

Drivers' speed behaviour at road section with variable speed limits.

A case study of E67

Siim Jaksi
Dago Antov

Problem

Speeding is one of the main factors contributing road crashes

People generally prefer to drive faster than is safe!

According to the SARTRE 3 survey*, around 20% of the European drivers report driving a little faster or much faster than other drivers.

At the same time, only around 5% state that they drive more dangerously than other drivers.

Apparently, dangerous driving is not related to speed in the mind of most of these drivers.

* Goldenbeld, Ch., van Schagen, I. & Drupsteen, L. (2005)



Speeding is often to considered not an illegal offence by drivers,
but drivers „are caught“ by police

Speeding is driving over speed limit

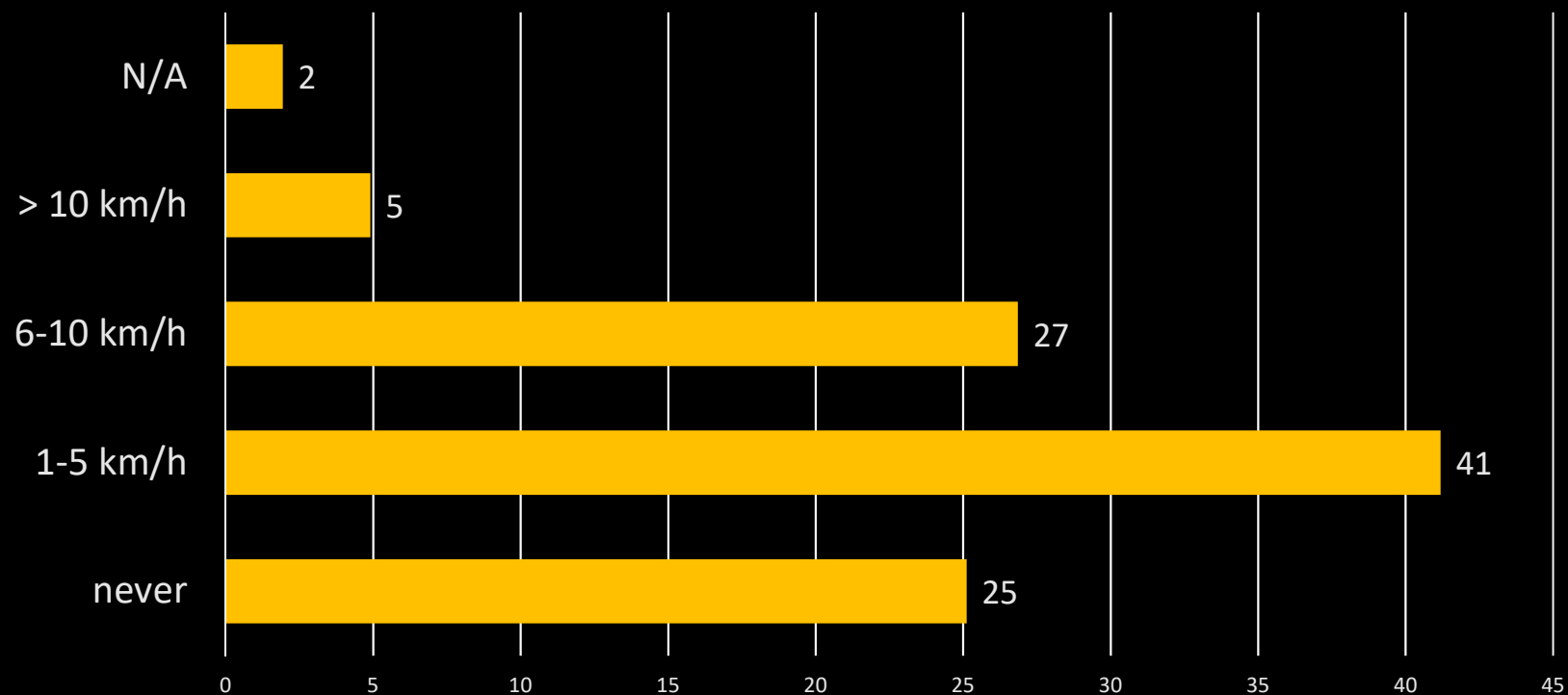
What is the right speed limit?

- APPROPRIATE SPEED – safe speed
 - Traffic conditions
 - Weather conditions
 - Vehicle conditions
 - Driver condition
 - ????

How to estimate the **right** speed?

Speeding is rather common offence

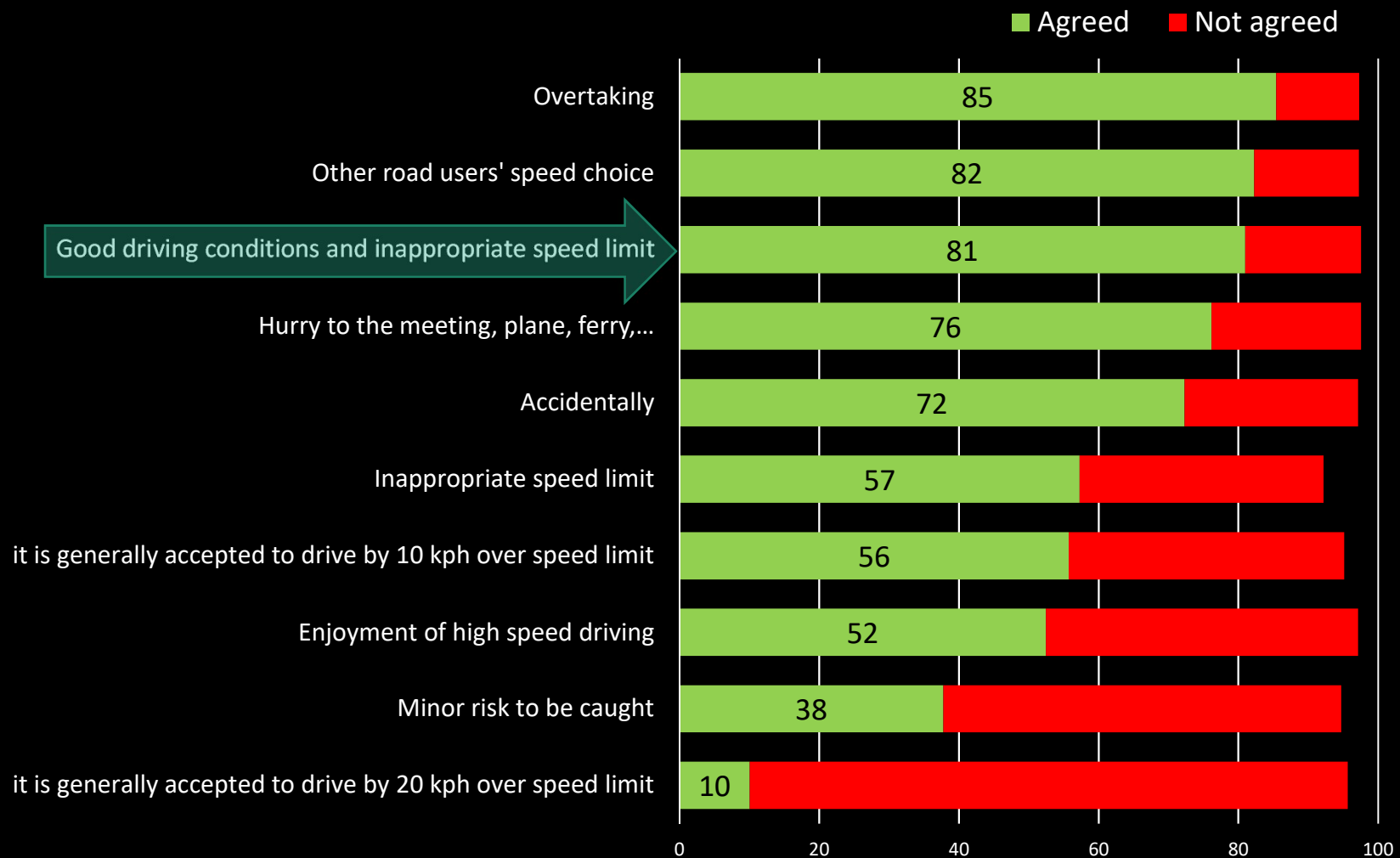
Drivers' self response on speeding at main roads
(% of drivers- often or usually)



Source: SÕIDUKI JUHTIMINE JOOBES, VÄSIMUSSEISUNDIS JA SÕIDUKIIRUSE VALIK 09/2017, Turu-uuringute AS

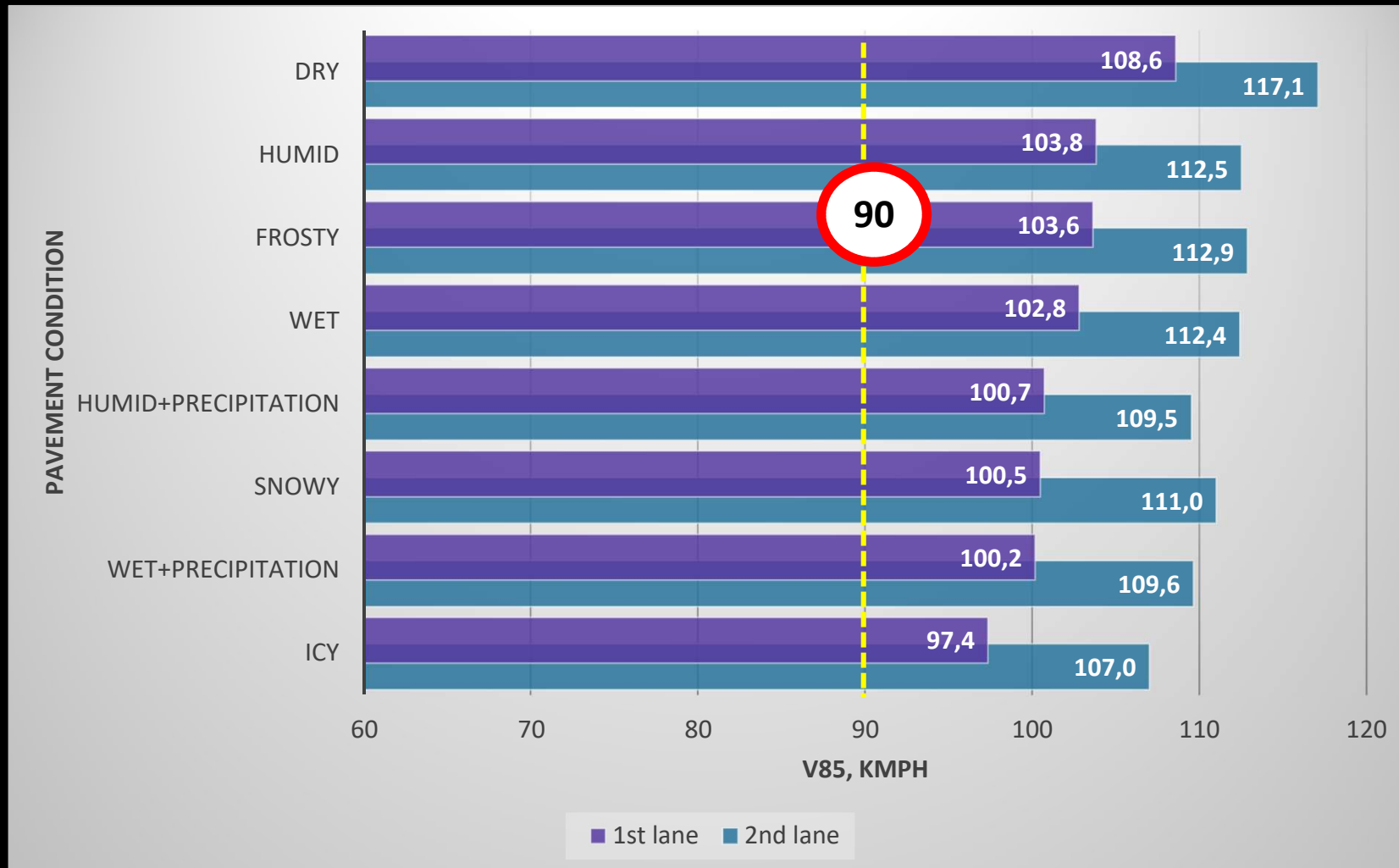
Main explanations of speeding

% of respondents agreed



Drivers' speed behaviour under different weather & pavement conditions

No VSL, regular speed limit 90 kmph



Variable speed limit - VSL

...is a measure which is aimed to follow some of those conditions, regarding infrastructure:

- Weather
- Traffic conditions



Research question

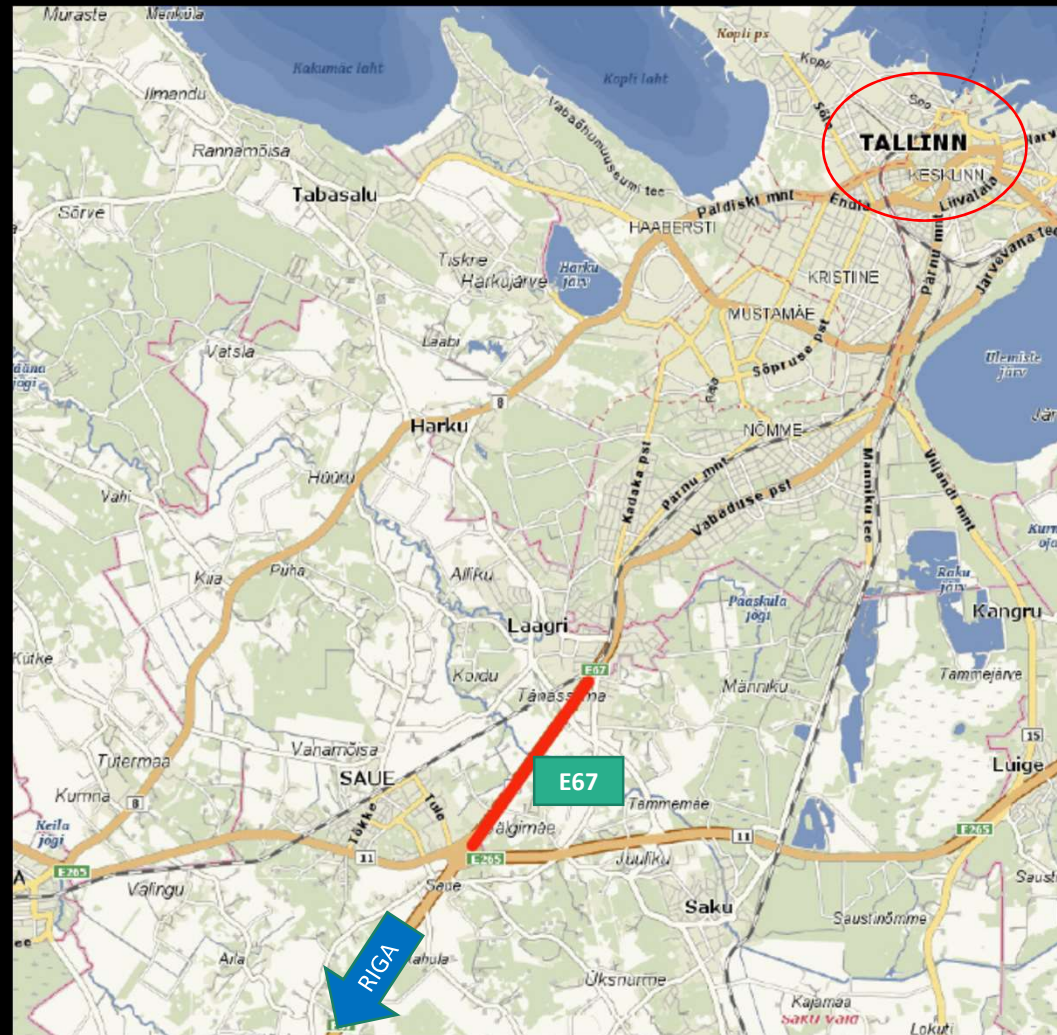
- Do the drivers accept variable speed limits better than regular ones?
- Does this effects on better speed behaviour and thus increased safety?

What is a Variable Speed Limit (VSL)?

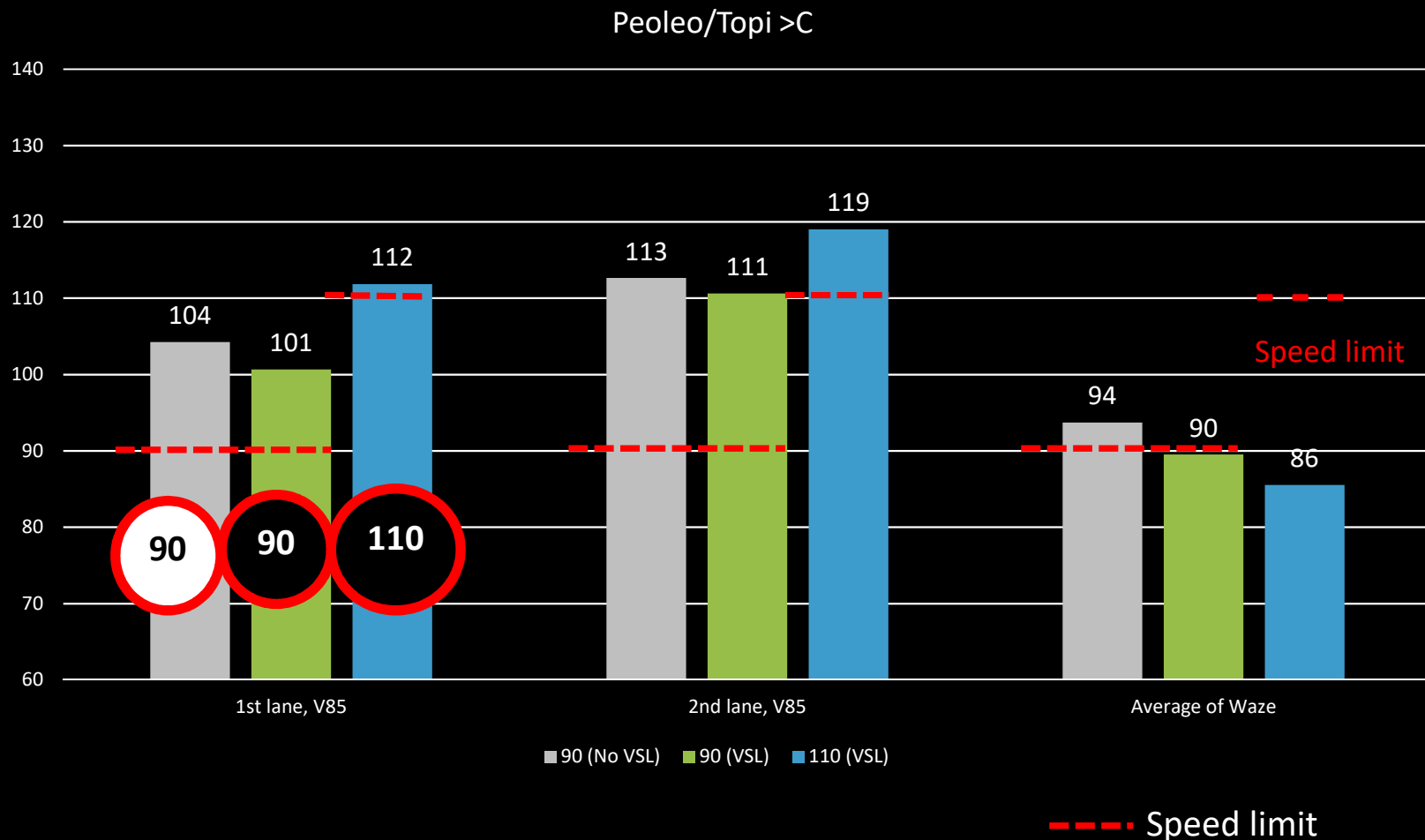
- Speed limit changes with changing conditions



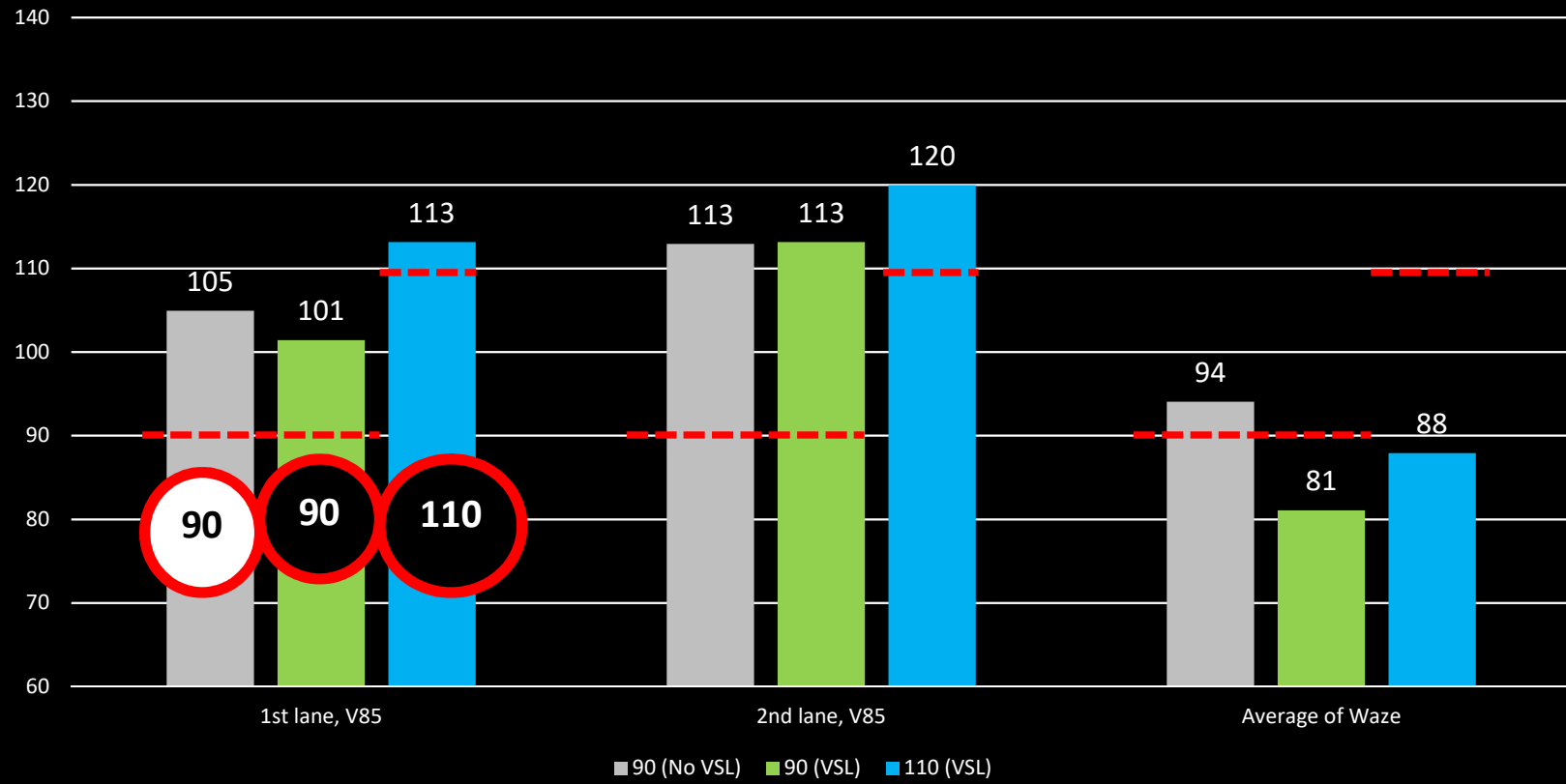
Case study location



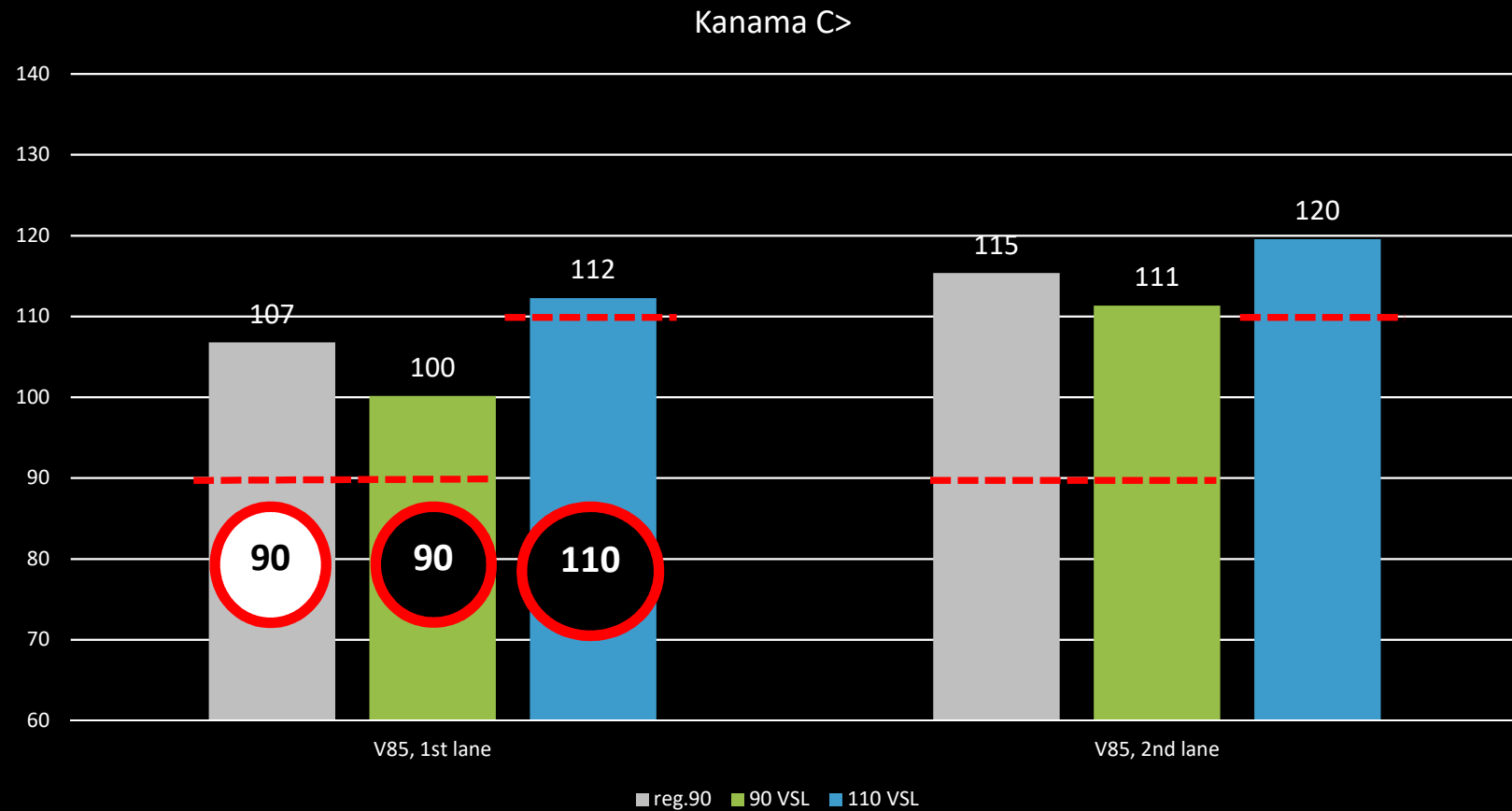
Speed behaviour at E67, km15 (Peoleo-Topi) V85 speed (km/h)



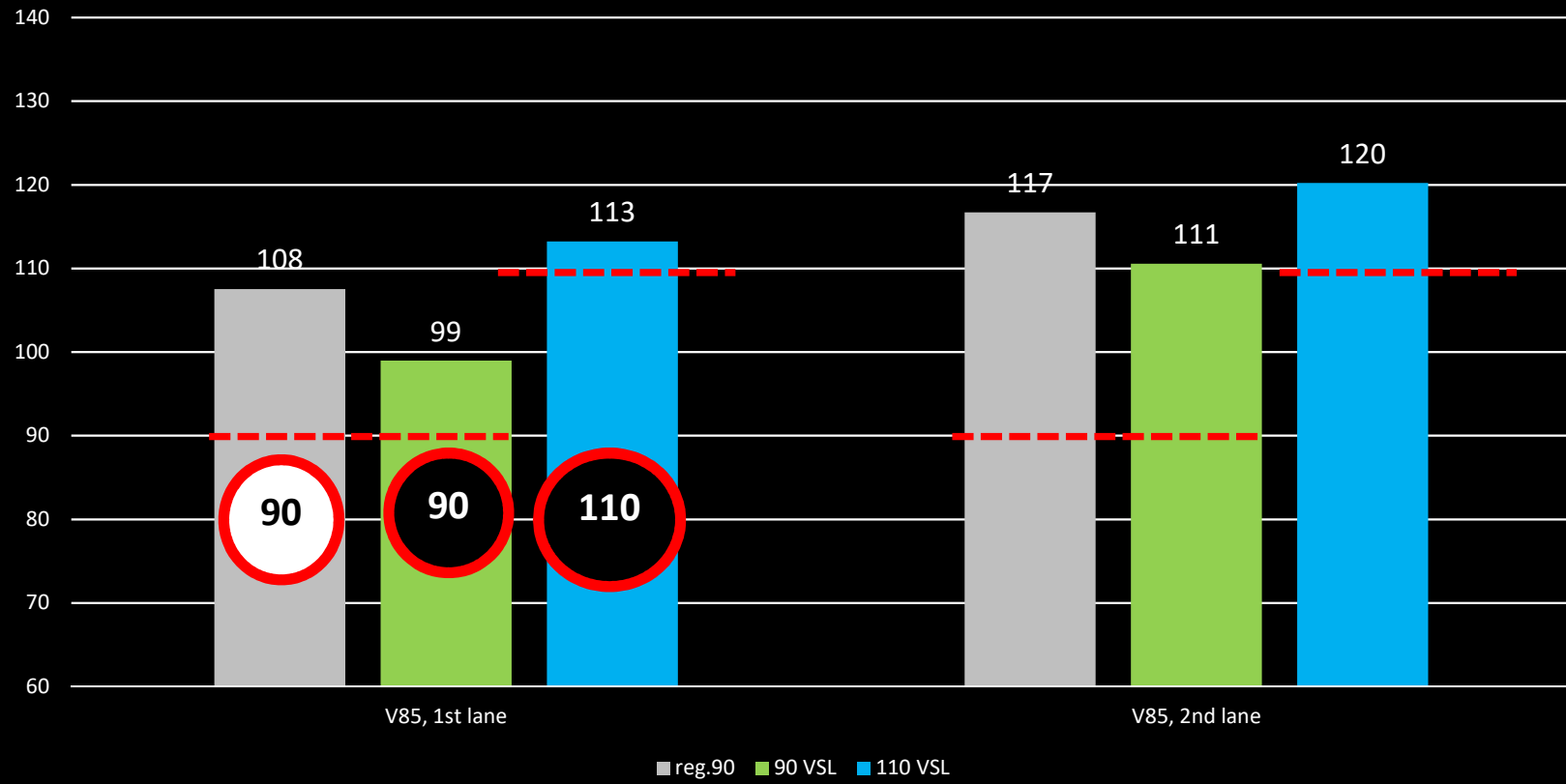
Peoleo/Topi C> (km 15)



Speed behaviour at E67, km20...21 (Kanama)



Kanama, >C



Conclusions (1):

- The V85 speeds are rather high, compared to speed limit
- There are essential difference of speeding on the 1st and 2nd lane, V85 difference is 7...12 km/h, in spite of speed limit
- VSL has a positive impact on speed behaviour.
 - Speeding at VSL's 90 km/h speed limit is less than on regular speed limit of 90 km/h.
 - **Difference is 3...9 km/h (1st lane) and 0...6 km/h (2nd lane)**
 - On 110 km/h VSL speeding is still a problem, but with less impact.

Conclusions (2):

- 1) VSL reacts better on changing weather and traffic conditions;
 - 2) VSL increases thus the trust to speed limit;
 - 3) Drivers speed behaviour is in a better accordance with speed limits, thus it could be expected to create a safer situation on road sections with VSL
- Higher V85 speed on „standard limits“ could be also because of good driving conditions, which drivers look as an unnecessary limit



Thank you for your attention!

dago.antov@taltech.ee