

Creating a more
inclusive travel
environment

North American
Edition
Issue 17
July 2017

The Review

Spotlight

Catering for hidden disabilities on public transit.

Aviation

New funding options for airports with Trump's infrastructure plan?

Active transportation

Using construction works to promote Transportation Demand Management.

Welcome

Welcome to the latest edition of Steer Davies Gleave's North America *Review*. In this issue, we explore the importance of making transit more inclusive and supportive for all passengers in a number of thought-pieces and interviews, with insightful contributions from Steve Bland of the Nashville MTA and Doug Douglas of DART. Our authors share insight into President Trump's infrastructure plan; promoting active transportation; planning for a successful ferry service; the importance of signage, and using GPS pay-as-you-go systems for toll roads, among others. We appreciate your feedback on these discussions and hope to continue the conversation to improve transportation for all members of our community.



Keith Whalen
Regional Director

New ferry service for Boston Harbor

Steer Davies Gleave has been selected to lead a strategic planning exercise to develop passenger ferry services in Boston Harbor. Despite the rapid growth of its waterfront in recent decades, Boston has yet to develop a substantial passenger ferry service, as seen in New York, Seattle and San Francisco.

Massachusetts Department of Transportation and a nonprofit entity, Boston Harbor Now, have asked Steer Davies Gleave to assess potential routes that could form the basis for an integrated ferry system serving the City's Inner Harbor, outlying communities and several leisure destinations in the greater Massachusetts Bay.

Steer Davies Gleave will lead a multidisciplinary effort that will include ridership and financial analysis, cost estimation, and public outreach. Our ridership analysis will include an extensive stated preference survey that will provide the basis for a ridership model tailored to the transit choices of Boston residents. It will also include a proposal for a low-emission vessel fleet.

Culver City TOD Vision Online Tool

The new Metro Expo line station in Culver City has proven extremely popular, and the city is working to create a transit-oriented vision for the next 10 years.

Steer Davies Gleave has developed an easy-to-use web platform to capture qualitative and anecdotal information from people who use the transportation network – be they residents of Culver City, people who work there, or people passing through – to determine what improvements need to be made.

The website <https://culvertodvision.org/map/> contains an interactive map that allows people to leave comments about issues. It could be transit users who feel their bus stop isn't in quite the right place, cyclists who feel that part of the network is dangerous, or pedestrians who feel their walk to work could be more pleasant. The tool allows the city to engage with the public from the beginning – putting the user at the center of the plan.

To date, 300 people have left comments on the platform. Read more about Culver City on page 9.

New faces



Katasi Kulubya
Principal Consultant

Katasi joins our Los Angeles office as a User Experience Designer. Katasi has extensive experience in graphic design and information science, and her most recent work includes mobile and web design projects, crafting integrated brand engagements, and growing online social communities.



Bronwen Keiner
Principal Consultant

Bronwen joins our Los Angeles office as Executive Director for Transportation Management Association, Go Glendale. Bronwen previously worked at LA Metro, and has extensive experience in community relations, stakeholder engagement and project management.

Consultants

Derek Cheah, Malithi Fernando, Noel Haines, and Wesley Smith join our Boston office; Brian Francoeur and Wojciech Szewerniak join our New York office; Aby Subin, Jeff Qjao and Patrick Yip join our Toronto office; Jenny Hong joins our Los Angeles office; Jenny Hostland joins our Vancouver office.

Looking to move?

If you are considering your future and are looking for somewhere to make a real difference, Steer Davies Gleave has much to offer. The firm continues to grow in North America, Latin America, Europe and Asia. To find out about the opportunities we have, visit our website:

www.na.steerdaviesgleave.com/careers-na

Company updates

Our Research & Innovation Club marks its 100th meeting

For Steer Davies Gleave, robust and insightful research is a prerequisite, and continuous innovation essential. It is these qualities that allow us to address the most pressing issues facing our cities, communities and infrastructure providers, and to do so blending experience and fresh perspectives.

Our Research & Innovation “R&I” Club, which recently celebrated its 100th meeting, epitomizes this spirit, regularly bringing together staff of all grades, disciplines and offices to work collaboratively.

When the R&I Club first started in 2013, it was mainly directed at recent graduate staff, believing they would still be fresh with ideas. As a result of its success, the Club was soon opened up to all staff across the business.

The R&I Club has a remarkable ability to deliver fresh insights grounded in the robust use of data, to advance professional standards and techniques and to challenge the status quo when appropriate. Over the past four years the Club has completed over 80 projects; some large, some small, some highly technical, others using soft skills; but all of them challenging and thought-provoking.

In North America, the Club has developed a number of projects, including analyzing traveler choice of managed lanes, journey planner research, Personalized Travel Planning, and creating a tool to identify where investment in cycling could be successful.

We look forward to the next 100 meetings of the Research and Innovation Club!

Winners of ‘Transport Consultant of the Year’ at the London Transport Awards

Steer Davies Gleave is delighted to have been awarded ‘Transport Consultant of the Year’ at the London Transport Awards 2017.

The London Transport Awards, presented by Transport Times, is a prestigious event recognizing excellence in the transportation industry and rewarding innovation and progress for transportation initiatives across London.

The ‘Consultant of the Year’ category is open to companies working with local transportation authorities, offering consulting services for transportation and planning. Steer Davies Gleave was awarded the accolade for the quality of our portfolio of projects in London.

Movement Matters: a burst of fresh thinking

Movement Matters is a series of inspirational seminars, debates and workshops, presented by Steer Davies Gleave, exploring how transportation shapes and influences places, people and economies.

Drawing on experience from international leaders in transportation, government and related industries, we share insights and debate opportunities and challenges.

Our first series of Movement Matters events, which took place earlier in the year in Los Angeles, was a great success.

The first session invited a select panel of experts to discuss the future of intelligent mobility. The speakers included Ashley Hand of CityFi; Alex Fay of Syncromatics; Jennifer Dice of Sound Transit, Craig Nelson of Steer Davies Gleave, and Antoinette Meier of San Diego Association of Governments. The panel discussed topics such as: what intelligent mobility actually means; where it is being done well/not so well; where major employers fit into intelligent mobility; and whether the lines between traditional and multimodal transit are starting to blur.

The second session of the series focused on encouraging an active first/last mile

journey with guest speakers Ben Plowden of Transport for London, Melani Smith of University of Southern California, Tracy Bryars of St. Jude Medical Center, and Lisa Buchanan of Steer Davies Gleave. The panel had a lively discussion about the importance of investing in infrastructure to encourage behavior change, the challenges surrounding safety, and what actions are most effective in encouraging active transportation.

The latest Movement Matters session explored how wayfinding can enhance the experience of place with guest speakers Evan Weinberg, formerly of Toronto Financial District BIA, and James Brown of Steer Davies Gleave. The speakers highlighted wayfinding best practices and their recent experience working together to develop a comprehensive wayfinding system for the PATH, a 16-mile pedestrian tunnel system in Toronto.

Visit www.movementmatters-sdg.com for more details on upcoming sessions.



The team receiving the ‘Transport Consultant of the Year’ award.

Preparing for the Trump Infrastructure Plan

A constant theme of President Trump's stated policies has been a strong infrastructure plan. While specifics are not yet fully known, during the campaign Trump referred to a plan that would attempt to stimulate more private investment through tax breaks. Could this open up the possibility for more toll road projects, and how should key players prepare for this possibility?

By David Cuneo

The policy paper released by the Trump campaign noted that this tax break approach could reduce necessary project financing costs by 18-20%, while suggesting the requirement for private investment to realize this tax benefit.

Key questions are whether this infrastructure plan will lead to more toll projects becoming feasible, and if so, will P3 become a more popular project delivery approach? If the answers to these questions are yes, then what actions should the key players take to prepare? Below we explore possible actions for each type of involved party.

Federal Government

Few toll projects can be completely funded through toll revenue alone, and while the proposed tax break could lower the threshold to make more toll projects feasible, the Federal Government may need to offer more support to improve feasibility and to reduce project development timelines and costs. Below are some possible actions for federal agencies:

- Expand the TIFIA program to ensure authorization is adequately funded to satisfy increasing demand levels that could result from the increasing attractiveness of toll financing.
- Develop efficient ways to accommodate quickly the differences in toll revenues



projected by the public sector grantor in their preliminary forecasts used for TIFIA project screening, and in private sector sponsor's forecasts used in the final finance plan.

- Streamline the environmental review process, particularly to incorporate private sector sponsor Alternate Technical Concepts into the final project design more easily. Without this, project schedules may be further extended, or good design modifications may be discarded because they do not conform to the environmentally-approved design.

Public Sector Grantors

With the tax break potentially making P3 projects more attractive, public sector grantors may need to consider the below actions:

- Ensure they have sufficient understanding of P3 project delivery options and knowledge of how to conduct Value for Money (VfM) analyses properly to help select the best project delivery option.
- Understand the new infrastructure plan incentives and how to incorporate them into VfM analyses.
- Utilize advisors familiar with sponsor's desires and practices to provide preliminary inputs that will be more consistent with final values to help streamline Federal interactions.

- Streamline the RFP process to provide private sector additional time to innovate, reduce costs and maximize benefits/revenues.

Private Sector Sponsors

The private sector has appetite and resources for an increased number of projects, but can also take actions to help project flow under the new infrastructure plan. For example:

- Develop and clearly communicate potential innovations and their benefits to the public sector.
- Learn to handle potential risks better to avoid high-profile project failures that have blemished the early track record of toll revenue-risk P3 projects in the US.
- Take additional risk by investing effort earlier in the process to seek more optimum solutions.

While there remains uncertainty about what changes and incentives will materialize, the above are some actions that key players can take to help make the new infrastructure plan a success.



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A new wave for passenger ferries

Passenger ferries are versatile, affordable transit options available to many agencies and cities. Planning for a successful ferry service must be approached strategically, considering its intended purpose, its operating structure, and how it will fit within the larger transit network.

By Mario Scott

In the current environment of tight transportation budgets, cities and organizations are increasingly turning to ferries as transportation solutions. The appetite for ferries has increased over the years as they provide opportunities for an entirely new transportation service at a relatively low cost, compared to new or expanded fixed guideway services like subway and commuter rail.

Ferry systems also tend to have lower subsidies per passenger than commuter rail or express bus services. For example, the new NYC Ferry system in New York, based on Steer Davies Gleave's 2013 Citywide Ferry Study, is expected to operate with a subsidy of \$6.60 per passenger, which is less than the Long Island Railroad and the city's express buses.

Additionally, the capital costs of ferries is less than that of fixed guideway services. New York City invested \$55 million in infrastructure upgrades and new landings for the NYC Ferry service, while the extension of one of the city's subway lines to an additional station cost approximately \$2.4 billion.

Beyond the financial attractiveness of ferries, they can offer solutions to a number of issues, including accessibility for underserved communities, hazard mitigation, and transit system redundancy.

Ferries are able to provide transportation solutions when other parts of the transit networks have suffered service disruptions,



ranging from strikes and power outages to disruptions caused by natural disasters and terrorism. It is likely that ferries will again be utilized to help mitigate the impact of a major system disruption in New York when the L train tunnels under the East River are shut down for repairs in 2019.

Together with the versatility and affordability of ferries, many agencies and cities are looking to take advantage of their waterways. When doing so, it is key to consider the ferry's purpose within the larger transit network, as it has implications to the life of the service and its operating structure.

The ferry's purpose within the larger network drives many aspects of the service including, but not limited to, capital costs, operating hours and vessel ownership. For instance, a ferry targeted to meet commuting demand will have very different objectives from a seasonal service taking passengers to one of the state parks, even though the same vessel may be able to serve both purposes.

It is important to identify the intended life of the service, as it may drive the operating structure. In addition to the operating characteristics and organization of the service, it must be well integrated into the wider transit network to be successful.

In conclusion, ferries are affordable, versatile transit solutions favored by many for their visibility and ease of implementation but,

to be most effective, a ferry service must be approached strategically. Such planning should focus on the purpose of the ferry within the larger transit network, the life of the service and the best operating structure to deliver a successful service.

You can read our Citywide Ferry Study on the New York City Economic Development Corporation website: <https://www.nycedc.com/resource/citywide-ferry-study-2013>



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New funding and business options for US airports?

Improving the country's ailing airports has made it into President Trump's \$1 trillion infrastructure plan, including a reform of America's ever-aging air traffic control system. What funding and business options does this plan open up for airport executives and boards to upgrade their infrastructure and to improve aviation for the millions of people who use airports?

By Stephen Van Beek

Just halfway through his first year in office, President Donald Trump has stirred excitement in Washington D.C. transportation policy circles. The excitement is centered on three areas the new President has discussed: transportation spending, regulatory relief and air traffic control corporatization. If turned into proposals and passed by Congress, will these offer airport executives and boards new tools to upgrade their infrastructure and operate sustainably? Will they improve aviation for the hundreds of millions of passengers, general aviation pilots and shippers who use airports?

Mirroring a campaign theme, the President is calling for \$1 trillion of new spending on transportation infrastructure to stimulate the economy and create jobs. Although the federal government's exact contribution is unclear, it would reportedly consist of federal spending and tax incentives that would leverage state and local government investments as well as money from private and institutional investors.

White House officials have also targeted regulatory rules that the Trump Administration claims inhibit job creation by placing unnecessary costs on businesses and

transportation providers. These officials have already convened meetings with industry representatives to get their wish lists of rules to simplify and eliminate.

For their part, American airports and their trade associations have submitted their ideas to ease the burden of the myriad rules that constrain airports' financial management.

The Trump Administration has also backed a congressional proposal to corporatize the governance, management and operation of air traffic control — responsibilities that are today in the hands of the Federal Aviation Administration (FAA). Modeled after a similar effort in Canada, the idea is to remove the FAA's Air Traffic Organization (ATO) from the federal government, where funding and procurement rules limit the ATO's ability to make investments necessary to modernize air traffic control.

Prospects for airports

Certainly, additional federal infrastructure spending and enhanced authority for airports to raise local revenues would provide the foundation for future investments in airside,

terminal and landside capacity. With large, international gateway airports experiencing continued growth, new revenue sources would enable airports to build the gates, hold rooms and roadways that will accommodate demand and improve service levels.

Infrastructure spending

At the federal level, these sources come in two forms. First, \$3.3 billion in federal grants is allocated from the Airport Improvement Program (AIP), capital funding paid for by taxes collected on air passengers and shippers and made available to airports.

Second, the federal government authorizes airports to collect Passenger Facility Charges (PFCs) of up to \$4.50 per flight segment for eligible airport infrastructure.

It is notable that President Trump or the majority party leadership in the House and Senate have yet to endorse an increase in AIP or the current \$4.50 ceiling in the PFC (both of which have remained at their current levels for well over a decade). Without either the imprimatur of the President or the congressional transportation leaders, it will





be challenging to pass legislation that opens revenue sources that appear to have a lid on them.

While it is true that Public-Private Partnerships (P3s) are emerging in the US airport sector to provide private and institutional investor resources for airport infrastructure (e.g. New York LaGuardia's Central Terminal) and, in a couple of cases, for the management and operation of airports (e.g. San Juan Airport), these developments have occurred independently of any recent policy developments in Washington. They have been led by state and local governments, such as the Port Authority of New York and New Jersey and the Puerto Rico Ports Authority.

Regulatory relief

On March 31, 2017, the American Association of Airport Executives and Airports Council International submitted regulatory reform ideas that would provide airports with additional options to attract new air services, simplify the AIP and PFC rules that are tied to receipt of grants and PFC collections, and ease the rules governing airport relationships with

their tenants and users.

The Trump Administration has set up an Aviation Relief Advisory Committee that will seek out ways in which regulations can be simplified. While the rhetoric surrounding reform has been attractive, it is still too early to determine if the initiative will produce tangible results.

Air traffic control corporatization

Any change to air traffic control will likely be legislated as part of the FAA authorization that must be passed prior to September 30, 2017, when the current authorization expires. Policymakers have signaled their desire to report a bill out of the House and Senate by Summer 2017, an aggressive timeline considering the significant change that corporatization would entail.

Many smaller community airports remain concerned that a new air traffic provider would not prioritize service to low-activity towers, while many other airports worry that a key component of reform — shifting from trust fund taxes to airline user fees — may create uncertainty around the receipt of AIP

grants. Thus far, the airport industry has largely been excluded from proposals on ATC reform — that will likely change as the effort is incorporated into the large FAA reauthorization bill. The impact of the new FAA authorization legislation on airports, and whether it includes improvements to AIP and PFCs, is yet to be determined.



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INTERVIEW

Doug Douglas
Vice President of Mobility
Management Services
Dallas Area Rapid Transit (DART)



Dedicated service: in the paratransit line of duty

For this issue of *The Review*, we spoke to Doug Douglas, Vice President of Mobility Management Services for Dallas Area Rapid Transit, about the future of paratransit and how they are embracing new technologies to offer their users a better service.

Public transit is an essential everyday service for millions of Americans, but for some it is much more than that, it is a lifeline.

Doug has dedicated 27 years of his working life to paratransit, the provision of public transportation services for people who are unable to use the fixed route (bus and/or rail) service. Nobody understands better than Doug what a difference paratransit services can make to the lives of some of the region's most vulnerable citizens: "When you can't travel freely, whether that's because of mobility problems, or limited vision or mental health issues, you lose more than just the conveniences of life. You become a stranger in your own town; you begin to feel like a second-class citizen."

The work of Doug and his team in the Dallas area allows more than 12,000 certified riders to escape the trap of immobility to be, as Doug puts it, part of mainstream society, "to work, to access lifesaving medical services, to enjoy aspects

of life that most of us take for granted."

The challenges are considerable. One-to-one support through the successful Travel Ambassador Program has many benefits, helping users to access services and plan journeys, but it is expensive and time-consuming. Many riders won't be able to use the mainline bus and rail services even with individual support and will rely on curb-to-curb (sometimes even door-to-door) special services to help them navigate the 700 square miles covered by the DART program. These services are liberating but require careful planning and complex logistical support, which means the paratransit rider lacks the spontaneity that most of us take for granted, generally needing to plan a journey at least 24 hours in advance.

But Doug sees big changes coming. Already digital technologies are making planning and booking easier, and keeping travel information more accurate and up-to-date. The arrival of autonomous vehicles is also a tantalizing prospect. But it is the arrival of the Transportation Networking Services (TNCs) such as Uber and Lyft, which is making the biggest splash right now: "These services, so disruptive in some parts of the transportation eco-system, could be a natural fit for us in paratransit. In fact, some groups, especially

those with visual disabilities, have been quick to adopt them for themselves. The technology to coordinate TNCs with our standard services is there, we just need to persuade users and legislators that it is practical and safe."

A pilot service combining the TNCs with DART paratransit services has already indicated benefits in flexibility and spontaneity, and because many users enjoy the anonymity of the unmarked vehicles. However, unmarked vehicles also represent a risk, especially for this particularly vulnerable group of consumers. There is plenty of work ahead in assessing safety and reassuring legislators.

Nevertheless, Doug is optimistic. It seems to be a characteristic of his team, where long service is the norm. Both Tammy Haenftling, Assistant Vice President for Mobility Management Services Administration, and Donnie Thompson, Assistant Vice President for Mobility Management Services Operations and Contract Compliance, have served more than 30 years. It must have something to do with job satisfaction. As Doug says: "Public transit is often fascinating and challenging, but paratransit is something else, it is making a difference on a different order of magnitude. And even after 27 years, I feel we are just at the start."

Visioning for a Transit Oriented Community

Culver City in California has been engaged in planning and implementing a Transit Oriented Development (TOD) for approximately ten years. In this time the City has realized many of its original objectives, yet there is still a way to go until it can be considered fully multimodal.

By **Andrea Pavia**

Planners for the Culver City TOD have succeeded in creating a higher-density, transit-served neighborhood that now offers opportunities for high-quality housing, retail, and employment. Nevertheless, there is still work to be done to allow residents to embrace a fully multimodal lifestyle. Like many cities across California and the US, Culver City struggles to densify and to replace a car-driven development model with a multimodal one.

Steer Davies Gleave is part of the consulting team developing a new Transit Oriented Development Visioning Plan for the district around the Metro Expo Line station in Culver City. This station, which opened in 2012, has been extremely successful in terms of ridership but still experiences heavy traffic congestion in the surrounding area.

Steer Davies Gleave's proposal is to help Culver City to build on its TOD successes, expanding the TOD model to encompass the whole city as a unified Transit Oriented Community over the next 10 years. For a community of less than 40,000 people, this could be a realistic goal. The intent is to shift the focus from private inward real estate development issues to a broader community-driven urban planning and design vision.

By design, a Transit Oriented Community allows people to drive less and to walk, cycle, and take transit more. In practice, this means



A bikeshop held in Culver City as part of the Visioning Plan

concentrated, higher-density, mixed-use, human-scale development around frequent bus stops and transit stations, a goal already partially achieved in Culver City. It also means a well-connected and well-designed network of Complete Streets, linking the Expo line station with other important nodes and city functions. All of this must be accomplished while balancing the needs of regional and local vehicular traffic.

Incremental approaches by means of Complete Streets and tactical urbanism techniques can jumpstart a much larger public-private place-making vision for the City. This could set in place an innovative urban design framework and even become a model for the larger Los Angeles metropolitan region. We know from research and experience that how we plan and design our communities has a profound impact on travel behavior. We also know that Transit Oriented Community design fosters transit use and supports other key sustainability goals, such as increased walking and cycling. A community shaped by this approach lends itself to a cost-effective transportation network and services, allowing people and goods to move more efficiently and to produce more value for each transportation dollar invested.

Transit Oriented Communities are adaptable and retain their value as great places

to live, work, and visit, even as the surrounding urban environment and the needs of residents change. When communities provide high-quality transportation choices for people of all physical abilities, for example, they become resilient in the face of changing demographics, such as an aging population. When less energy-intensive modes of transportation are well-utilized, communities are more resilient to fluctuations in energy prices. Finally, Transit Oriented Communities can become a strategic opportunity for Culver City to beautify its core and strengthen its identity, by providing a meaningful public realm and space for sociability.



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Being truly inclusive: catering for hidden disabilities

People with cognitive and psychosocial, or 'hidden', disabilities can find it challenging to navigate a transit network. A simple journey can cause anxiety if the information provided is unclear, and a lack of confidence in speaking to staff and other passengers can often add to the stress. There are a number of ways transit agencies can create a more inclusive and supportive environment for these passengers, often at a minimal cost.

By Andrew Mellor

Considerable progress has been made towards making transit networks more accessible for disabled people. The primary focus has been on improvements to hard infrastructure and vehicle design, to cater for people with physical and sensory impairments, with particular emphasis on the needs of wheelchair users. These efforts are necessary, but it is important to remember the broader spectrum of disabilities, many invisible to the casual observer, which nevertheless create severe difficulties when attempting a journey. In the US, less than 10% of disabled people use a wheelchair, so the scale of the problem often goes unrecognized.

People with hidden disabilities can be highly reliant on transit but face significant problems when navigating the network. Key reasons for not using fixed route services relate to anxiety and lack of confidence, particularly in interactions with staff and other passengers. Potentially limiting conditions affecting ability to use transit services include, but are not limited to, dementia, intellectual disabilities, dyslexia, and autism.

Creating a more inclusive and supportive travel environment has significant social benefits, but also makes financial sense. Enabling clients with cognitive and intellectual impairments to use mainstream transit reduces demand for costly paratransit.

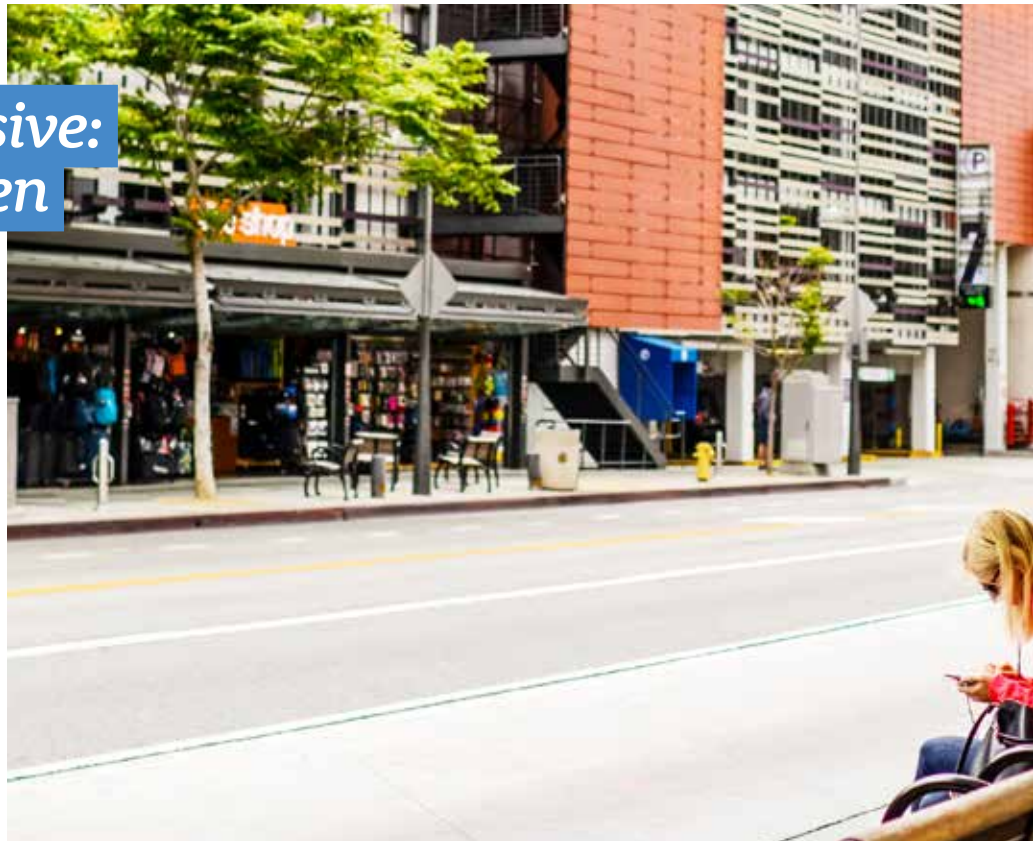
The wide spectrum of individual impairments means it is impossible to address everyone's needs perfectly. However, we can go a long way by starting with interactions between front line staff and customers. The ability to ask for help and to get a supportive response is vital. This does not mean expecting every bus operator to identify specific disabilities, but simply to recognize signs of distress and to provide appropriate customer service.

Transit agencies often provide courses on disability awareness and supporting people with dementia. However, it is vital that staff are encouraged to put training into practice, providing the necessary confidence to act.

In the UK, a range of Journey Assistance Cards have been introduced to let disabled passengers discreetly inform the bus operator of their needs, and prompt staff to respond sympathetically.

The cards were initially developed by First Group in consultation with disability groups, and are now issued by many other providers using a standardized card format designed to be universally recognized. Anecdotal evidence suggests that the cards have helped reduce anxiety felt by disabled bus users and increase confidence that their needs will be met.

Many disabled people suffer from chronic pain and find it difficult to stand on crowded services. Recognizing that not everyone who needs to sit may look disabled, Transport for London launched a 'Please offer me a seat' badge for customers with hidden disabilities. Users in the initial trial reported 72% of journeys as being easier as a result of the badge, with over a third spontaneously offered a seat, and only 4% of requests refused. These results contrast with the experience of a control group where only 6% were offered a seat and 31% of requests refused without the badge. The initiative appears far more successful than publicity campaigns, which simply encourage travelers to vacate designated priority seats.





Another means of simplifying the journey is to provide clear information; offering reassurance at every stage of the journey helps to reduce stress. In this context one size and one approach definitely doesn't fit all: there are often contradictory needs. This means providing information in a range of alternative formats and being prepared to work with personalized apps and devices, which people bring with them.

Wayfinding and signage strategies need to address different impairments, including the needs of dyslexic people. Bus route numbers may be easily confused (e.g. 15 or 51), but adding a color may provide vital clarity, as can at-stop announcements of the next bus arriving. Interfaces between service providers, with changes in responsibility for signage, can create problems where there is a lack of continuity, or inconsistency between the place names used.

To get the best results we must consult disabled people about their needs and fully involve them in the design, development and improvement of transit facilities.

At Steer Davies Gleave we ensured extensive engagement with disabled

representatives in our work on best practice interchange guidelines in London and wayfinding design for Britain's largest rail stations. Workshops and accompanied site visits helped to identify the day-to-day issues encountered by users with a range of impairments.

Acknowledging the needs of travelers with hidden disabilities, and providing support at critical times, requires minimal changes to the physical environment and can be delivered at minimal cost, but can significantly improve the quality of their journey experience. It's important to remember that many potential initiatives will benefit everyone at some point in their life.



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News in brief

GO Transit station access plan

GO Transit in the Greater Toronto Area serves more than 60 million passengers per year. Over the next five to ten years, GO Transit's peak services will change from mostly running every half hour to a 15-minute all-day service on most corridors.

The majority of GO Transit's existing passengers drive to and park at the station. This causes congestion on municipally-owned roads and requires either extensive surface parking or expensive parking garages. However, future increases in passenger numbers cannot be accommodated through continued expansion of parking facilities, which would also conflict with wider policy aims for both GO Transit and the municipalities it serves.

Steer Davies Gleave conducted a comprehensive review of existing access arrangements at all stations outside downtown Toronto for Metrolinx, the provincial agency responsible for GO Transit. We created individual in-depth station profiles detailing the current issues for access by each mode (walking, cycling, transit, pickup/drop-off, park and ride), and how these issues will change with the increased service levels.

The station-level data and findings were examined to identify network-wide issues and trends. These issues were then summarized in a series of mode-specific topic papers, written for the client's senior management team.

Metrolinx is using our work to develop station-specific solutions, resulting in appropriate investment in station access facilities. This will ultimately lead to a more sustainable access mode split that maximizes the benefits of the investment in service improvements.



Shifting construction to promote TDM

With nearly 50 major infrastructure projects planned over the next five years, the residents, businesses and commuters of the Golden Triangle area in San Diego, California, will experience an impact in their daily travel. So, what strategies are being used to convey this information while also influencing the use of alternative transportation?

By Destree Lazo Bascos

Shift San Diego is a pilot program designed to reduce traffic congestion around the Interstate 5/Genesee Avenue Interchange Project, and other infrastructure projects, in the Golden Triangle area.

One of the largest employment centers in San Diego, the Golden Triangle is also bisected by one of the busiest freeway corridors in the county, the I-5. The project itself is surrounded by the University of California, San Diego, a renowned golf course, two hospitals, and a number of large science and technology, research, and pharmaceutical companies. Adding construction to this mix makes for quite a commuter challenge, but with support from agencies like San Diego Association of Governments (SANDAG) and Caltrans, Shift San Diego is succeeding in offering alternative trip solutions to those traveling in and through the project area during construction.

During the summer of 2016, the I-5/Genesee project team geared up for two major construction milestones: a traffic switch on a main road, and a bridge demolition over the main freeway corridor. As expected, the closure of ramps and freeway lanes to achieve these milestones significantly affected traffic.

In order to propose alternative transportation solutions to the Golden Triangle community, here are some of the key strategies our team applied to the Shift San Diego program:



Communications: targeted audiences and simple messaging

The project team invested in media buys announcing these closures and promoting Shift San Diego. Using community ZIP codes and data pulled from the Census Bureau's Longitudinal Employer-Household Dynamics report, we targeted audiences living and working in the Golden Triangle area. The team used printed postcards and digital and radio advertisements to target specific ZIP codes. The team also used the local paper as a way to reach the general population of the community. The message presented the challenge of construction and paired it with commute solutions. These solutions were presented on an interactive map, showing real-time traffic and encouraging ridesharing or teleworking on the days of major freeway closures as a way to reduce congestion.

Incentives: Employer Outreach Program

Another key strategy for Shift San Diego is to reach commuters who may be affected by construction via their employer. Shift has integrated with SANDAG's iCommute Employer Outreach Program, which has been an effective way to influence the travel behavior of employees from driving alone to trying alternative commutes. In the iCommute program, a team member creates or supports their commuter benefits program by offering free services and incentives. In the past year,

Shift has worked with and actively engaged over 60 employers representing approximately 84,000 employees.

Social norms: Shift Insider blog

The Shift Insider blog is an important Transportation Demand Management tool that uses commuter stories, project and construction highlights, and transportation resources, in the words of everyday Golden Triangle commuters. The blog features employees using alternative commutes to work as a way to demonstrate that these options are viable, convenient and a choice that peers make. The blog, started in 2016, has helped to raise the interest level of the Shift San Diego resource. The average length of time a visitor is on this page is close to three minutes, so readers are finding interest and connecting with the stories.

These strategies were part of a diverse mix of successful communications that yielded a collective reach of over 3.7 million people. There were no employer complaints and minimal stakeholder concerns surrounding the two construction milestones.



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INTERVIEW

Stephen Bland
Chief Executive Officer
Nashville Metropolitan Transit Authority



Easy listening, Nashville style

We caught up with Nashville Metropolitan Transit Authority CEO, Steve Bland, to ask him how he is developing the service in face of exponential population growth.

When Steve Bland joined the Nashville Metropolitan Transit Authority as Chief Executive Officer in July 2014, he had a simple message for his new colleagues: “You do essential work, but they’re not going to mention that in the papers. If you need a reminder of why this stuff matters, do what I do: get on a bus, talk to the riders, listen to the single mom who can only keep a job because our services make it possible.”

It is a lesson learned from over 30 years working the buses in Pittsburgh, Pennsylvania and New York. Now, faced with the challenge of developing a transit system fit for a city set to grow by over a million citizens in the next 20 years, Steve believes that listening carefully will be more important than ever: “If there is one thing I have learned in my career, it is that you can never engage with the public too early or too often,” he says.

But it is not just about listening. Public engagement is about educating too. Developing transit isn’t simply about responding to changes in the city, supplying

bus or rail as demand grows: “It is a dynamic force, shaping the communities it serves, encouraging or discouraging growth and affecting local identity and character. Understanding and accepting those kinds of change can be a struggle. Everybody wants things to be better, but nobody wants them to be different.”

And for some members of the community there is more at stake than simply losing a sense of place; for some the risks are high. Growing population and better connections tend to mean rising property values which can mean rocketing rents. Gentrification has its losers. Does the new have to drive out the old?

The answers to such complex questions are never going to be simple: “There is no silver bullet, what we need is more like silver buckshot.”

That means that transit authorities will no longer be able to think of themselves in isolation from broader social policy concerns. They will have to work ever closer with sister agencies, recognizing that “transit is not just about buses and timetables anymore but must be understood as deeply connected to bigger urban issues such as affordable housing and social isolation.”

Steve is optimistic that the integrated future is not only achievable but already coming into view: “Ten years ago a lot of people thought the growth in places like Nashville was a flash in the pan, but now we have all woken up to the fact that it is here to stay and I have seen everyone stepping up, from university departments to local businesses. New technology makes services much more accessible, data easier to track and collect, and we have a Mayor with an ambitious vision of a fully connected city available to all our citizens.”

The next few years will see Nashville transform in size into a major city and Steve and his team will be at the center of that transformation. It is perhaps appropriate in the capital of Country and Rock ‘n’ Roll that better listening will be such an important part of that process, at least as far as transit is concerned, although it will not necessarily be the easy kind.

Paying for roads: time for a change?

With the exception of a few tolled sections, the roads network is free at the point of use. This distorts economic signals and leads to excess demand. Moving to a revenue neutral ‘pay as you go’ system, using existing and developing GPS and fleet management systems, would provide a way to link usage and cost directly, leading to a more optimal use of the road and wider transportation network.

By **Leslie Buckman**

The concept of road pricing to reflect both the direct cost of road provision and the scarcity of road space during congested conditions is well established within the discipline of transportation economics. Like any well-functioning market, road pricing would reflect the costs and benefits of using the road network. However, except for the relatively few tolled sections, the roads network is free at the point of use.

This is in part for to two historical reasons: the slow emergence, but ultimate dominance, of automobile travel, and the associated challenges of delivering a robust road pricing system given the technological limitations through the last century. A third, and arguably more important, reason for limited road pricing is the political realities of charging for something that hitherto has been free.

For example, the City of Toronto Council recently approved the implementation of road pricing on two key roads into the downtown core, in part to fund their C\$3-4 billion



rehabilitation cost. However, the Ontario provincial government, whose legal approval is required, rejected the application. Media observers suggested that the rejection was due to the perceived opposition from voters in the surrounding areas. Looking more widely, locations where road pricing has been proposed and put to referendums (Manchester and Edinburgh in the UK for example) confirm the public apprehension about road pricing schemes.

Much of this dislike stems from the perception that the existing road network has already been paid for with income, property, and fuel taxes and any additional charging is simply more taxation. However, a simple review of the operating and capital budgets across all levels of government illustrate that many billions of dollars are spent annually on operating, maintaining and expanding the road network. In addition to the C\$3-4 billion rehabilitation costs for two major highways, the City of Toronto has a 10-year highway

operating and capital budget of C\$1 billion per year; MTO, the Ontario provincial highways authority, plans to spend C\$2.2 billion in 2016-17 alone on highway infrastructure projects, and York Region in Ontario has a 10-year roads capital budget of C\$1.5 billion.

This work is funded by general taxation (including property taxes) and fuel taxes, and is thus largely ‘hidden’ to the road user.

However, the emergence of GPS and associated fleet management systems does provide an opportunity to make a fundamental shift in the way roads are paid for. The basic proposition is that, using such technologies to record vehicle use, the required funding is paid by a per kilometer charge levied on such vehicle use (estimated to be in the range of 5-10c/km for Ontario), billed to the vehicle owner on a periodic basis, just like any other utility.

However, and this is where the proposition differs from typical ad hoc road pricing proposals, general taxation would be reduced



to make the overall proposal revenue neutral. This was the approach adopted by the British Columbia government, when a carbon tax was introduced in the province. Introduced between 2008-2012, the tax requires a three-year plan for recycling carbon tax revenues through tax reductions elsewhere.

A similar approach could be used for road pricing (at least initially), with an independent body reviewing the money raised through road pricing and setting out where reductions should be made to compensate. Making the system revenue neutral becomes a much more attractive proposition to both the public and political arenas.

The use of real time GPS recording of road network use (which is already done by many IT companies to monitor traffic conditions, for example) could have wider uses as well. Such systems can also measure driving behavior; this could be used to enforce driving laws, notably around speed limits, with consequential improvements in road safety

and wider externalities (such as emissions). With an appropriate legal framework, fines could be levied directly on the usage bill.

Overall, a move to a revenue-neutral, distance-based road use pricing regime, would crystallize the cost of using the road network and engender a more balanced view of alternative modes of travel.



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News in brief

New LRT for the City of Surrey

The Surrey-Newton-Guildford Light Rail Transit project (SNG LRT) is a proposed 10 kilometer at-grade, low floor LRT line located in the City of Surrey in Metro Vancouver.

The SNG LRT would be the first permanent, modern light rail system in the province and would have 11 stops, connecting Surrey City Center with Newton and Guildford town centers.

The LRT would also connect with the regional SkyTrain system at two stations, and with two major bus exchanges.

The City of Surrey is set to welcome 300,000 new residents over the next 30 years. The urban style nature of the LRT would not only move people more efficiently in a car-dependent city, but also help with city-shaping.

Steer Davies Gleave, and joint venture partner Hatch, have been responsible for delivering $\pm 30\%$ and, subsequently, $\pm 15\%$ cost estimation certainty on the LRT design, as well as business case development to secure funding.

Provincial and federal funding has now been secured and the final steps towards securing the local share are being taken. The project is now moving ahead into procurement readiness.

Throughout this project, the Steer Davies Gleave team has been responsible for project management, LRT planning and operations, active transportation and transit integration planning, ridership forecasting and pedestrian modelling, as well as business case inputs development.



Surrey-Newton-Guildford LRT © TransLink

Unlocking the potential of high-speed rail in California

Two ambitious plans are being progressed for high-speed rail systems across California and Nevada. Could a 54-mile section of track along the High Desert Corridor be the key to unlocking the full potential of both?

By Mark Buckmaster

Throughout the US, and in California in particular, plans for high-speed rail are being progressed. The most advanced are the California High-Speed Rail, with Phase 1 between San Francisco and Los Angeles, and XpressWest, between Las Vegas and Victorville.

The two systems are projected to provide an attractive and viable rail service to important markets in their own right. Nonetheless, they remain two entirely distinct systems – the High Desert Corridor (HDC) project seeks to change that.

Why does the High Desert Corridor matter?

The High Desert Corridor will provide new high-speed rail infrastructure linking Victorville with Palmdale, thereby creating the potential for direct services connecting Las Vegas to cities across California.

Las Vegas provides a unique combination of entertainment and leisure facilities, and world-class convention and business facilities, on a scale which makes it a global brand. The city attracted almost 43 million visitors in 2016, a record number; approximately one third of them reside in California, making it Las Vegas' largest market.

This, however, significantly understates the scale of demand. International visitors, under-21s, people visiting friends and relatives, and demand from Nevada residents traveling to California, all contribute significantly to the total potential demand that services using the HDC could seek to attract.



How do we quantify the scale of the opportunity for high-speed rail?

Steer Davies Gleave was commissioned to produce investment grade ridership and revenue forecasts for high-speed rail services using the High Desert Corridor. Our approach employed advanced forecasting techniques, focused on quantifying:

- the current and future size of the potential “in-scope” market;
- how much of this market high-speed rail could capture; and
- how much additional travel could be “induced” by the presence of the high-speed rail service itself.

A lot is known about existing travelers: The Las Vegas Convention and Visitor Authority collect extensive statistics on visitor trends, and Las Vegas resorts employ some of the most highly sophisticated marketing and loyalty programs in the world. Further, we collected extensive primary data as part of our work, which included over 4,000 stated preference surveys, focus groups, highway travel-time data, GPS data, and over 10 million records based on anonymized and aggregated cell phone data describing origin-destination patterns. Such a rich pool of data is rare, and provides detailed understanding of the market.

Why might high-speed rail suit this market?

Most people currently drive between California and Las Vegas; but travel times can be long and unreliable, particularly on the heavily-congested I-15. High-speed rail across the HDC provides an opportunity for both reduced, and more certain, travel times, attracting demand from across California, while simultaneously contributing to traffic relief across Los Angeles County and beyond.

Our study demonstrates the scale of this opportunity, and thereby the role the HDC could play in significantly enhancing the potential for success of two major high-speed rail projects across California and Nevada; not bad for a 54-mile section of track!

Further details of the HDC, along with our executive summary report, can be found at: <http://cms.sbcounty.gov/dpw/Transportation/HighDesertCorridor.aspx>



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Building the case for passenger rail investment

Canada is currently in a new ‘rail renaissance’ with significant investments being considered coast to coast. These investments are an opportunity not only to transform how people move within cities and regions, but to also shape how regional economies develop.

By Patrick Miller

Across Canada, investment in passenger rail is at historic levels. For example, improved electrified rail projects are under development in the Greater Toronto and Hamilton Area, and in Greater Montreal. Additional studies are also underway to explore the benefits of more reliable interregional passenger rail services that operate at higher speeds and frequencies.

With rail being considered as a potential transformative investment in many jurisdictions, there is an opportunity to revisit the benefits that improved rail can offer to further develop the case for rail improvements or new rail systems.

In the past, the case for rail was centered on how the investment would improve travel conditions and, therefore, benefit existing travelers or grow ridership. In recent years, this methodology has expanded to account explicitly for benefits to society of individuals using the rail investment, such as reduced emissions or automobile accidents resulting in death or injury.

While this approach allows for a better understanding of how a new investment reduces or increases the impacts of transportation, it does not include wider benefits of improved transit services to economic and social development. In many ways, these evaluations often reflect ‘transportation improvements for transportation’s sake’, which may not present the full, compelling case for transit investment.



An effective rail investment can trigger wider economic benefits, such as increased productivity, by improving connections between industry or innovation centers. This may lead to new jobs, accelerated or expanded urban development, and overall increased economic activity. The same investment can also create social benefits, such as improved access to education or a range of public services, which promotes equity across cities or regions. Directly considering these concerns when making the case for a new investment can help decision-makers and stakeholders understand the true benefit of a new rail investment.

Steer Davies Gleave has applied a ‘passenger market-led approach’ to the design and evaluation of rail projects, including high-speed rail lines, to ensure that the benefits of transportation are considered at all stages of a project. Passenger markets refer to demand for travel by trip purpose, such as commuting or recreation, between different areas of a city or a region. A market-led approach:

- investigates how travel between different markets can promote economic and social development, and the costs to society (such as emissions or investment in services or infrastructure) of providing this travel;
- explores how people travel today, and how travel markets may change in the future, based on changes in regional economies or demographics;

- determines the value of improving or creating new travel opportunities within travel markets;
- identifies potential solutions that realize the value of improved travel and their cost to deliver; and
- communicates the benefits to travelers (new ridership, changes in travel time/reliability/frequency), reduction in transportation impacts (lower emissions or injuries/deaths), and wider benefits to society (improved economic activity, urban development, and social equity).

Our market-led approach expands the focus of evaluation from the transportation service/ infrastructure to the rationale for pursuing a new project: the benefits to society of improved transit. This approach can lead to higher potential options during project planning/evaluation, and to more robust and compelling cases for investing in them.



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A valuable approach to forecasting regional growth

Regional growth forecasting can be challenging, with unexpected impacts making accurate forecasting even more difficult. For transportation planners this data is vital, but it often has to be taken with a grain of salt. What valuable approach could planners take to improve the accuracy of demand and revenue forecasting?

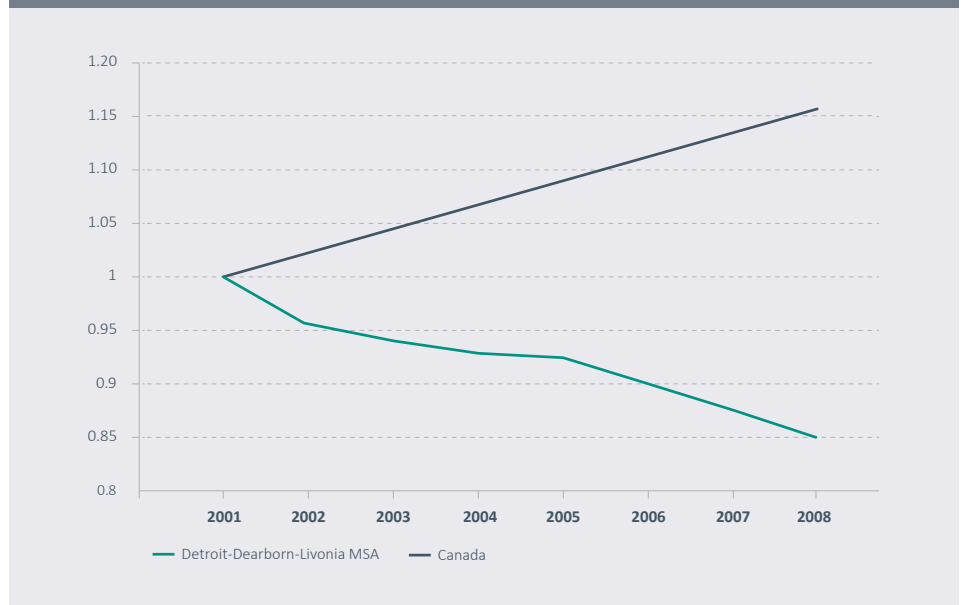
By Pierre Vilain

Regional transportation planning is inextricably tied to views about how the region will grow. While regional forecasts are generally available, the challenges of producing forecasts for regional growth are considerable, especially over the longer term. This means that transportation planners are often required to evaluate growth forecasts critically, or even to generate their own.

What are the determinants of regional growth? The field of regional economics would point to a list of factors that are associated with faster economic growth, including industrial mix (does the local economy have industries that are expanding), the level of human capital (i.e. education) in the workforce, amenities (accessibility, weather, culture and performing arts) and a high level of in-migration. These various factors are highly interrelated, and tend to reinforce each other in effect.

In an important study in the 1990s, the economists Olivier Blanchard and Lawrence Katz studied the growth of states in the US postwar period. They found that each state tended to have its own innate growth rate, with some states growing consistently faster than the average and some consistently slower. They also found that, within these trends, states were continually affected by “shocks” (recessions, decline of an industry, temporary boom due to in-migration), which would permanently affect the level of employment

Employment Growth Index, Base Year 2001=1, 2001-2008



before eventually returning to the original trend.

Key to the return to the growth trend for a regional economy is adjustment through labor mobility: in good times prices of labor and real estate rise, dampening growth; in bad times a region's prices fall, encouraging firms to move in and hire new workers, which then attracts in-migration.

These basic findings are important to consider when modeling regional growth. At the very least, they imply that simple trend extrapolation of past growth may be inherently problematic, as it will ignore the process by which regional economies adjust to shocks through changes in prices.

For example, the chart above shows employment growth trends between 2001 and 2008 for Canada (consistently on the rise) and the Detroit-Dearborn-Livonia metropolitan region in Michigan (consistently declining). Simply extrapolating the line for either may seem simplistic but is, often, the approach used by many forecasters.

What actually occurred in Detroit was quite different than suggested by the trends between 2001 and 2008. After years of decline that had begun in the 1960s, and as suggested by regional economic theory, prices (wages and real estate) declined enough that firm in-migration eventually began to outweigh out-migration, and employment growth has now been positive for the last seven years.

While simple extrapolation of trends for Canada would have been a reasonable guess, it would have been very wrong in the case of Detroit.

Although regional growth forecasting is challenging, and unforeseen shocks will always conspire to make accurate forecasting even harder, it is also true that some approaches are better than others.

One approach increasingly used by Steer Davies Gleave is to model regional growth in population and employment as a system, with prices included as well. These models have the benefit of representing the regional growth process, particularly the roles played by prices. Combined with extensive qualitative assessments of a region's competitive position, this approach is proving to be a valuable addition to the planning toolkit.



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Making first impressions count

In a world that is increasingly digital, physical signage may seem like a priority of the past. However, the power of an impactful wayfinding system can provide far more than simple directional guidance — it can be an extension of your brand identity.

By James Brown

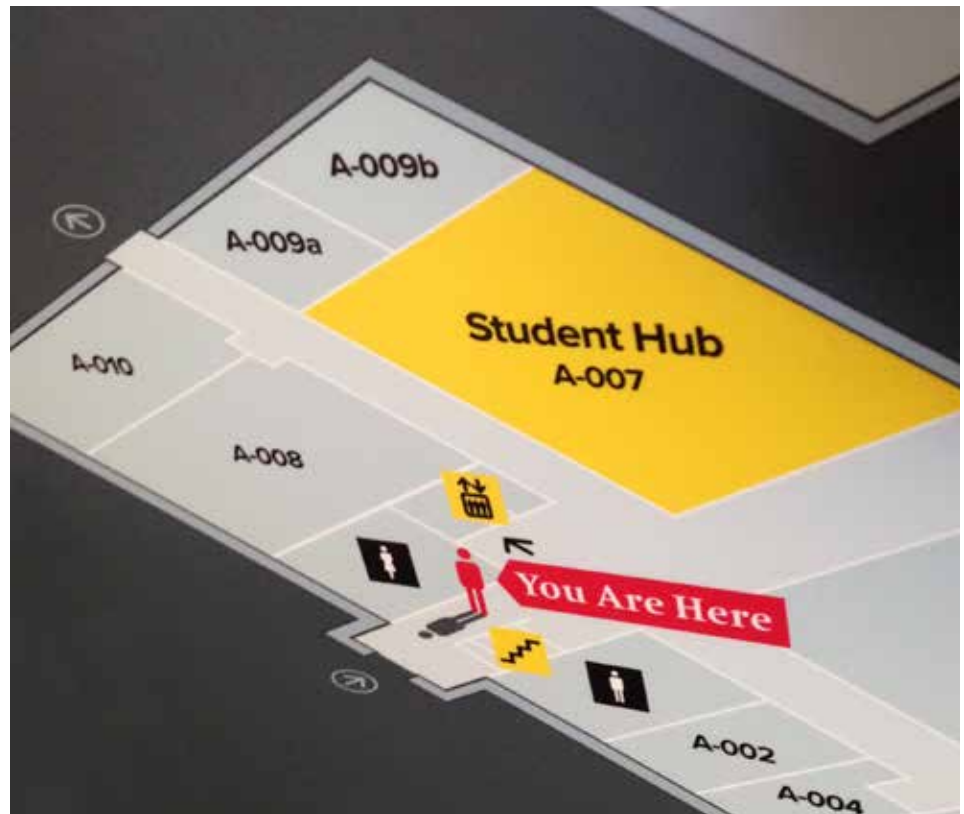
Smartphone users might wonder if we need physical signs anymore, but one could argue that they are just as integral to our daily lives now as they have ever been.

Whether they be street signs, transit signs, signs in malls, parks or universities: signage is all around us, but we only notice it when it goes wrong. Signs are carefully designed objects that form part of a wider system of thought-out information called wayfinding, but they also perform another perhaps less considered role.

Signs and the wayfinding systems they belong to are part of an experience, an extension of a place and the embodiment of a brand. No one system looks or performs the same as the next — otherwise all signs would look the same.

When entering a building, first impressions count. The headquarters of an international company, a world-renowned theatre, museum, gallery or even a university campus: each of these places is there to engage, impress and retain you through positive experiences.

Wayfinding systems are integral to these destinations, as they are highly visible assets. In the first instance, they are relied on to provide



concise and accurate information relating to your surroundings and, in the second, they are extensions of a brand's identity.

Signs are vital components of any successful campus wayfinding system, but if you're not using signs for more than this, you are not taking advantage of all they can really do.

Poor design is easy to spot, whether it be a cheap paper used to print a business card or an unconsidered layout in a printed booklet — these things are noticeable. In the case of signage it is no different: poorly-designed signs, or signs placed without consideration of place or without a considered strategy, will fail. This failure will damage the user experience and the image of your brand.

For universities, the competition for new students and donors is fierce. Wayfinding is a valuable tool, and signs often make the first impression on visitors to your campus, and that first impression may be all you get. Steer Davies Gleave is currently working with Regent's University London to envision a unified, cohesive wayfinding system that properly reflects the school's brand. Creating a good first impression through wayfinding can be achieved in a variety of ways, whether

through the use of high quality materials and finishes or through the implementation of clear and consistent information.

Once the potential is realized within an organization — that signs are a powerful medium for visual communication — there are many ways, within a wide range of budgets, to implement a signage and wayfinding program that can do much more than just direct pedestrian traffic.



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