

**USAID**  
FROM THE AMERICAN PEOPLE



## Alternate mobility solutions to meet paratransit demand

CLEANER **AIR** &  
BETTER **HEALTH**  
PROJECT

# Impacting sustainable development at scale with data, integrated analysis, and strategic outreach

## ● TRANSFORMATIONS

Low-carbon Economy

Energy Transitions

Power Markets

Industrial Sustainability

Sustainable Livelihoods

## ● QUALITY OF LIFE

Clean Air

Sustainable Water

Sustainable Food Systems

Sustainable Cooling

Sustainable Mobility

## ● ENABLERS

Sustainable Finance

Technology Futures

Circular Economy

Climate Resilience

International Cooperation

## SPECIAL INITIATIVES

CEEW Centre for  
Energy Finance

Powering  
Livelihoods

Emerging  
Economies

UP State  
Office

250+

Multidisciplinary team

380+

Peer-reviewed  
publications

190+

Instances of increased  
data transparency

540+

Roundtables &  
conferences

20+

Indian states engaged

130+

Bilateral & multilateral  
initiatives promote



**USAID**  
FROM THE AMERICAN PEOPLE



# The Cleaner Air And Better Health Project



**Cleaner Air and Better Health (CABH)** is a five year (2021 to 2026) project **supported by the United States Agency for International Development (USAID)**. It aims to **strengthen air pollution mitigation and reduce exposure to air pollution** in India by establishing **evidence-based models for better air quality management**.

The project is being **implemented by a consortium** led by the Council on Energy, Environment and Water and includes ASAR Social Impact Advisors, Environmental Design Solutions, Enviro Legal Defence Firm, and Vital Strategies.





**USAID**  
FROM THE AMERICAN PEOPLE



## An improved air quality governance regime, that places health and development outcomes at the centre of policymaking

### Guiding Principles



Transparency and  
accountability to  
enable learning



Innovation



Equity



Evidence based  
decision-making



Empowered  
communities



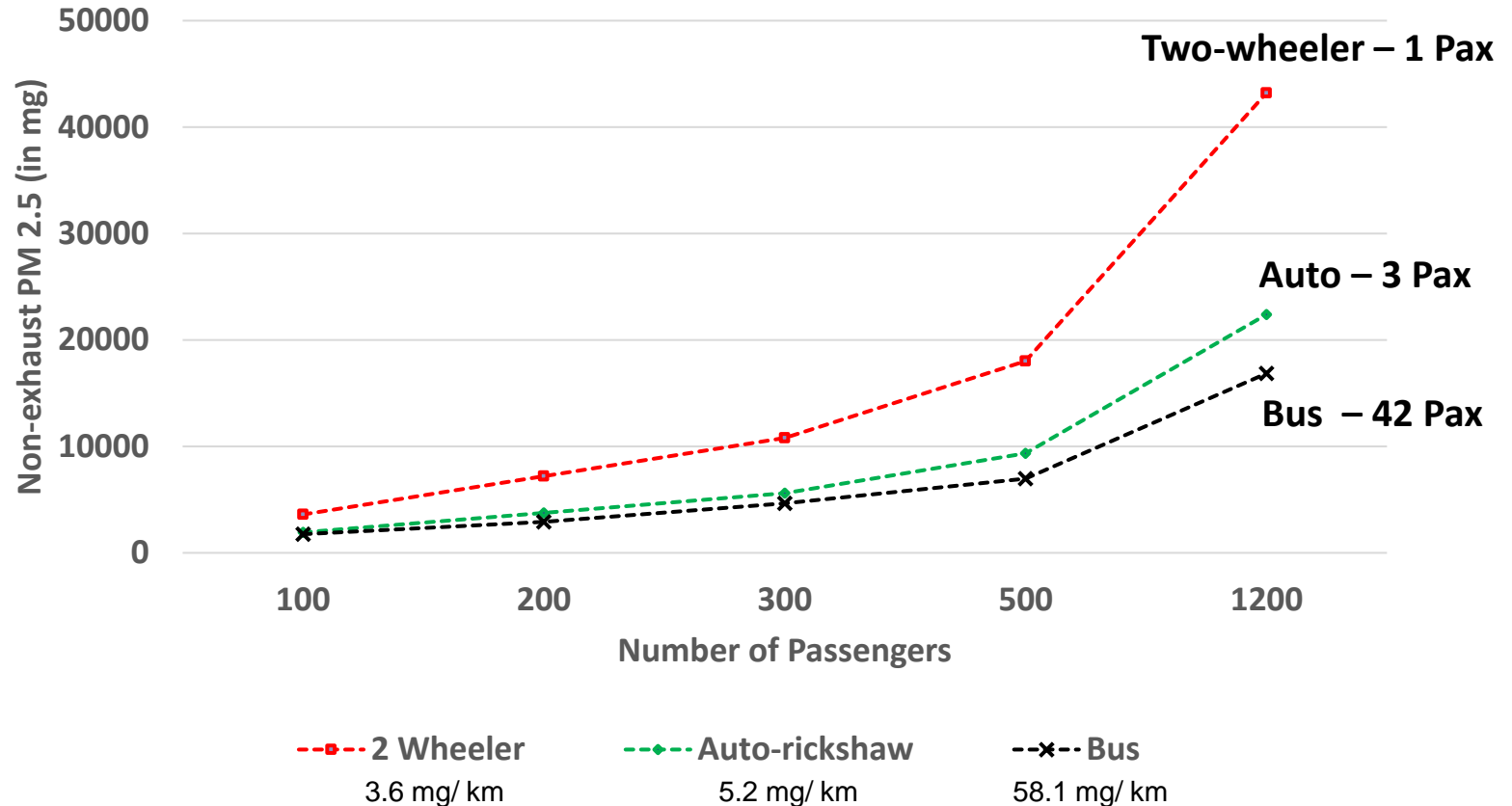
Robust regulations



Improved institutional  
capacity

# Each EV needs more riders to substantially reduce PM 2.5

Emissions are sensitive to vehicle km

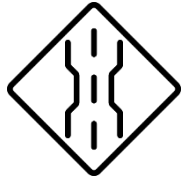


Emission factor source: (Raparthi and Phuleria, 2022)

# Which vehicle is most suitable?



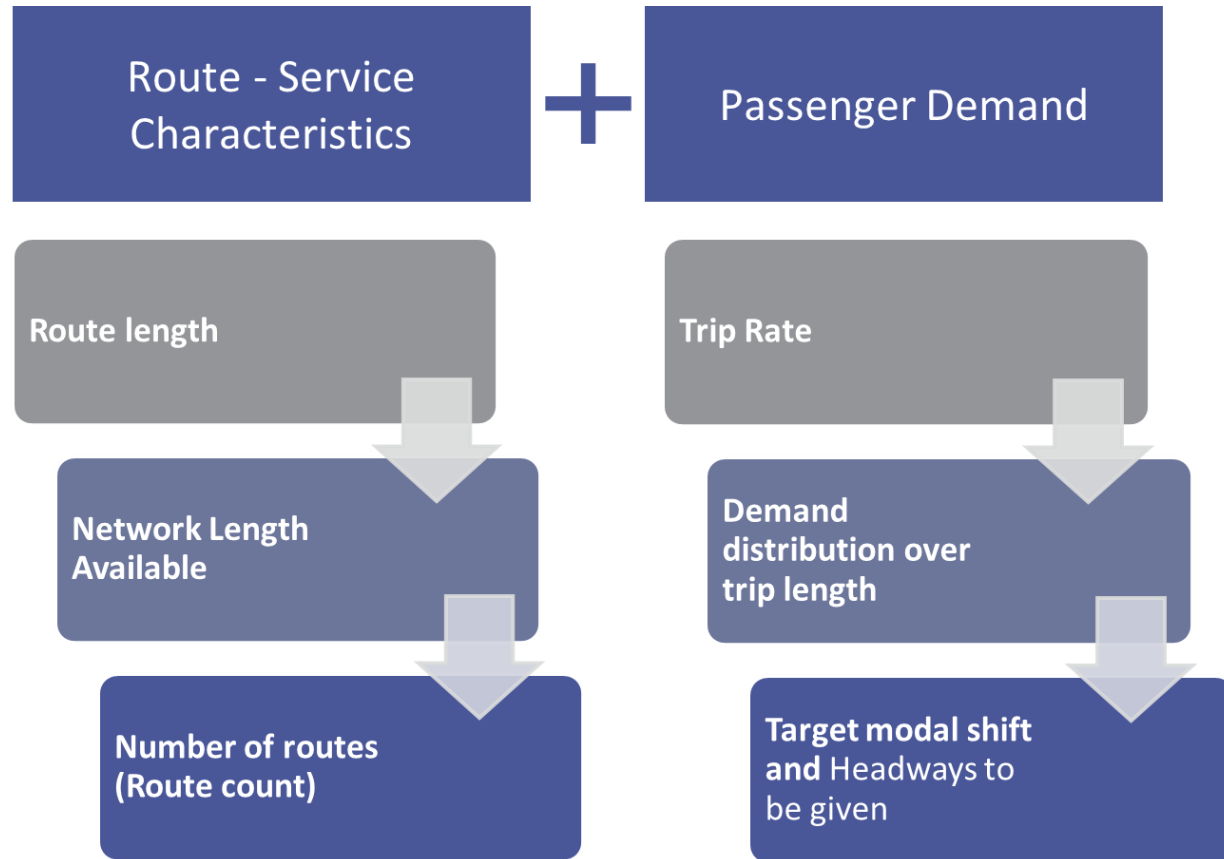
Volumes – Number of people per hour per route



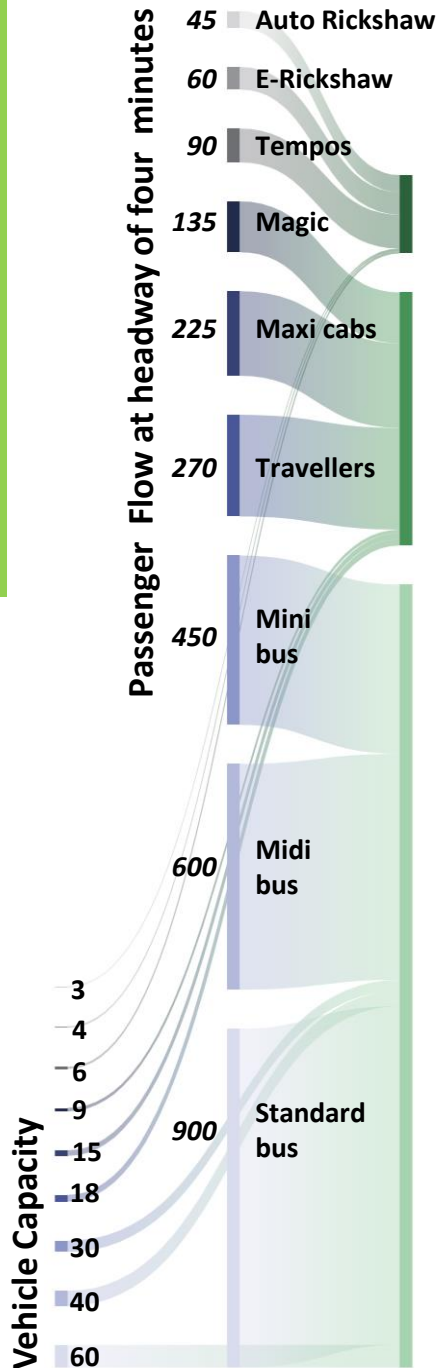
Road width



Level of Service







# 'Micro-bus' are optimal for 140 - 270 people per hour per direction



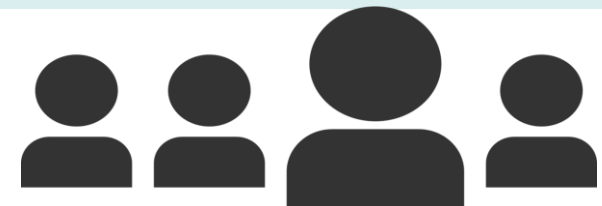
**Capacity** - 3-6 Pax  
**Ideal trip distance** - less than 5 km

**Capacity** - 30 Pax (mini bus)  
**Ideal trip distance** - 5 - 10 Km

**Use case** - Long distances with high passenger demand

**Use case** - Quick short distances with very low passenger demand to integrate larger PT network

One is too big, the other too small



# Need of these vehicles from the Global south

Introduced in 1950, the **Volkswagen Type 2 microbus** vehicle rose to popularity for its paratransit uses. The **12-16 seater** vehicle still dominates the public transport system in the global south



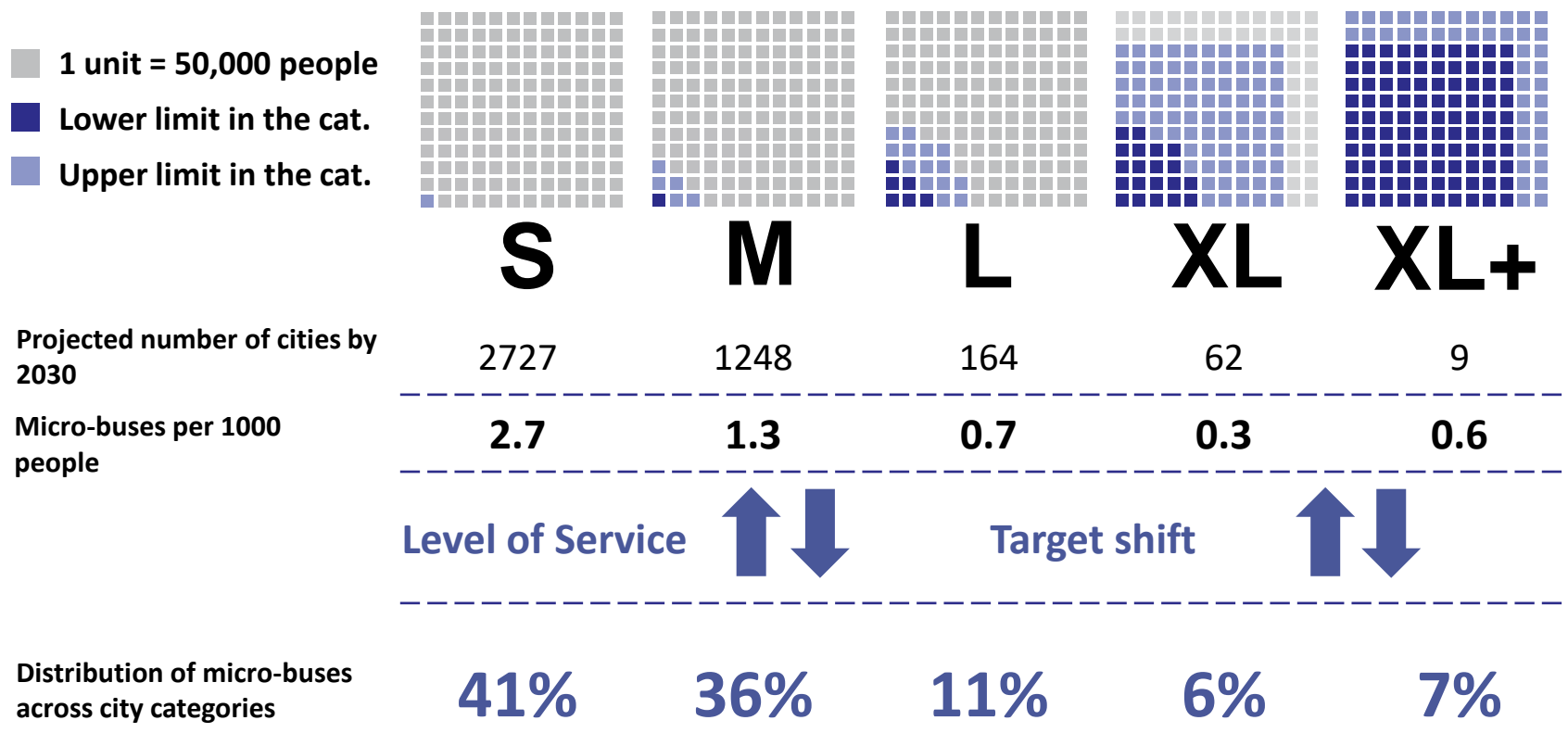
- *Jeepneys* in the Philippines
- *Kombi taxis* of South Africa
- *Pesero* or *combi* in Mexico



- *Bhoonds* or *kadukas* in Punjab
- Travellers in Himachal Pradesh
- *Maxi cabs* in Kerala and Tamil Nadu
- *Jugaad*, in Northern India



# Small and medium cities together make ~ 80 % of the demand for micro-buses across urban India



Urban India needs ~ 6,45,000 micro-buses by 2030

# Use cases across city category

Intra-city (2-5 km)

70 – 75 %

Intra-city/ Peri-urban (6-10 km)

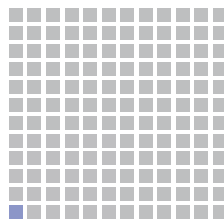
25 – 30 %

Short distance (0-5 km) intra-city and medium distance (6-10 km) peri-urban trips

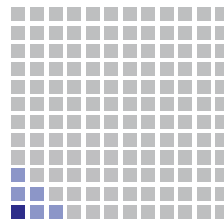
Intra-city (2-5 km)

100 %

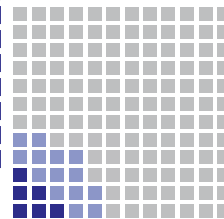
Short distance (0-5 km) intra-city trips and/ or feeder first-last trips to mass rapid transit



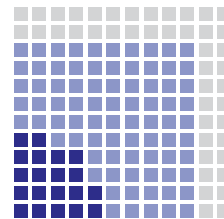
**S**



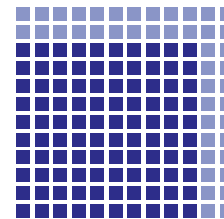
**M**



**L**



**XL**



**XL+**

# Four pre-requisites to encourage large-scale and just transition to micro-buses



**Pilots and performance evaluations** to develop specifications for micro-buses could nudge original equipment manufacturers (OEMs) to fast-track research and development.



**Formulating new City Transport Undertakings** for rapidly growing towns to plan micro-bus-based public transport.



**Creating aggregated demand** for micro-buses in IPT for quick fleet renewal with planned routes, stands, and schedules (like the Alwar Vahini scheme).



**Coordination, credit guarantee and scrappage linked incentives** for replacing old and polluting tempo-type vehicles (6-8 seater) with micro-buses.

# Thank You

Reach out at [Kishna.khanna@ceew.in](mailto:Kishna.khanna@ceew.in)

[Himani.jain@ceew.in](mailto:Himani.jain@ceew.in)

or

@ceew.in | @CEEWIndia

CLEANER **AIR** &  
BETTER **HEALTH**  
PROJECT

**Alternate mobility solutions to  
meet paratransit demand**

28 October 2023 | 1430 – 1600 IST