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Why Urban Planners Love Global Warming.

**Issues for land use, transport, and
housing affordability in a time of
climate-change alarmism**

A Presentation to

**The New Zealand Institute of Surveyors Annual
Conference, Napier 20 – 22 October, 2008.**

Development in a Changing Landscape

by

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Why we must Challenge the Theories of the Urban Central Planners.

1. Introduction: A Presentation in Five Parts, and Supported by Links.

This paper is Part A; the “integration” of a five-part package of presentations for this conference.

Part B is “[Halle Neustadt – the Sustainable City; a Cautionary Tale.](#)”

Part C is “[Alternatives to Smart Growth.](#)”

Part D is “[Climate Change – the Last Gasp of Smart Growth Theory.](#)”

Part E is “[Applying Systems Intelligence to Transport.](#)”

My verbal presentation will combine all five into a hopefully coherent whole.

When papers are available on the web I have used hyperlinks rather than footnotes. Most of these link to pdf files which may contain photos and graphs and hence are large files which may take a few minutes to download. Please be patient. The process is still much faster than a trip to the library. I recommend you read the paper right through and then browse the hyperlinks. Sometimes links close, so I have provided sufficient information to locate them elsewhere, if possible, using a normal Google search.

The aim is to provide information in a form useful for those preparing evidence for evidence-based hearings regarding environmental issues and land use planning, and in particular to challenge the current attempts by Regional Councils to direct and control urban form and plan the integration of transport and land use so as to engineer human behaviour.

2. Background.

2.1 Part of a Bigger Theory

These theories of *Managed Urban Form* and the *Planned Integration of Transport and Land Use* are part and parcel of the general theory of “Growth Management” or “Smart Growth”. This theory assumes that central planners¹ have a body of superior wisdom which gives them the moral authority to direct and control where people should live, work and play.

¹ I use the term “central planner” for those who believe they have the knowledge to direct and control the use of land and believe in economic planning and social engineering as a discipline. In New Zealand the term “planner” is often used to describe genuine Resource Management Consultants, who implement the RMA as intended, focusing on environmental effects. They are not my target.

I have no idea where this moral authority comes from, and the research demonstrates that the superior wisdom simply does not exist – which should not surprise us given the failure of the planned economies of the last century, and those few still remaining today.

This paper argues that central planning cannot achieve a better comprehensive integration of land use and transport, than the spontaneous order generated by individuals operating within a market-led economy, governed by the laws of deterministic chaos.

The failed Soviet experiment has surely demonstrated that we cannot centrally plan the national economy, and yet the advocates of Smart Growth, and similar planning theories, insist that, for some reason, what has failed at a national level can succeed at a regional or city level.

Where is the evidence? Did the Soviet cities prosper within a failing national economy?

The great cities of the world have successfully “integrated” transport and land use, and more importantly, for many years, have enabled urban economies to adapt to changing technologies.

We are now witnessing attempts to integrate transport and land-use to lock in place the transport technologies of the century before last and to use zoning and legal action to prevent people responding to the changes which are taking place around them every day.

The theory of such integration is fundamentally flawed, both in theory and in practice.

2.2 The Failure of Architectural Determinism.

During the post war decades “*Architectural Determinism*” was the dominant fad among architects and town planners. As a cocky young architect I just loved it. One justification for urban renewal and public housing was that if we put trashy people into tasteful attractive “designer” housing their surroundings would transform them into thoroughly nice, attractive people.

Unfortunately, the trashy people proceeded to trash the tasteful housing – and indeed frequently trashed the whole neighbourhood. In English novels “he comes from the Estates” now means “he comes from a slum.” US Public Housing Projects similarly failed to uplift the moral tone of their occupants.

In “*The Architecture of Happiness*” Alain de Botton reminds us that “Architecture may well possess moral messages; it simply has no power to enforce them” and illustrates the point

with a photo of Herman Goering chatting with his colleagues in one of Europe's most beautiful rooms.²

"*Architectural Determinism*" assumed that the built environment determined people's behaviour. We soon learned that, in reality, people's behaviour determined their built environment.

Architectural Determinism is now regarded as one of those unfortunate, and now unfashionable, fads of the past.

Architectural Determinism was a subset of a wider class of theory described as "the Design Fallacy" – the notion that design is a useful tool of social-engineering.

We should know better.

Conclusion: Architectural Determinism failed because people's behaviour determines their choice of built environment – not the other way round.

2.3 The Rise of "Spatial Determinism".

However, central planners need their theories, and over recent decades they have developed the theory of "spatial determinism" – my term, not theirs.

This new theory, as typically implemented by Growth Management and Smart Growth planners, holds that where people live determines how they will behave, and that once we are forced to live where they decree, our behaviour will improve. The central planners now insist that if we live at high densities in central cities we will all behave like model citizens, while people who choose suburbia will be driven to all kinds of bad behaviour as the unforeseen price of their making such an "unfortunate" choice.

They tell us that people who live in the suburbs are more obese than people who live in downtown apartments; that suburbanites don't go to the gym as often as city dwellers; and that suburbanites have more traffic accidents than downtown dwellers.

They are convinced that if we would just live where they say we should, we would all lead much happier and more "appropriate" and PC lives.

When I was young I liked to eat out, go to nightclubs, dance all night, and generally live the high life – so the central city was the place for me. I could stumble home from *Club Mirage* to *Westminster Court* without risking a drink-drive conviction, and probably feel better for the

² Page 21, The illustration is titled: "The moral ineffectiveness of a beautiful house."

walk. These days I like to read in the garden, walk the dog, grow my own vegetables, and work from my home in the countryside. The “spatial determinists” blame my location for my lost “vibrancy”, rather than the remorseless passage of time.

Conclusion: Our chosen behaviour determines where we choose to live, and we take our own behaviour with us – and that includes our obesity and other PC sins.

2.4 The Information Problem.

One consequence of “spatial determinism” is that RMA planning documents routinely claim we must not live in the outer suburbs because our commuter trips into the central area will be far too long, cost too much, and destroy the planet by global warming. We ordinary people just don’t appreciate the total consequences of our foolish location decisions.

In reality, only individual households have all the information needed to make their location decisions, which are governed by a host of factors totally outside the power of government in general, and of central planners in particular.

As Randal O’Toole says in “*The Best Laid Plans – How Government Planning Harms your Quality of Life, Our Pocketbook, and your Future*”³:

“Consider an urban area with a million people and a million parcels of property, each of which could be used for dozens of different purposes. Each of these people places a different value on each potential use of each parcel of land, resulting in trillions of different pieces of data to collect. Add transportation and other infrastructure (each item of which will be separately valued by each of the million people) changes in tastes and trends over time, and the way different uses on different properties influence the values of other nearby properties, and the data requirements reach into the quadrillions. No one can ever collect or understand this much data.”

Naturally, in the face of such complexity, central planners are forced to simplify, and O’Toole lists the standard and familiar simplifications:

- Instead of comprehensively planning for all resources, they focus on one or two resources.
- Instead of measuring the actual relationships between resources they rely on preconceived notions and the latest planning fads.

³ Randal O’Toole, [*The Best Laid Plans – How Government Planning Harms your Quality of Life, Our Pocketbook, and your Future*](#), Cato Institute, Washington D.C, 2007.

- Instead of predicting the future, they envision⁴ what they want and try to impose that vision on the future – and on our present.
- Instead of finding out what the people in the region really want, they succumb to pressures from powerful interest groups.

This is pseudo-science disguised as rational planning. Of course we need to plan our major infrastructure but fortunately major infrastructure is long-lived. The Romans built roads, dams and aqueducts which are still in use today. The Europeans built an extensive network of canals – which are still in use today. Their use may have changed from mostly freight to mostly tourism and leisure but they remain in use. We may soon tear up most of the inter city railway tracks but the rail-bed will be used for truck lanes, cycles lanes, bus lanes or for intelligent cars or whatever.

Many of our District Plans contain policies such as the following:

Policy X

Provide for the extension of existing and planned rural and coastal villages in a structured manner that supports nodal growth: and

Policy Y

Require proposals to assist in the consolidation of any rural township in the vicinity and create efficiencies in the provision of infrastructure, transport and community facilities.

These are real policies from a “real” plan. I have no idea what constitutes a “structured manner” but presumably it means whatever the bureaucrats want it to mean – a standard ploy.

“Supporting nodal growth” is part of the standard lexicon of Smart Growth.

Of course the assumptions embedded in Policy Y have no foundation in theory or practice and reflect what O’Toole identifies as the dependence on “pre-conceived notions and the latest planning fads”.

For example, I live in Oneriri Peninsula near Kaiwaka a small rural town in within a rural area with a multitude of nearby “nodes”.

⁴ Through the infamous “visioning process” in which the rulers have ‘visions’ and the people have nightmares.



I shop at the following locations for the following goods and services:

- Kaiwaka – for the Supermarket, the Italian Bread Shop, and the Dutch Delicatessen.
- Mangawhai Village – for the Library, the Butcher, the Vet, the Builders’ Suppliers, and the Market.
- Wood Street Shopping Centre – for the Garden Centre, the Medical Centre, the Pharmacy, the Electrical Store, the Petrol Station.
- Warkworth – for the Dentist and Optician.
- Whangarei – for the Hearing Clinic, the Spa Pool Centre, the Garden Centre, the Airport.

My wife has her own list, and her destinations would be quite different. My neighbours would have their own lists and destinations.

If some planner decided we should have been forced to locate so as to “support” their preferred “nodal centre”, given the dispersed nature of our preferred list of suppliers of goods and services, which nodal centre should we have been forced to support? And how can any planner determine which location would give us both the most efficient travel times?

Individual householders are the only people with the information to make their location decisions. Moving our household to be closer to one of those destinations can actually increase the overall trip length and travel time for most of these regular trips.

Conclusion: Individuals have more information about their personal circumstances than planners can ever have, and hence those individuals are best placed to decide where they should live, work, and play.

2.6 Communities make Places – not the other way round

The Centre paper “[Retail and the RMA – the high costs of regulation](#)” pints out that where regulators have attempted to protect main street shopping they have devastated the retail sector.

The regulators are well intentioned – they do not set out to reduce employment in retail, raise rents and prices, and choke off innovation and change. So why do the regulators get it so wrong? The problem lies with their belief in a second false theory based on the same spatial determinism.

The central planners believe that places create communities as an extension of their belief that locations determine behaviour.

This is a seductive theory but, sadly, it too is wrong as the Centre explains in "[Planners mired in an irrelevant past](#)".

Places do not create communities. Communities create places.

A retail centre may provide a focus for a community of shared interests, but not normally. If they do, it is because the community of interest has created the centre – not the other way round. For example, the wonderful Farmer's Market at Matakana has not created a "vibrant community" – whatever that may be. A group of people with a strong shared interest in growing and selling fresh fruit and vegetables created the Farmers' Market. The people created the place. When I want to chat to other growers that's where I go. When I just want to buy the week's groceries I go to the supermarket.

Think about your own life and think about your own communities of shared interests. Then ask how many focus on any single place.

The development of impersonal shopping centres has been a natural development of this dissociation of communities from a single place. We are not short of places to meet and chat. The internet means that most of us are chatting more than ever before.

So are we stuck with small retail centres at one end, and huge impersonal malls at the other?

Not at all. The market continues to respond to changing needs. As an aging generation has more time on its hands, and as a wealthier population seeks more variety in both in their products and places, the retail developers are building what the Americans now call "Lifestyle Centres". Botany Downs is an early local example.

These new centres recognize that the communities of interest need more than bargain prices to attract affluent customers with time to spare. So they build centres that complement the retail outlets with movie complexes, health clubs, children's play areas, farmers' markets, sit-down restaurants and cafés.

These diverse places are set within a high quality landscape combining efficiency with comfort and human scale.

The developers employ designers who know how to create intimate and comfortable architecture where one can relax, chat and watch the world go by.

Finally, the regulators have to understand that places with this “people appeal” are created by those few architects who know how to design spaces and places of human scale – the size of a room or an alcove. This requires an understanding of what makes people tick and an appreciation of those architectural elements which have proven their appeal over thousands of years. Christopher Alexander describes these in his seminal books “The Pattern Language” and “A Timeless way of Building”.

We cannot write these outcomes into a book of rules.

And we will not meet the needs of today by regulating to maintain an irrelevant past.

3 Refuting the Specific Assumptions of Spatial Determinism.

3.1 Technology largely dictates the impact of transport on urban form.

The major dictators of urban form are historical and topographical. For example, Auckland and Honolulu have long coastlines of wonderful beaches that act as strong magnets – stronger for most people than their local CBD. Auckland has two massive harbours within the metropolitan area that reduce its overall density even though Auckland’s urban densities are quite high by new-world standards. New York City and Venice are on islands – which truly dictate their urban form.

The impact of transport on ‘urban form’ is determined by the available technology.

In “*The Best Laid Plans*”⁵ Randal O’Toole, explains that the fundamental premise of Smart Growth – that ‘holistic urban design’ can change people’s transportation choices – is based on a misunderstanding of cause and effect. There is a connection between transport and land use, but it is a “one way street”. Transport technology influences patterns of land-use but land-use patterns do not significantly influence people’s choices of transport.

He explains:

Steam trains in the 1830s, horse-cars in the 1850s, cable cars in the 1870s, electric streetcars and subways in the 1890s and automobiles in the 1910s each reduced transportation costs and allowed more people to live in their preferred styles of housing. ... While early technologies such as steam trains and horse-cars were accessible only to the wealthy, electric streetcars (trams) helped create a growing middle class while Henry Ford’s automobiles were affordable to the working class.”

⁵ Randal O’Toole, *The Best Laid Plans*, p 96.

Each of these technologies allowed a step towards decentralization of the city and these advances in transport were being paralleled by advances in telecommunications – the telegraph, the telephone, the fax, and then the internet explosion, which allows people like me to live wherever I want, and still maintain daily contact with my ‘community of common interest’ now spread around the world.

O’Toole quotes a US survey of 2002 which found:

- *64 percent of Americans want to live in a larger home than their current one.*
- *Only 17 percent want to live closer than they do to work, shopping entertainment and restaurants.*
- *Only 7 to 9 percent want to live closer to “the city” or public transport.*
- *82 percent prefer a single family home in the suburbs; and*
- *only 18 percent want a “home in the city” close to work, public transport, and shopping.*

Surveys conducted in the Auckland city in the sixties confirmed these general trends, as do recent surveys in Perth, Western Australia.

It is easy to be impressed by the recent influx of people into the central cities.

However, during the post war years the planning fads of the time actively discouraged residential use in many central areas, which were rigidly zoned for commercial use. This rigid zoning was the target of Jane Jacob’s major work “The Death and Life of Great American Cities”.

I am quite sure that a similar survey of Aucklanders, and other New World citizens today would find similar preferences, which means that if Smart Growth policies are to be implemented anywhere, they will deny most citizens of their right to exercise their preferences. We should not be surprised if they depart for more democratic shores, or regions.

Californians are migrating to Texas, and Aucklanders are migrating to Australia.

Conclusion: the vast majority of people, especially in the nations of the New World, prefer to own their family homes on a suburban piece of land with some space round it – although these preferences may change through the family life-cycle.

3.2 Forced Public Transport-Oriented Residential Development Reduces Public Transport Use.

When surveys reveal that people living near to public transport nodes make greater use of public transport than the general urban population, Smart Growth advocates assume that forcing more people to live near to transport nodes will further increase public transport use.

Again this is getting the cart before the horse. People who live next to transport nodes and use public transport have chosen to live there because, for whatever reason, one or more members of the household prefer to use public transport.

Paradoxically forcing more people to live around these nodes by mandated minimum densities, and using legal force to prevent people living elsewhere, (which occupies much of the Smart Growth planners' time) actually displaces people who would prefer to use public transport. Consequently overall public transport use, or market share, declines.

Here is the relevant research:

[Residential Self Selection and Rail Commuting](#) (788-kb pdf)

Author: [Robert Cervero](#) and [Michael Duncan](#), UC Berkeley.

Citation: University of California Transportation Center research paper 604, 2003.

Summary: Robert Cervero is an urban planner who wants to believe that rail transit will work, but he is also an honest researcher. Here he finds that at least 40 percent of the transit usage near train stations is because people who want to ride transit choose to live there. He concludes that market-responsive zoning and reducing barriers to residential mobility is more important than mandating high-density housing.

Quote: "Public policies should focus less on designing TODs (Transit Oriented Developments) in response to, say, political smart-growth agendas and more on expanding market opportunities that allow those who wish to live near transit to act on their preferences."

This is yet another example of the unexpected outcome of inadequately researched market intervention.

Conclusion: Forced intensification around transport nodes is likely to reduce the public transport market share.

3.3 Residential Density Doesn't Count – Job Densities and Concentration Do.

The "Design Fallacy" and its currently fashionable subset, "Spatial Determinism" encourages Smart Growth central planners to believe that higher densities encourage people to drive less.

Not so.

These claims ignore the effect of incomes and household size on behaviour. When these factors are accounted for, changes in driving are significant only at very high densities. The sad reality is that if densities are doubled in urban neighbourhoods, where the infrastructure has been designed for their existing densities, the end result is an increase in congestion and increased frustration from the shortage of kerb-side parking. (the drainage systems are likely to be overloaded as well.)

The simplest analysis shows that it is job concentration which impacts on public transport use, and that high job concentrations are found mainly in the Central Business District.

Both US and Canadian studies show that residential densities have little effect on car ownership and use. The most important influence on reduced car ownership and use was “having a central-business district worker in the household.” Overall, “centrality of jobs has more effect on auto-ownership than population density.”⁶

Here is a summary of the relevant US research:

[United States Central Business Districts: 50 Largest Urban Areas 2000 Data on Employment and Transit Work Trips](#) (564-kb pdf)

Author: [Wendell Cox](#)

Citation: Demographia.com, 2006, 25 pp.

Summary: Presents data showing downtown jobs and the share of downtown and urban-area workers who use transit.

Quote: "Transit best serves the most concentrated CBD cores, where its routes generally converge."

ANALYSIS: TRANSIT & DOWNTOWN

Confirming the saying that “transit is about downtown,” approximately one-third of the nation’s transit commuters travel to five downtown areas (New York, Chicago, Washington, Boston and San Francisco). The transit work trip market share of these downtowns is 63 percent. These five downtown areas are so dense that they encompass a total of only 17 square miles, only slightly larger than Disney’s new urbanist development, *Celebration*. If the five downtowns were arranged in a circle, the average person would require less than one hour to walk from the middle to the edge. (The supporting table provides comparisons to the land area of the five largest CBDs.) At the same time, the transit market share outside the largest downtowns is much smaller. Among the remaining 45 largest urban areas, the downtown transit trip market share is 17 percent. Outside downtown areas, the transit market share outside downtown is 4.9 percent in the 50 largest urban areas. Only New York exceeds eight percent. However, outside the city of New York, which is five times as dense as the entire New York urban area, transit’s work trip market share is a much smaller 6.2 percent.

⁶ Andrew Carter, Gordon Ewing, and Murtaza Holder, [Could New Urbanism Policies Reduce Car Dependency in Cities? Evidence from Old Urbanism](#) (Montreal; McGill University, 2004), p28.

Given these harsh facts of life the notion that increasing densities around transport nodes remote from the CBDs of major cities will have any impact on car ownership and use appears fanciful, to say the least. We do know that these policies have a dramatic negative impact on housing affordability and also, on the overall desirability of urban areas subject to these draconian interventions by central planners.

When people are deprived of their choices they simply leave town. And if local house prices have been inflated they can benefit from the “relocation bonus” resulting from moving to a more affordable country, region or market. Until the “bubble” burst, moving from San Jose to Houston delivered a relocation bonus of over one million dollars, which certainly made relocation attractive. (See: “*The Star City of the Lone Star State* (Col.8) and Houston – the well-planned city without a Plan (Col. 9) at the [Centre Web Site](#). (Columns)

Conclusion: Increasing density around public transport nodes has little impact on car ownership and use (and may indeed be negative) unless the transport node services a high concentration of jobs as is normally found only in the CBD.

3.4 The Failure of Mandated Minimum Density.

Mandated minimum densities of the kind being promoted by Smart Growth advocates are a totally new degradation of property rights. The notion that any right to use one’s own private property is limited to a minimum “yield” is drastic form of “taking”. These minimum density rules obviously discriminate against the poor or anyone who has limited access to debt or equity. One could surely argue that such rules are contrary to the Bill of Rights.

Overseas research exposes all manner of unexpected outcomes – although in some cases the “unexpected” outcomes have been the intention.

When the city planners of San Jose or Portland wanted to declare an inner-city low income neighbourhood area “blighted” – so they can take it under their powers of eminent domain for on-sale to “more suitable” developers – they applied mandated minimum densities which means that houses must be replaced (in the event of fire or whatever) with apartments, and existing houses cannot be extended and improved except as new apartments or whatever. Of course most of these poor, black and Hispanic households have little borrowing power, especially to fund “commercial” enterprises such as apartment development.

The results were inevitable and intentional.

Even when the intentions are benign (if any such draconian intervention in people's rights to the "quiet enjoyment" of their property can be called benign) they do not deliver the intended benefits. Kenneth Dueker reports:

Increasing densities may be appropriate when other aspects of urban development can be controlled through urban design. However, evidence provided here indicates that mandating density reduces land consumption, but does not achieve other objectives of growth management, particularly street connectivity, greater use of alternative modes of transportation, and more housing choices.

Dueker's full report is here:

[Mandated Density: The Blunt Instrument of Smart Growth](#) (604-kb pdf)

Author: by [Kenneth Dueker](#) (Portland State University)

Citation: Draft, 2002, 13 pp., www.upa.pdx.edu/CUS/publications/docs/DP02-2.pdf

Summary: Minimum-density zoning won't accomplish the objectives of smart growth, such as getting people to drive less or providing more housing choices.

Quote: "Use of minimum density requirements in commercial areas is having the effect of under-building and diverting development from those areas. . . ."

The quote from Dueker's report should not be surprising. Developers who risk their own money are best able to assess what level of investment a site can stand. A rule which sets a minimum density is likely to deter many who want to make more modest investments than the rules allow.

Conclusion: Mandated minimum densities are an unprecedented intervention into people's rights in their own property and fail to deliver the claimed benefits, while causing major hardship for those least able to deal with the outcomes.

3.5 The Failure of Transit Oriented Developments.

Before anyone rushes down the path of mandated Public Transport Oriented Development we should surely look at the US research where these developments have been in place for some time and found wanting. Medals and awards for new schemes are no guarantee of success. We should examine the performance of projects that have been in place for some time and have been well tested. These two reports should give us pause.

[TOD: A Solution in Search of a Problem](#) (152-kb pdf)

Author: [John Charles](#), Cascade Policy Institute

Citation: Cascade Commentary 2003-24, July, 2003

Summary: There is no evidence to indicate that transit-oriented developments in the

Portland area are reducing congestion, increasing transit usage, or cost less to build than traditional suburban neighborhoods.

Quote: "Attempting to retrofit the suburbs through Transit Oriented Development (TOD) will be a costly exercise in futility, while making regional traffic problems worse."

[The Mythical World of Transit-Oriented Developments: Light Rail and the Orenco Neighborhood](#) (896-kb pdf)

Author: [John Charles](#) and [Michael Barton](#), Cascade Policy Institute

Citation: Cascade Policy Institute, 2003

Summary: Though widely acclaimed in the planning literature, the Orenco development has not reduced traffic or improved air quality, and the high-density zoning mandated for parts of the area are actually retarding development.

Quote: "Many local residents do not feel that high-density development improves their quality of life."

I have visited Orenco and it is quite bizarre. The central planners mandated high density development around the light rail stations and insisted on a limited parking per dwelling.

The idea was to encourage lots of people to live near the station and to discourage car ownership. The end result, as the photos in the Orenco study reveal, was that the stations are surrounded by plains of grass (where developers have feared to tread).

Conclusion: Planners cannot force developers to invest their money in projects which the public do not want, and will not accept.

3.6 "Integrated" Urban Design has limited ability to influence Walking and Cycling.

This should not surprise us. Many people walk and cycle mainly for exercise and are not concerned with destinations. I live in the country and try to walk the dog (and myself) every morning. The weather has much to do with the success rate. While hills discourage commuter walking (they make you sweat) exercise walkers seek them out.

This research from the Transportation Centre at Berkeley reveals much about our ignorance.

[Walking, Bicycling, and Urban Landscapes](#) (132-kb pdf)

Author: [Robert Cervero](#) and [Michael Duncan](#), UC Berkeley

Citation: University of California Transportation Center research paper 713, 2004.

Summary: Here Cervero finds that the 'built environment' exerted far weaker influences on people's decisions to walk or bicycle than other factors. Based on this, he again ends up supporting 'market-responsive planning and zoning.'

Quote: "Many factors conspire against walking and cycling in contemporary urban

American of which car-dependent landscapes is just one. Unless factors like weather conditions or topography are controlled for, our understanding of how built environments influence travel will remain murky."

We also have to recognise that sometimes the cost and benefit of cycle lanes within a roadway simply do not stack up. If a dedicated cycle lane takes a single traffic lane out of action the negative impact on the majority far exceeds the benefit for the minority. Given that road users pay for their roads with a petrol tax, should the users of cycle lanes pay for their "roads" with a combination of registration and lane-user charges, and if so what should the fees and charges be in a typical urban area? We should do the exercise if only to see whether the benefits really do justify the costs.

Conclusion: In most places, the combination of terrain, climate, and the aging population, means cycling will never make a major contribution to mobility, but has a place, especially for recreation, fitness and tourism. But when lanes compete for road space the benefits and costs demand cool-headed analysis.

3.7 Modern Technology is More Cost Effective than the Old

3.7.1 The Transport Mode that Dare not Speak its Name – because it works!

Our politicians and central planners love to tell us:

"We have to get people out of their cars and on to public transport – especially on to trains."

They may take heart from "widespread public support" for such slogans but they seem not to realise the public are really saying:

"Get other people out of their cars so I can have more room on the road."

It's a hopeless cause because the private automobile is simply the most effective, efficient and comfortable means of transport ever devised. People are NOT "addicted" to their automobiles. People CHOOSE to use automobiles for the same reason secretaries use word processors, farmers use tractors, and we all use washing machines. Automobiles are the sensible choice.

We now have ample evidence that attempts to reduce congestion by boosting public transport are doomed to fail. From 1980 to 2000 the US increased its annual transit subsidies by 133%. The end result was a 26% loss in public transport work-trip market share.

That's money well wasted.

Over the same period, solo-driving's work-trip market share increased by 18%.

There is no doubt that getting people out of their cars during peak hour commuting times can reduce congestion. We notice this during school holidays when many parents take their vacation so as to share it with their children.

So the first part of the "solution" – getting people out of their cars – may be a good idea. But the second part is now demonstrably wrong.

Why do the planners persist with such a lost cause?

Today's planners are Urban Romantics⁷ who steadfastly look to the 19th Century for solutions to 21st Century problems. Consequently, they completely overlook the one technology which actually does get people out of their cars during peak hours, which can reduce congestion and provide all the benefits claimed for public transport – but which are never delivered.

This ideal alternative is called telecommuting, and it's being driven by broadband – the higher the speed the better.

Since 1980, telecommuting is the only commute mode, other than single occupancy driving, which has increased right across America. The figures are startling. If we exclude New York City, which accounts for over 38% of total transit commuters in the US, telecommuters now outnumber public transport commuters – 3,904,656 telecommuters vs 3,747, 218 public transport commuters.

In San Diego, Dallas and Phoenix, telecommuters outnumber all public transport commuters. In Oklahoma City telecommuters outnumber all public transport commuters by nearly five to one. In San Diego telecommuters outnumber light-rail commuters by 22 to 1 and in Denver by 47 to 1. Broadband, unlike light rail, requires no subsidies from ratepayers or taxpayers – and it works.

Public transport enthusiasts insist that public transport delivers a host of benefits, which justify the massive extra costs and inconvenience.

Copious evidence now demonstrates these benefits simply don't eventuate. In spite of massive subsidies and attempted social-engineering the end result of massive wasted

⁷ McShane, Owen; *The Rise of Urban Romanticism or The New Road to Serfdom*. Centre for Resource Management Studies, June 17, 2005. Go to: <http://www.rmastudies.org.nz/documents/UrbanRomanticsUS.pdf>

investment in public transport has had virtually no impact on fossil fuel consumption, greenhouse gas emissions, accident rates, air pollution, and general quality of life.

On the other hand telecommuting delivers better outcomes to all these problems, and more.

When supported by high speed broadband, telecommuting improves mobility, reduces air pollution, reduces accidents, reduces fossil-fuel consumption, increases “quality time” and leisure, and increases employment opportunities for the physically handicapped.

This same package, working in reverse, also improves access to health care by allowing top quality doctors and specialists to operate from “virtually” anywhere

Many telecommuters have children at home. In the long term this may prove the most important benefit of all. In a recent *Opinion* piece in the *New Zealand Herald* a young woman, studying to be a lawyer, expressed concern that while she wanted to marry and have children the cost to her career would be massive because the time she would need to take off from work would set her back permanently, and the fact that this was her intention would probably stand against her from the day she began her legal career.

The American experience is that this no longer need be so. A young woman can continue to pursue her professional career by telecommuting – either full or part time. Many American companies now regard a period of proven telecommuting ability a big plus on a workers’ CV.

After all, telecommuting saves the employer costs as well, and proven telecommuters can be a useful resource when tendering for joint venture projects within different markets and countries. Telecommuters reduce the need to outsource to other countries because of their lower costs and higher productivity.

3.7.2 Choosing your Quality Time

Unions complain that our workers are spending more and more time at work and the quality of life, and of family life in particular, is suffering as a consequence.

Certainly, spending two hours every day commuting in rush hour traffic, fretting and fuming, and wasting time and money hardly contributes to anyone’s wellbeing. How many children go to school without lunch because their parents have had to get up so early “to beat the rush”? How many parents cannot afford school fees and books because of the money they spend on child-care and housekeeping services? Telecommuters can choose how to use their own time. It’s their choice.

Unions campaign for extra annual leave while employers complain of the extra costs. Typical telecommuters in America are gaining about 15 eight-hour work-days a year in actual extra time. These extra days come at no cost to the employer.

These savings are based on the measurable savings in commuting times. But telecommuters find other ways to save time – they shop at off-peak times and so enjoy easier parking and less time in check-out lines. They go to the gym when it suits rather than on their way to and from work when everyone else does.

They also save real money. The typical telecommuter in Southern California saves as much as US\$1,200 a year in petrol money alone. They also save on expensive wardrobes, restaurant meals, hairdressing, makeup, child-care, and house care.

3.7.3 A Quiet Revolution

Given all these gains in so many areas, why do the benefits of telecommuting go largely unnoticed by planners and politicians alike?

We know that the Smart Growth planners are more concerned with getting people into public transport than improving our lives. Politicians probably ignore telecommuters because they are dispersed, have no single voice, and are largely unaware of their own political power. Mainly, they don't identify themselves as telecommuters.

Even those who stand most to benefit from telecommuting, like the young woman studying for her law degree, seem unaware of the opportunity which telecommuting, supported by high speed broadband, can offer to improve their quality of life and enhance their careers.

It's time they spoke out.

3.7.4 Remove the Barriers.

Many District Plans hamper the growth of telecommuting, by, for example, strictly limiting the types of activities allowed in residential districts. We should relax our RMA standards to allow for more home-based work. This approach conforms to the principles of mixed-use development, popularized by New Urbanism. Supporters of New Urbanist design should also be encouraged by research that suggests that telecommuting *per se* does not expand sprawl. Telecommuting touches a surprisingly wide range of issues. It may be the most cost-effective way to reduce rush-hour traffic and it also helps improve air quality, highway safety, and health care. Telecommuting expands opportunities for the handicapped, conserves energy,

and—when used as a substitute for offshore outsourcing— it can help allay globalization fears.

Here is Ted Balaker’s splendid ground-breaking research:

[The Quiet Success: Telecommuting's Impact on Transportation and Beyond](#)

(1.2-mb pdf)

Authors: [Ted Balaker](#)

Citation: Los Angeles, CA: Reason Foundation, 2005, 57 pp.

Summary: Telecommuting is growing faster than transit ridership. However, unfriendly zoning ordinances and other existing laws often discourage it.

Quote: "Telecommuting may be the most cost-effective way to reduce rush-hour traffic and it can even improve how a weary nation copes with disasters, from hurricanes to terrorist attacks."

The most remarkable thing about Telecommuting is that it seems to have totally escaped the attention of government policy makers. Most government transport strategies make no mention of Telecommuting – the one transport mode which can achieve all of the strategy’s goals. Are we so fascinated with the technologies of the past that we cannot see the technologies all around us? This is not the time to be driving with our eyes glued to the rear vision mirror.

Conclusion: Telecommuting is the most effective new transport mode and has already proven that it can deliver all the benefits that regular “public transport” modes fail to deliver – and it requires no subsidies.

4 HOT Lanes – The Other Solution that Really Works.

Today’s High Occupancy Vehicle (HOV) lanes represent a valiant but largely unsuccessful effort to reduce traffic congestion in America’s large metropolitan areas. Despite billions of dollars worth of capital investment, and many years of rideshare promotion, HOV lanes have not changed Americans’ driving habits. Instead of gradually gaining strength, carpooling has been slowly eroding. Although HOV lanes reduce travel time for the small percentage of commuters who are able to carpool, most of the traveling public gains no benefit.

Meanwhile, traffic congestion has continued to increase.

All over the US HOV lanes are being transformed by turning them into High Occupancy Toll (HOT) lanes that serve as high-speed bus lanes, while providing a faster and more reliable travel option for private vehicles. Buses and van-pools can use the premium lanes free of

charge, while other motorists pay a variable toll. Tolls are debited electronically from users' smart cards,⁸ or window mounted transponders, thus doing away with tollbooths and cash transactions.

These HOT lanes are also work well with Bus Rapid Transit (BRT).

The number of cars using the reserved lanes can be controlled through variable pricing so as to maintain free-flowing traffic at all times, even during the height of rush hours. California's two HOT lane projects, which have been in operation for several years, have demonstrated convincingly the ability of electronic variable pricing to maintain congestion-free conditions even during peak hours. The following report shows the extent and rapid development of HOT networks across America.

[HOT Networks: A New Plan for Congestion Relief and Better Transit](#) (1.7-mb pdf)

Author: [Robert Poole](#), Reason Foundation and [Kenneth Orski](#), Urban Mobility Corporation

Citation: Reason Foundation, policy study 305, 2003

Summary: A network of toll lanes built alongside of existing free lanes could guarantee that anyone could drive anywhere at anytime of day without facing congestion if the tolls varied by the amount of congestion.

Quote: "People of all income levels use the (California) HOT lanes when saving time is an important consideration. Indeed, utility vans and delivery trucks are a far more common sight on California's HOT lanes than the proverbial Lexus."

Sadly, our own BRT system in Auckland is running on "bus-only lanes" and its declared purpose is to get motorists out of their cars and into public transport. Given that motorists fund these projects out of gas taxes and road-user charges surely they should reasonably expect that this massive investment in infrastructure should aim at improving the overall mobility of all road users. The combination of BRT and HOT lanes does just that and the overall return on the investment is hugely increased. The US experience shows that the tolls collected can make the project self funding – something which Bus-Only lanes can never do.

Conclusion: Any remaining Bus Only Lanes alongside high volume freeways should be converted to HOT lanes as soon as possible.

5.0 The Suburbs Keep Scoring Points.

5.1 Suburban Living no Impediment to Social Interaction.

⁸ Such Smart Cards are the answer to integrated ticketing – not central management or ownership of all our transport systems, as is claimed by so many City governments.

One claim in favour of “Smart Growth” is that people will interact more frequently and more effectively if they live at high densities and avoid the isolation they experience in the dreadful suburbs – which apparently promote every kind of misery known to man.

A new international study, “[Social Interaction and Urban Sprawl](#)” by Jan K. Brueckner (Department of Economics, University of California, Irvine) and Ann G. Largey, (Dublin University Business School, Ireland) puts this piece of planning lore to rest. The authors’ final paragraph concludes:

“... the paper’s findings suggest that social-interaction effects should not be included in the panoply of criticisms directed toward urban sprawl. In fact, the results suggest an opposite line of argument.”

The banging sound you hear is another nail being driven into the coffin of central planning lore.

5.2. Low Density Housing more Energy Efficient than High Density Housing

A new report from Australia provides even more music to the ears of those challenging “Smart Growth”, and similar foolishness. The report by Energy Australia, [Multi Unit Residential Buildings Energy & Peak Demand Study](#) examines the relative energy consumption of high-rise and medium-rise apartments and villas, town houses, and detached dwellings, on a “per capita” and “per household” basis. Now we all know – because the planners tell us so – that higher densities save energy, and that suburban detached housing is energy profligate. Well, it seems we have been misled – again.

The report examines the relative energy consumption of high-rise and medium-rise apartments and villas, town houses, and detached dwellings, on a “per capita” and “per household” basis. The report finds that low-density housing outperforms high-density housing in energy consumption and greenhouse gas emissions.

The reason why earlier reports had reached the opposite conclusion was because the researchers had ignored the energy impact of the public areas within the building. The Australian researchers’ last sentence reads:

It is critical that future studies look at the whole building consumption, including internal apartment consumption and common areas, to fully understand the energy needs of multi-unit dwellings.

I should think so. I was in a team that discovered this same sleight of hand from the New Zealand Ministry of Works back in the sixties when they claimed that their concrete five storey Star Flats were cheaper per square foot than two-storey timber construction. They compared the net floor areas rather than the gross areas.

Another study, which has come down in favour of central city apartments over suburban housing, simply compared the energy consumption of appliances with no regard to household size or dwelling size. (I won't grace it with a link.)

One does have to wonder if such research is honest. There is a strong case for double-blind funding of such studies, where the funder does not know who they are funding, and the researchers do not know who is funding their work.

5. Climate Change – the Last Gasp of Smart Growth Theory.⁹

5.1 Introduction

This paper, presented to the *San Jose American Dream Conference*, and to the *New York International Conference on Climate Change*, says that *Smart Growth*, in its many guises, has always been a policy in search of justification, or a solution in search of a problem.

More recently *Smart Growth* claims to save us from our own foolishness. If left to ourselves we will live in suburbs which will cost us more, contaminate our lungs, waste our time, make us fat, spend too much on transport and infrastructure and generally fall into moral turpitude and decline. *Smart Growth* will evidently save us from all these sins and the salvationist¹⁰ planners will deliver happiness – and a ride on a train. The general public remains unimpressed if we judge the public by its actions rather than by the pronouncements of the planners.

Most recently the *Smart Growth* salvationists claim they can deliver us from global warming. They have assumed – as usual without bothering to collect any supportive evidence – that intensification, more public transport, urban growth limits, walkable cities, and all their

⁹ <http://www.castlemaineaction.com/articles/last-gasp-of-climate-change.pdf>

¹⁰ For a discussion of “Global Salvationism” see *Economics, Climate Change Issues and Global Salvationism*, By Prof David Henderson. This text formed the basis for a talk given at the Political Economy Club, London, on 4 May 2005. Go to:

<http://www.staff.livjm.ac.uk/spsbpeis/David-Henderson.htm>

favourite fads, will reduce our carbon footprints, lead us down the path to carbon neutrality, and consequently save the world.

These “carbon” driven policies are typically promoted under the rubric of “sustainable urban form”.

The salvationists make these claims with such conviction that many on the sidelines assume they must know what they are talking about. You might think so too. You would be wrong.

5.2 Why are Cars the Favourite Target?

The promoters of “sustainable urban form” generally seize any opportunity to persuade us that they should be given the power to “design” “sustainable cities” with “compact urban form” behind *Metropolitan Urban Limits* so as to increase densities, stop people living in suburbs, force them out of their autos and onto buses and trains, or onto cycle tracks and footpaths.

They simply assumed these draconian interventions were self-evidently necessary as pathways to salvation from Global Warming. Smart Growth fans take it as read that suburban living sets us on the pathway to global warming hell.

They are wrong. Transport analysts acknowledge that the modern private-vehicle fleet is more fuel-efficient in its overall operation than buses and trains. This is because the whole-of-day percentage loading of the private automobile is much superior to the whole-of-day percentage loading of the public transport fleet. The UK *Rail Safety and Standards Board* recently admitted that catching a diesel train is now twice as “polluting” as traveling by car for an average family.

No amount of social engineering by managing “urban form” can significantly change these whole-of-day loadings because the majority of vehicle trips in a modern city¹¹ are for social and recreational activities rather than commuter trips, and commuter trips become less focused on the CBD by the day as cities and people’s activities continue to decentralise.

Consequently “getting people out of their cars and into buses and trains” does nothing to reduce the family “carbon footprint” and almost certainly makes it worse. More importantly, the New Zealand government’s own climate change web page tells us that the private vehicle fleet accounts for only 8.5% of New Zealand’s greenhouse gas emissions. Only a third of

¹¹ At least in the modern new world cities that have developed mainly since the widespread use of the automobile. It may not be true for “older world” cities such as New York.

those vehicles are in large urban centres. So manipulating urban form can impact on only something under 3% of New Zealand’s total greenhouse gas emissions. And the impact goes in the wrong direction anyhow.

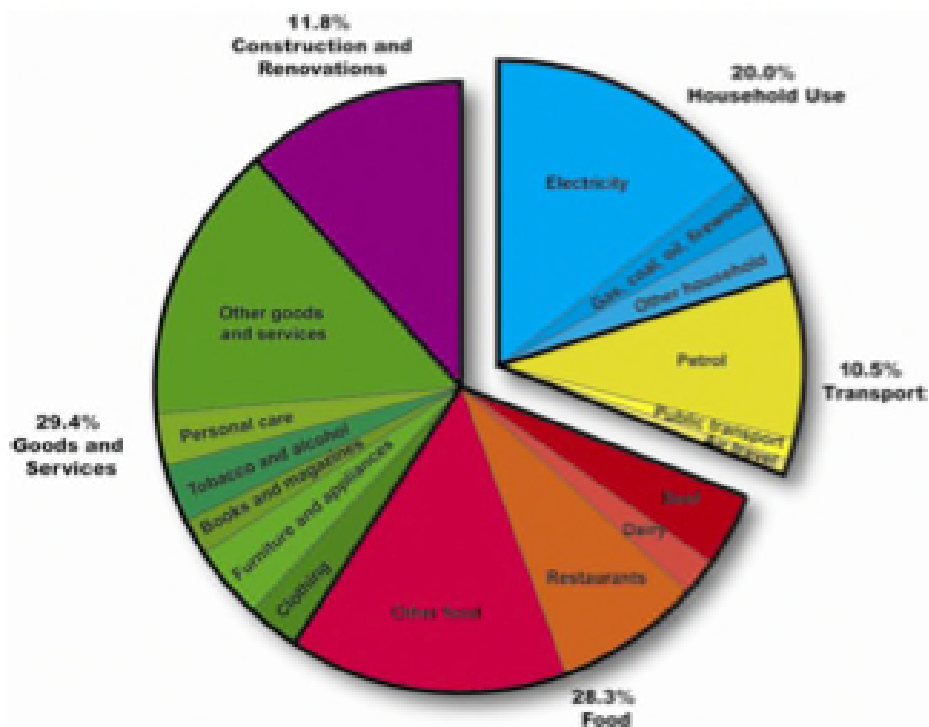
5.3 Private Household Emissions barely figure.

This application of Carbon Footprint alarmism to support Smart Growth theory has been further undermined by a recent Australian study, [Consuming Australia by Sydney University’s Australian Conservation Foundation](#), using data collected by the *Centre for Integrated Sustainability Analysis*. You cannot get a much more PC name than that – it combines conservation, sustainability and integration into one title!

Anyhow, the Sydney researchers found that total transport activity – including private vehicle use, public transport and aircraft – accounts for only 10.5% of the carbon footprint of the average Australian family. This was the smallest slice of the carbon footprint “pie”. (See the pie chart above.) Food accounted for over 28% of the footprint. Putting everyone on a diet would have a greater impact on the family’s carbon footprint.

Now there’s a new campaign for *Weightwatchers* – “Join up and Save the Planet!”

Fig 1. Average household profile: greenhouse gas pollution



Governments wanting to take the carbon footprint of dwellings should note that “construction and renovations” account for only 10.5% of the family’s carbon footprint – a bit more than transport, but much less than “other goods and services” at almost 30%.

The report bluntly concludes:

If every Australian household switched to renewable energy and stopped driving their cars tomorrow, total household emissions would decline by only about 18%.

So why do our social engineers focus on transport and construction which are such small slices of the carbon footprint pie?

Again, I suspect it’s just because “they are there” – and, in particular, they are there to tax, inspect, and regulate.

Wendell Cox has taken the same data and prepared a much more detailed analysis of the effect of urban form and household type on greenhouse gas emissions.

His executive summary (p7) concludes:

“However, reducing GHG emissions is not so simple as to be achieved through the urban consolidation agenda. Indeed there is considerable evidence to the contrary. GHG emission estimates from the recently published Australian Conservation Foundation Consumption Atlas, indicates virtually the opposite of the generally held perceptions. The data shows that lower density areas, which rely more on automobiles, tend to produce less in GHG emissions than the high density, more public transport dependent areas that are favoured by urban consolidation policies.”

Here are the truly “inconvenient truths” established by the Wendell Cox report (p 8):

- *Lower GHG emissions are associated with urban fringe locations, not the core.*
- *Lower GHG emissions are associated with higher rates of detached housing.*
- *Lower GHG emissions are associated with greater automobile use.*
- *Lower GHG emissions are associated with lower population density.*

The full report, *Housing Form in Australia and its impact on Greenhouse Gas Emissions* is at:

http://www.affordablehome.com.au/files/pdf/research-pdf/RDC_ACF_Greenhouse-Report.pdf

5.4 Live where you like – Location Doesn't Matter!

The *Consuming Australia* study also examined the carbon footprints of families living in different states, different cities, and in different locations within cities. The researchers probably expected to come up with support for Smart Growth claims that high-density inner-city living will help save the planet while suburban living sends us down the pathway to toast. Instead, they found that “place doesn't matter.”

Household income proved to be the major “carbon variable”. Families with the smallest carbon footprints are on lower incomes and live on the outskirts of town. The carbon footprint “criminals” are on high incomes, and live in “vibrant downtown communities”.

Burning up all that midnight ethanol must pump out the CO₂.

The researchers had to declare that:

Despite the lower environmental impacts associated with less car use, inner city households outstrip the rest of Australia in every other aspect of consumption. ... the opportunities for relatively efficient compact living appear to be overwhelmed by the energy and water demands of modern urban living. In each state and territory, the centre of the capital city is the area with the highest environmental impacts, followed by the inner suburban areas. Rural and regional areas tend to have noticeably lower levels of consumption. (my emphasis)

There goes the *Smart Growth* neighbourhood!

6. What is the Most “Sustainable” Housing?

Of course, “sustainable” means whatever the speaker wants it to mean – or the listener wants it to mean. Ask most people what they mean by sustainable and the replies are more garbled than most lay attempts to explain quantum mechanics.

However, the evidence from life itself, from bacteria to human beings, is that the key to long-term survival in the face of changing environments, (if that is what we mean by sustainable) is adaptability.

If a species is genuinely vulnerable to a small change in temperature then it has long disappeared from the planet. If some alarmist claims are true then polar bears “don't exist” because they could not possibly have survived the Earth's earlier warm periods. The surface

dwelling anaerobes certainly didn't survive the onslaught of atmospheric free oxygen – and their only survivors now live beneath the surface out of harm's way.

Humans are the most successful species on the planet in terms of habitat coverage because we are the most adaptable species on the planet. When it got cold during the little ice age we invented knitting and the Polynesians had the good sense to stop sailing towards New Zealand.

So, if we wish to build sustainable housing then surely we should be focusing on the most adaptable housing. We need a housing type that can be changed quite easily to adapt to changing household size or changing activities, and to changes in technologies and to changing needs of care. And if vegetables get expensive then a home garden is a useful option.

Now consider how easy it is to add a bedroom to a sixth storey apartment, or to retro-fit it with solar heating, or to add a home office with some measure of separation, or even to house a boat. If the apartment has been built of concrete for acoustic purposes then it can be difficult to rewire and change the plumbing.

And multi-storey buildings have all that public space which needs to be lit and heated.

However you look at it, the most adaptable, and hence the most sustainable dwelling looks something like the dwelling on the following page, complete with verandah additions, retro-fitted solar heating, vegetable gardens, wood burning stove, sky dish, an outdoor pizza oven and a separate building containing three offices on broadband and a sleep-out.



7. Conclusion – The End of Spatial Determinism?

Consuming Australia and the Wendell Cox report have, together, knocked the props out from under the argument that urban intensification is a cure for global warming by reporting that sprawling outer-suburban, auto-dependent households have lower carbon footprints than those living in the centre of town. And now the US urban economists, Professor Peter Gordon and his colleagues, have established that vehicle commuter trips are now outnumbered by non-work trips for social, recreational and other activities. Our own New Zealand statistics reveal the same truth. Philip McDermott's paper¹² reports that this was the case in New Zealand as early as 1997/98:

More immediately, even the presumption that trip making and transport capacity demands are still largely shaped by work trips is contentious. The National Travel Survey in 1997/98 indicated that work trips are in the minority. If we ignore trips to home (one third of the total) only 20% in total were actually to work (main or secondary job.) The figure rises to just 25% if we limit the analysis to car drivers.

Hence, if planners force people to live close to the CBD to reduce the work trip, they almost certainly increase their total driving times and distances – and their fuel consumption. Furthermore, edge-of-city dwellers have the shortest commuting times – they tend to drive across town to their jobs on the fringe rather than into town to the CBD. Professor Peter Gordon's web page is [a treasure-trove of evidence on patterns of work and residence in modern cities.](#)

Typical papers include:

- [The U.S. Context for Highway Congestion Pricing](#) [PDF]
- [Urban Spatial Structure and Economic Growth in US Metropolitan Areas](#) [PDF]
- [Where do \(near\) 300-million Americans Live and Work?](#) [PDF]
- [Residential Location, Land Use and Transportation: The Neglected Role of Nonwork Travel](#) [PDF]
- [Travel Trends in U.S. Cities: Explaining the 2000 Census Commuting Results](#) [PDF]
- [Settlement Patterns in the U.S. and Canada: Similarities and Differences —Policies or Preferences?](#) [PDF]
- [Is Sprawl Inevitable? Lessons From Abroad](#) [PDF]
- [Transportation and Land Use](#) [PDF]
- [The Continuing Decentralization of People and Jobs in the United States](#) [PDF]
- [Bicycling Boom in Germany: A Revival Engineered by Public Policy. A Comment](#)

¹² Phil McDermott, *Demographic Trends and Shifts in Transport Planning* a paper presented to the 7th Annual Land Transport Summit, 2007.

Central planning lore assumes that households have only one member and that member commutes to the CBD. In reality, different household members set out on different trips, serving different activities, in different directions. Consequently, no central planner has any idea how to optimize any household's location. It's time these myths about commuter trips were literally laughed out of court. Professor Gordon's work also demonstrates that cities cope with changing patterns of activity and trade by "churning" their land uses through different locations over time. This churning activity necessarily changes "urban form" in unpredictable ways. The rate of economic growth correlates directly to the rate of churn and hence attempts to freeze urban activities into fixed locations have a negative effect on growth and development. We should celebrate flexible land use rather than attempt to enforce rigid "growth management" rules.

If we want to promote economic growth and development we must avoid any interventions which inhibit economic development in general and flexibility in particular. That includes interventions in supply and price, as well as location.

Finally, spatial determinism flies in the face of basic freedoms. As Professor Gordon says¹³ "Country music fans celebrating *My Mean Green Freedom Machine* know what they are singing about" and "It is not only American teenagers who see an operator's license as their Declaration of Independence". We are people. We are not Lego blocks – providing toy-time for central planners. Motor vehicles do have adverse environmental effects. But the most efficient and effective way to address these effects is by focusing on the fuel, the engines and the emissions at the exhaust pipe. The modern vehicle fleet grows more fuel-efficient and less polluting by the day.

These benefits are delivered rapidly as improvements in air quality testify. On the other hand attempts to reduce driving by changing urban form impose massive costs, and any benefits – and I repeat, if any – are delivered only in some distant future by which time technological advances will have left the spatial determinists well behind.

We can only hope that "spatial determinism" will soon be as passé and laughable as the "architectural determinism" of old.

General Conclusion: If central planners want to make a useful contribution to the management of urban areas they need to focus on how cities actually work rather than on how they believe they should look, while leaving pollution and energy efficiency to the engineers and scientists

¹³ In *Is Sprawl Inevitable? Lessons from abroad* (See the list of papers above)