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THEME NO: RT15

BACK LANE / CONSERVANCY LANE IMPROVEMENT UNDER SMART CITY MISSION – AN APPRAISAL AND IMPACT ASSESSMENT.

CASE STUDIES OF JABALPUR, SHIVAMOGGA AND JAIPUR

SAAR- SAMEEKSHA SERIES
IMPACT ASSESSMENT STUDIES OF SMART CITIES MISSION

अमृत
Atal Mission for Rejuvenation and Urban Transformation

AMRUT Centre of Urban Planning for Capacity Building
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Back lane / Conservancy Lane Improvement Under Smart City Mission – An Appraisal and Impact Assessment.

Case Studies of Jabalpur, Shivamogga and Jaipur

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Abstract

The redesign and redevelopment of back lanes or conservancy lanes in Indian cities under the Smart City Mission of Government of India, coordinated by the respective Smart City Corporations of each cities, are some of most apt examples of public private collaborated projects in cities that have transformed defunct and discarded public spaces into vital zones of citizen engagement. A back lane or conservancy lane is generally a narrow lane that passes through the backsides of plots and carries sewerage and waste into the city's main channels. It is often characterized by filthy conditions and are zones never frequented by citizens. This report examines three such case study projects from cities spanning the breadth of the country – Jabalpur, Shivamogga and Jaipur. The case studies portray how such back lanes have been transformed with innovation and creativity by the city authorities into vibrant spaces of community aggregation. The conceptualization and execution of these projects are exemplary and showcase strong elements of inclusivity and innovation. However, there are possibilities of revisit and introspection on aspects of how these zones can continue to remain lively in future through innovative models of operations and maintenance. This report brings out the key benefits and details of these projects. The report also puts forth the finding out of primary surveys based on 06 indicators and 38 variables that try to evaluate aspects of environmental, economic, social and institutional impact of these projects. It discusses the findings capturing opinions of citizens and officials. This report attempts to study back lanes or conservancy improvement projects and bring out their key achievements, and future scope of improvement.

Keywords

Public Space Creation, Place Making, Back lane and Conservancy, Smart City

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All Images, Maps and Graphics used in the Report are prepared by the Project Team, unless stated otherwise alongside the image/map/graphic.

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1. INTRODUCTION

1.1. SAAR Sameeksha

SAAR Sameeksha is a vital component of India's "Smart Cities and Academia Towards Action & Research (SAAR)" program, which aims to strengthen the Smart Cities Mission by systematically reviewing and documenting the progress of urban development projects. This initiative, involving 15 premier academic institutions, plays a crucial role in analysing the effectiveness of smart city initiatives across the country, helping to refine strategies and policies for future urban planning.

SAAR Sameeksha undertakes the comprehensive analysis of at least 100 smart city projects, providing detailed documentation of their planning, execution, challenges, and successes. This documentation process is essential for creating a repository of knowledge that can guide future projects. By capturing both successes and areas for improvement, SAAR Sameeksha helps ensure that lessons learned are applied across India's rapidly urbanising landscape.

SAAR Sameeksha's primary objective is to identify and document best practices from the 100 smart city projects it reviews. By highlighting successful approaches to urban challenges such as transportation, waste management, water supply, and energy efficiency, SAAR Sameeksha provides a roadmap for other cities to replicate these solutions. This process not only accelerates the adoption of effective strategies but also helps to standardise successful practices across different urban contexts.

The findings from SAAR Sameeksha are used to provide critical feedback to policymakers and urban planners. This feedback loop allows for real-time adjustments to policies and strategies, ensuring that the Smart Cities Mission remains responsive to emerging challenges. Additionally, SAAR Sameeksha places a strong emphasis on measuring outcomes, focusing on the impact of smart city projects on urban populations. This includes assessing improvements in living conditions, service delivery, and infrastructure, ensuring that the projects deliver tangible benefits to over 500 million people living in India's urban areas.

Another key aspect of SAAR Sameeksha is its contribution to capacity building. Through the documentation and dissemination of best practices, SAAR Sameeksha has indirectly supported the training of over 10,000 ULB officials. These officials are now better equipped to manage and implement smart city projects, thanks to the insights and knowledge gained from the SAAR program.

1.2. Back lane/Conservancy Lanes

Back lanes or conservancy lanes are often overlooked urban spaces that play a crucial role in the functioning of cities. These narrow, often unpaved lanes, typically located behind buildings, serve as essential service corridors for waste disposal, utility connections, and pedestrian access. However, due to decades of neglect, these spaces have deteriorated, becoming breeding grounds for diseases and hindering urban development.

In many Indian cities, particularly in older neighbourhoods, back lanes have become synonymous with poor sanitation, inadequate infrastructure, and a lack of basic amenities. This neglect is a direct consequence of pseudo-urbanization, a phenomenon where rapid urban growth is concentrated in city centers, while peripheral areas and vital infrastructure like back lanes are left behind.

Recognizing the urgent need to address this issue, urban planners and policymakers are increasingly focusing on back lane redevelopment as a key strategy to revitalize urban areas. By upgrading these neglected spaces, cities can improve public health, enhance urban aesthetics, and stimulate economic growth.

2. LITERATURE REVIEW

2.1. Literature Study Back lanes

Back lanes, often overlooked in urban planning, are narrow passageways typically located behind buildings in residential, commercial, or mixed-use areas. They are historically intended for services like waste collection, deliveries, and utility access but have evolved to play significant roles in urban infrastructure, aesthetics, and community engagement. Understanding their importance and methods for conservation can transform back lanes from neglected spaces into vibrant urban assets.

2.1.1. The Need for Back lanes

- **Service Access:** Back lanes provide critical space for essential services such as garbage collection, utility maintenance, and goods delivery, reducing congestion on main streets.
- **Traffic Management**: By diverting service-related activities away from primary roads, back lanes help alleviate traffic congestion and improve road safety.
- **Space Optimization:** They create additional space for infrastructure needs without compromising the primary street's utility or aesthetics.
- **Community Interaction:** In some cultures, back lanes serve as communal spaces where residents interact and engage in recreational activities.
- **Emergency Access:** Back lanes can serve as alternative routes for emergency vehicles, enhancing urban safety.

2.1.2. The Need for Back lanes

- **Urban Functionality:** Back lanes streamline urban operations by accommodating utilities and reducing front-facing clutter on primary streets.
- **Aesthetic Enhancement:** Properly designed back lanes can enhance a city's visual appeal through landscaping, art installations, and lighting.
- **Cultural Preservation:** In historic neighborhoods, back lanes often reflect traditional urban layouts and contribute to cultural identity.
- **Environmental Benefits:** Green back lanes with vegetation can reduce urban heat island effects, improve air quality, and support biodiversity.

Table 2.1.1 Types of Back lanes

Type	Description
Residential Back lanes	Found in housing areas, these serve as access points for maintenance, parking, and secondary entry.
Commercial Back lanes	Located in retail or business districts, these lanes accommodate deliveries, waste management, and rear entrances for shops.
Mixed-Use Back lanes	Serving both residential and commercial purposes, these lanes often require multi-functional designs.
Green Back lanes	Designed with vegetation and sustainable materials to promote environmental benefits and enhance urban aesthetics.

2.1.3. Conservation and Revitalization of Back lanes

Table 2.1.2Strategies for Revitalization of Back lanes

Strategy	Details
Assessment and Planning	Conduct detailed studies to understand the back lane's existing condition, usage, and community needs. Integrate back lane development into broader urban planning frameworks.
Physical Improvements	Repair and maintain pavements, drainage systems, and utility lines. Add lighting, seating, and waste disposal units to improve usability and safety.
Aesthetic Enhancements	Use murals, vertical gardens, and creative lighting to enhance the visual appeal. Incorporate design elements that preserve the lane's historical and cultural context.
Greening Initiatives	Introduce vegetation using planter boxes, climbing plants, or community gardens. Promote community involvement in maintaining green spaces.
Community Engagement	Involve residents and businesses in planning and maintaining the back lane. Use the space for community events, markets, and art exhibitions.
Policy and Governance	Develop policies to regulate the usage and maintenance of back lanes. Allocate budgets and form partnerships with private entities for conservation efforts.

2.1.4. Challenges in Back lane Conservation

- **Funding:** Limited financial resources for maintenance and upgrades.
- **Community Resistance:** Initial hesitation from residents or businesses to adopt changes.
- **Overuse and Misuse:** Issues like illegal dumping, encroachments, and inadequate regulation.
- **Maintenance:** Continuous upkeep is required to sustain improvements.

2.1.5. Conclusion

Back lanes are an underutilized urban asset with immense potential for enhancing city functionality, aesthetics, and community well-being. Through thoughtful planning, design, and community collaboration, back lanes can be revitalized to meet modern urban needs while preserving their historical and cultural essence. Policymakers, urban planners, and communities must recognize their value and work together to transform these spaces into sustainable and vibrant parts of the urban landscape.

3. CASE STUDY

3.1. Case Study 01 - Church Street-Penang Street Back lane, Penang, Malaysia

The back lane revitalization project, initiated by the Penang Island City Council (MBPP), aimed to breathe new life into underutilized back lanes in George Town. This specific project focused on the back lane connecting Church Street (Lebuh Gereja) and Penang Street (Lebuh Penang), located within the George Town World Heritage Site. Previously neglected, the area suffered from being inconspicuous from the main road, perceived safety concerns, and a lack of basic amenities.

Figure 3-1 Before Back lane Make over (MEI EE Architects)

Figure 3-2 Plan (MEI EE Architects)

3.1.1. Objectives

- Enhance the aesthetic and functionality of the back lane behind George Town's heritage shop-houses.
- Create a landscaped pedestrian walkway with shading trees, lighting, and urban furniture.
- Preserve and enhance the cultural and communal identity of the area.
- Foster a safe, inclusive, and sustainable urban space for the local community and tourists.

Figure 3-3 After the makeover - Drone view (MEI EE Architects)

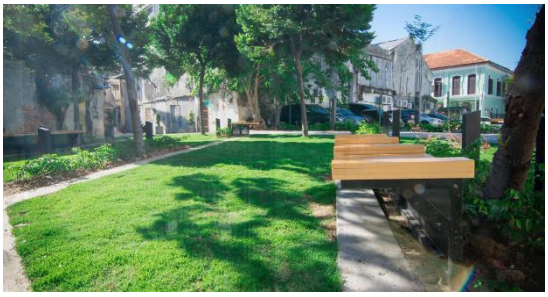


Figure 3-4 Seating Spaces (MEI EE Architects)

3.1.2. Design and Implementation

The design team, led by Mei Ee Architect under a CSR initiative, undertook the following strategies and improvements

Creating a Quiet Pocket Park:

- Designed as a 'Quiet Park' to ensure minimal disturbance to nearby residential areas.
- Added benches with strategically placed barrier slates to discourage inappropriate use while maintaining functionality.
- Installed trees, shrubs, and community planter boxes to provide shade and improve air quality.

Wayfinding Enhancements:

- Introduced 'arrow' striped floor patterns to lead visitors to the hidden pocket park.
- Added arrow-patterned sculptures and signage at entrances and along pathways to improve navigational behavior and create curiosity.

Landscaping and Urban Furniture:

- Arranged benches and landscaping along a diagonal axis to blend harmoniously with the paving pattern.
- Installed adequate lighting to enhance safety and improve the aesthetic appeal of the space.

Cultural Sensitivity and Privacy Considerations:

- Maintained the cultural essence of the back lane by preserving its unique 'place identity.
- Ensured minimal disruption to residential privacy and noise levels through thoughtful design.

Figure 3-5 Paved Path ways

3.1.3. Community and Environmental Impacts

Community Improvement:

- The project transformed an underutilized space into a vibrant and accessible pocket park, encouraging community interaction and engagement.
- Enhanced the sense of safety, deterring undesirable activities and ensuring the space's intended use.
- Promoted inclusivity by providing a quiet and clean space for relaxation within a heritage setting.

Environmental Benefits:

- Introduced greenery to the urban environment, contributing to biodiversity and improving microclimatic conditions.
- Shaded pedestrian walkways reduced the heat island effect, providing a cooler environment for users.

Cultural and Aesthetic Enhancements:

- Preserved and amplified the back lane's historical and cultural identity, enriching the heritage value of the area.
- Inspired a rethinking of neglected urban spaces, encouraging a shift towards integrating back lanes into the city's livable landscape.

Tourism Development:

- Added an element of surprise and discovery to the heritage site, increasing its appeal to tourists.
- Improved navigation and connectivity within George Town's heritage area, encouraging exploration of less-known spaces.

The Church Street-Penang Street back lane revitalization project is a testament to how thoughtful urban design can transform neglected spaces into thriving community assets. By addressing practical concerns like safety and usability while preserving cultural heritage, the project has set a benchmark for sustainable urban development. It highlights the importance of viewing back lanes not as mere service lanes but as potential contributors to the social, cultural, and environmental fabric of urban life.

3.2. Case Study 02 - George Town, Penang, Malaysia

The Back lane Upgrading Works project in George Town, Penang, was a corporate social responsibility initiative led by the Majlis Bandaraya Pulau Pinang (MBPP). The project aimed to transform the perception and functionality of back lanes, which are often seen as neglected, smelly, and unsafe due to poor drainage and lack of maintenance. Spanning 135 metres between Jalan Magazine and Jalan Gurdwara, this project rejuvenated the back lane into a vibrant community space without compromising its original character.

Figure 3-6 Back lane Before makeover (CKHO Architects)

Figure 3-7 Back lane After makeover (CKHO Architects)

3.2.1. Design and Implementation

- **Aesthetic Enhancements:** Retained the existing rusty corrugated metal roof deck hoarding and layered it with white metal screens. The screens, punctured with voids, added visual appeal while preserving a sense of belonging and familiarity. Installed geometric-shaped canvas sheets above the street, serving as an entrance statement and a homage to old Penang-styled markets.

Figure 3-8 Metal Screening over rusty hoardings (CKHO Architects)

Figure 3-9 Food Stalls (CKHO Architects)

- **Infrastructure Upgrades:** Paved 870 square metres with interlocking bricks and recycled timber designs to enhance durability and aesthetics. Improved lighting by adding street lamps that create a play of light and shadows at night, making the lane safer and more inviting.
- **Greening the Space:** Introduced cylinder planter boxes filled with plants chosen by residents from a recommended list by the landscape department. This addressed initial resistance from authorities and fostered community ownership.
- **Community Engagement:** Encouraged residents to care for the plants, promoting a sense of ownership. Involved the community in selecting plants, ensuring the space reflected their preferences and needs.

3.2.2. Impacts

Social Impact:

- Transformed the back lane into a lively community space for public interaction and engagement.
- Became a local attraction and venue for community festivities.

Aesthetic and Functional Impact:

- Improved the visual and functional aspects of the lane while preserving its existing character.
- Addressed safety concerns with better lighting and enhanced pathways.

Environmental Impact:

- Promoted greenery through community-maintained planters, contributing to a greener urban environment.
- Utilized recycled materials, demonstrating sustainable practices in urban development.

The Back lane Upgrading Works project exemplifies how neglected urban spaces can be revitalized into vibrant community hubs. By blending aesthetic enhancements, functional improvements, and active community involvement, the project addressed key urban challenges while preserving the cultural essence of George Town. The initiative has not only changed perceptions of back lanes but also set a benchmark for urban rejuvenation projects globally.

4. OBSERVATIONS

4.1. Observations from Literature Study and Case Studies on Back lane Revitalization

Back lanes, traditionally undervalued in urban planning, are emerging as critical spaces with untapped potential to enhance urban infrastructure, aesthetics, and community engagement. The Church Street-Penang Street revitalization project in George Town, Malaysia, exemplifies how thoughtful design and planning can transform these neglected spaces into vibrant urban assets. By integrating practical improvements, cultural sensitivity, and environmental considerations, the project sets a benchmark for back lane conservation.

4.1.1. The Importance of Back lanes

Back lanes serve multiple purposes in urban environments. They provide space for essential services such as garbage collection and utility maintenance, reducing congestion on main streets and improving urban functionality. Historically significant, these lanes often reflect traditional urban layouts and contribute to cultural identity, especially in heritage areas. Properly designed back lanes enhance the aesthetic appeal of cities, foster community interactions, and offer environmental benefits such as reduced urban heat island effects and improved biodiversity.

4.1.2. Transformative Strategies and Design Interventions

The revitalization efforts highlighted in the case studies demonstrate the effectiveness of targeted interventions. For example, in the Church Street-Penang Street project, the creation of a quiet pocket park with landscaping, benches, and green features addressed both functional and aesthetic goals. Wayfinding enhancements, such as arrow-patterned pathways and sculptures, added a sense of curiosity and improved navigational behaviour, drawing visitors to previously overlooked spaces. These interventions maintained the cultural and communal identity of the area while addressing safety concerns through better lighting and design features that deterred inappropriate use.

The inclusion of greenery, such as trees, shrubs, and community planter boxes, played a pivotal role in creating a pleasant and environmentally friendly atmosphere. These green initiatives reduced heat, improved air quality, and provided shaded walkways, demonstrating the environmental benefits of revitalized back lanes. The emphasis on sustainability was further reinforced by using recycled materials for paving and urban furniture.

4.1.3. Community and Policy Contributions

Community engagement was central to the success of the projects. Local residents were involved in selecting plants and maintaining green spaces, fostering a sense of ownership and responsibility. This collaboration not only ensured the space reflected community needs but also enhanced its usability and acceptance. The role of governance, with initiatives like those led by the Penang Island City Council (MBPP), was crucial in providing funding, regulatory support, and technical expertise for these projects.

4.1.4. Conclusion

The revitalization of back lanes has significant implications for urban life. Socially, these projects transform neglected spaces into vibrant community hubs, promoting interaction and inclusivity. Aesthetically, they preserve cultural heritage while introducing modern design elements, enriching the urban landscape. Environmentally, the integration of greenery and sustainable practices contributes to a healthier urban ecosystem.

However, challenges such as funding limitations, community resistance, and the need for continuous maintenance highlight the complexities of such projects. Addressing these challenges requires collaborative efforts from policymakers, urban planners, and the community to ensure sustainable and impactful outcomes.

5. METHODOLOGY

Figure 5-1 Methodology

6. IMPACT ASSESMENT

6.1. Background

The report first discusses the overall initiatives of projects related to back lanes across the country, focusing on outcomes such as socio-economic development, environmental sustainability, governance efficiency, and community well-being. Thereafter, the report takes up 03 case projects in Shivamogga, Jabalpur and Jaipur to discuss in depth, the implications of such projects.

6.2. Primary Survey and Indicators

Along with detailed understanding of the back lane projects in the three cities through site based observations and interactions with Smart City Corporation officials, primary surveys were designed to evaluate the multifaceted impacts of back lane/conservancy projects in all the three case cities. The primary surveys focussed on the contribution of the back lane projects on enhancing public health, safety, community engagement, and economic activities. The surveys were conducted in residential, commercial, and mixed-use areas in and near vicinity of the project sites. Respondents included a diverse group of citizens differentiated by gender, age, profession, literacy levels, and duration of stay in the city.

The primary surveys were also conducted with government officials of each of the three cities wherein the officials who were involved with the projects and who are now mandated to maintain and carry forward the projects were interviewed to gather their feedback and opinion.

6.2.1. Survey methodology

Sample Selection: Stratified random sampling was used to select respondents from various neighborhoods affected by the project. This ensured representation from residential, commercial, and mixed-use areas. The number of samples from each case city has been discussed in the subsequent sections.

Data Collection: Structured questionnaires were administered via in-person interviews and online forms. Respondents were given clear instructions, and data confidentiality was maintained.

Demographic Profile of Respondents: The demographic profile captured details such as location, gender, literacy, profession, age, annual income, and years of stay in the city.

6.2.2. Key Indicators Evaluated in the Survey

The survey focused on six main indicators, each encompassing specific dimensions of assessment. Each of the six main indicators were broken into measurable variables as discussed below. The measurable variables under each were captured through the questionnaire (as placed in the annexure).

Indicator 01 : Social and Community Impact

This indicator aimed to understand how the project influenced social interaction and community engagement. Questions were framed to capture the following aspects.

a) Enhancement of social interaction, community engagement, and sense of belongingness.
b) Frequency and duration of usage of back lane spaces post-project.
c) Preferred time of space utilization.
d) Increased foot traffic and facilities supporting diverse activities (e.g., seating, lighting, play areas).
e) Presence of inclusive features for differently-abled individuals and senior citizens.
f) Influence on mental well-being, health, safety, and security.

Indicator 02 : Public Health and Hygiene

This indicator evaluated the project's impact on cleanliness, waste management, and residents' health. Questions were framed to capture the following aspects.

a) Reduction in illegal dumping and littering.
b) Efficiency of waste collection and disposal services.
c) Promotion of waste segregation and recycling.
d) Maintenance and condition of waste disposal infrastructure.
e) Changes in resident attitudes towards waste disposal.

Indicator 03 : Safety and Security

The survey examined improvements in perceived safety and security levels. Questions were framed to capture the following aspects.

a) Safer environment for women, elderly, and children.
b) Change in reported crime rates pre- and post-project.
c) Improvements in streetlights and surveillance systems.
d) Residents' satisfaction with safety measures implemented.

Indicator 04 : Economic and Livelihood Opportunities

This indicator assessed how the project contributed to economic activities and financial opportunities. Questions were framed to capture the following aspects.

a) Creation of new businesses (e.g., kiosks, food stalls).
b) Increase in footfall leading to higher local business revenues.
c) Generation of direct employment opportunities (e.g., maintenance staff).
d) Types of income activities associated with the back lane project.
e) Residents' satisfaction with the project's economic impact.

Indicator 05 : Real Estate and Municipal Revenue Impact

The project's impact on real estate values and municipal revenue generation was assessed. Questions were framed to capture the following aspects.

a) Changes in rental rates for residential and commercial properties.

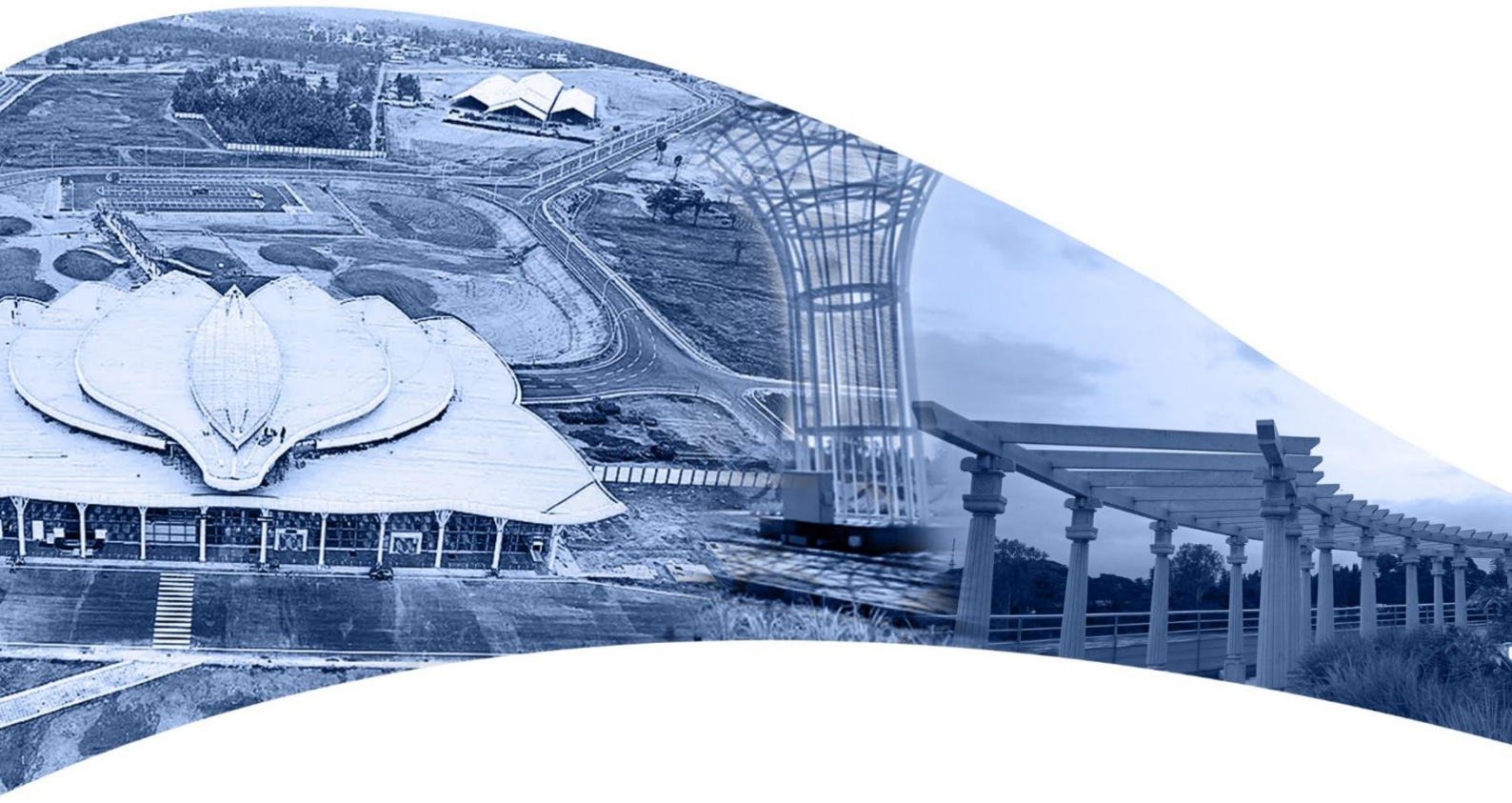
b) Occupancy rates before and after the project.
c) Increase in development charges and fees collected by the municipality.
d) Residents' willingness to invest in properties in the area.

Indicator 06 : Accessibility and Utility Efficiency

This indicator measured the impact on accessibility for emergency services and utility maintenance. Questions were framed to capture the following aspects.

a) Improvements in road width, signage, and accessibility for emergency vehicles.
b) Frequency and duration of service interruptions.
c) Efficiency of utility maintenance pre- and post-project.
d) Residents' satisfaction with improved access to services.

The findings from the primary survey that captured the opinion of the residents and the government officials are discussed in the subsequent sections.



CASE AREA 01

SHIVAMOGGA

7. CASE AREA 01 – SHIVAMOGGA

As part of the Smart City Mission's drive to enhance urban livability and improve community spaces, the Back lane Conservancy Project introduces essential upgrades to underutilized back lanes across various neighbourhoods. With a budget allocation of ₹19.38 crore, this project spans five distinct packages, collectively impacting a 6-square-kilometer area and covering a total length of 14.39 kilometers. Key improvements include the installation of e-toilets, gym equipment, designated parking lanes, and children's play equipment, all aimed at creating cleaner, safer, and more active community spaces. The project is systematically implemented across multiple wards: Package 01 in Jayanagara; Package 02 in Hosamane; Package 03 covering Ravindra Nagar, Channappa Layout, Jayanagara, Hosamane, and Sharavathi Nagar; Package 04 in the Garden Area; and Package 05 in Durgigudi, Basavanagudi, and Bapujinagar. By reimagining these spaces, the project not only enhances the quality of life for residents but also aligns with the mission's vision of modern, sustainable urban development, ensuring that back lanes serve as vital extensions of the city's public space network.

7.1. City Profile

Shivamogga, also known as Shimoga, is a prominent city in Karnataka, India. It serves as the administrative center of the Shivamogga district and is often called the "Gateway to the Malnad" due to its proximity to the Western Ghats. Known for its green landscapes and rich heritage, Shivamogga is rapidly urbanizing. The city is also a focus of development under the Smart City Mission, which aims to improve infrastructure, public services, and overall livability, blending modernity with its traditional charm.

7.1.1. History

Shivamogga's history dates to ancient times, having been ruled by dynasties like the Kadambas, Chalukyas, Rashtrakutas, and Hoysalas. It later became part of the Vijayanagara Empire and the Keladi Nayakas. During the British era, it served as a key administrative hub. The city's name is thought to derive from "Shivana-Mogu" (Face of Shiva) or "Shivana-Mogge" (Nose of Shiva), highlighting its deep cultural and religious significance over the centuries.

7.1.2. Demographics

As of the 2011 Census, Shivamogga had a population of approximately 322,650, with a nearly balanced gender ratio. The city's literacy rate is around 88%, higher than the national average. Kannada is the predominant language, with Urdu and other regional languages also spoken. The city is home to a mix of communities, including Hindus, Muslims, and Christians, reflecting its cultural diversity. This blend of communities contributes to Shivamogga's unique social fabric and cultural practices.

7.1.3. Economy

Shivamogga's economy is primarily agriculture-based, known for its production of areca nut, paddy, maize, and sugarcane. The agro-processing industry thrives due to this agricultural base. Industrial growth has accelerated, supported by the establishment of industrial estates. The service sector, particularly education and healthcare, also plays a vital role in the local economy. Educational institutions attract students statewide, while healthcare services cater to both urban and rural populations, contributing significantly to the city's economic structure.

7.1.4. Culture and Lifestyle

The culture of Shivamogga is deeply rooted in traditional Kannada customs and practices. Festivals like Ganesh Chaturthi, Ugadi, and Deepavali are celebrated with great zeal and enthusiasm, reflecting the region's rich cultural heritage. Folk art forms such as Yakshagana, a traditional theatre form, and Dollu Kunitha, a drum dance, are integral parts of the city's cultural identity. Despite the rapid pace of urbanization, Shivamogga has managed to maintain a balance between tradition and modernity. The lifestyle of its residents reflects this blend, with modern amenities coexisting alongside age-old customs and values.

7.1.5. Tourism

Shivamogga is rich in natural beauty and a popular destination for tourists who love nature and adventure. Close to the Western Ghats, it offers many attractions. Jog Falls, one of the highest waterfalls in India, draws many visitors. Kundadri Hill, with its ancient Jain temple, provides stunning views and a peaceful escape. The Tyavarekoppa Lion and Tiger Safari is a favorite for wildlife lovers, while Agumbe, known for its heavy rainfall, appeals to nature enthusiasts. Gajanur Dam is a tranquil spot for picnics and walks.

7.2. Contextual Background

The deteriorated conservancy lanes in Shivamogga presented several serious problems for residents. The lanes became unsanitary as they were used as dumping grounds for solid waste, and issues like open defecation and urination led to filthy conditions. Water logging occurred due to inadequate drainage, exacerbating sanitation problems and creating stagnant water that attracted mosquitoes, increasing health risks. Stray animals drawn by the waste further compromised public health. Encroachments by neighbouring property owners reduced the lanes' intended use and led to further misuse. The failure to connect household waste to sewer lines resulted in poor waste management, worsening the unsanitary conditions and causing pollution. The neglect of the lanes also turned them into areas for anti-social activities, impacting safety and order, while debris and uneven surfaces made them difficult to access and use effectively.

Conservancy lanes in Shivamogga, located typically at the rear of properties, were originally designed to provide essential drainage services and maintain urban hygiene. Over time, however, these lanes fell into disrepair and were underutilized. Issues such as the accumulation of construction debris, improper soil leveling after excavation, and frequent misuse—including open defecation and urination—led to the lanes becoming dumping grounds for solid waste. This resulted in water logging, unsanitary conditions, and an increase in mosquitoes, with stray animals also frequenting these areas.

Historically, these lanes were also connected to the practice of manual scavenging—a method of cleaning waste by hand, which was a common but highly undesirable job. With the abolition of manual scavenging, the lanes transitioned into makeshift garbage stockpiles as residents failed to properly connect household waste to sewer lines. Instead, waste flowed into open drains, exacerbating the unsanitary conditions and leading to stagnant water and further deterioration of the lanes. This neglect and misuse also contributed to encroachments and anti-social activities.

Recognizing the need for comprehensive improvements, Shivamogga sought to address these infrastructural deficiencies through the Smart Cities Mission. This initiative aimed to upgrade and renew vital infrastructure, focusing on resolving the chronic problems caused by outdated systems and poor maintenance. The revitalization of the conservancy lanes was crucial to reducing congestion, improving urban infrastructure, and ensuring proper waste management. By addressing these issues, the project aimed to restore functionality, enhance hygiene, and create a more organized and cleaner urban environment as part of Shivamogga's broader development goals.[

7.3. Project Details

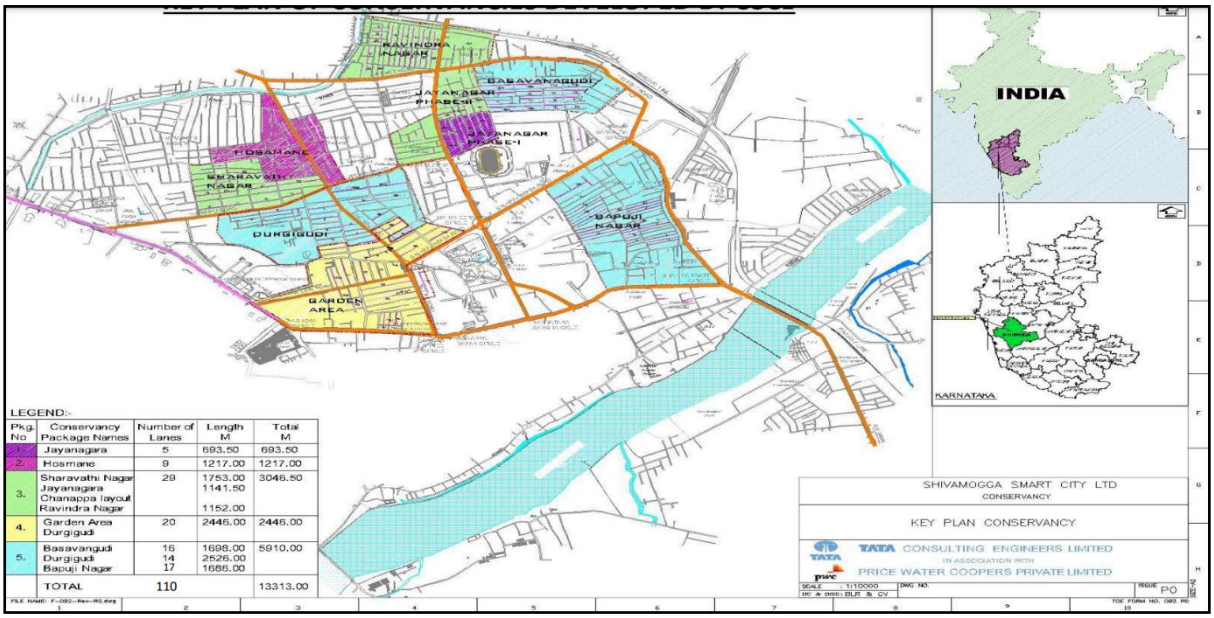


Figure 7-1 Key Plan of Implemented lanes (TCS)

7.3.1. Past Scenario

Photographs taken before the project showcase the state of neglect in the conservancy lanes. These images depict the accumulation of solid waste, waterlogging, and overgrown vegetation, emphasising the need for the project. The visuals also show the absence of proper lighting, security, and drainage systems, which contributed to the unsanitary and unsafe conditions in the lanes.

Figure 7-2 Package-5 Lane no 109 Bapuji nagar

Figure 7-3 Package 5 Lane no 123 Bapuji nagar

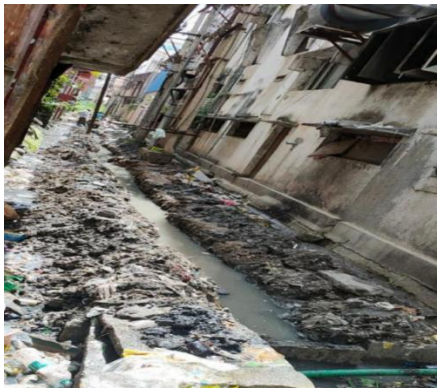


Figure 7-4 Package-4 Lane no 101 Garden area

Figure 7-5 Package-4 Lane no 59 Garden area

7.3.2. Implementation Scenario

Photographs taken during the implementation phase of the construction and upgrade processes. These images show workers installing drainage systems, paving the lanes, and setting up the lanes.

Figure 7-6 Cleaning of existing lanes

Figure 7-7 Construction of UGD

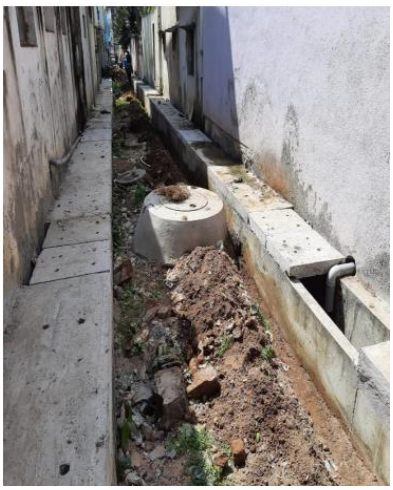


Figure 7-8 Utilities Connected to UGD

To address the issues with conservancy lanes, Shivamogga Smart City launched a redevelopment plan that included constructing and upgrading drainage systems and underground drains. The surfaces were covered with interlock pavers, and street lights, toilets, and gates were installed. These improvements resolved previous problems and unsanitary conditions. The renovated lanes were then repurposed for various uses, including parking spaces, vending zones, food courts in commercial areas, and recreational facilities such as playgrounds, gym equipment, and other amenities in residential zones. Additionally, grey water from residences was redirected to underground drainage lines, preventing nuisance in box drains and pollution of the Tunga River, thus creating a healthier urban environment.

Following this success, 110 more conservancy lanes were identified in the ABD area, totaling approximately 14.4 kilometers. These lanes were categorized into five packages based on land use—residential, commercial, and mixed-use—and developed at a cost of Rs. 19.44 crores. This strategic approach ensured effective execution and continued enhancement of urban infrastructure, aligning with the broader development goals and environmental guidelines.

- **Residential Areas:** It focused on redeveloping conservancy lanes within purely residential zones. The emphasis was on improving sanitation, providing amenities like toilets, and creating recreational spaces with playgrounds and gym equipment for residents.
- **Commercial Areas:** This targeted lanes in commercial zones, converting them into spaces for parking and vending zones. This helped reduce congestion on main streets and provided designated areas for street vendors and food courts.
- **Mixed-Use Areas:** In areas with both residential and commercial properties, this focused on balancing the needs of both sectors. The lanes were developed to serve as parking areas, small vending zones, and recreational spaces, ensuring they catered to the diverse needs of the community.
- **Sanitation and Drainage Upgrade** : Addressed the most critical aspect of sanitation by upgrading drainage systems and ensuring proper waste management. It involved the construction of underground drains, ensuring that grey water from residences was properly channelled to avoid pollution and health hazards.
- **Safety and Accessibility:** Focus on improving the overall safety and accessibility of the conservancy lanes. Street lights were installed, gates were added for security, and the lanes were made more accessible by levelling surfaces and clearing debris. This package ensured that the lanes became functional and safe spaces for public use.

7.3.3. Current Scenario

Figure 7-9 Food Stalls in Back lanes

Figure 7-10 Back lane in Residential Area with Play Equipments

Figure 7-11 Gym Equipments

Figure 7-12 Play Equipments

- **Enhanced Sanitation** : The construction of new drainage systems and underground drains, along with the installation of interlock pavers, street lights, toilets, and gates, resolved previous sanitation issues and eliminated the unhygienic conditions.
- **Improved Urban Environment :** The lanes were repurposed for various uses, including parking spaces, vending zones, food courts, and recreational facilities such as playgrounds and gym equipment, creating a more functional and pleasant urban space.
- **Health Benefits :** By redirecting grey water to underground drainage lines, the project prevented water pollution and reduced the risk of diseases associated with stagnant water and waste.
- **Reduced Pollution :** The new drainage system helped avoid the pollution of the Tunga River by managing waste more effectively and preventing the accumulation of waste in open drains.
- **Increased Safety and Order:** The redevelopment addressed issues of encroachment and misuse, reducing anti-social activities and improving overall safety and order in the urban area.
- **Enhanced Quality of Life :** The conversion of waste lands into recreational and refreshment areas provide residents with improved amenities and a more enjoyable living environment.
- **Strategic Urban Development:** The successful implementation of the project led to the identification and redevelopment of additional conservancy lanes, aligning with broader urban development goals and ensuring continued improvement of the city's infrastructure.

7.4. Citizen Response Survey

The questionnaire included 38 questions covering 6 key indicators to gather insights into public perceptions and priorities. In Shivamogga, a total of 32 samples were collected from citizens and 13 samples were collected from government officials. The samples of the citizens were collected from across the spatial length and region of the back lane project.

7.4.1. Indicator 01: Community Engagement and Public Space Activation of Project

This indicator assesses how the back lane conservancy project has encouraged local community engagement, social interaction, and active use of public spaces. By transforming back lanes into more welcoming, inclusive spaces, the project aims to foster a sense of community and provide areas where residents can socialise, relax, and participate in activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made.

Frequency of Space Utilisation - 62.5% of users utilize the back lanes daily, reflecting high engagement and indicating that these lanes are valued as essential community spaces. This frequent usage likely results from accessible, well-maintained lanes that support daily social interactions and recreational activities. Additionally, 31.25% of users engage multiple times a week, suggesting that while many appreciate these spaces, usage frequency may vary based on individual schedules and needs. However, issues like restricted access, debris, and poor maintenance in some areas could reduce engagement if not addressed.

Average Daily Duration of Use - Most respondents use the back lanes for less than an hour, primarily during the morning, suggesting these spaces serve as casual, quick-use areas for activities like social interactions or transit early in the day. A smaller group stays for 1 to 3 hours, likely using the lanes in the morning or evening for social gatherings or recreation. The lack of usage in the afternoon, night, or late night implies these lanes are not seen as comfortable or accessible for extended or late-day use, possibly due to limited amenities, lighting, or spatial constraints. Overall, the lanes are valued but primarily for short, morning-based activities.

Enhanced Social Interaction - The majority of respondents report some level of increased social interaction, with 53.33% noting a moderate increase and 33.33% experiencing a minimal increase. Only 6.67% report a drastic increase, while 6.67% observe no change in their social interactions. This suggests that the back lane development has had a positive, albeit varied, impact on community engagement, with most residents experiencing at least a modest improvement in social connectivity. The results highlight that the lanes have fostered a more interactive environment, although the extent of the increase in social interaction varies across individuals.

Foot Traffic Growth - The majority of respondents report an increase in foot traffic, with most noting a minimal increase and a significant portion experiencing a moderate increase. Only a small number observe a drastic increase in foot traffic, while a few report no change. This suggests that the development of the back lanes has led to a noticeable rise in pedestrian activity, with most respondents experiencing at least a modest increase. The data highlights that the lanes have encouraged more foot traffic, although the extent of this increase varies among individuals.

Support for Diverse Activities - Most respondents indicate that the back lanes support diverse activities, and actively using these facilities. However, a significant portion reports inactive usage, while a few note that no such facilities are present. This suggests that while the lanes offer varied spaces, there is potential for greater engagement and utilization.

Figure 7-13 Conflict of Back lane and neighbouring Development

Figure 7-14 Integration of Private and Back lanes

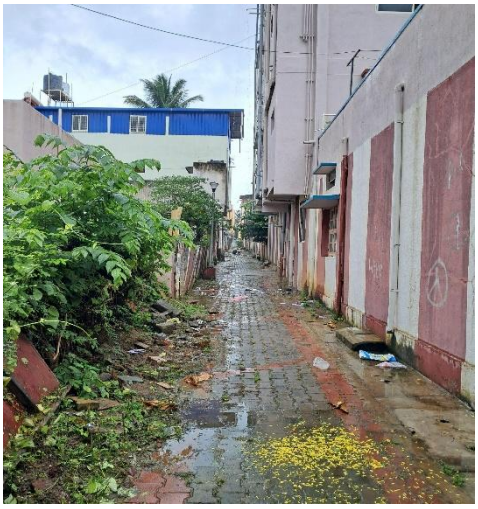


Figure 7-15 Dumping of Wastes in Back lane

Figure 7-16 Less Seating Spaces

Inclusivity of Features - Most respondents report that inclusive features, such as accessible ramps and seating areas for seniors, are not present in the back lanes. A smaller portion indicates that these features, where available, are actively used. This suggests that while there are some inclusive design elements in the lanes, their overall presence is limited. The lack of such features for the majority of users points to a gap in accessibility, which could restrict the lanes' ability to serve a diverse range of individuals, particularly those with mobility challenges.

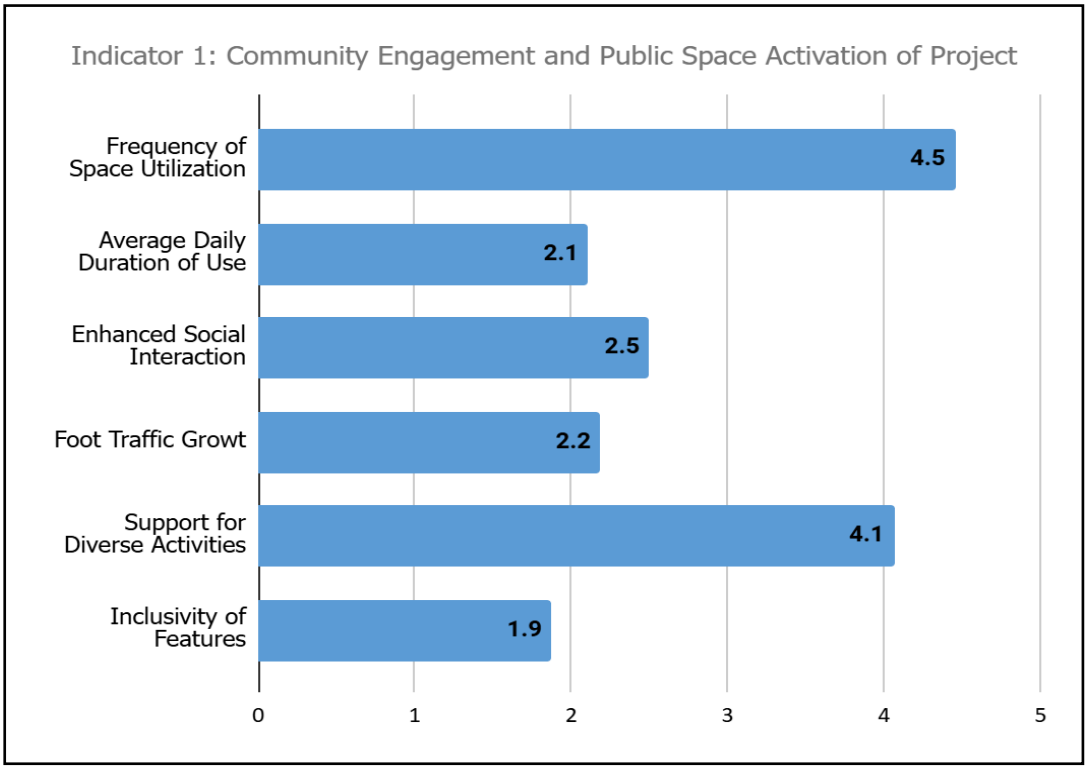


Figure 7-17 Indicator 1: Community Engagement and Public Space Activation of Project

The back lane conservancy project has encouraged increased community engagement, with most users actively utilizing the spaces daily and engaging in various activities, particularly in the mornings. Social interaction has generally improved, with most respondents noting at least a modest increase. Foot traffic has also risen, indicating that the lanes are becoming more frequented. However, usage duration remains short, primarily due to limited amenities, lighting, and the lack of inclusive features like accessible ramps and seating for seniors. While the lanes support diverse activities, some facilities remain underused, suggesting untapped potential for greater engagement. Overall, the project has made positive strides in transforming the back lanes into more welcoming spaces, though there are areas for improvement, particularly in accessibility and the activation of all available features.

7.4.2. Indicator 02: Health, Well-being, and Safety Impact of Projects

This indicator assesses the project's contribution to community health and safety. Improvements in air and noise quality, increased physical activity, and reduced stress levels support residents' well-being. Enhanced safety for vulnerable groups, better lighting, surveillance, and lower crime perception fosters a sense of security, with residents generally satisfied with these positive changes.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Stress Reduction Impact - The back lane project appears to have a positive impact on stress reduction, with a significant 62.5% of respondents reporting a positive difference, especially among those actively using the spaces. Most of these users noted the benefits of the back lanes in reducing stress, with the spaces offering areas for relaxation, social interaction, and recreational activities. A smaller group, including those with inactive usage, reported no difference, suggesting that the benefits may be more pronounced for those who actively engage with the space.

Overall Resident Perception - Most respondents have a positive perception of the back lane conservation project, with 81.25% expressing that they are glad it happened. A smaller portion, 18.75%, reported feeling that it made no difference to them, while none expressed a negative view. This indicates that the project has generally been well-received by the community, with most residents appreciating the improvements made to the back lanes. The strong positive response suggests that the project has been successful in meeting community needs or expectations to a significant extent.

Air Quality Perception - In terms of air pollution levels after the back lane conservation project, 68.75% noting an increase in air quality. A smaller portion, 31.25%, reported no difference in air quality. None of the respondents felt that air quality had decreased. This suggests that the project has had a positive impact on air quality in the area, with most residents noticing an improvement. The absence of negative feedback further reinforces the success of the initiative in enhancing the environmental conditions of the back lanes.

Noise Level Perception - Most respondents perceive a decrease in noise pollution levels after the back lane conservancy project, with 63.16% noting a reduction in noise. A smaller portion, 36.84%, reported no change in noise levels. None of the respondents felt that noise had increased. This suggests that the project has had a positive impact on reducing noise pollution in the area, likely due to the improved environment, cleaner spaces, and better management of public areas. The absence of negative feedback further supports the project's success in addressing noise concerns in the back lanes.

Increase in Physical Activity - In terms of physical activity in the back lane area post-project, 66.67%, observed an increase in physical activities such as walking, jogging, and playing in the back lane/conservancy space after the project. A smaller portion, 33.33%, reported no difference in physical activity levels. Only a small number, 5.56%, noticed a decrease in physical activity. The back lane development has positively influenced physical activity, with most respondents experiencing more opportunities for exercise and outdoor engagement. The project appears to have successfully encouraged a more active lifestyle in the community.

Health Impact Satisfaction - Most respondents expressed satisfaction with the health impact of the back lane/conservancy project, indicating that it has positively influenced health outcomes in the community. A smaller group felt neutral about the project’s impact, suggesting that while they acknowledged some benefits, there is room for improvement. No respondents were dissatisfied with the project, highlighting that the overall influence on health is generally viewed in a positive light, though there are areas that could still be enhanced.

Perception of Safety for Vulnerable Groups - Most r espondents feel that the conservancy project has made the area safer for women, the elderly, and children, indicating a positive perception of safety improvements. However, a significant portion perceives no difference in safety, suggesting that the changes may not have had a noticeable impact on their sense of security. A smaller group feels that the area has become more unsafe, highlighting concerns that still need to be addressed to ensure the safety of vulnerable groups. To enhance safety further, there is a clear need for additional lighting, CCTV surveillance, and better monitoring to increase visibility and deter potential threats.

Crime Rate Perception - Most respondents feel that the conservancy project has reduced reported crimes, suggesting improved safety in the area. Some perceive no change in crime levels, while none feel less safe. This indicates that the project has generally contributed to a positive perception of safety, though ongoing improvements and monitoring are important.

Lighting and Surveillance Improvements - A significant majority of respondents report an increase in street lights and surveillance systems, highlighting improved safety measures in the area. A smaller group perceives no difference in surveillance. This suggests that the project has positively impacted the presence of safety features, contributing to a greater sense of security among residents.

Safety and Security Satisfaction - The majority of residents are satisfied with the safety and security improvements brought by the back lane/conservancy project. About 68.75% of residents rated it a 3 or 4, with 22% providing a rating of 3 and 13% giving a rating of 4. No residents gave the lowest rating of 1. This suggests that while most residents approve of the improvements, there is still potential for further enhancement of safety and security in these areas.

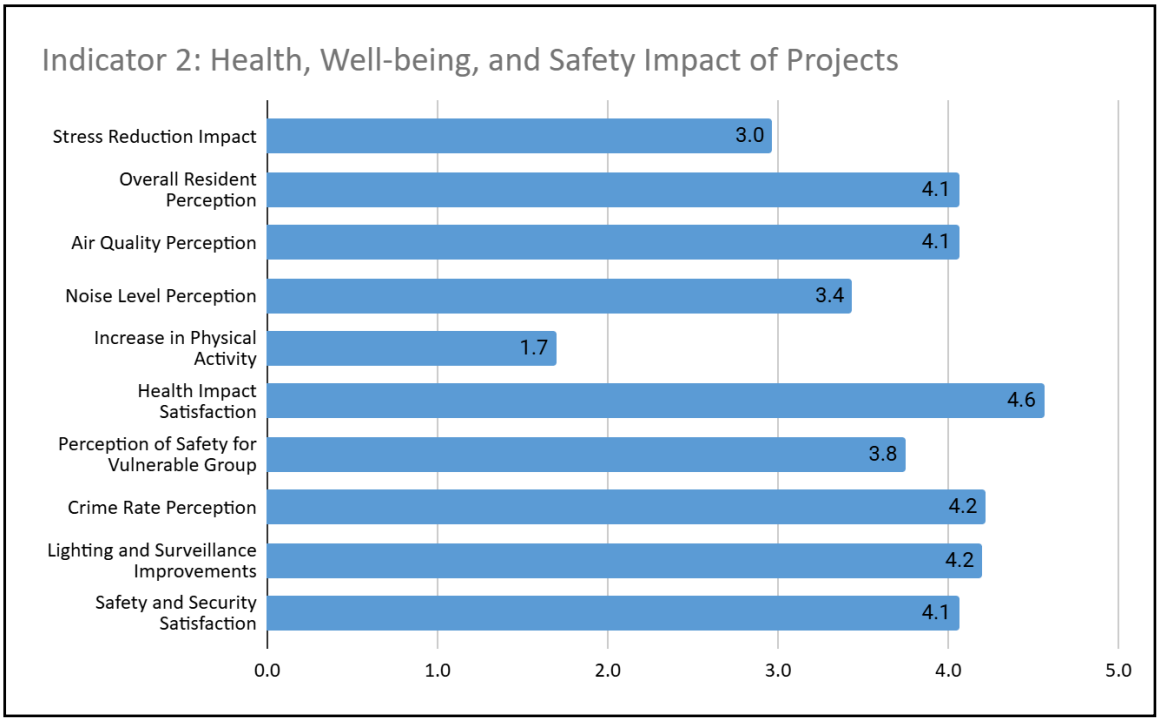


Figure 7-18 Indicator 2: Health, Well-being, and Safety Impact of Projects

Overall, the back lane conservancy project has positively impacted the health, well-being, and safety of the local community. Residents have reported improved stress levels, better air and noise quality, and increased physical activity, contributing to a healthier and more active lifestyle. The project has also enhanced perceptions of safety, especially for vulnerable groups like women, the elderly, and children, with most residents feeling safer due to increased lighting and surveillance. However, some residents perceive no significant changes in safety, highlighting the need for further improvements in surveillance and lighting. Overall, the project has been well-received, with most residents satisfied with the improvements, although ongoing enhancements in security and community safety measures are necessary for even greater impact.

7.4.3. Indicator 03: Economic Impact and Livelihood Generation from Projects

The "Economic Impact and Livelihood Generation from Projects" parameter assesses how infrastructure projects, like the back lane conservancy initiative, influence local economies and residents' financial opportunities. It examines indicators such as the emergence of new small businesses, increased revenue for existing businesses, direct job creation, the attraction of visitors, and various income-generating activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Emergence of New Small Businesses - The back lane/conservancy project has had minimal impact on the establishment of new small businesses in the area. Most respondents observed no change, indicating that the improvements in the back lane environment have not significantly attracted new businesses such as kiosks, food stalls, or retail shops. Only a small fraction reported the introduction of new establishments, with no businesses moving away. This suggests that while the project may have improved the physical space, it has not notably influenced the growth of small businesses in the area.

Increase in Local Business Revenue - Most respondents report no noticeable increase in local business revenues, with a significant portion indicating minimal or moderate differences. While a few respondents perceive a drastic change, the overall impact appears limited. This suggests that while the back lane/conservancy project may have slightly increased foot traffic, it has not led to substantial growth in business revenue for most local businesses. The minimal to moderate changes indicate that the economic impact of increased footfall could be enhanced through additional measures such as better promotion of local businesses or further improvements in infrastructure and amenities.

Figure 7-19 Neat & Clean Food Court

Figure 7-20 Parking Spaces and Public Toilets

Direct Job Creation - The 68.75% of respondents feel that the back lane/conservancy project did not directly create any new employment opportunities. However, a smaller group comments that the project has led to the creation of jobs, such as for maintenance staff or security personnel. This suggests that while the project has had some positive impact in terms of job creation, the overall scale of employment opportunities generated remains limited, and there may be potential for further employment generation if more targeted initiatives were introduced.

Visitor Attraction - A smaller portion of respondents reported that the project has attracted visitors to the area. The reason for the lack of significant visitor attraction could be attributed to factors such as limited promotion of the space, lack of unique or appealing features to draw tourists or outsiders, or insufficient amenities to support higher foot traffic. To increase visitor numbers, further enhancements such as better marketing, the introduction of more attractive public amenities, or the creation of events or activities could help make the area more inviting to a broader audience.

Resident Satisfaction with Livelihood Opportunities - Most respondents have expressed a neutral to dissatisfied view regarding the creation of financial opportunities through the back lane/conservancy project. This suggests that the economic benefits of the project, such as job creation or increased local business revenues, were not significant or visible enough to generate satisfaction. The absence of high ratings further reinforces the idea that the project has not made a strong impact in terms of livelihood generation, highlighting the need for additional measures to support small businesses, create jobs, or enhance the economic benefits for the community.

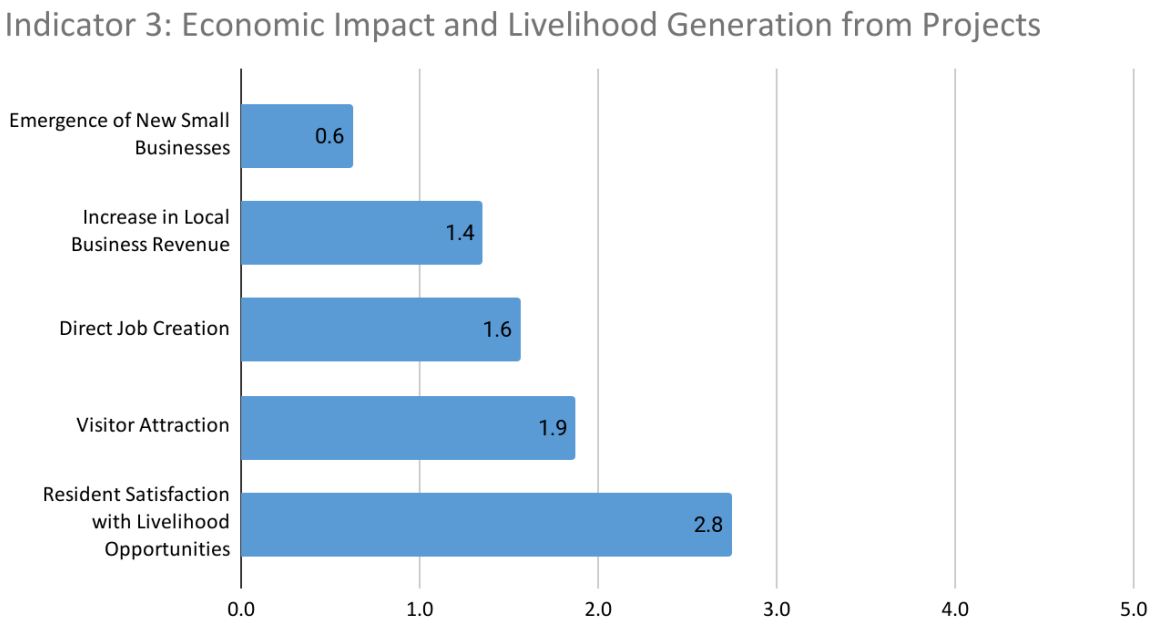


Figure 7-21 Indicator 3: Economic Impact and Livelihood Generation from Project

While the back lane/conservancy project may have improved the area in terms of cleanliness and infrastructure, it has had minimal impact on directly generating livelihoods or financial opportunities for the local community. The lack of significant job creation or support for small businesses could explain the lower satisfaction levels. Additionally, the absence of high ratings may indicate that the economic benefits of the project were not sufficiently visible or impactful for most of the residents, with many perhaps hoping for more substantial economic growth and job creation linked to the project.

7.4.4. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The "Real Estate and Municipal Revenue Impact" indicator evaluates how the back lane conservancy project affects property markets and municipal finances. It looks at changes in rental property rates, shifts in occupancy rates, and potential increases in municipal development revenue due to higher demand for real estate. Additionally, it considers residents' interest in investing in the area, reflecting the project's influence on property value perceptions and long-term investment potential. This indicator helps assess the economic ripple effects of the project on both real estate and municipal revenues.

Change in Rental Property Rates - Most respondents reported a marginal increase in rental rates for residential and commercial properties due to the back lane/conservancy project. A smaller portion noted a drastic increase, while none observed a decrease in rental rates. The project has positively influenced the real estate market, with most respondents recognizing improvements in property values. The increased demand for properties, driven by enhanced cleanliness, safety, and infrastructure, suggests that the project has contributed to making the area more attractive for both residential and commercial purposes, thereby potentially boosting municipal revenue through higher property taxes and development charges.

Figure 7-22 Clean & Neat Back lanes

Figure 7-23 Light and Play Equipments increase social interaction

Occupancy Rate Shifts - Most respondents reported no change in occupancy rates of rental properties before and after the back lane/conservancy project, indicating that the project did not have a noticeable effect on the number of tenants in the area for most properties. However, a smaller portion observed an increase in occupancy, suggesting that the improvements made through the project, such as better cleanliness and enhanced infrastructure, may have made certain properties more attractive to potential tenants. There were no reports of decreased occupancy, which implies that the project did not negatively impact rental demand.

Increase in Municipal Development Revenue - 100% of respondents reported no change in development charges and fees collected by the municipality because of the back lane/conservancy project. This suggests that the project did not stimulate significant development activity or increase the demand for new construction in the area.

Resident Investment Interest - Most residents showed dissatisfaction or neutrality regarding their satisfaction and willingness to invest in property due to the back lane/conservancy project. The absence of high ratings indicates that while the project improved livability, it did not significantly boost residents' confidence in investing in the area.

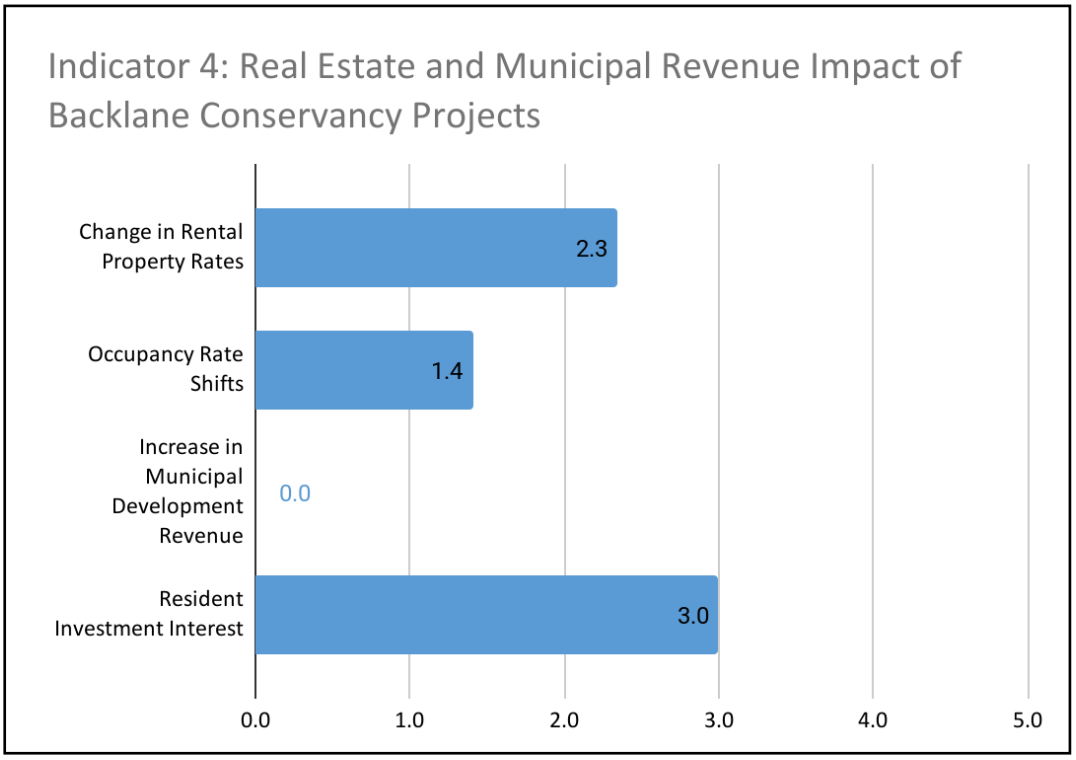


Figure 7-24 Indicator 4: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The back lane/conservancy project has had a positive but limited impact on the real estate market and municipal revenue. While most respondents reported a marginal increase in rental rates, there was minimal change in occupancy rates, with some areas seeing a slight increase in tenant demand. However, the project did not significantly influence municipal development revenue, as there was no notable change in development charges or construction activity. Additionally, residents expressed dissatisfaction or neutrality regarding their willingness to invest in property, indicating that while the area became more livable, it did not substantially boost investor confidence.

7.4.5. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

The "Improved Accessibility for Emergency and Utility Services" indicator evaluates how infrastructure enhancements in back lane conservancy projects affect the accessibility of emergency and utility vehicles, as well as the efficiency of service delivery. It focuses on improvements like road widening, signage upgrades, and the ability of emergency vehicles to access the area. Additionally, it considers service interruptions, utility maintenance efficiency, and resident satisfaction with the accessibility of services.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Infrastructure Enhancements - The majority of respondents (81.25%) noted improvements like widened roads and better signage due to the back lane/conservancy project, especially in commercial areas. However, 18.75% observed no significant changes, indicating that residential zones still face challenges with narrow lanes and limited access for emergency services.

Emergency and Utility Vehicle Accessibility - A 78.13% of respondents believe that emergency and utility vehicles can now access the area, indicating significant improvements in infrastructure. However, 15.63% stated that these vehicles were already able to access the area before the project, while 6.25% still face difficulties in vehicle access. This suggests that while there has been notable improvement, there are still some areas where access remains problematic.

Service Interruption Reduction - The back lane/conservancy project has positively impacted the frequency and duration of service interruptions, with most respondents (56.25%) reporting fewer interruptions compared to before the project. About 25% of respondents indicated that interruptions were rare even before the project, while 18.75% observed no difference in service reliability. Importantly, no respondents reported an increase in interruptions. This indicates that the project has effectively improved service continuity, enhancing overall community satisfaction with utilities and maintenance services.

Utility Maintenance Efficiency - The back lane/conservancy project has generally improved the frequency and efficiency of utility maintenance, with a significant majority of respondents reporting positive changes. These improvements likely stem from enhanced infrastructure and better management of utility access. While most people experienced better utility services, a small portion did not notice any difference, indicating that the improvements were not uniform across all areas. No respondents felt that utility maintenance worsened, highlighting the overall positive impact of the project on service reliability.

Resident Satisfaction with Service Accessibility - Most residents expressed moderate to high satisfaction with the improved access for emergency services and utility maintenance vehicles due to the back lane/conservancy project. Specifically, 56% of respondents rated the improvement a 3 or 4, indicating a neutral to positive response. Notably, none of the residents gave a rating of 1 or 2, implying that there were no significant dissatisfactions regarding the access improvements. However, the absence of top ratings (4 and 5) suggests that while the project improved accessibility, there is still need for further enhancement in this aspect

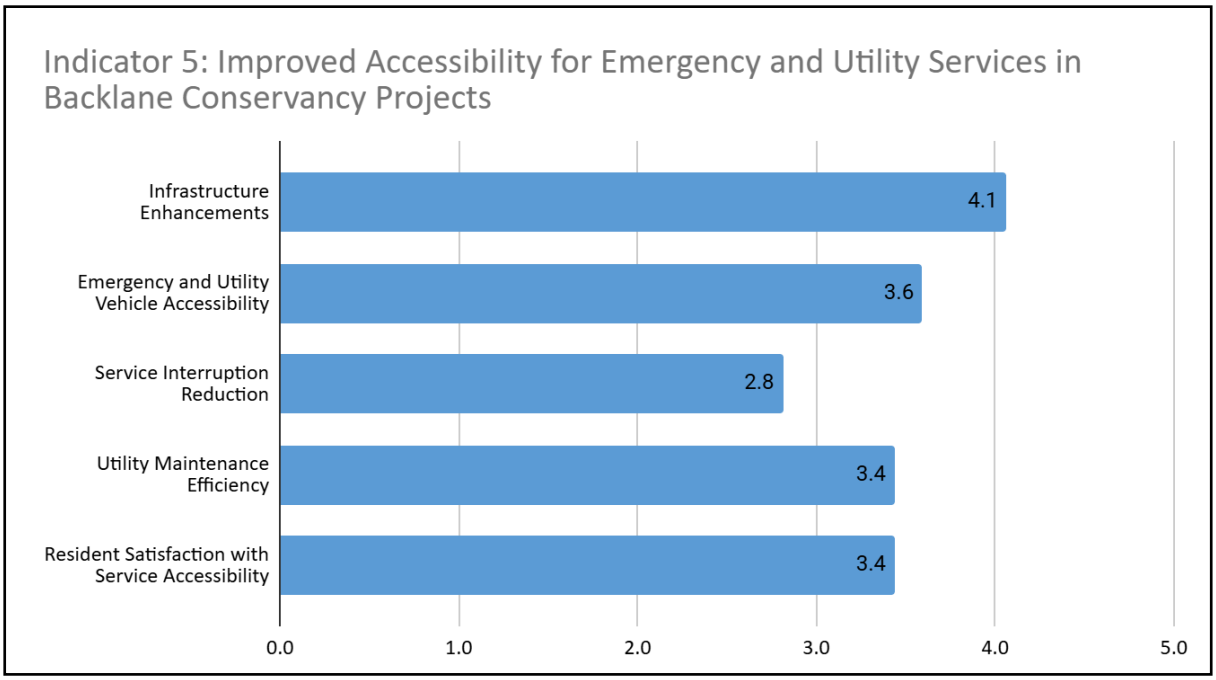


Figure 7-25 Indicator 5: Improved Accessibility for Emergency and Utility Services in Back Lane Conservancy Projects

The back lane/conservancy project led to some positive changes, it did not fully resolve accessibility challenges for emergency and utility vehicles. Most respondents reported improvements like widened roads and better signage, especially in commercial areas, but residential zones still face difficulties due to narrow lanes. A significant majority (78.13%) noted that emergency and utility vehicles can now access the area, but some areas still struggle with accessibility. Additionally, service interruptions were reduced for most respondents, and utility maintenance efficiency improved, indicating overall positive outcomes for service continuity. Resident satisfaction was generally moderate, with a substantial portion expressing positive views, though the absence of top satisfaction ratings suggests room for further improvements.

7.4.6. Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

The "Public Health and Hygiene Impact" indicator assesses how the back lane conservancy project affects waste management and overall cleanliness in the area. It examines factors such as the reduction of illegal dumping, improvements in waste collection efficiency, and the promotion of recycling initiatives. Additionally, it looks at the condition of waste disposal infrastructure, changes in residents' attitudes toward littering, and overall satisfaction with public health and hygiene improvements resulting from the project. This indicator helps evaluate how effectively the project contributed to a cleaner, healthier environment for the community.

Reduction in Illegal Dumping - The 78.13%of respondents () reported a reduction in illegal dumping because of the back lane/conservancy project. The project has effectively addressed the issue of illegal dumping, particularly in areas where residents are more engaged and responsible for maintaining cleanliness. However, 21.87% reported no change, indicating that in certain areas, challenges related to illegal dumping persist, potentially due to socio-economic or infrastructural constraints.

Waste Collection Efficiency - A large majority (90.63%) of respondents observed an increase in the efficiency of waste collection and disposal services following the back lane/conservancy project. This indicates that the project significantly improved the municipality's ability to manage waste collection, leading to more timely and organized service. Only a small portion (9.37%) observed no difference, suggesting the improvements were widespread, though some areas may not have seen the full benefits.

Promotion of Waste Segregation and Recycling - A substantial portion of respondents (78.13%) reported that the municipality promoted waste segregation and recycling post-project. This reflects the project's positive impact in encouraging better waste management practices, especially in terms of waste segregation, which is essential for efficient waste disposal and environmental sustainability. However, 21.87% saw no such efforts, indicating that some areas may not have fully embraced or benefited from these initiatives.

Waste Disposal Infrastructure Condition - Most residents (74.53%) rated the current condition and maintenance of waste disposal infrastructure positively, with 60.38% giving a rating of 4 or 5. This shows high satisfaction with the infrastructure improvements resulting from the back lane/conservancy project. However, a smaller portion (9.43%) rated the infrastructure poorly, which may indicate areas that still need improvements in terms of maintenance or access to facilities.

Figure 7-26 Illegal Dumping of Waste

Figure 7-27 Theft of Manhole Tops

Resident Attitude Towards Littering - A significant majority (84.38%) of respondents observed a change in resident attitudes and behaviors towards littering and waste disposal, indicating that the project successfully influenced public awareness and responsibility for maintaining cleanliness. Only a small portion (15.63%) reported no change, suggesting that, in certain areas, attitudes may have remained resistant to change due to socio-cultural factors or a lack of awareness.

Resident Satisfaction with Health and Hygiene Improvements - 74.91% percentage of residents rated the impact of the project on public health and hygiene positively, with 58.59% giving a rating of 4 or 5. This indicates that the project had a significant positive impact on improving hygiene and reducing illegal dumping or littering. However, a portion of residents (18.75%) gave a neutral rating (3), reflecting that while improvements were observed, some may not have felt the change was substantial enough to warrant a higher rating.

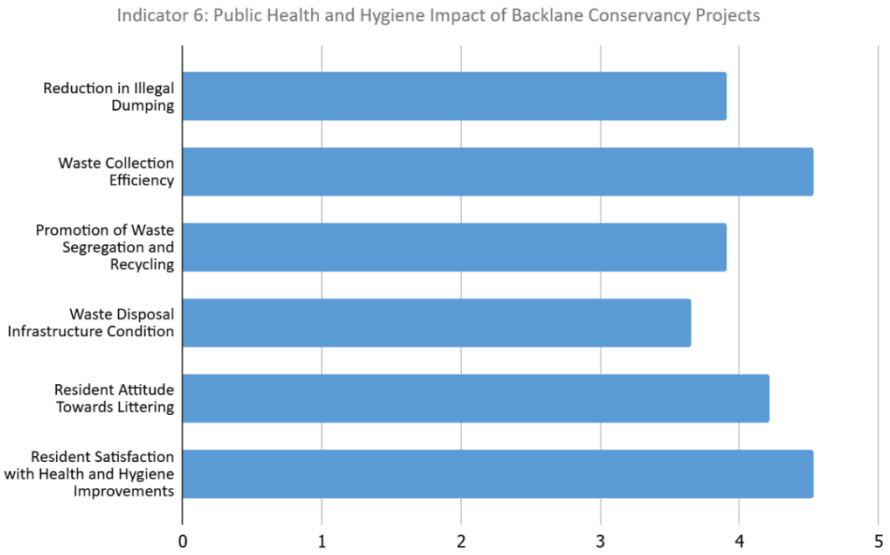


Figure 7-28 Indicator 6: Public Health and Hygiene Impact of Back lane Conservancy Projects

The back lane/conservancy project appears to have had a positive impact on public health and hygiene, with improvements in waste management services, reduced illegal dumping, and enhanced resident attitudes towards cleanliness. The high satisfaction levels with infrastructure and waste segregation efforts indicate strong positive outcomes. However, challenges remain in certain areas, especially in terms of resident engagement and consistent access to services.

7.4.7. Comprehensive Analysis

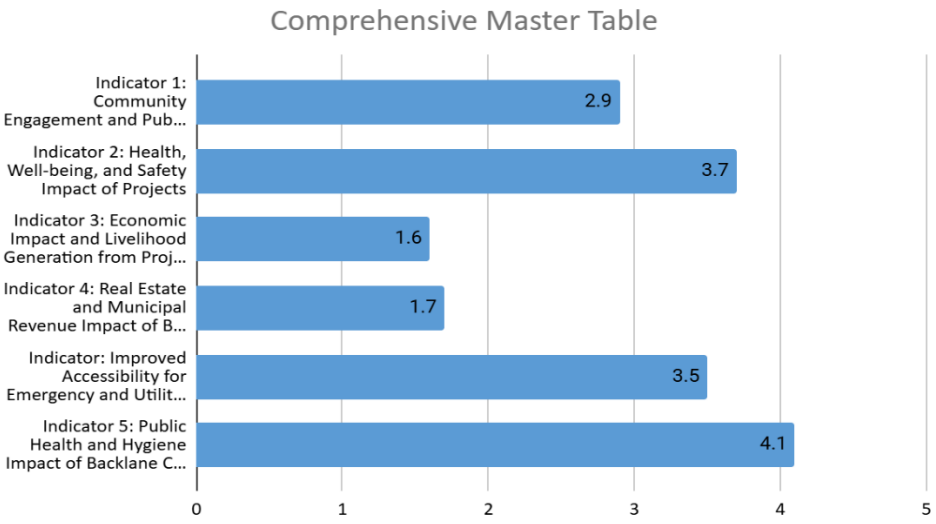


Figure 7-29 Comprehensive Analysis of Indicators

The back lane/conservancy projects have achieved notable success in enhancing public health and hygiene (Score: 4.1/5), especially by reducing illegal dumping and littering in commercial and mixed-use areas. The municipality's efforts to promote waste segregation and organized waste collection have improved cleanliness, leading to high resident satisfaction in these aspects.

Health, Well-being, and Safety (Score: 3.7/5) and Accessibility for Emergency and Utility Services (Score: 3.5/5) also show positive outcomes. Improved waste management practices have contributed to a cleaner and safer environment, while infrastructure upgrades in commercial zones have facilitated better access for emergency and utility vehicles, reducing service interruptions and improving maintenance efficiency. However, residential areas with narrow lanes still face challenges in accessibility.

Areas for Improvement: The Community Engagement and Public Space Activation (Score: 2.9/5) indicator shows moderate success, with some increased ownership among residents, but deeper engagement and more vibrant public spaces are still needed.

Finally, Economic Impact and Livelihood Generation (Score: 1.6/5) and Real Estate and Municipal Revenue Impact (Score: 1.7/5) remain limited. While there was a slight increase in property demand and rental rates in some commercial and mixed areas, the overall economic benefits have been minimal. Targeted measures to create local financial opportunities and drive municipal revenue growth would maximise the project's economic potential.

The project has effectively enhanced environmental health and utility access, but to achieve its full potential, further focus is needed on economic impacts and community participation.

7.5. Officials' Response

7.5.1. Indicator 01: Community Engagement and Public Space Activation of Project

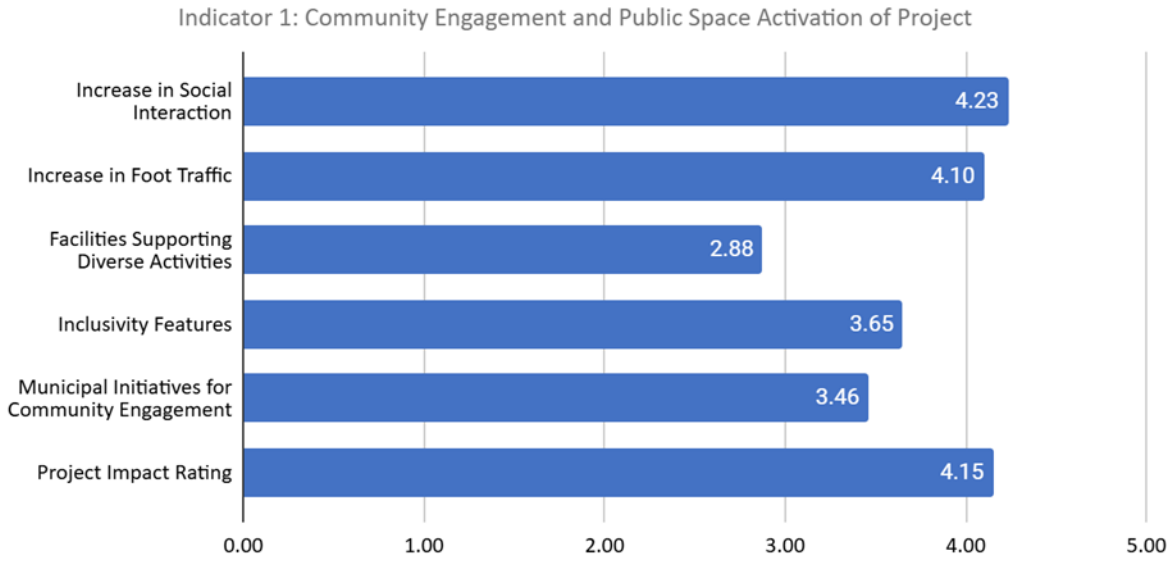


Figure 7-30 7.5.1. Indicator 01: Community Engagement and Public Space Activation of Project

The official response highlights significant improvements in social interaction and increased foot traffic, indicating the project's positive impact on activating public spaces and fostering community engagement. However, the relatively low score for facilities supporting diverse

activities suggests that more variety is needed to cater to different interests and demographics. Inclusivity features and municipal initiatives for community engagement also reveal moderate effectiveness, indicating room for further efforts to ensure equitable participation and proactive involvement by municipalities. Overall, the project has achieved a commendable impact rating of 4.15, reflecting its success in enhancing community dynamics while pointing out areas for improvement.

7.5.2. Indicator 02: Health, Well-being, and Safety Impact of Projects

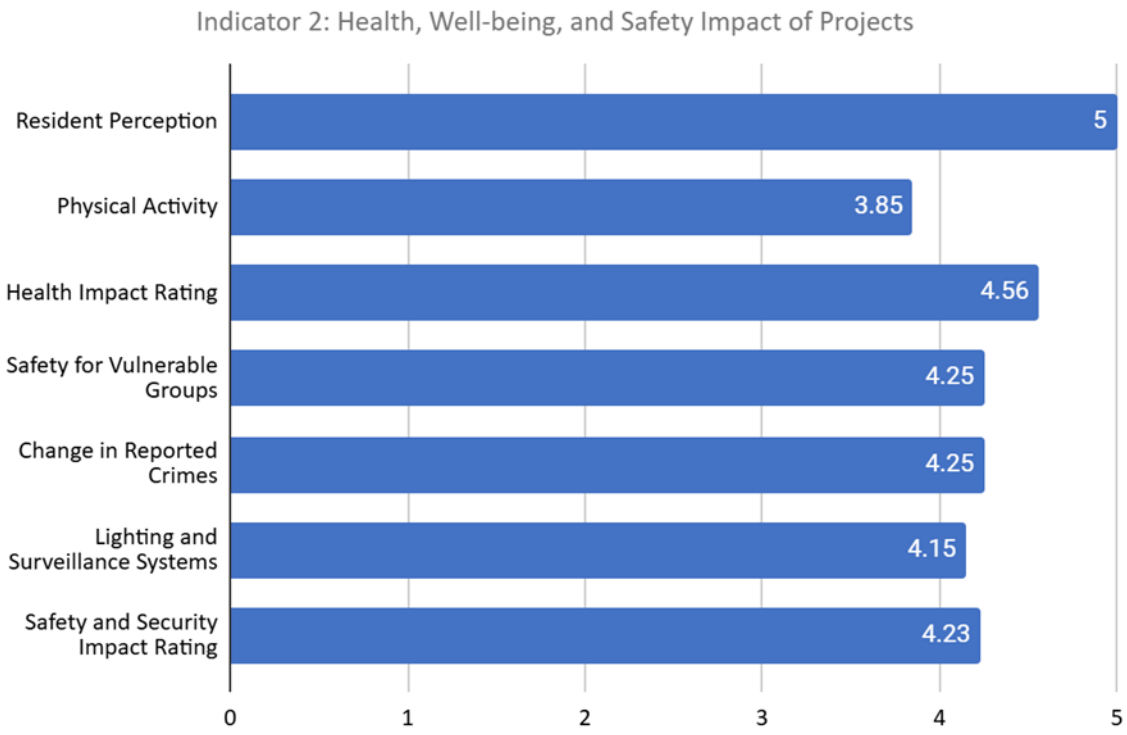


Figure 7-31 7.5.2. Indicator 02: Health, Well-being, and Safety Impact of Projects

The graph highlights an overwhelmingly positive perception from residents regarding the health, well-being, and safety impact of the project, with a perfect score of 5. This satisfaction is largely attributed to enhanced lighting and surveillance systems and additional measures like boom barrier gates and improved overall cleanliness, which have created a safer and more welcoming environment. The health impact rating is notably high at 4.56, further emphasizing the project's success in promoting well-being. Safety for vulnerable groups and a reduction in reported crimes showcase the effectiveness of safety measures. However, physical activity facilities scored a moderate, indicating the need for more diversified and improved equipment to better support active lifestyles. Overall, the safety and security impact rating stand at a strong 4.23, reflecting the project's comprehensive success in fostering a healthier and safer community.

7.5.3. Indicator 03: Economic Impact and Livelihood Generation from Projects

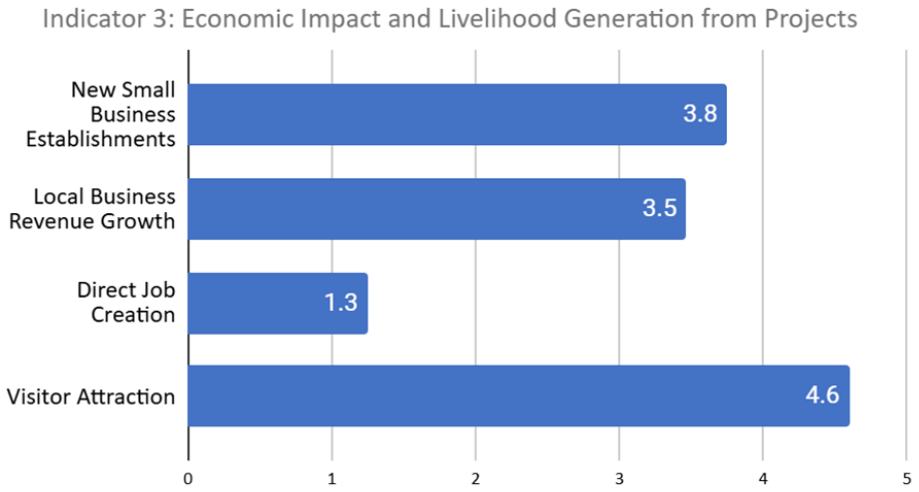


Figure 7-32 7.5.3. Indicator 03: Economic Impact and Livelihood Generation from Projects

The graph indicates that the project has significantly contributed to attracting visitors, which is attributed to the cleanliness and aesthetically pleasing environment it has created. This positive impact has also encouraged the establishment of new small businesses and contributed to local business revenue growth, highlighting its influence on the economic ecosystem. However, the project has generated minimal direct job opportunities, as reflected by a low score of 1.3. This gap suggests the need for structured operation and maintenance (O&M) strategies to create additional employment opportunities, further enhancing the project's economic and livelihood impact.

7.5.4. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

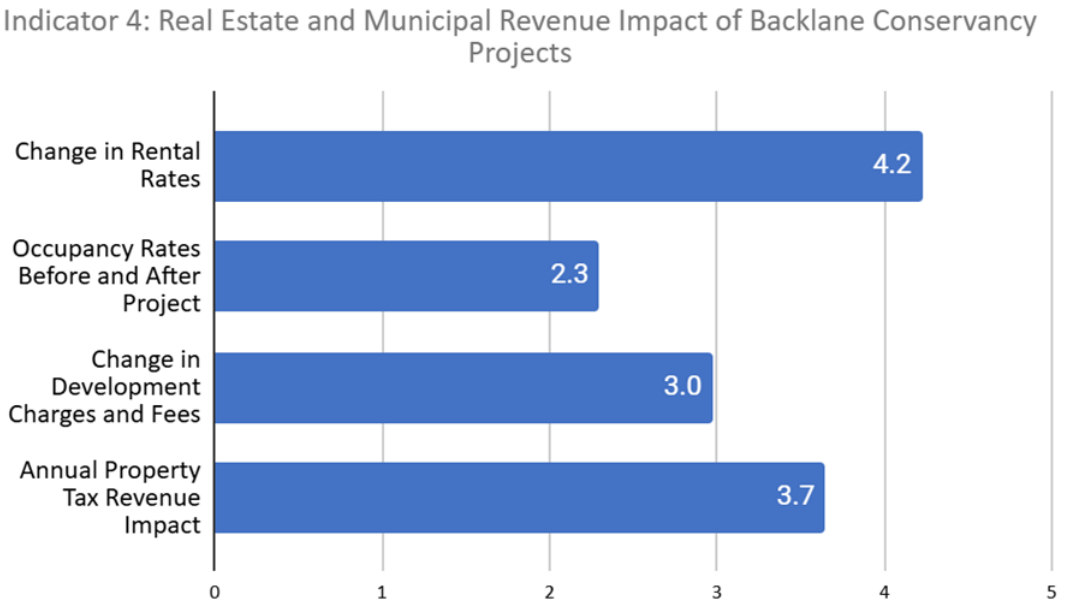


Figure 7-33 7.5.4. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

As per the official responses, the graph illustrates the positive real estate and municipal revenue impacts of back lane conservancy projects across four key parameters. The most significant change is observed in rental rates, which increased by 4.2 points, likely due to improved cleanliness and enhanced health and safety conditions in the back lanes. Annual property tax revenue also shows substantial growth, with a 3.7-point impact, indicating that the projects have contributed to an increase in property values. Changes in development charges and fees are recorded at 3.0 points, reflecting the higher demand for development in areas with rehabilitated back lanes. Lastly, the improvement in occupancy rates, marked at 2.3 points, underscores the appeal of these projects in attracting tenants. Collectively, these findings highlight the broad economic and social benefits derived from cleaner and safer urban back lanes.

7.5.5. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

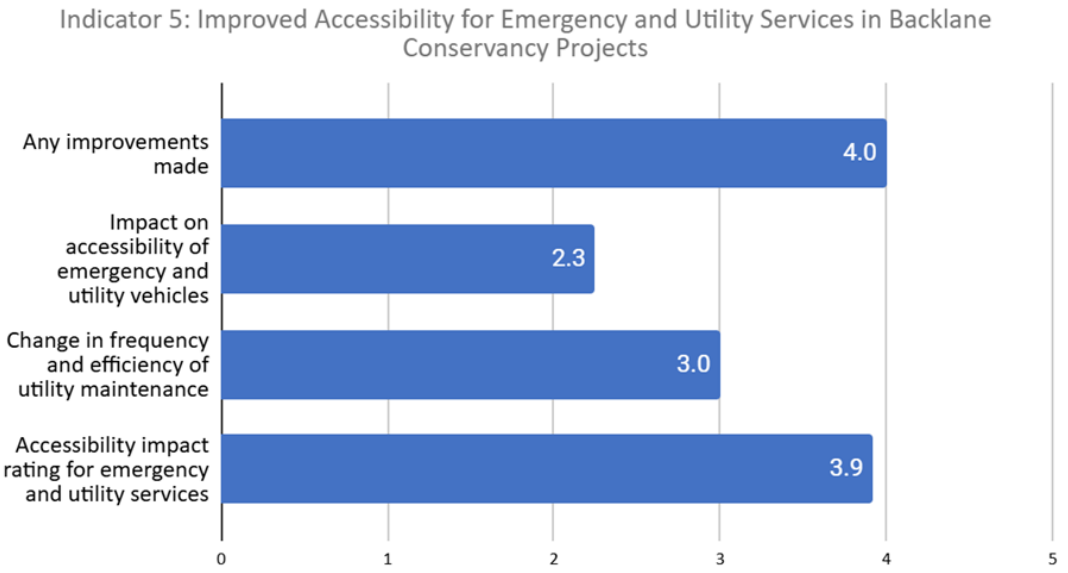


Figure 7-34 7.5.5. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

As per the official responses, the graph highlights the improvements in accessibility for emergency and utility services resulting from back lane conservancy projects. The most significant impact is seen in the "any improvements made" category, scoring a high 4.0, reflecting the substantial upgrades in back lane infrastructure. The accessibility impact rating for emergency and utility services follows closely at 3.9, underscoring how these projects have enhanced the ease of access for critical services. A notable improvement of 3.0 is observed in the frequency and efficiency of utility maintenance, demonstrating how better maintained back lanes facilitate operational efficiency. Meanwhile, the impact on the accessibility of emergency and utility vehicles, scored at 2.3, indicates moderate progress in reducing obstacles and ensuring quicker response times. These findings collectively emphasize the value of back lane enhancements in supporting emergency and utility operations, contributing to a safer and more functional urban environment.

7.5.6. Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

As per the official responses, the graph showcases the public health, and hygiene impacts of back lane conservancy projects across six key indicators. The highest score of 3.9 is observed in the "impact on illegal dumping and littering reduction," indicating that these projects significantly curb waste-related issues. Similarly, a notable 3.6 score in the "condition and maintenance of waste disposal infrastructure" reflects improved cleanliness and upkeep. The reduction in illegal dumping also scored highly at 3.5, underlining the effectiveness of these initiatives in discouraging waste disposal in inappropriate areas.

Positive changes in resident attitudes and behaviors, recorded at 3.4, highlight increased community participation in maintaining cleanliness. Improvements in waste collection and disposal efficiency scored 3.1, showing enhanced operational performance before and after project implementation. Meanwhile, the municipality's promotion of waste segregation and recycling scored 2.7, indicating room for improvement in raising awareness and encouraging sustainable practices. Overall, these projects have had a significant positive impact on urban hygiene and waste management practices.

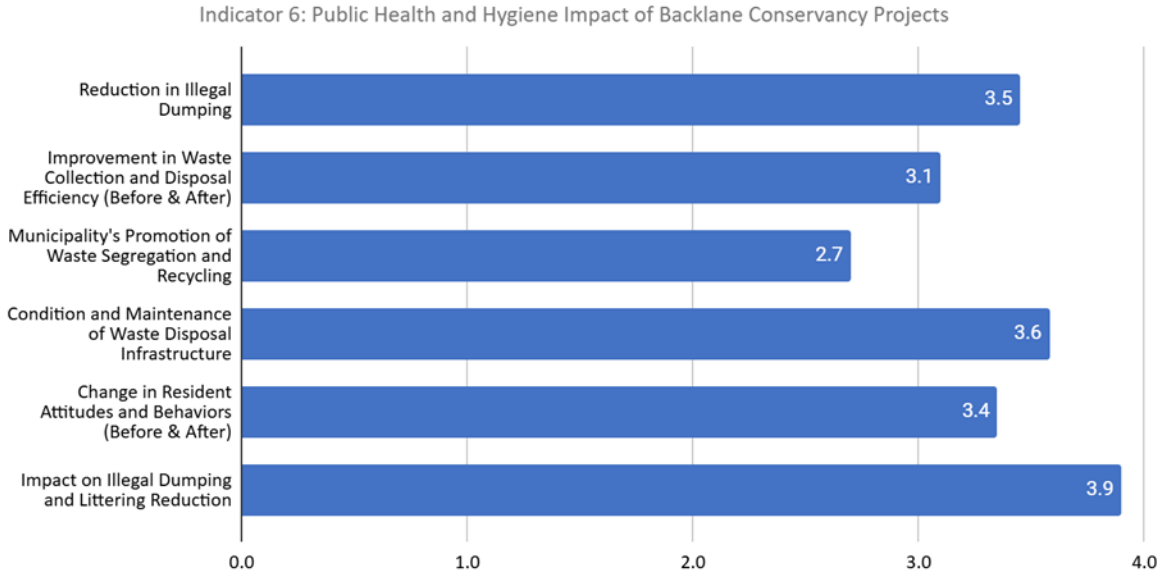


Figure 7-35 7.5.6. Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

7.6. Comprehensive Analysis

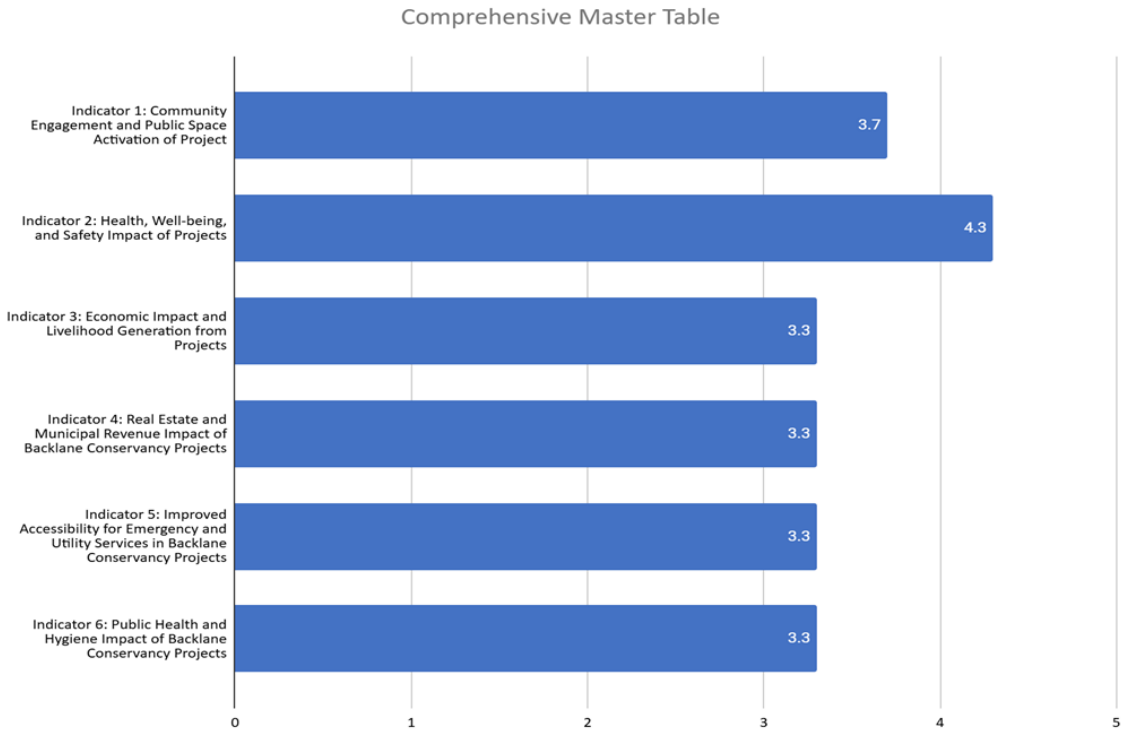


Figure 7-36 Comprehensive Analysis of Indicators

The Back lane Conservancy Lane projects in Shivamogga City have had a multifaceted impact on urban development, with notable achievements and areas for improvement. The most significant success lies in enhancing health, wellbeing, and safety, as evidenced by the highest score of 4.3. This underscores the project's contribution to creating cleaner, safer environments for residents. Community engagement and public space activation have also seen positive outcomes, with a score of 3.7 reflecting moderate progress in fostering social interaction and repurposing underutilized spaces. However, the economic impact, municipal revenue generation, accessibility improvements for emergency and utility services, and public health and hygiene outcomes each scored 3.3, signaling steady but limited gains in these areas. These results suggest that while the initiative has laid a strong foundation for urban renewal, further interventions are required to maximize its potential. Enhancing economic opportunities, addressing bottlenecks in accessibility, and strengthening public health initiatives could transform these back lane conservancies into vibrant, multifunctional spaces that drive sustainable growth and improve the overall quality of life in Shivamogga City.

7.7. Field Observations

Table 7.7.1 Field Observation

Indicators	Observations
Social Interaction & Community Engagement	The project enhanced social cohesion and sense of belongingness, particularly in residential areas, as residents used back lanes for recreation and gatherings. Commercial areas saw increased utility of space, attracting more foot traffic.
Mental Well-being, Health, Safety, and Security	Improved sanitation and infrastructure positively affected mental well-being, with residents and business owners benefiting from cleaner, more organized spaces. However, theft and antisocial behaviors remain concerns, especially at night.
Economic Impact & Livelihoods	Economic benefits are minimal, primarily limited to established businesses and a few informal activities.
Real Estate Value & Municipal Revenue	Real estate values and rental rates rose across all area types, attributed to improved cleanliness, infrastructure, and quality of life.
Accessibility for Emergency & Utility Services	Improved access in commercial areas, but residential zones still face constraints due to narrow lanes and recreational structures.
Public Health & Hygiene	Reduced littering and illegal dumping, especially in areas with regular waste collection and strong community engagement.

Figure 7-37 Field Visits and Stakeholder interaction, Shivamogga

7.8. Overall Findings

The Back lane Conservancy projects in Shivamogga City have had a varied impact across key urban development indicators, reflecting both commendable achievements and areas that require further improvement. One of the strongest outcomes is seen in public health and hygiene. The projects have significantly reduced illegal dumping and littering, particularly in commercial and mixed-use areas, through regular waste collection and waste segregation efforts. These interventions have resulted in cleaner environments, high resident satisfaction, and enhanced public health outcomes.

The projects have also positively influenced health, well-being, and safety. Improved sanitation and infrastructure have boosted mental well-being and contributed to safer surroundings. However, concerns such as theft and antisocial behavior persist, especially during nighttime, highlighting the need for targeted safety measures. Accessibility for emergency and utility services, reflects moderate success. Infrastructure upgrades in commercial zones have reduced service interruptions, but narrow residential lanes and obstructions from recreational structures continue to impede emergency access in some areas.

Community engagement and social interaction outcomes remain modest. While there is evidence of enhanced social cohesion and recreational use of back lanes in residential areas, the activation of vibrant, multifunctional public spaces has been limited. Deeper resident involvement and creative space utilization are essential to strengthen this aspect. Economic impact and livelihood generation have shown minimal progress. The benefits have been confined primarily to established businesses in commercial areas, and informal economic activities have seen only slight growth. More strategic efforts to integrate economic opportunities into these projects are necessary to realize their potential.

Real estate value and municipal revenue impacts have also been limited. Although real estate values and rental rates have risen due to improved cleanliness, infrastructure, and quality of life, the overall economic benefits and municipal revenue growth have been underwhelming. The lack of significant municipal revenue gains underscores the need for policies that translate these real estate improvements into broader financial benefits for the city.

In summary, the Back lane Conservancy projects have effectively enhanced public health, sanitation, and accessibility, particularly in commercial zones, laying a solid foundation for urban renewal. However, economic upliftment, deeper community engagement, and broader municipal revenue generation remain critical areas for future focus. Addressing these gaps will help maximize the impact of these projects, transforming them into robust drivers of sustainable growth and improved urban living in Shivamogga City.

7.9. Suggestions and Recommendations

Establish Formal Oversight & Maintenance Mechanisms

- Form a dedicated authority or committee responsible for regular inspections, waste management, and addressing unauthorized usage.
- Ensure consistent upkeep through routine maintenance schedules.

Enhance Surveillance and Security

- Install CCTV cameras and adequate lighting to deter theft and antisocial activities.
- Engage neighborhood watch programs or community volunteers to monitor back lanes, especially during off-hours.

Facilitate Mixed-Use Space Management

- Develop guidelines for shared use in mixed zones to minimize conflicts between residents and businesses.
- Adjust zoning laws to support flexible but regulated usage of conservancy lanes.

Expand Economic Opportunities through Infrastructure

- Designate spaces for kiosks, food stalls, and recreational zones to encourage local entrepreneurship and economic vibrancy.
- Provide small business support programs to foster sustainable livelihoods.

Increase Accessibility for Emergency and Utility Vehicles

- Standardize lane widths and restrict obstructive installations to improve access for emergency and maintenance vehicles.
- Introduce alternate pathways or adjustable barriers to ensure quick emergency response in residential areas.

Strengthen Public Health and Waste Management

- Implement systematic waste collection schedules and enforce compliance with waste segregation practices.
- Expand waste management infrastructure and ensure consistent monitoring to prevent littering and debris dumping.
- Run awareness campaigns about the public health benefits of maintaining clean and safe conservancy lanes.

Promote Job Creation through Maintenance Roles

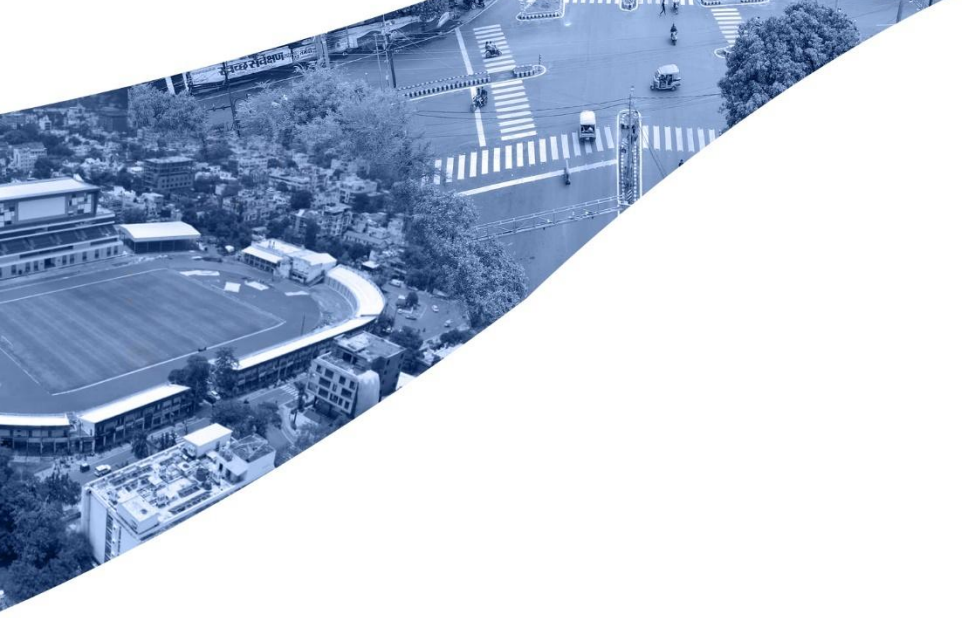
- Formalize operations and maintenance roles, creating job opportunities for residents.
- Encourage partnerships with local stakeholders for sustainable management and economic growth.

Support Structured Development and Municipal Revenue Generation

- Advocate for structured development that retains the aesthetic and functional appeal of conservancy lanes.
- Explore municipal revenue enhancements through property taxes, user fees, and paid amenities like parking spaces.

Enhance Community Engagement and Awareness

- Organize community awareness programs to foster a sense of ownership and encourage active participation in maintenance efforts.
- Introduce rewards or recognition programs for communities actively maintaining their conservancy lanes.



JABALPUR
SMART CITY LIMITED

CASE AREA 02
JABALPUR

8. CASE AREA 02 - JABALBUR

Between 2019 and 2022, significant efforts were made to transform the conservancy lanes in "Official Colony," of Jabalpur. These lanes, originally intended for manual scavengers to clean up waste, had become an unsightly dumping ground for garbage from neighbouring houses and flats. With no proper approach road for cleaning, the space had turned into a health hazard, with household sewer and wastewater regularly entering the lanes. To address these issues, a substantial budget of ₹4.47 crore was allocated for the back lane conservation project. The purpose of this project was to clean up and restore these neglected spaces, making them more accessible to NMT and functional.

8.1. City Profile

8.1.1. Introducing Jabalpur

Jabalpur is a major city in the central Indian state of Madhya Pradesh. Known for its historical significance and rich cultural heritage, Jabalpur is both an educational hub and a centre for administrative and judicial activities. Situated along the Narmada River, Jabalpur is surrounded by rocky hills and dense forests, contributing to its scenic beauty. The city experiences a subtropical climate with hot summers, moderate monsoons, and mild winters.

8.1.2. History

Jabalpur has a long history dating back to ancient times, once part of the powerful Gond dynasty. It later became an important administrative centre during British colonial rule. The city played a crucial role during the Indian independence movement, hosting several key events and figures. Its history is also marked by the presence of British cantonments and colonial architecture. Jabalpur is home to the famous Madan Mahal Fort, Rani Durgavati Memorial, and other historical landmarks that reflect its rich past.

8.1.3. Demographics

Jabalpur is the third-largest city in Madhya Pradesh, with a population of over 1.5 million people (Census 2011). The gender ratio in Jabalpur is about 939 females for every 1,000 males, reflecting the broader demographic trends in the region.Jabalpur has a literacy rate of approximately 87.6%, which is higher than the national average, reflecting a well-educated population.

The city is known for its diverse population, including communities of Marathas, Rajputs, and Muslims, among others. The city has seen steady growth over the years, becoming an educational and medical hub, attracting students and professionals from across the region.

8.1.4. Economy

Jabalpur's economy is a mix of industrial, commercial, and agricultural activities. It is known for its defence establishments, including ordnance factories, and has a growing IT sector. The city serves as an important trade centre for agricultural products and is also known for its production of arms and ammunition, contributing significantly to the region's economy.

8.1.5. Culture and Lifestyle

Jabalpur has a vibrant cultural scene, with numerous theatres, cultural clubs, and music schools. It's famous for its folk traditions and classical music. The city celebrates major festivals like Navratri, Diwali, and Eid with great enthusiasm. Events like Narmada Jayanti and the Mahakaushal Festival highlight the city's cultural richness.

8.1.6. Tourism

Key attractions include the marble rocks at Bhedaghat, Dhuandhar Falls, Rani Durgavati Museum, and the balancing rock formations. The city is also a gateway to nearby wildlife reserves like Kanha and Bandhavgarh. Boating on the Narmada River, trekking in nearby hills, and exploring caves and temples are popular among locals and tourists.

The city is undergoing various urban development projects, including road expansions, smart city initiatives, and the enhancement of public amenities. These projects aim to improve the quality of life and boost Jabalpur's appeal as a tourist destination.

8.2. Contextual Background

The urban drainage system plays a pivotal role in maintaining the health, hygiene, and aesthetics of a city. However, in Jabalpur, the issue of unhygienic drainage has become a critical concern, particularly in areas like Official Colony. This locality has faced years of neglect, resulting in a significant decline in sanitation standards. An examination of the existing drainage conditions reveals the systemic challenges associated with waste disposal and drainage management, which have exacerbated public health issues and deteriorated the urban environment.

Many years ago, the concept of conservancy lanes was introduced in Jabalpur's residential areas, such as Official Colony. These lanes, situated between rows of houses, were initially designed for waste disposal, where manual scavengers would collect and clean the waste. However, with the evolution of urban infrastructure and changes in waste management systems, these conservancy lanes have become a neglected aspect of the city's urban fabric.

Over time, the absence of proper maintenance and access has turned these lanes into breeding grounds for garbage accumulation. The inaccessibility of the conservancy lanes from either side, coupled with insufficient sanitation services, has transformed these spaces into ugly piles of waste that affect the neighboring houses and flats. Consequently, these once-functional urban spaces have become zones of environmental degradation, posing severe health risks to the residents.

The Omti Nala – A Critical Urban Drainage System

One of the most significant stormwater drainage systems in Jabalpur is the Omti Nala, which passes through the heart of the city, including the ABD (Area-Based Development) area. Initially designed to manage the city's stormwater, the Omti Nala has now become a critical node in Jabalpur's drainage crisis. Due to the continuous disposal of sewerage and solid waste into the Nala, the condition of the drain has deteriorated over time. The unsanitary state of

Figure 8-1 Unhygienic drainage conditions in Jabalpur

The Omti Nala reflects the broader challenges of Jabalpur's drainage management. The contamination of this vital stormwater drain not only threatens the water quality but also disrupts the natural drainage patterns of the city. Additionally, the unregulated dumping of solid waste has resulted in blockages, causing water stagnation and creating breeding grounds for mosquitoes and other disease vectors. From an urban planner's viewpoint, the poor condition of the Omti Nala underscores the need for a comprehensive drainage and waste management strategy.

8.2.1. Challenges and Impacts

Several challenges contribute to the unhygienic drainage conditions in Jabalpur, particularly in areas like Official Colony and the Omti Nala:

Lack of Access to Conservancy Lanes: The inaccessibility of conservancy lanes from either side limits waste collection and maintenance activities. This has resulted in the accumulation of garbage, transforming these lanes into unsightly and unhealthy spaces. The absence of a systematic approach to maintaining these lanes has led to a cascading effect on the overall drainage network.

Sewage Disposal into Stormwater Drains: The mixing of sewage with stormwater is a major concern in Jabalpur. This practice not only pollutes the water bodies but also clogs the drainage system, leading to frequent flooding during monsoons. The lack of a separate sewage system exacerbates this issue, overwhelming the capacity of the existing drainage infrastructure.

Solid Waste Management Failures: Uncontrolled solid waste disposal into drains and conservancy lanes is another critical factor contributing to the unhygienic conditions. The failure of solid waste management systems to keep up with the growing urban population has led to frequent blockages in the drainage system, affecting the entire city's sanitation.

Health and Environmental Hazards: The unhygienic conditions in the drainage system pose serious health risks, including the spread of waterborne diseases such as cholera, typhoid, and dengue. The environmental impact is equally alarming, as the pollution from the drainage system seeps into nearby water bodies and agricultural land, affecting biodiversity and natural ecosystems.

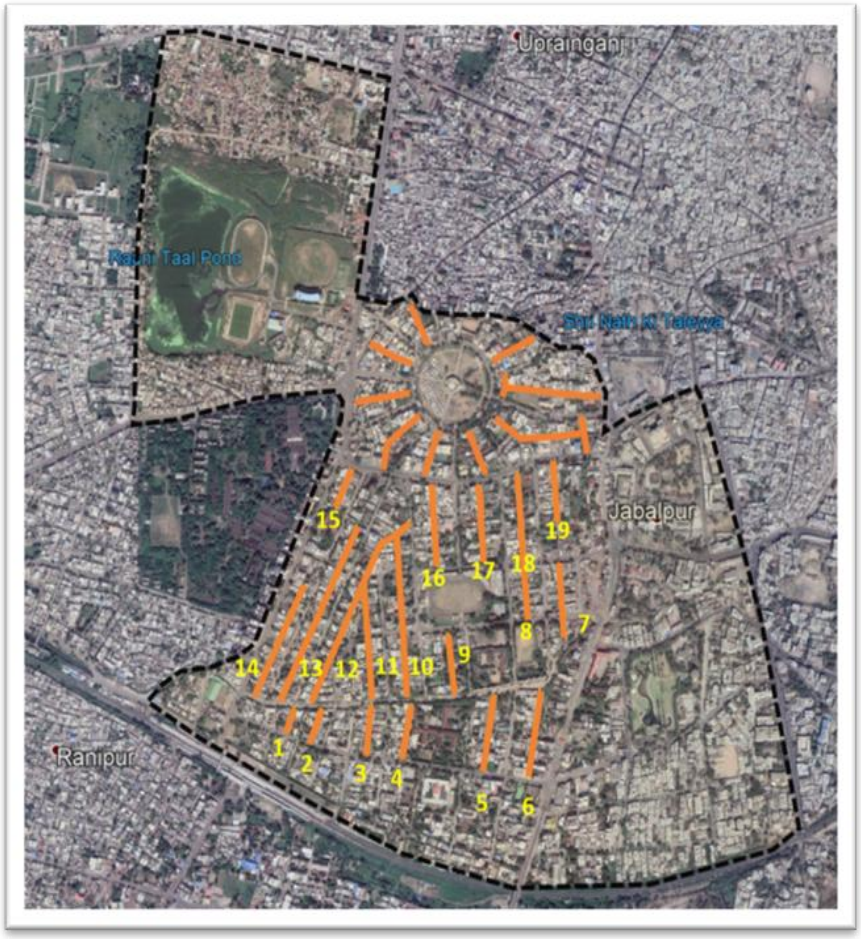


Figure 8-2 Locations of Identified back lane/conservancy lanes

The Jabalpur Smart City Limited (JSCL) took the lead in conceptualizing and initiating the back lane/conservancy lane project as part of the broader JNNURM scheme. The project was born out of the need to address long-standing issues related to urban sanitation and connectivity in Jabalpur's residential areas, particularly those situated near the Omti Nala.

The Omti Nala, a stormwater drain that traverses the city, including the Area-Based Development (ABD) zone, had become a focal point of Jabalpur's urban planning challenges due to unhygienic conditions resulting from improper sewerage disposal and solid waste accumulation. Initially, JSCL proposed an NMT corridor along the Omti Nala as part of its smart city initiative. The NMT corridor was designed to promote sustainable urban mobility by encouraging cycling, walking, and other forms of non-motorized transport.

However, during the planning and execution of the NMT project, it became evident that addressing the conditions of adjacent conservancy lanes was essential to the project's success. These back lanes, traditionally used for waste disposal, had turned into unsanitary zones due to years of neglect, inadequate maintenance, and poor waste management practices. Consequently, the NMT project expanded its scope to initiate the back lane/conservancy lane project, aiming to revitalize these neglected urban spaces while improving sanitation and drainage infrastructure.

8.2.2. Objectives of the Project

The initiation of the back lane/conservancy lane project was driven by several key objectives:

Sanitation Improvement: The primary goal was to improve sanitation conditions in the back lanes of residential areas, particularly those connected to the Omti Nala. This involved regularizing waste collection, preventing illegal dumping, and ensuring proper maintenance of these lanes to eliminate unhygienic conditions.

Urban Connectivity: The project aimed to enhance urban connectivity by transforming back lanes into functional spaces that could support pedestrian and non-motorized traffic. This initiative was closely tied to the NMT corridor project, as rehabilitating the conservancy lanes would create a seamless network of walkways and cycling paths across the city.

Environmental Sustainability: Another key objective was to promote environmental sustainability by integrating green infrastructure solutions into the project. By incorporating nature-based designs, such as permeable pavements, rain gardens, and bio-swales, the project aimed to manage stormwater effectively while reducing the risk of flooding and waterlogging in the lanes.

Public Health and Safety: Improving public health and safety was a critical component of the project. By addressing the drainage and waste management issues in the back lanes, the project sought to reduce the spread of waterborne diseases, improve air quality, and create safer urban environments for residents.

8.2.3. Planning and Design Considerations

The initiation of the back lane/conservancy lane project required thoughtful planning and design, particularly in the context of Jabalpur's complex urban landscape. Several key factors were taken into account;

Integration with Existing Infrastructure: A critical aspect of the project was ensuring that the upgraded lanes integrated seamlessly with the city's existing infrastructure, particularly the drainage system. Since the conservancy lanes were closely linked to the Omti Nala, it was crucial to ensure that the lanes supported proper drainage without contributing to pollution or blockages.

Urban Connectivity and NMT Integration: Integrating the rehabilitated conservancy lanes with the NMT corridor was a major planning consideration. The installation of barriers to prevent vehicle access to the NMT corridor enhanced pedestrian and cyclist safety, creating a vehicle-free zone that promoted sustainable mobility. The back lanes, once neglected, were now seen as essential extensions of this network, supporting Jabalpur's broader vision for non-motorized transport.

Community Participation: Community engagement was a cornerstone of the project's success. Involving residents in the planning, execution, and maintenance of the back lanes ensured that local needs were met and that the community had a sense of ownership over the improved urban spaces. Public consultations, awareness campaigns, and clean-up drives were organized to foster a collective effort in maintaining the rehabilitated lanes.

Sustainability and Resilience: Given the environmental challenges facing Jabalpur, such as frequent monsoon flooding, the project emphasized sustainable and resilient design. Green infrastructure solutions were integrated into the upgraded lanes to manage stormwater and reduce the strain on the city's drainage system. Using durable, low-maintenance materials ensured the long-term sustainability of the rehabilitated spaces, while also enhancing their resilience to future environmental challenges.

8.2.4. Implementation Strategies

The implementation of the back lane/conservancy lane project followed a phased approach to ensure efficiency and effectiveness. Coordination between JSCL, municipal authorities, contractors, and the local community was key to the successful execution of the project. Key strategies included:

Phase-Wise Execution: The project began with the most critical areas, particularly those adjacent to the Omti Nala and within the ABD zone. This allowed for concentrated efforts in high-impact zones before expanding to other parts of the city.

Community Engagement and Partnerships: To ensure sustained success, public-private partnerships (PPPs) were established to bring in expertise and resources. Simultaneously, community-driven initiatives, such as clean-up drives and waste management workshops, were promoted to encourage local involvement in maintaining the rehabilitated lanes.

NMT and Back Lane Integration: Ensuring the smooth integration of the back lanes with the NMT corridor was a priority. The barriers installed to prevent vehicular access created safe and connected spaces for pedestrians and cyclists, extending the reach of the NMT network throughout the city.

Monitoring and Evaluation: Continuous monitoring and evaluation were essential to track the progress of the project and address any challenges. Field surveys, community feedback, and the use of GIS-based tools were employed to assess the impact of the project on urban sanitation, connectivity, and public health.

8.2.5. Impact and Future Prospects

The back lane/conservancy lane project has made a significant impact on urban sanitation, connectivity, and sustainability in Jabalpur. The integration with the NMT corridor has improved non-motorized transport options, while the rehabilitation of the lanes has enhanced public health and safety. The project has also fostered a strong sense of community ownership, with residents actively participating in the maintenance of the improved spaces.

The initiation of the back lane/conservancy lane project by Jabalpur Smart City Limited marks a significant step towards addressing urban sanitation and connectivity challenges in the city. The project highlights the importance of integrated planning approaches that prioritize community engagement, environmental sustainability, and urban connectivity. Through strategic interventions and collaborative efforts, Jabalpur can continue to enhance its urban environment, creating a healthier, safer, and more sustainable city for all its residents.

8.3. Project Details

The back lane conservancy project in Jabalpur features three variations in lane width to accommodate different site conditions, urban layouts, and functionality requirements. These variations allow the project to adapt to diverse urban settings across the city. To understand the detailed design of the back lane conservancy project, it is essential to examine the cross-sections of the various lane types. These cross-sections highlight the specific interventions for each lane type, demonstrating how different components are integrated to create a cohesive urban space.

8.3.1. 2.4m Wide Lane

This variation is designed for narrow, high-density residential areas where space constraints are significant. The 2.4-meter-wide lane prioritizes pedestrian movement and waste management access.

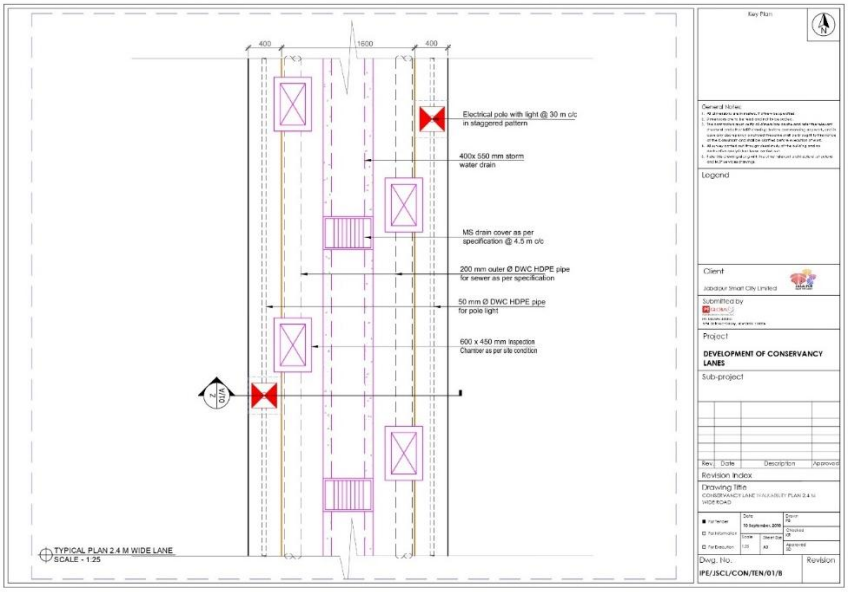


Figure 8-3 Typical plan 2.4m wide lane

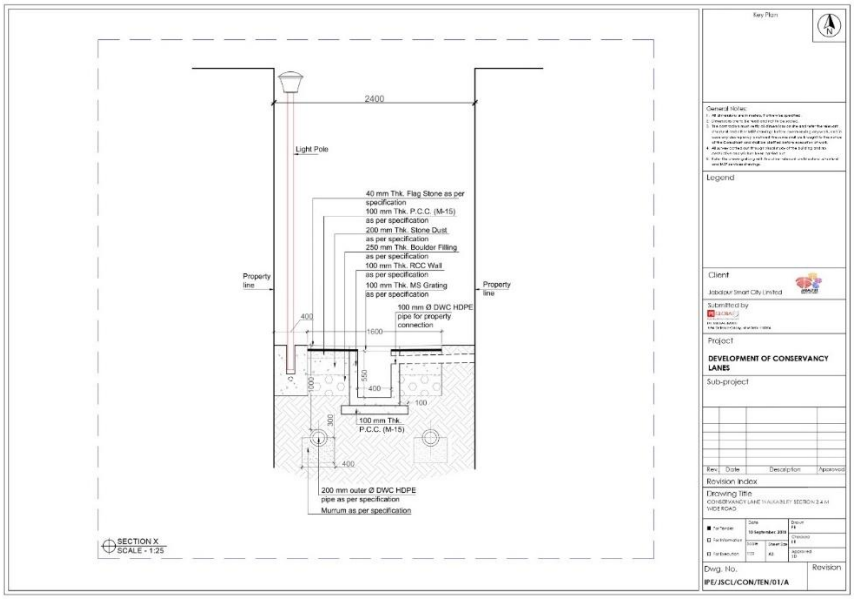


Figure 8-4 Typical Section 2.4m wide lane

The cross-section of the 2.4-meter-wide lane shows the compact design that prioritizes pedestrian access while incorporating essential infrastructure such as drainage channels and waste collection points. The lane features minimal setbacks, with boundary walls or fencing separating it from adjacent properties. This lane type typically includes a single row of streetlights and clear demarcation of pedestrian pathways.

8.3.2. 3-Meter-Wide Lane

The 3-meter-wide lane variation is implemented in medium-density residential areas, where there is a balance between space availability and functional needs. This lane accommodates both pedestrian movement and service vehicle access, including garbage trucks and emergency vehicles.

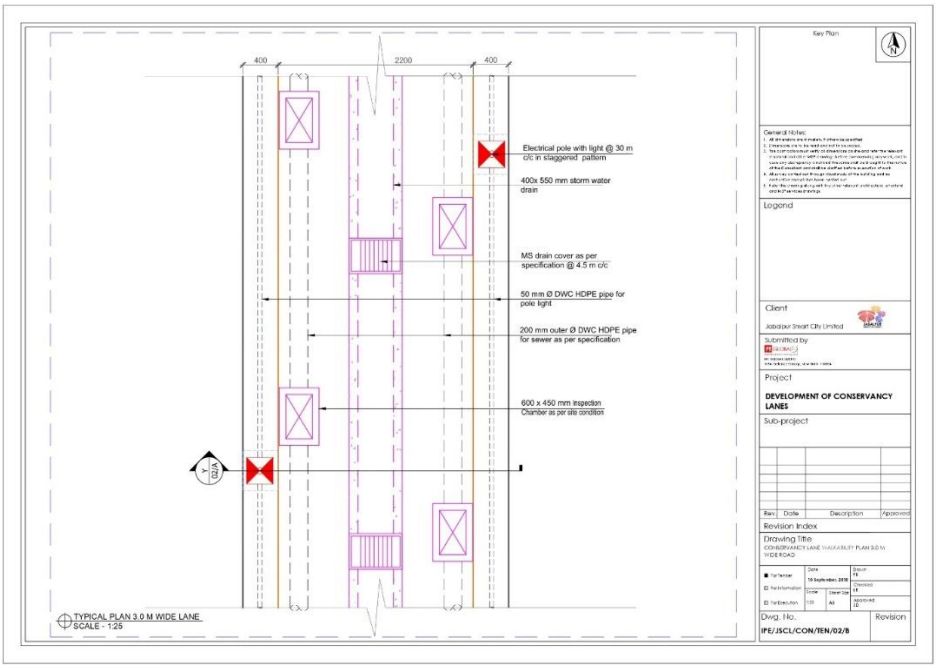


Figure 8-5 Typical plan 3.0m wide lane

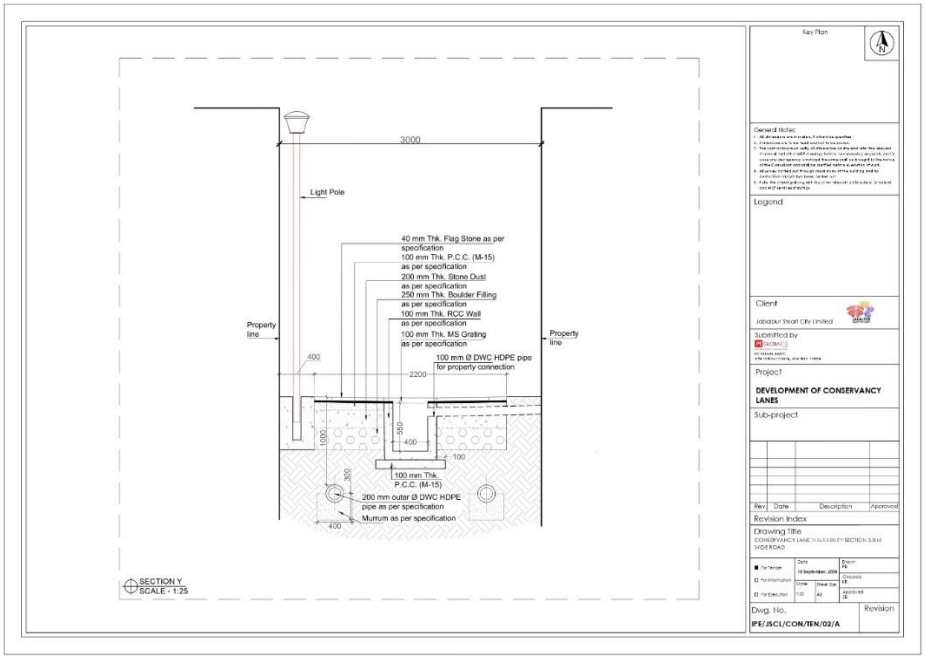


Figure 8-6 Typical section 3.0m wide lane

The 3-meter-wide lane cross-section demonstrates a more complex design, with wider pathways, drainage channels, and additional green infrastructure. This lane type includes provisions for service vehicle access, with reinforced paving to support the weight of garbage trucks and emergency vehicles. The cross-section also shows the integration of small green spaces and public seating areas.

8.3.3. 3.6-Meter-Wide Lane

The 3.6-meter-wide lane is the broadest variation and is implemented in areas where space allows for a more multi-functional approach. These lanes are designed to accommodate pedestrian movement, cycling, and service vehicle access, making them integral parts of the Non-Motorized Transport (NMT) network.

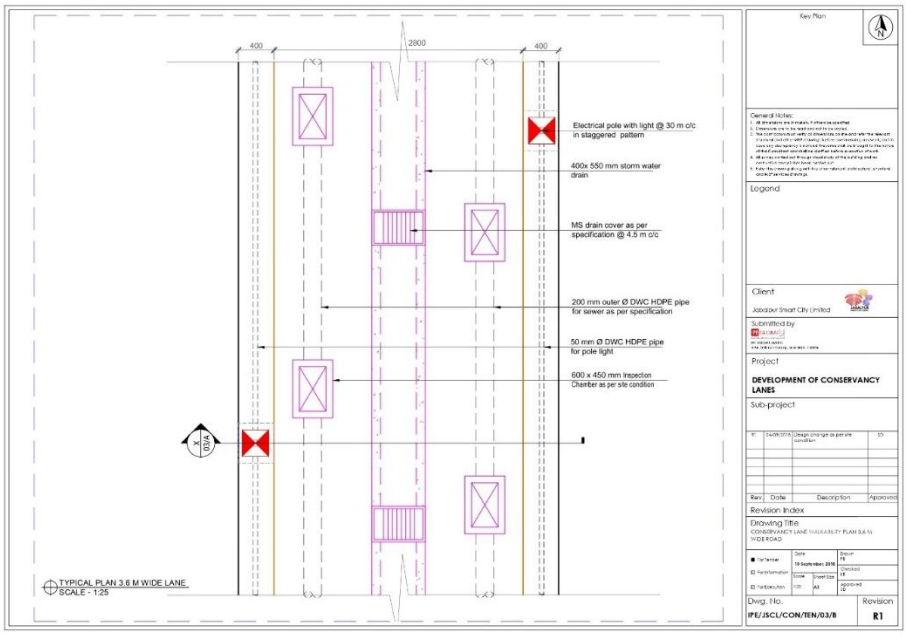


Figure 8-7 Typical plan 3.6m wide lane

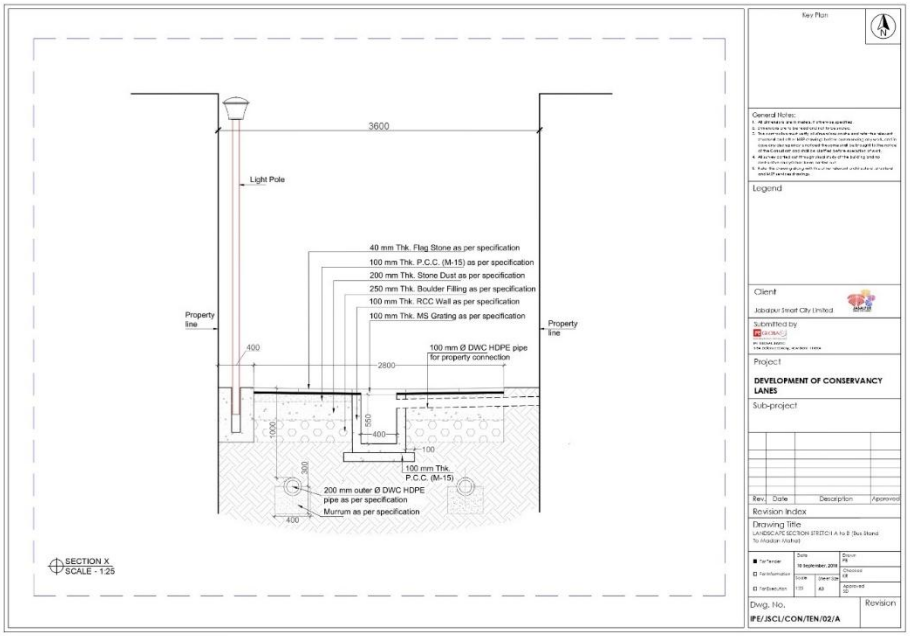


Figure 8-8 Typical section 3.6m wide lane

The cross-section of the 3.6-meter-wide lane showcases a multi-use path designed to accommodate both pedestrians and cyclists. The lane includes separate zones for each, with clear signage and markings to ensure safety. The cross-section also highlights the use of permeable paving materials, stormwater management systems, and enhanced security features such as CCTV cameras and street lighting.

8.3.4. Key interventions in this lane type include

Paving and Drainage: The lanes are paved with durable materials that facilitate easy cleaning and maintenance. Stormwater management is incorporated into the design through proper grading, ensuring that water flows into adjacent drains without causing waterlogging.

Waste Management: Dedicated waste collection points are established at regular intervals, with signage and barriers to prevent illegal dumping. Residents are encouraged to segregate waste, and regular collection schedules are implemented.

Lighting and Security: Adequate lighting is provided along the lane to enhance security and make the space safer for pedestrians, particularly at night.

Green Infrastructure: Small green spaces, including planters, are incorporated into the lane design. These features enhance the aesthetic appeal of the lane while contributing to stormwater absorption and reducing the urban heat island effect.

Seating and Public Amenities: In areas where space permits, public seating and other amenities, such as benches and shaded rest areas, are installed to create a more welcoming environment for residents.

Community Spaces: Where possible, the lanes incorporate community spaces, such as small parks or playgrounds, creating vibrant public spaces that encourage social interaction and community engagement.

8.3.5. Past Scenario

Photographs taken before the project showcase the state of neglect in the conservancy lanes. These images depict the accumulation of solid waste, waterlogging, and overgrown vegetation, emphasizing the need for the project. The visuals also show the absence of proper lighting, security, and drainage systems, which contributed to the unsanitary and unsafe conditions in the lanes

Figure 8-9 Past Scenario

8.3.6. Implementation Scenario

Visual documentation during the implementation phase captures the construction and upgrade processes. These images show workers installing drainage systems, paving the lanes, and setting up lighting and waste collection points. The photographs also document community engagement activities, such as clean-up drives and awareness campaigns, which played a critical role in the project's success.

Figure 8-10 During Implementation

8.3.7. Current Scenario

The after-completion photographs demonstrate the positive impact of the back lane conservancy project. The images showcase the rehabilitated lanes, with clean and well-maintained pathways, functional drainage systems, and properly managed waste collection points. The visuals also highlight the integration of green infrastructure and public amenities, creating a more vibrant and livable urban environment for residents.

Figure 8-11 After Implementation

The detailed planning and execution of the back lane conservancy project in Jabalpur demonstrate the importance of tailored interventions that address the specific needs of different urban contexts. By incorporating a range of lane typologies, integrating sustainable design solutions, and engaging the community in the process, Jabalpur Smart City Limited has created a model for urban renewal that enhances both sanitation and connectivity. The visual documentation of the project further underscores the transformative impact of these interventions, offering a glimpse into the future of urban spaces in Jabalpur.

8.4. Citizen Response Survey

The primary survey involved a citizen response analysis with a sample size of 38 participants. The questionnaire included 38 questions covering 6 key indicators to gather insights into public perceptions and priorities. In Jabalpur, a total of 38 samples were collected from citizens and 21 samples were collected from government officials. The samples of the citizens were collected from across the spatial length and region of the back lane project.

8.4.1. Indicator 01: Community Engagement and Public Space Activation of Project

This indicator assesses how the back lane conservancy project has encouraged local community engagement, social interaction, and active use of public spaces. By transforming back lanes into more welcoming, inclusive spaces, the project aims to foster a sense of community and provide areas where residents can socialise, relax, and participate in activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made.

Frequency of Space Utilisation - The data indicates that none of users rarely use the back lane after the conversion project, while 80% use it daily. This engagement likely results from most lanes being narrow and short, increasing accessibility and the ability to support any meaningful activities. This suggests that the project’s impact on back lane usage has been drastic due to accessibility.

Average Daily Duration of Use - 62% of the respondents spend less than 1 hour in the back lanes. This limited duration suggests that the lanes lack engaging activities and adequate space for extended use. Many of these lanes are too narrow to support human interaction comfortably, reducing their appeal as communal spaces.

Enhanced Social Interaction - Based on the data, 45% of respondents reported moderate change in social interaction, while 34% observed a minimal increase. This improvement is primarily noted in areas with well-maintained lanes. Overall, there are initiatives aimed at fostering social interaction, fostering the project's impact on community engagement in most areas.

Foot Traffic Growth - According to the data, 49% of the respondents reported minimal increase in foot traffic compared to pre-project levels. This increased foot traffic is attributed to the engaging or attractive activities in the back lanes, which has appealed and used by the community. With additional features to draw interest, the project has successfully enhanced the area's vibrancy or pedestrian presence.

Support for Diverse Activities - 97% of the Respondents indicated that there are facilities supporting diverse activities, such as footpaths, seating, lighting, or play areas, within the back lanes. 79% of the respondents actively use these facilities. With features to draw interest, the project has successfully enhanced the area's diversity.

Inclusivity of Features - 74% of the respondents reported presence of inclusive features, such as accessible ramps or seating areas for seniors and differently abled individuals. The presence of these essential amenities, the functionality and inclusivity of the back lanes, increasing their potential as active, welcoming community spaces.

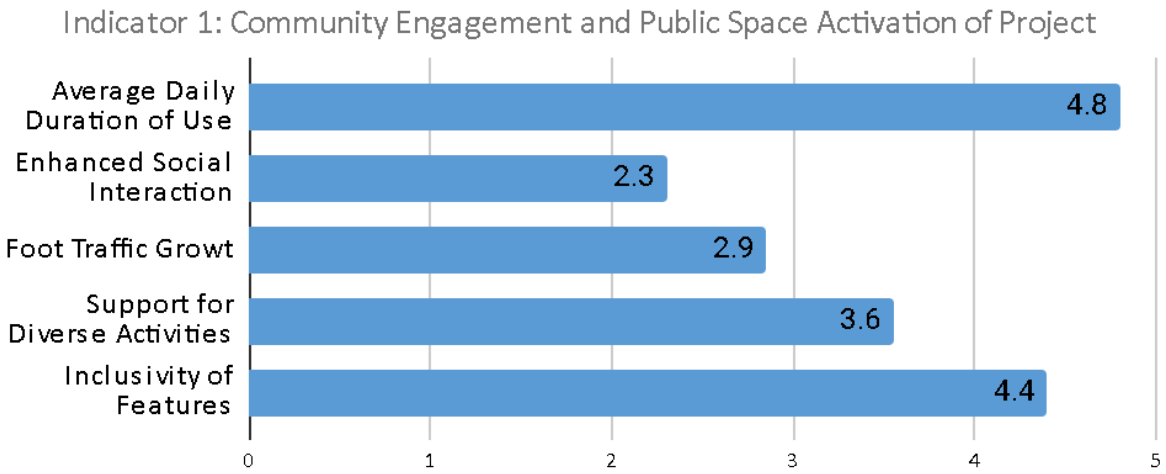


Figure 8-12 Indicator 01: Community Engagement and Public Space Activation of Project

The back lane conservancy project has made strides in creating accessible, community-focused spaces with high frequency of use, but limited features for prolonged engagement. The narrow layout and lack of diverse, inclusive amenities restrict the project's effectiveness in fully transforming these spaces into active community hubs. Enhanced infrastructural support could further foster communal interaction and encourage extended use, better aligning with the project's goals of creating inclusive, vibrant public spaces.

8.4.2. Indicator 02: Health, Well-being, and Safety Impact of Projects

This indicator assesses the project's contribution to community health and safety. Improvements in air and noise quality, increased physical activity, and reduced stress levels support residents' well-being. Enhanced safety for vulnerable groups, better lighting, surveillance, and lower crime perception fosters a sense of security, with residents generally satisfied with these positive changes.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Stress Reduction Impact - The data shows that 100% of respondents with active usage have reported differences in stress reduction due to the back lane project. All respondents indicated a positive impact on stress. This improvement suggests that the back lanes, as they currently are, provide sufficient calming features, green spaces, or engaging activities that positively influence mental well-being.

Overall Resident Perception - The back lane conservation project had an impact on most residents, with 100% of respondents with a positive perception. The positive responses reflect satisfaction with improvements in infrastructure; the majority's stance suggests that the project's benefits were widely impactful or relevant to daily life for most residents.

Air Quality Perception - In terms of air pollution levels after the back lane conservation project, 89% of respondents felt air quality improved, 9% reported no difference. The improvement in perceived air quality by some residents could be attributed to better connectivity to the Underground Drainage (UGD) system, potentially reducing stagnant water and waste buildup in the back lanes, which may have previously contributed to foul odours and particulates.

Noise Level Perception - Regarding noise pollution levels after the back lane conservation project, 89% of respondents observed a decrease. This suggests that the project's focus, primarily on improving utility connections to the Underground Drainage (UGD) system, involved measures that would significantly affect noise levels.

Increase in Physical Activity - In terms of physical activity in the back lane area post-project, 95% of respondents noticed an increase in activities like walking, jogging, and playing., while 5% noticed no difference. This uptick in physical activity could be attributed to the improved conditions due to the Underground Drainage (UGD) connectivity, which likely reduced issues like water stagnation or waste, making the space cleaner and more usable. However, the large majority experiencing change suggests that while the project improved functionality, it did significantly transform the area into a popular recreational spot.

Health Impact Satisfaction - Resident satisfaction with the back lane conservation project's impact on community health was high, with 57% expressing satisfaction and only 46% feeling dissatisfied. While the project improved conditions through UGD connectivity, which have helped reduce waste and odours, these benefits met residents' expectations for noticeable health improvements. This indicates broader health-focused initiatives, such as green spaces or pollution reduction, to enhance community well-being.

Perception of Safety for Vulnerable Groups - 89% of residents reported noticeable change in safety. This suggests that while the project addressed specific safety features like lighting, surveillance, or accessible pathways that might directly enhance a sense of security for vulnerable groups. As a result, the project's impact on safety perception remains high.

Crime Rate Perception - 82% of respondents observed a positive difference. This indicates that the conservancy project, while beneficial for infrastructure, did impact crime rates or safety concerns. Without measures like enhanced lighting, security patrols, or surveillance, the project did directly address factors that could reduce crime or increase residents' sense of safety in the area.

Lighting and Surveillance Improvements - Most respondents, 89%, reported difference in the presence of streetlights and surveillance systems in terms of crime rates or safety concerns. This suggests that the infrastructure improvements have enhanced visibility, they did significantly affect the perceived level of surveillance or safety

Safety and Security Satisfaction - Most respondents (60%) were satisfied with the safety and security aspect of the back lane/conservancy project, rating it a 4/5. Smaller percentages rated it a 2 (13%) or 3 (20%). This suggests that the project improved infrastructure, it did effectively address residents' safety concerns, indicating a need for additional measures like better lighting or surveillance.

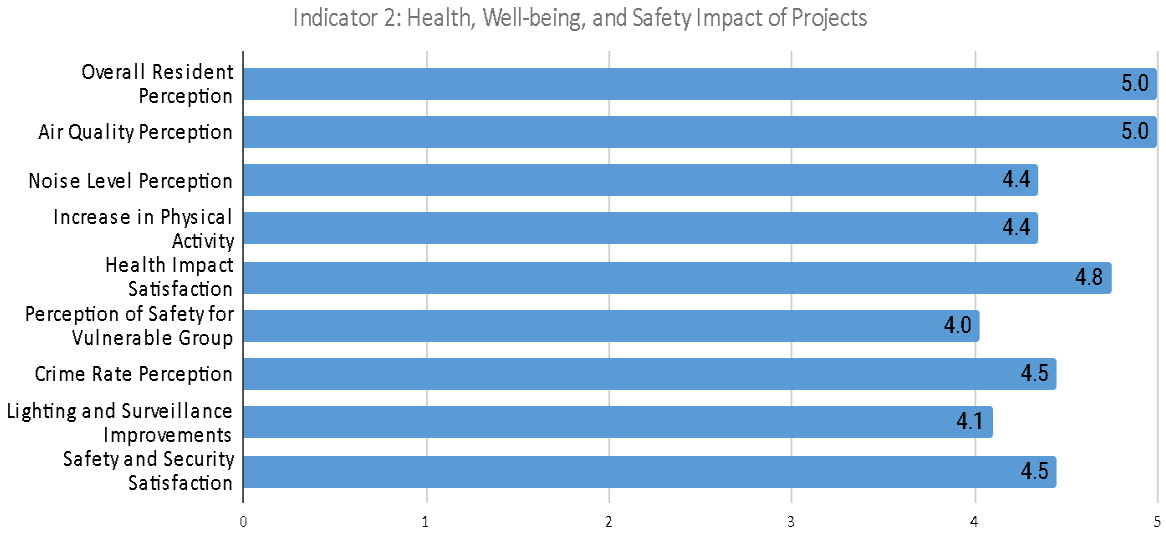


Figure 8-13. Indicator 02: Health, Well-being, and Safety Impact of Projects

The analysis of resident feedback on the back lane conservation project reveals significant positive impacts on community health and safety. Most respondents reported stress reduction (100%), improved air quality (89%), decreased noise levels (89%), and increased physical activity (95%) due to enhanced infrastructure, including better drainage and cleaner spaces. Residents also expressed high satisfaction with safety improvements, with 89% noting enhanced safety features like better lighting and surveillance, contributing to a greater sense of security. While 57% of residents were satisfied with the health impacts, there remains room for further improvements, especially in expanding green spaces and pollution control. The project's overall effectiveness in addressing safety concerns and improving resident well-being was positively received, though additional measures may be needed to address lingering concerns.

8.4.3. Indicator 03: Economic Impact and Livelihood Generation from Projects

The "Economic Impact and Livelihood Generation from Projects" parameter assesses how infrastructure projects, like the back lane conservancy initiative, influence local economies and residents' financial opportunities. It examines indicators such as the emergence of new small businesses, increased revenue for existing businesses, direct job creation, the attraction of visitors, and various income-generating activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made.

Emergence of New Small Businesses - 82% of respondents reported new small businesses established in the back lane/conservancy area, with no observed changes in business activity. This suggests that the project directly fosters the creation of new kiosks, food stalls, or retail shops. The new establishments indicate that, while the project has improved infrastructure, it did significantly stimulate local entrepreneurship and attract new businesses to the area.

Increase in Local Business Revenue - There was 74% minimal increase in local business revenue due to foot traffic, as reported by all respondents. This growth in revenue can be attributed to the increase of increased foot traffic in the area. Due to improvements in infrastructure, the project did draw more visitors & customers to local businesses, meaning the expected economic benefits from higher foot traffic did materialise.

Direct Job Creation - 74% of the respondents said new jobs were created by the project, such as roles for maintenance staff or security personnel. The project did directly contribute to job creation & provide new employment opportunities for residents. This job creation suggests that the project did significantly impact the local labour market & address employment needs in the community.

Visitor Attraction - 92% of the respondents observed visitors being attracted to the area due to the back lane/conservancy project. This suggests that the improvements made in the area did have the desired effect of drawing in external visitors or tourists. Without additional features such as promotional efforts or attractions, the project did seem to create a compelling reason for people to visit, limiting its potential to boost foot traffic or stimulate the local economy through outside visitors.

income activity is associated - 95% of the respondents associated back lane with increase in income in the informal sector (street vendors). This indicates that the project did generate new economic opportunities.

Resident Satisfaction with Livelihood Opportunities - 60% of the respondents were satisfied with the livelihood and financial opportunities created by the back lane/conservancy project, giving it a rating of 4/5. This indicates that the project did generate new economic opportunities & improve residents' financial conditions.

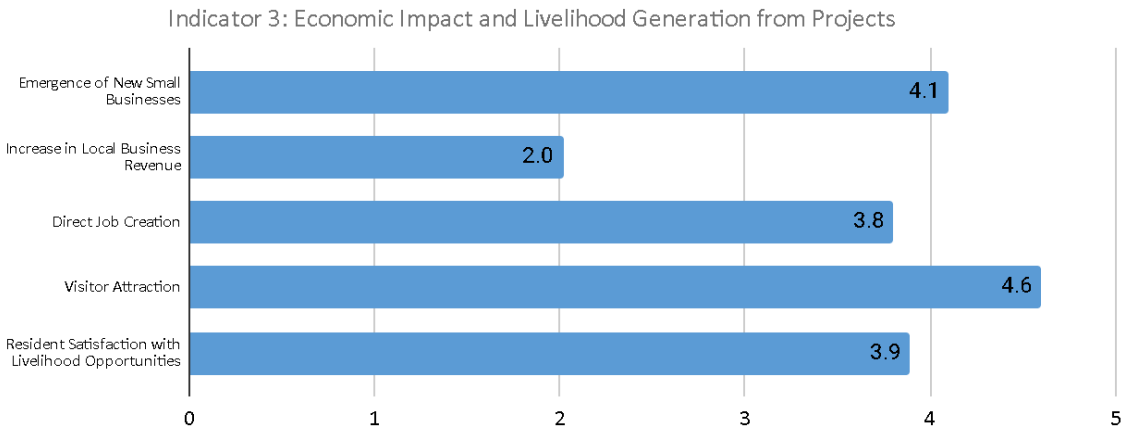


Figure 8-14. Indicator 03: Economic Impact and Livelihood Generation from Projects

Overall, the back lane conservancy initiative has positively influenced local economies and created financial opportunities for residents. Key findings include the establishment of new small businesses (82% of respondents observed new kiosks, food stalls, and shops), a slight increase in revenue for local businesses (74% reported growth due to higher foot traffic), and direct job creation (roles like maintenance and security staff). The project also attracted visitors (92% observed increased visitor interest), boosted informal sector income (95% noted more activity from street vendors), and generally improved resident satisfaction with livelihood opportunities (60% rated it 4/5). Overall, the project effectively enhanced economic prospects and provided valuable opportunities for the community.

8.4.4. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The "Real Estate and Municipal Revenue Impact" indicator evaluates how the back lane conservancy project affects property markets and municipal finances. It looks at changes in rental property rates, shifts in occupancy rates, and potential increases in municipal development revenue due to higher demand for real estate. Additionally, it considers residents' interest in investing in the area, reflecting the project's influence on property value perceptions and long-term investment potential. This indicator helps assess the economic ripple effects of the project on both real estate and municipal revenues.

Change in Rental Property Rates - 61% of respondents reported drastic change in rental rates for residential and commercial properties due to the back lane/conservancy project. This indicates that the project had a noticeable impact on property values & rental demand in the area. This increase, whether marginal or drastic, suggests that the infrastructure improvements did significantly enhance the area's attractiveness or influence the local real estate market.

Occupancy Rate Shifts - 37% of respondents reported a positive change in the occupancy rates of rental properties before and after the back lane/conservancy project. This indicates that the project did have a noticeable effect on the demand for rental properties in the area. This change suggests that the improvements made in the back lane significantly influence tenants' decisions or attract more people to rent in the vicinity.

Increase in Municipal Development Revenue - 63% of respondents reported no change in development charges and fees collected by the municipality because of the back lane/conservancy project. This suggests that the project did not stimulate significant development activity or increase the demand for new construction in the area.

Resident Investment Interest - Most respondents (60%) expressed satisfaction with the back lane/conservancy project in terms of investment potential, giving it a rating of 4/5. A small percentage (20%) rated it a 1/2, indicating some minor dissatisfaction. Many respondents rated it higher than 2, suggesting that the project did enhance residents' perception of the area as a place to invest in property. This level of satisfaction implies that the project did create a compelling reason for residents to consider the area a viable or attractive investment opportunity.

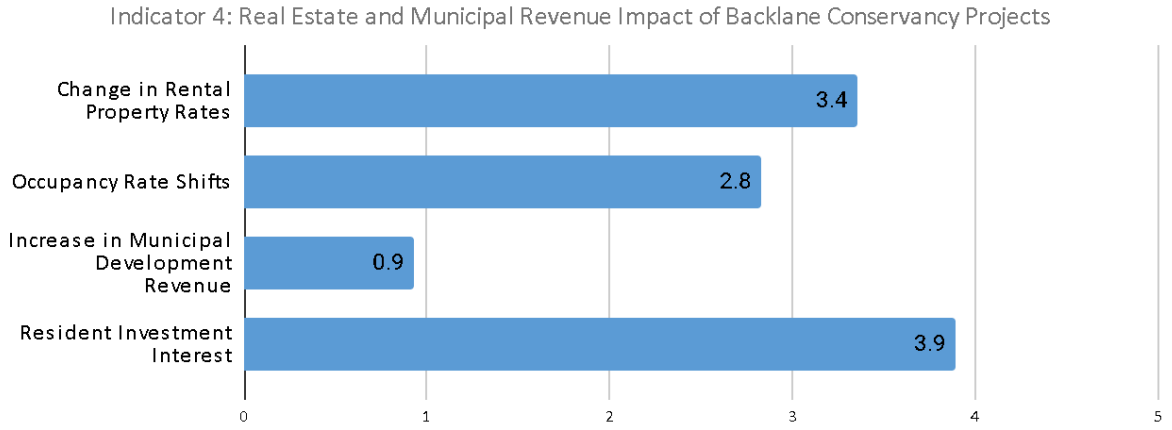


Figure 8-15. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The back lane/conservancy project had minimal impact on real estate dynamics and municipal revenue. There were no changes in rental rates, occupancy rates, or development charges, indicating that the project did not stimulate demand for properties or new construction. Additionally, residents showed low interest in investing in the area, reflecting a lack of perceived value or potential for property appreciation. Overall, the project did not create significant economic ripple effects on the local real estate market or generate additional revenue for the municipality.

8.4.5. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

The "Improved Accessibility for Emergency and Utility Services" indicator evaluates how infrastructure enhancements in back lane conservancy projects affect the accessibility of emergency and utility vehicles, as well as the efficiency of service delivery. It focuses on improvements like road widening, signage upgrades, and the ability of emergency vehicles to access the area. Additionally, it considers service interruptions, utility maintenance efficiency, and resident satisfaction with the accessibility of services.

Any improvements made (Improved signage) - In terms of improvements made, 71% of respondents observed positive changes in the back lane area, such as improved signage, enhancing the area's overall usability and accessibility. Meanwhile, 29% noted no noticeable difference, suggesting room for further enhancements to ensure consistent impact across the area. Notably, none of the respondents reported a decline in conditions, indicating that changes like improved signage contributed to a generally favourable environment without any negative effects.

Access to emergency vehicles/utility maintenance vehicles - Regarding vehicle access in the back lane area, 76% of respondents noted that vehicles can now access the area, indicating improved connectivity and accessibility due to the project. Meanwhile, 24% mentioned that vehicles were already able to access the area before the project, suggesting that while accessibility has been maintained or enhanced, this change was not entirely new for all residents. Importantly, no respondents indicated restricted access, highlighting that the project has successfully ensured or preserved vehicle accessibility in the back lane.

Frequency and duration of service interruptions - In terms of service interruptions in the back lane area, responses indicate a mixed experience among residents. About 34% reported rarely experiencing interruptions, suggesting no disruptions to service post-project. However, 24% noted more interruptions than before, indicating that the project might not have fully addressed all service interruptions which happened during the construction phase. Meanwhile, 42% observed no difference, implying that the project's impact on service reliability has been inconsistent, with improvements perceived by some but not universally experienced across the community.

Frequency and efficiency of utility maintenance - The project has impacted utility services positively, with 61% of respondents noting improved reliability in service frequency and duration. This indicates enhanced access and stability in utility services for most residents, likely due to infrastructure upgrades. Meanwhile, 39% of respondents (15 out of 38) reported no change, suggesting that while many have benefited, some households have yet to experience significant improvements. Importantly, none reported worsened conditions, reflecting an overall trend toward stable or enhanced utility service access in the area.

Resident satisfaction on better access for emergency services and utility maintenance vehicles - Resident satisfaction with the back lane project is notably high, with 84% of respondents rating their satisfaction as 4 or 5. This reflects strong approval and indicates that the improvements have met community expectations overall. Another 16% rated their satisfaction at 3, suggesting moderate contentment, with no residents rating their experience below this level. This positive response highlights the project's success in addressing local needs and improving quality of life in the area.

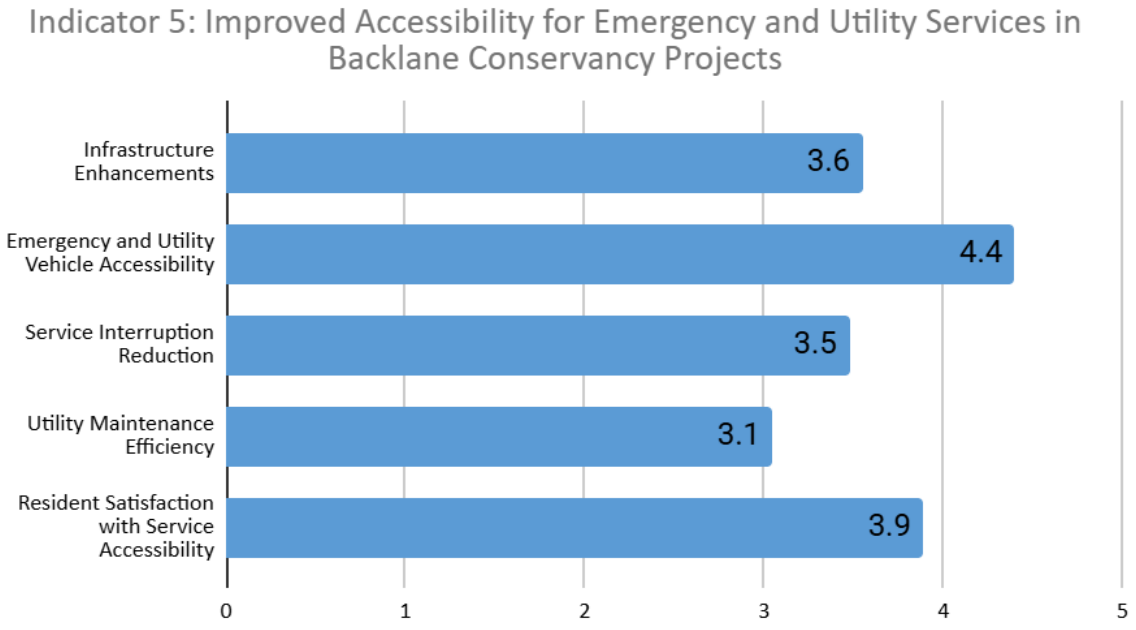


Figure 8-16. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

8.4.6. Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

The "Public Health and Hygiene Impact" indicator assesses how the back lane conservancy project affects waste management and overall cleanliness in the area. It examines factors such as the reduction of illegal dumping, improvements in waste collection efficiency, and the promotion of recycling initiatives. Additionally, it looks at the condition of waste disposal infrastructure, changes in residents' attitudes toward littering, and overall satisfaction with public health and hygiene improvements resulting from the project. This indicator helps evaluate how effectively the project contributed to a cleaner, healthier environment for the community.

Reduction in Illegal Dumping - The back lane project has been highly effective in reducing illegal dumping, with 92% of respondents observing a decrease in such activities. This indicates a significant improvement in cleanliness and waste management in the area. Only 3% noted no change, while 5% felt the situation worsened. Overall, these results suggest that the project has successfully discouraged illegal dumping, leading to a cleaner, more organised environment for residents.

Waste Collection Efficiency - The back lane project has greatly improved the efficiency of waste collection and disposal services, with 95% of respondents noting positive changes. This suggests that the project has effectively streamlined waste management processes, contributing to a cleaner and more sustainable environment. Indicating that the improvements were widely recognized and impactful for most residents

Promotion of Waste Segregation and Recycling - The efforts to promote waste segregation and recycling in the back lane area have been acknowledged by 68% of respondents, indicating a strong push toward sustainable waste practice. However, 32% did not observe such initiatives, suggesting room for further outreach and education to ensure that all residents are aware of and can participate in these efforts. This mixed feedback highlights progress in promoting recycling but also the need for broader community engagement.

Waste Disposal Infrastructure Condition - Most respondents (86.8%) rated the condition and maintenance of waste disposal infrastructure poorly, giving it a rating of 2, while 8.1% rated it a 1, indicating strong dissatisfaction. A small portion (8.1%) gave it a neutral rating of 3, but no respondents rated it 4 or 5. This suggests that the waste disposal infrastructure remains in poor condition and is not adequately maintained, which likely contributes to residents' dissatisfaction with overall waste management services in the area.

Resident Attitude Towards Littering - 66% of respondents reported no noticeable change, suggesting that while the project improved infrastructure, it may not have significantly altered habits or awareness. However, 34% observed a positive shift in attitudes and behaviours, indicating that some residents became more conscious of waste disposal and littering practices following the project. This suggests that while the project had some success in changing behaviours, broader or continued efforts may be needed for a more widespread impact.

Resident Satisfaction with Health and Hygiene Improvements - A total of 63% of respondents rated their satisfaction at 4 or 5, indicating a strong approval of the project's impact on cleanliness and health. Specifically, 50% gave a rating of 4, and 13% gave a rating of 5. 37% rated it 3, reflecting moderate satisfaction. No respondents rated the impact as poor, suggesting the project contributed positively to improving hygiene and reducing littering in the area.

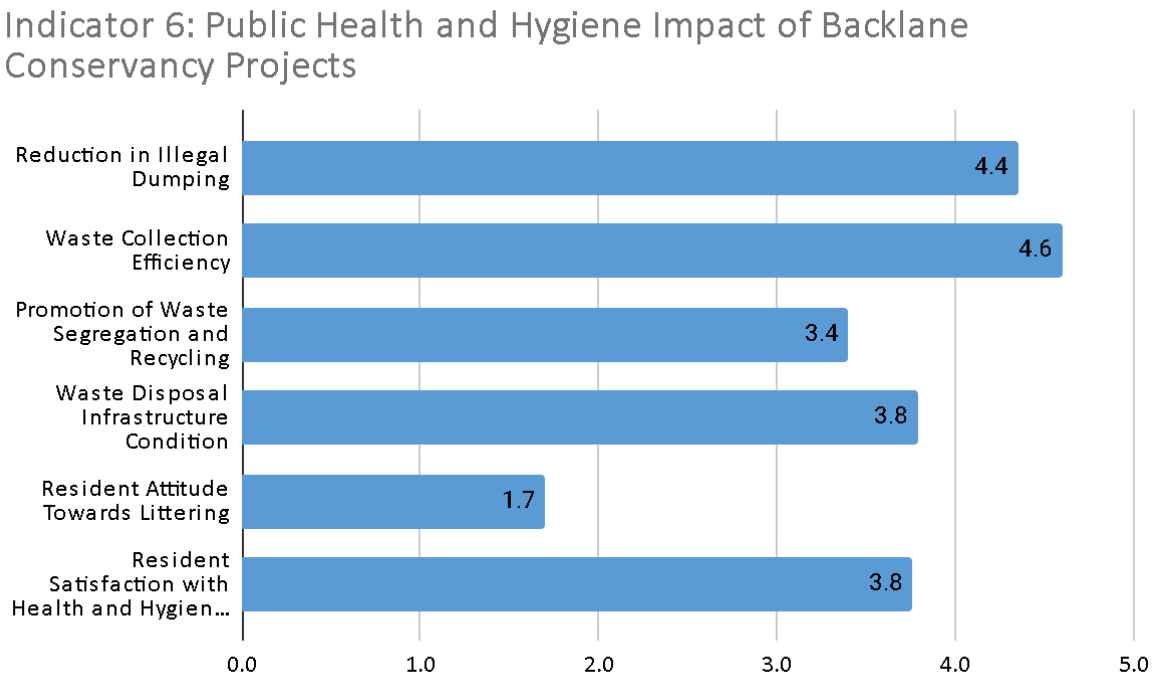


Figure 8-17 Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

The "Public Health and Hygiene Impact" indicator evaluates the back lane conservancy project's influence on waste management and cleanliness. It highlights improvements in reducing illegal dumping, enhancing waste collection efficiency, and promoting recycling initiatives. The project effectively reduced illegal dumping, with 92% of respondents noticing a decrease, and improved waste collection efficiency, recognized by 95% of respondents. However, 32% did not see significant progress in promoting waste segregation and recycling, indicating a need for further efforts. Despite the improvements in waste management, 86.8% of respondents rated the condition of waste disposal infrastructure poorly, suggesting that maintenance issues persist. While 66% of respondents saw no change in attitudes toward littering, 34% observed a positive shift. Overall, 63% of residents expressed satisfaction with the health and hygiene improvements, reflecting the project's success in enhancing cleanliness and public health.

8.5. Comprehensive Analysis

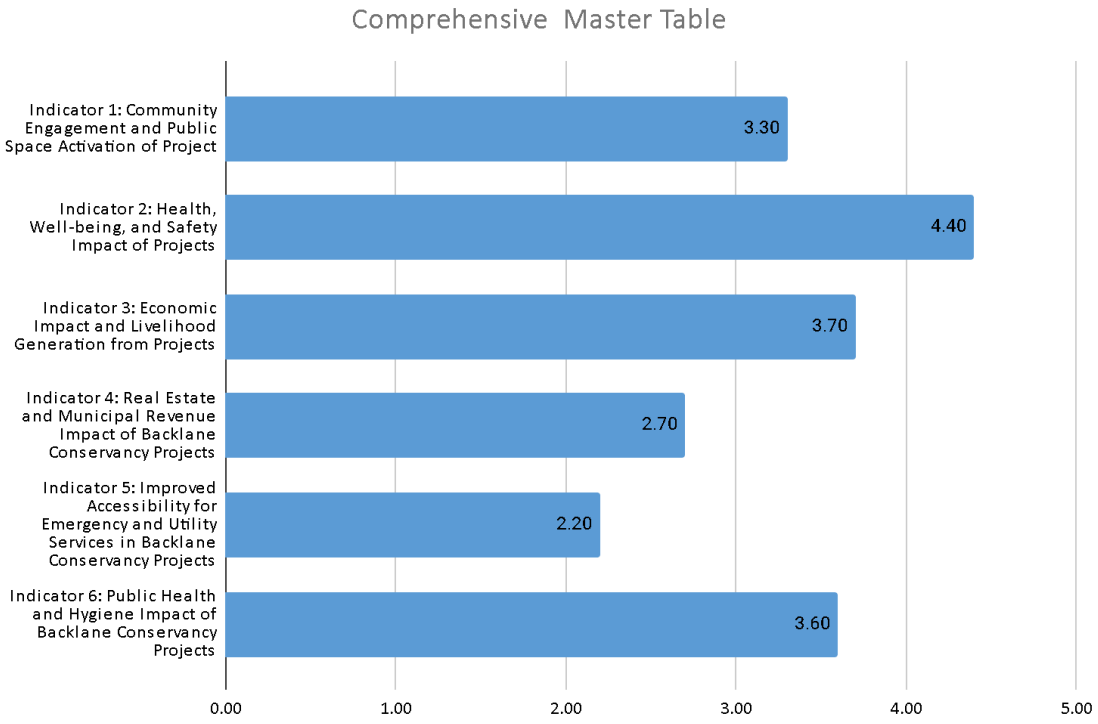


Figure 8-18 Comprehensive Analysis

The assessment of the Back Lane/Conservancy Project in Jabalpur indicates limited success across various indicators, each rated out of 5. Indicator 5: Public Health and Hygiene Impact scored the lowest at 2.2, showing minimal success in improving hygiene and reducing waste issues. Indicator 1: Community Engagement and Public Space Activation with a score of 3.3, reflecting limited community interaction and usage of public spaces. Indicator 2: Health, Well-being, and Safety Impact scored 4.4, suggesting major positive impact on residents' health and safety but with room for improvement.

On the economic front, Indicator 3: Economic Impact and Livelihood Generation received a poor score of 3.7, indicating minimal impact on local businesses or job creation. Similarly, Indicator 4: Real Estate and Municipal Revenue Impact scored 2.2, showing that the project has had negligible effects on property values or municipal revenue generation.

Overall, the project's impact has been most notable in health, Well-being and Safety impact of Projects, but it falls short in areas like Accessibility for Emergency and Utility Services, highlighting a need for targeted efforts to enhance its overall impact in Jabalpur.

8.6. Official Response

8.6.1. Indicator 1: Community Engagement and Public Space Activation of Project

This indicator assesses how the back lane conservancy project has encouraged local community engagement, social interaction, and active use of public spaces. Based on the analysis of responses under the various parameters, the following bar graph has been made.

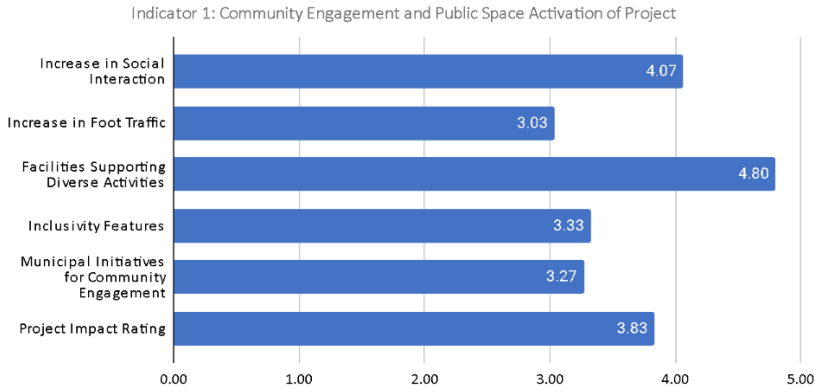


Figure 8-19 Indicator 1: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results, officials perceive the Community Engagement and Public Space Activation project as successful in several key areas. The project has significantly boosted social interactions among community members, indicating that the initiatives have effectively brought people together and fostered a stronger sense of community. Additionally, the project has moderately increased foot traffic. While this suggests that the project has attracted more visitors, there is still room for improvement to enhance the vibrancy and accessibility of public spaces. Overall, the project impact rating of 3.83 suggests that while the project is generally well-received and effective, there are specific areas that need attention for further improvement.

8.6.2. Indicator 2: Health, Well-being, and Safety Impact of Project

This indicator assesses the project's contribution to community health and safety. Based on the analysis of responses under the various parameters, the following bar graph has been made.

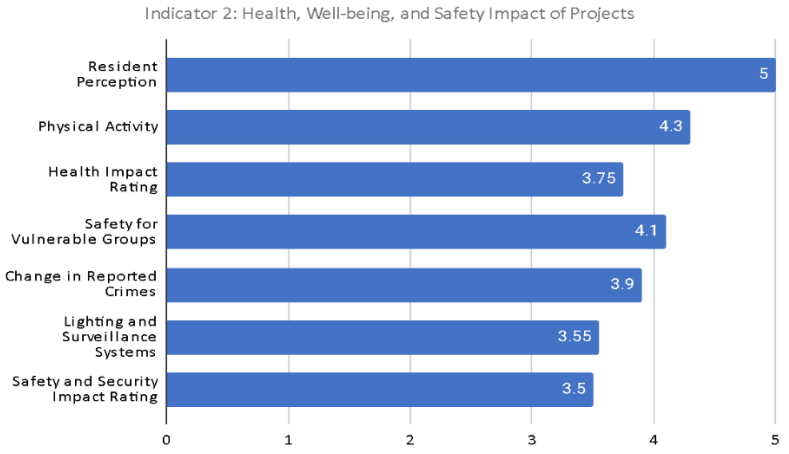


Figure 8-20 Indicator 2: Health, Well-being, and Safety Impact of Project (Official Response)

Based on the official survey results, the back lane conservation project has significantly enhanced the health and safety framework of the area. The inclusion of better lighting and surveillance systems has improved urban safety, particularly for vulnerable groups, while the upgraded infrastructure supports increased physical activity and reduces environmental stressors like noise and air pollution. The project's contributions to mental well-being are evident in the cleaner, well-maintained spaces that promote relaxation and activity. However, integrating more green infrastructure and addressing residual safety concerns could further elevate its impact on community health and security. Overall resident's perception score of 5.

8.6.3. Indicator 3: Economic Impact & Livelihood Generation from Projects.

This indicator assesses how infrastructure projects, like the back lane conservancy initiative, influence local economies and residents' financial opportunities.

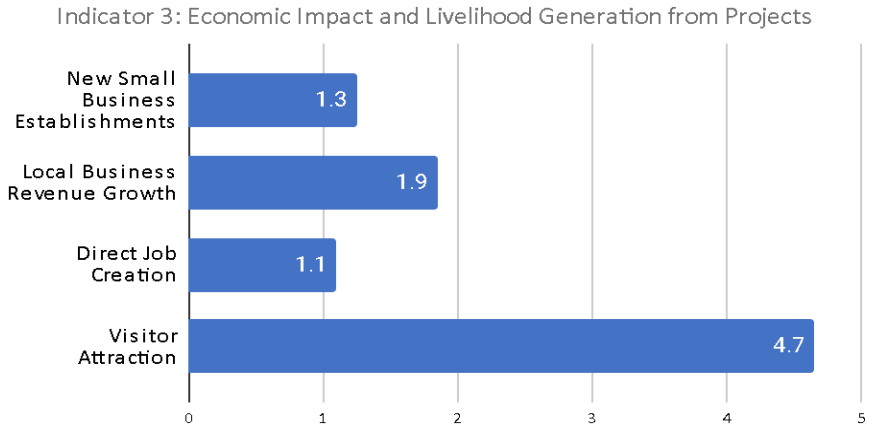


Figure 8-21 Indicator 3: Economic Impact & Livelihood Generation from Projects. (Official Response)

Professionals don't recognize the project's potential to spur local economic activity through the establishment of new small businesses and informal trade opportunities. Enhanced infrastructure has attracted foot traffic, creating avenues for vendors. The project had minimal impact on direct employment opportunities. Due to these setbacks, the overall economic stimulation remains limited, highlighting the need for targeted strategies to maximize commercial engagement and long-term economic benefits.

8.6.4. Indicator 4: Real Estate and Municipal Revenue Impact of Back Lane Conservancy Projects

This indicator evaluates how the back lane conservancy project affects property markets and municipal finances. It looks at changes in rental property rates, shifts in occupancy rates, and potential increases in municipal development revenue due to higher demand for real estate.

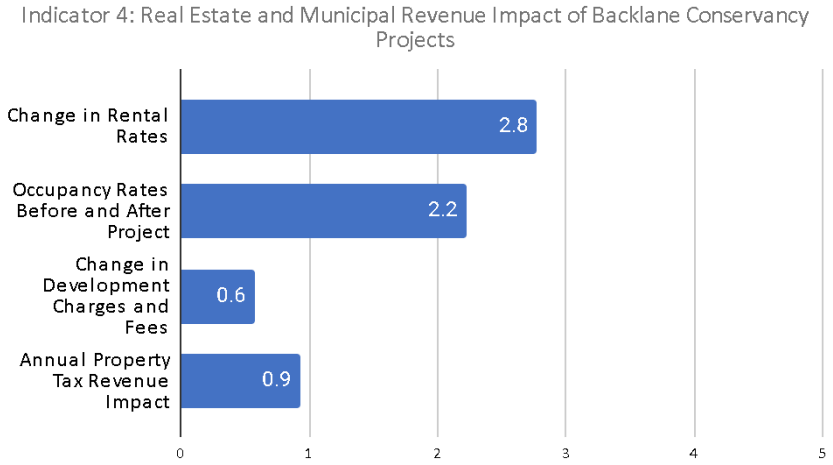


Figure 8-22 Indicator 4: Real Estate and Municipal Revenue Impact of Back Lane Conservancy Projects (Official Response)

The project's improvements in infrastructure have positively influenced the real estate market, making the area little attractive for investment and increasing rental demand. Professionals note that the enhancements have not had much impact on property values. However, the project's impact on municipal revenue remains modest, with minimal changes observed in development fees or tax collections. This underscores the need for broader policy interventions to align urban development projects with revenue-generation goals.

8.6.5. Indicator 5: Improved Accessibility for Emergency and Utility Services in Back Lane Conservancy Projects

This indicator evaluates how infrastructure enhancements in back lane conservancy projects affect the accessibility of emergency and utility vehicles, as well as the efficiency of service delivery.

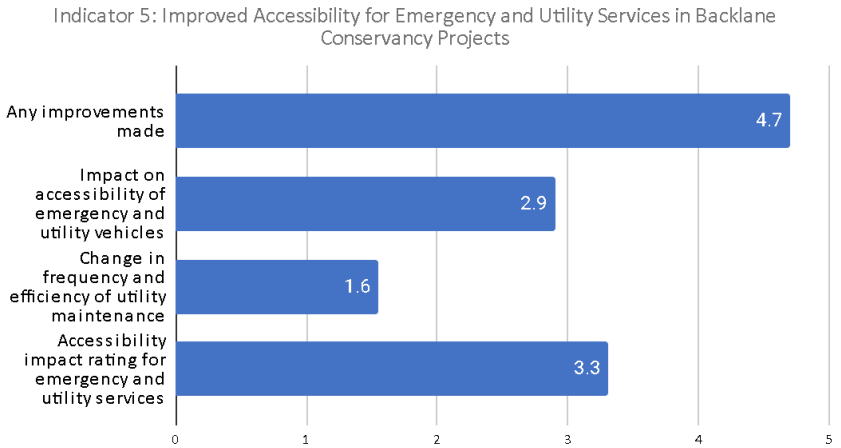


Figure 8-23 Indicator 5: Improved Accessibility for Emergency and Utility Services in Back Lane Conservancy Projects

The back lane project has markedly improved emergency and utility service access. Changes have enhanced the efficiency of essential service delivery and reduced response times for emergencies. While the overall accessibility improvements are commendable, professionals identify potential areas for refinement in utility service reliability and maintenance to ensure sustained effectiveness.

8.6.6. Indicator 6: Public Health and Hygiene Impact of Back Lane Conservancy Projects

This indicator assesses how the back lane conservancy project affects waste management and overall cleanliness in the area. It examines factors such as the reduction of illegal dumping, improvements in waste collection efficiency, and the promotion of recycling initiatives.

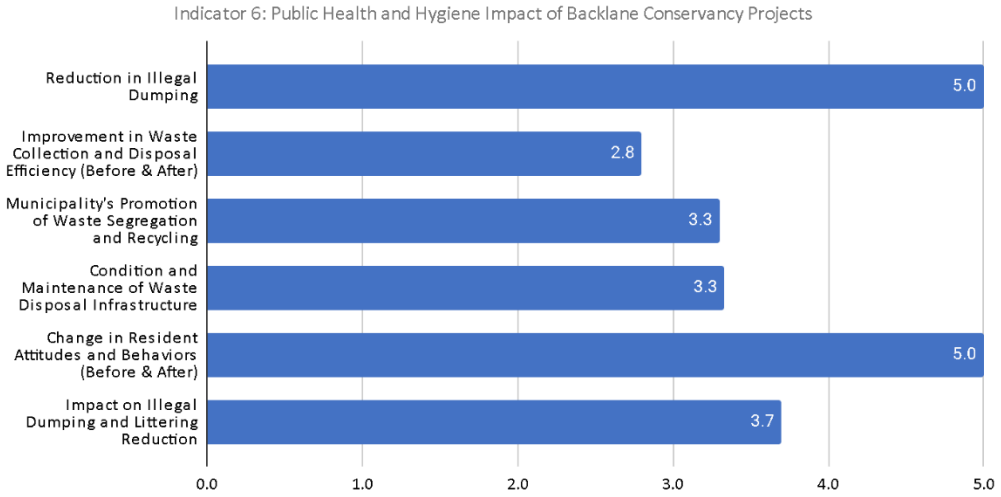


Figure 8-24 Indicator 6: Public Health and Hygiene Impact of Back Lane Conservancy Projects

From a professional standpoint, the project has been instrumental in addressing public health and hygiene challenges. The significant reduction in illegal dumping and the enhancement of waste collection systems have been pivotal in creating a cleaner urban environment. Professionals say gaps in infrastructure maintenance remain a concern. To optimize long-term impact, further efforts are needed to strengthen waste management systems and sustain behavioural changes among residents.

8.6.7. Comprehensive Analysis

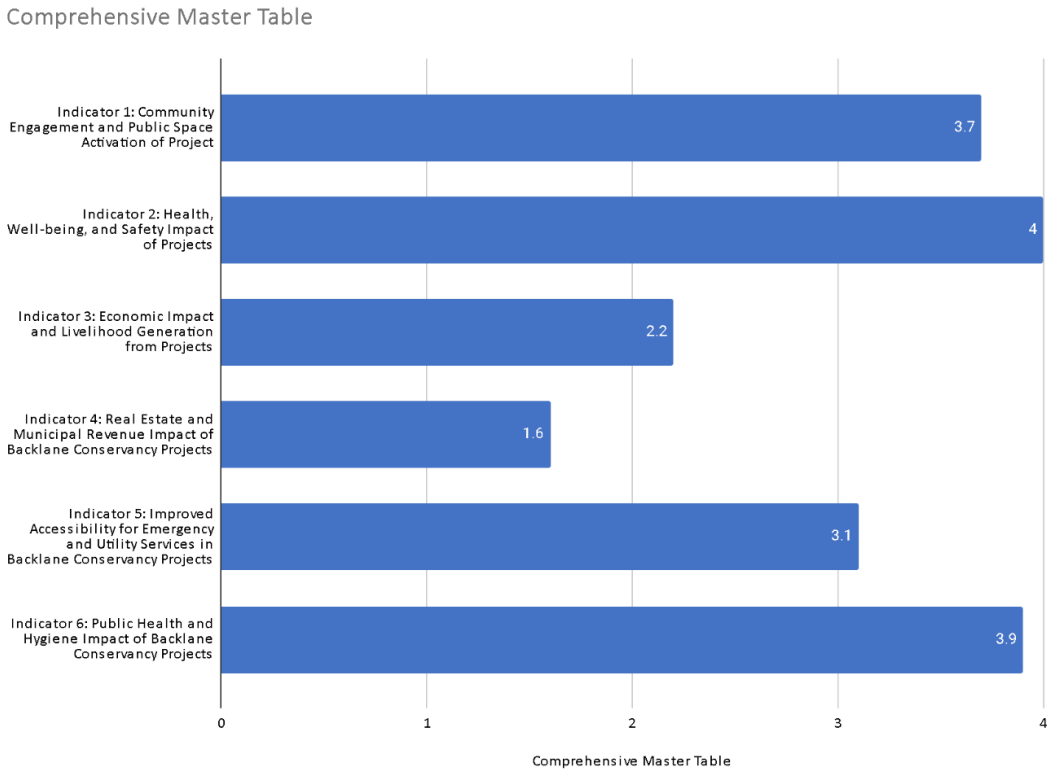


Figure 8-25 Comprehensive Analysis (Official Response)

The assessment of the Back Lane/Conservancy Project in Jaipur indicates success across various indicators, each rated out of 5. Indicator 5: Public Health and Hygiene Impact scored low at 1.6, showing minimal success in improving hygiene and reducing waste issues. Indicator 1: Community Engagement and Public Space Activation with a score of 3.7, reflecting limited community interaction and usage of public spaces. Indicator 2: Health, Well-being, and Safety Impact scored 4, suggesting major positive impact on residents' health and safety but with room for improvement.

On the economic front, Indicator 3: Economic Impact and Livelihood Generation received a poor score of 2.2, indicating minimal impact on local businesses or job creation. Similarly, Indicator 4: Real Estate and Municipal Revenue Impact scored 1.6, showing that the project has had negligible effects on property values or municipal revenue generation.

Overall, the project's impact has been most notable in health, Well-being and Safety impact of Projects, but it falls short in areas like Real estate and municipal revenue, highlighting a need for targeted efforts to enhance its overall impact in Jabalpur.

8.7. Field Observations

Table 8.7.1 Field Observations

Indicators	Observations
Social Interaction & Community Engagement	The back lane conservancy project has visibly enhanced community engagement by creating spaces that promote social interaction, footfall has been observed in the evening with presence of diverse facilities, overall, a positive impact on project area.
Mental Well-being, Health, Safety, and Security	It is observed that resident perception towards the project is very positive, physical activity among users, and in the aspect of safety, it felt safer, especially for vulnerable groups.
Economic Impact & Livelihoods	In economic aspect, visitor attraction was visibly observed, but from the perspective of new establishments or job creation or local business revenue growth, impact seemed limited
Real Estate Value & Municipal Revenue	When interacted with residents, their opinion on impact of this project on occupancy rates is mixed, whereas rental values seem to rise while tax impact seemed to be negligible.
.Accessibility for Emergency & Utility Services	To improve accessibility for emergency & utility services improvements were made like clear path and street lighting but overall impact might be limited due to narrow lanes.
Public Health & Hygiene	Biggest impact from the project is public health, according to residents and users, illegal dumping of waste and their perception towards the back lane was very positive.

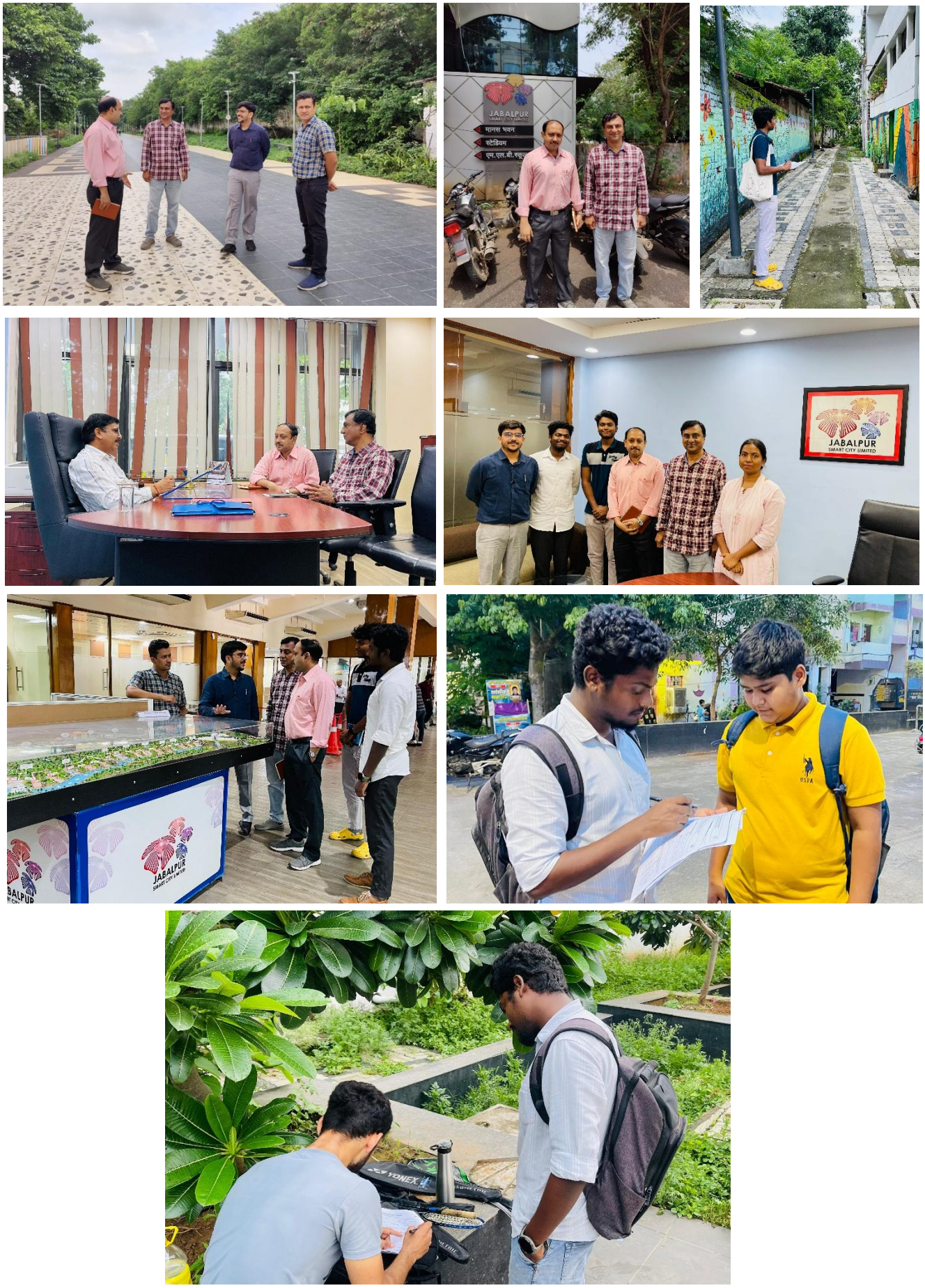


Figure 8-26 Field Visits and Stakeholder interaction, Jabalpur

8.8. Overall Findings

In the aspects of Social Interaction & Community Engagement, Citizens highlighted the project's success in fostering social interaction, creating welcoming spaces for gatherings, events, and shared activities, which strengthened community bonds. Officials commended the project for providing inclusive and functional spaces that enhanced local identity and collective engagement. Field observations revealed consistent use of these spaces for organized and informal community activities, demonstrating their impact on community life.

Mental Well-being, Health, Safety, and Security - Residents expressed that the improved spaces positively impacted their mental well-being, providing safe and aesthetically pleasing areas for relaxation and recreation. Professionals emphasized the project’s contribution to enhancing urban safety by increasing visibility and promoting secure, well-lit environments. Field observations confirmed these improvements, with reduced instances of unsafe conditions and active use of spaces by a diverse demographic.

Economic Impact & Livelihoods - Citizens noticed a boost in local economic activity, with increased foot traffic benefiting small businesses and informal vendors near the revitalized spaces. Officials recognized the project's role in catalysing local economic growth by attracting visitors and creating opportunities for small-scale commerce. Observations showed higher footfall and greater activity near commercial establishments, indicating economic revitalization.

Real Estate Value & Municipal Revenue - Residents associated the project with improved property values due to better infrastructure and enhanced neighbourhood appeal. Professionals acknowledged the project's contribution to increasing municipal revenue through property tax growth and business activity. Field evidence supported these claims, with visible signs of enhanced urban aesthetics and heightened investor interest in the area.

Accessibility for Emergency & Utility Services - Citizens reported improved access for emergency vehicles and utility services due to better-designed lanes and reduced obstructions. Officials highlighted the project's strategic planning in ensuring emergency readiness and operational efficiency. Observations confirmed unobstructed routes and well-maintained infrastructure, facilitating quicker and safer access for essential services.

Public Health & Hygiene - Residents praised the project for addressing sanitation issues and promoting cleanliness in public spaces. Officials emphasized the importance of waste management systems and hygienic conditions introduced through the initiative. Field observation noted cleaner environments, well-placed waste bins, and organized clean-up drives, enhancing overall public health and hygiene in the area.

8.9. Suggestions and Recommendations

8.9.1. Social Interaction & Community Engagement

- Organize regular community events, workshops, and festivals to strengthen social ties and maximize the use.
- Introduce participatory forums to enable citizens to contribute ideas for the continued activation of back lane.

8.9.2. Mental Well-being, Health, Safety, and Security

- Increase lighting to improve visibility and safety during evening hours.
- Enhance surveillance systems and improve emergency response to ensure continued safety and a sense of security among residents.

8.9.3. Economic Impact & Livelihoods

- Provide training and capacity-building programs for small vendors and local businesses to take full advantage of increased foot traffic.
- Explore partnerships with local entrepreneurs to establish markets and pop-up spaces within the revitalized areas.

8.9.4. Real Estate Value & Municipal Revenue

- Implement targeted property tax reforms to capitalize on increased property values while ensuring affordability for existing residents.

8.9.5. Accessibility for Emergency & Utility Services

- Coordinate with utility providers to streamline maintenance schedules and ensure quick response times for repairs.
- Conduct community drills and workshops to educate citizens about emergency response plans and available services.

8.9.6. Public Health & Hygiene

- Strengthen waste management systems conducting regular clean-up drives.
- Introduce educational campaigns to encourage responsible waste disposal and public participation in maintaining cleanliness.

JAIPUR SMART CITY LIMITED

CASE AREA 03

JAIPUR

9. CASE AREA 03 - JAIPUR

The Jaipur Smart City project, launched in 2018, undertook a significant Back lane Conservancy Lanes initiative, focusing on improving infrastructure and sanitation across Jaipur's old city area. The project, divided into five packages, aimed to address the challenges of waste management, sanitation, and accessibility within dense residential and culturally significant zones. Each package included the construction and connection of sewer chambers, installation of downtake drainage and sewer pipes, fixing gates to restrict garbage dumping in lanes, and thorough cleaning of back lanes to ensure a cleaner environment. Package 1 covered all wards in the Hawa Mahal (East) Zone, while Package 2 focused on waste pipe repairs in designated wards of the Hawa Mahal (West) Zone and Civil Line Zone. Package 3 involved adjusting the levels of back lanes and connecting them to sewer manholes in specific wards. Package 4 concentrated on back lane repairs in the Heritage Walkway area (Chowkdi Modikhana), and Package 5 focused on Ward 85, spanning a total length of 2 km, with an allocated budget of 5.5 crores. Through these packages, the project enhanced the functionality, sanitation, and overall quality of urban life in Jaipur's historic neighborhoods.

9.1. City Profile

Jaipur, the capital city of Rajasthan, is one of India's most prominent tourist destinations, known for its stunning architectural heritage, rich history, and vibrant culture. Nicknamed the "Pink City" due to the distinctive color of its buildings, Jaipur is a blend of tradition and modernity, making it a hub for commerce, education, and tourism in northern India. The city lies on the edge of the Thar Desert and is surrounded by the Aravalli hills, which add to its natural beauty. Jaipur experiences a semi-arid climate with hot summers, a brief monsoon season, and cool winters.

9.1.1. History

Founded in 1727 by Maharaja Sawai Jai Singh II, Jaipur was one of India’s first planned cities, designed based on the principles of Vastu Shastra (Indian architectural science). The city’s layout was revolutionary at the time, featuring wide streets and a grid system that made it one of the most well-organized urban centers. Jaipur’s rich history includes its role as a stronghold of Rajput kings and its strategic importance during British colonial rule. The city is home to numerous palaces, forts, and temples, including the Hawa Mahal, City Palace, and the iconic Amber Fort, all of which testify to its illustrious past.

9.1.2. Demographics

Jaipur, as of Census 2011, has a population of approximately 3 million people, making it the largest city in Rajasthan. The gender ratio stands at around 898 females for every 1,000 males. Jaipur boasts a literacy rate of 84.34%, which is above the national average, reflecting its growing emphasis on education and development. The city is home to a diverse population, with significant communities of Rajputs, Marwaris, Jains, Muslims, and Punjabis, contributing to its rich cultural mosaic.

9.1.3. Economy & Industry

Jaipur's economy is driven by a mix of traditional industries, commerce, and modern sectors. The city is renowned for its gemstone cutting, jewelry making, and textile industries, especially in the production of block-printed fabrics, carpets, and handicrafts. In recent years, Jaipur has also emerged as a growing IT hub, attracting startups and multinational companies. The city's proximity to the national capital, New Delhi, has facilitated trade and commerce, further bolstering its economy. Tourism plays a crucial role in Jaipur's economic landscape, as the city attracts millions of domestic and international visitors annually.

9.1.4. Culture and Lifestyle

Jaipur is a cultural hub, known for its art, music, and dance. The city is synonymous with vibrant festivals like Diwali, Teej, Gangaur, and the Jaipur Literature Festival, which draws global attention. Folk music and dance forms, including Ghoomar and Kathak, are integral to the cultural life of Jaipur. The city's cuisine, which features Rajasthani delicacies like Dal Baati Churma, Ghevar, and Laal Maas, reflects the region's royal culinary traditions. Jaipur's bazaars, such as Johari Bazaar and Bapu Bazaar, are famous for their traditional handicrafts, jewelry, and textiles, drawing shoppers from all over the world.

9.1.5. Tourism and Attractions

Jaipur's tourism appeal lies in its majestic palaces, forts, and historical landmarks. Major attractions include the Amber Fort, Hawa Mahal (Palace of Winds), Jantar Mantar (an astronomical observatory and UNESCO World Heritage Site), and the City Palace. Nahargarh Fort and Jaigarh Fort offer stunning views of the city and its surrounding landscape. Additionally, Jaipur is the gateway to the Thar Desert, with camel rides and desert safaris being popular activities for visitors. The city also serves as a starting point for exploring nearby attractions like the Ranthambore National Park, a renowned tiger reserve.

9.1.6. Urban Development

Jaipur is witnessing rapid urban development, with a focus on modernizing infrastructure and improving the quality of life for its residents. The Jaipur Metro, road expansions, and the city's inclusion in the Smart City initiative are enhancing urban mobility and public amenities. These developments aim to boost Jaipur's role as a commercial and tourist hub while preserving its architectural heritage.

9.2. Contextual Background

Jaipur, renowned for its historic charm and status as a UNESCO World Heritage Site, faces significant challenges in managing its urban back lanes and conservancy spaces. These areas, especially in heritage zones like the Walled City, historically served as essential service corridors for utilities, waste disposal, and drainage. They ensured that public facades retained their aesthetic and functional integrity while maintaining the behind-the-scenes operations that supported urban life. However, with rapid urbanization, the role of these back lanes has evolved, and their management has become increasingly complex.

In contemporary Jaipur, these spaces are often encroached upon by unauthorized constructions, reducing their accessibility and functionality. Waste dumping remains a persistent problem despite municipal initiatives aimed at improving solid waste management. Poor lighting and lack of maintenance have made many back lanes hotspots for antisocial activities, limiting their use and creating safety concerns. In mixed-use areas, the dual demands of residential and commercial activities add to the challenges, as conflicts over shared resources like drainage, utilities, and waste disposal arise.

Properly managed back lanes and conservancy spaces have immense potential to enhance urban life. They can foster social interactions by serving as informal gathering spaces, improve public health through better sanitation and drainage, and even support local economies by accommodating small vendors and informal markets. By addressing existing challenges with a focus on community engagement, strict policy enforcement, and innovative urban design, Jaipur's back lanes can transform into vital urban assets, showcasing how heritage preservation and modern urban development can coexist harmoniously.

9.3. Project Details

The Jaipur Smart City project, launched in 2018, undertook a significant Back lane Conservancy Lanes initiative, focusing on improving infrastructure and sanitation across Jaipur's old city area. The project, divided into five packages, aimed to address the challenges of waste management, sanitation, and accessibility within dense residential and culturally significant zones. Each package included the construction and connection of sewer chambers, installation of downtake drainage and sewer pipes, fixing gates to restrict garbage dumping in lanes, and thorough cleaning of back lanes to ensure a cleaner environment. Package 1 covered all wards in the Hawa Mahal (East) Zone, while Package 2 focused on waste pipe repairs in designated wards of the Hawa Mahal (West) Zone and Civil Line Zone. Package 3 involved adjusting the levels of back lanes and connecting them to sewer manholes in specific wards. Package 4 concentrated on back lane repairs in the Heritage Walkway area (Chowkdi Modikhana), and Package 5 focused on Ward 85, spanning a total length of 2 km, with an allocated budget of 5.5 crores. Through these packages, the project enhanced the functionality, sanitation, and overall quality of urban life in Jaipur's historic neighborhoods

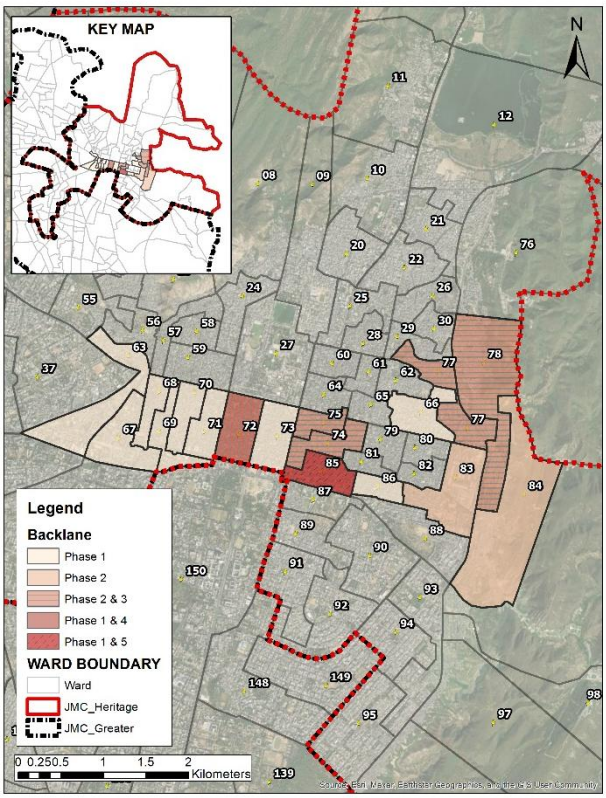


Figure 9-1 Key map showing Phase wise Implementation

9.3.1. Past Scenario

Photographs taken before the project showcase the state of neglect in the conservancy lanes. These images depict the accumulation of solid waste, waterlogging, and overgrown vegetation, emphasizing the need for the project. The visuals also show the absence of proper lighting, security, and drainage systems, which contributed to the unsanitary and unsafe conditions in the lanes.

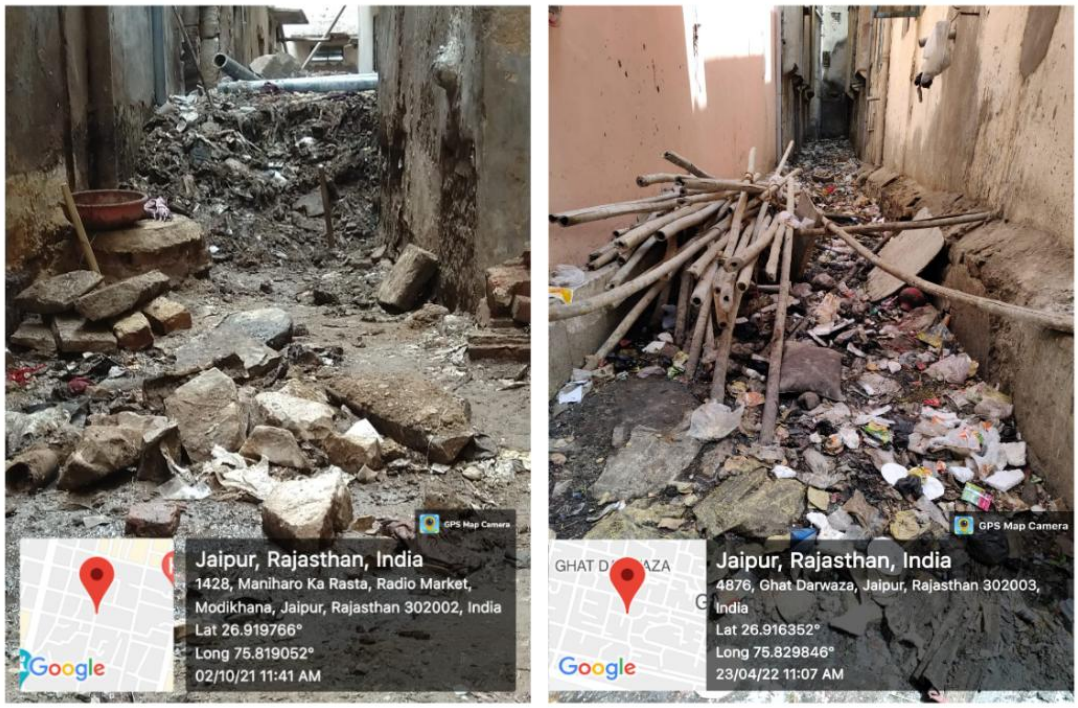


Figure 9-2 Before Implementation

9.3.2. Implementation Scenario

Visual documentation during the implementation phase captures the construction and upgrade processes. These images show workers installing drainage systems, paving the lanes, and setting up lighting and waste collection points. The photographs also document community engagement activities, such as clean-up drives and awareness campaigns, which played a critical role in the project's success.

Figure 9-3 During Implementation

9.3.3. Current Scenario

The after-completion photographs demonstrate the positive impact of the back lane conservancy project. The images showcase the rehabilitated lanes, with clean and well-maintained pathways, functional drainage systems, and properly managed waste collection points. The visuals also highlight the integration of green infrastructure and public amenities, creating a more vibrant and livable urban environment for residents.

Figure 9-4 After Implementation

9.4. Citizen Response Survey

The primary survey involved a citizen response analysis with a sample size of 38 participants. The questionnaire included 38 questions covering 6 key indicators to gather insights into public perceptions and priorities. In Jabalpur, a total of 38 samples were collected from citizens and 14 samples were collected from government officials. The samples of the citizens were collected from across the spatial length and region of the back lane project.

9.4.1. Indicator 01: Community Engagement and Public Space Activation of Project

This indicator assesses how the back lane conservancy project has encouraged local community engagement, social interaction, and active use of public spaces. By transforming back lanes into more welcoming, inclusive spaces, the project aims to foster a sense of community and provide areas where residents can socialise, relax, and participate in activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Frequency of Space Utilisation - The data indicates that 86.84% of users rarely use the back lane after the conversion project, with only 13.16% using it daily. This low engagement likely results from most lanes being narrow and short, limiting accessibility and the ability to support any meaningful activities. This suggests that the project's impact on back lane usage has been minimal due to these spatial constraints.

Average Daily Duration of Use - All of the respondents spend less than 1 hour in the back lanes. This limited duration suggests that the lanes lack engaging activities and adequate space for extended use. Many of these lanes are too narrow to support human interaction comfortably, reducing their appeal as communal spaces.

Enhanced Social Interaction - Based on the data, 71.1% of respondents reported no change in social interaction, while only 28.9% observed a minimal increase. This slight improvement is primarily noted in areas with wider, well-maintained lanes. Overall, there appear to be few initiatives aimed at fostering social interaction, limiting the project's impact on community engagement in most areas.

Foot Traffic Growth - According to the data, 100% of respondents reported no increase in foot traffic compared to pre-project levels. This lack of increased foot traffic is attributed to the absence of engaging or attractive activities in the back lanes, which has limited their appeal and use by the community. Without additional features to draw interest, the project has not successfully enhanced the area's vibrancy or pedestrian presence.

Support for Diverse Activities - Respondents indicated that there are no facilities supporting diverse activities, such as footpaths, seating, lighting, or play areas, within the back lanes.

Inclusivity of Features - There are no inclusive features, such as accessible ramps or seating areas for seniors and differently abled individuals. The absence of these essential amenities limits the functionality and inclusivity of the back lanes, reducing their potential as active, welcoming community spaces.

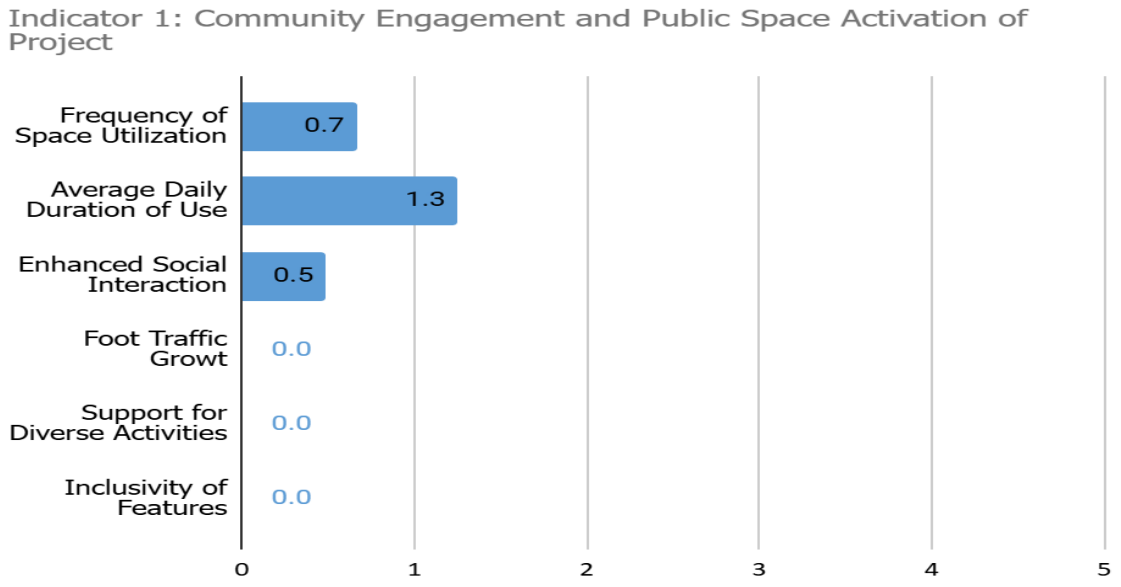


Figure 9-5 Indicator 01: Community Engagement and Public Space Activation of Project

The back lane conservancy project has had minimal impact in transforming these spaces into active, inclusive community areas. Citizen feedback highlights low usage, with most people spending very limited time in the back lanes due to the narrow layout and lack of amenities that could support social interaction or diverse activities. Additionally, no notable increase in foot traffic was observed, and the absence of inclusive features further limits accessibility for differently abled individuals and seniors. Overall, while the project intended to foster community engagement and enhance public space utilisation, the existing spatial and infrastructural constraints have hindered its effectiveness, resulting in low appeal and limited communal use.

9.4.2. Indicator 02: Health, Well-being, and Safety Impact of Projects

This indicator assesses the project's contribution to community health and safety. Improvements in air and noise quality, increased physical activity, and reduced stress levels support residents' well-being. Enhanced safety for vulnerable groups, better lighting, surveillance, and lower crime perception fosters a sense of security, with residents generally satisfied with these positive changes.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Stress Reduction Impact - The data shows that 86.84% of respondents with inactive usage and 13.16% with active usage reported no difference in stress reduction due to the back lane project. No respondents indicated a positive impact on stress. This lack of improvement suggests that the back lanes, as they currently are, do not provide sufficient calming features, green spaces, or engaging activities that could positively influence mental well-being.

Overall Resident Perception - The back lane conservation project had minimal impact on most residents, with 71.05% reported no difference, 26.32% had a positive perception, and 2.63% felt negatively about the project. The positive responses may reflect satisfaction with improvements in infrastructure, while the majority's neutral stance suggests that the project's benefits were not widely impactful or relevant to daily life for most residents. The few negative responses could be due to temporary inconveniences experienced during project implementation.

Air Quality Perception - In terms of air pollution levels after the back lane conservation project, 23.68% of respondents felt air quality improved, 76.32% reported no difference. The improvement in perceived air quality by some residents could be attributed to better connectivity to the Underground Drainage (UGD) system, potentially reducing stagnant water and waste buildup in the back lanes, which may have previously contributed to foul odours and particulates.

Noise Level Perception - Regarding noise pollution levels after the back lane conservation project, 100% of respondents observed no difference. This suggests that the project's focus, primarily on improving utility connections to the Underground Drainage (UGD) system, did not involve measures that would significantly affect noise levels.

Increase in Physical Activity - In terms of physical activity in the back lane area post-project, 88.24% of respondents observed no change, while 11.76% noticed an increase in activities like walking, jogging, and playing. This slight uptick in physical activity could be attributed to the improved conditions due to the Underground Drainage (UGD) connectivity, which likely reduced issues like water stagnation or waste, making the space cleaner and more usable. However, the large majority experiencing no change suggests that while the project improved functionality, it did not significantly transform the area into a popular recreational spot.

Health Impact Satisfaction - Resident satisfaction with the back lane conservation project's impact on community health was low, with 81.58% expressing dissatisfaction and only 5.26% feeling satisfied. While the project improved conditions through UGD connectivity, which may have helped reduce waste and odors, these benefits were too limited to meet residents' expectations for noticeable health improvements. This indicates a need for broader health-focused initiatives, such as green spaces or pollution reduction, to enhance community well-being.

Perception of Safety for Vulnerable Groups - 100% of residents reported no noticeable change in safety. This suggests that while the project did not address specific safety features like lighting, surveillance, or accessible pathways that might directly enhance a sense of security for vulnerable groups. As a result, the project's impact on safety perception remains minimal.

Crime Rate Perception - 100% of respondents observed no difference. This indicates that the conservancy project, while beneficial for infrastructure, did not impact crime rates or safety concerns. Without measures like enhanced lighting, security patrols, or surveillance, the project did not directly address factors that could reduce crime or increase residents' sense of safety in the area.

Lighting and Surveillance Improvements - Most respondents, 98%, reported no difference between the presence of streetlights and surveillance systems in terms of crime rates or safety concerns. This suggests that while the infrastructure improvements may have enhanced visibility, they did not significantly affect the perceived level of surveillance or safety

Safety and Security Satisfaction - Most respondents (56%) were dissatisfied with the safety and security aspect of the back lane/conservancy project, rating it a 1. Smaller percentages rated it a 2 (14%) or 3 (6%), while no one gave higher ratings. This suggests that while the project improved infrastructure, it did not effectively address residents' safety concerns, indicating a need for additional measures like better lighting or surveillance.

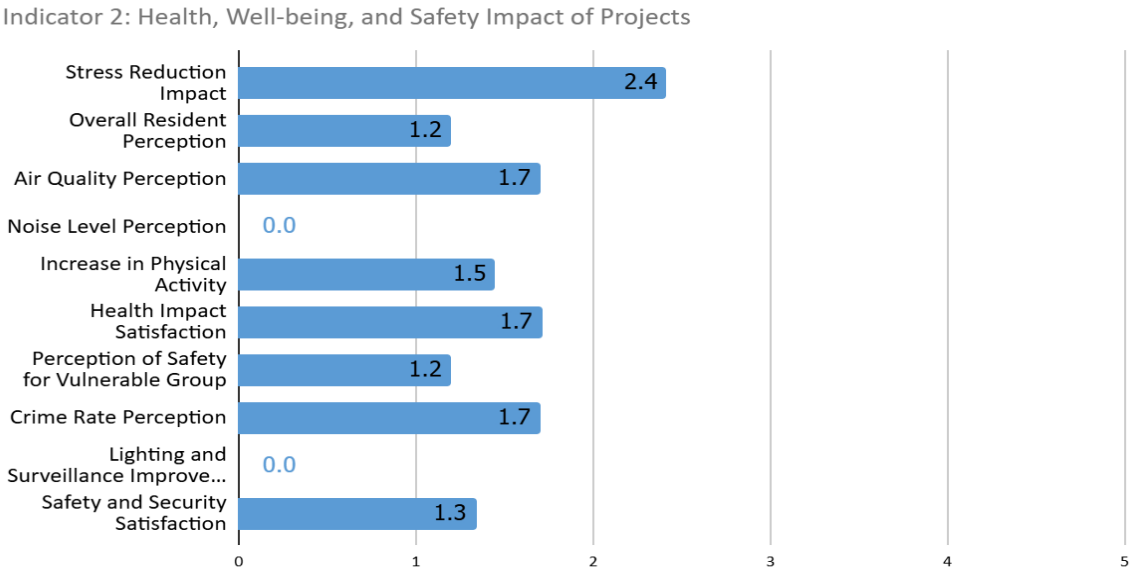


Figure 9-6 Indicator 02: Health, Well-being, and Safety Impact of Projects

Overall, the back lane/conservancy project had a minimal impact on community health and safety, with most residents reporting no significant changes. While some infrastructure improvements, such as better drainage, may have contributed to cleaner environments and reduced waste, these changes did not translate into noticeable benefits for mental well-being, physical activity, or safety. Residents expressed dissatisfaction with both the health and safety aspects, indicating that the project failed to address key factors like stress reduction, security, and crime prevention. For the project to have a more meaningful impact on community health and safety, additional measures focused on green spaces, pollution reduction, and enhanced security features would be needed.

9.4.3. Indicator 03: Economic Impact and Livelihood Generation from Projects

The "Economic Impact and Livelihood Generation from Projects" parameter assesses how infrastructure projects, like the back lane conservancy initiative, influence local economies and residents' financial opportunities. It examines indicators such as the emergence of new small businesses, increased revenue for existing businesses, direct job creation, the attraction of visitors, and various income-generating activities.

Based on the analysis of citizen responses under the following parameters, the following observations have been made,

Emergence of New Small Businesses - 100% of respondents reported no new small businesses established in the back lane/conservancy area, with no observed changes in business activity. This suggests that the project did not directly foster the creation of new kiosks, food stalls, or retail shops. The lack of new establishments indicates that, while the project may have improved infrastructure, it did not significantly stimulate local entrepreneurship or attract new businesses to the area.

Increase in Local Business Revenue - There was no perceived increase in local business revenue due to higher foot traffic, as reported by all respondents. This lack of growth in revenue can be attributed to the absence of increased foot traffic in the area. Despite improvements in infrastructure, the project did not draw more visitors or customers to local businesses, meaning the expected economic benefits from higher foot traffic did not materialise.

Direct Job Creation - No new jobs were created by the project, such as roles for maintenance staff or security personnel. The project did not directly contribute to job creation or provide new employment opportunities for local residents. The lack of job creation suggests that the project did not significantly impact the local labour market or address employment needs in the community.

Visitor Attraction - None of the respondents observed any visitors being attracted to the area due to the back lane/conservancy project. This suggests that the improvements made in the area did not have the desired effect of drawing in external visitors or tourists. Without additional features such as promotional efforts or attractions, the project did not seem to create a compelling reason for people to visit, limiting its potential to boost foot traffic or stimulate the local economy through outside visitors.

Resident Satisfaction with Livelihood Opportunities - All respondents (100%) were dissatisfied with the livelihood and financial opportunities created by the back lane/conservancy project, giving it a rating of 1. This indicates that the project did not generate new economic opportunities or improve residents' financial conditions.

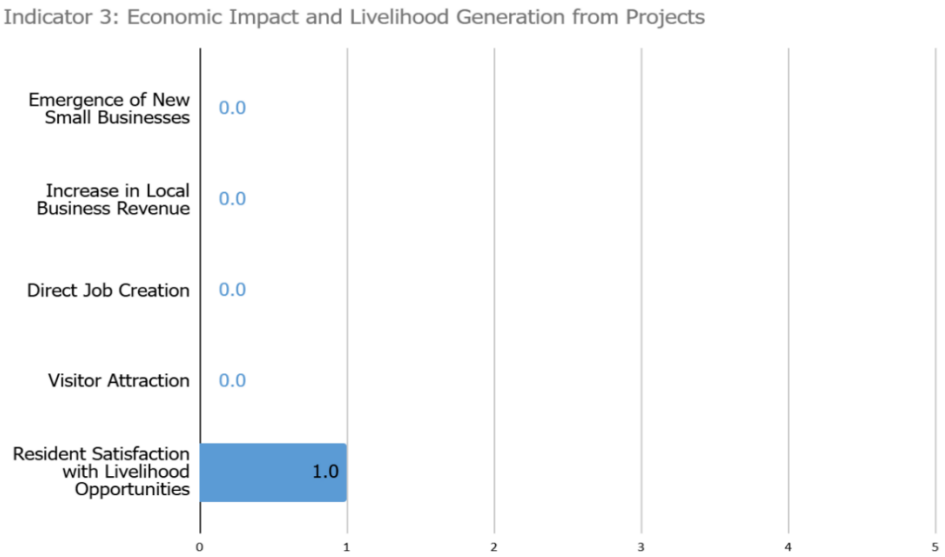


Figure 9-7 Indicator 03: Economic Impact and Livelihood Generation from Projects

The back lane/conservancy project had little to no positive impact on local economic growth or the creation of livelihood opportunities. Residents reported no new businesses, jobs, or increased revenue for existing businesses, and the project did not attract visitors or stimulate local entrepreneurship. The overall dissatisfaction with the economic outcomes suggests that, while infrastructure improvements were made, they did not translate into tangible financial benefits or economic opportunities for the community. More targeted efforts, such as support for small businesses or job creation programs, would be needed to generate meaningful economic impact.

9.4.4. Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The "Real Estate and Municipal Revenue Impact" indicator evaluates how the back lane conservancy project affects property markets and municipal finances. It looks at changes in rental property rates, shifts in occupancy rates, and potential increases in municipal development revenue due to higher demand for real estate. Additionally, it considers residents' interest in investing in the area, reflecting the project's influence on property value perceptions and long-term investment potential. This indicator helps assess the economic ripple effects of the project on both real estate and municipal revenues.

Change in Rental Property Rates - 100% of respondents reported no change in rental rates for residential and commercial properties due to the back lane/conservancy project. This indicates that the project did not have a noticeable impact on property values or rental demand in the area. The lack of any increase, whether marginal or drastic, suggests that the infrastructure improvements did not significantly enhance the area's attractiveness or influence the local real estate market.

Occupancy Rate Shifts - 100% of respondents reported no change in the occupancy rates of rental properties before and after the back lane/conservancy project. This indicates that the project did not have a noticeable effect on the demand for rental properties in the area. The lack of change suggests that the improvements made in the back lane did not significantly influence tenants' decisions or attract more people to rent in the vicinity

Increase in Municipal Development Revenue - 100% of respondents reported no change in development charges and fees collected by the municipality because of the back lane/conservancy project. This suggests that the project did not stimulate significant development activity or increase the demand for new construction in the area.

Resident Investment Interest - Most respondents (94.6%) expressed dissatisfaction with the back lane/conservancy project in terms of investment potential, giving it a rating of 1. A small percentage (7.9%) rated it a 2, indicating some minor dissatisfaction. No respondents rated it higher than 2, suggesting that the project did not enhance residents' perception of the area as a place to invest in property. This low level of satisfaction implies that the project did not create a compelling reason for residents to consider the area a viable or attractive investment opportunity.

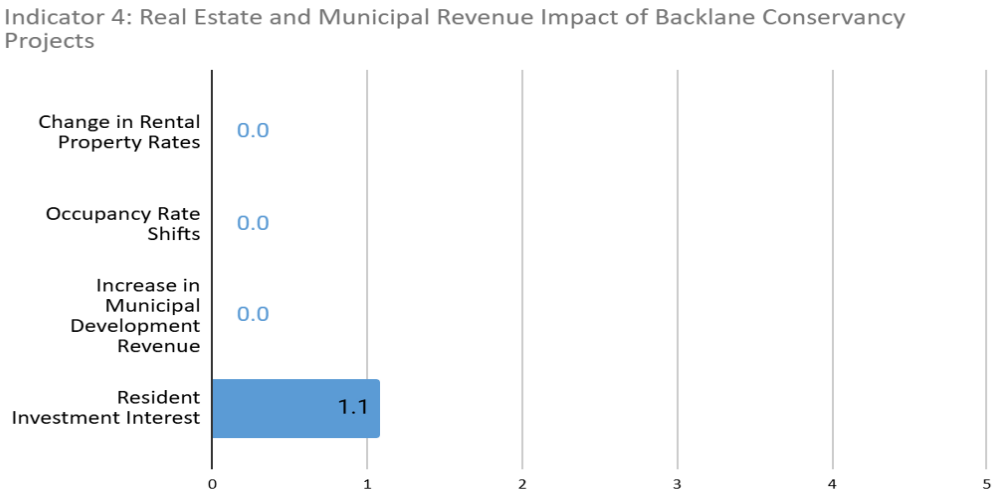


Figure 9-8 Indicator 04: Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects

The back lane/conservancy project had minimal impact on real estate dynamics and municipal revenue. There were no changes in rental rates, occupancy rates, or development charges, indicating that the project did not stimulate demand for properties or new construction. Additionally, residents showed low interest in investing in the area, reflecting a lack of perceived value or potential for property appreciation. Overall, the project did not create significant economic ripple effects on the local real estate market or generate additional revenue for the municipality.

9.4.5. Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

The "Improved Accessibility for Emergency and Utility Services" indicator evaluates how infrastructure enhancements in back lane conservancy projects affect the accessibility of emergency and utility vehicles, as well as the efficiency of service delivery. It focuses on improvements like road widening, signage upgrades, and the ability of emergency vehicles to access the area. Additionally, it considers service interruptions, utility maintenance efficiency, and resident satisfaction with the accessibility of services.

In this case, the back lanes remain too narrow and short to accommodate the movement of emergency and utility vehicles effectively. As a result, there have been no significant enhancements in vehicle accessibility or utility services. The project did not address the core issue of accessibility, limiting its relevance in improving the ability of emergency and utility vehicles to reach the area. Therefore, the expected improvements in service delivery and maintenance efficiency were not realized, and residents likely did not experience any notable enhancements in service accessibility.

9.4.6. Indicator 06: Public Health and Hygiene Impact of Back lane Conservancy Projects

The "Public Health and Hygiene Impact" indicator assesses how the back lane conservancy project affects waste management and overall cleanliness in the area. It examines factors such as the reduction of illegal dumping, improvements in waste collection efficiency, and the promotion of recycling initiatives. Additionally, it looks at the condition of waste disposal infrastructure, changes in residents' attitudes toward littering, and overall satisfaction with public health and hygiene improvements resulting from the project. This indicator helps evaluate how effectively the project contributed to a cleaner, healthier environment for the community.

Reduction in Illegal Dumping - 9% of respondents reported a reduction in illegal dumping after the project, while 70.3% observed no difference, and 8.1% felt that the situation worsened. This indicates that the project had limited impact on reducing illegal dumping in the area. While a small portion saw some improvement, most residents did not notice significant changes, suggesting that the project did not effectively address the root causes of illegal dumping or provide sufficient infrastructure or enforcement to discourage it.

Waste Collection Efficiency - 53.3% of respondents reported an increase in the efficiency of waste collection and disposal services after the project, 46.7% observed no difference, and 1.6% felt the situation worsened. This suggests that the project had a positive impact on waste management for most residents, with over half noticing improvements in the efficiency of waste collection and disposal. However, the substantial portion reporting no change indicates that the enhancements may not have been universally felt or sustained across the area.

Promotion of Waste Segregation and Recycling - 100% of respondents reported that the municipality did not promote waste segregation and recycling after the project implementation. This indicates that, despite the potential for improving waste management practices, the project did not include or encourage initiatives to promote recycling or waste segregation. The absence of such efforts suggests that the project may have overlooked an important opportunity to enhance environmental sustainability and foster more responsible waste disposal habits among residents.

Waste Disposal Infrastructure Condition - Most respondents (86.8%) rated the condition and maintenance of waste disposal infrastructure poorly, giving it a rating of 2, while 8.1% rated it a 1, indicating strong dissatisfaction. A small portion (8.1%) gave it a neutral rating of 3, but no respondents rated it 4 or 5. This suggests that the waste disposal infrastructure remains in poor condition and is not adequately maintained, which likely contributes to residents' dissatisfaction with overall waste management services in the area.

Resident Attitude Towards Littering - 89.2% of respondents reported no change in residents' attitudes and behaviours towards littering and waste disposal after the project, while 10.8% observed a positive change. This suggests that the project did not significantly influence residents' habits related to littering or waste disposal. Most residents did not experience a shift in behavior, indicating that additional efforts, such as awareness campaigns or stricter enforcement, may be needed to effectively change attitudes toward waste management in the area.

Resident Satisfaction with Health and Hygiene Improvements - 92% of respondents rated their satisfaction with the impact on public health and hygiene as 1, indicating strong dissatisfaction, while 10.8% rated it a 2, reflecting some dissatisfaction. No respondents gave a rating higher than 2. This suggests that the back lane/conservancy project did not effectively reduce illegal dumping or littering, and residents were largely dissatisfied with the project's impact on public health and hygiene. The lack of noticeable improvements highlights a need for more targeted measures to address cleanliness and waste management issues.

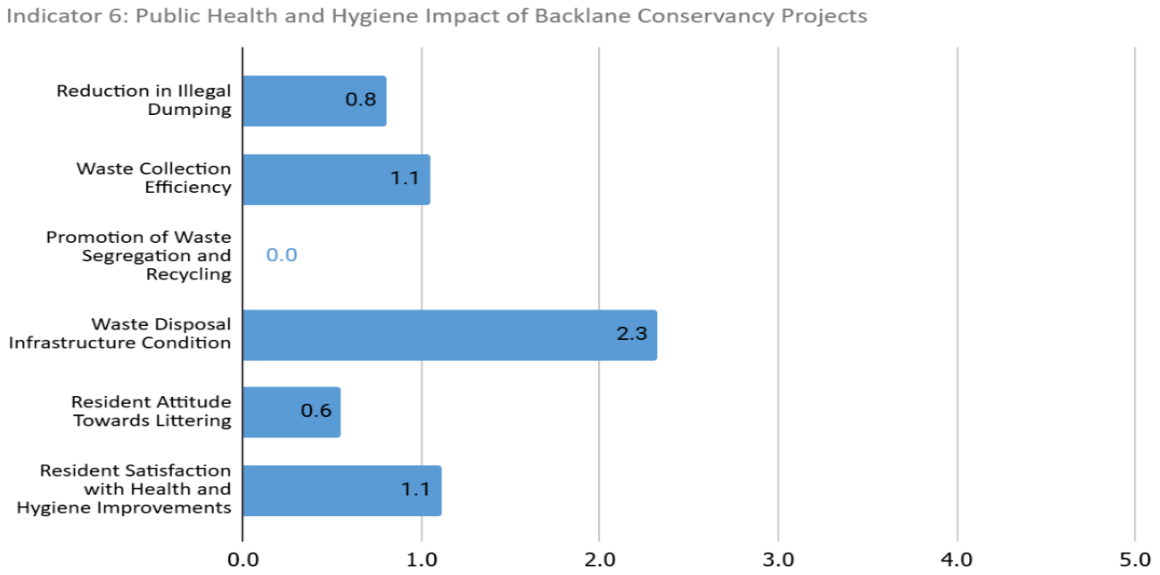


Figure 9-9 Indicator 05: Improved Accessibility for Emergency and Utility Services in Back lane Conservancy Projects

The "Public Health and Hygiene Impact" of the back lane conservancy project appears to have been limited, with little noticeable improvement in waste management, cleanliness, or resident behavior. While some respondents reported minor improvements in waste collection efficiency, the project had little effect on reducing illegal dumping, promoting recycling, or changing attitudes toward littering. The condition of waste disposal infrastructure remained poor, and most residents were dissatisfied with the project's impact on public health and hygiene. This suggests that the project did not adequately address key issues related to waste management and cleanliness, and more targeted efforts are needed to foster a cleaner and healthier environment.

9.4.7. Comprehensive Analysis

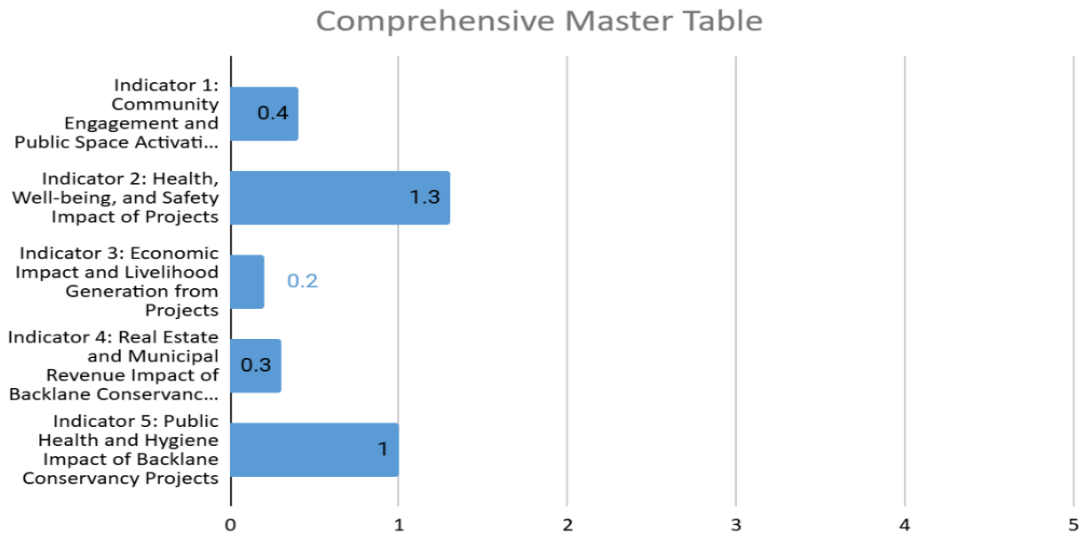


Figure 9-10 Comprehensive Citizen Response Analysis

The assessment of the Back lane/Conservancy Project in Jaipur indicates limited success across various indicators, each rated out of 5. Indicator 5: Public Health and Hygiene Impact scored the highest at 1.0, showing some limited progress in improving hygiene and reducing waste issues. Indicator 2: Health, Well-being, and Safety Impact followed with a score of 1.3, reflecting minor positive impacts on residents' health and safety, though there remains significant room for improvement.

Indicator 1: Community Engagement and Public Space Activation received a score of 0.4, indicating minimal community interaction and activation of public spaces. On the economic front, Indicator 3: Economic Impact and Livelihood Generation scored poorly at 0.2, suggesting a very limited effect on local businesses or job creation. Similarly, Indicator 4: Real Estate and Municipal Revenue Impact scored 0.3, showing negligible effects on property values or municipal revenue generation.

Overall, the project’s impact in Jaipur has been most notable in small improvements to public health, but it falls short in areas like economic growth, safety, and community engagement. These findings suggest a need for targeted efforts to enhance the project’s overall impact in Jaipur.

9.5. Official Response

9.5.1. Indicator 01: Community Engagement and Public Space Activation of Project

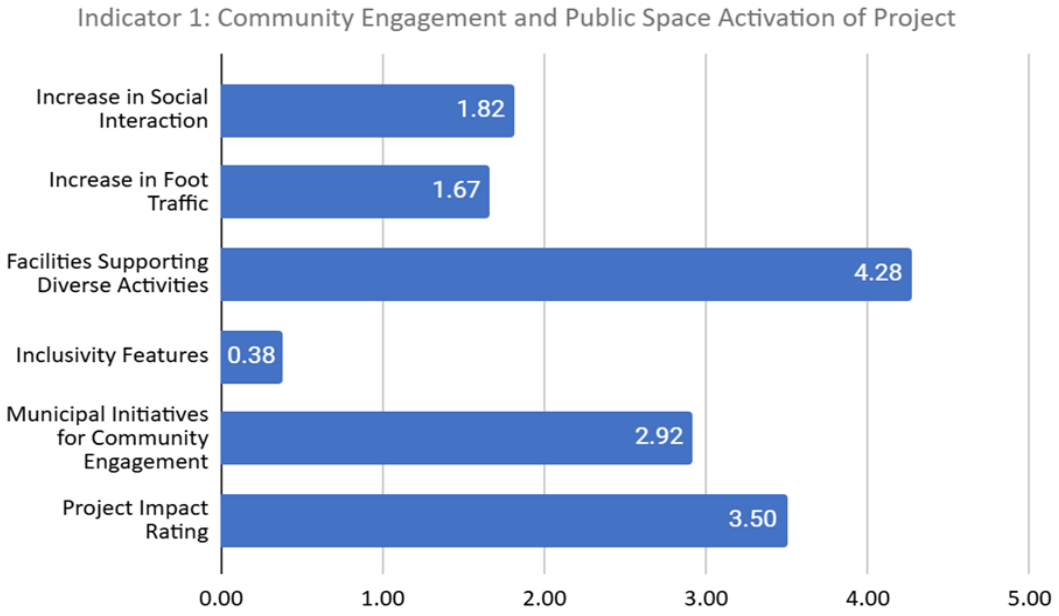


Figure 9-11 Indicator 01: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results, officials perceive the Community Engagement and Public Space Activation project as successful in several key areas. The project has significantly boosted social interactions among community members, indicating that the initiatives have effectively brought people together and fostered a stronger sense of community. Additionally, the project has moderately increased foot traffic. While this suggests that the project has attracted more visitors, there is still room for improvement to enhance the vibrancy and accessibility of public spaces. Overall, the project impact rating of 3.83 suggests that while the project is generally well-received and effective, there are specific areas that need attention for further improvement.

9.5.2. Indicator 02: Community Engagement and Public Space Activation of Project

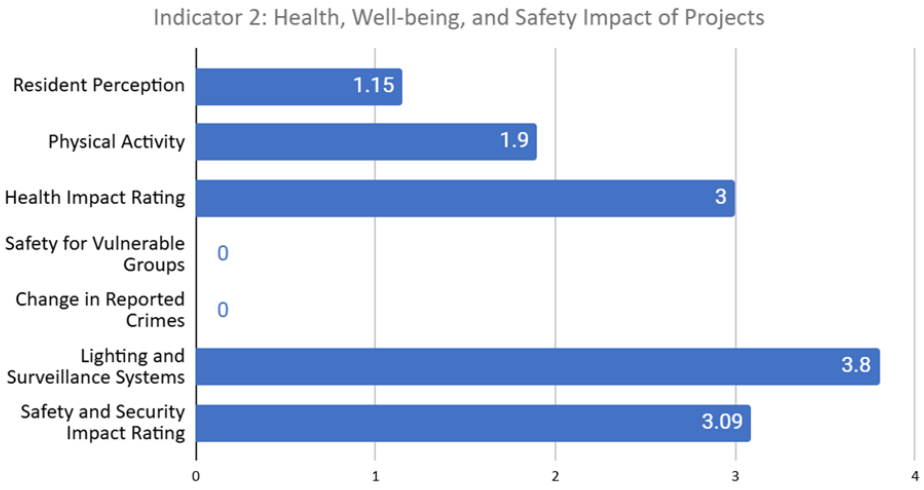


Figure 9-12 Indicator 02: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results for various parameters in the Health, Well-being, and Safety Impact of Projects, officials perceive mixed outcomes. Resident Perception received a low score of 1.15, indicating that residents have a largely unfavourable view of the project's impact. Similarly, Physical Activity scores 1.9, suggesting that the initiatives have not significantly encouraged physical activity among the community. On a more positive note, the Health Impact Rating stands at 3, reflecting a moderate improvement in overall health outcomes due to the project. However, Safety for Vulnerable Groups and Change in Reported Crimes both scored 0, pointing to critical areas where the project has failed to make an impact. In contrast, Lighting and Surveillance Systems received a high score of 3.8, indicating substantial improvements in these areas. This contributes to a Safety and Security Impact Rating of 3.09, which suggests moderate success in enhancing safety and security through improved infrastructure. Overall, while the project has made strides in certain areas, significant challenges remain in gaining resident approval, promoting physical activity, and ensuring the safety of vulnerable groups.

9.5.3. Indicator 03: Community Engagement and Public Space Activation of Project

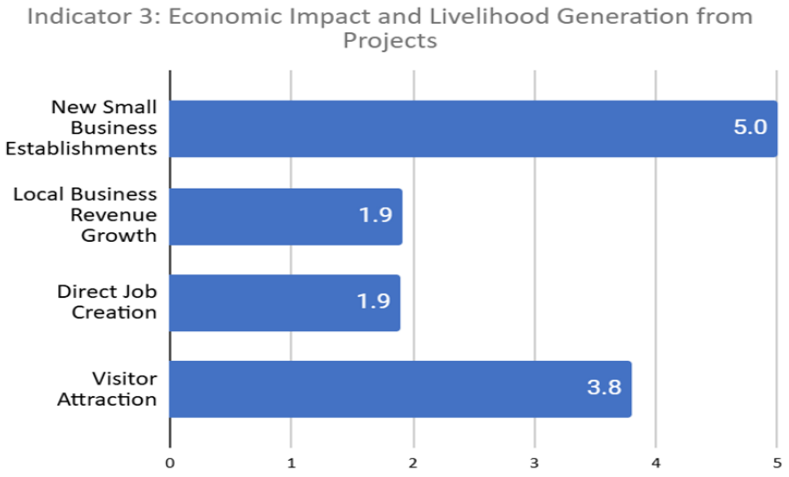


Figure 9-13 Indicator 03: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results for various parameters in the Economic Impact and Livelihood Generation from Projects, officials perceive a varied impact. New Small Business Establishments scored a perfect 5.0, indicating a highly favorable outcome in fostering new business ventures, reflecting strong support and success in encouraging entrepreneurship. However, Local Business Revenue Growth and Direct Job Creation both scored 1.9, highlighting significant challenges in boosting revenue for existing local businesses and creating new jobs. This suggests that while new businesses are being established, they may not yet be generating substantial revenue or creating many employment opportunities. On a brighter note, Visitor Attraction scored 3.8, indicating a positive impact in drawing visitors, which can provide ancillary benefits for local businesses. Overall, the projects demonstrate notable strengths in fostering new businesses and attracting visitors, but there are clear areas for improvement in enhancing local business revenues and job creation.

9.5.4. Indicator 04: Community Engagement and Public Space Activation of Project

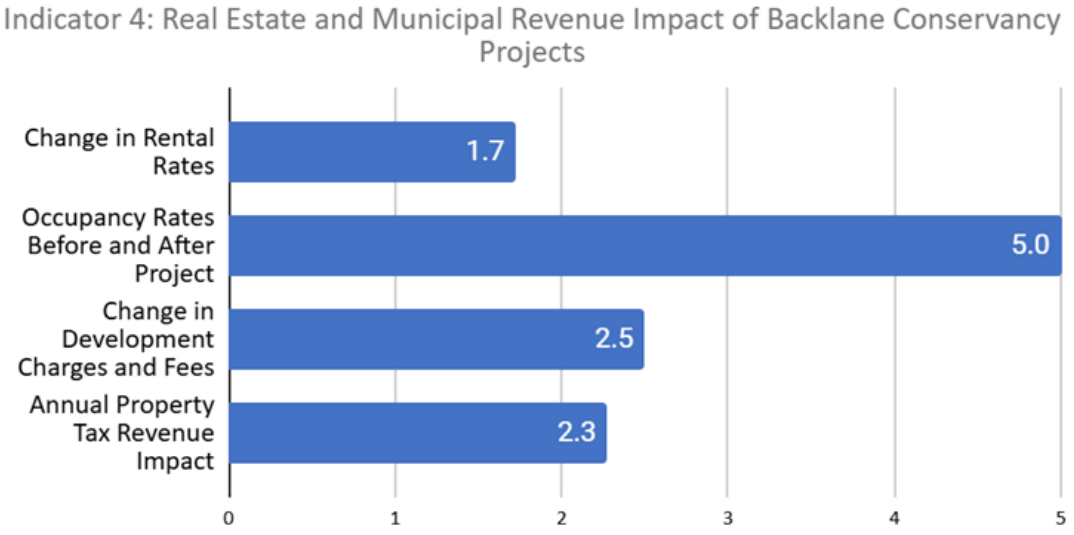


Figure 9-14 Indicator 04: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results for various parameters in the Real Estate and Municipal Revenue Impact of Back lane Conservancy Projects, officials perceive diverse outcomes. The Change in Rental Rates scored 1.7, indicating limited influence on local rental market prices. However, Occupancy Rates Before and After Project scored a perfect 5.0, demonstrating a highly favorable outcome with increased property occupancy rates, reflecting successful utilization and tenant attraction. The Change in Development Charges and Fees scored 2.5, indicating a moderate impact on development-related costs, which could influence investment decisions. Lastly, the Annual Property Tax Revenue Impact scored 2.3, suggesting a modest increase in municipal revenue from property taxes. Overall, while the projects have positively influenced property occupancy and moderately impacted development costs and tax revenue, they have not significantly affected rental rates, highlighting areas for further strategic focus.

9.5.5. Indicator 05: Community Engagement and Public Space Activation of Project

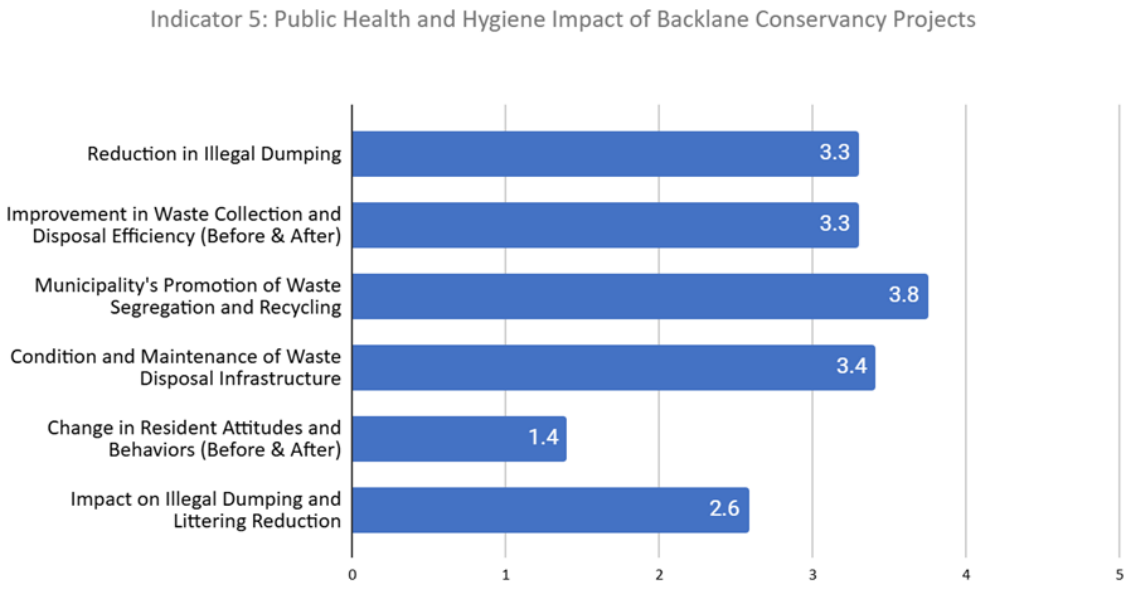


Figure 9-15 Indicator 05: Community Engagement and Public Space Activation of Project (Official Response)

Based on the official survey results for various parameters in the indicator of Public Health and Hygiene Impact of Back lane Conservancy Projects, officials perceive a mix of successes and ongoing challenges. The reduction in illegal dumping scored 3.3, indicating a moderate decrease in such activities. Similarly, improvements in waste collection and disposal efficiency also scored 3.3, reflecting significant advancements in waste management practices. The municipality's promotion of waste segregation and recycling received a higher score of 3.8, showcasing successful efforts in encouraging sustainable waste practices. The condition and maintenance of waste disposal infrastructure scored 3.4, pointing to effective maintenance and infrastructure improvement. However, the change in resident attitudes and behaviors scored 1.4, highlighting a minimal shift in community behaviors towards waste management. Lastly, the impact on illegal dumping and littering reduction scored 2.6, suggesting some progress but underscoring the need for continued efforts in this area. Overall, while there have been significant improvements in waste management and infrastructure, changing resident attitudes remains a key challenge to achieving long-term success.

9.6. Comprehensive Analysis for Officials Response

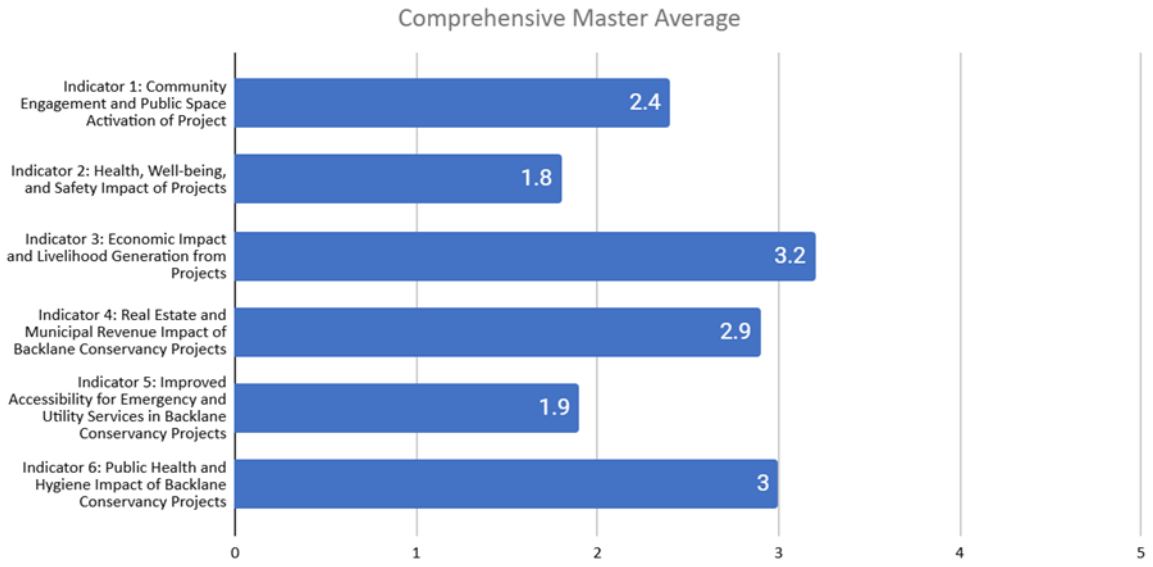


Figure 9-16 Comprehensive Analysis for Officials Response

Based on the official survey results, officials perceive a range of outcomes across different aspects of the projects. Community Engagement and Public Space Activation received a moderate score of 2.4, indicating some success in fostering social interactions and community engagement. The Health, Well-being, and Safety Impact scored lower at 1.8, highlighting minimal improvements in these areas. On the economic front, the Economic Impact and Livelihood Generation scored 3.2, reflecting a positive influence on economic activities and job creation. The Real Estate and Municipal Revenue Impact scored 2.9, suggesting moderate success in increasing property occupancy rates and municipal revenue. Improved Accessibility for Emergency and Utility Services scored 1.9, indicating limited enhancements in accessibility for critical services. Finally, the Public Health and Hygiene Impact received a score of 3, showing moderate improvements in waste management and public hygiene. Overall, the projects have made notable strides in economic impact and waste management, while areas such as health, safety, and accessibility require further attention to achieve greater success.

9.7. Field Observations

Table 9.7.1 Field Observations

Indicators	Observations
Social Interaction & Community Engagement	Narrow lanes, dead ends, and lack of interactive social space reduce vibrancy, while poor privacy and waste management compromise livability and hygiene.
Mental Well-being, Health, Safety, and Security	Improved connectivity and cleanliness of Utility, enhance mental well-being & health whereas negligeble improvement in terms of safety, and security
Economic Impact & Livelihoods	Despite improvements in infrastructure , the project has not significantly influenced economic impact or livelihoods, highlighting the need for targeted interventions to support local businesses and employment opportunities.
Real Estate Value & Municipal Revenue	The project has not significantly impacted real estate value or municipal revenue, as the improvements lack direct economic drivers or substantial infrastructure enhancements to stimulate property demand or revenue generation.
Public Health & Hygiene	Significant improvements in public health and hygiene are evident compared to the past, with better utility connections enhancing sanitation, accessibility, and overall community well-being, contributing to a healthier living environment

Figure 9-17 Field Visits and Stakeholder interaction, Jaipur

9.8. Overall Findings

The Back Lane Conservancy Project in Jaipur demonstrates mixed results across various impact areas, reflecting modest successes in some aspects and significant room for improvement in others. Public health and hygiene emerge as the most positively impacted area, with improved utility connections and waste management practices leading to better sanitation and overall community well-being. While progress is evident, further enhancements are necessary to ensure sustainable and long-lasting benefits in this domain.

In terms of mental well-being, health, safety, and security, the project has made limited progress. Enhanced connectivity and cleaner environments have positively influenced mental well-being, but safety and security concerns, such as inadequate lighting and insufficient safety measures, remain unaddressed. These gaps highlight the need for targeted interventions to improve urban safety comprehensively.

Community engagement and public space activation remain underdeveloped. Narrow lanes, dead ends, and a lack of interactive and inclusive social spaces have reduced vibrancy and hindered community participation. While there have been isolated instances of increased social interactions, a more systematic approach is needed to create multifunctional public spaces that encourage engagement and foster a sense of community.

The project's economic impact and contribution to livelihood generation have been minimal. Although infrastructure enhancements were implemented, they have not translated into meaningful economic benefits for local businesses or significant job creation. Supporting local economies through strategic initiatives and fostering informal business activities could help realize the economic potential of the project.

Similarly, the project's effect on real estate values and municipal revenue generation has been limited. Improvements in cleanliness and infrastructure have not significantly influenced property values or increased municipal revenue. To drive substantial growth in these areas, the project needs stronger economic drivers and substantial infrastructure improvements.

Overall, the Back lane Conservancy Project in Jaipur has made modest strides in improving sanitation and utility connectivity, but it has fallen short in addressing critical areas such as safety, economic growth, and community engagement. Discrepancies between citizen responses and official surveys underscore the importance of incorporating diverse stakeholder perspectives in planning and execution. Addressing these gaps with targeted measures will be key to unlocking the full potential of the initiative and driving holistic urban renewal in Jaipur. To maximize the project's overall impact, future efforts should focus on creating vibrant public spaces, strengthening safety measures, and promoting economic activities that directly benefit the community.

9.9. Suggestions and Recommendations

9.9.1. Improve Community Engagement and Social Interaction:

- **Create Interactive Spaces:** Develop dedicated community spaces such as parks, open seating areas, and small activity hubs to foster social interaction and vibrancy.
- **Enhance Public Participation:** Involve residents in planning and decision-making processes to ensure the design aligns with community needs and preferences.

9.9.2. Enhance Mental Well-being, Health, Safety, and Security:

- **Green Infrastructure:** Introduce greenery through vertical gardens, tree planting, and pocket parks to improve air quality, reduce stress, and enhance aesthetic appeal.
- **Lighting and Surveillance:** Install adequate street lighting and surveillance systems to improve safety and security, especially in narrow and less frequented areas.

9.9.3. Boost Economic Impact and Livelihoods:

- **Support Local Businesses:** Develop vendor-friendly spaces and offer incentives to small businesses to operate in back lane areas, creating economic activity.

9.9.4. Strengthen Real Estate Value and Municipal Revenue:

- **Revenue-Generating Initiatives:** Introduce municipal revenue strategies such as parking fees, user charges for public amenities.

9.9.5. Improve Public Health and Hygiene:

- **Public Awareness Campaigns:** Conduct awareness drives about hygiene practices and waste management to involve citizens in maintaining cleanliness.
- **Access to Utilities:** Continue to expand and maintain utility networks to sustain improvements in sanitation and public health.

10. ANNEXURE

10.1. Residential Survey Questionnaire

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RESIDENT SURVEY QUESTIONNAIRE

Location								**Age of Responders**	0-15	15-18	18-30	30-60	>60
Gender of Responders	Male			Female		Other		**Annual Income**	<3 Lakh	3 - 6 Lakh	6 -12 Lakh	12 - 18 Lakh	>18 Lakh
Literacy	Literate	Illiterate	Below primary	Below middle	Below matric / secondary	Secondary but below graduate	Graduate & Above	**Number of years of stay in the city**	0-1 year, Reason__		1-3 years	3-5 years	>5y ears
Profession	Self-Employed	Salaried	Labour	Student	Unemployed	Other - Retired/Homemaker							
I	**In what way the 'Backlane / Conservancy Projects' has enhanced the aspects of social interaction, community engagement, sense of belongingness and active public space utilisation at the neighbourhood level?**												
1	How often are you using the backlane after conversation project?							Daily	Once in a week	Multiple times a week	Rarely		
2	Duration of time spent by you in the space. (per day)							<1hr	1 to 2 hrs	2 to 3 hrs	>3hrs		
3	What is the preferred time to use the space, if using							Morning (6AM to 12PM)	Afternoon (12PM to 4PM)	Evening (4PM to 6PM)	Night (6PM to 10PM	Late night (10PM to 6AM)	
4	Do you think there is Increase in your social interaction? if yes how much							No change	Minimal increase	moderate increase	Drastic Increase		

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5	Do you think there is Increase in foot traffic compared to pre-project implementation, if yes how much	No	Minimal increase	moderate increase	Drastic Increase	
6	Do you think there are facilities supporting diverse activities (e.g., footpath, seating, lighting, play areas etc)	Yes (inactive usage)		Yes (actively used)		No present
7	Presence of inclusive features (differently-abled individuals, accessible ramps, seating areas for seniors etc)	Present (actively usage)		Present (Inactive usage)		Not present

II	**In what way the 'Backlane / Conservancy Projects' can influence mental well-being, health, safety and security of local communities?**				
1	Does the backlane project help in reduction of stress in the aspect of health	No difference (inactive usage)	No difference (active usage)	Postiive difference (inactive usage)	Positive difference (active usage)
2	Whats your overall perception of backlane conservation project in your area?	Good that it happened	No difference to me	Felt bad that it happened, mention why_____	
3	Perception of Air pollution levels in the backlane/conservancy area before and after project	Decreased air quality	No difference	Increased air quality	
4	Perception of noise pollution levels in the backlane/conservancy area before and after project	Increased noise	No difference	Decreased noise	
5	Observed any increase in physical activities such as walking, jogging, and playing in the backlane/conservancy space.	Decreased physical activity	No difference	Increased physical activity	

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6	Resident satisfaction on the influence of health in communities due to backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5
7	Do you think the conservancy project has made the area safer for women, elderly & children?	Yes (feels more safe)	No difference	No (feels more unsafe), mention why_____		
8	Do you feel there is change in number of reported crimes before and after the project.	Yes (feels more safe)	No difference	No (feels more unsafe), mention why_____		
9	Any difference in presence of street lights & surveillance systems?	Yes (Increased surveillance)	No difference	No (decreased sruveillance)		
10	Resident satisfaction on the aspect of safety and security with the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

III	**To what extent has the 'Backlane / Conservancy Projects' impacted in generation of livelihoods through creation of financial opportunities (direct or indirect)?**				
1	Observed any new small businesses (e.g., kiosks, food stalls, retail shops) established in the backlane/conservancy area	No difference	Yes (new establishments)	Few establishments moved away, mention why__	
2	Do you feel there is an increase in local business revenues due to higher footfall in the area?	No difference	Minimal difference	Moderate difference	Drastic difference
3	Do you feel any jobs were directly created by the project (e.g., maintenance staff, security personnel)	No new employment		Yes	
4	Do observe any visitors attracted to the area due to the backlane/conservancy project.	No		Yes	
5	What kind of income activity is associated with backlane conservation	Formal Sector (Established shops)		Informal Sector (Street vendors)	

6	Resident satisfaction on the generation of livelihoods through creation of financial opportunities (direct or indirect) with the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

IV	**In what way the 'Backlane / Conservancy Projects' influenced the real estate values in the vicinity and whether this has potential to enhance of municipal revenue?**					
1	Any change in rental rates for residential and commercial properties in the vicinity due to the backlane/conservancy project.	No difference	Marginal Increase	Drastic Increase	Decreased rental rate	
2	Occupancy rates of rental properties before and after the project.	Fewer tenants		No difference		More occupancy
3	Change in development charges and fees collected by the municipality as a result of increased development activity	No difference	Marginal Increase	Drastic Increase		Decreased charges
4	Resident satisfaction and willingness to invest in property in the area due to the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

V	**How has the project facilitated better access for emergency services and utility maintenance vehicles?**				
1	Any improvements made (e.g., widened roads, improved signage)?	Yes	No differences	Worsened, why?___	
2	Do you think emergency vehicles/utility maintenance vehicles can now access the area (e.g., fire trucks, ambulances, garbage trucks, utility vans) if needed?	Yes	Used to access prior too		No, now they can't, why?__
3	Frequency and duration of service interruptions before and after the project.	Rarely any interruption	More interruptions than before	Lessinterruptions	No difference
4	Any change in frequency and efficiency of utility maintenance?	Yes	No difference	Worsened, why?___	

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5	Resident satisfaction on better access for emergency services and utility maintenance vehicles due to backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

VI	In what way the 'Backlane / Conservancy Projects' impacted public health and hygiene in terms of reduced instances of illegal dumping or littering?					
1	Did the project reduce illegal dumping when compared to before & after the project?	Yes	No difference	Worsened, how?_____		
2	Did the project increase the efficiency of waste collection and disposal services when compared to before & after the project?	Yes	No difference	Worsened, how?_____		
3	After the project implementation, did municipality promote waste segregated and recycling?	No	Yes			
4	Rate present condition and maintenance of waste disposal infrastructure, (on a scale of 1 to 5)	1	2	3	4	5
5	Did resident attitude and behaviors towards littering and waste disposal before and after the project change?	No difference			Yes	
6	Resident satisfaction on impact of public health and hygiene in terms of reduced instances of illegal dumping or littering the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

Note -
The purpose of this survey is a part of initiative by SAAR-Sameeksha Series- Smart City Research Project by the Ministry of Housing and Urban Affairs (MoHUA), Govt of India. It is a collaborative action between academia and flagship urban missions to evaluate the project "The Backlane/Conservancy projects in Jabalpur City", and similar smart city projects in other cities assigned to School of Planning and Architecture Vijayawada, an Institute of National Importance, Government of India.

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PROFESSIONAL'S SURVEY QUESTIONNAIRE						
Name		**Department**				
Designation		**Qualification**				
I	**In what way the 'Backlane / Conservancy Projects' has enhanced the aspects of social interaction, community engagement, sense of belongingness and active public space utilisation at the neighbourhood level?**					
1	Do you think there is Increase in social interaction? if yes how much	No change	Minimal increase	moderate increase	Drastic Increase	
2	Do you think there is Increase in foot traffic compared to pre-project implementation, if yes how much	No	Minimal increase	moderate increase	Drastic Increase	
3	Do you think there are facilities supporting diverse activities (e.g., footpath, seating, lighting, play areas etc)	Yes (inactive usage)	Yes (actively used)	No present		
4	Presence of inclusive features (differently-abled individuals, accessible ramps, seating areas for seniors etc)	Present (actively usage)	Present (Inactive usage)	Not present		
5	Peak time of social interaction, if observed any	Morning (6AM to 12PM)	Afternoon (12PM to 4PM)	Evening (4PM to 6PM)	Night (6PM to 10PM	Late night (10PM to 6AM)
6	What steps has municipality taken to improve the community engagement, sense of belongingness & active public space utilisation	1	2	3	4	5
7	How would you rate the impact of this project in the aspect of social interaction, community engagement, sense of belongingness & active public space utilisation (On a scale of 1 to 5)	1	2	3	4	5
II	**In what way the 'Backlane / Conservancy Projects' can influence mental well-being, health, safety and security of local communities?**					
1	What steps has municipality taken to improve the mental well being, safety and security of residents under this project					

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2	Whats is the overall perception of residents on backlane conservation project in their area?	Good that it happened			No difference to them	
3	What steps has municipality taken to improve the air quality, to tackle air pollution, if any					
4	What steps has municipality taken to reduce noise levels, to tackle noise pollution, if any					
5	Has municipality observed any increase in physical activities such as walking, jogging, and playing in the backlane/conservancy space.	Decreased physical activity	No difference	Increased physical activity		
6	How would you rate the impact of this project in the aspect of influence the health aspect of communities due to backlane/conservancy project. (On a scale of 1 to 5)					
7	Did the conservancy project make the area safer for women, elderly & children?	No	Yes, how?_____			
8	Is there any change in number of reported crimes before and after the project.	No	Yes, how?_____			
9	Did the municipality setup street lights & surveillance systems?	No	Yes (Increased surveillance)			
10	How would you rate the impact of this project in the aspect of safety and security with the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5
III	**To what extent has the 'Backlane / Conservancy Projects' impacted in generation of livelihoods through creation of financial opportunities (direct or indirect)?**					
1	Are there any new small businesses (e.g., kiosks, food stalls, retail shops) established in the backlane/conservancy area	No	Yes (new establishments)	Few establishments moved away, mention why_____		
2	Any increase in local business revenues due to higher footfall in the area?	No difference	Minimal difference	Moderate difference	Drastic difference	
3	Are there any jobs were directly created by the project (e.g., maintenance staff, security personnel)	No new employment		Yes		

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4	Are any visitors attracted to the area due to the backlane/conservancy project.	No		Yes	
5	What steps has municipality taken to improve creation of financial opportunities (direct or indirect)				
IV	**In what way the 'Backlane / Conservancy Projects' influenced the real estate values in the vicinity and whether this has potential to enhance of municipal revenue?**				
1	Any change in rental rates for residential and commercial properties in the vicinity due to the backlane/conservancy project.	No difference	Marginal Increase	Drastic Increase	Decreased rental rate
2	Occupancy rates of rental properties before and after the project.	Fewer tenants	No difference	More occupancy	
3	Change in development charges and fees collected by the municipality as a result of increased development activity	No difference	Marginal Increase	Drastic Increase	Decreased charges
4	What was the financial impact of this project in the aspect of property taxes collected annually	No difference	Marginal Increase	Drastic Increase	Decreased
V	**How has the project facilitated better access for emergency services and utility maintenance vehicles?**				
1	Any improvements made (e.g., widened roads, improved signage)?	Yes, how?_____			No
2	What is the impact on accessibility of emergency vehicles/utility maintenance vehicles to the area (e.g., fire trucks, ambulances, garbage trucks, utility vans) if needed?	No difference	Used to access prior too		No, now they can't, why?_____
3	Was there any change in frequency and efficiency of utility maintenance?	Yes, how_____			None
4	How would you rate the impact of this project in terms of accessibility for emergency services and utility maintenance vehicles due to backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

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VI	**In what way the 'Backlane / Conservancy Projects' impacted public health and hygiene in terms of reduced instances of illegal dumping or littering?**					
1	Did the project reduce illegal dumping when compared to before & after the project?	No	Yes, how_____			
2	Did the project increase the efficiency of waste collection and disposal services when compared to before & after the project?	No	Yes, how_____			
3	After the project implementation, did municipality promote waste segregated and recycling?	No	Yes, how_____			
4	Rate present condition and maintenance of waste disposal infrastructure, (on a scale of 1 to 5)	1	2	3	4	5
5	Did resident attitude and behaviors towards littering and waste disposal before and after the project change?	No difference	Yes, how_____			
6	How would you rate the impact of this project in terms of reduced instances of illegal dumping or littering the backlane/conservancy project. (On a scale of 1 to 5)	1	2	3	4	5

Note -
The purpose of this survey is a part of initiative by SAAR-Sameeksha Series- Smart City Research Project by the Ministry of Housing and Urban Affairs (MoHUA), Govt of India. It is a collaborative action between academia and flagship urban missions to evaluate the project "The Backlane/Conservancy projects in Jabalpur City", and similar smart city projects in other cities assigned to School of Planning and Architecture Vijayawada, an Institute of National Importance, Government of India.

Shivamogga

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