

International Research about Road-building

A recent survey of international researchers and academics has produced this list of important articles. These papers give advice on a variety of transport issues and include many case studies from around the world.

ACEEE (2019), *Sustainable Transportation Planning*, American Council for an Energy Efficient Economy (www.aceee.org); at <https://database.aceee.org/city/sustainable-transportation-planning>. Includes a list of vehicle travel reduction targets.

Michelle Byars, Yishu Wei and Susan Handy (2017), *State-Level Strategies for Reducing Vehicle Miles of Travel*, University of California Institute of Transportation Studies (<https://its.ucdavis.edu>); at <https://bit.ly/2LvA6nn>.

CALTRANS (2020), *Transportation Analysis Framework: Induced Travel Analysis*, California Department of Transportation (<https://dot.ca.gov>); at <https://bit.ly/3aCYo7M>.

Mary Ebeling (2014), *Re-Thinking the Urban Freeway*, State Smart Transportation Initiative (<https://ssti.us>) and Mayors Innovation Project; at <https://bit.ly/3mLriZG>.

GOPR (2018), *On Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research (<http://opr.ca.gov>); at <http://opr.ca.gov/ceqa/updates/sb-743>.

ITDP (2012), *Death and Life of Urban Highways*, Institute for Transportation and Development Policy (www.itdp.org) and EMBARQ; at www.itdp.org/2012/03/13/the-life-and-death-of-urban-highways.

Tammy Klein (2019), "What U.S. Cities Are Doing to Decarbonize Transport: Focus on Fuels & VMT Reduction," *Future Fuel Strategies* (<https://futurefuelstrategies.com>); at <https://bit.ly/3iOIRM0>. Includes a list of vehicle travel reduction targets.

Eric Sundquist (2020), *California Highway Projects Face Review for Induced Travel*, State Smart Transportation Initiative (www.ssti.us); at <https://bit.ly/2VW5pev>.

Jamey M. B. Volker, Amy E. Lee, and Susan Handy (2020), "Induced Vehicle Travel in the Environmental Review Process," *Transportation Research Record* (<https://doi.org/10.1177/0361198120923365>).

Resources from **Todd Litman**, Executive director of the Victoria Transport Policy Institute, Victoria, Canada.

Smart Congestion Relief (https://www.vtpi.org/cong_relief.pdf) points out that roadway expansions tend to provide little long-term congestion reductions because in most cases the additional capacity is often filled with generated traffic within a year or two. Many of the traffic models used to evaluate highway expansion impacts and benefit are biased; they fail to account for the ways that motorists respond to congestion, and so they exaggerate highway expansion benefits and underestimate the full costs.

Generated Traffic and Induced Travel: Implications for Transport Planning. Traffic congestion tends to maintain equilibrium. Traffic volumes increase to the point that congestion delays discourage additional peak-period trips. If road capacity increases, peak-period trips also increase until congestion again limits further traffic growth. The additional travel is called “generated traffic.” Generated traffic consists of diverted traffic (trips shifted in time, route and destination), and induced vehicle travel (shifts from other modes, longer trips and new vehicle trips). Research indicates that generated traffic often fills a significant portion of capacity added to congested urban road.

Pavement Busters Guide: Why and How to Reduce the Amount of Land Paved for Roads and Parking Facilities

<https://www.dropbox.com/s/61xyfbxzf1yjex2/pavment%20busters%20guide%2C%20todd%20litman.docx?dl=0>

Understanding Smart Growth Saving Evaluating Economic Savings and Benefits of Compact Developments” (https://www.vtpi.org/sg_save.pdf) describe various costs of increasing pavement area, and of sprawled development.

A new planning paradigm (www.vtpi.org/paradigm.pdf) is reducing the emphasis on increasing automobile travel speeds, and therefore roadway expansions, and placing more emphasis on demand management solutions. Many jurisdictions have established vehicle travel reduction targets, and have adopted Vision Zero and Complete Streets policies that favor travel speed reductions in order to increase safety and improve walking and bicycling conditions. Although some people assume that these solutions can only apply in large cities, in fact, Transportation Demand Management (TDM) can be justified and effective in small towns and resort communities. See Rural Multi-modal Planning (<https://www.vtpi.org/rmp.pdf>).

“Road appraisal makes carbon dioxide uniquely insignificant. Why? And what to do about it?” **Phil Goodwin**, professor of transport policy at the Centre for Transport and Society, University of West of England, Bristol, and emeritus professor at University College London.

<https://www.transportxtra.com/publications/local-transport->

[today/comment/66363/road-appraisal-makes-carbon-dioxide-uniquely-insignificant--why-and-what-to-do-about-it-](https://www.transportforqualityoflife.com/u/files/The%20carbon%20impact%20of%20the%20national%20roads%20programme%20FINAL.pdf)

“The carbon impact of the national roads programme,” **Lynn Sloman and Lisa Hopkinson**, July 2020.

<https://www.transportforqualityoflife.com/u/files/The%20carbon%20impact%20of%20the%20national%20roads%20programme%20FINAL.pdf>

Why grids instead of highways:

The copious capacity of street grids, **Robert Steuteville**, June 2018.

<https://www.cnu.org/publicsquare/2018/06/28/copious-capacity-street-grids>

Why street grids have more capacity, Robert Steuteville, July 2018. The greater choice offered by well-connected street networks leads to more capacity and efficiency, according to pioneering smart growth engineer Walter Kulash.

<https://www.cnu.org/publicsquare/2018/07/31/why-street-grids-have-more-capacity>

Why not Level of Service:

“Urban Street Design Guide,” National Association of City Transportation Officials, North America. <https://nacto.org/publication/urban-street-design-guide/design-controls/performance-measures/>

“Connecting people to jobs and services week: How bad metrics lead to even worse decisions,” Transportation for America, November 2019. When the top priority of our transportation investments is moving cars as fast as possible, the end product is streets that are wildly unsafe. This focus on vehicle speed and throughput is the result of outdated metrics that utterly fail to produce a transportation system that connects people to what they need every day. <https://t4america.org/2019/11/18/destination-access-week-how-bad-metrics-lead-to-even-worse-decisions/>

Georgia Institute of Technology, USA, has a good library for this including:

“The Third Option: Removing Urban Highways,” **Robert Piatkowski**.

<https://smartech.gatech.edu/handle/1853/40928>

“Highways, Urban renewal, and patterns in the Built Environment: Exploring Impacts on Atlanta Neighborhoods,” **Leonard Matthew**.

<https://smartech.gatech.edu/handle/1853/60459>

Walkable City Rules, **Jeff Speck**, 2018. This is a doer’s guide to making change in cities, and making it now. The 101 rules are practical yet engaging—worded for arguments at the planning commission, illustrated for clarity, and packed with specifications as well as data.

Traffic Impact of Highway Capacity Reductions: Assessment of the Evidence

Sally Cairns, Carmen Hass-Klau & Phil Goodwin, Annex by Ryuichi Kitamura, Toshiyuki Yamamoto and Satoshi Fujiii

March 1998, Landor Publishing UK. A bit dated, but still an important resource.

This work was commissioned jointly by London Transport and the Department of Environment, Transport and the Regions. It forms part of the research programme of TSU as a designated research centre of the UK Economic and Social Research Council (ESRC). It includes case study material from Australia, Austria, Canada, Chile, France, Italy, Germany, Greece, Japan, The Netherlands, Norway, Sweden, Switzerland, USA and UK. This is the largest set of case studies, 27 or so with a summary.