

## A Comprehensive Planning Model for Amalgamation of Intensification and Green Infrastructure

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**Abstract :** The dispersed-suburban model has been the dominant one across North America for the past seventy years, characterized by automobile reliance, low density, and land-use specialization. Two planning models have emerged as possible alternatives to address the ills inflicted by this development pattern. First, there is intensification, which promotes efficient infrastructure by connecting high-density, multi-functional, and walkable nodes with public transit services within the suburban landscape. Second is green infrastructure, which provides environmental health and human well-being by preserving and restoring ecosystem services. This research studies incompatibilities and the possibility of amalgamating the two alternatives in an attempt to develop a comprehensive alternative to suburban model that advocates density, multi-functionality and transit- and pedestrian-conduciveness, with measures capable of mitigating the adverse environmental impacts of compactness. The research investigates three Canadian urban growth centers, where intensification is the current planning practice, and the awareness of green infrastructure benefits is on the rise. However, these three centers are contrasted by their development stage, the presence or absence of protected natural land, their environmental approach, and their adverse environmental consequences according to the planning canons of different periods. The methods include reviewing the literature on green infrastructure planning, criticizing the Ontario provincial plans for intensification, surveying residents' preferences for alternative models, and interviewing officials who deal with the local planning for the centers. Moreover, the research draws on recalling debates between New Urbanism and Landscape/Ecological Urbanism. The case studies expose the difficulties in creating urban growth centres that accommodate green infrastructure while adhering to intensification principles. First, the dominant status of intensification and the obstacles confronting intensification have monopolized the planners' concerns. Second, the tension between green infrastructure and intensification explains the absence of the green infrastructure typologies that correspond to intensification-compatible forms and dynamics. Finally, the lack of highlighted social-economic benefits of green infrastructure reduces residents' participation. Moreover, the results from the research provide insight into predominating urbanization theories, New Urbanism and Landscape/Ecological Urbanism. In order to understand political, planning, and ecological dynamics of such blending, dexterous context-specific planning is required. Findings suggest the influence of the following factors on amalgamating intensification and green infrastructure. Initially, producing ecosystem services-based justifications for green infrastructure development in the intensification context provides an expert-driven backbone for the implementation programs. This knowledge-base should be translated to effectively imbue different urban stakeholders. Moreover, due to the limited greenfields in intensified areas, spatial distribution and development of multi-level corridors such as pedestrian-hospitable settings and transportation networks along green infrastructure measures are required. Finally, to ensure the long-term integrity of implemented green infrastructure measures, significant investment in public engagement and education, as well as clarification of management responsibilities is essential.

**Keywords :** ecosystem services, green infrastructure, intensification, planning

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