Sports and Society Accelerator

SAPA CENTRE

2024

Active Transit for India

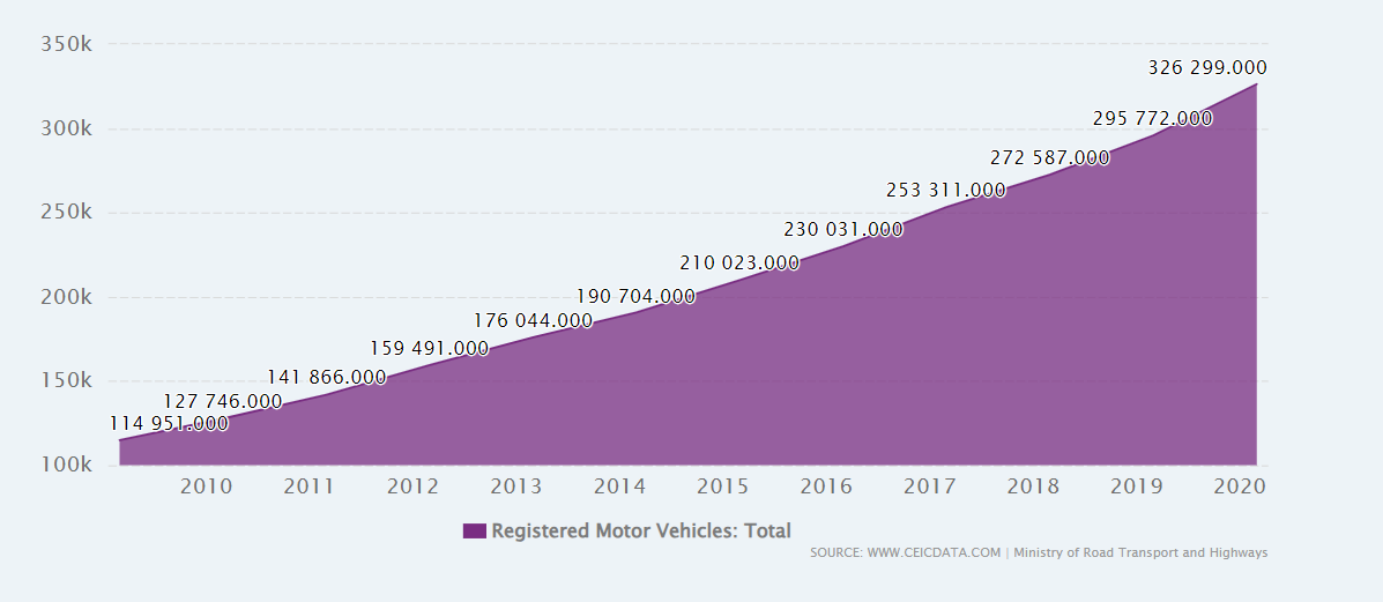
Issue Brief #4

Why is Active Transit important?

Rapid urbanization is reshaping the globe and India is at the forefront of this trend. This transformation is marked by a growing reliance on motorized transit, exacerbating congestion, pollution, and emissions. It fosters sedentary lifestyles, contributing to a surge in non-communicable diseases (NCDs). Engaging in sports and physical activity (SAPA) is a proven countermeasure to these health risks.

Active transit systems, which encourage walking, cycling, and other forms of physical movement, are an essential part of SAPA solutions. They not only mitigate the adverse effects of inactivity but also enrich urban life. This issue brief underscores the imperative of integrating active transit into the fabric of existing and future Indian cities, unlocking the potential to transform India into a nation characterized by vitality and robust public health.

Figure 1: Growth in motorized transport in India



Rapid urbanization in India has been accompanied by increased motorization of transportation systems. Vehicle registrations grew at a compounded annual growth rate of over 9% between 2010 and 2020[1], with the current number of registered vehicles (in April 2024) being close to 370 million.[2] This has reinforced a broader trend of increasingly sedentary lifestyles, increasing carbon emissions, and more public spaces taken over by cars. Recent statistics show that India's urban population will double by 2050 (as compared to 2018), adding 416 million people.[3] As more people get increasingly connected and are on the move, a significant part of their daily lives will be spent in transit. Whether it's walking, biking, taking the bus, or riding on the metro, or driving to and from anywhere, how we move matters.

These changes of increased motorization come with their own set of challenges. According to a recent study, increasingly sedentary lifestyles have led to a rising percentage of the population affected by non-communicable diseases (NCDs) in India.[4] This includes an estimated number of 101 million Indians affected by diabetes, over 200 million affected by generalized obesity, and about 300 million affected by hypertension.[5] This is partially attributable to a lack of active transit choices. In addition, other rising negative externalities of increasing motorization in urban areas, including greenhouse gas emissions, climate change, and environmental pollution, show the need for sustainable and environmentally friendly modes of transportation. Here lies the opportunity.

There is a longstanding body of evidence to suggest that the built environment is a key influencer of lifestyle choices, especially if there is a complementary focus on engaging individuals and communities. Creating an environment that is more suitable for choosing more active modes of transportation, like appropriate infrastructure for walking and cycling, availability of public transit, mixed-use development, etc., is likely to influence those in the catchment area of these environments to access them.[6]

In the context of cities in India, choosing modes of active transit is often challenging. The built environment is increasingly moving towards catering to motorised traffic.[7] This, combined with existing challenges of congestion, environmental challenges of growing levels of pollution, inconducive weather for walking, as well as other factors like unplanned development contributes to creating metaphorical roadblocks in choosing more active forms of transport.[8] This is also why we will need to be innovative and forward-thinking in our approach.

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[1] https://www.statista.com/statistics/664729/total-number-of-vehicles-india/
[2] Ministry of Road Transport & Highways, "VAHAN SEWA| DASHBOARD," 2024, https://vahan.parivahan.gov.in/vahan4dashboard/.
[3] Ejaz Ghani, "The Urbanisation Challenge," Deccan Herald, December 2023, https://www.deccanherald.com/opinion/the-urbanisation-challenge-2796855.
[4] Ranjit Mohan Anjana et al., "Metabolic Non-Communicable Disease Health Report of India: The ICMR-INDIAB National Cross-Sectional Study (ICMR-INDIAB-17)," *The Lancet Diabetes & Endocrinology* 11, no. 7 (July 2023): 474–489, doi:10.1016/S2213-8587(23)00119-5.
[5] Anjana et al., 485.
[6] Brian E Saelens, James F Sallis, and Lawrence D Frank, "Environmental Correlates of Walking and Cycling: Findings from the Transportation, Urban Design, and Planning Literatures," *Annals of Behavioral Medicine* 25, no. 2 (2003): 80–91.
[7] Geetam Tiwari, "Walking in Indian Cities – A Daily Agony for Millions," June 2022, https://www.thehinducentre.com/the-arena/current-issues/walking-in-indian-cities-a-daily-agony-for-millions/article65551959.ece.
[8] Tiwari.

What are Active Transit systems?

'Active transit' can be defined as the use of non-motorized forms of transportation such as walking, cycling, and variants including electric scooters, skateboards, and rollerblades.[9] These modes of transportation have attracted increasing interest because of their inherent nature of being healthy, sustainable, and eco-friendly. Active transit requires end-to-end design and planning that often includes a dedicated network that combines sidewalks, bike lanes, bike paths, and an ample amount of supporting infrastructure to be able to access these.[10]

These systems aim to reduce reliance on private vehicles, mitigate air pollution, and enhance urban connectivity. By prioritizing active modes of transportation, cities can improve livability, reduce traffic congestion, and enhance the overall quality of urban life.

The concept is already being implemented in policy frameworks through various initiatives. For example, the Singapore Land Transport Authority has turned to constructing a network of paths to facilitate cycling.[11] The paths within these localities connect to shops, schools, and key nodes of public transport, thereby integrating them into existing networks. Another example is that of Bogotá. The city is known for an extensive electric public transportation system connected by a widespread network of bicycle paths of around 500 km and pedestrian pathways, leading to 24% of all journeys completed by walking and the share of cycling trips being around 8%.[12]

Active transit comes with several multi-faceted benefits. It has advantages at the individual and systemic levels, providing an outlook into enhancing the overall quality of life:

Individual Benefits

- Health: Active transit options like biking and walking help integrate increased amounts of physical activity (PA) into daily lives. The evidence is exemplified in a study comparing 47 of the largest 50 US cities, where researchers found that higher rates of walking and cycling to work were associated with lower percentages of the local adult populations suffering from obesity and/or diabetes.[13]
- Economic: The advent of active transit also offers related individual economic benefits. These can be viewed in two ways. First, an individual can forego car-based expenses like fuel and parking fees, which are often not required when choosing non-motorized modes of transportation or relatively inexpensive methods like public transport including buses, metro systems,

[9] Q. Zhou et al., "Effects of Improvements in Non-Motorised Transport Facilities on Active Mobility Demand in a Residential Township," *Journal of Transport & Health* 16 (March 2020): 100835, doi:10.1016/j.jth.2020.100835.
[10] US Department of Energy, "Alternative Fuels Data Center: Active Transportation and Micromobility," 2024, https://afdc.energy.gov/conserve/active-transportation.
[11] Zhou et al., "Effects of Improvements in Non-Motorised Transport Facilities on Active Mobility Demand in a Residential Township."
[12] Institute for Transportation & Development Policy, "From Transmilenio to Cycle Networks: Lessons Learned from Bogotá's Comprehensive Urban Mobility Planning" (ITDP, 2022), https://itdp.org/wp-content/uploads/2023/05/From-Transmilenio-to-Cycle-Networks-Lessons-Learned-from-Bogotas-Comprehensive-Urban-Mobility-Planning-MAY4.pdf.
[13] John Pucher et al., "Walking and Cycling to Health: A Comparative Analysis of City, State, and International Data," *American Journal of Public Health* 100, no. 10 (2010): 1990.

and regional transit systems.[14] Second, as a consequence of increased PA in the commute, evidence links higher levels of activity to increased productivity through improved concentration and overall energy levels.[15]

Systemic Benefits

- Environmental: The shift away from cars leads to a reduction in greenhouse gas emissions. For instance, a study by WHO Europe found that a shift from car to active transit is possible for trips up to 16 km in length, and those trips are responsible for 40% of carbon emissions from vehicles, even if all the trips are not entirely replaced by walking, cycling or public transportation.[16]
- Social: The potential for more accessible walking spaces can foster social interaction and community engagement.[17] These spaces also have the potential to be inclusive in many ways and allow for those with limited social and physical access to be a part of these spaces.
- Economic: Research has shown that active transit can be an effective way to support economic development. Improving infrastructure can lead to significant cost savings in public health and urban area upkeep.[18] Given its multi-dimensional nature, it can improve transport efficiency to reduce travel time and accidents; increase options for non-drivers to be connected with more workplaces; reduce maintenance costs on motor-based infrastructure and space; support subsequent multi-modal development and decrease consumer expenditure on vehicle costs.[19]

The individual and systemic benefits create a compelling case for integrating active transit into our cities and examining how some of the best practices and global examples have worked to integrate active transit into their daily lives.

[14] Toronto Centre for Active Transportation, "The Economic Impacts of Active Transportation" (Toronto Centre for Active Transportation, October 2012), https://www.tcat.ca/wp-content/uploads/2014/10/Economic-Impacts-of-Active-Transportation-Backgrounder.pdf.
[15] Elena Losina et al., "Physical Activity and Unplanned Illness-Related Work Absenteeism: Data from an Employee Wellness Program," *PLoS One* 12, no. 5 (May 2017), doi:https://doi.org/10.1371%2Fjournal.pone.0176872.
[16] World Health Organization, "Cycling and Walking Can Help Reduce Physical Inactivity and Air Pollution, Save Lives and Mitigate Climate Change," 2024, https://www.who.int/europe/news/item/07-06-2022-cycling-and-walking-can-help-reduce-physical-inactivity-and-air-pollution--save-lives-and-mitigate-climate-change.
[17] Sally Eldeeb and Houshmand Masoumi, "Investigating Walkability and Bikeability in Compact vs. New Extensions: The Case of Greater Cairo," *Frontiers in Built Environment* 9 (2023): 15, https://www.frontiersin.org/articles/10.3389/fbuil.2023.1165996.
[18] Vinnie Wang, "A Breath of Fresh Air: How Active Transport Can Revitalize Cities," World Bank Blogs, February 2024, https://blogs.worldbank.org/en/transport/breath-fresh-air-how-active-transport-can-revitalize-cities.
[19] Todd Litman, "Evaluating Active Transport Benefits and Costs" (Australia: Victoria Transport Policy Institute, April 2024), 36, https://www.vtpi.org/nmt-tdm.pdf.

Figure 2: Benefits of active transit

Credits: EnviroCentre , https://www.envirocentre.ca/school-active-transportation/

What are good examples of active transit systems in cities?

Making transportation systems more efficient and sustainable to impact active living has become a common practice for urban planners throughout the world in recent years.[20] The following table covers different initiatives from cities excelling in integrating active transit across the world, and how innovative technology and/or practices are fueling this move towards active transit.

Table 1: Cities with Active Transit practices

City	Active Transit Practice	Innovation
Amsterdam[21,22]	• "Biking capital of the world" since the 1970s • Now, 38% of all trips are made on bicycles. • Have a dedicated "bicycle civil servant" for expanding and maintaining bike paths.	• Localized, centrally controlled traffic light systems to decongest roads. • Advanced traffic tech for "green zones" and emission control.
Bogotá[23,24]	• Public-led Ciclovía campaign since 1974, promoting biking on Sundays. • 500 km of biking infrastructure, including 350 km of bike lanes.	• Behavioral nudge through Ciclovía. • Retrofitting biking lanes into existing infrastructure for increased public transportation access.
Copenhagen[25,26,27]	• Extensive network of biking paths, including "superhighways."	• Intelligent transport systems (ITS) for safer biking intersections. The systems reduce stops (by 10%) and

[20] Yat Yen, Pengjun Zhao, and Muhammad T Sohail, "The Morphology and Circuity of Walkable, Bikeable, and Drivable Street Networks in Phnom Penh, Cambodia," *Environment and Planning B: Urban Analytics and City Science* 48, no. 1 (January 2021): 170, doi:10.1177/2399808319857726.
[21] Renate van der Zee, "How Amsterdam Became the Bicycle Capital of the World," *The Guardian*, May 2015, sec. Cities, https://www.theguardian.com/cities/2015/may/05/amsterdam-bicycle-capital-world-transport-cycling-kindermoord.
[22] Westermo, "Connecting Smart Traffic Systems throughout Amsterdam," 2024, http://www.westermo.com/about-us/success-stories/amsterdam-smart-traffic-system.
[23] Jo Helme, "How Bogotá Became Latin America's Cycling Capital," *CityChangers.Org – Home Base for Urban Shapers* (blog), November 2021, https://citychangers.org/how-bogota-became-latin-americas-cycling-capital/.
[24] Government of Colombia, "Urban Cycling: A Fun Way to Tour Bogota," 2024, https://colombia.travel/en/blog/urban-cycling-a-fun-way-to-tour-bogota.
[25] Sean Fleming, "What Makes Copenhagen the World's Most Bike-Friendly City?," World Economic Forum, October 2018, https://www.weforum.org/agenda/2018/10/what-makes-copenhagen-the-worlds-most-bike-friendly-city/.
[26] "Cities100: Copenhagen - Smart Traffic Signals Boost Cycling," C40 Cities, accessed April 27, 2024, https://www.c40.org/case-studies/cities100-copenhagen-smart-traffic-signals-boost-cycling/.
[27] Sidsel Birk Hjuler and Klaus Bondam, "Cycle Superhighways: How We Built an Inter-Municipal Network in Denmark," September 2020, https://www.c40knowledgehub.org/s/article/How-we-built-an-inter-municipal-cycle-superhighway-network-across-the-Capital-Region-of-Denmark?language=en_US.

	• Nine cycle routes linking 19 municipalities, with plans for 750 km of superhighways. • Almost 30% of all journeys and 41% of daily commutes are undertaken by bikes.	accidents and decrease travel time for cyclists.
Shanghai[28]	• Created a mission for "Safe, Green, Vigorous and Smart" streets. • Now, 25% share of commutes is via active mobility and 36% by public transportation.	• Smart technologies for traffic monitoring and public street facilities. • Widening walkways and streets for accessible walking and biking infrastructure.
Tokyo[29]	• Layered connections for pedestrian traffic between metro stations. • Widened walkways integrated with street-level infrastructure.	• Established key nodes of transportation and encouraged mixed-use development areas. • Dispersed crowds by creating multiple areas of public concentration.

[28] Centre for Liveable Cities and Urban Land Institute, "Urban Mobility: 10 Cities Leading the Way in Asia-Pacific" (Centre for Liveable Cities, Singapore and Urban Land Institute., 2017), 17, https://www.clc.gov.sg/docs/default-source/books/mobile-friendly-10-cities.pdf.
[29] Centre for Liveable Cities and Urban Land Institute, 31.

Active Transit for India

Challenges

When contextualized to India, the increasing urbanization rate in the country has led to substantial challenges for city planners, municipalities, and urban local bodies. These include (as mentioned above) increases in energy consumption, travel-related demand, and emissions, which have given rise to air pollution in highly populated metropolises such as Delhi.[30] In the past three decades, while the population of the city of Delhi has grown by a factor of four, the ownership of vehicles has grown by a factor of 28.[31] This is further supplemented by local climate challenges like heat, monsoon, and erratic weather, alongside context-specific challenges.

Table 2: Challenges to active transit in Indian cities

Category	Description[32]
Infrastructure	*Lack of facilities*: A small percentage of Indian roads have sidewalks, discouraging walking as a viable daily commute option. It is exacerbated by a problem of social equity. In India, traditionally, public transportation, walking, or cycling is accessed by a 'captive population', i.e., they are forced by circumstances and not by choice to choose them. The lack of facilities affects those users more, creating the need for more active transit modes for all. *Inadequate maintenance:* Existing pedestrian pathways and cycle lanes are often poorly maintained, encroached upon, or used for parking. Additionally, public spaces are under-resourced, which contributes to the poor maintenance that translates into underutilized areas.
Consumer Preferences	*Preference for private vehicles:* Car ownership is considered desirable and practical in urban India, reducing the appeal of cycling or walking. Rising incomes combined with inadequate public transport drive people to use personal vehicles. About 70% of vehicles in India are two-wheelers, 25% are cars, jeeps, taxis, and auto-rickshaws, and only 0.7% are public transport vehicles.[33]
Urban Planning	*Urban design*: Urban development often prioritizes motor vehicle traffic flow over the integration of cycling and pedestrian infrastructure, leading to high congestion levels and longer commute times. Peak-hour travel in Central Delhi has increased by nearly 40% and the options to replace that are limited. This is exacerbated by long (and growing) distances between homes, offices, and schools, with an increasing number of office areas coming up outside city centres.

[30] Tavoos Hassan Bhat, Hooman Farzaneh, and Nishat Tasnim Toosty, "Co-Benefit Assessment of Active Transportation in Delhi, Estimating the Willingness to Use Nonmotorized Mode and near-Roadway-Avoided PM2. 5 Exposure," *International Journal of Environmental Research and Public Health* 19, no. 22 (2022): 2.
[31] Bhat, Farzaneh, and Toosty, 2.
[32] Tiwari, "Walking in Indian Cities – A Daily Agony for Millions."
[33] Ashish Verma, Vajjarapu Harsha, and Gayathri Harihara Subramanian, "Evolution of Urban Transportation Policies in India: A Review and Analysis," *Transportation in Developing Economies* 7, no. 2 (2021): 4.

	Limited green spaces: Cities have a limited percentage of green spaces. Mumbai lost around 40% of its green cover between 1991 and 2018.[34]
Safety Concerns	*Accident rates:* India has one of the highest road traffic accident rates globally, with pedestrians and cyclists being highly vulnerable, with the portion of pedestrian fatalities being around 17% in road traffic crashes in 2019. *Enforcement issues:* Enforcement of traffic rules is often lax, contributing to unsafe conditions for non-motorized transport users. These safety concerns also contribute to making public spaces inhospitable for walking, cycling, or taking public transport, thereby preventing the use of active transit options for everyone from school-going children to those who step out for recreation.
Weather Conditions	*Extreme weather:* Cities such as Delhi and Chennai experience temperatures above 40°C regularly, discouraging active commuting. Other cities like Mumbai have seen average temperature rises of over 2 degrees in the last few decades.[35] Adverse weather conditions discourage commuters from walking or biking to their destinations, a practice that is further limited by the lack of appropriate infrastructure especially in urban workspaces, i.e. showers and changing rooms in buildings. *Impact of environmental conditions:* During the monsoon season, many Indian cities face waterlogging issues that make walking and cycling difficult and unsafe. The monsoon also creates unfavourable conditions for stepping out in general, given the lack of covered areas in outdoor spaces. This is compounded by rising pollution issues outside of the rainy season as well.

A framework for active transit

Considering these unique challenges, a framework for active transit in India needs to keep in mind the diversity of contexts and challenges that are unique to the country. This framework should be wide-ranging and far-reaching to cover the gamut of diverse contexts that are present among tier-1 cities like Delhi, Mumbai, Kolkata, and Bengaluru, as well as smaller tier-2, tier-3, and tier-4 cities.

Any implementation must follow a holistic approach that integrates existing infrastructure, policy, community engagement, and innovative technologies and draws on existing learnings from other active cities in their journeys. It also needs to draw from previously introduced programmes like the Smart Cities Mission, which had the objective "to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions"[36] A framework, for now, comprises suggested solutions alongside two themes –

[34] Alok Deshpande, "Mumbai Lost 40% Green Cover between 1991 and 2018," *The Hindu*, October 2021, sec. Mumbai, https://www.thehindu.com/news/cities/mumbai/mumbai-lost-40-green-cover-between-1991-and-2018/article37052861.ece.
[35] Deshpande.
[36] Government of India, "Smart Cities - Mission Statement and Guidelines" (Government of India, June 2015), 5, https://smartcities.gov.in/themes/habikon/files/SmartCityGuidelines.pdf.

retrofitting current cities and making space for imminent and future towns and cities by prioritizing greenfield developments. This, in combination with a set of indicators, creates a wireframe to measure progress as we go along.

Table 3: A potential Active Transit framework for India

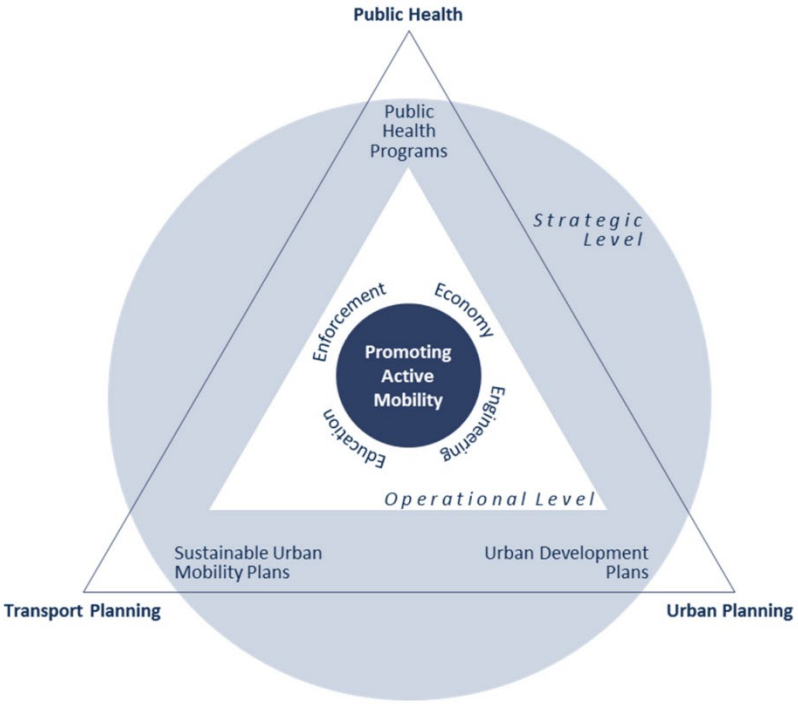
Potential Solutions		Indicators
Retrofitting Current Cities	**Imminent/Upcoming Towns and Cities (and their greenfield developments)**	
Infrastructure Development		
- Identify areas with high foot traffic, such as markets, and prioritize creating biking paths and walkways. Collaborate with local municipal bodies to reclaim underutilized spaces for this purpose. - Create more alternatives to walk and bike to and from metro stations/bus stops to plug the gap of 'last-mile connectivity', e.g. creating more parking spaces for bikes. - Identify intersections wherein smart traffic management systems can be implemented and integrate specific signals for cyclists and pedestrians. - Wherever feasible, replace current walking and biking paths with heat-resistant materials that can withstand high temperatures; complement with green barriers to protect from the heat and contribute to reducing pollution and emission levels. - Develop walking art districts in cultural hotspots like Chandni Chowk in Delhi or Fort in Mumbai. Incorporate local art and heritage into these spaces.	- Create new urban plans around '10-minute cities' for current, imminent, and future satellite cities/towns with dedicated cycling and walking paths, alongside extensive public transportation connectivity. - Design around open spaces for walking and community engagement with ample opportunities for physical activity. - Design around smart city transit systems that ensure all intersections and stop lights are catered towards all kinds of transport users equally. - Utilize native flora to create tree-covered walkways and bike lanes. Consider designing rain shelters using locally available materials. - Prioritize green cover when designing around residential areas for mixed-zone land use to also shorten distances for daily commutes.	- Percentage of bike lanes and walking paths compared to roads - Number of (new) last-mile options for connectivity - Number of urban attractions with walking and cycling options (and catering to accessibility) - Number of intersections with smart traffic systems - Percentage of walking, biking, and physical activity spaces fitted with green barriers, heat-resistant materials, etc. - Percentage of (new) neighbourhoods designed for mixed-use and proximity to daily needs.

Policy Initiatives		
- Provide subsidies and incentives to purchase (electric) bikes, similar to schemes for electric vehicles. - Conceptualise bike-sharing programs in neighbourhoods to give residents and visitors more local options - Implement stricter speed limits to improve road safety for pedestrians and cyclists. - Encourage sustainable development by offering tax breaks for builders who integrate green and mixed-use developments. - Promote active transit by providing tax incentives for companies that build showers and changing facilities. - Establish green zones in dense urban areas like Connaught Place in Delhi or Marine Drive in Mumbai, with hefty fines for violations.	- Center the city around 'green zones' from the ground up to have pedestrian and bike-only zones in the densest parts of the city. - Create building codes that mandate the use of green zones. - Plan new towns with pedestrian and bike-only zones at their core, inspired by the principles of "10-minute cities" with neighbourhood schools, and other amenities tailored to local contexts. - In the case of satellite towns, ensure regional rail or rapid transit is the most viable option to commute to larger cities nearby, like Delhi's Regional Transit Project.	- Percentage of city areas designated as only pedestrians and/or bike-only zones - Percentage of mixed-use zoning areas compared to total area of the urban sprawl. - Number of accidents involving cyclists and pedestrians. - Compliance rates with the various measures – building codes and 'green zones'. - Levels of pollution within the city (especially in green zones compared to non-green zones).
Community Engagement		
- Design educational programs for schools and higher educational institutions to highlight the benefits of active transit at all individual and systemic levels. - Localised engagement events (tied up with festivals and cultural celebrations) within neighbourhoods and communities to incentivise residents to take up active transit options.	- Work with upcoming communities and local neighbourhoods to design and discuss the development of local community spaces to ensure ownership of the initiatives. - Center greenfield city development around physical activity and active transit to ensure these are stitched into the fabric of the population from the beginning. This can be done by naming key public spaces and landmarks around	- Number of awareness programmes in schools/communities designed to promote the use of active transit. - Participation rates in the campaigns and dedicated days around active transit. - Percentage of the city's population using modes of active transit as part of their daily commutes.

- Encourage workplaces to incentivise employees to live closer to the office to reduce travel times. - Align with national campaigns like Swachh Bharat or Fit India Movement to promote dedicated days for cycling and walking. - Build on existing programmes like the Cycles4Change Challenge and the Streets4People Challenge that have been conducted under the Smart Cities Mission.	PA, sporting heroes, and the environment to generate the identity of a new city.	

Recommendations for the way forward

Figure 3: Policies and Strategies for Fostering Active Mobility[37]



Measures towards active mobility need to combine urban development plans with transport plans to determine the placement of transit routes (for bikes, walking, and public transport), alongside public health measures to formulate health-related programmes.[38] These will power the operational measures centered around infrastructure, enforcement, economic considerations, and educational programmes, allowing this to be a joint effort.

The suggested solutions within Table 3 cut across cities and contexts and allow for the creation of an overarching solution that will involve a range of policymakers, private stakeholders, and the general population. An effort like this will bank on the involvement of the Ministries of Environment, Forest and Climate Change, Health and Family Welfare, Housing, and Urban Affairs, Planning, Road Transport and Highways, and Youth Affairs and Sports – highlighting how multi-dimensional the problem and solutions are in the case of active transit.

In the short term, given how complicated retrofitting could be, implementing and learning from pilot projects in urban areas with the help of the ministries and local municipalities, alongside other key stakeholders, will be critical. These pilot projects will further help refine the solutions

[37] Koszowski et al., 15.
[38] Caroline Koszowski et al., "Active Mobility: Bringing Together Transport Planning, Urban Planning, and Public Health," in *Towards User-Centric Transport in Europe: Challenges, Solutions and Collaborations*, ed. Beate Müller and Gereon Meyer (Cham: Springer International Publishing, 2019), 15, doi:10.1007/978-3-319-99756-8_11.

and allow us to come up with more innovative ideas for implementation, and generate learnings for the future, serving as invaluable precedents and learnings for imminent and upcoming city greenfield developments. This can include small-scale initiatives like bike-sharing programmes or dedicated pedestrian zones that can start in smaller areas within large cities, and help chart a way forward. This will also allow us to identify the right local stakeholders like local businesses, municipalities as well as members of the general population that can aid infrastructure development and community engagement at all levels. Short-term implementation can be integrated into existing programmes and more PA-oriented initiatives like Fit India and Khelo India to encourage wider take-up of active modes of living.

However, in the long term, successful implementation will entail an evolution of the systems. This will be possible through localized monitoring and evaluation systems to ensure that initiatives are always catering to the local and city-wide priorities of the residents. At the same time, assessment will allow for rapid developments in adaptation to the environmental conditions and technological advancements that are constantly evolving. It will also ensure that interventions stay as low-cost as possible. This can be integrated with existing governance and monitoring mechanisms, to ensure policies are well positioned to be retrofitted within the realm of larger cities.

Another key consideration is the capacity of planners, local municipalities, city governments as well as all other government stakeholders involved. Their capacity is crucial in the developments as they will be the ones implementing a significant portion of the initiatives. It will also require structured consultations with experts both international and domestic to help build a repository of high-quality ideas and blueprints to actualize this imperative. This involves regular capacity building convenings and workshops, and regular and meaningful contact with other active transit systems and planners around the world – to enhance their understanding and implementation of active transit infrastructure, as well as enhance their capability to engage all the required stakeholders like the private sector, the public sector, and the affected populations. The next generation of cities can be designed to be active transport-enabled from the start. However, a dedicated governance framework will be needed to create the conditions of perpetual and sustainable change.

The long-term vision is to see the nationwide rollout of these programs through cities, states, and the central government, that can be implemented in all tiers of urban areas across the country. Cities across the country can be trendsetters in dealing with the current issues of urbanization like congestion, pollution, and unplanned developments. The nationwide rollout of successful pilot projects will involve taking the learnings and implementing them to city-wide levels. The long-term vision will rely on strong legislative and funding support for sustaining the active transit initiatives to get strong outcomes and wide-ranging adoption of active transit systems. It is an exciting opportunity to be forward-thinking and tackle several aspects that make for a healthy, active, and environmentally conscious population in India.

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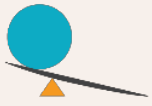

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