IMPROVED ROAD SAFETY AT WORK ZONES USING ADVANCED TRAVELER INFORMATION SYSTEMS
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Problem statement
- Work zones are considered unsafe locations for drivers because their expectations about the road are disrupted
- Many drivers have difficulties to adapt with work zone changes (i.e. speed and driving lane) and thus, crash rate increases in work zone areas
- Drivers tends to drive at higher speed limits than the temporary speed limit for the work zone
- Qatar’s Work Zone Traffic Management Guide (WZTMG) uses static signs for lane closures

Main findings and recommendation

<table>
<thead>
<tr>
<th>Scenario/Parameter</th>
<th>Speed</th>
<th>Acceleration/ Deceleration</th>
<th>Lane Changing</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Left lane</td>
<td>Second lane</td>
<td>Left lane</td>
<td>Second lane</td>
</tr>
<tr>
<td>Control</td>
<td>94 kph</td>
<td>90 kph</td>
<td>Sharp deceleration</td>
<td>Initiated lane changing 450m before merging point</td>
</tr>
<tr>
<td>VMS</td>
<td>90 kph</td>
<td>85 kph</td>
<td>Smooth deceleration</td>
<td>Initiated lane changing 600m before merging point</td>
</tr>
</tbody>
</table>

Recommendations
- Proper design of VMS messages is critical in terms of driver’s understanding
- VMSs at work zone are more effective than the traditional static signs
- VMSs are recommended as a potentially effective treatment to improve traffic safety at work zones

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