A Method for Identifying and Resolving Conflicts in Urban Riverside Development

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Abstract. Today, the urban riverside is prone to conflict; it is a location in the direst the need of preserving the environment and optimizing environmental management. This paper proposes a mechanism for resolving the conflicts that may arise when developing a riverside. The river and the riverside are crucial to high-quality natural and anthropogenic systems in any kind of settlement. The riverside is not only an important natural and recreational resource; it can also compensate for the anthropogenic environmental damage. However, it is also susceptible to intense anthropogenic impact associated with suboptimal use of coastal areas, deterioration of green spaces, and a considerable reduction in the areas suitable for recreation. To resolve the existing urban conflicts pertaining to the riverside, this paper proposes an ecological stabilization method that can create a holistic territorial complex to merge the necessary natural and anthropogenic components. The method is based on identifying urban conflicts and their parties, on finding a middle ground that will fit all of them while also preserving the ecological backbone. The method helps adapt riversides to the interests and values of all urban parties, protect the water reservoirs from intense anthropogenic impact, and improve the ecological conditions.

1. Introduction

Today, the urban riverside is prone to conflict; it is a location in the direst the need of preserving the environment and optimizing environmental management. In case of small and medium-sized rivers, economic activity has many times irreversibly and negatively altered the floodplains. The extent and nature of such alterations depends on the type of economic activity, the original environmental conditions, and the direction of the bed-building processes. Virtually any such alteration has negative impact on the ecological conditions of basins, floodplains, and riverside areas.

The riverside is a recreational landscape that contains valuable natural and esthetic resources, which require a special approach to landscaping. These areas have to sustain the load the urban development subjects them to, as they are not merely an ecological backbone, but also the an element that defines the urban structure and provides recreational space to the public.

Today, riversides are facing the following common problems: extensive ecological, geological, and esthetic degradation; lack of a clear-cut communication framework; conflict of interest between
different user groups; and the functional layout being inconsistent with the today’s urban context. Some of the problems are due to errors in the development and ignorance of the natural specifics of such areas. Long accumulation of structural inconsistencies coupled with suboptimal environmental management has resulted in both urgent and dormant urban conflicts. An urban conflict is defined as a state of imbalance, in which urban development fails to perform as intended. [1].

To resolve the identified urban conflicts pertaining to the riverside, this paper proposes an improved ecological stabilization method. The method resolves urban conflicts pertaining to the riverside by differentiating the recreational loads and prioritizing the ecological backbone when planning the layout and functions of such areas. The boundaries of a recreational area can serve to devise and promote a set of strategic and tactical actions, from providing recreational infrastructure in an attempt to create regional/municipal resorts to designing the local landscapes for urban residents within the riverside locations.

2. Research Essentials
The method builds upon a conflict-based approach and seeks to balance the interests and values of nature and man in riverside areas.

Analysis of the riverside development practices identifies two organizational levels: the city level, at which such development targets the holistic urban system; and the local level, at which such development targets specific system components. Riverside areas have to sustain the load that urban development imposes on them; they are crucial to the functional planning, recreation, and landscaping. Often the river and its adjacent unbuilt areas become the heart of the city’s ecological backbone. Within the city limits, water reservoirs are city-forming, as residential development and street planning revolves around them. Urban watercourses and reservoirs are esthetically important; they are the key factor compensating for the city’s lack of recreational sites.

The level of an urban-planning decision and the scale of its consequences define the parties involved as well as the form such consequences will take. At the city level, urban planning is up to municipal authorities, expert communities, developers (investors), and the general public. Plans thus devised are outlines in project documentation, strategic and recommendatory guidelines (the urban plans, the territorial plans, the land use and development rules, the urban development strategy, standards, master plans, etc.)

Locally adopted architectural, planning, and engineering decisions are made by municipal authorities and expert communities to serve the best interests of the locals, investors, and business owners (land tenants). These decisions are reflected in the local planning projects as well as in different layouts: functional layouts, transport line maps, landscaping maps, arboretums, etc.)

The proposed method for the ecological stabilization of small and medium-sized river coasts necessitates both city-level and local-level actions; it comprises three stages: analysis, categorization (classifying the parties to conflict and the conflicts per se), and resolution (finding a way to resolve the existing and potentially arising urban conflicts). Indeed, the method is also applicable to major rivers. In that case, river basins require a regional-level analysis [2].

Consider the essence of each stage.

1. Analysis. Preliminary city-level urban analysis may comprise:
- analysis of the ecological (environmental) backbone
- analysis of social infrastructures;
- analysis of public utilities;
- visual analysis of landscapes;
- analysis of consistency with the city’s strategic development programs.

Preliminary local-level urban analysis may comprise:
- analysis of the area’s position in the structure of the urban environment;
- terrain analysis;
- dendrological analysis;
- analysis of the transport, pedestrian, and cycling infrastructures;
- analysis of social infrastructures;
- analysis of historical and cultural heritage sites;
- assessing the comfort and satisfaction of users with this area;
- analysis of the visual quality of the area

2. Categorization. Identify and classify the urban conflicts using M.V. Perkova’s classification; also identify and classify the parties in conflict [3]. Urban conflicts fall into the following types: land use conflicts, social and functional conflicts, transport conflicts, regulatory and legal conflicts, and property conflicts. These five types are further grouped by hierarchy, duration, cause and manner of emergence, manifestation, escalation/resolution strategy, and location type [4]. Further visualize the structure of such conflicts to identify the relations and interconnections between the parties (natural and legal persons legally entitled to influence the decision-making with respect to the land plot, their interests) with respect to the area in its original state.

At the city level, parties to conflict are the municipal authorities, business communities, investors and developers, the expert community, and the (local) general public. At the local level, parties to conflict are the businesspeople (tenants), the locals, the urban authorities, developers (investors), the expert community, and specific groups of locals: motorists, cyclists, persons with reduced mobility, people with children, calm or active recreation enthusiasts, and pet owners. The structural model of an urban conflict involves defining the essence of the conflict as well as the positive/negative relations in it, see Figure 1.

![Figure 1. Structural model of a city-level/local-level urban conflict related to the riverside](image-url)
3. Resolution is the final step that should produce recommendations on how to find a middle ground that will fit all the parties to conflict [5,6]; the recommendations will be mandatory to follow when stabilizing the riverside ecology. As such, they are tailored to the level of conflict and have one obligatory requirement: any middle ground should prioritize the ecological backbone and its preservation. Below are the possible resolutions for urban riverside development conflicts:

1. Enshrining the right to use the riverside in law.
2. Reclamation of degrading riverside.
3. Renewal of the dilapidated industrial areas at the riverside.
4. Renewal of the dilapidated residential quarters at the riverside.
5. Renaturation of the riverside to preserve or regenerate biodiversity.
6. Reconstruction and adaptation of the cultural heritage sites located near rivers; landscape renaturation.
7. Involving all the stakeholders in the decision-making process.

3. Conclusion
Creating a comfortable human environment for human persons is a crucial ecological challenge today. On top of rapid urbanization, it becomes imperative to bring aquatic areas to the heart of urban life once again, to recreate their lost landscapes and biodiversity [7]. Apparently, this effort will improve the ecological conditions and help create new public, pedestrian, and recreational spaces while also unlocking the cultural potential of historical heritage sites. The authors hereof believe that in a market economy, it is the conflict-based approach that can handle river degradation, especially that of small and medium-sized rivers, while also improving the ecology and contributing to sustainable development. Finding a middle ground between parties to urban conflict while prioritizing the ecological backbone will help strengthen that backbone, preserve biodiversity, create new recreational zones, reduce the functionally void areas, and get the city rid of depressed locations.

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