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TITLE OF PROJECT: **Integration of Remote Sensing and GIS in Urban Planning**

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ABSTRACT (150-300 words):

In order to effectively handle the intricate problems of increasing urbanization, environmental sustainability, and effective resource management, urban planning is essential. In order to improve the efficiency of urban planning procedures, this study investigates the synergistic combination of Geographic Information Systems (GIS) with Remote Sensing (RS). While GIS makes it easier to integrate, visualize, and analyze disparate information, remote sensing technologies offer a useful way to gather, process, and monitor geographical data over wide areas. A thorough understanding of urban dynamics, such as changes in land use, population growth, environmental deterioration, and infrastructure development, is made possible by the combination of RS and GIS in urban planning. This essay examines the state-of-the-art in GIS and remote sensing technologies, emphasizing how they are used in urban planning. It talks about how merging these technologies can lead to better decision-making abilities, real-time data collecting, and increased accuracy. The article also discusses certain case studies where the successful application of RS and GIS integration in urban planning projects is discussed. These case studies highlight the useful advantages of the combined strategy, such as effective environmental monitoring, transportation planning, disaster management, and land use mapping. In addition, the difficulties and restrictions related to the combination of RS and GIS in urban planning are examined, along with possible fixes and future paths for investigation and advancement. To fully utilize RS and GIS in tackling urban difficulties, interdisciplinary collaboration between urban planners, geospatial scientists, and technological professionals is emphasized. To sum up, the combination of GIS and remote sensing in urban planning provides an effective set of tools for developing resilient, sustainable, and intelligent cities. Urban planners may make well-informed decisions, allocate resources optimally, and create strategies for long-term urban development that are consistent with sustainability and resilience by utilizing the capabilities of these technologies.

KEYWORDS: Remote sensing, Geographic Information Systems (GIS), geospatial scientists.

CATEGORY: Remote Sensing (GPS/GIS)