

Median Barriers: Dividing Fact from Fiction



abley

NZ TRANSPORT
AGENCY
WAKA KOTAHI

Insightful solutions.
Empowering advice.

Which road is safer?



Median Barriers: Dividing Fact from Fiction/ Mar 2018

Presentation Order

1. Overview of Median Barrier Typologies
2. Median Barrier Crash Performance
3. Case Studies
4. Operational Considerations
5. Conclusion

Median Barrier Typologies

- Rural Motorway/Expressway



- Urban Motorway/Expressway



Median Barrier Typologies

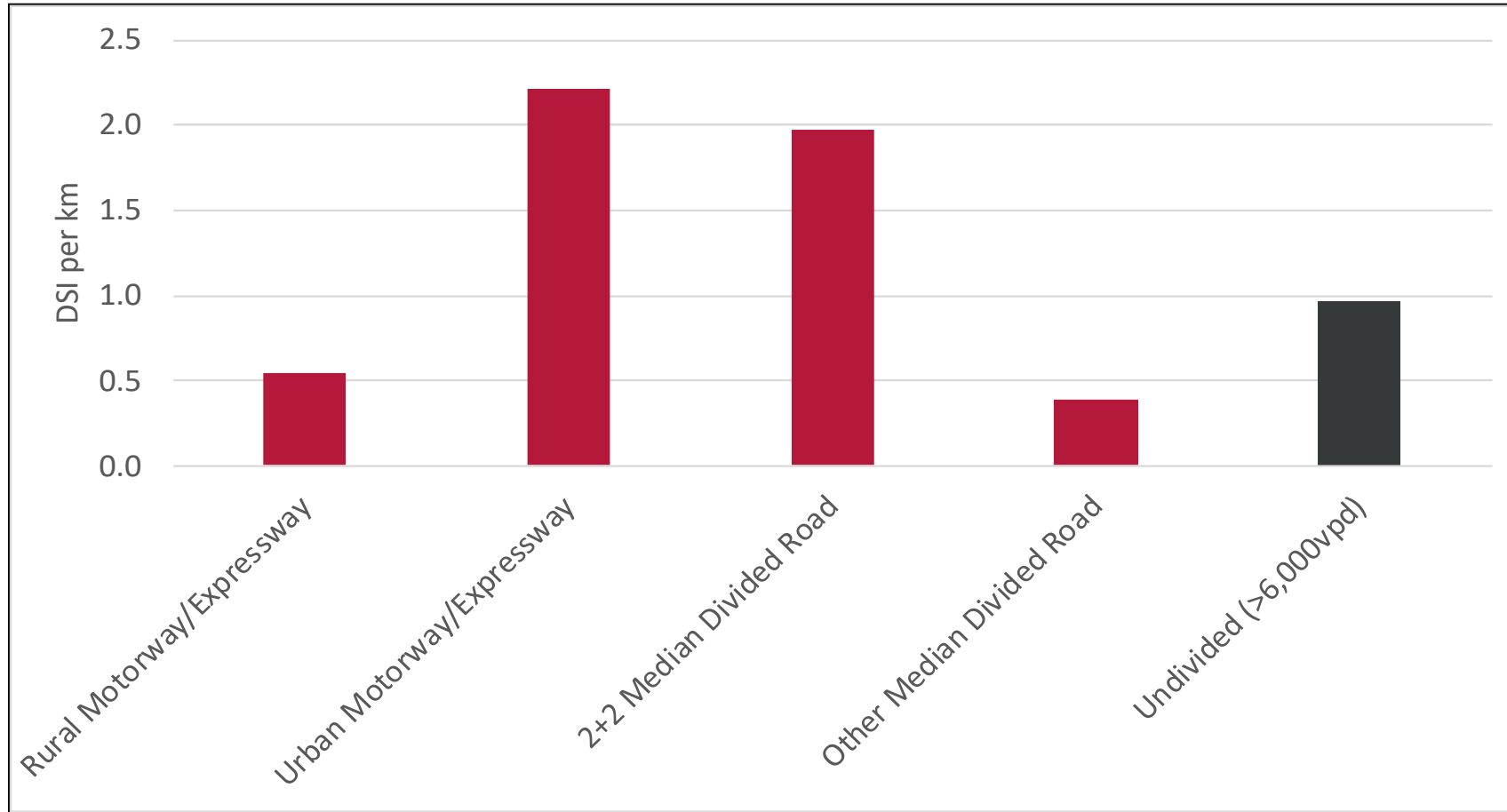
- 2+2 Median Divided Road



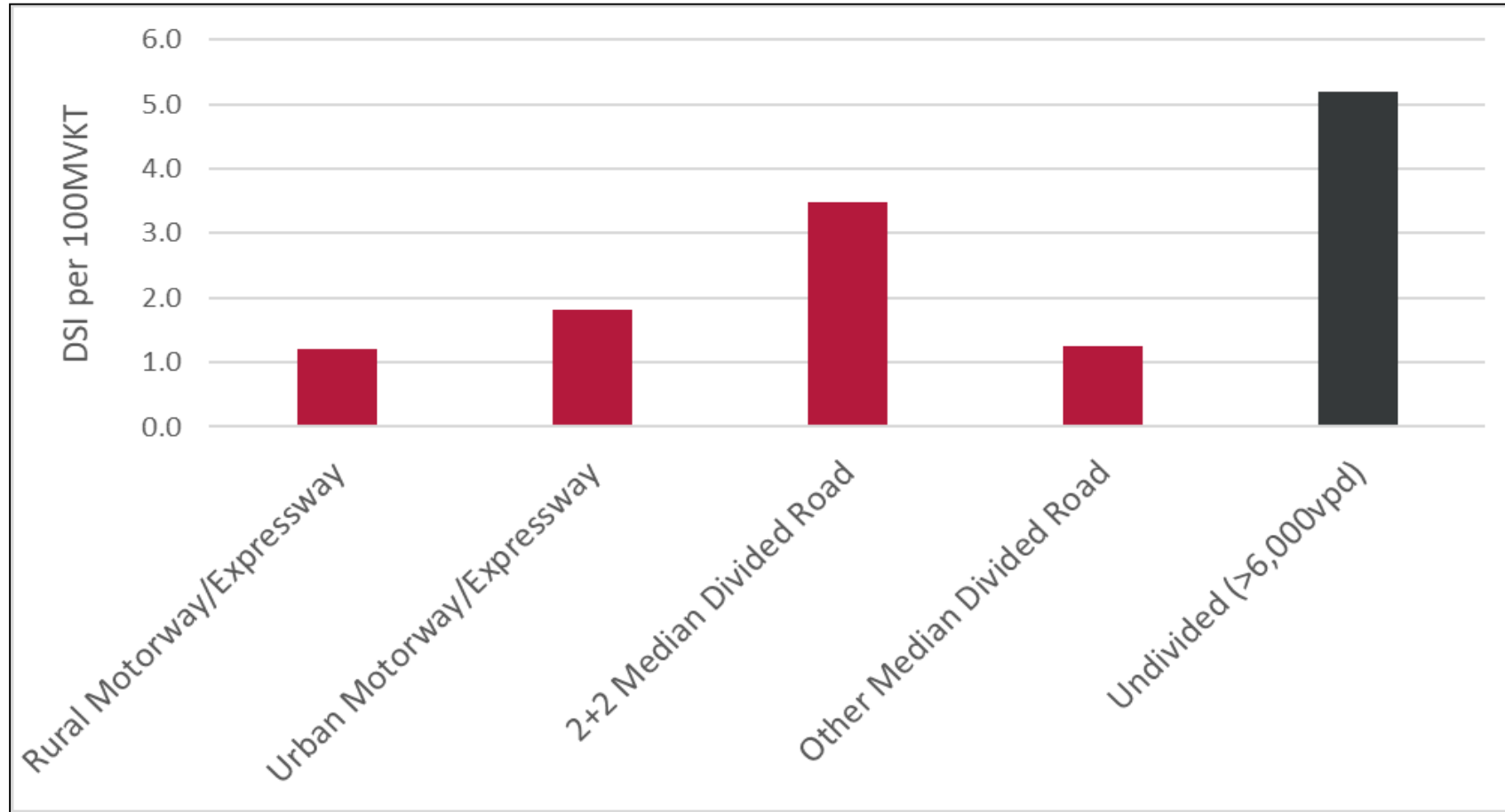
- Other Median Divided Roads



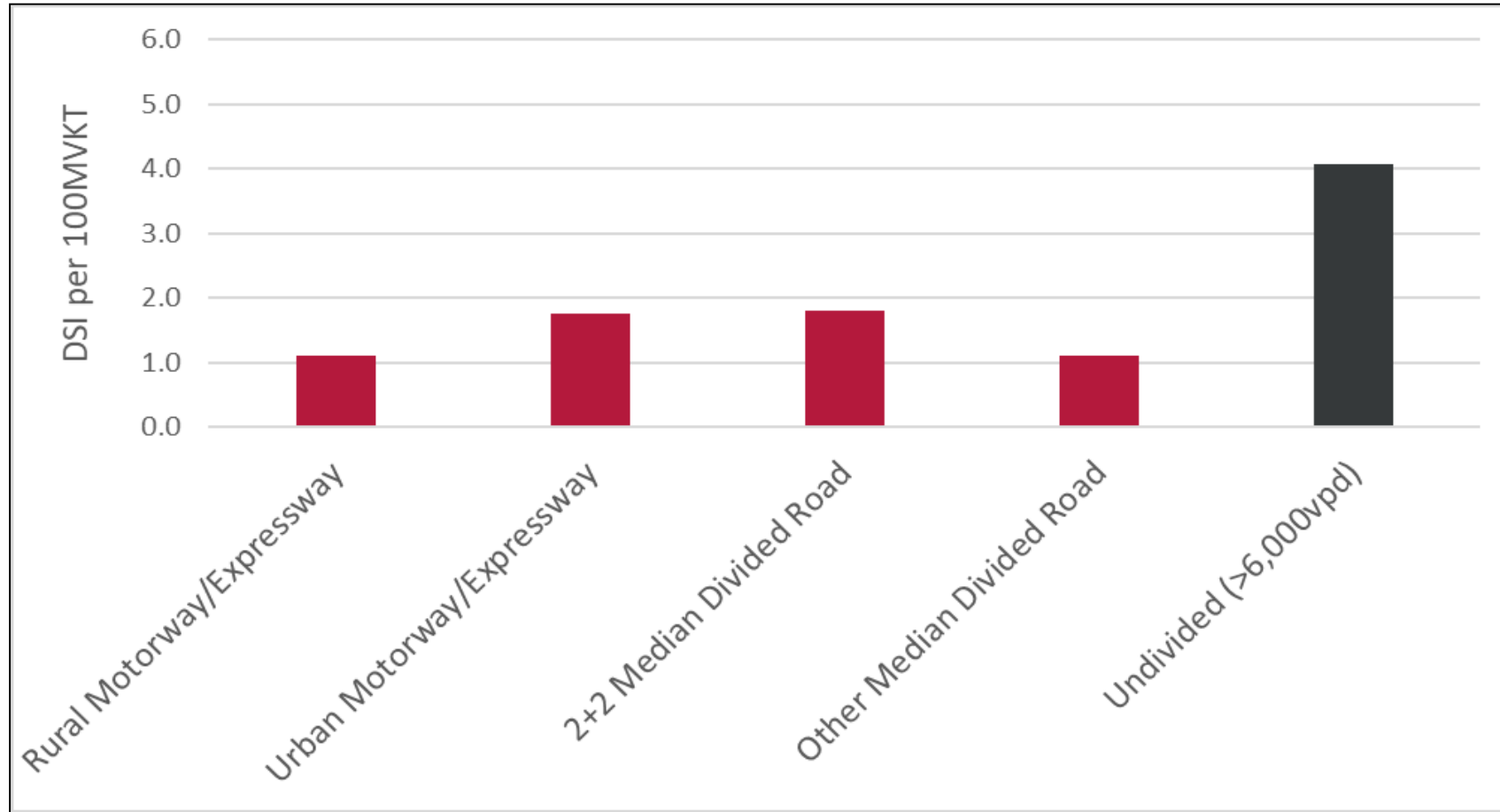
Collective Risk



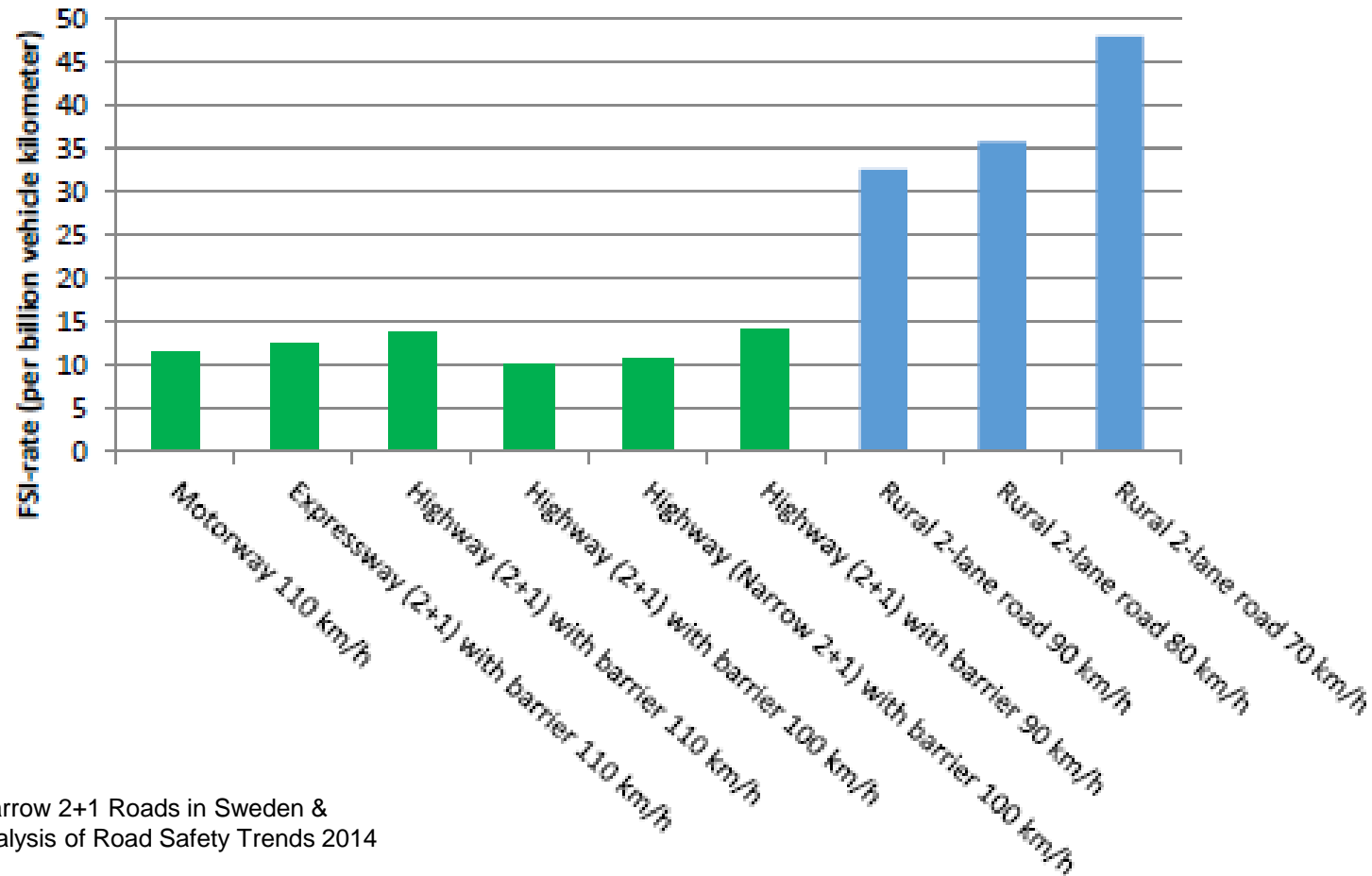
DSI per 100 Million VKT (Personal Risk)



DSI per 100 Million VKT (Intersections removed)



Comparison with Sweden (Personal Risk)



Sweden

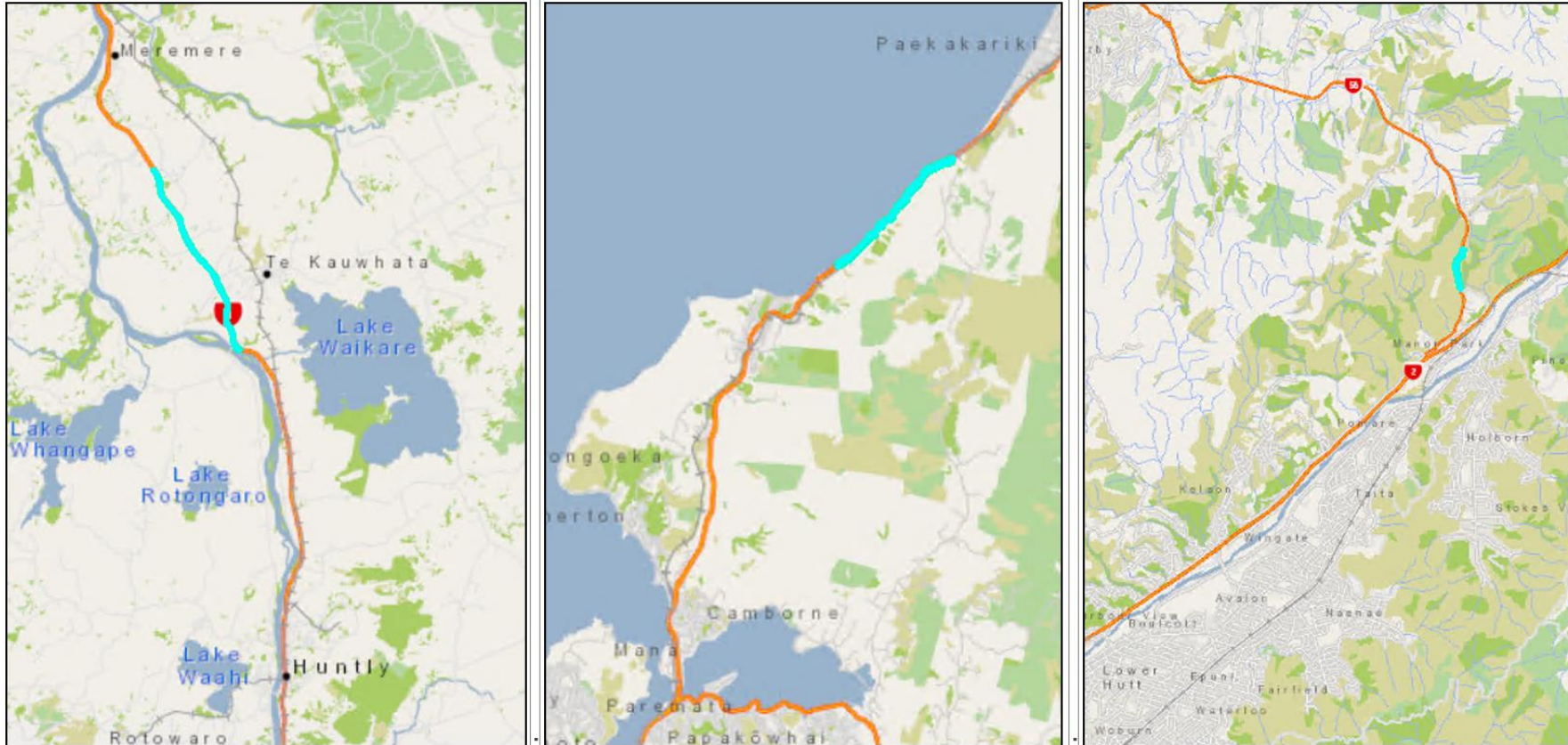
- 5,000km median
- 73% travel on >80ph roads with median

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- 350km median
- 20% travel on >80kph roads with median

Sources: Vedeby (2015) Effects of Narrow 2+1 Roads in Sweden & Swedish Transport Administration Analysis of Road Safety Trends 2014

‘Other’ Median Barrier Divided Roads – A success that should be replicated?

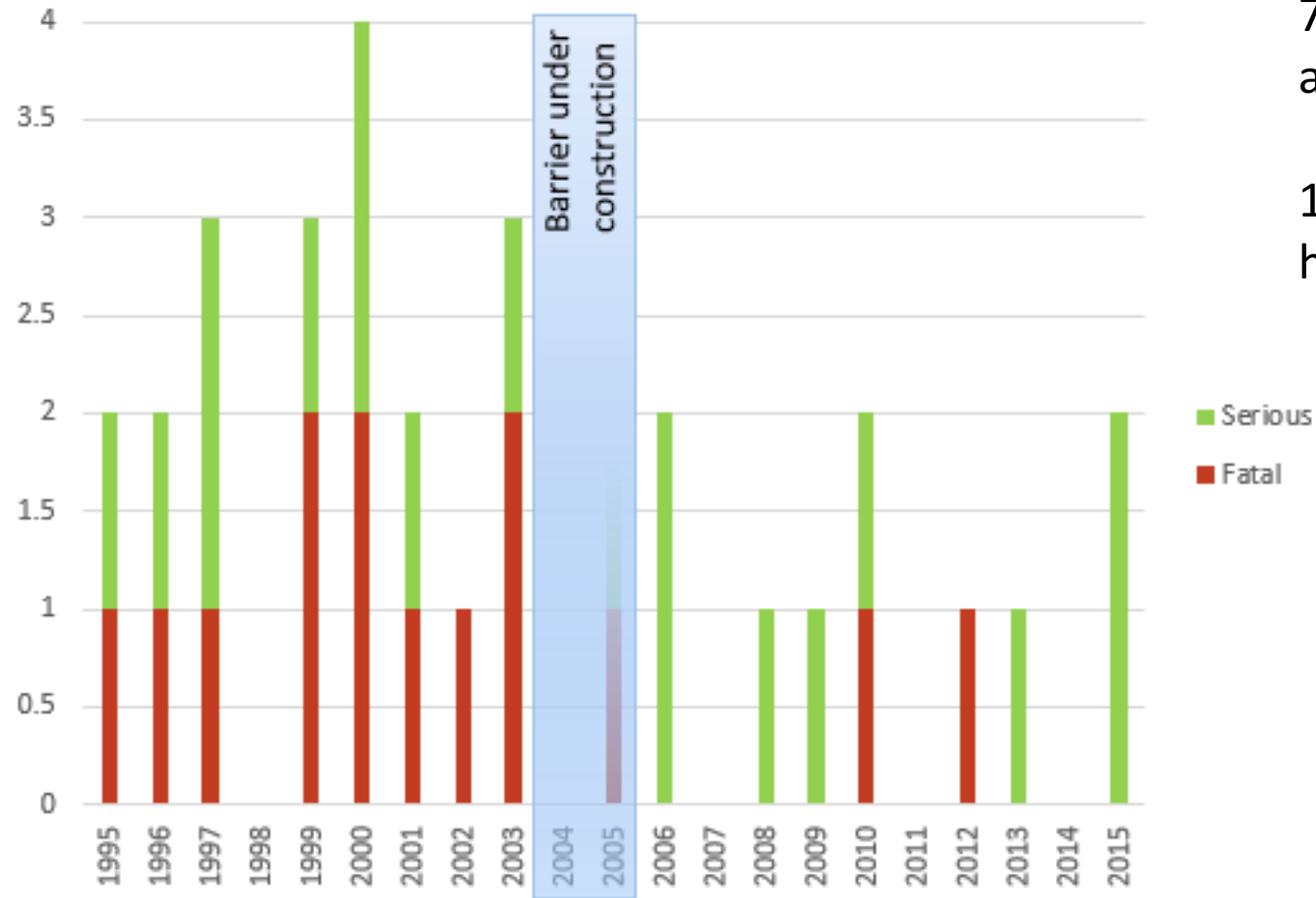


Rangiriri (Old SH1)



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Rangiriri (Old SH1)



76% reduction in fatal and serious injuries

100% reduction in head-on DSIs

Centennial Highway (SH1 Pukerua Bay to Paekakariki)



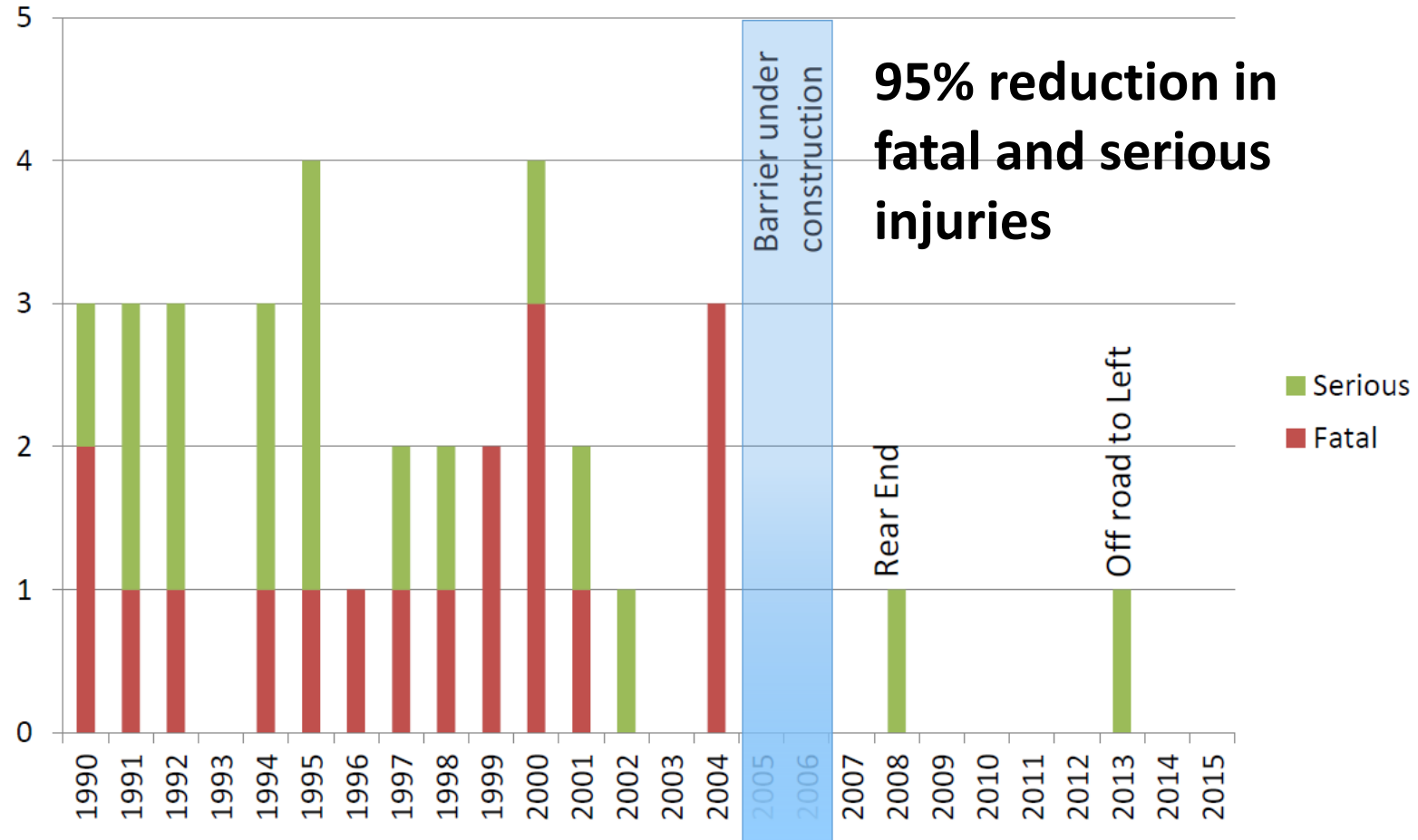
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Centennial Highway (SH1 Pukerua Bay to Paekakariki)

Cost of crashes

- Pre- \$5.8M / year
- Post- \$65k / year

100% reduction in head-on crashes

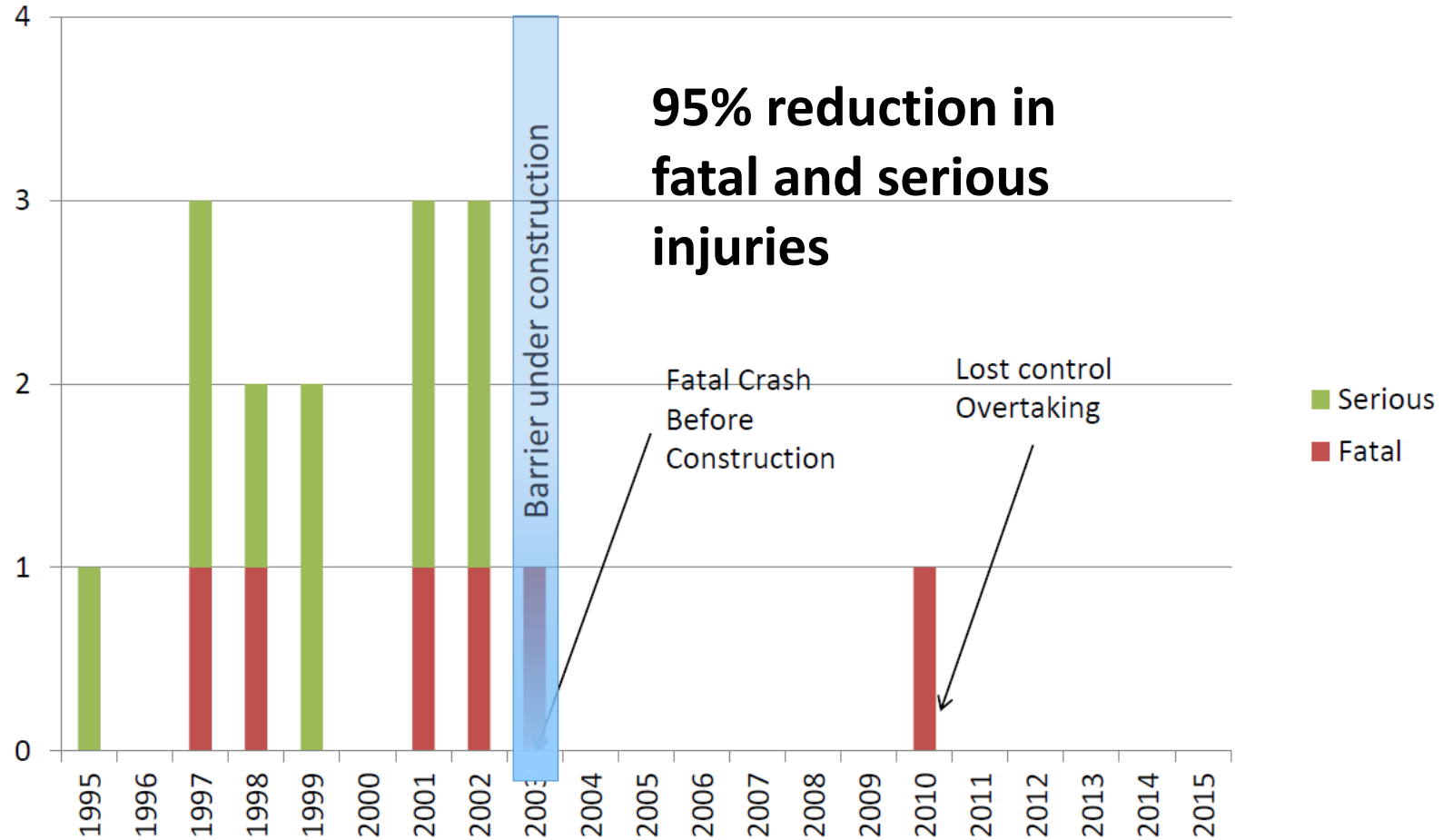


Haywards Hill Highway (SH58)

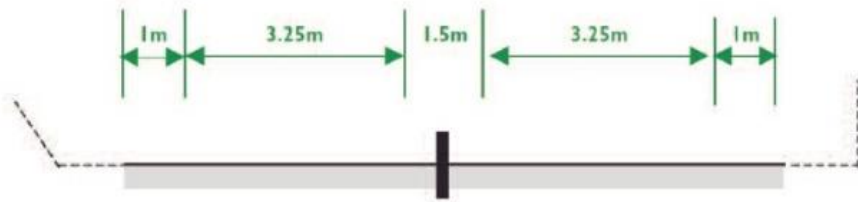


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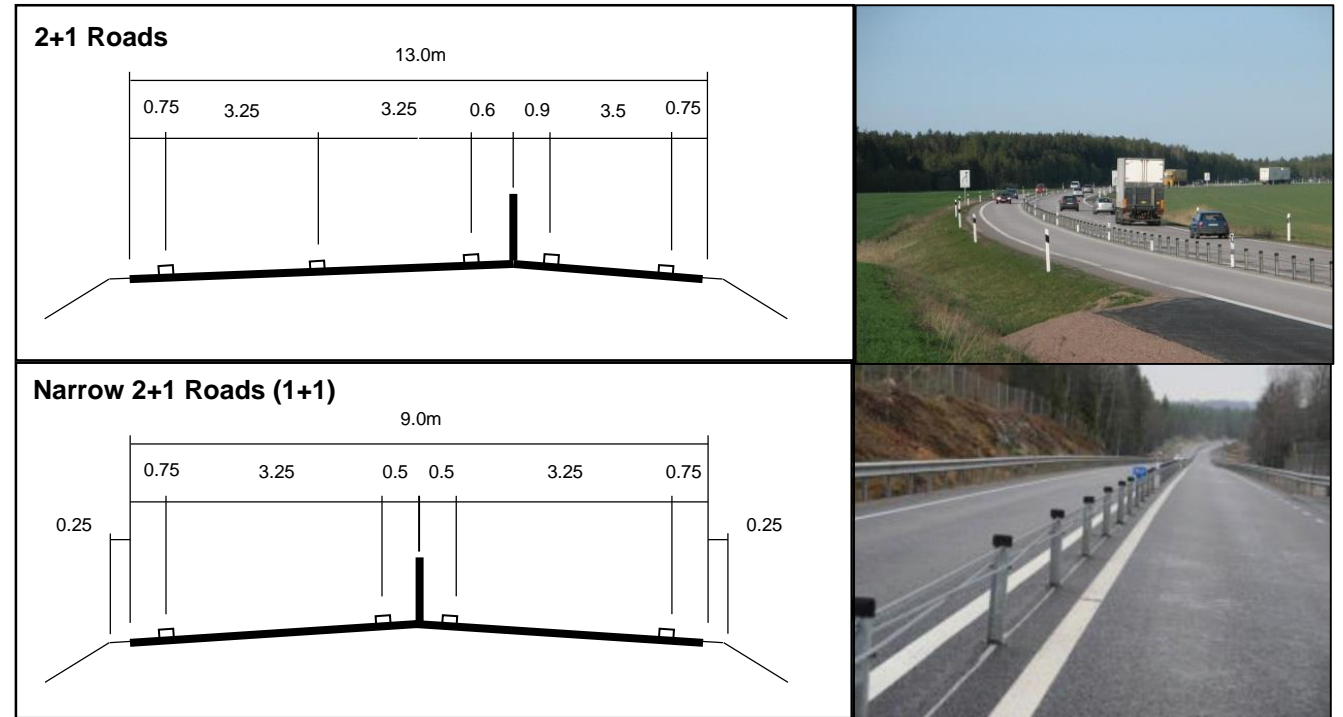
Haywards Hill Highway (SH58)



Operational Considerations



Sources: Vedeby (2015) Effects of Narrow 2+1 Roads in Sweden, Bergh (2016) Sweden 2+1 roads capacity and level of service & Marsh & Pilgrim (2010) Evaluation of Centennial Highway



Bergh et al (2016) - emergency stops, break downs, incidents and accidents do not create more delays on 2+1 roads compared to other cross-sections in terms of total vehicle-kilometres travelled.

Summary

- **Median Barriers dramatically reduce DSIs compared to undivided roads even if alignment, road width, accesses or intersection arrangements are not ideal.**
- **Safety benefits are primarily derived from physical separation through median and roadside barriers rather than number of lanes and cross section width.**
- **More research would help to better understand operation issues, however available evidence suggests maintenance is manageable and delays are no worse than other parts of the network.**