

CITY DEVELOPMENT PLAN 2005-2012

CORPORATION OF KOCHI

Contents

- [Executive Summary](#)
- [Abstract](#)
- [Water supply sector investment plan](#)
- [Desalination sector investment plan](#)
- [Rain water harvesting sector investment plan](#)
- [Sewerage sector investment plan](#)
- [Solid waste management sector investment plan](#)
- [Traffic and transportation sector investment plan](#)
- [Basic service to the urban poor sector investment plan](#)
- [Heritage sector investment plan](#)
- [Environmental protection sector investment plan](#)
- [Tourism sector investment plan](#)
- [Urban Renewal & Social Amenities sector investment plan](#)
- [Drainage sector investment plan](#)
- [Spatial Growth & Land utilization sector investment plan](#)

CITY DEVELOPMENT PLAN

Executive Summary

The CDP Kochi has been prepared after a series of consultations with the key stakeholders, consisting of Senior Citizens, Mayor, Ex- Mayors, M.L.A.s, M.P.s, Industrialists, Environmentalists, N.G.O.s, councillors and experts in various fields. The process of arriving at a vision for the city started from 1994, with the introduction of the 73rd & 74th CAA which gave powers to the Local Bodies to formulate their long term & short term plans. The Vision Document for Cochin was prepared in 2002 and the preparation of Master Plan for the city is in its final stages.

Apart from the verbal aspirations evolved during the workshops and seminars, each local body submitted their specific requirements in various sectors. The Rapid City appraisal and analysis of the opportunities, strengths, weaknesses and threats specific to Kochi have given a clear picture of the sectoral priorities and the interventions required in each sector. The vision as evolved from the aspirations of the people can be specified as below.

Vision for Kochi: - 'An economically productive, effective and socially egalitarian metropolis which will provide to all sections of society the level of services that would attract world wide attention as the desired center for heritage tourism, IT and Port based services'.

Taking cognizance of the fact that the J.N.N.U.R.M. lays emphasis on creating an economically productive, efficient, equitable and responsive city based on the vision for Kochi / as evolved from the various discussions, seminars and workshops, key challenges facing the city have been identified under various sectors of priority. The national and state Govt. policies and international development trends have been considered in prioritizing the key sectors. In order to bridge the gap between the existing situations and the future goals, strategies have been formulated and action programmes have been worked out. Financial, physical and administrative interventions required have been identified and an investment plan has been prepared. The study has led to the following conclusions,

1. The historic importance of the city and the rich and the varied heritage of the different ethnic groups present a need for conservation of the places of heritage value.
2. The growth of the city as revealed from the study of the administrative and political history points to the importance of trade and the role of the Cochin port in the development of the city.
3. The investments already proposed, in the port related activities present a need for augmentation of the city infrastructure with emphasis on the service accessibility by the urban poor.
4. The city and the environs have a fragile eco system, which needs to be protected.
5. Special priority is to be given to the urban poor section of the society especially in their accessibility to services.
6. There is a need to bring in reforms in physical & financial management, which will render sustainability to the whole programme.

Demography and Economic Base

Kochi, the largest agglomeration in Kerala, is centered on Cochin City, which is the nerve center of all commercial and economic activities in the state of Kerala. This area is characterized by comparatively flat terrain and a large expanse of backwaters and canals with small and large islands scattered in the backwaters. The coastal areas are densely populated with a density of 6300 persons per sq.km. in the city compared to the average density of 819 persons per sq.km. in the State.

Delineation of Kochi City for the purpose of CDP

Urban expansion during the past few decades out grew the limits of Cochin City. Immediate hinterland of Cochin Port has been delineated as the Greater Cochin Region, which covers 731 sq.km. which is almost 8 times the area of the city. From 1981 census onwards an Urban Agglomeration area has been identified. 2001 census has identified an urban agglomeration consisting of the City, 5 Municipalities and 15 Panchayats. For the purpose of the preparation of the City Development Plan, an area extending to 330 sq.km. with in the Greater Cochin Region predominantly falling under the Kochi UA has been delineated based on certain criteria which are explained in detail in chapter 1. The CDP area covers Cochin City, 2 adjoining Municipalities and 13 contiguous Panchayats. The population of the CDP area comes to 11.38 lakhs.

Population Projection

Projected population based on natural growth trend is estimated to be **12.52 lakhs** in 2011, **13.69 lakhs** in 2021 and **14.29 lakhs** in 2026. The city does not exert a pulling effect compared to other Metropolitan cities probably due to the rural urban continuum character of Kerala which provides services and amenities in outlying areas as well. However once the major projects planned materialize some migration can be expected. There is definitely a large percentage of floating population who commute daily to the city from a radius of about 100 kms. The total population including the expected migration and the floating population is estimated to be **14.52 lakhs** by 2011, **17.69 lakhs** in 2021 and **21.69 lakhs** in 2026 in the CDP area.

Economic Base

The economy of the area is dependent on the activities of the Cochin Port. More than 60% of the tax revenue of the State comes from Cochin and hence Cochin is rightly called the '**Commercial Capital of Kerala**'. A number of industries are located in this district and the proximity and development potential of Cochin Port attracts private and public investments in port related activities.

The economic activities and the population growth exert pressure on the available infrastructural facilities. This calls for the analysis of key sectors of infrastructural development to assess the extent of intervention needed to achieve the desired living and working condition in the area.

The vision, the key issues and the strategy adopted for meeting the challenges are indicated in each of the sectors separately. The key sectors are identified below

1. Water Supply
2. Sewerage
3. Solid Waste Management
4. Storm Water Drainage
5. Traffic and Transportation
6. Urban Poverty alleviation
7. Social Amenities and Urban Renewal
8. Heritage
9. Tourism
10. Environment
11. Spatial Growth Trends and Land Utilization

Water Supply

The vision

'Provide quality water supply in an environment friendly and sustainable manner.'

Key Issues

Based on the review of the current water supply scenario, the following key challenges are identified.

- Gap between demand and supply – At present the water supply service area of Aluva head works comprise of Cochin Corporation, 4 Municipalities and 27 Panchayats, drawing water from Periyar river. The total demand of the region is 622 mld. The present supply being only 225 mld, the deficiency is 397 mld. The problem will worsen when additional requirement is necessitated in non-domestic sector when the new projects in both public and private sector are completed in and around Kochi.
- Intermittent water supply – Due to the lack of sufficient quantity for supply, supply is limited from ½ an hour a day to 8 hours in different localities. There are areas where water is supplied only twice a week. Also, in some of the Islands, water is pumped online from water brought in barges at any time of the day – past midnight in some locations.
- Non-availability of spot sources – Spot sources like open dug well, shallow tube well and ponds are not feasible, in City center and coastal areas, due to salinity. However, there is scope for harvesting the rainwater, which is abundantly available during the Monsoon seasons. For coastal areas sea and brackish water desalination possibilities exist in addition to the normal piped supply.
- Far away perennial sources – Perennial sources are at far away locations, which need supply mains to be laid for long distances. This makes water supply costly.
- The availability of water in the 2 identified sources viz. the rivers is also a matter of concern in the long term, as the demand of water increases.
- Quality of the environment – The iron pipes used for water supply mains get corroded easily due to the high saline soil through which they are laid. This combined with the high pressure pumping lead to frequent bursting of mains.

Strategy.

Analyzing the key issues and current challenges, a clear strategy for water supply is adopted to achieve an efficient and sustainable water supply system. The goal is to supply water at 150 epcd by 2011 and increase the supply to at least 8 hours a day by 2011. The strategy covers aspects of policy level planning, reforms, institutional strengthening and service delivery system

Planning, Reforms & Institutional Strengthening

- Comprehensive Water Sector Development
- Energy Audit Studies
- Water Quality Studies and Monitoring
- Design and Implementation of Communication Strategy
- Baseline Survey
- GIS mapping of Water Supply Lines
- Modernizing Financial Management (MIS)
- Private & beneficiary participation in management of desalination plants and rainwater harvesting.

Water Resource Management

- Protection of river sources, Periyar and Muvattupuzha rivers
- Protection of fresh water ponds, wells and reservoirs
- Compulsory rainwater harvesting
- Identification of other fresh water sources
- Introduction of desalination plants for immediate supply of potable water especially in coastal areas

- Construction of Intake arrangements at Aluva
- Construction of Intake arrangements at Pazhoor
- Construction of 100 mld Water Treatment Plant at Maradu
- Construction of 285 mld Water Treatment Plant at Kalamassery

Augmentation of Water Supply

- Laying transmission mains and rehabilitation of existing distribution system
- Introduction of scada system
- UFW Reduction Project
- 24 hour water supply project

O&M of Water Supply System

- Motor and electrical repairs and up gradation
- Distribution network reforms rationalization

Citizens Relations management

- Modernization of Complaint redressal system
- Awareness creation to conserve the available water resources

Investment Plan for period up to 2012

Part – I Piped Water supply System

1. Planning Reforms & Strengthening Investment in Crores

		Estimated
a. Comprehensive Water Sector Development Water Plan	3.08	
b. Energy Audit Studies		3.08
c. Water Quality Studies and Monitoring	4.08	
d. Design and Implementation of communication Strategy	4.60	
e. Baseline Survey		0.75
f. Human Resources Development		8.35
g. Establishment of Regulatory Authority		6.85
h. GIS Mapping of Water and Sewerage Utility Mapping		4.50
i. Community Initiative Support		2.00
j. Modernizing Financial Management and MIS		3.75
k. E-Governance		3.00
Total		44.04

2. Water Resources

a Protection of river sources, Periyar and Muvattupuzha rivers	0.225
b. Construction of Intake arrangements at Aluva	5.00
c. Construction of Intake arrangements at Pazhoor	.75
d. Construction of 100 mld water Treatment Plant at Maradu	16.50
e. Construction of 285 mld Water Treatment Plant at Kalamassery	29.50
Total	51.975

3. Augmentation of Water Supply

a Laying Raw Water Pumping Mains	148.74
b Laying clear Water Pumping Mains	30.09
c Construction of GL sumps and service reservoirs	33.19
d Construction of Electrical Sub-station & Pump Houses	14.30
e Supply and Erection of Pump sets	11.63
f Laying transmission mains and rehabilitation of Existing distribution system	20.00
g. Laying additional distribution networks	600.00
h. SCADA Project	66.50
i. UFW Reduction Project	71.80
j. 24 Hr. water Supply Project	73.60
Total	1069.85

4. O & M Water Supply System

a Motor & Electrical repairs and upgradation	0.18
b Distribution network rationalization	2.94
Total	3.12

5. Citizen Relation Management

a Awareness creation to conserve the available Water resources and Citizens feed back mechanism	1.98
b. Modernization of complaint Redressal System	1.33
Total	3.31
Grand Total	1172.30

Special water Supply Project for the Coastal Areas

Part – II Setting up of Desalination Plants in the Coastal Parts of CDP area

1. Coastal Areas of Cochin City	11.00
2. Coastal Panchayats	15.50
3. Bottling Plants	3.50
Total	30.00

Part – III Rainwater Harvesting in Public Buildings

1. Purchasing of Ferrocement Tanks	
a. Corporation area	0.20
b. Municipal Areas	0.40
c. Panchayat Areas	2.37
Total	2.97
2. Construction of re- charge structures	
a. Corporation area	0.02
b. Municipal Areas	0.06
c. Panchayat Areas	0.15
Total	0.23
Grand Total	3.20

Sewerage

The Vision

'Provide efficient sewerage and wastewater services in an environment friendly manner.'

Key Issues

Kochi and surroundings face many a problem in the provision of sewerage. The following are the main issues.

- Lack of Coverage – At present only 5% of the corporation area is covered by sewerage network in the whole of the CDP area. This serves only 20,000 people. About 65% of the remaining make use of the septic tank system.

- Old and dilapidated Sewage Treatment Plants – Most of the units in Treatment plants are in dilapidated condition, which require replacement.
- No Revenue – There is huge gap between revenue and expenditure, the gap being the expenditure itself, since practically nil revenue is obtained.
- High water table – Due to the high water table of the area, septic tanks, two pit latrines, etc. do not function properly, making sewerage system essential.
- High cost of sewerage – The city and the environs have a very flat terrain; no natural gravitational flow is possible. Also, the soil is mainly alluvial - loose sand and clay, making open cutting difficult. Besides the high water table necessitates sewage pumping stations at frequent intervals. All these make the provision of sewerage a very costly affair in this area.
- Within the urban areas, residential and other activities are so thickly packed that the septic tank system does not work leading to water and soil pollution. Hence provision of sewerage is an imminent necessity.

Strategies

- Preparation of a Master Plan for Sewerage System
- Undertaking contour survey to assess the slope
- Obtaining public participation in adopting the sewerage system in lieu of the existing septic tank system.

Sewerage System Investment Plan (2 Phases)

Planning Reforms & Strengthening

Estimated Investment in Crores

1. Comprehensive Sewerage Sector Development Master Plan	8.00
2. Energy Audit Studies	5.00
3. Sewerage Quality Studies and Monitoring	5.50
4. Design and Implementation of Communication Strategy	4.60
5. Human Resources Development	1.50
6. Community Initiatives Support	8.35
Total	32.95

II. Construction of **treatment Plant** and Service Delivery System

• Construction of Treatment Plant	237.00
• Construction of Lifting station	130.00
• Laying Trunk Sewers	949.00
• Laying Distribution Sewers	812.00
• Supplying and Errection of Pump sets	17.00
• Road Restoration Charges & Railway Crossings	164.00
• Power allocation	11.05
• Rehabilitation of Existing Sewerage System	176.00
• Procurement of Tools & Plants, Machineries, Vehicles etc.	100.00
Total	2596.05
Grand Total	2629.00

Solid Waste Management

The Vision

' To implement economically productive and effective Solid Waste Management with accountability and transparency to transform Cochin and suburbs to one of the cleanest places in the world by the year 2010.'

Key Issues

1. Poor level of waste collection
2. No segregation at source
3. No planned reuse/recycle
4. Poor frequency of waste collection.
5. Inefficient collection and disposal at temporary transfer locations
6. Obsolete waste handling and transportation system
7. Street cleaning utterly inadequate.
8. No scientific and modern waste processing at any stage.
9. Water logging due to choking of drains with waste.
10. Mosquito menace due to stagnation of water in drains
11. Filthy Environment not congenial to a tourists' destination.
12. Misery of the poor who are the worst affected due to poor waste Management.

Strategy

The strategy involves awareness creating, proper management of collection

Planning Reforms & Strengthening in Crores	Estimated Investment
1. Awareness cum live model demonstration in schools, institutions.	49.55
2. Promotion of segregation of solid waste at source by Provision of litter bins, domestic vermi composting units and introduction of collection charges and Private participation in collection and transporting of solid waste at predetermined rates.	20.89
3. Creation of SPVs for secondary collection.	11.19
4. Secondary collection with Private participation	5.00
5. Compulsory Incineration units in hospitals.	56.99
6. Solid Waste processing at Brahampuram employing, composting, biomethantion and secure land filling methods.	
• Facility creation at Brahmapuram site	13.82
• Enhancement of the role of ULB staff, introduction Of Computer system	12.00
• Special method for disposal	0.96
Total	170.40

Drainage

The vision

A clean and flood free city scape with proper drainage system.

Key Issues

- Inadequate drainage – Analysis of the drainage sector reveals that only 60% of the Cochin Corporation area is covered by drainage. In this region with high rainfall, lack of drainage leads to frequent flooding of roads.
- Inefficient system – Many of the existing drains, lack sufficient slopes, making cross drainage inefficient. The flat terrain of the region, combined with high water table and the nearness to sea contribute to this. The tidal waters flow inward through the drains. Lack of sufficient funds is a major reason for this scenario.
- Lack of Master Plan – There is no Master Plan for drainage in the region. Works done in bits and pieces are not capable of providing total solution for the flooding of low-lying areas and also roads, blocking traffic during the rainy season.

- Barriers to drainage – Railway lines run in the north-south direction in Kochi city and the natural slope is from east to west. Even the few cross drainages across the railway lines get blocked, leading to stagnation.
- Lack of proper co-ordination – In Kerala, provision of drainage is carried out by the concerned local bodies, State Irrigation Department, National Highway, Southern Railways and the State PWD. Lack of proper co-ordination among these agencies leaves gaps in this sector.

Strategy

Rehabilitation of primary drains, Protection of secondary drains and construction of area drains to ensure complete drainage.

I. Capacity building	Estimated
Investment in Crores	
1. Identification of problem areas	1.50
2. Resettlement & Rehabilitation planning	8.00
3. Comprehensive Drainage Master Plan	3.00
4. Preparation of feasibility report and detailed engineering studies	23.50
Total	36.00

Primary Drains

1. Desilting and removal of weeds	14.78
2. Removal and rehabilitation of encroachments	25.70
3. Widening and deepening	20.50
4. Construction of side walls and lining	100.77
5. Construction of cross drainage works	64.12
6. Construction of canal side roads	25.45
7. Landscaping	14.39
Total	265.71

Secondary Drains

1. Desilting and removal of weeds	4.62
2. Removal and rehabilitation of encroachments	4.00
3. Widening and deepening	3.65
4. Construction of side walls and lining	290.35
5. Construction of cross drainage works	45.80
6. Construction of canal side roads	7.55
7. Landscaping	3.85
Total	359.82

Area Drains

1. Desilting and removal of weeds	0.90
2. Construction of interior drains	173.28
3. Cross drainage works	2.89
Total	177.07

Others

1. Creation of public awareness	5.00
2. Study of ground water charging & implementation	11.40
3. Canal water quality improvement	10.00
4. Regulatory Pumping system	10.00
5. Unforeseen items	25.00
Total	61.40
Grand Total	900.00

Traffic and Transportation

The Vision

'To attain an integrated transport system which leads to efficient, speedy, smooth, comfortable, and safe traffic flow with high priority to public transport which is environment friendly and accessible to the disabled.'

Key Issues

1. Majority of the traffic problems are concentrated along two east-west corridors
2. The city is divided into two parts by the Railway line
3. Improper traffic junctions
4. Chronic parking problems in core areas, lack of parking space results in road side parking causing bottle necks and creating traffic block
5. The pedestrian crossing across major corridors in city centre is a serious problem
6. The absence of bus bays causes considerable reduction in road capacity
7. Main roads are obstructed by transformers and hoardings installed on road margins
8. High volume of traffic in major corridors of the city core which do not have the capacity to bear the present traffic volume and creates high congestion
9. Narrow bridges and inadequate number of railway over bridges.
10. Encroachment of road by footpath vendors and petty shops results in consequent narrowing of the area available for movement of traffic.
11. Absence of integrated terminal for different modes of transport.
12. Lack of utility ducts in roads

Strategy

- Improvement of the existing road network to facilitate free flow of traffic by removing hindrances
- Completion of the traffic network
- Integration of different modes of transport by creation of terminal and interchange facilities.
- Constitution of Greater Cochin Transport Authority
- Updating of comprehensive traffic and transport study
- Traffic and transportation management using GIS & GPS technologies
- Creation of Urban Transportation Development Fund
- Encouraging the Water Transport
- Improving the share of public transport
- Introduction of MRTS
- Streamlining and regularising the heavy cargo transport
- Junction and Traffic signal improvement
- Synchronised traffic control
- Parking management

Name of Project	Estimated Investment in Crores
RFB Projects (16 Nos), Improvement to NH Standard	163.00
Outer Ring Road	140.00
Inner Ring Road	85.00
Link Roads	93.00
Roads Through CBD Area	37.00
Radial Roads	233.00
Water Front Road	132.00
Secondary Roads	661.00
Rail Over Bridges	332.00
FLY OVERs/ SUB WAYs	415.00
Bridges	900.00
Multi Level Parking	59.00
Public Comfort Centres	2.00
Moffusil Bus Terminals	133.00
Peripheral Parkings	15.00
Truck Terminals	70.00
Pedestrian crossing/ escalator facilities	16.00
Road Markings and Sign Boards	14.00
Signals	25.00
Waiting Sheds	6.00
Bus Bays	12.00
Inland Water transport Terminals, Navigational aids, Canal dredging	48.00
Metro rail, Viability Gap	635.00
Total	4226.00

Urban Poverty Alleviation

The Vision

'A city without slums by the year 2016.'

Key Issues

The major problems faced by the urban poor are identified as :

- Insecurity of tenure and housing
- Poor sanitary facility
- Acute scarcity of Potable water
- Poor standards of Health & Nutrition
- Social Security-Threat faced by women headed families, most vulnerable, physically and mentally challenged, bedridden, chronic ill patients and street children
- Poor standards of Education and Literacy, which has a particular impact on women and children, especially Muslim Women face particular problem because of low levels of literacy
- Poor transportation facilities from remote slum settlements to the mainstream.
- Extremely limited employment and income earning opportunities
- Limited provision of Environmental services and infrastructure

Strategy

- Creation of database about the urban poor sector
- Institutional strengthening
- Environmental improvement
- Ensuring provision of amenities and security of tenure
- Provision of housing to all urban poor families

Name of Project Investment	Estimated in Crores
1. Development of Comprehensive Data Base	3.00
2. Institutional Strengthening and Capacity Building	6.00
3. Environmental improvement of slums	57.60
4. Civic Amenities	166.00
5. Land Tenure and Housing	307.60
6. Social Security	62.00
7. Livelihood	35.00
8. Health	158.30
9. Education	64.50
10. O & M Cost	25.00
Total	885.00

Social Amenities and Urban Renewal

The Vision

'To bring in accessibility to all services at desired level to all sections of society and to rejuvenate the urban core areas to become more productive.'

Key Issues

There are gaps in delivery of urban social amenities and the urban poor are the worst affected. This is evident from the evaluation of existing amenities and facilities.

Strategy

Fulfilling the gaps in urban social amenities involves:

- Augmentation of facilities in govt. owned educational, health and social institutions.
- Improving the facilities in the stadia, play fields and open spaces available.
- Re organizing the congested city center by decentralizing activities like wholesale trade and truck parking.
- Reconstitution of decayed areas with public participation

Name of Project Investment in Crores	Estimated
1. Area development scheme for Ernakulam Market Area	
Shifting of building materials market -	
Rehabilitation of shop owners	20.00
b) Construction of a new wholesale building materials market	30.00
c) Reconstruction of the present Ernakulam market into a modern retail market	15.00
d) Environmental improvement landscaping and re alignment of roads	10.00
2. Conservation of bazaar road and vicinity area in Mattanchery	
a) Listing of buildings and preparation of control Drawings	10.00
b) Development of water front road approximately 5 k.m.	15.00
3. Development of community Halls, Training Centres & Anganwadis - Included in BSUP sector	
4. Facility for women's enterprises goods distribution	5.00
5. Facility augmentation in Orphanages & Old Age Homes	5.00
6. Provision of roofing to International Stadium	20.00
7. Re construction of Ambedkar Stadium	10.00

8. Maharaja's college stadium improvement	2.00
9. Development of Veli Maidan in west Kochi	2.00
10. Development of Jogger's track in Marine drive Maidan	
2.00	
11. Improvement of the Indoor Stadium at Varappuzha	2.00
12. District level Stadium and Sports Hostel at Thrikkakkara	5.00
13. International level Swimming Pool	10.00
14. Redevelopment of Ernakulam North Area	
a) Area development scheme	10.00
b) Construction of about 20000 sq.m. office space	30.00
15. Redevelopment of the area surrounding the present Corporation area	
a) Area development scheme	10.00
16. Redevelopment of old market areas in Municipal areas	
20.00	
17. Renovation & environmental improvement in Panchayat Market areas	26.00
Total	259.00

Heritage

The Vision

'A city proudly presenting the rich and varied heritage it possesses and a population who love and conserve/preserve their natural and cultural heritage.'

Key Issues

- Degeneration of old heritage areas
- Pulling down and modification of heritage structures
- Lack of proper development guidelines leading to destruction of harmony in heritage areas
- Traffic jams
- Too much dependence on tourism leading to displacement of original citizens
- Beautiful water edges are under the ownership of private individuals denying access to the public
- Ill maintained canal network system
- Harmful drainage water is being discharged into Mangalavanam, the wonderful piece of forest right in the heart of the town

Strategy

- Preparation of Heritage Master Plan
- Creation of awareness about Heritage among the children & the public
- Protection of Heritage precincts in urban core areas & giving necessary guidelines in the renewal
- Management Programme for preserving cultural heritage
- Formulation of enabling legal provisions for conservation
- Projecting heritage for economic benefit

Name of Project	Estimated Investment in Crores
1. Mission Projects	
Broadway urban renewal	10.00
Mattancherry Spice Museum	5.00
Ernakulam Broadway urban renewal & Renewal of pond and waterway to the pond	20.00
d) Mangalavanam conservation plan	included in Environment sector
e) Conservation & urban renewal schemes for Thripunithura Heritage zone	15.00
f) Total management Heritage Scheme to Sub-Zonal area	
5.00	
g) City Museum	2.00
h) An effective management programme for cultural Institutions	1.00

2. Mid Term Projects

a) Urban renewal for various canal precincts - canal renewal projects for various canal precincts such as Kalvathy canal precinct at Mattancherry	Included in Drainage Sector
b) Urban renewal scheme for Fort Vypeen Heritage zone	5.00
c) Conservation plan for heritage water edge of Mattancherry	5.00

3. Long Term Projects

a) Heritage management plan for Heritage Precincts of Cochin	5.00
b) Heritage Base Map Preparation Programme	1.00
c) Heritage Master Plan Preparation	2.00
d) Heritage forums- integrating heritage education in all schools mediating the subject & its relevance to the next generation	0.10
Total	76.10

Tourism

The Vision

'An area vibrant with tourists from world over, enriched with all the facilities in tune with our natural and cultural heritage.'

Key Issues

- Lack of publicity leading to reducing number of tourists.
- Lack of transportation linkages among tourism spots.
- Under utilization of canals, lack of performing art centres, recreational activities.
- Absence of tourism facilities such as wayside amenity centres and qualified guides.

Strategy

- Creation of signages and tourist information facility in all transport terminals
- Creation of facilities to cater to both domestic & foreign tourists
- Proper marketing of the strengths of the places especially backwaters to attract tourists
- Provision of different options of travel circuit planning.

Name of Project	Estimated Investment in Crores
1. Developing and maintaining public spaces for Cochin urban region	10.00
2. Renovation of DH Ground	0.20
3. Mulavukadu Village Tourism	5.00
4. Construction of tourism complex at Edappally	0.50
5. Kumbalam Tourism Project	5.00
6. Renovation of Bastian Bungalow at Fort Cochin	0.20
7. Landscape of Palm Avenue project from Thevara Junction to BOT Bridge	1.00
8. Integrated tourism proposal and, management programme for For Kochi And Mattancherry Tourism zone	10.00
9. Beautification of M.G. Road from Mattancherry Bridge to north over bridge	1.00
10. Developing chellanam as a Tourist Centre	10.00
11. Introducing various projects and programmes to strengthen the model village tourism project at Kumbalangi	15.00
12. Strengthening the Grahsthali Programme	5.00
13. A Cochin brand film festival	0.70
14. Padmasarovaram land cape project	15.00

15. Queen of Arabian Sea project		50.00
16. Subhash Park Improvement		0.50
17. Kunnara Park Improvement		0.30
18. P.J. Antony Meorial Cultural Centre Improvement		0.10
19. Pallathuraman Cultural Centre Improvement		0.20
20. Water edge walkway from Thoppumpady to Kamalakkadavu	5.00	
21. Natural History Museum		0.50
22. Establishing Keraka Village – Thanthonnithuruth		6.00
23. Martial Arts Centre	0.10	
24. Valanthu kadu Keraleeya Gramam		25.00
25. Backwater walkway from Valanthukadu – Chambakkara canal	10.00	
26. Kunnarapallimattam improvement		5.00
27. Water Sports Centre at Chilavannur Lake		5.00
28. Murikkal-Pulikapuram Tourism Development Project at Kadamakkudy		2.00
29. Kannakatt-Veliakulam Tourism Project at Palluruthy		0.50
30. Poonthuruthy Island Development		0.50
31. I-MAX Theatre		4.00
32. Nehru Park	0.10	
33. Mehboob Park		0.10
34. Mahakavi G Memorial		0.50
35. Organizing Festivals and fairs including Boat Races		0.50
36. Development of Planetarium & Science City		10.00
37. Development of Thanneerchal at Thiruvankulam		3.50
Total		208.00

Environment

The Vision

'To make this gifted land an abode friendly to nature and salubrious to the inhabitants through activities with community participation.'

Key Issues

Key issues in this sector were identified as an outcome of the extensive studies, as listed below.

- Undesirable waste management practices – the local water resources are contaminated by human activities, inadequate sewage treatment and nutrient discharge into the water bodies.
- Lack of community participation – community participation is minimal in environmental conservation.
- Depletion of natural wet lands – natural wet lands, which were supporting the local system are retained only marginally.
- Lack of statutory control – local authorities have practically no statutory control over many of the environmentally sensitive activities, nor any mechanism to assess the activities and make decisions.

Strategy

- Assessment of the environmental parameters at frequent intervals
- Awareness creation strategy from school level
- Steps for sea shore, water resources and ecologically sensitive area protection
- Modernization of all waste disposal systems to ensure that the environment is not adversely affected
- Setting standards and enforcing the same
- Frequent health status survey

Name of Project	Estimated Investment in Crores
1. Establishing and maintaining Environmental Management Centre	0.80
2. Supporting laboratory for air, water and noise (PCB accredited)	1.80
3. Community Education for schools, Institutions	

residence association	2.00	
4. Urban forestry	20.40	
5. Sea shore protection	1.20	
6. Restoration of Wetlands		25.00
7. Storm water management and rainwater harvesting sector		included in Drainage sector
8. Wet land parks & parks		40.00
9. Restoration of wells		included in Drainage sector
10. Waste water – improved disposal of sewerage sector		included in Sewerage sector
11. Institutional sewage disposal		included in Sewerage sector
12. Municipal Solid Waste – Community education		
Neighbourhood group level		included in Solid Waste Management sector
13. Public comfort stations		9.00
14. Conservation of Mangroves – 40 km patches along the water body	41.00	
15. Health Status – Participatory survey		1.00
16. Crematoria	30.00	
Total		291.00

Municipal Finance

The Vision

“ A city with financial propriety and high level accountability”

Key Issues

- Municipal expenditure is increasing day – by – day
- Need for increasing the revenue income to obtain sufficient cash balance for development activities

Strategy

- Shift to accrual based accounting system
- Overall expenditure control
- Preparation of balance sheets
- Budgetary control to be enforced strictly
- Efficient management of assets and debts
- Introduce private sector participation in service delivery

Urban Reforms and E-Governance

The Vision

“ A City administration with capacity to provide high level services to the citizens”

Key Issues

- Spatial and functional fragmentation
- Overlapping functions
- Lack of accountability
- High service delivery gaps
- Increasing urban poverty

Strategy

- Spatial integration of cochin Corporation, the nearby Municipalities and Panchayats for better planning and service delivery
- Establishing clear lines of accountability of all service delivery agencies
- Constituting separate service delivery agencies in different sectors like water supply, sewerage, sanitation, solid waste management, transport etc...
- Performance based memorandum of understanding between the city administration and various service delivery agents focusing on targets and outcome.
- Evolving inclusive E-Governance mechanism
- Institutional integration
- Establishing CO-ordination mechanisms to overcome spatial and functional fragmentation
- Outsourcing of services
- Rationalization of Municipal Man Power
- Simplification of regulations and systems

- Training to functionaries

Spatial Growth Trends and Land Utilization

The Vision

“To bring in developments which will make the city livable and efficient by introducing essential land use controls making use of planning tools.”

Key Issues

- High densities in and around the core city
- Growth trends indicate urban expansion towards North, North –East and West
- Demand for land for urban expansion results in conversion of water basins and paddy fields
- Deficiency is felt in infrastructural facilities
- Accurate land use data base yet to be created
- Proper land use planning is absent in areas surrounding the city
- The existing legal tools are not sufficient to control the haphazard developments
- The Town Planning Act needs amendments

Strategy

Land is the platform for all developments envisaged in the CDP. Hence land use planning is essential to bring in the desired developments. The strategy involved includes,

- Development of land use data base for the entire Greater Cochin Region
- Preparation of Perspective Plan for the Greater Cochin Region
- Preparation of Master Plan for the CDP area
- Preparation of Area Development Schemes with priority for individual sectors of development
- Water bodies being the biggest asset of Kochi, special schemes for protection of the asset and land use development control on the water front

Name of Project in Crores	Estimated Investment
I Creation of land use data base on GIS format For the entire Greater Cochin Region	10.00
II Preparation of perspective plan for greater Cochin Region	3.00
III Preparation of Master Plan for CDP area	3.00
IV Conservation of Water sheets by creating public walkway On the water edge including shore protection.	
Corporation area	3.00
Municipal areas	6.00
Panchayat areas	5.00
TOTAL COST	30.00

Abstract of Investment Plan

Investment Sector	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total Amount in Crores
Water Supply	0.00	1.63	84.01	210.12	216.89	332.06	327.59	1172.30
Desalination	0.00	6.50	23.50	0.00	0.00	0.00	0.00	30.00
Rain Water Harvesting	0.00	0.84	2.36	0.00	0.00	0.00	0.00	3.20
Sewerage	0.00	18.25	223.25	562.80	1102.75	315.00	406.95	2629.00
Solid Waste Management	0.00	44.41	49.57	31.79	16.71	13.96	13.96	170.40
Traffic & Transportation	0.00	691.00	1041.00	1083.00	832.00	519.00	60.00	4226.00
Basic Service to the Urban Poor	0.00	206.15	184.93	183.73	142.13	92.13	75.93	885.00
Heritage	0.00	11.42	11.42	15.22	19.01	11.42	7.61	76.10
Environmental Protection	0.00	7.05	64.80	64.01	63.90	48.70	42.45	291.00
Tourism	0.00	31.20	31.20	41.60	52.00	31.20	20.80	208.00
Urban Renewal & Social Amenities	0.00	31.00	64.00	65.00	51.00	40.00	8.00	259.00
Drainage	0.00	140.85	183.40	208.15	166.60	128.50	72.50	900.00
Spatial Growth & Land utilization	0.00	11.50	10.00	4.50	3.50	0.50	0.00	30.00
O & M – Institutional strengthening	0.00	2.00	0.60	0.60	0.60	0.60	0.60	5.00
TOTAL	0.00	1280.35	1974.14	2455.32	2639.78	1514.97	1020.44	10885.00

Water Sector – City Investment Plan

Activity	Amount in Financial Years (Crore)								JNNURM			
	05-06	06-07	07-08	08-09	09-10	10-11	11-12	Total	GOI	GOK	IR/IF	Total
Comprehensive Water Sector Development Master Plan	0	8	150	150				308	154	61.6	92.4	308
Energy Audit Studies	0	8	150	150				308	154	61.6	92.4	308
Water Quality Studies and Monitoring	0	8	150	100	50	50	50	408	204	81.6	122.4	408
Design and Implementation of Communication Strategy	0	10	100	100	100	75	75	460	230	92	138	460
Baseline Survey	0		75					75	37.5	15	22.5	75
Human Resources Development	0	10	100	200	200	175	150	835	417.5	167	250.5	835
Establishment of Regulatory Authority	0	10	75	150	150	150	150	685	342.5	137	205.5	685
GIS Mapping of Water and Sewerage Utility Mapping	0		100	200	50	50	50	450	225	90	135	450
Community Initiatives Support	0		50	50	50	50		200	100	40	60	200
Modernizing Financial Management and MIS	0	75	100	100	100			375	187.5	75	112.5	375
E-Governance	0		60	60	60	60	60	300	150	60	90	300
Total	0	129	1110	1260	760	610	535	4404	2202	880.8	1321.2	4404

Protection of river sources , Periyar and Muvattupuzha rivers	0	10	12.5	0	0	0	0	22.5	11.25	4.5	6.75	22.5
Construction of Intake arrangements at Aluva	0	0	50	200	200	50	0	500	250	100	150	500
Construction of Intake arrangements at Pazhoor	0	0	25	50				75	37.5	15	22.5	75
Construction of 100 mld Water Treatment plant at Maradu	0	0	250	500	600	300		1650	825	330	495	1650
Construction of 285 mld Water Treatment Plant at Kalamassery	0	0	300	500	800	900	450	2950	1475	590	885	2950
Total	0	10	637.5	1250	1600	1250	450	5197.5	2598.8	1039.5	1559.25	5197.5
Laying Raw Water Pumping Mains	0	000	2000	2000	2400	3600	4874	14874	7437	2974.8	4462.2	14874
Laying Clear Water Pumping Mains	0		800	609	500	600	500	3009	1504.5	601.8	902.7	3009
Construction of GL sumps and service reservoirs	0			863	1500	756	200	3319	1659.5	663.8	995.7	3319
Construction of Electrical Sub-station and Pump Houses	0		130	300	400	300	300	1430	715	286	429	1430
Supply and Erection of Pump sets	0		63	300	300	300	200	1163	581.5	232.6	348.9	1163
Laying transmission mains and rehabilitation of existing distribution system	0		400	500	500	400	200	2000	1000	400	600	2000
Laying additional distribution net works	0		500	9800	9800	19900	20000	60000	30000	12000	18000	60000
Total	0	0	3893	14372	15400	25856	26274	85795	42898	17159	25738.5	85795
a) SCADA Project	0		830	1250	1250	1660	1660	6650	3325	1330	1995	6650
b) UFW Reduction Project	0		800	1200	1200	1990	1990	7180	3590	1436	2154	7180
c) 24 Hr. Water Supply Project	0		920	1380	1380	1840	1840	7360	3680	1472	2208	7360
Total	0	0	2550	3830	3830	5490	5490	21190	10595	4238	6357	21190
1. O & M of Water Supply system	0											
a) Motor & Electrical repairs and upgradation	0	18	0	0	0	0	0	18	9	3.6	5.4	18
b) Distribution network reforms rationalization	0	0	80	170	34	0	10	294	147	58.8	88.2	294
Total	0	18	80	170	34	0	10	312	156	62.4	93.6	312
Citizen feed back mechanisms to be established	0	3	65	65	65	0	0	198	99	39.6	59.4	198
Modernization of Complaint redressal system	0	3	65	65	0	0	0	133	66.5	26.6	39.9	133
Total	0	6	130	130	65	0	0	331	165.5	66.2	99.3	331
Grand Total	0	163	8400.5	21012	21689	33206	32759	117230	58615	23446	35168.9	117230

The total project cost is worked out to 1172 .30 crores.

Water Supply Sector - Strategy (2006-2011)

Component	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Planning, Reforms and Institutional Strengthening	Comprehensive Water Sector Development Master Plan							
	Energy Audit Studies							
	Water Quality Studies and Monitoring		✓	✓	✓	✓	✓	✓

	Design and Implementation of Communication Strategy		✓	✓	✓	✓	✓	✓
	Baseline Survey							
	Human Resources Development					✓	✓	✓
	Establishment of Regulatory Authority	Proposed scheme is augmentation of the existing one under KWA						
	GIS Mapping of Water and Sewerage Utility Mapping		✓					
	Community Initiatives Support					✓		
	Modernizing Financial Management and MIS		✓	✓	✓			
	E-Governance		✓	✓	✓	✓	✓	✓
Water Resource Management	Protection of river sources , Periyar and Muvattupuzha rivers		✓	✓	✓	✓	✓	✓
	Construction of Intake arrangements at Aluva		✓	✓	✓			
	Construction of Intake arrangements at Pazhoor		✓	✓	✓			
	Construction of 100 mld Water Treatment plant at Maradu		✓	✓	✓			
	Construction of 285 mld Water Treatment Plant at Kalamassery		✓	✓	✓	✓		
Augmentation of Water Supply	Laying Raw Water Pumping Mains		✓	✓	✓	✓		
	Laying Clear Water Pumping Mains		✓	✓	✓	✓		
	Construction of GL sumps and service reservoirs		✓	✓	✓	✓	✓	
	Construction of Electrical Sub-station and Pump Houses		✓	✓	✓	✓	✓	
	Supply and Erection of Pump sets				✓	✓	✓	
	Laying transmission mains and rehabilitation of existing distribution system		✓	✓	✓	✓	✓	
	Laying additional distribution net works		✓	✓	✓	✓	✓	
Service Delivery	a) SCADA Project		✓	✓	✓	✓	✓	✓
	b) UFW Reduction Project		✓	✓	✓	✓	✓	✓
	c) 24 Hr. Water Supply Project		✓	✓	✓	✓	✓	✓
Governance	1. O & M of Water Supply system							
	a) Motor & Electrical repairs and upgradation		✓	✓	✓	✓		
	b) Distribution network reforms rationalization		✓	✓	✓	✓	✓	✓
Citizens Relations Management	Citizen feed back mechanisms to be established			✓	✓	✓		
	Modernization of Complaint redressal system		✓	✓				

Setting up Desalination Plants in Coastal Areas - Investment Plan

No	Place	Capacity of Plant (Lakh Liters/Day)	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Amount in Crore
1	Mattanchery-Fort Cochin area of Cochin Corporation									
	a. Desalination Plant		0	0.5	6.0	0	0	0	0	6.5
	b. Bottling plant		0	0.5	0	0	0	0	0	0.5
2	Palluruthy Edakochi area of Cochin Corporation									
	a. Desalination Plant	5	0	0.5	4	0	0	0	0	4.5
	b. Bottling plant		0	0.5	0	0	0	0	0	0.5
3	Elamkunnappuzha Panchayat									
	a. Desalination Plant	2.5	0	0.2	2.4	0	0	0	0	2.6
	b. Bottling plant		0	0.25	0	0	0	0	0	0.25
4	Njarakkal Panchayat									
	a. Desalination Plant	1	0	0.2	1	0	0	0	0	1.2
	b. Bottling plant		0	0.25	0	0	0	0	0	0.25
5	Chellanam									
	a. Desalination Plant	1.25	0	0.2	1.3	0	0	0	0	1.5
	b. Bottling plant		0	0.25	0	0	0	0	0	0.25

6	Kumbalangi a. Desalination Plant b. Bottling plant	1.25	0 0	0.2 0.25	1.3 0	0 0	0 0	0 0	0 0	1.5 0.25
7	Maradu a. Desalination Plant b. Bottling plant	1.75	0 0	0.2 0.25	1.8 0	0 0	0 0	0 0	0 0	2.0 0.25
8	Kumbalam a. Desalination Plant b. Bottling plant	1.25	0 0	0.2 0.2	1.3 1.3	0 0	0 0	0 0	0 0	1.5 1.5
9	Mulavukad a. Desalination Plant b. Bottling plant	1.25	0 0	0.2 0.25	1.3 0	0 0	0 0	0 0	0 0	1.5 0.25
10	Kadamakkudy a. Desalination Plant b. Bottling plant	0.75	0 0	0.2 0.25	0.8 0	0 0	0 0	0 0	0 0	1.0 0.25
11	Cheranalloor a. Desalination Plant b. Bottling plant	1.25	0 0	0.2 0.25	1.3 0	0 0	0 0	0 0	0 0	1.5 0.25
12	Varappuzha a. Desalination Plant b. Bottling plant	1.0	0 0	0.2 0.25	1 0	0 0	0 0	0 0	0 0	1.2 0.25
TOTAL			0	6.5	23.5	0	0	0	0	30.00

Rain Water Harvesting - Investment Plan

No	Proposals	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Amount in Crore
1	Purchase of Ferrocement Tanks								
	For public Buildings in 13 Panchayat areas	0	0.40	1.97	0	0	0	0	2.37
	Construction of re charge pits	0	0.10	0.05	0	0	0	0	0.15
2	Purchase of Ferrocement Tanks								
	For public buildings in 2 municipal areas.	0	0.20	0.20	0	0	0	0	0.40
	Construction of re charge pits in municipal areas	0	0.03	0.03	0	0	0	0	0.06
3	Purchase of Ferrocement Tanks								
	For public buildings in Corporation area	0	0.10	0.10	0	0	0	0	0.20
	Construction of re charge pits in municipal areas	0	0.01	0.01	0	0	0	0	0.02
Total			0.84	2.36	0	0	0	0	3.20

Sewerage System Investment Plan

Planning / Reforms and Institutional Strengthening												
Comprehensive Sewerage Sector Development Master Plan	100	150	150	200	100	100	800	400	160	240	800	
	100	150	150	50	50	0	500	250	100	150	500	
	100	200	100	50	50	50	550	275	110	165	550	

	SOLID WASTE AT SOURCE:										
2	Domestic Waste Bins	sponsorship	30% fund from sponsors	0	7.85	3.9	3.9	1.56	1.56	1.56	20.33
2	Domestic Vermi-composting units	user to pay	fund given, to be repaid	0	0.16	0.08	0.08	0.08	0.08	0.08	0.56
2	Door to door primary collection	user to pay	pay.urban poor employment								
3	SPECIAL PURPOSE VEHICLES										
3	SPVs	private participation	fund given, to be repaid		3.9	1.95	1.95	0.78	0.78	0.78	10.14
3	Cleaning Service for SPVs	private participation	fund given, to be repaid		0.39	0.18	0.21	0.09	0.09	0.09	1.05
4	SECONDARY COLLECTION:										
4	Secondary Collection	private participation	fund given, to be repaid		1.9	1	0.9	0.4	0.4	0.4	5
4	Waste from institutions	user to pay	pay,urban poor employment								
5	SLAUGHTER HOUSE/MAIN MARKET WASTE	user to pay	ULB /Private Fund		0.2	0.1	0.1	0.1	0.1	0.1	0.7
6	LITTER BINS	sponsors	30%fund through sponsors	0	0.39	0.03	0.03	0.03	0.03	0.03	0.54
7	INCINERATION UNITS	users to pay	fund given, to be repaid		0.5	0.05	0.05	0.05	0.05	0.05	0.75
	MAIN SOLID WASTE PROCESSING AT BRAHMAMPURAM										
8	WEIGHING MECHANISM	ULB	ULB fund		2						2
9	SORTING BIO-NON-DEGRADABLE WASTE	Private participation	fund given, to be repaid		2						2
10	COMPOSTING	Private participation	fund given, to be repaid		1	1	1	1	1	1	6
11	BIO-METHANATION PLANT	Private participation	fund given, to be repaid		3	3	3				9
12	ELECTRIC POWER GENERATION	Private participation	fund given, to be repaid		4	4	4	2	2	2	18
13	SECURE LAND FILLING FACILITY	Private participation	fund given, to be repaid		3	3	3	3	3	3	18
13	EXCAVATORS	Private participation	fund given, to be repaid		0.32						0.32
14	EFFLUENT TREATMENT PLANT	Private participation	fund given, to be repaid			6					6
15	DRINKING WATER AT MAIN PROCESSING SITE	ULB	fund given, to be repaid			2					2
16	GREEN BELT &PICNIC SPOT	Corporate participation	fund given, to be repaid		1	2	1	1	0.25	0.25	5.5
17	ENHANCING ROLE OF ULB STAFF	ULB	ULB			2	3	3	1	1	10
17	IMPLEMENTATION OF COMPUTER SYSTEM	ULB	ULB		2						2
18	BUILDING WASTE	Private participation	fund given, to be repaid			0.48	0.12	0.12	0.12	0.12	0.96
TOTAL Rs. In Crores				0	44.41	49.57	31.79	16.71	13.96	13.96	170.4

Traffic and Transportation Sector - Investment Plan (2006-2012) - Rupees in Crores

SI No	Name of Project	Length in KM/Nos	Amount in Crores	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
-------	-----------------	------------------	------------------	---------	---------	---------	---------	---------	---------	---------

1	RFB Projects (16 Nos), Improvement to NH Standard	98.30	163.00	0	43	30	30	30	30	0
2	Outer Ring Roads	35.00	140.00	2	27	30	45	20	18	0
3	Inner Ring Roads	42.00	85.00	0	15	20	20	20	10	0
4	Link Roads	17.20	93.00	0	13	30	20	20	10	0
5	Roads Through CBD Area	26.00	37.00	0	14	10	10	3	0	0
6	Radial Roads	110.50	233.00	0	40	47	50	55	40	1
7	Water Front Road	40.00	132.00	0	22	30	40	20	20	0
8	Secondary Roads	1316.20	661.00	0	110	119	120	150	150	12
9	Rail Over Bridges	19	332.00	0	72	100	120	40	0	0
10	FLY OVERS/ SUB WAYS	9	415.00	0	46	110	110	120	29	0
11	Bridges	73	900.00	0	110	180	180	180	205	45
12	Multi Level Parking	39	59.00	0	7	20	20	12	0	0
13	Public Comfort Centres connected to bus station and traffic centres	7	2.00	0	1	1	0	0	0	0
14	Moffusil Bus Terminals	16	133.00	0	25	50	50	8	0	0
15	Peripheral Parkings	5	15.00	0	5	5	5	0	0	0
16	Truck Terminals	4	70.00	0	17	25	28	0	0	0
17	Pedestrian crossing/ escalator facilities	8	16.00	0	3	6	5	2	0	0
18	Road Markings and Sign Boards	LS	14.00	0	5	3	3	3	0	0
19	Signals	LS	25.00	0	5	5	5	5	5	0
20	Waiting Sheds	LS	6.00	0	3	3	0	0	0	0
21	Bus Bays	250	12.00	0	2	2	2	2	2	2
22	Inland Water transport Terminals, Navigational aids, Canal dredging and scientific disposal	36	48.00	0	6	15	20	7	0	0
23	Metro rail, Viability Gap		635.00	0	100	200	200	135	0	0
GRANT TOTAL			4226	2	691	1041	1083	832	519	60

Traffic and Transportation Sector - Strategic Action Plan (2006-2012)

Component	Institution	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	
Planning, Reforms and Institutional Strengthening	CoC	Upgradation of Traffic & Transportation Study for entire for the Designated area		x						
	GoK	Constitution and Operationalisation of Greater Cochin Transport Authority (GCTA)		x						
	CoC	Transport Assets and utilities mapping using G.I.S. Technology		x	x	x	x	x		
	CoC, Police dept.	Traffic and Transportation Management using G.I.S. and G.P.S. technology		x	x	x				
	CoC, Police dept.	Design and Implementation of IEC campaign for improved traffic awareness		x	x	x	x	x		
	CoC	Capacity building initiatives for better traffic management		x	x	x	x	x		
	CoC/ Municipality / Panchayath		Provision of bus bays, including waiting Sheds in identified locations including signage		x	x				
			Signage improvement at bus bays to streamline bus and passenger mobility		x	x	x	x	x	x
			Development of bus terminals, 16 Nos		x	x	x	x		
			Development of required infrastructure (signage, signal system, separators, etc.)		x	x	x	x	x	

		Inland Water Transport Terminals, Major jetties 2 Nos, Minor jetties 36 Nos, Navigational Aids and Dredging of Water ways of 60 KMs		x	x	x	x		
	GoK/CoC/Municipality	Provision of MRTS (length in km)		x	x	x	x		
Improved Safety, Service delivery and Customer Satisfaction by providing better infrastructure	CoC/Municipality	Road Fund Board Projects (16 Nos), Improvement of existing roads to NH Standard		x	x	x	x	x	
		Forming a new Outer Ring Road for stream lining Traffic		x	x	x	x	x	
		Development of Inner Ring Roads for stream lining Traffic		x	x	x	x	x	
		Forming a new Link Roads for stream lining Traffic		x	x	x	x	x	x
		Development of existing Roads of CBD area		x	x	x	x		
		Development of Radial Roads		x	x	x	x	x	x
		Development of Water front Roads			x	x			
		Development of secondary roads of the City		x	x	x	x	x	x
		Railway Over bridges 18 Nos		x	x	x	x		
		Bridges 72 Nos		x	x	x	x	x	x
		Multi Level Parking 39 Nos of 50 Passenger car capacity		x	x	x	x		
		Public Comfort Centres, 7 Nos		x	x				
		Peripheral Parking at 5 Places		x	x	x			
		Truck Terminals 4 Places		x	x	x			
		Road Markings and Sign Boards		x	x	x	x		
		Signals		x	x	x	x	x	
		Fly Overs and Sub Ways		x	x	x	x	x	
		Pedestrian Crossing with Escalator Facilities		x	x	x			
Environmental upgradation	CoC	Development of Green Belts along the Road Margins			x	x	x	x	x
	PCB, RTA	Effective monitoring and pollution check		x	x	x	x		
	RTA, Traffic Police	Impose ban the use of air horns causing noise pollution		x	x				
Finance	CoC/Mun/Panch, state govt	Constitution of Urban Transport Development Fund		-	-	-	-	-	-
		Loans/Bonds		-	-	-	-	-	-

ESTIMATED COST

Sl. No	Components	Amount Rs. in crores
1	Development of Comprehensive Data Base	3.00
2	Institutional Strengthening and Capacity Building	6.00
3	Environmental improvement of slums	39.60
4	Electricity and street light	18.00
5	Civic Amenities	166.00
6	Land Tenure and Housing	307.60
7	Social Security	62.00
8	Livelihood	35.00
9	Health	158.30
10	Education	64.50
11	Operation & Maintenance Cost	25.00
	GRAND TOTAL	885.00

BSUP - FINANCIAL PLAN (2006-2012) Rupees in Crores

Component	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total
Development of Comprehensive Data Base		0.00	2.00	1.00					3.00
	Sub Total	0.00	2.00	1.00	0.00	0.00	0.00	0.00	3.00
Institutional Strengthening and Capacity Building		0.00	5.00	1.00	0.00	0.00	0.00	0.00	6.00
	Sub Total	0.00	5.00	1.00	0.00	0.00	0.00	0.00	6.00
Environmental improvement of slums	Individual pipe connections to all slum dwellers	0.00	3.00	2.00	1.00	1.00	0.00	0.00	7.00
	Rain water harvesting	0.00	1.50	0.50	0.50	1.00	0.50	0.00	4.00
	construction of borewells to slum dwellers	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50
	water connections to all civic amenities	0.00	0.50	0.00	0.00	0.00	0.00	0.50	1.00
	Silt removal from culverts and drains	0.00	1.00	1.00	1.00	1.00	1.00	0.00	5.00
	Construction of small drains	0.00	2.00	1.00	1.00	1.00	1.00	1.00	7.00
	construction of bye-lanes	0.00	4.00	2.00	2.00	2.00	2.00	2.00	14.00
	Purchase of mini buses	0.00	0.50	0.00	0.50	0.00	0.00	0.00	1.00
	Revolving Fund for O&M	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.10
	Sub Total	0.00	13.00	6.52	6.02	6.02	4.52	3.52	39.60
Electricity and street light	Electric wiring to individual house holds	0.00	1.00	1.00	1.00	1.00	1.00	1.00	6.00
	Street lights covering slum locality	0.00	1.00	1.00	1.00	1.00	1.00	1.00	6.00
	Electricity connections to all civic amenities	0.00	1.00	1.00	1.00	1.00	1.00	1.00	6.00
	Sub Total	0.00	3.00	3.00	3.00	3.00	3.00	3.00	18.00
Civic Amenities	Recreational facilities to slum dwellers., Parks, Mini theatres etc	0.00	0.00	2.00	2.00	2.00	3.00	1.00	10.00
	Construction & renovation of Community Hall Centres	0.00	2.00	1.00	3.00	0.50	2.00	0.50	9.00

	Construction & renovation of community toilets& washing areas	0.00	2.00	1.25	2.00	0.50	0.50	0.75	7.00
	Setting up of day- care centres/play schools	0.00	6.00	4.00	5.00	5.00	3.00	2.00	25.00
	Day care centres for senior citizens	0.00	0.00	5.00	5.00	5.00	0.00	0.00	15.00
	Construction & Rennovation of Anganwadies	0.00	10.00	5.00	5.00	4.00	4.00	2.00	30.00
	setting up of woking women's hostel	0.00	5.00	5.00	5.00	2.00	3.00	0.00	20.00
	Individual Sanitary Toilets and sewage connection	0.00	5.00	10.00	10.00	15.00	4.00	6.00	50.00
	Sub Total	0.00	30.00	33.25	37.00	34.00	19.50	12.25	166.00
Land Tenure and Housing	Regitsration of puramboke dwellers, Issuing photo identity cards	0.00	0.20	0.10	0.00	0.00	0.00	0.00	0.30
	Conferring Tenural rights	0.00	11.25	0.70	0.50	0.20	0.10		12.75
	Land Management Unit		0.30	0.70	0.50	0.50	0.30	0.20	2.50
	Acquisition and development of land for housing	0.00	5.10	10.00	8.00	1.00	1.90	0.00	26.00
	Access to Legal Support	0	0.15	0.50	0.15	0.15	0.05	0.05	1.05
	Housing	0	41.00	53.00	57.00	55.00	28.5	30.5	265.00
	Sub Total	0.00	58.00	65.00	66.15	56.85	30.85	30.75	307.60
Social Security	Community based rehabilitation including food and medicine	0	2.00	2.00	2.00	2.00	2.00	2.00	12.00
	Linkage with NGO's working with most vulnerables	0.00	1.10	1.00	1.00	1.00	0.50	0.40	5.00
	Night shelters for women and migrant labourers	0	0.50	1.00	1.00	1.00	0.75	0.75	5.00
	Construction and infrastructure facilities to rehabilitation centers	0.00	9.00	9.00	7.00	6.00	3.00	6.00	40.00
	Sub Total	0.00	12.60	13.00	11.00	10.00	6.25	9.15	62.00
Livelihood	Low cost work space with multi-dwelling houses and slum pockets.	0	2.00	3.00	3.00	3.00	2.00	2.00	15.00
	Construction of marketing, resource and advisory centers	0.00	3.00	3.00	3.00	2.00	2.00	2.00	15.00
	Advanced Enterprenural Training	0.00	1.00	0.50	0.50	0.50	0.50	2.00	5.00
	SubTotal	0.00	6.00	6.50	6.50	5.50	4.50	6.00	35.00
Health	Infrastructure facilities to Govt. hospitals	0.00	38.50	19.00	16.00	5.00	5.00	5.00	88.50
	Health awareness & CHV Strengthening	0.00	1.50	1.00	0.50	0.50	0.50	1.00	5.00
	Health Insurance	0.00	20.00	10.00	10.00	10.00	10.00	0.00	60.00
	Health Cards to urban poor	0.00	0.50	0.50	0.25	0.50	0.25	0.00	2.00
	Mobile Clinic & Ambulance	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50
	O&M of Mobile clinic &Ambulance	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.05
	Nutritional food supply	0.00	0.80	0.40	0.30	0.25	0.25	0.25	2.25
	Sub Total	0.00	61.80	30.91	27.06	16.26	16.01	6.26	158.30
Education	Strengthening of Balasabha	0.00	2.25	1.25	1.25	1.25	0.50	0.00	6.50
	Infrastructure facilities to continuing education centres	0	0.50	0.50	0.75	0.25	0.00	0.00	2.00
	Infrastrucure& other facilities to Govt. Schools	0.00	10.00	20.00	20.00	4.00	2.00	0.00	56.00
	Sub Total	0.00	12.75	21.75	22.00	5.50	2.50	0.00	64.50

Operation & Maintenance Cost		0.00	2.00	3.00	5.00	5.00	5.00	5.00	25.00
	Grand Total	0.00	206.15	184.93	183.73	142.13	92.13	75.93	885.00

BSUP Strategy to achieve Vision and Goal (2006-2012)

Component	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Development of Comprehensive Data Base		✓	✓	✓				
Institutional Strengthening and Capacity Building		✓	✓	✓				
Environmental improvement of slums	Individual pipe connections to all slum dwellers	✓	✓	✓	✓	✓		
	Rain water harvesting	✓	✓	✓	✓	✓	✓	
	construction of borewells to slum dwellers		✓					
	water connections to all civic amenities	✓						✓
	Silt removal from culverts and drains		✓	✓	✓	✓	✓	
	Construction of small drains	✓	✓	✓	✓	✓	✓	✓
	construction of bye-lanes	✓	✓	✓	✓	✓	✓	✓
	Purchase of mini buses		✓		✓			
	Revolving Fund for O&M Mini buses			✓	✓	✓	✓	✓
Electricity and street light	Electric wiring to individual house holds		✓	✓	✓	✓	✓	✓
	Street lights covering slum locality		✓	✓	✓	✓	✓	✓
	Electricity connections to all civic amenities		✓	✓	✓	✓	✓	✓
Civic Amenities	Recreational facilities to slum dwellers., Parks, Mini theatres etc			✓	✓	✓	✓	✓
	Construction & renovation of Community Hall Centres		✓	✓	✓	✓	✓	✓
	Construction & renovation of community toilets& washing areas	✓	✓	✓	✓	✓	✓	✓
	Setting up of day- care centres/play schools	✓	✓	✓	✓	✓	✓	✓
	Day care centres for senior citizens			✓	✓	✓		
	Construction & Renovation of Anganwadies	✓	✓	✓	✓	✓	✓	✓
	setting up of woking women's hostel		✓	✓	✓	✓	✓	
	Individual Sanitary Toilets and sewerage connection		✓	✓	✓	✓	✓	✓
Land Tenure and Housing	Regitsration of puramboke dwellers, Issuing photo identity cards	✓	✓	✓				
	Conferring Tenural rights	✓	✓	✓	✓	✓	✓	
	Land Management Unit		✓	✓	✓	✓	✓	✓
	Acquisition and development of land for housing	✓	✓	✓	✓	✓	✓	
	Access to Legal Support		✓	✓	✓	✓	✓	✓
	Housing	✓	✓	✓	✓	✓	✓	✓
Social Security	Community based rehabilitation including food and medicine		✓	✓	✓	✓	✓	✓
	Linkage with NGO's working with most vulnerables	✓	✓	✓	✓	✓	✓	✓
	Night shelters for women and migrant labourers		✓	✓	✓	✓	✓	✓
	Construction and infrastructure facilities to rehabilitation centers	✓	✓	✓	✓	✓	✓	✓
Livelihood	Low cost work space with multi-dwelling houses and slum pockets.		✓	✓	✓	✓	✓	✓

	Construction of marketing, resource and advisory centers		✓	✓	✓	✓	✓	✓	✓
	Advanced Enterprenural Training	✓	✓	✓	✓	✓	✓	✓	✓
Health	Infrastructure facilities to Govt. hospitals	✓	✓	✓	✓	✓	✓	✓	✓
	Health awareness & CHV Strengthening	✓	✓	✓	✓	✓	✓	✓	✓
	Health Insurance	✓	✓	✓	✓	✓	✓	✓	✓
	Health Cards to urban poor	✓	✓	✓	✓	✓	✓	✓	✓
	Mobile Clinic & Ambulance		✓						
	O&M of Mobile clinic & Ambulance			✓	✓	✓	✓	✓	✓
	Nutritional food supply	✓	✓	✓	✓	✓	✓	✓	✓
Education	Strengthening of Balasabha	✓	✓	✓	✓	✓	✓	✓	
	Infrastructure facilities to continuing education centres	✓	✓	✓	✓	✓	✓	✓	
	Infrastrucure & other facilities to Govt. Schools		✓	✓	✓	✓	✓	✓	
Operation & Maintenance Cost		✓	✓	✓	✓	✓	✓	✓	✓

Heritage Investment Plan

SI No	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total Amt in Crores
Long Term Projects									
1	Heritage Management Plan for Heritage Precincts of Cochin.	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
2	Heritage Base Map Preparation Program.	0.00	0.15	0.15	0.20	0.25	0.15	0.10	1.00
3	Heritage Master Plan Preparation.	0.00	0.30	0.30	0.40	0.50	0.30	0.20	2.00
4	Heritage forums – integrating heritage education in all schools mediating the subject & its relevance to the next generation.	0.00	0.02	0.02	0.02	0.01	0.02	0.01	0.10
Mid Term Projects									
1	Urban renewal for various canal precincts – canal renewal projects for various canal precincts such as Kalvathy canal precinct at Mattancherry etc.								
* The Cost Estimate for this project is included in the Drainage sector of the CDP									
2	Urban renewal scheme for fort Vypeen heritage zone.	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
3	Conservation plan for heritage water edge of Mattancherry	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
4	Total conservation of mangroves in Cochin.								
* The Cost Estimate for this project is included in the Environment sector of the CDP									

SL No	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total Amt in Crores
Mission Projects									
1	Broadway Urban Renewal	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
2	Mattancherry Spice Museum	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00

3	Ernakulam Broadway Urban Renewal and Renewal of Pond and Waterway to the Pond	0.00	3.00	3.00	4.00	5.00	3.00	2.00	20.00
4	Mangalavanam Conservation Plan								
* The Cost Estimate for this project is included in the Environment sector of the CDP									
5	Conservation and Urban Renewal Schemes for Thripunithura Heritage Zone	0.00	2.25	2.25	3.00	3.75	2.25	1.50	15.00
6	Total Management Heritage Scheme to Sub-Zonal Area	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
7	City Museum	0.00	0.30	0.30	0.40	0.50	0.30	0.20	2.00
8	An Effective Management Programme for Cultural Institutions	0.00	0.15	0.15	0.20	0.25	0.15	0.10	1.00
Total amount for each year		0.00	11.42	11.42	15.22	19.01	11.42	7.61	76.10

City Investment Plan - Environmental Protection Budget amount (Rs. In Crores)

Sl. No.	Activity./Year→	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Sub total	Remarks	Addl. Remarks	
1.0	Establishing & maintaining Environmental Management Centre	0	0.1	0.2	0.2	0.1	0.1	0.1	0.8	To assist ULB and community on environmental issues, disaster management	To work with volunteers	
1.1	Supporting laboratory for air, water and noise (PCB accredited)	0	0.1	1	0.3	0.2	0.1	0.1	1.8	Surveillance monitoring of air, noise, water at nominal charges, assimilation of technology	Generation and compilation of data, information dissemination	
1.2	Community education for Schools, institutions, residents associations	0	0.2	0.4	0.4	0.4	0.3	0.3	2	Water quality monitoring, climate recording, health survey, communication	To train, support and cooperate with community; environmental theme park with rainwater harvesting, waste disposal technologies at display	
2.1	Urban forestry	0	0.4	4	4	4	4	4	20.4	Development of canopy to reduce flash run off	Roadside and private un-built space 400 ha	
2.2	Sea shore protection	0	2	30	30	30	15	13	120	Geotextile protection, sea wall, tree belt with local participation	30 km Stretch from Chellanam - Frot Kochi & Fort Vypeen - Njarakkal	
3.0	Water resource Restoration of wetlands	0	1	5	5	5	5	4	25	Design, construction, protection with barrier, maintenance	40 km fringe land at 5m width	
3.1	Storm water management & Rainwater harvesting	Fund provided in Drainage Sector									with private participation	Large ponds, interception devices like on-land swales
3.2	Wetland parks or Parks	0	1	8	8	8	8	7	40	with private participation; these are fallow paddy fields - originally wetland	10 units of 5 ha in Trikkakara, Kakkanad, Chottanikkara; 50 ha near Panar	
	Restoration of wells	Fund provided in Drainage Sector									with participation of individuals and institutions	40 in the city; 100 in villages and panchayaths
4.0	Waste water Improved onsite disposal of sewage	Fund provided in Sewerage Sector									for BPL & service institutions	100 community & slum toilets; 5000 for individuals (BPL)
4.1	Institutional onsite sewage disposal	Fund provided in Sewerage Sector									Mainly with baffled anaerobic reactor & phytoremediation	100 units for hostels & hospitals

5.0	Municipal Solid waste Community education K-12 Neighbourhood Group Level	Fund provided in Solid Waste Management Sector							Preparation of material (brochure, display panels, get together and evaluation), printing, display cards; school level composting, student level composting at home recording and dissemination	600 composting units in school ; 40 institutional composting units (improved technology) <i>(this is in addition to the provision under MSW)</i>	
6.0	Public comfort stations	0	0.2	2	2	2	2	0.8	9	With urine recovery and conversion	50 in the city; 20 in municipalities; 40 in panchayaths
7.0	Conservation of mangroves 40 km patches along the water body	0	1	8	8	8	8	8	41	with protection, regeneration and community involvement in conservation at all suitable water fringes	at the fringe of all canals and islands
8.0	HealthStatus - Participatory survey	0	0.05	0.2	0.2	0.2	0.2	0.15	1	Continuous survey with student & NGOs; awareness education	All residential and industrial areas.
9.0	Crematoria	0	1	6	6	6	6	5	30	Scientifically & aesthetically designed (30)	Community association to operate on Build & operate basis
Grand Total		0	7.05	64.8	64.1	63.9	48.7	42.5	291		

Tourism Investment Plan

Sl No	Proposed Projects	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total Amt in Crores
1	Developing and maintaining public spaces for Cochin urban region	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
2	Renovation of DH Ground	0.00	0.03	0.03	0.04	0.05	0.03	0.02	0.20
3	Mulavukadu village tourism	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
4	Construction of Tourism complex at Edappally	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
5	Kumbalam Tourism Project	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
6	Renovation of Bastian Bungalow at Fort Cochin	0.00	0.03	0.03	0.04	0.05	0.03	0.02	0.20
7	Landscape of Palm Avenue project from Thevara Junction to BOT Bridge	0.00	0.15	0.15	0.20	0.25	0.15	0.10	1.00
8	Integrated tourism proposal and management programme for Fort Kochi and Mattanchery tourism zone	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
9	Beautification of M.G.Road from Mattancherry bridge to north over bridge	0.00	0.15	0.15	0.20	0.25	0.15	0.10	1.00
10	Developing Chellanam as a tourist center	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
11	Introducing various projects and programmes to strengthen the model village tourism project at Kumbalangi	0.00	2.25	2.25	3.00	3.75	2.25	1.50	15.00

12	Strengthening the Grahsthal Programme	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
13	ACochin brand film festival	0.00	0.11	0.11	0.14	0.18	0.11	0.07	0.70
14	Padmasarovaram land scape project	0.00	2.25	2.25	3.00	3.75	2.25	1.50	15.00
15	Queen of Arabian Sea project	0.00	7.50	7.50	10.00	12.50	7.50	5.00	50.00
16	Subhash Park Improvement	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
17	Kunnara Park Improvement	0.00	0.05	0.05	0.06	0.08	0.05	0.03	0.30
18	P.J.Antony Memorial Cultural Centre Improvement	0.00	0.02	0.02	0.02	0.03	0.02	0.01	0.10
19	Pallathuraman Cultural Centre improvement	0.00	0.03	0.03	0.04	0.05	0.03	0.02	0.20
20	Water edge Walkway from Thoppumpady to Kamalakkadavu	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
21	Natural History Museum	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
22	Establishing Kerala Village - Thanthonnithuruthu	0.00	0.90	0.90	1.20	1.50	0.90	0.60	6.00
23	Martial ArtsCentre	0.00	0.02	0.02	0.02	0.03	0.02	0.01	0.10
24	Valanthu kadu Keraleeya Gramam	0.00	3.75	3.75	5.00	6.25	3.75	2.50	25.00
25	Backwater walkway from Valanthukadu – Chambakkara canal	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
26	Kunnarapallimattam improvement	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
27	Water Sports Centre at Chilavannur Lake	0.00	0.75	0.75	1.00	1.25	0.75	0.50	5.00
28	Murikkal-Pulikapuram Tourism Development Project at Kadamakkudy	0.00	0.30	0.30	0.40	0.50	0.30	0.20	2.00
29	Kannakatt-Veliakulam Tourism Project at Palluruthy	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
30	Poonthuruthy Island Development	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
31	I-MAX Theatre	0.00	0.60	0.60	0.80	1.00	0.60	0.40	4.00
32	Nehru Park	0.00	0.02	0.02	0.02	0.03	0.02	0.01	0.10
33	Mehboob Park	0.00	0.02	0.02	0.02	0.03	0.02	0.01	0.10
34	Mahakavi G Memorial	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
35	Organizing Festivals and fairs including Boat Races	0.00	0.08	0.08	0.10	0.13	0.08	0.05	0.50
36	Development of Planetarium & Science City	0.00	1.50	1.50	2.00	2.50	1.50	1.00	10.00
37	Development of Thanneerchal at Thiruvankulam	0.00	0.53	0.53	0.70	0.88	0.53	0.35	3.50
	Total amount for each year	0.00	31.20	31.20	41.60	52.00	31.20	20.80	208.00

URBAN RENEWAL & SOCIAL AMENITIES

Investment Plan

No.	Proposal	FY1	FY 2	FY 3	FY 4	FY 5	FY 6	FY 7	Total
-----	----------	-----	------	------	------	------	------	------	-------

		05-06	06-07	07-08	08-09	09-10	10-11	11-12	
I		Area Development scheme for Ernakulam Market Area.							
	a	0	2	5	8	3	2	0	20
	b	0	3	8	8	5	4	2	30
	c	0	1	1	3	5	5	0	15
	d	0	0	0	0	5	5	0	10
II		Conservation of Bazaar Road, and vicinity area -							
	a	0	2	5	3				10
	b	0	1	3	5	3	3	0	15
III		Development of Community Halls, Training Centres and Anganwadis		Included in ULPA Sector					
IV		0	2	3	0	0	0	0	5
V		0	2	1	2	0	0	0	5
VI		0	5	5	5	5	0	0	20
VII		0	2	3	5	0	0	0	10
VIII		0	0	2	0	0	0	0	2
IX		0	0	2	0	0	0	0	2
X		0	0	2	0	0	0	0	2
XI		0	0	2	0	0	0	0	2
XII			1	2	2	0	0	0	5
XIII		0	2	2	3	3	0	0	10
XIV		Redevelopment of Ernakulam North Area –							
	a	0	2	2	2	4	0	0	10
	b	0	2	4	5	5	10	4	30
XV		Redevelopment of the area Surrounding the present Corporation Area							
	a		0	2	4	3	1	0	10
XVI		0	2	4	4	4	4	2	20

XVII	Renovation and environmental Improvement in Panchayath Market areas	0	2	6	6	6	6	0	26
------	---	---	---	---	---	---	---	---	----

Strategy for Investment

No.	Proposal	FY1 2005-06	FY 2 2006-07	FY 3 2007-08	FY 4 2008-09	FY 5 2009-10	FY 6 2010-11	FY 7 2011-12
I	Area Development scheme for Ernakulam Market Area.							
	a Shifting of Building Materials Market-rehabilitation of Shop owner		✓	✓	✓	✓	✓	
	b Construction of a new wholesale Building materials market		✓	✓	✓	✓	✓	✓
	c Reconstruction of the present Ernakulam market into a modern retail market		✓	✓	✓	✓	✓	
	d Environmental improvement, Landscaping and realignment of roads					✓	✓	
II	Conservation of Bazaar Road and vicinity area -							
	a Listing of buildings and Preparation of control drawings		✓	✓	✓			
	b Development of a water front road approximately 5 km		✓	✓	✓	✓	✓	
III	Development of Community Halls, Training Centres and nganwadis		Included in ULPA Sector					
IV	Facility for Women's Enterprises Goods distribution		✓	✓				
V	Facility augmentation in Orphanages And Old age Homes		✓	✓	✓	✓	✓	✓
VI	Provision of roofing to International Stadium		✓	✓	✓	✓		
VII	Reconstruction of Ambedkar Stadium		✓	✓	✓	✓	✓	
VIII	Maharaja's college Stadium Improvement			✓				
IX	Development of Veli Maidan in West Kochi			✓				
X	Development of Jogger's track in Marine Drive Maidan			✓				
XI	Improvement to the Indoor Stadium at Varappuzha			✓	✓	✓	✓	✓
XII	District level Stadium and Sports Hostel at Thrikkakkara		✓	✓	✓			
XIII	International level swimming pool		✓	✓	✓	✓		
XIV	Redevelopment of Ernakulam North Area -							
	a Area Development Scheme		✓	✓	✓	✓		
	b Construction of about 20000 Sgm office		✓	✓	✓	✓	✓	✓
XV	Redevelopment of the area Surrounding the present Corporation Area							
	a Area Development Scheme			✓	✓	✓	✓	

XVI	Redevelopment of old market areas in Municipal areas		✓	✓	✓	✓	✓	✓
XVII	Renovation and environmental Improvement in Panchayath Market areas		✓	✓	✓	✓	✓	

DRAINAGE - COST PROJECTION

Sl. No.	Nature of activities	Amount Rs. Crores
1	Improvements of primary canal in corporation area	156.77
2	Improvements of natural and man made secondary drains in corporation area	307.59
3	Improvements of area drains in corporation area	132.83
4	Improvements of primary canal in municipalities and panchayats area	108.94
5	Improvements of secondary canal in municipalities and panchayats area	52.23
6	Improvements of area drains in municipalities and panchayats area	44.24
7	Implementation of ground water charging works	11.40
8	Implementation of pumping regulatory system	10.00
9	Improving quality of canal water	10.00
10	R.R. Planning, Preparation of master plan and Engineering studies	36.00
11	Public awareness - campaign	5.00
12	Contingences	25.00
Grant Total		900.00

Drainage Finance

Component	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Capacity building	Identification of problem areas	0.00	1.50					
	R & R Planning	0.00	2.50	2.00	1.50	1.00	0.50	0.50
	Comprehensive Drainage Master Plan	0.00	2.50	0.50				
	Preparation of feasibility report and detailed engineering studies	0.00	18.50	5.00				
	Sub Total	0.00	25.00	7.50	1.50	1.00	0.50	0.50
Primary Drains Rehabilitation	Desilting and removal of weeds	0.00	4.78	5.00	4.00	1.00		
	Removal and rehabilitation of encroachments	0.00	5.70	7.50	7.50	5.00		
	Widening & Deepening	0.00	5.50	5.00	5.00	3.00	2.00	
	Construction of side walls & lining	0.00	10.77	20.00	25.00	20.00	15.00	10.00
	Construction of cross drainage works	0.00	6.12	16.00	15.00	11.00	10.00	6.00
	Construction of canal side roads	0.00	5.45	3.00	5.00	5.00	4.00	3.00
	Landscaping	0.00	1.39	3.00	4.00	3.00	2.00	1.00
	Sub Total	0.00	39.71	59.50	65.50	48.00	33.00	20.00
Construction of secondary drain (natural and man-made)	Desilting and removal of weeds	0.00	2.12	1.50	1.00			
	Removal and rehabilitation of encroachments	0.00	1.50	1.50	1.00			
	Widening and deepening	0.00	1.65	1.00	0.50	0.50		
	Construction of side walls and lining	0.00	35.35	60.00	75.00	60.00	45.00	15.00
	Construction of cross drainage works	0.00	5.80	10.00	12.50	7.50	5.00	5.00
	Construction of canal side roads	0.00	0.55	2.00	2.00	1.50	1.00	0.50
	Landscaping	0.00	0.35	0.50	1.00	1.00	0.50	0.50
	Sub Total	0.00	47.32	76.50	93.00	70.50	51.50	21.00
Construction of Area drains	Desilting and removal of weeds	0.00	0.25	0.40	0.15	0.10		
	Construction of interior drains	0.00	21.28	30.00	35.00	35.00	30.00	22.00
	cross drainage works	0.00	0.39	0.50	0.50	0.50	0.50	0.50
	Sub Total	0.00	21.92	30.90	35.65	35.60	30.50	22.50
Others	Public awareness	0.00	1.00	1.00	1.00	1.00	1.00	
	Feasibility study of ground water charging and implementation	0.00	1.40	3.00	4.00	2.00	1.00	
	Canal water quality improvement	0.00	1.00	1.00	1.50	1.50	3.00	2.00
	Regulatory pumping system	0.00	0.50	1.00	2.00	2.00	3.00	1.50
	Unforeseen items	0.00	2.00	3.00	4.00	5.00	5.00	5.00
	Sub Total	0.00	6.90	9.00	12.50	11.50	13.00	8.50
Grant Total		0.00	140.85	183.40	208.15	166.60	128.50	72.50

Drainage Finance

Component	Activity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Capacity building	Identification of problem areas		√					
	R & R Planning		√	√	√	√	√	√
	Comprehensive Drainage Master Plan		√	√				

	Preparation of feasibility report and detailed engineering studies		✓	✓				
Primary Drains Rehabilitation	Desilting and removal of weeds		✓	✓	✓	✓		
	Removal and rehabilitation of encroachments		✓	✓	✓	✓		
	Widening & Deepening		✓	✓	✓	✓	✓	
	Construction of side walls & lining		✓	✓	✓	✓	✓	✓
	Construction of cross drainage works		✓	✓	✓	✓	✓	✓
	Construction of canal side roads		✓	✓	✓	✓	✓	✓
	Landscaping		✓	✓	✓	✓	✓	✓
Construction of secondary drain (natural and man-made)	Desilting and removal of weeds		✓	✓	✓			
	Removal and rehabilitation of encroachments		✓	✓	✓			
	Widening and deepening		✓	✓	✓	✓		
	Construction of side walls and lining		✓	✓	✓	✓	✓	✓
	Construction of cross drainage works		✓	✓	✓	✓	✓	✓
	Construction of canal side roads		✓	✓	✓	✓	✓	✓
	Landscaping		✓	✓	✓	✓	✓	✓
Construction of Area drains	Desilting and removal of weeds		✓	✓	✓	✓		
	Construction of interior drains		✓	✓	✓	✓	✓	✓
	cross drainage works		✓	✓	✓	✓	✓	✓
Others	Public awareness		✓	✓	✓	✓	✓	
	Feasibility study of ground water charging and implementation		✓	✓	✓	✓	✓	
	Canal water quality improvement		✓	✓	✓	✓	✓	✓
	Regulatory pumping system		✓	✓	✓	✓	✓	✓
	Unforeseen items		✓	✓	✓	✓	✓	✓

SPATIAL GROWTH AND LAND UTILIZATION

SL No	Proposal	Estimated cost (Crores)
I	Creation of land use data base on GIS format For the entire Greater Cochin Region	1
II	Preparation of perspective plan for Greater Cochin Region	3
III	Preparation of Master Plan for CDP area	3
IV	Conservation of Water sheets by creating public walkway on the water edge including shore protection	
	a. Corporation area	3
	b. Municipal area	6
	c. Panchayat area	5
TOTAL		30

SPATIAL GROWTH & LAND UTILIZATION

Investment Plan

SL No	Projects	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	Total Rupees (Crores)
I	Creation of land use data base on GIS format For the entire Greater Cochin Region	0	8	2	0	0	0	0	10
II	Preparation of perspective plan for Greater Cochin Region	0	1	2	0	0	0	0	3
III	Preparation of Master Plan for CDP area	0	1	2	0	0	0	0	3
IV	Conservation of Water sheets by creating public walkway on the water edge including shore protection								
	a. Corporation area	0	0.5	0.5	1	1	0	0	3
	b. Municipal area	0	0.5	2	2	1	0.5	0	6
	c. Panchayat area	0	0.5	1.5	1.5	1.5	0	0	5
TOTAL		0	11.5	10	4.5	3.5	0.5	0	30

SPATIAL GROWTH & LAND UTILIZATION

Strategy for Investment

No.	Projects	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
I	Creation of land use data base on GIS format for the entire Greater Cochin Region		✓	✓				
II	Preparation of perspective plan for Greater Cochin Region		✓	✓	✓			
III	Preparation of Master Plan for CDP area		✓	✓				
IV	Conservation of Water sheets by creating public walkway on the water edge including shore protection							
	a. Corporation area		✓	✓	✓	✓		
	b. Municipal area		✓	✓	✓	✓	✓	
	c. Panchayat area		✓	✓	✓	✓		