

Current condition and simple solutions for a human-friendly mobility in Ulaanbaatar city

Amarjargal Nayanbaatar (PhD.)

amarjargal@ctii.co.jp



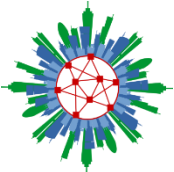
Amarjargal Nayanbaatar

CTI Engineering International Co.Ltd.,

Ulaanbaatar Liaison Office, Mongolia

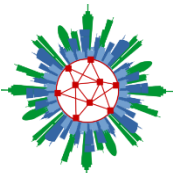
+976 9927-7766

Research field: Citizen participatory urban
development, soft policies on utilitarian cycling



CONTENT

1. Introduction
2. Public transport (bus service) issues
3. Walking issues
4. Cycling issues
5. Conclusion



1. Introduction

HUMAN-FRIENDLY MOBILITY ?

Mobility is a basic human right.

Government and Planners should pay attention to,

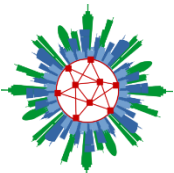
- How to improve mobility environment and condition
- Equality of access for all citizen



- INCLUSIVE MOBILITY
- HUMAN-FRIENDLY MOBILITY



<https://www.ateneo.edu/ais/inclusive-mobility>



1. Introduction

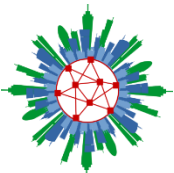
SOCIAL
ECONOMIC
ENVIRONMENTAL

FRIENDLY?

	Car	Bus	Bicycle	Airplane	Train
Space	100	10	8	1	6
Fuel consumption	100	30	0	405	34
CO ₂	100	29	0	420	30
NO _x	100	9	0	290	4
Transport burden	100	9	0	250	3
Accident percentage	100	9	2	12	3

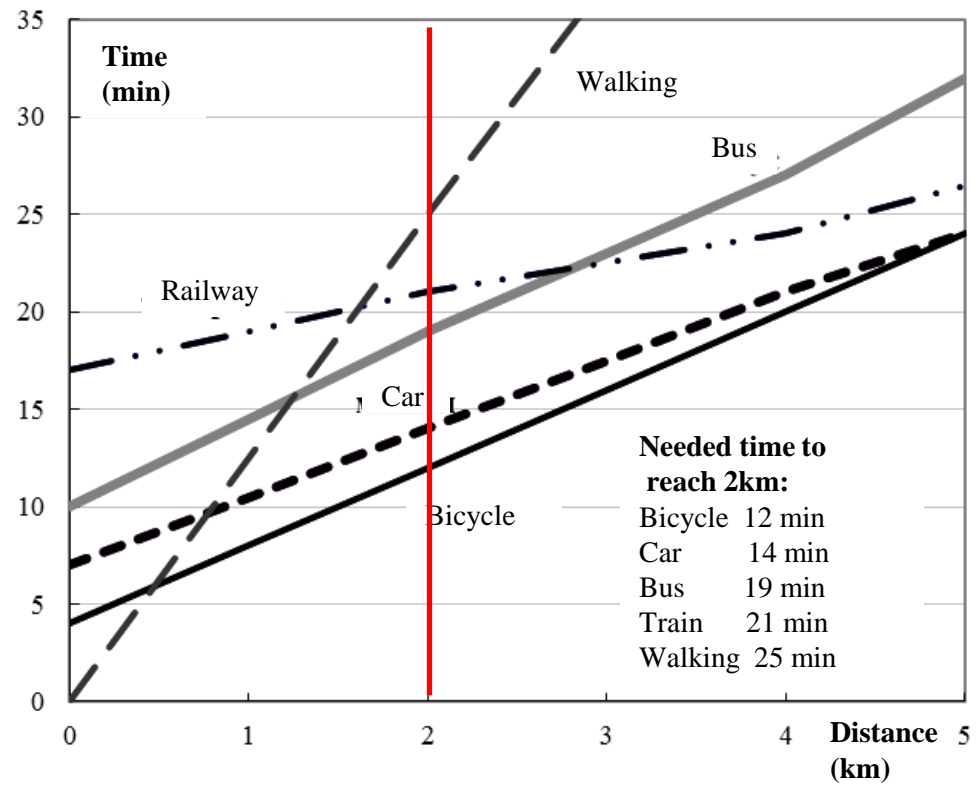
Source: Kokura, 2009

Transport burden: Negative influences on Environment, Society and Economy.
Transport burden per 1 person, 1 km (if car is 100) .



1. Introduction

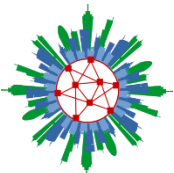
HOW MUCH TIME WE SPEND?



Source: Mori Kinen Zaidan, 2009

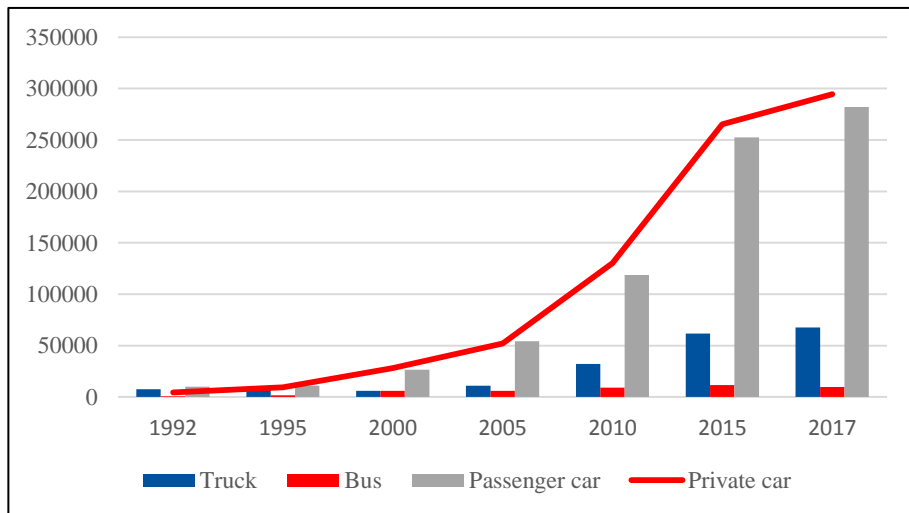
Spending time by means of traffic

Cycling is a fastest way to reach to distance of 2 km.

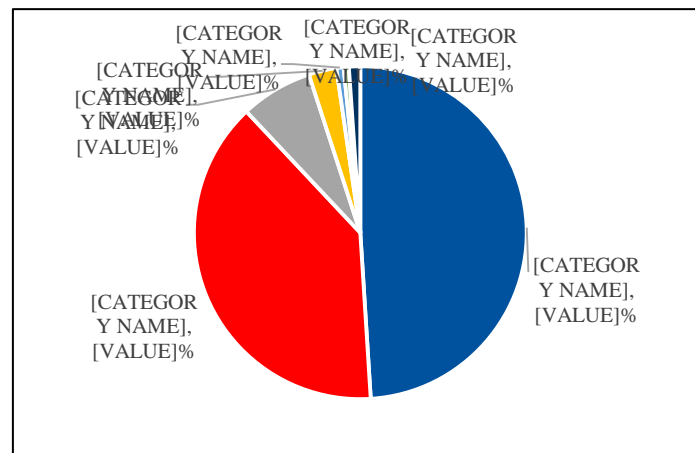


1. Introduction

City of Ulaanbaatar facing a heavy traffic jam, due to high percentage of private car ownership (81%) and private car modal share (49%).



Growth of automobile in Ulaanbaatar city, by vehicle type
Source: Statistical office of UB city, 2010-2018



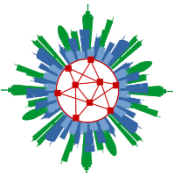
Modal share of Ulaanbaatar city
Source: Traffic planning, coordination and engineering department, MUB

- City government officials trying to ease traffic congestion by
 - Car-oriented policy, or
 - Road improvement (infrastructure)
 - Don't attach importance to **Human basic mobility**



- Public transport
- Walking
- Cycling

Human-friendly mobility



2. Public transport issues

Mass transit modal PLANS

- MRT (Metro) study (funded by JICA) 2011-2013

Not implemented due to high cost and other reasons

- BRT (Bus Rapid Transport) project (funded by ADB)

- TA to formulate a program (2009)
- Urban transport development project (2011-2014)
- Urban transport development

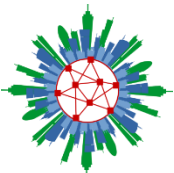
investment program (detailed plan,
construction work:

May 2017-current

Taking too long



Lack of continuity of urban transport policy



2. Bus Service Issues

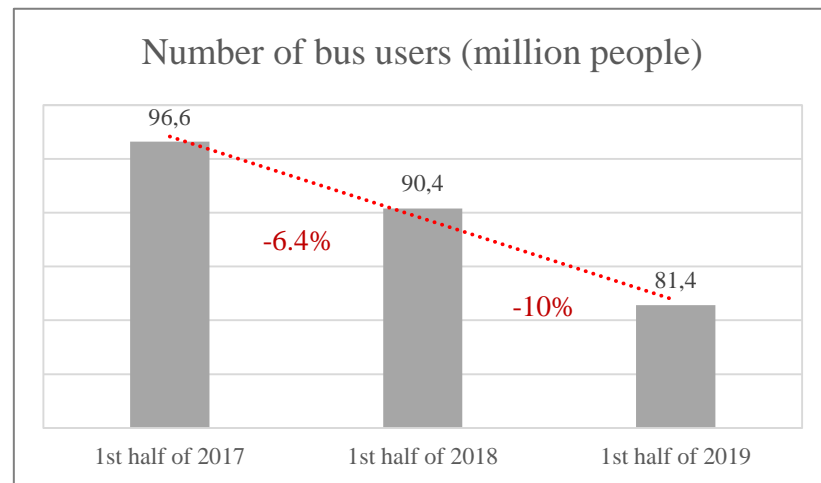
- Bus fare: very reasonable fare system

Single ticket (trolley bus)	300 MNT (about 0.11 US\$)
Single ticket (bus)	500 MNT (about 0.2 US\$)
Transfer in 30 minutes	No charge
Monthly ticket	25.000 MNT (about 9.4 US\$)

- U-money smart card introduced 5 years ago
 - UB Smart bus application ⇒ should improve some functions (search bus stop by name, difficult to understand bus network and bus routes)
 - U-money smart card ⇒ not considered short-term passengers (such as tourists, people from countryside etc.)
- Current problems:
 - Pure service quality (bus driver's manner: use mobile phone while driving, honking)
 - Unsafe driving (sudden brake, not enough time for getting on and off)
 - Passenger's dissatisfaction (long waiting, don't know the arriving time)

- To improve service quality:

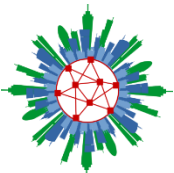
- Trainings for drivers
- Clear information on bus stops and bus routes
- Good image of bus service among citizen
- Awareness of public transport services
- Easy access



Source: Public Transport Service Department, MUB

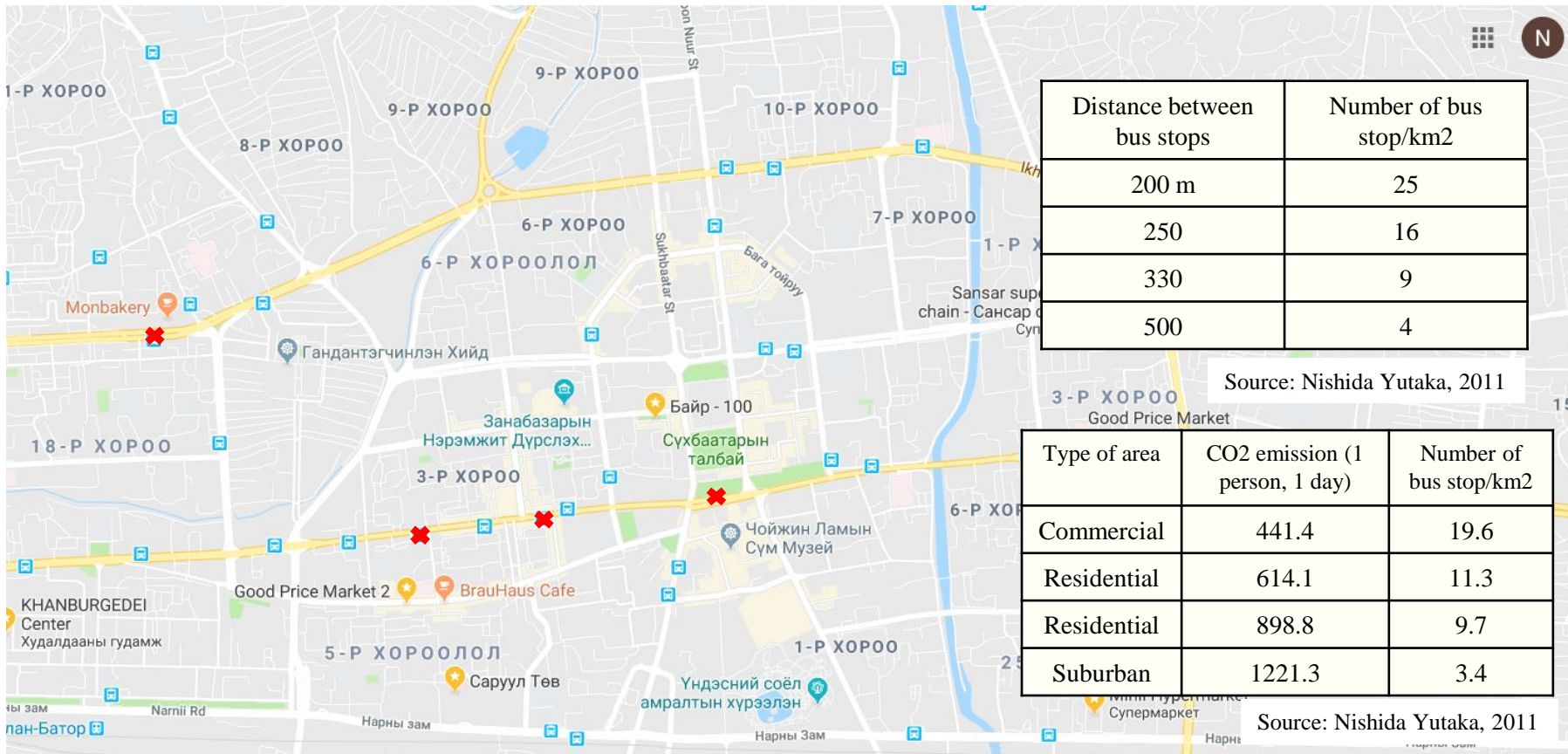


- Number of Bus users decreased in recent years



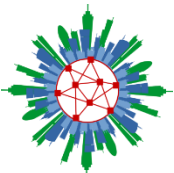
2. Bus Service Issues

Distance between bus stops in central area



- ✕ Previous bus stop
- 🚌 Current bus stop

- Some bus stops were removed on account of the “too close to intersection”, or “interrupting traffic”
- Distance between bus stops was 500-750m before, 1.0-1.4km now.
- Normal distance is 250-500m for passenger’s convenience and accessibility (Nishida Yutaka, 2011)
⇒ CO2 emission (usage of automobile) can be reduced by shortening the distance.

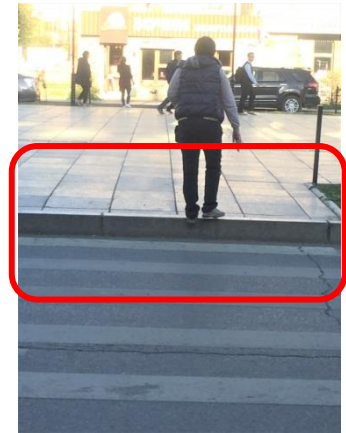
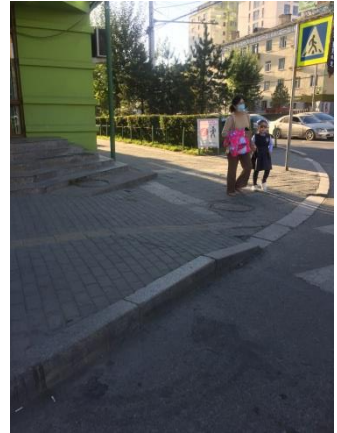
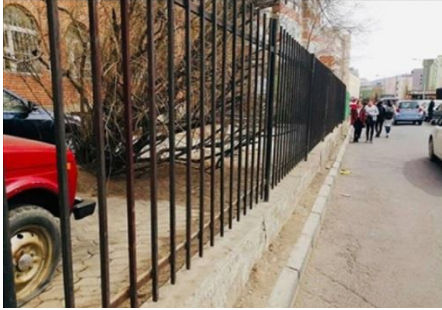


3. Walking Issues

■ Pedestrian way

Good pedestrian environment can reduce total number of single occupant auto use. Pedestrian way should be planned human-oriented and human-scale design

Good examples



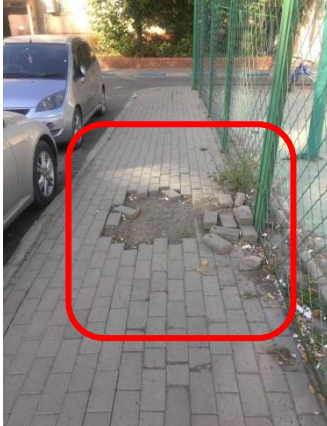
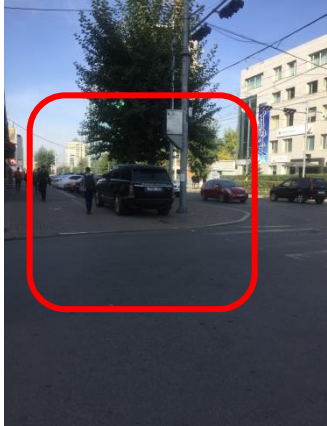
Source: Land department of Ulaanbaatar city

Land acquisition (removal of illegal facilities on pedestrian way) by UB Land department

Pedestrian ramps

Not easy to walk when you are disabled, pregnant and aged

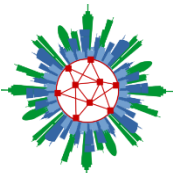
Problems



Parking on the pedestrian way

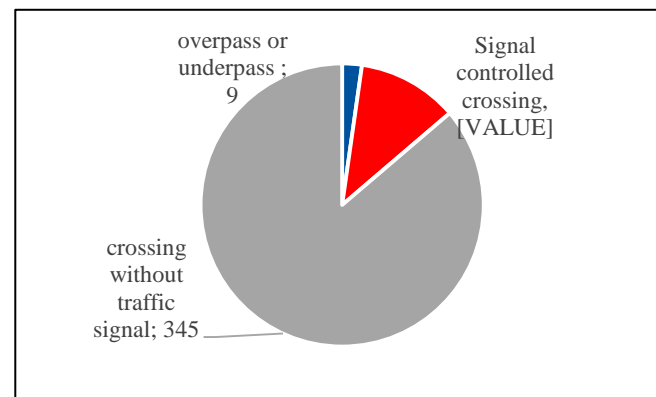
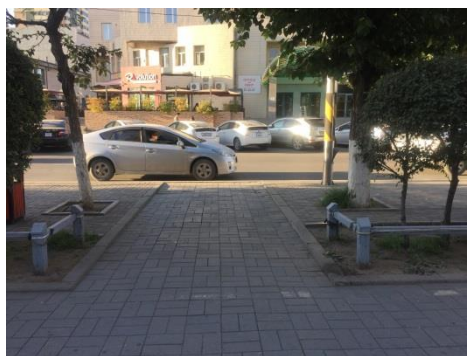
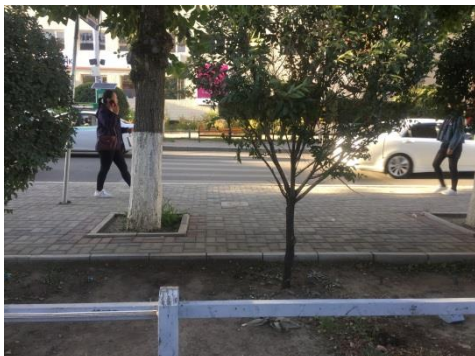
Damaged pedestrian way

Wheelchair (disabled people) can ride free only in the Car free days



3. Walking Issues

■ Pedestrian crossing



Pedestrian crossings in Ulaanbaatar city

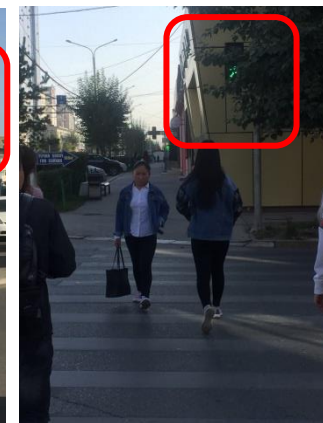
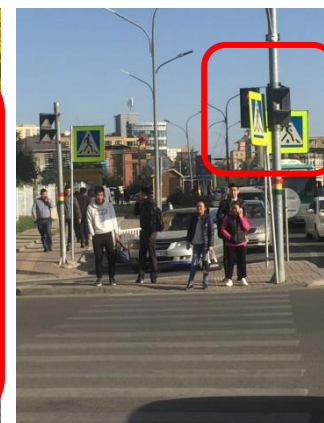
Source: Traffic planning, coordination and engineering department, MUB

Pedestrian crossings should be barrier-free

- Based on the Traffic police department’s proposal, some pedestrian crossing removed or replaced due to “too close between crossing” and “interrupting car traffic” reason.

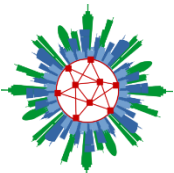


Source: Ulaanbaatar.mn 2019.09.06



Pedestrian crossing and traffic signals should clearly visible

“Provide level crossings every 80-100 m in urban environments. Distances over 200m should be avoided. If it takes a person more than three minutes to walk to pedestrian crossing, he or she may decide to cross along a more direct, but unsafe route” says Global Street Design Guide, National Association of City Transportation Officials.



4. Cycling Issues

- Very low cycling modal share
- Many bicycles are not used daily
- Must improve safety cycling space



Car free day, Ulaanbaatar

To improve cycling lane on pedestrian way, curb should be dropped (into slope)



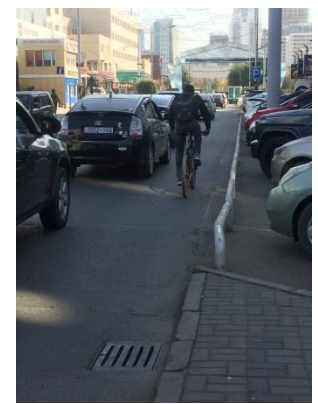
Two kind of cyclists

Low speed cyclists:

High speed cyclists:

Senior citizens, children, women

Young and experienced cyclists



Bicycle path: structure-separated road from driveway, pedestrian way, or cycling lane on pedestrian way.

Bicycle lane: cycling lane on the driveway, specified traffic sign on it.

Revised Traffic rules of Mongolia (2018.08)

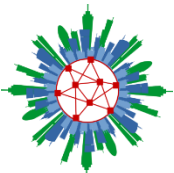


Bicycle path or cycling lane on pedestrian way



Bicycle lane on driveway or bicycle path

- When low speed cyclists use cycling lane on pedestrian way, they should give a way to pedestrians,
- Speed limit should be established



4. Cycling Issues

Promoting cycling



Community cycling is very effective to promote cycling

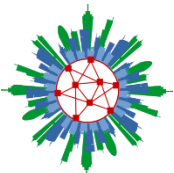
- Effective ways to promote cycling:
- Cycling allowance
 - Information on cycling merits (mental, healthy and saving merits)
 - Construction of bicycle stops near offices, schools, government offices and shops
 - Challenging cycling, walking and use of public transport instead of car

A good example: Officers from Construction Development Center called on citizens to cycle to work



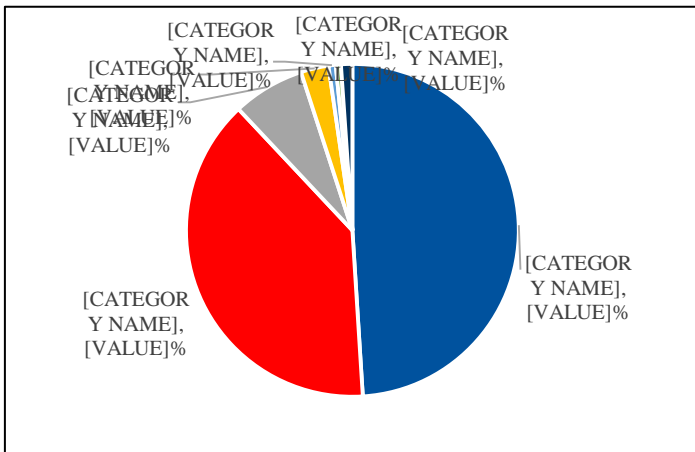
Need to improve and build bicycle stops





Conclusion

- To change point of view from car-oriented to human-friendly policy

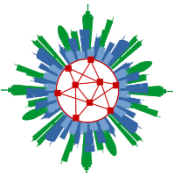


Modal share of Ulaanbaatar city

Source: Traffic planning, coordination and engineering department, MUB

- Focus on how to increase public bus, walking and cycling modal share
- Opportunity to create different smart modal shares (mass transit: BRT?, private: scooter?)
- Reduce private car share

- City government should develop a **COMPREHENSIVE TRANSPORT PLAN** including public transport (bus, taxi), walking, cycling, car and mass transit. Also should specify target percentage of modal share by 2025 or 2030.
- City government should declare **HUMAN-FRIENDLY MOBILITY** policy to citizens and ask to collaborate.
- Conduct various studies: walking environment, cycling environment



THANK YOU FOR YOUR ATTENTION