

PIDE KNOWLEDGE BRIEF

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City Planning and Urban Design Guide

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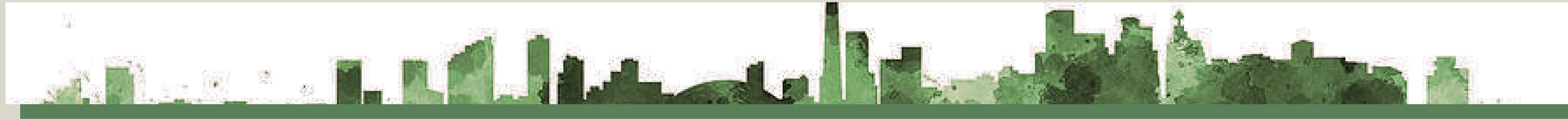
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"Pakistan has a potentially fleeting opportunity to harness its cities' potential as engines of growth."

01. INTRODUCTION

According to leading Pakistani demographers and social scientists, unofficial estimates place the country's urban population between 50 and 70 percent. As the fastest urbanizing country in South Asia, Pakistan has a potentially fleeting opportunity to harness its cities' potential as engines of growth. Unfortunately, Pakistan's rapid urbanization has instead been accompanied by a myriad of problems, including poor health outcomes, extreme poverty, overburdened public services, inadequate housing availability, and urban sprawl. These may be partially responsible for the country's slow and declining economic growth. The suboptimal performance of Pakistan's cities is highlighted in the following figures:

- 1 in 8 urban dwellers in Pakistan live below the poverty line.
- In 2015, 45.5 percent of Pakistan's urban population was living in informal settlements, which often have limited access to water and sanitation.
- Urban housing was approximately 4.4 million units short of demand in 2015.

- Karachi, considered to be Pakistan's economic and industrial hub, has been ranked amongst the 10 least livable cities for a consecutive four years by the Economist Intelligence Unit in their Global Livability Index.

Many of the issues plaguing Pakistan's cities can be attributed to poor urban planning, design, and management practices. This City Planning and Urban Design Guide aims to bring to light the factors restricting the progress of Pakistan's cities and to create space for urban planning in policy discourse. We advocate for the adoption of contemporary urban design concepts that prioritize commerce, density, community, and inclusive growth. Specifically, this guide uses the cities of Canada – which include the fastest growing city in North America and some of the world's most livable cities according to the Economist Intelligence Unit's Global Livability Index – to devise strategies for urban planning in Pakistan's cities.

THE PROBLEM OF SPRAWL IN PAKISTAN

- City planning in Pakistan has focused on low-rise suburban development, imposing restrictions on high rise construction and designing policies that subsidize car use.
- The resultant sprawl has led to an increase in:
 - Land consumption
 - Congestion and commuting times
 - Transportation costs
 - Greenhouse gas emissions
 - Health adversities due to air pollution
- Unlike inner-city development, which is possible with the renovation of current infrastructure, urban sprawl requires the construction of entirely new infrastructure. The cost of urban sprawl is consequently more than two times that of building in the city center.
- Single-family housing units are unaffordable for the average Pakistani household, including the poor and a large part of the middle-class.

Estimated Annual Costs to Service Varying Densities in Halifax, Canada

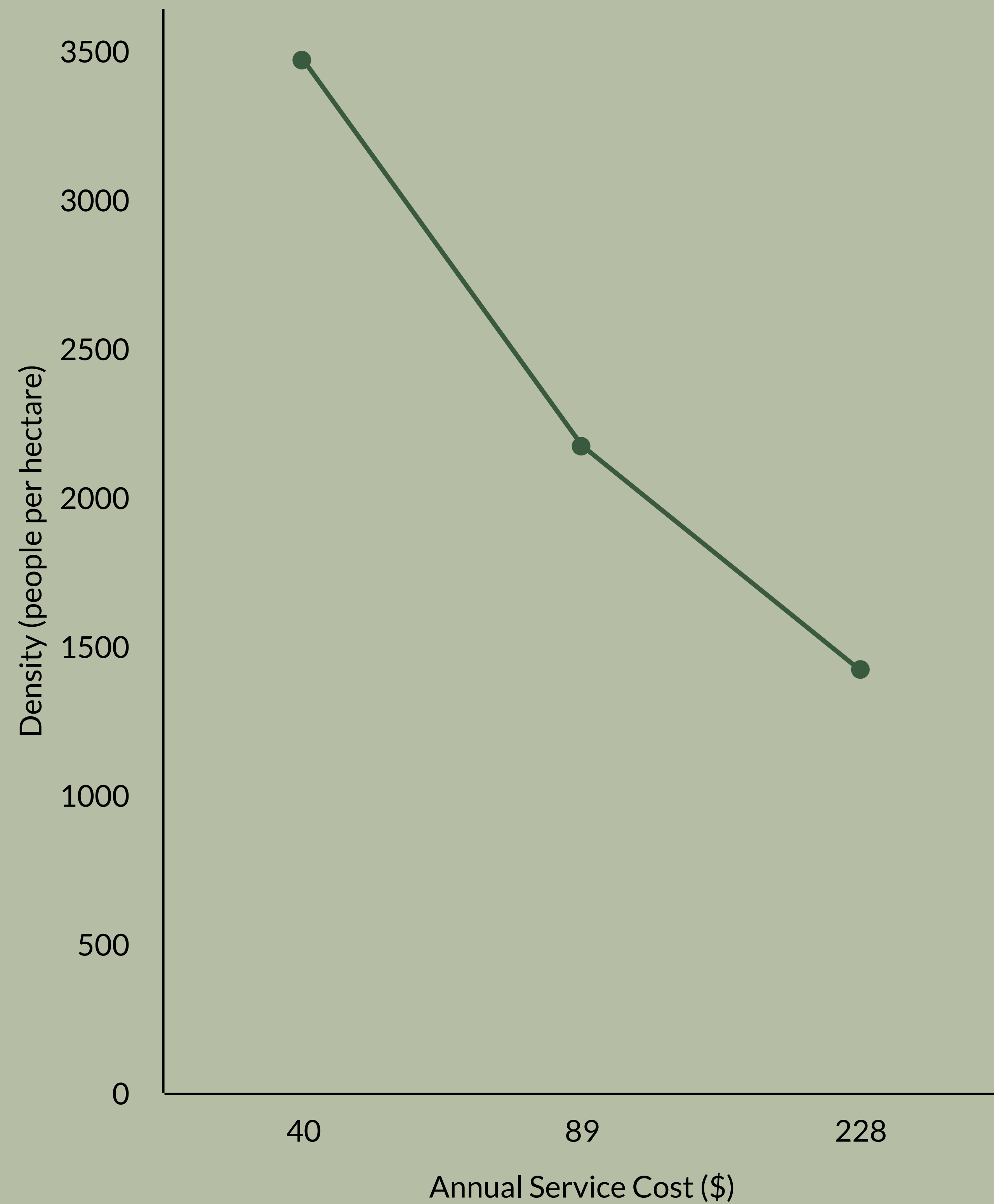


Chart 1: Service Costs Decrease with Density
(Source: Regional Municipality of Halifax, 2005).

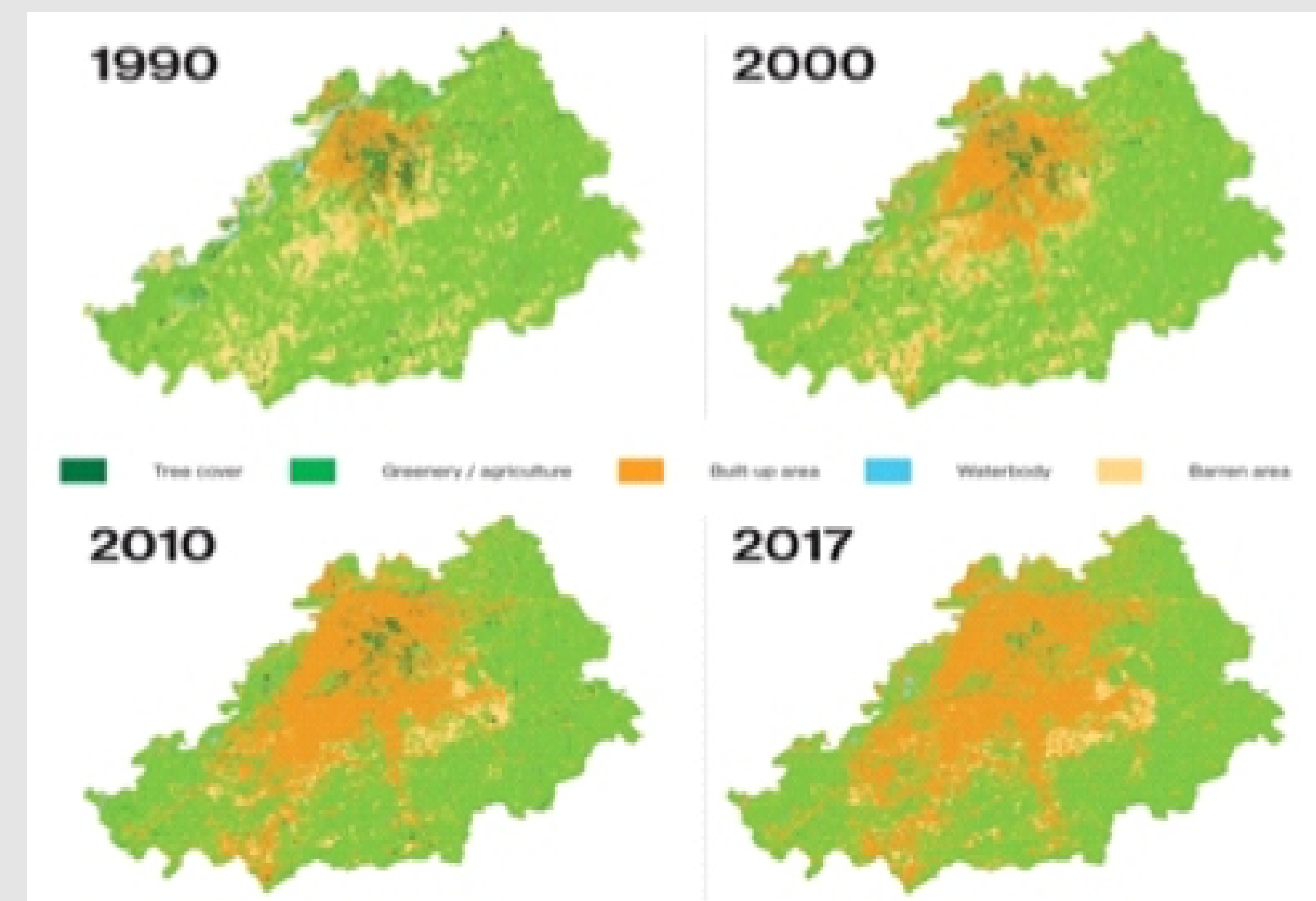


Fig. 1 Urban Sprawl in Lahore
(Credits: Hammad Gillani and Adeel Ahmad).

Distribution of Residential Land Use in Karachi, Pakistan

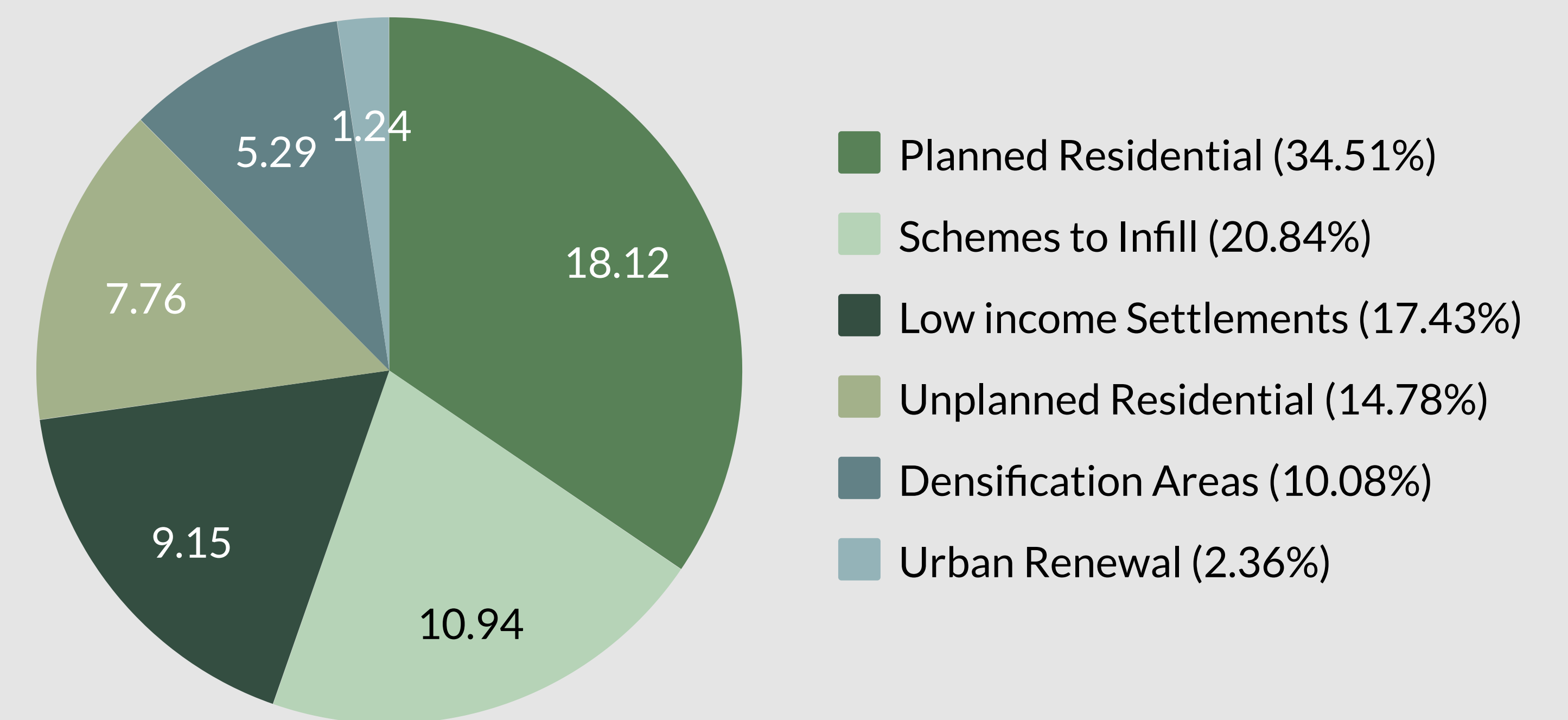
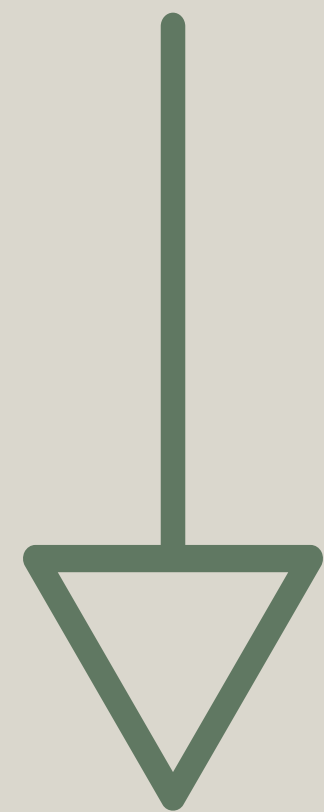


Chart 2: Residential Land Use in Karachi
(Source: Salman Qureshi, 2010).

What is Canada Doing About Urban Sprawl?

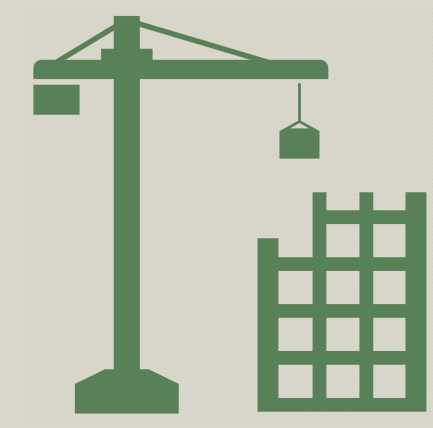


- Shifting to more compact development patterns and mixed-use development in urban growth centers.
- Encouraging greater integration of transit and land use planning.
- Increasing the availability of housing options that are “location-efficient,” i.e. walkable and close to transit, jobs, schools and services .
- Adopting transit-oriented development (TOD) by building mixed-use developments near existing or planned stations, along with social and physical infrastructure to support livability.
- Implementing *The Places to Grow Act, 2005*, an initiative by the Ontario government that establishes a long-term framework for better managing growth:
 - Promotes collaboration amongst multiple levels of government, indigenous communities, citizens, private and non-profit sectors, and other stakeholders.
 - Identifies density and intensification targets and imposes settlement area restrictions accordingly.
 - Prioritizes intensification and directs density toward designated strategic growth areas (urban growth centers, major transit station areas, and intensification corridors).
 - Supports a range of mixed housing options to offer affordable housing to numerous income groups.
 - Provides different approaches to manage growth in order to accommodate for the diversity of communities.



Fig. 2 Density in Toronto's Downtown
(Source: TVO.org).

OUR RECOMMENDATIONS



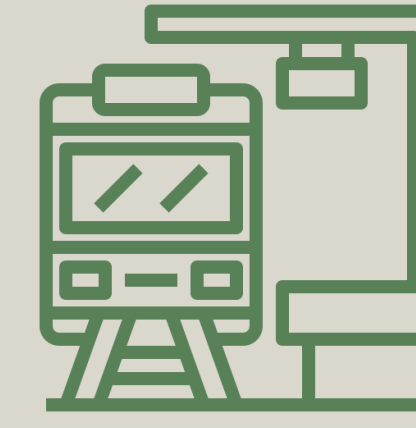
Shift from horizontal expansion to vertical expansion trends by relaxing height and land-use restrictions.



Develop downtown centers – that are walkable, dense, and mixed-use – in Pakistan’s major cities.



Revise zoning policies to increase commercial and industrial, instead of residential, land use.



Divert investment from flyovers, road widening, and underpasses to public transit systems.



Strengthen local governments that engage residents, the private sector, and other relevant stakeholders.



Prioritize walking and cycling as mobility choices by implementing a car policy.

Number of Registered Private Motor Vehicles

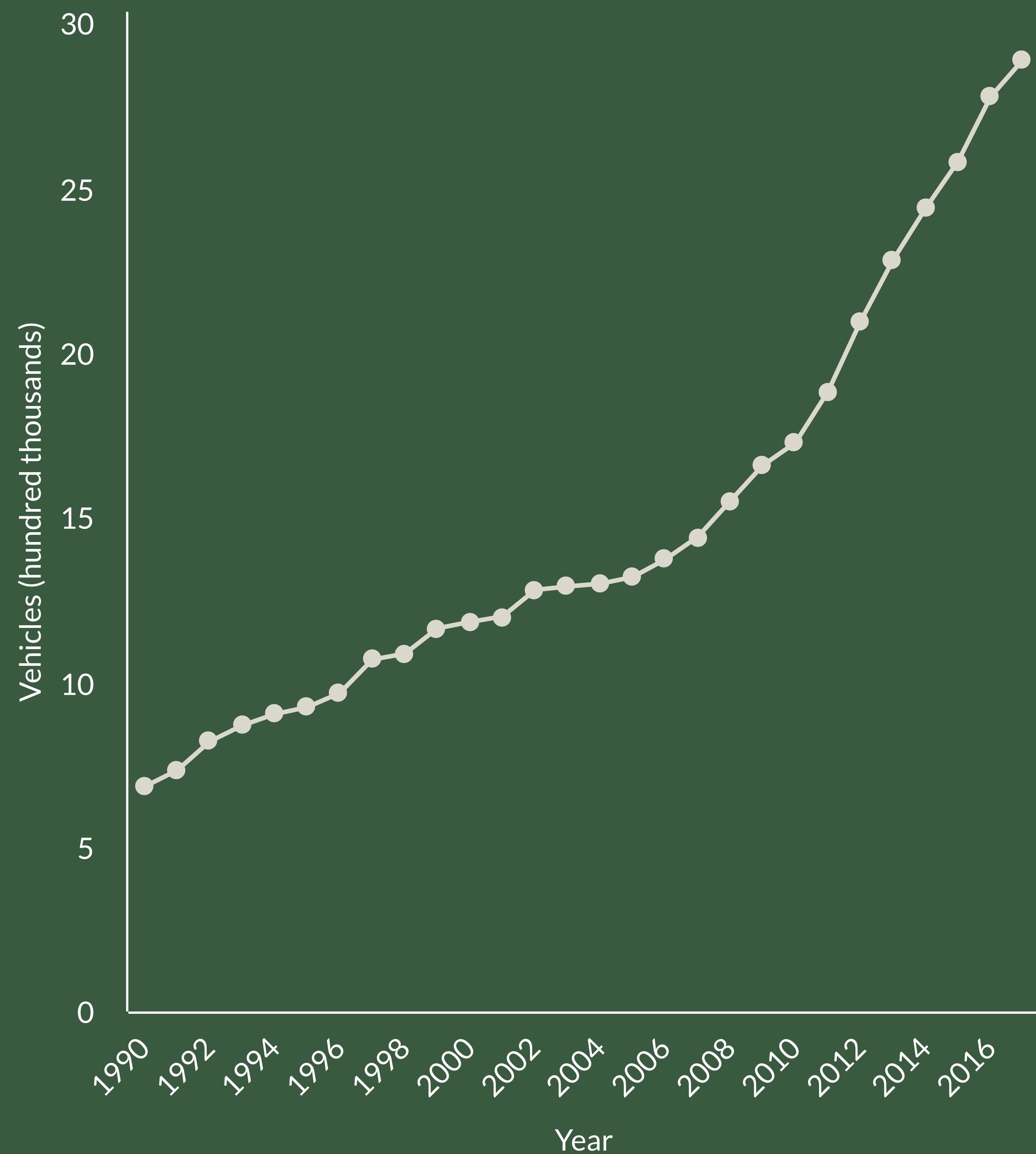
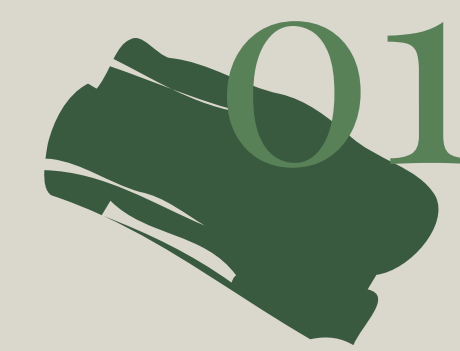
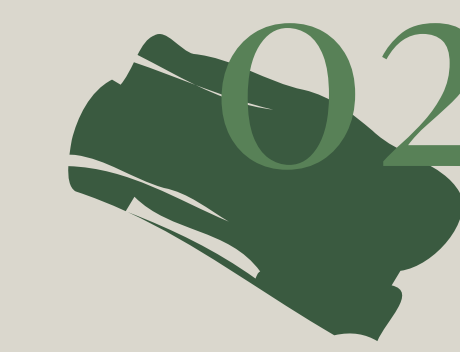


Chart 3: Registered Private Motor Vehicles - defined as motor cars, jeeps, and station wagons (Source: CEICData - Pakistan Bureau of Statistics).

PAKISTAN'S CAR CULTURE



01 Road-building is the largest item in the development budget of all levels of government.



02 As shown in Chart 3, the number of registered motor cars, jeeps, and station wagons increased from less than 700,000 in 1990 to more than 2.8 million in 2017 (Pakistan Bureau of Statistics).



03 As shown in Chart 4, the growth rate of certain vehicles has been consistently greater than that of Pakistan's population.



04 Private vehicles (motorbikes and cars) made up 87% of Pakistan's total vehicle share in 2018, according to data from the Pakistan Bureau of Statistics.



05 The extensive network of wide avenues, flyovers, and underpasses has functioned as a subsidy to car users and a tax on the poor.

INCREASING CAR USE HAS LED TO:

- Environmental adversities resulting from greenhouse gas (GHG) emissions
- Excessive travel times
- Poor investment in public transit projects
- Economic inefficiencies
- Low quality of life
- High noise and air pollution levels
- Urban growth that excludes the poor

Comparing Population and Vehicle Growth

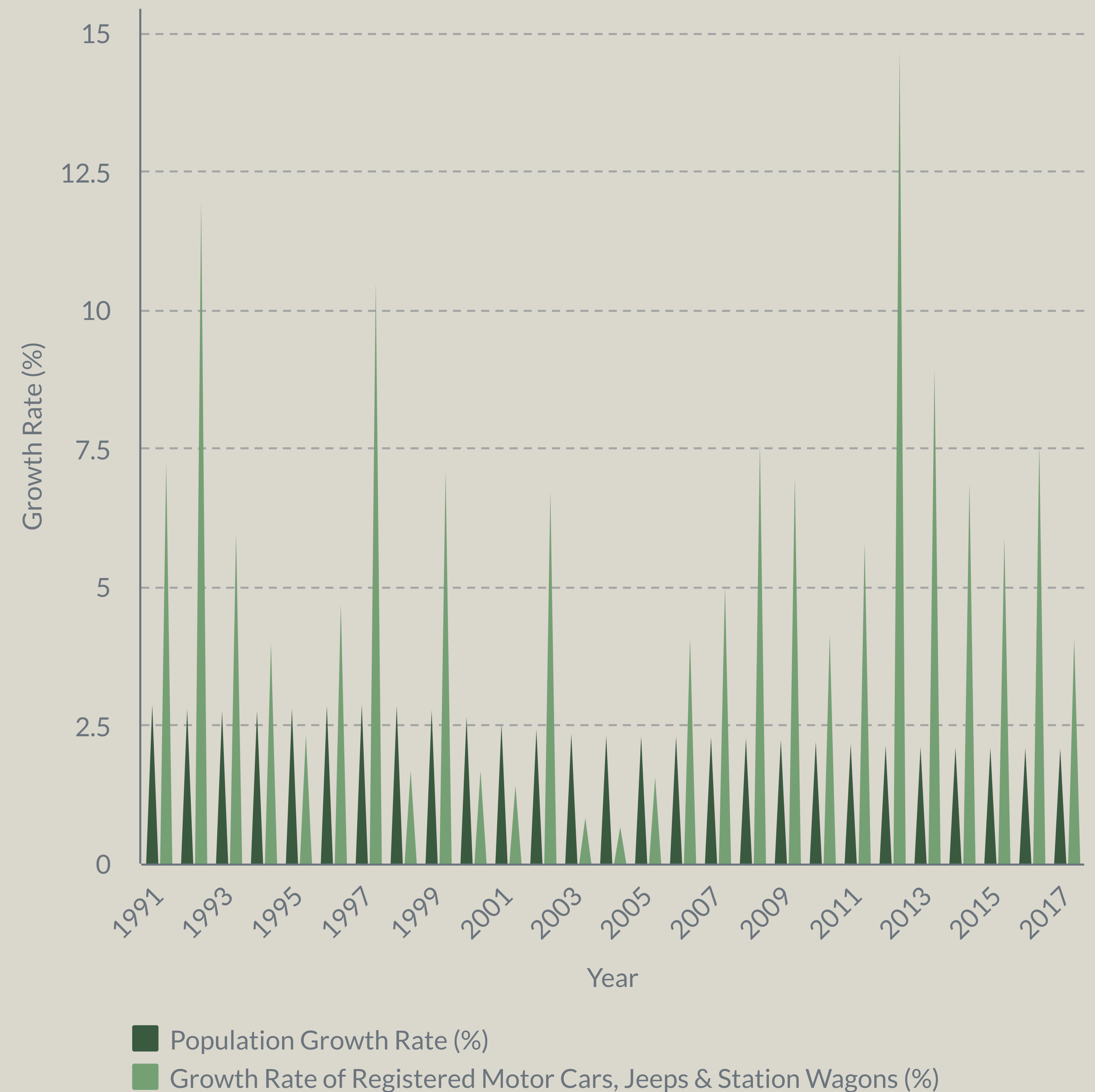
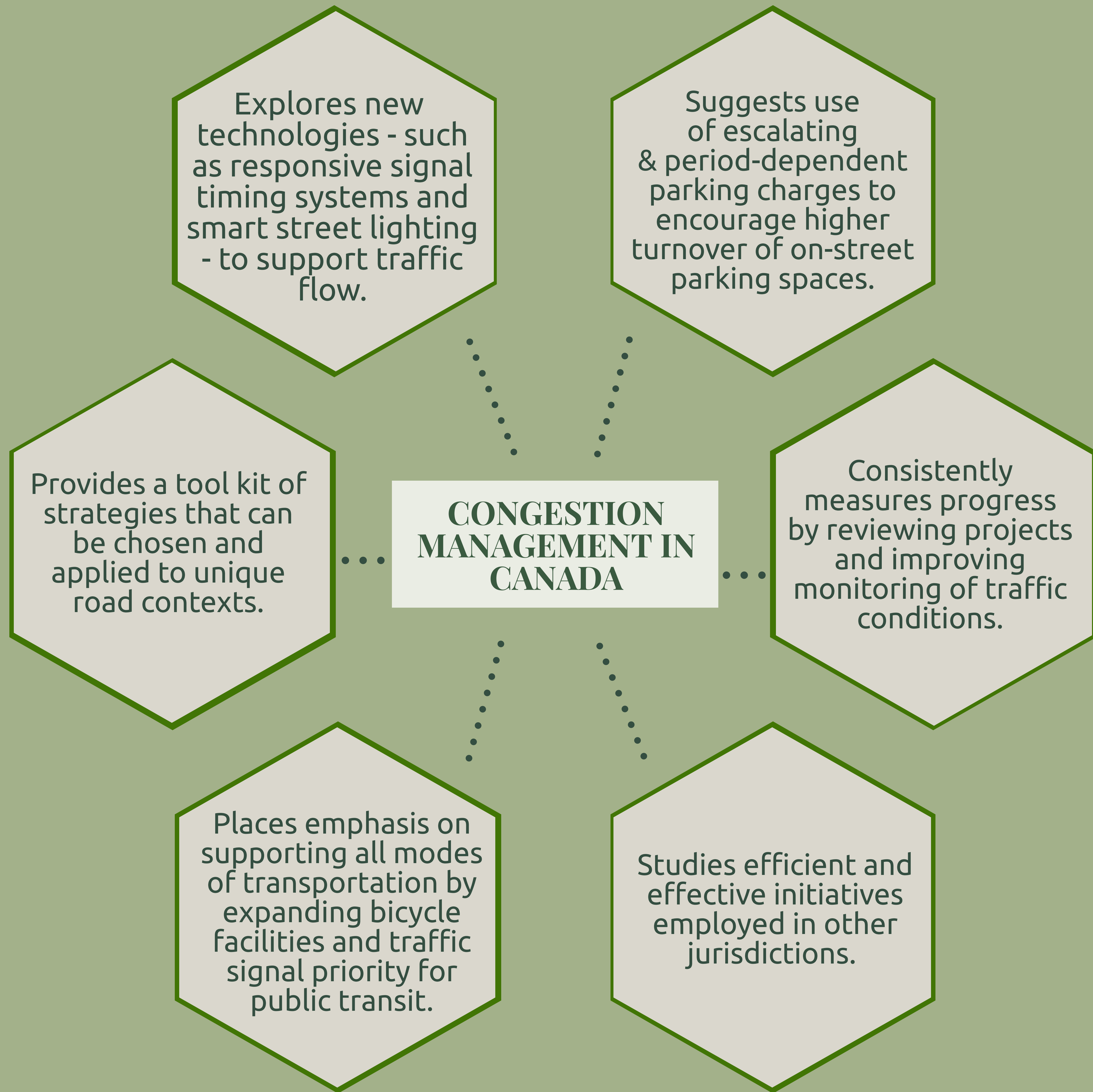


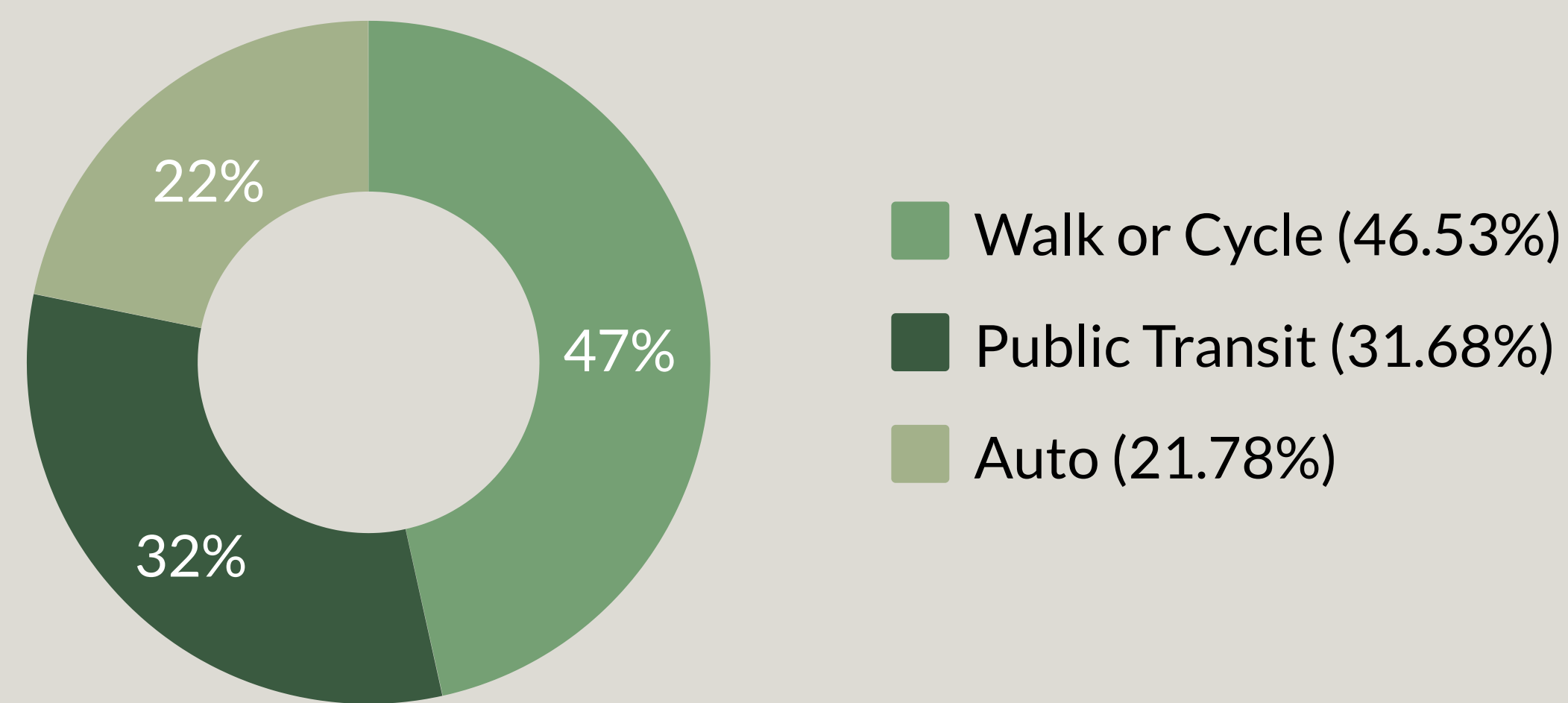
Chart 4: Growth in Population & Private Motor Vehicles
- motor cars, jeeps, and station wagons
(Sources: CEICData - Pakistan Bureau of Statistics & World Bank Group).



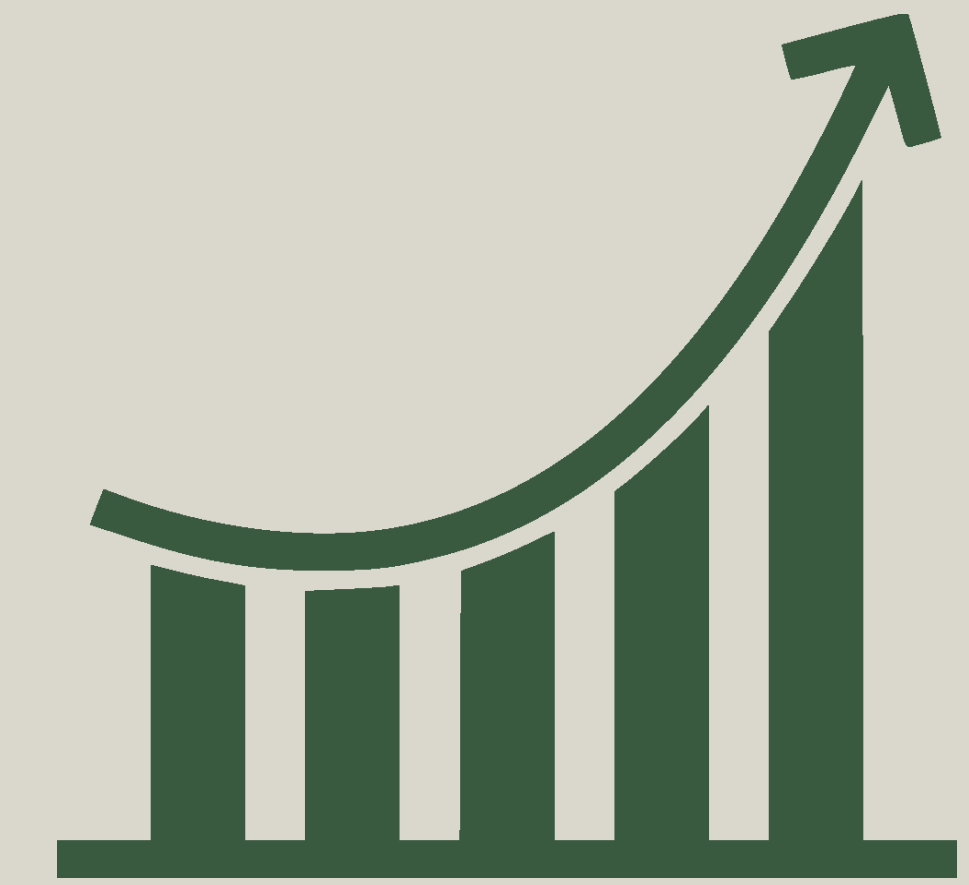
Results



Vancouver has seen a 32% decrease in distance driven per person since 2007.



Only 22% of Toronto's Downtown residents use autos to travel to work.



Parking revenues contribute ~5% of the money Vancouver uses to fund its annual budget.



SUGGESTION #1: CONGESTION MANAGEMENT PLAN

"When a city reaches an economic development level that makes car ownership affordable for a majority of residents it is rare to have low barriers and low congestion levels at the same time"
(McKinsey & Company, 2018).

DO's

- **Develop a strictly monitored metered parking system** in which rates increase the longer a vehicle is parked in a location.
- **Conduct an extensive review of traffic volumes and trends** in order to design appropriate strategies and establish baseline conditions.
- **Adopt mobility pricing**, with fees for private transportation, including bridge tolls, road usage charges, and other congestion fees.
- **Increase the use of technology** for route guidance, traffic control, payment collection, and road network performance.
- **Implement an electronic tolling system** that enforces charges to enter the denser and more commercial parts of a city.

DON'Ts

- **Prioritize cars** over cycling, walking, and shared vehicles as the primary mode of transportation.
- **Dedicate development budgets to the construction of roads** in order to accommodate the city's demand for cars.
- **Enforce zoning laws that separate land uses** as these ultimately lead to longer commutes and increased congestion.
- **Minimize local revenue collection** by ignoring the benefits of congestion fees and parking charges.
- **Continue haphazard horizontal expansion** that increases dependency on cars.

REIMAGINING MASS TRANSPORTATION

- Complete an analysis of the results of road, infrastructure, and transit investments in order to invest in transit projects with highest benefit-to-cost ratio.
- Take a network approach to transit development, instead of spending money on isolated and haphazard projects.
- Ensure that the per-passenger-development and running cost of a transit service is considered prior to investment.
- Shift to **Transit-Oriented Development (TOD)**: a type of urban development that creates high-density, pedestrian-oriented, mixed-use communities that are centered around public transport stations.
- Adopt public transport systems, such as **Bus Rapid Transit**, that have shown to lower congestion and pollution in developing countries such as Brazil and Mexico.

SUGGESTION #2: IMPROVE PUBLIC TRANSPORT SYSTEMS

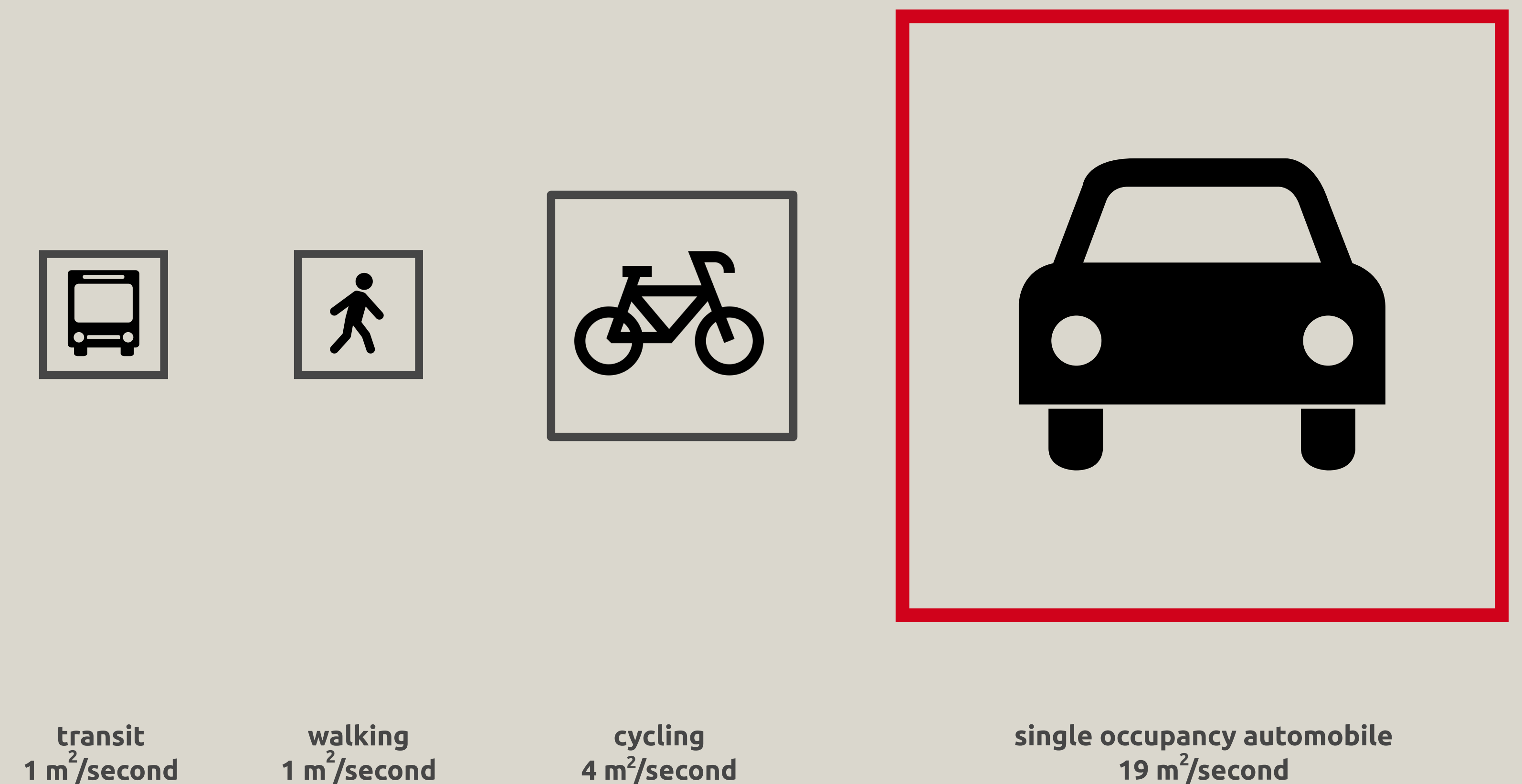


Fig. 3 Road space required per passenger for various travel modes
(Source: Toronto Complete Streets Guidelines)

**PAKISTANI CITIES MUST PRIORITIZE TRAVEL MODES
WITH LOW ROAD SPACE REQUIREMENTS TO
ADDRESS CONGESTION.**

TRANSPORTATION AND POLLUTION

- Transportation contributes 23% of Pakistan's total annual GHG emissions, according to the World Resources Institute's Climate Analysis Indicator Tool.
- Karachi is the only megacity in the world without a mass public transport system.
- 4 out of 12 of the world's most polluted cities are located in Pakistan (IQAir).
- As shown in Chart 5, road vehicles are the primary contributor to air pollution in Karachi.

Percent Breakdown of Particulate Matter Pollution

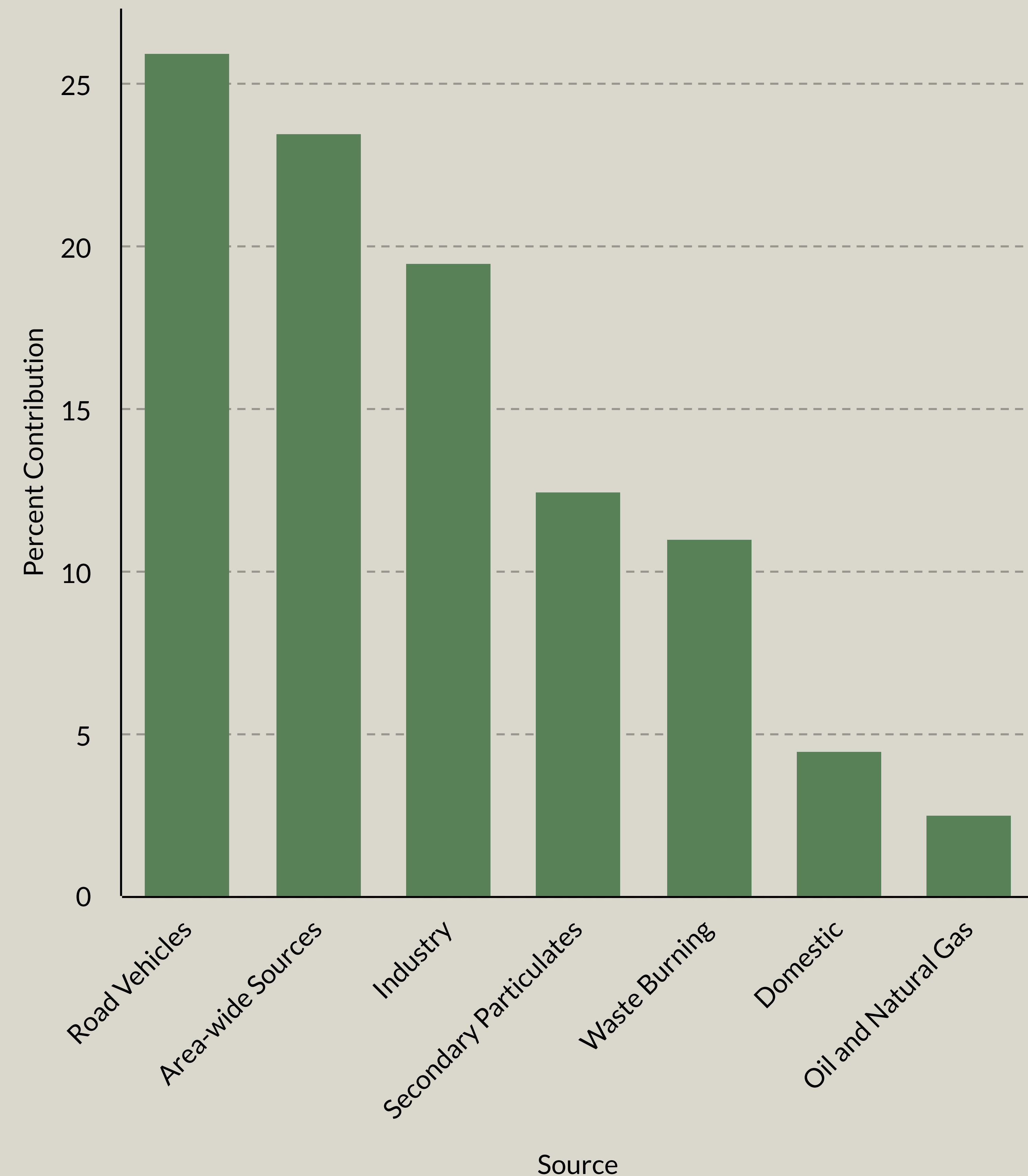


Chart 5: Analysis of Karachi from 2006 to 2009
(Source: *Cleaning Pakistan's Air - The World Bank*).

ENVIRONMENTAL URGENCY OF PUBLIC TRANSPORT



IN PAKISTAN, URBAN AIR POLLUTION IS ANNUALLY RESPONSIBLE FOR:



20,000+ deaths

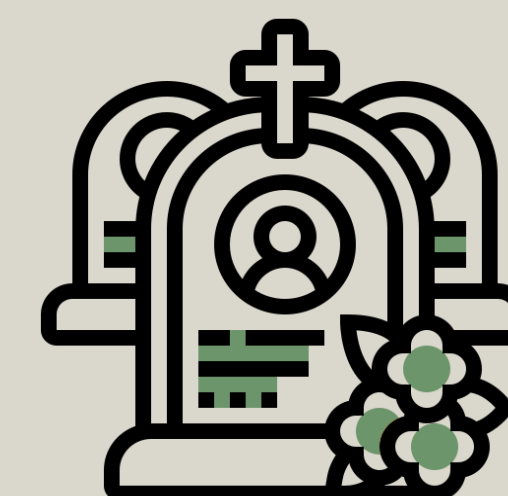


80,000 hospital admissions

IN SINDH, THE SOCIAL IMPACTS OF POOR AIR QUALITY EXTEND TO:

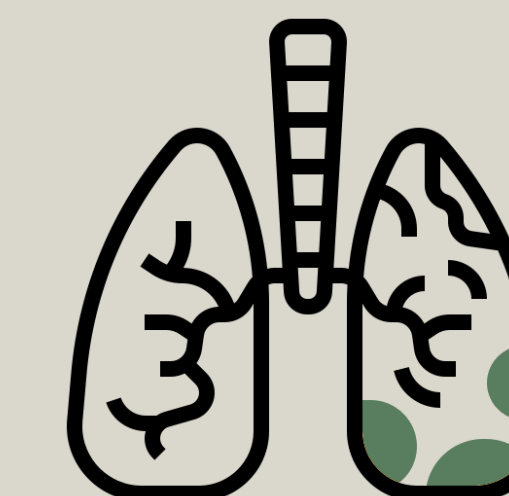


~2.7 IQ point loss for children under 5

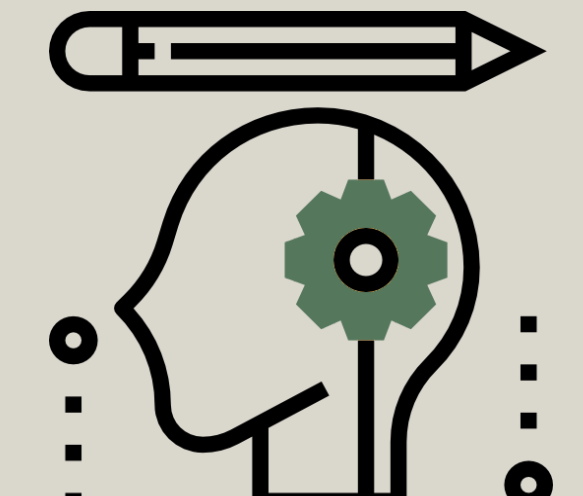


Years of life lost = 213,000+

THE ANNUAL COSTS OF AIR POLLUTION IN SINDH INCLUDE:



Health effects = 0.8 - 2% of GDP



IQ losses = 1.6 - 3.5% of GDP

SUGGESTION #3: OPTIMIZE STREET DESIGN

“Streets are dynamic spaces that adapt over time to support environmental sustainability, public health, economic activity, and cultural significance”

(Global Designing Cities Initiative)

Street design in Pakistan’s cities will play a critical role in promoting the use of non-motorized transport and reducing the country’s dependence on cars.

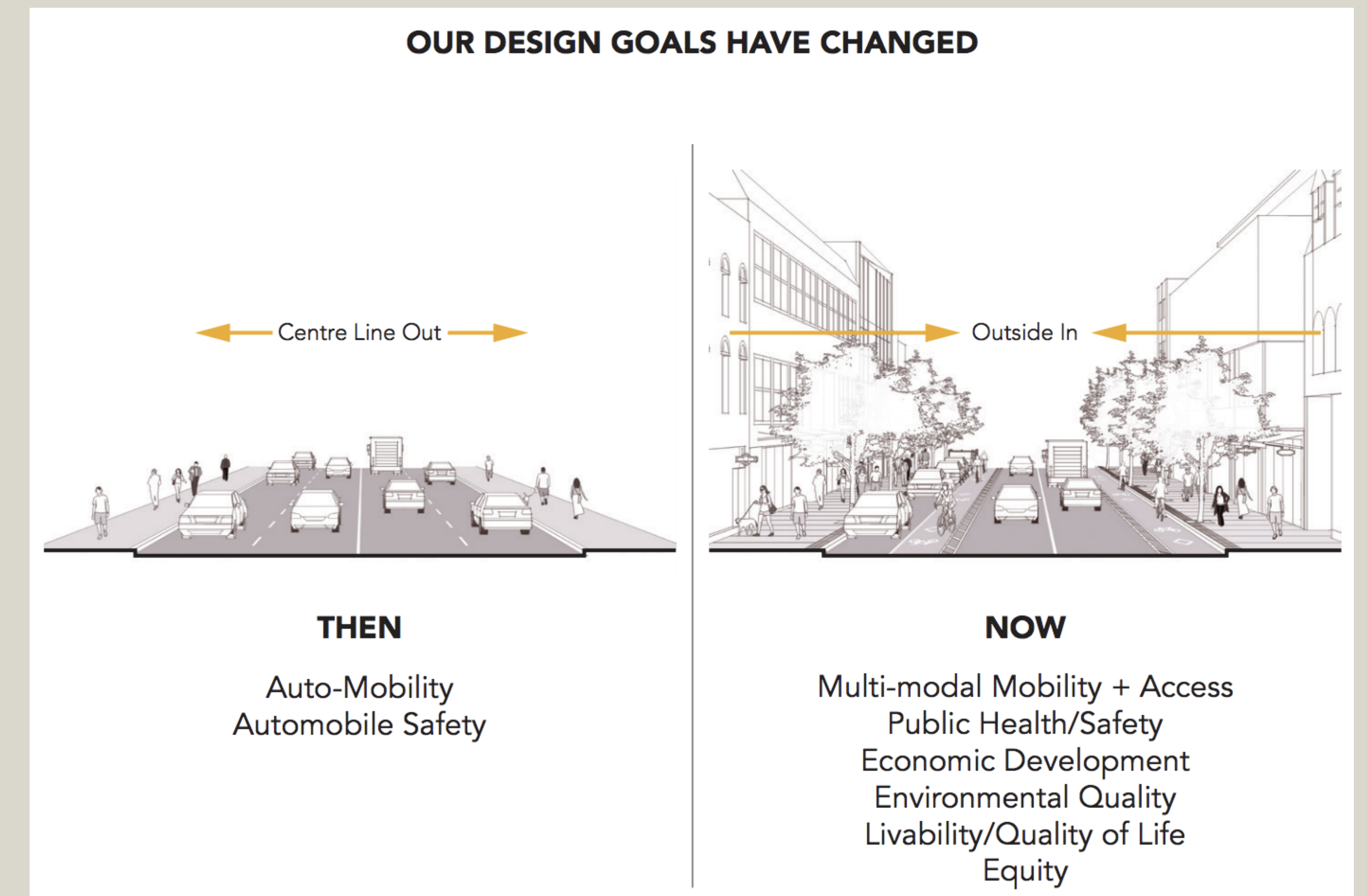


Fig. 4 Rethinking street design in Toronto (Source: Toronto Complete Streets Guidelines)

LEARNING FROM TORONTO'S COMPLETE STREETS GUIDELINES



1. Recognizes that streets are more than just corridors for movement and are in fact, for the people, for placemaking, and for prosperity.



2. Result of a collaborative effort involving policy makers, city staff, community residents, advocates, researchers, and professionals.



3. Identifies 16 different street types – including civic, residential streets, mixed use, and downtown streets – and provides key design objectives for each.



4. Informs complete street design approach by specifying context-sensitive design principles for cycling, transit, and sidewalks.



The transition to vertical growth is imperative to address Pakistan's urban housing crisis and enhance its cities' economic growth potential.

Pakistan's already large urban population is growing rapidly, with populations of Karachi and Lahore to increase by 50% in the next 15-20 years. This growth, coupled with regulations on high-rise buildings, has led to an acute shortfall of housing in the largest cities. As shown in Chart 6, the housing backlog in Lahore has magnified in the past few decades and is projected to only increase further.

The height restrictions on buildings has led to an underutilization of land in some of Pakistan's most populous cities. Due its high demand and low supply, housing is unaffordable for the poor and a portion of the middle class. This has led to the proliferation of slums and shanty towns known as *katchi abadies*. The development of high-rise, mixed-use communities is the best way for Pakistan's cities to make housing that is appropriate and affordable for a range of incomes.

04. THE NEED FOR DENSITY

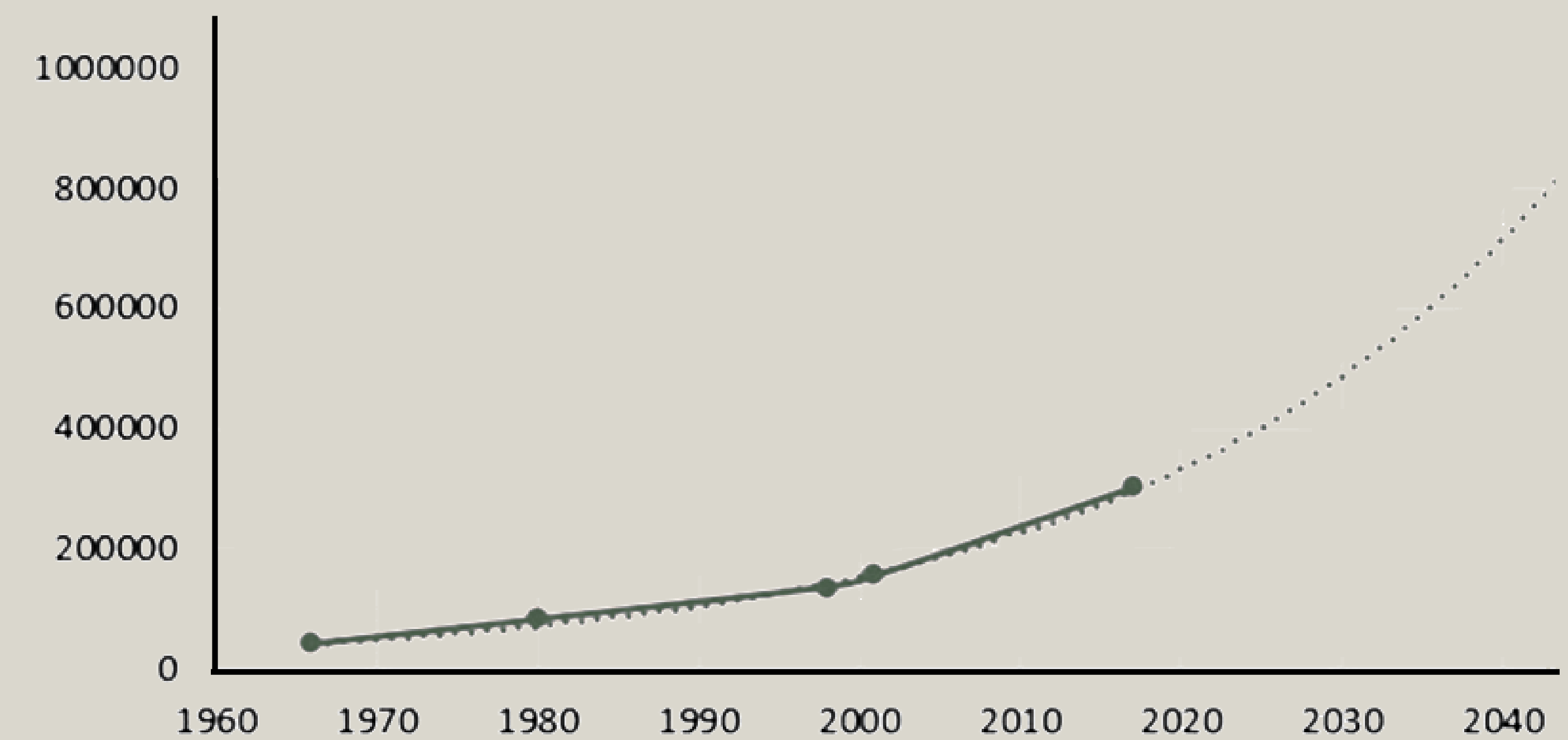


Chart 6: Trend and extrapolation of housing shortage in Lahore (Source: Muhammad Ahsan, 2019).

4.1

PAKISTAN'S URBAN PLANNING MODELS MUST CHANGE.

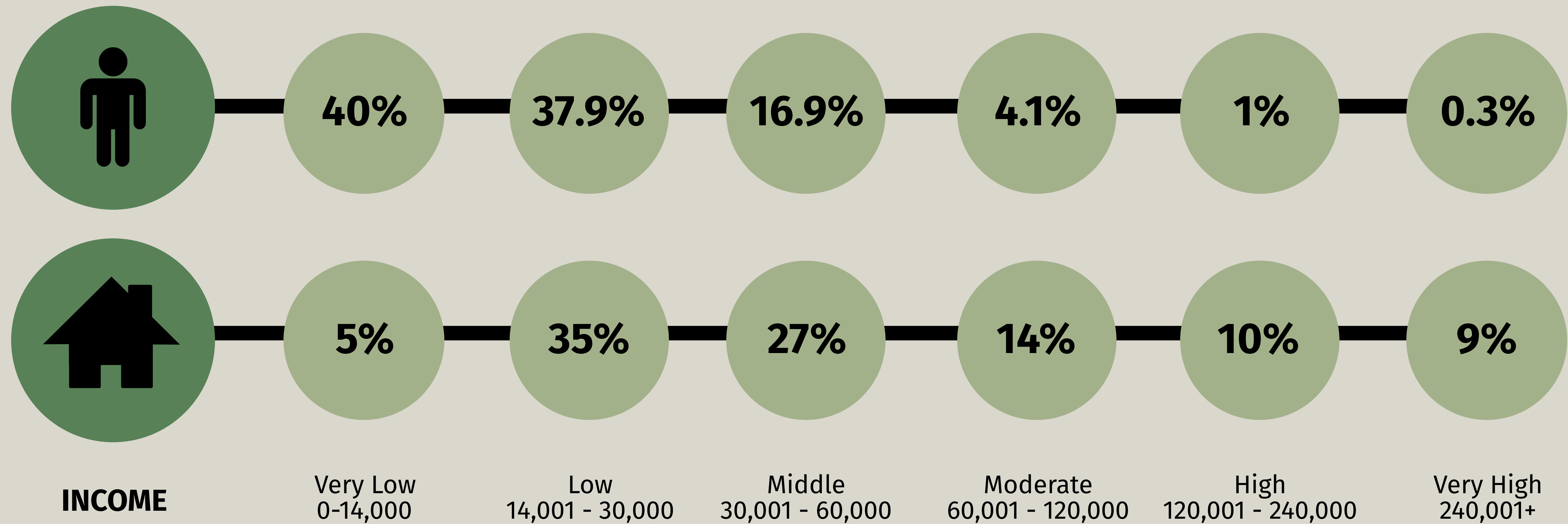


Fig. 5 Disproportionate housing provision in Punjab province (Source: Muhammad Ahsan, 2019).

Pakistan's cities have long favored a low-rise, low-density sprawl model, which has come to define the country's masterplans and urban policies. However, it is this beloved sprawl that has caused residential land use to encroach agricultural lands and destroy scarce forestation. Furthermore, the aversion to sprawl has restricted the ability to densify urban areas and is partially responsible for the country's backlog of over 10 million houses. The current sprawl model only caters to households in the highest income brackets, who are able to

afford suburban single-family homes. As a result, 47-50% of Pakistan's urban population is forced to live in *katchi abadies*, according to GoP estimates. While the Naya Pakistan Housing Project may mitigate the nation's housing shortage, similar initiatives have failed to create long-lasting change in the past. What Pakistan needs for inclusive growth in its cities, is a paradigm shift that rejects sprawl and instead favors densification.

4.2

REVISING ZONING AND BUILDING REGULATIONS

Competitive and vibrant cities are a complete ecosystem of commerce, culture, governance, and sustainability. Pakistan needs to amend its laws and regulations such that they encourage diverse forms of urban development.

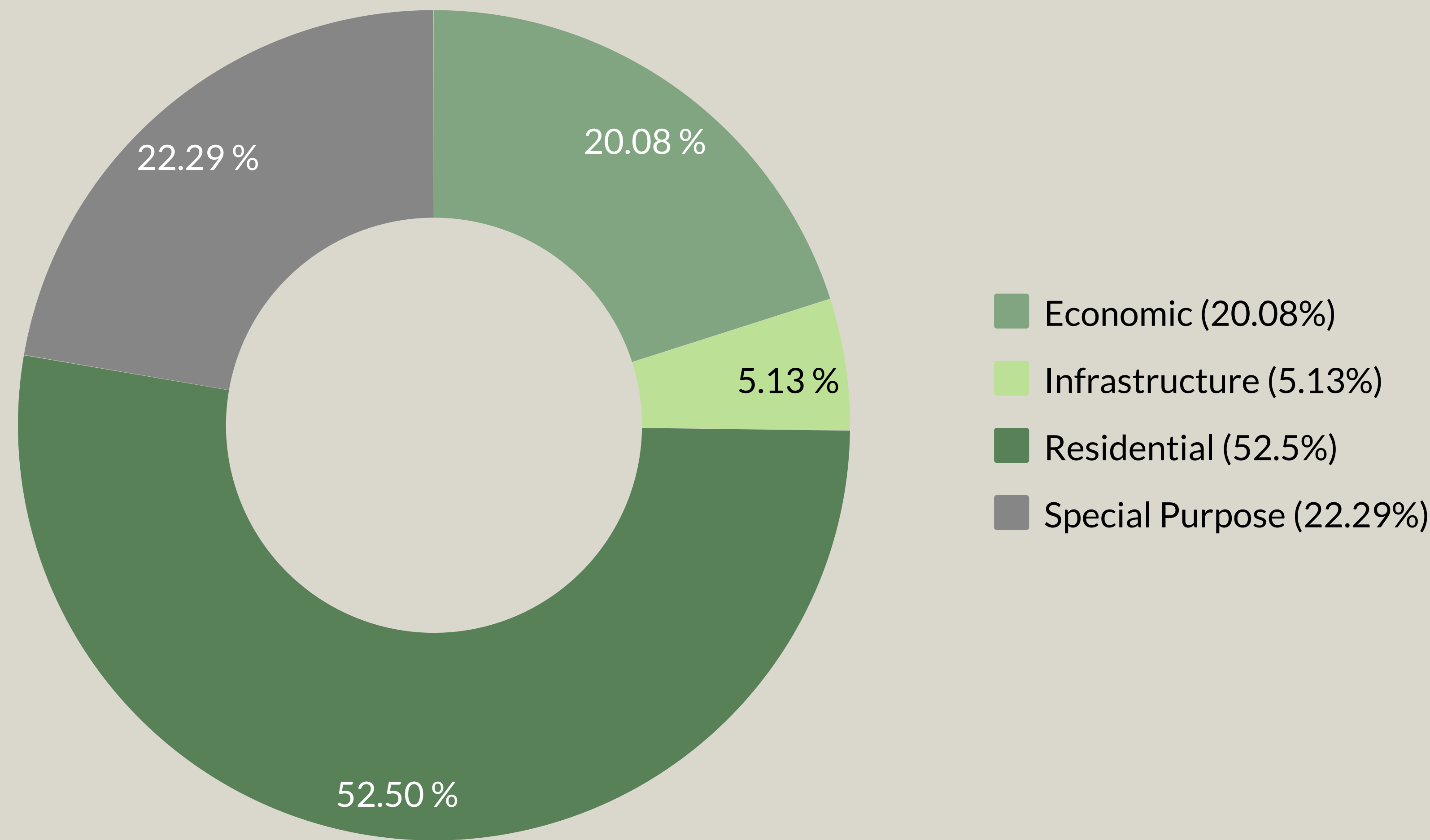


Chart 7: Breakdown of urban land use in Karachi (Source: Salman Qureshi, 2010).

- Instead of separation of uses, zoning laws should be revised to facilitate mixed-use, commercial development of office spaces and retail centers adjacent to residential areas. This will increase vibrancy and economic activity, finally allowing Pakistan's cities to become engines of growth.
- Relaxation of Floor Area Ratios (FARs) could add much-needed flexibility to Pakistan's restrictive zoning ordinances. A study by David Dowall and Peter Ellis discovered that lower FARs lead to high land prices and reduce formal housing, which disproportionately impacts the poor. High FARs could make housing affordable and increase social mobility.
- Easing height restrictions to allow vertical growth will enable the efficient use of urban space and address the issues of urban sprawl and insufficient housing.



UNION PARK: Toronto's Largest Mixed-Use Development



*Fig. 6 Oxford's vision of the Union Park Development
(Source: Oxford Properties Group).*



*Fig. 7 Two-acre public park space within Union Park
(Source: Oxford Properties Group).*

- **A four acre-site at the heart of Toronto's dynamic downtown.**
- Three towers including 800 rental residential units, 200,000 square feet of retail, and 3.3 million square feet of office space.
- Development could create 22,000 construction jobs.
- Around 18,000 people will work in the mixed-use community.
- Creating larger rental units to fulfill the demand for family housing in Toronto, which was identified in numerous research studies before the project commenced.

- **Prioritizing sustainability, convenience, and community interaction.**
- Features a two-acre park that will act as a landmark community-gathering space for the city's general public.
- The park is designed by award-winning architects who have focused on creating opportunities for programmable community spaces, public art, and installations.
- Union Park is planned to be a sustainable community, providing bicycle facilities and incorporating renewable energy.

TIME TO REINVENT PARKING: ELIMINATING MINIMUM PARKING REQUIREMENTS

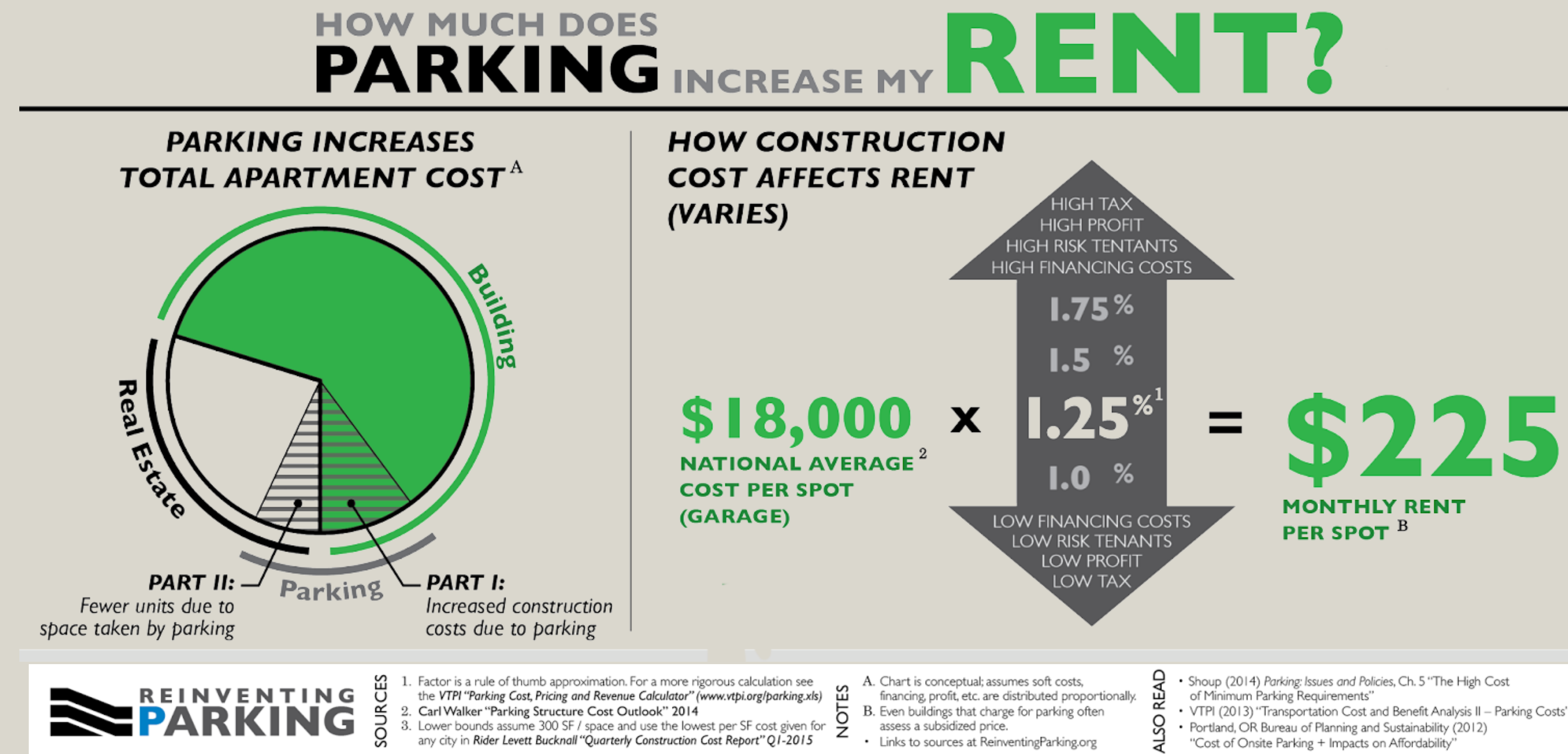


Fig. 8 Increased building costs associated with parking - estimates from the U.S. (Source: Reinventing Parking).

In addition to their direct costs, minimum parking requirements subsidize cars, raise housing prices, undermine walkable neighborhoods, block transit-oriented development, and leave less land for other purposes such as housing and commerce.

- Many cities, including London and San Francisco, have abolished minimum parking requirements without any ensuing chaos.
- Eliminating parking requirements will lead to gradual change, as many developers will still provide on-site parking. However, the provision of parking will be based on analyses of market demand, instead of arbitrary minimums imposed by authorities.
- Lower parking availability, coupled with fees on city-owned parking, will reduce free riding by motorists and discourage car use. In turn, this will encourage alternative mobility options in Pakistan's congested cities.

4.3

STRATEGIC DENSITY AND PUBLIC SPACES



Fig. 9 Rendering of Oakridge Community Centre in Vancouver (Source: DailyHive).

Infrastructure and service constraints must be considered in the shift toward densification and mixed-use development. The elements of sustainability, convenience, and community interaction should also be at the forefront of planning for this transition.

- Denser forms of development make more efficient use of land, but can only be successful if they are accompanied by appropriate levels of services and utility infrastructure.
- To begin densification, Pakistan's cities should strategically distribute medium- and high-rise developments throughout areas that are already urbanized and have effective service delivery.
- Governments must focus on matching infrastructure development – of water, transit, schools, hospitals, etc. – with growth.
- Pakistan's cities should mimic Toronto's model of including Privately Owned Publicly-Accessible Spaces (POPS) in high-density urban areas. These POPS are part of the development application process for private construction, and ensure open spaces are available for city residents.
- Mixed-use, high-density development requires innovative partnership between diverse stakeholders, as opposed to traditional unidirectional development that is often seen in Pakistan's masterplans.

A CHANGE IN GOVERNANCE

Currently, majority of Pakistan's cities lack local governments (LGs), and those that exist are subservient to the provincial tier. Despite the requirement to hold local elections, Sindh is the only province with elected LGs. In fact, the Local Government Acts passed by the provinces of Punjab and Khyber Pakhtunkhwa in 2019 completely abolished the district-level tier of government and transferred control of several devolved departments to higher governance levels. The lack of LGs is evident in the fact that LG expenditures constituted only 5% of public spending in 2011, a statistic that is likely to have decreased over the past decade. A centralized approach is detrimental to the growth of cities as it hinders political representation, the provision of public services, and effective city planning.

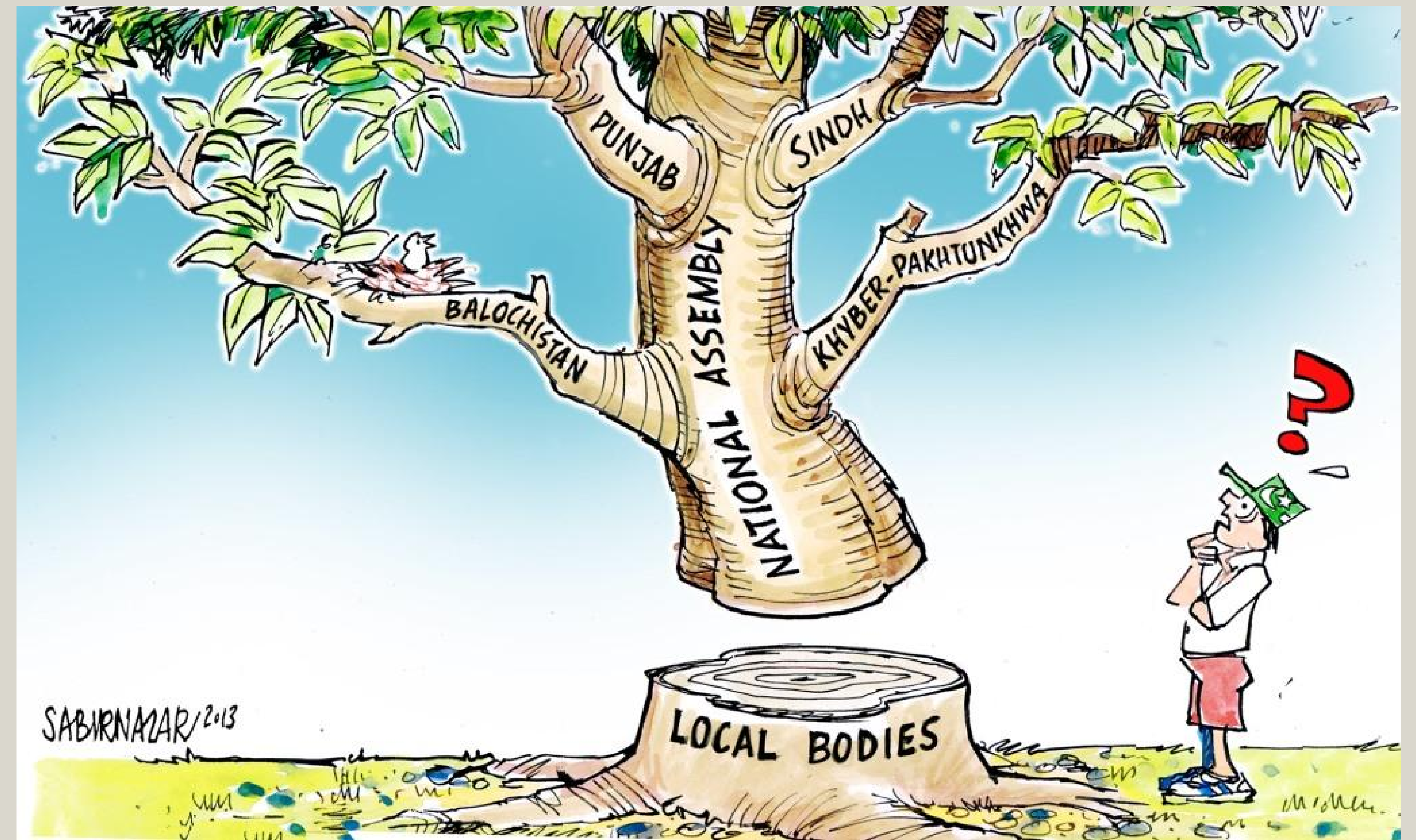


Fig. 10 Disconnect between local and national government bodies (Source: Jaffer Rizvi).

POINT #1

Context-Specific Governance

Decentralization will allow Pakistan's cities to respond to the unique needs of their municipalities and empower them to benefit from bottom-up economic and social development.

POINT #2

Economic Growth

The transfer of certain services and functions to LGs will create employment and contribute to economic growth in urban areas.

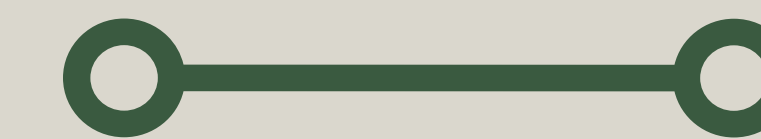
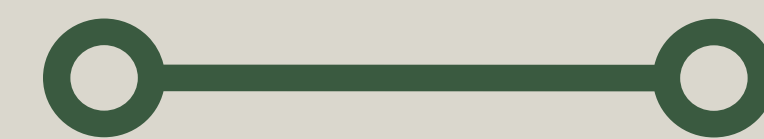
POINT #3

Provision of Power

Autonomy for LGs will empower them to appropriately allocate resources, authority, and funding that is currently concentrated in the hands of provincial politicians and bureaucrats.

COLLECTIVE GOVERNANCE

In order to create cities that are both socially and economically successful, Pakistan's cities must adopt a collaborative governance model. Such a model would engage diverse stakeholders in the political process, allowing LGs to identify key urban issues and create policies accordingly.



STEP 1

...

Foster an environment in which community residents and organizations are encouraged to voice their opinions about local matters.

STEP 2

...

Facilitate the participation of the working class, the poorest populations, women, and minorities in the city planning process.

STEP 3

...

Develop strategic partnerships with the private sector to drive entrepreneurship and undertake innovative urban design projects.

STEP 4

...

Engage in context-specific, succinct interventions which are designed according to interdepartmental efforts and public inclusion.



AN END TO ANTI-ENCROACHMENT

In 2019, the Islamabad High Court and the Supreme Court ordered removal of all encroachments in Karachi and Islamabad. While these actions may have been taken with the goals of formalizing the economy and modernizing cities, they ignore Pakistan's socioeconomic culture and its desperate need for poverty eradication. The anti-encroachment drive must be reexamined and the government should develop a national policy framework that recognizes and regularizes urban street vending businesses, instead of shutting down this large entrepreneurial market.

The Facts

- ✓ The recent removal of 485 khokhas (street kiosks) in Islamabad affected upwards of 25,000 people, according to Saima Bashi.
- ✓ 75 percent of Pakistani inhabitants said that they have easy access to street vendors, clearly demonstrating their demand.
- ✓ The incidence of multidimensional poverty in Pakistan is 38.3 percent, as indicated in The Global Multidimensional Poverty Index 2019.

Suggested Actions

- ✓ Acknowledge the economic and social contribution of street vending, which provides a livelihood for the poor and makes goods available at affordable prices for buyers.
- ✓ Allow city authorities to issue permits that legitimize vending.
- ✓ Designate vending zones and place restrictions on operating conditions to ensure vending is clean and aesthetic.
- ✓ Collect licensing fees to establish a previously untapped source of revenue.

Creating street vending licenses and designating vending zones in city plans is necessary for inclusive and pro-poor growth in Pakistan. Encouraging the employment of the nation's millions of poor residents is an important step in reducing poverty.

- **Indian National Policy on Urban Street Vendors (2009):**

- Requires each town to set up a Town Vending Committee (TVC) that designates vending zones through a participatory process.
- Instructs TVCs to provide water, electricity, toilets, and other necessary facilities at vendors' markets.
- Describes a system of registration, including revenue collection and renewal guidelines, for vendors.

- **Toronto's Municipal Code for Street Vending:**

- Designates protocol for the permit application, as well as the issuance, denial, and appeals of numerous vending permit types.
- Limits removal of vending units to those specified in the code's "Seizure and Removal section," thus eliminating the possibility of arbitrary anti-encroachment.

LESSONS FROM ABROAD

INTERNATIONAL EXPERIENCES IN MANAGING STREET VENDING

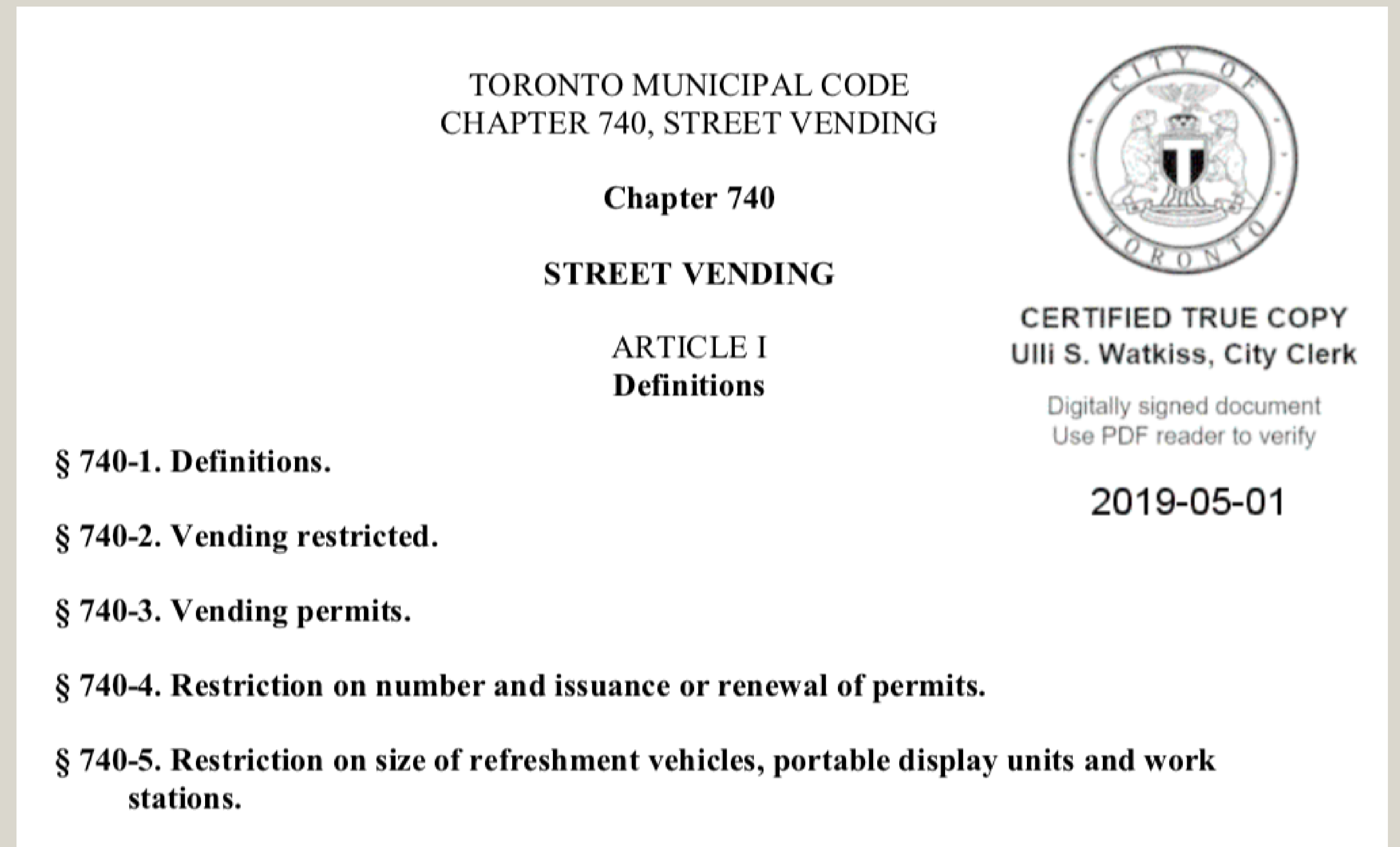


Fig. 11 City of Toronto's street vending code (Source: Toronto Municipal Code, Chapter 740).

07. CONCLUSION

Despite the international recognition of cities as engines of growth and globalization, Pakistan's cities have struggled to contribute to its economic and social development. This is largely due to a focus on horizontal expansion featuring a suburban model and haphazard city development. It is critical that the subsequent issues of congestion, poor land use, and a lack of opportunities for economic and social mobility, are addressed by a collaborative team of policy makers, administrative staff, city planners, technical experts, and community residents.

This City Planning and Urban Design Guide offers a discussion of some of the most pressing issues that Pakistan's cities are facing. It provides several recommendations based on the experiences of global cities, particularly those in Canada. Specifically, these suggestions can be adopted and implemented at local levels without rigid and restrictive masterplans. The pursuit of development in Pakistan's urban areas is a complex, yet achievable, task that requires a shift from traditional, centralized approaches to innovative and inclusive solutions.

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