Study of Potentiality of a Park System Along Streams for the City of Pune

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***Abstract*:- With the rapid development in cities like Pune we are losing open spaces especially public parks. As observed we have already lost substantial open spaces over the past 3 decades. The existing public parks are already saturated and not enough to cater the population. With the continuity of growth there is a question of what happens to potential public parks within the existing city. This question becomes even more relevant in today's day where a pandemic can not only halt the outdoor activities but start affecting the overall mental health and wellbeing of everyone.**

It is very important for any society to have public open spaces as recreational areas. This opens opportunities for informal gathering, areas for exercise, outdoor classes, etc. If not present the people of the city inevitably reach out to malls and multiplexes. The need of outdoor open spaces is even more as we have to consider social distancing.

The city of Pune, developed along a river front also has a number of streams which connect the hills and river bed. The natural systems are not only the lungs of the city but also valuable assets in terms of flora and fauna. The stream beds are often ignored but can they be developed to potential parks?

The purpose of this paper is to explore the potential of developing the existing streambed networks. A case study analysis method of park developments along riverfronts and along stream beds will be used to understand potentials. Students can be involved in the surveys and data collection. Conclusion will be to work out policies spanning over 3 decades , including quarantine, phasing, working out parallel cycle paths, merger with road networks and plantation out developments in present time and project a developed network of public parks for India in the future.

Key words- Park system, stream bed, public open space

INTRODUCTION

Pune city has developed along the River Mula Mutha, interspersed with small hills along the periphery. Connecting these is a series of natural streams. This web of stream beds along with its riparian zones has tremendous environmental value. These spaces are often been neglected.

The aim of this paper is to tap the potentials of development for these stream beds.

For the same, certain case studies of park systems along riverfronts and stream beds or nallahs will be carried out.

Case 1 - Emerald necklace, Boston, USA

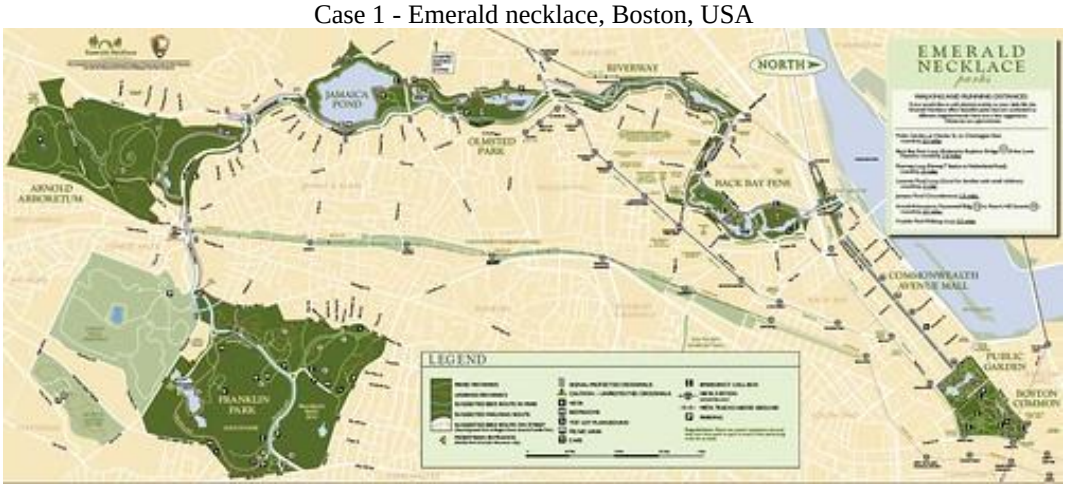

Fig. 1: plan of Emerald necklace Boston, USA

Source:https://www.emeraldnecklace.org/parkoverview/emeraldnecklace-map/

The Emerald Necklace, Boston, is a series of parks and parkways which are developed along a stream culminating into a river. Designed and developed by Fredrick law Olmstead. The project commenced in 1838, which began from cleaning up the marshlands, developing 5 parks to a system of parkways connecting all parks along the

existing stream with pathways, meadows and wetlands. This project has been successfully implemented and till date is functional.
The system of parkways has allowed the citizens of Boston to commute parallel with the Road traffic.
The medows offer a lot of open space for informal sports and games for people of all age groups.
The wetlands are the natural water treatment plants which is a sustainable option and has been working efficiently so far.

Case 2 -Parks developed along streams in Prabhat road and Bhandarkar road Pune

Fig. 2: Plan of linear park along the nallah from Prabhat road to Bhandarkar road
Source: Google Earth Maps

Prabhat road and Bhandarkar roads in Pune city have many connecting streams between them. One such bed has been converted to linear parks starting from Rear side of Symbiosis School to Marathawada college of Architecture. This park is frequented by many people in the mornings and evenings, for walking, jogging, exercise and recreational activities. The park is divided by Bhandarkar road, usage of people on both sides is observed. It is also observed that usage of the stretch of the same stream bed from Law college road to Prabhat road is lesser. This particular stretch has a vehicular road running through.
This conclude that pathways along with the traffic are mostly frequented by pedestrians walking along.
The parkways along the stream bed which don't have parallel vehicular traffic, work more successfully.

Case 3 -Osho Park.

Fig. 3: Plan of Osho park, Koregaon Park Pune
Source: Google Earth Maps

This park is developed along the stream adjoining the Osho Ashram. In comparison to case 2 this has a wider stream bed. Developed as a garden this park offers passive activities.
There are more seating areas and stroll garden.
Open to public at fixed timings it is maintained by a private organization. This park does not connect with any other open space.
It is observed that This stream park is frequented for more leisure activities than exercise areas
This concludes the larger open space has more potential to develop more than just jogging tracks.

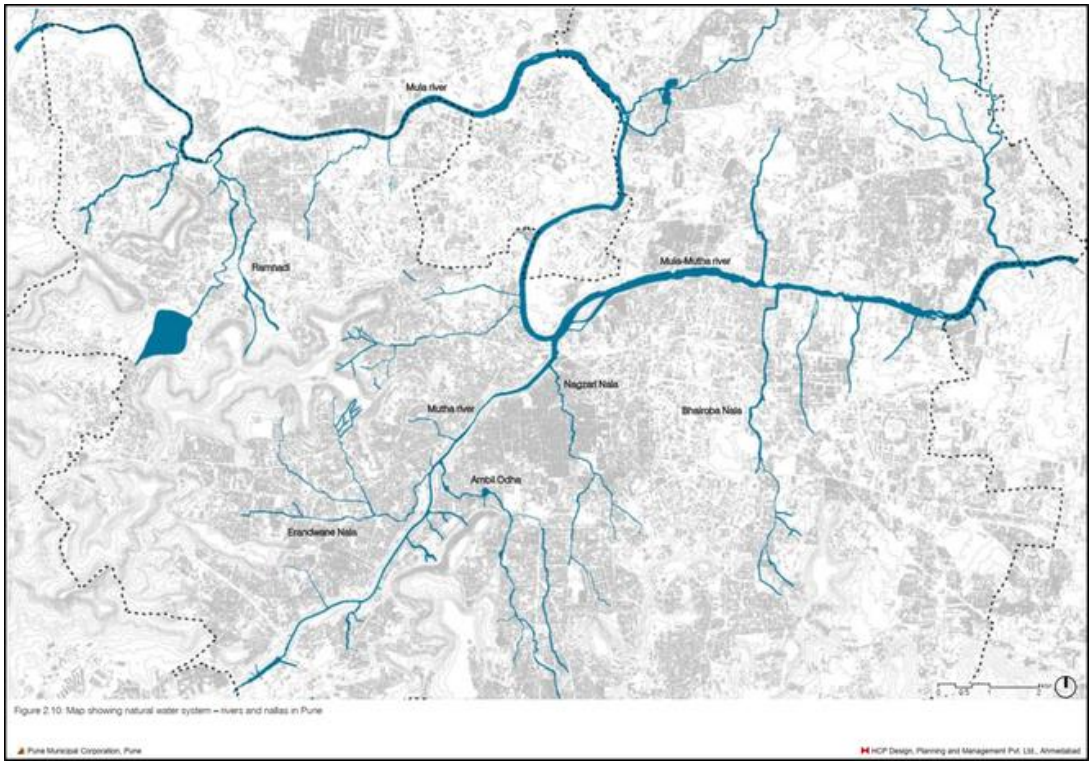

Fig. 3: Plan of Hydrology of Pune
Source:www.researchgate.net/figure/sub-watersheds-of-Mula-River-basin-source-author_fig1_324355190

As the city has developed along two rivers, expansion of the same has been concentric and restricted by the hill ranges. This has led to city developing along a lot of streams. The hydrology plan of Pune demarcates the major rivers Mula and Mutha along with a lot of streams of various sizes all through the city.

OBSERVATIONS

It is observed from the cases in Pune that the isolated examples when developed as public parks work successfully, offering as a breather in areas with high density.
The development of the park system along the stream beds can be worked out on certain policies.

1. Survey of all the stream beds within the city limit.
2. Quarantine of the stream beds is essential in this case
3. Workout policies for various parks depending on the available space and connecting roads.
4. Identify missing connections which can further strengthen the web of riparian zones

Mapping of each stretch of stream should be done in the following manner. Prepare a base map with existing features, vegetation, entrances and exits. Data of high flood lines can be obtained from the irrigation department.
The study needs to be done through the year every day for specified timings, for example
06:00 AM -09:00 AM
12:00PM – 02:00 PM
05:00PM –07: 00 PM
11:00PM- 12:00 AM

Observations needs to include usage of selected area by people, animals and birds. Water levels need to be mapped.
All observations when compiled together will give comprehensive information of the selected area. Data from All different stretches together will aid for master planning the entire park system. The study of this can span over two to three years.
This can also be developed as a project with people's participation. An excellent Example of this can be seen with *Jivit Nadi.*
In this case a group of people came together and started cleaning one part of a stream bed.
People's active participation was seen in the same making the project not only a success but also inculcating a strong sense of belonging for them.
Having various professionals and Students working on the survey and project can aid for a holistic design and planning approach.

CONCLUSION

With the assimilated data and survey proposals for development can be carried out.
Step 1) immediate cordoning out of the areas, clearing of trash from the sites, marking ecologically sensitive zones.
Step 2) working out planting policies and planting trees. Native vegetation and noninvasive species to be used.
Step 3) with the data generated, each stream bed with its unique identity can be designed further to highlight that particular aspect. For example Bird friendly trees can be planted more in numbers to attract more birds. Similarly for butterflies.
Step 4) Jogging tracks, bicycle tracks and pavilions need to be added to make the parks accessible.
Step 5) Entrance areas with parking need to be designs for larger parks and gates for smaller parks.
Step 6) Gabion walls, bridges, culverts need to be added for continuity in movements.
Step 7) Areas which get flooded and submerged need to be identified and designed as submersible landscapes.

As we are going through the pandemic, there are a lot of changes that have occurred in each individual's life.
We need to understand this and adapt to a future which will allow us our basic need of outdoor intervention even in a situation where social distancing is a norm.
Landscapes have a healing quality at not only physical but physiological level for Humans beings.

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Website documents:

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[2] www.researchgate.net/figure/sub-watersheds-of-Mula-River-basin-source-author_fig1_324355190
[3] Google Earth Maps