

Strategies to Minimize User Inconvenience During Road Rehabilitations

Duminda J.M.S., Bandara J.M.S.J.

Many of the nation's transport infrastructure reaches the end of its life cycle, work zones are becoming more and more prevalent on our roadways. This increased exposure to work zones increases likelihood for inconvenience to road users. Level of inconvenience and how they perceive will be changed according to the user category depending on their involvement as passengers, pedestrians, drivers, residence, commercial parties or others. It is important to identify user inconvenience and activities causing inconvenience to them and introduce strategies to eliminate or minimize the inconveniences.

Road construction activities can lead to make some negative impacts such as increasing air pollution, noise pollution, traffic delays, crashes, disturbing to access, disturbing to existing drainage system and water stream, disturbing to utility services, water pollution, increasing vehicle operating cost and vibration, etc. All of these have certain economic and social cost.

Aim of this paper is to identify how the users perceive the inconveniences due to road rehabilitation work and to propose strategies to minimize or eliminate them. Field surveys and user interviews were used to gather information relating to different types of inconveniences. Analysis shows that, air pollution, traffic delays, noise pollution, disturbing the accessibility, disturbance to water ways and drains and interruptions to utility services are mostly disturb the road users during road construction.

Air pollution is the most impacted inconvenience to road users. Air pollution occurs due to many construction activities. Roadway excavation, site clearing, barrow pits, road base and sub base constructions, paving and surfacing, stone crushing plants, asphalt mixing plants, machines and vehicles makes lot of dust and emissions to the environment.

Traffic delays are the next most impacted inconvenience to road users. Road construction projects can potentially cause significant delays to road users. During road rehabilitation, traffic is allowed to pass on existing road or divert to another route. Going through road construction sites require additional time due to many obstructions. Traffic diversions to alternative roads also need extra time causing traffic delays.

Noise pollution comes next that have many inconvenience to road users. The major sources of noise are blasting, compaction, travels of heavy equipment and machineries, generators and pile driving, etc. Disturbing the accessibility during road construction also has a higher value. Many of excavations, storing materials, parking machineries, forming new levels due to designs and road closures disturb accessibility of road users.

Many construction activities can lead to disturb water ways and drains during construction period and sometimes even after that. If un-compacted earth surfaces are left exposed and construction activities are carried out during the rainy seasons, erosion and siltation severely may occur. When excavated material within the trace is used as fill material, or if proper planning and management of cut and fill operation is not followed, large amount of materials need to be kept in temporary storage thereby causing environmental issues such as erosion, silting, landslides etc.

Road users are suffered due to interruption of utility services (water, electricity and telecommunication) during road construction. Normally service lines are damaged due to construction activities. During shifting of these service lines, failure of providing continuous service may be happened. Strategies are proposed for all of the above inconvenience with conclusions and recommendation.