To:	Transport & Health Policy Makers, & Practitioners
From:	Prof Adrian Davis, TRI, Edinburgh Napier University
Date:	26th March 2019
Subject:	Essential Evidence 4 Scotland: No. 7 Transforming Cities: Best practice towards clean air and active travel

Top line: The best practices of clean air and active travel have produced impressive results, which are improved when enacted simultaneously in integrated policy packages.

By 2050, 70% of the global population will live in urban areas, exposing a greater number of people to specific city-related health risks that will only be exacerbated by climate change. Two prominent health risks are poor air quality and physical inactivity.[1] In 2017, over 80% of the world's urban population was exposed to air pollution levels that exceeded World Health Organization (WHO) recommendations.[2] Ambient air pollution exposure has been linked to premature mortality and cardiovascular disease, stroke, respiratory diseases and inflammations including lung cancer, pneumonia, childhood asthma, and chronic obstructive pulmonary disease, deep vein thrombosis, type 2 diabetes, obesity, autism and child behaviour problems, dementia, and pregnancy complications.

Regarding active travel, because the built environment, and its respective transport infrastructure, largely dictate transport mode choices, active travel rates reflect the urban planning and design policies that mold the built environment. There are four levels of policy interventions that influence active transport: society-level policies (reducing speed limits, restricting car use, or limiting parking spaces to discourage motor vehicle travel), city-level policies (land use design changes to increase density and walking and cycling), route level policies (providing the required infrastructure to enable active transport), and individual-oriented policies (educational initiatives to encourage changing travel behaviours). The policies and practices of car-free policies, vehicle technologies, urban design interventions, green space provision, and public transport provision can make significant additive improvements when enforced simultaneously.

Examples of best practice include California (over 20 policies over 20 years) which has reduced emissions substantially, Beijing (for the 2008 Olympics), Copenhagen has reduced carbon emissions by 40% since 1990, despite a population increase of 50%, and aims to be carbon neutral and fossil fuel free by 2050; and modelling of health for London and Delhi which found that a combination of active travel and lower emission motor vehicles) would yield the largest health benefits preventing 7439 disability-adjusted life years in London and 12,995 in Delhi, mainly from a reduction in the number of years of life lost from heart disease (10–19% in London, 11–25% in Delhi). Alone, the increased use of lower-emission motor vehicles scenario resulted in the least health benefits.

The attempt to curtail air pollution has been an evolving issue. Despite air quality improvements, road networks are still expanding, and car ownership is increasing globally, exacerbating air pollution and physical inactivity in cities. The necessity for interdisciplinary collaboration to ensure that future city expansion is done sustainably has become an important focus area of recent research and practice.

[1] Glazener, A., Kheis, H. 2019. Transforming our cities: Best practice towards clean air and active transportation, *Current Environmental Health Reports,* https://doi.org/10.1007/s40572-019-0228-1
[2] WHO. Air pollution. WHO. 2018. https://www.who.int/airpollution/ambient/health-impacts/en/