Journal of Mechanical, Civil and Industrial Engineering
ISSN: 2709-0809
DOI: 10.32996/jmcie
Journal Homepage: www.al-kindipublisher.com/index.php/jmcie

JMCIE
AL-KINDI CENTER FOR RESEARCH AND DEVELOPMENT

| RESEARCH ARTICLE

Rethinking Sprawl: How High-Density, Low-Rise Housing Can Reshape Small Cities like Baton Rouge

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| ABSTRACT

This paper examines the potential of low-rise, high-density housing as a solution to urban sprawl in Baton Rouge, Louisiana. Driven by zoning regulations that favor single-family homes, Baton Rouge's outward expansion contributes to environmental harm and car dependency. Arguing for a shift towards higher-density living, this paper proposes low-rise, mixed-use developments as a more sustainable and community-focused approach. By analyzing case studies and examining the benefits of mixed-use integration, this paper demonstrates how such developments can create a more vibrant, walkable, and environmentally conscious urban environment for Baton Rouge. Furthermore, it addresses concerns related to traffic and infrastructure, highlighting how thoughtful design and planning can mitigate potential challenges. Finally, the paper proposes policy recommendations, including zoning reform, incentivizing affordable housing, investing in public transportation, and community engagement, to facilitate this transition towards denser, more resilient urban growth.

| KEYWORDS

Urban Sprawl, High-Density Low-Rise Housing, Mixed-Use Development, Sustainable Urban Planning, Baton Rouge-Louisiana

| ARTICLE INFORMATION

ACCEPTED: 10 July 2025 **PUBLISHED:** 25 August 2025 **DOI:** 10.32996/jmcie.2025.6.3.9

Introduction:

Driving through Baton Rouge, Louisiana, one is struck by the seemingly endless stretches of single-family homes and wide, car-dominated streets. This pattern of low-density development, typical of many American cities, is at odds with the growing need for affordable and sustainable housing. This conflict underscores a broader tension between traditional urban planning and the urgent need for denser, more sustainable urban environments. As cities struggle with issues like urban sprawl, housing affordability, and environmental impact, the model of low-density living is becoming increasingly unsustainable. However, a recent decision by the East Baton Rouge Metropolitan Council offers a spark of hope. They have recently approved the development of 132 new mixed-income housing units, with over $6 million in funding allocated to the project (Broome). While this is a promising step, it also highlights a critical issue facing Baton Rouge: urban sprawl.

Despite having a relatively small population the city continues to expand outwards, fueled by zoning regulations that prioritize single-family homes on large lots and limit higher-density development. Consequently, people relocate to the less regulated outskirts, contributing to environmental harm and intensifying reliance on cars. For expanding cities like Baton Rouge, the solution to sprawl is shifting towards higher-density, especially low-rise residential mixed-used development. This shift promotes environmental consciousness and allows for the incorporation of community well-being into the fabric of urban design. To fully understand this argument, this paper will examine the challenges posed by urban sprawl, explore the debate between high-rise and low-rise housing solutions, and analyze successful case studies of dense urban development. We will then delve into the importance of mixed-use development and effective transportation strategies for dense communities. Finally, the paper will consider policy recommendations to promote sustainable growth and facilitate the transition towards denser, more resilient cities.

Housing Challenges and Urban Sprawl:

Baton Rouge, with a population density of 2,852 people per square mile in 2023 ("U.S. Census"), exemplifies the challenges of urban sprawl. Outward city expansion comes with higher carbon emissions and loss of a pedestrian-friendly urban environment. While creating multiple city centers could help prevent sprawl, this approach can be expensive and difficult to combine with pedestrian-friendly design. Therefore, increasing density within the existing urban fabric offers a more viable solution. This can be achieved through two pathways: high-rise, high-density housing, and low-rise, high-density housing.

Baton Rouge lacks a clearly defined city center, which raises a crucial question: if we were to introduce high-rise buildings, where would they logically be located? Unlike cities with a concentrated downtown core, Baton Rouge doesn't have an obvious focal point to accommodate the influx of residents that high-rises would bring. This lack of a central gathering place makes high-rise development a less suitable solution for maintaining the existing neighborhood fabric.

Other than that, high-rise buildings raise concerns about affordability, energy consumption, and environmental impacts. Architect Jonathan Yeung wrote about high-density high-rises in a popular architectural website, *Archdaily*. His article- "How Dense Is Too Dense? The Future of Social Housing in Metropolises." identifies densification as the solution to the current housing situation and discusses a few of densification challenges. He discusses how over-densification of cities creates more problems than solutions as increasing number of houses solve housing crisis statistically, but it decreases quality of life, hygiene and mental well-being. Now the goal is to increase density in a way that improves living conditions, which leads to the development of higher-density, low-rise residential areas. Baton Rouge is not the kind of city that has severe housing crisis like big cities and its landscape of mostly single-family homes wouldn't aesthetically accommodate high-rise residential buildings. So, adding high-rises among these low-rise neighborhoods would create an imbalanced look across the city.

However, increasing density presents both opportunities and challenges. While higher density living offers solutions to issues like urban sprawl and environmental impact, it can also strain existing amenities and services designed for smaller populations. This potential strain on infrastructure is a key reason why policymakers often resist higher-density development. Furthermore, the legacy of redlining in Baton Rouge has created significant disparities in access to housing and resources, making affordability a critical concern in any densification efforts. Overcoming these challenges requires careful planning and innovative solutions, such as incorporating mixed-use development and prioritizing pedestrian-friendly infrastructure.

High-density Low-Rise Residential:

The high-density, low-rise model refers to a housing model where buildings are low in height, typically no more than 3 stories. The housing model is organized to maximize the number of living units within a given area. The difference between high-rise and this low-rise model is that low-rise density prioritizes individual entrances for the residences, private gardens, courtyards and terraces. It combines the benefits of living in individual homes and having communal features like shared spaces-courtyards or green areas. These low-rise fosters diverse communities, promote walkability, and allow for a range of affordable options. Architect Starr Charles wrote about the first low-rise, high-density residential development in Ireland in a famous architectural site *dezeen* as an editorial intern. She discusses how planners and architects view the project, highlighting how it is seen as a solution that is more sustainable, less energy and carbon intensive, and most cost effective to build. Jack Hanly says- "Low-rise, high-density housing attempts to combine the best elements of both urban and suburban development schemes: a multitude of public transportation options, access to urban services, moderate scale, public open space and individualized dwellings," in *Architizer*, emphasizing the advantages of low-rise, high-density housing in balancing urban convenience with a more human-scale and sustainable living environment.

Case Study:

The case studies presented in this paper will analyze a range of low-rise, high-density housing projects through specific criteria, including the number of housing units, the presence of private outdoor spaces, affordability levels, the types of amenities provided, the integration of mixed-use activities, any site constraints, and the surrounding neighborhood character. By comparing these diverse examples, the analysis will highlight how these projects address modern-day challenges such as urban sprawl, affordability, and community well-being. Furthermore, the case studies will explore the ways in which these developments influence their surroundings, considering factors like integration with existing neighborhoods, the creation of vibrant public spaces, and the promotion of sustainable living practices. The three case studies discussed in this paper are- Social Housing in Athis-Mons by Atelier VongDC, France, Hannibal Road Gardens by Peter Barber Architects, London and Cypress at Ardendale, a Housing Project in Baton Rouge.

Social Housing in Athis-Mons, France

This project, completed in 2012 by Atelier VongDC, provides 42 affordable housing units within a low-rise, high-density configuration. Situated in an existing urban area, the design carefully balances the need for density with the character of the surrounding low-density residential neighborhood. The low-density neighborhood has the character like Baton-rouge. It has critical design consideration which reflects how it can adjust to the different scenario on two different sides. This can play a role like a

transitional space while designing high density development. It creates visual balance to the character of the existing urban situation.

Fig: Social Housing in Athis-Mons, France ("42 Social")

The inclusion of balconies and garden-facing facades ensures residents have access to private outdoor spaces and natural light, contributing to a sense of individuality and well-being within the higher-density development. Furthermore, the project demonstrates a commitment to affordability, a crucial factor in addressing housing challenges in growing urban areas(Hanly). By successfully integrating into the existing urban fabric, the Social Housing project in Athis-Mons exemplifies how low-rise, high-density housing can contribute to a more diverse and inclusive community.

Hannibal Road Gardens, London

Completed in 2012, Hannibal Road Gardens by Peter Barber Architects offers a compelling example of how underutilized urban spaces can be reimagined to provide much-needed housing. Built on a former parking garage, this development maximizes a small urban footprint to create eight townhouses, each featuring multiple garden terraces and individual entrances. This project holds particular relevance for Baton Rouge, a city with a significant amount of impervious land dedicated to parking garages. Hannibal Road Gardens serves as a prime example of how these often-overlooked spaces can be incorporated into thoughtful, high-density designs that contribute to a more vibrant and sustainable urban fabric. By reimagining these spaces, Baton Rouge could create new housing opportunities while simultaneously addressing issues of land use efficiency and urban sprawl.

Fig: Hannibal Road Gardens, London (Hanly)

This design prioritizes both private outdoor space and a sense of community, with shared amenities like a community garden contributing to a vibrant and interconnected living environment. The project's focus on affordability further strengthens its contribution to addressing housing challenges in London(Hanly). By transforming an underutilized site into a thriving residential development, Hannibal Road Gardens demonstrates the potential for innovative design solutions to increase density without sacrificing quality of life or community well-being.

Cypress at Ardendale, a Housing Project in Baton Rouge

This project is an upcoming project in Baton Rouge, scheduled for completion in 2025, offers a local perspective on low-rise, high-density housing. The Cypress at Ardendale is proposed to provide 434-unit mixed-income community. The project prioritizes community living and well-being, with planned amenities including a community room, fitness center, computer learning lab, and covered pavilion with BBQ areas. Furthermore, the development emphasizes walkable or bikeable infrastructure and communal gathering spaces, fostering a sense of connection and promoting an active lifestyle for its residents.

While the affordability levels are yet to be confirmed, the project's focus on integrating with the broader Baton Rouge community and providing a range of amenities highlights the potential for low-rise, high-density housing to address the specific needs of different demographics while contributing to a more vibrant and inclusive city. The project navigates the site constraint

of existing wetlands, integrating them into the design to create a unique sense of place. Adding walkways and bikeable pathways, this integration includes public space to the new housing.

Fig: Cypress at Ardendale, a Housing Project in Baton Rouge ("Cypress")

This approach differs from existing low-rise, high-density housing in Baton Rouge, such as student housing developments, which typically lack extensive amenities. As a city with a large land-grant university, Baton Rouge has a number of these developments, but they often prioritize affordability over communal spaces and features. The Cypress at Ardendale project, on the other hand, introduces a new model by incorporating amenities that cater to the needs and well-being of its residents. While it may not align with the concept of individual entrances often associated with low-rise housing, its inclusion of amenities represents a significant shift in the approach to high-density living in Baton Rouge.

These case studies reveal valuable insights for developing low-rise, high-density housing in Baton Rouge. While both the Social Housing in Athis-Mons and Hannibal Road Gardens prioritize housing units over extensive amenities, they offer distinct approaches to community living. The Athis-Mons project utilizes terrace-like common spaces to balance privacy with a sense of shared living, while Hannibal Road Gardens maximizes space through attached houses with shared courtyards. In contrast, the Cypress at Ardendale project in Baton Rouge incorporates a range of amenities within the development itself. This difference highlights a potential need for Baton Rouge to integrate amenities into new housing projects, unlike cities where existing infrastructure may already provide sufficient resources. The Ardendale project serves as a model for incorporating mixed-use development and amenities into low-rise, high-density housing.

Furthermore, the Hannibal Road Gardens project offers valuable lessons in creating a sense of individual ownership within a higher-density context. Its design, featuring private entrances and terraces alongside shared courtyards, can inspire similar developments in Baton Rouge, balancing the desire for personal space with the benefits of community living.

Project	Housing Units	Personal Terrace	Affordability	Amenities Provided	Mixed-Use Activities	Site Constraints	Neighborhood Character	Completion Year
Social Housing in Athis-Mons	42 units	Yes	Affordable	Balconies, garden-facing facade	**No**	Urban density	Balances low-density residential area	2012
Hannibal Road Gardens	8 Families	Yes	Affordable	Community garden, shared spaces	**No**	Small urban footprint	Community-focused, eco-friendly	2012
Cypress at Ardendale	434 units	To be confirmed	Affordable	Planned amenities within the community will consist of a three-quarter acre urban park, a game/recreation room, fitness center, computer learning lab, covered pavilion with barbeque areas, and a community clubhouse with a kitchen.	**Separate**	Existing wetlands In site	Integration with Baton Rouge community	2025

Fig: Comparison among the case studies

Overcoming Challenges:

Baton Rouge is likely to face NIMBYism as higher-density projects are proposed, with concerns arising about increased traffic, changes to neighborhood character, and perceived overcrowding. However, the case studies presented offer solutions to mitigate these concerns. Firstly, incorporating mixed-use development with amenities like shops and clinics within the projects themselves can alleviate pressure on existing infrastructure and reduce the need for residents to travel. Secondly, prioritizing pedestrian-friendly design with walkable streets and public spaces, as seen in the Cypress at Ardendale project, can foster a sense of community and reduce reliance on cars, thereby mitigating traffic concerns. Finally, by focusing on low-rise developments that maintain a human scale and connection to green spaces, as demonstrated in both the Athis-Mons and Hannibal Road Gardens projects, the perceived threat of overwhelming density can be minimized. These strategies, combined with a commitment to affordability and community engagement, can help address NIMBY concerns and pave the way for more sustainable and inclusive urban growth in Baton Rouge.

Policy for sustainable growth:

To effectively address the challenges of urban sprawl and promote the adoption of low-rise, high-density housing, Baton Rouge needs to implement supportive policies. These policies should focus on several key areas:

Zoning Reform:

Amend existing zoning regulations to allow for greater density and mixed-use development in appropriate areas. This could include reducing minimum lot sizes, permitting accessory dwelling units, and incentivizing the development of low-rise, high-density housing.

Incentivizing Affordable Housing:

Implement policies that encourage the inclusion of affordable housing units within new developments, such as density bonuses, tax breaks, and expedited permitting processes.

Investing in Public Transportation:

Prioritize the expansion and improvement of public transportation networks to reduce reliance on private vehicles and support denser, more walkable communities. This could include increased bus routes, dedicated bike lanes, and improved pedestrian infrastructure.

Community Engagement:

It's important to make sure the community has their input in new housing development in how their neighborhoods grow and change. This means creating ways for people to share their ideas and concerns about new housing projects. When people feel heard, it's easier to address their worries, find solutions that work for everyone, and make sure new developments fit the needs of the community.

By adopting these policy recommendations, Cities like Baton Rouge can create a regulatory environment that encourages sustainable growth, promotes affordability, and facilitates the transition towards a denser, more resilient, and community-oriented city.

Conclusion:

To combat sprawling development patterns, Baton Rouge must embrace higher density living, particularly through low-rise residential development. The recent approval of $6 million in funding for affordable housing projects presents a prime opportunity to efficiently utilize these funds by constructing high-density, low-rise buildings that maximize land use and incorporate vibrant mixed-use spaces. This shift towards low-rise, high-density housing in Baton Rouge promises a multitude of benefits that extend beyond addressing urban sprawl. By fostering denser, more walkable communities, it can significantly decrease commuting time, leading to reduced traffic congestion and improved air quality. This, in turn, minimizes the environmental impact of transportation, contributing to lower carbon emissions and mitigating the greenhouse effect. In a city like Baton Rouge, which is increasingly vulnerable to extreme weather events, this reduction in carbon emissions plays a crucial role in building a more resilient and sustainable future.

Policy recommendations such as zoning reform, incentivizing affordable housing, investing in public transportation, and community engagement can help realize the vision of driving through vibrant Baton Rouge neighborhoods where people connect and thrive. By embracing high-density, low-rise development, Baton Rouge can create a more vibrant, walkable, and sustainable urban environment. This shift will not only enhance the quality of life for residents but also stimulate economic growth and ensure a thriving future for the city.

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