UNIVERSITY TRANSPORTATION CENTER
RESEARCH BRIEF

An Impact of Safety Rest Area Closures on Fatigue-related Highway Crashes in Northwest

Kishor Shrestha, PhD

Background

In the United States, SRAs were introduced along the highways in the early 1900s (Cardone 1965). They were constructed as part of the interstate highway system, after the highway system began construction in 1956. There are over 2,700 SRAs across the United States (NCHRP 1989), which were envisioned as an important facility where highway users could take not only a restroom break, but also opportunity to get some rest, especially for tired and weary drivers before continuing their journey safely. A full-size SRA may provide several services including but limited to rest room facility, parking, drinking water, picnic tables, free coffee, tourist information, etc. Studies recommend that spacing between the SRAs should be approximately 50 miles (NCHRP 1989). A study conducted in Minnesota shows that single-truck crash rate decreased to 0.45 crashes per mile for Interstate Highway segments 10-30 miles from previous SRA from 0.55 crashes per mile for segments 40-50 mile from previous SRA (SRF 2007).

Although SRAs are a remedy for fatigue-related highway crashes, many states closed their SRA for various reasons (NBC 2009). One of the main reasons was due to budgeting issues (Helber 2009). In the last two decades, budget issues with states resulted in many SRAs being shut down for long-term (several months to years). Some states closed two-to-four SRAs and a couple of states closed half-to-all of SRAs they had been operating. Connecticut closed all seven SRAs for an example (Bergal 2017; Polansky and Galal 2019). Using the national average cost, the monetary cost of highway crashes due to closing seven Connecticut SRAs is estimated approximately $2.80 Million per year (Shrestha 2021; NCHRP 1989). Recently, Arizona, California, Florida, Georgia, New Mexico, Louisiana, Vermont, and Virginia closed a number of SRAs due to budget shortfalls.

States also close their SRAs short-term and long-term for routine activities and fixing defects. The routine activities include inspections of electrical, plumbing systems as well as water and wastewater systems and fix any defects as required. Some routine activities demand short-time (within a week), such as safety inspection of electrical and plumbing systems. Other activities need long-time (several months) to complete their routine activities, such as fixing wastewater seepage. For example, Idaho completely shut down the I-84 SRA due to sewage leak in 2019 and reopened temporarily after over 10 months (King 2019). And Washington DOT also completely closed the Horn School SRA to fix wastewater system in the summer of 2020 and it has not opened yet. Figure 1 presents the Horn School and Gee Creek SRAs; they are in Eastern and Southwest regions respectively.

Research Project

The main objective of this study is to determine how the SRAs shut down impacted the fatigue-related highway crashes. The total dollar amount loss due to SRAs shut down will also be computed based on fatigue-related highway crashes in Northwest states. The study findings may help to understand the relationship between SRA shut down and frequency of fatigue-related crashes. The findings could assist states in developing a policy regarding the SRA closures as well as to develop a framework to reduce highway crashes due to driver fatigue. Ultimately, mitigating the drowsy drivers, the US highways will be safer to wide range of highway users.

ABOUT THE AUTHORS

The research team consisted of Kishor Shrestha of Washington State University.

ABOUT THE FUNDERS

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FOR MORE INFORMATION

https://depts.washington.edu/pactrans/research/projects/an-impact-of-safety-rest-area-closures-on-fatigue-related-highway-crashes-in-northwest/