

1. Background and purpose

The smart city mission , a major initiative of the Government aimed at bringing substantial and required changes in urban living ..

The main ingredients of such development are increase in happiness index and quality of life that depends on various factors including employment generation, material well being , good health and environment.

There is vast scope of greenfield development in the policy envisaged .

Needless to say that trying and implementing smart and innovative solutions to meet the basic needs and upgrade the standards of living, improve the quality of life towards prosperity would be a priority.

While striving to achieve the best as engineering consultants for smart cities planning, the following aims and objectives could be set:

1. Clean and green environment
2. Affordable housing and easy living / livelihoods
3. Smart connectivity and sustainable development
4. Optimum use of natural and renewable sources
5. Applications of Innovative concepts, New technologies and such methods , techniques for achieving the aforesaid objects.

In pursuance of the above ,

Conceptual master plan comprising of various greenfield development project proposals is outlined.

1.1 Application and case studies

The above concepts of fruitfully utilising and harnessing laws of nature for retrofitting, redevelopment and greenfield development are applied in examples of

a) Master planning of Mumbai Metro

b) Redevelopment of Nagpur city

c) IIT Indore, NIT Surat

And being applied in proposed development of Amravati,

Further proposed to be applied to other smart cities shortlisted

for example

Shimla to be developed as new capital region

2. The conceptual plan proposal



The new concepts / methods / techniques / technologies may be categorised as under

2.1 Transportation planning :

Targets to be achieved include safe, efficient, economic, environment friendly movement of passengers and goods in qualitative and quantitative terms .

a) Smart Transport led development :

It is about developing existing and new settlements aligned with the transport facilities (existing and new) in a comprehensive planning approach

The effort is to connect all habitats by a main and a Feeder system (May be termed primary and secondary network)

and ensure the planned developments are in accordance with the principles of total connectivity as well as affordable and convenient transportation.

b) New travel free settlements :

It is about developing existing and new stations / terminals/ junctions / ports (suitable terminology as per the location, function, utility may be taken)

Such that all the basic amenities and requirements of the population in the influence area are available with almost no travel by a motor transport.

The idea is to save time , money, fuel , traffic from congestion and the environment in the long run.

Another advantage of the new concept is the revenue generation an innovative use of 3 dimensional spaces around the new stations which in itself is a new emerging concept.

We have the successful examples of Shanghai, Dubai where underground cities have been developed in this pattern

Statutory permissions, geotechnical , seismic conditions

and such analysis however are necessary and need to be done meticulously.

Having taken care of safety and environmental concerns,

Such methods of planning and development would be a decisive step towards sustainable development.

Personalised Rapid Transportation system

c) Using renewable energy for transportation and for the demands of the population in the influence zone :

It should be possible to make best use of the renewable sources as water, sun, wind ,biomass etc to arrive at such planning model

Theoretical calculations present quite an optimistic scenario.

The new and existing parameters such as

Power generation per location with % economy and efficiency

Transportation cost per km with % economy and efficiency

Area wise reduction in environmental pollution with the new transportation facilities

Investment in the above facilities

Revenue from development at and around the new stations

Revenue from new transportation network, power generation and distribution

Increase in safety, convenience, comfort with affordability

And other social and environmental benefits

Can be evaluated from planning to implementation and upgradation

And will open up more possibilities as the trial and implementation starts on ground.

2.2 Environmental planning :

Looking for smart and innovative solutions for a good, healthy environment, the target is to eliminate and replace the sources of pollution, promote such methods and techniques that help cleaning and greening

a) New methods ,technologies for

Renewable energy making best optimum use of natural and renewable sources .

There is immense potential for such development in himalayan region and such areas with abundance of the renewable sources

The new technologies will increasing efficiency and economy of power generation and distribution in order to meet the basic needs and demands of the population in the influence area.

And further towards prosperity using direct and indirect benefits.

b) New methods , techniques, technologies for achieving

Water balance under various environmental conditions and climate

The main objective is to avoid flooding during monsoons and water scarcity during other seasons and drought situations in such areas.

Target is water for all for the essential and basic needs while avoiding the extremes

THE MAIN PARAMETERS WOULD BE

_ AMOUNT OF WATER STORED AND THE AVAILABILITY DURING THE YEAR USING NEW METHODS OF CONSERVATION AND COLLECTION OF WATER FROM VARIOUS SOURCES INCLUDING THE RAIN HARVEST

_ EFFECTIVENESS OR SPEED OF WATER DISTRIBUTION AND THE EXTENT OR THE AREA OF DISTRIBUTION AS WELL AS ECONOMIC ADVANTAGE OF THE METHOD AND THE TECHNOLOGIES

_ THE EFFICIENCY OF SEGREGATION, PURIFICATION, REUSE, RECYCLING

Integration of the above components of transport, water balancing and Power generation in a controlled and coordinated manner increase the benefits manifold

THAT OF EACH COMPONENT AND THE ENTIRE
NEW SYSTEM

c) Recreation and tourism planning and development

Promotion of new sports like rock skiing, innovative ways of creating green lungs, open spaces, plantations of pollution absorbing ,medicinal trees and herbs,

Landscaping to explore natural beauty, development of scenic views to increase the tourism potential

Modifying and creating favourite destinations for film shooting etc

Also planning a film city in the vicinity to promote art and culture which augments the employment

opportunities in the region would be a smart addition to the conceptual plan.

2.3 Regional planning and implementation

An innovative planning model can be developed by

USING ABOVE methods and techniques BASED ON the existing and new principles aforesaid in the urban as well as rural context.

Urban components in the city jurisdiction and rural components in the surrounding areas combined harmoniously could be a typical guideline for the new regional plan

3. Conclusion:

It is thus possible to achieve the objective of smart, liveable, ecofriendly, slum free , travel free cities with sustainable infrastructure

at any location using the aforesaid innovative concepts and planning techniques.

Further adoption of a comprehensive, iterative planning approach

with systematic and periodic evaluation of the main parameters of successful implementation and upgradation accordingly is recommended.

Moreso a policy that accommodates well such smart and innovative solutions will help, given the requirement of enabling legislation, statute permissions for land, resources as also the necessity of major funding and support to try and implement the above development plan with all benefits .

WITH REGARDS

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