



Walkability in Asian cities: state and issues

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Clean Air Initiative for Asian Cities Center

ADB Transport Forum

Manila, Philippines

25-27 May 2010

In partnership with

ADB



Outline

- Why walking is important in Asian cities
- Walkability Assessment Surveys
 - Field Walkability Survey
 - Pedestrian Preference Interview Survey
 - Pedestrian-oriented Policies/ Institutional Issues and Guidelines
- State of the Walking Environment
- Summary and Recommendations



How walkable are our cities? (1)



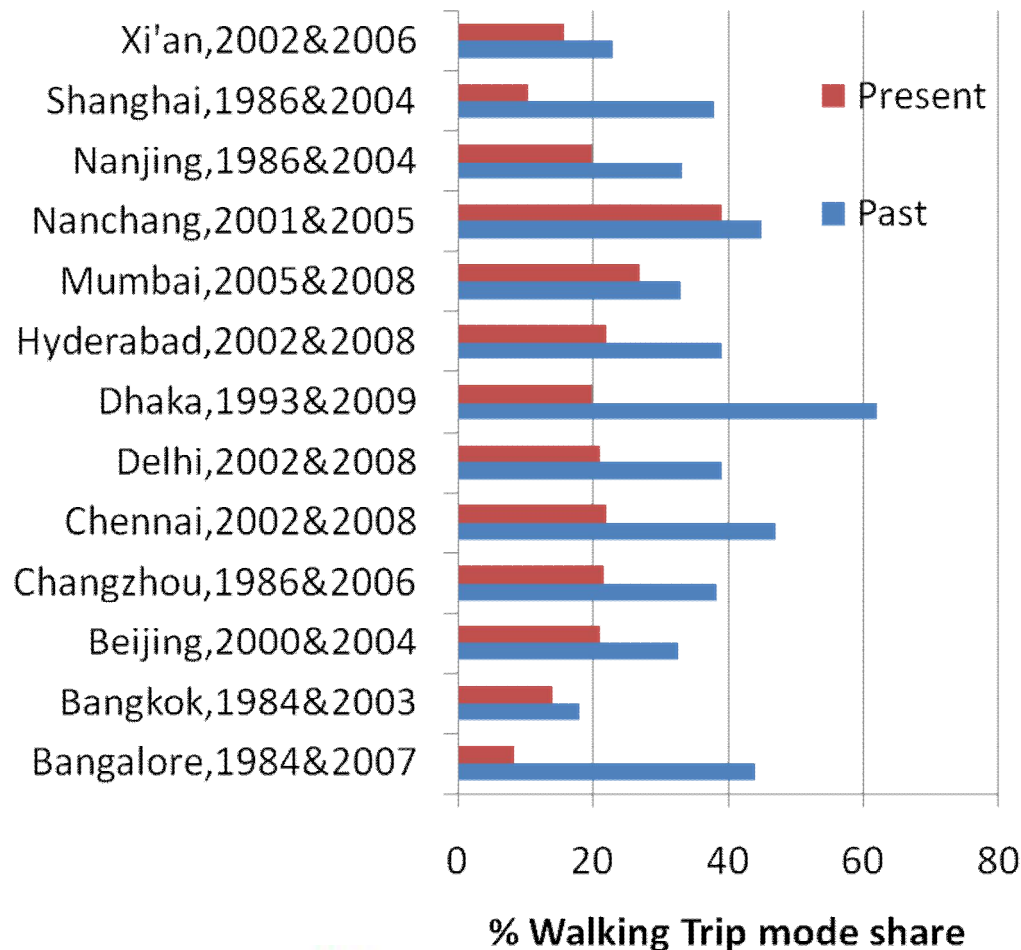
How walkable are our cities? (2)



improving walkability entails improvement not only in the physical infrastructure but equally in the minds of people



Why walking is important in Asian cities



- High urban density
- High urbanization rates
- Lower motorization rates
- Short trip lengths and mixed land use
- Many people especially urban poor rely on walking as major transport mode
- Provides health and environmental benefits (zero carbon and air pollution!)
- Makes cities more vibrant and alive
- However, high pedestrian accidents /casualty and high air pollution exposure



But what is Walkability?

- The extent to which walking is readily available to the consumer as a safe, connected, accessible and pleasant activity – Transport for London (2004)
- A measure of the urban form and the quality and availability of pedestrian infrastructure within a defined area.– Seilo (2004)
- The “idea of quantifying the safety and desirability of the walking routes” – Center for Disease Control (2009)
- The extent to which the built environment is walking friendly – New Zealand Transport Agency (2009)
- Describes and measures the connectivity and quality of walkways, footpaths, or sidewalks in cities
 - ...some aspects are objective, and therefore easily measurable, but others are subjective. – Livi and Clifton (2004)



Walkability Assessment Methodology (1)



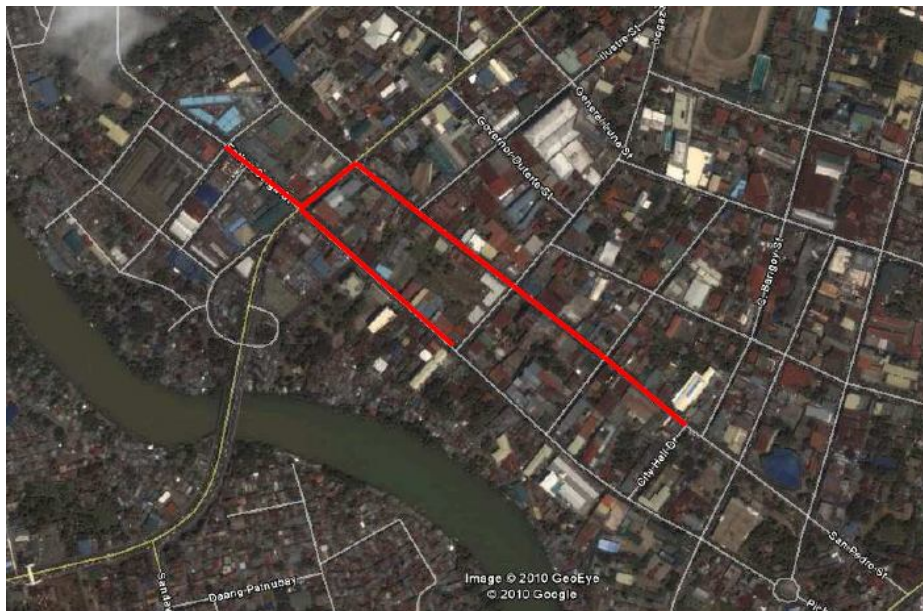
- Walkability Assessment – Surveys in residential, educational, public transport terminals, and residential considering pre-identified pedestrian routes:
 - Field Walkability Survey – based on the Global Walkability Index
- Nine Parameters - Walking Path Modal Conflict, Availability of Walking Paths, Availability of Crossings , Grade Crossing Safety, Motorist Behavior, Amenities, Disability Infrastructure , Obstructions, Security from Crime
 - Pedestrian Preference Interview Surveys
 - Profile of the respondents – travel behavior
 - Preference of the respondents on walkability and pedestrian facilities improvements
 - Survey on Policies and Guidelines/Stakeholder survey



Walkability Assessment Methodology (2)



- Surveys for 13 cities with ADB and CAI-Asia/ FK support - Cebu (Philippines), Colombo (Sri Lanka), Davao (Philippines), Hanoi (Viet Nam), Ho Chi Minh City (Viet Nam), Hong Kong SAR (PRC), Jakarta (Indonesia), Karachi (Pakistan), Kathmandu (Nepal), Kota (India), Lanzhou (PRC), Manila (Philippines) Ulaanbaatar (Mongolia)



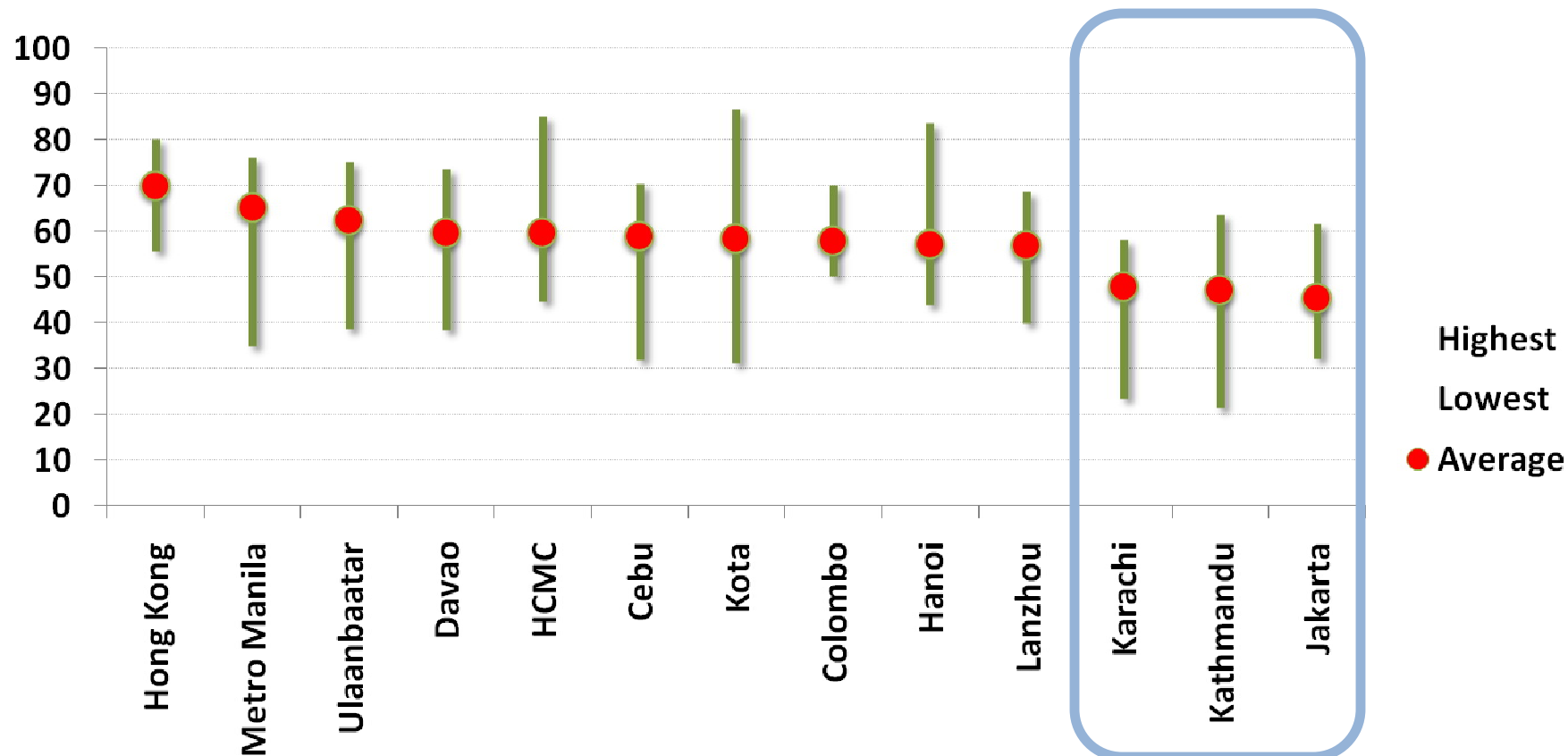
Davao: Commercial Center
(San Pedro Street, Quirino St., Father Selga Avenue)
1.7 km



Hong Kong: Residential
Whampoa Garden Site 3 Blk 8
0.8 km – 10 mins



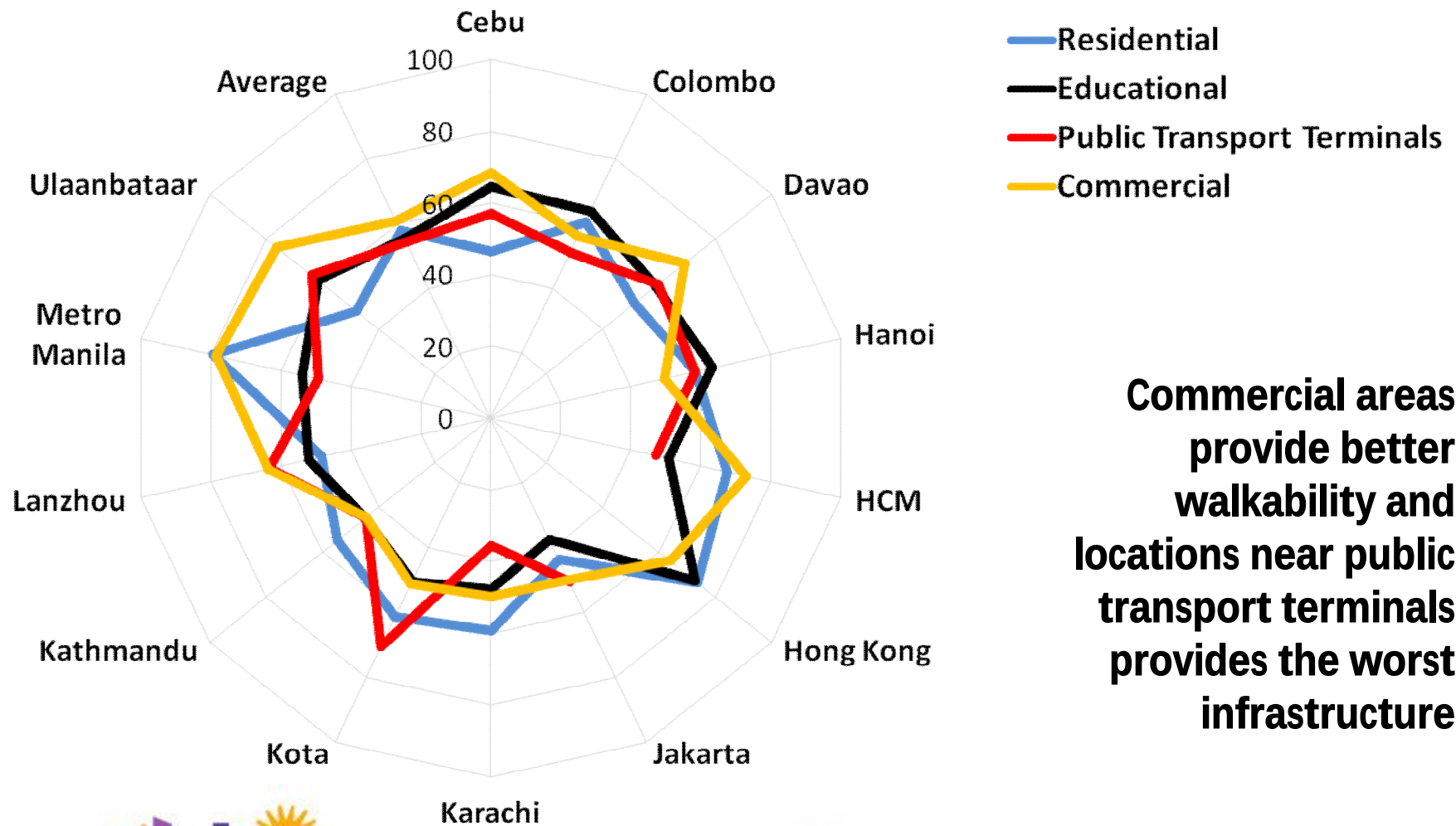
Field Walkability Assessment Results (1)



The walking environment varies significantly depending upon the location



Field Walkability Assessments Results (2)



Commercial areas provide better walkability and locations near public transport terminals provides the worst infrastructure



Field Walkability Assessment Results (3)



	Highest	Lowest	Average	City-Highest	City- Lowest
1. Walking Path Modal Conflict	80	53	65	Hong Kong	Karachi
2. Availability Of Walking Paths	74	48	58	Hong Kong	Kathmandu
3. Availability Of Crossings	87	53	69	Kota	Kathmandu
4. Grade Crossing Safety	76	45	60	Manila	Hanoi
5. Motorist Behavior	72	41	58	Hong Kong	Jakarta
6. Amenities	85	32	49	Hanoi	Kathmandu
7. Disability Infrastructure	61	21	39	Hong Kong	Kathmandu
8. Obstructions	75	33	56	Hong Kong	Jakarta
9. Security from Crime	77	44	63	Kota	Jakarta
Walkability Score	70	45	58	Hong Kong	Jakarta

All cities except Hong Kong gave the lowest rating for disability infrastructure



Pedestrian Preference Survey Results (1)



Profile and travel behavior

- More than 4500 people were interviewed in 13 cities
- 51% of respondents said that their households had no vehicles
- About 67% of trips are within 30 minutes
- About 30% trips are less than 3 km and 20% within 3-6 kms

Respondent rating of pedestrian facilities

- About 36% consider walkability in the “bad” or “worse” category while only 17% consider walkability as either “good” or “best”
- Davao (36%) , Hong Kong (27%) , Manila (22%) respondents considered their walkways are good or best
- Kathmandu (78%), Jakarta (71%), Kota (69%) considers their walkways as bad or worse
- About 40% of respondents consider that they are most exposed to air pollution while walking



Pedestrian Preference Survey Results (2)



Preference of Respondents

- Respondents top priority is to provide "Wider, level and clean sidewalks/ footpaths" followed by "removal of obstacles/ parked cars from sidewalks/ footpaths" and least priority was for "improvement of disability infrastructure"
- About 49% prefer at-grade crossings and 36% skywalks
- About 45% prefer pedestrian crossings to be within every 50m while 33% can walk to 100m
- If there are no improvements in pedestrian facilities, 82% of respondents says that they would shift to motorized modes of transport



Policies, Institutions and Guidelines

Survey Results (1)



Policies and Guidelines (examples)

- Sri Lanka – 1/10th of space of all roads within urban areas exclusively for NMT - Action Plan for Traffic Management in Greater Colombo (2008)
- Indonesia – Traffic and Road Transport Act of Indonesia – “...If a pedestrian crossing does not exist, pedestrians must take care of their own safety when crossing the road. People with disabilities must wear special signs that are visible to motorists .”
- India - Indian Road Congress - Footpath separated with carriageway with an unmountable kerb. Pedestrian crossings at mid block only when the distance between intersections is minimum of 300m. Provision of controlled crossings at mid blocks when peak hour volumes of pedestrians and vehicles are such that $PV^2 > 1$ million (Undivided carriageway), $PV^2 > 2$ million (divided carriageway) , Stream speed of greater than 65 kph



Policies, Institutions and Guidelines Survey Results (2)



Dedicated Institutions

- Dedicated institutions having legal and financial resources that supports pedestrian's needs is lacking
- Political support has also been identified as one of the barriers in promoting improvement of pedestrian facilities considering the significant number of pedestrians and public transport commuters



Policies, Institutions and Guidelines

Survey Results (3)



Allocation of Resources

- Most cities do not sufficiently allocate resources for pedestrian facility improvement
- In cases where there are allocated resources, it may not be relevant to pedestrian's needs
 - Bangladesh (Dhaka)
 - 0.24% of the municipal budget to pedestrian facilities for next 20 years
 - India (Bangalore)
 - 0.6% of total budget for next 20 years
 - Future vision/target – Pedestrian trip mode share to be 20% after 20 years
 - Ratio of investment on footpaths and on "skywalks" = 25 to 75% - Bangalore Pedestrian Policy, BMLTA (2009)



Summary

- Asian cities have high pedestrian mode shares but declining due to inadequate pedestrian facilities, high number of pedestrian accidents and exposure to air pollution
- Walkability assessment surveys, especially in high pedestrian areas, are needed in order to better understand the behavior and preference of pedestrians and plan for their needs
- Most Asian cities have insufficient policies that prioritizes pedestrians and current guidelines for pedestrian facilities are not comprehensive enough to address pedestrian's needs
- Insufficient resources are allocated for pedestrian facilities
- Unclear institutional and legal mandates and uncoordinated activities in improving walkability and pedestrian facilities in many cities



Policy Recommendations

- Develop pedestrian-oriented policies and guidelines
 - Comprehensive national and city policies focusing on pedestrians including pedestrianized streets and open spaces
 - Setting reduction targets on pedestrian accidents
 - Conduct regular walkability assessment surveys
- Create institutions for NMT and allocate more resources
 - NMT units in city government
 - Increase investments on relevant pedestrian facilities
- Integrate in urban transport plans and projects
 - Review design guidelines for urban transport and pedestrian facilities including facilities for transport-disadvantaged people
 - Mandate inclusion of pedestrian plans in transport projects and use level of service (LOS) concept



Boon or bane?

Using the same money as required for constructing 1 km metro, one can, on average, construct 350 km of new quality sidewalks !!

“An increase of 5% trip mode share would result in 9% decrease in CO₂ emissions in a typical Indian city !!”



It leads to the open manhole across the road... A blessing in disgust.

Times of India - 16 Apr 2010

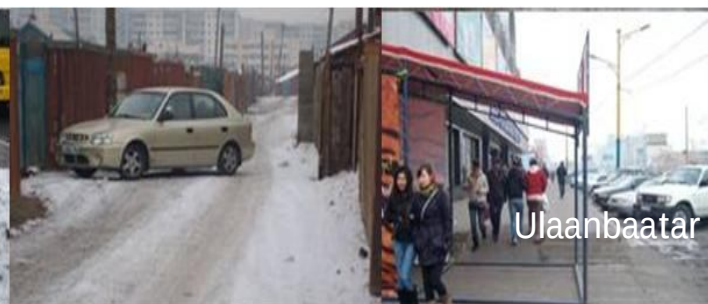


For more information, pictures and videos... see

http://cleanairinitiative.org/portal/knowledgebase/topics/topic_overview/NMT-Walking



Kathmandu



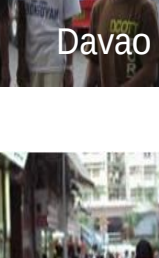
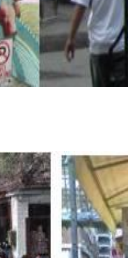
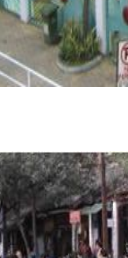
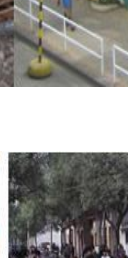
Ulaanbaatar



Lanzhou



Metro Manila



Davao



Hong Kong



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