Bangalore. i-stock.

BANGALURU
TENDER SURE PROJECT

Novo Nordisk and C40 have formed a research-based partnership aimed at ensuring that urban climate action is beneficial to both the environment and the health of urban citizens. This collaboration aims to generate new insights into a range of benefits of climate action – in particular the health of city populations. At the heart of the partnership lies the pivotal role of cities in the fight against climate change and poor health through increased active mobility of population.

DRIVERS FOR ACTION

12.4 MILLION RESIDENTS

10% GROWTH IN VEHICLES EACH YEAR[1]

STATE HAS THE 3RD HIGHEST NUMBER OF ROAD ACCIDENTS[3]

PM2.5 CONCENTRATION 4 X THE WHO RECOMMENDED VALUE[4]

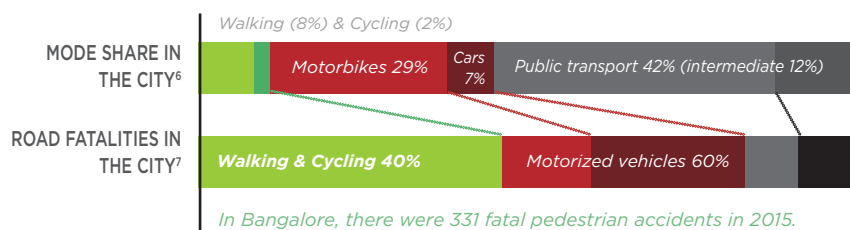**1 MILLION PREMATURE DEATHS DUE TO AIR POLLUTION IN INDIA EACH YEAR**[5]

CITY POLICY CONTEXT

City context

In the last decade, the number of vehicles on the road in India has grown at a rate of around 10% each year[1], and therefore many cities are facing a decline in pedestrian-focused infrastructure, as well as environmental quality. As a consequence, pedestrian safety has decreased in recent years. Pedestrians represent 40% of road fatalities,[2] with a third of accidents happening near sidewalks. In 2016, the Karnataka state, of which Bengaluru is the capital, was 3rd in the country for number of road accidents.[3]

Additionally, the levels of air pollution have recently reached seriously harmful levels, with the annual average concentration of fine particles (PM2.5) four times the WHO recommended limit in Bengaluru[4], urging new measures to control pollutants' emissions. Ambient air pollution is the 5th leading cause of disease in India, causing around 1 million attributable deaths in 2016.[5] As a result, Bengaluru is taking action to reduce fossil-fuel transport as a win-win for the health and safety of its citizens.

MODE SHARE IN THE CITY[6]

Walking (8%) & Cycling (2%)
Motorbikes 29% | Cars 7% | Public transport 42% (intermediate 12%)

ROAD FATALITIES IN THE CITY[7]

Walking & Cycling 40% | Motorized vehicles 60%

*In Bangalore, there were 331 fatal pedestrian accidents in 2015.*

Policies in place

The condition of pedestrian facilities in the city has been deteriorating over the past few years, due to a lack of attention during the design phase (with inadequate widths and crossings), through to the implementation and maintenance phases (with illegal parking, obstruction from informal street sellers and frequent repairs required).

As motorised transport has historically been a priority, the local government needed a major rethink of the street programme. Therefore, Bengaluru joined C40 networks on Mobility Management and Air Quality to learn from examples from leading cities around the world.
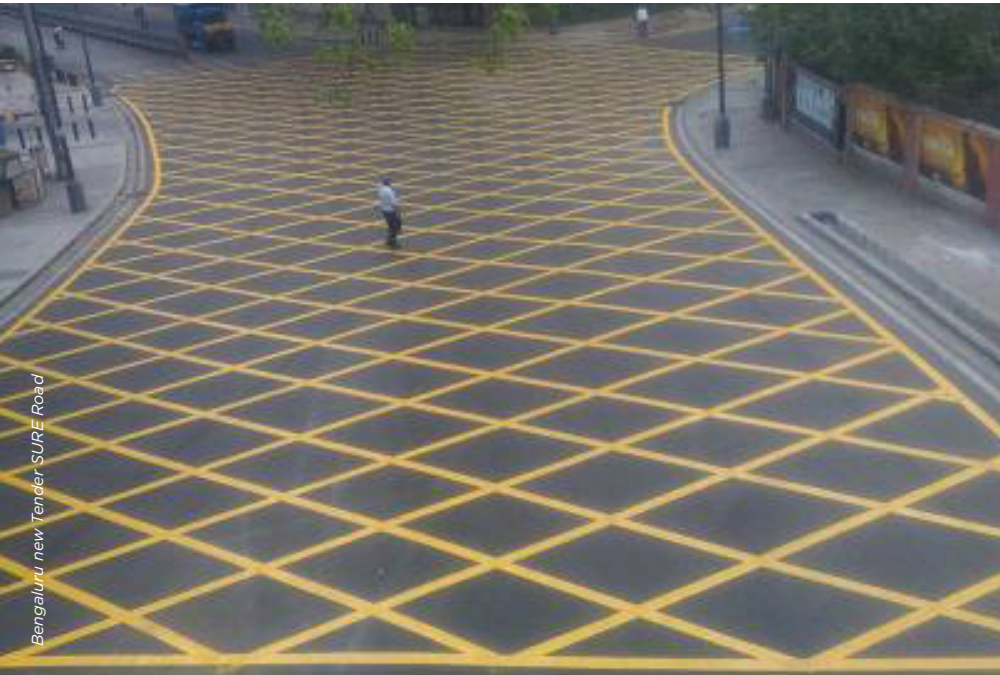
Bengaluru new Tender SURE Road

Taking action: Tender SURE Project

The government launched a programme to ensure all agencies collaborated in the process of designing, implementing and maintaining streets together, in order to ensure more safe, sustainable and pedestrian-friendly streets, This programme ensured a comprehensive planning approach which included all aspects of mobility and discouraged fossil-fuel transportation, with better standards for designing and analysing data, and a participatory process amongst agencies. The execution phase was also defined with better terms of reference, contract and construction management control and a 3rd party inspection. Finally, the programme also considered the managing of streets, with a coordination of maintenance cycles, including all service utilities, to avoid frequent repairs.

Where are they located ?

The Tender SURE approach has been applied to several central business district areas in the city: Vittal Mallya Hospital Road, Cunningham Road, Residency Road, St. Mark's Road, Museum Road, Commissariat Road and Richmond Road, Jayanagar 11th Main, Modi Hospital Road, Siddaiah Puranik Road, KG Road, Nrupathunga Road. The network of these 12 pilot roads has been strategically chosen as being major hubs for business, historical sites, public buildings and near schools.

Operations were based on data-driven, ground investigations to determine the feasibility and most accurate design options, including topographic, traffic and pedestrian counts surveys.[9]

TENDER SURE PROJECT

The programme, called Tender SURE (Specifications for Urban Road Execution), aimed to inhibit the use of private, motorised transport and prioritise pedestrians and cyclists, with adequate footpaths and cycle lanes, and specific attention given to junctions at crossings, bus stops or ramps. Roads were defined hierarchically as arterial, sub-arterial, collector and local roads, with consequent width and speed limits for cars. The design incorporates walkaway facilities as planted alleys, dedicated spaces for vendors and car or motorcycle parking, safe bus stops, segregated waste disposal, public toilets, signage and LED lighting.

Tender SURE also integrates and sizes utilities, such as electricity, telecom lines, gas, water and sewage, to avoid having to open roads multiple times for different maintenance operations. Adaptation measures are also integrated with a proper storm drainage system on both sides of the road to avoid floods from heavy rain.
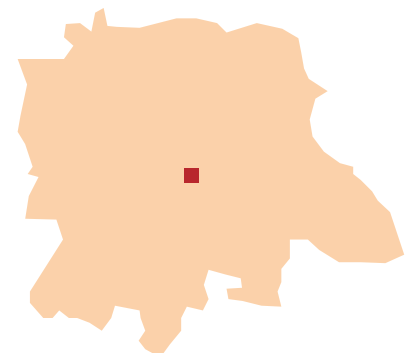
DISCOURAGE FOSSIL-FUELS TRANSPORTATION	SAFE, SUSTAINABLE & PEDESTRIAN-FRIENDLY STREETS	COORDINATION OF IMPLEMENTATION & MAINTENANCE	12 PILOT STREETS

Benefits of Tender SURE

The performance of the Phase I street renovations was assessed both quantitatively and qualitatively with surveys and volume analyses. According to a walking perception survey, on a scale of 1 to 5, most users have a positive evaluation of the changes, except for road crossings which could be improved.[9]

The police reported a decrease in accidents in some monitored stations as the Jayanagar road which changed from 140 accidents in 2016 (13 people killed) before implementation of Tender S.U.R.E., to 81 accidents in 2018, after the implementation.[11] In Bengaluru in general, accidents dropped from 6,024 in 2011 to 4,611 in 2018.[12]
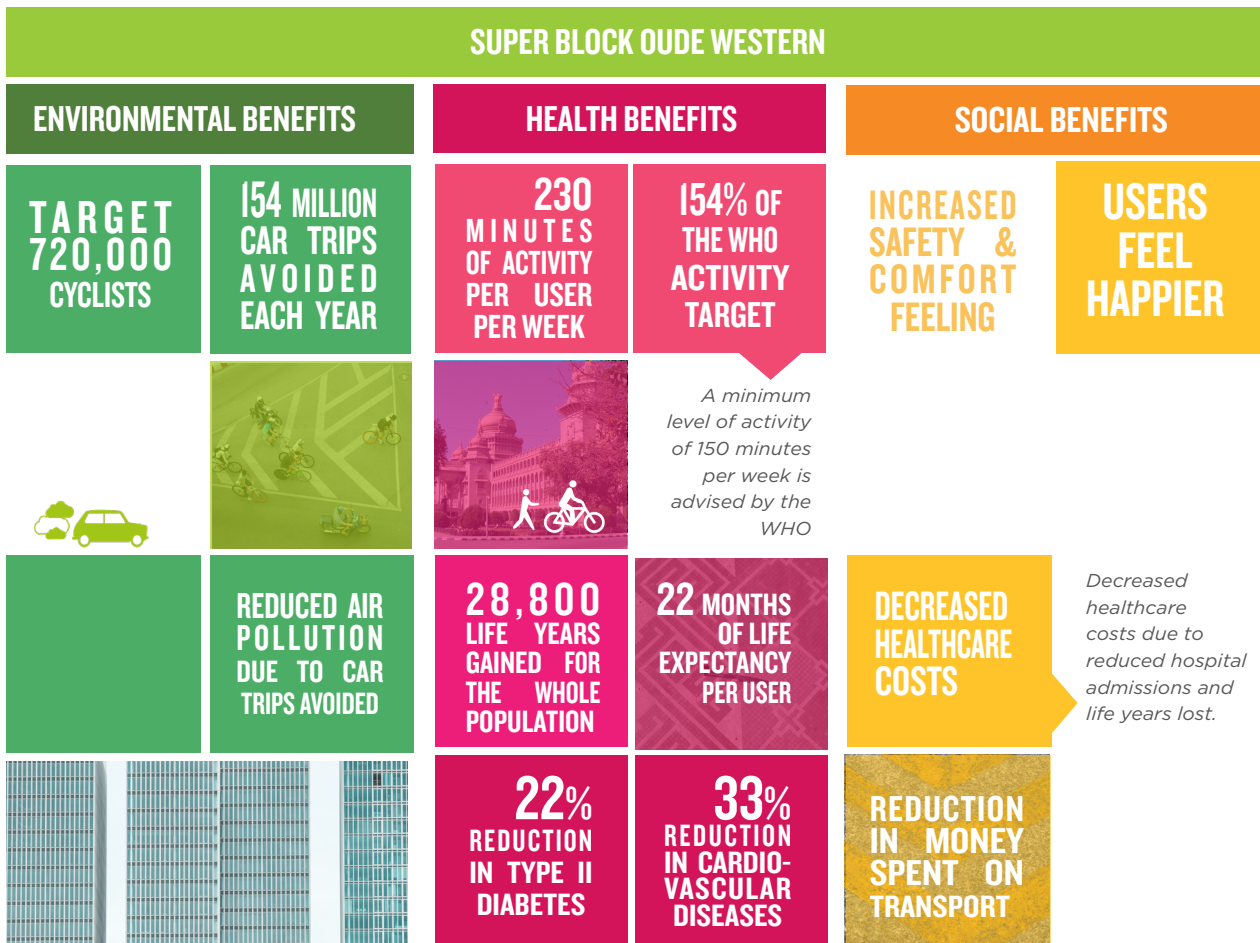
During the Masterclass, the team was eager to learn about the benefits of increased physical activity from cycling. The cycling population at the time was around 480,000 with a target of 1,200,000 users city wide. While this was a very ambitious target, the associated health benefits of achieving this were massive: avoiding 153.6 million car trips each year. The life expectancy of each cyclist would increase by 22 months due to increased physical activity and reduced risk of disease.

What is the timeline?

The Tender SURE project was launched in 2011 and the budget to implement 20 pilot roads was allocated the year after by the government of Karnataka. These pilots were then built in two phases, with the first seven roads opening in 2015. Another package of five roads was inaugurated in 2017.[10] Although the project still faced some challenges, mainly concerning behaviour change, Tender SURE has been recognised as a leading example in India.

> Roads under Tender SURE Phase 1 (2015): Vittal Mallya Road, St. Marks Road, Richmond Road, Residency Road, Museum Road, Commissariat Road, Cunningham Road.

> Roads under Tender SURE Phase 2 (2017) : Jayanagar 11th Main, Modi Hospital Road, Siddaiah Puranik Road, KG Road, Nrupathunga Road.

SUPER BLOCK OUDE WESTERN

ENVIRONMENTAL BENEFITS		HEALTH BENEFITS		SOCIAL BENEFITS	
TARGET 720,000 CYCLISTS	**154 MILLION CAR TRIPS AVOIDED EACH YEAR**	**230 MINUTES OF ACTIVITY PER USER PER WEEK**	**154% OF THE WHO ACTIVITY TARGET**	**INCREASED SAFETY & COMFORT FEELING**	**USERS FEEL HAPPIER**
			A minimum level of activity of 150 minutes per week is advised by the WHO		
	REDUCED AIR POLLUTION DUE TO CAR TRIPS AVOIDED	**28,800 LIFE YEARS GAINED FOR THE WHOLE POPULATION**	**22 MONTHS OF LIFE EXPECTANCY PER USER**	**DECREASED HEALTHCARE COSTS**	*Decreased healthcare costs due to reduced hospital admissions and life years lost.*
		22% REDUCTION IN TYPE II DIABETES	**33% REDUCTION IN CARDIO-VASCULAR DISEASES**	**REDUCTION IN MONEY SPENT ON TRANSPORT**	

Source: Methodology for the Benefits Calculation: C40 Walking and Cycling Benefits tool, last 2019 version published, using the input from Bengaluru at 2017 Walking and Cycling masterclass. More information on the Benefits webpage.

CHALLENGES

TECHNICAL COORDINATION

Carrying out the Tender SURE plan was difficult, as providing such a large space for pedestrians had not been done before, and neither had the level of detail in the design. Therefore, this presented a number of new challenges which had to be overcome by the city government internally.

Convincing credible contractors to participate was difficult as they rejected the proposal on the basis of complicated contracts and a lack of confidence in completing the project. Coordination among different agencies was required, including the water supply and sewerage board, power supply company, data cabling companies and traffic police. Therefore, an Empowered Committee was set up with Chief Secretary, Finance Secretary, and Commissioners.

PUBLIC SUPPORT

Securing public buy-in was a constant challenge. Even though there was greater awareness of issues around air pollution, there was still a backlash from motorists concerned about the space they were losing on the roads and the loss of parking. There were also concerns raised about the overall project cost and the State's intervention over the City Corporation. The Chief Minister of the state of Karnataka showed support for the project early on, which helped in keeping momentum during the backlash.
Another challenge the city had to accommodate was the behaviour of its citizens, with people crossing at random points of the road depending on traffic, buses dropping-off passengers on the road and not at specific stops, and vehicles parking on roads or footpaths.

NEXT STEPS

Following the Masterclass in June 2017 in Copenhagen, the city decided to introduce a cycle hire scheme, which is being tested by another city in the state of Mysuru. This shows again how Bengaluru is setting an example for other Indian cities to follow through implementing progressive walking and cycling actions. The project plans to introduce 6,000 bikes across six neighbourhoods, and the Department of Urban Land Transport (DULT) has invited firms which can provide these services to submit expressions of interest (EoI) for approval.

Furthermore, Bengaluru is looking to improve the mass transit transport mode share and also tackle air quality, The city is seeking to introduce less polluting public vehicles to reduce overall levels of air pollution, as well as improve public transport infrastructure. A special focus on integrated planning of transport is being undertaken, in order to integrate intermodal mobility for public transport and walking and cycling, targeting the first and last miles of journeys.[14]

LESSONS LEARNED

Despite all of these challenges, the city of Bengaluru was able to successfully implement the Tender SURE project, with the results being well received by the city and its citizens. The city learnt the importance of government buy-in and data-driven policies to handle criticism, staying true to the design principles to reach a meaningful outcome. The city also had to face reluctance from numerous stakeholders in the project, including utility providers, the urban land transport authority, planning authority, local ministers, elected representatives and welfare associations.

Bengaluru is continuing to successfully implement the Tender SURE comprehensive plan to improve pedestrian safety in the city, and provide an example that other Indian cities can follow. The project is strongly supported by the government, and the Chief Minister has proposed implementation of more Tender SURE roads. There is a budget of 700 Crores INR (~98 million USD) from the government to build another 50 safe road upgrades that will vastly improve the existing infrastructure which is focused on motorised transport.

REFERENCES

Notes:

[1] *Total Number of Registered Motor Vehicles in India, 1951-2013, Ministry of Road Transport and Highways, 2016.*

[2] *Road Accident Statistics, Bengaluru City Traffic Police, 2017.*

[3] *Statistics of Road Accidents in India From 2013 to 2016, Ministry of Road Transport and Highways, 2017.*

[4] *The current annual average of PM2.5 is 40 µg/m³, while the WHO recommends a maximum of 10 µg/m³. However, the Indian standards are much higher than the WHO, allowing concentrations until 40 µg/m³. Annual average value of Air Pollutants at Bangalore city during the year 2017-18, Karnataka State Pollution Control Board, 2018.*

[5] *Global Health Observatory database, Death by country, WHO, 2016.*

[6] *Annual Report, Transport, Environmental management & Policy Research Institute (EMPRI), Government of Karnataka, 2017.*

[7] *Road Accident Statistics, Bengaluru City Traffic Police, 2017.*

[8] *A. BasavarajKabade et al., Improvement to Pedestrian Walkway Facilities to Enhance Pedestrian Safety-Initiatives in India, World Academy of Science, Engineering and Technology, International Journal of Transport and Vehicle Engineering, Vol:12, No:3, 2018*

[9] *Tender SURE is not against motorists, it is for a walkable city, Citizen Matters, 2015.*

[10] *Tender SURE Bangalore, Namma Sarkara, Oct 2017.*

[11] *Bangaluru Road Traffic report per station, Bangaluru Police Traffic 2018.*

[12] *Bangaluru Accident Statistics, Bangaluru Police Traffic, 2018.*

[14] *Annual Report, Transport, Environmental management & Policy Research Institute (EMPRI), Government of Karnataka, 2017.*

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