

Pahunch !

Equitable Accessibility
for Low-income settlements



**INDIA'S LOW-INCOME
URBAN SETTLEMENTS**
How livable, inclusive and accessible are they?



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According to URDPFI guidelines,

1. Location of a settlement contributes to growth and functionality of settlements.
2. Planning (Transport systems & mobility) should enable people living in all areas to use advantages of the city and its facilities.
3. **'Accessibility' is the dominant** factor that influences growth and functionality of urban settlements

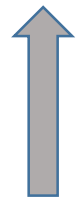
There are multiple other standards and policies that advocate for inclusive and equitable accessibility in urban areas. SDG, NMSH Parameters, NUTP 2006, TOD Policy, SLB for Transport etc. which have been considered in the study

What is this accessibility re we talking about today!

Thematic areas and Indicators of Accessibility

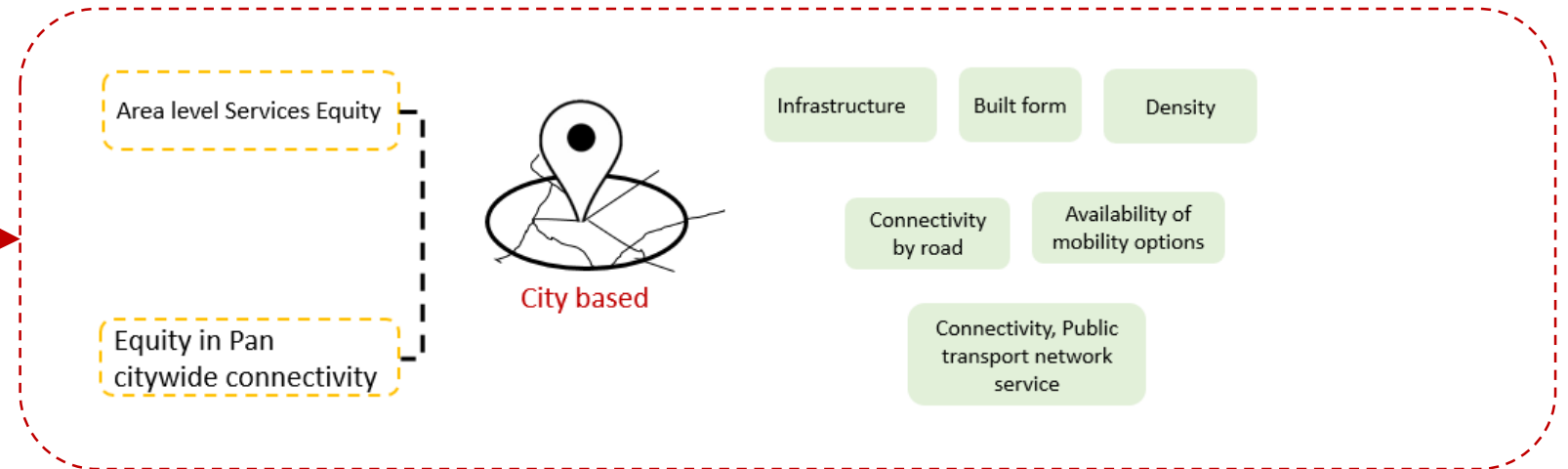
Hierarchy of Spatial Accessibility

Pan City



Access to Mobility options

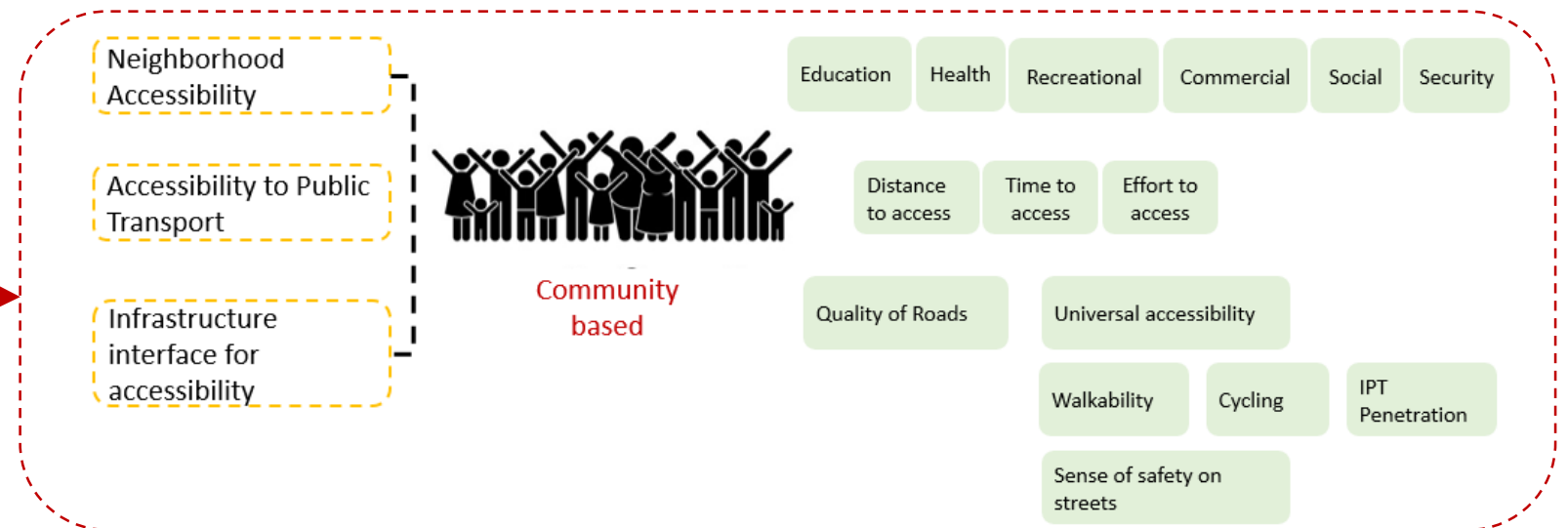
- To plan a bus network
- To plan a metro network



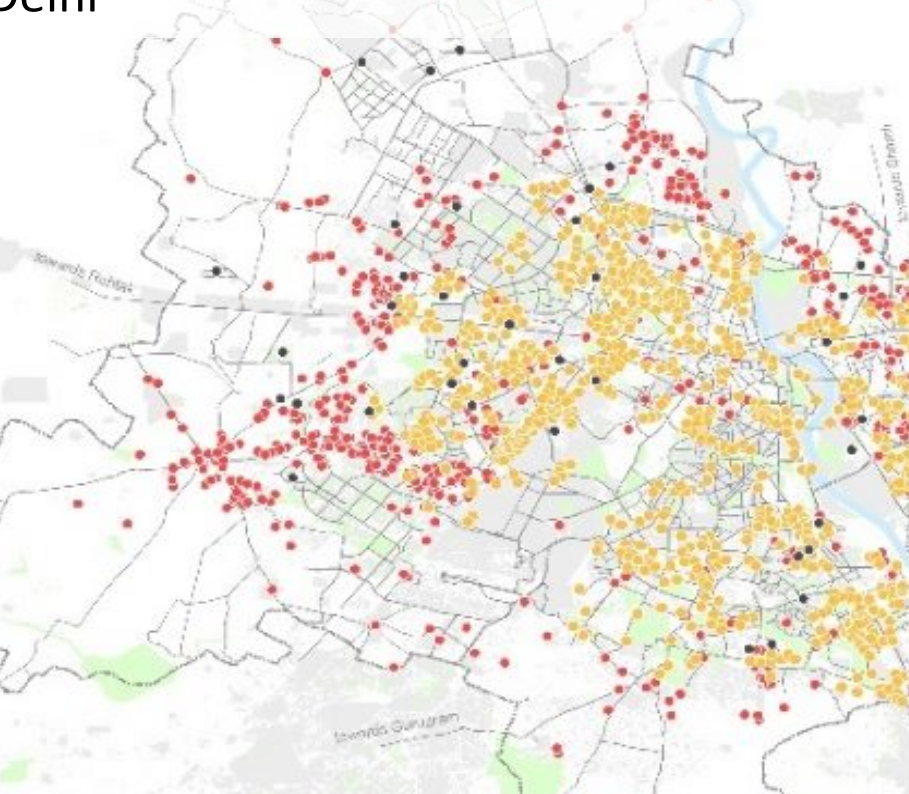
Closer to home

Intra-neighborhood access

- To access road, to home, shop, to office, to park, to shop etc. etc.



to examine the accessibility parameters in Delhi



A map of Delhi, India, showing the distribution of accessibility parameters. The map is overlaid with a grid of red and yellow dots, representing different locations or data points. The dots are concentrated in the central and eastern parts of the city, particularly around the Connaught Place and Indraprastha areas. The map also shows major roads and the Yamuna River.

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graph TD
    Root[Settlements in Delhi] --> Formal[Formal]
    Root --> Informal[Informal]
    Formal --> Planned[Planned Settlements]
    Formal --> Unplanned1[Unplanned Settlements]
    Informal --> Unplanned2[Unplanned Settlements]
    Planned --> Legal[Legal]
    Planned --> SemiLegal1[Semi-Legal]
    Unplanned1 --> Legal
    Unplanned1 --> SemiLegal1
    Unplanned1 --> Unauthorized[Unauthorized colonies  
Urban villages]
    Legal --> PlannedColonies[Planned demarcated colonies]
    SemiLegal1 --> OtherHousing[Other housing areas]
    SemiLegal1 --> AffordableHousing[Affordable housing areas]
    Unauthorized --> Regularized[Regularized Unauthorized colonies  
Notified Urban villages]
    Regularized --> LowerAffordability1[Relatively lower affordability]
    Unplanned2 --> SlumsJJ[Slums  
JJ Cluster]
    Unplanned2 --> Formalized[Formalized through notification/naturalization]
    Formalized --> SemiLegal2[Semi-Legal]
    SemiLegal2 --> Designated[Slums Designated Areas  
Resettlement colonies]
    Designated --> LowerAffordability2[Lower Affordability]
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Planned standard areas

Rest 2/3rd of Delhi's population

Built form, degree of compliance with standards, legality, land ownership, land price , population density highlights three characteristically different areas



Low-income area
type A

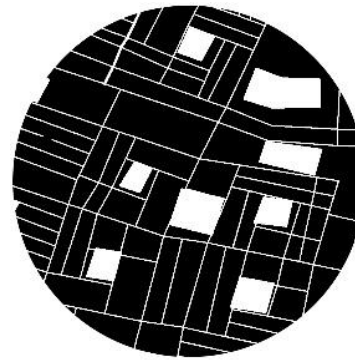


Poothkalan



Organic Unplanned low-income settlements
are mostly built up
(avg. **89% built-up**)

Low-income area
type B



Madangir Colony



Low-income Planned settlements
have relatively better built-up to open space ratio
(avg. **77% built-up**)

Other settlements



Greater Kailash



Planned settlements
conform to most MPD norms and have a
balanced built-up ratio
(avg. **63% built-up**)

Built form, degree of compliance with standards, legality, land ownership, land price , population density highlights three characteristically different areas



Income Group	Low-income areas A	Low-income areas B	High-income areas	Source
Settlement structure	Unplanned	Somewhat planned	Planned	GIS, MPD gazette notifications
Compliance with standards	-	As per MPD norms for sub standard areas and LIG/EWS areas	As per MPD Norms	Economic Survey of Delhi 2019-20, MPD 2021
Formal recognition under ambit of MPD	Formal	Formal	Formal	MPD 2021, amendments, MPD gazette notifications of DDA
Legality	Semi-legal	Semi-legal	Legal	Economic Survey of Delhi 2019-20
Land ownership	yes	Yes	yes	Economic Survey of Delhi 2019-20
Cost of land	land value of Rs 23,280 per sqm	land value Rs 70,080 to Rs 23,280 per sqm	land value Rs 70,080 to Rs 46,200 per sqm	Revenue Department of Delhi, Circle rates
Population	2/3 rd Population		1/3 rd population	Economic Survey of Delhi 2019-20, MPD 2021, Electoral list of Delhi

5 key findings from our on-ground assessment

Differences in Area level Equity - Low-income areas have higher built-up but other areas have high share of qualitative spaces



Within Kalkaji District

- Low-income areas as Jawaharlal Nehru camp, Govindpuri, and Tughlakabad Extension had 1.4 to 1.2 times more built-up inhabiting 2 to 3 times more people per unit space compared to its counterpart.
- On other hand planned settlements like Greater Kailash I and CR park had more qualitative open spaces as park, playground and more area on roads

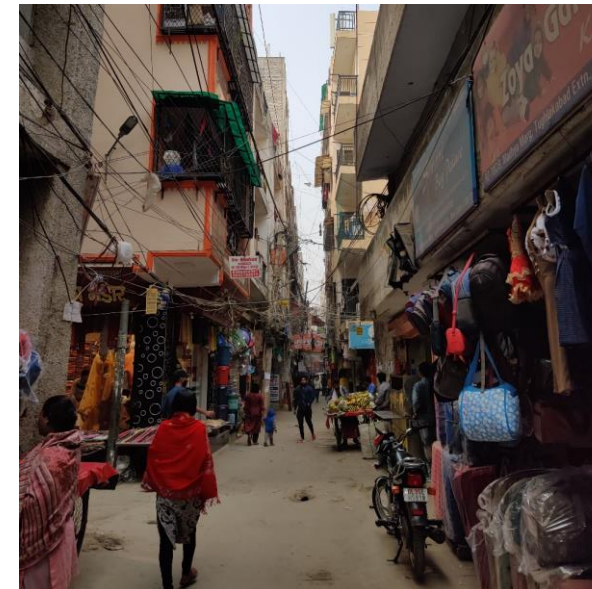
Built fabric of Govindpuri



Built fabric of Greater Kailash



Typical street in Low-Income settlements



Typical street in Other settlements



	Low-income settlements	Other settlements	Standard (MBBL 2016, URDPFI, MPD 2021)
Population Density (pph)	700-1400	300-400	900 pph for sub-standard areas Rest – 300-400 pph
% area on roads	4%- 12%	19%-24%	URDPFI - 25-35% MPD 2021 – 20- 30%
% area on open spaces	1%- 11%	11%-24%	

Multiple source: Census, DUAC reports, revenue Department Delhi, Electoral list of Delhi

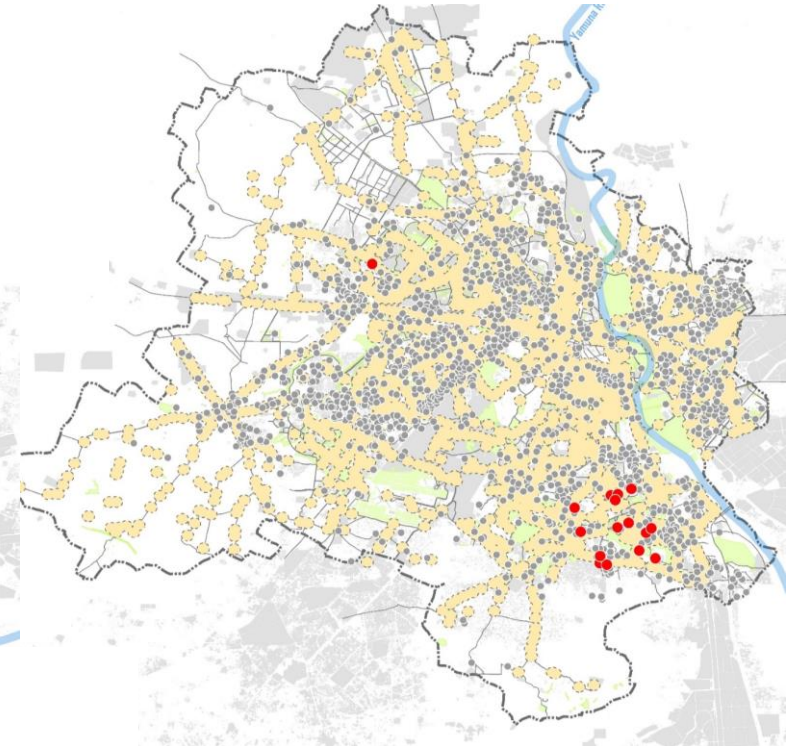
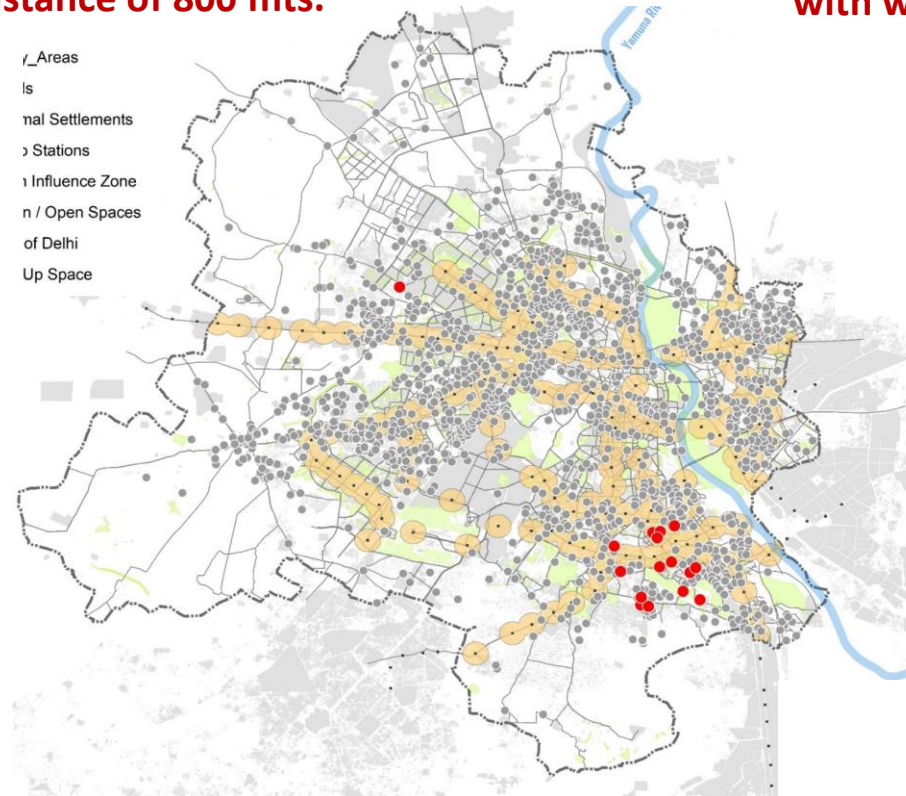
1 Differences in Built form with Kalkaji District



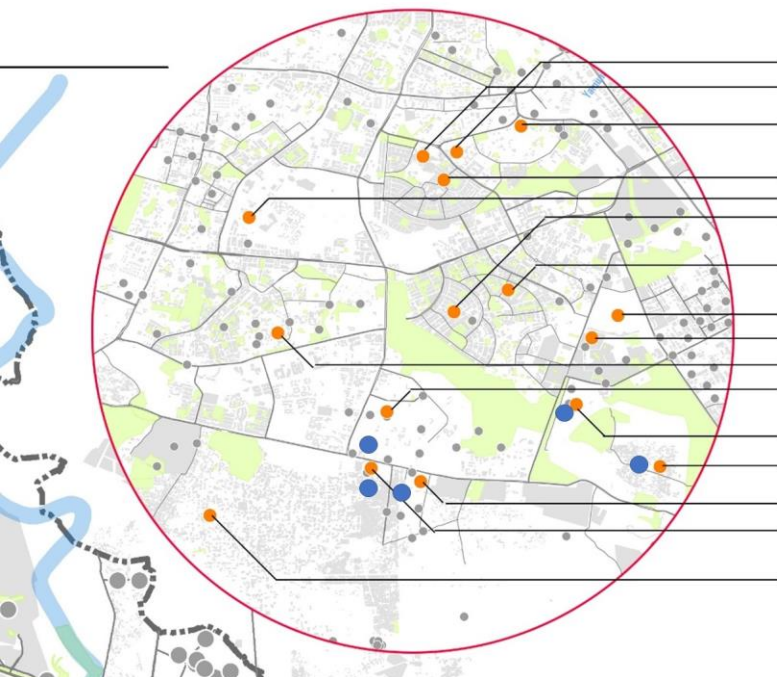
Low Income Areas

**Existing Delhi Metro network
with access distance of 800 mts.**

**Delhi Bus network
with walkable distance of 400 mts.**



Settlements and their connectivity with Arterial roads



Zamrudpur, EoK
Black E, EoK
Garhi, EoK

Kailash Colony
Shahpur Jat
Greater Kailash I
CR Park

Govindpuri
JLN Camp
Khirki Ext
Madangir

Tughlakabad Ext
Tughlakabad Vilg

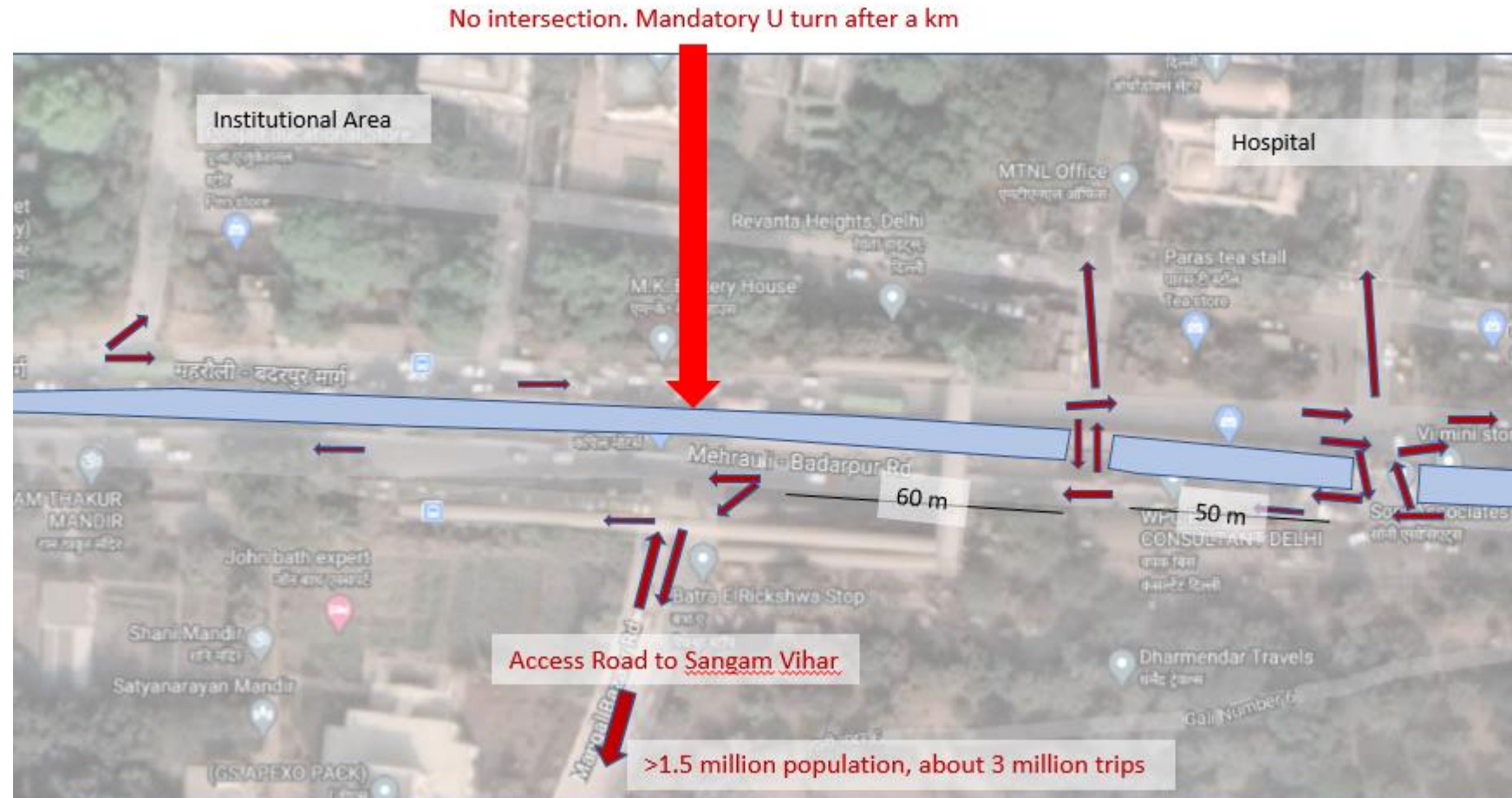
Tigri Ext
Khanpur

Sainik Farms

Lack of direct access to functional arterial roads

These areas didn't have a direct access road connecting the settlement to arterial road and for areas that had, either it was blocked or diverted to facilitate through traffic

1. The low-income areas Jawaharlal Nehru camp, Govindpuri, and Tughlakabad Extension do not have direct connectivity and adequate last mile connectivity to arterial road and transit network. Often they have to be dependent on multiple modes
2. For Sangam Vihar area, with 1.5 million people generating over est. 2 million daily trips. It was observed that
 - Despite an access road, the traffic to and from the area is diverted and blocked.
 - In this case one is forced to take a U turn 1 km ahead. This not only increased their distance in commuting, but also induces more physical effort in a trip and renders access to other public transport mode options difficult.





Mobility pattern indicates more physical effort in a trip



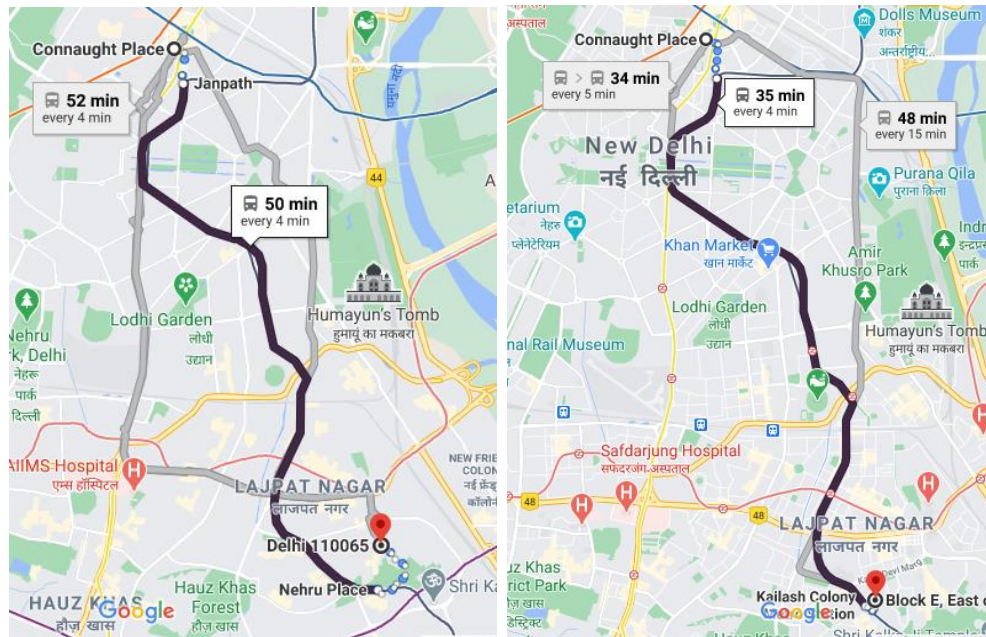
Modal Split

- In Delhi, 39 % of daily trips are on walk and cycle, 47% trips are within 6 km (Census 2011)
- But for Delhi's urban poor 77 % of commute on foot, 60 % trips are within 4 km and 80 % within 6 km

Draft Policy for enhancing Walkability Delhi

PT network

Most low-income settlements do not have a direct connectivity by formal public transport network



Garhi Village to Connaught Place in metro

East of Kailash to Connaught Place in metro

Commuting to major locations via public transport was assessed for the settlements. It was found that despite being located within same neighborhood, for low-income areas

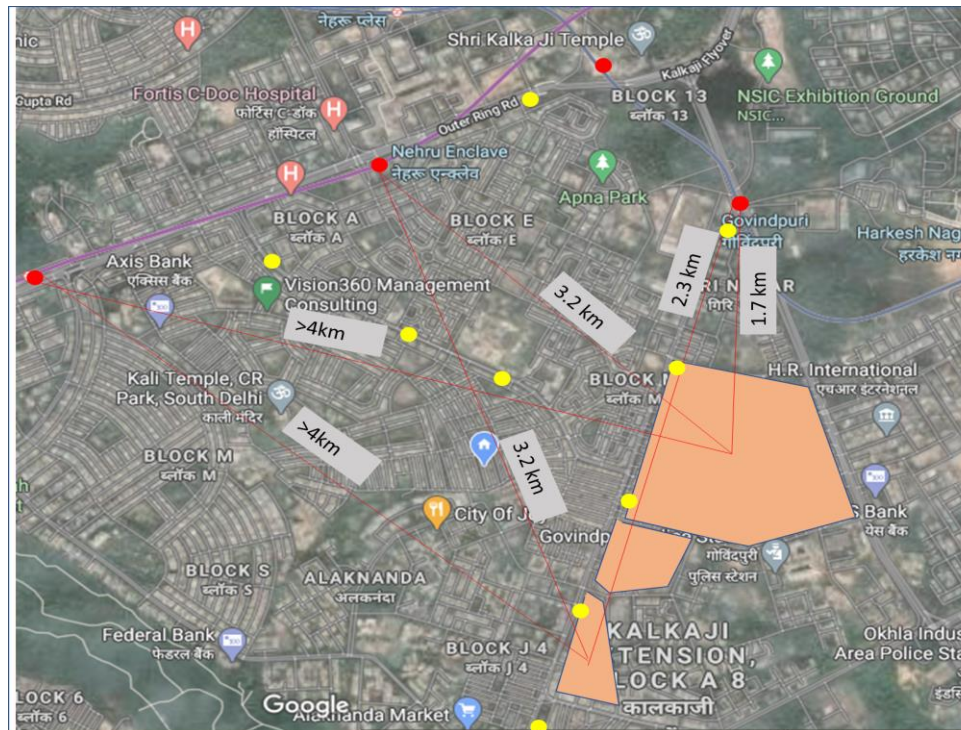
- walk time in a trip increases by 1.2 to 1.8
- increase in transfer – commuting from most area involves more than one mode
- increase in trip cost, by 1.5 to 3.5 times higher

While distance is not the issue, the increase in walk time, and trip cost definitely is.

Not all low-income areas have access to Mobility within prescribed standards

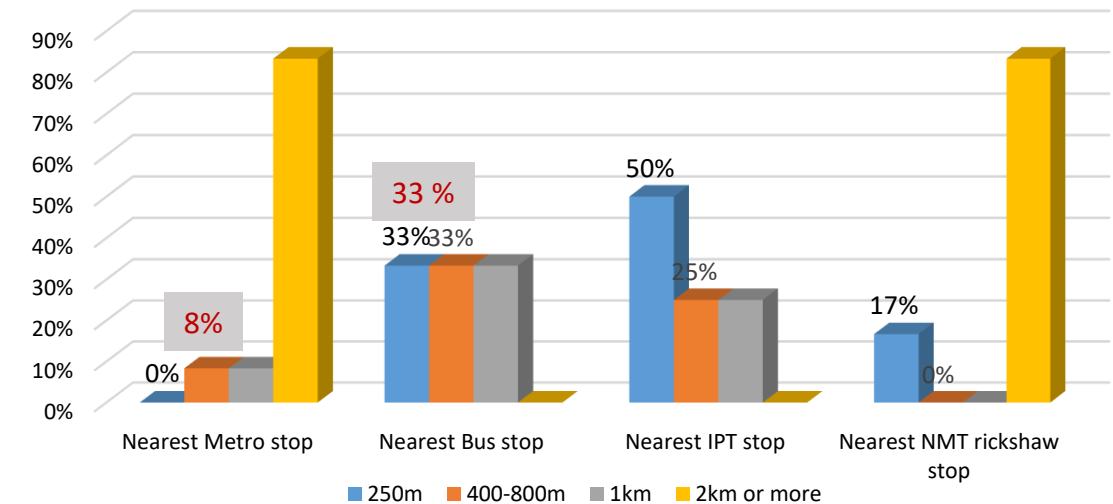
Within Kalkaji District

- while Greater Kailash and CR park can access metro station closer to neighborhood, Low-income areas like Jawaharlal Nehru camp, Govindpuri, and Tughlakabad Extension are dependent on three modes and two transfer with Grameen seva, E-rickshaw and then reach metro
- In this case the metro stations are beyond mobility network of IPT that connects these areas.
- And in case a person chooses to use buses, the service remains insufficient and at times involves intra-mode transfers. It was also observed that the frequency of buses for one route crossing these areas can vary from 10 minutes to over 40 minutes.



- Metro station
- Bus stop

1/3rd settlements have access to bus stop and only a few had access to a metro station within prescribed standards



It was also found that it also adds to trip cost. At times it was also found that to skip transfers and extra cost people tend to walk a significant distance to access formal public transport, this increases the amount of walk time

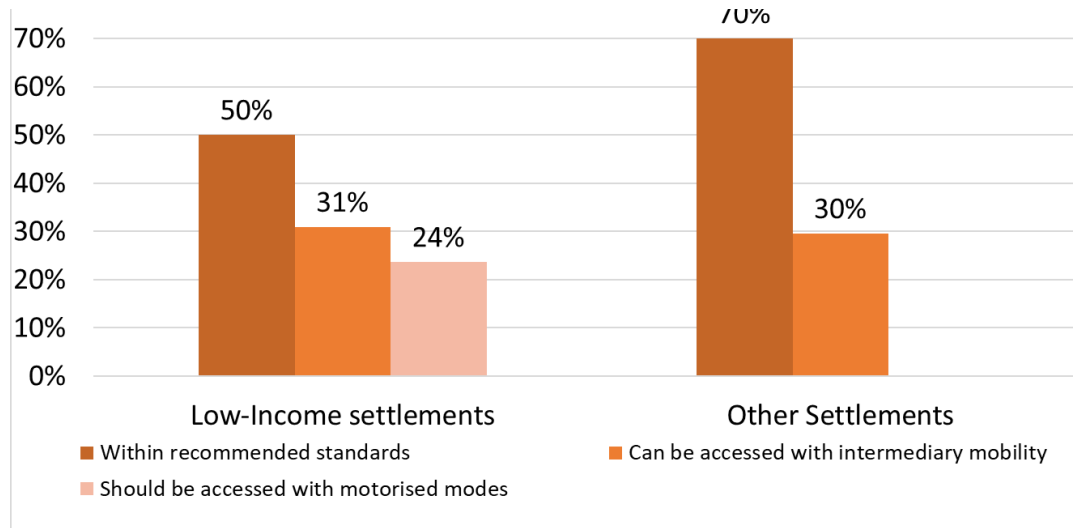
If commuting by public transport is Rs 800-1000 per month, and if he/she considers an IPT as a connecting mode an additional expenditure of Rs 1000 increases.

Most settlement don't have access to intra-neighborhood amenities within standard

MPD 2021 guidelines and URDPFI together prescribes 11 intra-neighborhood amenities essential for a neighborhood with significant population size beyond 5000. It was found that

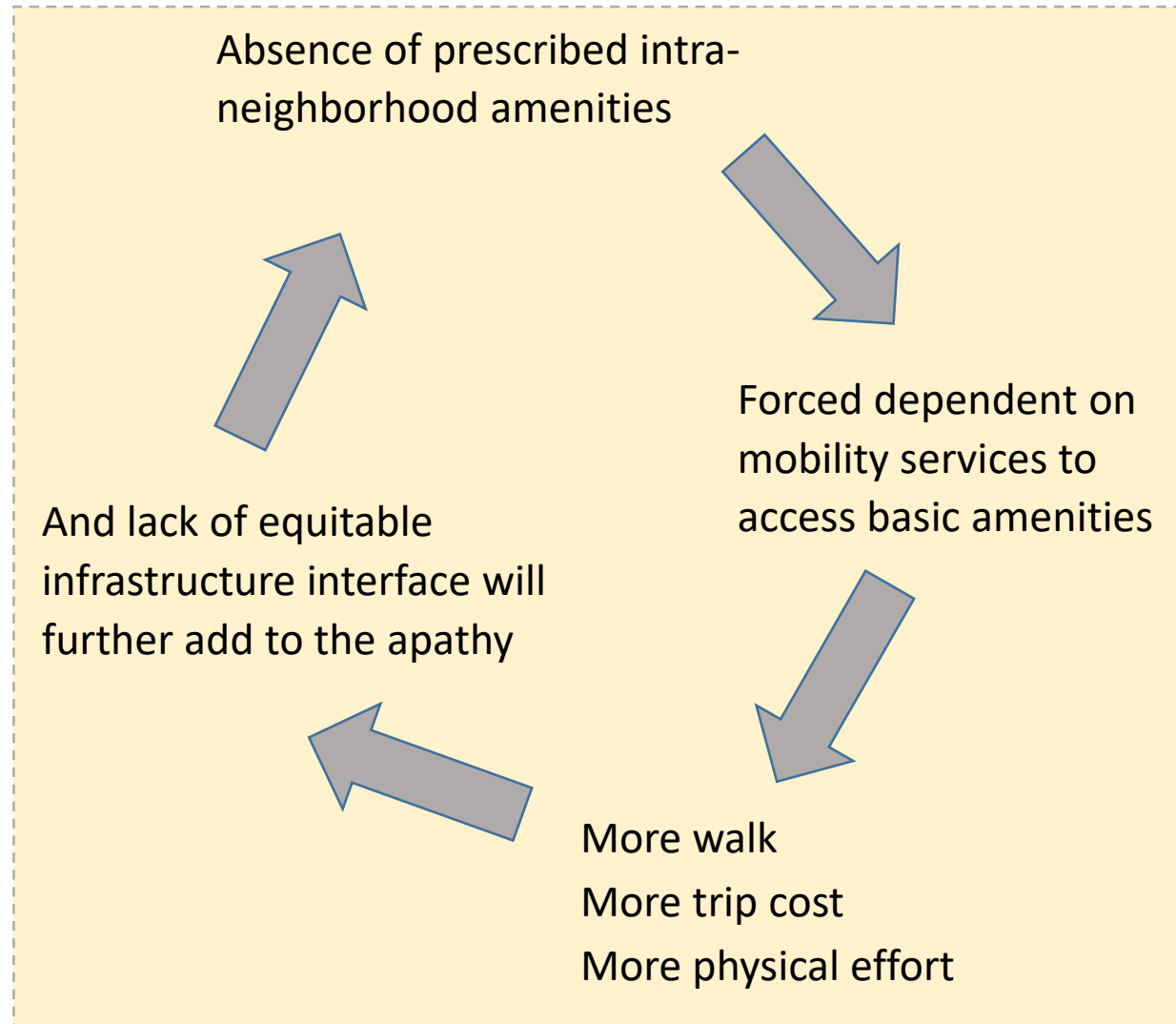
- Low-income areas have access to barely 50 % intra-neighborhood amenities within recommended access standards and had to be dependent on motorized modes to the access rest
- While planned settlements had access to most within prescribed standards, the rest could be accessed by a intermediate mode of transport

Access to intra-neighborhood amenities within prescribed access distance



- Most of the areas like Tughlakabad extension, Poothkalan, Zamrudpur, JLN Camp, Govindpuri lacked etc lacked park, playground and open spaces.
- People living in Tughlakabad Extension have to access primary healthcare and local market area only in Govindpuri and other areas like Tughlakabad Village didn't have access to formal security or local police booth.

Settlement structure too amplifies disparity in access



Local inner street network



Though all areas fell short of meeting adequate street infrastructure, it is the low-income areas that is impacted more from lack of it

Neighborhood street network

- It was observed that the actual road width in these areas ranged from 1 to 4 metres.
- Areas like tughlakabad extension and Poothkalan have local street network of width not more than 1.5 metres average.
- Additionally, these are broken, have manholes, sometimes unpaved, has electric poles etc. etc. And wherever there is a bit available width, it is encroached with parked vehicles.
- It was also found that a considerable length of road within Sangam vihar area, Tughlakabad Village was unpaved leading to more water clogging, mud and broken roads.

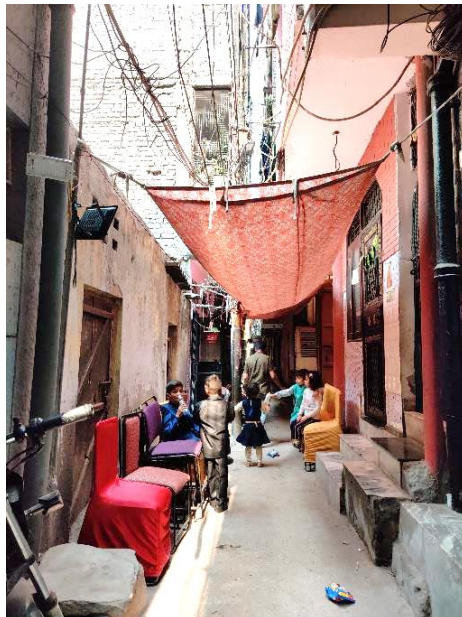
These factors not only create inconvenience but hampers walkability, cycling on which 77 %of urban poor are dependent on. Moreover, the structure of roads in itself eliminates penetration by Rickshaw or IPT modes making commuting more difficult in these areas.

Access road to settlements



Despite all shortcomings these streets are life of community living too

Social life on local street network



- Ironically this also indicates that these areas lack access to social and recreation facilities within neighborhood. And the nearest available facility is far or is costly

Market on streets major roads



- Due to lack of local market area, absence of open space & lack of access to other open spaces, the weekly market is set up along the major access road causing obstruction and bottleneck
- This also aligns with the fact of lack of unbuilt open space, parks and playgrounds unlike other residential areas

Leaving you with few questions here



How walkable are these ?
Can one cycle without hesitance?
Are these streets universally accessible ?
Will you feel safe to walk at nigh night ?
Can a rickshaw come close to your residence?
Can a auto enter these lanes ?
Is Bus/Metro easily accessible

Even if two of your answers are **NO**,
we need to do more about improving access
within these areas and inform policy reforms

END