Urban Development Department
Government of Uttarakhand

City Development Plan: Haridwar Revised

Under
Jawaharlal Nehru National Urban Renewal Mission
(JNNURM)

May 2007

GHK International, UK

in association with

Infrastructure Professionals Enterprise

ENC Consulting Engineers

Ver 308

Preface

The City Development Plan (CDP) of Haridwar is prepared as a part of the initiative of Government of Uttarakhand to access funds under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). CDP is one of the pre requisites for accessing funds under the scheme.

This CDP focuses on the municipal area of Haridwar. At the same time it takes into consideration the future urban growth of Haridwar city which is likely to grow beyond the present municipal boundary. The Kumbh Mela area extends far beyond the city of Haridwar to an area of approximately 130 sq. km. The suggestions and recommendations contained in the Administrative Report on Ardh Kumbh Mela 2004 of the Government of Uttarakhand have also been taken into consideration for Institutional Development as well as identified works proposed in the City Investment Plan.

The CDP was first prepared in August 2006. The CDP was adopted by the State Level Nodal Agency and forwarded to the Ministry of Urban Development, Government of India. The CDP was subsequently appraised by the National Institute of Urban Affairs (NIUA). The comments and observations of NIUA have been duly incorporated in this revised report.

Contents

Annexes

List of Tables

Abbreviations and Acronyms

ADB	Asian Development Bank
ADP	Annual Development Plan
ARV	Annual Ratable Value
BHEL	Bharat Heavy Electrical Limited
BMS	Basic Minimum Services
BPL	Below Poverty Line
BOD	Biological Oxygen Demand
BOO	Build Own Operate
BOT	Build Operate Transfer
BSY	Balika Samriddhi Yojna
CAA	Constitutional Amendment Act
CBO	Community Based Organisation
CCF	City Challenge Fund
CDP	City Development Plan
CDS	Community Development Society
CII	Confederation of Indian Industry
CIP	City Investment Plan
CO	Community Organiser
CPHEEO	Central Public Health Engineering and Environmental Organisation
CSO	Civil Society Organisation
DA	Development Authority
DDP	Draft Development Plan
DFID	Department for International Development (UK)
DLBs	Directorate of Local Bodies
DM	District Magistrate
DoE	Department of Environment
DoHFW	Department of Health and Family Welfare
DPR	Detailed Project Report
DUDA	District Urban Development Agency
DWACUA	Development for Women and Children in Urban Area
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rates of Return
EWS	Economically Weaker Section
FIRR	Financial Internal Rates of Return
GIS	Geographical Information System
GoU	Government of Uttarakhand
GoI	Government of India
GPCU	Ganga Pollution Control Unit
Ha	Hectare
HDA	Haridwar Development Authority
H&ED	Housing and Environment Department
HUDCO	Housing and Development Corporation
ICDS	Integrated Child Development System
IDSMT	Integrated Development of Small and Medium Towns
IHSDP	Integrated Housing and Slum Development Programme
IIE	Integrated Industrial Estate
ILCS	Integrated Low Cost Sanitation
IRC	Indian Road Congress
ISBT	Inter State Bus Terminus
ISO	International Standard Organisation
IT	Information Technology
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
KABB	Knowledge Attitude Belief Behaviour
LPCD	Litres per Capita per Day
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MIS	Management Information System

MLD	Millions Litres Per Day
MMIS	Municipal Management Information System
MoRTH	Ministry of Road, Transport and Highways
MSW	Municipal Solid Waste
NGO	Non Governmental Organisation
NH	National Highway
NHC	Neighbourhood Committee
NP	Nagar Palika
NPP	Nagar Palika Parishad
NRY	Nehru Rozgar Yojana
NSDP	National Slum Development Programme
O&M	Operation and Maintenance
PMIUPEP	Prime Minister's Integrated Urban Poverty Eradication Programme
PMU	Project Management Unit
PPP	Public Private Partnership
PPTA	Project Preparation for Technical Assistance
PRA	Participatory Rapid Assessment
PSP	Private Sector Participation
PWD	Public Works Department
RAP	Resettlement Action Plan
RTO	Regional Transport Office
SADA	Special Area Development Authority
SDM	Sub Divisional Magistrate
SGDP	State Gross Domestic Product
SFC	State Finance Commision
SH	State Highway
SIDCUL	State Industrial Development Corporation Limited, Uttarakhand
SJSRY	Swarna Jayanti Shahari Rojgar Yojna
STP	Sewage Treatment Plant
SUDA	State Urban Development Agency
SWM	Solid Waste Management
SWOT	Strength, Weakness, Opportunity & Threat
TA	Technical Assistance
TCPO	Town and Country Planning Organisation
T&CP	Town and Country Planning Department
ToR	Terms of Reference
UBSP	Urban Basic Services Programme
UDD	Urban Development Department
UBSP	Urban Basic Services for the Poor
UDA	Urban Development Authority
UEPPCB	Uttarakhand Environment Protection and Pollution Control Board
UFW	Unaccounted for Water
UJS	Uttarakhand Jal Sansthan
ULB	Urban Local Body
UPCL	Uttarakhand Power Corporation Ltd.
UPE	Urban Poverty Eradication
UPJN	Uttarakhand Pey Jal Nigam
USWEP	Urban Self Employment Programme
UUDP	Uttarakhand Urban Development Project
UWEP	Urban Wage Employment Programme
VAMBAY	Valmiki Ambedkar Awas Yojana
VRS	Voluntary Retirement Scheme
WHO	World Health Organization

Executive Summary

Haridwar, the most prominent religious and spiritual centre of the state of Uttarakhand is one of the 3 towns of Uttarakhand listed under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The city currently has a population of nearly 2 lakh plus an average of 1.6 lakh floating population. On an annual average, 8 million tourists visit Haridwar. The city requires substantial investment to upgrade, expand and provide new infrastructure to meet the growing demand, rapid pace of urbanization and fast rate of population growth. Although the current rate of decadal growth is nearly 16%, which is likely to increase until the population stabilizes. This City Development Plan (CDP) is intended to provide a perspective for development for the next 20-25 years, keeping in view longer term growth until the year 2036.

Besides being a tourist hub, Haridwar, in relative terms, is the most industrialized area of Uttarakhand. At present, 14,200 workers are engaged in 4 industrial units in the Haridwar city area; 11,000 are employed by the BHEL and its ancillary unit alone. Outside the city limit, there are 19 functioning industrial units together employing 2.6 thousand workers. SIDCUL is setting up an Integrated Industrial Estate with attractive tax exemptions and other fiscal incentives. Some of the most well known industrial houses have already committed large investments.

Haridwar is a unique city in many respects. The old city area, which is home to many spiritual societies and *Ashrams*, has little land to grow. On the other hand, industrial development in its neighborhood is likely to attract large number of people to the city. The unparalleled influx of several million visitors during *Kumbh Mela* to the city creates tremendous pressure to the city and its infrastructure. The demands and challenges of development and preservation of its rich cultural and spiritual heritage and natural environment require to be met concurrently.

In keeping with the guidelines of the JNNURM for preparation of the CDP, an elaborate process of consultation and participation of all stakeholders have been adopted from the initiation until finalization of this CDP. The process started with identifying and sensitizing the stakeholders and continued through preparation of city vision, prioritization of infrastructure provision and preparation of sectoral strategies, concurrently with extensive data collection, analysis of current situation of various elements of urban planning and infrastructure development. Strategies, Interventions and Action Plans were developed in continuous consultation with the stakeholders.

The situation analysis of the various elements brought out key issues. The sectoral key issues that emerged out of public consultations and discussions with Haridwar Nagar Palika Parishad and para-statals are:

i) ***Physical Growth and Environmental Aspects***

There are major issues of (a) Restricted physical growth of town, due to hills, reserved forests and water bodies (b) Ribbon development along the main corridor of town, within the municipal boundary (c) High density development in Old Areas without proper infrastructure (d) Unauthorized constructions on undeveloped open land and fringe areas: supply of serviced land is limited; even the *ghat* areas have been encroached by commercial establishments (e) Lack of affordable housing (f) Growth of slums and squatter settlements along the river

and canal (g) Lack of clarity on status of land ownership (h) Pollution due to increased vehicular traffic (i) Pollution of the Holy River Ganga and (j) Land slide and soil erosion from Mansa Devi Hill

Degradation of riverside and lack of public open spaces, sports and recreational facilities are leading to an unsustainable situation.

ii) ***Water Supply***: Lack of adequate supply, unequal distribution of water, low pressures, old dilapidated pipelines, uncontrolled zoning and unsatisfactory operation and maintenance requires thorough reorganization and upgradation of this sector

iii) ***Sewerage***: Inadequate coverage of area under sewerage system, and unserviced new areas require immediate intervention and a careful planning with adoption of appropriate technology to take care of environmental concerns

iv) ***Stormwater Drainage***: Although the natural topography of the city helps in gravity drainage, internal collector drains are lacking; besides, major natural drainage courses require attention, as they are often choked with silt and mud coming with run-off from hills

v) ***Solid Waste Management*****:** The city has not met its mandatory obligations under the *Solid Waste Management Rules, 2000* and is burdened with an inefficient collection system, environmentally unsound disposal practices and uncontrolled dumping at a site by a rivulet. It thus requires immediate and sustained effort to upgrade to an acceptable level.

vi) ***Roads and Transport****:* This sector perhaps is the most troubled one; with annual growth of tourists reaching an unprecedented rate of 20% (2004-05) and over 16% growth rate (2005-06) of registered vehicles, congestion and lack of parking spaces during *Melas* and festival season make the citizens lives very difficult. The extremely narrow roads in the core city area, inadequate traffic management throughout the city and a general lack of proper road hierarchy requires a sustained effort over a period of time to reorganize the road sector. Public transport, which is in a rudimentary state, also requires large scale investment to support economic activity commensurate with the growth potential.

vii) ***Urban Poor:*** The city has about 20 main slums and about another 29 minor poverty pockets or slums, accommodating about 47% of total population. Approximately, 7.6% of the poor are families Below Poverty Line (BPL). The urban basic services in these pockets vary widely. However, much is needed to improve overall municipal services. The noteworthy point is that the residents are willing to pay for services. They are even willing to pay tax. The proposed strategies for poverty reduction may include Community organization, Income generation activities, Community participation, Housing and infrastructure development projects.

viii) ***Institution and Governance***: Haridwar Nagar Palika Parishad (HNPP) has very few functions in the municipal domain. Unlike city corporations elsewhere in India, HNPP has very limited role to play in the city's planning, development and infrastructure provision. In fact, solid waste management is the main function of HNPP. Conventional municipal functions such as water supply,

sewerage, roads, etc. are in the hands of either para-statals or state agencies. In the absence of institutionalization of citizens' involvement through smaller ward committees and other mechanisms, city management has remained virtually an 'outsiders' job and not a participative civic management. Haridwar being the second most important town of the State, needs a strong municipal government and this essential requirement needs to be acknowledged at the highest level in state administration. Besides functional devolution in terms of 74th CAA, all-round municipal capacity building (preferably after a TNA exercise) would be of paramount necessity. Haridwar needs a strong municipal political executive as the key driver of change management.

ix) ***Municipal Finance of HNPP and Finance of para-statals****:* HNPP, UJS, and HDA are the three most important agencies responsible for the urban finance in Haridwar. HNPP's revenue receipts (own) mainly comprises of Property / House tax, rentals and advertisement. UJS's revenue receipts are mainly water tax and water charges. HDA's revenue receipts mainly arise out of state government grants, followed by non-tax receipts and house tax receipts. Its revenue expenditure is due to establishment, operation and maintenance (O&M), interest and debt servicing as also due to refund of deposits. Capital expenditure has not been significant and mainly comprises of development expenditure, grants expenditure, assets, loan repayments and various refunds. Efforts are under way for converting the accounting system into accrual based double entry accounting system of accounting. There is a need to provide suitable training on double-entry accounting/accrual system of accounting. The arrears (accounts receivable) need to be reduced by streamlining the collection machinery. There is lack of financial and taxation powers. Under the present financial status it is very difficult for HNPP to access funds from market. There is considerable room for review and revision of the current tax rates. The data base and information management is poor and there is a lack of use of technology in infrastructure monitoring.
In case of HDA, over the years both income and expenditure have shown an increasing trend.

Haridwar Vision

The "City Vision" has been developed in a collective, conscientious and participatory manner. Workshops were organised to elicit views from wide range of stakeholders on vision of Haridwar. The views of stakeholders ranging from an epitomized view of Haridwar such as 'Vatican of Hindus' to a much generalized 'Clean and Green City' were integrated to form the city vision, which enhances the character of the old historical town and also sets the progressive path for the new developing areas. The vision statement drawn is:

The city of Haridwar aspires to be

"A City of Hope, Faith and Spirituality"

Identification of Projects and City Investment Plan

Based on situation analysis, strategy to achieve vision and continued consultations, projects have been identified, and costs estimated. The city needs a total investment of of Rs. 4,882.8 crores. This investment phasing over the next

20 years or so will be decided at the DPR stage. The component-wise summary of the CIP is given in the Table below. On an overall basis, it is seen that 63.3% of the total identified investment is proposed in the roads, traffic and transport sector followed by 20.7 % in urban renewal, 5% for basic services to urban poor, 4.1% is for Drainage, 2.6% for water supply sector, 2.3% for sewerage, and 4.7% for solid waste management.

S. No.	Projects	Phase 1 2007-13	Phase 2 2014-25	Total (Rs.Crores)
1.	Sewerage and sanitation	68.7	43.0	111.7
2.	Water Supply	76.0	65.8	141.8
3.	Storm Water Drainage	168.2	75.9	244.1
4.	Roads & Transport	1857.7	1061.6	2919.3
5.	Solid Waste Management	107.2	118.4	225.6
6.	Urban Poor / Slums	230.2	0.0	230.2
7.	Urban Renewal and Redevelopment	575.6	378.6	954.2
8.	Heritage and Tourism	31.6	6.3	37.9
9.	Street lights	18.0	0.0	18.0
	Total	**3133.2**	**1749.6**	**4882.8**

Note: Above costs are at current 2006 prices and include 7.5% physical contingency and 5% project management assistance.

The GoU is in negotiation with ADB and it is anticipated that ADB funds could be leveraged for Haridwar and other urban centers in Uttarakhand. The application of JNNURM funds to the city's investment proposals contained within this CDP and associated CIP will be appropriately adjusted during preparation of DPRs in sub-sectors where application of ADB funds will be involved

Mandatory and Optional Reforms

JNNURM guidelines provide for mandatory and optional reforms at the State and DNN/Para Statal levels in the areas of Institution and finance. Steps have been initiated for implementation of some of the mandatory reforms like introduction of e-governance, introduction of double entry accounting system, property tax reform to achieve 85% efficiency within 7 years, user charges to recover O&M cost, budget earmarking for basic services to the poor, basic services to the poor and security of tenure at affordable prices and computerisation including software development.

Mandatory reforms at State level like decentralisation of powers, repealing of urban land ceiling and regulation act, reform of rent control laws, rationalisation of stamp duty to bring down to 5%, enactment of public disclosure law and community participation law and city planning function to be assigned to urban local bodies are under active consideration.

1. Introduction and Background

1.1 Background of JNNURM

Urban population constitutes nearly 28% of India's total population (2001 census). More importantly, during the last five decades, the urban population has grown five times, while the total population has grown three times[1]. The population living in slums has also grown rapidly, posing a challenge to the urban basic services. Faced with this phenomenal growth, it became imperative for the Government of India to draw up an integrated and coherent national strategy to develop selected cities on a mission mode. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is a "reforms driven, fast track, planned development of identified cities with focus on efficiency in urban infrastructure/services delivery mechanism, scommunity participation and accountability of Urban Local Bodies (ULBs)/para-statals towards citizens".

Considering the magnitude of investment and contents, the JNNURM will have significant impact on cities and city planning system. With the launch of JNNURM, urban development has acquired a renewed focus. JNNURM aims at providing incentives to cities to undertake institutional, structural and fiscal reforms, necessary to improve service delivery systems that are sustainable, enhance local economic performance and bring about transparency and accountability in the functioning of municipal governments. The mission cities are required to prepare a City Development Plan (CDP) for accessing the funds under the scheme.

Of the 63 towns identified and targeted under JNNURM, Haridwar is one of the 3 towns in Uttarakhand under "selected cities /UAs" (state capitals and other cities). Haridwar is identified as town of religious/historic importance. All three towns have less than 1 million population.

The CDP is intended to provide an action plan towards creating economically productive, efficient, equitable and responsive cities. Following are the basic steps in preparation of a CDP:

- In-depth Analysis of Existing Situation
- Development of a Vision of the City
- Formulation of City Development Strategies including city governance and required reforms
- Preparation of Action Plan with identified projects under each sector of infrastructure
- Preparation of City Investment Plan

1.2 Objective of CDP

The objective of the CDP is to provide a perspective and a pathway of future development of a city/town over the next 20 - 25 years. It presents a clear view of where are we to-day, arising out of analysis of current situation. It strives to put together collective vision of the citizens and other stakeholders where do we wish to go. Finally, it also provides a roadmap of strategies, alternatives and action

[1] Guidelines for Projects of Jawaharlal Nehru National Urban Renewal Mission, December 2005

plans of how we achieve the vision of the city and how we manage the city ourselves. In essence, it provides options and choices as exercised by stakeholders, not the city as an urban space by default. Clearly, a CDP is a blue-print of an informed exercise, owned by the citizens and the city government, i.e., the ULB.

1.3 Process of CDP Preparation

CDP Haridwar has been prepared through four steps forming the process of preparation. In the first step, consultants' team members gathered data and information from various sources, made field visits, carried out detailed discussions with the officials concerned followed by an analysis of the current situation. . Data gaps were identified and these were filled by generating primary data and utilising such primary data collated and analysed further. For this purpose, a detailed socio-economic survey with purposive stratified random sampling of 440 households was carried out and the results analysed. The whole exercise enabled the consultants to identify both present shortcomings and likely interventions needed over the next 20 - 25 years or the planning/design period.

In the next step, it was desired to sensitize the stakeholders, appraise them about the CDP process and impress upon them the need for their participation towards forming the city vision and sector visions. This was done by holding a workshop with the municipal ward councillors, elected representatives and officials in charge of various departments looking after relevant components of infrastructure in Haridwar. During this workshop, two things came up clearly – (i) the present needs of Haridwar city in terms of infrastructure and (ii) a broad consensus regarding priorities of interventions in various sectors including infrastructure and urban management.

Before holding the next workshop to elicit citizen's vision, documentations were prepared (i) about JNNURM, (ii) city vision, (iii) evaluation / performance of infrastructure and (iv) sectoral visions and priorities of intervention. Stakeholders were identified as:

Stakeholder Consultation: Calendar of Events

- 20th May, 2006: First Workshop with Nagar Palika Parishad (NPP) Councillors, CBO's and NGO's, Elected Representatives, Senior Officers of NPP and Infrastructure Departments e.g. PWD, UJS, UPJN etc. Chaired by the Minister, Urban Development
- 15th June- 15th July: Socio- economic Survey - Field Group Discussions with Urban Poor – Verification of Slums
- 7th July, 2006: Second Workshop with Primary Stakeholders, Secondary Stakeholders and Tertiary Stakeholders to formulate and agree on a City Vision chaired by the Chairperson Haridwar NPP.
- 7th July 2006: Group Discussions and Consultation with Working Groups – (a) Urban Planning & Land Management, (b) Water & Sanitation, (c) Roads & Transport, (d) Solid Waste Management, (e) Basic , (f) Urban Services to the Poor, (g) Governance & Finance
- Series of Consultation with Nagar Palika, SUDA, UPJN, PWD, UJS, Irrigation Department and such other organisations (Mid May till Mid July)
- 8th August 2006: Discussion on Identified Projects in CDP with all Secondary Stakeholders, chaired by the Minister, Urban Development

- Primary stakeholders (e.g., residents, interest groups, CBOs and NGOs)
- Secondary stakeholders (service providers – e.g., UPJN, UJS, PWD, UPPCL officers at District/Division level etc.)
- Tertiary Stakeholders (Policy providers – Secretaries of concerned department(s), M.D. of UPJN, CGM of UJS etc. at state level)

The workshop was held with the Chairperson in the chair. After brief introduction by the Chairperson, Citizens were requested to share their vision about the city of future. The Citizens presented their views in the open house for discussion. At the end of the workshop, the vision statement was adopted collectively. During the proceedings, a number of citizens showed keen interest in certain sectors. They were invited to participate in the subsequent sector vision workshop. In the sector vision workshop, six sub-groups met in roundtables for Focus Group Discussions. The sub-groups were:

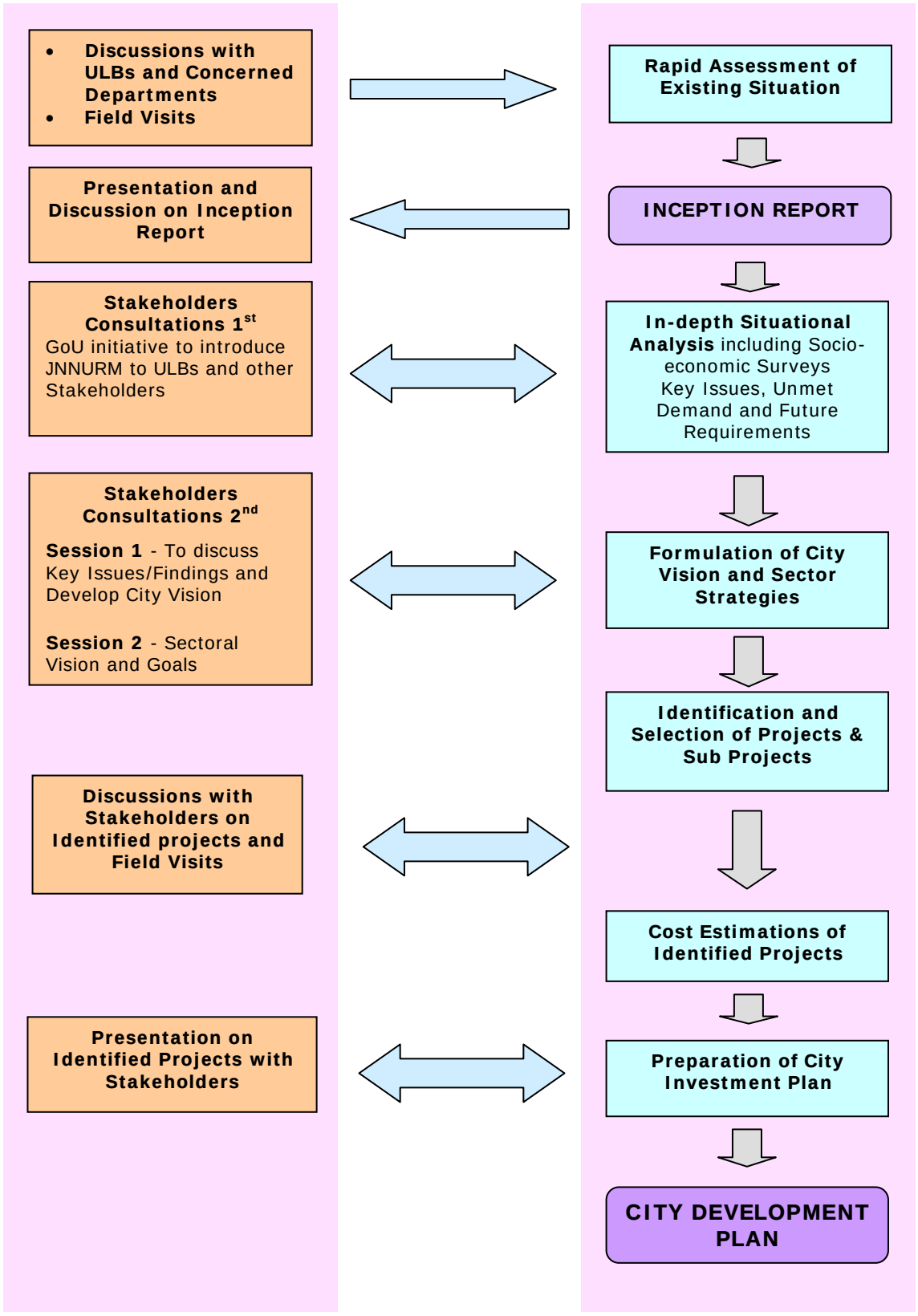
- Institutional and Finance
- Solid Waste Management and Environment
- Roads, Traffic and Transport
- Water, Sewerage and Sanitation
- Urban Planning, Tourism and Industries
- Urban Poor and Slum Development

Each sub-group comprised citizens, representatives of CBOs/NGOs, officials of para-statal bodies (e.g., for Roads & Transportation group, representatives from PWD, Police (traffic), Nagar Palika Parishad etc.) and Consultants' subject experts. After discussions on the sector vision over the next 25 years, interventions were discussed, identified and consensus was reached in prioritizing them.

Based on the activities of steps 1, 2 and 3, sub-projects were developed and cost estimates prepared. These were again discussed at length over a period of time with Nagar Palika Parishad officials and officials of concerned para-statal bodies. The consolidated list of projects was presented in a meeting held with the State Steering Committee (chaired by the Minister of Urban Development), and their views obtained before the final list of identified project with estimated costs was drawn up.

The CDP was then prepared with inputs obtained from the series of consultations held as mentioned. Figure 1.1 presents the CDP preparation process.

Figure 1.1: Process of CDP Preparation



2. City Profile

2.1 About Haridwar

An old, venerable sadhu (hermit) had returned to his village after a decade of tapasya (penance) in the sacred 'devabhoomi' in the Himalayas. In the evenings, village folks would gather around him to hear him speak. Whenever the sadhu was asked to describe the devabhoomi, or when one wanted to go on a tirthyatra (pilgrimage) to the devabhoomi and sought directions, the sadhu would say,

'Jahan aaye bhakti mein jwar |
Wohi bhoomi hai Haridwar ||'

(Wherever one feels a rush of devotion for God, that land is none other than Haridwar)

Source: Kalyan Magazine

Figure 2.1: Temples at Har ki Pauri

The short anecdote brings out the spirit of the ancient city of Haridwar. The city is associated as the Gateway to both Lord Shiva and Lord Vishnu, as 'Hardwar' and 'Haridwar' respectively. Haridwar is also rightfully called 'Gangadwar', as the holy river Ganga which flows down the Himalayas, enters the plains at Haridwar and spreads over the northern plains. It is among the seven sacred cities of Hindu culture in India. Hardiwar is also one of the four venues in the country for the *Kumbh Mela* and Ardh *Kumbh Mela*, held every twelve and six years respectively. Haridwar is known for its temples, bathing ghats and tanks. Essentially a religious centre, Haridwar is also known as a centre of herbal medicine, and traditional studies at Gurukul Kangri and today, Haridwar is a bustling urban centre of the new state of Uttarakhand.

Haridwar stands as the gateway to the four pilgrimages of Uttarakhand. Pilgrims start their journey to four significant pilgrimage centres – Badrinath, Kedarnath, Gangotri and Yamunotri, from Haridwar after taking the holy dip in the Ganga at the most revered location, Brahmkund at Har-Ki-Pauri.

Haridwar town is the headquarters of Haridwar District. Haridwar district comprises of three tehsils namely Roorkee, Haridwar and Laskar. It has six development blocks, which are Bhagwanpur, Roorkee, Narsan, Bahadra bad, Laksar and Khanpur.

2.2 Historical Perspective

Haridwar finds mention in ancient Hindu scriptures and epics. The present town of Haridwar was known as Mayapuri, Kapilasthan, Gangadwar, and Mokshadwar during different periods. The town got its present name in the 15th century. Haridwar has always remained a major pilgrimage for the devotees through the years.

Haridwar has been the place of meditation of one of the revered saints Kapil.

Historically it has been recorded that when river Ganga enters the plains at Haridwar, ashrams of following saints were found; Kashyap, Vashishta, Yani, Vishwamitra, Khamdagini, Bharadwaj and Gautam. Today, the place is famous as Sapt Rishi Ashram and Sapt Sarovar. King Shweta also meditated for God Brahma at this place. King was given a boon from the God that whosoever takes bath at this holy place will get the blessings from the trinity – Brahma, Vishnu and Mahesh. This holy place, in the present times, is known as Brhamakund. According to the legend, Prince Bhagirath performed penance here to salvage the souls of his ancestors who had perished due to sage Kapil's curse. The penance was answered and the river Ganga trickled forth from Lord Shiva's locks and its bountiful waters revived the sons of King Sagara.

Figure 2.2: Har ki Pauri in early 19th Century

Haridwar is believed to be one of the important places where Pandavas ventured during the Mahabharata period. Mahabhatrata is believed to have taken place in 3000 BC. The present Haridwar was also ruled by Samrat Ashok whose inscriptions are found on the Ashoka Pillar. Following the league of saints who have medidated here, Vikramaditya's brother Bharthahari finds a special mention as Vikramaditya constructed Brahmakund and the steps as a memorial of his brother Bhagirath, and since then this place is known as 'Har-Ki-Pauri'.

In the era of King Harshvardhan, a Chinese traveler Hyuen Sang who traveled all over India for 15 years has mentioned about this place in his memoirs which can be correlated to present Mayapuri area in Haridwar. The town was redeveloped in 8 BC and came to be known as 'Gangadwar', however, the name Gangadwar also diminished in the ravages of time. The town regained its glory in the Mughal era during Akbar's reign. Akbar and his ally King Mansingh laid the foundations of present day Haridwar town. The temple constructed by King Mansingh still exists in the midst of Har-Ki-Pauri. Haridwar is also one of the four places; where *Kumbh Mela* occurs after rotation of every twelve Years and Ardh *Kumbh Mela* is organised after six years of every Kumbh.

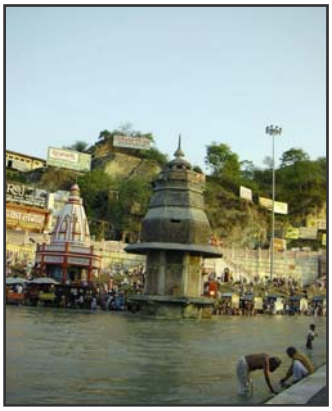


Figure 2.3: Present form of Temple constructed by Mansingh

River Ganga travels for 213 km to enter the plains at Haridwar. From this place onwards, use of Ganga water for various purposes began with the construction of Ganga Canal in 1858.

2.3 Location

Haridwar is situated along Delhi-Niti Pass (DN Road) which starts from Delhi and passes through Meerut, Muzzafarnagar, Roorkee, Haridwar and goes till India-Tibet Boundary. The town of Haridwar grew between the Shivalik Mountain Range in the North and Northeast and Ganga River in the South. Haridwar occupies a position of latitude 29° 58' in the North to longitude 78°10' in the East.

Haridwar is well connected by rail and road from Delhi, Kolkata, Mumbai, Dehradun and Yamunotri in the Himalayas. Haridwar is located at a distance of 225 kms Northeast from Delhi, 52 kms from Dehradun and 494 kms from Lucknow.

2.4 Physiography

Haridwar is situated at an altitude of above 300 meters above sea level. On the left side of the town is Chandi devi hill on which a temple dedicated to Goddess Chandi is situated; on the right is Mansa Devi temple. Geologically, Shivaliks are separated by the Himalayas by a continuous reverse fault and fall in three main divisions, the upper Shivalik, middle Shivalik and the lower Shivalik. The Shivalik are mostly composed of sandstone and conglomerates. The river Ganga flows in a series of channels separated from each other called aits, most of which are well wooded. Other minor seasonal streams are Ranipur Rao, Pathri Rao, Rawii Rao, Harnaui Rao, Begam Nadi etc.

2.5 Climate

The general characteristics of climate[1] of this region are:

- Temperature: Hot during summers, cool to cold during winters and warm humid during Monsoon season. Annual maximum temperature is 30 to 42 degree celsius. Annual minimum winter temperature is 4 to 14 degree celsius.
- Humidity: During rainy season humidity is 70 percent to 85 percent, during summer season it is 40 percent to 60 percent and during winter season it is 25 percent approximately.
- Wind: There is no specific wind direction but West, Northwest and Southwest are most probable. Summer is characterized by hot dust raising winds with velocities going up to 15 km/hour. Atmosphere is dusty In May/June.

2.6 Vegetation

Dense green forests are located in the north and east of Haridwar town, most of it falling in Rajaji National Park. The Shivalik Hills to the northeast are also wooded and so is the Chandl Hill, which is a part of Chilla Range. Pathri reserve forest lies to the south of Haridwar town. The principal vegetation types can be classified as moist tropical forests located in a few places in Shivaliks and dry mixed deciduous forest. They consist of Sal, Sissoo, Ber, Kadam, Amaltas, Harsingar etc. Bamboo forests are mainly found along the riverbanks, and on the slopes of Siwalik Hills. The scrub forests have thorny bushes like: Kathber, Karaunda, Bell, Dhak and stunted Khair. The vegetation on the two hills – Manasadevi and Chandidevi are subjected to degradation due to landslides.

[1]Data collected by CBRI Roorkee

3. Situational Analysis – Problems and Opportunities

3.1 Socio-economic Profile

In order to study the socio-economic profile of the city, secondary data (from various sources, including the Census of India) were collected and analysed. To supplement the analysed secondary data, primary data were obtained from the socio-economic survey, analysed and the results utilised. The following sections present an overall socio-economic profile of Haridwar. Description of the methodology used for the socio economic survey is presented in the Annex 3.1.2.

3.1.1 Demographic Profile

It is discernible that since 1961, the population of Haridwar has maintained an upward trend with a few kinks in some decades. In the recent decades, as is observed, the decadal rate of growth gradually dropped down from 45.71% in 1981 to 16.00 % in 2001 decade, the later being far below the national average. As per Census 2001, average household size is about 5.4 persons.

Table 3.1.1: Population (Census 2001) and Decadal Change in Population

Year	Population ('000)	Decadal Growth Rate (%)
1901	26	
1911	29	12.05
1921	31	7.26
1931	33	8.2
1941	41	22.64
1951	57	40.46
1961	60	4.57
1971	79	32.22
1981	116	45.71
1991	147	21.09
2001	175	16.00

Haridwar hosts about 8 million religious tourists every year. For projection of population (the permanent population) of this town, the tourist arrival per se is not relevant. However, its impact on the sector activities like trade, hospitality services, transportation etc. can not be overlooked. The giant public sector unit BHEL (population 43,000 in its colony), a large unit of Hindustan Lever (employment 559), and three engineering units together employing 11,040 workers have their impact on the tertiary sector of the economy of the town. In private sector also, some large industrial units are functioning in the fringes of Haridwar, which have impact on the economy of the town; and many more units which are in the offing, will also indirectly strengthen the economy of this town. As the economy grows, the rate of in-migration of workers will grow concomitantly, which will reflect on the growth of population.

In this background it may be presumed that Haridwar's population growth rate will gradually increase in the next couple of decades and then taper off to finally stabilize at the natural growth rate of 2.5 % per annum.

As stated earlier, throughout the year Haridwar hosts a large number of religious tourists. As per official record tourist arrivals in Haridwar in 2003, 2004, and 2005

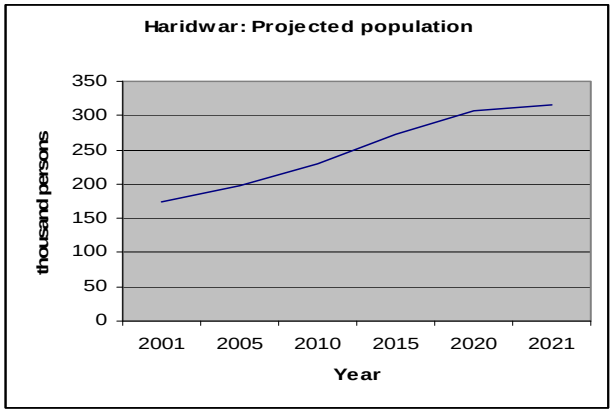
was 5.5 million, 6.3 million, and 7.5 million respectively. The percentage increase of tourist arrival in 2004 over 2003 was 14%, and that in 2005 over 2004 was 20%.

Largest number of tourists arrive in the month of July during Kanwar Mela and Somawati Amavasya (refer Annex 3.5.3). Number of tourists went up to 55.0 lacs in this month. This annual peak lasts for around 11 days. On this basis the tourist population per day during this peak period works out to 4.88 lacs. This is termed as Tourist load.

Besides the tourist population, a large number of daily religious visitors and visitors who come on different business in this head quarter town (Haridwar town is the Head Quarter of District Haridwar) constitute the floating population. This is considered separately.

Assuming the number for the year 2005 as the base year, and a conservative rate of growth rate an average of 2.5 % per annum (slightly above the national average of little over 2.0% per annum), the floating population has been estimated. Population of 2.86 lacs and 3.15 lacs is projected for 2021 and 2025. Refer Annex 3.1.1.for year-wise population projection. The trend of population growth from 2001 to 2021 is shown in figure below:

Figure 3.1.1: Population projections.



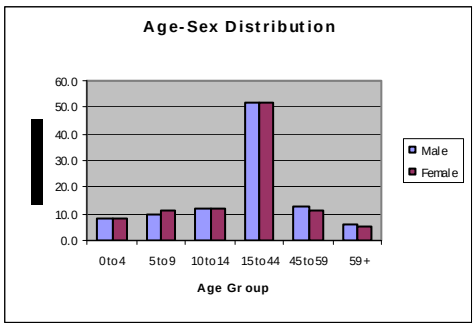
Social Composition

Age Sex Structure of Population

The overall sex ratio in the sampled households is 924, which is higher than that reported (851) in Census of India 2001. The age groups of 15-44 have highest population for both the sexes.

Table 3.1.2: Age-Sex Distribution and Sex Ratio

Age group	Male	Female	All	Sex Ratio
0-4	8.4	8.4	8.4	**924**
5-9	9.5	11.4	10.4	
10-14	11.9	11.8	11.8	
15-44	51.8	51.7	51.7	
45-59	12.6	11.5	12.1	
60+	5.8	5.2	5.5	
Total	1362	1259	2621	



Literacy

Literacy, being an important indicator of social development, affects the demographic characteristics and participation in labour force. As per Census of India 2001 literacy rate in urban Haridwar is 84.3 for males and 72.3 for females, the corresponding numbers for the state-average being 87.1 and 72.3 respectively. The literacy rate of Haridwar is relatively low. The survey results show there are 78.7 percent literate males and 66.3 percent females.

Overall literacy is 72.9 percent in the town. This data shows a gender gap of 12.4.

Table 3.1.3: Literacy Status of Population Age 7 Years and Above

Male		Female		Total	
Illiterate	Literate	Illiterate	Literate	Illiterate	Literate
21.3	78.7	33.7	66.3	27.1	72.9

Employment

Data on employment shows that 42 percent of the workers are in service, 10 percent are self employed, 0.5 percent is unemployed. Of all 44 percent are students, 2.8 percent are housewives, 0.1 percent are farmer, 0.7 percent are retired.

Table 3.1.4: Occupation by Age

Category	Age group (in years)					
	<18	18-24	25-44	45-59	60+	Total
Service	2.5	36.5	67.6	76.7	63.3	41.7
Self Employed	0.2	7.8	18.3	16.3	20.6	10.3
Unemployed	-	0.5	0.2	1.6	1.5	0.5
Student	96.9	54.5	7.8			44.0
Housewife	0.2	0.5	5.7	4.9	2.9	2.8
Farmer	0			0.5		0.1
Retired	0		0.2		11.8	0.7
Total		97.1	0.2	194.4	11.8	100.1

Income and Expenditure

Majority of the sampled households are in BPL and poor income groups, 47.2 percent of the sampled population is below the national (GoI) poverty line. Mean per capita income of the families is Rs.2372 and mean household income is Rs.7144. There is a considerable proportion of population in the lower expenditure group and it is evident that they spend more than their income. Families in the middle income groups have maximum savings in the sample.

Table 3.1.5: Data on Income

Income	In Rs.	Percentage
Per Capita Income		
Below Poverty Line (BPL)	Upto 562	47.2
Poor	563-1999	34.6
Lower-Middle	2000-3499	9.1

Income	In Rs.	Percentage
Upper-Middle	3500-5999	6.0
High	6000+	3.1
	Mean Income	Rs.1289.7
Household Income	Upto 2999	53.2
	3000-5999	20.4
	6000-9999	8.4
	10000-14999	6.4
	15000+	11.5
	Mean Income	Rs.7144.4

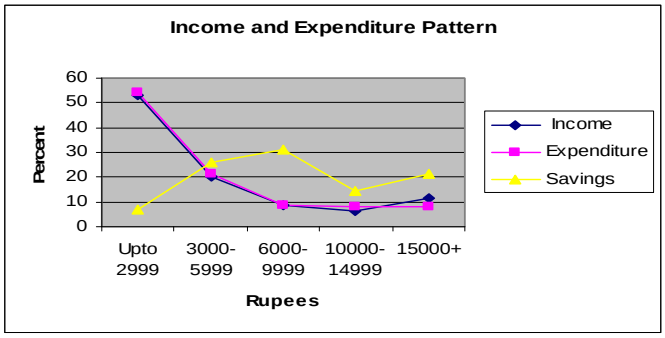


Table 3.1.6: Data on Expenditure and Savings

	In Rs.	Percentage
Household Expenditure	Upto 2999	54.0
	3000-5999	21.1
	6000-9999	8.7
	10000-14999	8.0
	15000+	8.2
	Mean Expenses	Rs.6375.7
HH Savings	**In Rs.**	
	Upto 2999	6.9
	3000-5999	25.9
	6000-9999	31.0
	10000-14999	14.7
	15000+	21.6
	Mean Saving	Rs.4362.8

Table 3.1.7 shows the distribution of population by household composition and form of tenure and possession. Majority in each income group have freehold title of their land and having their own pucca house with electricity. All the high income group families own land, and have pucca house with electricity. On an average 20 percent of all the families in the slums stays with some other family; in other income groups this value ranges between 7 and 15. Seventy seven percent of the households have legal electric connection in the BPL group; among poor and lower-middle group, connection increases from 92 to 100 percent.

Around 36 and 89 percent of the BPL and poor households respectively use gas as fuel for preparing food. This increases with higher income and in upper-middle and high income groups 100 percent families has gas connection. Kerosene is used in almost all the groups, except two higher groups all others use wood as fuel; 50 percent of BPL families use wood.

Table 3.1.7: Distribution of Population by Household Composition and Possession

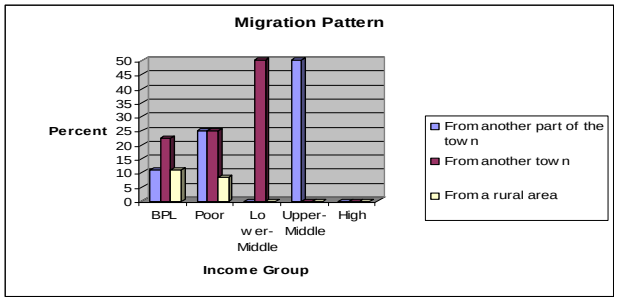
Characteristics of Households (%)	Income Group				
	Below Poverty Level	Poor	Lower-Middle	Upper-Middle	High
Land Ownership					
Freehold title	74.6	79.5	95.1	96.3	100
Lease	8	9	2.4	0	0
Patta	0.5	0	0	0	0
Joint patta	0	0	0	0	0
Other legal right	1.9	1.3	0	0	0
No legal right	15	10.3	2.4	3.7	0
House Ownership					
Own	85	89.1	97.6	96.3	100
Rented	15	10.9	2.4	3.7	0
Mean rent per month	409.7	484.9	800.0	600.0	-
House Type					
Kutcha	28.2	17.9	2.4	0	0
Semi-pucca	25.4	10.3	0	0	0
Pucca	46.5	71.8	97.6	100	100
Access to Electricity					
Yes	75.6	88.5	100	96.3	100
No	24.4	11.5	0	3.7	0
Electric Metre					
Yes	77	92	97.6	100	100
No	23	8	2.4	0	0
Fuel Used					
Gas	35.7	68.6	97.6	100	100
Kerosene	14.1	14.1	0	7.4	14.3
Wood	50.2	17.9	2.4	0	0

Migration

It was found that almost all the sampled families are residing in the town for about 12 years and about a quarter of the migrated families have moved in from another city. While tracing the migration pattern within last 5 years it was found that majority (79.5 percent) of the sampled families are in the town for more than that period. More than 80 percent of the BPL and poor families are residing in the town for more than 5 years (Table 3.1.8). Of all the households, 2.8 percent moved from another part of the town, 1.3 percent migrated from another town and 0.4 percent came from rural area. This contradicts the notion that poor settlements are created by migration from rural areas.

Table 3.1.8: Migration

Migration	Income Groups					
	All	BPL	Poor	Lower-Middle	Upper-Middle	High
All moved in last 5 years	25	9	12	2	2	0
From another part of the town	20	11.1	25	0	50	0
From another town	24	22.2	25	50	0	0
From a rural area	8	11.1	8.3	0	0	0
Not specified	8	0	16.7	0	0	0



3.1.2 Urban Poverty Profile

Poverty and Vulnerability

It is important to examine poverty with reference to its various dimensions including asset ownership. Interventions need to be worked out to reduce urban poverty especially the vulnerability of the poor and to enhance their assets in terms of- labour, human capital, housing, social capital and so on.

JNNURM and Urban Poverty

As stated in JNNURM guideline "The ever increasing number of slum dwellers causes tremendous pressure on urban basic services and infrastructure. In order to cope with massive problems that have emerged as a result of rapid urban growth, it has become imperative to draw up a coherent urbanization policy/strategy to implement projects." The objectives of the Mission are stated below:

- Focused attention to integrated development of Basic Services to the Urban Poor in the cities covered under the Mission.
- Provision of Basic Services to Urban Poor including security of tenure at affordable prices, improved housing, water supply, sanitation and ensuring delivery through convergence of other already existing universal services of the Government for education, health and social security. Care will be taken to see that the urban poor are provided housing near their place of occupation.
- Secure effective linkages between asset creation and asset management so that the Basic Services to the Urban Poor created in the cities, are not only maintained efficiently but also become self-sustaining over time.
- Ensure adequate investment of funds to fulfill deficiencies in the Basic Services to the Urban Poor.
- Scale up delivery of civic amenities and provision of utilities with emphasis on universal access to urban poor.

Keeping these in view, an effort has been made to promote an integrated slum development project to improve living condition and general quality of life of the urban poor, which in turn will improve the quality of life of the city as a whole. Against this background, it has been planned to analyse the urban poverty situation and formulate appropriate strategies to deal with the existing problem situation and promote sustainable development.

Urban Poverty Profile of Haridwar

This section presents an overview of the urban poverty in Haridwar. No recent studies are available about the extent of poverty levels in the town. According to information available from the HNPP and the District Urban Development Agency (DUDA) the town has 20 main slums[2] scattered across the town (Map 3.1.1). In addition to these slums, there are a few smaller slums, which add up to a total 41 slums, considering both 31 registered and 10 unregistered slums. Annex 3.1.4 shows the list. The slum population is about 47 percent of the total population of the town.

Table 3.1.9: List of Major Slums in Haridwar

S.No.	Name of Slum Areas
1	Gosai Gali, Bhim Goda
2	Basant Gali, Balmiki Basti, Kharkahri
3	Mukhiya Gali, Bhupat wala
4	BhramPuri- above lalta rau bridge
5	New Basti, Bhimgoda, Balmiki basti
6	Ghosiyan, Jawalapur
7	Lodha Mandi jawalapur
8	Pul Jatwada, jawalapur
9	Kadachh, Jawalapur
10	Tiwidi, BHEL Road
11	Lodha Mandi, Industrial Area
12	Kumhar Gadha, Kankhal
13	Latowali, Purbiya Mandi, kankhal
14	Ravidas Basti, Kankhal Harijan Basti
15	Teliyan Kanjran, Sharifnagar, Jawalapur
16	Kashipura, Jogiya Mandi
17	Dev Nagar Basti, Hanuman Gadi Kankhal
18	Uttam Nagar Basti, Bhupatwala
19	Mayapur Balmiki Basti, Near Garage and Tank No. 6
20	Bairagi Camp, Chhawni

Source- Document of Haridwar Nagar Palika Parishad /DUDA (2006)

In order to obtain first hand information, visits were made to the slums. An effort was made to assess the prevailing situation through-

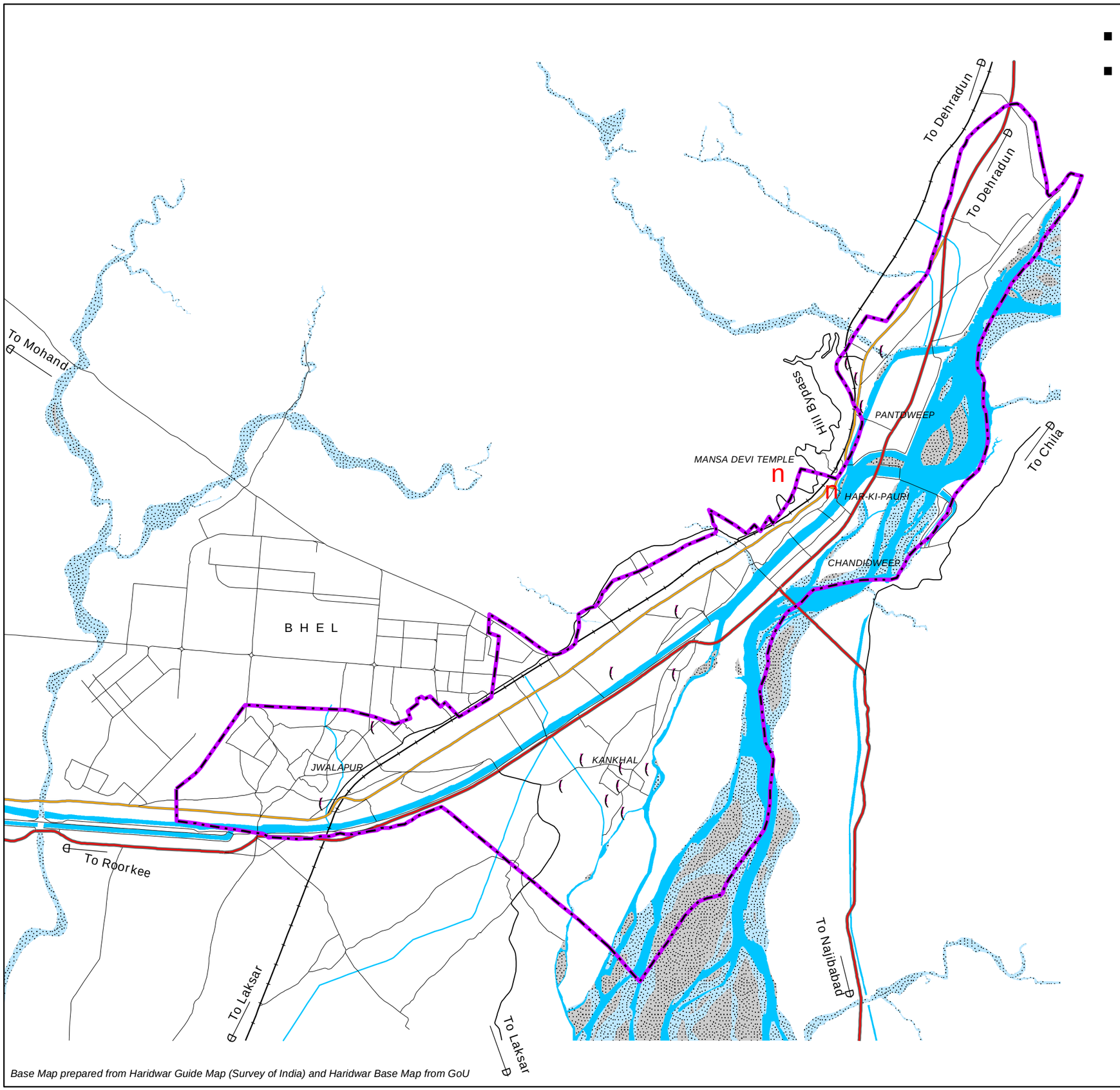
- Focus group discussions
- Observation
- Socio-economic sample survey.

[2] A slum is a compact settlement with collection of poorly build tenement mostly of temporary nature, crowded together usually with inadequate sanitary and drinking water facilities in unhygienic conditions (Govt. of Uttarakhand 2002).

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.1.1:- CONCENTRATION OF POVERTY POCKETS



Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**
- **Poverty Pockets Concentration**

1 0 1 2 km

Data Source

- ! **Haridwar Nagar Palika Parishad**
- ! **District Urban Development Agency**
- ! **Field Visits**

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Household Profile

Slum population in Haridwar is 86,848. Average household size for slum households, as found from the baseline survey, is 7.1. The slums on encroached land and on the hill slope are generally worse in comparison to other slums. Of the below poverty line (BPL) population, 15 percent households and 10 percent of the poor do not have any legal rights of the land. In the absence of ownership of land and clear policy to address their problems, the poor suffer from many inadequacies in terms of access to basic services and infrastructure.

Land availability is a major constraint in the slums. On an average 20 percent of all the families in the slums stays with some other family.

3.1.3 Situation Analysis

Adequate secondary data at household level on water supply, sanitation, solid waste management etc. are not available. Consequently, data from socio-economic survey at household level were analysed and the findings are discussed in this section. Wherever secondary data are available, these are used in the situation analysis, supplemented by further field studies. The status of service delivery and service coverage as brought out in sample survey is summarised in the following sections.

Water Supply

Majority (81%) of all the households have connection for water supply. Of the BPL households, 70 percent and 87 percent of the poor have house connection. The number of house connection increases with higher income. In the two upper income groups all have house connection. Water supply problem exists in many slums as the supply is very irregular in some localities.

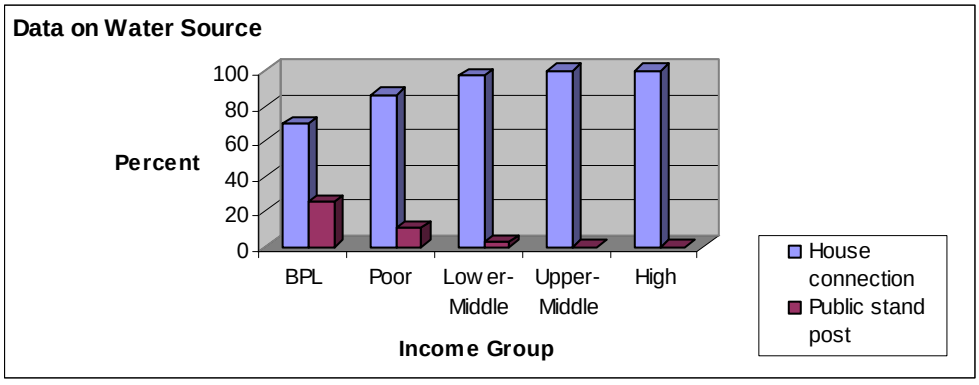


Table 3.1.10: Source of Drinking Water (% of H/H)

Source of Drinking Water (Household in %)	BPL	Poor	Lower-Middle	Upper-Middle	High
House connection	69.5	86.5	97.6	100	100
Public stand post	25.4	10.9	2.4	0	0
Neighbour's house	3.3	1.9	0	0	0
Municipal tanker	0.9	0	0	0	0
Private vendor	0	0	0	0	0
Tube well/ Hand pump	0.9	0.6	0	0	0

Water is mostly fetched by women. Men from BPL and poor income group share this responsibility. Only a few boys help their family in fetching water; 12.2 percent BPL girls and 6.4 percent poor girls carry water from outside. This signifies that household responsibilities are mainly carried out by females.

Table 3.1.11: Responsibility of Water Collection

Gender (Household in %	BPL	Poor	Lower-Middle	Upper-Middle	High
All (number)	*213*	*156*	*41*	*27*	*14*
Adult male	2.3	3.2	0	0	0
Adult female	84	90.4	100	96.3	100
Boy	1.4	0	0	3.7	0
Girl	12.2	6.4	0	0	0

On an average 79 percent BPL families and 57 percent poor less than 50 metres and spend half an hour to 45 minutes for collection of drinking water. Mean distance travelled is 47 metre and mean time spent is 36 minutes for all.

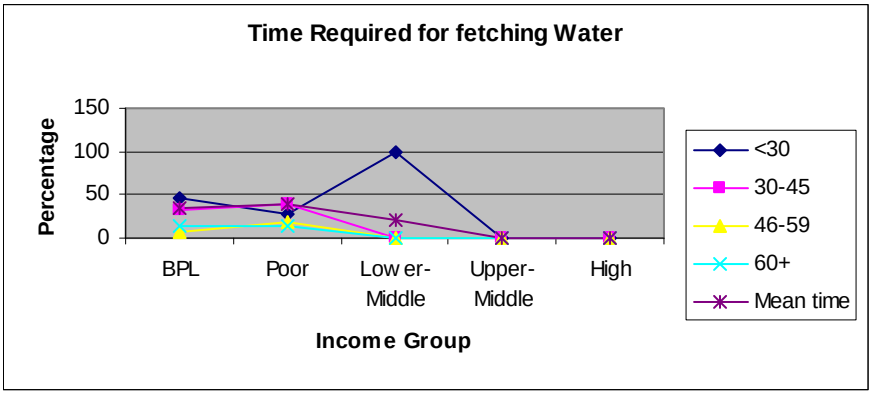


Table 3.1.12: Time spent for collecting water

Time spent per day (in minutes)	BPL	Poor	Lower-Middle	Upper-Middle	High
<30	46.2	28.6	100	0	0
30-45	32.3	38.1	0	0	0
46-59	7.7	19	0	0	0
60+	13.8	14.3	0	0	0
Mean time	35	39.9	20	0	0
Standard Deviation	17.3	16.7	0	0	0

*Data show household in %

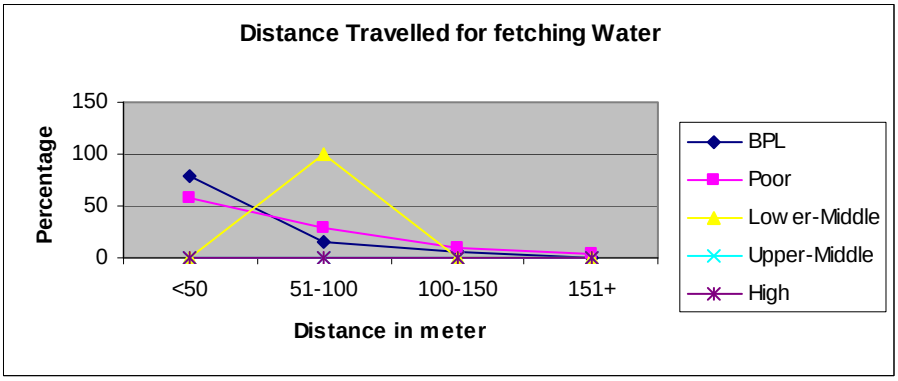


Table 3.1.13: Distance covered for collecting water

Distance in metre	BPL	Poor	Lower-Middle	Upper-Middle	High
Total households	*65*	*21*	*1*	*0*	*0*
<50 metr	78.5	57.1	0	0	0
51-100 metr	15.4	28.6	100	0	0
100-150 metr	6.2	9.5	0	0	0
151+metr	0	4.8	0	0	0
Mean distance	42.8	60	75	0	0
Standard Deviation	26.5	43.8	0	0	0

*Data show household in %

Majority (83.4 percent of all) of the sampled household have rated water quality as good. Of all 78 percent expressed that they judge the quality by its taste, 16 per cent said they consider the appearance for this. Most (97 %) of the families do not treat water before consumption; on an average 2 percent filters it and the rest boils. It seems the families are not aware of the chance of transmission of germ through water.

Table 3.1.14: Quality of water

Quality	BPL	Poor	Lower-Middle	Upper-Middle	High
Total households(No.)	*213*	*156*	*41*	*27*	*14*
Good	77.9	84.6	95.1	92.6	100
Medium	20.2	15.4	4.9	7.4	0
Poor	1.9	0	0	0	0

*Data show household in %

Only 12 percent families in the town are willing to take new connection for water supply. This percentage is 15 for BPL families and 10 for poor. Of the high income group 11 percent desires new connection.

Sanitation and Sewerage

Of the households surveyed, 77 percent have a latrine in the house. Only 3.6 percent BPL families and 3.8 percent of the poor families have pit latrines. Rest have sanitary latrines. Those who do not have a latrine in the house go for open defecation. Most of the BPL and poor residents wear footwear while going for open defecation- this is a good hygienic practice.

Table 3.1.15: Type of Latrine

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
All having latrine in household (No.)	*138*	*130*	*40*	*27*	*14*
Pour flash	77.5	83.8	100	96.3	100
Twin pit latrine	18.8	12.3	0	3.7	0
Pit latrine	3.6	3.8	0	0	0

Seventy seven percent of all households have sewer connection. Cleaning and maintenance of latrines are mostly done by the respective family.

Table 3.1.16: Data on Sanitation

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
Defecation site for males					
Latrine in this house	64.8	83.3	97.6	100	100
Neighbour's house	0.5	0.6	0	0	0
Public toilet	0.5	0.6	0	0	0
Pay and use toilet	0.5	0	0	0	0
Open defection	33.8	15.4	2.4	0	0
Defecation site for females					
Latrine in this house	64.8	83.3	97.6	100	100
Neighbour's house	0.5	0.6	0	0	0
Public toilet	0.5	0.6	0	0	0
Pay and use toilet	0.5	0	0	0	0
Open defection	33.8	15.4	2.4	0	0
Defecation site for children					
Latrine in this house	64.8	82.7	97.6	100	100
Neighbour's house	0.5	0.6	0	0	0
Public toilet	0.5	0.6	0	0	0
Pay and use toilet	0.5	0	0	0	0
Open defection	33.8	15.4	2.4	0	0
Not specified	0	0.6	0	0	0
Water in latrine					
Yes	70.9	85.3	97.6	96.3	100
No	29.1	14.7	2.4	3.7	0
Latrine discharges					
Sewer	88	93.3	97.5	88.9	100
Drain	6	5.2	2.5	11.1	0
River	0	0	0	0	0
Open land	0	1.5	0	0	0
Septic tank/Soak pit	6	0	0	0	0

*Data show household in %

Sewer line is absent in many areas, people have septic tank or soak pit with their latrines. On an average 74 percent families are satisfied with the existing facility, so only a few desires betterment.

Solid Waste Management

Sweeping and Solid Waste Management (SWM) are done by HNPP. The service is irregular and overall primary collection is poor (43 percent dispose garbage in the open). Many appoint private scavengers for cleaning against a monthly payment Covered waste bins are required in the localities. The drains and streets in slums are either irregularly cleaned or not cleaned at all.

Table 3.1.17: Solid Waste Management

Disposal Place	BPL	Poor	Lower-Middle	Upper-Middle	High
In private bin for house collection	9.9	17.3	46.3	51.9	85.7
In community bin	37.6	37.8	39	22.2	14.3
Burn	0.5	0	0	0	0
Throw outside openly	52.1	44.9	14.6	25.9	0

*Data show household in %

Only about 16 percent segregate solid waste at source, this number is higher with higher income groups. Segregation is done mainly by the women (90 percent) member of the family. Municipal collection is not uniform in the town. All in high income group have appointed private worker for solid waste collection and they pay for this monthly. About 8 percent of all the residents said that burning waste is practiced in the locality. Burning is mainly done by the NPP workers. Of the sampled households, 54 percent sell old news paper, plastic, glass, bottles, etc. and 33 percent dispose them with other wastes.

Table 3.1.18: Disposal of Solid Waste

Satisfaction with disposal	BPL	Poor	Lower-Middle	Upper-Middle	High
All (number)	*213*	*156*	*41*	*27*	*14*
Adult male	7.5	11.5	4.9	0	0
Adult female	81.2	84	95.1	100	100
Boy	1.4	0	0	0	0
Girl	9.9	4.5	0	0	0

*Data show household in %

Storm Water Drainage

A storm water drainage system exists in the town. Drains are mostly pucca and open. Proper drain is absent in some slums. It has been noticed that those are clogged in many localities. Water logging is not very frequent and generally of short duration. In some slums drains are damaged and in many localities those are clogged as they are not cleaned regularly. Street side drains are not continuous and broken at some places.

It has been noticed that water logging is not a major problem but some localities remain under water for long (at least 1 week in a year). Most of the affected families are from PBL households, but they do not suffer any major damage due to flooding and water logging. Table 3.1.19 depicts the status of water logging in the town.

Table 3.1.19: Data on Drainage and Water Logging

Characteristics (Household in %)	BPL	Poor	Lower-Middle	Upper-Middle	High
Water logging/Flooding problem	*213*	*156*	*41*	*27*	*14*
Yes	12.7	1.3	0	3.7	0

Characteristics (Household in %)	BPL	Poor	Lower-Middle	Upper-Middle	High
No	87.3	98.7	100	96.3	100
Frequency	*27*	*2*	*0*	*1*	*0*
<5 times in a year	74.1	100	0	100	0
5-10 times in a year	18.5	0	0	0	0
10+ times a year	7.4	0	0	0	0
Duration	27	2	0	1	0
<1 week in a year	96.3	100	0	100	0
1 week to 1 month in a year	3.7	0	0	0	0
Damage due to flooding					
All those suffer	*27*	*2*	*0*	*1*	*0*
No	48.1	100	0	100	0
<5 times in a year	40.7	0	0	0	0
5-10 times a year	11.1	0	0	0	0
Average cost of damage					
All those suffer	*30*	*27*	*2*	*0*	*1*
No cost	60	55.6	100	0	100
< Rs 500	13.3	14.8	0	0	0
Rs 500-1000	23.3	25.9	0	0	0
Rs 1000-5000	3.3	3.7	0	0	0

Approach Road and Street Light

Ten percent of slum dwellers do not have paved approach road. Most of other colonies have proper approach road. Streets are in bad condition in the slums and street lights are inadequate and many are not well maintained. Light bulbs are non-functional often.

Table 3.1.20: Approach Road

Status	BPL	Poor	Lower-Middle	Upper-Middle	High
Paving					
All	*213*	*156*	*41*	*27*	*14*
Yes	90.1	96.8	97.6	100	100
No	9.9	3.2	2.4	0	0
Condition of the road					
All	213	156	41	27	14
Kutcha	8.9	1.3	0	0	0
Metalled	69.5	78.8	63.4	70.4	78.6
Painted	21.6	19.9	36.6	29.6	21.4
Street Light					
All	213	156	41	27	14
No	8	9.6	2.4	0	0
Yes within 50m	89.2	85.9	97.6	100	100
More than 50m Away	1.9	3.2	0	0	0
Not specified	0.9	1.3	0	0	0

Status	BPL	Poor	Lower-Middle	Upper-Middle	High
Functional					
All street light	194	139	40	27	14
Yes	85.6	85.6	92.5	100	100
No	14.4	14.4	7.5	0	0
Payment for street light					
All street light	194	139	40	27	14
Yes	2.6	2.2	2.5	3.7	0
No	96.9	97.1	97.5	96.3	100
Not specified	0.5	0.7	0	0	0

Priorities

Of all the sampled households 74.5 percent has expressed that their first priority is water supply. Second priority of 56.3 percent is sanitation and 43.2 percent placed drainage in their second priority. Solid waste collection is of fourth priority to some (33.5%) families. Some (38.6%) of the families put emphasis on roads and street lighting as their fifth priority. They felt that the streetlights is important for residents especially women. A large number (70%) has considered proximity to public transport as their 6th priority.

Table 3.1.21 Priority in order of importance to quality of life

Services	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5	Priority 6
Water	74.5%					
Sanitation		56.3%				
Drainage			43.2%			
Solid waste collection				33.5%		
Roads, street lighting					38.6%	
Proximity to public transport						70.7%

Health and Hygiene

It has been found that hygienic practices of citizens are good. Use of soap is high, 91-100 percent of the people, who go for open defecation uses footwear. Reported cases of diarrhoea and ARI are very rare.

Table 3.1.22: Health and Hygiene Status

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
Hand washing after defection					
All (number)	*213*	*156*	*41*	*27*	*14*
With mud	7	9.6	2.4	0	0
With water	1.9	0.6	0	3.7	0
With soap	91.1	89.7	97.6	96.3	100

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
Use of footwear while going for open defecation					
All (number)	*75*	*26*	*1*	*0*	*0*
Yes	97.3	100	100	0	0
No	2.7	0	0	0	0
Diarrhoea in last six months					
Yes	15	7.7	0	3.7	0
No	85	92.3	100	96.3	100
Acute Respiratory Infection (ARI) in last six months					
Yes	6.6	1.9	0	0	0
No	93.4	98.1	100	100	100
Work days lost in illness					
None	85.4	94.2	95.1	100	100
Less than 5 days	7.5	1.3	2.4	0	0
5-10 days	2.8	1.3	2.4	0	0
10-20 days	1.4	0.6	0	0	0
More than 20 days	0.5	0.6	0	0	0
Not specified	2.3	1.9	0	0	0

Total reported death occurred in the last year was 3, the causes are presented below. A death due to TB was reported from the BPL group and a case of death due to gastric problem was from poor group.

Table 3.1.23: Data on mortality in the last year

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
Death in last year					
Yes child under 5	0.5	0	0	0	0
Yes Other	0.5	0.6	0	0	0
No	99.1	99.4	100	100	100
Probable cause of death					
HH having death case					
Road accident	50				
TB	50				
Gastic		100			
Average cost of treatment for the family per month					
All (number)	*213*	*156*	*41*	*27*	*14*
Nothing	6.1	7.7	0	7.4	7.1
Less than Rs 50	14.6	15.4	12.2	7.4	0
Rs 50-100	31.5	21.8	4.9	3.7	0
Rs 100-200	10.3	22.4	7.3	3.7	0

Characteristics	BPL	Poor	Lower-Middle	Upper-Middle	High
Rs 200+	37.1	32.1	75.6	77.8	92.9
Not specified	0.5	0.6	0	0	0

Municipal Services

It was found that in all income groups about 56 percent of the families have rated the overall municipal services as fair. Solid waste services are rated as bad. Water supply, roads and street light and access to public transport services are rated as fair. Rest of the services is ranked as average. Services of sanitation and solid waste collection have been ranked as bad. It indicates that in slums these services are poor.

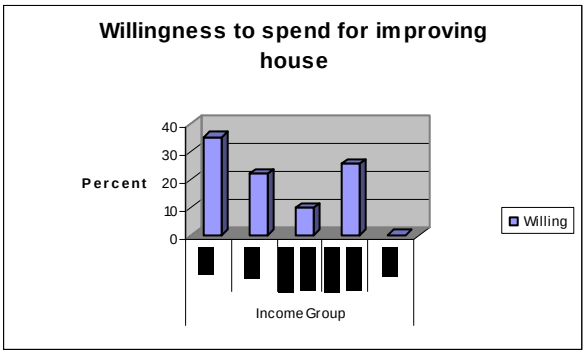
The residents' priorities are water supply, SWM, street cleaning, sanitation and drainage in the descending order.

Willingness to Pay

It is evident from Table 3.1.24 that willingness to improve house is maximum among the BPL group. As the higher income groups already have good houses, they do not wish to improve it further. 35.7 percent BPL families and 22.4 percent of poor are willing to spend for improving their houses. Among the lower-middle families only 9.8 percent and 25.9 percent of the upper-middle group are willing to spend for improving their houses.

Table 3.1.24: Willingness to improve house

Willingness (household in %)	Income Group				
	BPL	Poor	Lower-Middle	Upper-Middle	High
Willing	35.7	22.4	9.8	25.9	0
Unwilling	64.3	77.6	90.2	74.1	100



Of all residents more than 85 percent are not willing to pay for services. Willingness is less among poorer groups and the richer are not sure whether to pay more.

Others

Of all the respondents 41 percent BPL and 44 percent poor families stay at a distance 100 metre to 1 Km away from the main road respectively. The higher income groups reside within 100 mtr. For this reason, 71 percent of the residents place proximity to public transport at the 6th priority order.

Social Capital

Membership of local group is low. Membership of Residents or community welfare association is highest (7%) among the high income group, followed by lower-middle (2.4%) and BPL population (1.9%). It is felt that if community groups are reorganized and empowered they could probably be able to take active part in planning and decision making. More than 91 percent in each income group have ration card. But only 86.4 percent of the BPL holds such card.

3.1.4 Key Urban Social Issues

The key issues identified during community consultation and by situation analysis are:

- Drinking water supply in the slums is not adequate.
- Practice of open defecation exists in some slums.
- Absence of sewer in many areas.
- Solid waste is poorly managed in most of the slums.
- Drains are mostly open and as a result often blocked as solid waste is dumped in them.
- Community infrastructure is not sufficient

The specific needs in the slums are:

- Providing sufficient, timely and uniform supply of potable water.
- Installing public stand post.
- Laying of new sewer connection or connecting slum latrines to existing sewer line.
- Initiating solid waste management, especially segregation at source.
- Construction of side drains.
- Paving approach roads.
- Maintenance of street lights.
- Organising residents in the participatory process
- Involvement of Community Based Organisations (CBOs)/Non-Government Organisations (NGOs) in the whole process.
- Utilisation of existing community centres as base offices of community based complaint redress system.
- Establishing a community development cell in the NPP and deploying an officer, who could be a link between the NPP and the base offices.
- Launching awareness programme.

- Securing land tenure to the residents and providing low cost housing. EWS housing schemes should be targeted at registered slum dwellers. In-situ upgradation should be given priority within such schemes.
- Convergence of various poverty alleviation programmes.

3.2 Economic Development

3.2.1 Economic Base of City

Haridwar is the hub of religious tourism in the State of Uttarakhand. Among several religious tourist destinations in this State, Haridwar attracts largest number of visitors, the impact of which on the service sector is quite significant, particularly in the small trade, hotel business, transport and such other activities. Haridwar is also growing as the industrial hub of the State. The public sector unit BHEL, although having its own colony of 43,000 persons, has indirect impact on the economy of the town. Besides, a number of medium and large scale industrial units are already operating within and in the fringe areas of the town and many others are in the offing. An Integrated Industrial Estate is also operational in the area.

No data-based assessment of the economic base of the city is possible as, essential town-wise economic information is not readily available. It can, however, be conjectured that the dominant sector of the economy of Haridwar is the tertiary sector. This is substantiated by the fact that in most of the years since 1996-97, tertiary sector's contribution to the NSDP of Uttarakhand was the highest (43% in 2003-04), and that of the secondary sector the lowest. With the growth of tourist population, which has already recorded as 7.5 million (2005), the tertiary sector will continue to grow, particularly the activities like transport and storage, communication; trade, hotel and restaurant; real estate and bus services.

Besides being a tourist hub, Haridwar, in relative terms, is the most industrialized area of Uttarakhand. As Table 5 indicates, 14,200 workers are engaged in 4 industrial units in the Haridwar city area; 11,000 are employed by the BHEL and its ancillary unit alone. Outside the city limit, there are 19 functioning industrial units together employing 2.6 thousand workers.

Table 3.2.1: Large and Medium Scale Industrial Units in Haridwar District and Workers Employed

Type of units	Within Haridwar Urban Area		Outside Haridwar Urban Area		Total	
	No. of workers	No. of units	No. of workers	No. of units	No. of workers	No. of units
Pharmaceuticals and chemicals	559	1	532	3	1091	4
Engineering	40	1	135	1	175	2
Electrical	11000*	2	122	3	11122	5
Food processing			1453	3	1453	3
Iron & steel			308	2	308	2
Others			56	7	56	7
Total	11599	4	2606	19	14205	23

***BHEL** and an ancillary of BHEL

*Source: Government of Uttarakhand, Directorate of Industries, Directory – Large and Medium **Industries (Functioning),** 2005*

Haridwar's economic structure is quite complex. The relative impact of the incredibly high number of religious tourist arrivals on the economy of the city on the one hand, and relatively heavy concentration of industries on the other, accentuate the complexity. In the absence of data, sector-wise contribution of Haridwar city to the NSDP can not be assessed. It can only be conjectured that notwithstanding relatively more concentration of industries in this city, its tertiary sector is still a major player in it's over all economy. This contention is based on the fact that given the huge tourist arrivals; there are strong service sector activities like transport, hotel, eating places, small trade etc. in this city.

3.2.2 Economic Growth potential

As it stands now, Haridwar is one of the focal areas for industrial development and growth in Uttarakhand. As the New Industrial Policy (summarised in Appendix 3.2.1) is implemented, Haridwar will experience an accelerated growth in secondary sector. The present pattern of concentration of industrial units indicates that Haridwar is a preferred destination for industrial investments in Uttarakhand. Being closer to the National Capital Region and having very good rail and road connectivity, Haridwar offers locational advantage for industries. It is understood that Haridwar is the focus area of the State for industrial development. A large Industrial Estate is already in operation in this area and a few are planned to be located here. There is lot of optimism about faster rate of industrialization of Haridwar.

Haridwar is already showing the sign of restructuring its economic base, and emerging as an urban center with industrial base. 'Some 500 industries have already signed on to set up their units in two integrated industrial estates (IIEs) in Haridwar and Pantnagar, envisaging an investment of Rs. 4000 crores.[3] In addition to the public sector unit of BHEL, a number of medium and large scale industrial units are already operating within and in the fringe areas of the town and many others are in the offing. In consonance with the growth of the secondary (industrial) sector, the tertiary sector will also grow, may be at a much faster rate. Growth of these two sectors together will create more employment opportunities in this town in the mid and long term periods with their impact on the growth of population, both in terms of natural growth and in-migration.

As in the case of Dehradun, the impact of two factors viz. large investments in industries which are expected to be made in the coming years; the planned infrastructure and institutional improvement with financial assistance of the ADB and the Infrastructure Development Fund; and the proposed overall development of the town under the Jawaharlal Nehru Urban Renewal Mission will widen employment opportunities both in secondary and tertiary sectors.

3.3 Physical Growth and Environmental Aspects

3.3.1 Introduction

The town of Haridwar grew and expanded between the plains below the Shivalik mountain range and river Ganga in a linear form. Haridwar Nagar Palika Parishad was established in 1868. In 1951, Haridwar Urban Agglomeration area was defined which included old Haridwar Nagarpalika area, Gurukul Kangdi and

[3] *Utpal Parasar, Advantage:Uttarakhand, in Uttarakhand, Vision and Programme, M.L Dewan and Jagdish Bahadur ed. Concept Publishing Company, New Delhi, p 362*

Jwalalpur which led to 40% increase in the population. The reason for delineating Haridwar urban agglomeration was to include the satellite townships of Jwalapur, Shyamnagar and Krishnanagar which were developed by Municipality in order to rehabilitate the refugees during partition in 1947.

Over the next two decades, Haridwar is bound to have spatial expansion in order to accommodate the projected resident population of about 3.15 lakhs and provide services to an additional intermittent floating population[4] of 2.56 lakhs. This section therefore attempts to study the physical growth trends and planning efforts undertaken in Haridwar.

3.3.2 Constituents of Haridwar Development Authority Area

The Planning area of Haridwar was declared under The Uttar Pradesh (Regulation of Building Operations) Act, 1958 on 18 January 1980 which included the Haridwar Nagarpalika and the surrounding 51 villages. In 1986, this area was demarcated as development area by UP Government's order No. 3692/11-5-86-23 (1)/DA/85 for undertaking planned development of Haridwar and surrounding towns and rural areas. The HDA area includes parts of four present districts of Uttarakhand – Dehradun, Haridwar, Tehri and Pauri-Garhwal. HDA is also entrusted with the responsibility of various developmental works for *Kumbh Mela* apart from enforcement and implementation of master plans.

Table 3.3.1: Constituents of Haridwar Development Authority

S.No.	Area	Total Area (in sq.km.)	% to HDA Area
1.	Part A	43.44	74.52
2.	Haridwar Nagarpalika	11.9	20.41
3.	Rest of Part A	34.64	59.43
4.	Part B	14.85	25.47
5.	Rishikesh Nagarpalika	7.13	12.23
6.	Rest of Part B	7.72	13.24
	Total HDA Planning Area	**58.29**	**100**

Source: Haridwar Master Plan 2001 and Rishikesh Master Plan 2011

The total HDA area is divided into two parts: (i) Part A covers the Haridwar Nagarpalika Parishad area and surrounding villages; and (ii) Part B covers Rishikesh Nagarpalika Parishad area and surrounding villages. The scope of this study is limited to Part A as it covers Haridwar Nagarpalika Parishad and the sites earmarked for *Kumbh Mela* in the form of islands, river banks, ghats and open areas surrounding Har-Ki-Pauri.

3.3.3 Growth of Haridwar

Haridwar has a long history, but was relatively undeveloped until about 200 years ago. The following section gives an overview of the important stages in the evolution of Haridwar.

[4] it doesn't include influx of pilgrims during *Kumbh Mela* and other major religious fares

Growth of Haridwar

I. 19th Century

- British Government expanded the lower platforms by 34 ft and upper platform by 89 ft. in 1819.
- Construction of Ganga Canal in 1857 is an important landmark
- Municipal Board started functioning in 1868.
- In 1885, Haridwar-Laksar railway line was constructed which was extended to Dehradun in 1891 and linked to Rishikesh in 1926.
- Many Ashrams and Dharamshalas were constructed in Kankhal

II. Early 20th Century

- In 1900, Mahatma Munshiram set up the famous Gurukul in Kangri village.
- In 1938, the existing 38 ft. Har-Ki-Pauri Ghat was extended to 285 ft. for *Kumbh Mela*.

III. Post Independence

- In 1947, Haridwar became a part of Saharanpur District of UP. Haridwar became a separate district in 1988.
- In 1962, many permanent bridges were constructed across the Ganga Canal.
- Rapid and unplanned growth of town after establishment of BHEL in 1965.
- Enforcement and implementation of Haridwar Master Plan 2001 in 1985.
- Development of Integrated Industrial Estate (IIE) by SIDCUL

Figure 3.3.1: Pictures showing transformation of built form at Har-ki-Pauri

Source: Picture of Har ki Pauri in 19th century received from Mr. Avinash Vashishth INTACH Convener Haridwar Chapter

3.3.4 Efforts for Planned Development

The sudden increase in population from 57,338 in 1951 to 1,45,946 in 1981 due to establishment of BHEL led to rapid and unplanned growth of Haridwar town resulting in infrastructure deficiencies. In order to ensure planned and controlled growth of Haridwar town and the neighboring rural areas, the first master plan of Haridwar was prepared by the Town and Country Planning Division Office (located at Meerut). The first Master Plan prepared for the time horizon of 1985-2001, still continues to be the legal document. A new Master Plan for 2025 is under preparation by the Town and Country Planning Department and the draft plan is expected to be published in the near future.

Review of Master Plan 2001

The Master Plan 2001 was prepared for a projected population of 3.06 lakhs which included 2.13 lakhs population in Haridwar NPP area, 71,440 rural population and 21,370 migrants. The Master Plan covers all the sectors such as housing, commerce, industries, public utilities, transport, government offices, and tourism. Table 3.3.2 gives the issues and the proposed initiatives outlined in the

Master Plan. The key reasons for unplanned growth of town as identified in the Master Plan are as follows:

- Linear development as a result of mountains in the north and river Ganga in the south.
- Unauthorised housing construction on un-developed land within the municipal boundary
- Lack of recreational facilities and open spaces
- Mixed land use in core congested city areas
- Heterogeneous traffic (including hand carts) on main roads, lack of proper parking areas, narrow roads, unplanned traffic junctions, etc causing severe traffic problems and danger to pedestrians

Table 3.3.2: Key Provisions as per Master Plan 2001

Component	Issues Identified in Master Plan 2001	Proposals in Master Plan 2001
Residential	Lack of adequate housing led to encroachments on open undeveloped areas. High density housing areas - very small houses, inadequate and deteriorating services, congested narrow streets, lack of open and green spaces, mixed land use. In 1981, there was a shortfall of 998 houses.	Additional housing need of 42,084 units was estimated for 2001. It was estimated that 40% of population will fall in the EWS category, 30% in LIG, 25% in MIG and 5% in HIG category.
Industrial	Industrial development took place at a slow to medium pace till 1981.	Industrial development was mainly proposed in the following categories – agriculture based, timber, pharma and BHEL related. 275 ha was proposed for small and medium sized industries for projected 20,600 workers, but 147.5 ha of land was proposed for industries in proposed land use for 2001.
Roads and Transport-ation	Heterogenous traffic, commercial establishments along main roads, narrow streets, encroachments, lack of parking for trucks, wholesale markets along national highway. Location of bus stand in the city centre led to traffic congestion.	Transport Nagar was proposed. Shifting of the existing bus stand to outer city area was proposed. Road widening was proposed from Jatwara Pull to Dudadhari Temple, Tulsi Chowk to Shiv Murti, Byepass to Pawandham, Hill byepass, Jwalapur Overhead Bridge to Ranipur Road, Shankaracharya to Damkothi. New roads – Bridge between Dam Kothi and Singhdwar and road to connect Kankhal with BHEL
Recreational Facilities, Parks and Open Spaces	Lack of parks and recreational facilities for residents. Large area had to be kept open for Kumbh and Ardh *Kumbh Mela*s.	462.5 ha of land was proposed for parks, gardens and open spaces in the master plan against the estimated need for 540 Ha for parks and recreational facilities.
Tourism	Inadequate transport facilities, traffic management mechanisms and proper sanitation facilities during religious fairs as primary concerns	Open area of 575 ha was delineated for *Kumbh Mela* in the Master Plan.

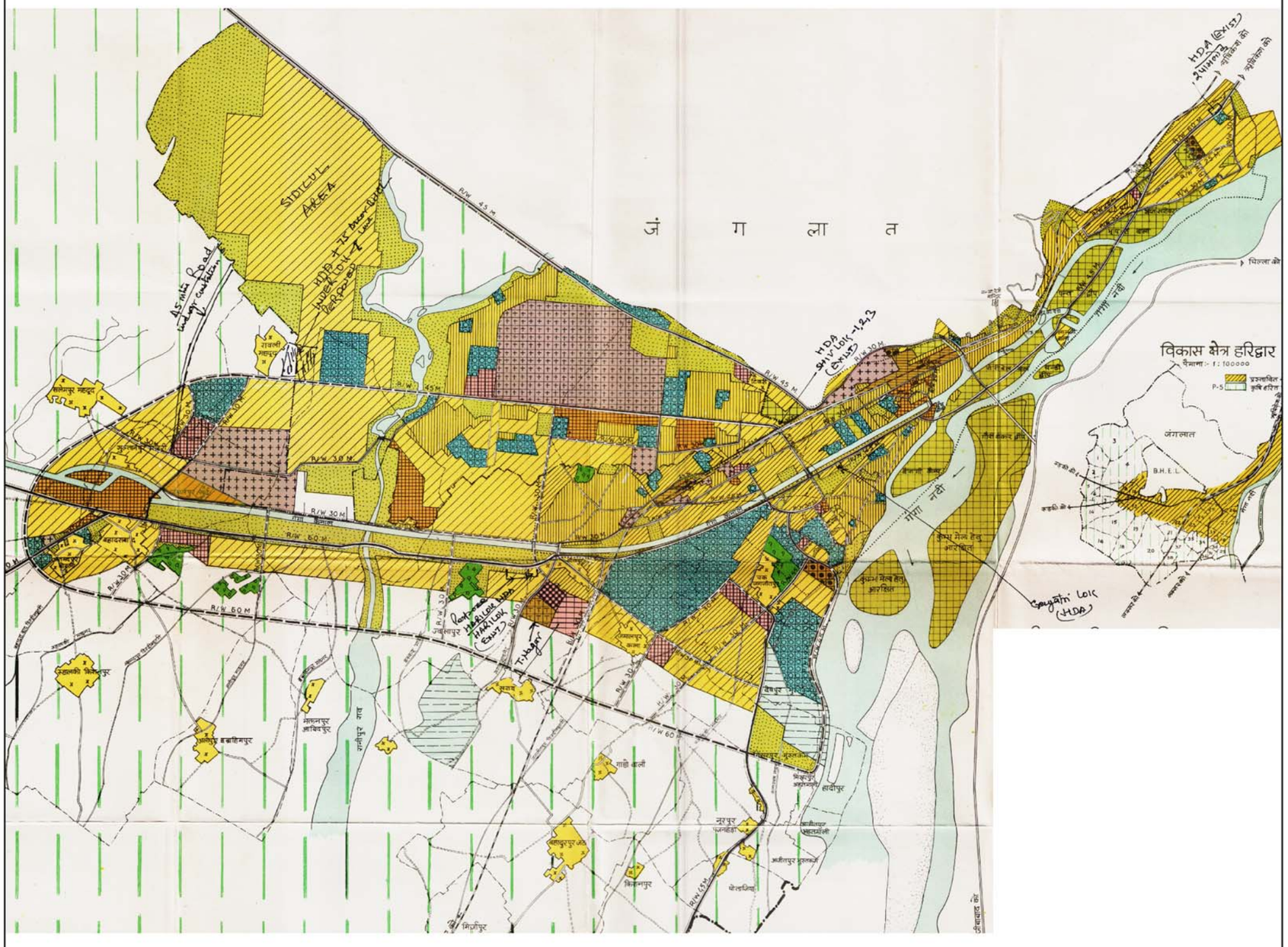
Implementation of Master Plan

The details of each sector were proposed to be worked out in zoning/sector plans. The preparation of zonal development plans and regulations are recommended under section 9 of the UP Urban Planning and Development Act, 1973.

- Many road development projects were not undertaken due to problems with land acquisition. Inadequate road infrastructure coupled with increasing encroachments on the main roads has led to severe traffic congestion. HDA has acquired land for Transport Nagar but further investments are required for site development. Shifting of the bus stand located in the city area, which was proposed in the master plan, is among the present priorities of HDA.
- The unauthorized housing construction on undeveloped land has remained a critical issue. HDA has been able to implement 8 housing schemes. The details are given in section 3.3.4.
- The magnitude of industrial development has gone beyond the estimated figure in the master plan due to development of industrial park by SIDCUL. In the emerging phase of large scale industrialization, new townships are expected to come up in the fringe areas.
- Development of parks and recreational facilities were not taken up as planned. An open space of 462 Ha was proposed as parks and open spaces and 575 Ha was earmarked for *Kumbh Mela*. Open spaces have been encroached and about 150 Ha of this land has unauthorized construction. *Kumbh Mela* Area has private land. These land properties were not acquired which has led to construction by private owners on these properties and thus are not available for use during *Kumbh Mela*.

3.3.5 Land Use Assessment

The assessment is based on the land use distribution available in Master Plan 2001. Land use survey conducted in 1985 gives the land use distribution in the Haridwar NPP area covering 1190 ha (11.9 sq. km.) while the land use proposed for 2001 covers the proposed urbanisable area of 4344.25 ha (43.44 sq. km). As the geographical spread of the available land use data for 1985 and 2001 is different, percentage distribution of land uses such as residential, commercial, industrial, public utility, Kumbh area, parks and open spaces is compared in Table 3.3.3 to analyse the spatial growth trends. The total area is divided into developed and undeveloped areas. Map 3.3.1 shows the proposed land use plan as per Master Plan 2001.



H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.3.1 :- PROPOSED LAND USE AS PER MASTER PLAN 2001

Legend

- B-1 वर्तमान निर्मित क्षेत्र
- B-2 ग्रामीण आबादी
- R-1 आवासीय उच्च घनता (100 से 150 व्यक्ति प्रति स्कड़)
- R-2 आवासीय निम्न घनता (75 से 100 व्यक्ति प्रति स्कड़)
- C-1 नगरीय वाणिज्य केन्द्र
- C-2 थोक वाणिज्य केन्द्र
- C-3 भण्डारण
- M-1 लघु एवँ मध्यम उद्योग
- M-2 लघु एवँ एक्सट्रेक्टिव उद्योग
- M-3 वृहद उद्योग
- G राजकीय एवँ अर्द्ध राजकीय कार्यालय
- T-1 बस अड्डा
- T-2 ट्रान्सपोर्ट नगर एवँ ट्रक अड्डा
- T-3 रेलवे लाइन, रेलवे स्टेशन, रेलवे क्षेत्र
- वर्तमान मार्ग / प्रस्तावित मार्ग
- F सामुदायिक सुविधायें
- P-1 पार्क एवँ खुला स्थल
- P-2 नदी तटीय विकास क्षेत्र
- P-3 कुम्भ मेला क्षेत्र
- P-4 बाग
- P-5 कृषि हरित पट्टी
- P-6 सीवेज फार्म
- नदी, कैनाल डिस्ट्रीब्यूटरी
- विकास क्षेत्र सीमा
- बी॰ एच॰ ई॰ एल॰ सीमा
- नगर पालिका सीमा
- ग्राम सीमा

Data Source

- **Haridwar Master Plan 2001**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Table 3.3.3: Land use Distribution as per Haridwar Master Plan 2001

S.No.	Land use	Existing 1985		Proposed 2001	
		Area (in ha.)	Percentage of NPP Area	Area (in ha)	Percentage of Proposed Urbanisable Area
	Developed Areas				
1.	Built Up Area	-		37.5	0.86
2.	Rural Areas	-		142.5	3.28
3..	Residential	254	21.4	1347.5	31.02
4.	Commercial	12	1.0	122.5	2.82
5.	Industrial	60	5.1	147.5	3.40
6.	Public Utilities	60	5.1	437.5	10.07
7.	Traffic and Transportation	43	3.6	554.75	12.77
8.	Govt and Semi Govt Offices	14	1.1	95.0	2.19
9.	Religious	98	8.3	-	
10.	Camping Locations	113	9.5	-	
11.	Tourism	2	0.2	-	
	Sub Total of Developed Areas	656	55.3	2884.75	66.40
	Undeveloped Areas				
12.	Parks and Open Spaces	190	16.0	387.5	8.92
	River Front Development Area	-		15.0	0.35
13.	Gardens	105	8.6	75.0	1.73
14.	*Kumbh Mela* Area			575.0	13.24
15.	Agriculture	128	10.8	-	
16.	Forests	17	1.4	-	
17.	Sewage Farm	-		207.0	4.76
18.	Rivers and Water Bodies	94	7.9	200.0	4.60
	Sub Total of Undeveloped Areas	534	44.7	1459.5	33.60
	Total	1190	100	4344.25	100

Source: Haridwar Master Plan 2001

Fig. 3.3.2: Comparison of 1985 and 2001 Land use

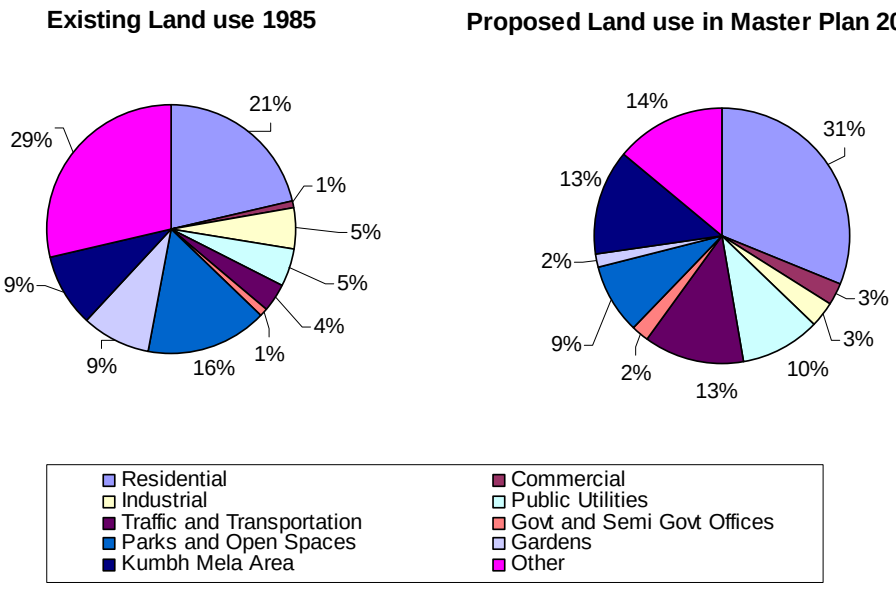


Figure 3.3.2 shows that Master Plan 2001 proposed a considerable increase in residential, commercial, traffic and transportation and public utility land uses. Percentage of *Kumbh Mela* area is also higher in the proposed urbanisable area. The open space as indicated in the land use in 1985 was proposed as parks and open spaces. In the present context, comparison of percentage variation of land uses can be taken as only indicative and not actual. The existing land use and actual deviation from the proposed land use distribution will be available in the new master plan. The new master plan is under preparation by the Town and Country Planning Department. The land use survey was conducted by TNCP in 2004. Details of land use distribution in 2004 are given in Annex 3.3.1.

3.3.6 Housing

Haridwar Development Authority, private developers and religious trusts are the primary institutions providing housing in Haridwar. The religious trusts build ashrams and dharamshalas to provide temporary housing for the devotees for a few days extended to a few months. The devotees coming to Haridwar constitute a considerable proportion of floating population. Housing Board has not become fully functional in the new state, however, there are a few housing colonies/units in Haridwar which were developed by the Housing Board before 2000.

HDA has developed eight housing schemes since 1986, which covers an area of 51.15 acres (20 ha). About 1,519 housing units were developed by the HDA. Additional requirement of 40,084 housing units was proposed in the Master Plan 2001 against which HDA has been able to construct 1,519 housing units.

Table 3.3.4: Housing and Area Development Schemes/Projects Developed by HDA

S No	Name of the Project	No. of Housing Units	Area in acres	Year
1	Shivlok - I	205	5.45	1988-1989
2	Shivlok - II	263	4.56	1990-1991
3	Shivlok - III	191	6.95	1993-1994
4	Rishikesh Colony	174	4.08	1988-1989
5	Harilok Colony	552	19.05	1996-1997
6	Shyamlok Colony	93	8.81	1999-2000
7	Shivlok – III Extension	38		1999-2000
8	Gayatri Lok	3	2.25	1999-2000
	Total	**1519**		

Details of HDA's housing and area development schemes are given in the Annex 3.3.2.

During the preparation of Master Plan 2001 it was observed that due to shortage of housing, there was high incidence of unauthorised construction activities on undeveloped land. This issue still remains critical. There is a clear need to increase the supply of affordable housing for all. Land should also be made available for private developers with strict enforcement of norm of 20-25% housing for EWS in the housing project. Requirements of EWS housing is discussed in chapter 8.

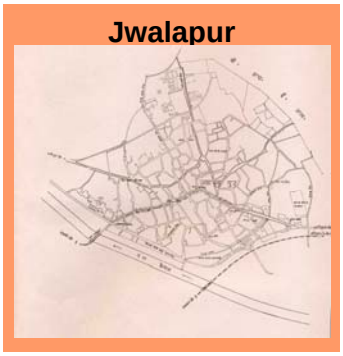
Overall, the housing situation today presents a complex picture in Haridwar. Discussions with stakeholders indicated that there are many houses which are not physically occupied. On the other side citizens expressed that there are lack of

housing availability. This creates a false scarcity of housing in Haridwar. Recently HDA has received some 25,000 applications against about 550 plots for their upcoming Indralok housing scheme. One of the reasons for this kind of situation could be the fact that increasingly people in the northern region wish to buy their second residence/summer homes in Haridwar. Housing Department with the help of TNCP is in the process of preparing Housing Policy for the State.

3.3.7 Urban Renewal

Old area of Haridwar including Kankhal –The old town area of Haridwar, extending from Bhimgoda to Lalta Rao Bridge at Har-Ki-Pauri is the nucleus of the present town of Haridwar. This area has dense development with narrow streets, mixed landuse and inadequate and deteriorating services. The old town area has high incidence of encroachments resulting in traffic congestion. The heritage structures are also defaced due to unauthorized commercial establishments built around it. Any relocation/redevelopment work in old areas will have to be taken up with participation of institutions such as Seva Samiti, Ganga Sabha, Niranjani Akhada, etc. Some improvement works like construction of ghats, reorganization of activities, etc can be taken up in the short term.

At present, construction within 200 m from the river Ganga has been restricted and construction of only temples, maths and dharamshalas is allowed after mutation and registration in Land Records Department. Kankhal area has a number of old dharamshalas, temples and ghats, ayurvedic pharmacies and institutions. This area is very congested and needs widening of roads and upgrading of civic infrastructure facilities apart from conservation of heritage structures. Conservation of heritage structures in the old town area is separately covered in section 3.5.



Congested areas of Jwalapur: It is the main commercial zone of the town. The unorganised growth of the area has resulted in haphazard development and traffic congestion on narrow streets.

3.3.8 Future Growth of Haridwar

In the context of increasing urban population and industrial development around Haridwar, it is deemed necessary to expand the boundaries of Haridwar NPP to include the fringe areas. The issue of expanding the present municipal boundary of Haridwar NPP and upgrading it to Haridwar Nagar Nigam (Municipal Corporation) is under consideration by the GoU.

Physical Constraints

Haridwar has Shivalik mountain range in the north and northeast and river Ganga in the south which restricts its growth in these directions. The reserved forests along Najibabad Road restrict development along this corridor.

Directions of Future Growth

Since the last few decades, Haridwar is experiencing physical growth mainly towards the west due to suitable terrain. Future growth is also expected to be in the same direction along Roorkee road, Laksar road and towards Roshnabad. Development of IIE by SIDCUL in Roshnabad is likely to trigger rapid urban

growth in this area to support the industrial development. HDA has proposed Harilok Phase II and Indralok housing schemes on Roorkee Road and near BHEL area respectively. Areas along Roorkee road are expected to have higher rate of growth in future. Area along Laksar road is having scattered development on agricultural fields. This is a potential direction of growth but future development must be regulated to preserve the rich agricultural belt. Field observations and consultation with stakeholders are presented in Map 3.3.2.

3.3.9 Key Issues relating to Physical Growth and Built Environment

- **Topography**: Physical urban growth is constrained by Shivalik in the north and north-east and river Ganga in south and this has resulted in linear growth of town. Growth is also restricted along Najibabad Highway due to reserved forests and water bodies.
- **Ribbon Development**: Linear growth has resulted in ribbon development along the main corridor of town, the Delhi-Niti Pass highway, known as DN Road/ Upper Road within the municipal boundary. DN road has high density commercial development creating traffic congestion during religious fairs and festivals. Increasing number of tourists every year has further accentuated the need for additional flyovers, dedicated pedestrian ways, widening of existing roads, development of parking places, etc.
- **High Density Development in Old Areas without Proper Infrastructure**: High density development in Kankhal and Jwalapur are putting more pressure on existing network of services.
- **Unauthorized Constructions on Undeveloped Land and Fringe Areas**: Supply of serviced land is limited and this has led to unauthorized development on undeveloped land and fringe areas. Main roads in the town also have encroachment which has reduced the clear road width available for movement of traffic. The *ghat* areas have also been encroached by commercial establishments.
- **Lack of Affordable Housing**: Stakeholder's consultation raised the issue of lack of availability of affordable housing. Stakeholders feel that this false scarcity of housing is created due to the general trend of people from the northern regions to buy their second residence in Haridwar. There is need to provide serviced land and access to affordable housing for all.
- **Slums and Squatters**: Growth of slums and squatter settlements along the river and canals is contributing to water polluting in Ganga. This needs to be controlled on priority basis.
- **Land Ownership:** Lack of clarity on status of land ownership and its use is an issue in Haridwar for future development.
- **Undeveloped Open Spaces**: Open spaces measuring upto 575 ha is earmarked for Kumbh and Ardh *Kumbh Mela* which are used for camping, parking, exhibition and other community facilities. These open areas should be developed with parking, community facilities and landscaping which will increase the scenic beauty of the town, serve as tourist attractions and at the same time prevent encroachment in these areas.
- **Large Scale Industrial Development by SIDCUL**: Integrated Industrial Estate (IIE) proposed on 2034 acres of land is being developed by SIDCUL located at a distance of about 4 kms from Haridwar. IIE is likely to put pressure on the existing infrastructure services.

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.3.2 :- PHYSICAL GROWTH CHARACTERISTICS

Motichur

? Ashrams, dharamshalas and hotels coming up on private properties in this area
? Terrain suitable for development
? Limited possibility for large scale residential development.

Roshnabad

? Development of Integrated Industrial Estate (IIE) by SIDCUL
? Likely to have rapid urban growth due to pressure from IIE
? Suitable terrain and land availability for future development

Area around Har-Ki-Pauri

? Old, congested and high density development
? Deteriorating service levels especially sanitation infrastructure
? Encroachments on ghats and unplanned construction activities

Area along Delhi- Niti Pass Road (DN Road)

? Ribbon Development along DN Road
? High density commercial development
? Severe traffic congestion during religious occasions

Area along Roorkee Road

? Potential for future development
? Residential development by HDA
? New Transport Nagar coming up Off Roorkee Road

Area along Laksar Road

? Scattered development - mainly residential, ashrams and institutions
? Conversion of rich agriculture land for developmental purposes
? Potential for future development

Area along Najibabad Road

? Beautiful scenic view surrounding forests, hills, river and open green areas
? Physical constraints for future development

To Dehradun
To Dehradun
To Mohan
To Roorkee
To Laksar
To Najibabad
To Chila
Hill Bypass
PANTDWEEP
MANSA DEVI TEMPLE
HAR-KI-PAURI
CHANDIDWEEP
KANKHAL
JWALAPUR
B H E L

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**

1 0 1 2 km

Data Source

! **Field Visits & Stakeholders Consultation**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

3.3.10 Environmental Quality

Water Quality

The recent characteristics of water quality of river Ganga is furnished in Table 3.3.5. Uttarakhand Environment Protection and Pollution Control Board (UEPPCB) under the "Monitoring of National Aquatic Resources (MINARS)" Programme has been monitoring the water quality of river Ganga on a monthly basis at 11 stations in Haridwar.

Table 3.3.5: Characteristics of Water Quality of River Ganga at Haridwar

Month	Temp.^{0}C	pH	DO mg/l	BOD mg/l	Fecal Coliform MPN/ 100ml	Total Coliform MPN/ 100ml
Apr'05	21.0	7.5	6.8	-	21.00	1600
May'05	22.0	7.5	6.0	-	17.00	1600
Jun'05	20.0	7.5	6.4	-	17.00	1600
July'05	22.0	7.5	7.0	-	23.00	1600
Aug'05	22.0	7.5	6.9	-	-	1600
Sep'05	23.0	7.5	7.2	-	17.00	1600
Oct'05	20.0	7.5	7.0	4.4	17.00	1600
Nov'05	20.0	7.5	7.4	4.1	17.00	1600
Dec'05	13.0	7.5	6.1	4.2	23.00	1600
Jan'06	13.0	7.5	7.0	4.1	17.00	1600
Feb'06	20.0	7.5	6.9	-	17.00	1600
Mar'06	22.0	7.5	6.5	-	23.00	1600

A study of Tables 3.3.5 and 3.3.6 clearly shows that the stretch of the river Ganga at Haridwar satisfies the criteria for Class C for most of the year but does not fulfill the requirement for Class B. The critical parameter is "Total Coliform". The high level of coliform is attributed to mass bathing by thousand and lakhs of pilgrims in Haridwar. The desired River Water Quality at Haridwar is at least Class B. Apart from mass bathing pollution is also contributed by several nallas discharging into the river. Although most of the 19-odd nallas have been intercepted and dry weather flows diverted to sewers in various phases of the "Ganga Action Plan", a few nallas still remain to be intercepted and diverted to stop any wastewater reaching the rivers.

Air Quality

There has been increasing motorized vehicular traffic, particularly during holy seasons and dates, contributing to air pollutants. Although recent data were not available, it is generally believed that there is deterioration of air quality due to such activity.

Table 3.3.6: Water Quality Classification according to Designated Best Uses

Class	Designated-Best-Use	Criteria
A	Drinking Water Source without conventional treatment but after disinfection	1 Total Coliforms Organism MPN/100ml shall be 50 or less 2. pH between 6.5 and 8.5 3.Dissolved Oxygen 6mg/l or more 4. Biochemical Oxygen Demand (5 days, 20^0 C) 2mg/l or less
B	Outdoor bathing (Organized)	1 .Total Coliforms Organism MPN/100ml shall be 500 or less 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 5mg/l or more 4. Biochemical Oxygen Demand 5 days 20^0C 3mg/l or less
C	Drinking water source after conventional treatment and disinfection	1 . Total Coliforms Organism MPN/100ml shall be 5000 or less 2. pH between 6 to 9 3. Dissolved Oxygen 4mg/l or more 4. Biochemical Oxygen Demand 5 days 20^0C 3mg/l or less
D	Propagation of Wild life and Fisheries	1 .pH between 6.5 to 8.5 2. Dissolved Oxygen 4mg/l or more 3. Free Ammonia (as N) 2.2 mg/l or less
E	Irrigation, Industrial Cooling, Controlled Waste disposal	1 .pH between 6.0 to 8.5 2. Electrical Conductivity at 20^0C micro mhos/cm Max. 2250 3. Sodium absorption Ratio Max. 26 4. Boron Max. 2mg/l
Below-E		Not Meeting A, B, C, D & E Criteria

Key Environmental Management Issues

Based on the above situation analysis, major environmental concerns and management issues of the city is summarized as under:

- **Pollution Due To Increased Vehicular Traffic***:* There is a significant increase in vehicular traffic in the city during the last few years. This includes public, private and other vehicles. Total number of vehicles on road has increased from 1,18,713 to 1,37,016 during last one year. Emission from these vehicles contributes significantly to the air pollution of the city.
- **Pollution of the Holy River Ganga***:* The River is polluted due to various manmade activities. These include discharge of untreated wastewater into the river, waste disposal from the cremation grounds close to the bank of the river, bathing and washing and disposal of solid wastes, and pollution from upland catchments. Recently UEPPCB and Ganga Pollution Control Unit, a section of the Uttarakhand Jal Nigam has taken initiatives to divert 19 drains to the existing Sewage treatment Plant and augment the capacity of the plant. These drains otherwise is discharging wastewater into the river. Thousand of pilgrims come to Haridwar for having holy bath at the river Ganga. The River Water Quality at Haridwar should conform at least to Class B criteria.

- **Collection, Transportation and Safe Disposal of Solid waste***:* The city has failed to comply "Municipal Solid Wastes (Management & Handling) Rules, 2000" under the umbrella act "The Environment (Protection) Act, 1986".
- **Monitoring of Air and Noise Levels***:* No monitoring is done on a routine basis with respect to the quality of air and level of noise pollution for the city. Under the National Ambient Air Quality Monitoring Programme, regular monitoring of air quality of the city is necessary. Regular monitoring of the noise level is also required to regulate the noise level as per Noise Pollution (Regulation and Control) Rules, 2000.
- **Land Slide from Mansa Devi Hill***:* Land slides of the Mansa Devi Hill takes place at a regular interval. Huge quantity of boulders and soil from the hill get deposited near the congested town area. Some of the silt finds its way into the River Ganga upstream of Har-ki-Pauri.

3.4 Municipal Infrastructure

3.4.1 Water Supply

Piped water supply was first introduced in Haridwar in 1927 with a tubewell at Tiwadi, which is now lying defunct. Since then the town has expanded significantly and the water supply system has been augmented and reorganized in manifolds.

The water supply of Haridwar is operated and maintained by Uttarakhand Jal Sansthan (UJS), an institution working under Department of Drinking Water, Government of Uttarakhand (GoU), which also undertakes some of the low budget works. Large capital works and overall planning are carried out by another institution, Uttarakhand Pey Jal Nigam (UPJN), also working under Department of Drinking Water. Although a municipal function, the Haridwar Nagar Palika Parishad (NPP) is not involved in the planning, design, construction, operation, maintenance and service delivery of this important Urban service. This section deals with the analysis of current situation of water supply, its problems, key issues and the likely scenario of water supply with respect to water demand, resources, system requirements and related aspects.

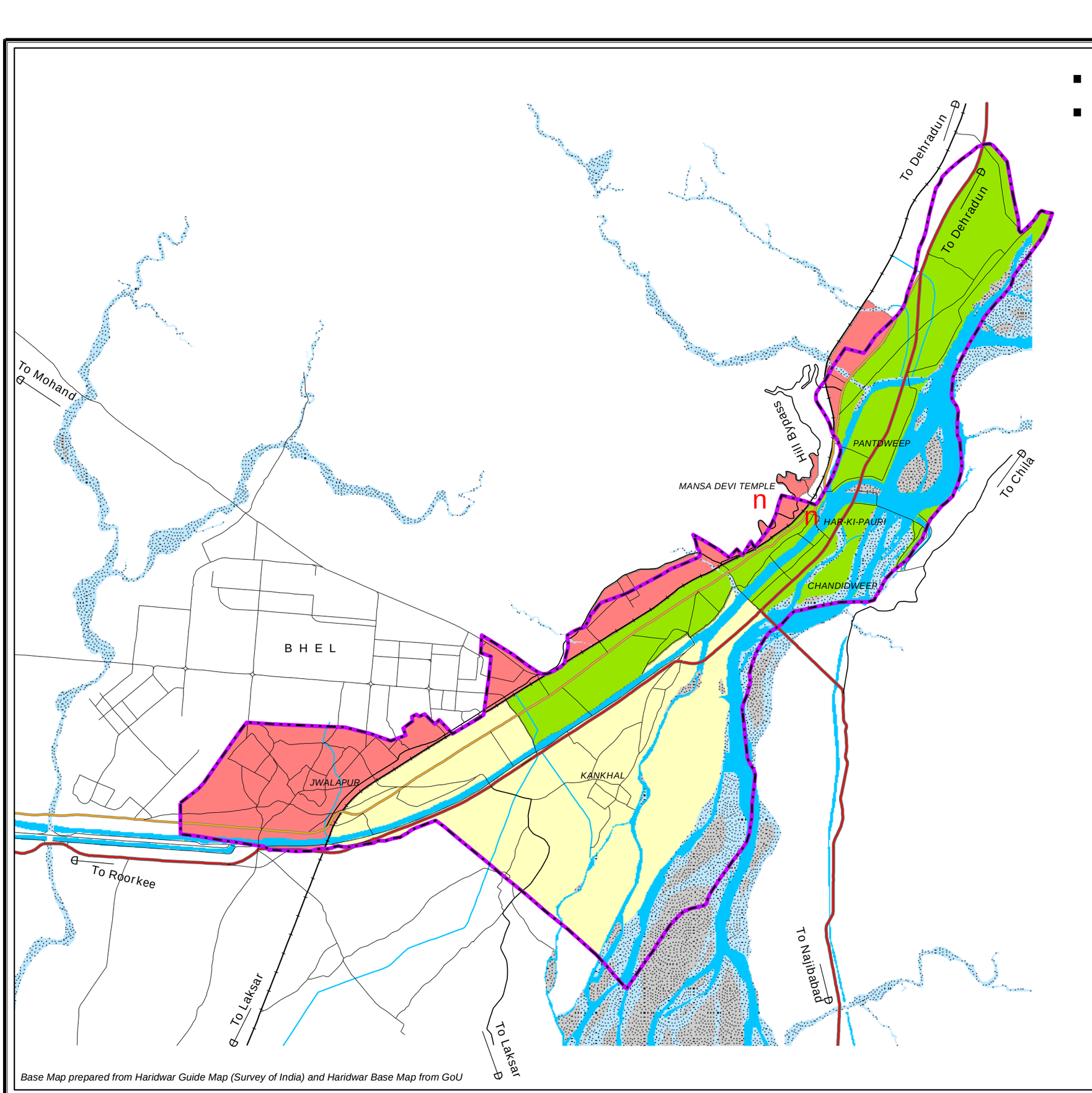
Water Sources and Generation of Water

Haridwar is situated on the bank of river Ganga, the largest perennial river of India. The town therefore enjoys water of this river as source infiltrated through soil and collected in large diameter wells. However, availability of this water is limited to the areas close to the river. For the areas little away from the river the infiltration becomes ineffective due to increase in the width of natural soil media in between and ground water is proved to be the most techno-economically suitable source. Both these sources are in abundance in Haridwar. Situated by the side of a large river, and recipient of plenty of rainfall, the region possesses large potential for ground water recharge. Presently about 60 mld of water is abstracted from these sources through 44 wells of different kind as shown in Table 3.4.1.

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.4.1 :- STATUS OF WATER SUPPLY



Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**
- **Shortage of Water**
- **Normal Water Supply**
- **24 hrs. Water Supply**

1 0 1 2 km

Data Source

! **Uttaranchal Pey Jal Nigam, Haridwar**

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Table 3.4.1: Present Availability of water from various sources

S. No.	Name of source	Nos.	Approximate quantity Available (mld)
1	Infiltration wells	16	25
2	Tubewells (200 mm – 300 mm dia)	23	32
3	Mini tubewells (150 mm dia)	2	2
4	Open wells	3	1
	Total	44	60

Treatment of Water

The quality of water from the sources is quite good and does not need sedimentation or filtration. As such, it is directly pumped to the distribution system after disinfection by liquid sodium hypo chloride or gaseous chlorine.

Distribution System

For ease of operation and rational distribution of water, Haridwar town has been divided into six water supply zones on the basis of area, population, nature of requirement and ground elevations. The zones and the areas served are given in Table 3.4.2.

Table 3.4.2: Zones and Areas Served

S. No.	Zone	Area served
1	A	Bhopat wala
2	B	Bhim goda & Har ki pauri area
3	C	Mayapur
4	D	Kankhal
5	E_1	Jwalapur (part-I)
6	E_2	Jwalapur (part-II)

Har Ki Pauri area is a surplus water supply zone by virtue of it being low lying and also due to the special care taken for its religious importance. Availability of water in this zone is almost 24 hours. Parts of Jwalapur, Kankhal and Bhopatwala areas are comparatively scarcity zones where water supply is restricted to 1 to 4 hours daily.

There are 12 Over Head Tanks (OHT)/Clear Water Reservoirs (CWR). Out of which 11 OHT serve the area within the municipal limits. One CWR is not functioning for want of feeder main. The combined storage capacity of these OHT and CWRs is 14,030 kl against a total supply of 60 mld i.e. about 23% of the total supply which is insufficient. The locations of the storage tanks also need to be examined during detailed engineering stage to achieve appropriate hydraulic efficiency of the distribution network.

In the absence of pipeline network map, exact length of distribution network in the town can not be assessed correctly, however, as discussed with Jal Sansthan, Jal Nigam and HNPP it is reported to be more than 200 kms in addition to 8 km of feeder mains from infiltration wells, tube wells, mini tube wells and open wells. In several cases the distribution lines are buried under the road arising out of road

widening programs. The old and dilapidated pipes in the old city area also give rise to frequent problems in service. Repairing of these pipelines also poses various problems to the traffic system of the town.

Some pipelines have been laid along the sewers in such a manner that at many points they are crossing the manholes. Even some house connections have been provided through these manholes. At many places there is potential danger that leaking joints of pipelines may suck sewage water and get polluted. These pipelines are needed to be shifted immediately.

There are about 24,000 domestic water connections in Haridwar. In addition there are 2,389 commercial connections and 450 community public standposts. To strengthen the water supply system, 105 India mark-II hand pumps have been provided by Jal Sansthan (81), DUDA (20) and NPP (4).

The actual number of households in Haridwar municipal area is being updated by Haridwar NPP. However, it is estimated that there are about 32,000 households with an average household size townwide of 5.8, slightly above the 2001 census figure of 5.4. The socio-economic survey revealed that about 47% of the town population (86,500) lives in slums. Households belonging to the economically weaker section use standpost supply in a ratio of about 20 houses per standpost. Accordingly, the present piped water supply coverage to the population of Haridwar can be presumed to be about 85%. The balance population meets their requirement from the tube wells with hand pumps and additional community standposts.

The level of service in Haridwar town water supply in respect of quantity, supply hours and pressure can be well identified in three distinct characters. About 42% of town area demarcated under Zone A, B and C enjoys 24 hrs supply, in surplus quantity (> 135 lpcd), while 30% of the area demarcated under Zone E_2 and some parts of the foothill situated at higher altitude including the industrial area faces scarcity in supply both in terms of quantity and pressure. The supply hours in these areas are also intermittent, 1-4 hrs a day. In the remaining area demarcated under Zone D and E_1 the supply is reasonably normal although is slightly less than 135 lpcd in workable pressure with 4 - 6 hrs of supply a day.

Unaccounted for Water

No proper investigation and study have been conducted to determine a reasonable figure of unaccounted for water (UFW) in Haridwar water supply system. The UPJN/UJS generally agree that line and production losses of water are about 30%. The actual UFW may however be more. Some of the major reasons for high UFW are:

- Undetected leakages due to construction of metalled roads over the pipeline.
- Open zone boundaries allowing water to flow free from high pressure zones to low pressure zones resulting in some areas getting water supply for long hours beyond supply period developing a tendency of wastage and misuse of water.
- Some of the existing pipelines in old city area have outlived its utility leading to frequent breakdown and leakages.
- General leakage from joints and valves in the distribution system.
- Production losses due to reduction in efficiencies of old aging equipment and filter beds in the water works.

- Unauthorized tapping and connections.
- Wastage through the stand posts by removal of taps.
- Non recording of connections and consumption

Per Capita Water Supply

Considering 30% UFW the total quantity of water reaching to 3,44,000 population of the town (including a floating population of about 160,000) is about 42 mld. The average per capita supply rate may therefore be assumed as 122 litre/day which is slightly below the norm of 135 lpcd prescribed by the Central Public Health and Environmental Engineering Organization (CPHEEO), Government of India to support an effective sewerage system.

Water Quality

There is sometimes deterioration in the quality of water due to malfunctioning of the treatment plants. Many of the old pipes buried under the road in the course of their widening develop leakages and remain undetected. It results in sucking back the outside water/sewage when supply is closed, consequently polluting the water.

Operation and Maintenance

- Uttarakhand Jal Sansthan is responsibe for operation and maintenance of water supply system in Haridwar. During the study field visits detailed discussion were held with consumers (primarily citizen of Haridwar Nagar Palika Parishad area) and the officials of both UJS and UPJN. The findings related to O & M are:
- Lack of standby power generation system to make up frequent interruptions in power supply.
- Low efficiency of old pumping machineries requiring replacement.
- Lack of adequate data base of transmission & distribution system. Drawing / map of distribution system, which is the basic information needed are not available.
- Many rising mains are tapped and used as distribution main leading to large scale drop in pressure, wastage of energy and disruption in supply.
- The UFW is high, resulting in large revenue losses.
- Low water tariff and absence of metering contribute to large scale wastage; UJS has little or no means to control such wastage.
- Zones are generally interconnected with each other, resulting in uncontrolled transfer of water from zones in higher ground elevation to those in lower ground deviation.

Summary of present status of water supply system of Haridwar

Table 3.4.3 summarizes the present status of water supply system in Haridwar.

Table 3.4.3: Present Status of Haridwar Water Supply (2006)

S. No.	Item	Quantity
1	Total Permanent Population in Municipal Area (2006) (Permanent Population = 184000 + equivalent Floating Population = 160000)	3,44,000
2	Estimated households	32,200
3	Total No. of Domestic Connections.	24000
4	Total No. of Commercial Connections.	2389
5	Total No. of standpost	450
6	Total Length of Pipeline	168 km
7	Total Nos. of Storage Tanks (OHT/CWR)	12
8	Total Capacity of Storage Tanks (OHT/CWR)	14030 KL
9	Total No. wells (Infiltration well, tube well & open well)	44
10	Total water production capacity	60 MLD
11	Estimated line & production losses	30%
12	Total water availability	42 MLD
13	Average rate of per capita water supply	122 litre / day

Key Issues

Based on the above situation analysis, the following emerge as the key issues facing water supply system in Haridwar:

- Lack of adequate data base and maps on transmission & distribution system network.
- With open zones water freely travels to other zones.
- Unequal distribution of water resulting in acute shortage in certain areas.
- Lack of pressure in the scarcity areas.
- Deterioration in quality of water at times.
- Inefficient network hydraulics with respect to tapping, pumping and balancing storage tanks.
- In the intermittent supply system the tendency of the consumer is to keep the taps open throughout the supply increasing the peak factor and raising the chances of wastage of water
- The old and dilapidated network develops leakages most of which are buried under roads and remain undetected. This result in sucking back the outside water when supply is closed, consequently polluting the water supply
- Lack of standby power generation system at Headworks as interruptions in power supply is frequent.
- Low efficiency of old pumping plants
- Many feeder mains are tapped and used as distribution main leading to drop in pressure, wastage of energy and disruption in supply.
- Abnormal growth in high density areas raising water demand with which the existing diameters of pipeline cannot cope.
- The water tariff recovered is many much lower than its cost of production.

Annex 7.2.2 shows the growth of population, water demand and storage of water till 2036.

3.4.2 Sewerage & Sanitation

Coverage of Sewerage Network

Sewerage system was introduced in Haridwar in 1938. Since then it has been extended to various parts of the town. At present, more than 80% of the population is covered with sewerage system. Presently, one 18 MLD and another 8 MLD STP are taking care of treatment of collected sewage.

The city is located at an altitude of 292.7 metres above the Mean Sea Level. The spread of Haridwar from foothills is generally levelled with 3-7 metres of undulation. The area at the foothills on the bank is excessively populated with Dharamshala, Hotels, Shops etc. The soil here is generally sand mixed with boulders and rocks.

Based on the topography of the town and the need of STP's, city is divided into 3 sewerage zones:

Zone I: Bhopatwala zone (lies on the northern side of Haridwar).
Zone II: Haridwar, New Haridwar and Kankhal.
Zone III: Jwalapur Zone

Table 3.4.5 shows the characteristics of sewerage zones

Service Levels of Sewerage Systems

Service levels for sewerage collection and treatment are satisfactory. Out of the total 33 mld sewage generated by 184,000 permanent population and 160,000 floating population almost 80% collected by sewerage system and 20% at drain interceptions. Present capacity of sewage treatment is 26 mld with a gap in treatment capacity of 7 mld. It excludes special occasions such as Kumbh, Kanwar and other exigencies. Detailed calculations are provided in Annex 3.4.2.

Table 3.4.4: Service Levels of Sewerage System

Details	Units	Remarks
Water Supply	51.3 mld	
Actual Water Reached to Consumers	36 mld	30 % distribution Loss
Sewerage generated	33 mld	15 % infiltration & 80 % water consumption.
Sewage Collected	33 mld	80 % sewerage & rest 20 % intercepted at drains and diverted to STP.
Gap in treatment capacity	7 mld	Existing 26 MLD Treatment capacity

Table 3.4.5: Characteristics of sewerage zones

Zones	Sub Zones	Permanent Population (2006)	Floating Population (2006)	Sewage Generated** mld	Area Covered	Remarks
Zone I Bhopatwala Zone	A	10207.0	34558.0	3.5	Bhopatwala, Sapt Sarovar, Uttam Basti, Satyam Vihar, Shanti Kunj, Narmal School, Agrawal Dharamshalal, Durga Nagar, Satyam Vihar, Rly Station MotiChur, Bharat Mata Mandir	• The zone is located at the north side of Haridwar. It is partially covered with sewerage system. • All new population and Ashrams are settling in this zone. New Sewerage schemes of needed for the growing population in this area. • Partially collected sewage in this zone is taken to Bhopatwala SPS and finally to Kankhal STP. • In Future the sewage is diverted to proposed Bhopatwala 9mld STP.
Zone II Haridwar	B,C,D,E1	110021	123626	21.6	Nai Basti, Basant Gali, Kunj Gali, Krishna Gali, Moti Bazar, Maya Devi temple, Kotwali, Hospital, Nirmal Chawni, Mayapur, Nagar Palika, Industrial Area, Naya Haridwar and Kankhal.	• The area is mostly covered with sewerage system. • The sewage is taken through rising main by different sewage pumping stations and finally to 18 mld Kankhal STP. • Kankhal STP is working very efficiently, but in near future needs rehabilitation. • Different sewage pumping station & rising mains needs rehabilitation. • Some newly developed areas needs sewerage systems.
Zone III Jwalapur	E2	63765	1626	8	Jwalapur area	• Partially covered with sewerage systems. • Needs sewerage system for different uncovered areas. • Partially collected sewage is treated at 8 mld agro forestry based STP at nearby Sarai Village.

* Sub Zones are zones considered by Uttarakhand PayJal Nigam.

** Calculations of sewage flow is based on 80 % of water supply rate of 135 L/c.d for permanent population and 70 lpcd for floating population. In addition 15 % groundwater infiltration is also considered.

Treatment and Disposal of Sewage

The first sewage treatment plant was constructed under Ganga Action Plan Phase 1 in 1992 at Kankhal area of Haridwar. The capacity of STP is 18 mld and it is based on the Activated Sludge Process. Recently, a new STP of 8 mld was constructed based on Karnal Technology (Agro Forestry) to treat sewage from Jwalapur area of Haridwar. Presently, total sewage generated is 33 mld, out of which 7 mld is left untreated under normal conditions. But in special occasions the sewage generation increases to 40-45 mld. Due to relatively flat topography and prohibition of discharge of treated sewage at the upstream of Har Ki Pauri (Important Religious Bathing Place), the town needs excessive pumping of sewage. There are about 15 working sewage pumping stations for lifting and carrying sewage to downstream for treatment and irrigation. Details of existing sewerage facilities is given in Annex 3.4.1.

New sewerage schemes for augmenting 18 mld STP to 45 mld and construction of new 9 mld STP at Bhopatwala were already approved by the Government of India and will be implemented through NRCD. After the implementation of these schemes the total capacity will be enhanced from 26 mld to 62mld. These schemes will cater to the need of sewage treatment until 2023 as per analysis of UPJN.

However, additional funds are needed for the implementation of:

- New sewerage schemes to increase the sewerage coverage to 100 %.
- Capacity augmentation of rising mains,
- Modification and augmentation of 8 mld STP and
- Rehabilitation of 18 mld STP and Sewage Pumping stations.

Key Issues

- There is no mapping information available on the existing sewerage i.e., length and diameters and profile of the existing sewerage system. Therefore, a GIS and CAD software assisted database of the existing system is needed. The mapping database built on GIS based town map prepared by the GoU would be very useful in implementing proposed schemes for sewerage.
- At present, sewer clogging is observed in some areas, the most common reason is the dumping of municipal solid waste in manhole chambers, therefore a comprehensive solid waste management plan should be prepared for the prevention of entering municipal solid waste in the sewer line. Another reason for sewer clogging is the deposition of silt into the sewers. During rains eroded heavy silt came from near by hills. A plan for the prevention of silt should be undertaken on the priority basis.
- Community should be encouraged to pay and use category of public conveniences with community involvement in the maintenance of the sewerage system. It is observed that currently sewerage is not covered by way of user charges; only sewerage service charges are collected as part of property tax.

Figure 3.4.1 Existing State Of Sewage Pumping Stations & Sewage Treatment Plants

Existing Agro forestry based 8 MLD & Proposed (SBR) 12 MLD Jwalapur/Sarai STP

Existing State of Sewage Pumping Stations in Haridwar

Existing conditions of 18 MLD Sewage Treatment Plant

(Overview & Return Sludge Pumping Station)

3.4.3 Storm Water Drainage

Rainfall

Haridwar receives an average annual rainfall of about 2300 mm. The maximum rainfall occurs in July and August amounting to around 1200 mm.

Drainage System

Practically the whole town, wherever roads or brick paved lanes/paths exist, have some kind of side drains leading to storm water drains, except in slums or some parts of peripheral areas. Most of the drains need cleaning, remodelling and repairs. In addition to this, there are lanes and roads in the town which are still *kutcha*. The total length of *kutcha* roads is about 28 km. There is a total of 214 km of roads maintained by HNPP and about 45 km roads maintained by PWD. The drainage system is shown in Map 3.4.2**.**

Drainage Characteristics and Problems:

Most of the Haridwar City is situated on the right bank of River Ganga while the Ganga Canal divides the city in two parts. Shivalik hill ranges in the north have restricted the growth of the town in that direction. Naturally the slope of the ground is from hills towards the river i.e. from north to south which is also the main direction of flow of storm water drains. All these drains have varying quantities of deposits - silt, gravel and boulders. Soil erosion from the hill slides on the northern side, particularly Mansa Devi hill causes these deposits during rains. Due to steep slopes and large catchment areas, run off is high causing water logging and back flow in many areas. Old Ranipur turning is one of the worst affected areas.

The drain below Mansa Devi Temple has large silt chambers. The section is large at the head but suddenly reduces to a smaller section as it enters the main market. Natural drains have been encroached upon at many places. Gully pits are broken and side drains are connected to sewers which itself need cleaning.

The storm drains carry, as in most towns, illicit sewage in the form of dry weather flow draining into the R. Ganga. About 19 such nallas have been intercepted and dry weather flows diverted to sewers. List of these nallas are given in Table 3.4.6**.**

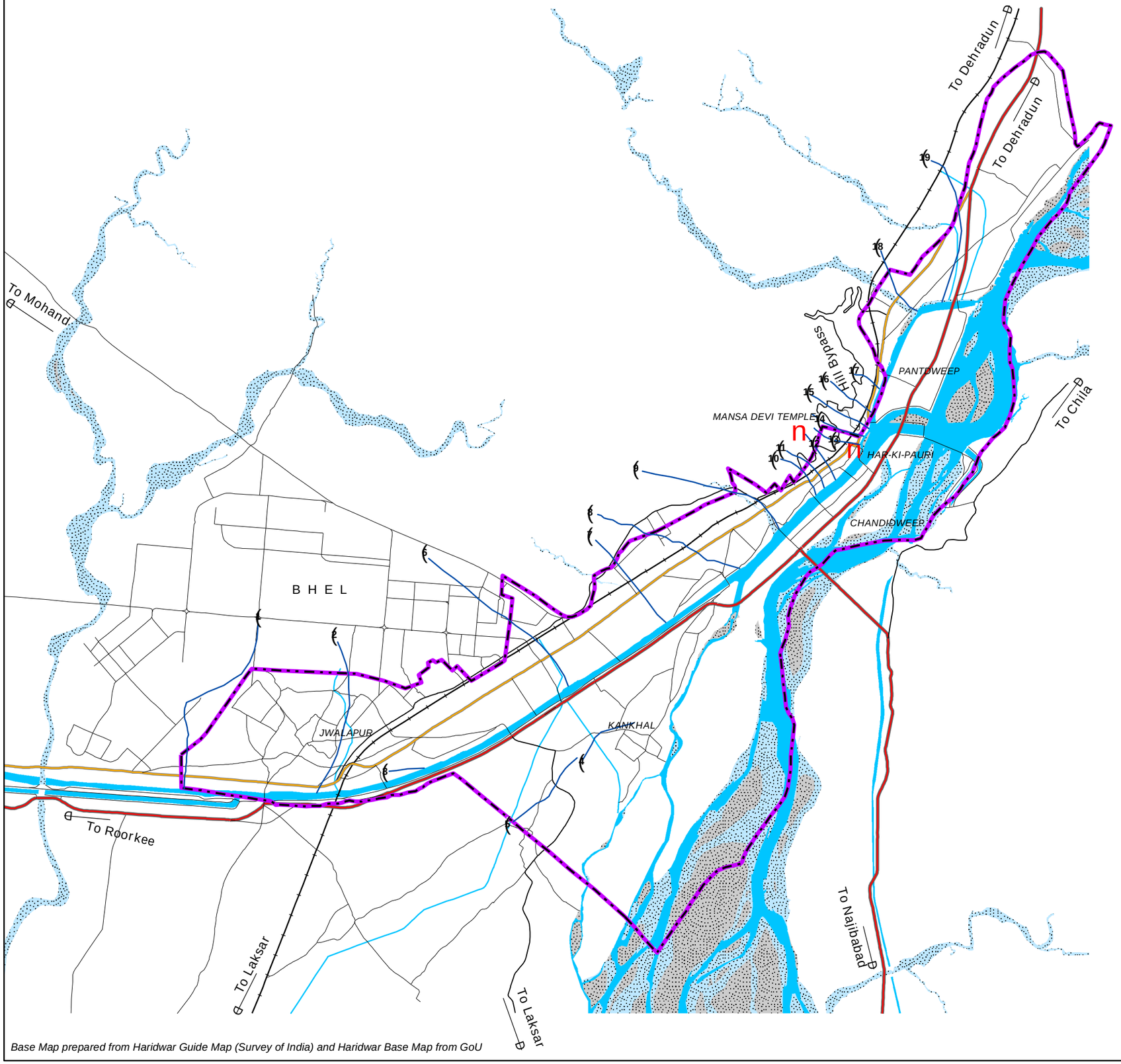
The main problems of this natural drainage system are man made. These are listed below.

- Dumping of garbage and all kind of solid waste in to the drains.
- Unauthorised cutting of slopes near the foot hills for construction of houses, creating a danger to the stability of the hills (back of Bhimgoda)
- Obstruction to the natural flow by encroaching sides of the drains by construction of houses. Diversion of one drains into another as in the case of the drain across Rishikesh road.
- Non-cleaning of the drains as can be seen at Bhimgoda colony near the kund Bhopatwala and RTO. Crossing Nala which are heavily silted

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.4.2 :- STROM WATER DRAINS



Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**
- **Storm Water Drain**

1. **Pandewala Nala**
2. **Kasai Nala**
3. **Shiv Mandir Nala**
4. **Latowali Nala**
5. **Jagjeetpur Nala**
6. **Awas Vikas Nala**
7. **Devpura Nala**
8. **Mayapur Nala**
9. **Lalitaro Nala**
10. **Kushaghat Nala**
11. **Nago Ki Haweli Nala**
12. **Nai Sota Nala**
13. **Kangra Mandir Nala**
14. **Karnwal Nala**
15. **Railway Nala**
16. **Karoli Nala**
17. **Bhimgoda Nala**
18. **Saptsarover Nala**
19. **Loknath Nala**

1 0 1 2 km

Data Source

! **G.P.C.U, Uttaranchal Pey Jal Nigam, Haridwar**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Table 3.4.6: Details of Nallas draining into the Ganga

S.No.	Name of Drain	Length (in Km Approx)	Connected Areas
1	Pandewala Nala	1.5	Area around Pandewali Road, Dhirwali Road
2	Kasai Nala	1.2	Kadach, Meat Market Teliyan, Kanjaram Ladh Mandi, Peepla
3	Shiv Mandir Nala	0.5	Near Sharda Nagar
4	Latowali Nala	0.6	Latowali Area East of Satikund Area
5	Jagjeet pur Nala	1.0	Jagjitpur Area
6	Avas Vikas Nala	1.5	Avas Vikas Colony, & area around it
7	Dev Pura Nala	1	Rishikul Area(Part), Dev Pura, Near Ghora Mandi Area
8	Mayapur Nala	1.8	Mayapur, Around Shiv murty Road & Development Authority area.
9	Lalita Rao Nala	1.5	Valmiki Basti Lalta Road, Bilkeshwar Area
10	Kusha Ghat Nala	0.5	Between Ratan Talkies Bhimgoda and Valmiki Basti
11	Nago Ki Haveli Nala	0.5	
12	Nai Sota	0.7	
13	Kangra Mandir Nala	0.5	
14	Karanwal Nala	0.7	
15	Railway Nala	0.7	
16	Karoli Nala	0.7	
17	Bhimgoda Nala	0.5	
18	Sapt Sarovar Nala	1	Sukhi Rao, area around Sapta Sarovar
19	Lok Nath Nala	1.5	Bag Rao, Area around Satyam Vihar & Lok Nath.
	Total	**17.9**	

Situation Analysis

To accommodate increased storm water run-off due to growing urbanization, some parts of these drains were lined with stone or brick masonry. It is observed that the main drainage channels are heavily silted because garbage is routinely thrown into these channels often packed in polythene bags. This causes a formidable problem as the polythene slows down the disintegration of the degradable material packed inside. Most of the main drains are in a bad shape at present and need repairs, reconstruction and other works in nearly 60 percent of their lengths.

Although large part of the town is well drained, there are certain localized problems of insufficient drainage and water logging during heavy rains.

Some of the spots prone to flooding and water logging are as follows:

1. Chandra Charya Chowk (Ranipur turn)

2. Old Ranipur Area
3. Bhimgoda Nai Basti
4. Along Rishikesh road
5. Laton wali
6. Nath Nagar before Railway station Jwalapur

Considerable length of drains in commercial areas has been encroached upon by the construction of shops, or the other building covering the drains completely at some points. The minimum that can be done to facilitate cleaning and maintenance of such drains is to provide bigger sized manholes 900mm.dia at 30 m Intervals, besides lining and reconstruction in necessary stretches.

Key Issues

- Due to faster growth of population and rapid increase in the land prices, habitation has extended to the low lying areas which do not have proper drainage outlets.
- Dumping of garbage, particularly plastics, causes serious reduction in waterways of main drainage channels
- Encroachments by poor as well as other sections of society has resulted not only in constriction of waterway but also has led to problems of access for repair & maintenance activities
- In the old city areas, space for construction of roadside drains is a major problem
- 15% to 20% of the houses which do not have a sewer connection or a Septic tank are discharging their domestic sewage into the existing drains, causing serious environmental problems.
- Decrease in green areas i.e., parks and gardens and increase in built up areas has increased the runoff inside the town.
- Due to natural degradation of rocks, deforestation, leading to loss of top soil, accumulation of silt in the nallas causes over flow and back flow of water in certain densely populated areas.

3.4.4 Solid Waste Management

Municipal Solid Waste Generation

The city generates, on an average, about 190 MT of MSW per day. The major sources of MSW generation of the city are domestic, shops and commercial establishments, hotels, restaurants, dharamsalas and fruit and vegetable markets. Number of registered hotels, restaurants and dharamsalas in the city are 270, 250 and 280 respectively. In addition there are 3 fruit and vegetable markets. Quantity of waste generated from various sources are presented in Table 3.4.7

Table 3.4.7: Solid Waste Generation from Different Sources (Ton/day)

Source	Generation
Domestic	155
Fruit & Vegetable Markets	5
Shops & Commercial Establishments	12
Hotels, restaurants and dharamsalas	4
Construction/demolition Activities	2
Other	12
Total	**190**

(Source: Haridwar Nagar Palika Parishad)

Waste Composition and Characteristics

The MSW of the city mainly comprises of organic, inert and recyclable wastes such as paper, plastics, glass etc. No data is available to determine the composition and characteristics of the MSW for the city.

Collection, Storage and Transportation

There is practically no primary collection system in the city except in few localities where the Mohalla Swachhata Samities (MSS) recently have started door-to-door primary collection by engaging private sweepers. Waste is mostly collected through community bins/containers and road sweeping. HNPP sweepers and sanitary workers engaged by the MSS sweep the streets. They accumulate the collected waste into small heaps and subsequently loaded manually or mechanically onto the community containers/bins or directly loaded onto the solid waste transportation vehicles for onward transportation to the disposal site. The present collection and transportation system involves multiple handling of solid waste. About 60 open handcarts and 20 cycle-rickshaws are used for collection of waste including wastes generated from street sweeping and cleaning of drains. Both long and short brooms are used for street sweeping.

Recently, the MSS, comprising of a group of residents, has been formed to engage private sweepers for door-to-door primary collection of waste from the area and to keep the area clean. About 55 such MSS have been formed to cover different areas of the city. All MSS are not functional. Some of them are functioning satisfactorily whereas others performance is irregular and un-satisfactory.

A private agency called “Dry Waste Recycling & Resource Centre, Haridwar” is presently segregating recyclable wastes from the various waste collection points by organizing the rag pickers for further process.

Private agencies called “Signet” and “Pahal BMW” are involved in collection of bio-medical wastes from various hospitals and other medical establishments of the city and transports it to the Bharat Heavy Electrical Ltd (BHEL) complex situated at the outskirt of the city for incineration.

Secondary storage of solid waste is done by means of community containers and bins having capacities of 0.5 m3, 1m3 and 4.5 m3. 220 such containers and bins are placed at different locations (also called collection points) of the city for

secondary storage of solid waste. Although most of these containers and bins are of closed type but these are often left open attracting animals. In addition to the above mentioned containers and bins, there are about 15 numbers of open collection points and 2 Dhalaos (Constructed enclosures) located in different locations of the city.

Haridwar Nagar Palika Parishad (HNPP) presently utilizes the following vehicles and equipment for transportation of solid waste (Table 3.4.8).

Table: 3.4.8: Vehicle/Equipment Presently Being Utilized by HNNP for Transportation of MSW

Type of Vehicle/Equipment	Total Quantity (No.)
Tractor Trolley	6
Container Carrier Tractor	3
Tipper Truck	5
Mechanical Loader	2
JCB Loader cum Excavator	2
Dumper Placer	2
Refuse Compactor	1
Mini Refuse Collector	1
Vikram Three Wheeler	6
Cow Catcher	2

(Source: Haridwar Nagar Palika Parishad)

In Solid waste transportation addition HNPP has two Spray Machines and four fogging machines which are used to prevent mosquito and insects breeding. Most of the solid waste transportation vehicles are covered. HNPP owns all these vehicles/equipment. About 90% of the vehicles are operative whereas the remaining 10% are either defunct or under repair. HNPP claims that about 80 percent of the waste generated is removed everyday. There is no facility for weighing the loaded vehicles before disposal for assessment of the quantity of solid waste disposed everyday. The assessment is based on the number of trips each vehicle makes per day and the loading capacity of the vehicle. HNPP has its own workshop for repair works of its vehicles.

Waste Disposal

At present HNPP disposes the solid waste of the city to two sites - one located at Jwalapur, about 7 km from the city and the other by the side of the National Highway-74 at a distance of about 8km from the city. In both the sites, waste

disposal is done by uncontrolled dumping. HNPP owns about 14.50 hectare of land at Sarai Village, located at a distance of about 12 km from the city for future solid waste disposal. The locations of existing and proposed solid waste disposal sites are shown in Map 3.4.3

Institutional Setup

Public Health Department (PHD) of HNPP is responsible for solid waste management of the city. Usually the Senior Health Officer heads the department. Health Officer, Chief Sanitary & Food Inspector, Sanitary Inspectors and Supervisors support him. The Organization Structure of the PHD is furnished in Figure.3.4.3

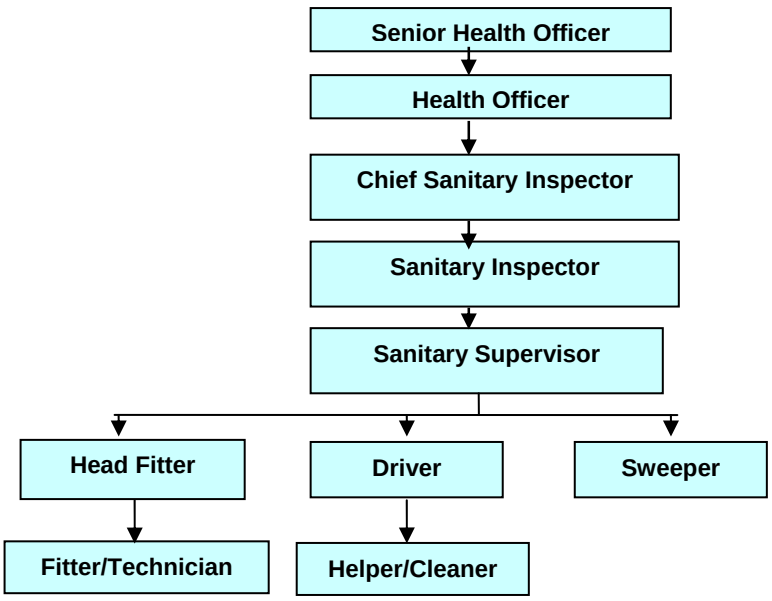
HNPP has divided the 25 municipal wards into 4 SWM Circles for better management of solid waste. Wards covered under each SWM Circles are presented in Table 3.4.9.

Table 3.4.9: Wards Covered Under Different Solid Waste Management Circle

S. No.	SWM Circle	Total Wards	Municipal Wards
1	Haridwar	05	1 to 4 and Part of 5
2	Mayapur	08	Part of 5,6,7,12,13,Part of 14 ,15 and 16
3	Kankhal	05	8,9,10,11 and Part of 14
4	Jwalapur	09	17 to 25

(Source: Haridwar Nagar Palika Parishad)

Figure 3.4.3: Organization Structure of Public Health Department- Haridwar NPP



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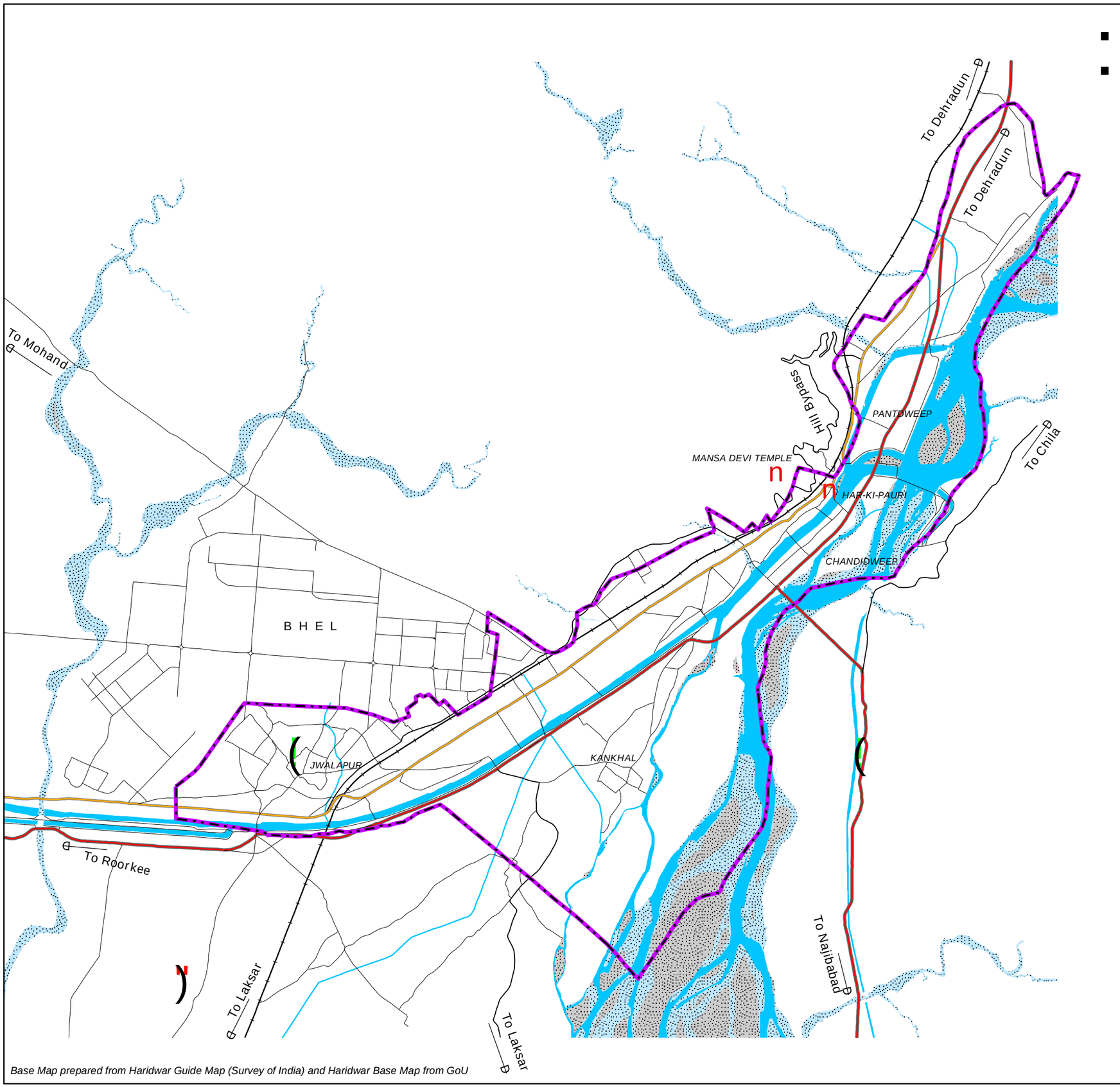
MAP 3.4.3 :- LOCATION OF SOLID WASTE DISPOSAL SITES



Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**
- **Existing Solid Waste Disposal Site**
- **Proposed Solid Waste Disposal Site**

1 0 1 2 km

Data Source

- **Haridwar Nagar Palika Parishad**
- **Field Visits**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Present status of the staff strength of the Public Health Department is shown in Table 3.4.10.

Table 3.4.10: Present Staff Strength of Public Health Department

S. No.	Post	Sanctioned	Filled	Vacant
1	Senior Health Officer	1	1	Nil
2	Health Officer	1	1	Nil
3	Chief Sanitary and Food Inspector	1	1	Nil
5	Sanitary Inspector	4	2	2
6	Safai Nayak	15	13	2
	Driver	12	10	2
	Helper/Cleaner	6	6	Nil
7	Head Fitter	1	Nil	1
8	Fitter/Machinist	1	1	Nil
9	Clerk	5	5	Nil
10	Peon	1	1	Nil
11	Sweeper	468	440	28

(Source: Haridwar Nagar Palika Parishad)

The above “Sanctioned” posts are permanent. In addition to the above permanent posts, HNPP has engaged the following staff on temporary contract basis to counter shortfall of staff:

- Sanitary Inspector-1
- Driver-15
- Fitter- 4
- Sweeper- 135

Key Issues

The major issue of the SWM is non-compliance of the Municipal Solid Waste (Management & Handling) Rules, 2000 by the HNPP. HNPP has failed to comply with the rules in all aspects of SWM i.e. Collection, Storage, Transportation, Processing, Disposal of MSW of the city and Institutional Reform. Other important issues along with the deficiencies in the present SWM system are enumerated as follows:

- Solid waste quantification and characterization: HNPP has not conducted any city wide study for determining the composition and characteristics of the solid waste. Proper quantification of waste is an important factor for assessment of equipment, vehicles and manpower. Representative characterization of the city waste is essential for determining appropriate waste processing and disposal methods.
- Segregation of waste at source: At present, there is no segregation of waste at source. Source segregation of waste reduces the waste load at the disposal site. This also reduces the cost of transportation of solid waste considerably.
- Primary Collection of waste: Present collection system is irregular, ineffective and inefficient. A significant part of the waste is left unattended. This waste not only degrades the environment but also block storm water drains.

- Community and Private Participation: Although HNPP has initiated community involvement and private participation by forming MSS for primary collection of waste, a lot of improvement is necessary in the level of services. The Mahalla Swachhata Samities are in the inception stage. The long term sustainability of MSS needs to be ensured.
- Improvement in SW Transportation system: The present SW transportation system lacks the following:
  - Proper routing of vehicles for transportation of waste to the disposal site.
  - Waste Transfer Station to minimize time and distance of travel of the solid waste transport vehicles. This will reduce cost of transportation and increase efficiency of the vehicles.
  - Inadequate and upgraded vehicle and equipment
  - Modern record keeping and communication facilities
- Safe Disposal of Waste: The present state of solid waste disposal is poor and unsatisfactory. A major part of the solid waste generated is disposed into open lands, streets, surface drains, river etc and sometimes burnt in open causing health hazards, public nuisance and degradation of environment and aesthetics. The existing disposal site at Jwalapur has been abandoned. The other solid waste disposal site located by the side of NH-74 is the only site where HNPP is presently disposing the solid waste of the city by open dumping.
- The HNPP owned land identified at Sarai Village as proposed solid waste disposal site is located away from the city limit. The present access road to the site is narrow and not suitable for movement of heavy solid waste transportation vehicles. Widening of the access road is therefore, essential. There is no alternative route that leads to the site from the city. Necessary environmental approval is required for this site before its final selection as a solid waste disposal site. No environmentally approved site has so far been selected as future solid waste disposal site.
- Health and Hygiene of Sanitary Workers: Under the present SWM activities manual handling of waste is involved starting from collection up to the disposal of waste. During the process, the sanitary workers are exposed to the waste. No protective measures have been taken for safety, health and hygiene of these workers who are vulnerable to the health hazards.
- Public Awareness: No major initiatives have been taken so far by the HNPP to educate people on the ill-effects of haphazard disposal of solid waste.

3.4.5 Roads and Transport

Road network, Junctions and Traffic Management

Existing situation – Road Network

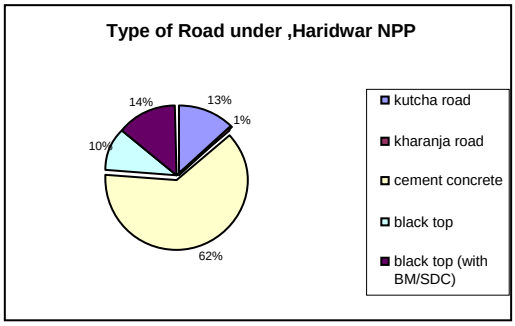
The city is connected by road to other parts of the state with Delhi – Niti pass road, Rishikesh road, Nazibabad road and NH- 58 forming the major travel corridors. This city is also connected by rail with other parts of the country. Haridwar city comprises of 246 km of roads of which 214.10 km are maintained by HNPP and 31.90 km (including 13 km of National Highway) are maintained by PWD. The traffic carrying capacities of city roads are low due to limited widths, intense land use and encroachments.

Roads maintained by HNPP

There are about 1686 no. of roads in 25 wards under Nagar Palika Parishad, status of which are described as below.

Table 3.4.11: Details of Roads under HNPP

Type of road	Length (km)
kutcha road	28.41
kharanja road	1.44
cement concrete	133.11
black top	21.54
black top (with BM/SDC)	29.60
Total	**214.10**



As may be observed from the above table and figure that more than 60% road under HNPP is concrete roads, whereas 13% roads are kutcha.

The core networks of the roads within city consist of following main roads, which are under the maintenance of PWD.

Table 3.4.12: Details of Roads under PWD

S. No.	Road	Length (km)
1.	Pul Jatwara to Har-Ki-Pauri – Bhupatwala road (Previously Delhi – Nitipass state Highway)	11.500
2.	Jwallapur to Chandi ghat via Lalita Rao Road	7.915
3.	Laksar – Jwallapur road (Partially)	2.000
4.	Hill bye-pass Road	6.380
5.	Gurukul Kangri Mahavidyalaya Road	2.600

Junctions

It has been observed that junctions has not been designed properly, i.e.

- No proper channelisation for free left turn
- Lack of footpath on approaches of the junctions
- No planned pedestrian zebra crossing
- Haphazard parking on the approaches of the junction
- Lack of proper signalization system toensure smooth traffic movement

On the basis of field observations, discussion with Traffic Police personnel, HNPP and PWD, following junctions have short-comings:

1. Chandi ghat junction(on NH 58)
2. Shankaracharya chowk
3. Tulsi chowk
4. Deshrakchak T- junction
5. Ranipur Morh Chowk

6. Chandracharya Chowk
7. Junction rossing of Rishikul and NH-58
8. Agrasen chowk
9. Junction of old Delhi – Nitipass road and Hill bypass road
10. Dudhadhari junction on NH-58 chowk
11. Shiv chowk on Delhi – Niti pass road
12. Junction of old Delhi – Nitipass road and NH-58
13. Bhagat Singh chowk near BHEL colony
14. Prem Nagar chowk
15. Singh Dwar chowk
16. Pul Jatwara junction
17. Katghara chowk
18. Aryan agar chowk
19. T- junction near Shankar Ashram
20. Devpura chowk
21. junction of Delhi – Niti pass road and Karach road
22. RTO chowk
23. Sarvanand ghat chowk
24. T- junction near Jairam Ashram

Existing Situation - Traffic Flow, Congestion and Management

Following parametres which are observed causing congestion of traffic.

- Inadequate width of the road
- Encroachments
- Street hawkers
- unplanned on-street parking
- Heterogeneity of traffic
- Pedestrian flow
- Improper turning of traffic
- Lack of median on important roads
- More no. of median gaps on upper roads
- Lack of traffic signages, road markings, guard rails etc
- Lack of enforcement of traffic rules

Mostly all roads have 2-way traffic movement barring a few exemptions. There is a large tempo attraction in the Upper road area due to the presence of commercial establishments at Har ki paudi,. The tempos stop wherever passengers board/alight, thereby causing congestion and delay to other vehicles. It has been observed that areas like Har ki paudi have heavy pedestrian traffic due to

pilgrims from various parts of the country. During mela periods in the city, a special management for pedestrians and traffic is enforced by the authority.

On the basis of observation, discussion with Traffic Police personnel, HNPP and PWD Engineers, following stretches have above short-comings:

- Hill bypass road (Pul Jatwara to Laltarao)
- Delhi – Niti pass road (From near Pul Jatwara to Dudhadhari junction via Har ki paudi)

Around the Jwalapur area, the traffic condition is poor. Most of the roads within the area have less than single lane, and also encroached by the local shop keepers, hawkers, haphazard on-street parking by mainly two- wheelers and cycles.

Transport System Characteristics

Existing situation - Registered motor vehicles in the city (2006)

The no. of registered motor vehicles in the city for the year 2005 and 2006 are given in Table: 3.4.13

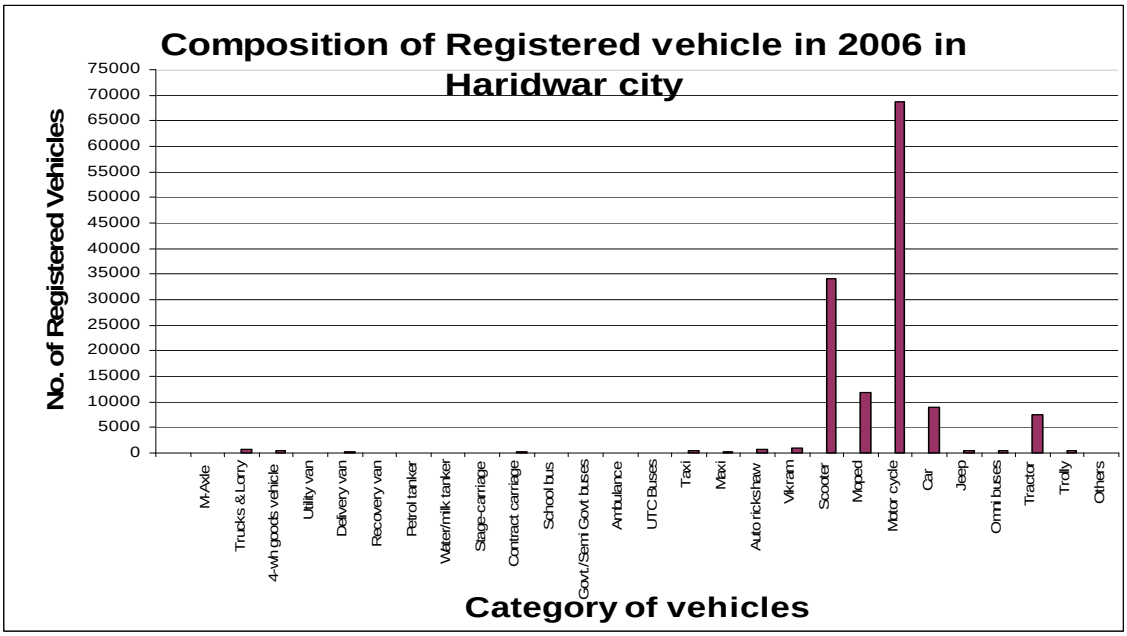
Table: 3.4.13: Numbers of Registered Motor Vehicles

Year	M-Axle	Trucks & Lorry	4-wh goods vehicle	Utility van	Delivery van	Recovery van	Petrol tanker	Water/milk tanker	Stage-carriage	Contract carriage	School bus
	1	2	3	4	5	6	7	8	9	10	11
2005	1	667	323	30	243	2	38	15	100	89	67
2006	1	697	418	32	350	3	47	16	110	151	93

Year	Govt./Semi Govt buses	Ambulance	UTC Buses	Taxi	Maxi	Auto rickshaw	Vikram	Scooter	Moped	Motor cycle	Car
	12	13	14	15	16	17	18	19	20	21	22
2005	19	37	9	407	268	750	931	32512	11465	55638	7440
2006	27	46	101	421	285	746	930	34054	11829	68827	9033

Year	Jeep	Omni buses	Tractor	Trolly	Others	Total
	23	24	25	26	27	28
2005	399	334	6559	347	23	118713
2006	401	422	7442	507	27	137016

There are about 1.37 lakh registered motor vehicles in Haridwar city in the year 2005-2006. It is observed from the above figure that Cars and motorized two-wheelers constitute more than 7% and 85% of the total vehicles respectively in the city. During the year 2005-2006, the growth of vehicles is around 15.5%.



Existing Situation – Public Transport system

Uttarakhand Transport Corporation buses mainly serve long distance inter-city trips and medium distance shuttle services from the old bus terminal. Insufficient and lack of Public Transport has led to operation of Intermediate Public Transport (Pvt. Vehicles) which operate from different parts in the city. IPT consists of 930 Tempos / Vikrams and 746 Auto rickshaws.

Tempos/Vikrams operate on a fixed route and fixed fare basis (by RTO) for short distance intra-city trips within the city, while auto rickshaws operate on free route pattern without any fixed rate. Minibuses and tempos do not have proper terminal facilities or amenities for passengers. The city also lacks designated stops for public transport operation. Besides these, 706 taxis and maxis operate within the city for intra and inter city trips.

Key Issues

- Absence of road hierarchy and traffic carrying corridors. Most of the internal city roads are 1-2 lanes. Rapid growth in vehicles and population (both permanent as well as floating) have resulted in exceedence of the carrying capacity on the road network.
- Lack of enforcement measures has further deteriorated the situation. Encroachment on streets by shop owners and vendors further reduce the width of carriageway.
- Hindrance to pedestrian movement because of absence of foot paths.
- Ineffective traffic control and management measures.
- Absence of adequate parking lots leading to haphazard on-street parking reducing road capacity thereby causing traffic congestion.
- The mode split of two-wheelers is about 85% of the total motorised vehicles on the roads. Corresponding vehicle density is 557 vehicles per km of the road which is very high.
- Lack of public transport system in the city has resulted in improper operation

of Intermediate Public Transport vehicles causing traffic congestion and pollution.

- Inadequate Road Infrastructure and Safety Issues.
- Absence of pedestrian footpaths

3.5 Heritage and Tourism

3.5.1 Areas of Historical, Cultural and Architectural Importance

Haridwar has a vast and rich cultural heritage. Although built in the last two centuries, many of the temples and other structures and the water bodies in Haridwar have references to ancient times which make it one of the seven sacred cities of India. Haridwar does not have any archaeological site. Indian National Trust for Art and Cultural Heritage (INTACH) has undertaken 'Cultural Resource Mapping of Haridwar District'. The listing includes 164 cultural resources in Haridwar, 78 in Kankhal and 32 in Jwalapur. These identified resources are further categorised as Temples, Ashrams, Dharamshalas, Residence/Haveli, Ghat, Water body, Gurudwara, Trees and others. Details are enclosed in the Annex 3.5.1.

It includes structures such as Temples, Ashrams, Dharamshalas; material heritage such as old paintings and sacred water bodies and rituals.

Har-Ki-Pauri: This sacred Ghat was constructed by King Vikramaditya in memory of his brother Bhartrahari. The reflection of golden hues of floral diyas in the river Ganga is the most enchanting sight in the twilight during the Ganga Arti ceremony. Ganga Sabha, a registered society is responsible for maintenance of Har-Ki-Pauri Ghat and conducts Ganga Aarti every evening. Other temples that are visited by a large number of pilgrims are listed in Annex 3.5.2.

3.5.2 Heritage Conservation

The various temples and kunds in Haridwar are usually renovated for *Kumbh Mela* every twelve years. But rather than a long term systematic plan for heritage conservation for Haridwar, ad-hoc actions prevail. Har-Ki-Pauri Ghat has been renovated a number of times to accommodate increasing number of pilgrims. It still needs further expansion and development. Some of the important temples on the Ghats also have been renovated but there are many temples and heritage structures in the Ghat area as well as in the town which are being defaced by the rampant encroachments around the structures in the form of residential expansion and commercial establishments. INTACH has identified 27 structures as potential cultural resource for further restoration and conservation. The list gives the ownership status of the property and its location. The issues and problems in conservation is discussed in detail at the end of this section. The feature which needs to be implanted at these sites is to create awareness about historical references.

3.5.3 Tourist Attractions

Haridwar is considered as the point of entry to Char Dham, the four main centres of pilgrimage in Uttarakhand region viz. Badrinath, Kedarnath, Gangotri and Yamunotri. Haridwar, with its rich heritage attracts millions of tourists on religious occasions every year and especially during *Kumbh Mela* and Ardh *Kumbh Mela*. Religious tourists come to Haridwar with the aim of taking dip in the holy Ganges as Haridwar is the first marked town where river Ganga emerges from the mountains to touch the plains. In the present economic perspective, religious tourism with such scale of tourist influx is perceived as an industry in itself.

Fairs and Festivals

Kumbh Mela: *Kumbh Mela* is the largest Hindu festival that occurs every twelve years. Haridwar is among the four locations in India where *Kumbh Mela* is organised every twelve years and Ardh Kumbh is organised six years after every Kumbh. Haridwar has millions of pilgrims coming during *Kumbh Mela* to take the dip at Har-ki-Pauri in the holy Ganges and participate in various religious ceremonies organised during the Mela. During Kumbh and Ardh Kumbh, the holy city of Haridwar is flooded with pilgrims and requires planning on a massive scale to provide basic services and facilities to the large floating population.

> The history of *Kumbh Mela* dates back to the creation of the Universe legends. Mythology states that the Gods and the demons once churned the ocean to retrieve the Kumbh (pot) containing nectar of immortality (Amrit). As Dhanvantri, the divine healer appeared with the Kumbh containing nectar in her palms, a great fight followed between the Gods and the demons to wrist the pitcher. During the fierce battle in the sky, a few drops of nector fell at four different places, Prayag, Haridwar, Nasik and Ujjain. Since then devotees converge to commemorate this divine event.

A geographical area of approximately 130 sq. km. is covered in Kumbh and Ardh *Kumbh Mela (Source: Report of Ardh Kumbh Mela, 2004 published by GoU)*, which essentially extends to Rishikesh and areas surrounding these towns. The total area is divided in 31 sectors. Activities are earmarked for each of these sectors. Some of the main activities are exhibitions, camping by various Akhadas and religious groups, additional community services to maintain the levels of health and hygiene. Mela Control Room has been constructed opposite Har-Ki-Pauri which serves as an information centre as well as central control point during the Melas.

Other Important Fairs and Festivals organised in Haridwar are summarised in the Annex 3.5.3. An average of seventy five lakhs of tourists visits Haridwar annually, with maximum influx during Ganga Dusserah, Kanvar Mela and Somwati Amavasya.

Kanvar Mela: Ten days before Shivteratri (during the months of Shravan and Phagun) thousands of devotees throng to Haridwar to collect holy waters of the river Ganga. Then they carry it back to their hometown and offer it at the local Shiv temple. Colourful shops spring up and

Haridwar resounds to the chanting of hymns.

Natural Resources

Haridwar's greatest power comes in the beauty of its nature and the majesty of the Ganges. The picture shows the sun rising over Rori Island. Town is surrounded by natural resources - river, hills and forests which enhance the scenic beauty of the town. The list of cultural resources prepared by INTACH also mentions some very old trees in Haridwar.

"The Ganga, especially, is the river of India, beloved of her people, round which are intertwined her memories, her hopes and fears, her songs of triumph, her victories and her defeats. She has been a symbol of India's age long culture and civilization, ever changing, ever flowing, and yet ever the same Ganga."

- Jawaharlal Nehru, First Prime Minister of India

Tourist Attractions in Surrounding Areas

Haridwar has neighbouring tourist attractions which makes it a tourist hub in the region.

Rishikesh (25 km): Rishikesh, the 'place of sages' is a celebrated spiritual town on the bank of Ganga and is surrounded by shivalik mountain range on three sides. Rishikesh is an ideal destination for spiritual pursuits. The spiritual haven of the various ashrams is on the eastern side of the Ganga, at Swargashram. The ashrams provide organise discourses. Rishikesh is well known for Geeta Bhavan, Lakshman Jhula.

Piran Kaliyar (23 km): The Tomb (Dargah) of Hazrat Makhdum Alluddin Ali Ahmed "Sabir", lies on the outskirts of Roorkee. The tomb is a living example of religious harmony in India which is visited by the people of all religious sects from all over the world. 'URS' festival is organized every year on the holy dargah in summer.

The Chila Wildlife Sanctuary (10 km), part of the ***Rajaji National Park***, covers an area of around 240 sq. km. It has vivid flora and fauna species like elephants, tigers, leopards, jungle cats.

Strategic location of Haridwar makes it one of the key destinations in the northern tourist circuits of India for religious interests as well as for wild life and adventure tourism. Haridwar is also growing as a centre for ayurvedic treatment, herbal remedies and spiritual pursuits, which is considered a niche segment in the growing tourism industry.

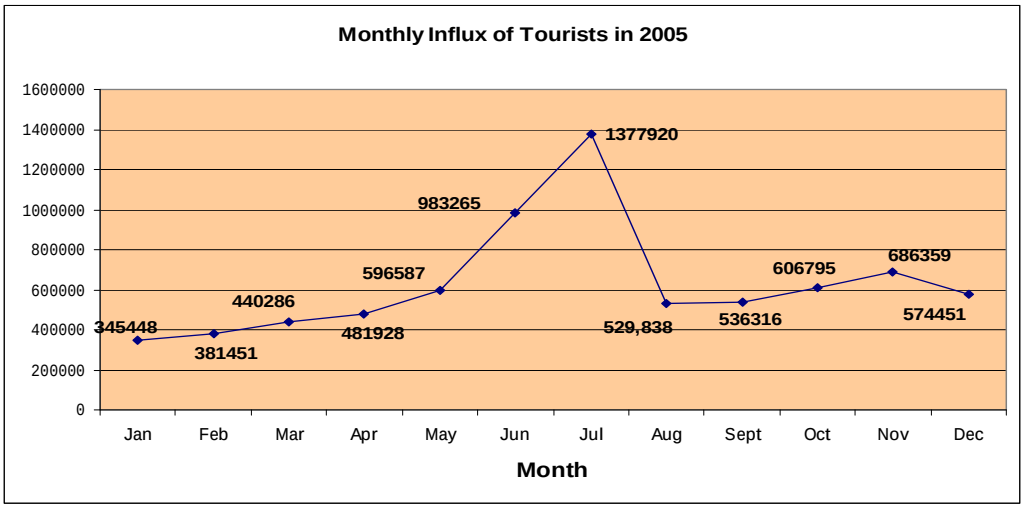
3.5.4 Tourist Influx

Tourists come in millions to Haridwar from all over India and the world throughout the year. The total tourist arrival in 2003, 2004, and 2005 (Source: Tourism Department, Haridwar) is 56.2 lakhs, 62.9 lakhs and 75.3 lakhs respectively. Over the years, there has been a continuous increase in the number of tourists visiting Haridwar. The increase in 2004 over 2003 was 14%, and that in 2005 over 2004

was 20%. The tourist influx varies across different months. There is higher tourist influx during summers as this season marks the beginning of pilgrimage, '*yatra',* of Badrinath and Kedarnath after the dip in the holy river at Haridwar which continues till October. The intermittent in-flow of population leads to major changes, although temporary in nature, such as blocking the national highway for vehicles to allow the pilgrims going to Haridwar during Kanvar Mela. It would be crucial to have alternative strategies in order to keep the infrastructure intact for growing industrial and commercial activities in and around Haridwar.

There is a steady increase in the number of Indian tourists while the trend is fluctuating in case of foreign tourists. The graphic representation of monthly influx of tourist in 2005 clearly shows that number of pilgrims sharply increase in the months of May-July, highest being in July due to Kanvar Mela.

Figure 3.5.1: Monthly Influx of Tourists



Being primarily a religious tourist destination, large proportion of tourists arriving in Haridwar belongs to middle income and lower income groups. The period of stay of the tourists ranges from a few hours to about a week.

Facilities and Services for Pilgrims / Tourists

Accommodation facilities

180 Dharamshalas, 400 hotels, and 220 Ashrams together provide accommodation for 89,000 tourists per night (Source Tourism Department, Haridwar). During Mela, the dharamshalas make additional provisions to accommodate more number of people. Evidently, the accommodation now available is far too short of the requirement particularly during the peak mela days.

Additional Facilities during *Kumbh Mela*

The additional facilities of temporary bus stands, parking places, camping, exhibition, places for religious sermons, etc are distributed in Kumbh Area divided into 31 geographical sectors covering Haridwar and Rishikesh towns. Har-Ki-Pauri is connected with surrounding areas with temporary pedestrian walkways.

3.5.5 Tourism Policy

Tourism development is high on the priority list of Government of Uttarakhand. The Government feels that 'the unlimited tourism potential of Uttarakhand has not been fully realized in the absence of a planned and coordinated strategy of tourism development. The vision adopted by GoU is as follows:

- To place Uttarakhand on the tourism map of the world as one of the leading tourist destinations, and to make Uttarakhand synonymous with tourism.
- To develop the manifold tourism related resources of the State in an eco-friendly manner, with the active participation of the private sector and the local host communities.
- To develop tourism as a major source of employment and income / revenue generation and as a pivot of the economic and social development in the State

Tourism policy of GoU has been given in Annex 3.5.4.

3.5.6 Key Issues relating to Heritage and Tourism

Several complexities are associated with Conservation of heritage structures in Haridwar. Based on field studies, public consultations and discussions with INTACH, the issues identified are as follows:

- **Heritage Structures on Private Properties:** Private ownership of many heritage structures is a major constraint regarding their planning for conservation.
- **Religious Sensitive Areas:** Areas such as Har-Ki-Pauri are highly sensitive, having presence of prominent religious groups and societies such as Ganga Sabha, Seva Samiti, etc. Thus any further development works at Har-Ki-Pauri area should be done with continuous participation from these institutions.
- **Absence of Long Term Strategy for Heritage Conservation**: A long term strategy is required for conservation of built and living heritage of the town, involving government authorities, religious institutions and trusts and individuals, which would enable conservation of religious areas and private buildings and utilisation of funds in a prioritised manner.
- **Encroachments on Ghats and Around Temples:** In the recent years, there has been high incidence of encroachment on the ghats and in front of temples which defaces the structure visually as well as adds various other activities in the same space.
- **Untapped Tourism Potential:** More than 90% tourists visit Haridwar for pilgrimage. Haridwar has untapped tourism potential in the sectors of eco-tourism, cultural tourism, and adventure tourism. Haridwar should also be highlighted for ayurvedic treatments, yoga and spiritual pursuits which is an emerging niche segment in the tourism industry
- **Lack of Initiatives for High End Tourism:** The tourism infrastructure in Haridwar is addressed largely to middle and lower income groups which is justified. As Haridwar is also emerging as tourism destination for cultural, nature and adventure tourism and with the new tourism policy of GoU, there is a need to develop accommodation facilities for high end tourists.
- **Lack of Private Sector Investment:** Although there has been a steep rise in the number of hotels and other public facilities in the last two decades, there is

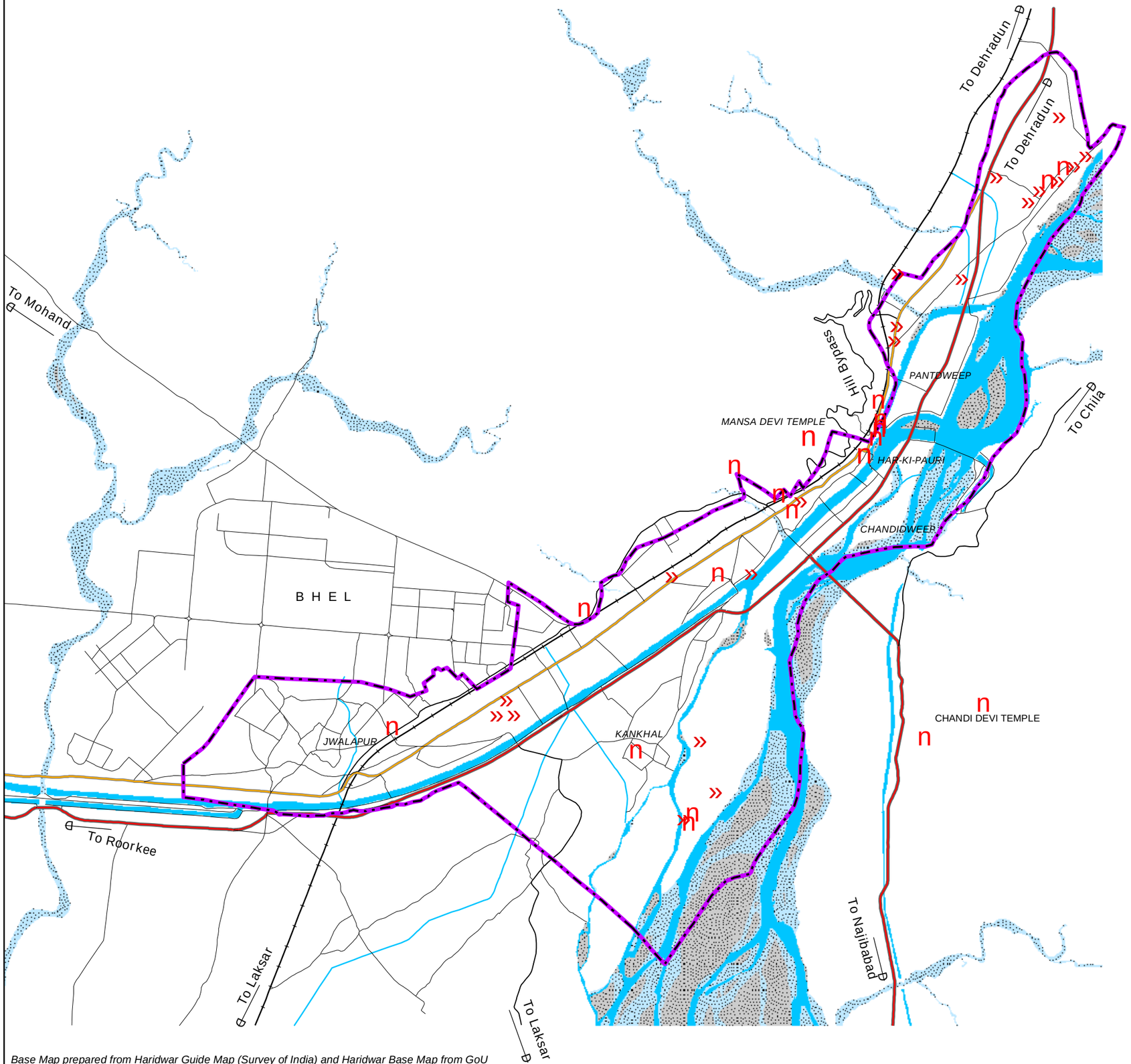
an immense scope for undertaking projects with PPP to develop accommodation facilities especially high end tourism facilities, specialised transport facilities during fairs, sanitation facilities, etc.

- **Lack of Adequate Sanitation Facilities:** The system needs to be upgraded to support a sudden increase in pilgrims during special occasions. Haridwar requires increased number of public toilets and effective mechanisms for waste collection and disposal.
- **Lack of Public Interface to Guide the Tourists:** There is no central authorised information centre which can provide information on various tourist attractions and facilities to the tourists. Also, such a centre could be entrusted with the responsibility of registration of tourists, thus providing for an authentic data base on number of tourist.
- **Development of Open Spaces and Islands for Tourism:** Open spaces and islands earmarked for Kumbh and Ardh *Kumbh Mela* are used for various purposes during the Melas. These areas can be developed as potential tourist attractions for the interim long periods. The type of development should be such that it enhances natural beauty and cultural significance of Haridwar such as plantation of ayurvedic and exotic Himalayan species, open air theatre, etc.

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 3.5.1 :-LOCATION OF TEMPLES & ASHRAMS



Legend

- **Municipal Boundary**
- **National Highway**
- **State Highway**
- **Major City Road**
- **Railway Line**
- **River / Drain**
- **Ashram** »
- **Temple** n

1 0 1 2 km

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Data Source

! **Haridwar Nagar Palika Parishad**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

4. Urban Governance and Institutional Set Up

'Good governance is perhaps the single most important factor in eradicating poverty and promoting development'
UN Secretary General, Kofi Annan, 1998

4.1 Components of Governance

Thinking about how best to govern is not a new issue. 'Governance', as internationally acknowledged, stands for 'the manner in which power is exercised in the management of a country's social and economic resources for development'. Applied to local institutional analysis, governance has to be related to the management of a city or town's social and economic resources for planned urban development. Governance refers firstly to processes – how things are done, not just what is done; and secondly, governance requires more than a focus on government. It also relates to the nature of relations between state and society. Governance refers to the nature of rules that regulate the public realm – the space where state and economic and societal actors interact to make decisions. However, it is important to make distinctions that are important for assessing the relationship between governance and development. Another challenge is that various agencies engage with governance in ways to fit their own specific mandates, and it is important to transcend these limitations - governance is contextual (see Figure 4.1). While it is possible to identify concepts and principles of governance that are universal, they make no sense without adequate contextual references.

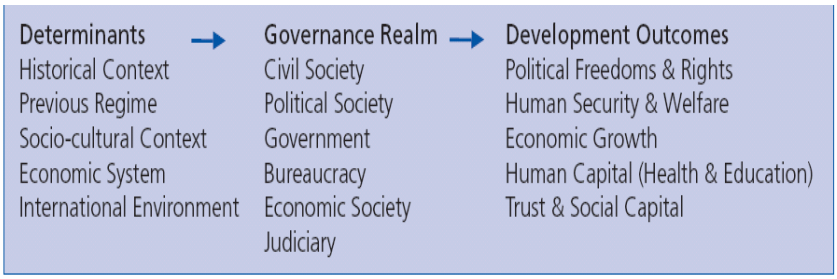


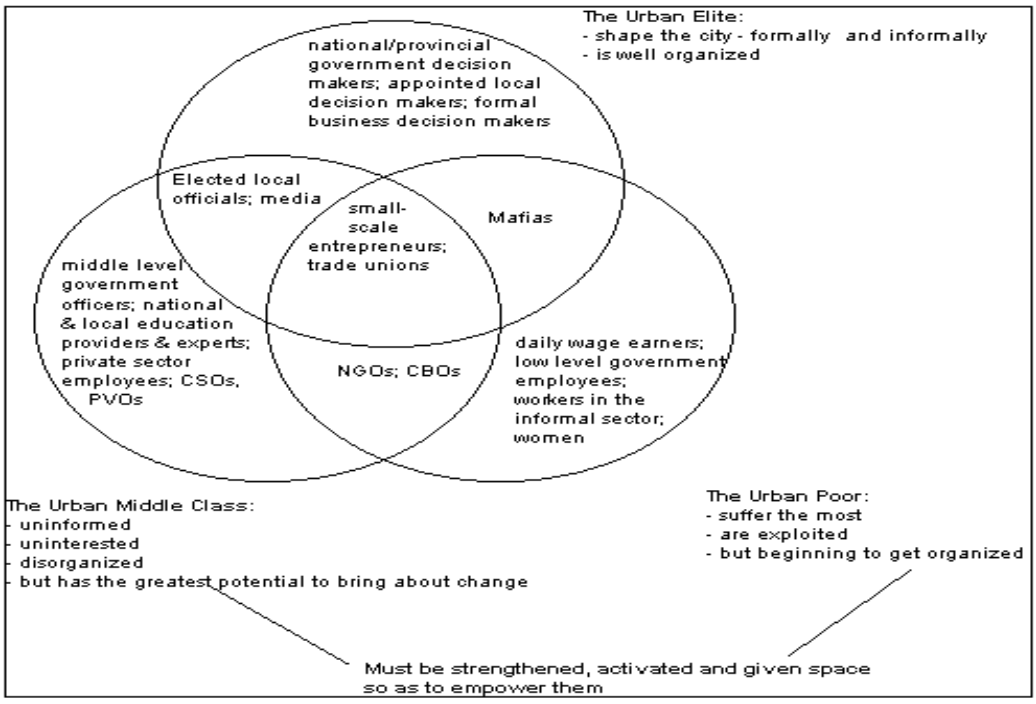
Figure 4.1: Framework for Analysing Governance & Development

The particular conditions of each place provide both constraints and opportunities to improve governance. It is also critical to recognize that there are multiple and complex relationships between governance and development. Better governance is positively associated with improved investment and growth rates. Government effectiveness, an efficient bureaucracy and rule of law are associated with better economic performance and adult literacy, and negatively associated with infant mortality. Corruption hinders development. On the other hand, some governance issues are seen a constituent of development itself.

Four basic elements of 'good governance' are generally defined: (a) accountability, (b) transparency, (c) predictability in terms of stable, open and widely understood 'rules of the game', and (d) participation. Governance and capacity-building have, at least, three interrelated dimensions: (i) a strong public sector management component, (ii) the role of government in creating and fostering an enabling environment for private sector growth, and (iii) strengthening civil society which would include participation of stakeholders and beneficiaries in development policies and projects. An analysis of governance thus focuses on both formal and informal actors involved in decision-making and implementation.

Government, in the formal sense, is one of the many actors involved in the act of governing. Other actors vary depending on the level or site chosen for the analysis of governance. In urban areas, these other actors may include the parastatal agencies involved in sectoral (eg. Water supply, sewerage etc.) management or in the overall planning and development of the urban area. Other candidate organizations are the various associations working in the city, NGOs, finance institutions, political parties, etc. Figure 4.2 presents a picture of interconnections among multiple actors involved in urban governance.

Figure 4.2: Interconnections among actors involved in Urban Governance



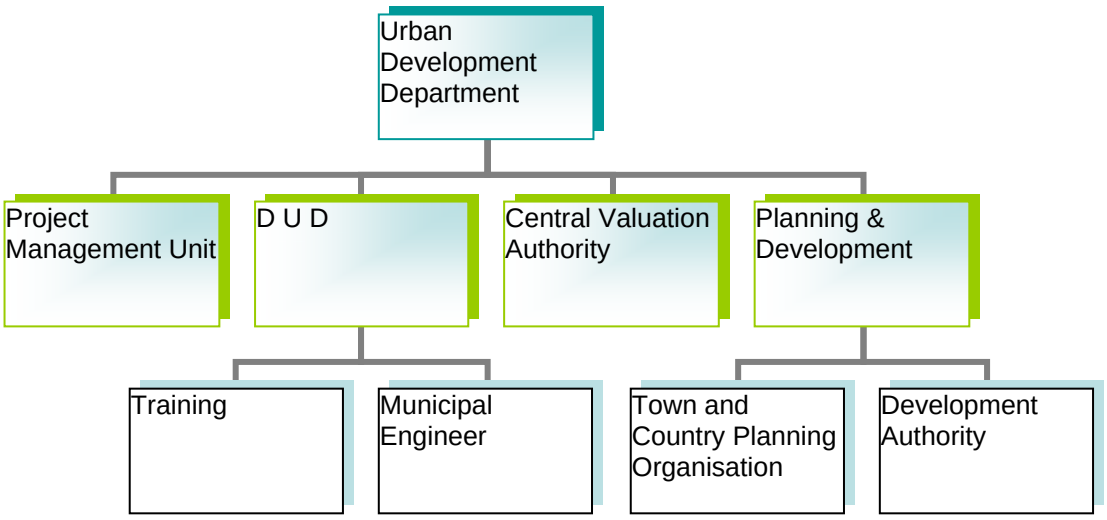
Role of State Government

It needs emphasizing that local (urban) institutional development issues are closely linked with macro policy positions of Central and State Governments. Obvious examples are the 74th Constitutional Amendment and JNNURM, both emanating from Central Government's concern respectively with constitutionalizing local self-government and promoting planned urban development. The role of the State Government would be reflected in drafting 'conformity legislation' in terms of 74th CAA with consequences for both ULBs and Para-statals. *A new pattern of inter-institutional functional realignment is likely to emerge only on the basis of State's well-thought-out policy design in respect of functional redistribution between the ULBs on one hand and the Para-statals on the other. To be specific, functions such as 'urban planning', 'building regulations', 'water supply' etc. which are listed in the 12th Schedule for transfer to the ULBs are presently in the hands of Para-statals and State agencies in Uttarakhand. How and when the State Government would be deciding to transfer all or any of these functions to the ULBs is going to be crucial for the future shape of institutional development in Uttarakhand.*

Planned urban development in Uttarakhand, in the context of current initiatives, demands a fresh look at the Secretariat-level set-up of the Urban Development

Department. This is addressed as part of the ongoing work for the Uttarakhand Urban Development Project, but preliminary broad-brush analysis suggests that the future shape of UDD could develop as presented here graphically, although this structure will be further refined based on further analysis of the current situation. Imaginative policy guidelines and time-bound monitoring and evaluation of large programmes, as well as guiding and assisting the municipal bodies (in their new role as vibrant local self-government) would require a refined organisation structure for the Urban Development Department in the coming years.

Possible Future Shape of UDD



A city or town evolves over time under certain socio-cultural and legal-institutional imperatives, thus as the city or town grows demographically and socio-economically, there is bound to be commensurate growth in the scale and complexity of urban problems that would have to be addressed through governmental re-engineering. This requires an efficient and effective governance framework to suit the complexities of urban management.

4.2 JNNURM and Urban Governance

Against this backdrop, major highlights of the JNNURM relevant to institutional analysis are presented hereunder:

Goal
'Creating economically productive, efficient, equitable and responsive cities'

Focus
'On efficiency in urban infrastructure/services delivery mechanism, community participation and accountability of ULBs / parastatals towards citizens'

Objective
'To implement projects on mission mode'

The inference is that a city or town, in terms of JNNURM's vision, must set its goals right, fix the focus of activities clearly, and spell out its operational objectives (mission mode) unambiguously. The 'goals', 'focus', and 'objectives', once clearly set, would be helpful in refashioning the management of a city or town, bringing

about, in the process, a new paradigm shift in urban governance.

Multi-Institutionality

The phenomenon of multi-institutionality in a city situation has been admitted in JNNURM Guidelines which are worth quotation in this context:

"The city is managed and governed by a number of institutions and organizations. In this respect, a city is a complex entity….Often, responsibilities overlap, and also often, there may exist fragmentation of responsibilities without any platform for coordination".

What is significant to note is that the Guidelines talk of 'fragmentation' and 'overlap' of functions and responsibilities, and pointedly refer to the absence of 'any platform for coordination'.

It is helpful to recount, in this context, some other important guidelines of JNNURM:

- Identification of institutions and organizations that have direct and indirect responsibilities for infrastructure provision
- Identification of areas of fragmentation or overlap
- Its impact assessment on infrastructure delivery and management, and
- Review of the role of private sector in service delivery and the potential of public-private partnership in the development and management of infrastructural service.

Urban Reforms Agenda

Discussions on the issues relating to strengthening urban governance and institutional development need to be linked to the 'urban reforms' agenda as incorporated in the JNNURM guidelines.

The suggested 'reforms' cover a wide gamut of items involving two levels: State and the ULBs.

ULB-level

- Accrual-based, double-entry accounting system
- E-governance with IT applications like GIS, MIS etc.
- Property Tax reform to achieve 85% efficiency within 7 years
- User charges to recover O&M cost
- Budget-earmarking for basic services to the poor
- Basic services to the poor & security of tenure at affordable prices

State-level

- Decentralization measures as per 74th Constitutional Amendment
- Repeal of Urban Land Ceiling and Regulation Act
- Reform of Rent Control Laws
- Rationalization of Stamp Duty to bring it down to 5%
- Enactment of (i) Public Disclosure Law and (ii) Community Participation Law

- City planning function to be assigned to ULBs

4.3 Institutional Profile

Haridwar Nagar Palika Parishad (HNPP) is the urban local authority for the ancient Hindu city of Haridwar, also known as Gangadwar or the door to the holy river Ganga. Haridwar is the confluence of three great Himalayan rivers – Bhagirathi, Mandakini, and Alakananda. Pilgrims, in hundreds, thousands and even lakhs, pour into the city almost every day for offering puja of different kinds on different occasions. Hence Haridwar's civic administration or urban planning needs to be sharply distinguished from conventional city planning and administration where the city's urban space has a fairly settled population, albeit swollen by occasional arrival of some floating population. Haridwar has reported a population of about 1.75 lakhs in the last census (2001), but during Kumbh or Ardh Kumbh and on the occasion of other big 'melas' which constitute a regular feature of Haridwar, the city receives daily anything between 3 to 5 lakhs and more (particularly during *Kumbh Mela*).

The municipal body has, under these circumstances, to constantly 'network' with a number of organizations and agencies to cope with the unusual situation of seasonal ingress and egress of large populations. In other words, Haridwar civic administration has to be constantly prepared to meet seasonal, anticipated 'emergencies' in addition to meeting the 'normal' civic needs of the city. Ideally, Haridwar has then to have two kinds of civic administrative arrangement: one for 'normal' times, and another for seasonal 'emergencies'. The entire civic administration is likely to be thrown out of gear during seasonal 'emergencies', unless the civic administration learns to remain in a state of preparedness, through past experiences of serving, from time to time, the 'temporary' civic needs of massive populations influx. This is a unique situation calling for a unique response from urban planners and managers.

Keeping the broad JNNURM guidelines in view, the institutional profile of Haridwar is presented in some detail below.

Broadly, the institutions involved in infrastructure/service provision in the city are:

I. Haridwar Municipal Council

II. Haridwar Development Authority

III. Uttarakhand Pey Jal Nigam

IV. Uttarnchal Jal Sansthan

V. Public Works Department

VI. Regional Transport Office

VII. Uttarakhand State Electricity Board

VIII. Uttarakhand State Environment Protection and Pollution Control Board

IX. Uttarakhand State Urban Development Agency

X. Uttarakhand Transport Corporation

XI. Irrigation Department

Besides these, State's field administration, particularly District Administration headed by the District Magistrate (DM), the Divisional Commissioner (DC), and 'heads' of functional departments such as the Executive Engineer and the Superintending Engineer are closely associated with some aspect of city administration. Then the State Government has set up a permanent 'Mela Committee' to coordinate the activities of several agencies during Ardh and Purn kumbhs. Thus Haridwar has through experience, developed two sets of organizational structures – one for normal times and another for emergency situations, with the Mela Committee an example of the latter. Owing to the fact that Haridwar is an important pilgrim town of Hindu's and often attracts a large congregation of population, various state-level agencies are operating here and are responsible for some of the major infrastructure and service provisions of the city. The responsibility often is limited to the planning, designing and execution of projects, which are then transferred to the agencies directly responsible for the operation of infrastructure facilities. Table 4.1 below provides the details of the responsibilities of the various agencies.

Table 4.1: Institutional-Functional Matrix

S. No.	Functions under Schedule XII of 74th CAA	Agencies responsible for Planning and Design	Execution	Operation and Maintenance
1	Urban planning including Town Planning	HDA and TCPO	HDA and TCPO	HDA and TCPO
2	Regulation of land use and construction of buildings	HDA	HDA	HDA
3	Planning of economic and social development	Planning, and Social Welfare Departments	Different Government Departments	Different Government Departments
4	Roads and bridges	PWD, HDA	PWD, HAD, HNPP	PWD, HDA, HNPP
5	Water supply for domestic, industrial and commercial purposes	UPJN, UJS (for small projects)	UPJN, UJS (for small projects)	UJS
6	Public health, sanitation, conservancy and solid waste management	HNPP	HNPP	HNPP
7	Fire service	State Police Deptt.	State Police Deptt.	State Police Deptt.
8	Urban forestry, protection of environment and promotion of ecological aspects	Forest Department, UEPPCB,HNPP	Forest Department, HDA, HNPP	Forest Department, HDA, HNPP
9	Safe guarding of interests of weaker sections of society, including handicapped and mentally retarded	Planning, and Social Welfare Departments	Different Government Departments, SUDA, HNPP	Different Government Departments, HNPP
10	Slum improvement and up gradation	HDA, HNPP, SUDA	HNPP	HNPP
11	Urban poverty alleviation	SUDA, HNPP	SUDA, HNPP	HNPP
12	Provision of urban amenities, and facilities such as parks, gardens and play grounds	Sports Deptt., DNN	Sports Deptt., DNN PWD, HNPP	Sports Deptt., DNN PWD, HNPP
13	Provision of cultural, educational and aesthetic aspects	Department of Culture, HNPP	Department of Culture, HNPP	Department of Culture, HNPP

S. No.	Functions under Schedule XII of 74th CAA	Agencies responsible for Planning and Design	Execution	Operation and Maintenance
14	Burial and burial grounds; cremations, cremation grounds and electric crematorium	HNPP	HNPP	HNPP
15	Cattle ponds; prevention of cruelty to animals	HNPP	HNPP	HNPP
16	Vital statistics including registration of births and deaths	HNPP	HNPP	HNPP
17	Public amenities including street lighting, parking lots, bus stops and public conveniences	UPC, HNPP, HDA	UPC, HNPP	HNPP
18	Regulation of slaughter houses and tanneries	HNPP	HNPP	HNPP
HDA: Haridwar Development Authority; TCPO: Town and Country Planning Organization; HNPP: Haridwar Nagar Palika Parishad; UPJN: Uttaranchal Pey Jal Nigam; UJS: Uttaranchal Jal Sansthan; PWD: Public Works Department; UPC: Uttaranchal Power Corporation; UEPPCB: Uttaranchal Environment Protection and Pollution Control Board; SUDA: State Urban Development Agency.				

This demonstrates the overcrowding of organizations in Haridwar which is largely the result of patchy decisions taken from time to time at the State level.

The Municipal Body

Haridwar Nagar Palika Parishad (HNPP) had its origin in a City Board in 1868. Presently functioning under the provisions of the UP Municipalities Act 1916, HNPP has an elected board of 25 members out of which 10 are women and 3 belong to the SC/ST category. The Chairman and the Vice-chairman are elected by the elected members of the board. Unlike the Mayor of Dehradun, the Chairman of HNPP has some real powers, and because of his political clout, he is able to influence the officers and the staff more than the Executive officer can do vis-à-vis his staff. The councilors are used to bringing to bear their own particular demands and pressures on specific municipal departments. Since most of the lower-level staff including the clerical staff is recruited locally, they owe their loyalty more to their 'benefactors' than the departmental heads and the Executive Officer. This tends to dilute the formal municipal authority structure and create obvious management problems in the running of the day-to-day municipal administration. The structure is shown at Figures 4.3 and 4.4.

The Executive Officer

The EO functions under the general control and supervision of the Chairman. He looks after the entire executive administration of HNPP including municipal personnel management. The EO has to manage: (a) the affairs of the political wing: advising the Chairman, holding meetings of the board and the committees; (b) the professional, administrative wing: executing board and committee decisions, and overseeing the functioning of different municipal departments including field/site inspections; (c) doing the liaison function insofar as conducting external relations are concerned: keeping in touch with State Government including its field officials (e.g. DM, DC etc.), and the parastatals (like UPJN, UJS, HAD etc.); and (d) public relations and the handling of public grievances. Haridwar being a popular place of pilgrimage, EO has often to attend to the visits of VVIPs/VIPs.

Because of local recruitment of the clerical and lower level staff, there is a close nexus between the local politicians and the municipal employees. This has adversely affected the authority structure of the municipality, whatever be the statutory position of the Executive Officer vis a vis the municipal personnel. Considering the variety and complexity of duties of the EO and the imperative need, in the special situation of Haridwar, to deal with a wide network of organizations, there is a case for upgrading the post of EO of Haridwar. At least, a senior officer of the state civil service should be posted to give the city a greater degree of sound political and professional management.

Committee System

HNPP has as many as nine committees whose domain of activities can be inferred from their names:

1) Finance Committee
2) Public Works Committee
3) Street Lights Committee
4) House Tax Assessment Committee
5) Water Works Committee
6) Girl Child's Education committee
7) Youth Committee
8) Health Committee
9) Physical Development Committee

Each committee consists of 7 members. The water works and entire water supply system have since been taken over by the UJS which is a para-statal agency. The need for continuation of the Committee on Water Works is thus not clear. The Health Committee may be renamed as Public Health Committee or solid waste management committee, as HNPP has little to do with curative aspects of health and its exclusive charge is now solid waste management. The committee system does not seem to have been developed rationally. The Youth committee and Physical development committee could, for instance, be merged into one committee. With the transfer of SJSRY scheme to the municipality, a special committee on urban poverty alleviation has to be constituted for the purpose.

As earlier stated, the 'Mela Committee' has been set up by the state government for the management and organization of various melas, of which as many as 36 are organized during a year in the town, calling for special administrative arrangement to deal with the various facets of 'mela' management. Various agencies/parastatals are involved in the provision of services during these melas; hence there is need for an umbrella agency to manage and plan these congregations of population. The present mela committee has representatives from all the organizations/parastatals and various non-governmental agencies active in the town. This Committee may benefit from closer association with the HNPP, and the HDA.

Ward Committees

HNPP is yet to set up 'ward committees' since the 74th CAA has provided for such committee formation only for cities having a population of three lakhs and above. The Ward Committee is a participatory mechanism, the purpose being to associate the citizens with locality-level management of civic services such as maintenance of streets and drains, collection of garbage, maintenance of parks and open spaces, and street lights etc. Uttarakhand Municipal Act, if it is going to be enacted in future, may consider formation of ward committees for all municipal bodies. The formation of ward committees needs to be accorded priority not simply to conform to constitutional requirements; this will help institutionalize citizen's participation in grassroots civic services planning and management.

Functional Departments

Among the major functional departments, engineering department, solid waste management department, taxation department, and accounts department are bearing the brunt of municipal administration. Considering the work load – roads construction and maintenance, removal of unauthorized constructions (which are numerous in the town) etc, Haridwar needs a full-fledged Executive Engineer. Also status upgradation of the municipal engineer will help in external negotiations with his counterparts in other departments like the PWD, Irrigation and so on. In the Haridwar situation such negotiations have to be almost regular because of the frequency of religious celebrations and congregations when crowd management from different perspectives (public health, shelter, cleanliness, water supply etc.) becomes the responsibility of a host of agencies and organizations.

The other functional department of importance is the solid waste management department which has the onerous duty of keeping the city clean by organizing collection, transportation and disposal of solid waste. The solid waste generated increases dramatically when lakhs of people pour into the town during religious festivals which are a regular feature of the town life. For this purpose, the town is divided into four circles – each headed by a sanitary inspector. Below the SI are the Safai Nayeks (12) who operate locally with the help of sweepers. Additional sweepers are engaged during large celebrations to cope with the sudden increase in work load.

Mohalla Swachata Samitis have been formed in quite a few localities where the sweepers are paid partly by the municipality and partly by the local citizens. The payment system is a bone of contention, as local households are not always making regular payments; nor is the municipality's payment very regular.

The department is headed by a senior health officer, who has under him a second health officer. In view of the special nature of Haridwar town, there is a suggestion to have a public health engineer as head of the department which would be in conformity with the Supreme Court's guidelines on solid waste management. The entire solid waste management of Haridwar, subsuming the processes of collection, midpoint storage, transportation, and disposal needs to be properly planned and managed. There is need for generating public awareness about sound local garbage collection methods to persuade the general public not to throw garbage on to the streets (which is the general habit now).

The taxation management – revenue mobilization – is in the hands of a tax superintendent. HNPP is dependent on state grant to the extent of 80 per cent of

its ordinary revenue. Both in terms of valuation and collection, property tax management of the town needs to be thoroughly overhauled. It is suggested that the state government seriously think of setting up a commission/committee on rationalization of property taxation to provide a more rational, citizen-friendly and revenue-yielding basis for the levy of this tax.

The lighting department is currently being looked after by a lighting superintendent on ad hoc basis who has no technical experience in this field. Looking after about 7500 polls throughout the length and breadth of the town is no easy task. Planning of lighting, procurement of fixtures and bulbs, man management, repairs and maintenance need a properly qualified person to head the department.

The SJSRY programme, basically for urban poverty alleviation, is looked after by the District Urban Development Agency. It is presently located within the premises of HNPP. There are 20 slum areas within HNPP area constituting less than a quarter of the city's population. Since DUDA is to be annulled, and its functions transferred to the municipality, HNPP needs to have a poverty amelioration committee and a department on SJSRY.

Working within an extremely limited functional domain, HNPP has neither a forward looking political executive nor a dynamic, professionally committed, skill group headed by a senior civil servant. To move the HNPP toward a new era of planned city development as envisaged in the JNNURM, municipal administration of Haridwar needs to be radically restructured both from the political and professional perspective. The city has to have a strong political executive – either a collegial body or a strong chairman supported by a senior professional executive. Similarly, as mentioned earlier, Haridwar municipality needs dynamic modern-day professional management based on IT and computer application in different segments of city administration.

Figure 4.3: Haridwar Municipal Council: Political Wing

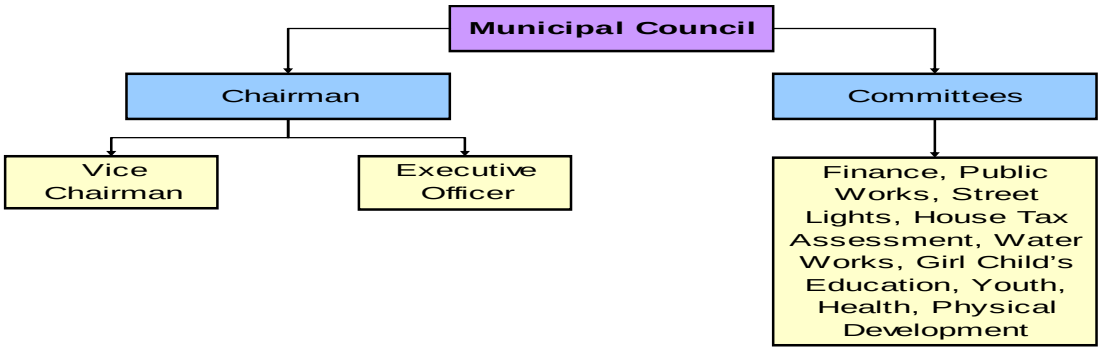
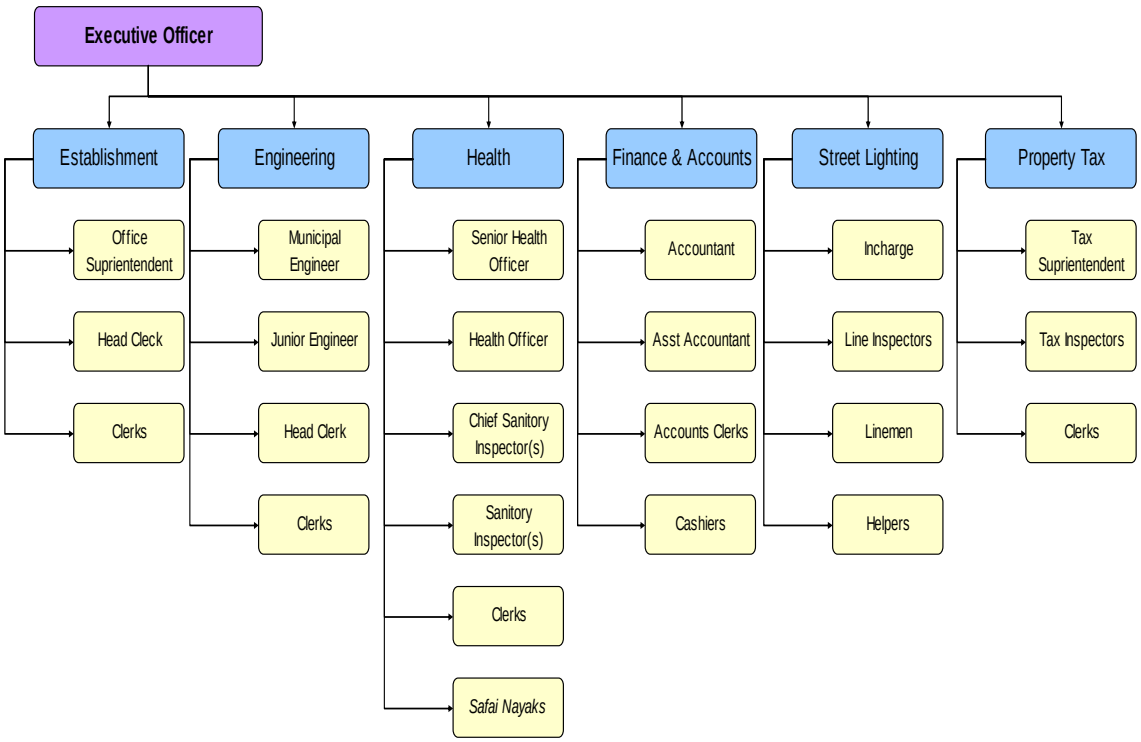


Figure 4.4: Organizational Structure of HNPP



As per the present policy of the State Government, there are five kinds of officers and staff in the municipality:

1) State appointees

2) Officers belonging to Unified/Integrated cadres

3) Locally recruited staff

4) Staff recruited on contractual basis, and

5) Staff recruited on purely ad hoc basis.

In view of the new and challenging responsibilities of the Municipality as envisaged under the JNNURM, State Government has urgently to newly examine its traditional policy toward municipal personnel in order that municipal professional administrative strength can be substantially enhanced.

Municipal Functions

The functions of HNPP are listed in Uttar Pradesh Municipalities Act, 1916. It provides for mandatory functions as well as discretionary functions of HNPP. The major functions of HNPP are: city cleanliness, solid waste management, maintenance of gardens/dividers/circles, street light, bio-medical waste, slaughter house, flood control, encroachment removal, stray cattle management, community toilets, community halls, stormwater and wastewater drainage, parking lots,

development works, advertisement, sale of land, house tax, and licensing. Responsibility for water supply which is also provided for under the act is transferred to the responsibility of UJS.

Issues

Table 4.2 provides a summary of issues relating to the functioning of Haridwar Nagar Palika Parishad.

Table 4.2: Sector Issues

Legal	• Devolution of more powers and functions to HNPP, in the spirit of 74th CAA. • Need to have business allocation regulation for clear demarcation of function to be performed by cells/ department and sections of HNPP. • No transfer of Infrastructure assets / services created by Line department or private developers • Overlapping of functions; • Implementation of Byelaws.
Organization and functioning	• Municipal Council status restricts it organizational functioning, need for Municipal Corporation Status is of paramount importance • Lack of clarity for exercise of powers by committees, elected functionaries and nominated functionaries. • Lack of clarity about the role to be performed by the officers and elected members of HNPP. • Scattered structure of HNPP. No defined business rules for departments and sections. • Lack of accountability and transparency in functioning of HNPP. • Lack of experience in handling big infrastructure project.
Finance	• Weak Financial Organizational Structure. • Under-utilised financial and taxation powers. • No proper budgeting system in place. • Revenue collection system inefficient. • Poor record maintenance and asset management.
Human resource management	• HNPP does not have the required technical and skilled staff as per the status of the town. • Need to redefine recruitment polices and guidelines. • Need to prepare office manual.
Data base and information management	• Poor Data Base and Information Management • No asset management • Traditional land record and registration system • Need for Use of Technology in infrastructure monitoring and database management system

Inter Agency Coordination Issues

For historical and religious reasons (earlier being a part of Uttar Pradesh), Haridwar has inherited a complicated local institutional profile that has aggravated the problems of inter-institutional coordination. The conventionally known ‘local’ municipal functional field in the Haridwar situation, has been preempted by a number of institutions, mostly parastatals who are administering pre-eminently ‘local’ functions such as roads, water supply, sewerage, storm water drainage, building regulations, and slums improvement. Issues of coordination, therefore, are linked to the historical process of institutional evolution in Uttarakhand State.

Way Forward

The present Municipal Act, under which HNPP functions, predates the 74th Constitutional Amendment. Any conformity legislation to be drafted in the near future is expected to 'municipalise' many of the functions which are presently outside the ambit of municipal administration (in terms of the 12th Schedule).

There are three interrelated ways of looking at the *Coordination issues:*

- For practical reasons (since change in governmental system takes time), the present multi-institutional scenario, with minor adjustments, would be continuing for some more time,
- Even if 'big changes' would take time, some intermediate compromise measures have to be adopted, possibly meeting half way some limited functional transfers as per the 74th CAA to work out coordination solutions for the time being, pending longer term solutions, and
- In view of national policy of constitutionalization of local self-government reinforced by the JNNURM Guidelines, 'big' changes have to be brought about through enactment of 'conformity legislation' incorporating the essential mandate of the 74th Constitutional Amendment involving large scale functional realignment coupled with corresponding institutional overhaul.

Three successive stages of 'reforms' are suggested:

Stage I: Limited municipalization of parastatal functions like building regulations transferred to municipality, and more importantly, formation of a strong standing coordination committee headed by the Divisional Commissioner – this is to be done within three months of acceptance of this report.

Stage II: More functions transferred to municipality, and the standing coordination committee orchestrating the activities of multiple organizations – this should not take more than six months from the acceptance of the report.

Stage III: Full scale transfer of functions to the municipality in terms of 74th CAA – this should be completed within a year.

The balance sheet of actions that have been undertaken by the ULB so far are presented below:

Table 4.3: Balance Sheet of Actions: ULB-level

S. No.	Initiative	Status
1	Accrual-based, double-entry accounting system	Being introduced
2	E-governance with IT applications like GIS, MIS etc.	Process started, Computers in ULBs have been procured but the staff requires training plan
3	Property Tax reform to achieve 85% efficiency within 7 years	Under consideration
4	User charges for O&M cost recovery	Govt. order issued in this regard, under implementation
5	Budget-earmarking for basic services to the poor	New budget exercise required
6	Basic services to the poor & security of tenure at affordable cost	ULB & Para-statal level interventions required

Similarly, status of state-level reforms in terms of JNNURM guidelines is shown in the table below:

Table 4.4: Balance Sheet of Actions: State-level

S. No.	Initiative	Status
1	Decentralization measures as per 74th Constitutional Amendment	Under active consideration with new draft Bill
2	Repeal of Urban Land Ceiling and Regulation Act	Since repealed
3	Reform of Rent Control Laws	Being examined
4	Rationalization of Stamp Duty to bring it down to 5%	Under consideration within constraints of State's revenue situation
5	Enactment of Public Disclosure Law	Disclosure Law can be part of new Municipal Bill now being drafted
6	.Enactment of Community Participation Law	Participation Law is in place, but needs broadening
7	City planning function to be assigned to ULBs	Provision made in the draft Municipal Bill

Institutional changes in Haridwar Context

Against the backdrop of these institutional changes, four kinds of change scenarios are proposed (refer figure 4.4). Out of these four typologies, the inter-institutional 'network' scenario seems practically achievable in the short term. The ultimate objective should, of course, be to move toward the Constitutionally-mandated 'decentralization' initiatives, as per the guidelines of the JNNURM.

In Figure.4.5 explanations have been briefly provided within each box –

- Vision-Existing Situation,
- Journey-First Step,
- Intermediate Step,
- Full-Scale Adoption of 74th CAA Model.

The existing situation in (i) is just a descriptive presentation. Journey-First Step is the major first step toward institutional reform involving (a) limited transfer of functions from Para-statals to HNPP, and (b) more importantly, constitution of a strong Standing Coordination Committee to be headed by the Divisional Commissioner (or any other sufficiently senior civil servant). Intermediate Step in (iii), is a further advance on First Step envisioning transfer of some more functions from Para-statals to HNPP at the second phase. Full-scale Adoption of 74th CAA model as shown in (iv) is self-explanatory. This would reflect complete and orthodox adoption of the Constitutional model. (This 'process' view has to emanate from the State level as a general policy for all the urban areas in the State.)

4.4 Role of Private Sector in Urban Infrastructure Provision

Private sector participation in infrastructure provision in Haridwar city is yet to emerge. But there are a number of potential areas where the PPP model can be applicable on the lines of similar efforts successfully made in many cities in India. Selective references, in this context are

- Solid waste management, especially transportation, disposal and composting
- Maintenance of parks and gardens
- Infrastructure creation such as off-street parking, roads and fly-overs, bus stands
- Provision of basic facilities during the various melas that are held in the town
- Street lighting etc.

4.5 Status Upgradation

Haridwar, being an ancient heritage city that attracts lakhs of people from different parts of India, is in many respects a 'national city'. As discussed above, it has unique problems of governance that demand a unique institutional response. The problems and issues are similar to those being faced by any large city anywhere else in the country. Hence, it may be seriously considered as to whether the city could be invested with the status of a Municipal Corporation. This deserves consideration as, in near future, the functions such as planning and building regulations, water supply and sewerage etc., as envisaged in the 74th CAA, are likely to be transferred to the municipal body.

The devolution of functions may not happen overnight, but a process of 'municipalisation' of the above functions has to start in a phased manner. This will necessitate rebuilding the HNPP's administrative-managerial set-up with appropriate departmentalisation and organisational redesign.

All these are conventional municipal functions but internal managerial strength of HNPP would then have to be augmented in a planned manner. In other words planned capacity building of HNPP must precede any scheme of 'municipalisation' as might happen in future to conform to the constitutional (74th Amendment).

Figure 4.6: Transfer of Functions to HNPP

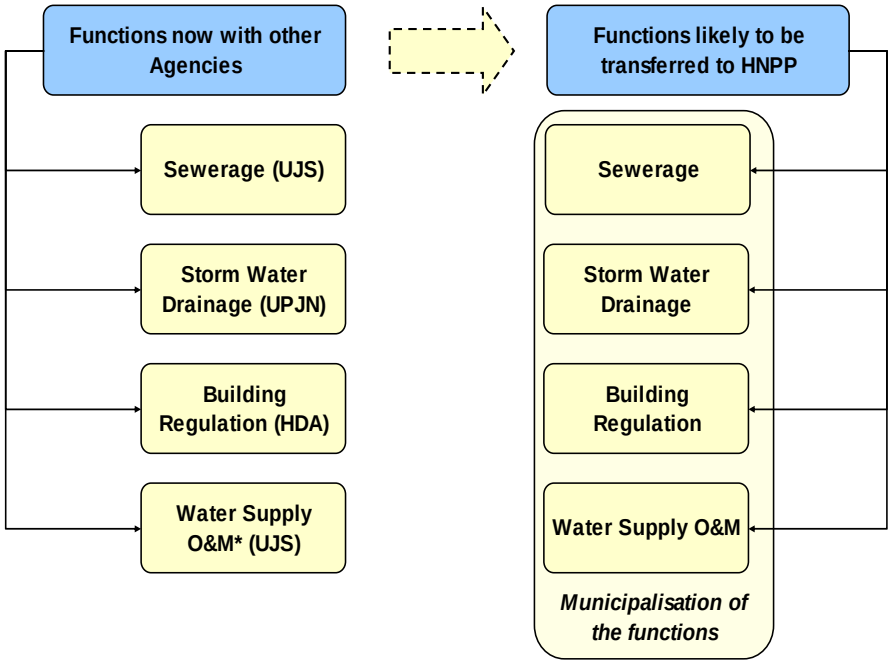
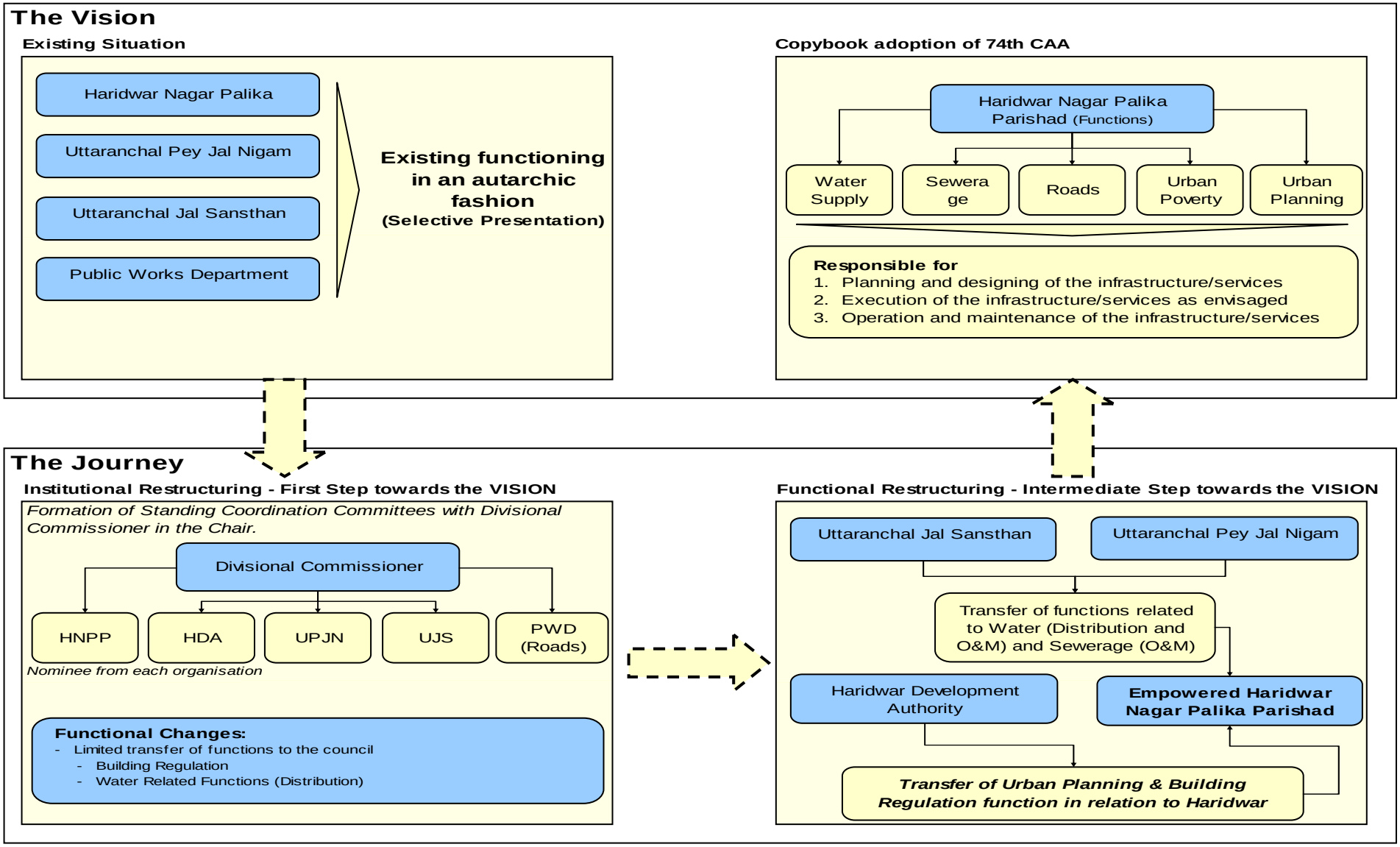


Figure 4.5: Change Scenarios



The networking arrangements shall continue even after the institutional changes (mergers etc) with restructuring of the set up.

Community Participation

The concept of ward(s) committee in the 74th Constitutional Amendment is a revolutionary idea with the objective of deepening city democracy by making the citizens active participants in local area civic administration (eg local SWM, maintaining civic infrastructure such as street lights, parks and playgrounds, etc.).

Although ward committees have not been set up, a greater level of public participation in the functioning of the town is necessitated in Haridwar in of its role as an important religious town in the country, often attracting population which is as much as 300% – 500% of its total population base in a single day. Committees need to be constituted for effective citizen's participation, and the composition of a Ward Committee will then have to be differently conceived, making it an amalgam of elected ward councillors and a cross-section of nominated local citizens: doctors, engineers and other professionals, some women members and SC/ST members etc. HNPP has to evolve a system of local community participation to harness the energy and support of the civil society and create, in the process, a sense of ownership of municipal institutions among the citizen.

Community participation can be functionally as well as really organized. Almost all the existing municipal functions and those that might be transferred to the corporation in terms of the 12th schedule can have advisory/consultative committees with lay citizens and experts as members. Ward committee for every ward will allow room for more active citizen participation. There can also be constituted area/zonal committees with appropriate citizens' participation to consider and advise on issues involving wider area level problems, say, an open space or a large park or water body.

4.6 Training and Capacity Building Initiatives

'Urban Development' is a multi-disciplinary subject involving a cross-section of institutions and organisations. State-wide policy needs to be framed to take into account this macro issue. Uttarakhand does not have any training institution with exclusive focus on Urban Management, Planning and Development. If the current trend towards planned urban and municipal development would be continuing in the years to come, Uttarakhand will have to plan for the establishment of a Urban Planning and Management Institute at the earliest.

Pending establishment of such an institution (which may take time), a Training Cell may be constituted within the office of the Director of Local Bodies. Its task will be two-fold: (i) to build on the current initiative to carry out a training needs assessment (TNA) exercise in ULBs across the state, may be with some expert help, to ascertain with some precision the diverse training needs of ULBs; and (ii) to identify appropriate training modules, prepare a list of training institutions which offer such modules. And make arrangements for sending employees on these specific types of training programmes.

Within the State Administrative Training Institute, there is already a Centre for Urban Development. Its capacity can be enhanced with appropriate faculty induction. The technical expertise of IIT, Roorkee, Dehradun Institute of Technology, engineering colleges in the State and other existing institutions can be harnessed and these institutions mobilized for conducting specialized training programmes related to urban management.

So far as the Haridwar urban scene is concerned, the institutions that are directly involved in the planning and management of the urban area have to be more dynamic, forward looking and 'management' oriented. Also a culture of 'networking', not one of insular tunnel vision, has to be developed to bring about 'convergence' among sister/allied organisations. Common training schedules can be worked out for a cross section of staff and officers of different organisations. For instance HNPP's Solid Waste Management wing can sit together with the *Jal Sansthan's* officers involved in Sewerage and Drainage works. Similarly, Town Planning Directorate can have joint programme with HNPP's Public Works Engineer and SWM Officer (Health Officer). There can be many such inter-institutional joint trainings/workshops focused on Haridwar's planned development.

Training is likely to be of cosmetic value unless it is done on the basis of rigorous training needs assessment and tied up with placement, promotion and career development policies of the involved organisations (refer Figure 4.7). It must also be sequenced in such a way that municipal staff are able to immediately apply the techniques and approaches leaned to their every day working practice. A tentative training profile is presented below.

Political Leadership

Capacity Building for political leadership is of paramount importance. Municipal Laws (and other institutional statutes), rules and regulations need to be clarified in easy language for proper understanding of the 'formalities' that are often not known to the politicians (leading to misgivings and apprehension and even conflict).

In a democracy, it is the capacity of political leadership to 'vision' the future, 'understand' the present and 'guide' future development that makes or mars development management at any level. Specially for HNPP leadership, following programmes (Training/workshop/seminars) can be imaginatively organised (refer Figure 4.8).

An able, understanding and sensitive political leadership, cutting across political lines, is an asset to municipal management and this kind of leadership is hardly ever self made; it has to be groomed through appropriate training programmes.

Figure 4.7: Training Needs for Organisations

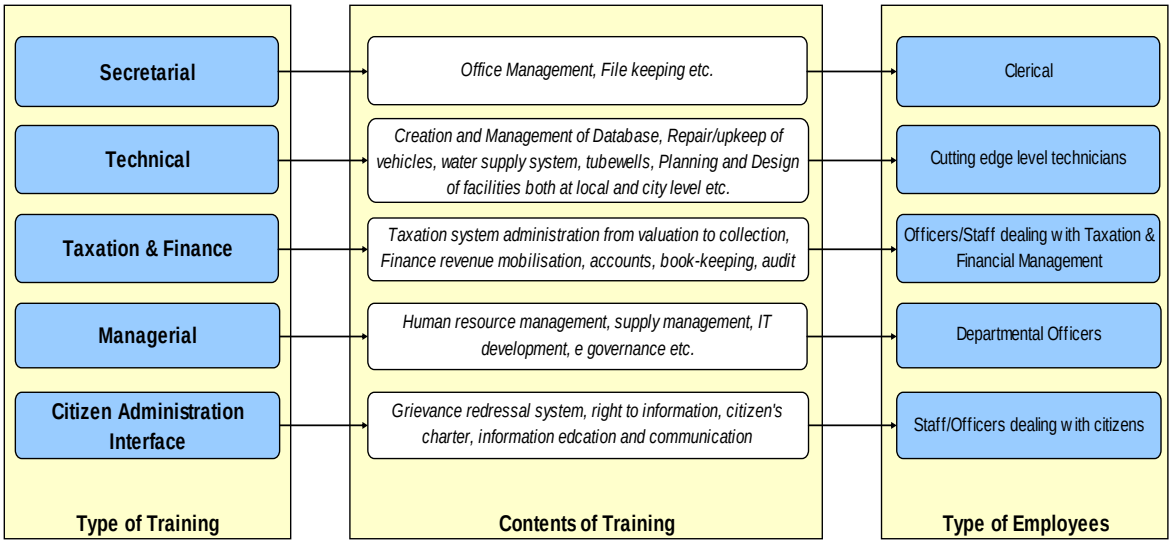
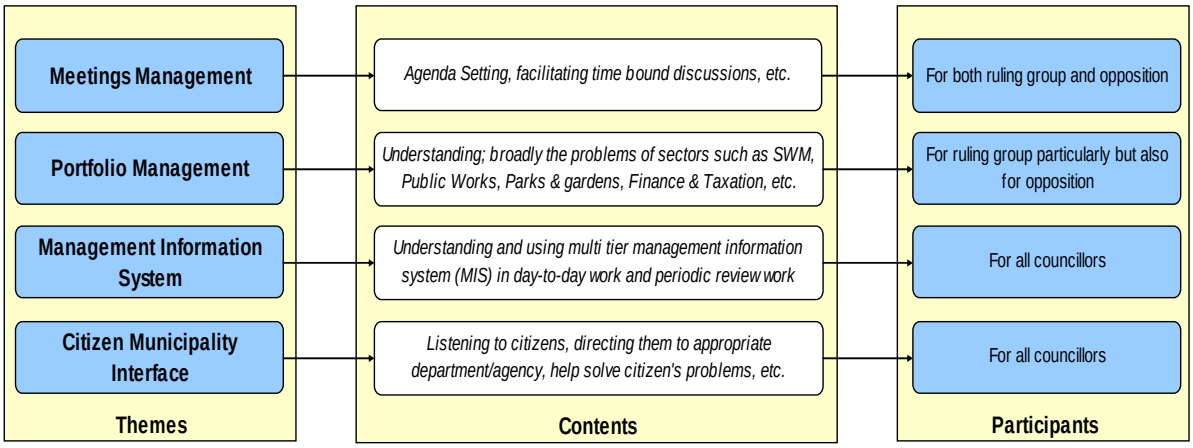


Figure 4.8: Training/Workshops for DNN's Political Leadership



5. Financial Profile of Haridwar Nagar Palika Parishad (HNPP) and Other Agencies

5.1 Towards a City Development Plan – Financial Aspects

This chapter on the financial aspects of the City Development Plan (CDP) of Haridwar is anchored onto the primarily goal of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), namely, creating economically productive, efficient, equitable and responsive cities. It is divided into the following sections: Section 5.2 gives a review and analysis of the existing fiscal and financial situation of the city in terms of trends in revenues and expenditures of the concerned agencies. Section 5.3 aims to the financial analysis of Haridwar Nagar Palika Parishad (HNPP). Section 5.4 deals with the financial analysis of Haridwar Development Authority (HDA). Section 5.5 deals with the financial analysis of the Uttarakhand Jal Sansthan, Haridwar Division.

5.2 Review of the Existing Fiscal and Financial Situation

The purpose of this stage is to review and analyze the existing financial situation in terms of trends in the revenues and expenditures of the authorities concerned with the development of the city.

The urban services are provided by multiple agencies in Haridwar. They are

- Haridwar Development Authority (HDA),
- Haridwar Nagar Palika Parishad, (HNPP),
- Uttarakhand Jal Sansthan (UJS),
- Public Works Department (PWD),
- Irrigation Department (ID),
- Police Department - Fire Services (PD)

HNPP, UJS, and HDA are the three most important agencies responsible for the urban finance in Haridwar. HNPP's revenue receipts (own) mainly comprise Property / House tax, rentals and advertisement. UJS's revenue receipts are mainly water tax and water charges. HDA's revenue receipts mainly arise out of urban assessment, interest and miscellaneous receipts, deposits and loan recoveries while capital receipts comprise capital loan recoveries and grants from state and central governments. Its revenue expenditure is due to establishment, operation and maintenance (O&M), interest and debt servicing as also due to refund of deposits. Its capital expenditure comprise land acquisition, development works, construction as also grants to HNPP and Panchayats and acquisition of other assets.

5.3 Overview of HNPP Finances

HNPP has been assigned a range of functions related to the provision of the public services. They strive to meet the costs of constructing and maintaining urban facilities and services. The revenue receipts comprise own sources (taxes and non-taxes) of the Parishad and grants. Capital receipts comprise revenues earned from sale of land, general grants from state and central governments and

various loans. Revenues are raised to cover capital investments and recurrent revenue expenditures. The raised revenues must be utilized to attain the needs of the public as well as enhance the development of the city as a whole. The revenue expenditure comprises salaries and wages, establishment, operations and maintenance and interest and debt servicing. Capital expenditure includes grants, equipment/assets, loan repayments and refunds. The accounts of the HNPP are maintained presently on cash based single-entry system. The process of conversion into accrual based double entry accounting system has been initiated.

HNPP is empowered to levy and collect taxes approved by the state government.

Figure 5.1: Structure of HNPP Finances

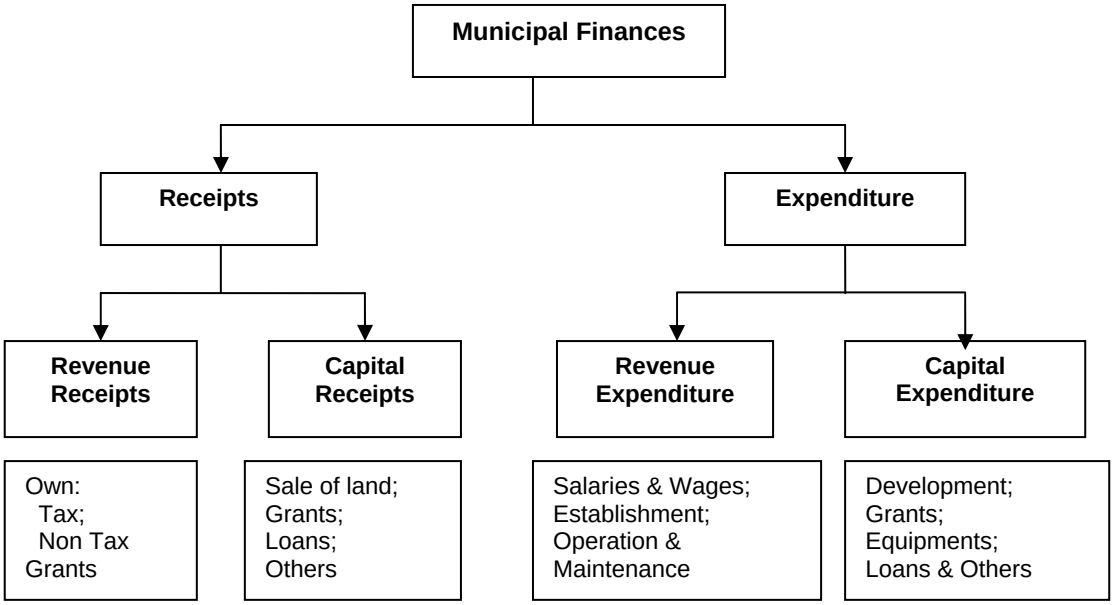


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Table 5.1: Summary of financial profile of HNPP FY 2001-02 to FY 2005-06

(Rs. million)

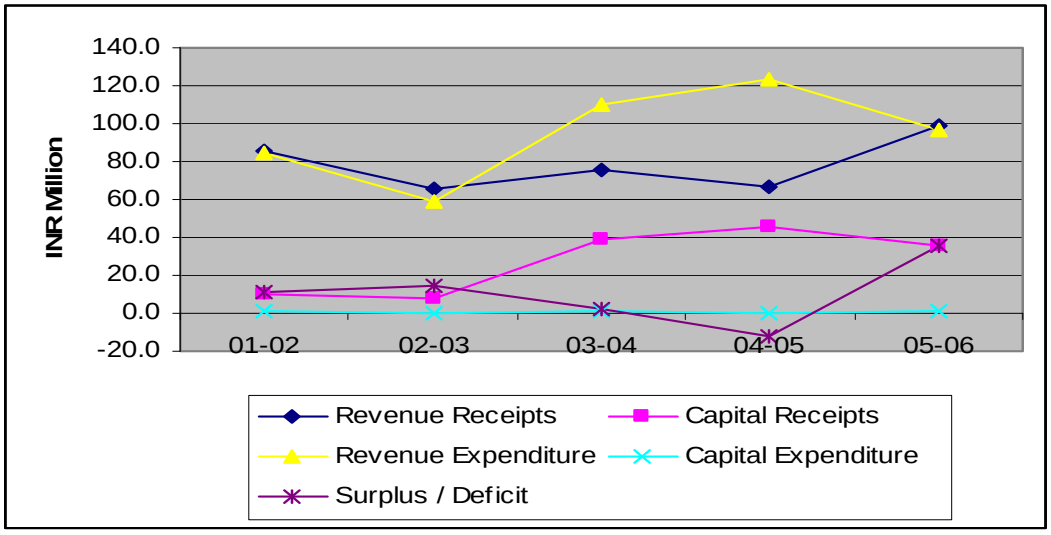
Items	2001-02	2002-03	2003-04	2004-05	2005-06	Avg.	% Contribution
Revenue Receipts	85.8	65.2	75.4	66.3	98.5	78.2	73.9%
Capital Receipts	10.4	8.1	38.4	45.7	35.2	27.6	26.1%
Total Receipts	96.2	73.3	113.8	112.0	133.7	105.8	100.0%
Revenue Expenditure	84.7	59.2	110.3	123.6	97.1	95.0	99.3%
Capital Expenditures	0.8	0.0	1.0	0.1	1.3	0.6	0.7%
Total Expenditure	85.5	59.2	111.3	123.7	98.4	95.6	100.0%
Surplus/(Deficit)	10.7	14.1	2.5	-11.7	35.4	10.2	

Source: HNPP income statement

Table 5.1 shows that there have surplus in every year excepting in the year 2004-05. However, this does not take into account the unpaid liabilities towards dues to Uttarakhand Power Corporation (about Rs. 140 million). There is no definite growth trend in the case of revenue as well as capital receipts. However, revenue

expenditure (excepting for the year 2005-06) has shown an increasing trend over the years.

Figure 5.2: Income and Expenditure HNPP



5.3.1 Receipts Analysis

A. REVENUE RECEIPTS

Own Sources

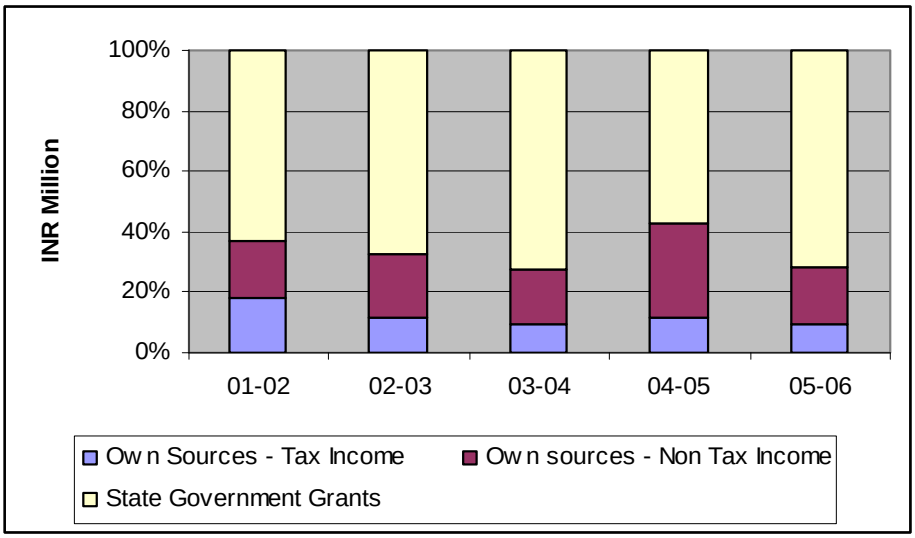
The revenues basically comprise own-tax and non-tax revenues, grants from the state government. As in the case of other municipal bodies, HNPP's tax revenue comprises the revenues from property/ house tax and entertainment tax. Own tax contribute about 11.9 percent of the revenue receipts.

Non-tax revenues in the form of fees, licenses, etc contribute 21.3 percent. Grants from State Government constitute a substantial portion at 66.8% of total revenues on five year average basis (Table 5.2).

Table 5.2: Summary of Revenue Income by Source Categories, HNPP FY 2001-02 to FY 2005-06

Items	2001-02	2002-03	2003-04	2004-05	2005-06	Avg.	% Contribution
Own Sources - Tax Income	15.4	7.6	7.0	7.7	9.1	9.3	11.9%
Own sources - Non Tax Income	16.4	13.9	13.9	20.6	18.5	16.7	21.3%
State Govt Grants	54.1	43.8	54.5	37.9	70.9	52.2	66.8%
Total Revenue Receipts	85.8	65.2	75.4	66.3	98.5	78.2	100.0%

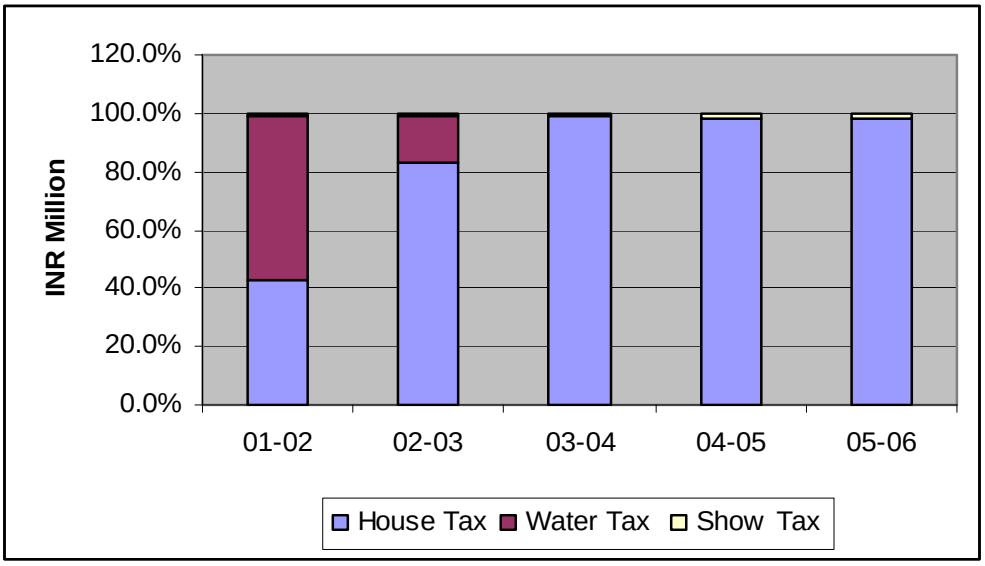
Figure 5.3: Trends in Revenue Receipts



Composition of Own Sources Taxes

HNPP levies house tax and service based taxes of different types against the

Figure 5.4: Composition of Own Sources Taxes



services provided by it to the citizens and income from such sources is known as receipts under own sources. Of the tax revenues house tax is the most important tax, followed by the show tax. Earlier water tax (till the year 2002) used to contribute substantially to the own revenues of the HNPP. However, water operation and maintenance was handed over to Jal Sansthan in the year 2002. The house tax is effectively the only significant local tax, contributing over 99% of own source tax revenues. House / Property tax is levied at uniform rate of 7.5% of the Annual Ratable Value (ARV). Basis of determining ARV is the market rent in some cases and is based on five percent of cost of land and construction cost in other cases.

Non-tax sources

Non-Tax income from revenue sources comprises various components like fees under municipal acts, penalties and other miscellaneous charges for provision of certain services. The income from non-tax revenue receipts has increased from INR 16.362 million in FY 2001–02 to INR 18.471 million in FY 2005–06 (Table 5.3) with maximum revenue in the year 2002-03 at Rs. 20.6 million.

Table 5.3: Composition of Non-tax Revenues, HNPP FY 2001-02 to FY 2004-05

(Rs. million)

Items	2001-02	2002-03	2003-04	2004-05	2005-06	Avg.	% Contribution
Rent of movable properties	1.766	1.418	1.736	2.445	4.397	2.4	14.1
Rent of immovable properties	4.713	5.592	5.939	7.163	2.085	5.1	30.6
Sale of Waste	0.000	0.229	0.000	0.000	0.000	0.0	0.3
Educational Institutions	0.012	0.011	0.019	0.021	0.027	0.0	0.1
Medical Institutions	0.007	0.008	0.010	0.014	0.014	0.0	0.1
Markets	1.190	1.201	1.608	1.821	2.319	1.6	9.8
Slaughter House	0.032	0.027	0.028	0.025	0.026	0.0	0.2
Photocopy charges	0.081	0.076	0.076	0.079	0.057	0.1	0.4
Carts & Motor Vehicles Licence	0.000	0.000	0.000	0.000	0.021	0.0	0.0
Barbers Licence	0.012	0.000	0.000	0.000	0.008	0.0	0.0
Cozy House Licence	0.261	0.294	0.205	0.230	0.278	0.3	1.5
Income from water works	0.272	0.175	trf UJS			0.1	0.5
Interest on Investment	0.119	0.313	0.648	0.315	2.029	0.7	4.1
Water Charges	4.318	0.934	trf UJS			1.1	6.3
Fines & Penalties	0.057	0.052	0.088	0.069	0.080	0.1	0.4
From Pounds	0.000	0.000	0.000	0.016	0.001	0.0	0.0
Form other sources (lodging houses)	0.299	0.253	0.291	0.308	0.322	0.3	1.8
Others	3.222	3.325	3.244	8.126	6.808	4.9	29.7
Total	**16.362**	**13.908**	**13.891**	**20.633**	**18.471**	**16.7**	**100.0**

State Government Grants

The most important source of revenue receipts is the grants from the State government. Over the years, there has been a steady increase in the grants. Grants from the state government have increased from Rs. 54.1 million in the year 2001-02 to Rs. 70.9 million in 2005-06. (Table 5.2).

B. CAPITAL RECEIPTS

Capital receipts of HNPP mainly comprise general grants and loans. They have increased from INR 10.4 million in FY 2001-02 to INR 35.2 million in FY 2005-06 with lowest figure of Rs. 7.3 million in 2002-03. (Table 5.4).

Table 5.4: Composition of Capital Receipts, HNPP FY 2001-02 to FY 2005-06

(Rs. million)

Items	2001-02	2002-03	2003-04	2004-05	2005-06
Ardh *Kumbh Mela* (AKM-2004) - Roads, Lights and Sanitation	0.000	0.000	28.827	15.616	0.000
MP/MLA Funds - Grant	0.000	0.000	0.000	0.000	0.383
From Jumboorie	0.000	0.000	0.000	0.000	1.797
From Haridwar Development Authority	0.000	0.000	0.000	0.000	0.570
Eleventh Finance Commission	0.000	0.000	8.974	9.205	6.121
Contractors' Deposits	0.151	0.130	0.027	0.011	0.043
Slum Development Scheme	0.000	0.000	0.000	0.000	0.690
Stamp Duty	0.000	0.000	0.000	16.356	21.556
Revolving Fund - Loan / Avasthapana (Infrastructure) Fund	10.246	7.147	0.570	4.547	2.969
Non Governmental Loans	0.000	0.000	0.000	0.000	1.109
Total	10.397	7.277	38.398	45.734	35.238

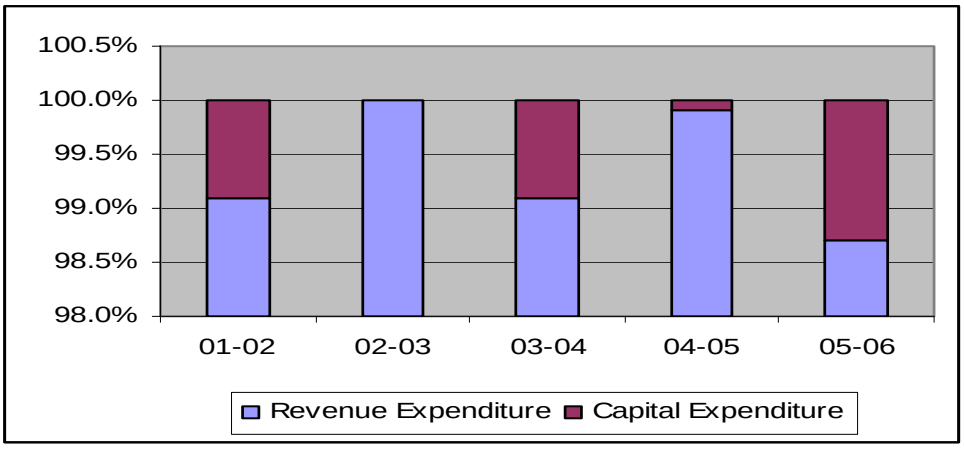
Source: HNPP Income Statement

5.3.2 Expenditure Analysis

As regards the expenditure of HNPP, total expenditure has risen from INR 85.5 million in FY 2001-02 to INR 95.6 million in FY 005-06 that is at about 3.6 percent per annum (Table 5.1).

Figure 5.5 suggests that more than 98.5% of the expenses are incurred under revenue expenditure and the remaining goes to the capital expenditure side.

Figure 5.5: Share in Expenditure (%)



C. REVENUE EXPENDITURE

Revenue expenditure comprising salaries and wages, establishment, operation and maintenance and interest payments, has been rising faster than the capital expenditure.

Table 5.5: Composition of Revenue expenditure, HNPP FY 2001-02 to FY 2005-06

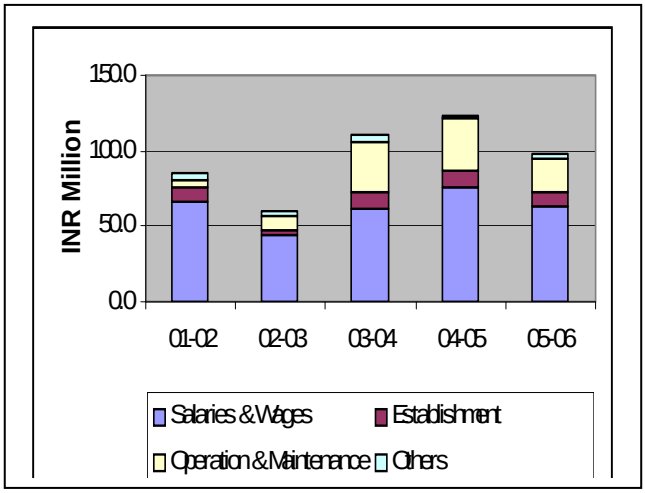
(Rs. million)

Items	2001-02	2002-03	2003-04	2004-05	2005-06	Avg.	% Contribution
Salaries & Wages	65.723	43.853	60.880	76.250	63.454	62.0	65.3%
Establishment	10.680	3.551	11.374	10.768	8.718	9.0	9.5%
Operation & Maintenance	3.709	8.701	33.508	34.836	22.129	20.6	21.7%
Others	4.613	3.107	4.538	1.709	2.805	3.4	3.5%
Total	84.725	59.212	110.301	123.564	97.106	95.0	100.0%

Source: HNPP Income Statement

Figure 5.6: Composition of Rev. Exp.

Figure 5.6 depicts the wide gap between the various components of revenue expenditure. The wage bill has been more or less constant accounts for 65 percent of the total revenue expenditure, on average basis. Establishment is declining and Accounts for 9.5 percent of total Revenue expenditure. Operation expenditure accounts to almost 22 percent of the total revenue expenditure (Table 5.5), on average basis, and growing at 56 percent.



D. CAPITAL EXPENDITURE

Capital expenditure has not been significant and mainly comprises of development expenditure, grants expenditure, assets, loan repayments and various refunds. It has increased from Rs. 0.8 million in 2001-02 to Rs. 1.3 million in 2005-06 (Table 5.1).

5.3.3 Key Indicators

This section gives the financial indicators which help in analyzing the efficiency and operational performance. These have been calculated as an average over a period of five years, which provide a more realistic picture. The fiscal health of the HNPP is brought out clearly by the fiscal indicators in Table 5.6.

Table 5.6: Fiscal health indicators, HNPP FY 2001-02 to FY 2005-06

S. No.	Fiscal Health Indicators - HNPP 2001-02 to 2005-06	Average %
	Resource Mobilisation	
1.	Share of Own Revenue in Revenue Income	33.2%
2.	Growth in Revenue Income	3.5%
3.	Growth in Own Resources of Revenue Income	-3.5%

S. No.	Fiscal Health Indicators - HNPP 2001-02 to 2005-06	Average %
4.	Share of Non Tax in Revenue Income	21.3%
5.	Share of House Tax in Revenue Income	19.2%
	Expenditure Management	
6.	Share of Expenditure on Salaries & Wages in total Revenue Expenditure	65.3%
7.	Share of Expenditure on Salaries & Wages in total Revenue Income	79.3%
	Performance Assessment	
8.	Revenue Account Balance (Rs. Million)	-16.735
9.	Capital Account Balance (Rs. Million)	26.931
10.	Operating Ratio (Rev Expenses/ Income)	1.2
11.	Establishment Cost / Revenue Receipts	0.79
12.	Capital Utilisation Ratio	0.02

Source: HNPP income statement

HNPP's performance with respect to resource mobilization and expenditures has not been good during the last years as the growth rate of the income is not enough to meet the revenue expenditure. Moreover the share of salaries and wages in the total revenue expenditure is 65.3 percent on an average, which is very high, especially in view of the fact that the revenue expenditure is more than 98.5 percent of the total expenditure.

House tax contributes only 19.2 percent in the total revenues, which is low as compared to the contribution of the same in other states of the country.

The operating ratio, which is defined as the ratio of revenue expenditure to revenue income, is an indicator of profitability of the operations of a local body. For HNPP, is more than unity indicating that the revenue expenditure is not fully met by revenue income. Ratio of establishment expenditure to revenue is showing an increasing trend.

Capital Utilization Ratio is the ratio of capital expenditure to the capital income. This ratio indicates the performance of the local body in terms of utilization of capital income – it also serves as an indicator of the local bodies' capacity to utilize capital resources. Capital utilization ratio of greater than unity indicates that revenue account surplus has been utilized for capital works, which is a positive feature. A capital utilization ratio below unity indicates that either capital income is being diverted for revenue expenditure (when operating ratio is above unity) or that part of capital income is unspent during the FY under consideration. In case of HNPP, the capital utilization ratio is lesser than unity.

5.3.4 Haridwar Nagar Palika Parishad - Issues

Overall, there appears to be lack of experience in handling big infrastructure project. HNPP still depends substantially on state government grants for meeting its revenue expenditure.

Efforts are under way for converting the accounts into accrual system of accounting. There is a need to provide suitable training on double-entry accounting/accrual system of accounting.

The arrears (accounts receivable) need to be reduced by streamlining the

collection machinery. The revenue collection system is inefficient and the asset management and maintenance are inadequate. There is lack of financial and taxation powers, the HNPP cannot borrow from the market. There is considerable room for review and revision of the current tax rates. The data base and information management is poor and there is a lack of use of technology in infrastructure monitoring.

All properties have to be brought in the books of HNPP for property / house tax assessment. The last survey conducted in the year 2000-2001 in Haridwar, Jwalapur in 2001 and Kalkhal in 2000. The newly developed areas have not been brought into house tax coverage. The number of properties presently assessed under house / property tax is 23,460 as on 31st March 2006.

The demand, collection and balance details of HNPP in respect of house/ property tax are given in Table 5.7.

Table 5.7: Demand, Collection and Balance

(Rs. million)

Particulars	**2004-05**	**2005-06**
Opening Balance	14.97	15.45
Current Demand	8..74	9.73
Total Demand	**2.37**	**25.18**
Net Demand after discount	23.00	24.20
Total Collections	**7.62**	**8.96**
Out of which:		
against current demand	4.85	5.76
against arrears	2.77	3.20
Closing Balance	15.45	15.34
Collection Recovery trends (%)		
Collections against current demand (%)	60.5	65.8
Collections against arrears demand (%)	18.5	20.8
Total Collections against Total Demand (%)	**33.2**	**37.1**

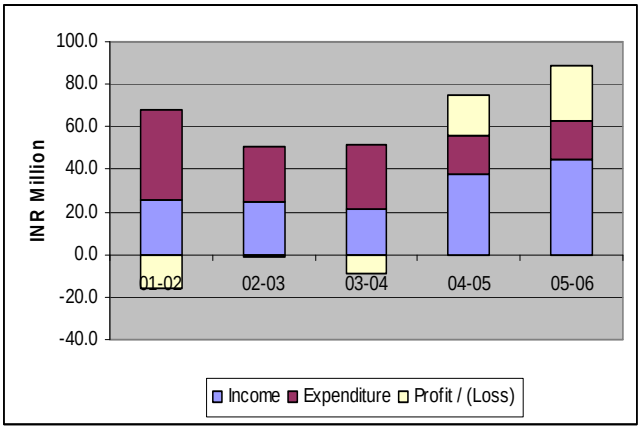
The tax collection efficiency needs to be improved.

5.4. Overview of Haridwar Development Authority (HDA) Finances

HDA finance structure comprises income and expenditure (Figure 5.7). The income sources of HDA may be categorized as development charges, compounding fees, conversion charges, supervision & stacking charges, interest received etc. The expenditure comprises salaries & allowances, development charges, office maintenance & other expenses, and depreciation.

From the above figure it can be seen that the over the years both income and expenditure have shown an increasing trend. HDA earned profits in 2004-05, 2005-06 and posted losses in the years 2001-02 to 2003-04.

Figure 5.7: Income and Expenditure of HDA



Source: Accounts

5.4.1 Composition of Income

The composition of income of HDA, as per the audited accounts for the years 2001-02 to 2003-04 and budget vis-à-vis actual statement of accounts for the years 2004-05 and 2005-06 is presented in the Table 5.8.

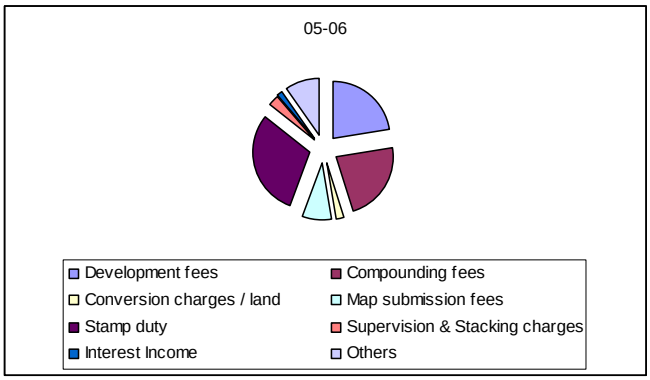
Table 5.8: Composition of HDA Income

(Rs. million)

Items	01-02	02-03	03-04	04-05	05-06	Avg.	% Contribution
Income							
Development fees	8.7	7.1	0.7	9.6	10.0	7.2	23.5
Compounding fees	3.9	3.5	4.9	6.8	10.0	5.8	18.9
Conversion charges / land	0.9	0.4	1.8	0.3	1.0	0.9	2.9
Map submission fees	1.3	1.4	1.7	3.9	3.8	2.4	7.8
Stamp duty	0.0	0.0	0.0	9.8	13.5	4.7	15.1
Supervision & Stacking charges	0.9	0.6	1.0	1.2	1.3	1.0	3.3
Interest Income	9.6	7.6	8.4	4.0	0.6	6.0	19.6
Others	0.6	4.4	2.8	1.7	4.3	2.7	8.9
Total	25.9	24.9	21.2	37.3	44.5	30.8	100.0

Source: Audited accounts & Budget vs Actual for 2004-05 & 2005-06

Figure 5.8: Composition of Receipts of HDA



Source: Audited accounts & Budget vs Actual for 2004-05 & 2005-06

Table 5.8 and Figure 5.8 reveals that development charges, at 23.5%, contributes maximum to the revenue of HDA followed by interest income (19.6%) and compounding fees (18.9%). Development charge has grown at a compounded average growth rate (CAGR) of 3.5% during the period 2001-02 to 2005-06. Compounding fees has grown at a CAGR of 26.3% whereas the interest income has shown a CAGR of 67.3%.

5.4.2 Expenditure

The composition of expenditure of HDA, as per the audited accounts for the years 2001-02 to 2003-04 and budget vis-à-vis actual for the years 2004-05 and 2005-06 is presented in the Table 5.9.

Table 5.9: Composition of Revenue Expenditure

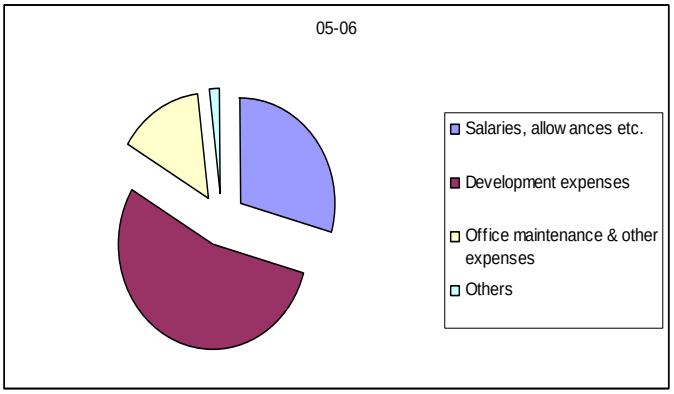
(Rs. million)

Items	01-02	02-03	03-04	04-05	05-06	Avg.	% Contribution
Expenditure							
Salaries, allowances etc.	5.2	4.9	4.7	5.7	5.4	5.2	19.2
Development expenses	32.3	12.6	20.8	10.0	10.0	17.1	63.6
Office maintenance & other expenses	3.6	6.9	4.0	2.2	2.7	3.9	14.3
Others	0.8	1.6	0.9	0.3	0.3	0.8	2.9
Total	**41.8**	**25.9**	**30.4**	**18.2**	**18.5**	**27.0**	**100.0**

Source: Audited accounts & Budget vs Actual for 2004-05 & 2005-06

Table 5.9 and Figure 5.9 reveals that, out of the total expenses, development expenses forms the largest portion at 63.6% followed by salaries and allowances at 19.2% and office maintenance & other expenses at 14.3%.

Figure 5.9: Composition of Expenditure of HDA



5.4.3 Financial Position of HDA

A study of the audited balance sheet as at 31st March 2004 reveals that there are no outstanding loans taken by HDA. There were balances of Rs. 99.4 million in

reserves, Rs. 31.1 million in grants, Rs. 11.3 million in infrastructure development fund, Rs. 47.6 million in advances received accounts. The funds have been invested in fixed assets (Rs. 8.8 million), capital projects under hire purchase schemes (Rs. 35.3 million) and in fixed deposits and balances with banks (Rs. 146 million).

5.5 Assessment of Financial Performance of Uttarakhand Jal Sansthan (Haridwar Division)

Summarised financial position of Haridwar division of Uttarakhand Jal Sansthan is presented in Table 5.10 and Figure 5.10. In this table the income does not include operational grant received from State Government. The expenses figures for the years 2003-04 to 2005-06 does not include Electricity / Power charges. A review of past five years' power charges shows that average annual electricity / power charges /bill for this division comes to about Rs. 15 million per annum. Considering this in the expenses of 2003-04 to 2005-06 there is really no operating surplus.

Table 5.10: Financial Summary

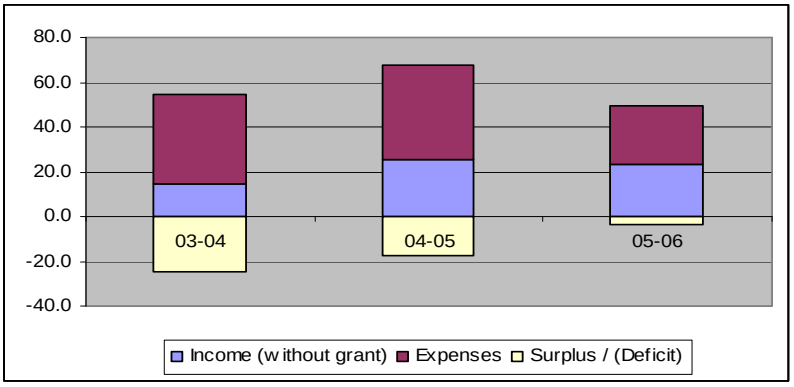
(Rs. million)

Financial Summary	2003-04	2004-05	2005-06
Income (without grant)	14.690	25.289	23.102
Expenses	39.522	42.501	26.714
Surplus / (Deficit)	**-24.832**	**-17.212**	**-3.611**

Source: accounts statement

As per the information available all the power dues have been settled this year with grants received from the State Government.

Figure 5.10: Financial Summary



Source: accounts statement

Composition of Income of Haridwar Division of Jal Sansthan is given in the Table 5.11.

Table 5.11: Composition of Income of UJS – Haridwar Division

(Rs. million)

Income Composition	2003-04	2004-05	2005-06
Water tax	7.333	13.033	12.310
Water charges	7.080	10.256	8.791
Other charges	0.276	2.001	2.001
Total Income	**14.690**	**25.289**	**23.102**

Source: accounts statement

Composition of expenses of Haridwar Division of Jal Sansthan is given in Table 5.12.

Table 5.12: Composition of Expenses of UJS - Haridwar Division

(Rs. million)

Expenses Composition	2003-04	2004-05	2005-06
Operational expenses	0.345	0.888	0.244
Operation & maintenance	4.124	6.414	4.410
Establishment	19.168	18.329	19.155
Office expenses	0.884	1.870	2.904
Total	**24.522**	**27.501**	**26.714**

Source: accounts statement

Collection efficiency of the Haridwar Jal Sansthan is only 25% of total demand. This needs to be improved upon. The table depicting the demand, collection and balance in respect of various items of revenue of this division for the year 2005-06 is given in Table 5.13. The amount outstanding as on 31st March is 200% of annual demand.

Table 5.13: Demand, Collection & Balance Statement

(Rs. million)

Income Head	Opening balance	Current Demand	Total Demand	Collections	Balance 31.3.2006
Water tax	28.536	17.749	46.285	12.310	33.975
Water charges	28.262	14.639	42.901	8.791	34.110
Other charges	0.000	2.001	2.001	2.001	0.000
Total Income	**56.798**	**34.389**	**91.187**	**23.102**	**68.085**

Source: accounts statement

5.5.1 Uttarakhand Jal Sansthan (Haridwar Division) - Key Issues

- Jal Sansthan (Haridwar Division) is not able to generate revenue on its own to meet its revenue / operational expenses. The Division I still is dependent on the State Government grants for meeting portion of its operational expenses.
- Collection efficiency needs to be substantially improved from the present level of 25% in respect of various charges levied by the Jal Sansthan, Haridwar Division.

6. City SWOT Analysis and Vision

6.1 Introduction

Haridwar, in its journey through the last two centuries, has evolved from a small settlement of saints and hermits on the bank of a sacred river to a bustling town with a complex mix of activities ranging from hardcore industrial and economic activities to the practice and propagation of yoga, meditation and ayurveda. This complexity is further heightened by an unparalleled influx of pilgrims, with no less momentum and magnitude of a storm surge in an ocean, and of humanity. This happens every year with unfailing punctuality. Haridwar is thus unique, so much so, that every six years, the city is practically besieged, if not overrun, by tens of millions of pilgrims, who are purely outsiders to the city. This periodicity acts like a natural phenomenon, forcing the residents to simply bear it.

Given this dynamic behaviour of rising and falling tides of visitors, the city struggles to remain in working order. Notwithstanding, the citizens like to live, work and prosper in this unique city. The city, in order to remain home to its growing number of citizens certainly needs a vision. Clearly, before proceeding to prepare the vision, it is imperative to examine the strength, weakness, opportunities and threats of the city and various elements of infrastructure and urban services that support the city.

6.2 SWOT Analysis

The existing situation analysis were carried out first by using all available information from various departments and agencies concerned with urban services and functions. Data gaps were identified and these information gaps were bridged and supplemented (i) through extensive discussion with the concerned departments and agencies and (ii) by conducting a city-wide survey. The survey was carried out to supplement information and data available from various departments and agencies. Further, first-hand information about citizens' satisfaction and opinion about urban services, priorities and willingness to participate in development were also obtained from the survey. Simultaneously, extensive participatory consultation with all stakeholders were carried out in Haridwar

Based on the existing situational analysis and extensive participatory consultation with primary and secondary stakeholders, City's strengths, weaknesses, opportunities and threats have been assessed. Table 6.1 presents the SWOT analysis done at City level and Table 6.2 presents the SWOT analysis of each sectors.

Table 6.1 City Level SWOT Analysis

STRENGTHS	WEAKNESSES
▪ One of the seven sacred cities of India. ▪ One of the four locations in India for *Kumbh Mela* ▪ Gateway to Chardham, the four main pilgrimage centres in the North, ▪ Surrounded by scenic beauty ▪ Proximity to Delhi ▪ Well connected by rail and road ▪ Industrial development in close proximity	▪ Lack of developable land ▪ Lack of better tourism infrastructure ▪ Inability to tap tourism potential other than pilgrimage ▪ Poor connectivity by Air ▪ Difficult to balance the interests of various groups for redevelopment activities ▪ Increased pressure on existing infrastructure services
OPPORTUNITIES	**THREATS**
▪ Rapid industrial development close to the city area ▪ Emerging destination for ayurvedic treatment, yoga and spiritual pursuits ▪ Strategic location for tapping tourism potential other than pilgrimage such as eco tourism and adventure tourism ▪ Open spaces for development of tourist attractions	▪ Ecologically sensitive areas ▪ Soil erosion from Bilwa Parvat ▪ Disaster prone area ▪ Increasing water pollution in Ganga ▪ Increased possibility of accidents and health hazards due to massive crowd during occasions such as *Kumbh Mela*

Table 6.2: SWOT Analysis of Urban Sectors

Sectors	Strengths	Weakness	Opportunities	Threats
Physical Growth and Urban Environment	BHEL and Integrated Industrial Estate developed by SIDCUL contributing to urban growth Scenic beauty of surrounding hills, mountains, river and green areas Better connectivity with other important cities Good weather and religious character of the place attracts people Good potential for development of eco tourism and adventure tourism acitivities on Najibabad Road	Physical growth constraints of hills, forests and water bodies Ribbon development along Delhi-Niti Pass leading to traffic congestion Rapid and unplanned development in the last two decades Deterioration of infrastructure services in congested city areas Encroachments in the old city areas and Ghats Lack of developed land for affordable housing Scattered development in peri urban areas without proper infrastructure facilities	New Master Plan under preparation by TCPD Suitable terrain and better accessibility towards west for future development Opportunity to enforce development controls to ensure environmental friendly urban growth	Unauthorised construction on parks & open spaces, *Kumbh Mela* areas Conversion of rich agriculture land including orchards for developmental purposes in peri urban areas Soil erosion from Bilwa Parvat (Mansa Devi Parvat) Disaster prone area Unplanned growth could lead to degradation of eco-system
Water Supply	Good quality water available from tubewells and infiltration wells. Savings in treatment cost – tubewells and infiltration wells provide clean water. Water supply Master Plan already prepared	Huge Unaccounted for water Water charges too low considering the higher cost of production Some of the tube wells and Pumping plants are old need replacement. Zones being open – cause unequal distribution. No stand by Power Supply	Stakeholders have shown a willingness to pay more for better services State Govt., Institutions and Individuals have shown a strong commitment to improve the town during vision exercise	Water tariff revision may face some opposition from Commercial Consumers and individuals. Tampering with the sanctioned connection by some consumers.
Sewerage	More than 80 % Sewerage collection. Highly aware and sensitive public on River Ganga Pollution. Highly skilled and promising staff for effective maintenance of	Only 60 % sewage is treated. Clogging of sewer lines due to solid waste. No revenue from this sector	Better Environment for residents and tourists. Re-use of treated sewage and sludge for agriculture Use of biogas from STP as a fuel for Dual-Fuel Generating sets.	Complete dependence on grant from GoU for O & M expenditure

Sectors	Strengths	Weakness	Opportunities	Threats
	sewage pumping stations and STP.			
Drainage	Adequate natural gradients available for achieving self cleansing velocities for open and under ground drainage Good soil strength to provide foundation for rectangular drains	Local habits of discharging wastewater into drains dumping garbage into drains uncontrolled encroachment of waterways, even on slopes of rivers	Willingness of the stakeholders to bring about positive change in the system and ready to bear some of its responsibility	Opposition from encroachers, and industrial and commercial quarters The present momentum getting lost due to undue delay in implementation
Solid Waste Management	Support available from GoU Desire of citizens for a clean city	Non availability of suitable disposal site in close proximity to city Little segregation at source Poor primary collection Indiscriminate dumping of waste in Stormwater river, drains and nallas Inability of civic authorities to handle SWM during fairs and festivals Lack of awareness and motivation	Scope for segregation of bio degradable waste Scope for decentralisation of waste collection and treatment Collect and treat organic waste from the decentralized fruit and vegetable markets and slaughter houses	Present disposal of waste along Najibabad Road in close proximity to reserved forests Widespred use of polythene Sudden swell of pilgrims during religious occasions disrupts the solid waste management
Roads, Parking and Public Transportation	Availability of construction material such as ballast, boulders, sand, etc from river beds Road construction activity from funds available for Kumbh and Ardh *Kumbh Mela*	Very high cost of land Removal of encroachments from roadside Non availability of labour Very high floating population	GoU is focused about need for providing improved and adequate facilities Interest to introduce MRTS	Removal of encroachment from Roadside Public resistance towards acquisition of land for construction of bypass and off street parking
Heritage and Tourism	Rich cultural heritage and unique historicity Religious character of the town and holy Ganges attract millions of pilgrims/tourists Beautiful and scenic surroundings Ashrams and dharamshalas for accommodation of lower and middle income groups	Tourist infrastructure not able to support sudden swell of pilgrims Inadequate civic services for tourists No long term plan for heritage conservation Constraints for heritage conservation/preservation as many of the structures are private	Opportunity to involve PPP especially for high end tourism infrastructure Utilising open spaces to promote cultural events Emerging centre for ayurvedic treatments, yoga and spiritual pursuits Untapped tourism potential in	Sudden influx of tourists leads to degradation of urban environment Vehicular movement disrupted during religious fairs Poor sanitation facilities likely to cause health hazards

Sectors	Strengths	Weakness	Opportunities	Threats
	Neighbouring tourist destination of Rishikesh, Rajaji National Park and Kaliyar	properties Inadequate sanitation facilities	Dehradun Development of Haridwar as a regional tourist hub	
Urban Poor	Poverty pockets are relatively less in number Basic services of water supply, sanitation, drainage, waste management are available in many slums, however, there are shortfalls Good awareness level	Inadequate housing provision Inadequate level of services Nonfunctional streetlights Lack of regular maintenance of facilities Lack of clear policy with regard to land tenure Non adherence to master plan Unwilling to pay for services	Scope for reactivation of existing community groups and formation of new ones NPP is willing to establish urban poverty alleviation cell at an early date	High level of encroachment open areas, hill slopes and islands Insecurity of uprooting of squatter settlements Unsanitary conditions leading to poor health and hygiene
Governance and Institutional	Initiative of the state to bring about reforms in the present institutional structure to improve urban governance	Civic administration is thrown out of gear during religious fairs and festivals especially during *Kumbh Mela* Major municipal functions have not been devolved to HNPP Multiplicity of development authorities Lack of coordination among authorities Poor Institutional capacity	New Municipal draftred by GoU is expected to empower the ULBs in conformity with the provisions of 74th CAA Uttarakhand being a new and a special category state, lot of scope for innovative approaches for streamlining development process	gradual narrowing of the role of Haridwar NPP due to increasing number of parastatal bodies and special committees like Mela Committee Capacity building of all the government organisations if inadequate would result in non-implementation of several reforms Continuation of centralized approach
Municipal Finance	Haridwar is the hub of religious tourism in the special category state of Uttarakhand and thus eligible for higher percentage of grants from GoI for developmental projects, O&M and *Kumbh Mela*	Low capacity to generate revenues from own revenue sources	Potential for higher revenue generation from tourists	Capacity building of all the government organisations if inadequate would result in non-implementation of several reforms Fiscal reforms are a key for carrying out projects and provision of infrastructure in a sustainable manner

6.3 Haridwar City Perspective and Vision

Haridwar has evolved from a small settlement on the banks of Ganga where hermits and ascetics from far off lands came for *tapasya* (penance) to a thriving urban centre and an emerging industrialised city of the newly formed state of Uttarakhand. In future, Haridwar is destined to become a multi functional centre with the following prime roles:

- Gateway to *Chardham*, the four holy shrines in Uttarakhand
- Its significance as 'Gangadwar' as Haridwar is the first marked town where Ganga touches the plains
- An ancient town of religious importance with an array of important temples and sacred water bodies, most important being *Brahmkund* at 'Har-Ki-Pauri'
- One of the four locations in the country for *Kumbh* organized every twelve years attracting millions of people from all economic classes
- International destination of religious tourism which is an industry in itself in the present day economic perspective
- Emerging destination of eco tourism and adventure tourism
- Growing centre for ayurvedic treatment, yoga and spiritual pursuits
- Economic growth centre driven by development of Integrated Industrial Estate (IIE) by SIDCUL

With such varied and distinct activities in the town where floating population and pilgrims outnumber the resident population, the development planning will need to go beyond the conventional norms. Haridwar should be conceived as a dynamic urban space rather than a city with conventional character.

The areas which have historical significance and heritage value are clubbed together which should be developed in a way that restricts further deterioration of heritage and at the same time further enhances the historical importance of the town. Such development will ensure that the traditional beliefs associated with structures/locations are kept intact for future generations. The newly developed areas and potential areas for future development are grouped together which should have an all inclusive development, integrating the urban growth characteristics with the need to preserve the environment.

6.3.1 Stakeholders Consultations – Vision Exercise

The City vision and the sector strategies have been developed considering the issues identified in the SWOT analysis in consultation with primary (elected representatives of people) and secondary stakeholders. The consultation process included public workshops and discussion groups at each stage of strategy and action plan preparation. All the relevant state-level stakeholders (e.g., Secretaries and top echelons of para-statals those who guide policy formulation). The Haridwar NPP and many of the important City-level government institutions, e.g para-statal organizations like the UJS and UPJN, have contributed to the preparation of the vision as have NGOs, eminent citizens and private sector representatives.

A one day workshop was organized on 7th July 2006 to formulate the city vision. The exercise was led by the chairperson of Haridwar and had participation of all the stakeholders

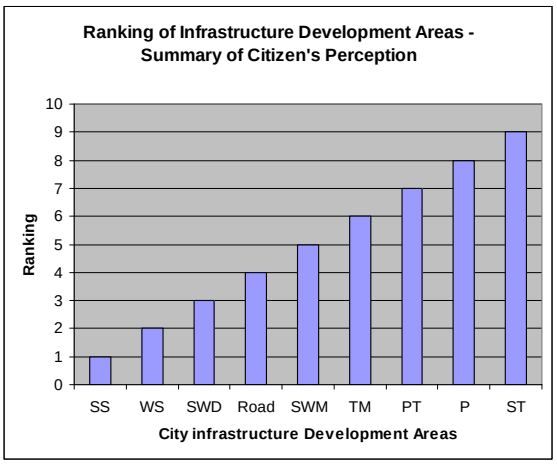
The “City Vision” has thus been developed in a collective, conscientious and participatory manner.

6.3.2 Stakeholders’ Perceptions

Questionnaire, designed specifically, were distributed to citizens present in the vision meeting. The format of the questionnaire is available in Annex 6**.** Based on the rankings given by the participants, the ranking of the City infrastructure development areas have been carried out. Table 6.3, provides the details and the result is depicted in Figure below.

Table 6.3 Summary of Citizen’s Perceptions

City Infrastructure and Development Areas	CIDA	Ranking (1-most important, 9-least important .)	Summary / Average
Sewerage and Sanitation	SS	1	2.0
Water Supply	WS	2	2.5
Storm Water Drainage	SWD	3	3.8
Road	Road	4	3.9
Solid Waste Management	SWM	5	4.0
Traffic Management	TM	6	4.3
Public Transport (Bus, Vikram, 3 wheeler, cycle Rickshaw, any other)	PT	7	4.4
Parking	P	8	4.5
Street lighting	ST	9	5.5

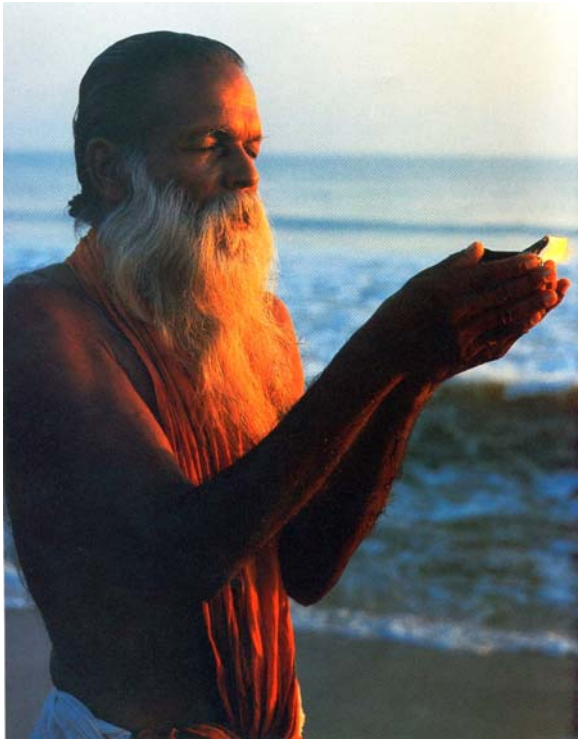


6.3.3 Vision Statement

Views of stakeholders on vision of Haridwar are as follows:

- Beautiful City
- Clean and Green City
- Pollution free
- Global City of Hope, Faith and Spirituality
- Vatican of Hindus
- Integrated Services for residents and floating Population
- Adequate public transport and parking facilities
- Improvement of basic services in slums
- Land development and affordable housing for all
- Public recreational facilities
- Urban aesthetics
- Environmentally sustainable
- Good governance and departmental coordination

The diverse views of stakeholders ranging from an epitomized view of Haridwar as 'Vatican of Hindus' to a much generalized 'Clean and Green City' were integrated to form the city vision. In the above context, it was felt that Haridwar should have a vision which enhances the character of the old historical town and also sets the progressive path for the new developing areas.



Vision Statement

The holy city of Haridwar aspires to be

A City of Hope, Faith and Spirituality.

Haridwar will develop into an international destination of pilgrimage and tourism, in keeping with its rich cultural heritage, pristine surroundings and strategic location on the pilgrimage route.

and

will emerge as a fast growing urban centre led by economic development

Strategic Objectives

- **Integrated development to provide facilities to citizens and tourists**
- **Develop Tourism in Haridwar in sectors of Pilgrimage, Eco Tourism and Adventure Tourism**
- **Environmentally sustainable development to preserve the surrounding natural resources**

6.4 Sector Vision and Goals

Six working groups were formed to discuss sector vision and goals. The sub-groups were as follows:

- Institutional and Finance
- Solid Waste Management and Environment
- Roads, Traffic and Transport
- Water, Sewerage and Sanitation
- Urban Planning, Tourism and Industries
- Urban Poor and Slum Development

These groups held focussed group discussions. Each sub-group comprised of citizens, representatives of CBOs/NGOs, officials of para-statal bodies (e.g., for Roads & Transportation group, representatives from PWD, Police (traffic), Nagar Palika Parishad etc.) and Consultants' subject experts. After discussions on the sector vision over the next 20 - 25 years, interventions were discussed, identified and consensus was reached in prioritizing them.

Photos of stakeholder's workgroups

Finance & Institutional Work Group Consultation

Summary of discussions in Annex 6

Solid Waste Management & Environment Work Group Consultation

Summary of discussions in Annex 6

Roads & Transport Work Group Consultation

Summary of discussions in Annex 6

Water, Sewerage and Sanitation Work Group Consultation

Summary of discussions in Annex 6

Planning, Urban Renewal Work Group Consultation

Summary of discussions in Annex 6

Urban Poor and Slum Development Work Group Consultation

Summary of discussions in Annex 6

6.5 Sector Strategies

The sector strategies have been prepared in consultation with primary and secondary stakeholders. The "vision" for the City, as agreed with the primary and the secondary stakeholders, is to be realised through a more specific range of infrastructure and economic sector strategies and land use transformations. The sector strategies are discussed in the Chapter 7.

7. Sector Strategies and Identification of Projects and Programme Interventions

In this chapter, each sector is discussed commencing from the sector vision, goals and strategies to achieve the vision leading to intervention and action plans for each sector. Projects have been identified wherever relevant and prioritized. It is proposed to achieve the vision through a phased programme of intervention. Phase 1 will cater to the needs of the citizens for each sector until 2021 and implementede during 2007-21. Phase 2 will cater to the citizens' needs beyond 2021 up to 2036 and will be implemented during 2014 – 25. The proposed projects have been costed and the estimated costs leading to a city Invetment Plan, is presented in Chapter 8.

7.1 Economic Development

From the city vision, it is clear that Haridwar will emerge as a unique city with rapid economic growth and promotion of pilgrimage by restoring its cultural heritage. The impact of two factors viz. large investments in industries which are expected to be made in the coming years; the planned infrastructure and institutional improvement with financial assistance of the ADB and the Infrastructure Development Fund; and the proposed overall development of the town under the Jawaharlal Nehru Urban Renewal Mission will widen employment opportunities both in secondary and tertiary sectors. Consequently, an economic development strategy for the city ought to be in place. This must be balanced against: (i) the need for conservation and enhancement of the existing cultural, historic and religious assets of the town, and (ii) the expressed desire of stakeholders to retain 'clean and green' new city areas.

7.1.1 Economic Development Strategy

The city economic development strategy may include:

- Acquire and develop land for creating industrial estates, for meeting the demand of individual industries, and for housing complexes in tune with the Physical Growth Initiatives and zoning control
- Provide for uninterrupted power supply
- Install an earth station at Haridwar
- Promote public-private partnership in the development of infrastructure
- Provide a truck terminal, perhaps in joint venture with private sector, and promote shopping complexes
- Upgrade connectivity, road, rail, other communication
- Create warehousing facilities
- Prepare and activate Disaster Management System to be in readiness at all times
- Develop satellite townships and relocate Government Offices away from hustle bustle of old religious overcrowded city areas
- Upgrade infrastructure for pilgrims and high end tourists

7.2 Physical Growth and Urban Environment

To restore the character of each area and maintain a balance between various activities areas, the growing city of Haridwar should be perceived as different zones for future development. The present city area is identified and classified in two zones for future development:

I. Areas of historical significance -

- Old Town Area of Haridwar – primarily religious/spiritual in character – Temples, Dharamshalas, Gurukul Kangri, Kankhal, Har-Ki-Pauri and other Ghats

II. New City areas -

- Newly developed area – residential, commercial, institutional and support services
- Fringe areas – Upcoming townships due to industrialisation

The vision, strategies and action plans related to urban physical growth and urban environment are presented in Table 7.1.

Table 7.1: Physical Growth and Environmental Aspects

Vision and Goals	Issues	Strategies
Vision: To promote ecologically sustainable and planned development for citizens and the tourists **Goals**: To restore the historical character of the old town To integrate development in the peri urban areas To preserve and conserve the environmental and ecologically sensitive areas	Physical urban growth is constrained by Shivalik mountain range in the North and Northeast and river Ganga in the South. Ribbon development along the main corridor of town creating traffic congestion Mixed land use in old areas Deteriorating environmental quality in old areas Encroachments along roads and on ghats Slums and squatter settlements along the river and canal Acute congestion in Jwalapur due to unorganized growth Unauthorised construction on undeveloped land Lack of affordable housing. Encroachments on undeveloped open spaces Lack of recreational facilities.	***Old Town*** Area around Har-Ki-Pauri to be declared as a "Special Zone" and should have controlled development. In the long term, this zone should have only public transport and pedestrian ways which entails provision of proper parking areas at suitable nodes. Conservation/ preservation of heritage buildings Remove encroachments from heritage precincts Identify and develop norms for ecologically fragile areas and preparation of natural disaster mitigation plan Widening of Upper road as well as development of alternate routes to Har-Ki-Pauri. Strict enforcement of development controls to restrict construction activities in old town areas Revision of byelaws to include appropriate controls and architectural guidelines for built structures to enhance aesthetics Improve old congested areas of Jwalapur and Kankhal ***New town areas*** Urban Growth Directions Promote Growth in areas with good connectivity, availability of land for expansion and suitable terrain for development. Future development should be promoted towards west Future development on Laksar road should be regulated to preserve the rich agricultural fields Restrict development on Najibabad Road. Eco-tourism based activities should be encouraged on Najibabad Road Strict enforcement of development controls to preserve hills, forests and rivers

Vision and Goals	Issues	Strategies
	Increased pressure due to large scale industrial development by SIDCUL in Roshanabad	<u>Housing and Built Environment</u> Provision of affordable housing and serviced land for residential development Revision of byelaws to promote inclusive and adequate built infrastructure in the new city areas. Promote architecture which respects the status of Haridwar town and is compatible with the surroundings while effectively meeting the demand for future growth Prepare land management policy to check encroachments and unauthorised construction especially on open spaces Preserve and enhance the green areas, parks, gardens, river-side plantation and Islands Identified open spaces to be developed with parking, community facilities and landscaping <u>Industrialisation</u> Master Plan should include land use provisions and zoning regulation for environment friendly industrial development Strict enforcement of zoning regulations to ensure planned development particularly in respect of location of industrial units
	Environment Pollution due to increased vehicular traffic Pollution of the the River Ganga Monitoring of air and noise pollution Collection, Transportation and Safe Disposal of Solid waste Land Slide from Mansa Devi Hill	Provide adequate provisions for parks, green belts and plantation of trees at the planning stage for development of an area. Protection of environmental resources such as forest, land and water body Plantation of appropriate tree species on the existing roadsides and conducting regular tree census Adequate protective measures to prevent landslide from the Mansa Devi Hill. Framing bye laws to incorporate environment protection at city level. City greening by involvement of private sector, NGOs and citizens groups The new master plan should address Environmental aspects e.g., river pollution, prevention of soil erosion from the surrounding hills and natural hazards Necessary measures to make it mandatory for use of alternative fuels (i.e. CNG)and improve traffic management system of the city Compliance of the MSW (Management & Handling) Rules, 2000 including identification and selection of alternative landfill sites and composting for safe disposal of MSW of the city. Wider coverage of the city by sewerage network and house connections and providing treatment facilities of the sewage for its safe disposal. Proper maintenance of the existing sewers and water supply pipelines to ensure minimum leakage.

Based on consultation with stakeholders at the city and state level, initiatives were identified to achieve the sector vision and goals. The proposed projects and the implementing agency are listed in Table 7.2. The listed projects cover the urban renewal of the old town areas, development in the fringe areas and urban environmental upgradation initiatives.

Table 7.2: Identified Projects for Urban Renewal, Area Development and Environment

S.No.	Project	Description/Remarks	Implementation Agency
	Urban Renewal and Area Development		
1.	Development of GIS of HDA Planning Area (covering Kumbh Mela Area)	Proposed by HDA. Development of GIS will be crucial for taking up a planned and an integrated development of Haridwar town and the fast developing peri urban areas	HDA
2.	Development of Ghats	The need to develop these Ghats was raised by HDA, Ganga Sabha, Tourism Department and citizens. Development of Ghats was proposed to be divided in three categories as follows: I. Development of Ghats along Ganga Canal - from Har-Ki-Pauri to Bhimgoda - from Har-Ki-Pauri to Pantdweep bridge - Chandidweep Ghat - from Damkothi to Sati Ghat - from Sati Ghat to the Point where it meets River Ganga - Extension and development of Har-Ki-Pauri Ghat (includes beautification) - Replacement of tiles on existing Ghats as Pilgrims find the tiles unbearably hot in the day time and also the tiles are very slippery which is dangerous. Also it was informed that tiles are breaking off at various places II. Development of Ghats in Jwalapur Area III. Development of Ghats downstream from Kankhal Improvement works on some ghats are proposed in budget for Kumbh 2010	HDA
3.	Improvement Works at Har– Ki- Pauri Area	This is one of the old and congested areas of the town. The area needs redevelopment which will be done over long term; however, short term improvement works have been identified with the stakeholders such as reorganization of areas fir 'Pooja', construction of changing rooms, lighting facilities and installation of metal chains along Ghats.	HDA
4.	Redevelopment of Moti Bazar	Stakeholders raised the need to redevelop Moti Bazar to expand Har-Ki-Pauri	HDA
5.	Urban Renewal Projects in Jwalapur Area	Underground cabling was proposed in the dense areas which would help in road widening. Relocation of transport agencies and timber marts was proposed by the stakeholders.	HDA, Haridwar NPP
6.	Urban Renewal Projects in Kankhal	Underground cabling, development of Latowala Nala, constuction of public stand posts and public toilets was proposed by the stakeholders to decongest the area.	
8.	Improvement and Beautification of Khadkhadi Shamshan Ghat, Sati Ghat and Shamshan Ghat in Jwalapur	Primary concern of Ganga Sabha and citizen groups as lack of facilities at these Ghats is causing water pollution in the river (ashes, unburned body parts, etc flown in the water) and the surroundings are not conducive for performing various rituals. Beautification of Sati Ghat is proposed in budget for Kumbh 2010.	Irrigation
9.	Relocation of Slaughter House	Proposed by citizens and Haridwar NPP	Haridwar NPP
10.	Shifting of Govt	Project proposed by HAD to decongest the Haridwar	HDA, PWD

S.No.	Project	Description/Remarks	Implementation Agency
	Offices	town area	
11.	Site Development of Transport Nagar	HDA has already bought the land for Transport Nagar. Site development will include construction of administrative offices, internal roads, community facilities, shed for drivers and a sewge treatment plan	HDA
12.	Construction of Ganga Museum showing history of River Ganga	Stakeholders have strongly suggested the need for such museum. It was further suggested that Museum could be developed on top of existing municipal Jahnvi Market at Har-Ki-Pauri	Haridwar NPP
13.	Preparation of Land Inventory of HDA	Clear need for land inventory raised by various officials to achieve clarity on the status of land and its use as most of the land is under the ownership of Irrigation Department, UP Govt, etc	HDA
14.	A study of Building Byelaws	Proposed by HDA. The study will cover: - to assess allowable FAR for areas in old city area, other city area and the upcoming new areas - ensure seismic safety - to assess possibilities of colour scheme and architectural design guidelines for core city areas, etc - to include guidelines for maintaining cleanliness in the public buildings and religious institutions in the core city area - to restrict construction activities in the foothills of Shivalik mountain range - to include rain water harvesting and recycling of water	HDA
15	Preparation of Master Plan for religious town	It was deemed necessary to prepare a separate master plan for the old town areas – Har-Ki-Pauri and Kankhal and other sites of historical importance to preserve the intrinsic religious character of Haridwar.	HDA
16	Area Development in Peri Urban Areas	It is estimated by HDA that about 1,75,000 sq m of land would be required for 25,000 EWS housing in areas around IIE in the coming decade (refer section on Urban Poor). Further, service network will need to be expanded in areas along Laksar Road, Roorkee Road and in Roshnabad to accommodate future physical urban growth. The proposed cost estimate will include infrastructure development costs in the peri urban areas and for EWS housing the cost will include land acquisition and area development costs	HDA
	Urban Environmental Upgradation		
17.	Geological and Soil Conservation study for Mansa Devi Hill	This will be an important study in order to undertake the plantation and soil stabilization initiatives on Mansa Devi Hill	Forest Department
18.	Rock bolting, surface stabilisation, drainage and erosion control works for Mansa Devi Hill	The need to check soil erosion from Mansa Devi Hill was brought out very strongly during the stakeholders consultation	Forest Department
19.	Contour Drains along Mansa Devi Hill with silt arresting chambers	Need for such a drain was raised very strongly by HNPP and UDD	Irrigation Department
20..	Surface stabilisation, drainage and erosion control works for Chandi Devi Hill	Stakeholders raised the immediate need to prevent erosion from Chandi Devi through various means including plantation	Forest Department

S.No.	Project	Description/Remarks	Implementation Agency
21.	Development of Green Belt along the Ganga Canal	Plantation along Ganga Canal would help in increasing the green cover in the town as well as prevent encroachments on these areas	Irrigation Department
22.	Preparation of Disaster Management Plan and setting up Disaster Management Centre	The consultants and other tertiary stakeholders felt it imperative to draw a disaster management plan for the town to cater to emergencies during religious fairs especially *Kumbh Mela* and for natural disasters as Haridwar lies in an ecologically fragile zone.	HDA
23.	A study of landscape characteristics and recommendations for open areas	Proposed by HDA.	Tourism / Irrigation Department

7.3 Water Supply

Vision

The vision of this sector is “a clean and green city with integrated services for residents and floating Population and improved basic services in slums”

Strategies

In order to prepare a strategy to achieve the sector vision it may be advisable to refer to the National and State Policies on water. The National Policy emphasizes on:

- Drinking water must get the top most priority on water allocation.
- Adequate Safe drinking water must be provided to the entire population.
- Need to ensure that water charges must cover at least the operation & maintenance cost part of the capital cost subsequently.
- Private Sector participation in planning and management should be encouraged where ever feasible.

The State Policy of Government of Uttarakhand is under preparation. It is understood that the GoU, keeping in view the difficult hilly terrain and low per capita income, is working on an appropriate policy to provide clean, potable water in adequate quantity for all in the rural and urban areas of Uttarakhand. This generally follows the national policy.

The strategies to achieve the vision of assured, good quality water supply to all citizens of Haridwar are:

1. Create computerized database of entire system built on GIS based mapping done by GoU and update continuously
2. Reduce UFW in a progressive manner to achieve 15% UFW over the short term
3. Prepare a Long termComprehensive System Reorganization programme using Consultants’ services.
4. Provide additional sourceworks to satisfy the demand of population

5. Replace old and dilapidated piplines including those that have come under roads due to road widening
6. Separate Zones to achieve control on distribution parameters and achieve equitable distribution
7. Achieve assured quality of supplied water by introducing routine water quality monitoring and disseminate information at municipal ward level; Enhance testing capability
8. Achieve Least Cost of production and distribution to consumers
9. Achieve at least 50% cost recovery over short term and maximum / full recovery over medium to long term.

Suggested Interventions to achieve Sectoral Vision

Essential works, along with the immediate needs as estimated by UJS for proper running and maintenance of the water supply system and to cater to the vision of stakeholders up to the year 2036 have been included in this plan after discussions with UJS officers, stakeholders and peoples representatives. The provision of water has been made @ 135 lpcd keeping an allowance of 15% for wastage.

Annex 7.2.2 shows the growth in demand upto the year 2036. During Phae 1, Immediate requirement of the water supply system needed for proper running and maintenance along with the works needed for the population after 15 years i.e. upto 2021 will be taken up. These works include construction of new tubewells or infiltration wells, over head tanks for the requirement of 2021 population, Reorganisation of distribution system in old affected areas and replacement of pipes crossing the sewer manholes and those which have come under road widening and buried 4 to 5 metre deep, leak detection, SCADA and building for tax collection centres etc. During Phase 2, capaqcity augmentation to provide additional sourceworks (new tube wells / infiltration wells) and storage works will be taken up. Further, replacement of old tubewells, including those constructed in Phase 1 will also be taken up in Phase 2.

1. Sourceworks

During phase 1, the suggested areas for proposed tubewells to meet the demand of population upto 2021 are given below.

1. Pant Dweep, 2. Sapta Sarovar, 3.Dudhadhari Chowk, 4.Shanti Kunj, 5.Kangra Dweep, 6. Lalji Wala, 7.Rodi, 8. Chandi Dweep, 9. Industrial Area 10. Belwal, 11. Gurukul Kangri, 12. Guru bax vihar, 13. Bairagi Camp, 14. Santosh vihar, 15. Nath Nagar, 16. Mahatan , 17. Peeth Baazar, 18. Pandey Wali,

The exact spots for the construction of tubewells or infiltration wells are yet to be identified. Despite availability of funds, many works for the Ardhkumbh could not be taken up due to non availability of land as was envisaged in the project. Therefore, in the present case, cost of land at the prevailing market rates has been included in the cost estimates for these works.

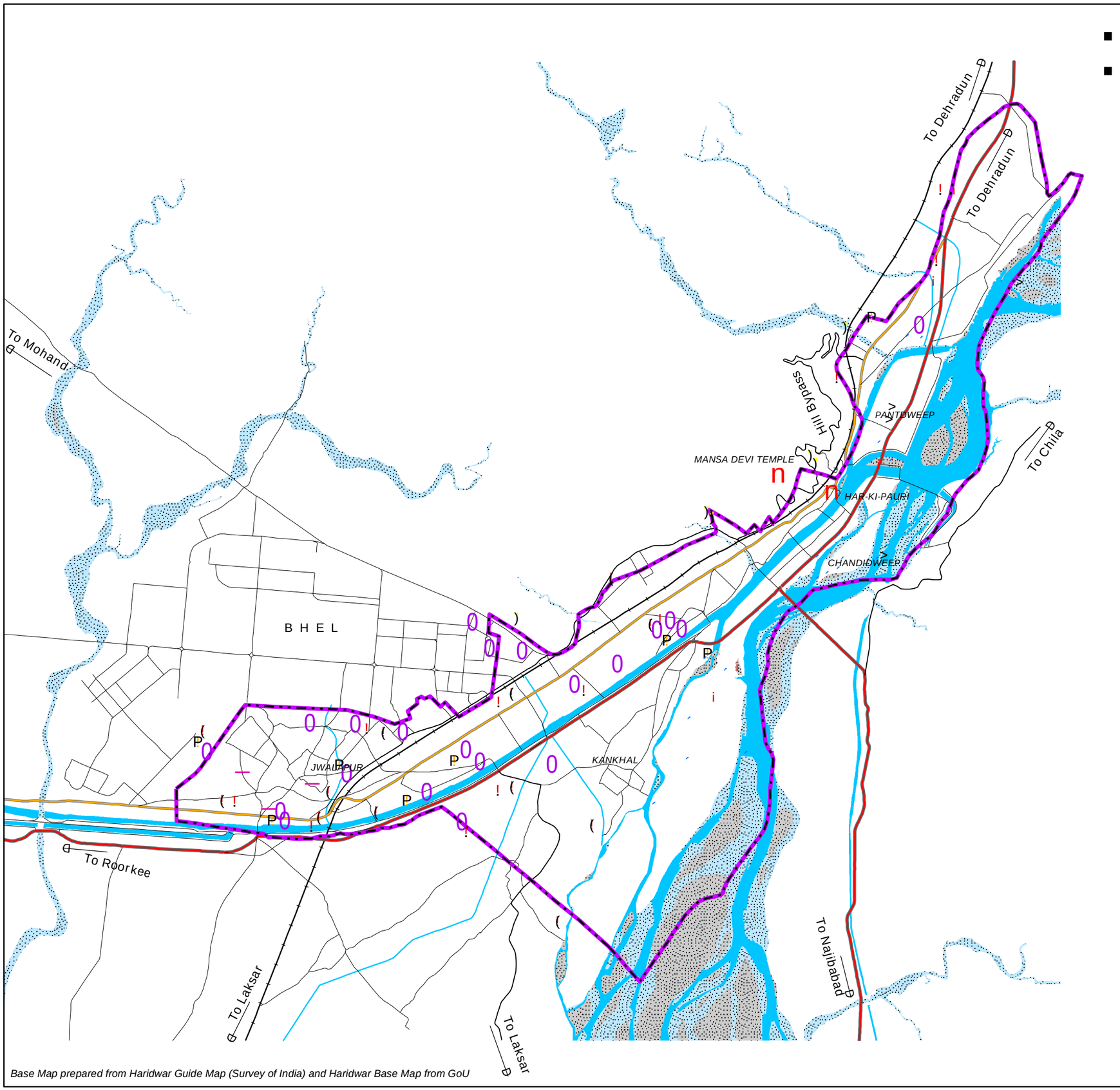
2. Replacement of Pipelines

Several stretches of pipelines, which have come under the middle of road due to road widening and buried 4m to 5m below require replacement. Replacement work of these pipelines is listed in Table 7.3.

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 7.1 :- WATER SUPPLY PLAN



Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Legend

Municipal Boundary	
National Highway	
State Highway	
Major City Road	
Railway Line	
River / Drain	

	EXISTING	*PROPOSED*
Over Head Tank	P	!
Clear Water Reservoir	)	
Tubewell	0	(
Infiltration Well	´	i
Temporary IW	>	
Open Well	—	

1 0 1 2 km

Data Source

! **Uttaranchal Pey Jal Nigam, Haridwar**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Table 7.3: List of Pipelines Proposed for Replacement during Phase 1

S.No.	From	To	Dia of pipe	Approximate length	Depth below the road
1.	Ganga Swarup ashram	RTO office	125mm	200m	5m
2.	Dudhari Chowk	Sapta Rishi Chungi	250mm	500m	4.5m
3.	Bridge corporation Chowk	Laltarao	450mm	200m	4.5m
4.	Mela Hospital	Nirmala Chawni	150mm	250m	4m
5.	Chandra Charya Chowk	Govind puri	150mm	250m	4m
6.	Chandra Charya Chowk	PNB Vivek Vihar	200mm	250m	4m
7.	Chandra Charya Chowk	Vinayak Hotel	200mm	250m	4m
8.	Bharat cement store	Ram Rahim colony	100mm	600m	4m
9.	Desh Rakshak Hospital	Ganesh puram	100mm	600m	4m
10.	Laksar Road	Gupta colony	100mm	300m	5m
11.	Other area in various zones under investigation	-	100mm to 250mm	6600m	4 to 5m

3. Replacement of Old and damaged distribution Mains in old town

Replacement is required in several areas in the old town. The range of diameter varies from 65 mm to 200mm. Total length estimated is 85 km.

4. Areas of old town where pipeline is proposed to be reorganised (Approx. 100 kms)

1.Bhopat wala, 2.Har Ki Pauri, 3. Mayapur, 4. Kankhal, 5. Jwalapur (Both zone)

5. Replacement of pipelines to prevent mixing up with sewage water

Many pipelines are adjacent to sewer lines and crossing the manholes which are proposed to be replaced by new pipelines approx. 10 kms. Average diameter of all the above pipelines is considered as 150 mm and estimated @ Rs. 1000 per m.

The breakdown of these works during Phase 1 and Phase 2 is shown in Table 8.2.

7.4 Sewerage

Vision

The sector vision states that *"Haridwar will be a Clean and Green City and Pollution free"*. The GoU is aware of this sector goal to have a pollution free sewerage system in the whole of the town.

Strategies

The strategies to achieve this vision are as follows:

- 100 % treatment of sewage.

- Sludge reuse for agriculture, horticulture, and ornamental purposes such as recreational parks.
- New technologies such as intermittent cyclic or sequencing batch reactor activated sludge process are needed to achieve high effluent quality, low land requirement, no odor, vector or nuisance and competitive operation and maintenance cost. Details on the selection of large, medium and small sized sewage treatment plants are provided in Annex 7.1.

Action Plan for Haridwar Sewerage System

To cater to the current service gap as well as needs of the estimated population, following actions are required.in a phased manner:

- Creation of Database of the existing sewerage system by GIS & sewer design software based mapping during Phase 1
    - An additional 74.4 Km of sewerage network is proposed to be put in place in the by 2011-2012 during Phase 1. Some extension work will also be required during phase 2, although of a lesser magnitude.
- During Phase 2, new STPs will be implemented for ……..to cater to population growth during 2022-36
- Rehabilitation of existing sewage pumping stations and 18 mld STP. Location of STPs is shown in Map 7.2 during Phase 1.
- Capacity augmentation and rehabilitation of rising mains during Phase 1; this action will also be needed during Phase 2.
- Modification of 8 mld STP based on Karnal Technology (Agro-Forestry) to 12 mld Sequencing Batch Reactor process during Phase 1

Action Plan for Implementation

A zonewise action plan for phase 1 is given in Table 7.4.

Table 7.4: Zonewise Action Plan

Zones	Components of Schemes
Zone I **Bhopatwala**	▪ New trunk sewer scheme: Hotel Nanda Tel-Shanti Kunj-Jai Maa Ashram-Near Loknath Nala-Bhopatwala SPS = 4.0 km sewer length : 460 lacs ▪ New trunk sewer scheme: Haripur Kalan- Saptrishi Ashram-Anand Utsav-Bhopatwala-SPS = 5.5 km sewer length : 850 Lacs. ▪ New Branch Sewer Schemes = 20.0 km sewer length: 550 Lacs ▪ Bhopatwala SPS rehabilitation. ▪ 100 % Treated sewage and sludge reuse for agriculture.
Zone II **Haridwar**	▪ New sewerage schemes for PWD colony and municipality Low Lying area with SPS = 23.9 km sewer length : 250 Lacs. ▪ New sewerage schemes for Lok Sewa Ayog area and SPS = 8.0 km sewer length : 500 Lacs. ▪ SPS Kankhal rising mains capacity augmentation = 1.4 km Length: 200 Lacs ▪ New Bypass construction of Kankhal Trunk Sewer = 1.0 km Length: 200 Lacs. ▪ Existing 18 MLD STP rehabilitation.= 350 Lacs. ▪ Kangra Mandi, Gaughat, Brahmapuri, Mayapur SPS, Arya Nagar, Bairagi Camp, Kankhal, Bhairon Mandir, Main Jagjitpur SPS rehabilitation. = 500 Lacs.(including other sewage pumping stations) ▪ GIS based mapping of the existing sewerage system. 100 lacs ▪ 100 % Treated sewage and sludge reuse for agriculture.

Zones	Components of Schemes
Zone III **Jwalapur**	▪ New Sewerage scheme for Gughal Road area= 5.5 km sewer Length: 320 Lacs. ▪ New Sewerage scheme for St Mary Holy Family Church area.= 4.0 km sewer length: 320 Lacs. ▪ New sewerage scheme with SPS for Lal Mandir Area = 3.5 km sewer Length: 320 Lacs. ▪ Rehabilitation of rising mains of Jwalapur SPS to Sarai STP= 3.0 km length: 250 Lacs. ▪ Existing STP Modification to SBR Activated Sludge Process of 12 MLD capacity =1000 Lacs) ▪ Jwalapur SPS rehabilitation. ▪ 100 % Treated sewage and sludge reuse for horticulture, recreational parks and agriculture.

Figure 7.1: New Sewerage Schemes for Proposed Areas

Proposed Sewerage Scheme for Zone I (Anandutsav Ashram, Bhopatwala)

Proposed Sewerage Scheme for Zone III (St. Mary Hospital & Lal Mandir Area of Jwalapur)

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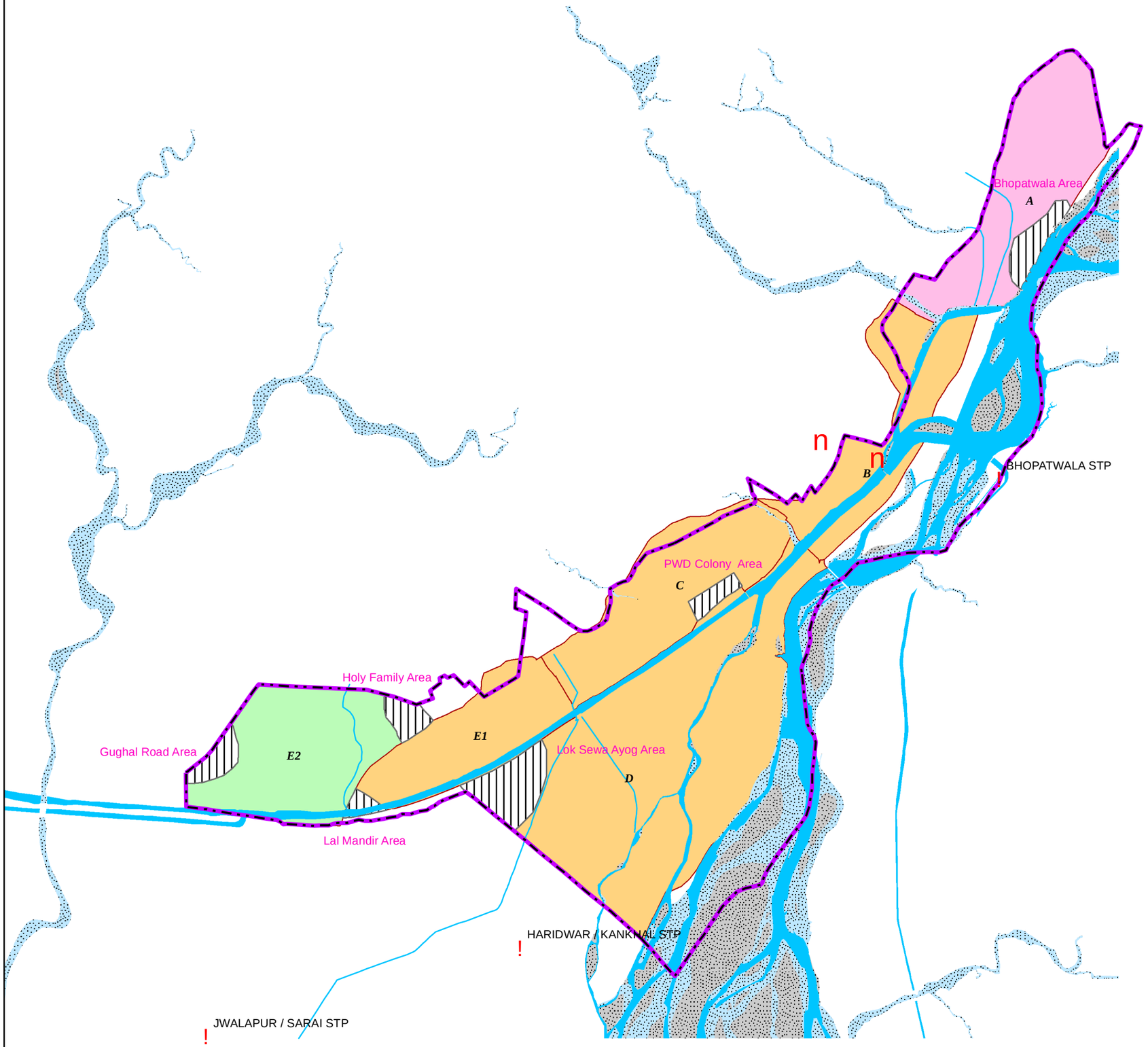
CITY DEVELOPMENT PLAN

MAP 7.2 :- EXISTING, PROPOSED SEWERAGE & STP's



Legend

- **Municipal Boundary**
- **River / Drain**
- **Existing Sewerage Network**
  - **Zone I**
  - **Zone II**
  - **Zone III**
- **Proposed Sewerage Network**
- **Sewage Treatment Plant**

1 0 1 2 km

Data Source

! **Uttaranchal Pey Jal Nigam, Haridwar**

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

Other action plans and initiatives may be taken up concurrently. They are as follows:

- Prevention of entering municipal solid waste and silt in the sewer line.
- Keep sewer at reasonable distance from water line to avoid contamination.
- Improve and ensure access to sanitary services for the urban poor and slum dwellers.
- SCADA control system for sewage pumping station operations.
- Encourage pay and use category of public conveniences with community involvement in the maintenance of the same
- Cost recovery on service through the introduction of sewerage charges directly or in the form of tax or introduction of sewerage surcharge in the water bills from local residents, hotels and Dharamshalas. This however needs political will.

7.5 Storm Water Drainage

Vision

The sector vision states that *"Haridwar will emerge as a fast growing urban centre of the new state*". Provision of Integrated Services for residents and floating population is the mainstay of this sector vision. The GoU is aware of this sector goal to have a problem free storm water drainage system in the whole of the town.

Strategies

The strategies proposed to achieve the above sectoral vision are as follows:

- Strict control against Dumping of Garbage in the drains.
- Awareness Campaign to educate the masses.
- Regular Cleaning and maintenance of drains.
- Banning the use of plastic bags (as achieved in other tourist towns).
- Discontinue the practice of connecting the Toilet outlets to the drains.
- Implementation of the comprehensive plan for Remodeling of the drainage system, starting from the tail ends and not from head or middle as is the adopted some times.
- The practice of Diversion of surface drains in to sewers should be stopped.

The key issues and strategies were discussed with primary stakeholders and secondary stakeholders (e.g., UJS, UPJN and HNPP) to arrive at a set of proposed interventions and action plan.

Proposed Interventions

Interventions are required to rehabilitate capacities of receiving nallas and drains, construct new facilities to achieve required efficiency of the drainage system. The following proposals are recommended as part of the Action Plan:

Table 7.5: Proposed Intervention for Storm Water Drainage

S. No.	Proposals	Phase 1 2007-13	Phase 2 2014-25
1.	Road side surface masonry drains	250 km	30 km
2.	Rehabilitation of existing drains in to RCC. Drains	10 km	4.5 km
3.	Box culvers for main roads	54 nos.	24 nos.
4.	Slab Culverts for internal roads	200 nos.	100 nos.
5.	Precast covers over the drains	20 km	9 km
6.	Laying of under ground 450mm pipes in small lengths	3.8 km	1.2 km
7.	Provision of manholes of 900mm dia where existing drains have been permanently overed & other Misc. works such as out fall structures	100 nos.	30 nos.
8.	Outfall Structures	L.S.	L.S.

7.6 Solid Waste Management

Vision

The sector vision states that *"Haridwar will be a Clean and Green City and Pollution free"*. Solid waste management is one of the most crucial elements to achieve the vision. The sector vision and strategies are presented in Table 7.6. Outline of proposed SWM collection is given in Annex 7.2.

Table 7.6: Sector Vision and Strategies for SWM

Vision	Key Issues	Strategies	Phasing
One of the most 'Clean & Green' Cities of the Country	Non-compliance of the Municipal Solid Waste (Management & Handling) Rules, 2000	Prepare a comprehensive Solid Waste Management Master Plan	Phase 1
	No proper citywide solid waste quantification and characterization	Conduct long term campaign for waste segregation and minimization at the household level	Phase 1; to continue in phase 2
	No Segregation of waste at source	Improve the primary waste collection by extension of door-to-door waste collection system including the slums.	Phase 1
	Primary Collection of waste is almost absent	Improve present solid waste transportation system by efficient route planning and waste handling	Phase 1; to continue in phase 2
	Less involvement of community and private agencies	Outsource part of the transportation activities to private agencies.	Phase 1; to continue in phase 2
	Improvement in SW Transportation system	Identify, select and develop alternative disposal sites to fulfill long term needs and safe waste disposal	Phase 1; to continue in phase 2
	Safe Disposal of Waste	Decentralize SWM Circle office.	Phase 1
	Health and Hygiene of Sanitary Workers	Set up separate cell in DNN for exclusive SWM purpose.	
	Lack of Public Awareness	Train and upgrade the knowledge and skill of the DNN staff.	Phase 1; to continue in phase 2

Vision	Key Issues	Strategies	Phasing
		Frame bye-laws to comply with the MSW (Handling & Management) Rules, 2000 and empower the DNN to strictly implement the same	Phase 1
		Provide protective clothing to the workers	Phase 1; to continue in phase 2

7.7 Roads and Transport

Vision

Efficient, Safe and Eco friendly Transport system.

The vision of the Roads and Transport sector for Haridwar city is to provide the citizens and tourists with a safe and comfortable transport system that is sustainable and environment friendly and to significantly improve the share and quality of public transport service that would improve the quality of life.

Strategies

Arising from the above sectoral vision, the following strategies are adopted:

- Ensure free flow of traffic through junction improvement, and providing sufficient off-street parking for both city traffic as well as floating traffic.
- To provide alternate routes, elevated roads, water ways, widened bridges for decongesting the traffic on the major traffic corridors in the city.
- To provide better and affordable public transport system.
- To improve the facilities for pedestrians and thus public safety.

Major Initiatives/Projects

Junction Improvement

Following junctions are proposed for the improvements on the basis of observation and with consultation of Traffic Police, Haridwar city.

Table 7.7: Junctions Proposed for Improvement

Phase 1	Phase 2
1. Chandi Ghat junction(on NH 58	1. Prem Nagar chowk
2. Shankaracharya chowk	2. Singh Dwar chowk
3. Tulsi chowk	3. Pul Jatwara junction
4. Ranipur Morh Chowk	4. Katghara chowk
5. Chandracharya Chowk	5. Aryan agar chowk
6. Junction crossing of Rishikul and NH-58	6. T- junction near Shankar Ashram
7. Agrasen chowk	7. Devpura chowk
8. Junction of old Delhi – Nitipass road and Hill bypass road	8. junction of Delhi – Niti pass road and Karach road
9. Dudhadhari junction on NH-58 chowk	9. RTO chowk
10. Shiv chowk on Delhi – Niti pass road	10. Sarvanand ghat chowk
11. Junction of old Delhi – Nitipass road and NH-58	11. T- junction near Jairam Ashram
12. Bhagat Singh chowk near BHEL colony	
13. Deshrakchak T- junction	

Intersections must be designed and operated for simplicity and uniformity. The design must keep the capabilities and limitations of drivers, pedestrians, and vehicles using intersections. It should be based on knowledge of what a driver will do rather than what he should do. All the traffic informations on road signs and markings should be considered in the design stage prior to taking up construction work. Any locations having merging diverging or crossing maneuvers of two vehicles are a potential conflict point. The main objective of the intersection design should be minimizing conflict points. The improvements measures normally include:

- proper channelisation for the free left turn
- footpath on approaches of the junctions
- planned pedestrian zebra crossing
- shifting of electric poles and cutting of trees (where absolutely necessary)
- land acquisition/removing structures
- No parking on the approaches of the junction for at least 50m.

Traffic Improvement Plan and Traffic Enforcement

As it is observed that there is haphazard on-street parking which reduces road capacity causing traffic congestion. Following areas are proposed for no parking zone:

- N.H.58 from Jatwara Bridge to NPP Haridwar Boundary.
- Jatwara Bridge to Bhopatwala via Har-ki-Pouri (Delhi –Nitipass Road/Upper road).
- Jwalapur –Chandighat road via Lalta rao (including AB link road, Old DN, road, Railway culvert 1/24 park road).
- PWD Inspection House Road.
- Bhimgoda Link road.
- Chandracharya Chowk to Bhagat singh Chowk road (BHEL road).
- Hill Bye Pass road.
- Tulsi Chowk to Shiv Murti Chowk Road.
- Road From Shankaracharya Chowk to Deopura.
- Road From Mayapur Dam to Lalta Rao Road.
- Pawandham road .
- Sarvanand Ghat link road.
- Shankaracharya Chowk to Chowk bazaar road (Kankhal).
- Road from Kankhal Sanyas Road.
- Road from Kankhal Thana to Singhdwar Road.
- Singhdwara to Shankarahran Road.
- Kankhal-Jwalapur road.
- Jwalapur railway crossing to Ambedkar Chowk road (Kadach road).

- Road From Thana Jwalapur to Jhanda Chowk Road .
- Road from Jhanda Chowk to Railway Police Chowki via Jama Masjid Road.
- In 20m Length on all arms of Junction.

Proposed one-way, clockwise traffic movement

- Ugrasen Chowk to Shiv Murti chowk (except heavy vechicles).
- Shiv Murti Chowk to Tulsi Chowk (Shiv murti road).
- Tulsi Chowk to Ugrasen Chowk (Sant Muthura Dass road).
- Aryanagar Chowk to T-Junction near Shankar Ashram.
- T-Junction near Shankar Ashram to singh Dwar Chowk (Avadhut Mandal Road).
- Kankhal –Jwalapur road (Aryanagar Chowk to sewerage pumping station Road).
- Junction of DN Road and Jwalapur – Lalta road to kadach Road Junction.
- Kadach road Junction to Aryanagar Chowk.
- Ram Krishan Mission Road in Kankhal (Desh Rakshak Chowk to Mahatma Gandhi Road
- Junction).
- Ram Krishan Mission road and Mahatma Gandhi Road Junction to Shankaracharya Chowk.
- Sanyas Road (Shankaracharya Chowk to Thanda Kuan).
- Jhanda Chowk to Desh Rakshak Chowk.
- Thana Jwalapur to Jama Masjid via Jhanda Chowk (Kathara Bazar Road).
- Jama Masjid to Railway Police Chowki (Gurudwara road).

Traffic Enforcement

It is necessary to strengthen traffic police with trained manpower and equipments for effective enforcement and monitoring of traffic. As per the discussion with traffic police, there is a huge gap between existing strength of traffic police and demand in the city. The traffic police department in Haridwar should also contact with various NGO's and corporate sectors. To improve the improvement of traffic enforcement in the city, following are required:

- Independent consultants(to conduct study for 5 years)
- Development traffic education modules
- Development of traffic training parks (2 nos.)
- Traffic education programme for 10 years

Pedestrian Facilities

Pedestrians are most vulnerable road users in cities. It is therefore necessary to provide better facilities for pedestrian movement in areas where pedestrian movement is predominant. Pedestrian facilities in terms of providing footpaths free

of encroachment, pedestrian guard rails along footpaths in order to segregate them from the traffic on the road. On the basis of observation on flow of heavy pedestrian traffic on main carriageway and discussions with Municipal Engineers and stakeholders following footpaths and guard rails are suggested.

Table 7.8: Proposed Projects for Footpath and Guard Rail

S. No.	Road Section	Length of footpath (km)	Length of Guard rail (km)
1	Jatwara Bridge to Bhupatwala Via Har-Ki-Pauri (DN road) Guard rail upto Bhimgoda.	11.50	9.30
2	Jwalapur to Lalta Rao Road upto Ranipur Mod	2.70	2.70
3	Kankhal- Jwalapur road.	1.10	1.10
4	Arya Nagar to kadach Road Junction	0.60	-
5	Singhdwar to Shankar Ashram Road	0.50	0.50
6	Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	1.80	1.80
7	Tulsi Chowk to Shiv Murti Chowk	0.60	0.60
8	Tulsi chowk to ugrasen chowk	1.20	
9	Chandighat to DN Road near Lalta Rao.	0.80	0.80
10	Saptrishi Ashram Road	1.65	-

Off Street Parking

The phenomenal growth of vehicles has led to increased demand for parking. Being a religious city, there is a sudden increase of floating population on weekend and during Melas and hence there is sudden huge demand of parking to accommodate them. The problem has been further aggravated by the absence of adequate off-street parking facility in the proximity of traffic. Following off-street parking lots are proposed to ease the acute parking problem:

- Pant Dweep (Multi Level) along with Public emenities eg. Toilets, Restaurant etc.
- Rodi Belwala (work already in progress by CPWD)
- Bus Stand (Multi level) by shifting it.
- Rishikul Mandi (Multi level).
- Ramlila ground (Multilevel).
- Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur – Irrigation Dept. Land.
- Chandi Dweep along with Public eminities eg. Toilets, restaurant and bathing ghats.
- Baba Dudhadhari (Bhupatwala).
- Dhobhi ghat (Bairagi) - only during Ardh Kumbh/*Kumbh Mela*.
- Bhairon Akhada for 2 wheelers.
- On BHEL land near Bhagat Singh Chowk for Jwalapur Avas Vikas market Complex.(land is to be acquired from BHEL)

In the above proposed off-street parking lots, a separate projects for beautification which includes public amenities also suggested.

Widening, Strengthening and Overlaying of Existing Roads

Based on traffic observed and present capacity of the road, following corridors are to be widened/overrlaed to cater the traffic demand at the desired level of service.

National Highways:

- NH.58 is proposed to widen from existing 2 lanes to 4 lanes including widening of bridges. (Project already taken by NHAI).

Major Roads:

- Jatwara Bridge to Laltarao road (DN road)- widening by adding additional 1 lane.
- Jwalapur to Laltarao road – Widening by adding additional 1 lane including Bridge in place of Cause way.
- Bhimgoda Link Road – Widening from 4.5m to 7.0m.
- Motichur Railway feeder – widening from 3 m to 5.5m.
- Saptrishi Ashram Road- widening from 5.5m to 7.0m.
- Over laying of existing Kutcha/Khanjar roads

Bypasses, New Roads and Bridge

Bypassess

It has been observed that hill bypass road is damaged and hence not in use at all. This bypass needs restoration and improvement. It is also important to point out that there is no possibility to construct new bypass on the other side of the city as Ganga river is flowing and part of National Rajaji park is coming on the way of the alignment of bypass. Also a new byepass is proposed which connects NH-58 near Jwalapur with Nazibabad road NH-74 near Sidh sot.

New Roads and Bridges

- 1 Lane wide road Covering Kadach Nala.
- 2 Lane bridges to connect N.H.58 with Chandidweep -2 Nos.
- 2 Lane Pedestrian bridges along with pedestrian way from Chandidweep to Har ki Pairi.
- Bridge connecting Chandi dweep and Laljiwala
- Bridge in place of causeway on Jwalapur – Laltarao road
- Bridge on new proposed byepass over Ganga river
- Channelisation of stream between NH 58 and Chandidweepfor spill water from canal

Elevated Roads through River

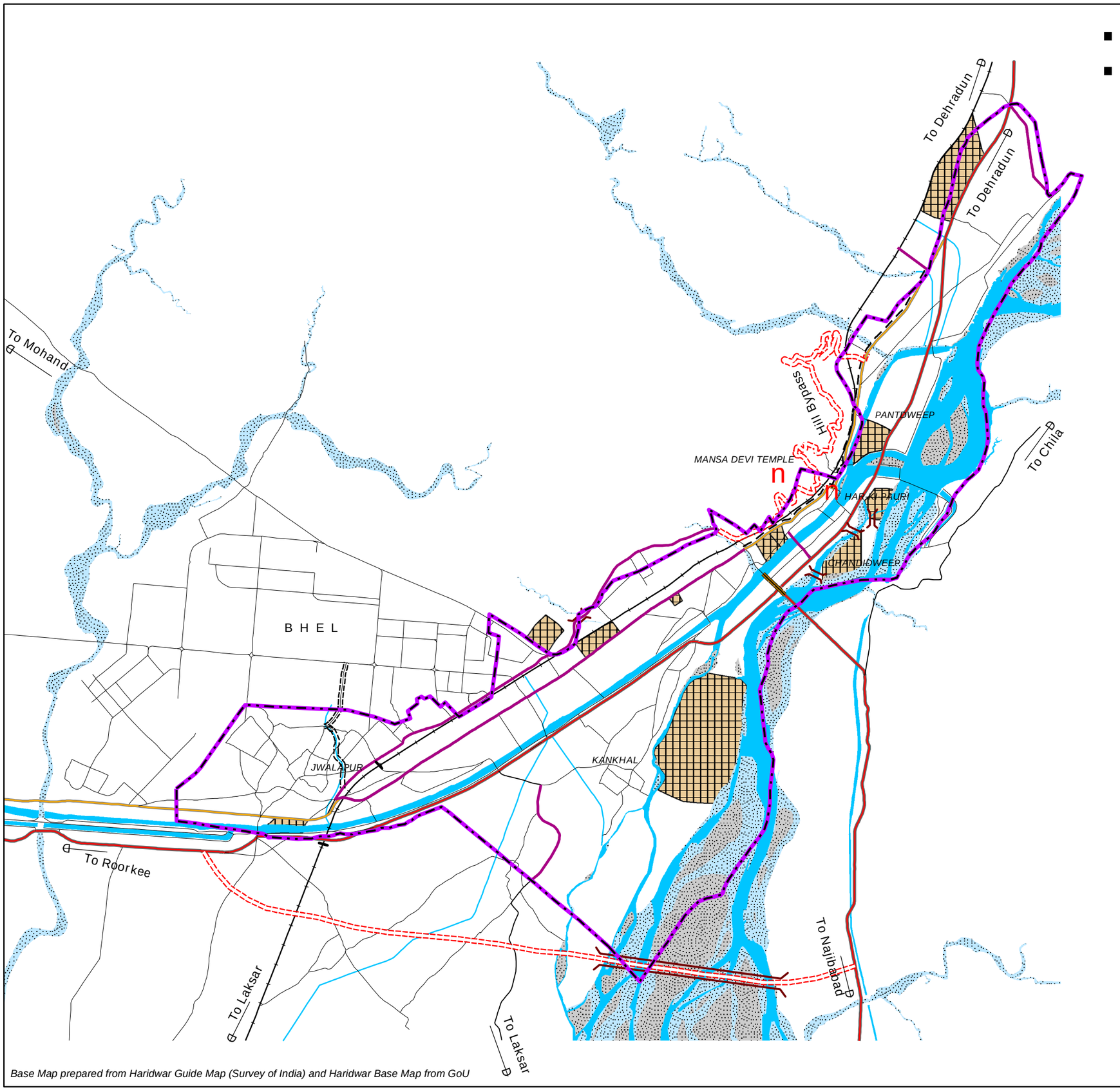
- 2 Lane Road along with foot path connecting Chandighat Chowk to DN Road through Lalta Rao along with bridge over Ganga Canal

Details of sub-projects is given in Annex 7.4 and the proposed projects are shown in Map 7.3.

H A R I D W A R

CITY DEVELOPMENT PLAN

MAP 7.3 :- MAJOR ROAD TRANSPORT PROJECTS



Legend

- Municipal Boundary
- National Highway
- State Highway
- Major City Road
- Railway Line
- River / Drain
- Bypass Road
- ROB / Elevated Road
- New Road
- Elevated Road along River
- Road needing Widening
- Bridge
- Off Street Parking

1 0 1 2 km

Base Map prepared from Haridwar Guide Map (Survey of India) and Haridwar Base Map from GoU

Data Source

! **Secondary Data & Field Studies**

UTTARANCHAL URBAN DEVELOPMENT PROJECT
GOVERNMENT OF UTTARANCHAL

ROBs/ Flyovers/Elevated roads

Road over Bridges (Railway level Crossings)

- On Road Connecting Arya Nagar Chowk to Kadach road.
- Widening of Existing ROB on old DN road.

Elevated Road for Pedestrians

As Haridwar is a city of Pilgrims and huge floating population is observed during the weekend, melas, etc.Keeping in view to provide smooth flow of pedestrians comfortably, an elevated road over upper road is proposed. This will ease both vehicular traffic on the upper road and minimizing conflicts between vehicular traffic and pedestrian traffic.

- 6m wide elevated road for Pedestrian between Laltarao and Motichur Railway feeder road over upper road with stair cases at appropriate locations.

Traffic through Water Way

As Haridwar is spread longitudinally along the river Ganga, motorized boats are proposed to carry pedestrian traffic between Damkothi and Har ki Pauri with optimum frequency of trips as per the demand. It will also be the one of the beautifications for the city.

Public Transport System for Haridwar City

Presently Intermediate Public Transport (IPT) system of the city is providing services except for a small share by city buses for short and medium distance trips. With the expansion of the city and increasing of its population, it becomes difficult for IPT alone to meet the demand. There is a need to gradually eliminate the IPT mode and replace them with the better public transport systems; better quality buses which are affordable and also sufficient to meet the city's travel demand. Minimum infrastructure such as bus bays, bus stands, terminals etc should be provided.

Dedicated Bus corridors, Bus bays and Terminals

Frequent busy movements of buses in busy corridors have a significant effect on the speed of traffic. Furthermore, stopping buses at the face of traffic at bus stops tends to block the traffic moving on the left lane. Most of the roads in the city are less than 2 lanes, thus bus bays are required to improve traffic flow at designated places. Dedicated bus corridors and construction of new terminals at major hubs will also ease the traffic flow, significally increasing the share of public transport and will also improve the comfort of the passengers. An ISBT is already proposed at Harilok.

MRTS corridors of about 15 km length are suggested as a longer-term improvement to cater for increasing demand. A detailed study would be needed to work out this plan. However, either light rail or monorail systems are very expensive, but may be the only alternatives to cater to the long-term intra-city travel demand.

A detailed study would be required for the implementation of a light rail or monorail. It has the capacity to carry 10000 – 12000 passengers per hour. In most cases monorail is elevated, but it can also run at grade, or below grade.

Few monorail systems are shown below

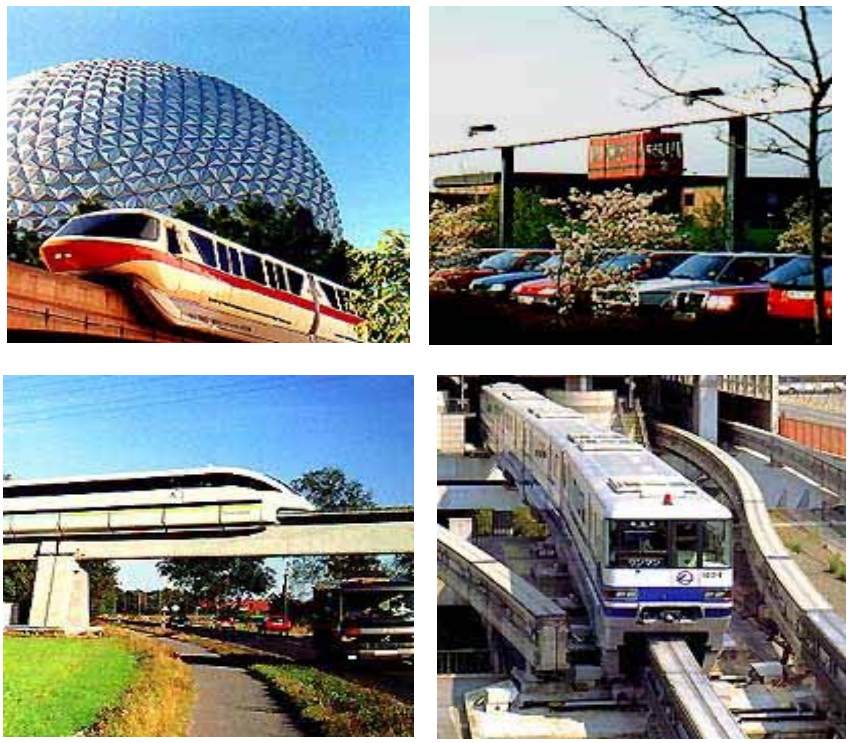


Figure 7.1: Various Monorail System

7.8 Street Lighting

Street lighting is primarily intended to enable the road users (motorists, cyclists and pedestrians) to see accurately and easily the carriageway and the immediate surroundings in the darkness. In city streets, therefore, there is a need to illuminate the carriageway and its immediate surroundings so that the use of head- lights can be avoided or minimized. A large number of road accidents are caused in the night due to poor and unsatisfactory street lighting. In addition street lighting is important for pedestrian safety and security – particularly among women.

Improved visibility at night by means of artificial lighting lessens the strain on driving and ensures comfort and also speed of traffic improves with better lighting and hence improves traffic flow conditions. Favorable headway and lateral placements are proposed, which improves the ability of the road to handle traffic.

The mountain height of the street light in general is 7.5 – 12.0 m for traffic routes. In general, the spacing of street lightings should not exceed 55m and should preferably be 35-45 m on important traffic routes. Generally it is 3 to 5 times the mountain height of light.

As per the standards, to cover 263 km of road network in the city, total no. of street light should be around 140000 (only 20-25 % of the road areas is covered

by light). This means about 12000 new lights are required to cover the entire area. Also it is proposed to put high mask lights on each proposed parking lots.

7.9 Heritage and Tourism

The sector vision on Heritage and Tourism and strategies to achieve the vision is given in Table 7.9. One of the key strategies proposed in the physical growth section is to demarcate the old area of Haridwar and preserve the cultural heritage. The projects proposed to achieve the sector vision are presented in Table 7.10. All of these projects will be taken up in Phase 1. Only incremental activities and/or extension works will be taken up during Phase 2.

Table 7.9: Vision and Strategies for Heritage and Tourism

Vision	Issues	Strategies
To develop Haridwar as an international tourism destination by tapping the potential of cultural heritage, eco tourism, adventure tourism in Haridwar besides being a major pilgrimage centre	Absence of long term strategy for heritage conservation Encroachments on Ghats and around temples Private ownership of heritage structures Untapped tourism potential Lack of initiatives for high end tourism Lack of private sector investment Inadequate tourism infrastructure especially sanitation facilities	Preparation of tourism master plan with the objective of developing Haridwar as a tourist centre of international standard. Create a nodal institution for heritage conservation Create database of cultural heritage Make provision for the government to intervene in respect of heritage conservation on private properties Encourage private sector Participation for developing tourist infrastructure Effective Marketing strategy to promote tourism

Table 7.10: Proposed Project for Heritage and Tourism

S. No.	Project	Description/Remarks	Implementing Agency
1.	Preparation of Tourism Master Plan	Consultants and tertiary stakeholders felt that a tourism master plan will be crucial in identifying and tapping the tourist potential	Tourism Department
2.	Tourist Information Centre including Rain Basera (Night Halts)	Stakeholders raised the need to have a single authorised tourist information centre in Haridwar. They also felt an urgent need to have shelters for beggars	Tourism Department, HDA
3.	Landscaping of open areas	Temple complexes-Daksh Mahadev, Mayadevi, Narayanishila, Bhairavnath, Bhimgoda Proposed by HDA and Tourism Department	HDA, Tourism Department
4.	Beautification of Dhyankunj area and Temple Complexes		HDA
5.	Entrance Gateways at Chidiyapur, Bhagwanpur and Gurukul Narsan	Proposed by Ganga Sabha to create a mark of the old religious town of Haridwar	HDA
6.	Development of a tourist park at Laljiwala	Proposed by Tourism Department	Tourism Department

S. No.	Project	Description/Remarks	Implementing Agency
7.	Public Toilets for tourists at 18 locations	Proposed by Tourism Department and HDA to cater to the high influx of tourists. Provision for public toilets not given separately, however, Rs. 13 Crores are earmarked for health department.	Tourism Department/ Haridwar NPP
8.	Installation of Boards giving historical significance at all the heritage structures	Proposed by citizens and INTACH	Tourism Department
9.	A study of landscape features and recommendations for plantation in open areas	Such a study would lead to a systematic plantation in the open areas which is beneficial from all the stakeholders	HDA/ Irrigation Department
10.	Long term Heritage Conservation Plan	In the absence of a clear cut policy by GoU for conservation of Heritage on Public and Private Properties, it is difficult to propose a project. However, a fund may be created with private parties and NGOs with an initial corpos of Rs. 2.5 Crores from JNNURM funds. It will also include short term initiatives such as construction of steps to Mansa Devi etc.	GoU, HDA, INTACH and other institutions in Haridwar.

Projects proposed to be taken up with PPP

- Amusement Water Park
- Childrens' Park at Bahadarabad
- Eco tourism activities on Najibabad Road
- World class centres of naturopathy centre, yoga, etc
- Hotels
- Light and Sound Show at Har-Ki-Pauri

7.10 Urban Poverty Reduction

Vision

The vision of citizens from poverty pockets is as follows:

A clean, beautiful and fully developed city with all facilities and universal access to affordable housing.

It was envisioned that all urban poor of the town will have voice in reform planning of the slums. They also participate in designing and evaluation of development projects. The vision subsumes that, well before 2021, projects would be developed through participatory process.

Strategies

The Draft National Slum Policy states that:

Town without slums should be the goal and objective of all urban planning for social and economic development. To reach this goal, it will be necessary to re-

vision urban development processes to make towns and cities fully democratic, economically productive, socially just, environmentally sustainable, and culturally vibrant.

One of the main strategies would be establishing a framework for involving all stakeholders for the efficient and smooth implementation of the Policy objectives.

Keeping in view the above Policy the suggested strategies for poverty reduction are as follows:

Community Organisation

- Meaningful and effective community participation involves decision making which results in a shift in the existing power relations between community and organisations. This also empowers marginalised groups in turn.
- Implementation of 74th Constitutional Amendment Act in terms of community participation.

Community driven programmes would be designed so that all groups in the community have a voice in decision making and management, and have entitlement to the benefits. Specific gender sensitive approaches are necessary to ensure inclusion of both women and men. To ensure maximization of benefits to the poor, the issues of social inclusion and gender must be considered as central element and of prime importance. The **Kerala model of Kudumbashree** could be adopted for reorganizing the existing groups in the town.

Kudumbashree Community Based Organisations (CBOs) called Community Development Societies (CDS) have a three-tier structure. At the grassroots level every poor family in a neighbourhood, each represented by a woman, is organized into a **Neighbourhood Group** (NHG), covering about 20 to 40 households. A team of five **barefoot organisers**, consisting of Community Health Volunteer, Community Infrastructure Volunteer, Community Income Generation Volunteer, Secretary and President are at the helm of every NHG. The NHGs are federated at the Municipal Ward as **Area Development Societies (ADSs)** and then further networked into **Community Development Societies (CDSs)** at Municipalities**.** The CDSs of the Mission are registered NGOs under Charitable Societies Act.

It has been found that similar community structures in 4 CDSs already exist in the town. So it is essential to reactivate those and channelise all community development activities through them.

Income Generation Activities

- Initiate various income generating activities for the urban poor

As mentioned in the inception report, one of the guiding principles of the study is reduction of urban poverty- both quality of life poverty and income poverty through enhanced opportunities for economic development.

It was evident from various consultations in the town unemployment is an emerging concern of the citizens.

In view of this a project of vocational training for local youth is being proposed under this project. Young men and girls from slums could be trained in various vocational trainings with the help of DUDA and NPP in

order to provide gainful employment to the urban unemployed or underemployed poor through self-employment or wage employment. The local skilled workers, who are already in various resource persons could be used as the trainer in such trainings.

Community Participation

- Participatory planning by participatory problem identification and analysis is required. It also helps in designing Information Education and Communication (IEC) activities.

The citizens need to be mobilised and sensitized towards the need for their participation. This in turn will empower the local community who does not have access to basic services. This could also be achieved through the community structure of SJSRY programme.

- Positive Deviance (PD) approach
  - Identify good practices
  - Use PD people as change initiator

In every community there are some "Positive Deviants (PD)" whose special practices/ strategies/ behaviors enable them to find better solutions to prevalent community problems than their neighbours who have access to the same resources. Positive deviance is a culturally appropriate development approach that is tailored to the specific community in which it is used. For using PD approach to bring about a change in the community practices the current community groups under SJSRY programme could be used.

- Launching of awareness programme
  - Participatory Hygiene And Sanitation Transformation (PHAST).
  - Child-Child education
  - Child-Adult education
  - Women-Women education

It is essential to use PHAST approach to help poor people of the town to feel more confident about themselves and to improve their ability to take action and make improvements in their localities. It has been felt that feelings of empowerment and personal growth are as important as the physical changes, such as cleaning up the environment or building latrines.

7.11 Strengthening Urban Governance and Institutional Development

Strengthening urban governance and institutional development in respect of Haridwar needs to be considered within the framework of the 'urban reforms' agenda as incorporated in the JNNURM guidelines. Haridwar's urban situational analysis in Chapter 4 depicts the present institutional strengths and disabilities, and any strengthening effort has to be based on whatever exists now in the town. This must also be carried out within the context of the current and on-going

'reform' programmes of the Uttarakhand State Government that have been outlined in Chapter 4.

Urban Situation

Every city and town has its uniqueness and at the same time, because of standard policies and practices followed by higher levels of government – Centre and State – there are certain commonalities observed within it. Haridwar is no exception to this, and it is within this context that the major reform issues in the Haridwar urban area need to be addressed.

I. First and foremost, for historical reasons, conventional municipal functions such as buildings regulations, water supply, sewerage, storm water drainage, roads, etc., which are usually to be found under city government's management elsewhere in India, are in the hands of either para-statals or state agencies. In Haridwar, as mentioned in Chapter 4, water supply, sewerage and storm drainage are in the hands of the parastatals – UPJN, UJS and UEPPCB. Even a normal municipal function like buildings regulations has been left to a parastatal – the Haridwar Development Authority. There is enough evidence to suggest that such institutional fragmentation has led to working at cross purposes (UJS also sometimes constructing water works, for instance), loss of efficiency due to discordant operation, and, more importantly, lack of accountability. Ultimately, it is the people of Haridwar who suffer due to this institutional chaos.

II. Haridwar does not have a city government as the focal point of city management. What exists is a medley of multiple authorities. The Nagar Palika Parishad has very few functions in its direct municipal domain. Water supply used to be a municipal function a few years ago. Today, the only reckonable function in the hands of the Nagar Palika is solid waste management. Thus, unlike city government elsewhere in India, HNPP has a very limited role to play in the city's planning, development and infrastructure provision. Keeping the democratically elected city government out of 'city management' is tantamount to keeping the people out of city management.

III. The one and only important function left to the care of HNPP – solid waste management – is more oriented toward 'health' management than 'public health' management. It is headed by a Senior Health Officer, and for unknown reasons another Health Officer has been appointed recently. Job distribution between the two officers remains unclear. Following the guidelines of the Honourable Supreme Court, a city like Haridwar (with so many 'melas' round the year) should have a senior public health engineer in charge of the city's solid waste management. The zonal administration of SW has been going on from four 'circles' into which the city is subdivided. This is an old arrangement that needs urgent review in view of the city's subsequent growth and consequent increase in each circle's work load. Manpower deployment for SWM needs proper organisation planning to ensure that cleanliness in this ancient city is maintained. From primary collection to transportation to dumping ground – the entire process with its manpower requirement and planning for equipment and trucks and tractors – needs to be carefully reviewed from the point of view of efficient management and cost-effectiveness. Haridwar's 'melas' that are held at regular intervals put extra strain on civic SWM, and city administration has to 'network' with many organizations to keep the city clean during those festivals. HNPP has been looking for another dumping site that has to be in position as early as possible.

The institution of 'sacchata samity' in the localities – apparently a citizen's initiative to keep the locality clean – is a welcome step, but it has many loopholes that need to be plugged (eg. coverage, payment, supervision etc.).

IV. Haridwar's slum population does not have access to essential civic services such as water supply, garbage collection, street lighting etc. There is a government move now to transfer the national scheme of SJSRY which is basically for urban poverty amelioration, to the Nagar Palika. While this is a welcome decision, HNPP does not at present have an appropriate organization to deal with the complex problems of slums improvement and poverty amelioration. An anti-poverty cell has to be set up with appropriate trained staff within the HNPP to do a detailed survey of the slums situation and create the local community structure as prescribed in SJSRY. Also, planning of civic services has to be taken up in consultation with the parastatals (eg. UPJN, UJS, UEPPCB etc.) to make the essential civic services available to the slum dwellers. Elementary education and primary health services should also be planned together with the planning of civic services and income enhancement efforts.

V. In a city like Haridwar that regularly experiences a large flow of floating population, the concept of 'community' that can be seen in a settled population, is virtually absent. In those areas where the city has its own settled localities, participation mechanisms can surely be identified and developed. For instance, in the areas having Mohalla Swachata Samitis the community can be mobilised for more participative services management (beyond garbage collection). With the formation of the neighbourhood committees under SJSRY, slums communities can be mobilized for local participative slums improvement programmes. Haridwar has many NGOs centred around Ganga puja and protection, as also there are numerous welfare organizations looking after the problems of the pilgrims. The present Chairman seems well connected with these organizations. His good offices can be utilized to form an all-Haridwar welfare committee to bring about a salutary convergence between the welfare activities undertaken by the Nagar Palika and those by several voluntary welfare societies in the town.

VI. The concept of Ward Committee as envisaged in the 74th CAA is yet to be implemented in Haridwar. Although the CAA conceives of such committees in cities having three lakhs and more population, in the interest of people's participation, the ward committees may be universalised, and there can be one committee for each ward. The Nagar Palika Act has then to be amended to incorporate this change. A ward committee can have its own small office to which all locality-level municipal staff such as sweepers, lighting man and others can report. Each ward committee can look after the maintenance of locality-level activities like garbage collection, street lighting etc. Also, the committee may mobilise local efforts for local community development, and do the liaison work for the municipality for revenue mobilization.

VII. There is scope for PPP in solid waste management and municipal street lighting. But, due perhaps to lack of initiative both on the part of the Municipality and the State, no such initiatives have been attempted in Haridwar to explore potential application of PPP.

VIII. HNPP with its narrow functional domain has not been able to emerge as the main actor in the city's development and governance. As earlier stated, any serious effort to place HNPP at the centre of city management needs major

State-level initiatives in at least three important aspects; (a) extension of municipal functional domain, (b) by implication, transferring functions from the parastatals to the Nagar Palika, and (c) municipal management improvement by (i) posting a senior state civil service officer to head the municipal executive administration, (ii) bringing in well-qualified functional officers like a public health engineer, a finance and accounts officer, (iii) improving the skill and changing attitudes of municipal political leaders, (iv) exposing the departmental heads and other employees to 'best practices' elsewhere in India, and (v) designing appropriate action-oriented, problem-solving training programmes for all grades of employees. There is an urgent need in this context to review State's municipal personnel recruitment policy including the policy on creating appropriate cadres, transfer policy, and constitution of a suitable recruitment commission/committee.

IX. Haridwar is a unique city – a heritage site of national and international importance. The State may consider upgrading the city to a Nagar Nigam status. The city is in need of a strong municipal government along with a proper organizational set-up and a group of senior departmental heads supervised and coordinated by a senior State civil service officer.

X. The general direction of municipal reform in the State has been charted out in Chapter 4. Institutional reform has to be a slow but sure process, as any radical effort to introduce short-term change may create a severe jolt which may be dysfunctional and counterproductive in the short run. Thus three successive stages of 'reforms' are suggested.

XI. It needs to be emphasised that well planned and monitored municipal 'capacity building' should be a precondition of full scale transfer of functions to the municipality. This involves strengthening of the Urban Development Directorate and the design and implementation of imaginative training programmes and workshops.

Major Recommendations

Recommendations in the course of the institutional analysis have been made in specific parts of Chapter 4 highlighted in italics. Key elements of these recommendations are summarized here for the sake of emphasis. For completeness, these summary recommendations include those applicable to the state urban sector as a whole.

- Among the many reform agenda items listed in JNNUM guidelines, conformity slegislation on the basis of 74th CAA is of crucial importance. A new Municipal Bill has been drafted, and this should be finalized and given full legal form at the earliest possible time.
- Two important legislations are still required: one on public disclosure, and another on community participation. These can be made parts of the new Municipal legislation which is under finalisation.
- Training and capacity building need to be taken up both for political leadership and the professional staff in the municipalities and the para-statals. For this purpose, a Training Cell may be set up in the Urban Development Directorate. The currently proposed state-wide TNA exercise to ascertain training needs and identification of specific training institutions should be carried out as soon as possible. Meanwhile, the urban Center within ATI may be suitably

strengthened.

- Reforms at the municipal level need to be initiated by the State. For this purpose, the State's secretariat needs to be reorganized to enable the policy level to come out with more holistic and integrative view of things on the ground. UDD should have under it the DAs and the TCPO. Its Directorate dealing with ULBs needs to be strengthened to help the modernization processes in the ULBs that are under way now.
- The organizational status of the Municipal Council of Haridwar needs to be upgraded to that of a Municipal Corporation. This is of importance since Haridwar is one of the most important religious places and often attracts populations three to four times its permanent population in any given day. This not only creates infrastructure-related issues but also significant management issues. Being a Municipal Council, the current professional staff is not capable of handling this burden. The Haridwar Nagar Palika Parishad, in its present form is too weak even to manage its very limited functional load. HNPP's political and executive-professional structure needs overhauling to enable it to cope with its municipal management responsibilities and large development projects in future. An All-India Service Officer should be posted as its chief executive, following the system in other big cities in India, to provide the required level of management presence and expertise.
- The typical municipal functions that are under the ambit of municipalities in other parts of the country are not with the municipal council. The functions such as water distribution, sewerage, building regulations, etc. need to be transferred to the council. This however cannot be done until there is state-wide reform and the capacity of the authority is built to the required level.
- The committees that are functioning need to be rationalized in order to provide a framework more specific to the requirements of the town. For example the Water Works committee which still exists in the council has no or limited role since the function has been transferred to UJS.
- Although the formation of ward committees is not mandatory in Haridwar, the town has some unique characteristics which call for a greater level of interaction with the citizens. The ward committees thus are of paramount importance and are required to be set up in order to establish a citizen authority network.
- Following recommendations have been made for management of future *Kumbh* and *Ardh Kumbh Mela* in the Administrative Report on Ardh Kumbh 2004 published by GoU:
- The roles and responsibilities of *Mela Adhikari* to be clearly identified to enable suitable actions as and when required regarding the maintenance of law and order situation. Various concerned officials to be made aware of the Chain of Command and Command Structure.
- The *Mela* Management Committee formed under *Mela Adhikari* during *Melas* is dissolved after the *Melas* until the next such occasion. Such arrangement creates problems such as (1) Lack of proper upkeep of documents and records; (2) Wastage of time in preparing the schemes again which leaves limited time for execution of various projects; (3) It becomes difficult to restrict construction in open areas earmarked for *Kumbh Mela*. In this context a permanent *Mela* Cell is proposed which will have an OSD, Data Entry Operator and class IV employee. It is proposed that the engineering department of HDA will provide technical guidance to the *Mela* Cell. Following

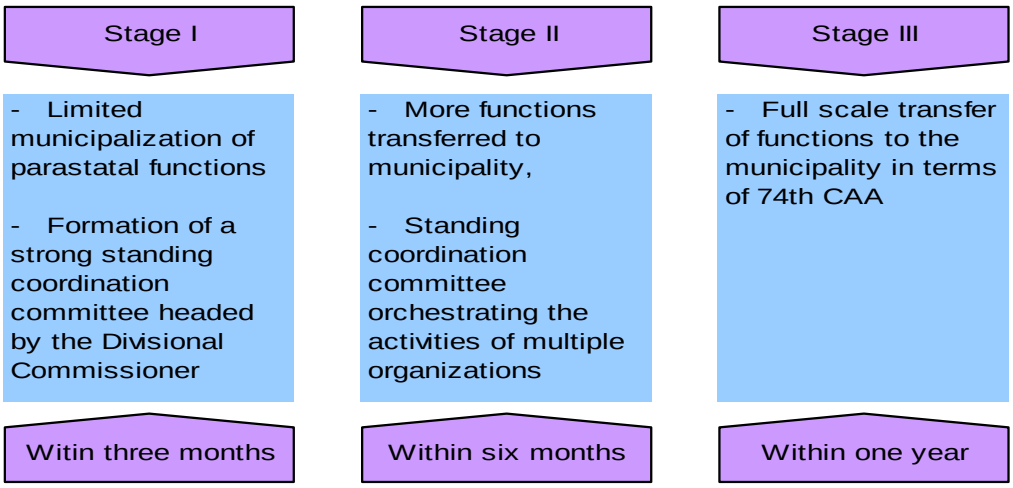
responsibilities are identified for *Mela* Cell:

- Keeping watch on Mela Land which includes checking encroachments in Gaurishankar, Neeldhara, Satidweep, Pantdweep and Bhupatwala sectors as identified in the government report.
- Upkeep of Documents
- Digitisation and development of GIS of Mela area
- Preparation of integrated management plan for Melas
- Monitoring and maintenance of infrastructure procured during *Melas*
- Permanent posting of Magistrates till the first major religious bath is proposed for *Kumbh* 2010
- To avoid wastage of time and resources to overlay services in the same area, it is deemed necessary to ensure coordination among various departments and sequencing of works. Establishment of *Mela* Cell will enable planned execution of long term works.
- In the absence of proper maintenance of physical assets built during Melas, it gets damaged and needs rebuilding for the ensuing Mela occasion. Separate provision should be made for maintenance of infrastructure assets.
- It is suggested that like Kumbh/ArdhKumbh Mela, separate funds should be earmarked for other major religious fairs which are organised throughout the year.
- In Haridwar's urban situation, there are too many institutions that have grown up under historical circumstances. Keeping in view the needs for coordinated development and institutional strengthening, well-thought-out institutional planning is of crucial importance. This is not going to be a one-shot exercise and needs to be taken up on phased basis. The process of institutional re-engineering has been graphically shown in Chapter 4. Rough timelines have been indicated to bring about institutional changes within an accelerated time frame. Four scenarios have been depicted as shown below.
- Stage I: Limited municipalization of parastatal functions like building regulations transferred to municipality, and more importantly, formation of a strong standing coordination committee headed by the Divisional Commissioner – this is to be done within three to six months of acceptance of this report.
- Stage II: More functions transferred to municipality, and the standing coordination committee orchestrating the activities of multiple organizations – this should not take more than six to twelve months from the acceptance of the report.
- Stage III: Full scale transfer of functions to the municipality in terms of the provisions of the 74th CAA (and municipal act) – this should be completed within one to three years.
- Institutional change in terms of the upgrading of the status and transfer of functions from parastatals to the municipal body has to be accompanied by a well-thought-out policy of 'all round capacity-building' for the municipality. There has to be a paradigm shift away from the present day weak and marginalized urban local body to a robust, strong and vibrant nodal institution to take charge of planned development and management of the city. It must have the capacity to usher in dynamic municipal management and at the same

time to successfully 'network' with other organizations operating within the Haridwar urban area.

- Change management of this scale and complexity would require a specialized cell within the UDD which may be called the PMU (project management unit).

Figure 7.2: Proposed Institutional Changes



7.12 Municipal Financial Management

HNPP proposes to adopt the following strategies to achieve the targets of Financial Reforms as mandated in the JNNURM guidelines.

Double Entry System of Accounting

The process of introducing the system has been started. Initial system studies have been completed by the consultant appointed for development of accounting software. This consultant will be responsible not only for the development of accounting software but also for the maintenance of the same for subsequent three years.

The terms of reference for the appointment of accounting firm for the design of common state accounting manual and implementation of the double entry accounting system has been finalised. Short listing of chartered accountants is in process of being finalized for hand-holing and training of accounts staff.

The double entry accounting system will be introduced in all of the 63 ULBs, and all parastatal agencies. Guidelines for arriving at opening balance have been issued.

It is envisaged that the introduction and implementation of double entry accounting system in HNPP would be completed by the end of financial year 2007-08.

Property Tax

The collection efficiency is proposed to be increased to the required / desired level of 85% over the next four years (by 2009-10) by streamlining the present

collection system. The software consultant is developing a computerised collection system facilitating collection at various collection centres. This system is expected to be in place by end of the financial year 2006-07.

Simultaneous to increasing the collection efficiency the tax base is proposed to be widened.

Measures are proposed to ensure growth in tax revenue to match with the growth in the State Domestic Product. Some of the measures in addition to the ones mentioned above are better / enhanced tax compliance, remove bottlenecks in the efficient implementation etc.

8. City Investment Plan, Strategies And Implementation Plan

City Investment Plans in line with the identified vision for Haridwar have been prepared through: (i) a comprehensive process of assessment of the status of physical and social infrastructure sectors, (ii) stakeholder consultations, and (iii) preliminary analysis of demand and supply. This assessment has also led to the identification of sector-specific strategies, implementation actions and associated reforms.

The strategies adopted primarily have three dimensions; improving the service delivery by efficiency measures, improving service delivery by creating infrastructure assets and improving the governance aspects of HNPPP and para-statals. This section summarises the capital investments required for creating infrastructure assets and various strategic interventions required in the implementation of such sub-projects. It is based on the analysis presented in the foregoing chapters, and sector-wise interventions identified in Chapter 7.

8.1 City Investment Plan (CIP)

The City Investment Plan is the multi-year scheduling of identified and prioritized investments. The scheduling or phasing of the plan has been developed keeping in mind likely fiscal resources availability (for new investments and O&M), technical capacity for construction and O&M, and the choice of specific improvements to be carried out for a period of six years, and in subsequent phases.

The need for the CIP is on account of:

- Assessment of city growth and infrastructure needs (to be carried out once every five years)
- Preliminary outline feasibility and engineering studies carried out for new projects
- Scheduling of investments of ongoing and committed projects with funding from other sources
- Assigning of priorities within the constraints of available financial resources

8.1.1 Institutionalising the CIP Process

The City Investment Plan is an important element of, and is significant in terms of, the city's management process and sustainability with regard to the delivery of basic services. The CIP also provides a framework for the annual budget cycle of HNPP and para statals for the next 6-10 year period, and thereafter for subsequent investment phases.

As a part of the process of CIP preparation for the CDP, HNPP and para statals have:

- Analysed and discussed with the stakeholders, the existing applicable norms and standards for infrastructure services;
- Agreed and recommended a reasonable and realistic option;
- Justified and provided rationale if the chosen option is not within the existing

service level standards; and

- Identified the roles and responsibilities of various stakeholders in the implementation of identified projects.

8.2 Capital Facilities, Investment Phasing and Implementation

The City Investment Plan involved the identification of public capital facilities to cater to the demand of the city populace in two phases – Phase 1 (by the year 2012) and Phase 2 (by 2025) according to the infrastructure needs.

The project identification has been done through a demand-gap analysis of the services and reconciliation of the already identified projects as part of various outline, preliminary and in some cases detailed engineering studies. The analysis has also built on recently completed technical studies where these are available.

Further project prioritisation and strategising of the investments, and phasing of these investments will be carried out at the DPR preparation stage based on the strategies listed out under each service sector as identified by HNPP through stakeholder consultations. The projects derived are aimed at ensuring the optimal and efficient utilisation of existing infrastructure systems and enhancing the capacity of the systems and services to cater to the demands of future population additions. Certain other projects listed as part of the CIP include developmental projects other than those addressing the core service sectors viz. system modernisation, river conservation etc. Such projects are also based on lists and or reports prepared by and for HNPP by others.

The City Investment Plan and forecast future of needs for provision of capital facilities under each identified sector are presented below. These assets will help HNPP and para statals universalise services for the current population as well as accommodate the expected increase in population. In sectors where long-term planning is required (for example, source development for water supply), a 30-year planning horizon (till the year 2036) is considered. Assets created in such sectors consider the projected population in this horizon. HNPP expects that these infrastructure assets would not only guarantee services to its citizens, but also signal a proactive commitment to potential investors considering the Haridwar region.

8.2.1 Summary of Investments

The total estimated capital investment required for providing efficient services to the present population and future population of HNPPP by the year 2025 is Rs. 4,882.8 crores, of which Rs. 3133.22 crores is required to be invested by 2012-13 (all at 2006 prices).

The planning horizon for the projects identified in sectors of urban poor slum improvements, land development planning and other similar sub-projects is 2021. The planning horizon for core service sectors of water supply, sewerage, drainage, solid waste management is 2036. In case of roads, traffic and transport sectors, most of identified investment is for the overall need for improving road network and transport systems in the city.

The phasing of the identified projects and investments be based on the following principles:

- Priority needs, with developed areas receiving priority over future development area
- Inter and intra-service linkages, viz. water supply investments shall be complemented by corresponding sewerage/ sanitation improvements
- Size and duration of the requirements, including preparation and implementation period
- Project-linked revenue implications, such as installing house connections where supply and distribution capacities have been increased
- The scheduling of adequate time to allow pre-feasibility, full feasibility and safeguard investigations for those large sub-projects which will require such analysis
- Scheduling additional infrastructure requirements to match with the population, and tourist inflow growth over the plan period

Table 8.1 below presents the summary of sector-wise total investment needs.

Table 8.1: Summary of Capital Investments (Rs. Crores)

S. No.	Projects	Phase 1 2007-13	Phase 2 2014-25	Total
1	Sewerage and sanitation	68.7	43.0	111.7
2	Water Supply	76.0	65.8	141.8
3	Storm Water Drainage	168.2	75.9	244.1
4	Roads & Transport	1857.7	1061.6	2919.3
5	Solid Waste Management	107.2	118.4	225.6
6	Urban Poor / Slums	230.2	0.0	230.2
7	Urban Renewal and Redevelopment	575.6	378.6	954.2
8	Heritage and Tourism	31.6	6.3	37.9
9	Street lights	18.0	0.0	18
	Total	**3133.2**	**1749.6**	**4882.8**

Note: *Above costs are at current 2006 prices and include 7.5% physical contingencies and 5% project management assistance.*

On an overall basis, 61.2% of the total identified investment is proposed in the roads, traffic and transport sector towards up-gradation, new construction, widening and strengthening works, High Capacity Mass Rapid Transit works, other public transport systems, bridges and junction improvements. This is followed by investments in urban renewal, heritage, and water bodies forming 20.% of investment proposed for land use planning and other non-core sectors for programs like river conservation, inner city revitalisation, relocation of markets and economic infrastructure, system modernization, year-to-year minor capital works etc. 4.8% of the investment is proposed for various urban poor/ slum development programmes. 5.1% of total investments are proposed in Drainage and erosion control and 3% in the water supply sector. 2.3% and 4.7% of the investment is proposed in the sewerage and solid waste management sectors respectively. Finally, 0.8% and 0.4% of the total investment is proposed for Heritage & Tourism and Street Lights respectively.

8.3 Sector Investment Plan

Sector wise details of the City Investment Plan, capital facilities identified to be created, supportive actions and implementation aspects and strategies are discussed in the following sections in detail. Component-wise details of capital investment phasing under each sector is as follows.

8.3.1 Water Supply

Proposed component wise investments given in Table 8.2 would meet the immediate requirements of rehabilitation of the existing system as well as augmentation leading to assured supply of water to the residents of Haridwar. Large quantum of the investments proposed is for the construction of tube well, construction of OHT of various capacities.

Table 8.2: Water Supply Sub-Projects Investments

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1.	Construction of Tube well / Infiltration well, including Pump house, Pumping Plant rising main etc. and all works needed for the Commissioning (21Nos for phase 1 and 40 for phase 2)	12.1	23.0	35.1
2.	Construction of OHT of various capacities (Av. 15 m Staging at various Localities); total capacity 26,390 kl for phase 1 and 23,145 kl for phase 2.	24.1	14.7	38.8
3.	Reorganization of distribution system by laying additional pipelines, replacement of old damaged and deeper pipelines including those laid adjacent to sewer lines crossing manholes and separate feeder mains for stand post in Mela area .	19.4	4.5	23.9
4.	Installation of SCADA System on Tube Wells.	2.0	0.8	2.8
5.	Replacement of Damaged / Old Pumping Plants (Av. 40 H.P.) 27 Nos.	0.1	0.4	0.5
6.	Leak detection and water and power Audit	0.4		0.4
7.	Supply and Installation of mechanical bulk water meters 150 mm to 250 mm, 59 Nos. sluice valves 80 mm to 250 mm 25 Nos. for separation of zones	0.6	0.5	1.1
8.	Establishment of a fully equipped water testing laboratory	0.5	0.0	0.5
9.	GIS based pipeline network mapping in Haridwar.	0.7	0.0	0.7
10	Staff Quarters Tax collection Centres office Buildings etc	1.0	0.0	1.0
11	Installation of India mark-II H.P. H.P 200 Nos. for floating population who misuse the stand posts..	3.0	0.0	3.0
12.	Development & Repairs of 2 Nos. Tubewells at Tibdi, repairs of CWR & Rising main at Har ki Pauri, conversion of Temporary infiltration well in to permanent well and other Misc.works	2.0	0.0	2.0
13.	Replacement of rising mains being used as supply mains simultaneously through illegal / legal house connections 8 kms	1.6	0.0	1.6

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
14.	Replacement of Tubewell of Phase I	0.0	14.20	14.20
15.	Replacement of pumps of Phase I	0.0	0.40	0.40
	Total	**67.5**	**58.5**	**126.0**
	Physical Contingency @ 7.5%	5.1	4.4	9.5
	Price Contingency @ 5%	3.4	2.9	6.3
	Grand Total	**76.0**	**65.8**	**141.8**

8.3.2 Sewerage

The component-wise investments proposed in Table 8.3 will involve the rehabilitation and augmentation of sewerage systems and construction of sewage treatment plants (STPs). These investments are in line with the investments in water supply system augmentation.

Table 8.3: Sewerage Sub-Projects Investments

S. No.	Sewerage System	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1	Conveyance and Rising mains and bypass sewers for capacity augmentation. (5.4 km) + 3 km for population of 2036	6.5	4.0	10.5
2	Collection Network augmentation (74.4 Km) + 37 km for population of 2036	35.0	18.0	53
3	Jwalapur/Sarai STP modification to SBR Activated Sludge Process.	10.0	-	10.0
4	Sewage Pumping Station Rehabilitation including SCADA system.	5.0	-	5.0
5	18 MLD STP rehabilitation	3.5	-	3.5
6	GIS & Sewer Design Software based mapping of the existing sewerage system.	1.0	-	1.0
7	Jwalapur, Kankhal (existing) & Bhopatwala STP augmentation 35 mld	-	16.0	16
	Total	**61.0**	**38.0**	**99.0**
	Physical contingency@ 7.5%	4.6	3.0	7.6
	Price contingency@ 5.0%	3.1	2.0	5.1
	Grand Total including contingencies	**68.7**	**43.0**	**111.7**

8.3.3 Storm Water Drainage

The proposed component-wise investments given in Table 8.4 would meet the immediate requirements for rehabilitation of existing major drains and construction of road side surface masonry drains, box culverts for main roads etc. Completion of these investments will go a long way in reducing the water logging and flooding of city areas, especially during the rainy season.

Table 8.4: Storm Water Drainage Sub-Projects Investments

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1.	Road side surface Masonry drains 250 km in phase 1 and 30 km in phase 2	125.0	56.4	181.4
2.	Rehabilitation of existing major drains in to RCC drains 10 km in phase 1 and 4.5 km in phase 2	12.6	5.6	18.2
3.	Box culverts for main roads 54Nos in phase 1 and 24 no. in phase 2.	6.5	2.9	9.4
4.	Slab culverts for internal road 200 nos. in phase 1 and 100 nos. in phase 2	0.5	0.3	0.8
5.	Pre-cast covers over the drains 20km in phase 1 and 9 km in phase 2	2.4	1.1	3.5
6.	Laying of 450mm dia under ground pipes in small Length 3.8 km in phase 1 and 1.2 km in phase 2	1.0	0.3	1.3
7.	Provision of manholes of 900 mm dia where existing drains have been totally covered by construction of shops or houses.	1.0	0.3	1.3
8.	Outfall structures L.S.	0.5	0.5	1.0
	Total	**149.5**	**67.4**	**216.9**
	Add:			
	Physical Contingency @ 7.5 %	11.2	5.1	16.3
	Price Contingency @ 5 %	7.5	3.4	10.9
	Grand Total	**168.2**	**75.9**	**244.1**

8.3.4 Solid Waste Management

Proposed component-wise investments given in Table 8.5 would meet the immediate requirements for an efficient system of collection and disposal of the entire solid waste generated in the city of Haridwar. Some major replacement and/or maintenance of the systems are proposed as long term investments.

Table 8.5 Solid Waste Management Sub-Projects Investments

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
	Procurement of Equipment & Vehicles			
1.	Containerised Handcarts	2.1	1.99	
2.	Containerised Cycle-rickshaw	3.1	7.7	
3.	Seamless Handcart for desilting of drains	0.2	0.2	
4.	Container liftable by tractors (4.5 m^3)	5.2	5.46	
5.	Dumper Placer Containers (4.5 m^3 capacity)	5.1	5.35	
6.	Dumper Placer Machine	4.4	7.2	
7.	Tractor	2.9	9.4	
8.	Pickup Vehicles (1-2 m^3 Capacity)	5.2	5.9	
9.	Tipper Truck (10-12 m^3 Capacity)	4.9	5.9	
10.	JCB Loader with Backhoe	0.5	0.1	
11.	Bull Dozers (Land Levelling)	1.0	1.8	

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
12.	Front End Loader	1.3	1.8	
13.	Drain Cleaning Machine	1.4	0.1	
14.	Vaccum Sweeping Machine	1.4	0.1	
15.	Fogging Machine	1.2	0	
16.	Spray Machine (Cold Fog)	0.6	0	
17.	Refuse Compactor	2.7	0	
18.	Refuse Collection Bins	5.8	7.77	
19.	Refuse Compactor Bins	8.8	3	
20.	Construction of Circle Offices	0.3	0.02	
21.	Construction of SW Transfer Station	0.4	0	
22.	Construction of Vehicle Depot with Workshop Facility	0.3	0.2	
23.	Development of new disposal site (After Identification and selection)	22.0	26.59	
24.	Compost Plant *	0.0	0.0	
25.	Public Awareness	1.5	0	
26.	Training and Capacity Building	1.0	1	
27.	Preparation of SWM Master Plan	0.3	0	
28.	EIA Study for SW Disposal sites	0.1	0.1	
	Total	**83.7**	**91.68**	
29.	Land Cost			
30.	Circle Office (4nos)	0.15	0.00	
31.	Transfer Station (4 nos)	2.80	0.00	
32.	Vehicle Depot	1.00	1.40	
33.	Disposal Site (New)	7.67	12.17	
	Total	**95.32**	**105.25**	**200.57**
	Physical Contingencies - 7.5%	7.15	7.89	15.04
	Project Management Assistance - 5%	4.77	5.26	10.03
	Grand Total	**107.24**	**118.4**	**225.64**

8.3.5 Roads and Urban Transport

Proposed component-wise investments are given in Table 8.6 which would meet the immediate requirements of footpaths, off-street parking, widening of existing roads, and construction of new bypasses to reduce traffic congestion, and construction of bridges. Provision has been for a limited mass rail transport system – light rail or monorail system has been proposed.

Table 8.6: Roads & Urban Transport sub-projects investments

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
A.	Traffic Management			
1	Traffic singh board (L S)	0.1		0.1
2	Road Marking (L S)	0.0		0.0
3A	Reflectors	0.2		0.2

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
3B	Road furnitures	0.4		0.4
4	Guard rail	6.7		6.7
5	Footpath (with covered drain) both sides	29.5		29.5
6	Traffic Education Awareness Programme	2.0		2.0
	Total (Traffic Management)	38.9		38.9
B	Off-street Parking (3 storey)	444.6		444.6
C1	Amenities at Proposed Parking places including beautification of the area	38.5		38.5
C2	Shifting and construction of new bus stand	20.0		20.0
D	Junctions Improvement including signal	3.4		3.4
E1	Widening and Strengthening of existing roads	36.2	4.0	40.2
E2	Overlaying of existing roads(as proposed for 2010 Kumbh mela)	9.7		9.7
F	New Byepasses	14.1	17.6	31.7
G	New Road through Nallah	3.6		3.6
H	Grade Separators			-
1	ROBs /Elevated Roads	60.7		60.7
2	Bridges	7.9	22.1	30.0
I	Channelisation of stream between NH 58 and Chandi dweep for spill water from canal	7.5		7.5
J	Elevated road through the river			-
	2 Lane Road along with footpath connecting Chandighat Chowk to DN Road through Lalta Rao along with bridge over Ganga Canal.	7.4		7.4
K	Motorized boats are proposed to carry Pedestrian Traffic between Damkothi and Har ki Pauri	20.0		20.0
L	High Capacity Mass Rapid Transit System (monorail)	900.0	900.0	1,800.0
	Total (Roads & Transport)	**1,651.4**	**943.7**	**2,595.1**
	Physical contingency@ 7.5%	123.8	70.8	194.6
	Price contingency@ 5.0%	82.5	47.2	129.7
	Grand Total including contingencies	**1,857.7**	**1,061.7**	**2,919.4**

8.3.6 Street Lighting

The investments envisaged for street lighting would fulfill the immediate requirements.

Table 8.7: Street lighting Sub-Projects Investments

S. No.	Components	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1	New Electric poles with lights	6.0		6.0
2	High Mask light at all proposed parking lots	10.0		10.0
	Total	**16.0**	**0.0**	**16.0**
	Physical contingency@ 7.5%	1.2		1.2
	Price contingency@ 5.0%	0.8	-	0.8
	Grand Total including contingencies	**18.0**	**-**	**18.0**

8.3.7 Urban Poor

The proposed component-wise investments given in Table 8.8 would meet the immediate requirements for housing of slum populations, sewerage and drainage in identified slums as well as the rehabilitation and resettlement of slum settlements along the river banks. The requirements in respect of water supply and solid waste management system in the slum settlements have been provided for in the overall city investment plan for respective sector.

Table 8.8: Urban Poor Sub-Projects Investments

S. No.	Project	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1.	**Housing** 25000@Rs.80,000*	200.0		200.0
a.	Water Supply Awareness Programme	0.1		0.1
b.	Drainage (New- 1000 m, Repairing- 2000 m)	0.1		1.0
c.	Sewerage	2.5		2.5
d.	Solid Waste Mgmt. Awareness Programme	Included in SWM sector	Included in SWM sector	Included in SWM sector
e.	Access Road 5,000m @ Rs.1800	1.8		1.8
f.	LCS 20 community Latrines (5+5 seater) @ Rs.3500 plus incidentals	0.11		0.11
g.	Street Light	Included in SL component	Included in SL component	Included in SL component
Total		**204.61**		**204.61**
Physical contingency (7.5%)		15.34	0	15.34
Project Management Assistance @ 5.0%		10.23	0	10.23
Grand Total		**230.18**	**0**	**230.18**

8.3.8 Urban Renewal and Redevelopment

Table 8.9 provides the details of various urban renewal, area development and environment sub-components proposed for investment. Some of the major proposals are development of Ghats, improvement works at Shamshan Ghats, shifting of the entire government offices to new site, shifting of slaughter house, urban renewal projects in Kankhal and Jwalapur, area development in the peri urban areas and environmental upgradation projects to prevent soil erosion from Mansa Devi Hill and plantation initiatives.

Table 8.9: Urban Renewal, Area Development and Environment Sub Projects

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
	Urban Renewal and Area Development			
1.	Development of GIS of HDA Planning Area	0.7		0.7
2.	Development of Ghats	101.0		101.0
3.	Improvement Works at Har– Ki- Pauri Area	6.0		6.0
4.	Redevelopment of Moti Bazar	2.5	2.5	5.0

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
5.	Redevelopment of Jwalapur	15.0	10.0	25.0
6.	Redevelopment in Kankhal	13.6	9.0	22.6
7.	Improvement and Beautification of Khadkhadi Shamshan Ghat, Sati Ghat and Ghat at Jwalapur	10.0		10.0
8.	Relocation of Slaughter House	0.5		0.5
9.	Shifting of Govt Offices	20.0	30.0	50.0
10.	Site Development of Transport Nagar	6.1		6.1
11.	Construction of Ganga Museum Showing History of River Ganga	1.0		1.0
12.	Preparation of Land Inventory of HDA	0.5		0.5
13.	A Study on Building Byelaws	1.0		1.0
14.	Preparation of Master Plan for Religious town	1.0		1.0
15.	Area Development in Peri Urban Areas	250.0	250.0	500.0
	Environment			0.0
16.	Geological and Soil Conservation study for Mansa Devi Hill	1.0		1.0
17.	Rock bolting, surface stabilisation, drainage and erosion control works for Mansa Devi Hill	35.0	25.0	60.0
18.	Contour Drain along Mansa Devi Hill with silt arresting chambers	10.0		10.0
19.	Surface stabilisation, drainage and erosion control works for Chandi Devi Hill	25.0		25.0
20.	Development of Green Belt along Ganga Canal	1.5		1.5
21.	Preparation of Disaster Management Plan and setting up Disaster Management Centre	10.0	10.0	20.0
22.	A study of landscape characteristics and recommendations for plantation in open areas	0.3		0.3
	Total	**511.6**	**336.5**	**848.2**
	Physical Contingencies 7.5 %	38.4	25.2	63.6
	Price Contingency 5%	25.6	16.8	42.4
	Grand Total including contingencies	**575.6**	**378.6**	**954.2**

8.3.9 Heritage and Tourism

Table 8.10 provides a listing of the projects identified under heritage and tourism development. Some of the major projects are construction of public toilets, preparation of tourism master plan, development of tourist parks, etc. Some project have been identified which can be taken up with PPP mechanism.

Table 8.10: Heritage and Tourism Sub Projects

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
1.	Preparation of Tourism Master Plan	1.0	0.20	1.2
2.	Tourist Information Centre	0.4	0.08	0.48
3.	Development of *Raen Baseras* (4 Nos)	1.0	0.20	1.2
4.	Landscaping of open areas	9.4	1.88	11.28
5.	Beautification of Dhyankunj area and Temple Complexes	7.2	1.44	8.64

S. No.	Projects	Phase 1 2006-13	Phase 2 2014-25	Total (Rs.Crores)
6.	City Gateways (3 Nos.)	0.5	0.10	0.6
7.	Development of a tourist park at Laljiwala	1.5	0.30	1.8
8.	Public Toilets	3.9	0.78	4.68
9.	Development of an open air theatre for cultural activities	0.5	0.10	0.6
10.	Signage at important heritage sites	0.2	0.04	0.24
11.	Long term heritage conservation initiative	2.5	0.50	3.0
	Total	**28.1**	**5.62**	**33.72**
	Physical Contingency 7.5%	2.1	0.42	2.52
	Price Contingency 5%	1.4	0.28	1.68
	Grand Total	**31.6**	**6.32**	**37.92**

8.4 Financing Plan

As per the guidelines of JNNURM, Haridwar is eligible for 80% of the total project cost as grant finance from the Government of India. 10% of the total project cost will be financed through grants from State Government. HNPP and Para-statals would be contributing the balance 10% of the total project cost.

As per the same guidelines, in case any JNNURM project is also approved as Externally Aided Project (EAP), the EAP funds can be passed through as ACA to the State Government as funds contributed by State/ULBs/FIs and JNNURM funds can be used as GoI contribution. Urban infrastructure investments in respect of Haridwar are also being taken up for the proposed Asian Development Bank (ADB) urban sector loan for Uttarakhand. The GoU is in negotiation with ADB and it is anticipated that significant ADB funds could be leveraged for Haridwar and other urban centers in Uttarakhand. The application of JNNURM funds to the city's investment proposals contained within this CDP and associated CIP will be appropriately adjusted during preparation of DPRs in sub-sectors where application of ADB funds will be involved.

8.5 Financial and Operating Plan

8.5.1 Cost Estimates and Financing Plan

Cost Estimates. The total cost of the CDP, during the JNNURM period, is estimated at Rs.3780.66 crores including duties, taxes, contingencies (physical and price). Base cost of sub-project components were determined based on prevailing Schedule of Rates and compared with costs of similar nature projects – where designs / detailed reports were available, costs were counterchecked and incorporated into the CDP. Physical and price contingencies are included on investment program cost. Costs on Investment Program Management are estimated at the overall program-level and is also included in the CDP sub-project cost. CDP cost summary is indicated in Table.

Financing Plan. Based on discussions held with GoU, 80 percent (Rs.3024.5 crores) of the CDP is proposed to be financed by Government of India as grant, 10% (Rs. 37.8 crores) by GoU, Haridwar HDA and Haridwar NPP as equity, and 10 percent (Rs.37.80 crores) of the CDP is proposed to be financed by grant from GoU.

Table 8.11: Investment Program

Component	Program	Dist.
	INR mn	*%*
Part A: Urban Infrastructure Improvement		
Water Supply	760.0	2.4%
Sewerage and Sanitation	686.3	2.2%
Solid Waste Management	1,072.4	3.4%
Urban Drainage	1,681.4	5.4%
Urban Transport and Roads	18,577.1	59.3%
Sub total - Part A	22,777.1	72.7%
Part B: Slum Improvement		
Community Infrastructure	2,301.9	7.3%
Street Lighting	180.0	0.6%
Sub total - Part B	2,481.9	7.9%
Part C: Civic Infrastructure		
Art, Culture, Heritage and Tourism	316.0	1.0%
Urban Renewals	5,755.6	18.4%
Sub total - Part C	6,071.6	19.4%
Cost including physical contingencies	31,330.6	100.0%
Contingencies		
Price Contingencies	6,475.4	
Sub total – Contingencies	6,475.4	
Total Cost	**37,806.0**	

Source: Analysis.

8.5.2 CDP Sustainability

Basic Assumptions for Projections

In order to determine the financial viability of the CDP, two instruments were used – the internal rate of return (FIRR) and the Financial Operating Plan (FOP). The FIRR determines the rate of return based on surplus cash flows from sub-project account. The FOP is a cash flow stream of Haridwar Jal Sansthan / NPP / HDA based on regular revenues, expenditures, and applicability of surplus funds to support sub-project sustainability. The FOP horizon is determined to assess the impact of full debt servicing liability resulting from the borrowings to meet the identified interventions/sub-projects. The proposed capital investments are phased over a five-year period from FY2008 to FY2012.

Revenue Income. The assumptions for forecasting revenue income comprise:

(i) Taxes and Charges. In cases like property related taxes, water charges and sewerage charges, where the base and basis of revenue realization are known and predictable, the likely revenue is forecast based on certain assumptions regarding growth in number of assessments, revision in ARV (in case of property-related taxes), revision in charges/tariffs and improvement in collection efficiencies.

   a. **Property Tax:** projected based on ARV per property; number of assessments to grow at a nominal 1 percent per annum; ARV for properties assumed to grow at 3 percent per annum; ARV for all properties revised once in five years beginning 2006-07 at 30 percent; and collection performance assumed at 80 and 86 percent against arrears and current demand respectively.

   b. **Water Charges:** no new connections envisaged in the base case scenario and increase in water connections is a result of the availability

of additional water for distribution – it is assumed that 98 percent of the properties would have water connections by FY 2028; the current rate of water charge is revised at 5 percent annually; collection performance is assumed at 85 percent of total demand; and new (one-time) connection charges are adopted at Rs.1,000 per domestic connection, Rs.2,000 per commercial connection and Rs. 3,000 per industrial connection.

c. **Sewerage Charges:** it is assumed that 80 percent of the properties under this phase would have sewer connections by FY 2028; an average surcharge rate of 50 percent of the water charges per property is assumed for FY2012 and increase is assumed annually in proportion to water charges; collection performance is assumed at 85 percent of the demand; and new (one-time) connection charges are adopted at Rs.1,500 per domestic connection, Rs.3,000 per commercial connection and Rs.4,500 per industrial connection.

(ii) Other revenue income from own sources. All revenue income from own sources other than property-related taxes, and water and sewerage charges, where the base and basis is not clearly defined, are forecast based on the observed trend during the past five years/assessment period (2001-02 to 2005-06). Non-tax Own Sources and Tax Own Sources are expected to grow at 1 percent annually.

(iii) Grants and Contributions Revenue income in the form of grants and contributions are also forecast based on the observed trend during the last five years (2001-02 to 2005-06), to meet the operational deficits.

(iv) Additional Revenue Income due to Sub-Projects. The sub-projects – in case of water and sewerage projects – are expected to secure additional revenue by way of increase in number of assessments and levy of user charges. Water charge is adopted at Rs.1.5/kl (average) (FY2008) with an annual revision of 5 percent; the sewerage charge is adopted at 50 percent of the water charges with corresponding annual revision, and the conservancy charge is adopted at Rs.72 per month from FY2012 with an annual revision of 5 percent. The additional revenue income due to water supply, sewerage and solid waste management sub-projects is computed based on the proposed number of properties, new connections, proposed tariffs and assumed collection performance (at 85 percent of demand).

Revenue Expenditure. Key assumptions for forecasting revenue expenditure comprise:

(i) Expenditure on Municipal Services. Expenditure on municipal services including general administration, revenue collection and service delivery are forecast based on the observed trend during the past five years (2001-02 to 2005-06), and is expected to grow at 8 percent annually. General Administration expenditure is expected to increase at 8 percent annually and increase in staff salary is assumed at 8 percent of the current employee related expenses.

(ii) Outstanding Non-debt and Debt Liabilities. Currently, Haridwar NPP does not have any outstanding non-debt liabilities like payments due to employees, Uttaranchal Power Corporation (UPC), etc. Hence, it is assumed that future non-debt liabilities will not occur. Haridwar Jal Sansthan has no outstanding loans.

(iii) Additional O&M Expenditure due to Sub-Projects. While each sector identifies the O&M costs applicable for asset maintenance (manpower, consumables, power charges, etc.), a proportion of the capital cost was derived for projections. Table 8.12 presents the assumptions regarding O&M expenditure on new assets.

Table 8.12: Assumed O&M Expenditure

S. No.	Sector	O&M as % of Capital Cost
1	Water Supply	3.00
2	Sewerage & Sanitation	2.00
3	Urban Drainage	2.00
4	Solid Waste Management	15.00
5	Urban Transport and Roads	2.00
6	Community Upgrading	2.00
7	Urban Development	2.00

Capital Account. In case of capital account, no capital transactions are considered and sub-project cash flows are loaded onto the FOP and their impact on Jal Sansthan, Development Authority and municipal finances tested. Key assumptions regarding capital account are investment phasing and sub-project financing/funding structures.

(i) Capital Expenditure. The estimated expenditure for implementing sub-projects is phased over 2008-12 and expenditure ascertained adopting a physical contingency of 7.5 percent (for civil works) and a price contingency of five percent per annum. Base costs are determined based on 2006-07 prices.

(ii) Capital Income. Capital income is forecast based on actual requirement to meet proposed capital expenditure. This Phase of CDP assumes 20 percent grant / equity financing from Government of Uttaranchal, Haridwar NPP and Haridwar Development Authority and 80 percent grant financing from Government of India under JNNURM.

Sustainability

Sustainability Analysis. Sustainability analysis assumes that GoU and parastatal agencies like Haridwar Jal Sansthan and Haridwar NPP will carry out minimum reforms indicated as assumptions for financial projections. The financial and operating plan (FOP) for Haridwar Jal Sansthan and Haridwar NPP evaluates the Jal Sansthan / Municipal fund status for the following scenarios:

(i) Base Case Scenario. In the base case scenario, the finances of Haridwar Jal Sansthan / NPP are forecast in a “do nothing” or “without CDP” scenario. The revenue deficit indicates Haridwar Jal Sansthan / NPP incapacity to service capital expenditure.

(ii) Investment Scenario. The investment scenario is based on investments identified under the CDP and the requirement for upgrading the city’s infrastructure is estimated and phased based on construction activity. Implications of this investment in terms of additional operation and maintenance expenditure are worked out to ascertain sub-project cash flows. Revenue deficits from the Base Case Scenario and sub-project cash flows emerging from implementable investments – the cash flow net surpluses indicates the Haridwar NPP’s and Haridwar Jal Sansthan’s ability ability to

generate operating surplus. FY 2013 is assumed as the reference year to determine the net surpluses and whether Haridwar Jal Sansthan / NPP maintain a debt/revenue surplus ratio as an indication of the Haridwar Jal Sansthan / NPP ability to sustain investments.

Based on the aforesaid sustainability analysis, the sub-project cash flows (refer attachments) were applied onto Haridwar Jal Sansthan / NPP Revenue Account cash flows to determine the Operating Surplus/Closing Balance. Summary figures are indicated in Table 8.13 and Table 8.14 below.

Table 8.13: CDP Sustainability – Haridwar NPP

Item	2007	2013	2021	2032
	Rs. million			
Revenue Account				
Opening Balance	-2.2	0.6	0.3	0.6
Revenue Income	105.8	469.8	645.9	1,382.3
Revenue Expenditure	103.5	469.7	645.8	1,382.5
Closing Balance	-	0.7	0.3	0.4

Source: Analysis

Table 8.14: CDP Sustainability – Haridwar Jal Sansthan

Item	2007	2013	2021	2032
	Rs. Million			
Revenue Account				
Opening Balance	-1.5	0.5	0.2	0.4
Revenue Income	31.5	106.1	182.4	434.0
Revenue Expenditure	29.4	106.4	182.4	433.8
Closing Balance	0.6	0.2	0.2	0.6

Source: Analysis.

Table 8.15: Financial Improvement Action Plan

Item / Current Situation	FY 2006-07	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	Remarks
A. Water Supply								
• Connection Fee Revision	-	-	-	20% of fee in FY 2007	-	-	20% of fee in FY 2010	Water connection fee is assumed as Rs.1000 for domestic connections in FY 2007.
• Increase in monthly water charge per connection	-	5%	5%	5%	5%	5%	5%	The monthly charge for domestic connection is Rs. 1.3 per Kilo Litre (KL) in FY 2007 and Rs. 5.4 per KL in FY 2028. 85% collection performance.
• Properties covered by water connections		67%	70%	72%	75%	80%	90%	100% coverage
B. Sewerage								
• Connection Fee Revision	-	-	-	20% of fee in FY 2007		-	20% of fee in FY 2010	Sewer connection fee is assumed as Rs.1500 for domestic connections in FY 2007.
• Increase in monthly sewer charge per connection		same	as	in	case of	water		Based on the size of investments and the priority for sewerage investments, sewer charges are proposed as monthly fees as a 50% surcharge on water. 85% collection performance.
• Properties covered by sewer connections						25%	37%	80% coverage by FY 2028.
C. Solid Waste Management								
• Increase in monthly conservancy charge per property	-	-	-	-	-		20% every three years from 2014-15	Conservancy tax/charge introduced from FY2011 Rs. 72 per month for domestic, Rs. 540 per month for commercial, and Rs. 900 per month for industrial. 85% collection performance.
• Properties covered by conservancy charge	-	60%	60%	70%	80%	100%	100%	100% coverage
C. Property Tax								
• ARV Revision		-	-	-	60% of ARV in FY 2012		-	Revisions in ARV made once every three years @ 20%. Annual increase @1%.
• Collection Performance Demand	39%	45%	51%	58%	66%	73%	81%	Achieve 85% collection of arrear and current demand.

Table 8.16: Financial and Operating Plan

Item Heads			2007	2008	2009	2010	2011	2012	2013	2021	2028	2032
			As of March 31 (in INR Million)									
		REVENUE ACCOUNT										
	I	**Revenue Income**										
	A	**Tax- Own Sources**										
	1	House Tax	10.4	12.8	15.2	17.6	27.9	35.0	42.2	94.2	161.5	220.5
	2	Other Taxes & Charges (incl under spl law, acts)	0.13	0.13	0.13	0.13	0.13	0.14	0.2	0.15	0.16	0.17
		Tax- Own Sources	*10.5*	*12.9*	*15.3*	*17.7*	*28.0*	*35.2*	*42.4*	*94.3*	*161.7*	*220.7*
	B	**Non Tax- Own Sources**										
	1	Income from Municipal Properties and Markets	6.55	6.61	6.68	6.75	6.81	6.88	6.9	7.53	8.07	8.40
	2	Miscellaneous Income	10.1	10.2	10.3	10.4	10.5	10.6	10.7	11.6	12.4	12.9
		Non Tax- Own Sources	*16.6*	*16.8*	*16.9*	*17.1*	*17.3*	*17.5*	*17.6*	*19.1*	*20.5*	*21.3*
	C	**Revenue Grants / Transfers**										
	1	State Finance Commission	71.7	72.4	73.1	73.8	74.6	200.0	202.0	218.7	30.6	
	2	Operational Grants	4.5	35.2	40.8	47.5	46.7	105.1	72.1	8.5		
		Revenue Grants	*76.1*	*107.6*	*113.9*	*121.4*	*121.3*	*305.1*	*274.1*	*227.2*	*30.6*	-
	D	**Other Income**										
	1	Income from Interest on Investments	2.5	3.0	3.7	4.5	5.5	6.7	8.2	40.1	161.1	357.0
		Other Income	2.5	3.0	3.7	4.5	5.5	6.7	8.2	40.1	161.1	357.0
		Revenue Income	**105.8**	**140.3**	**149.9**	**160.7**	**172.1**	**364.4**	**342.3**	**380.7**	**373.9**	**599.0**

Financial and Operating Plan (contd…)

	Item Heads	2007	2008	2009	2010	2011	2012	2013	2021	2028	2032
II	**Revenue Expenditure**										
A	**General Administration**										
1	Staff Salary and Employee Related Expenses	68.5	103.6	111.9	120.8	130.5	140.9	152.2	281.4	482.0	655.5
2	Office - Contingency expenses	9.6	10.5	11.6	12.8	14.0	15.4	17.0	36.4	71.0	103.9
	Establishment	*78.1*	*114.1*	*123.5*	*133.6*	*144.5*	*156.3*	*169.1*	*317.8*	*552.9*	*759.4*
B	**Operation & Maintenance**										
1	Public Safety and Health and others	25.4	25.9	26.5	27.0	27.5	28.1	28.6	33.6	38.5	41.7
	Operation & Maintenance	*25.4*	*25.9*	*26.5*	*27.0*	*27.5*	*28.1*	*28.6*	*33.6*	*38.5*	*41.7*
	Revenue Expenditure	**103.5**	**140.1**	**149.9**	**160.6**	**172.0**	**184.4**	**197.8**	**351.4**	**591.5**	**801.1**

Financial and Operating Plan

CASH FLOW STATEMENT - Haridwar NPP

(Rs. Million)

	Item Heads	2007	2008	2009	2010	2011	2012	2020	2021	2028	2032
	Opening Balance	-2.2	-	0.2	0.1	0.2	0.3	0.6	0.3	0.6	0.6
	Revenues										
	Tax and other revenues	105.8	140.3	149.9	160.7	172.1	364.4	342.3	380.7	373.9	599.0
	Solid Waste Management	-	-	-	-	-	89.6	127.5	265.2	533.0	783.3
	Sub-total Revenues	105.8	140.3	149.9	160.7	172.1	454.0	469.8	645.9	906.9	1,382.3
	Expenditure										
	Existing revenue expenditure	103.5	140.1	149.9	160.6	172.0	184.4	197.8	351.4	591.5	801.1
	Solid Waste Management	-	-	-	-	-	199.7	201.7	218.5	234.2	467.5
	Community Upgrading & Civic Infrastructure	-	-	-	-	-	69.5	70.2	76.0	81.5	113.9
	Sub-total Expenditure	103.5	140.1	149.9	160.6	172.0	453.6	469.7	645.8	907.2	1,382.5
	Closing Balance	**-**	**0.2**	**0.1**	**0.2**	**0.3**	**0.6**	**0.7**	**0.3**	**0.3**	**0.4**

CASH FLOW STATEMENT – Operation and Maintenance Costs GoU / HAD

Rs. Million

	Item Heads	2007	2008	2009	2010	2011	2012	2020	2021	2028	2032
	Opening Balance	0						624	5,847	10,770	13,742
	Transport Planning	0	0	0	0	0	439	444	481	515	536
	Urban Development	0	0	0	0	0	42	42	46	49	51
	Storm Water Drainage	0	0	0	0	0	143	144	156	168	174
	Closing Balance	0	0	0	0	0	624	1,254	6,529	11,502	14,503

Note: Operation and Maintenance costs would be met from State Government grants for above along with for ongoing projects.

CASH FLOW STATEMENT - Haridwar Jal Sansthan

Rs. Million

	Item Heads	2007	2008	2009	2010	2011	2012	2020	2021	2028	2032
	Opening Balance	-1.5	0.6	0.1	0.2	0.3	0.5	0.2	0.2	0.3	0.4
	Water Supply										
	Revenues	31.5	34.6	36.7	39.2	78.6	73.1	78.6	154.5	267.8	366.3
	Expenditures	29.4	35.1	36.6	39.1	78.4	83.0	88.4	153.8	287.4	396.0
	Sewerage & Sanitation										
	Revenues	-	-	-	-	-	33.0	33.7	28.0	53.5	67.7
	Expenditures	-	-	-	-	-	23.4	23.9	28.6	33.9	37.8
	Closing Balance	**0.6**	**0.1**	**0.2**	**0.3**	**0.5**	**0.2**	**0.3**	**0.2**	**0.3**	**0.6**

Financial and Operating Plan

PROPERTY TAX REVENUE SCHEDULE

	Item Heads	2007	2008	2009	2010	2011	2012	2013	2021	2028	2032
	Demography										
	Population	351,869	362,425	373,298	384,497	396,032	407,913	420,150	532,234	654,580	736,736
	Approx. Households/Properties	60,667	62,487	64,362	66,293	68,281	70,330	72,440	91,764	112,859	127,023
	Authorized Properties										

	Item Heads	2007	2008	2009	2010	2011	2012	2013	2021	2028	2032
	Domestic	69,690	70,387	71,091	71,802	72,520	73,245	73,977	80,107	85,885	89,373
	Commercial	3,788	3,825	3,864	3,902	3,941	3,981	4,021	4,354	4,668	4,857
	Industrial	2,273	2,295	2,318	2,341	2,365	2,388	2,412	2,612	2,801	2,914
	Authorized Customers	75,750	76,508	77,273	78,045	78,826	79,614	80,410	87,073	93,354	97,144
	Property Tax										
	Assessments										
	Number of old assessments	23,460	26,041	28,905	32,085	35,614	39,531	43,880	63,072	74,317	77,335
	Additional assessments annually	235	260	289	321	356	395	439	631	743	773
	Assessments to increase Tax Base	2,346	2,604	2,891	3,208	3,561	3,953	4,388	6,307	-	-
	Total number of assessments	26,041	28,905	32,085	35,614	39,531	43,880	48,707	70,010	75,060	78,108
	Annual Ratable Value										
	Avg. ARV (Old Assessment)	5,402	5,564	5,731	5,903	9,445	9,728	10,020	17,230	28,763	37,717
	Avg. ARV (New Assessment)	5,564	5,731	5,903	6,080	15,112	15,565	16,032	29,245	51,792	69,950
	ARV Rate & Periodic Revision					60%					
	ARV Increase Per New Property										
	Current Demand (INR Million)										
	Old Assessments	9.5	10.9	12.4	14.2	25.2	28.8	33.0	81.5	160.3	218.8
	New Assessments	1.1	1.2	1.4	1.6	4.4	5.1	5.8	15.2	2.9	4.1
	Total Current Tax Demand	10.6	12.1	13.8	15.8	29.7	33.9	38.8	96.7	163.2	222.8
	DCB Statement										
	Arrear	16.2	16.4	15.7	14.4	12.6	14.3	13.2	13.7	26.4	36.1
	Current	10.6	12.1	13.8	15.8	29.7	33.9	38.8	96.7	163.2	222.8
	Total Demand	26.8	28.5	29.5	30.2	42.2	48.2	52.0	110.5	189.7	258.9
	Collection										
	Arrear	4.1	4.9	5.5	5.7	5.7	7.9	9.2	11.0	21.2	28.9
	Current	6.3	7.9	9.7	11.9	22.3	27.1	33.0	83.2	140.4	191.6
	Total Collection	10.4	12.8	15.2	17.6	27.9	35.0	42.2	94.2	161.5	220.5
	Property Tax Collection Performance	39%	45%	51%	58%	66%	73%	81%	85%	85%	85%
	Property Tax Coverage	34%	38%	42%	46%	50%	55%	61%	80%	80%	80%

8.6 Investment Sustenance Plan

Steps are being initiated to meet the requirements of mandatory reforms and optional reforms, institutional and financial, at the ULB / Para Statal level in order to strengthen the financial system and improve financial management in these bodies (see Chapter 4 above). Modalities for meeting the minimum requirement of 50% of the operation and maintenance costs, as per the JNNURM guidelines, would be worked out and implemented with a phased plan towards full cost recovery.

Annexures

ANNEX 3.1.1: Year-wise projection of population upto the year 2035

HARIDWAR

Year	Resident population		Projected population ('000)			
	Assumed annual av. Gowth rate (%)	Projected Population ('000)	Tourist load	Daily visitors	Dist. Hq. floating population	Total
1991		147				147
2001	1.6	175	478	18	9	680
2005	2.5	179	488	18	9	694
2006		184	497	19	9	709
2007		188	507	19	10	724
2008		193	517	19	10	740
2009		198	528	20	10	756
2010	3	204	538	20	10	773
2011		210	549	21	10	790
2012		216	560	21	11	808
2013		223	571	22	11	827
2014		230	583	22	11	846
2015	3.5	238	594	22	11	866
2016		246	606	23	11	886
2017		254	618	23	12	907
2018		263	631	24	12	929
2019		273	643	24	12	953
2020	2.5	279	656	25	12	972
2021		286	669	25	13	993
2022		294	683	26	13	1015
2023		301	696	26	13	1037
2024		308	710	27	13	1058
2025	2	315	724	27	14	1080
2026		321	739	28	14	1102
2027		327	754	28	14	1123
2028		334	769	29	14	1146
2029		341	784	30	15	1170
2030	2	347	800	30	15	1192
2031		354	816	31	15	1216
2032		361	832	31	16	1240
2033		369	849	32	16	1266
2034		376	866	33	16	1291
2035		384	883	33	17	1317
2036		392	901	34	17	1344
2037		399.84	919	35	17	1371

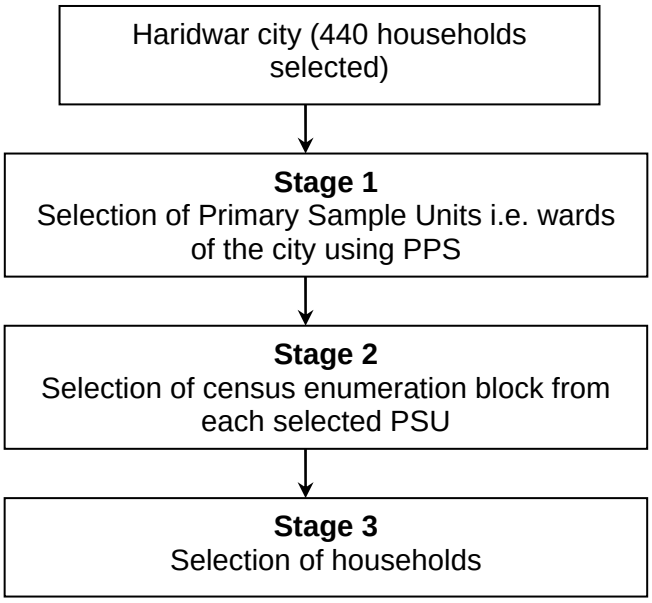
ANNEX 3.1.2: Methodology of Socio-economic Survey

Sample design

Total sample to be covered – 2000 households from 5 cities.

Sample unit=Household

The sample will be selected in three stages for each selected city. In the first stage, Primary Sampling Units (PSU) (i.e. wards of the cities) will be selected using probability proportional to population size (PPS). In the next stage, one census enumeration block (CEB) from each selected PSU will be selected randomly. Finally, households will be selected within each sample of CEB. The households to be interviewed will be selected with equal probability from the household list in CEB using purposive sampling.



Sample size distribution

The proportionate distribution of sample size is as follows:

Town	Population	Sample size	Investigators	Days required
Haridwar	175,010	440	5	20

ANNEX 3.1.3: Questionnaire for Baseline Socio-economic Survey

Household Baseline Survey

A. *Background information*

Sl.No._____ **City**_____ **Ward**_____

Locality_____ **Street**_____ **HH No.**_____

B. *Demographic information*

Religion_____ **Caste**_____ **Duration of stay**_____

Sl. No.	*Name*	*Relation with HHH*	*Sex*	*Age*	*Education*	*Occupation*		*Approx income/month*	*Approx expenditure/ month*	*Monthly savings*	*Remarks**
						Primary	*Other*				
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

Note- Please mark the respondent (should be an adult) as "R" in the remarks column

* Mention if there is any comment

C. HOUSING		
1. How long has your family lived in this neighbourhood?		Months
2. If you have moved here in the last 5 years, have you moved:	1. From another part of this city 2. From another city, 3. From a rural area 4. From other country 5. Not Applicable	
3. Ownership of plot	1. Freehold Title 2. Lease 3. Patta 4. Joint patta 5. Other legal right 6. No legal right	
4. Given better legal right to this land, would you use your own money to improve your house?	1. Yes 2. No	
5. Ownership of house	1. Own 2. Rented 3. Others (Specify)	
6. If on rent, the r**ent** per month		Rs.
7. House type	1. Kutcha 2. Semi pucca 3. Pucca	
8. Does any other Family (With separate kitchen) stay with you in this house?	1. Yes 2. No	
9. Do you pay any tax to local body. If Yes, what for how much? Water tax_____ Water charge_____ Property tax_____ Other service tax_____		Total Rs._____
D. ENVIRONMENTAL SERVICES		
10. How important are the following to your quality of life? (rank in order of importance)		
a. Water	Highest	1.
b. Sanitation		2.
c. Drainage		3.
d. Solid waste collection		4.
e. Roads, street lighting		5.
f. Proximity to public transport	Lowest	6.
Water		
11. What is your primary source of water supply?	1. House connection 2. Public standpost 3. Neighbour's house 4.Municipal tanker 5. Private vendor 6. Tube well/Hand pump 7. Dug well 8. Pond/River 9. Others	
12. If answer is 1; Do you have a water meter for house connection?	1. Yes 2. No	
13. Do you sell piped water to others, e.g. neighbors? If yes, how much per day?	1. Yes 2. No	_____
14. How many persons outside your household use water through your connection?		
15. Quality of water	1. Good 2. Medium 3. Poor	
16. Is the water treated before use?	1. None 2. Boil 3. Filter 4. Others (Specify)	
17. Hours of water supply through	Morning_____ Afternoon/Evening_____	Total

piped system per day		hours
18. Who fills water?	1. Adult male 2. Adult female 3. Boy 4. Girl	

Sanitation		
19. Where do your family members go for defecation?	1. Use latrine in this house 2. Use neighbour's latrine 3. Use a public toilet 4. Use a pay and use toilet 5. Open defecation	Men Women Children
20. Why do they go to other place?		
21. How the facility is maintained?		
22. Who cleans it?		
23. How often?		
24. If you have a latrine in the house, type of it?	1. Pour flush 2. Twin pit latrine 3. Dry/ bucket latrine 4. Not Applicable	
25. Where does it discharge?	1. Sewer 2. Drain 3. River 4. Septic tank/soak pit	
26. Are you satisfied with the facility?	1. Yes 2. No	
27. If not, why?		
28. Do you plan for something else?	1. Yes 2. No	
29. Is there enough water for the latrine?	1. Yes 2. No	
30. What is the source of that water	1. Tap 2. Hand pump 3. River/pond	
31. How do you clean your hands after defecation?	1. With mud 2. With water 3. With soap 4 Others (Specify)	
32. If going out for defecation do you wear footwear?	1. Yes 2. No	
Drainage		
33. Do the locality has a rain water drainage? 1. Yes 2. No		
34. Does your neighbourhood suffer from water logging/flooding problems? 1. Yes 2. No.		
35. If Yes, How many times a year?	1. No, never 2. Less than 5 times a year 3. 5-10 times a year 4. More than 10 times a year	
36. If Yes, for how long does it stay flooded?	1. No, never 2. Less than one week in a year 3. 1week to 1 month in a year 4. 1-3 months a year 5. More than 3 months a year	
37. If Yes, do you suffer from damage to your home or loss of income as a result of flooding?	1. No, never 2. Less than 5 times a year 3. 5-10 times a year 4. More than 10 times a year	
38. On average, what is the cost of the damage each time?	1. No cost 2. Less than Rs 500 3. Rs 500 – 1000 4. Rs 1000 – 5000 5. More than Rs 5000	

Solid Waste / Garbage		
39. How does your household dispose of solid waste?	1. In private bin for house collection 2. In community bin 3. Burn 4. Throw outside on street or open area	
40. Who disposes waste?	1. Adult male 2. Adult female 3. Boy 4. Girl	
41. What is the approximate quantity?	In gm	
42. Is it segregated?	1. Yes 2. No	
43. Who segregates?	1. Male 2. Female	
44. 68. If you put waste in either private or community dustbin, how often is it collected?	1. Daily 4. Longer than a week 2. 2-3 times per week 5. Never 3. Weekly	
45. Who collects garbage from collection point	1. Municipality 2. Private party	
46. Is open burning in practice	1. Yes 2. No	
47. Who burns?	1. Residents 2. Municipality	
48. Do the streets get swept?	1. Yes 2. No 3. Don't know	
49. 69. Is the road drain outside your house swept clean regularly?	1. Yes 2. No 3. Don't know 4. No Drains	
50. Who sweeps?	1. Municipality 2. Private party 3. Residents	
51. How frequently?	1. Daily 4. Longer than a week 2. 2-3 times per week 5. Never 3. Weekly	
52. Do you pay any amount for garbage collection/sweeping	1. Yes 2. No	
53. How much?		
Electricity		
54. Do you have an electric connection in your house?	1. Yes 2. No	
55. Is there any electric meter in your house?	1. Yes 2. No	
Roads, Street Lighting & Access to Public Transport		
56. Is the road in front of your house paved?	1. Yes 2. No	
57. Condition of the road	1. Kutcha 2. Metalled 3. Painted	
58. Do you have a street-light in your street?	1. No 2. Yes, within 50 m 3. More than 50m away	
59. Is it functional?	1. Yes 2. No	
60. Do you pay for it?	1. Yes 2. No	
61. How far do you have to go to get public transport?	1. Less than 100m 2. 100m to 1km 3. More than 1 km	
F. HEALTH		
62. Has any household member suffered from diarrhoea in the last six month?	1. Yes 2. No	

63. Has any household member suffered from acute respiratory infection in the last six months?	1. Yes 2. No	
64. 44. How many days of work were lost because of these illnesses in the last month?	1. None 2. Less than 5 days 3. 5 -10 days 4. 10 – 20 days 5. More than 20 days	
65. Has there been any death in the family in the last year?	1. Yes, child under 5 2. Yes, other 3. No	
66. Probable cause of death		
67. What is the average cost of treatment for the family per month?	1. Nothing 2. Less than Rs 50 3. Rs 50-100 4. Rs 100 – 200 5. More than Rs 200	

H. SOCIAL CAPITAL

68. Does any family member of the household have a membership of any local groups?	1.Yes 2. No	
69. Does any member of the household have a membership of Residents' or Community Welfare Association?	1. Yes 2. No	
70. Do you have a ration card?	1. Yes 2. No	

J. PERCEPTIONS & PRIORITIES

71. How do you rate the provision of services by the Government/Corporation in your area for:

a) Water	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
b) Sanitation	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
c) Drainage	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
d) Solid Waste Collection	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
e) Roads & Street Lighting	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
f) Access to public transport	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
72. How would you rate their overall performance?	1. Excellent 2. Good 3. Average 4. Fair 5. Bad	
73. Which do you think are the 3 most important services to improve?	1. Water 2. Sanitation 3. Drainage 4. Solid Waste Collection 5. Street Cleaning 6. Roads & Street Lighting 7. Public transport 8. Other? *Please specify*	

Willingness to Pay

74. Would you be willing to pay more for a better quality of service for? *

a) Water	1. Yes 2. No 3. Don't know If yes, how much?	
b) Sanitation	1. Yes 2. No 3. Don't know If yes, how much?	
c) Drainage	1. Yes 2. No 3. Don't know If yes, how much?	
d) Solid Waste Collection	1. Yes 2. No 3. Don't know If yes, how much?	
e) Roads & Street Lighting	1. Yes 2. No 3. Don't know If yes, how much?	

*Slabs for willingness to pay

(1) <200 /month
(2) <250 /month
(3) <300 /month
(4) <350 /month
(5) <500 /month
(6) <750 /month
(6) >750 /month

75. **General Observation:**

Approach road-

Streets/paths-

Drains-

Stand post-

- *Post*
- *Platform*
- *Tap*
- *Cleanliness*

Cleanliness of locality

Street lights

Possession:

- Television- Colour, B/W
- Air conditioner
- Air cooler
- Refrigerator
- Telephone
- Mobile
- Bicycle
- Motorbike
- Car
- Other assets

Annex 3.1.4: List of Slums in Haridwar

S. No.	Name of Slum	
	Registered	**Unregistered**
Brahmapuri Khadkhadi		
1.	Lodhamandi, Rishikul	
2.	Brahmapuri	
3.	Gusain Gali, Nai Basti, Bheemgoda	
4.	Ramgarh	
5.	Mukhiya Gali, Bhupatwala	
6.	Uttamnagar Basti, Bhupatwala	
7.	Basant Gali, Balmiki Basti, Khahkhadi	
8.	Mayapur, Balmiki Basti Garage, Tank no. 4	
9.		Jhakaari Basti
10.		Kashipura
11.		Indrabasti, Industrial Area Haridwar
Kankhal		
12.	Sheikhupura	
13.	Ravidas Basti, Balmiki Basti	
14.	Hanuman Garhi, Devnagar Basti	
15.	Lattonwali, Purabiya Mandi	
16.	Indira Basti, Daksh Road (Illegal Slum)	
17.	Bairagi Camp, Ganga Paar	
18.		Bajri wala, Ganga Paar (Illegal Slum)
19.	Balmiki Basti	
Jwalapur – I		
20.	Puljatwada	
21.	Panwdohi	
22.	Ram Rahim / Babur Colony	
23.	Kassabaan, Hassabaan	
24.	Ghosiyaan, Maliyaan	
25.	Maidaniyaan	
26.	Kaitwada	
27.	Kotarwaan	
28.	Neelkhudana / Dheerwali	
29.	Maihtaan / Peethbazaar	
30.	Chaujaan	
31.		Soniya Basti (Illegal Slum)
Jwalapur - II		
32.	Tibdi	
33.	Kadach	
34.	Lodhamandi	
35.	Tailiyaan, Sharifnagar	
36.	Ahbaabnagar	
37.		Rajeev Nagar
38.		Lal Mandir, Indira Basti
39.		Indira Basti, Jwath
40.		Sanjay Nagar
41.		Balmiki Basti, Water Works
Total	**31**	**10**

Source: Community Development Societies through Haridwar Nagar Palika Parishad July 2006

ANNEX 3.2.1: Industrial Policy 2003

'The New Industrial Policy 2003' of the Government of Uttarakhand has spelled out vision for industrial development and has announced various concessions to attract industries, some salient points of which are listed below:

A vision statement:

- To create high quality world class infrastructure facilities in the State.
- To provide single window facilitation in the State to expedite project clearances.
- To promote and encourage private sector participation in the development and management of infrastructure projects. s
- To provide assured power supply for industries.
- To simplify and rationalise labour laws.
- To promote small scale and cottage industries.
- To promote tourism as a focus area and develop Uttarakhand as a premier global tourism destination.
- To promote and strengthening air, rail, road, and other connectivity.
- To develop Uttarakhand as a premier education and research centre
- Fiscal incentives
- 100% central excise for ten years.
- 100% income tax exemption for first five years and 30% for next five years for companies and 25% for others.
- CST @ 1 % for five years.
- Capital investment subsidy of 15% subject to a maximum Rs. 3 million.
- 100% exemption of entertainment tax for multiplex projects for three years.
- Policy instruments
- Single window contact, information and facilitation.
- Single window clearance mechanism.
- Deemed clearance.
- Information technology
- IT and IT related services accorded industry status.
- A dedicated IT park is already coming up in Dehradun
- Exemption on electricity duty on generator sets of IT industries established in IT park/industrial estates.
- Free bandwidth up to 2 mbps to all IT software companies/IT enabled service based companies, call centres, BPOs etc. for one year subject to some conditions.

ANNEX 3.3.1: Land use 2004 in Haridwar Development Area

S. No.	Land Use	Area in Hectare	
1.	Residential		**1063.50**
2.	Ashram		**208.20**
3.	Business		**157.20**
	- Commercial	151.32	
	- Main Business Centre	5.88	
4.	Office		**117.80**
5.	Other offices		**1004.30**
	- B H E L	955.00	
	- C I S F	13.45	
	- P A C	35.85	
6.	Industrial Area		**135.70**
7.	Public Utilities		**214.00**
	- School / College	54.94	
	- Degree College and Gurukul Kangri University	76.97	
	- Medical College	5.20	
	- Technical Institution	0.95	
	- Park	4.99	
	- Cultural Centre/ Meeting Place	2.56	
	- Hospital	4.86	
	- Play Ground	8.84	
	- Electricity office	8.56	
	- Telephone	2.48	
	- Post Office	0.82	
	- Police Station	1.68	
	- Sewage farm	14.78	
	- Temple / Mosque / Church	8.31	
	- Burial Ground	18.06	
8.	Transport and Communication		**626.40**
	- Airport	108.00	
	- Bus Stand	0.72	
	- Road	415.86	
	- Railway Track	91.26	
	- Railway Station	10.56	
9.	Garden		**578.50**
10.	Agriculture		**11474.95**
11.	Barren		**1306.21**
12.	Open Area		**916.86**
13.	River / Drain / Canal		**1964.58**
14.	Forest Area		**570.80**
	Total		**20119.00**

Source: Town and Country Planning Department, GoU

ANNEX 3.3.2: Details of Schemes Developed by HDA from 1986 – 2006

S No	Name of the Project	Type of Housing/ Building	Number	Area (Acres)	Year
1.	Shivlok - I	HIG	15	5.45	1988-1989
		MIG	39		
		LIG	44		
		EWS	72		
		Site and Services	31		
		Commercial	4		
2.	Shivlok - II	HIG	48	4.56	1990-1991
		MIG	48		
		LIG	36		
		EWS	127		
		Commercial	4		
3.	Shivlok - III	HIG	19	6.95	1993-1994
		MIG	75		
		LIG	30		
		EWS	27		
		Site and Services	8		
		Commercial	32		
4.	Rishikesh Colony	HIG	40	4.08	1988-1989
		LIG	63		
		EWS	71		
5.	Harilok Colony	HIG	117	19.05	1996-1997
		LIG	157		
		EWS	126		
		Shelter	78		
		Commercial	73		
		Hotel	1		
6.	Shyamlok Colony	HIG	34	8.81	1999-2000
		LIG	40		
		Ashram	8		
		Group Housing	2		
		Commercial	7		
		School	1		
		Ashram/ Religious	1		
7.	Shivlok – III Extension	EWS	38	2.25	1999-2000
8.	Gayatri Lok	Group Housing	2		
		HIG	1		
	Total		1519		

Source: Haridwar Development Authority

Annex 3.4.1: Details of Existing Sewerage Facilities

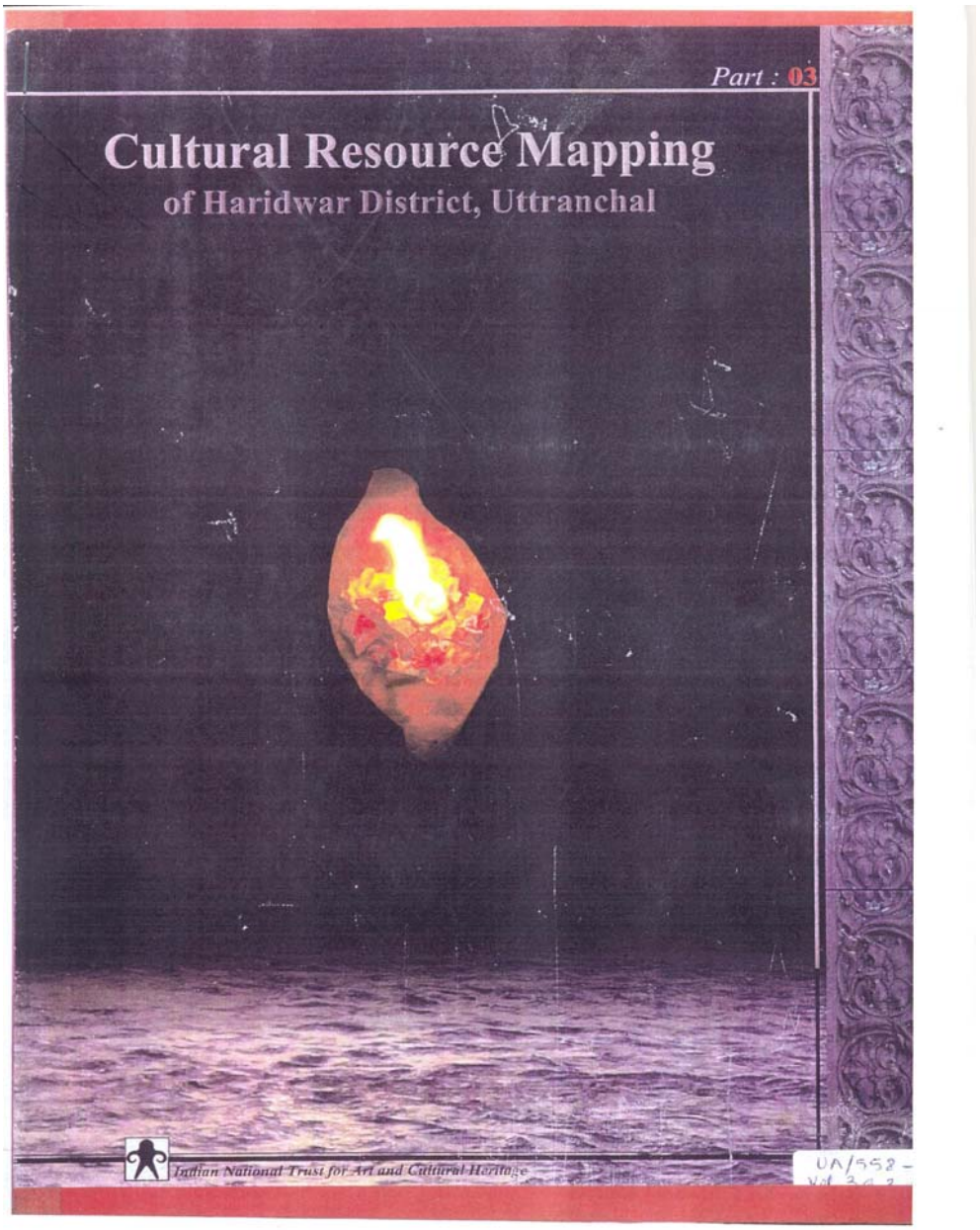
Existing Sewage Generated (2006) from different zones

Zone	Sub Zones	Permanent Population (numbers)	Floating Population p.e	Sewage Generated** mld
I Bhopatwala	A	10207.0	34558.0	3.5
II Haridwar	B	10572.0	8252.0	1.8
	C	48106.0	47325.0	9.0
	D	28999.0	44413.0	6.5
	E1	22344.0	23636.0	4.3
Sub Total		110021.0	123626.0	21.6
III Jwalapur	E2	63765.0	1084.0	8.0
GRAND TOTAL		183993.0	159268.0	33.1

* Sub Zones are zones considered by Uttarakhand PeyJal Nigam.

** Calculations of sewage flow is based on 80 % of water supply rate of 135 lpcd for permanent population and 70 lpcd for floating population. In addition 15 % groundwater infiltration is also considered.

ANNEX 3.5.1: Cultural Resource Mapping in Haridwar District by INTACH



S. No.	Area	No. of Cultural Resources	Potential Cultural Resources
	Haridwar	164	13
	Kankhal	78	13
	Jwalapur	31	1

ANNEX 3.5.2: Important Temples In and Around Haridwar

Mansa Devi: The temple of Goddess Mansa Devi is situated at the top of the hill known as Bilwa Parwat. Here one statue of the Goddess has three mouths and five arms while the other statue has eight arms. The temple is managed by Niranjani Akhada. A beautiful view of the city unfolds from the top of the mountain. The temple can be reached by trolley through ropeway or on foot. The temple lies outside the municipal boundaries. Bilwa Parvat has high incidence of landslides and soil erosion, posing a threat to the habitation below. Immediate measures are required to check soil erosion.


Main entrance of the chandi temple.

Chandi Devi Temple: The temple of Chandi Devi situated on top of the mountain, *Neel Parvat,* on the other bank of river Ganga was constructed in 1929 A.D. by the king of Kashmir- Suchat Singh. Legend has it that the army chief Chanda-Munda of a local demon King Shumbh - Nishumbha was killed by Goddess Chandi here after which the place got the name Chandi Devi. It is believed that the main statue was established by Adi Shankracharya in 8th century A*Temple:* This is an ancient temple of Maya Devi, the deity of Haridwar. The city derived its name 'Mayapur' in the past from this temple. It is famous as a *Siddhapeethas* and has ancient legends attached to it.

Daksha Mahadev Temple: The ancient temple of Daksha Mahadev is situated in the south of Kankhal. As per Hindu Mythology, it is believed that King Daksh Prajapati, father of Sati (Lord Shiva's first wife) performed *yagya* at this place, but didn't invite Lord Shiva (Mahadev). Feeling insulted, Sati burnt herself in the *yagya* kund. Provoked by this, the *ganas* (followers) of Lord Shiva killed King Daksha. Later, Lord Shiva brought him back to life. Daksha Mahadev temple is a tribute to this legend.

Other Temples: Some of the other important temples are PawanDham, Bhooma Niketan, Vaishnav Devi Temple, Bharat Mata Mandir, Doodhadhari Temple and Shahi Gurudwara.

Gurukul Kangdi: It is situated on the Haridwar-Jwalapur bypass road. The Gurukul, founded in 1902, is a centre of Vedic studies. The Ved Mandir Museum in the campus has archaeological exhibits.

Sapt Rishi Ashram and Sapt Sarovar: It is said that Ganga had split herself in seven currents at this place so that the Sapt (seven) Rishis worshipping there would not be disturbed.

Wall paintings in Pipleshwar Mahadev Temple: One of the old temples situated at Har-Ki-Pauri has beautiful paintings on the inside of the walls of the temple.

Dharamshalas: The dharamshala shown in the picture is the oldest dharamshala in Haridwar, constructed in 1886 by Seth Suraj Mal, a wealthy Marwari businessman living in Calcutta. Inside the compound is an image of Shiva (Saptasamudreshvar) mentioned in texts from the early 1800s. Haridwar has several other Ashrams of significance such as ShantiKunj, Jairam Ashram, Bhuma Niketan, Shravan Nath Math, Pawan Dham, etc.

Sati Kund: It is recognised as an ancient site where Goddess Sati set herself on fire. Although the site is fairly developed having a boundary wall and benches, etc, the water tank does not have water. The site needs to be redeveloped to restore its significance.

Bhimgoda Kund: It is believed that while Pandavas were going to Himalayas through Haridwar, Bhima's horse got hurt at a place which came to be known as Bhimgoda and a Kund (sacred water tank) by the name of Bhimgoda Kund exists in Haridwar.

Rites and Rituals: A wide range of rituals from Ganga Aarti every evening at Har-Ki-Pauri Ghat to Kumbh Mela form the rich cultural heritage in Haridwar.

Bathing Ghats lined with small shed where Pandas perform the rituals

The Pandas help the pilgrims perform various rites and rituals on the Ghats. They also maintain *bahis* or records of the visits of the pilgrims. These records carry the names, caste and purpose of the visit of each pilgrim with names of the pilgrim's three preceding generations. This tradition of serving the pilgrims by the Pandas is called 'Teerth Purohitai', and it has been carried down through generations. Haridwar has a long history as a dwelling-place for ascetics, and part of its holiness comes from the sanctity brought by these holy men.

Similarly, *Akhadas* or religious institutions were formed to guard and protect the religious sanctity of these holy places of worship. In 1750 AD., the Mahanirvana Akhada was established. Since then, all the Akhadas established to this date command a place of respect among Hindu followers.

Aside from its importance as a place to take a holy bath in Ganges, Haridwar is also an important site for some of the last rites for the dead. People come from far off areas to immerse the ashes of the dead in the Ganges. Haridwar has shamshan ghats along river Ganga where the dead are cremated. Har-Ki- Pauri also has platforms for immersing the ashes.

ANNEX 3.5.3: Religious Fairs and Festivals

S.No.	Occasion	Month	Approx. no. of Tourists
1.	Makar Sakranti	January	2-2.5 lacs
2.	Maha Shivratri	Feb-March	2 lacs
3.	RamNavmi	March-April	3-4 lacs
4.	Baisakhi	April	8-10 lacs
5.	Buddha Poornima	May	3 lacs
6.	Ganga Saptami	May	2 lacs
7.	Ganga Dussehra	June	8-10 lacs
8.	Kanwar Mela	July	25-30 lacs
9.	Somwati Amavasya	July	20-25 lacs
10.	Janmashtmi	August	1 lac
11.	Durga Puja	October	3 lacs
12.	Kartik Poornima	November	7-8 lacs
13.	Ekadashis	Every Month	2 lacs
14.	Poornimas	Every Month	2 lacs
15.	Amavasyas	Every Month	2 lacs
16.	Surya Grahans	Whenever occurs	4-5 lacs
17.	Chandra Grahans	Whenever occurs	4 lacs

Source: Official website of Haridwar, www.ua.nic.in

Annex 3.5.4: Tourism Policy and Action Plan of GoU

Strengths and Assets

Pilgrimage has traditionally been a major segment of tourism in Uttarakhand. However, Uttarakhand is blessed with enormous resources for cultural, adventure, wildlife, nature and leisure tourism and a wide variety of entertainment and sporting activities which attract the modern tourist. Specific sectors identified for tourism development are as follows:

- **Pilgrimage**
- **Cultural Tourism**
- **Natural Beauty**
- **Adventure Tourism**
- **Wildlife Tourism**
- **Eco-Tourism**
- **Amusement and Leisure Tourism**

Challenges

- Augmentation of Infrastructure Facilities
- Winter/Year Round Tourism
- Target Group Oriented Tourism Development
- Development of new Tourist Destinations
- Promotion of Tourism Oriented Handicrafts Industry and Cuisine
- Publicity and Tousrism Marketing
- Human Resources Developlment
- Tourism Administration and Management
- Lack of Private Sector Participation

Action Plan

Tourism has the potential to become a mainstay of Uttarakhand's economy, and needs to be developed in a planned and time bound manner. Towards this end, the following thrust sectors have been identified:-

- **Strengthening of institutional framework.**
- **Infrastructure development.**
- **Enhanced private sector participation.**
- **Mobilization of resources.**
- **Human resources Development**
- **Publicity and marketing.**
- **Optimal development** of Pilgrimage Tourism, Cultural Tourism, Nature and Eco-Tourism, Amusement and Leisure Tourism, Corporate Tourism, Adventure Tourism and promotion of Tourism oriented Handicrafts and Souvenir industry.

ANNEX 6: Stakeholders Consultations

One Day Workshop on

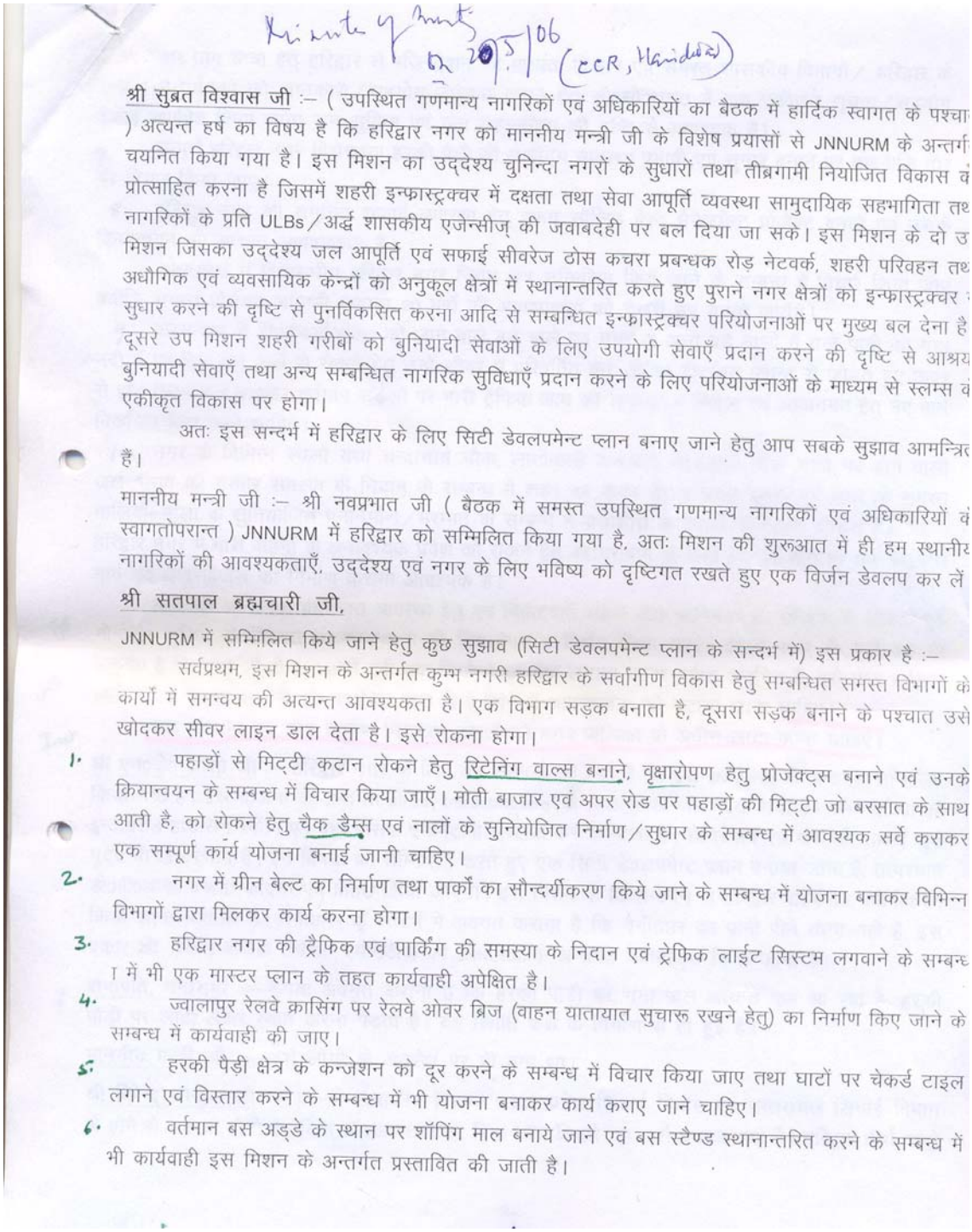
Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

Date : 20th May 2006

Venue: Mela Control Room, Haridwar

Chairperson: Mr. Navprabhat, Hon'ble Minister, Urban Development Department

Record Notes of the Meeting -



Minutes of Meeting dt. 20/5/06 (CCR, Haridwar)

श्री सुब्रत विश्वास जी :– (उपस्थित गणमान्य नागरिकों एवं अधिकारियों का बैठक में हार्दिक स्वागत के पश्चा) अत्यन्त हर्ष का विषय है कि हरिद्वार नगर को माननीय मन्त्री जी के विशेष प्रयासों से JNNURM के अन्तर्ग चयनित किया गया है। इस मिशन का उद्देश्य चुनिन्दा नगरों के सुधारों तथा तीव्रगामी नियोजित विकास व प्रोत्साहित करना है जिसमें शहरी इन्फ्रास्ट्रक्चर में दक्षता तथा सेवा आपूर्ति व्यवस्था सामुदायिक सहभागिता तथ नागरिकों के प्रति ULBs/अर्द्ध शासकीय एजेन्सीज् की जवाबदेही पर बल दिया जा सके। इस मिशन के दो उ मिशन जिसका उद्देश्य जल आपूर्ति एवं सफाई सीवरेज ठोस कचरा प्रबन्धक रोड़ नेटवर्क, शहरी परिवहन तथ अधौगिक एवं व्यवसायिक केन्द्रों को अनुकूल क्षेत्रों में स्थानान्तरित करते हुए पुराने नगर क्षेत्रों को इन्फ्रास्ट्रक्चर सुधार करने की दृष्टि से पुनर्विकसित करना आदि से सम्बन्धित इन्फ्रास्ट्रक्चर परियोजनाओं पर मुख्य बल देना है दूसरे उप मिशन शहरी गरीबों को बुनियादी सेवाओं के लिए उपयोगी सेवाएँ प्रदान करने की दृष्टि से आश्रय बुनियादी सेवाएँ तथा अन्य सम्बन्धित नागरिक सुविधाएँ प्रदान करने के लिए परियोजनाओं के माध्यम से स्लम्स व एकीकृत विकास पर होगा।

अतः इस सन्दर्भ में हरिद्वार के लिए सिटी डेवलपमेन्ट प्लान बनाए जाने हेतु आप सबके सुझाव आमन्त्रित हैं।

माननीय मन्त्री जी :– श्री नवप्रभात जी (बैठक में समस्त उपस्थित गणमान्य नागरिकों एवं अधिकारियों व स्वागतोपरान्त) JNNURM में हरिद्वार को सम्मिलित किया गया है, अतः मिशन की शुरूआत में ही हम स्थानीय नागरिकों की आवश्यकताएँ, उद्देश्य एवं नगर के लिए भविष्य को दृष्टिगत रखते हुए एक विर्जन डेवलप कर लें

श्री सतपाल ब्रह्मचारी जी,

JNNURM में सम्मिलित किये जाने हेतु कुछ सुझाव (सिटी डेवलपमेन्ट प्लान के सन्दर्भ में) इस प्रकार है :–

सर्वप्रथम, इस मिशन के अन्तर्गत कुम्भ नगरी हरिद्वार के सर्वांगीण विकास हेतु सम्बन्धित समस्त विभागों के कार्यों में समन्वय की अत्यन्त आवश्यकता है। एक विभाग सड़क बनाता है, दूसरा सड़क बनाने के पश्चात उसे खोदकर सीवर लाइन डाल देता है। इसे रोकना होगा।

1. पहाड़ों से मिट्टी कटान रोकने हेतु रिटेनिंग वाल्स बनाने, वृक्षारोपण हेतु प्रोजेक्ट्स बनाने एवं उनके क्रियान्वयन के सम्बन्ध में विचार किया जाएँ। मोती बाजार एवं अपर रोड पर पहाड़ों की मिट्टी जो बरसात के साथ आती है, को रोकने हेतु चैक डैम्स एवं नालों के सुनियोजित निर्माण/सुधार के सम्बन्ध में आवश्यक सर्वे कराकर एक सम्पूर्ण कार्य योजना बनाई जानी चाहिए।
2. नगर में ग्रीन बेल्ट का निर्माण तथा पार्कों का सौन्दर्यीकरण किये जाने के सम्बन्ध में योजना बनाकर विभिन्न विभागों द्वारा मिलकर कार्य करना होगा।
3. हरिद्वार नगर की ट्रैफिक एवं पार्किंग की समस्या के निदान एवं ट्रेफिक लाईट सिस्टम लगवाने के सम्बन्ध ा में भी एक मास्टर प्लान के तहत कार्यवाही अपेक्षित है।
4. ज्वालापुर रेलवे क्रासिंग पर रेलवे ओवर ब्रिज (वाहन यातायात सुचारू रखने हेतु) का निर्माण किए जाने के सम्बन्ध में कार्यवाही की जाए।
5. हरकी पैड़ी क्षेत्र के कन्जेशन को दूर करने के सम्बन्ध में विचार किया जाए तथा घाटों पर चेकर्ड टाइल लगाने एवं विस्तार करने के सम्बन्ध में भी योजना बनाकर कार्य कराए जाने चाहिए।
6. वर्तमान बस अड्डे के स्थान पर शॉपिंग माल बनाये जाने एवं बस स्टैण्ड स्थानान्तरित करने के सम्बन्ध में भी कार्यवाही इस मिशन के अन्तर्गत प्रस्तावित की जाती है।

चार धाम यात्रा हेतु हरिद्वार से रजिस्ट्रेशन को मान्यता दिलाने एवं समस्त शासकीय विभागों/ हरिद्वार के सम्बन्ध में पर्यटकों को जानकारी/सहयोग उपलब्ध कराने हेतु सी0सी0आर0 में एक एकीकृत सूचना/सहयोग इकाई स्थापित किया जाना जन सुविधा एवं जन सहभागिता की दृष्टि से आवश्यक है।

7. सम्पूर्ण हरिद्वार नगर विशेषतया हरकी पैड़ी की लाईटिंग व्यवस्था प्रभावी एवं सुन्दर बनाने पर तकनीकि तौर पर विचार किया जाए।

8. हरिद्वार नगर की समुचित सफाई व्यवस्था हेतु समग्र सॉलिड वेस्ट मैनेजमेन्ट प्रोजेक्ट बनाने एवं उसके क्रियान्वयन की अत्यन्त आवश्यकता है।

JNNURM में विचाराधीन हरिद्वार नगर निगम क्षेत्र सम्मिलित किये जाने के सम्बन्ध में विचार किया जाए क्योंकि समस्त प्रोजेक्ट आगामी लगभग 20 वर्षों की आवश्यकता को देखते हुए बनाये जायेंगे।

9. कस्साबान से बी0एच0ई0एल0 को जाने वाले बड़े नाले एवं नगर के अन्य बड़े नालों में गन्दे पानी को गंगा नदी में प्रवाहित होने वाले से रोकने हेतु उन्हें सीवर में परिवर्तित कर सीवेज ट्रीटमेन्ट प्लान्ट से जोड़ते हुए ऊपर से हॉट मिक्स रोड़ बनाकर वर्तमान सड़कों पर भारी ट्रैफिक जाम की समस्या के निदान एवं आवागमन हेतु नए मार्ग विकसित किए जाने चाहिए।

10. नगर के विभिन्न स्थलों यथा चन्द्राचार्य चौक, लाटोवाली कनखल, आर्यनगर चौक आदि पर होने वाली जल–भराव की गम्भीर समस्या के निदान के सम्बन्ध में शहर का वाटर ड्रेनेज प्लान बनाते हुए नगर के समस्त नालियों–नालों के सुनियोजित पुनर्निर्माण/मरम्मत के सम्बन्ध में यथाशीघ्र कार्यवाही की जानी वाँछित है।

हरिद्वार नगर में भारी वाहनों के अनावश्यक प्रवेश को रोकने हेतु बहादराबाद से रेलवे क्रॉसिंग मोतीचूर तक बाईपास मार्ग एवं ओवरब्रिजेस का निर्माण कराना आवश्यक है।

नगर की आन्तरिक यातायात व्यवस्था हेतु एवं निकटवर्ती शहरों जैसे ऋषिकेश को हरिद्वार से जोड़ती हुई मोनोरेल सुविधा के विकास के सम्बन्ध में भी विचारोपरान्त निर्णय लिया जाए। इसके साथ ही यहाँ यह भी अनुरोध है कि गंगा जी से 200mकी दूरी तक निर्माणों पर रोक लगाया जाना सर्वथा अनुचित है, इसे तथा दाखिल खारिज एवं खसरा खतौनी की मानचित्र पास किये जाने में आवश्यकता को हटाया जाना चाहिए।

जल संस्थान एवं गंगा प्रदूषण नियन्त्रण इकाई को नगर पालिका के अधीन लाया जाना चाहिए।

श्री एन0के0 जोशी जी :– हरिद्वार नगर के लिए यह सौभाग्य की बात है कि इसे JNNURM के अन्तर्गत सम्मिलित किया गया है। इस योजना के अन्तर्गत all city Infrastructure के विकास पर जोर दिया गया है। स्लम एरिया की इन्टीग्रेटेड हाउसिंग स्कीम एवं वहाँ बेसिक एमेनिटीज उपलब्ध कराया जाना है। सेनिटेशन एवं गंगा की सफाई जुड़े मुद्दें भी विचारणीय है। इन विषयों को सम्मिलित करते हुए एक सिटी डेवलपमेन्ट प्लान बनाया जाना है, तत्पश्चात डी0पी0आर0 बनाया जाएगा एवं MoU किया जाएगा। इस मिशन के कियान्वयन से हरिद्वार शहर का नवीनीकरण किया जाना अपेक्षित है। नैनीताल के सन्दर्भ में अवगत कराना है कि नैनीताल का पानी पीने योग्य नहीं है, इस प्रकार की समस्त बेसिक सिविक एमेनिटीज को JNNURM के अन्तर्गत नवीनीकृत किया जाना है।

सभापति, गंगासभा :– कृपया अवगत कराना है कि हरकी पौड़ी पर गंगा जल अत्यन्त कम आ रहा है, हरकी पौड़ी पर लोटा लेकर स्नान करना पड़ता है। यह स्थिति फर्श के निर्माण से ही हुई है।

माननीय मन्त्री जी :– फर्श लोगों के अनुरोध पर ही बना था।

श्री विरेन्द्र श्रीकुँज जी :– दो–दो शासकीय विभागों उत्तर प्रदेश सिंचाई विभाग एवं उत्तरांचल सिंचाई विभाग के होने से समस्या होती है। बिना मॉडल स्टडी के, बिना सोचे विचारे यह फर्श बनाया गया है। हरिद्वार तीर्थ पहद

है, शहर बाद में है। समस्याओं पर पूरे विचार के बाद ही निर्णय लिया जाये। तीर्थ की मर्यादा, गरिमा व स्वरू बना रहे। हरिद्वार के हृदय स्थल ब्रह्मकुण्ड पर जल नहीं है। हरकी पौड़ी पर पुल के लिए जो पिलर/प बनाये जाते हैं, उन्हें हटा दिया जाता है। ब्रह्मकुण्ड को चारो ओर से चैनल गेट लगाते हुए बन्द करने क कोई व्यवस्था नहीं करनी चाहिए।

श्री प्रदीप पन्त जी :– हरिद्वार में ट्रैफिक की समस्या गम्भीर है। श्रावण के महीने में विशेष समस्या हो है। बस अड्डा दक्षद्वीप में लाया जाये एवं बैरागी कैम्प से सड़क बनाकर उसे जोड़ दिया जाये।

श्रीमति प्रकाशवती जी :– हरिद्वार के घाटो की सुन्दरता नहीं है। गरीबों को अलग से दुकान बनाव अथवा स्थान दिये जाये तथा उन्हें घाटों से अन्यत्र स्थानान्तरित किया जाये। मंशा देवी परिसर में अने दुकानों/खोखों से बहुत अधिक अतिक्रमण हो गया है, जिसे तत्काल हटाया जाये, इससे हमेशा दुर्घटना सम्भावना रहती है। जल संस्थान व सीवर विभाग नगर पालिका को पुनः वापस दिया जाये।

श्री जगधीर जी :– वार्ड नं0 18 की मलिन बस्ती के 200 घरों के सीवर का पानी कड़च्छ नाले से ह हुए गंगा जी में जाता है। अतः एक सीवेज ट्रीटमेन्ट प्लांट से इसे जोड़ा जाए। इसका उचित निदान कि जाए।

श्री बलराम राठौर जी :– जल संस्थान, गंगा प्रदूषण नियन्त्रण इकाई व मानचित्र स्वीकृत करने का अ ाकार पालिका को दे दिया जाये। ऊषा ब्रेको द्वारा बहुत अधिक किराया बढ़ा दिया गया है, जिसे कम कि जाना चाहिए। ज्वालापुर रेलवे फाटक पर आये दिन जाम लगे रहते हैं, इस समस्या के निवारण के लिए रे फाटक के स्थान पर रेलवे ओवर ब्रिज शीघ्र बनाया जाये। इसके अतिरिक्त कूडा डलवाने के लिए नये स्थ बनाये जाये।

माननीय मन्त्री जी :– ट्रेचिंग ग्राउण्ड हेतु स्थल तभी दिया जाएगा, जब समस्त वार्डों में मौ0 स्वच्छता ाार समितियाँ बनायी जायेगी एवं वे भलीभाँति कार्य करने लगेंगी। अन्यथा ग्रान्ट रोक दी जायेगी।

श्री इदरीश जी :– मलिन बस्तियॉ मेरे वार्ड में भी हैं, जिनमें सड़क, सीवर आदि का निर्माण होना बॉ है। कृपया इस सम्बन्ध में आवश्यक धनराशि एवं स्वीकृति प्रदान की जाए।

श्री ओम प्रकाश जमदग्नि जी :– हरिद्वार विकास प्राधिकरण द्वारा लागू किया गया नियम, कि पालि सीमान्तर्गत नक्शा स्वीकृत होने से पहले दाखिल खारिज होना आवश्यक है, को समाप्त किया जाना चाहि हरिद्वार विकास प्राधिकरण में सैकड़ों मानचित्र कई वर्षो से लम्बित पड़े हैं। गंगा नदी से 200m दूरी अन्तर्गत धर्मशाला, आश्रम आदि के निर्माण पर कभी रोक नहीं रही है, केवल कॉमर्शियल निर्माण पर रोक

शमशान घाट खड़खड़ी आबादी क्षेत्र (जीरो जोन) के बीच में आ गया है जिसे शताब्दी घाट बाईपास रोड़ पास ले जाना चाहिए। उक्त घाट की व्यवस्था की जिम्मेदारी सेवा समिति को ही दे दी जाये। इससे श में यातायात एवं प्रदूषण की समस्या भी घट सकेगी। केबल व्यवसाय के सम्बन्ध में बाहरी व्यक्तियों पर लगायी जाये।

माननीय मन्त्री जी :– कृपया केवल JNNRUM से ही सम्बन्धित विषयों पर वार्ता की जाये।

श्री रतनमणी डोभाल जी :– खड़खड़ी शमशान घाट को शिफ्ट करने से सम्बन्धित मामला JNNRUM ही जुडा है।

श्री ए0के0 चौधरी जी :– यह मिशन एक पैच वर्क नहीं होना चाहिए। लोकतन्त्र में Vision is given

leaders and execution is done by officers. Haridwar is on international map. वर्ष 2025 में हरिद्वार की क्या आवश्यकता होगी? इसके अनुसार विचार होना चाहिए। Haridwar is a city of faith and if it cannot support its faith, its importance will diminish. Haridwar and its adjoining area should be given a special spiritual status. Haridwar takes a central position of being a "Vetican city" of Hindus. The administrative reforms are required first. All the Govt machinery is working very hard but system is missing. We have to get together eg. D.M. Sir gives order for removal of encroachment but the things do not materialise. Invite a national bidding. First wider picture of Haridwar should be made, larger canvasse has to be decided first.

डा0 सत्यनारायण शर्मा जी :– समस्याएँ एवं सुझाव इस प्रकार है :–

चिकित्सा एवं स्वास्थ्य के क्षेत्र में :– हरिद्वार में प्रतिदिन लगभग 7,33,000 पर्यटक आते हैं, जिससे हरिद्वार का जनसंख्या धनत्व काफी अधिक होता जा रहा है, परन्तु हरिद्वार में चिकित्सा सुविधाएँ समुचित नहीं हैं, इस हेतु मेला चिकित्सालय में स्पेशिअलिस्ट के तौर पर यथा कार्डियोंलॉजी, न्यूरोलॉजी, आदि की समुचित आपातकालीन सुविधा होनी चाहिए। किसी भी प्रकार कि दुर्घटना की स्थिति में एक सुदृढ़ इमरजेन्सी सुविधा का हरिद्वार में मौजूद रहना इस विश्व प्रसिद्ध कुम्भ नगरी के लिए अत्यावश्यक है। यहॉ यह अवगत कराना है कि उत्तरी हरिद्वार में यदि कोई आयोजन होता है, तो वह क्षेत्र मेला/महिला चिकित्सालय से पूर्ण रूप से कट ऑफ सा हो जाता है। अतः उत्तरी हरिद्वार में भी सम्पूर्ण सुविधायुक्त महिला चिकित्सालय एवं आपातकालीन चिकित्सालय बनाया जाना चाहिए।

शिक्षा :– उत्तरी हरिद्वार के कट ऑफ हो जाने के कारण महिलाएँ एवं बालिकाएँ शिक्षा सुविधाओं के अभाव में हैं। अतः खड़खड़ी क्षेत्र में जूनियर हाईस्कूल को हाईस्कूल की मान्यता दी जाये तथा इस क्षेत्र में एक डिग्री कॉलेज भी बनाया जाना आवश्यक है।

आपदा प्रबन्धन :– हरिद्वार के खड़खड़ी क्षेत्र को बरसाती पानी व भूस्खलन काफी प्रभावित करता है। नन्दा देवी के घने पर्वत होते हुए भी निकट के गॉव सुरक्षित हैं, क्योंकि वहॉ रिटेनिंग वाल व साथ का नाला सड़क के बगल में होने से पानी बस्ती में नहीं आता। जीरो जोन क्षेत्र को भूस्खलन सर्वाधिक प्रभावित होता है। अतः इसके निदान हेतु पर्वतीय क्षेत्र के रोड़ एवं रिटेनिंग वाल को बनाने वाले विशेषज्ञ को प्राथमिकता दी जाये।

सीवर की समस्या :– सन् 1946 में सीवर डाली गयी, जो कि मात्र 8" से 16" की डाली गई थी, आज भी उतनी साइज की ही है जरा सी वर्षा होने पर सीवर का पानी सड़कों पर आ जाता है। इसके अतिरिक्त हरिद्वार में पोलीथीन पर भी रोक लगनी चाहिए एवं इसका विकल्प भी निकाला जाना चाहिए क्योंकि यह एक ओर जहॉ प्रदूषण करता है वहीं दूसरी ओर नाले नालियों को चोक कर देने के कारण जल भराव की समस्या को जन्म देता है।

यातायात :– समस्त पुलों को चार लेन का बनाना चाहिए। कांवड मेला हेतु वैकल्पिक मार्ग भी बनना चाहिए। चण्डी चौराहा को बिजनौर–मुरादाबाद का ट्रैफिक चीला मार्ग से होते हुए आता है, जिसे बाईपास से निकाला जाये। चण्डी चौक का पार्क काफी बड़ा है, जिससे ट्रैफिक के लिए काफी कम जगह बचती है। इसके अतिरिक्त हिलबाई पास मार्ग तत्कालिक तौर पर प्रारम्भ किया जाना चाहिए। भूस्खलन को रोकने हेतु रिगाल जैसे वृक्षों को लगाया जाना चाहिए। ट्रैफिक कन्जेशन को रोकने हेतु वन वे ट्रैफिक प्रणाली लागू की जाए।

सफाई व कूड़ा निस्तारण :– हरिद्वार की जनसंख्या काफी बढ़ गई है। यात्रा सीजन के दौरान प्रतिदिन आने वाले 7,33,000 पर्यटकों के लिए मात्र 437 सफाई कर्मचारी ही हैं। हरिद्वार में नित नई बस्तियॉ विकसित हो

रही है। यद्यपि हरिद्वार में हरकी पौड़ी क्षेत्र में सफाई कर्मियों को कोई अवकाश नहीं दिया जाता तथापि सफा सन्तोषजनक नहीं रह पाती क्योकि यात्रियों द्वारा जो भोजन वितरण किया जाता है, उससे काफी गन्दगी ए अव्यवस्था होती है। रोड़ीबेलवाला क्षेत्र केवल शौच के लिए ही प्रयोग किया जाता है, उसकी रोकथाम एवं सौन्दर्यीकर किया जाना चाहिए। शेष प्रस्ताव लिखकर प्रस्तुत कर दिए जाएंगे।

श्री रामकुमार मिश्रा जी :– शमशान घाट खड़खड़ी पर अक्सर मिट्टी आ जाती है। वहॉ एक घाट सतीघाट क तरह बनाया जाना चाहिए। हरकी पौड़ी से मायापुर डैम तक पूरा घाट बनाया जांये, ताकि हरकी पौड़ी पर श्रद्धालु की निरन्तर बढ़ती भीड़ का दबाव कम हो सके। रेलवे स्टेशन के सामने व पीछे अन्य शहरों की तरह दोनों तरफ रास निकास एवं प्रवेश के होने चाहिए क्योंकि हरिद्वार में गाड़ियों की संख्या काफी बढ़ गई है, जिससे अक्सर इस स्थ पर जाम लगा रहता है। ललतारौ के निकट सौन्दर्यीकरण होना चाहिए। लगभग 1 लाख स्क्वायर फीट जमीन खाल पडी है, इसका उपयोग बाईपास मार्ग बनाने अथवा अन्य प्रकार से किया जाना चाहिए।

श्री कैलाश केशवानी जी :– हरिद्वार नगर को JNNRUM में सम्मिलित करने हेतु बहुत–बहुत धन्यवाद।

श्री सुनील छइयाँ जी :– अभी तक हरिद्वार का कोई मास्टर प्लान नहीं है। अतिकमण पूर्ण ईमानदारी से बिना किस राजनीतिक दबाव के हटाया जाये, तो यातायात की समस्या का निदान हो सकता है।

श्री दीपक नौटियाल जी :– विकास का एक अहम पहलू स्वच्छता है। यातायात को बिगाड़ने में अतिकमण सब बड़ा इश्यू है। अतिकमण हटाने की कार्यवाही को हरिद्वार में राजनीतिक तौर पर हमेंशा रूकवा दिया जाता है।

श्री चौहान जी :–शासन की यह बचनबद्धता है कि नागरिकों को सस्ता एवं सुन्दर न्याय मिले। शिवालिक नगर त आने जाने में होने वाली असुविधा समाप्त हो। रोशनाबाद में कोर्ट है अतः यातायात के समुचित साधन होने चाहिए हाई कोर्ट नैनीताल में है, वहां पीने के पानी की कमी है, जब कि हरिद्वार में सब व्यवस्था है। हाईकोर्ट बैंच के लि हरिद्वार में ही प्रयास किये जाएं।

श्री पी0के0 दत्ता जी :– सावन के महीने में कांवड़ियों के आवागमन के कारण व्यवस्था न होने से Clashes हो हैं। समुचित व्यवस्था की जाए, अन्यथा PIL की जायेगी। उन दिनों Sainitation की Problem होती है, लोग अक्स बीमार हो जाते हैं। आज रोड़ बनती है और कल टेलीफोन की लाईन डालकर रोड काट दी जाती है। Urban Pla में धन के इस प्रकार दुरूपयोग को रोका जाय। Law Scholars के ठहरने हेतु व्यवस्था तथा विधि संस्थान की स्थाप की जाए। चिन्मय डिग्री कॉलेज के पास की रोड रोशनाबाद को जाने वाला मार्ग Insufficiant है, आज रास्ता चौ किया जा सकता है, अन्यथा बाद में Encroachment हो जायेगा। हरिद्वार में Traffic Signals की बहुत आवश्यकता है

श्री पारस कुमार जैन जी :– मैं सन् 1973 में अध्यक्ष बना था। सन् 1974 कुम्भ मेला में माननीय कमलापति ने एक घंटे में विकास कार्यों का समस्त प्रस्ताव स्वीकृत किया था। हरिद्वार विकास प्राधिकरण का पदेन सदस्य था, कमीश्नर भी उन दिनों जनप्रतिनिधियों की बातों को ज्यादा ध्यान देने हेतु कहते थे, क्योंकि जनप्रतिनिधि ज समस्याओं को भलीभाँति समझते हुए उसका निदान सुझाने में मदद करते हैं। कनखल में पानी का आना रोकने हे बनाए गये बंधे को चौड़ा किया जाए। सुलभ शौचालय, रैन बसेरा बनाए जाएं। सी0सी0आर0 टॉवर जैसी स्थायी ची बनायी जानी चाहिये। बाईपास मार्ग का निर्माण किया जाए। हरिद्वार में आगन्तुकों की संख्या लगातार बढ़ रही है अ भूपतवाला चुंगी से पुल जटवाड़े तक इस प्रकार की समुचित लाईट व्यवस्था प्रणाली हो कि पार्किंग लाईट जलाक गाड़ी चलायी जा सकें, इससे दुर्घटनाएँ राकी जा सकती है एवं उचित ट्रैफिक व्यवस्था बनाई जा सकती है। हरिद्व नगर के भीतर से गुजरने वाले हाइवे में होनी वाली दुर्घटना के सम्भावित स्थलों को चिन्हित कर निदान किया जा

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चाहिए।

श्री पुरूषोत्तम शर्मा जी :– विश्व प्रसिद्ध तीर्थ हरिद्वार को JNNURM में सम्मिलित किए जाने हेतु धन्यवाद एवं अभिनन्दन। भविष्य को दृष्टिगत् रखते हुए योजना बने। पुल जटवाड़े से लेकर मोतीचूर तक Flyover की व्यवस्था हो। यदि संभव हो तो दिल्ली जैसे महानगरों की मैट्रो रेल की तरह Underground Tunnel बनाकर भी ट्रैफिक की समस्या का निदान किया जाए। बरसात के समय की समस्या है कि पूरी पंचपुरी में 2 घंटे की लगातार बारिश से जलभराव हो जाता है। मंशा देवी पर्वत माला की मिट्टी बहुत तेजी से सड़क की ओर आ रही है। पेड़ों से ये पर्वत वंचित हैं। रिटेनिंग वाल एवं Plantation जिनकी जड़ें गहरी हों, द्वारा इस समस्या का निदान किया जाए। शहरी क्षेत्र में दाखिल–खारिज की अनिवार्यता समाप्त हो। गंगा से 200 मीटर रेंज में कोर्ट के ऑर्डर बताकर निर्माण पर पूर्ण रोक लगाना अव्यावहारिक है। Charitable Trust के संबन्ध में छूट होनी चाहिए। हरिद्वार विश्व प्रसिद्ध तीर्थ स्थल है, जहां पूरी दुनिया से लोग आते हैं। पालिका के पास सफाई के संसाधन कई दशकों पूर्व के हैं। सफाई कर्मियों की बढ़ोत्तरी एवं आधुनिक उपकरण उपलब्ध कराया जाना चाहिए तथा सफाई मास्टर प्लान बनाया जाना चाहिए। मात्र पालिका के वर्तमान संसाधनों से यह संभव नहीं है। ग्रीन विस्टा योजना जो केन्द्र सरकार द्वारा निर्मित की गयी है, इसमें पूरी बेल्ट अलकनन्दा से ललता रॉ के साथ विष्णुघाट व गऊघाट तक इसे शामिल किया जाए। साथ ही रोड़ी बेलवाला पार्क भी इसी योजना में विकसित एवं सौन्दर्यीकृत कराया जाए। कथाओं के आयोजन से हरिद्वार में अनेक प्रकार से दुर्व्यवस्था हो जाती है, इसके लिए चण्डी द्वीप वाले स्थान का उपयोग किया जाना चाहिए।

श्री प्रदीप चौधरी जी :– हरिद्वार विकास प्राधिकरण में गंगा नदी से 200 मीटर तक निर्माण पर रोक के सम्बन्ध ा में अवगत कराना है कि संजय पुल से मायापुर तक Old Supply Channel है, जबकि गंगा नदी तो चण्डी घाट की तरफ है। उस तरफ ही वह तथाकथित रोक है। हरिद्वार में गंगा तट पर FAR 0.6 व अन्य जगह 1.5 कर दिया गया है, उसे बढ़ाया जाए। खसरा–खतौनी की एवं दाखिल–खारिज की आवश्यकता समाप्त की जाए। सफाई व्यवस्था कूड़ा निस्तारण हेतु निश्चित जमीन उपलब्ध करायी जाए। सफाई व्यवस्था Health Manual के अनुसार हो। फॉगिंग एवं लाल दवा जो पूर्व में प्रयोग की जाती थी, की व्यवस्था हो। हरिद्वार शहर में 75 MLD पेयजल प्रतिदिन का उत्पादन है, जबकि आवश्यकता 150 MLD की है। अतः भूपतवाला में 100 MLD का एक Water resource develop किया जाए। जल–कल / जल संस्थान निश्चित तौर पर पालिका को देना चाहिए। हरिद्वार में वी0आई0पी0 बहुत आते हैं, अतः हरिद्वार में वर्ष भर लगने वाले लगभग 36 मेलों को दृष्टिगत् रखते हुए मेला प्राधिकरण की आवश्यकता है। साथ ही भवनों के मानचित्र भी नगर पालिका ही स्वीकृत करे।

ललतारॉ से हरकी पैड़ी तक One Way Traffic हो तथा जयराम आश्रम से वापसी हो। हरिद्वार में गंगा Museum हो, जिसमें गंगा जी का इतिहास हो। भूपतवाला भीमगोड़ा के पास एक जैनरेटर की व्यवस्था हो तथा ऋषिकुल तक पानी की पाईप लाईन हो, जिसपर केवल स्टैण्ड पोस्ट कनेक्टेड हों, ताकि मेले के दौरान विद्युत आपूर्ति बन्द होने पर मेला क्षेत्र में यात्रियों की न्यूनतम पेयजल आवश्यकता की पूर्ति हेतु उक्त जैनरेटर से पानी की आपूर्ति की जा सके। जगह–जगह हैण्डपम्पस् यात्रियों की सुविधार्थ लगाए जाने चाहिए।

वाडिया इन्स्टीटयूट् की रिपोर्ट पर भी विचार किया जाना चाहिए। मंशादेवी व चण्डी देवी के पर्वतों पर प्लान्टेशन किया जाना चाहिए। इसके अतिरिक्त नारसन बार्डर से चिड़ियापुर तक सड़क के दोनों ओर एक प्रकार के पेड़ हों जिससे आगन्तुकों को यह आभास हो हरिद्वार प्रारम्भ हो चुका है। रेलवे स्टेशन के वर्तमान मालगोदाम को रेलवे स्टेशन का Extention बनाया जाए तथा यहां का मालगोदाम ज्वालापुर स्टेशन को स्थानान्तरित किया जाए, ताकि हरिद्वार रेलवे स्टेशन पर यात्रियों के दबाव को कम किया जा सके।

श्री अशोक शर्मा जी :– ट्रैफिक समस्या का एक मात्र निदान कनखल बस अडडा है। कनखल में गंगा की सफाई

पर कभी ध्यान नहीं दिया गया है। मेले में चोर गली में सीवर लाईन डालने का प्रस्ताव बनाया गया था, किन्तु पाईप लाईन छोटे व्यास की डाली गयी है। अतः भविष्य में इस प्रकार दोबारा होने वाले Wastage को रोका जाए। लाटो वाली क्षेत्र में जल भराव की समस्या का निदान आवश्यक है। बाबा रामदेव के आश्रम के सामने की नहर में काफी कूड़ा एवं गंदगी है। PWD नाला ध्वस्त हो गया है। लाटोवाली नाला का निर्माण शीघ्र होना चाहिए साथ ही जगजीतपुर जाने वाली सीवर पाइप लाइन की कैपेसिटी बढ़ाकर उसमें नाला जोड़ा जाना चाहिए। इस क्षेत्र में जलभराव से लाखों रूपये का नुकसान हो चुका है। डामकोठी से सिंहद्वार तक का पानी कनखल, जो गहराई में है, में इकठ्ठा होता है। पहले नाला चौड़ा था किन्तु जगह–जगह अतिक्रमण है अतः इस अतिक्रमण को प्रभावी ढंग से हटाया जाना चाहिए तथा अतिक्रमण पर रोक लगनी चाहिए। शीघ्र यह नाला बनाया जाना आवश्यक है। अतिक्रमण से हमारे नेताओं को बाज आना चाहिए। गोविन्दपुरी में जलभराव हो रहा है, जिसका निदान होना चाहिए। कनखल में शौचालय का निर्माण होना चाहिए। कनखल में नलकूप होना चाहिए क्योंकि वहां पानी की समस्या है।

श्री सुनील पाण्डेय जी :– कनखल में अस्थायी ट्यूबवैल बनाये गये थे, उनको स्थायी रूप से चालू करना चाहिए। हरिद्वार विशेषकर कनखल क्षेत्र में प्लाण्टेशन की अत्यन्त आवश्यकता है। बाग काटकर अवैद्य कालोनी बनाना शीघ्र रोका जाए। कनखल के बैरागी कैम्प में किसी भी प्रकार का अवैध निर्माण नहीं होना चाहिए। हिलबाईपास मार्ग का निर्माण होना चाहिए। नेहरू जी की स्मृति में स्मारक बनाया जाना चाहिए।

श्री दिनेश कौशिक जी :– रूड़की में फैक्टरी वालों ने सड़क घेर लिया है। रूड़की में आज मात्र 140 सफाई कर्मचारी हैं। हरिद्वार के साथ–साथ रूड़की को भी JNNURM में सम्मिलित किया जाना चाहिए, क्योंकि रूड़की के रास्ते से ही हरिद्वार व देहरादून को आया जाता है। सड़कों के Encroachment को रोकना चाहिए। जितनी भी फैक्टरी हैं उनमें पार्किंग व्यवस्था अन्दर कैम्पस में ही होनी चाहिए, क्योंकि बड़ी–बड़ी वैगन के सड़कों पर खड़े होने से साईड से आने वाले वाहन नहीं दिखाई देने के कारण अक्सर दुर्घटनायें हो जाती हैं। बाईपास के बजाय ओवर ब्रिज बने क्योंकि बाईपास बनाने से उसके दोनो ओर अतिक्रमण हो जाता है।

श्री मुकेश बाजपेयी जी :– शहरी बेराजगारी को दूर करना चाहिए। प्रशासन के कार्यों में समन्वय का अभाव है। हिल बाईपास का निर्माण एवं गरीबों के लिए आवासों की व्यवस्था होनी चाहिए।

हरिद्वार होटल एसोशिएशन के प्रतिनिधि :– हरिद्वार में तीर्थयात्री आते हैं। हरिद्वार में ट्रैफिक व्यवस्था बिगड़ने का कारण शहर में समुचित पार्किंग की व्यवस्था न होना है। नगर क्षेत्र में पार्किंग हेतु पर्याप्त व्यवस्था हो। पार्किंग की व्यवस्था मायादेवी मन्दिर व रामलीला ग्राउंड में वर्तमान में व्यक्तिगत तौर पर है इसके स्वामित्व के झगड़े को नगर पालिका को शीघ्र सुलझाना चाहिए। Zero Zone हरिद्वार में 24 घंटे नहीं रहना चाहिए।

श्री अभिनव कुमार जी :– कृपया अवगत कराना है कि रात्रि 8.00–9.00 बजे के बाद Zero Zone Relax कर दिया जाता है। रात्रि में मात्र विशेष पर्वों पर ही Zero Zone होता है।

हरिद्वार होटल एसोशिएशन के प्रतिनिधि :– गाड़ियां Zero Zone में ले जाने की व्यवस्था नगर पालिका के हाथ में दे दी जाए । इससे पालिका की आमदनी भी बढ़ेगी। गाड़ी के पास की व्यवस्था सी0ओ0 सिटी की बजाय कोतवाली में होनी चाहिए। Zero Zone की Terms & Conditions होटल ऐसोशिएसन लगाने के लिए तैयार है, ताकि रोज–रोज का झगड़ा बन्द हो जाए।

श्री रतनमणी डोभाल जी :– हमने लाखों रूपये खर्च करके वी0आई0पी0 घाट बनाया है, जबकि अस्पताल जाने वाले मरीज व स्कूल जाने वाले बच्चे तक Zero Zone में नहीं जा सकते हैं। लगभग 10 बैंक एवं महत्वपूर्ण अस्पताल

Zero Zone में हैं, पर वहां प्रवेश निषेध होना ठीक नहीं है। यहां के होटल व्यवसाय पर इसका बहुत बुरा प्रभाव पड़ रहा है।

श्री अम्बरीश कुमार जी :– गरीबों तक Basic Amenities कैसे पहुँचायें? अनियन्त्रित विकास हेतु जिम्मेदार कौन है? जमीनों के दाम गरीब की सीमा से बाहर है! इसे दृष्टिगत रखते हुए समग्रता के साथ एक योजना बनाने की आवश्यकता है। दो–ढाई घण्टे में हम अपनी बात नहीं कह सकते। हरिद्वार स्तर पर एक छोटी समिति बना दी जाये। प्रस्ताव/सुझाव देने हेतु एक सप्ताह का समय कम है। उक्त समिति कम से कम आठ Sittings करे हर विषय पर उदाहरणार्थ :– सड़क का विषय, आवास का विषय आदि। सरकारी/प्राईवेट कालोनियों में 25 प्रतिशत जमीन Weaker Section के लिए आरक्षित रखा जाना चाहिए। Infrastruciure हम खडा कर लें पर नगर पालिका उसे अपने सीमित संसाधनों से कैसे Maintain करें? उसके पास पर्याप्त संसाधन हों। Encroachment की समस्या–जो गरीब है, उनकी क्या व्यवस्था हो? व्यवस्थित शहर हों एवं नागरिक सुविधाऐं व्यवस्थित ढंग से पहुँचें। सम्पूर्णता के साथ एक व्यवस्था बने। सुझाव जो लिखित में प्राप्त हों, उन पर समुचित विचारोपरान्त ही शासन में अनुमोदन हों। पूर्व में शासन द्वारा अनुमोदित कई योजनाओं पर कार्य नहीं हुआ। Slowpace of working पर भी कोई रोक हो। योजनाएँ समय पर पूर्ण हो। हर कुम्भ या अर्द्धकुम्भ के बाद मेलाधिकारी जनता से सुझाव लेते हैं। हरिद्वार की विशेषता है कि शहर में एक वर्ष में तीन करोड़ लोग आ जाते हैं। इस मिशन में मेला की व्यवस्था को भी सम्मिलित करना होगा। 2004 के मेले के उपरान्त मेलाधिकारी को जो सुझाव जनता द्वारा दिये गये थे उन सुझावों को भी इस मिशन में सम्मिलित किया जाये। सम्पूर्णता के साथ एक अच्छी योजना बने। संवैधानिक बात– श्री राजीव गाँधी ने 73 वें व 74 वे संविधान संशोधन में विकेन्द्रीयकरण की जो नीति बनाई थी, उन संशोधनों का पूर्ण अनुपालन करते हुए समस्त विभागों का अधिकार नगर पालिका परिषद को दिया जाना चाहिए।

श्री मदन कौशिक जी :– हरिद्वार शहर में दिन–प्रतिदिन यात्रियों की संख्या बढ रही है। सुझावों पर कियान्वयन हो तो अति उत्तम होगा। हरकी पैड़ी को Congested नहीं किया जाना चाहिए। पुलिस चौकी को वहॉ से हटाना चाहिए, ताकि दूर से ही हरकी पैड़ी को देखा जा सके। ट्रैफिक व्यवस्था ठीक किया जाना चाहिए। हरिद्वार में कुम्भ व अर्द्धकुम्भ का अच्छा बजट आता है, जो विकास कार्य मेले की योजना में नहीं आ सकते उन्हें JNNURM में लेना चाहिए। हरिद्वार के लिए Outer Ring Road बनानी चाहिए। हरिद्वार की भौगोलिक परिस्थिति ऐसी है कि दोनों ओर पहाड़ एवं बीच में गंगा जी हैं। समुचित सीवरेज व्यवस्था सम्पूर्ण हरिद्वार के लिए करनी होगी। वर्षा के दौरान इसमें overflow होता है। 18 नाले ऐसे हैं, जो गंगा में सीधे मिल रहे हैं। जल भराव की समस्या विकट है। दो घण्टे की बारिश के बाद ही हमें प्रभावित स्थलों पर जाकर खड़ा होना पडता है, किन्तु यह सर्वविदित तथ्य है कि पालिका एवं प्रशासन के पास संसाधन व सम्पूर्ण व्यवस्था इससे निपटने की बिल्कुल भी नहीं है। जहॉ ISBT हो, वहाँ नगर पालिका का कार्यालय हो। वहीं चारधाम यात्रा का रजिस्टेशन भी हो। कांवड के दौरान हरिद्वार के समस्त रास्तों पर कांवडिये चलते हैं। राष्ट्रीय राजमार्ग बन्द होता है। स्कूल, कॉलेजों की छुट्टी हो जाती है, इसे कैसे नियन्त्रित करे, ताकि शहर की सामान्य व्यवस्था प्रभावित न हो। प्रदेश स्तर की Expert कमेटी जो बनायी गई है, उसी तरह हर शहर की भी एक कमेटी होनी चाहिए। प्रस्ताव/सुझाव शहर कमेटी से प्रदेश कमेटी में जायें एवं तभी उसका Experts मूल्याकंन करें एवं तभी शासन में सम्यक् विचारोपरान्त उन्हें लागू किया जाये।

श्री अम्बरीश कुमार जी :– दो योजनाऐं – सूक्ष्म जलागम योजना, चार साल की रूपये 60 लाख की योजना (प्रतिवर्ष रूपये 15 लाख के हिसाब से) बनी थी। दोनों योजनाएँ पहाड़ कटान रोकने हेतु लागू होनी चाहिए।

श्री संजय अग्रवाल जी :– पलजलदवाडा ज्वालापुर में गंगा जी आरती प्रारम्भ हो गई है। अभी भी वहाँ कटान जारी

जा रहा है। कूड़ा वहाँ से शीघ्र हटना चाहिए। बारात घर एवं नर्सिंग होम के कूड़े के निस्तारण की व्यवस्था अलग से होनी चाहिए। ज्वालापुर में एक फायर ब्रिगेड स्टेशन की शीघ्र व्यवस्था की जानी भी आवश्यक है।

माननीय मन्त्री जी :– जन प्रतिनिधियों की बात सुनने के बाद अधिकारियों के बजाय इस कार्य हेतु नियुक्त विशेषज्ञ ही बतायें कि किस तरह इन समस्याओं के निदान हेतु उनके द्वारा सुझावों का समायोजन करते हुए निस्तारण किया जायेगा। हमे अपने Development Plan को Sector wise Planning के अनुसार बनाना होगा। तीन Zones बनाये जाएँ :– प्रथम Core Zone, द्वितीय City Zone एवं तृतीय Outer Zone (जो मेले के दौरान Important होता है)। अलग–अलग Zone में अलग–अलग आवश्यकता होगी। यह अच्छी बात है कि हरिद्वार की Satelite Imagery available है। इसे Square kilometre के हिसाब से बनाएँ एवं तद्नुसार Composite Plan बनाएँ। जो लोग Silting से प्रभावित हो रहे हैं, वे यदि PDC बना लें एवं वृक्षारोपण कर उसकी रक्षा करने को तैयार हो तभी Plantation हेतु मैं तैयार हूँ। दीवार बनाने से Silting की समस्या का निदान सम्भवतया नहीं हो सकेगा। अतः नालो के द्वारा व्यवस्था हो सकती है। अन्य कुछ महत्वपूर्ण विचारणीय बिन्दु इस प्रकार है :– कुम्भ की Land Acquisition, मोनोरेल। क्या यातायात हेतु Waterways को Use नहीं कर सकतें?

श्री अभिनव कुमार जी :– जगह–जगह Locks हैं, जिससे Waterways यातायात में समस्या हो सकती है।

माननीय मन्त्री जी :– राजाजी पार्क के कारण कुछ सड़कें चौड़ी नहीं की जा सकती है hence only solution is tunnels.

श्री अभिनव कुमार जी :– Elevated Highways बनाये जाने पर भी विचार किया जाये।

माननीय मन्त्री जी :– Elevated Highways V/S Tunnels को Costwise देख लिया जाये। जितनी गंगा tributeries हैं, उन पर dams बनाकर एक passage दे सकते हैं, जिन पर सम्भव हो, उनके सम्बन्ध में विचार किया जाये। कुछ दिनों बाद ही हरिद्वार में Industries से related traffic भी बहुत अधिक बढ़ना सम्भावित है। चीला बाईपास भी पुन राजाजी नेशनल पार्क से है। उसके विकास की भी Permission नहीं है। Elevated Highways में भी only two lanes हो सकती हैं, अतः यह limited है, उसके बाद Develop नहीं हो सकता। साथ ही मोनोरेल की सम्भावना Elevated Highways से कम हो जायेगी। PWD के Elevated Highways के plan को ultimately permission नहीं मिलेगी मोनोरेल काफी congested area से निकाली जा सकती है। Underground Tunnels में Forest Conservation Act नहीं आता है एवं इससे Distance भी बहुत shortest हो जाती है।

श्री अम्बरीश कुमार जी :– हरिद्वार में एक छोटा air port बन जाये तो जौलीग्रान्ट पर dependence कम हो जायेगी

माननीय मन्त्री जी :– जितने sectors में total revisits की जरूरत है, वह भी की जाएँ, उदाहरणार्थ :– Parking severage, electicity, drainage systems, fire hydrants, शौचालयों की आवश्यकता एवं relocation of Govt. offices भी विचारणीय है। Govt. Properties को old city से बाहर निकाल कर, उस पर. infrastructure develop किया जाये। अ श्री दत्ता, कन्सलटेन्ट प्राप्त सुझावों पर CDP के सम्बन्ध में अपने विचार/अपनी योजना रखें।

श्री दत्ता जी :– हमने 10 शहर Visit किया है। समस्याओं का preliminary assesment किया जा रहा है। चयनित शहर हरिद्वार, देहरादून और नैनीताल मुख्य हैं। 4–6 शहर तक का एक Development Plan बनायेंगे। JNNURM की एक विस्तृत guide line है। साथ ही Do's & Dont's इसके लिए हैं। पहला चरण– शहर का एक Mission Statemen बनाएँ। यह consultative process से होगा। public consultative process को एक organised ढंग से करना होगा अतः जून के Ist Week के बाद हमें Mission Statement बनाने हेतु visits करना है। हमारी टीम में engineers, urba experts, economists / financial Experts etc. सम्मिलित हैं। Technical feasibility & economic viability दोनों जरूर हैं। इस मिशन के O&M करने में ULBs में reforms की जरूरत है। 73 वें एवं 74 वें संविधान संशोधन के तह reforms पर विचार करना है। एक मिशन स्टेटमेन्ट के सात महीने में यह प्रोजेक्ट कम्पलीट करना है। कन्सलटेश

9

Suggestions and Recommendations from Ganga Sabha after meeting organised by GoU on 20th May 2006

श्री गंगा सभा (रजि०) हरिद्वार (उत्तरांचल)

संस्थापक-स्व० महामना पं० मदनमोहन जी मालवीय

इनकम टैक्स एक्ट की धारा ८०-(जी०) के अन्तर्गत आयकर मुक्त

Shri Ganga Sabha (Regd.) Haridwar (U.A.)

(Regd. Under Act. XXI of 1860)

अध्यक्ष
पं० रामकुमार मिश्रा

पत्रांक. DRN० 1109/P-48
दिनांक. 23/5/06

प्रतिष्ठा में,

श्री नवप्रभात जी
माननीय मंत्री, शहरी विकास, वन एवं पर्यावरण
उत्तरांचल सरकार, देहरादून।

विषय - जवाहरलाल नेहरू नेशनल अरबन रिन्यूवल मिशन (JNNURM) के अन्तर्गत हरिद्वार के विकास हेतु सुझाव।

माननीय महोदय,

सर्वप्रथम तीर्थ नगरी हरिद्वार को जवाहरलाल नेहरू नेशनल अरबन रिन्यूवल मिशन (JNNURM) के अन्तर्गत शामिल कराये जाने पर आपको हार्दिक धन्यवाद।

महोदय, जैसा कि उपरोक्त के सम्बन्ध में दिनांक 20-05-2006 को हरिद्वार में आहुत बैठक में मेरे द्वारा दिये गये सुझावों को आपके निर्देशानुसार लिपिबद्ध कर प्रेषित कर रहा हूं। आशा है आप इन पर विचार कर उक्त योजना में जनहितार्थ शामिल कराने का कष्ट करेंगे -

रेलवे स्टेशन -

हरिद्वार तीर्थ में 10-15 वर्ष पूर्व मात्र 6 रेलगाडियां हरिद्वार आती थी, जबकि आज वर्तमान में लगभग 20 रेलगाडियां सामान्य दिनों में एवं मेलों में अतिरिक्त रेलगाडिया हरिद्वार आती है एवं भविष्य में हरिद्वार उत्तरांचल राज्य में राज्य सरकार द्वारा तीर्थाटन एवं पर्यटन के लिए जो सराहनीय प्रयास किये जा रहे है उनको देखते हुए आने वाले समय में देश के विभिन्न प्रान्तों से आने वाली रेलगाडियों की संख्या में वृद्धि होनी निश्चित है। हरिद्वार रेलवे स्टेशन का प्रवेशद्वार शहर के मध्य में स्थित होने, रोडवेज बस स्टैंड एवं टैक्सी स्टैंड भी उसी क्षेत्र में होने के कारण सड़कों पर प्रतिदिन जाम की स्थिति होती है। इसके निराकरण हेतु मेरा आपको सुझाव है कि रेलवे स्टेशन के पीछे की ओर जो औद्योगिक क्षेत्र है उस ओर भी रेलवे स्टेशन का एक द्वार खुलवाने का कष्ट करें एवं हरिद्वार रेलवे स्टेशन से मालगोदाम को पथरी अथवा ज्वालापुर रेलवे स्टेशन स्थानान्तरित किया जाना भी समस्या के निदान में सहायक होगा।

दिल्ली-हरिद्वार-देहरादून के मध्य मैट्रो रेल का परिचालन भी सड़क पर हो रही वाहनों की अप्रत्याशित वृद्धि के कारण जाम एवं सडक दुर्घटना रोकने में सहायक होगा।

संस्थापक-स्व० महामना पं० मदनमोहन जी मालवीय
इनकम टैक्स एक्ट की धारा ८०-(जी०) के अन्तर्गत आयकर मुक्त
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अध्यक्ष
पं० रामकुमार मिश्रा

पत्रांक.....
दिनांक.....

स्नानार्थियों हेतु घाट व्यवस्था –

पूर्व में समय-समय पर हरकी पौडी, ब्रह्मकुण्ड का विस्तार हुआ है जिससे हरकी पौडी पर आने वाले तीर्थ यात्रियों को सुविधा हुई है एवं वर्तमान में प्रतिदिन हरिद्वार आने वाले तीर्थ यात्रियों की संख्या में लगातार वृद्धि हो रही है जिस हेतु हरकी पौडी का विस्तार कांगड़ा मन्दिर पन्तद्वीप पुल तक किया जाना नितान्त आवश्यक है। उक्त विस्तार के पश्चात हरकी पौडी पर मेले के दिनों में तीर्थ यात्रियों का दबाव कम करने में मदद मिलेगी।

श्मशानघाट खडखडी हरिद्वार के आगे बागरो नदी का बरसात में मलवा लगभग 7-8 फुट की ऊंचाई तक जमा हो जाता है जिस कारण श्मशान घाट को जलापूर्ति में व्यवधान होता है एवं मृतक का क्रियाकर्म करने वाले परिजन मृतक का क्रियाकर्म गंगा के बीचोबीच करते हैं तथा जले एवं अधजले शव एवं लकड़ियां बहकर हरकी पौडी एवं आगे के घाटों पर आ जाते हैं जिससे स्नानार्थियों को भारी असुविधा का सामना करना पड़ता है एवं उनकी धार्मिक भावनाएं आहत होती हैं। इसके निराकरण हेतु मेरा सुझाव है कि श्मशानघाट खडखडी के सामने गंगा के बीच में बने टापू पर सतीघाट कनखल की तर्ज पर एक घाट का निर्माण करा दिया जाये ताकि भोपतवाला क्षेत्र में आश्रमों एवं धर्मशालाओं में निवास करने वाले तीर्थयात्रियों को हरकी पौडी के अतिरिक्त भी एक अन्य घाट स्नान हेतु उपलब्ध हो जायेगा और गंगा के बीच में दाहसंस्कार करने वालों पर भी रोक लगेगी।

माननीय महोदय, आपके अथ्क प्रयास से भीमगोडा से कांगडा मन्दिर हरकी पौडी तक एक घाट का निर्माण अर्द्धकुम्भ मेले में कराया गया था। इस घाट के निर्माण से उक्त क्षेत्र में बने हुए मकानों का दूषित जल गंगा में आने से रूक गया है एवं दिवंगत प्रधानमंत्री स्व0 राजीव गांधी जी द्वारा शुरू किया गया गंगा प्रदूषण मुक्ति अभियान उक्त क्षेत्र में वास्तविक रूप से अब पूर्ण हुआ है। इस सम्बन्ध में मेरा आपसे अनुरोध है कि उक्त घाट की भांति ही हरकी पौडी से मायापुर तक बने हुए भवनों के आगे एक घाट का निर्माण करा दिया जाये जिससे जहां एक ओर हरकी पौडी से मायापुर तक स्नानार्थियों को अतिरिक्त घाट की सुविधा प्राप्त होगी वहीं दूसरी ओर इस क्षेत्र में बने मकानों का प्रदूषित जल गंगा में जाने से रूकेगा एवं गंगा को प्रदूषण मुक्त करने के लिए एक अनुकरणीय कार्य किया जा सकेगा।

संस्थापक-स्व० महामना पं० मदनमोहन जी मालवीय
इनकम टैक्स एक्ट की धारा ८०-(जी०) के अन्तर्गत आयकर मुक्त
Shri Ganga Sabha (Regd.) Haridwar (U.A.)
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अध्यक्ष
पं० रामकुमार मिश्रा

पत्रांक.....
दिनांक.....

हरकी पौडी पर जलस्तर में गिरावट रोकने हेतु सुझाव –

महोदय, तत्कालीन उत्तर प्रदेश सरकार द्वारा भागीरथी बिन्दु पर निर्माण कर गंगा की चौड़ाई लगभग 220 फुट से घटाकर 40 फुट कर दी गयी थी एवं नीचे कंकरीट के ब्लॉक बनाकर डाल दिये गये थे जिस कारण हरकी पौडी ही नहीं हरिद्वार व कनखल के घाटों पर जल की मात्रा लगातार कम हो रही है जिससे स्नानाथियों को स्नान करने में अत्यधिक असुविधा होती है। इसके निराकरण हेतु भागीरथी बिन्दु के पुराने स्वरूप को बहाल किया जाना नितान्त आवश्यक हो गया है।

गंगा को प्रदूषण से रोकने हेतु कानून व्यवस्था –

माँ गंगा को कूड़ा-करकट डालकर, कपडे एवं वाहन धोकर प्रदूषित करने वालों से सख्ती से निपटने हेतु कानून बनाकर दंडित किया जाना नितान्त आवश्यक है।

धोबी घाट व्यवस्था –

हरिद्वार में कोई भी धोबी घाट व्यवस्था न होने के कारण स्थानीय धोबी एवं टेंटवाले गंगा किनारे कपड़े धोते हैं जिस कारण गंगा जी में साबुन आदि का प्रदूषण फैलता है। इस समस्या के स्थायी निराकरण हेतु कनखल-हरिद्वार-ज्वालापुर में अतिरिक्त धोबीघाट की आवश्यकता है।

सीवरेज व्यवस्था –

हरिद्वार की सीवरेज व्यवस्था लगभग 70 वर्ष पुरानी है। 70 वर्ष पूर्व में और आज की स्थानीय जनसंख्या में एवं आने वाले तीर्थ यात्रियों की संख्या में कई गुना वृद्धि हुई है जिस कारण उपरोक्त व्यवस्था सीजन समय में ही नहीं साधारण दिनों में भी चरमरा जाती है जिससे सीवर का जल बहकर गंगा में जाता है और गंगा को प्रदूषित करता है। स्थानीय निवासियों एवं आने वाले तीर्थयात्रियों की भावनाएं भी इससे आहत होती हैं। इस समस्या के स्थायी समाधान हेतु हरिद्वार-कनखल-ज्वालापुर की सीवेज व्यवस्था का दुरूस्त करने के लिए अधिक क्षमता की सीवर लाइन डालकर जगह-जगह सीवेज पम्पिंग स्टेशन का निर्माण किया जाना नितान्त आवश्यक है।

बरसात के दिनों पहाडी मिट्टी का कटाव होकर वह पूरे बाजार एवं गंगा को प्रदूषित करती है जिस कारण आने वाले यात्रियों एवं स्थानीय निवासियों को बाजारों एवं सडकों पर मिट्टी जमा होने के कारण असुविधा होती है वहीं दूसरी ओर उक्त मिट्टी सीवर लाईन जाम करती है तथा सीवर लाईन का गंदा पानी बहकर गंगा

संस्थापक-स्व० महामना पं० मदनमोहन जी मालवीय
इनकम टैक्स एक्ट की धारा ८०-(जी०) के अन्तर्गत आयकर मुक्त

Shri Ganga Sabha (Regd.) Haridwar (U.A.)

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अध्यक्ष
पं० रामकुमार मिश्रा

पत्रांक.....
दिनांक.....

जी को भी प्रदूषित करता है। इसके निराकरण हेतु हरिद्वार की पहाडियों पर वृक्षारोपण किया जाना एवं सीवरेज व्यवस्था से हटकर अतिरिक्त नालों का निर्माण किया जाना आवश्यक है।

पॉलिथीन पर प्रतिबन्ध –

हरिद्वार में गंगा में बढ़ रहे प्रदूषण, प्रतिदिन सीवेज व्यवस्था चौपट होने से रोकने हेतु हरिद्वार ही नहीं अपितु सम्पूर्ण उत्तरांचल राज्य में पॉलिथीन पर रोक लगायी जानी आवश्यक है।

पार्किंग –

हरिद्वार आने वाले वाहनों के लिए राज्य सरकार द्वारा रोडी बेलवाला के सामने गंगा किनारे एक पार्किंग निर्माण कर सराहनीय प्रयास किया गया परन्तु यह प्रयास वाहनों की बढ़ रही संख्या को देखते हुए पर्याप्त नहीं है। इसके निराकरण हेतु भीमगोडा क्षेत्र, भोपतवाला क्षेत्र, विष्णुघाट के सामने, मायादेवी प्रांगण, रामलीला ग्राउन्ड हरिद्वार में पार्किंग निर्माण के साथ-साथ हरकी पौडी के सामने पहाडी पर पार्किंग निर्माण कर हरकी पौडी आने के लिए रोपवे अथवा सीढी मार्ग बनाकर आने वाली गाड़ियों को जहां सुरक्षित पार्किंग मिल सकेगी वहीं दूसरी ओर हरिद्वार में बढ़ रही गाडियों की चोरी को विराम लग सकेगा।

प्रवेशद्वार –

हरिद्वार के प्रवेशद्वार चिडियापुर, भगवानपुर, गुरूकुल नारसन में उत्तरांचल संस्कृति को दर्शाते हुए भव्यद्वारों का निर्माण हो ताकि पर्यटकों व तीर्थयात्रियों को हरिद्वार प्रवेश की एक सुखद अनुभूति मिल सके तथा वे राज्य की संस्कृति व परम्परा के साथ जुड़ा अपने को महसूस कर सकें।

भवदीय,

(रामकुमार मिश्रा)
अध्यक्ष

DRNo-1102/P-40/06

प्रतिलिपि –

1- मा0 सुब्रत विश्वास जी, आई.ए.एस., परियोजना निदेशक, उत्तरांचल अरबन डेवलपमेंट प्रोजेक्ट, देहरादून।
2- मा0 जिलाधिकारी, हरिद्वार।

List of Participants in Meeting organised by GoU on 20th May 2006

दिनांक 20.05.2006 को माननीय श्री नवप्रभात जी, मन्त्री शहरी विकास, वन एवं पर्यावरण उत्तरांचल शासन, देहरादून की अध्यक्षता में आहूत बैठक में उपस्थित अधिकारियों/गणमान्य व्यक्तियों की सूची।

क्र0	नाम	विभाग का नाम
1.	श्री सुब्रत विश्वास	परियोजना निदेशक, उत्तरांचल अरबन डेवल प्रोजेक्ट (ADB)
2.	श्री एन0के0 जोशी	अपर सचिव, उत्तरांचल शासन
3.	श्री आर0के0 सुधांशु	जिलाधिकारी, हरिद्वार
4.	श्री अभिनव कुमार	एस0एस0पी0, हरिद्वार
5.	श्री मदन कौशिक	विधायक, हरिद्वार
6.	श्री रतपाल ब्रह्मचारी	अध्यक्ष, नगर पालिका परिषद, हरिद्वार
7.	श्री एस0एस0 जैन	उत्तरांचल अरबन डेवलपमेन्ट प्रोजेक्ट (AI)
8.	श्री एस0 भट्टाचार्य	एशियन डेवलपमेन्ट बैंक
9.	श्री सी0एस0 भट्ट	चीफ डेवलपमेन्ट ऑफिसर, हरिद्वार
10.	श्री एस0पी0 सुबुद्धि	डी0एफ0ओ0, हरिद्वार
11.	श्री विनोद प्रसाद रतूडी	ए0डी0एम0, हरिद्वार
12.	श्री के0पी0 उप्रेती	ई0ई0, पी0डी0 पी0डब्ल्यू0डी0, हरिद्वार
13.	डा0 जी0पी0 डिमरी	डिप्टी सी0एम0ओ0, हरिद्वार
14.	श्री डी0एस0 स्वाती	अधिशासी अभियन्ता, यू0पी0सी0एल0, ह
15.	श्री आर0एन0 वर्मा	एस0ई0/जी0एम0, पेयजल निगम, देहराद
16.	श्री डी0एल0 शर्मा	ई0ई0, जल निगम, हरिद्वार
17.	श्री प्रभात राज	जी0एम0 जी0पी0सी0यू0 उ0पे0ज0निगम
18.	श्री सुबोध कुमार	ई0ई0 जल संस्थान, हरिद्वार
19.	श्री वी0एस0पवार	डी0एस0, इ0वे0प्रा0, हरिद्वार
20.	श्री एच0सी0एस0 राणा	ई0ई0, ह0वि0प्रा0, हरिद्वार
21.	श्री विष्णु अवस्थी	अधिशासी अधिकारी, रूड़की
22.	श्री एस0पी0 जोशी	अधिशासी अधिकारी, लक्सर
23.	श्री रामगोपाल	अधिशासी अधिकारी, झबरेडा
24.	श्री एम0सी0आर्य	
25.	श्री एस0पी0 शर्मा	ई0ई0, आई0डी0, हरिद्वार
26.	श्री सी0एस0 सिंह	ए0ई0, आई0डी0, हरिद्वार
27.	श्री मधुसूदन शर्मा	अग्नि शमन अधिकारी, हरिद्वार
28.	श्री एम0एल0 शाही	अधिशासी अधिकारी, न0पा0प0 मंगलौर
29.	श्री जगदीश प्यारे लाल	जे0ई0,
30.	श्री आर0के0शर्मा	भारत संचार निगम लिमिटेड, हरिद्वार
31.	श्री जगदीश प्रसाद	भारत संचार निगम लिमिटेड, हरिद्वार
32.	श्री प्रदीप पन्त	सभासद, नगर पालिका परिषद, हरिद्वार
33.	श्रीमति प्रकाशवती	सभासद, नगर पालिका परिषद, हरिद्वार
34.	श्री जगधीर सिंह	सभासद, नगर पालिका परिषद, हरिद्वार
35.	श्री बलराम सिंह राठौर	सभासद, नगर पालिका परिषद, हरिद्वार
36	श्री रामकुमार	उत्तरांचल पर्यटन विभाग, हरिद्वार
37.	श्री मुकुल राठी	उत्तरांचल पर्यटन विभाग, हरिद्वार
38.	श्री ए0के0 चौधरी	ऊषा ब्रेको लिमिटेड, हरिद्वार
39.	डा0 सत्यनारायण शर्मा	सभासद, नगर पालिका परिषद, हरिद्वार
40.	श्री रामकुमार मिश्रा	अध्यक्ष, श्रीगंगा राम रजि0, हरिद्वार

CONTINUE FROM PREVIOUS PAGE 001

44.	श्री दीपक नौटियाल	पत्रकार, उत्तर उजाला
45.	श्री रतनमणी डौभाल	पत्रकार, अमर उजाला
46.	श्री तररौन सिंह चौहान	सचिव, बार ऐसो0, हरिद्वार
47.	श्री आर0के0 दत्ता	अध्यक्ष, डी0बी0ए0,
48.	श्री पारस कुमार जैन	पूर्व अध्यक्ष, नगर पालिका परिषद, हरिद्वार
49.	श्री पुरूषोत्तम शर्मा	अध्यक्ष, शहर काँग्रेस, हरिद्वार
50.	श्री प्रदीप चौधरी	पूर्व अध्यक्ष, नगर पालिका परिषद, हरिद्वार
51.	श्री एन0के0जोशी	अपर सचिव, अरबन डेवलपमेन्ट
52.	श्री दिनेश कौशिक	अध्यक्ष, नगर पालिका परिषद, रूड़की
53.	श्री अम्बरीष कुमार	पूर्व विधायक, हरिद्वार
54.	श्रीमति हेमा मिश्रा	सभासद, नगर पालिका परिषद, हरिद्वार
55.	श्री दुर्गा शंकर भाटी	पत्रकार, दैनिक हिन्दुस्तान
56.	श्री सुभाष चन्द	सभासद, नगर पालिका परिषद, हरिद्वार
57.	श्री विजय शर्मा	अध्यक्ष, व्यापार मण्डल, हरिद्वार
58.	श्री ओम प्रकाश शर्मा	सभापति, श्रीगंगा सभा रजि0, हरिद्वार
59.	श्री विरेन्द्र श्रीकुँज	महामन्त्री, श्रीगंगा सभा रजि0, हरिद्वार
60.	श्री राजेश शर्मा	अध्यक्ष, जन जागरण समिति, कनखल
61.	श्री आदेश त्यागी	पत्रकार, दैनिक हिन्दुस्तान
62.	श्री संजय शर्मा	सभासद, नगर पालिका परिषद, हरिद्वार
63.	श्री अजय अरोड़ा	कोषाध्यक्ष, भीमगोड़ा
64.	श्री सुरेश गुलाटी	अध्यक्ष, शहर व्यापार मण्डल, हरिद्वार
65.	श्री हरिकेश अकेला	मुख्य सहायक, स्थानीय निकाय कलेक्ट्रेट, हरिद्व
66.	श्री इदरीस अन्सारी	सभासद, नगर पालिका परिषद, हरिद्वार
67.	श्री पंकज ममगाई	अध्यक्ष, हरिहर व्यापार मण्डल, भीमगोड़ा, हरिद्व
68.	श्री सतीश गुजराल	महामन्त्री, हरिहर व्यापार मण्डल, भीमगोड़ा, हरि
69.	श्री दिलीप उपाध्याय	सचिव, शहर व्यापार मण्डल, हरिद्वार
70.	श्री शिव कुमार कश्यप	महामन्त्री, शहर व्यापार मण्डल, हरिद्वार
71.	श्री हरीश कुमार	पूर्व सभासद, नगर पालिका परिषद, हरिद्वार
72.	श्री अशोक कुमार	
73.	श्री विक्की	जी0एच0के0 इन्टरनेशनल
74.	सुश्री उर्वी मांकड	जी0एच0के0 इन्टरनेशनल
75.	सुश्री अर्चना	जी0एच0के0 इन्टरनेशनल
76.	श्री डी0एस0जोडोन	डब्ल्यू/एस0 एण्ड सीवरेज एक्सपर्ट
77.	श्री सुनील दत्त पाण्डेय	संवाददाता, जनसत्ता, हरिद्वार
78.	श्री शिवा अग्रवाल	संवाददाता, पर्वतीय टाईम्स/बद्री विशाल
79.	श्री प्रदीप गर्ग	सम्पादक, यंग उत्तरांचल, हरिद्वार
80.	श्री महेश पारिख	संवाददाता, बद्री विशाल, हरिद्वार
81.	श्री एम0ए0 त्यागी	
82.	श्री एस0सी0 त्यागी	प्रोजेक्ट इंजीनियर, जी0पी0सी0यू0, हरिद्वार
83.	श्री डी0आर0शर्मा	सफाई एवं खाद्य निरीक्षक, न0पा0प0, हरिद्वार
84.	श्री जे0एस0 जयाडा	सफाई एवं खाद्य निरीक्षक, न0पा0प0, हरिद्वार
85.	श्री बलराम सिंह	सफाई एवं खाद्य निरीक्षक, न0पा0प0, हरिद्वार
86.	डॉ0 ए0के0त्यागी	नगर स्वास्थ्य अधिकारी, न0पा0प0, हरिद्वार
87.	श्री हर्ष वर्धन मिश्रा	अधिशासी अधिकारी, न0पा0प0 हरिद्वार
88.	श्री विनय गुप्ता	नगर अभियन्ता, न0पा0प0 हरिद्वार

JAN-2004 03:22

One Day Workshop on
Haridwar City Development Plan
Stakeholders Consultation to formulate City Vision
Date: 7th July 2006
Venue: Mela Control Room, Haridwar

Invitation letter of Chairperson, Haridwar NPP for Vision Workshop

06 JUL 06 02:34p NAGAR PALIKA HARIDWAR 01334-227006 P.2

अ0शा0 पत्रांक:–५९१/ वैय0सहा0 / 2006–07

सतपाल ब्रह्मचारी
अध्यक्ष

नगर पालिका परिषद्
हरिद्वार
दूरभाष :– (कार्या0) 01334–224321
(कै0कार्या0) 01334–260777

दिनाँक :– 01.7.2006

निमन्त्रण–पत्र

महोदय / महोदया,

अत्यन्त हर्ष का विषय है कि कुम्भ नगरी हरिद्वार को सर्वांगीण विकास की धारा में नये आयामों के साथ अग्रसर किये जाने के उद्देश्य से भारत सरकार द्वारा जवाहर लाल नेहरू नेशनल अरबन रिन्यूवल मिशन (JNNURM) के अन्तर्गत चयनित किया गया है। उक्त मिशन के अन्तर्गत निर्धारित गाईड लाईन्स के अनुसार "नगर विकास योजना" (City Development Plan) तैयार की जानी है, जिसके लिए हरिद्वार नगर के विज़न एवं बेहतर नगरीय अवस्थापना सुविधाओं (Infrastructure) का निर्धारण किया जाना है। इस हेतु आपका योगदान अत्यन्त महत्वपूर्ण एवं आवश्यक है।

उक्त मिशन से सम्बन्धित एक प्रारम्भिक बैठक श्री नवप्रभात जी, माननीय मंत्री, शहरी विकास, वन एवं पर्यावरण, उत्तरांचल शासन की अध्यक्षता में विगत माह आयोजित की गई थी। इसी अनुक्रम में "नगर विकास योजना" (C.D.P.) तैयार करने हेतु एक कार्यशाला का आयोजन सी0सी0आर0 भवन, हरिद्वार में दिनांक 07.07.2006 को पूर्वान्ह 10.30 बजे से अपरान्ह 5.30 बजे तक किया गया है।

उक्त मिशन की पृष्ठभूमि, विवरण एवं आपसे सम्बन्धित अवस्थापना सुविधा के सम्बन्ध में प्रपत्र की प्रति संलग्न कर इस अनुरोध के साथ प्रेषित है कि कृपया उपरोक्त के सन्दर्भ में अपने बहुमूल्य सुझावों एवं संलग्न प्रपत्र पर विवरण के साथ कार्यशाला में आपकी गरिमामयी उपस्थिति प्रार्थनीय है।

संलग्नक :– उपरोक्तानुसार प्रपत्र एवं विवरण।

(सतपाल ब्रह्मचारी)
अध्यक्ष,
नगर पालिका परिषद, हरिद्वार।

"सहभागिता से समाधान,
उत्तरांचल के लिए वरदान"

Concept Note circulated before the Workshop:

JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

1. Background to JNNURM and CDP

- JNNURM was launched by Government of India in December 2005.
- Three cities from the state of Uttarakhand are included in JNNURM Dehradun, Haridwar, and Nainital.
- JNNURM entails preparation of City Development Plan (CDP) for each project town for 2021. A city development plan (CDP) is both a perspective and a vision for the future development of a city.

SECTORS INCLUDED IN CDP

- ☑ Urban Renewal
- ☑ Urban Services - Water Supply, Sewerage, Solid Waste Management, Storm water drainage, Urban Transport, Parking
- ☑ Development of heritage areas
- ☑ Environment

SECTORS NOT INCLUDED IN CDP

- ☒ Power
- ☒ Telecom
- ☒ Health
- ☒ Education
- ☒ Wage employment programme and staff component

- The State Government, ULBs and para statal agencies are required to implement the mandatory and optional reforms proposed in JNNURM.
- To access Central assistance, the State Govt and ULBs including para statals (where necessary) will need to execute Memorandum of Agreement (MoA) with Central Govt after submission of CDP, indicating their commitment to implement the identified reforms.
- The Funds are expected to flow from Centre, State and ULBs in the ratio of 80:10:10. The Funds from Centre and State will flow through the designated State Nodal Agency to ULBs.

2. Vision Exercise

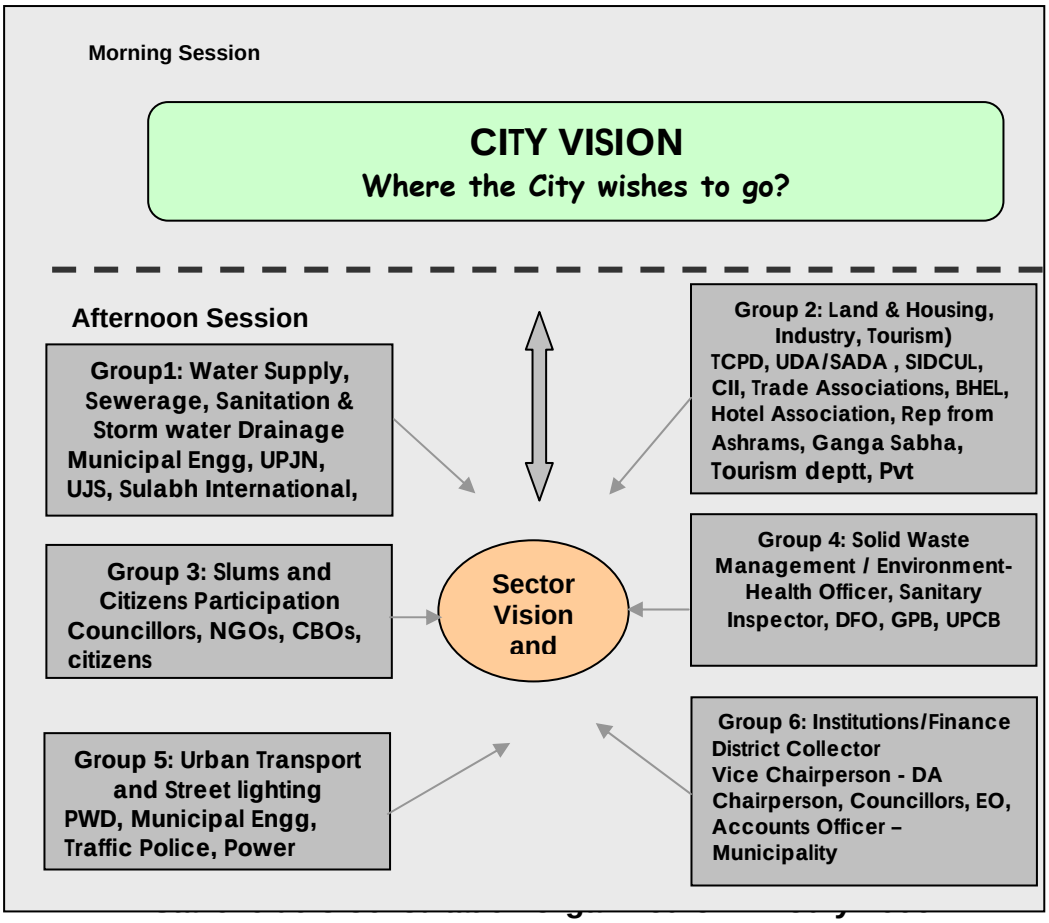
A one day workshop is proposed for a city wide stakeholder's consultation exercise.

Why	• To formulate a Vision Statement for the Town and sectoral vision and goals • To identify key problems and solutions in the town
How	• Workshop will be facilitated by UUDP-TA Consultants • All participants will be encouraged to participate actively using group work and other participatory techniques**.**
Who	• Chaired by Minister / Mayor/ Chairperson / Executive Officer • Participants: MP, MLAs, representative group of ward councillors, concerned officers of municipality, concerned line depts, CBO's, NGOs, citizen groups, eminent citizens and other organisations

	working with poor.
Output	1. Vision statement for town agreed 2. Main sector problems and issues identified 3. Sector Vision and goals agreed. 4. Set of recommendations / suggestions to improve municipal services 5. Structured set of proposals to implement institutional reforms
Time	1 day
Agenda	**Morning 1100-1300** 1. Presentation on JNNURM & CDP 2. City Vision Formulation 3. Sector Vision Formulation
	Afternoon 1400 - 1600 1 Discussion and formulation of Sector Strategies

"Vision is a statement of where the city wishes to go, within a given time frame and is often explained in terms of clear expectations."

Vision Exercise



Format of Questionnaire for Citizens Perceptions

नागरिक ज्ञान/अनुभव

1. आप अपने क्षेत्र एवं नगर को आगामी 25 वर्शों में किस रूप में देखना चाहते हैं ?

2. आपकी राय में इस लक्ष्य को प्राप्ति हेतु क्या उपाय अपेक्षित है ?

3. यदि आप जन–सहभागिता आवष्यक समझते हैं तो अपनी पंसद के कालम में सहीं (☐) का/ के चिन्ह आंकित करें।

आपके क्षेत्र के सुधार की कार्य योजना	निर्माण कार्यों का परिवीक्षण	सेवाओं का रखरखाव जैसे पेयजल आपूर्ति आदि	योजनाओं का गुणवत्ता एवं समय आदि के आधार पर मूल्यांकन	कार्यो में सुधार हेतु आप द्वारा दिया जाने वाला वित्तीय अंषदान

4. क्या आपकी राय में उत्तम नगरीय सेवाओं के लिये नागरिक और अधिक भुगतान करने के इच्छुक होंगे?

5. जन सहयोग प्राप्त करने के लिये नागरिकों को किस प्रकार से बाध्य किया जा सकता है?

6. नगर निगम/नगर पालि का से अपकी क्या आषांए है?

7. नागरिकों से अनुरोध करते हैं कि वे अपनी प्राथमिकता के अनुसार 1 से 9 तक अंक दें (1– अति महत्वपूर्ण, 9– सबसे कम महत्वपूर्ण)

क्रं0सं0	नगर का मूलभूत ढांचा व विकास के क्षेत्र	प्राथमिकता मूल्यांकन	सम्बन्धित/टिप्पणी
1ण	जलापूर्ति		
2ण	सीवर एवं सफाई		
3ण	ठोस अपषिश्ट प्रबन्धन		
4ण	वर्शा जल की निकासी		
5ण	सड़क		
6ण	जनता परिवहन (बस, विक्रम, थ्री व्हीलर, साईकिल, रिक्षा एवं अन्य)		
7ण	मार्ग प्रकाष व्यवस्था		
8ण	यातायात प्रबन्धन		
9ण	वाहनों को खड़ा करने का स्थान		

नाम :

स्थान/निवास का नाम रू हस्ताक्षर

फोन न0:

नोट :– सुझाव हेतु पृथक पृश्ठ भी जोड़ा जा सकता है।

List of Participants

S.No	Name	Designation	ffice
1.	Satpal Bramchari	Chair person	
2.	Harshvardhan Misra	E.O	
3.	Vinay Gupta	City Engineer	
4.	S.P. Gupta		
5.	Dr. Anil Tyagi	City Health Officer	
6.	Sushil Sharma	Secretary, HDA	
7.	Naresh Saxena	Consultant	A.D.B.Team
8.	Mashgur Ahmed	Traffic Consultant	A.D.B.Team
9.	B.L.Sharma	Executive Engineer	UPJN
10.	T.K.Acharya	Consultant	A.D.B.Team
11.	Urvi Mankad	Consultant	A.D.B.Team

12.	Archana S. Hinduja	Consultant	A.D.B.Team
13.	S.K.Gupta	Consultant	A.D.B.Team
14.	P.K.Varma	Consultant	G.H.K
15.	N.S.Bisht	Executive Engineer	Uttarakhand Power Corporation
16.	Mohammad Shoaib	Consultant	A.D.B.Team
17.	K.T.Upreti	Executive Engineer	P.W.D
18.	Subodh Kumar	Executive Engineer	U.J.S
19.	Abhit Rana	Office Manager	U.U.D.P
20.	Jagadesh Prasad	B.S.N.L	B.S.N.L
21.	Shankar lal Gupta	Councilor	
22.	Mahavir sehal	Councilor	
23.	Khemanand ji	Councilor	
24.	M.Rajan lal	Councilor	
25.	M.mohen lal	Councilor	
26.	Praveen Jaa	Councilor	
27.	Gupta	Executive Engineer	
28.	Pradeep Panth	Councilor	
29.	Rathnamani Dobhal	Editor (Amar Ujala)	
30.	Raju Pushoula	Editor/Photographer	
31.	M. S. Pharaswan	C.O.Traffic	Police
32.	A.K.Chavdhary	SRM,VSHA BRELO Ltd	Corporate
33.	Smt. Babitha		
34.	Dr.Ganga Mahesh		
35.	Dr.O.P.Agarwal	Medical Officer	G.M.O Office
36.	Shevend Kanyat	Writer	
37.	Charan Singh		
38.	Smt.Prakasha vathi		
39.	Prabhat Rana		
40.	V.K.		
41.	Smt. Subhun Chauhan		
42.	Smt. Sobha Devi		
43.	Satyanaryan		
44.	S.P.Sharma	Executive Engineer	
45.	S.B.tyagi		
46.	Ram Kumar		
47.	Mukul		
48.	Ram Kumar Misra		
49.	Jinda Hasan		
50.	Sanjai Sharma		
51.	Gangadher Simha		
52.	Balaram Simha		
53.	Sandeep		
54.	Thanuvi Valiya		
55.	Harish Chandra Singh		
56.	Krishna Kumar Swami		
57.	Aswini Kumar		
58.	Ambareesh Kumar		

STAKEHOLDERS' CONSULTATION - INDIVIDUAL SECTOR-WISE

Institutional and Finance Work Group – Summary of Discussions

Participants:

1. Mr. Satpal Brahmchari, Chairperson, Haridwar NPP
2. Mr. Satish Sharma, Secretary , HDA
3. Mr. Harshvardhan Mishra, Executive Office, Haridwar NPP
4. Mr. P. Krishnan, Financial Analyst, UUDP (TA)

Finance

Double entry system of accounting:

- The process of introducing the system has been initiated;
- Will be introduced in all of the 63 ULBs, and all parastatal agencies;
- Guidelines for arriving at opening balance have been issued;
- Short listing of chartered accountants being finalized for hand holding and training of accounts staff
- Electronic software for accounting is now being developed
- Time frame for introduction of double entry system
    - Piloting in Haridwar NPP - 2006-07
    - Introduction of the system in 25 ULBs and all parastatal organizations - 2007-08
    - Introduction of the system in all ULBs - 2008-09

Property tax:

- Rate percentage should be reduced
- Tax base to be widened
- Tax compliances to be enhanced
- Ratio of non-tax and tax revenue should be reduced
- The growth in collection of tax revenue should match the growth of SDP
- The percentage collection of property tax to reach 85% by 2009-10

Institutional

- E- governance is in the process of introduction
- GIS based planning to be done
- Registration of birth and death to be enforced
- Profession licensing to be introduced

- 74th CAA
    - The ULBs do not have the capacity to carry out whatever power already given to them. As they build up their capacity to perform, more functions may be delegated to them
    - A regional planning and development authority should be in place with adequate representation of the ULBs
    - The Peyjal Nigam may be corporatized with equity participation of the ULBs
- Water supply
    - There may be a separate agency established on public-private partnership basis or community based organization (CBO) for distribution of water and collection of water tax and charge. O%M of

water supply system may be out sourced on contract basis. The ULBs may act as regulatory authorities.

- SWM
  - Encourage resident welfare committees, mohalla swachhata samitiees, CBOs and joint ventures to pick up performance linked contracts for collection and disposal of garbage
- Power bills of ULBs
  - Electronic meters should be installed
  - The Power Corporation should levy a cess of 2% on all bills to cover the power bills of the ULBs
- Poverty
  - In the municipal board, there should be at least one representative from the poor community
  - All urban poverty programmes should be implemented by the ULBs
  - The SUDA should provide assistance to the ULBs on hand-holding basis and facilitate their capacity building process
  - The CO should manage the schemes addressed to the poor
  - Contracts for implementing schemes for the poor should be routed through CDS
  - Poverty alleviation schemes should be formulated, implemented and maintained by the poor themselves.

- There is need for scientifically addressing the institutional issues to develop efficient organizations

- What is known as citizens' charter is the commitments of an institution to provide or deliver services and a basis of redressal of grievances.

Planning and Urban Renewal Work Group Discussion

Mr. Mukul Rathi, Tourism Department

Mr. Ramkumar, Tourism Department

Mr. Ashwani Kumar, President, Hotel Association

Mr. Ram Kumar Mishra, Ganga Sabha

Mr. H.C.S. Rana, AE, Haridwar Development Authority

Mr. D.D. Sharma, OSD, Special Mela Committee

Physical Growth - Opportunities and Constraints: Data Sheet for HDA

Key Areas	Brief Description	Problems/Key Issues	Suggestions/ Recommendations
Directions of urban growth (including peri urban areas)	Roshanabad Road (SIDCUL)	SIDCUL Industrial area is coming up on this Road.	Expansion of residential and other activities should be promoted on this road as it is on a plain land, land is available and also it would support the pressure from SIDCUL area
	Motichur Road	Limited land available	Though terrain is suitable for development, most of the land is private owned and ashrams/hotels are coming up along the road Limited possibility for residential development
	Laksar Road	Terrain suitable for development Unauthorised Development	At present, the land is mostly covered by agriculture fields Further development should be regulated to preserve the rich agricultural fields.
	Roorkee Road		Roorkee road has further potential for further development as land is available for development, the area is in proximity

Key Areas	Brief Description	Problems/Key Issues	Suggestions/ Recommendations
			to Jwalapur which is an established township and the upcoming townships on Roshnabad Road. HDA has two of its housing schemes of Harilok I and II on Roorkee Road. Also the new Transport Nagar is coming up Off Roorkee Road. The new ISBT is also proposed to come up on this road.
	Najibabad Road	The Road has Reserved Forest on left side for a stretch of 3-4 kms and open green land through out the length of the road.	Development should be regulated and restricted in order to preserve the natural heritage – green areas, forests, water bodies. It is recommended that only eco tourism related activities should be allowed in this area in a controlled manner
Constraints for physical growth such as forests, water bodies, agriculture land, cantonment area, etc	Haridwar has Shivalik Range in the North and Ganga River in the South which restricts its growth in these directions. Development has been linear along the Delhi-Rishikesh Highway No. 45 Future development is going towards Roorkee, Jagjitpur and Roshnabad		
Congested core areas for redevelopment	- Har ki Pauri - Moti Bazaar - Bada Bazaar - Vishnu Ghat - Ram Ghat - Jwalapur - Chowk Bazaar at Kankhal to Daksh Mandir - Chowk Bazaar to Police Thana	- Narrow Roads - Encroachments - Heavy unregulated traffic - Lack of parking spaces - Old tiles which are slippery and also are breaking which is unsafe for pilgrims especially the old people	- Removal of Encroachments – 2' to 3' on Upper Road which has 60' RoW - Change in the traffic movement – one way on Upper Road - Construction of Footpath and dividers which would restrict further encroachment - Road widening by laying underground cables - Flooring to be changed on ghats to red stone

Key Areas	Brief Description	Problems/Key Issues	Suggestions/ Recommendations
			- Development of New Ghats to ease off the pressure on Har ki Pauri
Relocation of non-conforming land uses	Transport related activities in Jwalapur Informal sector in the main city area		Transport Nagar has already been proposed off Roorkee Road Construction of Hawkers Zone
Environmentally sensitive areas like rivers, other water bodies, green areas, etc including cultural and historical areas	Ecological sensitive areas – Mansa Devi, Chadidweep, historical monuments, sacred water bodies		
Residential Development by MDDA in last 10-15 yrs - Total Area in Hectares - Type (EWS, LIG, MIG and HIG) and Number of Houses	- Since 1996, HDA has not taken up any residential scheme and land within the municipal boundary and in the peri urban areas largely belongs to the government which restricts construction of housing by private developers. - There is shortage for housing for which HDA will necessarily have to take up land development and housing schemes.	- The team was informed that about 25% of construction is illegal. - It was also observed that demand for housing includes demand from the local citizens as well as from people from other regions	- Increased number of housing schemes by HDA - Increased number of EWS housing
Encroachments on rivers, canals, natural drains, etc	- The river and canal banks have been encroached and slums and squatter settlements have sprung up which clearly need to be rehabilitated.		- Relocation and Rehabilitation of slums existing along the river banks
Seismic consideration in building bye laws	A certificate from private structural engineer is taken by HDA for giving building permission		There is a need to enforce strict regulations on structural design
Future development priorities			
Any other concerns or suggestions			

Solid Waste Work Group Discussion

Solid Waste Management and Environment: Data Sheet for Health Officer, Haridwar NPP

Key Areas	Problems/Key Issues	Phasing of Recommendations		
		Short term (5 yrs)	**Medium term (10 yrs)**	**Long term (15-20 yrs)**
Collection and Storage	At source segregation of solid waste is not done properly excpt some Swachata Samities Shortage of storage point	Promotion of measures for segregation Construction of storage sites		
Transportation	Shortage of refuse compactor vehicles. Small vehicles are not good for long distance transportation	Ensure availability of RCs and covered vehicles according Rule 2001		
Disposal	Disposal site is not proper Now solid waste disposal is being done in land filling sites	Establishment of secure land fill sites and site for composite etc.		
Organisational Issues (staff, infrastructure, etc)	According alarms Sanitation staff is not sufficient for floating population there is no extra arrangement (usually)	Proper strength of safai karamcharis other staff		

Key Areas	Problems/Key Issues	Phasing of Recommendations		
		Short term (5 yrs)	**Medium term (10 yrs)**	**Long term (15-20 yrs)**
Health and Hygiene (perception based on present water and sanitation facilities)				
Public Participation (at any SWM stage)	Is starting in Swatchta Samities. In some Samities very good results are obtained	Health education schemes for Public to participate in slum mainly in At source segregation		
Private Participation (at any SWM stage)	NGOs for plastic segregation is working – Dry waste recycling and research center – Haridwar	NGOs may behind for SWM eg segregation, transportation etc.		

Name: Dr A K Tyagi, Health Officer

Water Supply Work Group Summary of Discussions

Water Supply: Data Sheet for UPJN, UJS, Haridwar Nagar Palika Parishad

Key Areas	Problems/Key Issues	Phasing of Recommendations		
		Short term (5 yrs)	**Medium term (10 yrs)**	**Long term (15-20 yrs)**
Network Coverage (Total Number of House Connections/Total Number of Houses)	Domestic Connections : 24000 Coverage : about 65% At present, number of house connections are more than the number of listed houses with UJS			
In the absence of piped water supply, status of alternate water supply provision	India Mark II Handpumps			
Levels of Services - Per capita supply - Water pressure - Duration of Supply - Areas of Discrepancy (unequal supply hours) - Water Quality	122 lpcd Pressure is varying across the city 4 to 20 hrs Har Ki Pauri is surplus Zone, Industrial areas has water scarcity, Areas beyond the railway line are scarcity areas as the terrain is hilly and increasing altitude in the north direction Water quality is average			
Unaccounted For Water (leakage, water losses, etc)	30 percent			
Cost Recovery				
O&M (Revenues, Maps and Information Systems)	UFW is very high O&M cost recovery is very poor and even the level of taxation is very low (flat tariff) which makes it financially unviable			
Any other concerns or		Rain water harvesting		

Key Areas	Problems/Key Issues	Phasing of Recommendations		
		Short term (5 yrs)	Medium term (10 yrs)	Long term (15-20 yrs)
suggestions		should be done. MDDA should make it mandatory in house connection		

Sewerage Work Group Summary of Discussions

Sewerage: Data Sheet for UPJN, UJS

Key Areas	Problems/Key Issues	Phasing of Recommendations		
		Short term (5 yrs)	Medium term (10 yrs)	Long term (15-20 yrs)
Network coverage and O&M				
Coverage of Septic Tanks and its O&M				
Sewage treatment and disposal		i. Sewer treatment plants are needed ii. Recycling of sewerage is also needed		
Cost r				
Adequacy of Public Toilets and its O&M	Sulabh Toilets are there. A battery of toilets are required to serve the tourists and floating population			
By-products of Sewage Treatment– fertiliser/gas				
Any other concerns or suggestions	It is a high priority of			

Suggestions and Recommendations received from Ganga Sabha after stakeholders consultation on Vision and Sector Strategies on 7th July 2006

Shri Ganga Sabha (Regd.) Haridwar (U.A.)

(Regd. Under Act. XXI of 1860)

अध्यक्ष
पं० रामकुमार मिश्रा

पत्रांक.....
दिनांक...10-07-06

सेवा में,

प्रोजेक्ट प्रभारी
उत्तरांचल अर्बन डवलपमेंट प्रोजेक्ट
उत्तरांचल सरकार
आई.एस.बी.टी. काम्पलेक्स
देहरादून।

विषय – **केन्द्रीय नियंत्रण कक्ष हरिद्वार में हुई बैठक दिनांक 07-07-2006 में दिये गये सुझाव।**

महोदय,

कृपया आप मेरे सलंग्न पत्र का अवलोकन करने का कष्ट करें जिसमें मेरे द्वारा जवाहरलाल नेहरू नेशनल अर्बन रिन्यूवल मिशन (JNNURM) के अन्तर्गत हरिद्वार के विकास हेतु सुझाव प्रेषित किये थे।

इसके साथ ही दिनांक 07-07-2006 में हुई कार्यशाला में भी श्री गंगा सभा रजि0 हरिद्वार का अध्यक्ष होने के नाते मैंने अपने सुझाव प्रेषित किये थे जो मै लिखित रूप से पुन: आपके समक्ष प्रस्तुत कर रहा हूं –

समस्या – कुम्भ-अर्द्धकुम्भ पर्व एवं कांवड़ मेले व अन्य महत्वपूर्ण मेलों में शंकराचार्य चौक से भूपतवाला बाईपास हरिद्वार बंद कर दिया जाता है अथवा यातायात का अधिक दबाव होने के कारण कई-कई घंटे अवरूद्ध हो जाता है जिस कारण तीर्थयात्री, मरीज एवं स्कूल जाने वाले बच्चों को अत्यधिक कठिनाई का सामना करना पड़ता है। पूर्व में बने पर्वतीय बाईपास मार्ग अनेक स्थानों पर भूस्खलन होने के कारण बंद कर दिया गया।

सुझाव – सिंहद्वार कनखल से दक्ष मन्दिर कनखल होते हुए एक अतिरिक्त मार्ग चंडीदेवी के बराबर से होते हुए मोतीचूर के आसपास निकाला जाना अत्यधिक आवश्यक है अथवा पूर्व में बने शंकराचार्य चौक से दूधाधारी तिराहे तक बने मार्ग पर फ्लाईओवर का निर्माण समस्या का स्थायी निराकरण कर सकता है।

समस्या – मोतीचूर-रायवाला के मध्य रेलवे फाटक एवं ज्वालापुर रेलवे फाटक पर लगातार जाम होने के कारण स्थानीय निवासी, तीर्थयात्रियों एवं आकस्मिक चिकित्सा हेतु जाने वाले मरीजों को होने वाली कठिनाई।

सुझाव – उक्त दोनो स्थानों पर फ्लाईओवर का स्थायी निर्माण समस्या से छुटकारा दिला सकता है।

समस्या – मंसादेवी एवं चंडीदेवी मन्दिर पर्वतमाला पर हो रहे अंधाधुंध निर्माण कार्यो से उत्पन्न हरिद्वार को खतरा।

सुझाव – नियोजित निर्माण एवं विकास।

संलग्नक – उपरोक्तानुसार।

भवदीय,

(रामकुमार मिश्रा)
अध्यक्ष

List of Participants in the meeting chaired by Minister Urban Development for discussion on the identified projects in Haridwar CDP

MEETING FOR HARIDWAR CDP

8th August, 2006

S.No.	Name	Designation	Sign
1.	Sh. Navi Prakash	Min. of Urban Development.	
2.	Sh. S. Biswas	PD, UUDP.	
3.	Sh. S. S. Jain	UUDP	
4.	D. S. Naik	VC. HDA	
5.	H. P. Uniyal	CGM Jal Sansthan	
6.	P. C. Kimothi	SE Jal Sansthan	
7.	Sushil Kumar Sharma	Secy, HDA	
8.	R. Roy Chaudhuri	CSS, UUDP	
9.	Subodh Kumar	Ex. EN. Jal Sansthan	
10.	B. L. Sharma	Ex. Er. Jal Nigam	
11.	Naresh Saxena	ADB team	
12.	Deep Sharma	Ch. Man N. Palika Rishikesh	
13.			
14.		Addl. Secy(UD)	
15.	P. K. Sharma	M. D. Peyjal Nigam	
16.	R. N. Verma	S.E/G.M, Peyjal Nigam Dehradun	8/8
17.	Sushash Gupta	Dy. Director Urban Dev. Dept.	
18.	A. T. ANSARI	O.S.D. Urban Develop. Directorate	
19.	Harishwardhan Mishra	Executive Officer Nagar Palika Parishad Hdr	
20.	Vinay Gupta	Nagar Abhiyanta Nº P.P. Hdr	
21.	Dr. Kazmi	IIT Roorkee	
22.			
23.			

Record minutes of the meeting organised to discuss the projects identified in Haridwar CDP

8th August 2006
Uttarakhand Urban Development Project Office, ISBT Complex

Chairperson: Mr. Nav Prabhat, Minister, Urban Development Department, GoU

Participants:
Mr. Amrinder Sinha, Secretary, Urban Development Department, GoU
Mr. Subrato Biswas, Project Director, UUDP
Mr. Satpal Brahmchari, Chairperson HNPP
Officials of HNPP
Head of Departments, GoU
UUDP TA Consultants

The meeting began with presentation of the projects identified by the consultants in Haridwar CDP. The Team Leader informed the group that the projects have been identified after a series of consultation with the concerned line department and field visits by the sector experts in the team. All the sector projects were discussed in the meeting. The Minister UDD and the senior GoU officials took keen interest and discussed all the projects with the team. The UDD Minister and other senior GoU officials and HNPP officials gave their opinion on further modification of the scope and extent of the projects and also suggested some new projects. Some of the key comments in each sector are presented in the following section.

Water Supply
The cost estimates for reoganisation and distribution of pipelines to be revised
The length of pipelines to include existing as well as proposed for future expansion
Establishment of water testing lab will require sophisticated equipments, therefore the estimates should be increased to allow installation of such equipments
Minister asked UPJN to give back the properties to Nagarpalika
It was suggested by the officials that special temporary provisions should be made for Kumbh Area although the consultants clarified that such provisions have been made in the separate budget proposed by GoU for Kumbh 2010

Sewerage
Team Leader clarified that SBR technology is suggested as it requires less space
Exe Engg, UPJN suggested use of trenchless technology at some locations in Haridwar

Storm water drains

UPJN Chief Engineer agreed with the consultants that long stretches of underground drains may not work as there is lot of silt from Mansa Devi Hill
Remodeling of small drains was suggested by the HNPP officials

Senior Gou officials opined that it is extremely important to include a contour drain along Mansa Devi Hill
HNPP suggested provisions of mechanised cleaning but Minister UDD refuted the proposal in the context of adverse ground realities for its smooth functioning

Solid Waste Management
Officials raised the need to increase the number of transfer stations from 4 to 8 in light of religious fairs organized throughout the year.

Services to Urban Poor

HDA and UDD officials strongly raised the need to increase the provision of affordable hosing to more than 20,000 as service sector is likely to increase due to increasing industrialisation. Secretary UDD stated that population load will be 550 per acre due to IIE.

Roads and Transport

It was suggested by the Minister UDD to extend the length of proposed MRTS to 45 Km upto Rishikesh
Rapid transit system, emergency evacuation routes amenities and parking shd be planned for Kumbh. The consultants clarified that many of such projects have been proposed in the budget for Kumbh 2010 by GoU

Urban Renewal, Heritage and Tourism

EO HNPP and Minister UDD along with other officials strongly suggested inclusion of area development in peri urban areas as Haridwar is likely to have rapid urban growth in the next few years due to IIE in Roshnabad.
Minister UDD raised the issue of ownership of open areas in Haridwar. He flagged that 700 Ha of land in and around HNPP still belongs to UP Govt.
Secretary UDD asked the consultants to refer to the Ardh Kumbh Report 2004 to include the recommendations made in the report. The consultants agreed to review the recommendations and include it as and where felt appropriate in the CDP.
Minister UDD suggested construction of shed on the running stream for women instead of the existing Mahila Ghat
In the idenitified project of Development of Ghats, the GoU officials suggested inclusion of Ghat development in Jwalapur and construction of Ghats downstream of Kankhal.
HNPP officials raised the need for public toilets. The consultants clarified that such projects was already proposed.

ANNEX 7.1: Proposed Sewage System Generation

Proposed Sewage Generated (2021) from different zones

Zone	Sub Zones	Permanent Population p.e	Floating Population p.e	Sewage Generated MLD
I Bhopatwala	A	14864	50315	**5.1**
II	B	16290	12023	2.8
Haridwar	C	74121	68933	13.6
	D	44682	64692	9.7
	E1	34428	34429	6.5
Sub Total		169520.1	180077.0	32.7
III Jwalapur	E2	100514	1548.0	12.6
GRAND TOTAL		284898.3	231940.2	50.3

Note: Considering 10 % exigencies: Total Sewage Generated is 56 mld (Say 60 mld)

Choice of Technology for Jwalapur Zone III 12 MLD Sewage Treatment Plants

- Sewage treatment process is generally classified as primary, secondary and tertiary. Tertiary treatment is carried out where the treated effluent is discharged into a watercourse that is used for bathing and/or as a water source for drinking. Under the present conditions tertiary treatment is not required.

- The Primary treatment comprises screening, grit removal and sedimentation in series. These activities are common for all treatment plants. There are various processes available for secondary treatment giving ample scope for alternative solutions for the scheme. Factors influencing the selection of a STP for Jwalapur Zone III are as follows:

- High Performance efficiency in removal of BOD, Suspended solid and coliform for reuse.
- Low Land Requirement vis-à-vis availability.
- Low Capital costs
- Low Power requirement & Total O & M Cost.
- No Odor,Vectors, Nuisance.
- Aesthetics with surroundings
- Efficiency under low ambient temperature
- Biogas Generation for electricity production
- Sludge disposal and reuse
- Nutrient Removal
- Expansion potential
- Equipment Requirement
- Operational Characteristics

- In the Indian context, for a city like Haridwar a medium amount of mechanisation is generally preferred. The O&M are necessary to be simpler. Based on this philosophy coupled with consideration of land resource, the following process options may be generally followed: A comparative study is made on different treatment processes with respect to the selection criteria mentioned above and presented in the following

- Table: Comparison of different large and medium scale STP

-

S. No.	Item	WSP	Aerated Lagoon	UASB + PP	Conv. Trickling Filters	Conv. Activated Sludge	Extended Aeration	FAB Process	SBR
1	BOD Removal (%)	75-85	75-85	80-90	80-90	90-95	90-95	90-95	90-95
2	SS Removal (%)	70-85	80	70-85	75-85	85-90	85-90	85-90	85-90
3	Total Coliform Removal (%)	90-99.9	60-90	90-99	90-99	90-99.9	90-99.99	90-99.99	90-99.9
4	Land Requirement (m2/person)	0.60-0.70	0.30-0.40	0.20-0.30	0.20-0.30	0.18-0.25	0.15-0.20	0.1-0.15	0.15-0.2
5	Total Capital Cost (Rs./person)	330	300	350	220	610	440	610	500
6	Power Requirement (kwh/person/year)	2	13	8	9	14	18	18	12
7	Total O&M Cost ((Rs./person/year)	22	44	52	27	76	60		70
8.	Odor, Vector Nuisance	Yes	Yes	Yes	Yes	Less	Less	Least	Least
9.	Aesthetics with surroundings	No	No	No	No	Fair	Fair	Yes	Best suited
10	Efficiency under low ambient temperature	Low	Low	Low	Medium	High	Higher	Higher	High
11.	Biogas Generation	Not possible	Not Possible	Possible	Possible	Possible	Not Possible	Not Possible	Possible
12.	Sludge disposal and reuse	Problems	Problems	Can be reused	Can be reused	High quality sludge effectively reused	High quality sludge effectively reused	High quality sludge effectively reused	High quality sludge effectively reused
13.	Nutrient Removal	Not	Not	Not	Not	Not	Not	Not	Possible
14.	Expansion	Difficult	Diffic	Difficult	possible	Possible	Possible	Possible	Simplified

S. No.	Item	WSP	Aerated Lagoon	UASB + PP	Conv. Trickling Filters	Conv. Activated Sludge	Extended Aeration	FAB Process	SBR
	potential		ult						expansion
15.	Equipment Requirement	Negligible	Low	Low	Large	Large	Medium	Medium	Medium
16.	Operational Characteristics	Simple	Simple	Skilled	Skilled	Skilled	Simpler	Simpler	Skilled

From the above comparative study it was found out that most simple and least energy intensive systems are Waste Stabilization Ponds, Aerated Lagoons and UASB with Polishing Ponds. However, the main drawback of these systems is the large area requirement. Being a newly formed state its rapid industrialization has caused very high land prices. Moreover, in these processe effluent quality is not very high; efficiency deteriorated with seasons, sludge disposal and odor problems. Hence, these processes are not suitable in Haridwar.

- Therefore, conventional activated sludge process, Extended Aeration process, FAB and SBR processes are judicious choices under prevailing conditions. However, FAB and extended aeration processes are the favorable choices for small size STP where load fluctuations are high and stabilized sludge is needed avoiding anaerobic digestion. Due to the elimination of primary settling tanks and higher aeration requirements for sludge stabilization the operation cost of extended aeration and FAB process become higher and therefore cannot be considered.

The only choices left are conventional activated sludge process and SBR Activated sludge process. Both processes work on the same principle and the effluent quality is almost same. However, due to the elimination of primary and secondary settling tanks in SBR the operation and maintenance of moving equipments and area requirement is greatly reduced. SBR can be expanded easily as each unit forms a modular treatment unit. All basins have been built with common wall construction. This can be achieved by maintaining the same length for all tanks and increasing the width appropriately. The blower equipment is also sized proportionally to the capacity of each basin such that the same blowers are used before and after expansion. Also, because of the flexibility of working in time rather than space, the operating policy can be modified to meet new effluent limits, handle changes in wastewater characteristics, and accommodate the fluctuations in seasonal flow rate, all withoutincreasing the sizes of the physical plant. Moreover, US, EPA did extensive study on construction cost comparison of SBR and conventional activated sludge process and found out that SBR are much more promising than conventional activated sludge process for municipal sewage treatment.

As shown in figure 1. that the differences between SBRs and continuous flow ASPs are drastic. However, this comparison should only be used as an indication of the relative construction costs of SBRs and continuous flow ASPs. Clearly, the lack of need of a primary and secondary clarifier and return sludge pumping system offers potential savings in construction cost.

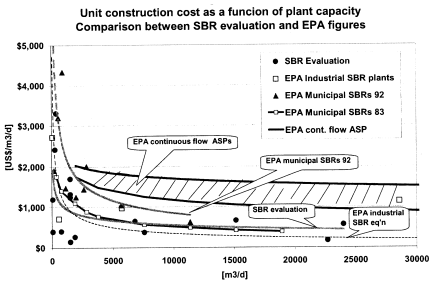


Figure 1: Comparative cost between conventional activated sludge process and SBR

ANNEX 7.2: Proposed Outline for MSW Collection System

Collection system: Primary collection of MSW from different sources of waste generation may be improved in the following manners:

Source of MSW Generation	Primary Collection System	Mode of Collection	Frequency of Collection
Domestic (Excluding Residential Complex, Housing Colonies, Slums etc.)	Door-to-Door collection of segregated (Bio-degradable & Non-Biodegradable) waste by DMC workers/ Private Agency followed by either temporary storage in the community bins/containers or direct loading to the MSW transport vehicles	Through covered containerized handcarts/ cycle rickshaws at a pre-determined time	Everyday round the year
Residential Complex & Housing Colonies	Door-to-Door collection of segregated (Bio-degradable & Non-Biodegradable) waste by RWA/Private Agency followed by either temporary storage in the community bins/containers or direct loading to the MSW transport vehicles	Through covered containerized handcarts/ cycle rickshaws at a pre-determined time	Everyday round the year
Slums	Door-to-Door collection of segregated (Bio-degradable & Non-Biodegradable) waste by Mohalla Swachhata Samiti followed by either temporary storage in the community bins/containers or direct loading to the MSW transport vehicles	Through covered containerized handcarts/ cycle rickshaws at a pre-determined time	Everyday round the year
Shops & Commercial Establishments	Shop owners and Market Associations shall be held responsible for segregation, storage, collection and transfer of waste either to temporary storage community containers/bins or direct loading to the MSW transport vehicles	Individual shop shall store segregated waste within its premise and transfer the same either to the community containers/bins or directly load to the MSW transport vehicles	Everyday round the year except the days when the shops or markets are closed
Fruit & Vegetable Markets	Market Associations shall be held responsible for storage, collection and transfer of waste to temporary storage community containers/bins for further transportation by MSW transport vehicles	Individual shop shall store its daily waste and transfer the same to the community containers/bins	Everyday round the year except the days when the markets are closed
Hotels & Restaurants	Individual Hotel/Restaurant shall be held responsible for storage and transfer of waste to temporary	DMC will provide vehicles for secondary collection and transportation of waste and charge to the respective hotel/restaurant for the service	Everyday round the year

Source of MSW Generation	Primary Collection System	Mode of Collection	Frequency of Collection
	storage community containers/bins or to the MSW transport vehicles. Shop Owner's Association/ Market Association shall be overall responsible for primary collection of waste from their respective shops/markets	based on the quantity of waste generated by these hotels & Restaurants.	
Construction and Demolition Waste	Individual waste generators shall be held responsible for collection, temporary storage and transportation of the waste for safe disposal. DMC may provide vehicle for waste transportation and disposal against charges.		As and when required
Street Sweeping/ Drain Cleaning	Accumulation of wastes by sweeping of streets and roadside drains by DMC workers for further transportation to the waste disposal site	Using sweeping and drain cleaning tools and equipments and handcarts	Everyday round the year

All door-to-door collection of waste will be chargeable as 'Service Charge'. In slum areas the service charge may be subsidized. NGOs/ Private agencies may be involved for collection and transportation of the re-cyclable wastes for further processing.

Annex 7.2.2: Assessment of Water Demand and Storage

Table 1: Assessment of Water Demand

Year	Resident Population (000)	Total Floating Population (000)	Reduction factor for Floating Population	Equivalent floating population (000)	Total Population (000)	Water demand @ 135 lpcd (mld)	Add allowance of losses (mld)	Total Water Demand (mld	Present Production (mld)	Deficit (mld)
2006	184	525	(0.30)	(0.30) 160	344	46.4	30% 19.9	66.3	60	-6.3
2011	210	580	(0.31)	(0.31) 181	391	52.8	25% 17.6	70.4	60	-10.4
2016	246	640	(0.32)	(0.32) 205	451	60.9	20% 15.2	76.1	60	-16.1
2021	286	707	(0.33)	(0.33) 232	518	69.9	15% 12.3	82.2	60	-22.2
2027	327	796	(0.40)	(0.40) 319	646	87.2	15% 15.3	102.6	60	-42.6
2037	400	971	(0.40)	(0.40) 388	788	106.3	15% 18.8	125.1	60	-65.1

Note:- Considering safe discharge of 1000 lpm from a tubewell, pumping 18 hours per day, no. of Tubewells/ Infiltration wells required to meet 2021 demand = 22.2/1.08 = 20.6, say 21 nos. Similarly, No. required to meet 2037 demand = (65.1/1.08 – 21) = 40

Table 2: Assessment of Water Storage Reserviors

Year	Total Population Including effective floating population (000)	Water Demand @ 135 lpcd mld	Total Water Demand after accounting for losses (mld)	Total Storage Capacity Required @ 10 hours Storage (kl)	Total Storage Available (kl)	Short fall (kl)
2006	344	46.4	30% 66.3	27600	14000	13600
2011	391	52.8	25% 70.4	29300	14000	15300
2016	451	60.9	20% 76.1	31700	14000	17700
2021	518	69.9	15% 82.2	34300	14000	20300
2027	646	87.2	15% 102.6	42750	14000	28750
2037	788	106.3	15% 125.05	52104	14000	38104

Note:- Shortfall in 2021 comes to 20,300 kl . Providing 30% extra for fire fighting, total capacity proposed is 26,390 kl. Similarly, Shortfall in 2037 comes to 38,104 kl. Providing 30% extra for fire fighting, total capacity required is 49,535 kl. Additional requirement for 2037 (over storage provided in 2021) = (49,535 – 26,390) = 23,145 kl.

Annex 7.3: Proposed Works for Kumbh Mela 2010, Haridwar

S.No.	Department Name	Permanent works	Temporary works	Total money (in lakh)
1.	Public works dept.,Haridwar	8611.20		8611.20
2.	Public works dept., Rishikesh	625.00		625.00
3.	Public woeks dept., Narendra Nagar	860.05		860.05
4.	Uttarakhand Power corporation	4595.00		4595.00
5.	Irrigation dept., Haridwar	3143.00		3143.00
6.	Irrigation works, Dehradun	1348.32		1348.32
7.	Uttarakhand Pey Jal Nigam, Haridwar	2626.00	1485.00	4111.00
8.	Uttarakhand Pey Jal Nigam, Rishikesh	271.50	11.80	283.30
9.	Uttarakhand Pey Jal Nigam, Munikireti	185.00	70.00	255.00
10.	Ganga Pollution control Board	2350.00		2350.00
11.	Haridwar development Authority	9322.00		9322.00
12.	Nagar Palika Parishad, Haridwar	1677.42		1677.42
13.	Nagar Palika Parishad, Rurki	278.00		278.00
14.	Nagar Palika Parishad, Rishikesh	758.03		758.03
15.	Nagar Panchayat, Jhabrera	53.15		53.15
16.	Nagar Panchayat, Munikireti	190.00		190.00
17.	Nagar Panchayat, Laksar	94.00	1.50	95.50
18.	Health department		1300.80	1300.80
19.	Forest office, Haridwar	24.00		24.00
20.	Raja ji National Park			
21.	District Office		9.71	9.71
22.	Dairy department		193.97	193.97
23.	State Transport department		60.00	60.00
24.	Transport Coporation		131.00	131.00
25.	Northern Railway			
26.	Bridge Corporation			
27.	Mela Adhishthan		550.00	550.00
28.	Information & Public Relation		113.00	113.00
29.	Tourism dept.	20.00	50.40	70.40
30.	Animal husbandry	55.00	23.50	78.50
31.	Police dept.			
32.	Electricity investigation			
	Total	**37086.67**	**4000.68**	**41087.35**

* Installation of CCTV at Kharkhari, Upper Road etc may be included in the proposed work

ANNEX 7.4: Details of Sub Projects of Road and Transport

Annex to the calculation of Projects			
Traffic singh board (L S)	Number	400	
Road Marking (L S)	m^2	7500	
Reflectors	km		
Delhi- Niti pass road	11.5		
Jwalapur - Laltarao road	4.7		
Bhimgoda Link road	0.3		
Sapt rishi Ashram road	1.65		
Arya nagar to karach road junction road	0.6		
Tulsi chowk to ugrasen chowk	1.2		
Chandighat to DN Road near Lalta Rao.	0.8		
Kankhal - jwalapur road	1.1		
Hill byepass road	6.4		
Mayapur dam to Laltarao	0.9		
Tibdi road	1.2		
Shankarya chowk to Chowk bazar	1.7		
Kankhal - Sanyas road	1.7		
Jwlapur Railway crossings to Ambedkar nagar	0.8		
Tulsi chowk to Siv murti chowk	0.6		
Total	**35.15**		
Guard Rail	**length(km)**	**length(m)**	
Jatwara Bridge to Bhupatwala Via Har-Ki-Pauri (DN road) Guard rail	9.3	18600	
Jwalapur to Lalta Rao Road upto Ranipur Mod	2.7	5400	
Kankhal- Jwalapur road.	1.1	2200	
Singhdwar to Shankar Ashram Road	0.5	1000	
Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	1.8	3600	
Tulsi Chowk to Shiv Murti Chowk	0.6	1200	
Chandighat to DN Road near Lalta Rao.	0.8	1600	
Total	**16.80**	**33600.00**	
FOOTPATH (BOTH SIDES)	**Length(m)**	**Width(m)**	area (sq m)
Jatwara Bridge to Bhupatwala Via Har-Ki-Pauri (DN road) Guard rail	11500	1.5	34500
Jwalapur to Lalta Rao Road upto Ranipur Mod	2700	1.5	8100
Kankhal- Jwalapur road.	1100	1.5	3300
Arya Nagar to kadach Road Junction	600	1.5	1800
Singhdwar to Shankar Ashram Road	500	1.5	1500
Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	1800	1.5	5400
Tulsi Chowk to Shiv Murti Chowk	600	1.5	1800
Tulsi chowk to ugrasen chowk	1200	1.5	3600
Chandighat to DN Road near Lalta Rao.	800	1.5	2400
Saptrishi Ashram Road	1650	1.5	4950
On other city internal roads/lanes	40000	1.0	80000
Total	**62450.0**		**147350.0**
Traffic Education Awareness Programme	**Qty**	**Cost L S**	
Independet consultants(to conduct study for 5 years)	5 yrs	20	
Development traffic education modules		30	
Development of traffic training parks (2 nos.)	2 nos.	100	
Traffic education programme for 10 years	10 yrs	50	
Total		**200**	
Off-street Parking	**Area (sq m)**	**Area (sq**	
Old Bus Stand (Multilevel)	6000	18000	514
Rishikul Mandi (Multilevel)	40000	120000	3429
Ramlila ground (Multilevel)	20000	60000	1714
Pant Dweep (Multilevel)	60000	180000	5143
Chandi Dweep along with Public eminities eg. Toilets, restaurant and	75000	75000	2143
Laljiwala (1 STOREY)	100000	100000	2857
Baba Dudhadhari (Bhupatwala).	200000	200000	5714
Dhobhi ghat (Bairagi) - only during Ardh Kumbh/Kumbh Mela.(1	100000	100000	2857
Bhairon Akhada for 2 wheelers	10000	30000	857
On BHEL land near Bhagat singh Chowk for Jwalapur Avas Vikas	5000	15000	429
Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur –	30000	90000	2571
Total	**550000**	**988000**	
Junctions	**Total no.**		
Priority 1	13		
Priority 2	11		
Total	**24**		
Widening and strengthening/ of existing roads	**Length (KM)**	**Lane**	**Total(Lane.km)**
Jatwara Bridge to Laltarao road (DN road)- widening by adding	8	1	8

Annex to the calculation of Projects			
Jwalapur to Laltarao road – Widening by adding additional 1 lane	6.5	1	6.5
Bhimgoda Link Road – Widening from 4.5m to 7.0m	0.6	1	0.6
Motichur Railway feeder – widening from 3 m to 5.5m.	0.4	1	0.4
Saptrishi Ashram Road- widening from 5.5m to 7.0m.	1.65	0.5	0.825
Strengthening of existing Kutcha/Khranja Roads as per annexure 1(in	28	2	56
Widening of Jwalapur - Laksar road	4	2	8
			80.325
Overlaying of existing roads(as proposed for 2010 Kumbh mela)			
Jatwara Bridge to Bhupatwala (DN road)-	11.5	2.5	28.75
Jwalapur to Chandi ghat chowk via Laltarao road –	8	2	16.00
Motichur Railway feeder road	0.4	1	0.40
Bhimgoda Link Road	0.45	1.5	0.68
Saptrishi Ashram Road	1.65	1.5	2.475
			48.3
New Roads and byepasses	**Length (KM)**	**Lane**	**Total**
Hill byepass	6.4	2	12.8
Byepass from Before Jwalapur on NH-58 to near Sidh sot on NH-74	8	2	16.0
Total			**28.8**
Roads			
New Road covering kadatch nalla including strengthening of	2	1	2.0
Total			**2.0**
ROBs /Elevated Roads	**Length (m)**	**width(m)**	**area(sq m)**
Widening (7m) of existing ROB On D-N Road	100	7	700
ROB on Road Connecting Arya Nagar Chowk to Kadach road	600	7	4200
6m wide elevated road for Pedestrian between Laltarao and Motichur	4000	6	24000
Total			**28900**
New Bridges			
2 Lane bridges to connect N.H.58 with Chandidweep -2 Nos.	100	7	**1400**
2 Lane Pedestrian bridges along with pedestrian way from	150	7	**1050**
Bridge connecting Laljiwala and Chandidweep	100	7	**700**
Bridge on proposed new byepass over Ganga river	1500	7	**10500**
Bridge in place of causeway on Jwalapur - Laltarao road	60	10.5	**630**
	M	NO.	**TOTAL (M)**
Channelisation of stream between NH 58 and Chandidweepfor spill	1500	2	**3000**
Elevated road along the river	**Length(km)**	**width(m)**	**Total (sq m)**
2 Lane Road along with foot path connecting Chandighat Chowk to	500	7	3500
Motorized boats are proposed to carry the pedestrian traffic between			

Details of Projects

S.No.	Projects	Total Amount (Rs lakh)
A.	**Traffic Management**	
1	**Traffic singh board (L S)**	**14.00**
2	**Road Marking (L S)**	**3.75**
3A	**Reflectors**	
	Delhi- Niti pass road	6.90
	Jwalapur - Laltarao road	2.82
	Bhimgoda Link road	0.18
	Sapt rishi Ashram road	0.99
	Arya nagar to karach road junction road	0.36
	Tulsi chowk to ugrasen chowk	0.72
	Chandighat to DN Road near Lalta Rao.	0.48
	Kankhal - jwalapur road	0.66
	Hill byepass road	3.84
	Mayapur dam to Laltarao	0.54
	Tibdi road	0.72
	Shankarya chowk to Chowk bazar	1.02
	Kankhal - Sanyas road	1.02
	Jwlapur Railway crossings to Ambedkar nagar	0.48
	Tulsi chowk to Siv murti chowk	0.36
	Sub-Total	**21.09**
3B	**Road furnitures**	**35.00**
4	**Guard rail**	
	Jwalapur to Lalta Rao Road upto Ranipur Mod	372.00

S.No.	Projects	Total Amount (Rs lakh)
	Kankhal- Jwalapur road.	108.00
	Arya Nagar to kadach Road Junction	44.00
	Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	20.00
	Tulsi Chowk to Shiv Murti Chowk	72.00
	Tulsi chowk to ugrasen chowk	24.00
	Saptrishi Ashram Road	32.00
	Sub-Total	**672.00**
5	**Footpath (with covered drain) both sides**	
	Jatwara Bridge to Bhupatwala Via Har-Ki-Pauri (DN road) Guard rail upto Bhimgoda.	690.00
	Jwalapur to Lalta Rao Road upto Ranipur Mod	162.00
	Kankhal- Jwalapur road.	66.00
	Arya Nagar to kadach Road Junction	36.00
	Singhdwar to Shankar Ashram Road	30.00
	Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	108.00
	Tulsi Chowk to Shiv Murti Chowk	36.00
	Tulsi chowk to ugrasen chowk	72.00
	Chandighat to DN Road near Lalta Rao.	48.00
	Saptrishi Ashram Road	99.00
	On other city internal roads/lanes	1600.00
	Sub-Total	**2947.00**
6	**Traffic Education Awareness Programme**	
	Independet consultants(to conduct study for 5 years)	20.00
	Development traffic education modules	30.00
	Development of traffic training parks (2 nos.)	100.00
	Traffic education programme for 10 years	50.00
	Sub-Total	**200.00**
	Total (Traffic Management)	**3892.84**
B	**Off-street Parking (3 storey)**	
	Old Bus Stand (Multilevel)	810.00
	Rishikul Mandi (Multilevel)	5400.00
	Ramlila ground (Multilevel)	2700.00
	Pant Dweep (Multilevel)	8100.00
	Chandi Dweep along with Public eminities eg. Toilets, restaurant and bathing ghats.	3375.00
	Laljiwala	4500.00
	Baba Dudhadhari (Bhupatwala).	9000.00
	Dhobhi ghat (Bairagi) - only during Ardh Kumbh/Kumbh Mela.	4500.00
	Bhairon Akhada for 2 wheelers	1350.00
	On BHEL land near Bhagat singh Chowk for Jwalapur Avas Vikas market Complex	675.00
	Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur – Irrigation Dept. Land.	4050.00
	Total	**44460.00**
C	**Amenities at Proposed Parking places including beautification of the area**	
	Old Bus Stand (Multilevel)	200.00
	Rishikul Mandi (Multilevel)	250.00
	Ramlila ground (Multilevel)	50.00
	Pant Dweep (Multilevel)	500.00
	Chandi Dweep along with Public emenities eg. Toilets, restaurant and bathing ghats.	2000.00
	Laljiwala	200.00
	Baba Dudhadhari (Bhupatwala).	250.00
	Dhobhi ghat (Bairagi) - only during Ardh Kumbh/Kumbh Mela.	250.00
	Bhairon Akhada for 2 wheelers	50.00
	On BHEL land near Bhagat singh Chowk for Jwalapur Avas Vikas market Complex	50.00
	Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur – Irrigation Dept. Land.	50.00
	Total	**3850.00**
D	**Junctions Improvement including signal**	
	Priority 1	182.00
	Priority 2	154.00
	Total	**336.00**
E1	**Widening and Strengthening of existing roads**	
	Jatwara Bridge to Laltarao road (DN road)- widening by adding additional 1 lane.	400.00
	Jwalapur to Laltarao road – Widening by adding additional 1 lane including Bridge in place of Cause way.	325.00

S.No.	Projects	Total Amount (Rs lakh)
	Bhimgoda Link Road – Widening from 4.5m to 7.0m	30.00
	Motichur Railway feeder – widening from 3 m to 5.5m.	20.00
	Saptrishi Ashram Road- widening from 5.5m to 7.0m.	41.25
	Strengthening of existing Kutcha/Khranja Roads as per annexure 1(in old city area), assuming average width is 7m	2800.00
	Total	**3616.25**
E2	**Overlaying of existing roads(as proposed for 2010 Kumbh mela)**	
	Jatwara Bridge to Bhupatwala (DN road)-	575.00
	Jwalapur to Chandi ghat chowk via Laltarao road –	320.00
	Motichur Railway feeder road	8.00
	Bhimgoda Link Road	13.50
	Saptrishi Ashram Road	49.50
		966.00
F	**New Byepasses**	
1	Hill byepass	1408.00
	Total	**1408.00**
G	**New Road through Nallah**	
1	New Road covering kadatch nalla including strengthening of adjascent road the nallah	360.00
	Total	**360.00**
H	**Grade Separators**	
1	**ROBs /Elevated Roads**	
a	Widening (7m) of existing ROB On D-N Road	147.00
b	ROB on Road Connecting Arya Nagar Chowk to Kadach road	882.00
c	6m wide elevated road for Pedestrian between Laltarao and Motichur Railway feeder road over upper road with stair cases at appropriate locations.	5040.00
	Sub total	**6069.00**
2	**Bridges**	
a	2 Lane bridges to connect N.H.58 with Chandidweep -2 Nos.	294.00
b	2 Lane Pedestrian bridges along with pedestrian way from Chandidweep to Har ki Pairi.	220.50
c	Bridge connecting Laljiwala and Chandidweep	147.00
e	Bridge in place of causeway on Jwalapur - Laltarao road	132.30
	Sub total(Bridges)	**793.80**
	Total (Grade Separators)	**6862.80**
I	**Channelisation of stream between NH 58 and Chandi dweep for spill water from canal**	**750.00**
J	**Elevated road through the river**	
	2 Lane Road along with footpath connecting Chandighat Chowk to DN Road through Lalta Rao along with bridge over Ganga Canal.	**735.00**
K	**Motorized boats are proposed to carry Pedestrian Traffic between Damkothi and Har ki Pauri**	**2000.00**
	Grand Total	**69236.89**
	STREET LIGHTS	
	New Electric poles with lights	**600.00**
	High Mask light at all proposed parking lots	**1000.00**
	Total	**1600.00**

Broad Cost Estimates of Projects

Projects	Unit	Quantity	Unit Rate (Rs)	Total Amount (Rs lakh)
Traffic Management				
Traffic singh board (L S)	**Number**	**400.00**	3,500	**14.00**
Road Marking (L S)	**m2**	**600.00**	625	**3.75**
Reflectors				
Delhi- Niti pass road	km	11.50	60,000	6.90
Jwalapur - Laltarao road	km	4.70	60,000	2.82
Bhimgoda Link road	km	0.30	60,000	0.18
Sapt rishi Ashram road	km	1.65	60,000	0.99
Arya nagar to karach road junction road	km	0.60	60,000	0.36
Tulsi chowk to ugrasen chowk	km	1.20	60,000	0.72
Chandighat to DN Road near Lalta Rao.	km	0.80	60,000	0.48
Kankhal - jwalapur road	km	1.10	60,000	0.66
Hill byepass road	km	6.40	60,000	3.84
Mayapur dam to Laltarao	km	0.90	60,000	0.54
Tibdi road	km	1.20	60,000	0.72
Shankarya chowk to Chowk bazar	km	1.70	60,000	1.02
Kankhal - Sanyas road	km	1.70	60,000	1.02
Jwlapur Railway crossings to Ambedkar nagar	km	0.80	60,000	0.48
Tulsi chowk to Siv murti chowk	km	0.60	60,000	0.36
Sub-Total		**35.15**		**21.09**
Road furnitures	km	**175.00**	20000	**35.00**
Guard rail				
Jwalapur to Lalta Rao Road upto Ranipur Mod	r m	18600.00	2000	372.00
Kankhal- Jwalapur road.	r m	5400.00	2000	108.00
Arya Nagar to kadach Road Junction	r m	2200.00	2000	44.00
Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	r m	1000.00	2000	20.00
Tulsi Chowk to Shiv Murti Chowk	r m	3600.00	2000	72.00
Tulsi chowk to ugrasen chowk	r m	1200.00	2000	24.00
Saptrishi Ashram Road	r m	1600.00	2000	32.00
Sub-Total		**33600.00**		**672.00**
Footpath (with covered drain) both sides				
Jatwara Bridge to Bhupatwala Via Har-Ki-Pauri (DN road) Guard rail upto Bhimgoda.	sq m	34500.00	2000	690.00
Jwalapur to Lalta Rao Road upto Ranipur Mod	sq m	8100.00	2000	162.00
Kankhal- Jwalapur road.	sq m	3300.00	2000	66.00
Arya Nagar to kadach Road Junction	sq m	1800.00	2000	36.00
Singhdwar to Shankar Ashram Road	sq m	1500.00	2000	30.00
Kankhal – Jwalapur Rd(Singhdwar to Desh Rakshak Chowk)	sq m	5400.00	2000	108.00
Tulsi Chowk to Shiv Murti Chowk	sq m	1800.00	2000	36.00
Tulsi chowk to ugrasen chowk	sq m	3600.00	2000	72.00
Chandighat to DN Road near Lalta Rao.	sq m	2400.00	2000	48.00
Saptrishi Ashram Road	sq m	4950.00	2000	99.00
On other city internal roads/lanes	sq m	80000.00	2000	1600.00
Sub-Total		**67350.00**		**2947.00**
Traffic Education Awareness Programme				
Independet consultants(to conduct study for 5 years)	yrs	5.00	400,000	20.00
Development traffic education modules	L S			30.00
Development of traffic training parks (2 nos.)	nos.	2.00	5,000,000	100.00
Traffic education programme for 10 years	yrs	10.00	500,000	50.00
Sub-Total				**200.00**
Total (Traffic Management)				**3892.84**
Off-street Parking (3 storey)				
Old Bus Stand (Multilevel)	sq m	18000.00	4500	810.00
Rishikul Mandi (Multilevel)	sq m	120000.00	4500	5400.00
Ramlila ground (Multilevel)	sq m	60000.00	4500	2700.00
Pant Dweep (Multilevel)	sq m	180000.00	4500	8100.00
Chandi Dweep along with Public eminities eg. Toilets, restaurant and bathing ghats.	sq m	75000.00	4500	3375.00
Laljiwala	sq m	100000.00	4500	4500.00

Projects	Unit	Quantity	Unit Rate (Rs)	Total Amount (Rs lakh)
Baba Dudhadhari (Bhupatwala).	sq m	200000.00	4500	9000.00
Dhobhi ghat (Bairagi) - only during Ardh Kumbh/Kumbh Mela.	sq m	100000.00	4500	4500.00
Bhairon Akhada for 2 wheelers	sq m	30000.00	4500	1350.00
On BHEL land near Bhagat singh Chowk for Jwalapur Avas Vikas market Complex	sq m	15000.00	4500	675.00
Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur – Irrigation Dept. Land.	sq m	90000.00	4500	4050.00
Total		**988000.00**		**44460.00**
Amenities at Proposed Parking places including beautification of the area				
Old Bus Stand (Multilevel)	L S			200.00
Rishikul Mandi (Multilevel)	L S			250.00
Ramlila ground (Multilevel)	L S			50.00
Pant Dweep (Multilevel)	L S			500.00
Chandi Dweep along with Public emenities eg. Toilets, restaurant and bathing ghats.	L S			2000.00
Laljiwala	L S			200.00
Baba Dudhadhari (Bhupatwala).	L S			250.00
Dhobhi ghat (Bairagi) - only during Ardh Kumbh/Kumbh Mela.	L S			250.00
Bhairon Akhada for 2 wheelers	L S			50.00
On BHEL land near Bhagat singh Chowk for Jwalapur Avas Vikas market Complex	L S			50.00
Near Canal in front of Balmiki Basti (Multi Level) in Jwalapur – Irrigation Dept. Land.	L S			50.00
Total				**3850.00**
Junctions Improvement including signal				
Priority 1	per location	13.00	1400000	182.00
Priority 2	per location	11.00	1400000	154.00
Total		**24.00**		**336.00**
Widening and Strengthening of existing roads				
Jatwara Bridge to Laltarao road (DN road)- widening by adding additional 1 lane.	lane/ km	8.00	5000000	400.00
Jwalapur to Laltarao road – Widening by adding additional 1 lane including Bridge in place of Cause way.	lane/ km	6.50	5000000	325.00
Bhimgoda Link Road – Widening from 4.5m to 7.0m	lane/ km	0.60	5000000	30.00
Motichur Railway feeder – widening from 3 m to 5.5m.	lane/ km	0.40	5000000	20.00
Saptrishi Ashram Road- widening from 5.5m to 7.0m.	lane/ km	0.83	5000000	41.25
Strengthening of existing Kutcha/Khranja Roads as per annex 1(in old city area), assuming average width is 7m	lane/ km	56.00	5000000	2800.00
Widening of Laskar road	lane/ km	8.00	5000000	400.00
Total		**80.33**		**4016.25**
Overlaying of existing roads(as proposed for 2010 Kumbh mela)				
Jatwara Bridge to Bhupatwala (DN road)-	lane/ km	28.75	2000000	575.00
Jwalapur to Chandi ghat chowk via Laltarao road –	lane/ km	16.00	2000000	320.00
Motichur Railway feeder road	lane/ km	0.40	2000000	8.00
Bhimgoda Link Road	lane/ km	0.68	2000000	13.50
Saptrishi Ashram Road	lane/ km	2.48	2000000	49.50
Sub total				**966.00**
New Byepasses				
Hill byepass	lane/ km	12.80	11000000	1408.00
Byepass from Before Jwalapur on NH-58 to near Sidh sot on NH-74	lane/ km	16.00	11000000	1760.00
Total		28.80		**3168.00**
New Road through Nallah				
New Road covering kadatch nalla including strengthening of adjascent road the nallah	lane/ km	2.00	18000000	360.00
Total				**360.00**
Grade Separators				
ROBs /Elevated Roads				
Widening (7m) of existing ROB On D-N Road	sq m	700.00	21000	147.00

Projects	Unit	Quantity	Unit Rate (Rs)	Total Amount (Rs lakh)
ROB on Road Connecting Arya Nagar Chowk to Kadach road	sq m	4200.00	21000	882.00
6m wide elevated road for Pedestrian between Laltarao and Motichur Railway feeder road over upper road with stair cases at appropriate locations.	sq m	24000.00	21000	5040.00
Sub total		**28900.00**		**6069.00**
Bridges				
2 Lane bridges to connect N.H.58 with Chandidweep -2 Nos.	sq m	1400.00	21000	294.00
2 Lane Pedestrian bridges along with pedestrian way from Chandidweep to Har ki Pairi.	sq m	1050.00	21000	220.50
Bridge connecting Laljiwala and Chandidweep	sq m	700.00	21000	147.00
Bridge on proposed new byepass over Ganga river	sq m	10500.00	21000	2205.00
Bridge in place of causeway on Jwalapur - Laltarao road	sq m	630.00	21000	132.30
Sub total(Bridges)				**2998.80**
Total (Grade Separators)				**9067.80**
Channelisation of stream between NH 58 and Chandi dweep for spill water from canal	**m**	**3000.00**	25000	**750.00**
Elevated road through the river				
2 Lane Road along with footpath connecting Chandighat Chowk to DN Road through Lalta Rao along with bridge over Ganga Canal.	sq m	3500.00	21000	**735.00**
Motorized boats are proposed to carry Pedestrian Traffic between Damkothi and Har ki Pauri	L S			**2000.00**
High Capacity Mass Rapid Transit System (Monorail)	KM	**15.00**	1200000000	**180000.00**
Grand Total (Roads & Transport)				**253601.89**
Physical contingency@ 7.5%				19020.14
Price contingency@ 5.0%				12680.09
Grand Total including contingencies				**285302.13**
STREET LIGHTS				
New Electric poles with lights	nos.	12000.00	5000	600.00
High Mask light at all proposed parking lots	L S			1000.00
Total				**1600.00**