Sidewalks and Public Transportation: Keys for Air Quality and Traffic Congestion/Flow

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Pollution and Congestion:

Unpaved sidewalks and excessive number of wheels on roads has resulted in extreme-pollution and congestion, increasing the percentage of airborne Particulate Matter (PM) pollution, and placing Kathmandu on the top 10 list of most polluted cities in the world.

Figure 1. Pedestrian, vehicles and pollution

Sidewalks: The Source and Cause:

More than 85% of sidewalks in Kathmandu are unpaved and the cause of 90% of the PM pollution. Poor road conditions and lack of sidewalks causes pedestrians to use roads, creating safety hazards.

Figure 2. Sharing sidewalks and roads

Air Quality and Traffic-Congestion: Findings

Four Air Quality Sensors were stationed at a junction at Gausala Square, Kathmandu and from 1490 data sets, the air quality came to 161 Air Quality Index (AQI), 303.8 $\mu g/m^3$ PM_{10} and 78 $\mu g/m^3$ $PM_{2.5}$, which is an extremely high air quality level and very harmful for public health.
Replacing current ring-road traffic with electric buses will reduce the number of vehicles by 83% and the number of wheels by 37%.

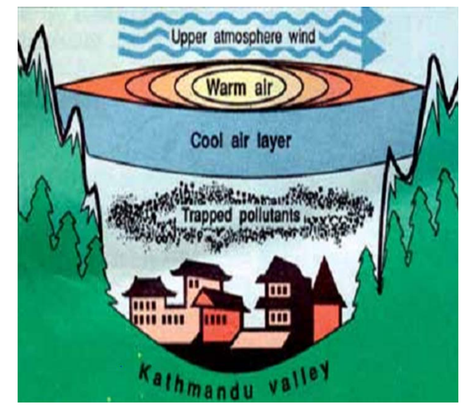

Figure 3. Gausala Square, Traffic-flow data collection spot

Sidewalk Re-Construction and Public Buses

All roads must be accompanied with paved sidewalks to minimize pollution. Buses make up only 1% of public transportation. Increasing this number will reduce the number of mini-tempos and micro buses.

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References

"Dhuwalo" (Smoke and Dust) presentation at *Martin Chautari, Kathmadnu*.