

ABSTRACT SUBMISSION FORM

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Overview of Presentation

Transport systems abound with unquantified externalities. While official guidance from the New Zealand Transport Agency recommends evaluating all impacts of vehicle operations, including noise and emissions, many are left unmeasured due to methodological difficulties. As a result, transport evaluations can arrive at conclusions that seem unrealistic from an on-the-ground perspective. This paper describes a new approach to measuring transport externalities that are typically left unmeasured – vehicle noise and emissions. It then applies this approach to Auckland's urban bus fleet, showing how GIS data and simple quantitative modelling techniques can be used to understand the impact of bus operations on urban amenity. Our approach allows us to analyse and quantify trade-offs between higher fleet costs and better outcomes on city streets.

Finally, this paper reflects upon the implications for transport agencies and bus operators. Improved evaluation methods suggest that upgrading urban bus fleets to hybrid or electric buses can bring significant long-term benefits. Although recent international experience suggests that hybrid and electric buses are not yet ready for widespread deployment, agencies and operators should develop strategies for incorporating them into fleets within the next decade.