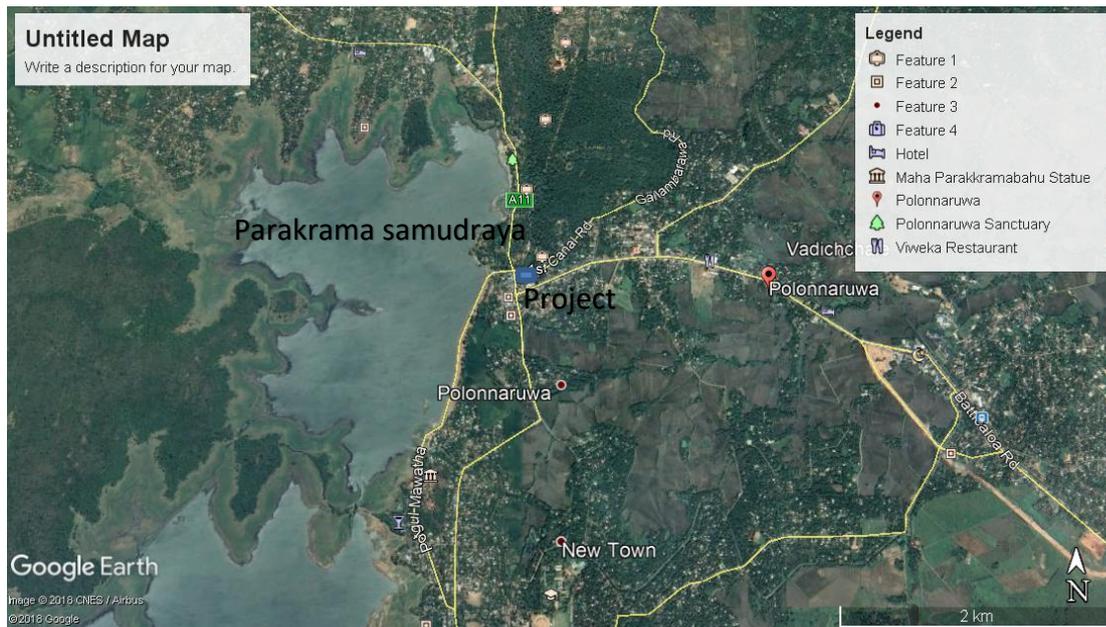
- Provide spaces for Commercial Developments in the Kaduruwela Town Expantion Project.



Annexure 33
Re development of Existing Shops

Objectives of the Projects

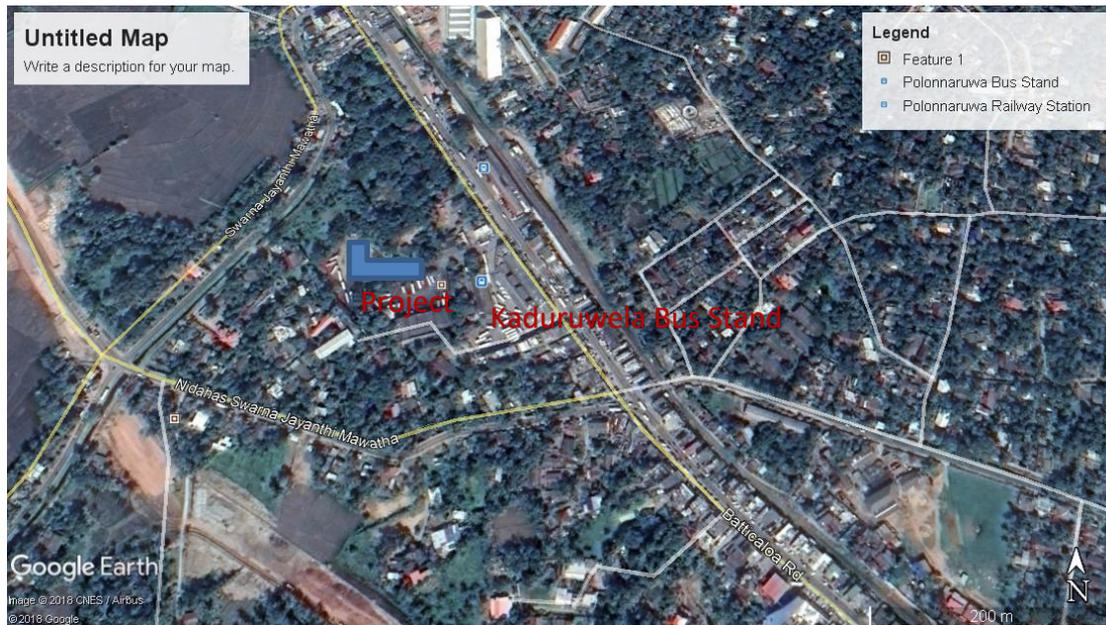
- Provide successful Commercial activities



Annexure 34 Public Market

Objective of the Project

- Provide Commercial activities



Annexure 35
Government Quarters Complex

PROJECT IDENTIFICATION

Project Title	Government Quarters Complex at New Town
Project	Provide Quarters Facilities
Project Proposal	Propose to build the Government Quarters Complex with 86 Quarters.

PROJECT LOCATION

Location	Province	North Central	District	Polonnaruwa
	DS Division	Thamankaduwa	LA	Polonnaruwa MC
Boundary	North	East	South	West
	Road PS	Lot No: 602 in F.T.P. Po 160	Road PS	Road PS
Access	PS Road			
Location Map				
Adjacent Land uses (explain with map)	Adjacent land is situated in behind the Administrative Complex (Under construction) at Polonnaruwa New Town and access to the Pradeshiya sabha road.			

PROJECT JUSTIFICATION

Project Type	New	/	Improvement		Extension		Land Development only	
Project Category	Conservation	Commercial	Landscape & Recreation	Heritage	Housing	Relocation	Infrastructure	
Project Aspect	Environment		Economic		Social	/		

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Project Objective	<ul style="list-style-type: none"> Provide Quarters facilities in the Government Quarters complex, as per the Requests.
Rational of Project	<p>Quarters complex project was formulated by UDA under the direction of polonnaruwa town Development plan. In addition to his Excellency the President has given instructions to implement the Project under the “Awaking Polonnaruwa” Development programme.</p> <p>Polonnaruwa, New town is functioned as main administrative center in the Polonnaruwa District and UDA has planned to established as an administrative village which concentrating all offices and Quarters in New Town. Therefore the construction of Quarters Complex with Administrative Complex will effect positively to the efficiency to the Government Officers.</p>

PROPERTY DESCRIPTION

Present Land Ownership	Private		State	/	Other	
Free Encumbrances	Yes		No	/	If No give details	Vesting procedure is in progress for the UDA
Details of the Ownership		State land				
Survey plan Detail	Survey plan No.	Name of the surveyor	Date	Land Extent		
	2572 A 2572 B	Nayana Bandara Ekanayake	09/03/2016 25/03/2016	7 A	1 R	34 P

PROJECT DESCRIPTION

Project Period	Short term 1>Year)		Mid term (1-3 year)		Long term (3< year)	/	Total Estimated Cost	1579.5 Mn
Financing Method	Treasury Funded under the “Awaking Polonnaruwa” Town Development programme.							
Description of the Project (With map)	Developing the Government Quarters Complex Project, construction with 86 Quarters for the Government Officers as per the Requests of them.							

						
Infrastructure Availability	Water	Required Capacity Total: 80500 / per day		Electricity	Required Capacity	KVA
		Drinking Purpose: Average Person * Required Liters 400 * 5 Liters = 2000 /				350
		Cooking, Bathing purpose including Wash rooms Average person * Required Liters 400 * 195 Liters = 78000 /				
		Watering plants 500 /				
	Available Capacity	-		Available Capacity		
	Solid waste Management system	Yes	/	No	If No give suitable SWM proposal	
Zone	Administrative	Zoning compatibility	Yes	/	No	

EXISTING SITUATION

Construction work is in progress.

PROJECT BUDGET

ACTIVITY	COST (Rs.Mn)
1. Demolishing Existing buildings	16,056,000.00
2. Land Development	19,700,000.00
3. Three Bed Room Quarters	315,181,380.00
4. Two Bed Room Quarters	992,317,975.00
5. Internal Access Roads and Boundary Walls	
Government Quarters Complex	58,657,770 .00
Proposed Administrative Complex	80,933,500.00
6. Water supply System	28,260,969.73
7. Community Hall	14,958,655.00
8. Sewerage Treatment Plant	53,434,380.00
TOTAL COST ESTIMATE	1,579,500,629.73

APPROVAL AGENCIES

ACTIVITY	RELEVANT AUTHORITY	AUTHORIZED PERSON
<ul style="list-style-type: none"> Land clearance (vesting for UDA) 	From AGA to UDA	DD (planning) – Polonnaruwa
<ul style="list-style-type: none"> Preparation of Drawings 	UDA	Unit Head (Consultancy), Northern Province.
<ul style="list-style-type: none"> Construction Work 	CECB	Deputy General Manager
<ul style="list-style-type: none"> Maintenance & Management 	UDA	DD (Planning)-- Polonnaruwa

Regulations and Guidelines	Regulations	Guidelines
	UDA planning and Building Regulations	<ul style="list-style-type: none"> Clearances obtained from the Urban Development Authority All development should be compatible with the relevant Zone.
Details of Attachments	<ul style="list-style-type: none"> Survey plan Layout plan of the Project Board Approval 	

