

Smart Growth: Combating 'hypersprawl'

Jon Reeds examines the global Smart Growth movement and light rail's crucial role in developing the low-carbon urban centres of the future.

It's a few years since Atlanta, Georgia, USA, was dubbed "the fastest growing settlement in human history". Already, by 1990, its low-density sprawl stretched 105km (65 miles) north to south but, by 2006, that had stretched to almost 180km (110 miles) – and it was still growing. In the land of 'hypersprawl', 'boomburbs' or 'exurbia', towns without sidewalks and freeways up to 18 lanes wide, it had narrowly emerged as the champion sprawler.

Not that there wasn't plenty of competition, but extreme challenges beget powerful solutions. The last two decades have seen the emergence of America's Smart Growth movement which aims to turn back decades of low-density, car-dependent sprawl and urban decay by promoting compact, permeable, communitarian, traditional urban forms supported by protection of undeveloped land and the promotion of urban transit, particularly in rail-based form.

Background to Smart Growth

A number of streams flowed into the Smart Growth concept, which was born in the 1990s. From the 1960s, the urbanist philosophy pioneered by Canadian Jane Jacobs and others showed how traditional, compact towns functioned as communities far better than low-density sprawl or high-rise. From the 1970s, countryside protection and opposition to urban sprawl became increasingly well organised. From the 1980s the transit-oriented development (TOD) movement began showing how settlements clustered around transit nodes functioned more efficiently and effectively than car-dependent ones.

Putting these kinds of thinking together in the 1990s generated Smart Growth and today it has become the basic planning philosophy of a raft of US cities and states. It transcends political boundaries, attracting bipartisan support from both Democrats and Republicans, and even has support from the White House.

So now, while Atlanta still expects to add another three million residents by 2040, the conurbation is prioritising development which makes best use of existing infrastructure – a key Smart Growth concept – especially transit stops. It is also encouraging densification of the development around the stops, enabling it to accommodate people with a lower environmental footprint in ways which encourage communities to develop.

California's Department of Transportation lists ten potential benefits of TOD:

- Travel options for those who cannot or do not use cars
- Populating streets outside peak hours, increasing public security
- Increasing transit ridership
- Reducing car usage
- Cutting commuting costs
- Reducing air pollution and energy use
- Reducing greenfield sprawl
- Regenerating run-down areas

Right: The City of San Diego, California (USA) adopted TOD design guidelines in the 1990s and incorporated them into official policies. These have since been successfully applied to residential and commercial developments around the light rail development to reduce urban sprawl, encourage infill and redevelopment, and further support development of the trolley and bus networks. EPA Smart Growth

Below: Light rail oriented development in Seattle, USA. The South Lake Union Streetcar is a perfect example of how sustainable, electrified transport has transformed a neighbourhood. Built to a cost of USD56m, the 2.1 km (1.3-mile) line began construction in July 2006, with joint funding from local property developers and federal, state and local funding, with public services beginning 18 months later. EPA Smart Growth



- Making best use of existing infrastructure
 - Reducing the cost of affordable housing
- Atlanta has been developing rail-based transit since the 1970s, but it took a couple more decades before TOD began turning the tide against sprawl. In 2005, a broad-based taskforce, the Livable Communities Coalition, recommended a raft of Smart Growth measures, including a "fair share for transit".

The ten counties in the conurbation are now promoting TOD at Metropolitan Atlanta Rapid Transit Authority (MARTA) transit stops and America's former sprawl capital is moving in a new direction. Areas of derelict industrial land like Atlantic Station and Glenwood Park have been redeveloped for mixed-use communities at traditional densities and the Beltline project is currently planning to convert a mostly abandoned 35km (22-mile) orbital rail corridor around the centre into an exemplar of compact, sustainable development and open space linked by light rail.

Smart Growth in the US Capital

Take Tysons Corner, outside Washington DC. Thanks to massive growth in offices and shopping malls, it grew from a rural intersection in the 1950s to the United States' 12th

largest employment centre. Its daytime population is around 100 000, but at night that falls to around 20 000 as workers and shoppers head for suburbia in their cars.

But Virginia's Fairfax County has long-term plans to utilise the Washington Metro Silver Line development to change Tysons Corner by creating denser urban centres around four of the stops, adding further public transport, creating ground-level retail and pedestrian friendly streets.

Such an approach is still by no means universal, but a significant and growing number of towns and cities in both the USA and Canada have adopted it – and there has been significant interest elsewhere. Cities like Portland have long stressed the importance of rail-based transit and Oregon pioneered rural protection, but many states are now signed up.

The significant growth of light rail in dozens of North American cities has not occurred in isolation; often, behind it, lie the philosophies of TOD and Smart Growth.

A good start, but could do better...

Today in the US, rising fuel prices are hitting house prices hardest where commuting distances are longest, and the economies of traditional compact town and city centres are reversing the trend of recent decades with growth that is

beating sprawl areas. A great deal of stimulus money has been put into transit and while deficit reduction may now scale that back, the benefits have been obvious.

A recent report by Smart Growth America, *Recent Lessons from the Stimulus: Transportation Funding and Job Creation*, found that the states that had created the most jobs were the ones that invested in transportation projects, both public transport and existing roads and bridges. But those that did worst were those which invested in building new roads, while public transport had the best return.

"The states that did put dollars toward public transportation were richly rewarded," it concluded. "Each dollar used on transit was 75% more effective at putting people to work than a dollar used for highway work."

But Smart Growth involves much more than just building transit facilities; it means getting building densities and forms right so that people not only want to walk or cycle round their towns but have good reasons to do so, such as local shops and other facilities and that town centres have "active frontages" like shop fronts, restaurants or community facilities, not hostile dead frontage or parking areas.

It involves realising that urban sprawl destroys more than just nice views, but also damages our food and water supplies and flood control, reduces our land's ability to sequester carbon and undermines the powerful emotional links which even urban dwellers have with our land.

Many of these responses are already second nature in some European countries and here in the UK, is rightly proud of the role it played in developing the concepts of spatial and transport planning.

It isn't that the Europeans don't try to do better; it's that, lacking an holistic philosophy to draw it all together, all too often success isn't achieved.

"It's been said that the UK has the best guidance and the worst practice in Europe," says strategic planning consultant Martin Crookston, a former partner at Llewellyn Davies and member of the Urban Task Force.

"An awful lot of development is given permission without consideration of public transport carrying capacity. Nowhere has ever had the sorts of thing you see in Vienna, Freiburg or Amsterdam, with tramways in before development is 25% complete. But they're mostly delivery issues in Britain."

Overtuning a century of myopic policy

The UK Treasury's malign influence on British light rail funding is a case in point, but there are longer-term influences undermining the country's ability to create sustainable communities. Most public transport professionals need no introduction to the "roads lobby" and its dismal influence on policy for the last 100 years, but I believe the UK has also had a "sprawl lobby" dominating spatial planning. The two have an unstated, but symbiotic, relationship.

Both lobbies' origins lie in the Edwardian period when motor vehicles became a practical reality and the idealists of the garden city movement urged rehousing of the population in new, ultra-low density settlements. While the garden cities – urged by gurus like Sir Ebenezer Howard – had little success on the ground, the parallel garden suburbs

Below: MediaCityUK is a large property development on the site of the former Salford Docks in Greater Manchester, UK. The extension of the Metrolink light rail system into Salford Quays was part of a programme of urban renewal for the area around the Manchester Ship Canal. Published plans to run a light rail system into Salford Quays have existed since around 1987, and the eventual extension of the Eccles line opened in September 2010. Murdoch Currie



Above: Another TOD success story is the Lynx LRT system in Charlotte, North Carolina. A full two years before the system opened, in 2005, the American Public Transportation Association observed that "the momentum of economic development in this corridor in anticipation of light rail has been outstanding". Vic Simons

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shows that compact transit-friendly cities aren't only better ways of building communities, they must be our objective if we are to house our population and reduce greenhouse emissions by 80% by 2050. This is the target figure which scientists believe is the minimum we need to prevent catastrophic climate change.

Location Efficiency and Housing Type – Boiling it Down to BTUs (Daniel Hernandez, Matthew Lister, and Celine Suarez, US Environmental Protection Agency, 2011) looked at the energy consumption of typical families with a number of variables – housing type (detached, semi-detached or apartment block), vehicle (conventional cars or more efficient vehicles like hybrids), construction aspects (conventional construction against green building techniques) and location (car-dependent sprawl versus transit-served location).

Not surprisingly it found all choices offer significant energy reduction potential, but the biggest single reduction came from moving the household to a transit-served location where it could leave the car at home for some of its journeys. The family could reduce its household energy use by 39-50% in this way alone, and coupling this with the other energy-saving lifestyles could actually reduce the energy consumption of a detached, suburban house-living, car-driving and energy wasteful family's carbon footprint by more than 70%. That's a significant step along the path to the 80% reductions we all need to make.

"We cannot fix our energy use and global warming emissions problems by looking only at building and vehicle technology; we also have to look at land use and transit," noted the Natural Resources Defense Council's director of sustainable communities & smart growth, Kaid Benfield, in response to the report.

Conclusions

The low-carbon city of the future will have to eschew road transport for the most part thanks to the high energy demands imposed by pneumatic tyres' rolling resistance. It will mostly move around on steel rails, but that offers an opportunity to recreate the compact, permeable and socially functional cities we enjoyed before the roads and sprawl lobbies tempted us into low-density, car-dependent suburbia. Areas of low-density sprawl will need both rail connections and at least partial densification if they are to survive at all in an era of huge fuel price rises and carbon restrictions.

We need to realise that light rail and metros don't only offer comfortable, modern, efficient and low-carbon urban transit. These modes will be essential pieces of the transport mix of the low-carbon city of the future - where most of us will have to live if we are ever to get anywhere near the carbon reduction targets that are essential to our future survival. TAUT

Jon Reeds' book, **Smart Growth - From Sprawl to Sustainability**, looks at the US Smart Growth movement and examines 100 years of unsustainable UK spatial and transport policies and suggests ways of adapting Smart Growth principles to UK conditions.

movement's low-density ideals have remained a paradigm for development ever since, through the unplanned sprawl of the inter-war years and the planned sprawl ever since.

This movement deserves credit for creating the modern planning system, but the cosy fiction that garden city thinking was what tackled the Victorian slums needs laying to rest once and for all.

To be sure, mid-19th Century UK cities were filthy, overcrowded slums, but the half century leading up to the Great War saw this successfully challenged by a string of legislation on public health, sanitation, water, education, housing and public transport. By 1914, Britain's towns and cities had vast areas of 'bye-law housing' – the familiar terraces despised by garden suburb enthusiasts which still provide compact, sustainable, communitarian housing.

Some slums remained until the mid-20th Century thanks to wars and economic decline, but these were mostly the products of the early 19th Century. The later period gave us schools, water mains and sewers, convenient local shops, fine town and city centres, hospitals and, of course, dense networks of electric tramways. The 1870 Tramways Act was not the era's finest achievement, but the harm it later caused was mostly the result of a failure to modernise it as time went on.

From low-density suburbs to complex cities

So the Edwardian cities left behind by a century of low-density suburbia were not the squalid slums described by Charles Dickens or Elizabeth Gaskell as garden city apologists would have you believe, they were fast becoming some of the most sustainable urban development the world has ever seen. They were compact and communitarian and they moved around on foot, on a bike or on rails; all they really needed to meet modern standards of sustainability was an energy source other than coal.

Professor Carmen Hass-Klau's article in *TAUT* 860, August 2009, also presented compelling evidence that property prices in new residential developments based around light rail stops both in the UK and Germany could be as high as 50% more than properties sold in adjacent areas sold just a year earlier.

So Smart Growth isn't simply about better spatial and transport planning, it will be key in the struggle against climate change. A recent study by Jonathan Rose Companies for the US Environmental Protection Agency

