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HEALTHY COMMUNITIES • SUSTAINABLE COMMUNITIES

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THE NEW MOBILITY PARADIGM

Transportation-as-a-service, integrated mobility, transit, carpooling, automated vehicles, and more . . .

Ontario Professional Planners Institute
Institut des planificateurs professionnels de l'Ontario

HEALTHY COMMUNITIES • SUSTAINABLE COMMUNITIES

201 - 234 Eglinton Ave. East,
Toronto, Ontario, M4P 1K5
(416) 483-1873 or 1-800-668-1448
Fax: (416) 483-7830
E-mail: info@ontarioplanners.ca
Web: www.ontarioplanners.ca

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New Mobility Paradigm

By Dennis Kar, RPP, contributing editor

In 1908, the Model T Ford was introduced, bringing affordable mobility at an unprecedented scale by redefining the mass production process with the moving assembly line. This not only fundamentally altered the manufacturing industry, but significantly changed the nature of cities and where we live, work and play.

The mass production of the automobile provided affordable personal mobility to nearly every household, allowing citizens to move further away from urban cores and heavy industry and led to the development of post-war suburbs, big-box retail outlets, suburban office parks and three-car garage single family homes. Owning and driving a car has become a key value in our culture.

Navya http://navya.tech/?lang=en

However, just like every other good thing, over indulgence can have consequences. In the case of our cities, this consequence has included significant congestion in metropolitan areas, climate change and impacts on human health through inactivity.

Planners have responded with a re-focus on urbanism: planning environments with an increased pedestrian focus and an emphasis on transit. Billons are being invested in rapid transit solutions to create choice and influence how people move. While these investments are significant in transforming how we move and how cities are planned, this is just the cusp of the new mobility paradigm.

The new mobility paradigm represents a significant shift in how we travel; and that shift will have the same transformative power on our cities as the Model T Ford did in the early 1900s. But this new paradigm will not be led by tires on the road or new rapid transit construction. The new mobility paradigm is being driven by our mobile phones, the sharing economy and the micro-processor.

The mobile phone along with the re-emergence of a sharing economy is bringing new players to the transportation market. Fixed-route, fixed-schedule transit services may provide a solution for long distance trips in dense corridors, but they lack the flexibility, convenience and spontaneity to meet the needs of a more discerning market, particularly in low-density areas or outside peak travel times. The new world of mobility is dynamic, responding to on-demand requests for service and integrating multiple modes of travel.

The Millennial generation is helping to shape this new mobility paradigm. Instant access to real time information, a deeper understanding of our ecological footprint and a stronger desire to live in mixed-use urban areas has resulted in many individuals delaying or foregoing getting their driver's license. A reason often cited for this is that "Driving takes time away from texting and using social media." We live in a connected world and access to information no longer requires a trip to the library but instead a simple tap or swipe of your index finger.

While sometimes controversial, technology companies such as Uber and Lyft have filled this gap and understand the desire for more dynamic shared mobility; and they are growing at a rapid pace developing different models to address various mobility needs. With the swipe of a finger, you can now book a ride, pay for a ride, share a ride and get information about where and when your ride will arrive—all in real time. Dynamic mobility is the first step in the new paradigm. As planners, we can either react and see these private sector players as competition to the taxi industry and transit services, or be champions of change, identifying ways to integrate these new services into the network of mobility options available to us.

2GetThere http://www.2getthere.eu/

Transit systems in particular are poised to be the biggest beneficiaries. The current transit service model has done well connecting high-density nodes and corridors, particularly when

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dedicated travel lanes are introduced. Where transit has struggled is in addressing the first and last mile of the trip and providing access to low-density areas (residential or employment) and during low-demand periods (e.g., late evenings).

Integration with new dynamic mobility models has the potential to rationalize transit investment where it can be most effective and leave the rest to providers that are more adaptive to doing things differently and addressing niche markets. Ian Black, General Manager of Uber in Canada, provides some insights in this issue of the Ontario Planning Journal on how this tech giant has grown, its vision for the future and how ride sharing services complement transit services.

Robosoft (also a partner of Easy Mile) www.robosoft.com

And as we struggle to address these game-changing technologies, keep in mind that the next generation; those under five years of age, will face another paradigm shift that will have an even greater transformational impact on the way we move and live. Instead of asking children when they will get their driver's license, the more appropriate question will be whether they will actually need one.

Meet George Jetson and his wife Jane. The classic Hanna Barbera cartoon "The Jetsons" depicted a futuristic family with self-flying cars. While for many this depiction seemed like science fiction, this future will soon be a reality… well, maybe not the flying part. Automated vehicles are coming and the automobile sector and other technology companies from Ford to Google are investing heavily in self-driving vehicles. In fact, the Ontario government announced it will allow testing of self-driving vehicles on public roads starting this year. The big impetus behind this automation is public safety; by taking away human error, we can significantly reduce the number of vehicle collisions. But this is just the tip of how automated vehicles may impact how we move and how we plan our cities.

On the one hand, converting to automated vehicles will take up less roadway space. Vehicles will be able to travel closer together on all sides (front, back, left and right) and traffic flow will be smoother. Roads with excessive lane widths may be restriped and narrowed to add an additional lane within the same right-of-way or providing more space to accommodate pedestrians and cyclists. If we know this is coming, should we be rethinking roadway standards to allow for future re-purposing of transportation corridors?

Some people speculate that we will move from purchasing vehicles to purchasing vehicle memberships (mobility as a service). If I purchase a membership with Honda, I can request a small one-seat vehicle delivered to my door if I am travelling alone or a mini-van if I would like to pay a cheaper rate and travel in a group. Right-sizing vehicles to demand will reduce the amount of space they occupy and ultimately lead to more roadway capacity without increasing pavement width. It will also reduce the need for excessive parking. So the question becomes, are all parking lots being designed with future retrofitting in mind?

There are many uncertainties that come with this future mobility paradigm that planners need to better understand so we can influence policy and infrastructure decisions that are being made today. Our transportation plans that feed into infrastructure investment decisions continue to be based on 30-year predictive models that include vehicles being driven by people. If we were to re-model travel behaviour with autonomous vehicles and adopt tech-driven mobility solutions, would we still make the same roadway expansion and rapid transit investment decisions?

Many growth management plans assume that today's location and housing preferences will continue. With automated vehicles allowing more productive time while commuting, will this continue to be the case or will there be a higher migration outside of urban centres?

The only certainty is that automated vehicles are coming and technology will ultimately disrupt every existing service delivery model. Outside of that, there are many views about the future of mobility and how it will influence where people live, work and play.

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The intent of this issue of the *Ontario Planning Journal* is to provide further insight into this new mobility paradigm. It includes contributions from experts in the fields of transit, ridesharing and mobility applications, urban planning and automated vehicles. Contributions are provided from the private sector, the Canadian Urban Transit Association, new mobility providers and the City of Toronto (which is working to better understand the impacts of automated vehicles).

The new mobility paradigm will have the same disruptive impact as the Model T Ford. Understanding this new reality is critical to ensure that planning decisions we make today are based on a world that more closely resembles the Jetsons than the Flintstones.

Dennis A. Kar, MUP, RPP is an associate at Dillon Consulting Limited and leads the Transit Planning & Design Technical Service Line. He is also the Transportation Editor for the Ontario Planning Journal and a Member of the Ontario Professional Planners Institute and the Canadian Institute of Planners.

New Mobility Paradigm

Planning for transportation-as-a-service

By Bern Grush & John Niles

Some observers suggest that we are on the cusp of a tsunami of automotive innovation that will enable relief from the congestion, carnage and environmental harms of the automobile. Others warn this technology portends a new wave of problems. Since this road could fork either way, planning for the next 20 years will be very challenging…or worse. So, what's your plan?

Governments are urged to prepare for autonomous vehicles. But prepare for what? An increase in household vehicles or more ride sharing? Less congestion or more vehicles deadheading? The end of parking or empty vehicles circling while waiting for owners to finish shopping? The end of bus-transit or the beginning of soaring ridership on autonomous transit?

Patterns of future vehicle ownership will be decisive, but now we can only speculate. Given the current profusion of assumptions, claims, exaggerations and warnings, governments cannot be sure what to get ready for—or when.

Better plan: Urban leaders decide what they want AV technology to do for their cities—in other words decide what's in the public interest. Ask not what municipalities can do for AVs. Tell AVs what they can do for municipalities.

AVs are robots; we can specify what we want them to accomplish. If municipalities do not tell AVs what to do, then Uber will. Uber's CEO has already said as much and has demonstrated that Uber can be both pervasive and persuasive.

Transportation-as-a-Service is the transit of the future whether run by cities or corporations.

If Ontario's cities use AV technology to expand transit coverage and ridership, frequency and convenience, flexibility and service options, then a tsunami of positive change is possible.

Bern Grush

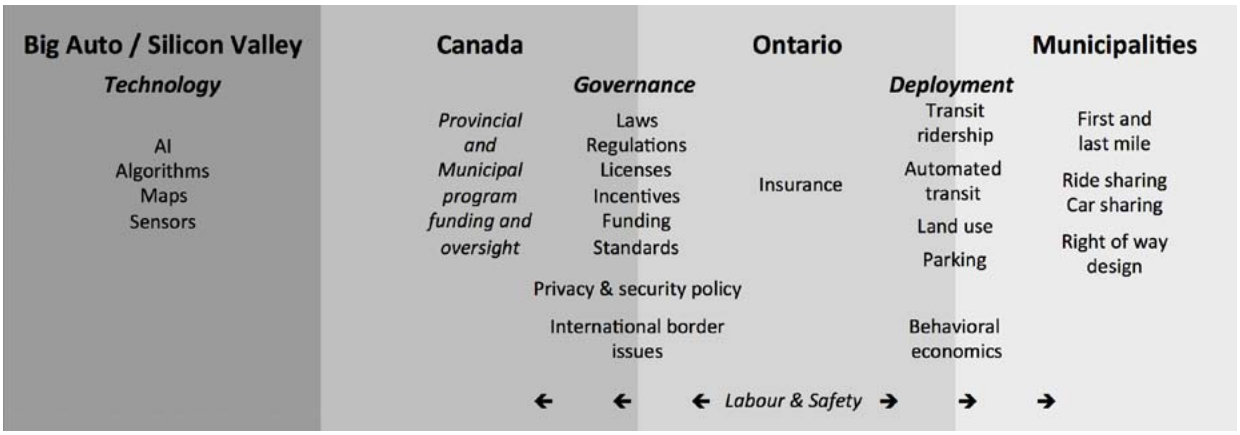
John Niles

Where are we, right now?

Every day we creep nearer to robotic vehicles that handle most situations encountered, but we remain far from vehicles that handle everything everywhere. The final 10 per cent of any technology development consumes 99 per cent of our inventive efforts. A household vehicle that can go driverless, at posted speeds, on any road household vehicles use today does not yet exist.[1]

As of 2015, we have entered a sobering few years of reality checks about the AV that needs no human supervision.[2] Sending your 8-year-old to ballet or hockey without a human driver is farther off than most believe. So is deadheading, the end of parking, and the self-arriving robo-cab. There are a tremendous number of valuable Advanced Driver Assistance Systems improvements in the offing but none that change the current ownership paradigm.

One concern: Quasi-robotics make highway and congested driving more tolerable, increasing our willingness to commute farther. What will this mean for highway exit ramps emptying into Ontario's cities? For urban parking infrastructure, much of it over-demanded and under-charged? For rail networks and transit-oriented development? What if increasingly sophisticated Advanced Driver Assistance Systems were all that were deployable until 2070, as pioneer Steve Shladover predicts[3] (i.e., no quantum leap in household transportation that indicates infrastructural change)?



Sample of key policy vectors for autonomous vehicles. Some things, such as automated transit, straddle a couple of levels. Others, such as labour and safety, are influenced at all levels

What should governments do?

Our three levels of government will play different but interconnected roles in robotic transportation. None of these governments need spend on technology R+D, which is advancing quickly in Silicon Valley, Detroit, Europe and Asia. But if Ontario wants regional economic returns and to address the transportation snarls of its cities, then it must go beyond promoting early AV innovation to facilitating early adoption. Markets enable the social benefits of new technologies.

The best way forward for governments is to invest in deploying newly-enabled forms of automated transit services as a first step in moving toward autonomous transit vehicles. Deployment targets should aim to increase transit ridership by a factor of three by 2030 and eight to 10-fold by 2045. This would have several effects: Give transit an advantage in providing the user experience of robotic transportation; Support early, low-cost autonomous transit options before household AVs are deployable; Increase the portion of travellers that perceive robotic public transportation as more suitable than owning a vehicle.

What should Ontario do?

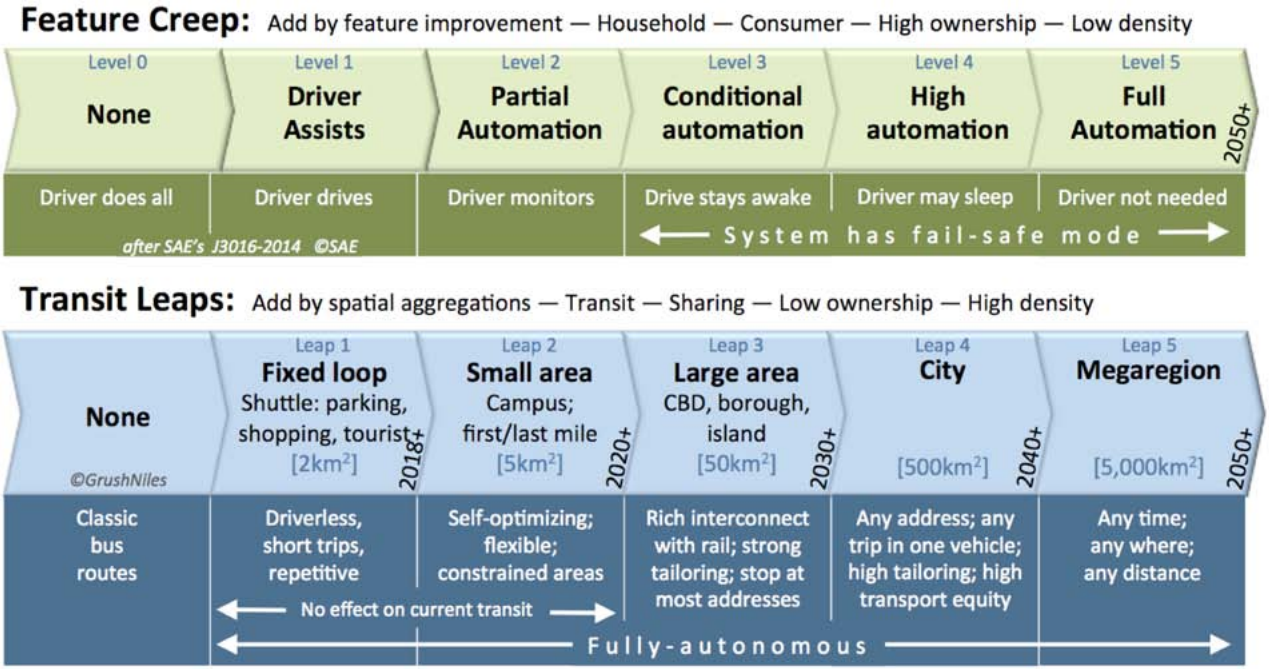
Ontario should move forward with autonomous transit rather than wait for the driverless private automobile to be perfected. Just as the barriers to the household market for Level 5 autonomous vehicles are becoming apparent,[4] the application of robotic vehicles for public transit is being implemented. Already there are successful trials of non-rail, free-moving, autonomous minibuses being used on constrained routes and limited networks in the UK, EU and Singapore.[5]

At the same time, the private sector is quickly developing its own transit routes, still driven by human drivers, such as Chariot and UberHOP. One can easily imagine these commercial routes persisting—and expanding—as operating costs drop during the transition from route-constrained to fully-capable robotics.

Robotic service applications on limited routes can more easily overcome barriers faced by early, access-limited, self-driving household vehicles. This enables the autonomous vehicle to both disrupt household ownership and find an important niche in disrupting transit—and enabling plenty of support jobs to replace vehicle operator jobs.

By their nature, public transit vehicles are limited in spatial range and are constrained to fixed routes. Targeted, affordable, roadway preparation can be associated as autonomous transit applications and routes are mapped and prepared one-by-one within constrained areas and routes. Gradually, Ontario cities would experience expansions of robotic, on-demand shuttles and taxis. With growing ridership, user fees could support public-private partnerships as investors and fleet managers. Driverless vehicles in public service mean long daily use cycles such that high turnover could maintain Ontario's automotive manufacturing jobs.

Significant instances of robotic service applications can be realized in Ontario in the early 2020s.



Feature Creep as expressed in the five-level autonomous vehicle standard, J3016 from the Society of Automotive Engineers (SAE). Only the level 5 vehicle is fully autonomous (no driver controls needed); [caption - bottom] five levels of *Transit Leap* spreading autonomous usage by controlled spatial extension rather than by randomly distributed consumer purchases. All vehicles in Transit Leaps 1 through 5 are fully autonomous SAE Level 5 vehicles.

Transit Leaps

Transit Leaps like quantum leaps are dramatic rather than incremental shifts. Transit Leaps refer to public-use, robotic, shared-mobility applications that start small, expand by demand, grow, merge and spread. The core motivation for Transit Leap is to accelerate the arrival of robotic mobility as a social good, while expanding transit ridership and concurrently reducing the demand for household vehicles.

Transit Leaps introduce robotic vehicle mobility to the urban landscape, application-by-application and area-by-area rather than car-by-car or owner-by-owner. The latter has already started with Feature Creep technology releases such as Tesla's ADAS and Volvo's planned Level 3 autonomy pilot for Gothenburg in 2017.

With spatially-constrained robo-transit, progressive, urbanized regions can jump quickly and directly to fully autonomous vehicles, with meaningful social applications for SAE Level 5 vehicles. Initially courteous, deliberate, cautious and slow, these vehicles address user anxiety and safety while avoiding the distracted-driver issue plaguing semi-autonomous, pre-Level 5 vehicles.

What can Ontario municipalities do?

A first step for any municipality is local first/last kilometre applications expanding gradually and opportunistically into larger, still constrained areas. While the first Transit Leap project for a city would likely be its most difficult, as experience builds these applications merge and grow into urban-wide, then region-wide systems, through a connected series of increasingly flexible and capable extensions incorporating incremental AV technology improvements suited to each application.

The changing nature of public transit employment would result in growth of non-driving jobs. If, for example, a transit agency were to quadruple its ridership using autonomous vehicles, the labour contingent required to manage and service a tailored and responsive fleet for service could double its workforce.

Expansion of the geographic reach of autonomous Transit Leap vehicles will continually erode the need for vehicle ownership. Peak car ownership becomes declining car ownership. Stagnant transit ridership and the threat of public agency job loss become growing ridership and expanding mobility industry employment.

Robotic transit can't be stopped

Autonomous vehicles are bound to disrupt both public transit and the use of public-access shared vehicles. The opportunity for Transit Leaps lies in leveraging this disruption to increase transit ridership whether by robo-bus, robo-shuttle or robo-taxi.

Under a Feature Creep paradigm of household ownership of AVs, transit will be negatively disrupted. A future robotic offering by Uber competing with a laggard offering from municipal transit will mean a decline in transit's viability in providing equitable mobility for all income levels. Uber's CEO Travis Kalanick is on record saying he will provide better transit. The choice facing Ontario's municipalities is whether to abdicate or grow transit.

The massive, 120-year-old automotive industry is premised on making and selling a consumer product. Those commercial enterprises will remain and continue to build vehicles better and cheaper—and in greater numbers. The ethos of the status machine, the personal and private machine, the convenience machine, and the fast, sleek-and-sexy machine will linger as will consumer predilections for owning one.

The automotive Feature Creep business model erodes the comparable, already-disadvantaged appeal of transit. Our business-as-usual world aspires to a "car-in-every-garage," but in the Transportation-as-a-Service world there is a "ride-for-every-need." Removing the driver from the private car is an enabler for more affordable transportation service, but may be a step backward if Ontario and its municipalities "wait and see" while the automotive manufacturers prepare better and better vehicles for household consumption rather than for Transportation-as-a-Service consumption.

The path to the oft-predicted, smart urban future of any-time, on-call, mobility-on-demand will be easier to traverse and come sooner where the Transit Leap paradigm is deployed. Ontario's transportation leaders should not dither in the face of AV technology hype, hope and fear. Rather, our city builders should begin implementing what is already feasible starting now.

Bern Grush (endofdriving.org, Toronto) is an entrepreneur, innovator, patent holder, standards writer, speaker and author for autonomous vehicles, parking reform, and road pricing. He is a founder of PayBySky, Inc. John Niles (endofdriving.org, Seattle) is a research associate with Mineta Transportation Institute and research director for the Seattle-based, Center for Advanced Transportation and Energy Solutions.

Endnotes

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New Mobility Paradigm

Peering into the crystal ball

By Antonio Gómez-Palacio, RPP

Imagine two opposing scenarios. In one you are walking down a busy street carpeted by cars whizzing by and you slowly realize that you are the only actual human being in sight. In a parallel future scenario, the street is bustling with pedestrians, nobody owns a car anymore, and the few vehicles that exist are carpooling between hubs, mostly out of sight.

What will cities really look like with driverless cars? They have the potential to disrupt urban life in unexpected ways, and soon. But, how? Nobody knows. We can only speculate.

Over the last few decades cities have been striving to reduce car-dependency and create livable, walkable communities—vibrant places where people can live, work and play within comfortable walking distances. Will driverless cars aid or hinder this vision? And, how?

One way or another, we need to start planning our cities and transport systems to adapt, leveraging the potential opportunities and mitigating the impacts. The risk of misdiagnosing those opportunities and impacts is lesser than ignoring the impending changes altogether.

Having spent the better part of the last two decades as an urban planner/designer here is what I would venture to speculate are the key implications and opportunities for cities.

Induced congestion

There has been much speculation on the potential for driverless vehicles to reduce congestion. I don't think this will happen on its own. When it comes to roads, we tend to use all of the infrastructure available until congestion compels us to change our route, habits or transportation mode – this phenomenon has been termed induced traffic. As long as we build roads, they will be used to full capacity. In fact, by mobilizing people who would not otherwise be able to drive, we will potentially see more vehicles on the road, albeit with less space requirements.

In response: We still need roads. In fact, some transportation planners will argue that we need more roads. But we must resist the temptation to rely on automated vehicles to meet our transportation needs (necessitating more roads) and instead continue to pursue alternative modes of transporting people and goods (reducing vehicle and road dependency).

Increased shared-economy

The real opportunity with driverless cars is if their arrival can help us leverage the trend in reducing car ownership. Today, choosing not to own a car is facilitated by the increasing number of options available: I can rent a car for a day or an hour; I can sublet my vehicle to others; take a bike/train/walk for a portion of my trip; etc. Cities like Helsinki are already striving to make car ownership pointless, focusing instead on providing a plural and comprehensive, door-to-door system (targeted for 2025). The trend towards a sharing economy is visible in many other areas: hoteling, office spaces, heavy machinery, etc. And correspondingly, there is an increasing level of comfort by the end-user with the idea of using services rather than owning the things that provide those services.

Some of the opportunities that come with reduced car ownership include: a net decrease in vehicle numbers, as each vehicle has more people using it; a net decrease in parking spots, as vehicles spend less time idle; an increased use of alternative modes of transportation, as people are not anchored to their car for every trip/km; and so on.

In response: Much like what Helsinki is doing, the focus of transportation planning needs to shift away from creating spaces for cars to providing transportation options for users (i.e., inter-modal integration). And priority should be given to Transportation Demand Management strategies that target a reduction in car ownership.

Complete streets

The term complete streets has been coined to describe the idea that streets should provide for a variety of users and uses, not just cars. Streets around the world are being redesigned to better accommodate pedestrians, cyclists, spill-out retail, an urban tree canopy, and other public realm functions. Driverless cars have the potential to assist these efforts by requiring less overpowering road engineering (e.g., tighter turning radius, smaller lanes, pedestrian-oriented signal timing, etc.). They also have the potential to do the exact opposite, somehow dehumanizing the function of the road (e.g., making a road intersection impossible to walk across). In our designs and engineering, we will be confronted with having to prioritize road users (establishing a modal-hierarchy) and should be wary of the potential impact to the livability of cities.

Consider drop-off and pick-up zones. It is not inconceivable to imagine that office buildings at peak hours will begin to look like school zones. Every user of a driverless car will want to disembark directly on

the red carpet and have their car waiting curbside for when they emerge. Buildings will need to incorporate more robust drop-off and pick-up zones, potentially internalized. I would imagine that many existing underground parking structures could be repurposed to this effect.

In response: We need to remain vigilant in realizing the goal of reprioritizing the function of roads towards multi-modal use. That is, designing roads for people, not for cars. It will be all too easy to be distracted by new technologies and lose perspective of the bigger picture.

A reduction/redistribution of parking needs

Parking needs, location and design, will probably change drastically as vehicles can now mosey back home, or pick up a different passenger. You will no longer need a parking spot near your destination. In fact, you may not need one at all. And if you do, the size of the parking spot (and ceiling height) could be significantly reduced as the entire process is automated.

In response: This is an interesting one to consider, given that so much of our urban environments are currently dedicated to parking. Those vast surface lots surrounding malls can be repurposed. Parking structures can be redesigned or recycled. Street-side parking can be replaced by sidewalks or extended drop-off zones. Furthermore, eliminating parking as a (physical/economic) barrier to intensification will increasingly enable adaptive reuse and infill development.

Shift towards mass-transit and multi-modal integration

Public transit systems have typically straddled the objectives of moving significant volumes of people (high ridership) and serving a broad population (high coverage). By reducing barriers to mobility, driverless cars have the potential to appeal to some of the demographics previously served by transit—seniors, youth, mobility-challenged, etc.—because they offer door-to-door service. These riders may choose not to use public transit, instead relying on a driverless car to complete part of their journey. I can predict that transit operators will feel less pressure to cover all parts of the city (e.g., lower-density neighbourhoods) and focus instead on areas where the volume of users makes individual vehicles (with or without a driver) less viable (e.g., intensification nodes and corridors). A senior living in a suburb will now be able to use a driverless car. The inner city office worker commuting to the financial district will still be dependent on the subway.

The inter-modal interface (transferring from a driverless car, to a train, to a shared bike, etc.) will become increasingly important, as people use different modes for different parts of their trip. This interface will need to be accommodated at transit stations, and at all key destinations and cross-roads.

In response: Public transit systems will likely divest from lower-density areas and will refocus efforts on higher-density mass-transit systems. They will divest from offering services for the financially-challenged, allowing shared ownership systems and driverless technologies to fill the gap. Public transit agencies will, following the trend, require less drivers and be able to diversify their fleets and operations to include driverless transit vehicles that are more bespoke in their size and operations. Expect more rapid-transit systems filled with commuters along busy routes and fewer large buses running empty along suburban streets.

Sprawling commuting time/distances

With a driverless car, passengers can spend their commuting time sleeping, watching TV or working on their laptops. As a result, people's tolerance for longer commuting times will probably increase, resulting in further urban sprawl. Furthermore, people will be able to reside longer in a suburban residence (aging-in-place) than what they may do otherwise. As a result, we can expect more cars on the road, not less. Much like the widespread introduction of cars post-WWII enabled a wave of suburbanization, driverless cars has the potential to further this (artificially subsidized) paradigm.

In response: There will be increasing pressure to develop bedroom communities, far removed from urban centres. As in the past, many municipalities will find this building boom hard to resist. It will require political will and tenacious policy to resist the impulse to sprawl.

An adjustment of land values

New technologies, inevitably, alter the viability of developing land and the corresponding land values. Three types of land in particular stand out. One, awkward infill or adaptive reuse sites, which may become developable as parking and access constraints diminish. Two, plots on the urban fringe that become viable as the tolerance for commuting times increases. And three, existing parking lots and structures.

In response: Undoubtedly, we can expect an adjustment of land values to reflect new development opportunities. In the absence of updated policy, speculation will run rampant. It behooves urban planners and policy-makers to set the right framework now, rather than contend with unrealistic expectations later.

Automation of goods movement

The movement of goods by both larger vehicles transporting goods intra-cities and smaller inner-city delivery vehicles will, in all likelihood, also be significantly transformed with the introduction of driverless trucks, trains, boats, planes, etc. In fact, the transfer of goods from one vehicle to another will probably also be mechanized, transforming warehousing and distribution centres. Overall, this will have social and economic ripple effects, in addition to planning and urban design implications.

In response: Same as the post-industrialization shift

to mechanized manufacturing of goods entailed a rethink of land use (opening up brownfields), causing potential disruptions to trades and employment, cities will need to brace for the broader social and economic impact of the atomization of the movement, warehousing and distribution of goods, in addition to the urban design of streets and buildings.

Further automation

Why stop at driverless cars? When the driver becomes redundant, other tasks in transportation and distribution systems will soon follow. Consider garbage pick-ups, pizza deliveries and so on. A slew of complementary technologies will undoubtedly emerge to close the gap between a driverless vehicle and a fully automated transport/delivery service. This is a trend already evident in the shipping industry, where there has been an increase in mechanization of port activities, utterly changing the social and economic dynamics of port cities. Expect driverless cars to be extremely specialized (e.g., an automated arm for garbage pick-up, or a drone for pizza delivery) and architecture to be equally accommodating (e.g., a technological interface on the delivery side).

In response: Buildings will need to include a port for the docking of automated deliveries and pick-ups. These service areas (frequently an eye-sore) can now be hidden from view and operated on more convenient schedules. The automation of delivery systems will probably extend into the building, all the way to individual units. Just as we now expect services like water and sewer to connect with our units, in the future other services will be automated door-to-door. Docking functions have the potential either to take over the image and function of streets, or to be concealed, allowing streets to be places for people. We will need to decide.

Thoughts moving forward…

Nobody knows, truly, what the impact of driverless cars will have on cities. Uncertainty, however, is a poor excuse for inaction. We need to make some informed guesses and begin to design and plan our urban environments to respond to the impending implications. A word of warning though. The one risk we need to be wary of is that we become so distracted by the glamour of the new technology, we end up pandering to it. We cannot allow that to happen, therefore we must keep the bigger picture in mind and ask, not how we accommodate driverless cars, but rather, how driverless cars can help us design better, more livable cities for people.

Antonio Gomez-Palacio, RPP is a member of Ontario Professional Planners Institute and a founding partner of DIALOG. He is committed to creating healthy places, where people thrive – through dialogue. His work with cities, communities, and campuses has been recognized with awards for planning and design.

New Mobility Paradigm

How planners can facilitate integrated mobility

By Asher Mercer, RPP

Most efforts to reduce automobile dependence in the planning sphere have been subtle carrots and sticks related to parking requirements (e.g., shifting from parking minimums to parking maximums, and shared parking). Somewhat passive, these efforts tended to be embedded in zoning codes and building designs. Now a significant infrastructure is developing to give people access to the appropriate mode of travel for a particular trip, and the means to see real-time information to access those options.

Creating a viable network of integrated mobility options has the potential to reduce congestion in downtown areas and reduce automobile dependence in suburban areas. Networks have been implemented in several cities in Europe, notably in Germany and network components have emerged in a more haphazard way in several North American cities. The focus of this article is on on what planners can do to facilitate the creation of this network of options, to enable seamless transitions between modes and provide urban residents with a menu of travel modes that suit the needs of their various trips.

There are a number of modes and travel options that form the integrated mobility menu:

Private ridesharing (i.e., carpooling) is a well-established option thanks to online ride-matching services and the provision of carpooling gathering spots at businesses and, in some regions, transit stations. Many municipalities have also built into the site plan approval process a requirement to allocate carpooling spots in new commercial developments.

For-profit ridesharing, or taxi equivalents such as Uber, are part of the equation as well. Much like taxis these benefit from the presence of high-occupancy vehicle lanes. While regulatory issues remain, these services allow travellers to affordably reach a destination quickly without needing to resort to a private vehicle. Some municipalities are also exploring subsidizing Uber fares in suburban areas as an alternative to subsidizing poorly-used transit in these areas.

Carsharing services, such as ZipCar, AutoShare, Car2go, and Enterprise Rideshare allow travellers to easily reach areas that do not have optimal transit service or bike infrastructure. Point-to-point services such as Car2go, which allows users to leave the vehicle at a different location than the origin point, offer maximum flexibility for connecting to other modes as necessary.

Planning policy should prioritize the allocation of space for such services near transit stations, mixed-use areas and in multi-storey residential developments. Some municipalities have been able to secure commitments from mid-rise and high-rise residential developers to provide carshare parking spaces. Another key planning initiative is to amend parking by-laws to allow point-to-point carshare users to leave vehicles in permissible on-street locations throughout the municipality. In some cities, you can end trips in any valid on-street public parking spot; in others, such as Toronto, users are confined to parking lots where the service can negotiate agreements.

Policies should encourage public transit agencies to support carsharing and ridesharing services through marketing or integrating online tools. European studies have indicated that after joining a carsharing service, household transit use increased by 25 per cent. In Quebec City, monthly transit pass purchases rose by 45 per cent among those who took advantage of a joint offer by the transit agency and a carsharing company.

Bikesharing services such as BIXI should be considered critical last-mile infrastructure allowing easy connections between residential areas and transit stations. While typically (and logically) viewed as mimicking the experience of private bicycle ownership and use, these services should be viewed as another layer of the transit system. Planning policy needs to accommodate bikesharing stations near high-traffic destinations in urban areas, and provide for safe cycling facilities in the vicinity of these stations.

A common target in any urban municipality's official plan is to have a certain percentage of residents within 400 metres of a transit stop. Urban areas that can offer a bikeshare service and a safe cycling experience can effectively extend this envelope, helping to reach that target.

All these options, when implemented properly, work in concert to provide whatever mode the traveller needs. The space required to accommodate these complementary services near transit stations is significantly less than that required for park & ride facilities, and leaves more space available in these high demand areas for development.

Transit is still the backbone of this network. Many of the approaches are focused on bridging the distance between people's origins and destinations, and the closest transit stop. In some jurisdictions transit agencies have been reluctant to support other trip modes for fear of eating into their ridership. While many trips will not include a transit component, an overall strategy focused on integrated mobility has been

shown to lead to more transit trips overall. Official plans and other planning documents need to emphasize the value of transit agencies facilitating trips along the entire integrated mobility network.

A key feature of this emerging network is the blending of public services like transit, and for-profit services such as carsharing. This hybridization allows mobility options to be implemented more broadly without public subsidy. However, the downside of privately-provided mobility options is that it is generally limited to dense areas where population and trip density is high enough to ensure high use and a return on investment.

In suburban areas, facilitating increased use of active travel modes and carsharing can make alternatives to single-occupant vehicle trips viable when frequent transit service may not be possible without significant subsidies. While it is unrealistic to expect automobile ownership to make the shift from necessity to luxury in low-density suburban areas, reducing the number of 2-, 3-, and 4-car households in these areas is a viable short- and medium-term goal that can be achieved through an integrated mobility approach.

Another factor to consider is the location of affordable housing. Increasingly it is likely to be located in suburban parts of the city. Transit in these areas operates with less frequency and with significantly higher public subsidy, making driving more attractive to those who can afford it. Providing enhanced and equitable mobility options in these areas will require, among other things, official plan policies that prioritize active transportation infrastructure focused on local retail and school destinations, as well as subsidies for carsharing spaces in convenient locations.

Integrated mobility should not simply be viewed as an add-on to transit service. Rather it should reframe transit service as the central piece of an overall approach to getting around urban areas without needing to rely on a car.

Asher Mercer, RPP is a member of Ontario Professional Planners Institute and has 12-years experience planning and implementing mobility options with provincial and municipal governments, as well the private sector. He operates Urban ID Consulting, which is focused on improving sustainable transportation and place-making in urban areas.

New Mobility Paradigm

What role for transit?

By Patrick Leclerc

In November of last year, CUTA launched its fall conference with a breakfast panel discussion featuring panelists from Uber, Netlift (a mobile-based carpooling app), Transit App (a real-time multimodal app using open data), Metrolinx and Deloitte (on disruptive innovation and change management). The topic? In short… what the heck's happening to the transit industry and what do we do now? Our intent was to challenge conventional thinking in the industry and to bring the topic from backroom discussions to a wide open forum in front of industry leaders. But the reality is that we're past the "challenging conventional thinking" phase. The change is happening right now. While decision-makers are still trying to figure out how they should regulate Uber, thousands of people around the world are hailing a ride from the IT company as you're reading this article—more than 1-million trips per day.

But the discussion is not about Uber, or at least it shouldn't be. The discussion is about Uber, Bridj, Lyft, Chariot, Split, Boost, Via, RideCo, Netlift, RideCell, Transit App, RideScout, Car2Go, etc. And, ultimately, the discussion is not even about them. The discussion is about people, urban and suburban citizens and the new generation of mobility customers. This is what it's all about.

Yes, technology is transforming the sector. It's bringing new opportunities and a fair share of challenges. But the technology wouldn't disrupt the transit industry if there was no demand or clients to hail a ride on Uber or book a trip with Bridj. And, the discussion isn't and cannot be about "how do we stop the phenomenon?" because we don't stop progress. We adapt to it—and hopefully take advantage of it.

Transit agencies must realize that they are in a unique position to establish themselves right in the middle of this transformation. We should not be on the fringe of the evolution of urban mobility. No one is better positioned to understand mobility patterns and needs in a city than transit agencies. However, understanding mobility patterns is one thing; thinking differently, adapting quickly and driving change is another thing. Everyone agrees that public transit is here to stay. No ride-on-demand, ride hailing or micro-transit offering can replace a subway or a crowded bus route in a high-density area. The question is not about the existence of transit but about the form it will take and the role it will play. Because of its unique capacity to move a large number of people efficiently, transit serves as the backbone of the system. Then we need to decide if we want to be proactive or reactive.

Let's look more closely at the underlying factors driving the change. First, the customers. A lot has been said about the Millennials and their desire to live an urban lifestyle where mobile connectivity takes precedence over car ownership. While Millennials are early adopters of new technologies and their mobility behaviours are different from previous generations, the interest in easy to use, efficient and personalized mobility options is appealing to many transit and non-transit customers outside of the Millennials cohort. The demand has been there for a while. The difference today is that mobile technology is allowing companies outside of traditional transportation players to connect the dots and offer new mobility options. However, the connection between transit agencies and mobility customers is well established and our sector has the ability to easily reach out to a large number of customers to further understand their collective and individual needs. Remember, we're moving people, not buses. Once we know what customers want, the question is: are we ready and capable to respond to their needs?

Ultimately, the discussion is not about Uber, Bridj, Lyft, Chariot, Split, Boost, Via, RideCo, Netlift, RideCell, Transit App, RideScout, Car2Go, etc. The discussion is about people, urban and suburban citizens and the new generation of mobility customers.

That leads us to data, which has become quite the buzz word in the industry. IT start-ups can offer new mobility options because they have access to data, they know how to analyse and interpret data and, most importantly, how to use data.

It's true, transit agencies don't have data… oh, wait a minute… we do have data and tonnes of it. If anything, our store of data exceeds our ability to process it. Here's what Bridj CEO Matt George has to say about his company: "Internally we look at ourselves as a technology and big data provider. The output happens to be transportation rather than the other way around."[1] George goes on to say that Bridj uses about 19 different streams of data, including municipal data, census data and social media data…

all available to transit agencies. Ok, we do have data. Now, what do we do with it?

This is where it gets tricky.

Data: check.

Our ability to understand them: partial check.

Our ability to understand data, develop complex algorithms, make optimal use of the technology (and keep pace with it) and automate the process to offer new mobility options based on a different business model…. No check.

Can this box ever be checked? Does it have to be checked? Not really. Let me throw a new element into this mix.

Our ability to establish partnerships: check.

Transit agencies have established partnerships with various actors for decades. In fact, we have solid partnerships with a wide variety of stakeholders—think paratransit, private operators, taxis, advertisers, retailers, etc. Why should it be different with the new mobility providers? Once we've established that transit is the backbone of the system, can we imagine that new mobility actors could be complementary to our offerings? What about the first mile/last mile issue? What about low-density areas where frequency of service is challenging? What about the expensive park-n-ride facilities we have to build and maintain?

One of the challenges we face as a sector relates to our agility. By nature, public transit will always be slower to react and adapt to a fast changing environment and to technological progress than a start-up. Transit managers lead complex organizations that rely on complex corporate and governance structures and that operate in a complex urban environment. As you can see, I am not underestimating the complexity that we have to deal with and the challenge ahead, however, we must find a way to redefine ourselves and to make sure we position transit right in the middle of the transformation. The other alternative is to take our time or, even worse, do nothing. But this is not a real alternative, as others will determine for us what our role should be, and it may not be the role we want to play as we strive to inspire and influence the evolution of integrated urban mobility.

There's a lot happening in urban mobility and this is just a fraction of what we have to reflect on as an industry. And I haven't even touched on the concept of Mobility as a Service, autonomous vehicles and the role transit agencies could play as mobility managers… only so many words and topics can fit into a single article.

Patrick Leclerc is the president and CEO of the Canadian Urban Transit Association. Since joining CUTA in 2010, Patrick has led the transit industry's efforts to raise the profile of public transit with the federal government and key stakeholders and decision-makers across the country.

Endnote

1 "Meet Bridj, the start-up using big data to revamp bus transit", Matt McFarland, Washington Post, October 22, 2014

New Mobility Paradigm

Expanding mobility options

By Ian Black

Every big city in Canada, and in the world, is dealing with mobility challenges: increased urbanization, high use of personal vehicles and the rising costs of expanding public transit and building infrastructure. This leads to unnecessary pollution and decreased economic productivity.

In trying to solve these issues two ideas have been bandied about for decades. First, carpooling at a scale that would result in more residents in fewer cars. Second, more affordable and reliable transportation options that could act as a first mile/last mile complement to public transit by encouraging more people to use high occupancy modes of transportation, like buses and rail.

Uber believes ridesharing—in cooperation with cities—can unlock these solutions, bringing some relief to congestion, and the environmental and economic downsides that come with it. Instead of relying on city message boards to connect residents looking to coordinate their travel, Uber is matching riders travelling along the same routes. We call this product uberPOOL.

But the goal of moving away from single occupancy vehicles doesn't stop there. Uber is piloting two other products to get more people in fewer cars. This past December, Toronto was one of two cities in the world to welcome uberHOP, a fixed point-to-point service that matches up to six passengers travelling in one vehicle on particularly congested routes for a low flat fare price. In Chicago and Chengdu, China, we rolled out uberCOMMUTE, which allows someone to provide a ride on his or her routine trip to the office to those heading in the same direction. These products are in their very early stages of development, but they illustrate how the ridesharing platform is continually evolving to encourage people to ditch single occupancy vehicles for more efficient means of getting around.

We are finding that ridesharing is becoming a complement to public transit, providing a crucial first mile/last mile component to bus and rail. In cities like Atlanta or Dallas, Uber is integrated into public transportation apps. That means someone who is on the subway or a train can request a car before they get to the last stop and they know it is going to be there when they arrive. In Altamonte Springs, Florida, a suburb of Orlando, the city is now paying 25 per cent of the cost of using Uber to or from the city's commuter train station to any destination within the city.

The American Public Transportation Association recently released an independent study that provided additional evidence that people who routinely use shared modes of transportation (including ridesharing) are more likely to use public transit. We're very excited to see public transit authorities begin to approach ridesharing as a partner, not as a competitor. By complementing public transit, ridesharing is making it more likely that people will use the existing public transit where they may not have been able to before.

Admittedly, when Uber started five years ago, it was just two guys looking for a way to help get from point A to point B with their friends in San Francisco. Changing the way cities move, the way cities plan, wasn't really top of mind. But now, with the evolution of ridesharing and the operationalization of carpooling, the positive impact on cities that's starting to emerge is much greater than we could have ever imagined.

By creating more mobility options, and helping reduce congestion and emissions, we start to see how ridesharing has become a part of the solution for big cities. There is a real opportunity to help solve major challenges and build better, more liveable cities from the ground up.

Ian Black is responsible for Uber's Canada operations. His mission is to reinvent transportation in Canadian cities by seamlessly connecting people and goods with reliable, affordable and safe transportation. Uber Canada operates in over 40 municipalities across the country and has offices in Toronto, Mississauga, Ottawa, Montreal and Edmonton.

New Mobility Paradigm

Status and trends

By Barrie Kirk

Three separate but linked technologies will soon change our lives and our cities as much as the introduction of the car changed the 20th Century. Autonomous vehicles, connected vehicles and electric vehicles are separate technologies that are already converging. In the 2020s, we will see far more vehicles that use all three technologies. The focus of this article is AVs, their status, deployment trends and the impacts on planning.

Current status

Two types of first generation AVs are with us now. First, special purpose, low-speed AVs are already being marketed. Examples include fully-automated heavy haulers for use in resource extraction. Suncor has announced that it is buying 175 of these from Komatsu for use in the Alberta oil sands. Another example is fully-automated, low-speed, electric shuttle buses. Two European companies—EasyMile and Navya—have launched second-generation AV shuttles.

Second, cars with partially-autonomous capability are also commercially available now. High-end cars such as the Mercedes S-Class, Infiniti Q50, and Tesla include intelligent cruise control, lane centring, self-parking, pedestrian detection and automatic braking. These features are often called Advanced Driver Assistance Systems. As the car manufacturers add more features, the vehicles will evolve to become fully-autonomous.

Deployment trends

Looking ahead, there are two major milestones. First, fully-autonomous cars will be available in showrooms by about 2020. Some manufacturers may say a year earlier or a year later, but 2020 is a good average. It is expected that the penetration of AVs will happen fairly quickly, especially given the expected trend to Mobility-as-a-Service. This trend will focus on use of driverless taxis resulting in a decrease in private car ownership, which will accelerate the switchover from human-driven cars to AVs.

The second major milestone is 2025, which will be a tipping point for the deployment of AVs. The trend to AVs and Mobility-as-a-Service will likely be significant and will accelerate significantly from then on.

This will be followed by the convergence of three vehicle technologies to create what I call ACE vehicles: automated, connected and electric. Individually, each brings substantial improvements to the environment, vehicle operation, safety and convenience. Together, ACE vehicles will be very disruptive to our lives, cities, society and world.

Impacts on planning

The key benefits of AVs vehicles include reductions in greenhouse gases, collisions, deaths, injuries, congestion and parking spaces. For example, up to 30 per cent of the land in major cities is used for parking. Driverless taxis that don't need to park as much will enable planners to redefine our cities There will also be greater mobility equity for those who don't have a licence or can't drive, including seniors and people with disabilities.

We have recommended that the federal government sets aside 1 per cent of its planned infrastructure funding for smart infrastructure, including autonomous and connected vehicle technologies, big data and analytics. This will help cities reduce traffic gridlock and help Canadian technology companies compete in the global marketplace.

Mobility-as-a-Service will have a significant impact on local transportation and transit. We recommend that municipalities and transit companies incorporate the impact of AVs into their master plans for transportation and transit services.

Canada's economy is on the brink of a significant, disruptive change. We recommend that this change be actively managed by planners both in the private sector and at all levels of government to maximize the benefits to all Canadians in the 21st Century.

Barrie Kirk, P.Eng. is the executive director of the Canadian Automated Vehicles Centre of Excellence. He is a well-known consultant and speaker on the subject of automated vehicles. His projects over the last few years have focused on a wide range of new vehicle technologies.

New Mobility Paradigm

Are cities ready for automated vehicles?

By Sean Rathwell

New regulations for testing fully automated vehicles. A collision involving a Google fully automated car. Automated vehicles will improve road safety. Automated vehicles can replace transit.

These are just some of the many topics about automated vehicles that are being discussed with increasing frequency within professional associations, among transportation and planning professionals and in the mainstream media. It is clear from these discussions and articles that automated vehicles are coming and they have the potential to dramatically change how we think about moving around urban areas. The question is, are cities ready for this?

Dillon Consulting's broad transportation planning and integrated mobility service lines have been closely monitoring the progress of automated vehicles. We wanted to know if cities are ready so we spoke with Canadian automated vehicle experts, researched the topic and met with representatives from Canadian cities and transit systems. Here is what we learned.

Some communities are actively considering the implications of automated vehicles. For example, the City of Toronto commissioned some research that resulted in the report "Driving Changes: Automated Vehicles in Toronto." The report was commissioned by the city's Transportation Services Division as background to help guide decision-makers during the discussion of short- and medium-term policy, planning and investment options and decisions.

Other cities have acknowledged that automated vehicles are on the horizon and assigned key staff to monitor activity. They are organizing and attending workshops and seminars to better understand the topic and engage broader groups of municipal staff in a discussion of the issues.

Many municipalities, however, have not formally acknowledged automated vehicles and are not yet considering how they may impact their communities. Fortunately, there are engaged professionals within most of these communities who are monitoring the situation and making sure that they are knowledgeable and understand what the future may bring.

Whether their cities have acknowledged automated vehicles, or not, the people we spoke with are focused on the same questions and issues.

When will fully automated vehicles be commonly available in the marketplace, and when will they achieve critical market penetration and become the dominant technology?

Some sources suggest that a reliable and safe fully automated vehicle will be available to the general public around 2020, but it is unlikely that the vehicles will be commonplace on roads for 10 to 20 years.

Will automated vehicles be largely owned by individuals (as we own cars today), or will they be mostly in a communal fleet that individuals can call at a moment's notice as part of a Mobility-as-a-Service arrangement?

At this point in time, it is expected that mobility as a service will grow in importance in urban areas, reducing the level of individual ownership of vehicles. However, it is also expected that there will continue to be a significant amount of individual vehicle ownership.

Will automated vehicles take modal share away from active transportation and/or public transit? (e.g., will an inexpensive and readily available fleet of shared automated vehicles be easier and more attractive to the community than cycling or transit for short trips?)

The answer to this depends on how urban areas evolve, and the availability and quality of sustainable transportation infrastructure and services in each community.

Will automated vehicles encourage people to live farther from their work or school locations because they don't have to focus on driving while being transported to their destinations? Or, will they induce densification because it will be easier for people to live in urban areas without having to own and/or drive a car?

Both of these scenarios could occur and it will be important for cities to set policies to allow the best arrangements for their individual communities.

Will people use their personal fully automated vehicle to travel to work and then send it home to avoid parking costs, and recall the vehicle for the trip back home?

If this occurs, there would be significant increases in the number of vehicles on the roads along with greater wear and tear on the infrastructure.

Will the same type and amount of parking be needed? How much parking revenue might a city lose if fully automated vehicles don't need to park?

The answers to these questions will depend on what the answers are to some of the previous questions.

Can automated vehicles be used to reduce the cost of transit service in low demand, low density areas and address the first-mile-last-mile question? Can some of the automated vehicle technologies be used to enhance customer service through precision docking at stops or to improve operations at bus storage and maintenance facilities?

All of these are possible, and transit systems will implement them when there is a business case that clearly shows a benefit for both the operation of the system and the community.

While there are some answers to these and other questions, the actual outcomes are not clear to most municipal representatives. What is clear is that they need to know more, and they need a better understanding of how automated vehicles may impact their communities. A good first step that people from a number of municipalities suggested was to undertake some scenario analysis. This would involve describing a variety of possible futures incorporating automated vehicles and analysing the implications of each for the city. Some of these futures could produce positive outcomes for an urban area while others might be very negative. This understanding is needed to guide policy and planning in the absence of clear answers to many of the automated vehicle questions.

Sean Rathwell, P.Eng., is a transit and integrated mobility specialist with Dillon Consulting who has more than 30 years of municipal transit and consulting experience in Canada and internationally. His work focuses on the planning of transit services and infrastructure, and helping communities understand and implement the future of integrated urban mobility.

Preparing for autonomous vehicles

By Stephen Buckley, Ryan Lanyon & David Ticoll

Automated and autonomous vehicles have tremendous potential to not only disrupt urban transportation systems but to challenge the provision of a wide range of municipal services. The City of Toronto is considering the impacts of AVs from a pan-divisional perspective, with transportation stakeholders taking a lead role in facilitating preparations and change. Actions taken, scenarios considered and possible future pathways will be explored in this article.

The city's Transportation Services division began to monitor developments in the field of automated and autonomous vehicles in January 2014. This included building knowledge around the types of automation, the major actors in the automation field, stakeholders invested in the implications of automation, and the level of awareness and action among other municipalities and levels of government. Recognizing the extensive scope of potential impacts arising from the emergence of automated vehicles, the division initiated a change leadership process to advance the entire municipal bureaucracy toward a state of preparation for automated and autonomous vehicles.

The first formal exchange involving the City of Toronto was through the National Association of City of Transportation Officials in December 2014, where large municipalities and industry representatives shared information and discussed potential legal, mobility and demand management issues. Of particular interest is the disruption to traditional models, such as the privately-owned single-occupant vehicle, and the emergence of transportation network companies, such as Uber and Lyft, who could migrate their business model to a driverless system, potentially decreasing the cost of travel.

In March 2015, representatives from across the city bureaucracy were presented with the current state of automated vehicle development by the Canadian Automated Vehicle Centre of Excellence. Participants brainstormed how AVs might impact municipal operations under three scenarios: Major shift to Transportation-as-a-Service with fully automated, on-demand taxis and a lack of attractiveness to own a private vehicle; Moderate shift to Transportation-as-a-Service with private vehicle ownership remaining strong; Private vehicle ownership dominant (current model).

Transportation Services staff then formed a research partnership with the University of Toronto to conduct an extensive literature review on AVs, develop a white paper for the city, and facilitate more extensive stakeholder engagement. The white paper, Driving Changes, comprised a brief technical background on AV development and competing deployment timeframes and models, current urban and social trends, potential benefits and challenges specific to Toronto, and an overview of government initiatives in other jurisdictions. Most importantly, the paper provided potential strategic directions for the city to pursue in a number of areas, including transportation system regulation and management, urban planning and economic development.

The paper served as the basis for four research and engagement workshops with City of Toronto staff. Participants generally agreed that the city needs to begin to prepare for the arrival of automated and autonomous vehicles, particularly those operating at the levels of high or full automation. Widespread resistance or complacency with respect to the introduction of AVs is neither feasible nor desirable.

The city's approach could follow a number of pathways. First, it could develop various analytical tools to assist with decision-making around AVs, establish partnerships with other municipalities and senior levels of government, and conduct assessments of how AVs could be influenced by or impact city policies such as the official plan, Climate Change Action Plan, and the strategic plan to accelerate economic growth and job creation. Second it could embrace the AV industry and encourage it to establish and test in the area, with municipally-driven consultations and pilot projects. Third, the city might become a showcase for automated and autonomous vehicles. This could include the incorporation of AVs into international events and positioning Toronto as a leading global centre for the development and introduction of AVs.

No matter which pathway the city chooses, the process of preparing for automated and autonomous vehicles will continue. A program of research, exploration, consultation and debate will continue through the establishment of an interdivisional working group, which will soon establish a clearer vision to present to council and the community.

Stephen Buckley

Ryan Lanyon

David Ticoll

The City of Toronto does not have an official policy or position on automated / autonomous vehicles. The views and opinions contained in this paper are not an official representation of the City of Toronto.

Stephen Buckley is the general manager of Transportation Services at the City of Toronto. Ryan Lanyon is the chair of the AV Working Group for Toronto's Transportation Services. He also serves as the manager of the city's street furniture program. David Ticoll is a distinguished research fellow, Innovation Policy Lab at the Munk School of Global Affairs, University of Toronto. He is a Canadian and international authority on the policy, business and social implications of technology innovation, and an accomplished private sector and social entrepreneur.

Call for upper-tier CIP amendments

Creating Elgincentives

By Nancy Reid, RPP & Steve Evans, RPP

Nancy Reid

Steve Evans

Upper-tier involvement in community improvement planning is a relatively new tool that was not permitted prior to 2006, when the *Planning and Conservation Land Statute Law Amendment Act* came into effect. In that legislation the extent to which a prescribed upper-tier municipality can participate in community improvement is distinguished from that of an upper-tier municipality not prescribed through regulation. Ten years later only a small number of upper-tier municipalities in Ontario have taken advantage of this new tool. Thus in 2014, when Elgin County—a non-prescribed upper-tier municipality—initiated a county-wide community improvement initiative—Elgincentives—it had a limited number of best practices on which to base its approach.

This article highlights some of the challenges and lessons learned by Elgin County during the creation of Elgincentives. It also presents a call for further amendments to the *Planning Act* to eliminate the distinction between prescribed and non-prescribed upper-tier municipalities when it comes to community improvement planning.

Section 28 overview

Section 28 of the *Planning Act* provides the legislative authority for community improvement planning. In 2006, through Ontario's planning reform, community improvement tools established by *Section 28* became more flexible by expanding them to upper-tier municipalities, subject to certain restrictions.

> Only a small number of upper-tier municipalities in Ontario were participating in community improvement planning. The experience in Elgin County therefore offers lessons to other non-prescribed upper-tier municipalities

Specifically, as a result of amendments to the *Planning Act*, a prescribed upper-tier municipality is permitted to designate a community improvement project area for the purpose of preparing a community improvement plan (Section 28(2)). *Ontario Regulation 221/07* identifies the list of six prescribed upper-tier municipalities—Durham, Halton, Niagara, Peel, Waterloo, and York regions.

The *Planning Act* was also amended to state that the CIP of an upper-tier municipality may deal only with prescribed matters (*Section 28(4.0.1)*). These matters are set out by *Ontario Regulation 550/06* and they include infrastructure that is within the upper-tier municipality's jurisdiction, land and buildings within and adjacent to transit corridors with the potential for higher density mixed-use development/redevelopment, and affordable housing.

In addition, through amendments to the *Planning Act*, upper- and lower-tier municipalities may voluntarily participate in each other's CIPs through the provision of grants and loans, provided relevant policies have been approved in the official plan of the municipality providing the incentives (*Section 28 (7.2)*).

Thus, most upper-tier municipalities in Ontario are not prescribed and therefore cannot designate a community improvement project area or prepare a community improvement plan. The only opportunity for non-prescribed upper-tier municipalities to participate, in accordance with current legislation, is through CIPs that are prepared and adopted by the council of a local municipality, and specifically by providing grants and loans through the incentive programs that are established by the local CIP.

Elgincentives

Elgin County's first official plan was approved in 2013 and enabling CIP policies were put in place.

In October 2014, Elgin County initiated Elgincentives and retained MPC to assist. The intent was to develop a county-wide framework that would allow Elgin to coordinate community improvement efforts across its seven local municipalities, and to generally align community improvement tools with the county's economic goals and priorities. Specifically, Elgincentives would aim to diversify the economic base and support the creative rural economy with a focus on agricultural areas, tourism, and downtowns/mainstreets.

With respect to implementation, it was also Elgin's intent that senior county staff would be responsible for the administration of Elgincentives, including review and approval of grant applications. In addition, it was intended that the county would provide all of the funding for incentive programs.

However, the only way the county could accomplish the above and realize its vision for county-wide community improvement in accordance with the *Planning Act* would be through the preparation and adoption of seven individual Elgincentives CIPs (by local councils) through which Elgin could provide grants to private landowners.

Outcomes

When Elgin County initiated Elgincentives, only a small number of upper-tier municipalities in Ontario were participating in community improvement planning. The experience in Elgin County therefore offers lessons to other non-prescribed upper-tier municipalities interested in developing coordinated community improvement initiatives.

Early and on-going consultation with local municipalities was integral to the process. In particular, valuable input was received in the delineation of local community improvement project areas and the prioritization of projects in key economic areas, including along the lakeshore and tourism corridors. Also it ensured discussion with respect to the relationship between Elgincentives and other existing CIPs previously adopted at the local level.

While it was Elgin's overall intent to align community improvement tools with the county's economic goals and priorities, there was also a need to prepare local CIPs that were reflective of lower-tier goals, objectives, and official plan policies. This balance required more extensive background and document review than anticipated to address unique local planning contexts. In addition, official plan amendments were required to all local official plans to ensure that the community improvement policies were supportive of Elgincentives.

While it was also Elgin's intent that the county would be primarily responsible for implementation it was ultimately determined that implementation of local CIPs should be undertaken in partnership with local municipalities to maintain the intent of the *Planning Act*. Therefore, a committee of both county and local municipal staff was established. This committee reviews all applications for financial incentives and determines whether it should be approved or refused, based on evaluation criteria.

While Elgin had intended to provide all the funding for CIP grant programs, it was determined that local municipalities should also have the opportunity to contribute, subject to the availability of resources. This would maintain the intent of the *Planning Act* and allow for the greatest amount of resources to be invested into programs. Since an upper-tier municipality is required to specify the extent to which it will contribute financially in a CIP, each individual grant program states that up to 100 per cent of the funding may be provided by the county. This approach offered considerable flexibility so that, as part of annual budget processes both levels of government can designate a budget for any given year. The only exceptions are with respect to the Tax Increment Equivalent Grant and the Application and Permit Fees Rebate, where each level can only fund their portion of the grant.

Finally, to be in compliance with the *Planning Act*, it was also determined that grant payments from Elgin County could not be provided directly to an applicant. As a result the county must forward grant funds to the local municipality, which in turn will pay the successful applicant.

Legislative amendments needed

The process to create Elgincentives offers a new best practice for upper-tier municipalities, in the context of existing community improvement legislation. As a non-prescribed municipality, Elgin County was able to achieve its vision for a coordinated and strategic community improvement framework through the creation of seven local CIPs, which are now being implemented in partnership with the county.

As a non-prescribed municipality, Elgin County was able to achieve its vision for a coordinated and strategic community improvement framework through the creation of seven local CIPs, which are now being implemented in partnership with the county.

Prior to initiating Elgincentives, the county explored the potential to submit a request to the Minister of Municipal Affairs and Housing to be prescribed by regulation for community improvement planning purposes. Other non-prescribed upper-tier municipalities have also explored this option.

However, simply adding other upper tier municipalities to the list of prescribed municipalities is not enough. Instead, it is suggested that the *Planning Act* is too restrictive when it comes to enabling upper-tier leadership in community improvement planning. In this respect, *Section 28* of the *Planning Act* should make no distinction between upper- and lower-tier municipalities.

Based on the Elgin experience, an amendment to the *Planning Act* is warranted: elimination of the references to prescribed upper-tier municipalities and prescribed matters in *Sections 28(2)* and *28(4.0.1)* of the *Planning Act* and elimination of *Ontario Regulations 221/07* and *550/06*.

By making changes to the *Planning Act* and its regulations, all upper-tier municipalities would have access to powerful planning tools, community improvement initiatives could be implemented more effectively on a broader scale, and opportunities for partnership funding across Ontario would be enhanced.

Community improvement planning is a key element of economic development across Ontario, and every effort should be made to streamline the process and coordinate efforts between upper- and lower-tier municipalities where there are shared interests beyond those currently prescribed by regulation.

Nancy Reid, MES, RPP, is a senior planner and a member of the OPPI Outreach Committee. Nancy was the project manager and lead planner for the Elgincentives CIP project. Steve Evans MPA, RPP, is a member of the Ontario Professional Planners Institute, and the manager of planning for the County of Elgin who worked collaboratively with the Elgin County Economic Development and Tourism Services on the Elgincentives CIP Project.

LAKELAND DISTRICT

A Brick-by-Brick Guide to Planning

By Scott Taylor, RPP

Planners often speak of 'engagement' and we sometimes bemoan the fact that young people are underrepresented in traditional planning processes. Youth engagement is often spoken of, but difficult to undertake, unless one is dealing with a topic which is particularly relevant to youth. Consultation on recreation, or youth-focused activities such as skateboard or bike parks, has had greater success in engaging young people, and particularly teens.

To frame the issue more succinctly, how do we teach kids about planning in a way that may make them want to engage in the planning process, now and in the future?

Learning about planning one brick at a time, participants are given a 15-minute crash-course on planning, where concepts such as zoning, eyes-on-the-street and active transportation are explained. Participants are then presented with an actual site in their city, using pictures from Google Street View. They then break into small groups and redesign the site using LEGO® bricks in any manner they choose. Meanwhile planners are circulating throughout the room talking to the kids about their designs. Following the design session the entire group reconvenes and the kids explain their ideas to the rest of the group.

The beauty of explaining planning concepts through LEGO® is that children can hear the theory and have a tangible hands-on example in front of them which they can shape and design. Furthermore, by separating the children into groups, they get an appreciation for the different designs each group comes up with for the same site.

Although most kids have never heard of community planning before, once you start explaining it to them they intrinsically get it. In speaking to school-age children, planners are dealing with a generation which has societal norms unlike those of even one or two generations ago. The current generation of Canadian kids has never known a time when recycling was optional and environmental issues have always been near the forefront of their curriculum. As a result, concepts like balancing interests, managing resources and conservation have been ingrained into most children from their earliest memory.

This generation has also come of age at a time when games and digital apps have always been available to them. Games like MINECRAFT® or various simulators have given kids much more spatial awareness than was the case for previous generations. MINECRAFT® in particular has become so popular that Denmark has recreated the entire country in a 1:1 ratio in block form for people to build in and explore.

Lakeland District hopes to continue with LEGO® planning sessions at schools, libraries and community centres throughout the district. A MINECRAFT® session may also be incorporated into one of these future events. In each case the lesson will be tailored to the host community with a site recognizable to the children. We are also working on a special program for World Town Planning Day 2016.

Thanks to OPPI's Lakeland District for the purchase of the LEGO® used in these sessions and to all of the children for their participation and ideas.

Scott Taylor, RPP is the vice-chair of OPPI Lakelands District and the senior planner with the County of Grey. He assists with Lakeland District programming.

It should be noted that engagement and education through LEGO® is not a new idea. There have been many successful examples across the globe where people have used LEGO® in a similar manner, including a recent profile in the documentary The Human Scale on Danish architect and urban thinker Jan Gehl. Similar programming was also recently featured in a NextCity.org article. LEGO® is a trademark of the LEGO

Group of companies which does not sponsor, authorize or endorse this project. MINECRAFT® is a trademark of Microsoft which does not sponsor, authorize or endorse this project.

PEOPLE

Spotlight on Planners

Will Pol, RPP

Will Pol has worked as a land use planner for 35 years. Currently he teaches full time in the GIS and Urban Planning and Bachelor of Environmental Design programs at Fanshawe College in London and undertakes consulting projects in the summer. He recently discovered that he has been teaching planning his entire career.

"Every time you interact with the public, council, or clients you are teaching, sharing expertise and knowledge about planning. You are helping them on their journey through the complex web of land use planning. At the end of the process the council decision becomes a discovery, sometimes expected, sometimes not. This is where learning takes place.

"Teaching is an extension of this journey. It is now rewarding to watch as students discover planning in the classroom, on field trips, during charrette week and through the college's urban design competition. My philosophy is to teach planning so our next generation will be confident exploring future uncharted planning territory."

Will's advice to young planners and students is to "imagine your career as if you were an explorer in a strange land. With planning expertise you will lead the public, municipal council and clients through unknown territory to discover solutions in a changing physical reality. During your career, the quests will be many, you will experience challenges, enjoy rewards and endure disappointment. You will find solutions to problems that did not exist at the beginning of your journey."

Will Pol, RPP, is a member of Ontario Professional Planners Institute and volunteers as an examiner and a member of the accreditation review committee for the Professional Standards Board. He is also chair of the Cycling Advisory Committee in the City of London. Will has a Bachelor of Applied Arts in Urban and Regional Planning and a Certificate in Public Administration from Ryerson, and a Master of Public Administration from Western University.

PEOPLE

Gertler named to Order of Canada

Planner and University of Toronto president Meric Gertler, RPP has been named one of 69 new appointees to the Order of Canada for his contribution in field of geography.

Gertler was named in honour of "his research in urban geography, notably for his influential studies of innovation, technology and development in cities," according to the media release. He has written over 80 journal articles and book chapters in his field. His research revolves around "the geography of innovative activity and the economies of city-regions."

The Order of Canada, which was created in 1967, is the second highest civilian award for merit in Canada. The award recognizes "outstanding achievement, dedication to the community, and service to the nation" from people in all sectors of Canadian society.

OBITUARY

James M. Kennedy, RPP, 1948-2016

James Kennedy passed away peacefully on March 22, 2016. James was a founding partner of KLM Planning Partner Inc. He started his professional career as a planning technician at the City of Brampton and worked his way up over the years to becoming Senior Planner in charge of long-range policy planning at the Town of Markham before joining the private consultancy sector. He was passionate about planning and community design and was involved with the creation of a significant number of new communities throughout the Greater Toronto Area.

Many will remember Jim for his honest opinion, dedication and charitable work with the Osler Foundation. He always told clients what they needed to hear, not what they wanted to hear. He will be missed.

Are all jobs created equal?

By Nick McDonald, RPP

There has been much discussion lately about all jobs being created equal in terms of planning ahead and planning for complete communities.

Much of the thinking involves the loosening of the restrictions on permitted uses in employment areas to allow for a broader range of activities. Inevitably, this means that a number of quasi-employment uses, retail uses and institutional uses, and even potentially residential uses, are considered for locating in employment areas.

There is merit in considering the opening up of employment areas to a broader range of uses and there are specific locations in the GTA where this may make sense. However, not all employment areas are the same and not all employment areas are located in areas that are clearly transforming from employment areas to true mixed-use areas, such as adjacent to the rapidly changing downtown core of Toronto.

In many of the larger employment areas on the outer edge of the City of Toronto and in the 905 areas not all jobs are created equal. In this regard, a job that is located within a facility that can be easily integrated with adjacent sensitive land uses is very different from a job located in a facility that cannot.

Examples of the latter types of facilities are 24-hour industrial operations with frequent movement of goods and in some cases, the outdoor storage of finished materials and/or raw materials. These types of facilities do not require visibility on major roads and in fact, many are hidden from view with most people generally unaware of their existence. Often, it is difficult to determine from the outside what exactly goes on inside.

The one thing that many of these facilities have in common is that they typically require an Environmental Compliance Approval because of the noise, odour or dust that may be produced at these facilities. One of the key factors considered whenever an application is being made for such an approval is the proximity and nature of the adjacent land uses (such as the nearest noise sensitive land use according to the provincial Environmental Noise Guideline). These adjacent land uses are fixed in time when the application is submitted.

This may become problematic for the use requiring the Environmental Compliance Approval if the facility already exists, but some of the adjacent land uses have changed since the last approval was issued (if there was one). In many cases, the owner of the facility is not aware of the introduction of new sensitive lands uses, or may have thought that since it was there first, it should be ok. However, this is not the case—existing and new facilities have to comply by the same rules. While it is recognized that there are some breaks given to existing uses particularly when a planning authority has deliberately permitted new noise sensitive use adjacent to an existing use, this has to be a deliberate decision.

This means that the introduction of sensitive land uses near a facility where a new Environmental Compliance Approval is required will have a potential impact on the ability of an existing industry to secure new approvals for its facility. The impacts in cases such as these can be significant.

What is challenging about the Environmental Compliance Approval process is that municipalities are typically not even aware of these land use compatibility concerns because they are not involved in the approval process. In addition, the existing industry is generally not aware of the introduction of new sensitive land uses near its facility, unless it has been notified directly. Even then, it may not appreciate the impact.

In many cases, sensitive uses are developed without *Planning Act* approvals and sometimes do not require a building permit (if the use is going into a multi-unit building for example) because the use is permitted through municipal zoning. However, this becomes a problem when an Environmental Compliance Approval is required. In some cases, even the consideration of a business expansion by a business requiring an approval is eliminated before an application is submitted, because the business has concluded that obtaining the required approvals would be difficult and/or the subsequent conditions expensive to implement.

As municipalities continue to plan ahead, it is my opinion that the core employment areas that contain facilities that are sensitive to the introduction of incompatible uses be identified and protected. However, even protecting these areas may not be enough because no matter where you draw a line, an interface is potentially created. This is why planning ahead is always a challenge!

Nick McDonald, RPP is a member of the Ontario Professional Planners Institute and president of Meridian Planning Consultants in Vaughan and has over 27 years of experience providing advice to municipalities and landowners on a range of planning issues.

PRESIDENT'S MESSAGE

In Conversation with Andrea Bourrie

Governance, communication and priorities

This is the third in a series of conversations with OPPI President Andrea Bourrie. Interviewed by OPPI Director Jason Ferrigan, Andrea talks about OPPI organizational structure and strategic priorities. The accompanying chart illustrates the core elements of OPPI's system of governance. The following text has been condensed and edited; the full interview is available online.

JF: What is OPPI's structure? How is OPPI governed? How does the Institute make decisions?

AB: OPPI is the recognized voice of the planning profession and represents almost 4,500 planners in Ontario. We get our mandate from the *Ontario Professional Planners Institute Act* and the organization is led by a volunteer Council elected by the membership. Council is accountable for all OPPI`s activities and accomplishments.

Council is comprised of nine to 11 members including a president, secretary/treasurer, president-elect and one voting public member. This is a person who is not a RRP. Council members are motivated individuals drawn from diverse backgrounds, who work together effectively with foresight and creativity. They govern the Institute with strong leadership and attention to performance.

Priorities are established annually in support of the approved five-year Strategic Plan. These direct the activities of the Institute and are operationalized by a group of highly skilled staff. Council—through its volunteer strategy groups, district leadership teams and program committees—works collaboratively with staff to accomplish its objectives and ensure quality performance.

JF: How does council make decisions?

AB: The priority of Council is to guide the organization through policy decisions and strategic directions. Issues are identified by committees and staff and brought to Council, which makes decisions, based on appropriate research, in the best interest of the Institute and the planning profession in Ontario. While Council does take votes on key issues, most decisions are made consensually after respectful debate. As is the case with any highly functioning organization, once a decision is made Council speaks with one voice, regardless of differing personal opinions.

JF: How do we keep members and stakeholders engaged and informed? How do we communicate?

AB: This is critical to the organization, especially with members widely dispersed across the province and having a variety of needs and expectations in terms of communications. Hence we communicate using many modes and media—events, policy initiatives, webinars, eblasts, OPJ, tweets, surveys, blogs and emails and phone calls. Keeping members informed and engaged is one of the most important responsibilities of OPPI Council.

JF: What are the strategic priorities for OPPI this year?

AB: The first priority is the pursuit of professional regulation of the planning profession in Ontario. That legislation is being advanced through a new bill to be introduced by MPP Peter Milczyn. Next is to continue to build recognition of the RPP designation, very much a tangible sign of our profession.

Another priority is inspiring members to create an annual learning path that enhances their professional competencies. It doesn't have to be onerous but can be an effective tool. A complementary initiative is supporting District coordination in the delivery of CPL opportunities on topics relating to OPPI's Learning Strategy.

> The Inspire OPPI process is helping us to understand the changing environment and to create a dynamic and relevant strategy that advances the public interest of the planning profession and takes into account the needs and aspirations of professional planners across the province

This has been a very busy policy season over the past several months as we engage members in in the development of submissions and calls to action. It is important that OPPI has a voice at the table with respect to these matters.

Preparing and implementing OPPI's Strategic Plan—Inspire OPPI—is among the most significant of our priorities. It will set the foundation for our next work program and ensure that Council is aligned with what the members view as priorities. As you know, Jason is chairing the process.

JF: What is the Strategic Plan and why is it important? What is Inspire OPPI all about? How is OPPI engaging members in the creation of the new Strategic Plan?

AB: The Inspire OPPI process has been truly outstanding in terms of its reach and level of engagement. There has been a record level of quality responses.

Together with others, we are developing insight into what

trends might occur in the future, and how OPPI needs to respond. Some of the themes we are consistently hearing concern the impacts of limited budgets, awareness of the role of planners and planning, increasing complexity of planning issues, the need for transparency and the importance of effective governance.

JF: How does OPPI anticipate and respond to change?

AB: Through the strategic planning process OPPI Council anticipates and responds to change. In this case, the Inspire OPPI process is helping us to understand the changing environment and to create a dynamic and relevant strategy that advances the public interest of the planning profession and takes into account the needs and aspirations of professional planners across the province. We are always considering both the short- and long-term future, not only of the Institute, but of the planning profession as a whole in Ontario.

JF: What opportunities are there for members to get involved in OPPI?

AB: In addition to Council, there are many opportunities to be involved in OPPI—membership on Strategy Groups, Working Groups, District Leadership Teams and Program Committees, as well as participation in conferences, symposiums and events.

The four strategy groups are really important to the Institute: District Forum, Professional Regulation, Quality Practise and Planning Issues. The Professional Regulation Strategy Group is leading the pursuit of stronger legislation to move from a voluntary, consensual, professional association to a professionally-regulated profession acting in the public interest.

The process whereby OPPI develops public policy positions has served us well. The Institute has a strong public policy presence that has raised the profile of planning and planners in Ontario. In addition to the Planning Issues Strategy Group there are a number of Working Groups. These provide leadership, advocacy, input and comments on key planning matters—legislative changes, guidelines, regulatory initiatives and related policy issues. They serve as a focal point within the Institute for members who have particular knowledge and expertise. All members are encouraged to provide input and comments on public policy positions and Calls to Action. These activities are profiled in the e-newsletter, website and on social media.

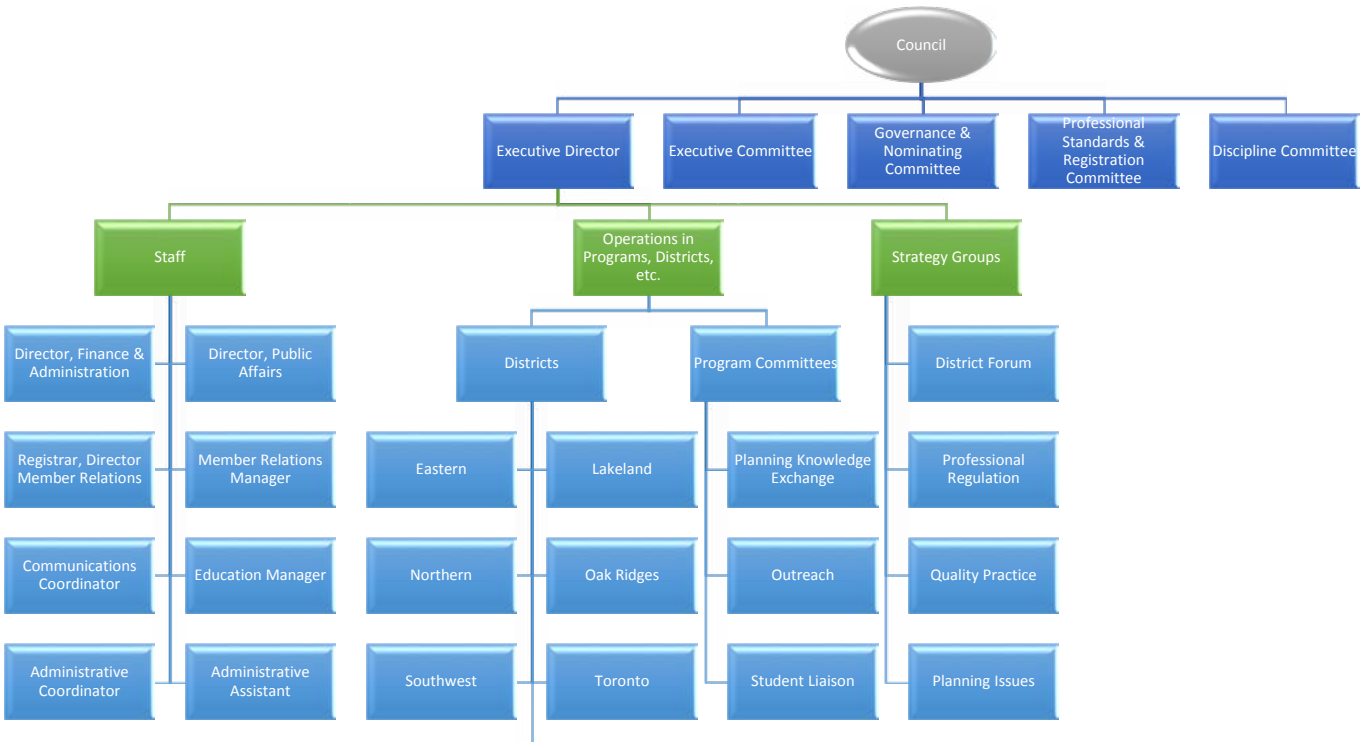
We have seven distinct districts and each has a District Leadership Team comprising members who advance CPL programming and activities in each region. They build support for the professional regulation of the planning profession and promote the value of good planning through a coordinated communications program. District events are also lot of fun.

Three Program Committees—Outreach, Planning Knowledge Exchange and Student Liaison Committee—work closely with staff.

JF: Thank-you Andrea for taking the time to chat with me today. I look forward to your next interview which will be about the 2016 Symposium and its associated Call to Action - Healthy Communities and Planning for the Public Realm.

Do you have any ideas for future podcasts? Let us know at info@ontarioplanners.ca.

OPPI Organizational Chart



SOCIAL MEDIA

What's the score?

By Rob Voigt, RPP, contributing editor

There is a staggering amount of data becoming available online through open data programs. From this information new tools and services are continually being developed, and in turn, new expectations from the users of these tools and services. This relationship between data access and business creation began well before the advent of mobile phones and apps. In fact the entire industry relating to weather forecasting has essentially been based on open data.

Such tools can be incredibly powerful and, easy to share with others, but their simplicity of use can be deceptive in terms of the underlying complexity of relationships they are representing. As professional planners we need to be prepared for the ways in which assessment tools of the built environment, for example, can influence discussions and perceptions.

This evolution of data sets being translated into usable services is becoming commonplace; even in the world of planning. The various mapping services and tools that are found online and loaded directly on mobile phones when purchased are excellent examples. One in particular that has entered the discussions of planners, elected officials and citizens alike is Walkscore.

This tool has been developed to give users a general measure of the walkability of any community's neighbourhoods within its database. Walkscore's results are developed through an algorithm that compares data values, proximity to features, and a host of diverse variables that relate to practical measures and some perceptions of walkability. As Walkscore evolves, improvements are being made to the service to provide scores that are more reflective of an area's desirability for walking together with the physical attributes that make walking possible. The speed with which these calculations are made, and the complexity of factors that can be compared using this tool is staggering compared to what any one professional planner could analyze on his or her own. The results are arguably quite useful for broad assessments of walkability; and are becoming more refined as time passes. These are just a few of reasons why Walk Score has become so popular.

This simple idea of providing people with a way of judging and understanding a neighbourhood's capacity to meet their needs for walking, makes it a very popular tool. It is used by planners, featured on real estate web sites, quoted by citizen advocacy groups and discussed by politicians. For example the CBC recently featured an article about the Walkscore of Calgary titled, Calgary's overall Walk Score less than Edmonton, Brampton and Saskatoon. In this article, the City of Calgary's pedestrian strategy manager was quoted as he reflected on Calgary's comparative Walkscore. This illustrates the heights to which this tool has risen in the discourse about community livability and community design. It also shows how easy it has become for people to allow their opinions to be influenced by new technological tools.

A neighbourhood's Walkscore has become a kind of shorthand for describing its pedestrian friendliness without having to describe specific elements. Walkscore undoubtedly takes vast amounts of data and characteristics into account to develop its maps and scores. However, on a block-by-block basis, there are many more characteristics of the public realm that are not fully integrated into the tool, such as lighting, complexity of the land uses, interesting community design features, physical relationships between destinations, presence of street furniture and street trees and sense of safety and security, etc. All of these play an important role in people's perceptions and determinations of an area's walkability, yet the referencing of this technology can mean that they are eliminated from the discussion. In this way, complex discussions may be inadvertently replaced by overly simplified ones. This is where problems can arise.

When the results from these kinds of assessment tools enter a planning-oriented discussion, or are presented by elected officials, professional planners should have consideration for the following two critical points. These will help ensure that their planning practices are well informed and consistent with the public interest.

- Planners need to have an understanding of the elements that make up the rubric of the particular technology. This will help us identify what components are being used to generate the findings and which have not been considered.
- When making judgements based on these tools planners need to maintain an awareness of their own areas of expertise. These tools are exceptionally easy to use, and will likely continue to become more so, and have increased computational power as well. However, planners should not become over-reliant on them. Rather we must maintain balanced professional judgement and not overreach our ability to make similar assessments independent of these tools.

Communities are complex arrangements of people, culture and the mechanisms that are developed to facilitate the exchange of ideas, services and goods. There are efforts underway to better understand these complex entities and plan for them through the use of data and algorithms. These technological tools can provide professional planners with the ability to do many complex comparisons/calculations, rapidly,

THE BUTLER GROUP CONSULTANTS INC.
Land Planning Services

David A. Butler, MCIP, RPP
President

397 Brunswick Avenue, Unit 6
Toronto, Ontario M5R 2Z2
416.926.8796
E-mail dab@butlerconsultants.com

repeatedly and with great accuracy. However, when it comes to community planning we need to make sure that we understand how technology works, and its limitations, so that it finds a place within our specific areas of practice, complementing but not replacing our other tools.

Robert Voigt, RPP is a professional planner, artist, and writer. He is recognized as an innovator in community engagement and healthy community design. Robert is the chair of the OPPI Planning Issues Strategy Group, member of PPS' Placemaking Leadership Council and writer for Urban Times and publisher of the CivicBlogger.

PROFESSIONAL PRACTICE

Dear Dilemma,

I work as a development review planner for a municipality, which recently initiated an Application Facilitator Program. A number of staff members, including some professional planners, have been selected as application facilitators to work with individual development companies, as their representatives, to resolve issues with respect to the review of their various applications under the *Planning Act*. As the assigned file manager on these applications, sometimes I feel that the application facilitator is downplaying my professional opinion and favouring the applicant's point of view. Can OPPI stop him/her? Or stop this whole Application Facilitator Program?

—Frustrated

Dear Frustrated,

Generally OPPI would not intervene with a municipality with respect to a certain work process. Also, in the situation you described, if the application facilitator is not an OPPI member, then the standards of professional behavior required by the Institute would not apply. However, it is assumed that there would be a RPP in a more senior position supervising staff engaged in the review process and any ethical issues for you as the file manager would be addressed by that individual.

If the application facilitator is an OPPI member, the Professional Code of Practice and Standards of Practice which sets the benchmark for quality practice among planning professionals would apply. Regardless of the role of the member in the planning process, he or she is first and foremost an RPP that is responsible for the public interest. This requires a balanced approach in determining the public interest with respect to any task that s/he may be assigned by their employer. For this reason it is important that the services of an application facilitator would be available to all interested parties with respect to a particular development application, including the public. Balance and transparency in the formulation and administration of this program would reduce the potential for conflict to arise between these interests, whether internal or external to the municipality.

More specifically for an RPP the code requires that members behave toward other members and colleagues in a spirit of fairness and consideration. RPPs both as application facilitators and as file managers need to respect colleagues in their professional capacity, and demonstrate objectivity and fairness when evaluating their work or advice.

In the situation that you described, it is important for you, as a professional planner, to render an independent professional opinion. As the file manager, you should acknowledge the different opinions, conduct diligent research to better understand the issues and inform the decision-makers, whether it be senior management, council or the OMB of all aspects of the issue, without downplaying your colleague's professional opinion.

As municipalities explore new processes and roles for their staff in the review of applications under the *Planning Act* it is important to understand the consequences for RPPs in terms of their commitment to adhere to ethical standards of professional practice. To that end it is critical that communication channels remain open and transparent both within and outside the municipality.

Yours in the public interest,

—Dilemma

Through this regular feature—Dear Dilemma—the Professional Practice and Development Committee explores professional dilemmas with answers based on OPPI's Professional Code of Practice and Standards of Practice. In each feature a new professional quandary is explored—while letters to Dilemma are composed by the committee, the scenarios they describe are true to life. If you have any comments regarding the article or questions you would like answered in this manner in the future, please send them to info@ontrarioplanners.ca.

ELTO

Precedence given to heritage policies and guidelines

By Samantha Lampert

In a recent decision of the Ontario Municipal Board, the impact of a proposed development on an adjacent heritage property took centre stage. Time will tell as to whether this case is an anomaly or precedent-setting in the wealth of board jurisprudence. In the meantime, the development industry should be mindful of the increasing significance and predominance of heritage policies and guidelines in today's planning climate within Ontario.

In *CHC MPAR Church Holdings Inc. v. Toronto (City)*, Church Holdings appealed Toronto council's refusal to amend

its zoning by-law to accommodate a 32-storey student residence at 412 Church Street. There were several issues contemplated in the appeal including: whether the proposal represented an overdevelopment of the property; whether the board should approve a student residence that was not affiliated with any postsecondary institution; and traffic impacts on the adjacent neighbourhood. However, the board did not adjudicate on any of these issues. Instead, it determined that "its adjudication of the impacts of this project on the adjacent listed and designated heritage structures would be central to the board's evaluation of the appropriateness and supportability of the implementing zoning by-law amendments." The board went on to determine that if the "proposed development could not satisfactorily conserve the adjacent heritage structures… it would be unnecessary for the board to adjudicate the ancillary issues of neighbourhood transition, use and those listed above."

The results of this case were fairly surprising to both the legal and planning community. First, the board placed markedly significant importance on the compatibility and impact of a proposed development on heritage properties. Indeed, despite there being various planning issues to adjudicate, the board elected not to do so, determining that if the board found that the proposed development was not compatible with the applicable heritage policies, every other issue would be of no concern. Thus, even if heritage was not a primary issue in the eyes of either the applicant or the city, it was the sole and decisive issue for the board in this case.

In its 43-page decision, the board provided an overview of the policies relevant to "whether the proposed development conserves the adjacent heritage structures and respects their scale, character and form" including the heritage policies found in the *Provincial Policy Statement* and the City of Toronto Official Plan and the Tall Building Guidelines.

Second, this case is significant for the emphasis the board places on the city's Tall Building Design Guidelines. Generally, the case law has determined that while guidelines are important and informative, they are not mandatory and should not be given the weight of official plan policies. While the board touches upon the heritage policies outlined in the *PPS*, the official plan and OPA 199, the decision goes into detail respecting the heritage policies outlined in the guidelines.

"The various municipal guidelines are not simple documents; they cannot be so easily relegated to some lesser and inconsequential reading when it comes to testing the appropriateness of the development applications in the policy context." [paragraph 32]

While the board acknowledged that guidelines are not policy, it suggests that guidelines ought to be given a more significant role in determining whether development proposals represent good planning.

"The board has written of the importance of the [Tall Building Design Guidelines] in its assessment of the proposal. These set out an important approach that tall buildings are expected to 'conserve and integrate adjacent and on-site heritage properties so that new buildings are sympathetic to, and compatible with, the heritage property'. This direction has not been achieved for the reasons given." [paragraph 64]

Third, and rather unusually, the board recommends land assembly in this decision.

"Most telling in this flawed development proposal is the applicant's inability to provide a building design that conserves the heritage attributes of the abutting properties and in particular of 414-418 Church Street and the 0-metre setback." [paragraph 49] … "Given the board's careful consideration of the subject property and this proposal, it finds that there might be more planning merit derived—and likely heritage-sensitive design possibilities as well—through a consolidated development proposal as the opposing witnesses referenced than through its stand-alone approach." [paragraph 84]

It is noteworthy that the board decided to comment on the merits of land assembly in this case, and to suggest that land assembly may have been a solution to the planning issues raised. It will be interesting to see whether future board decisions will embrace this perspective in the context of other development proposals where multiple landowners of adjacent properties are involved.

Ultimately, the board dismissed the appeal.

"The board finds that the proposed development does not achieve the applicable heritage policies and directives of the relevant planning documents as identified. Specifically, the proposed development fails to conserve the heritage attributes of the adjacent listed and designated heritage properties; it does not respect their scale, character and form; and it creates unacceptable negative impacts on 414-418 Church Street and 86 McGill Street." [paragraph 94]

Samantha Lampert is a first-year associate at Devine Park LLP and practices in the area of planning and development law.

MAY/JUNE ALERT

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