



Core Service Infrastructure Development: A Need Of The Time In Dehradun Smart City

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Abstract

The smart city mission was launched by the Hon' PM Govt. of India in June 2015 for 100 smart cities in India with a visionary concept & aim to provide a better, futuristic, self sustainable livelihood for the citizens of these cities. Dehradun the state capital of Uttarakhand was selected in 3rd round in June 2017 for Smart City Mission implementation.

The Dehradun Smart City project aims to transform the city into a sustainable and livable urban center. However, the city's core services infrastructure is facing numerous challenges that need to be addressed. This paper identifies eight key issues of concern, including traffic density and jam, overhanging electric and communication cables, pollution, road safety, safety of old age and isolated citizens, availability of easy and world-class health facilities, 24×7 water supply, and uninterrupted electric supply. The paper proposes solutions to these challenges and emphasizes the need for a comprehensive approach to develop the city's core services infrastructure.

The Smart City Mission launched to improve the existing urban infrastructure with retrofitting assumptions and latest improved technology in core sector infrastructure development. The aim to retrofit the latest innovative ideas and technology to develop a successful role model, which can be expanded and implemented PAN city in future. Unfortunately Dehradun could not perform well and as per the Vision of Smart City Mission of Government of India even in initial face. This bitter experience of management and implementation of smart city projects of Phase-1 is pulling the city's claim to the end of the Smart City Era in Future course.

Key words: PAN- Presence Across Nation, GOI-Government Of India, Doon-Dehradun, SCM-Smart City Mission, UPCL-Uttarakhand Power Corporation Limited, ABD-Area Based Development, ONGC- Oil and Natural Gas Corporation, DGP- Director General of Police, CCTV-Closed-Circuit Television, CEO-Chief Executive Officer, SCADA-Supervisory Control and Data Acquisition, GPS-Global Positioning System

Introduction: Dehradun city is popularly known for school education and beautifully surrounded by high hills in Doon Valley. It is well connected to Himachal, Punjab, Haryana and Uttar Pradesh states. Dehradun city is connected to these states not only by rail and road but air connectivity is also available to most of the state capitals of India from Jolly Grant Airport, which is 25 Kms. away from Dehradun City.

A very ambitious and only one of its kind in India project of National Highway Authority is Elevated Delhi-Dehradun Expressway. The project highlights "The Delhi-Dehradun expressway corridor project aims to reduce travel time between the two cities from 6 hours to 2.5 hours by 2025. The new

elevated road, almost complete, will go through Baghpat and Saharanpur, bypassing the existing longer route. This includes a significant stretch through Rajaji National Park, cutting travel time significantly.

A much highlighted "Lekhak Gaon now up in Doon, answer to Vajpayee's worry over 'writers space'" In Dehradun: A unique facility, named 'Lekhak Gaon' (Writers' Village) and spread over 25 acres in the lush-green Thano on the outskirts of Dehradun, was inaugurated by ex-President Ram Nath Kovind, reported by Kautilya Singh / Oct 25, 2024, (<https://timesofindia.indiatimes.com/topic/ram-nath-kovind>).

The initiative, designed as a space for writers, has a main building, library, museum and writers' cottage along with a 'Bhojanalaya' that serves traditional Uttarakhand dishes. Ex-CM and Former Minister of Education GOI, Dr. Ramesh Pokhriyal Nishank, the man who visualized and pushed for it, said he got the idea of a writers' village after he heard former PM Atal Bihari Vajpayee expressing anguish about "writers in the country not being given enough respect and space".

But a crucial question comes in mind is the existing Infrastructure capable enough to withstand this massive floating tourists and migrated population during regular time and specifically on international events of cultural and intellectual importance.

Objective: Objective of this paper is to study and explore the issues of concern which are to be managed on priority by Dehradun Smart City Project governing agencies and authorities.

Literature Review: The study of this paper is based on reviewing and analysis of data available on SCM web portal, reviewing News papers/Journals and various reports of Dehradun & Other Smart City Mission projects.

Methodology: Secondary data collection and analyzing the actual project work progress status in field by observation, work progress status reports, published news reports about Dehradun & other Smart City progress in media.

Discussion regarding Core Service and Infrastructure Development: The Dehradun Smart City project is a flagship initiative of the Government of India aimed at transforming the city into a sustainable and livable urban center. The project focuses on developing the city's core services infrastructure, including transportation, energy, water, waste and safety/Security management of citizens in Smart Manner.

Dehradun a city of greater importance due to above mentioned highlights is facing numerous challenges and concerns that need to be addressed as follows;

Traffic Density and Jam: The city's roads are congested, leading to traffic jams and air pollution. An unwanted and unexpected event of regular road rages between vehicle riders is very common in Dehradun. This is a new challenge for Smart City authorities to manage with great importance and care mostly in peak hours in morning and evening. To address this issue, the city needs to develop a comprehensive transportation plan that includes the development of public transportation systems, pedestrian-friendly infrastructure, and intelligent traffic management systems.



Picture 1 Traffic Jam Dehradun creating Road Rages

Bindal and Rishipana rivers are badly affected by unauthorized landfills, dumping solid and untreated sewage waste, construction debris. The river side encroachment has been converted these rivers in narrow seasonal storm water and sewage waste drains. A huge population which is unauthorized settled on both sides of these rivers, ultimately converted big slums along the life line of Dehradun.

A net work of Non Motorized Transit (NMT) can be planned and implemented to for short distance and narrow lanes/streets. Rishipana and Bindal Rivers including their tributaries can be developed as Non Motorized Transit with beautification of their approaches and strengthening river stream.

A great initiative has already been successfully implemented in Jabalpur Smart City over Omti Nala a waste drain of approximately 10 meter in width across entire Jabalpur City, which is a national awarded project under Smart City Mission. Initial cost of the projects can be compensated by development of small commercial and recreational spaces. Cycle tracks, children's play and fitness centers along sides of these Non Motorized Transit.



Picture 2 Aerial View of Non Motorized Transit Jabalpur Smart City

Overhanging Electric and Communication Cables: The city's electric and communication cables are overhanging, posing a safety risk to citizens. To address this issue, the city needs to develop an underground cabling system that is safe, reliable, and efficient. Any way the work of 930 Km electric

lines has been started by UPCL and ADB as reported in "Amar Ujala, Dehradun" dt. 25.11.2024. Execution of this work should be expedited to get the desired results with interdepartmental coordination.

Pollution: The city is experiencing high levels of air and water pollution, posing a risk to citizens' health. To address this issue, the city needs to develop a comprehensive pollution control plan that includes the development of green spaces, Solid waste management systems, and pollution monitoring systems. City roads are always covered with dust, debris and scattered plastic waste.

The cleaning personals deputed for brooming streets and roads are simply busy in useless exercise by cleaning the same quantity of dust of road's surface. The dust is not being collected and disposed at designated location. The collected solid waste is just being burnt openly along road or street sides, ultimately creating a big issue of air pollution.

Road Safety: The city's roads are unsafe, leading to accidents and injuries. A very heart shattering accident occurred at ONGC chowk in Dehradun on Tuesday, November 12, 2024, and this unfortunate incident taken 6 youths.

New DGP of Uttrakhand who taken over the charge in November 2024 addressed this issue, and mentioned that the city and other areas needs to develop a comprehensive road safety plan. He also mentioned that a work plan shall be prepared with involvement of responsible departments.

It is suggested to prepare a comprehensive micro level plan should be developed with pedestrian-friendly infrastructure, intelligent traffic management systems, and public awareness campaigns. Implementation of the traffic management plan can be executed with interdepartmental coordination between various government and public agencies.

Safety of Old Age and Isolated Citizens: The city's old age and isolated citizens are vulnerable to safety risks, including crime and accidents. A very horrific incident occurred on December 9, 2024 in Dehradun with 75 years old aged retired ONGC Engineer, who was allegedly killed brutally in his house, who was residing alone and isolated.

Dehradun Smart City has installed thousand of CCTV cameras under Smart City Mission projects but it is a bitter fact that maximum of these are not in function. This realty came in light when a fatal accident of 6 youth occurred on 12th November 2024 at ONGC Chowk. It was informed that due to cyber hacking attack on various state web portals most of the CCTV camera installed by Smart City Dehradun has been malfunctioned. It is a major glitch either technical or lack of security provisions in tender specifications and installation of city's surveillance system.

It was also mentioned and highlighted by District Magistrate Dehradun who has also taken charge CEO Smart City in review meeting with Smart City Management authority on December 8, 2024.

To address this issue, the city needs to develop an integrated safety and security plan that includes the development of community-based safety programs, emergency response systems, and public awareness campaigns. Know your neighbors for safety and security campaign should be implemented for citizen's awareness.

Availability of Easy and World-Class Health Facilities: The city's health facilities are inadequate, leading to a lack of access to quality healthcare services. The efficient use of medical resources and its technically up gradation is an issue of great concern as Minister of Health of Uttarakhand state mentioned in yearly session of State Medical Services Sangh Uttarakhand held on December 8, 2024.

To address this issue, it is required to develop a comprehensive healthcare plan that includes the development of world-class hospitals, community health centers, and public health programs.

24x7 Water Supply: The city's water supply system is inadequate, leading to a lack of access to safe and clean drinking water. To address this issue, the city needs to develop a micro level water supply plan that includes the development of a 24x7 water supply system, water treatment plants, and water conservation programs.

SCADA based monitoring system should be implemented to avoid unauthorized and waste of drinking water. SCADA system will help water management authorities to find out the leakage and controlling the required pressure at each and every Node of distribution.

A GPS tagging should be adopted for underground water pipelines and the other requirement to avoid unnecessary digging of the road sides for repair and maintenance works, which ultimately result in pollution and cleaning issues.

A review meeting chaired by Minister of Urban Development, Uttarakhand held on May 19, 2023 regarding the drinking water supply and other Smart City Works. Since then some works have been initiated and expedited but in respect of drinking water supply no visible impact reflects in water supply monitoring and management system even after 18 months.

Uninterrupted Electric Supply: The city's electric supply system is inadequate, leading to power outages and disruptions to economic activity. Regular and frequent power cuts are a serious concern to be handled carefully. Any state capital city is the mirror of development and growth of entire state. People judge the economic and infrastructure development status with the services available in a capital city either any state or country.

The frequent power cuts in Dehradun are a drawback to its image as a state capital and Smart City. The state itself is a big hydro power generator and has surplus electrical energy. But unfortunately the state is not able to fulfill its own energy demand whichever may be the reason, but any how it impacts the image of any capital and Smart City.

To manage this issue, the city needs to develop an integrated electric supply plan that includes the development of a reliable and efficient electric supply system, developing renewable energy sources, and energy conservation programs. The solar power generation may be a big source of energy which can cater and fill the gap of demand and supply at least for domestic electrical demand.

The installation cost of solar power system for individuals should be cut down to minimum affordable with subsidized pricing. The cost can be adjusted to their users and solar energy generation bills to motivate. A work plan can be implemented to install the solar panels for each and every houses phase wise, which can be apply to all household mandatorily.

Storm Water and Drainage System: Dehradun city facing a drastic situation during monsoon and heavy rains. Most of the roads submerged with overflowing storm water in rainy season due to faulty and clogged drainage system. Entire network of roadside drains are full of settled sludge, debris and plastic waste. Nagar Nigam Dehradun always start a desludging drive with huge funds before monsoon every year, but most of the de-silted material lying over the sides of these drains and resulting flushing again in drainage system.

Scattered plastic solid waste, garbage and other packing materials along shops, restaurants, and retailers is also a big challenge for city authorities to manage and abolish, which is a major cause of blockage of surface and side drainage of Dehradun. A penalty campaign being inducted by Nagar Nigam Dehradun time to time but after some time the offenders start the same practice.

Dehradun city still struggling with its door to door garbage and domestic waste collection system since a long and could not finalized any permanent agency for collection, management and treatment procedure of this biggest concern of cleaning and hygiene segment of Smart City Mission of GOI.

Conclusion:

Once full of greenery with welcoming pleasant environment Dehradun was said to be the city of leisure and best livable habitat for retired and senior citizens, today, Dehradun is almost grid locked with traffic and insufficient civic amenities. The carrying capacity of the city relative to the population has been exceeded by far a long time ago and most of this growth would probably have happened after it was declared the state capital. Dehradun also lost most of its green area due to many reasons as widening of roads, development works in Smart City Mission and unauthorized housing and commercial buildings in city and around.

The Dehradun Smart City project aims to transform the city into a sustainable and livable urban center. However, the city's core services infrastructure is facing numerous challenges that need to be addressed. This paper has identified nine key issues of concern and proposed solutions to these challenges. The city needs to develop a comprehensive approach to develop its core services infrastructure, including transportation, energy, water, and waste management. By addressing these challenges, the city can provide its citizens with a high quality of life, promote economic growth, and become a model for sustainable urban development.

The issues like Mool Niwas and Bhukanoon seems to be another political and social burning agenda which is to be handled carefully by Political and social leadership. These concerns will directly impact the demographic and economic direction of growth, which may be either positive or negative in terms of betterment of Dehradun and entire Uttarakhand state.

Creation of jobs in service sector at local level and other self employment in Dehradun is a long awaited dilemma of policy makers and political leaders. Most of the highly qualified and technical experts do not have any opportunity to give their services in any sector not even in Dehradun but entire Uttarakhand state. They all are bound to migrate from Dehradun either to Delhi-NCR or Southern states of India for career growth and better financial rewards. We could not develop any career oriented service and industrial sector for our own Dehradun City, resulting mass migration. Seasonal or religious tourism is not sufficient enough to create jobs or employment specifically highly qualified and career oriented youths not only in Dehradun but in entire Uttarakhand state.

We have much prestigious and renowned school level educational Institute up to 12th Standard in Dehradun but have very few institute of higher education of national repute. The quality higher education system development may be the positive potential sector which can be groomed in Dehradun city and around.

Recommendations:

It is suggested to up lift the living environment and up grading basic core infrastructure of Dehradun, it is recommended to organize various citizens' awareness campaign to feel them an ownership of their city.

A joint demographic and social forum should be prepared in and around Dehradun at municipal ward level to review and monitor the progress of their ward's Smart City Projects or other government funded projects.

A dedicated social online plate form or portal should be prepared for sharing the problems, concerns and suggestion of all citizens of Dehradun in respect to development of services or core infrastructure. The social platform should be open to all and regular relevant queries should be answered by a responsible dedicated team comprising authorized nodal officer from all departments.

Reward or award schemes may be sponsored by Dehradun city administration authorities for keeping clean and maintain better ecology of individual houses, surroundings, community and commercial area in each Municipal Wards. This will encourage citizens to feel ownership about their surroundings and city.

A dash board of work progress and status of all the government funded scheme, fund utilization up dates, technical specifications, public complaints and grievances, queries, suggestions, new proposals for city should be prepared and open to all for online access irrespective of login-ID, password hurdles. This will create a great transparency, intention and belief in citizen's mind set.

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