Evaluation of Operational Performance and Proposal of Improvement Schemes for Two Key Intersections in Dhaka, Bangladesh
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Key words: saturation flow rate, capacity, mixed traffic

**Background**
- Heavy traffic congestion (1. demand > capacity) on urban roads
- Lack of systematical land use and transportation planning
- Mixed traffic (2) along with undisciplined user behavior (3)
- Inappropriate traffic operations at intersections (4) (=capacity bottlenecks)

**Purpose**
- To evaluate operational performance of key intersections in Dhaka, Bangladesh, and propose improvement schemes for them to alleviate traffic congestion on urban road network

**Study Sites & Data Collection**
- Two key intersections in Dhaka, Bangladesh
- Video survey time: 07:30~09:30 am, July 13th, 2009
- Data reduction with a resolution of 1/10 sec.

**Improvement Schemes**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Signal Control</th>
<th>Geometric Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonargaon</td>
<td><img src="image1" alt="Current plan" /> <img src="image2" alt="Proposed plan" /></td>
<td><img src="image3" alt="Current plan" /> <img src="image4" alt="Proposed plan" /></td>
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<tr>
<td>Shahbag</td>
<td><img src="image5" alt="Current plan" /> <img src="image6" alt="Proposed plan" /></td>
<td><img src="image7" alt="Current plan" /> <img src="image8" alt="Proposed plan" /></td>
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</tbody>
</table>

**Performance Evaluation**
- Estimated saturation flow rates under the current and proposed plans
- Estimated capacities under the current and proposed plans

**Conclusions**
- Capacity could be increased by 8.5% at Sonargaon and 9.1% at Shahbag in average, if road users completely comply with traffic rules.
- Capacity could be improved up to 44.1% at Sonargaon and 110.2% at Shahbag through proposed schemes.

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