Speed effects of automatic camera enforcement on main road 51

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Background, data, etc.
Results
Conclusions
Speed effects of automatic camera enforcement on main road 51
Enforced road stretch and measuring points

1. Spot speed
2. Spot speed
3. Spot speed

Travel speed measuring

Information
Camera enforcement

Speed display
The schedule and measuring

<table>
<thead>
<tr>
<th>Measurement</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel speed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Before camera enforcement**
- **Long-term effects**
- **Immediate effects**
  - Winter speed limits (80 kmph)
  - Summer speed limits (100 kmph)

Traffic signs exposed 20.5.2003
Summertime mean speed (kmph) before enforcement (2002) and one year after (2004)

Enforced road

Control roads

-1.4
-1.1
-2.4
-3.5
-1.7
-1.9

1.2
0.4
0.1
The percentage of drivers exceeding the speed limit by 1-10 kmph before enforcement (2002) and after during summers (2003 and 2004)

**2003**

- Immediately:
  - at post: Blue - Before: 12%, Yellow - Immediately: -29%
  - near: Blue - Before: 20%, Yellow - Immediately: -27%
  - between: Blue - Before: 15%, Yellow - Immediately: -34%
  - beginning I: Blue - Before: 15%, Yellow - Immediately: -51%

**2004**

- One year after:
  - at post: Blue - Before: 30%, Yellow - After: -12%
  - near: Blue - Before: 20%, Yellow - After: -9%
  - between: Blue - Before: 20%, Yellow - After: -25%
  - beginning I: Blue - Before: 15%, Yellow - After: -35%
  - beginning II: Blue - Before: 15%, Yellow - After: -23%
  - end: Blue - Before: 5%, Yellow - After: -42%
The percentage of drivers exceeding the speed limit by 11-20 kmph and by more than 20 kmph before enforcement (2002) and one year after during summer (2004)

Exceeding by 11-20 kmph

- at post: -38%
- near: -26%
- between: -51%
- beginning I: -68%
- beginning II: -42%
- end: -65%

Exceeding by more than 20 kmph

- at post: -50%
- near: -27%
- between: -63%
- beginning I: -74%
- beginning II: -40%
- end: -75%
### Wintertime mean speed (kmph) before enforcement (2002/2003) and one year after (2004)

#### Enforced road

<table>
<thead>
<tr>
<th>Camera site</th>
<th>before -02</th>
<th>before -03</th>
<th>after -04</th>
</tr>
</thead>
<tbody>
<tr>
<td>at post</td>
<td>82</td>
<td>84</td>
<td>86</td>
</tr>
<tr>
<td>near</td>
<td>88</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>between</td>
<td>90</td>
<td>92</td>
<td>94</td>
</tr>
<tr>
<td>beginning I</td>
<td>96</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>beginning II</td>
<td>82</td>
<td>84</td>
<td>86</td>
</tr>
<tr>
<td>end</td>
<td>88</td>
<td>90</td>
<td>92</td>
</tr>
</tbody>
</table>

#### Control roads

- Kt 51 Soukka: +1,5* (from 2002/03 to 2004)
- Vt 25 Dragsvik: -0,3
- Vt 25 Virkkala: -1,6
- outside I: 81,4 kmph
- outside II: -1,3

*ero 02/04, 03 ei vertailukelpoinen
The percentage of drivers exceeding the speed limit by 1-10 kmph before enforcement (2003) and one year after during winter (2004)
The percentage of drivers exceeding the speed limit by 11-20 kmph and by more than 20 kmph before enforcement (2003) and one year after during winter (2004)
## Travel speed

<table>
<thead>
<tr>
<th>Direction</th>
<th>Before -02</th>
<th>Immediately -03</th>
<th>After -04</th>
<th>Differ. 02/04</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki</td>
<td>mean speed</td>
<td>95,4</td>
<td>92,2</td>
<td>93,3</td>
<td>-2,1</td>
</tr>
<tr>
<td></td>
<td>st. deviation</td>
<td>7,4</td>
<td>6,3</td>
<td>6,5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>1262</td>
<td>1385</td>
<td>1812</td>
<td></td>
</tr>
<tr>
<td>Karjaa</td>
<td>mean speed</td>
<td>92,6</td>
<td>90,4</td>
<td>92,2</td>
<td>-0,4 ns</td>
</tr>
<tr>
<td></td>
<td>st. deviation</td>
<td>7,4</td>
<td>6,7</td>
<td>6,2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>1672</td>
<td>1762</td>
<td>1739</td>
<td></td>
</tr>
</tbody>
</table>
The percentage of overtaking vehicles

Before -02 | After -03 | After -04
---|---|---
To East | -28% | -46%

Before -02 | After -03 | After -04
---|---|---
To West | -29% | -50%
Conclusions

Mean speeds

• During summertime (100 kmph) the reduction in mean speeds (1.1 – 3.5 kmph) was about the same immediately after the camera enforcement was introduced and a year after.

• During wintertime (80 kmph) the mean speeds decreased by 1.5 – 4.9 kmph.

• No effects outside the enforced road section.

Overtakings

• The number of overtakings halved (summertime measurement).
Exceeding the speed limit

• In the summertime exceeding the speed limit by more than 20 kmph halved at all surveillance area measurement spots immediately after automatic enforcement. The effect was almost the same a year after the beginning of enforcement.

• In the summertime exceeding the speed limit by 11–20 kmph decreased at least by a fourth at every measurement point.

• Exceeding the speed limit by more than 20 kmph during wintertime halved at three measurement points and at three other decreased at least by a third.

• In the wintertime proportion of speed limit exceedings of 11–20 km/h decreased at least by a fourth at every measurement point. However, the proportion of these exceedings remained at 10–20% during the first winter with the enforcement.
Thank You!