

# **Project Handout Summer Internship 2013**

## Introduction

Directorate of Urban Land Transport (DULT) has been set up by the Government of Karnataka under the Urban Development Department with objective to coordinate planning and implementation of Urban Transport projects and programs. The Directorate is in general responsible for overseeing all the urban land transport initiatives in Urban/ Local Planning Areas of Karnataka.

Since its inception, the Directorate has implemented many initiatives including service level benchmarking in Bangalore; preparation of policies on parking; preparation of mobility plans for cities in Karnataka; feasibility studies for mass transit systems etc. It is also working in tandem with BBMP, the city corporation of Bangalore and other city corporations on NMT initiatives. The Directorate is also spearheading the implementation of Bus rapid Transit system between the twin cities of Hubli and Dharwad.

The Directorate has grown from its humble beginnings and has now set its sights on fresh challenges. It provides a rare opportunity for technical personnel, urban and transport planners etc to work on urban transport challenges by being a part of a government organization.

In respect to that every year DULT provides opportunity for 2 months paid internship at its headquarter in Bangalore to Masters as well to Bachelors students from all over the country. The 2 months internship program is in tandem with the colleges/ university curriculum and usually the period is for May- July every year. In continuation to that, internship for the year 2013 is starting from 2nd week of May and this document intends to provide the insights of the selected projects to the interns. . The document also looks into the desired deliverables expected from each intern.

Students may have to travel to project locations for case study, site visit, data collection, and/ or for meeting with different authorities or stakeholders. In some case students may be stationed at project locations for whole period, depending on the complexity of the project and its proximity to Bangalore.

It would be important for the student to have done some background reading before entering the internship program. Since it is a 7-week internship program, the project has been compacted in such a way that there is maximum value-add to the student in this short period. Being a graduate degree internship, some amount of independence of thought and work decisions, work ethics, and dedication is expected from the student for utmost impact and learning.

Students joining DULT for internship program has to fulfil the below stated administrative requirements:

- Attendance on all days is mandatory. Leave, if any shall be granted with prior approval from the mentor.
- Time- in and Time- out shall be logged/ report on all days to the mentor (typical timings are from 10:00 AM to 5:30 PM, with 45 min lunch break.
- It is appreciated if personal laptops could be brought to work.

<b>Public Space Design</b>	
Location	Hubli- Dharwad
<b>Introduction</b>	
<p>Hubli and Dharwad are twin cities in the state of Karnataka in India. In 1962, Hubli and Dharwad were combined and recognized as twin cities with the formation of the Hubli Dharwad Municipal Corporation (HDMC). Hubli-Dharwad is now an important commercial, industrial and educational centre in Karnataka. The present population of HDMC is about 10 lakh and covers an area of 202 sq.km out of which developed area is approximately 72.78 sq.km including 45 villages and large number of extensions spread in all directions.</p> <p>The total road network in Hubli Dharwad is 700 km. Roads cover an area of 22.69 sq. km, which constitutes 22 percent of developed area. The average trip length, including walking is about 5.1 km. However, the average trip length of motorised trips is high at 8.6, which is expected in linear cities. Public transport services in Hubli- Dharwad are offered by NWKRTC. A Bus rapid transit project is under implementation between the twin cities of Hubli and Dharwad. Hubli-Dharwad BRTS company is in charge of the implementation of the project.</p>	
<b>Project Brief</b>	
<p>Public Spaces are an essential ingredient to the sustainability of cities for political, social, economic, public health and bio-diversity reasons (Banerjee, 2001). A public space is a social space that is open and accessible to everyone. Public space as a term, and as a concept in design is volatile, as there is always a debate as to what constitutes public space, what role it plays and how design should approach and deal with it. Public Space is an element in urban design that integrates all kinds of land uses. It is an important oasis in a concrete jungle, which helps give life to the buildings/spaces around it and hence elevate the experience of a space around it. Traditionally, even villages had central and well-designed public places where people used to congregate. With the development and growth of cities and the importance given to vehicles, the quality of public space has declined. If the overall goal of city planning is to ensure that our cities are liveable and aesthetically pleasing, then, proper design and creation of public spaces is crucial.</p> <p>The main objective of this assignment is to make a qualitative study of the existing public and open spaces available in the twin cities of Hubli- Dharwad and to conceptually design one public space that will enhance the quality of social life in these twin cities. A good public space needs to be accessible; BRTS is the best spine around which these public spaces can be enhanced.</p> <p>This assignment will need a detailed study of the culture and microcosm of the cities and needs observation of how and where people congregate and make needful infrastructure improvements and provisions in such places first and then dive into making other places into a public space to attract public into it.</p>	

	<ul style="list-style-type: none"> <li>• Week 1: <ul style="list-style-type: none"> <li>- Reviewing the status of existing public space/ open spaces in Hubli- Dharwad and document the same.</li> <li>- Choose a site of interest for public space design and do a background study of the surroundings of this space.</li> </ul> </li> <li>• Week 2: Site visit, stakeholder meetings on- site to the chosen site, to see the ground conditions and feel the character of the space, culture of the twin cities, which will help understand what public space design should incorporate for these cities.</li> <li>• Week 3 &amp; 4: List the elements of a good public space. Conceptual Design development of the chosen public space (Use AutoCAD, SketchUP), along with defining a character and come up with recommendations to maintain the public space.</li> <li>• Week 5 &amp; 6: Development of a report of Urban Design concept and plan for the selected public space in HD, plans for execution of the design and policy recommendations for awareness of necessity of public spaces and maintenance of these spaces.</li> <li>• Week 7: Final Design, Report and presentation at DULT</li> </ul>
Project Duration	7 weeks
Concerned Authorities	Hubli -Dharwad BRTS Company Ltd, HDMC, NWKRTC,
Related Documents	CTTP, Master Plan- Hubli Dharwad, DFR- BRTS project
Mentor	Sonal Kulkarni
Deliverables	<ul style="list-style-type: none"> <li>• Identification of site of interest for public space design</li> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>• By end of 6th week a draft report with conceptual or details drawings in Autocad/ sketch up format including recommendation, detailing different components of design should be submitted.</li> <li>• A final report and a presentation will due by 7th week.</li> </ul>

<b>Last Mile Connectivity</b>	
Location	Gulbarga
<b>Introduction</b>	
<p>GULBARGA is known as 'KALBURGI' in earlier days which means stony land in Kannada. Gulbarga district is situated in the northern part of Karnataka State. In the earlier days, Gulbarga is a district of Hyderabad Karnataka area and became a part of Karnataka State after re-organization of states. It is envisaged that by the year 2029, the population within the Gulbarga City area will be approximately 12.35 lakhs.</p> <p>Gulbarga has about 753 Kms of roads maintained by Gulbarga City Corporation and Public Works Department. The number of vehicles in Gulbarga as of 2008 is 1, 83,699. Public transport buses both city and inter-city services in Gulbarga are currently operated by NEKRTC. The NEKRTC operates along 22 routes within Gulbarga City. Non-motorized transport (NMT) in Gulbarga accounts for about 25% of the total trips. About 15% of the trips are made completely by walk.</p>	
<b>Project Brief</b>	
<p>The aspect of providing economical and convenient “last mile connectivity”, that is, from the trip ends to the point of accessing a public transport system, is an area of significance in Indian cities. Unreliable last mile connectivity impacts the overall quality and usage of any public transit, resulting in a shift in the mode share of public transport. It is essential to improve last mile connectivity and link these services into an integrated system for better access to users. The challenges to effective, reliable and affordable last mile connectivity solutions include poor quality, unorganized auto-rickshaw and taxi services; and a lack of public bicycling services and infrastructure.</p> <p>Better and planned approach to the provision of “last mile connectivity”, a proper design of transit link, may influence factors such as accessibility, mobility, and convenience of public transport systems, which in turn may increase in public transport share, a step towards being a sustainable city. Last mile connecting services enable commuters to easily connect or transfer to mainline: rail / bus lines either at the commencement or the end of their trips. They are important because they complement rapid transit services by offering commuters the complete trip they need.</p> <p>In Gulbarga, NEKRTC (Nrupatunga) city buses circulate within the city and also provide access to the nearby towns and villages. The public bus service was inadequate with the PT operator servicing the city with a fleet of 17 buses and a daily ridership of 18,000. However, NEKRTC revived its city bus services with the introduction of a new and improved bus service under the branding of ‘Nrupatunga’ with a newly acquired fleet of buses. They augmented 40 buses on 10 routes in the month of November 2012. The operation expanded with addition of 10 buses to the fleet and three new routes being added in December 2012. Out of the total number of trips of 2,66,016 within the city, 46,000 trips are done by the newly introduced city services, which is approximately 17% of the total trips. With the augmentation of the buses from 17 to 50, the mode share has increased by more than 6%.</p>	

As far as the last mile connectivity of the commuters is concerned, shared autos are available for getting around the city. For a larger mass in Gulbarga, IPT, cycling and walking are the only solutions for negotiating the final stretch that public transport doesn't reach. However to increase the patronage of the city bus service within Gulbarga the reliability of the mode used by commuters to reach the destination needs to be analysed. As a pilot the objective of the project is to identify the issues in covering the final stretch of their journey along one of the PT plying corridor in Gulbarga and also to suggest suitable measures so as to serve their door-to-door mobility needs.

Tentative Work plan- Below is the broad level of activities planned for a 7- week period to achieve the above objective.

- Week 1: Review of the City Bus Evaluation Report- Gulbarga, CTTT Gulbarga.
- Week 2: Site visit to Gulbarga- Reconnaissance of the identified bus route, Collecting the primary data (Passenger opinion survey), secondary data etc.
- Week 3: Data analysis
- Week 4: Development of recommendations.
- Week 5 & 6: Preparation of draft report (incorporating any comments or suggestions from DULT reviews.
- Week 7: Finalisation of the report and presentation.

Project Duration	7 weeks
Concerned Authorities	NEKRTC, Gulbarga Municipal Corporations, Embarq.
Related Documents	CTTP, Gulbarga City bus service evaluation report- Embarq, Gulbarga City Bus services-
Mentor	Sreelakshmi Pillai & Yougal Tak
Deliverables	<ul style="list-style-type: none"> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end- of- day every Saturday)</li> <li>• By end of 6th week a draft report including recommendation on the issues along the identified corridor along with the presentation should be submitted.</li> <li>• A final report and a presentation will be due by 7th week.</li> </ul>

<b>City Bus Services</b>	
Location	Mangalore
<b>Introduction</b>	
<p>Mangalore is the chief port city of the Indian state of Karnataka and is the district headquarters of Dakshina Kannada with a population of 6.49 lakhs as per 2001 census. The city is an administrative, commercial, educational, as well as industrial centre.</p> <p>Mangalore planning area has a primary road network close to 660 km. Private vehicles have shown alarming growth at 15% per annum in the past decade in the district. 16% of total trips are walk trips, and public transport mode share is 68% in 2009 from 73% in 2006.</p> <p>Mangalore's city bus service is operated by private operators and provides access within city limits and beyond. Dakshina Kannada Bus Operators Association (DKBOA) and the Canara Bus Operators Association (CBOA) are the major bus operators within the city limit, other than KSRTC who are responsible for intercity bus service.</p>	
<b>Project Brief</b>	
<p>Mangalore is a rapidly growing city with high traffic potential and there is a constant flow of traffic from Surathkal and Thalapady which are around 15 km from the city. Mass transportation in Mangalore City is handled by City Buses. There are about 300 buses operating in the city. Further, there are about 15,500 Auto rickshaws plying on the City Service. There are more than 60 city bus schedules of which the longest route is No.54 with 32 km distance going to Thoudugoli which is close to Kerala State Boundary. With increasing population and increasing demand the present bus supply is not able to cater the demand of entire LPA. Hence, with inadequate bus supply and increasing affordability and attractiveness of private vehicles the transit share in Mangalore is decreasing i.e. validated by the past trends. The bus service does translate into a healthy mix of modal split in Mangalore, but the modal split has reduced from 73% to 68%. In the future if nothing is done it is estimated that the share will deteriorate even further.</p>	
<b>Public Transport Improvement Strategies</b>	
<p>Improvement of roads and infrastructure development is the first step towards better transport services. However, this step alone cannot yield the desired results. There is a need to rationalize the bus route system, with adequate frequencies in the required routes and introduction of modern and more comfortable bus fleet and facilities to promote intermodal integration. These improvements are expected to promote public transport services, improve the transit infrastructures, promote environmentally sustainable transport and reduce greenhouse gas emissions in the city. Initiating improvements in the city bus service is a long standing demand of the public. As discussed earlier Mangalore's city bus service is operated by private operators. A detail review of the city bus service along with innovative recommendations to improve the existing situation should be the highlight of the study. The study emphasizes on the following:</p>	

- Service Level Benchmarking (SLB)
- Integrated Public Transit Network Planning and Additional Route Identification
- Bus Stations and Bus Shelters
- Integration of Bus Stations with bicycles, other NMT Modes , IPT Modes like taxis and auto rickshaws, park and ride facilities
- NMT Facilities
- Capacity Building for Efficient and Sustainable City Bus Service
- Public / Private Sector Participation

Introduction of innovated city services by recasting the existing services in the city will certainly receive kudos from the public. Compared to other cities of Karnataka Mangalore's Public Transport Share is on the higher side. Mangalore performance indicators and benchmarks can be compared with other city indicators. These Service Level Benchmarks can help Urban Local Bodies (ULBs) and other agencies in identifying performance gaps and effecting improvements through the sharing of information and best practices, ultimately resulting in better services to the people.

Tentative Work plan- Below is the broad level of activities planned for a 7- week period to achieve the above objective.

- Week1: Developing Methodology with timeline to each task to be performed and also the project execution plan
- Week2: Site visit to project location- for reconnaissance survey, stakeholders meeting, secondary data collection, and identify data collection needs and their source. Review of existing reports, guidelines, and related documents.
- Week 3: Primary data collection activity (surveys etc.)
- Week 4 & 5: Data analysis and development of recommendations
- Week 6: Preparation and submission of Draft report with presentation
- Week 7: submission of final report and presentation (incorporating any comments or suggestion from DULT reviews)

Project Duration	7 weeks
Concerned Authorities	NEKRTC, Mangalore Municipal Corporations,
Related Documents	CTTP- Mangalore
Mentor	Shruthi Srinivas & Abhishek Ranjan Prasad
Deliverables	<ul style="list-style-type: none"> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>• Review and assessment of current city bus services, review of existing infrastructure</li> </ul>

	<ul style="list-style-type: none"><li>• By end of 6th week a draft report including recommendations (if any) to improve the same, detailing different components of design should be submitted.</li><li>• A final report and a presentation will due on the end of the 7th week.</li></ul>
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<b>Station Accessibility Plan- Bangalore Metro Rail Project</b>	
Location	Bangalore
<b>Introduction</b>	
<p>Bangalore, the capital of south Indian state Karnataka is India's fifth largest and a rapidly growing metropolis. It is known world over as India's Garden City and Silicon Valley. In the last decade or so, a genial small city, dotted with breathtakingly beautiful gardens and dominated by large defence establishments and government funded labs transformed quickly in to a teeming metropolis with large public sector companies, educational institutions and a global IT hub.</p> <p>The population of Bangalore city increased from 5.67 million (2001) to 7 million (2011). The need for efficient rail-based system was felt in to address its transport problems. That's when Bangalore Metro was proposed and readily accepted by GOI. BMRCL was constituted as a SPV for implementation of the Bangalore Metro Rail Project.</p>	
<b>Project Brief</b>	
<p>While there are different definitions of access, in transportation planning, accessibility (or just access) refers to the physical ease of reaching goods, services, activities and destinations. Access is the goal of most transport activity. Access to public transport can be achieved through different means/ modes. These are walking, bicycling, feeder public transport, intermediate public transport and private motor vehicles.</p> <p>Improving access to and from Metro is critical to meeting ridership goals and serving customer needs. Potential riders may be lost or choose other means of travel if any of the following conditions exist:</p> <ul style="list-style-type: none"> <li>• Pedestrian paths are indirect and fragmented;</li> <li>• High traffic volumes and traffic conflicts exist in and around the station;</li> <li>• Pick-up/drop-off space is inconvenient or limited and access is not provided for shuttle buses;</li> <li>• Short-term and long-term parking are full or unavailable.</li> </ul> <p>Potential riders may also be lost if access constraints mean that the door-to-door journey involving Metro becomes more expensive, time consuming, unreliable or frustrating than an alternative means of travel, such as driving. Ultimately, the goal of improving station access is to better serve existing customers while attracting additional customers by:</p> <ul style="list-style-type: none"> <li>• Enhancing the pedestrian experience with a safer and more attractive walking environment;</li> <li>• Maintaining a good level of service for transit access to the site for buses and other transit vehicles;</li> <li>• Accommodating future access needs, which include vehicular traffic growth;</li> <li>• Making transit use more convenient and attractive.</li> </ul> <p>The introduction of Namma metro in Bangalore has initiated and accelerated transformation in the adjacent neighbourhoods with changing movement patterns within these neighbourhoods. The number of passengers expected to</p>	

<p>travel on the metro every day is estimated at 12 lakhs in 2013 and 19 lakhs in 2021.</p> <p>The Station Accessibility Plan is to be prepared within the overall framework of the National Urban Transport Policy (2006). It is to bring about more equitable allocation of road space with people, rather than vehicles, as its main focus; and encourage greater use of public transport and non-motorized modes. At the city level, the findings of the CTTTP (2007) need to be kept in mind and addressed, especially the decline in public transport modal share over the last two decades and overall inadequate and unmaintained footpath infrastructure. The travel patterns in each neighbourhood around the metro stations are characterized by their land uses, densities, built up area and urban fabric. The Station accessibility plan has to identify the distinct character of each area, identify their distinct travel patterns with a focus on pedestrian and cyclist and propose interventions to address their specific context.</p> <p>With the overall goal of creating a sustainable Bengaluru, the Station Accessibility Plan for Namma Metro is perceived to improve access to the metro stations by following the green hierarchy i.e. prioritizing walking, bicycling / movement of non-motorized vehicles (NMTVs), public transport and intermediate public transport.</p>	
<p>Tentative Work Plan- Below is the broad level of activities planned for a 7-week period to achieve the above objective.</p> <ul style="list-style-type: none"> <li>• Week 1: Background Study and development of the methodology.</li> <li>• Week 2: Site visit to project location- Reconnaissance survey of the area (socio-cultural activities, economic activities, existing infrastructures), stakeholder meetings and identify data collection needs.</li> <li>• Week 3: Developing project execution plan</li> <li>• Week 4&amp;5: Data collection activities</li> <li>• Week 6: Preparation and submission of Draft report with presentation</li> <li>• Week 7: Submission of final report and presentation (incorporating any comments or suggestion from DULT reviews)</li> </ul>	
Project Duration	7 weeks
Concerned Authorities	BMRCCL, DULT, BBMP, BDA,
Related Documents	CMP, CTTTP, TOR for station accessibility plans.
Mentor	Nawaz N
Deliverables	<ul style="list-style-type: none"> <li>• Accessibility study of Minx Station (underground)</li> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>• By end of 6th week a draft report including recommendation on suitable accessibility plan, detailing different components of design should be submitted.</li> <li>• A final report and a presentation will due by 7th week</li> </ul>

<b>Junction Design</b>	
Location	Tumkur
<b>Introduction</b>	
<p>Tumkur is an industrial town located in the state of Karnataka. Tumkur city is located about 70 km from Bangalore, which makes it the largest city close to Bangalore. The city has a population of 3.05 lakhs (2011) and like other cities, Tumkur too is experiencing an increase in the number of vehicles. The mode share in the city as per CMP- Tumkur indicates 10% of trips are made through PT and 60% trips on 2-wheel.</p> <p>City roads that were originally designed for a relatively low density of vehicles are now facing discord with the growing vehicular traffic in the city.</p>	
<b>Project Brief</b>	
<p>Junctions are a critical component of a roadway network, where multiple roads meet. Junctions provide an opportunity for road users to change their direction of movement and are usually a conflict point in road network. Hence junctions should be carefully designed if an overall improvement in the operation of road network is desired.</p> <p>Tumkur is a fast growing city due to its proximity to the State capital, Bangalore and connected by a National Highway, NH4. Tumkur has also abundant commercial and educational establishments which keeps the city vibrant with activities. The road infrastructure has not kept pace with the growth in economy and increasing trips in the city. Each junction in the city where roads criss-cross, traffic-jams are aplenty. DULT has prepared a Comprehensive Mobility Plan (CMP) to tackle the issue of poor transport infrastructure and planning sustainable transport systems to meet the future demand for people &amp; goods movement. Tumkur CMP also identifies several major intersections that need to be re-designed to accommodate the future traffic demand and transportation systems planned for Tumkur. The earlier remedies for such traffic snarls at junctions, namely, traffic signal and traffic round-about seem insufficient in handling the multi-fold increase in vehicle density.</p> <p>This calls for a new approach to designing of junctions, keeping in view the needs of all users of a junction—vehicles, non-motorized vehicles (NMVs) and pedestrians. The aim of this study is to analyze and design a suitable intersection for one of the intersections stated in the CMP and propose a suitable road junction design as to decrease the probability of accidents, and one that meets the current needs and future demands of the city.</p>	
<b>Tentative Work Plan- Below is the broad level of activities planned for a 7-week period to achieve the above objective.</b>	
<ul style="list-style-type: none"> <li>• Week 1: Review of junction design – Tumkur CMP, IRC, DULT Guidelines</li> <li>• Week 2: Site visit to project location – reconnaissance survey of junctions, traffic operations, stakeholder meetings, identify data collection needs</li> <li>• Week 3: Developing project execution plan <ul style="list-style-type: none"> <li>• Data collection plan – identify data source</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>• Final report structure</li> <li>• Week 4: Data collection activity</li> <li>• Weeks 5 &amp; 6: Data analysis and development of recommendation</li> <li>• Week 7: Preparation and report and analysis (incorporating any comments or suggestions from DULT reviews)</li> </ul>	
Project Duration	7 weeks
Concerned Authorities	Tumkur Municipal Corporation, UMTC- Consultant for junction design in Bangalore
Related Documents	CTTP, CMP, Tumkur city bus services
Mentor	Shamanth Kuchangi and Siva Subramaniam J
Deliverables	<ul style="list-style-type: none"> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>• By end of 6th week a draft report including recommendation on suitable intersection design, detailing different components of design should be submitted.</li> <li>• A final report and a presentation will due by 7th week</li> </ul>

<b>Riverfront Development</b>	
Location	Kanakpura
<b>Introduction</b>	
<p>Kanakapura is a town and the headquarters of Kanakapura Taluk in the Ramanagara district in the state of Karnataka, India. Situated 55 km from the city Bangalore, this town is famous for the production of silk and granite. The town is a tourism hotspot as it is located among the lush green forests of the state of Karnataka. As of 2001 census Kanakapura had a population of 47,047.</p>	
<b>Project Brief</b>	
<p>Waterfronts, the unique places where land and water meet, are a finite resource embodying the special history and character of each community. Urban waterfronts, like the cities help define, dynamic places. In each era, the needs for relaxation and the pursuit of leisure activities resulted in planning forms that expresses the human response to lakeside or seaside. Waterfronts are often the most valuable resource of a city.</p> <p>Realizing the potential and scope for planned development along the river Arkavathi in the Kanakpura town, the Kanakpura Planning Authority identified the riverfront development project in its Master plan 2013. The aim of this project would be transforming Kanakpura as a unique cultural platform with recreational and entertainment facilities serving the city, its people and tourists with new dimension, meaning and scale of development. The riverfront development shall be envisaged as a city's identity on its waterfront. The project would look into the ways to rejuvenate the urban life and the space through improved quality of life, facilitating recreational and cultural activities, organizing informal businesses and designing better public spaces with creative amenities. The goal is to plan a development that would be oriented towards creating an urban form that is wholly consistent with the physiographic feature of the area. The urban form integrated with the natural landscape would create an enriching experience by responding to the context of water and existing diversity of activities thereby, creating a visually dominant landmark. As an initiative of the riverfront development concept in the plan, this project would be confined to a small section of the river that would be delineated based on some primary analysis of the area considering its potential conditions and critical issues.</p>	
<p><b>Tentative Work Plan-</b> Below is the broad level of activities planned for a 7-week period to achieve the above objective.</p> <ul style="list-style-type: none"> <li>• Week 1: Background Study and development of the methodology.</li> <li>• Week 2: Site visit to project location- Reconnaissance survey of the area (socio-cultural activities, economic activities, tourism activities, existing infrastructures), stakeholder meetings and identify data collection needs.</li> <li>• Week 3: Developing project execution plan</li> <li>• Week 4&amp;5: Data collection activities</li> <li>• Week 6: Preparation and submission of Draft report, drawing with presentation</li> </ul>	

<ul style="list-style-type: none"> <li>Week 7: Submission of final report and presentation (incorporating any comments or suggestion from DULT reviews)</li> </ul>	
Project Duration	7 weeks
Concerned Authorities	BMRDA, Kanakpura Planning Authority (KPA), Ramanagara Channapatna Urban Development Authority (RCUDA)
Related Documents	Master plan 2011, Sabarmati Riverfront Development- Ahmedabad ( report and drawings)
Mentor	Ritumoni Sonowal
Deliverables	<ul style="list-style-type: none"> <li>At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>By end of 6<sup>th</sup> week a draft report including conceptual plan &amp; suitable design in Autocad format, detailing different components of design should be submitted.</li> <li>A final report and a presentation will due by 7<sup>th</sup> week</li> </ul>

<b>Park Connectors</b>	
Location	Anekal
Introduction	
<p>Anekal is a town and taluk of Bangalore Urban district. It lies in the southern part of the Bangalore metropolitan area around 35 km from Bangalore, located close to Tamil Nadu border. As of 2001 census Anekal had a population of 33,160.</p>	
Project Brief	
<p>The pace at which the development is happening in the cities especially in the past five decades is remarkable and good not only for the city but also for the people living there. The focus of this growth has always been on Industrialization and Urbanization. In the process of this growth very little attention has been given towards the quality of life. The importance of having a quality of life came into prominence once the problems like, overcrowded places without proper infrastructure, degraded forest, land resources, polluted air and water resources seems to become uncontrollable. The debate over these issues led to the development of concepts like liveability and quality of life</p> <p>Liveability depends not only on efficient infrastructure and economy rather upon a pleasant urban environment and the vibrancy of cultural and artistic expressions which together enhances quality of life. Now there is an increased emphasis on a vision which takes into account economic development a city earmarking the equal responsibility towards critical and sensitive issues like preserving, maintaining resources and heritage. The importance of these attributes in maintaining and strengthening a city's identity, uniqueness along with enhancement of living conditions has been well understood.</p> <p>In this background Green corridors, known as the Park Connector System/Network, have gradually been created in Singapore. This aims to address the need to enhance the quality of life in urban Singapore' by creating new green spaces as well as preserving the existing ones. The Park Connector System is 'links' along which people can cycle, jog, walk, exercise or sit and enjoy nature. This initiative is seen as an attempt to bring people closer to nature along with the provision for recreation.</p> <p>The aim of the present project is to do a pilot study by experimenting the concept of Park Connectors. The objective of the study is to prepare a plan to develop connectors to green spaces, parks and water bodies of the area in a manner which results in providing recreational facility to the citizens plus making them aware of their importance to their own as well as city's life.</p>	
Tentative Work Plan- Below is the broad level of activities planned for a 7-week period to achieve the above objective.	
<ul style="list-style-type: none"> <li>• Week1: formulation of methodology &amp; study the present regulation/norms related to the use and maintenance of city's natural areas &amp; study the existing best practices (eg- Singapore PCN)</li> </ul>	

<ul style="list-style-type: none"> <li>• Week2: Identification, demarcation and mapping of the study area along with the features like, parks, green spaces, water bodies open spaces etc</li> <li>• Week 3: Primary and secondary data collection and meeting with different stakeholders/citizens</li> <li>• Week 4 &amp; 5: Data Analysis &amp; Preparation of plan to use this connectors only by NMT and Walk and also Suggestion for the active citizen participation in maintenance of these areas</li> <li>• Week 6: Preparation and submission of Draft report with presentation</li> <li>• Week 7: Submission of final report and presentation (incorporating any comments or suggestion from DULT reviews).</li> </ul>	
Project Duration	7 weeks
Concerned Authorities	Anekal Planning Authority (APA), BMRDA
Related Documents	Master plan 2011
Mentor	Madhu Singh
Deliverables	<ul style="list-style-type: none"> <li>• At the end of each week, a summary report of the task assigned should be submitted to the mentor (by end-of-day every Saturday)</li> <li>• By end of 6th week a draft report including conceptual plan, drawing &amp; suitable map showing park connectors in Autocad format, detailing different components of design should be submitted.</li> <li>• A final report and a presentation will due by 7th week.</li> </ul>