URBAN GREENWAYS AS PLANNING STRATEGY

Krishnanjana K
Department of Architecture
Govt. Engineering College, Thrissur, Kerala, India

Abstract— Cities across the world have developed urban greenways as a tool to tackle the problems caused by rapid and unsustainable urbanisation. In many of the countries greenways are used to achieve a number of environmental, economic, and social goals. Greenways are recreational trails that provide functions beyond recreation, such as storm water management, economic development, community development, and aesthetic improvements. However, greenways are not a new idea. The popularity of greenways has grown because greenways fulfil many functions, while bringing numerous benefits to the cities in which they are implemented.

Keywords— Greenways, Recreational trails

I. INTRODUCTION

Urban areas are great magnets to most humans. Indeed, around 2.8 billion people worldwide live in urban areas. Urban areas are the nucleus of economic growth, the major sources of new technology and wealth. However, they also face significant problems: uneven urban development, creation of economic and social ‘sink’ areas, and environmental decay (urban areas are the major consumers of natural resources and the largest producers of pollution and waste). The massive increase in urbanization and the impact of urban areas on the global environment mean that creating more sustainable urban areas is essential to sustainability at the national and international level.

The rest of the paper is organized as follows. Concept of Greenways and its advantages are explained in section II. Case studies along with analysis are presented in section III. Concluding with recommendations for planning Greenways are given in section IV.

II. CONCEPT OF GREENWAYS

A. Characteristics and functions –

When planned and executed in the right way, urban greenways tie together the environmental, economic, and social equity goals of sustainable development and lead to improved urban resilience. Changing of conditions, conceptions and tendencies lead to change of the concept and scope of greenways. There are five key characteristics for this Greenways – Linear, Linkage, Multifunctional, Consistent and Spatial strategy component of the original image detail (high frequency).

Fig. 1. 5 key characteristics

B. Benefits of Greenways –

Greenways provide many benefits that increase quality of public life with using spaces for multiple goals. Benefits of greenways can be broadly classified in to 3 categories – Environmental benefits, Economic benefits and social benefits.

Table -1 Benefits of Greenways

<table>
<thead>
<tr>
<th>Environmental benefits</th>
<th>Economic benefits</th>
<th>Social benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps to restore and protect the natural environment</td>
<td>Induce positive publicity for business</td>
<td>Can be a means of education</td>
</tr>
<tr>
<td>Support local plant and animal community</td>
<td>Enhance facilities for employees</td>
<td>Enable a better appreciation and awareness of nature and the environment</td>
</tr>
<tr>
<td>Provide wildlife corridors</td>
<td>Stimulate higher productivity</td>
<td>Provide an alternative transport route</td>
</tr>
<tr>
<td>Support</td>
<td>Provide direct</td>
<td>Enhance wellbeing</td>
</tr>
</tbody>
</table>
biodiversity  employment opportunities  through contact with nature
Protect waterways and kept unpolluted  Attract tourism and enable commercial opportunities  Provide visual relief, especially in urbanized areas
Help to reduce flood hazard  Improve the overall appeal of a community to prospective new residents  Induce healthier lifestyles
Reduce problems of soil erosion and downstream sedimentation  Increase real estate property values  Provide access and linkage between natural and cultural sites
Induce a more efficient utilization of land  Helps to create tax revenue and reduce public costs  Help to preserve monuments and historical buildings
Limit urban growth  Cost effective strategy for providing outdoor recreation  Enhance sense of community
Reduce car related family budget  Anchor for revitalizing neighborhoods and building healthy communities
Facilitate social equity and therefore, social cohesion
Positive influence on human behavior and helps to reduce crime

III. CASE STUDIES AND ANALYSIS

Urban greenways offer numerous benefits to the cities in which they are implemented, but much work goes into the creation of a greenway. Hundreds of greenway trails exist across the world presenting numerous urban greenway examples to study. How cities are planned, funded and implemented Greenways? To get an idea regarding the planning and implementation of Greenways, 3 case studies were studied. The planning processes, implementation, stakeholders involved, levels of coordination, and sources of funding for these three examples were studied.

Table -2 Case studies

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Greenways</th>
<th>Location</th>
<th>Length</th>
<th>Year opened</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High Line</td>
<td>New York</td>
<td>2.33km</td>
<td>2009</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>High Line</th>
<th>Lambro river valley</th>
<th>Multipurpose Greenway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>New York</td>
<td>Italy</td>
<td>Concord</td>
</tr>
<tr>
<td>Type of Greenway</td>
<td>Recreational greenway</td>
<td>Urban river side and natural corridor that are of ecological importance.</td>
<td>Multipurpose greenway.</td>
</tr>
<tr>
<td>Purpose of Greenway</td>
<td>To preserve the historic structure. To develop public space for people’s benefits.</td>
<td>Protection and conservation of Lambro River. Connect people with natural resources and centers of life.</td>
<td>Multipurpose greenway system to tackle the problems of rapid growth and expansion.</td>
</tr>
<tr>
<td>Implementation of Greenway</td>
<td>Public private partnership model</td>
<td>Regional level Greenway planning 4 phases</td>
<td>Greenway planning for North Carolina. Broadly 7 steps to be followed</td>
</tr>
<tr>
<td>Community participation</td>
<td>Good involvement of people.</td>
<td>Very less involvement</td>
<td>Equal importance to public</td>
</tr>
<tr>
<td>Challenges</td>
<td>Funding for the developments</td>
<td>Unawareness of people regarding</td>
<td>Unawareness of people regarding</td>
</tr>
</tbody>
</table>
To develop a greenway certain factors to be considered. All these factors together will form a Greenway

- Understanding of natural resources within the area
- Understanding of centers of life
- Analysis of all routes and networks within the area
- Connect nearby open space facilities to form recreational activities
- Link recreation areas with residential, commercial, and cultural destinations
- Reserve existing open space for future recreation areas and to conserve natural resources
- Proper planning and implementation

1. Sustainable Design
To be successful in the long term, a greenway must be designed to be physically, ecologically, and economically sustainable.

2. Aesthetic Value

When designing each greenway network, careful attention must be given to its “look and feel,” so that it is designed appropriately to its specific setting.

3. Paved Trails
The Greenways Plan proposes a combination of paved and unpaved trails, to allow for different types of uses and different types of sites. Paved surfaces can be recommended to be asphalt.

4. Natural Surface Trails
For trails located in a natural setting, or intended for use mostly by people on foot, an unpaved or “soft” trail surface is appropriate. An unpaved surface can be constructed at far lower cost than a paved trail.

5. Amenities
Amenities and features as parking, restrooms, tables and benches, trash receptacles, bike racks, lighting, welcome signage, maps and directional signs, drinking fountains, and vending machines, rent a shop for cycles etc.

V. REFERENCE

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[7] Natalia Fumagalli, Claudia Colombo, Paolo Stefano Ferrario, Giulio Senes, Alessandro Toccolini, Department of Agricultural and Environmental Sciences, University of Milan, Italy. Journal of Agricultural Engineering 2013; volume XLIV:183