

Analysis of Human Factors in Nighttime Work Zones

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In an effort to reduce the congestion impacts of highway projects, Departments of Transportation and municipalities have increased the frequency of nighttime construction work. Safety in the work zones, however, is a major issue: a recent study reports that 42% of all fatal work zone crashes occurred during nighttime work, despite the reduction in traffic. Nighttime construction activities also have other negative impacts on the workers, including sleep deprivation, exhaustion, and difficulties in balancing the conflicting pressures of family life and nighttime. These suggest that there is a trade-off between the collective benefits of nighttime work and the negative effects for workers.

The project examined the impacts that nighttime construction activity has upon the workers and sought to define work standards to mitigate these factors. Thirty construction workers on four highway construction projects, along with a focus group of union laborers, were interviewed for their opinions and comments to questions on human factors related to work on nighttime work zones in the fall of 2000. Field data from interviews were analyzed for human factors such as sleep deprivation, eating habits, commuting difficulties and social/domestic issues.



The research found evidence of long working hours, social and family disruption, long commutes and sleep deprivation. The workers interviewed agreed that nighttime work has a negative impact on their body rhythms, and a negative impact on their social and family life. They were almost unanimous in their statements that their families react negatively to their working at night.

A majority of the workers generally preferred daytime work. However, a few liked working at night because they were able to adjust their schedule accordingly and also because working during the nighttime resulted in extra money. The vehicle speeds of traffic through the work zone and safety were also a major concern to all the workers. Nighttime construction has many advantages and efforts to address or mitigate its impact on the nighttime worker are very important.

Lessons from this study were published as:
J. Holguín-Veras, K. Ozbay, R. Baker, D. Sackey, A. Medina, and S. Hussain, "Towards a Comprehensive Policy of Nighttime Construction Work,"
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