REGIONAL PLANNING FOR SUSTAINABLE DEVELOPMENT: LESSONS FOR CANADA FROM CALIFORNIA

Elisa Barbour
Professional Researcher, University of California, Davis

Elizabeth Deakin
Professor Emerita of City and Regional Planning, University of California, Berkeley

Kathryn Exon Smith
Graduate Researcher, Department of City and Regional Planning, University of California, Berkeley

SCHOOL OF CITIES WORKING PAPERS, NO. 1, 2024

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ABSTRACT

The rapid growth of Canadian metropolitan areas poses challenges for sustainability, with traffic congestion, housing affordability, and environmental degradation all increasing public concern. This paper reviews California's experience in addressing these issues through regionwide, mandated scenario planning, examining transportation and land use strategies that could improve long-term sustainability, i.e., supporting a socially equitable society with a strong economy and a healthy and livable environment. The paper is based on a review of the literature and interviews with nine Canadian subject matter experts, as well as the authors' experiences with U.S. urban planning processes. We review the California experience in legislating that its 18 metropolitan planning organizations develop scenario plans aiming to reduce greenhouse gas emissions, and examine the case of the San Francisco Bay Area. The paper concludes by discussing counterpart issues in Canada and the Canadian policy context, and then identifies ten elements that are key to successful regional transportation planning.

EXECUTIVE SUMMARY

The rapid growth of Canadian metropolitan areas poses challenges for sustainability, with traffic congestion, housing affordability, and environmental degradation all increasing public concern. This paper reviews California's experience in addressing these issues through mandated scenario planning, examining transportation and land use strategies that could improve long-term sustainability, i.e., supporting a socially equitable society with a strong economy and a healthy and livable environment. The paper is based on a review of the literature and interviews with nine Canadian subject matter experts, as well as the authors' experiences with U.S. urban planning processes.

REGIONAL PLANNING IN THE U.S. AND THE EMERGENCE OF METROPOLITAN PLANNING ORGANIZATIONS

The regional governance structures now known as Metropolitan Planning Organizations (MPOs) grew out of conflicts about highway development in urban areas in the 1960s and were from the outset intended to be a continuing, comprehensive transportation planning process carried on cooperatively by states and local communities (known as the "3-C" process). Federal rules required all metropolitan areas of population over 50,000 to conduct transportation planning for the region, and further mandated that both central cities and the burgeoning suburbs had a voice in decisions, with planning taking place under the direction of a board of locally elected officials. Only projects consistent with the regional plan could receive federal funding. Beyond that, the institutional framework was flexible, permitting each state to designate existing regional agencies or form new organizations to carry out the required planning process.

Federal-level reforms adopted in the 1990s gave MPOs control over more resources and increased flexibility in their use, including greater authority over project selection, while also stiffening air quality management responsibilities. Subsequent federal legislation increased the focus on freight movements and increased the participation of transit providers and other key stakeholders. The federal mandates transformed MPOs into multi-modal planning organizations whose plans and projects would "conform" to attainment and maintenance of air quality standards, while also protecting civil rights and incorporating stakeholder and public involvement. Some states further strengthened MPOs by building on this federal framework to incorporate additional issues such as growth management and special lands protection into the regional planning process. Today, the MPO organizational structure varies considerably across the U.S. but the content of MPO plans is consistently regional in scope and responsive to federal, state, and local objectives.

A major strength of the MPOs is their region-wide scope and perspective, which promotes consideration of how projects fit together and also where gaps may persist. The intention is for the regional plans and programs to assess the transportation system and its relation to urban development thoroughly, and propose projects that will improve regional welfare. The work of MPOs has evolved over time from "predict and provide" models of transportation planning to more sophisticated scenario planning in which MPOs evaluate alternative ways forward (scenarios)

compared to a "business as usual" trend. In this framework, some MPOs have adopted a new, more integrated sustainability-oriented approach that turns land use as well as transport alternatives into variable elements. Scenarios thus become packages of transport policy and program options considered in combination with land use policy and program options. California has pushed the mandate of MPOs further, requiring them to develop scenario plans aiming to reduce greenhouse gas emissions.

SB 375 – CALIFORNIA EXPANDS THE SCOPE OF REGIONAL PLANNING FOR SUSTAINABILITY

California passed Senate Bill SB 375 in 2008. The law calls for the state's eighteen MPOs to develop, adopt, and periodically update plans to reduce greenhouse gas emissions by specific state-mandated amounts. This overarching performance constraint has led to systematic consideration of land use-transport interactions and a deeper, evidence-based understanding of what it will take to meet GHG goals in the broader framework of a sound economy, social equity, and a healthy environment. It also has led to development and use of sophisticated yet (relatively) transparent analytical methods, incorporating stakeholder input, for comparing implementation strategies and their impacts.

SB 375 further requires that transportation plans be consistent with local government land use plans for accommodating housing at all income levels, with each local jurisdiction assuming its so-called "fair share" of projected regional housing needs, to be accommodated through appropriate zoning measures. This policy combination has turned the 3-C MPO planning process from one that merely enables sustainability planning to one that, in California, mandates it. As a result, the law builds upon the lessons learned by MPOs that had been working to improve their transportation models, plans, and programs — sometimes in response to federal and state mandates, sometimes in response to local concerns, and sometimes in response to environmental advocacy. In essence, SB 375 institutionalizes such "pilot studies," making scenario planning a standard procedure in the state.

The law's most notable successes to date are its focus on evidence-based performance objectives, its analysis of progress, and its creation of an ongoing state-wide conversation (and increasingly, debate) about inter-governmental responsibilities for sustainable development policymaking and action. The Achilles heel of SB 375, however, has been the lack of effective and adequate measures to ensure plan implementation. While implementation failures hardly constitute an unusual concern for policy analysts, effective policy solutions will be needed if SB 375 is to accomplish its goals.

LEARNING FROM CALIFORNIA: APPLICATIONS TO THE CANADIAN CONTEXT

The establishment of a stable institutional framework that links federal and state performance mandates for long-range, cyclically-updated regional plans for transportation and land use in coordination, while incorporating local government participation through the MPO governance structure, has provided an effective venue for the emergence of sustainability-oriented regional planning in many U.S. regions, notably in California. Canadian and American urban areas and regions share a number of environmental, economic, and equity concerns, and the U.S. MPO framework, and California's SB 375 framework in particular, could serve as starting points for discussions about planning processes that would deliver well for Canada's metropolitan regions.

The paper identifies ten elements that are key to successful regional transportation planning:

1. Federal (national level) directives, funding, and incentives are needed to establish the framework for regional planning and motivate active collaboration within it.

2. The geographical scope of regional planning should be the economic region, covering the entire commute shed. The topical scope should cover all transport modes and their inter-relationships to location and land use alternatives and their social and environmental consequences.

3. The decision-making team should be comprised primarily of local elected officials representative of the entire region, with state and federal participation ex officio or as additional partners. Ongoing planning and decision support should be provided by a team of technical experts.

4. The regional leadership team should enunciate goals and specify performance measures to put the focus on achieving desired outcomes.

5. Stakeholders and decision-makers should identify implementation measures based on reliable evidence of what works.

6. Regional decision-makers should evaluate multiple, sophisticated alternative plan scenarios and project alternatives.

7. Decision-makers should offer experts and key stakeholders a seat at the table.

8. Flexibility in organizational arrangements is needed to account for different local cultures.

9. Multiple orders of government need to make secure commitments to short- and long-run implementation measures.

10. Monitoring needs to be cyclical and transparent to allow processes and proposals to be updated over time.

1. INTRODUCTION

This paper was commissioned by the School of Cities, University of Toronto, to consider what might be learned from California's experience with regional planning for sustainable development through Metropolitan Planning Organizations, or MPOs, which have been in place in the United States for over six decades. These experiences are relevant to conversations about how to employ funds from the Canadian federal government's proposed permanent public transit fund (PTF), expected to be launched in 2026-27, with particular salience in the Toronto region.[1] The paper is based on findings from research conducted by the authors in California and Canada, including a review of literature on governance and planning in Canada and the U.S. and nine semi-structured interviews with academic and practitioner planning experts in the Toronto area.

In the United States, states and MPOs prepare long-range plans for transportation and assemble shorter-range programs of projects to which funding will be directed. Each state is required under federal law and regulations to carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process. This includes the development of a long-range transportation plan and short-range transportation improvement program (TIP) that facilitate the safe and efficient management, operation, and development of surface transportation systems, support intercity transportation, foster economic growth and development, and consider resiliency needs while minimizing transportation-related fuel consumption and air pollution. In addition, all metropolitan areas with a population of 50,000 or more must have an MPO. Each MPO is required, in cooperation with the state and public transportation operators, to develop long-range transportation plans and TIPs for the area within its boundaries through a performance-driven, outcome-based approach to planning.

MPOs are governed by a policy board of local officials, supported by a technical staff. The specific organizational composition and responsibilities vary: some MPOs have been established specifically to meet the federal requirement and others add the MPO responsibilities to an existing organization. As a result, some MPOs have additional transportation responsibilities, which range from managing toll facilities to coordinating paratransit services, and a few have responsibilities for other regional programs such as open space planning and waste management. MPO boundaries ideally cover the urbanized area as designated by the U.S. Census Bureau plus additional areas anticipated to urbanize in the next 20 years. Each regional plan and program is expected to address a set of objectives that include improving accessibility and mobility, and improving safety, security, good repair, and interconnectivity of the regional transportation system, through investments that can be implemented with reasonably available funding (these objectives are spelled out in more specific detail later). Each MPO must establish performance measures to evaluate the efficacy of its plans and programs, and monitoring and reporting of progress (or lack thereof) is required. The federal government reviews MPOs every 4-5 years to certify compliance with requirements and performance standards.

Within this federal framework, California has developed an advanced approach to MPO planning that not only provides a multimodal transportation plan designed to meet challenging performance standards, but also helps meet additional critical state goals including greenhouse gas (GHG)

reduction and the provision of an adequate supply of affordable housing. While plan development and implementation has been challenging and additional process improvements are likely needed, the California experience offers valuable lessons for other areas wishing to improve outcomes for transportation, land use, economic prosperity, social equity, and the environment through a rigorous, evidence-based, participatory planning process.

Currently, Canada does not have a national requirement for regional transportation planning like that of the U.S. Instead, regional planning in Canada has been ad hoc, with significant variation across the country. Compared to the U.S., Canada's Westminster system of government is more top-down, and provinces frequently intervene in legal and regulatory matters in the urban sphere, with few constitutional limits on their jurisdiction over local government. This is a considerable point of departure from the United States, where most states have provided at least partial "home rule" authority to localities over multiple functions considered local in nature, including land use (Taylor, 2019).

Like California, Canada is highly urbanized, with significant immigration and diverse communities in its largest cities. It has ambitious climate goals, including a collaborative and comprehensive Air Quality Management System. Canada, like California, is facing growth-related pressures including providing affordable housing, improving accessibility, reducing traffic congestion, and maintaining environmental values. The vast majority of commuters still travel by car, even in major urban areas, and the COVID-19 pandemic further decreased transit ridership, widening existing funding gaps for public transportation.

With more fluid governance arrangements in Canada, multiple government entities have undergone reorganization of responsibility and authority over the last several decades, such as the current discussion of restructuring some two-tier regional governments into single-tier cities. This flexibility has significant advantages in enabling institutions to change in response to political preferences and economic and social conditions. However, various observers, including some of our interviewees, contend that the greater flexibility of the Canadian system has sometimes resulted in a lack of consistency and coordination, and decision-making that is opaque and often politically oriented, short term in perspective, and focused on attracting support from particular interests rather than addressing regional issues, especially when it comes to coordinating transportation and land use. With a less stable system of checks and balances, and less stable designation of authority at different government levels, "Westminster systems are viewed as decisive but irresolute. With few veto points, policies are easily overturned when the executive's preferences change" (Taylor, 2019, p. 35).

The Toronto region currently lacks a systematic coordinating function along the lines of the U.S. MPO system, in which a regional body is held responsible for multimodal transportation planning (for both roads and transit, along with active modes) on an ongoing cyclical basis, and which is required to employ evidence-based performance analysis of plan options at the metropolitan regional scale in furtherance of multiple planning objectives. The U.S. MPO structure, in place for many decades, has provided institutional consistency, a stable organizational framework, and a venue for creative strategies to emerge. While the environmental performance framework of MPO planning was originally oriented primarily to air quality attainment, sustainability-oriented MPOs have extended their performance evaluation scope to include a much wider range of goals and objectives. The establishment of a stable institutional framework that links federal and state performance mandates

for long-range, cyclically-updated regional plans for transportation and land use in coordination, while incorporating local government participation through the MPO governance structure, has provided an effective venue for the emergence of sustainability-oriented regional planning in many U.S. regions, including in California.

With the Permanent Transit Fund, Canada has the opportunity not just to make a generational investment in transportation infrastructure but to establish enduring governance structures that promote intergovernmental collaboration and develop integrated plans for the future. The Minister of Intergovernmental Affairs, Infrastructure and Communities has articulated the following goals guiding the fund's design:

- Provide stable and predictable funding with flexible delivery
- Be responsive to local/regional priorities and realities
- Catalyze transit investments to address pressing social, environmental, and economic challenges
- Deliver improved governance and intergovernmental alignment
- Champion more transparent, evidence-based decision-making

The key question for our paper is how Canada can learn from the experience of the United States, and particularly the larger regions of California, in addressing these goals. In the following sections of the paper, we describe the historical evolution of regional transportation planning in Canada and the U.S. system, and the circumstances surrounding the creation and implementation of the MPO structure. Then we describe how California extended the mandates of the MPOs to incorporate planning for sustainability and trace the impacts of this work during the 2010s. We present the case of the San Francisco Bay Area, which has some salience for Canada because of its similarities in size and function to the Greater Toronto Area (GTA).[2] Finally, we offer a series of recommendations based on the U.S. and specifically Californian experience that can be considered with the Permanent Transit Fund process and Ontario in particular.

2. REGIONAL PLANNING IN CANADA: CONSIDERING CURRENT CHALLENGES

As in the U.S., where local governments are creatures of the state and neither cities nor regions are mentioned in the federal Constitution, Canadian cities are creatures of the provinces. Municipal and regional affairs in Canada sit entirely within the jurisdiction of provincial governments, and provinces have authority over which powers municipal governments hold, their governance arrangements, and even the extent of their borders (Hodge, Robinson, and Hall, 2017). In the U.S., federal support for cities and regions has been justified as providing for the general welfare of the population, supporting commerce, assuring the public defense, and protecting the constitutional rights of the populace: with such justifications, federal aid has flowed to a variety of programs including transportation, economic development, health and environmental protection, and education. In Canada, federal involvement in urban affairs is constitutionally constrained and, with a few historical exceptions, has been limited to transaction-based transfers which fund infrastructure and social programs – a less programmatic approach (Meekison, Telford, and Lazar, 2004). Yet as cities have grown, Canada, like the U.S., is increasingly aware of the role of cities in shaping the country's social, economic, and environmental performance.[3]

Over 70 percent of Canadians live in cities larger than 200,000 people, with almost 50 percent of the population in just six major census metropolitan areas (CMAs) in four provinces: Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, and Edmonton (Table 1). Each of these metro areas is growing, with much of that growth from international immigration, as over 90 percent of immigrants to Canada move to large urban centres (Hodge, Robinson, and Hall, 2017). Even during the pandemic, the downtown populations within major cities grew faster (10.9 percent) than the cities as a whole (6.1 percent) however, smaller communities in the outer suburbs and exurbs, particularly in Ontario and British Columbia, have also experienced significant growth in the last decade (Statistics Canada, 2022).

In spite of the ongoing growth pressures in Canada's urban areas, there are a few examples of successful integrated regional governance in Canada today. Vancouver is perhaps the most organized and was an early leader in regional integration, with municipalities collaborating voluntarily from the early twentieth century on water and sewer infrastructure. It is the oldest surviving regional government in Canada, first established as the Greater Vancouver Regional District Municipal Authority in 1967, and is now known as Metro Vancouver, with 21 municipalities, an electoral district, and a First Nation collaborating. Each constituent has a member on the governing board. However, governance is flexible, with neighbouring cities outside of the region occasionally joining for specific projects. The Vancouver region's municipalities have notable achievements to their credit. They created a landmark Livable Region Plan which was adopted as statutory by the province in 1996. The region was also an early leader in smart growth and its intensification targets still exceed those of the Toronto region. Today, Metro Vancouver's planning activities address regional development, climate action, air quality, drinking water, and solid and liquid waste, and the federation manages water and waste services and provides affordable housing. Despite the inclusion of transportation in regional

plans, the federation has never managed transportation. It was run by BC Hydro until 1998, when the province created TransLink, a special purpose body for transportation planning and implementation (Taylor, 2020).

Unusually for large Canadian cities, TransLink has both a planning and operational mandate. It was established in 1998 by provincial statute, and is responsible for all planning, coordinating, and operation of transit within the Metro Vancouver area. The agency administers federal gas tax capital funding on behalf of the region, as well as funding from provincial sources. TransLink is also responsible for maintaining major regional roads, including five bridges. Of the agencies in the three major cities, TransLink has the most local representation on its governing board and is by far the most integrated with regional planning, making it the closest approximation of an MPO in the country.

Table 1: Major census metropolitan areas in Canada, 2021.

City	Province	Total population	Share of national population	Growth rate 2016-21
Canada		**36,991,981**		5.2%
Toronto CMA	Ontario	6,202,225	16.8%	4.6%
Montréal CMA	Quebec	4,291,732	11.6%	4.6%
Vancouver CMA	British Columbia	2,642,825	7.1%	7.3%
Ottawa-Gatineau CMA	Ontario	1,488,307	4.0%	8.5%
Calgary CMA	Alberta	1,481,806	4.0%	6.4%
Edmonton CMA	Alberta	1,418,118	3.8%	7.3%

Source: Statistics Canada Census Profile, 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001.

Montréal also offers a model. Transit in the Montréal region is overseen by the Autorité régionale de transport métropolitain (ARTM), an umbrella organization that was established as a crown corporation by the Province of Quebec in 1996, and which reports to the Quebec Ministry of Transportation. Its board consists of a mix of members appointed by the Communauté métropolitaine de Montréal (CMM), some of whom are elected officials, and transit experts appointed by the provincial transportation authority, Transports Quebec. The agency is responsible for long-term planning in support of CMM's land use and development plan, which includes minimum density thresholds (Communauté métropolitaine de Montréal, 2012). It also establishes levels of service for local transit, and is responsible for setting fares and coordinating fare integration. It works in coordination with local transit system operators and its staff comprises members of former local transit agencies. Like MPOs, ARTM is the conduit for funding from provincial, regional, and municipal sources, including provincial subsidies, gas and vehicle taxes, and user fares collected through the OPUS fare card system. These funds are redistributed back to local authorities and its own subsidiary, the EXO regional rail and bus service operator. Its role has been characterized as similar to a network manager (Taylor, 2020).

And though today it faces many challenges, Toronto was once a model for regional governance, with the experience of Metro Toronto a staple of the American urban planning curriculum. With leadership made up of elected officials from the local councils and a balance of urban and suburban voices, the Metro Toronto model laid the foundation for a program of consistent, rapid, economically efficient development of inner and outer suburbs during a period of rapid expansion. It oversaw all aspects of transportation infrastructure, including transit service, highways, and arterial roads. Its land use purview included both the urban core and surrounding greenfield sites, to account for urbanizing areas outside of the city proper (Hodge, Robinson, and Hall, 2017). As a result, the Toronto region today has denser development with better transportation access and a greater variety of uses — parks, employment, and housing types — than many American cities, similar to European cities like Copenhagen and Stockholm (Sorensen and Hess, 2015).

Metro Toronto was perceived as a success by both residents and political elites, and through the late 1960s and early 1970s, traditional county governments across the province – including neighbouring Durham, Peel, and Halton counties in the Greater Toronto Area – adopted similar structures (Taylor, 2019). However, this period was also marked by less direct provincial oversight into municipal affairs, which meant less incentive for regions to come together to solve growing inter-municipal issues of traffic congestion and the hollowing out of urban tax bases. By the time Metro Toronto was amalgamated into the single-tier City of Toronto in 1998, with surrounding regions remaining distinct entities with their own two-tier governance structures, regional thinking was at a low ebb, and has yet to fully recover.

This lack of coordination is reflected in a transportation governance environment that Siemiatycki and Fagan (2019) have described as “uniquely dysfunctional” in terms of the time needed to gain approvals, the “interminable wrangling among different levels of government,” and political considerations that “often seem to supersede evidence in project selection, resulting in investments that do not necessarily deliver the greatest benefit” (p. 1). They argue that two interrelated challenges are paramount in explaining the planning dysfunction: first, the “structural hurdles posed by unclear and often competing responsibilities among different levels of government,” and second, the “uneasy relationship between technical evidence and politics in transit decision-making” (p. 2). The result, the authors contend, has been to create a “stop-gap, ad hoc, beggar-thy-neighbour approach to building — or not building — transit” in the Toronto region (p. 9).

In Toronto, the municipal, provincial, and federal governments are each responsible for some transit operations, but there is no overarching regional body that oversees or coordinates their activities. As a result, transit is disconnected, without services or fares that are streamlined across city borders, undermining transit convenience and leading to more driving and congestion. The Toronto Transit Commission (TTC), which operates within the city itself and extends in a handful of places to surrounding York and Peel regions, is the largest urban transit system in the country, and one of the largest in North America by ridership. However, TTC is not governed by the regional transportation authority, Metrolinx, and its fare system is not integrated with other systems in the region. It also has distinct funding sources, which has been an ongoing point of contention as the TTC is one of the least-subsidized systems in North America (City of Toronto, 2020). Neighbouring areas, including the City of Mississauga and Durham and York Regions, have smaller, separate systems of their own, none of which has planning, funding, or fare integration with other providers. Several of the experts we

interviewed commented that coordination among the transit operators is uneven and is often an impediment to greater transit use, with travelers instead relying on private autos and adding to the region's congestion problems.

Regional transit planning is overseen by Metrolinx, a crown agency accountable to the province's Ministry of Transportation, with a capital budget funded entirely by the province. Though originally its leadership was partially made up of elected officials, Metrolinx's board structure was changed by the province in 2009 to consist entirely of officials appointed by the provincial cabinet, a move widely condemned within the region as a step backward in transparency and accountability, particularly after board meetings were made private (Tremblay-Racicot, 2018). In addition to its planning mandate, Metrolinx is currently overseeing two major extensions to the TTC network, both of which are being planned, funded, and built by Metrolinx and the province but which will be operated by the TTC once complete. Siemiatycki and Fagan (2019) have referred to the ongoing debates over which level of government should be responsible for these and other capital planning projects as emblematic of the "clumsy process" that lacks "sufficient forethought about how [to] advance Greater Toronto's collective transit system" (p. 3). They note that in GTA transit planning, "the evidence behind project selection is sometimes public, sometimes not" and furthermore, "a key challenge in Ontario — and the GTA in particular — is that responsibility for transit planning and funding is so diffused among municipalities, provincial departments, and the federal government that, at the political level, there are often mixed messages amid competing interests" (p. 5).

In the last decades of the twentieth century, land use planning regulation grew stronger within cities, but inter-municipal coordination was lacking, as was an institutional frame for linking transportation and land use planning at a metropolitan scale (Taylor, 2019). It was not until the creation of the Growth Plan for the Greater Golden Horseshoe (GGH), released by the Province of Ontario in 2006, that proactive regional planning reemerged in the Toronto area. The plan contained three key spatial categorizations which would organize development in the region (as shown in Figure 1):

- a built-up area centred on Toronto which extends roughly 50km to the east and west and 25km north of Lake Ontario;
- a series of urban growth centres where future growth was to be channelled, two thirds of which are in the Toronto area, and including many historic downtown areas in the broader GGH region; and
- a Greenbelt area between them, protecting natural and agricultural areas surrounding Toronto and its neighbouring regions.

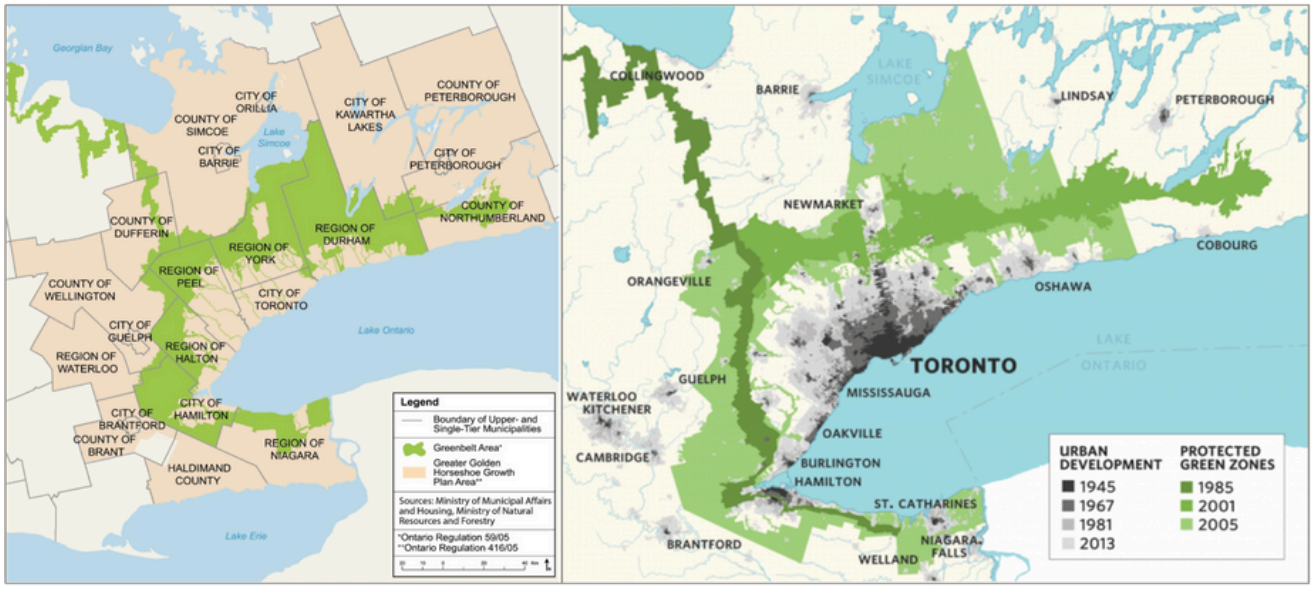
The plan has generally resulted in a shift to more compact and mixed-use development and better integration of land use and transportation planning. A 2020 update ("A Place to Grow") provides more specific land use policies for a time horizon through 2051 which carry legislative authority at the provincial level. The plan directs growth to areas with a delineated boundary, with a focus on complete communities and proximity to higher-order transit, while limiting growth within the Greenbelt area and rural settlements. It provides specific density targets for downtown areas and transit corridors and station areas, and explicitly states that "transit is the first priority for transportation planning and investment" (Province of Ontario, 2020, p. 29). The province tracks how areas are meeting intensification targets using GIS-coded building permits, and upper-tier municipalities (i.e., regions) are permitted to override plans of lower-tier municipalities in the event

of noncompliance (Hodge, Robinson, and Hall, 2017).

The growth plan has proved a relatively stable force for the last two decades, but achieving conformity in municipal by-laws and zoning codes took nearly a full decade after the plan's release, and is still a fraught process. Toronto's worsening housing crisis is also prompting some recent adjustments, including a controversial proposal in 2022 (later withdrawn following widespread public outcry) to open some of the protected land in the Greenbelt for development.

Other critics of the overall plan have indicated that the density targets in the more suburban areas are insufficient to justify the planned levels of investments in public transit, while funding for areas like Toronto, where transit use is already high, is sorely lacking.

Figure 1. The Greater Golden Horseshoe Plan Area with existing regional governments (left) and the historical development of the CCH area (right) (Province of Ontario, 2020, greenbelt.ca)



As noted above, while it is facing significant region-wide growth challenges, the Toronto area lacks a systematic coordinating function along the lines of the U.S. MPO system, in which a regional body is held responsible for multimodal transportation planning (for both roads and transit, along with active modes) on an ongoing cyclical basis, and which is required to employ evidence-based performance analysis of plan options at the metropolitan regional scale in furtherance of multiple planning objectives. This paper now turns to discussing the MPO model in the U.S., and how it has provided a vehicle for sustainability planning to emerge in California.

3. REGIONAL PLANNING IN THE U.S. AND THE EMERGENCE OF METROPOLITAN TRANSPORTATION ORGANIZATIONS

In the U.S., the development of metropolitan planning organizations and processes has occurred over a long period, and continues to be adjusted to reflect changing patterns of urbanization as well as changing understandings of the problems to be addressed. The MPO model for regional transportation planning built upon the successes of the planning approaches that preceded it, and has responded to problems that previous efforts revealed.

Scholars have documented that in Western nations, many of today's elements of city and regional planning can be traced back to the rapid industrialization and urbanization of the late nineteenth and early twentieth centuries: reactions to the squalor and crowding of the tenement districts that sprang up in city centres and the perceived risks these conditions posed to public health, safety, and the dominant social order. Responses included reformist and utopian approaches to improve living conditions and decongest city centres, from public housing projects to social work; City Beautiful programs that added monumental buildings, artwork, landscaping and widened streets; and functional planning interventions including citywide zoning, standards-based subdivision control, the creation of areawide sanitation districts, and the establishment of networks of parks and open space (Hall, 1989; Marcuse, 2011). Many of these interventions were organized at the city level, but larger projects extended across multiple jurisdictions and were implemented through the establishment of special districts. A parallel set of developments during this period created landscape-level regional plans for flood control, irrigation, wilderness preservation, and forest management – a rural counterpart to the urban approaches intended to address issues of culture as well as development concerns. Typically, these large-scale initiatives, organized around ecological regions, entailed partnerships among federal, state, and local governments (Steiner, 1983).

In the subfield of transportation, early twentieth century policy initiatives focused on street widening and paving along with the regulation of public transit services, which for the most part operated as private enterprises pre-WWII. Initially cities were in charge of most of these projects, but with the growth of auto ownership, pressures mounted for faster and more costly improvements, and local governments found that huge and unsustainable shares of their budgets were being spent on transportation projects.[4] The local governments lobbied for state and federal assistance. The states responded by taxing motor vehicle fuels and directing the revenues to road projects; the federal government responded by mandating the creation of state highway departments directed to develop state by state plans for a federal-aid highway system.

Planning during this period was construed as an activity that projected growth patterns and aimed to devise an optimal set of actions to respond to them. The iconic Regional Plan for New York and Its Environs, issued in two volumes in 1929 and 1931, was based on a series of surveys and analyses that analyzed the region's population density and distribution, demographics, living conditions, and

health; its economy and industries; its topography and physical conditions; and its infrastructure, including highways, transit, parks, and open spaces. Land regulations such as city plans and zoning codes also were documented. The two volume plan then used this detailed database to develop proposals for the location of residential, commercial, and industrial land uses, parks and open space, and transportation and other public infrastructure. While some of the proposals were later criticized for their adverse impacts, and some were opposed by the Regional Planning Association itself, the plan became a source of project ideas during the Great Depression of the 1930s, and a number of its projects were built as part of Roosevelt's New Deal (RPA, 2023).[5] The plan's regional scope and its linkages of transportation, land use, and quality of life issues established a pattern for regional plans in many parts of the world. Its "predict and provide" ethos, based on expert forecasts and a proposed single best alternative, also became a widely accepted norm.

The Great Depression and World War II slowed highway investments and motorization and added to the challenges faced by transit operators, who since the 1920s had been struggling with heavy competition from the automobile, regulatory restrictions on fares and operations, and labour disputes. After the war, policies in the U.S. moved toward implementing an Interstate Highway system, again with states taking the lead but with 90 percent federal funding. The articulated objective of the Interstate program was the fast, safe, efficient movement of people and goods: suburban development was accelerating during the period and highway "needs studies" showed that massive investments would be needed to keep traffic moving. While projections of population and employment growth were used to justify the projects, land uses were treated as driven by largely exogenous forces and for the most part the transportation plans treated the land use forecast as an input rather than a variable that could itself be affected by transportation investments.

The Interstate Highway program imposed uniform, federally established design standards nationwide, aiming to minimize conflicts and to produce a homogeneous flow with an emphasis on speed, safety, and efficiency. Only a few observers — such as Lewis Mumford and Daniel P. Moynihan — predicted conflicts when the Interstates reached the city. Sure enough, when the standard Interstate design was attempted in urban areas, freeway revolts erupted in San Francisco, Boston, New Orleans, Memphis, Washington, Baltimore, Los Angeles, Sacramento, Phoenix, and many other cities. Freeway opponents were often joined in their complaints by transit advocates, who wanted the government to help rescue transit, whose private operators were failing by the 1950s. Calls for a balanced transportation system became common (Deakin, 2006).

Coming at a time when the courts were affirming the need for electoral districts to be apportioned according to population — which increased urban representation — and when civil rights, citizen participation, and environmental protection were becoming rallying cries, legal and institutional change was almost inevitable. The image of the Interstate highway program and programs such as urban renewal as a "federal bulldozer," disregarding social and environmental effects, helped produce new legislation that required environmental impact assessment and an increased role in decision-making for local elected officials and community residents. Highway departments began to add units that supported transit and addressed community and environmental factors. Many states replaced independent highway commissions, seen as indifferent or even hostile to community concerns, with transportation secretaries who were seen as more likely to be politically responsive. To give both central cities and the burgeoning suburbs a voice in decisions, regional agencies were asked to undertake a metropolitan regional transportation planning process under the direction of a

board of locally elected officials. It is this planning process for metro regions — called the 3-C planning process — that evolved into the metropolitan planning organization and regional transportation planning approach the U.S. uses today.

The 3-C planning process traces back to the 1962 Federal Aid Highway Act, which called for "a continuing, comprehensive transportation planning process carried on cooperatively by states and local communities" (23 USC 134). Initially, this process was established primarily to allow urban officials to referee conflicts over highway projects (Weiner, 1987). Projects that lacked the support of the regional board could not be included in transportation improvement projects, effectively giving the metro regions veto power over controversial projects. At the time, however, MPO plans did not have to be followed by the state transportation agency and the state could use this to bargain for projects that the MPO had not included. In practice, concerns about particular projects typically led to further study and in many cases resulted in project modifications or in quid pro quos that made the redesigned project or the project plus complementary actions acceptable.

The organizational structure in which this process was embedded varied considerably, reflecting local histories as well as metro area size and capacity. In regions where regional planning had a foothold or a council of governments had been established, these already-established organizations were often asked to take on the 3-C planning tasks. In other regions, new agencies were created or state transportation officials assigned staff to provide technical support to the board of local officials. The composition of the board of local officials varied as well; in some cases, board members were selected by caucuses of the member jurisdictions and in other cases the positions were designated by state law. These organizational variances persist to this day.

In their early years, the planning processes followed by the 3-C planning agencies were very much in line with those established decades earlier in the Regional Plan of New York, but focused more narrowly on transportation. The technical staff collected or assembled and analyzed data and forecasts on population and economic conditions in the region; allocated expected growth to subareas based on trends data and local plans; and determined the need for transportation investments to handle the resulting traffic forecasts. In preparing travel forecasts the agencies typically treated their growth estimates and location forecasts as givens, unaffected by transportation investments. They then relied on models designed to estimate trip rates, origin-destination patterns, and mode shares, and examined the consequences for existing transportation networks. Projects proposed by the state transportation agency or local authorities were then added to the networks and the models were run again to forecast expected results. Early analysis efforts emulated studies from the 1950s that had pioneered what at the time were state-of-the-art systems analysis and computer programming applications: the Chicago Area Transportation Study (CATS) (McDonald, 1968), the Bay Area Transportation Study (BATS) (Beckett, 1988), and the series of studies done for the Bay Area Rapid Transit District (BART) (Parsons, Brinckerhoff, Hall, and MacDonald, 1956).

Like the CATS, BATS and BART studies, early 3-C plans and the analyses supporting them focused on the monetary costs of projects and their economic efficiency. However, by the sixties it was apparent that a broader view was needed: "Transportation costs should be minimized without destroying community values, amenities, and resources" (IURD, 1967, p. 12). Responding to such sentiments, many transportation agencies developed capacity for evaluating the costs and benefits of proposed

projects, including social and environmental costs, and established community outreach and engagement processes to garner feedback on the projects that were being proposed. As one observer, writing in 1968, put it, "Evaluation of cost factors is no longer limited to the transportation facilities themselves, and it is recognized that there are new forces that demand high aesthetic standards to protect the natural beauty of the area and high environmental standards to protect air and water….Congestion of highways is now viewed by many professional planners and city officials as a necessary constraint to limit the number of vehicles entering the city. This 'planned' congestion, however, must occur where the traveler can conveniently use public transit as an alternate. Thus, automobile congestion does not become an economic deterrent, but it is a factor in controlling the use of alternate services" (Beckett, 1968, p. 435).

As methods of analysis improved and urban geographies evolved, the regional planning agencies typically adopted increasingly sophisticated analysis approaches. In many instances, local universities provided assistance in developing planning methods and analysis techniques. An outstanding example was the collaboration in the 1970s between the Bay Area's Metropolitan Transportation Commission and Professor Daniel McFadden and his students at UC Berkeley on the Travel Demand Forecasting Project. The innovations in modelling travel behaviour that emerged from that project not only resulted in major advances in the analysis capabilities of MTC but subsequently transformed modelling at MPOs across the U.S. (and resulted in a Nobel Prize for McFadden).

Periodically, the cyclical 3-C planning process has been updated to accommodate new issues, interests, and requirements. The 3-C process was solidified during the 1970s by federal requirements for states and localities to take on additional responsibilities, notably adding transit options and demand management strategies to the alternatives considered, and incorporating planning for transportation and air quality measures for (urbanized) nonattainment areas as required by the Clean Air Act Amendments of 1977. It was at this time that the term "metropolitan planning organization" began to be applied to the entities carrying out the 3-C planning process. Federal and state laws in the 1990s underscored MPO responsibilities, expecting MPOs to become multimodal planning organizations whose plans and projects would "conform" to attainment and maintenance of air quality standards, while also protecting civil rights and incorporating stakeholder and public involvement (Sciara and Handy, 2017). In particular, the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) integrated what had formerly been separate highway and transportation planning processes into an explicitly coordinated set of requirements. The legislation provided MPOs with greater authority and flexibility for programming transportation funds and created new programs that provided planning and project funds to the MPOs directly, changes that MPOs had been seeking for over a decade. At the same time, the legislation strengthened mandates for MPO actions to improve air quality and to monitor system performance. One result was that the MPOs sought to improve techniques for predicting air pollution emissions impacts of their planning choices — techniques that MPOs would subsequently employ for modelling other plan impacts (Harvey and Deakin, 1993; Howitt & Altshuler, 1999; Yarne, 2000; Wolf & Fenwick, 2003).

ISTEA also required state and MPO plans to be more realistic about funding for their plans and projects. In the late 1970s and through the 1980s, a period of strained federal and state budgets for transportation purposes, state and MPO plans often included proposals for transportation investments which had no apparent source of funding. Plans thus constructed provided the appearance of progress on air quality and congestion relief, while the realities of project investment

programs to be "fiscally constrained" – meaning that funding for the projects in the plan had to be reasonably assured to be available over the planning period (though a certain amount of speculation was permitted: funds could come from state or local sources, including sales taxes that would require voter approval and other sources not yet solidly in hand).

Recent decades have seen increasing recognition that urban areas, once thought of a central city surrounded by suburbs, have been reconstituted as multicentric and that the suburbs are widely varied, with some becoming denser and more like the urban core (Soja, 2016). Globalization is increasingly seen as a key driving force in economic development and in the role of cities. This changing urban geography has sparked renewed interest in the ways that transportation investments can shape urban development, and this in turn has led a number of MPOs to invest in land use modelling. Increasingly, rather than treating land use as a given, MPOs are treating it as contingent and variable. Rather than ignoring freight movements, MPOs are developing analysis tools to better understand them.

Additional legal changes over the past three decades have given MPOs specific planning objectives and requirements to track progress in meeting them, while continuing to allow them the flexibility to choose projects that align well with local context.[6] Currently, in their plans and programs, MPOs are required to address ten factors specified by federal law, at a level consistent with the scale and complexity of the region. The ten factors are:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
10. Enhance travel and tourism.

Legislative changes have also acknowledged that larger urban areas typically deal with more complex issues and have more capacity to act than do smaller ones. While it remains the case that any area with a population over 50,000 must have an MPO and conduct regional transportation planning, today an MPO covering an area with a population greater than 200,000 is further designated a Transportation Management Area (TMA).[7] TMAs are given increased transportation responsibilities including congestion management planning. If they are in an air quality nonattainment area, limitations on highway expansion apply unless it can be demonstrated that there are no feasible, effective alternatives. TMAs also have the option to consider alternative growth and investment scenarios in their planning processes.

MPOs' evolving responsibilities have served to highlight the advantages of co-benefits — fiscal, economic, and environmental efficiencies that could align with transport and development location efficiencies. In this context, some MPOs have chosen to emphasize accessibility improvements (or, in other words, providing better accessibility to desired destinations, achievable through proximity as well as through speedy transport modes) rather than the traditional MPO focus on improving mobility (implemented, in particular, through roadway capacity expansion to increase transport speeds) (Handy, 2008). Although traffic congestion is rising in many areas, MPOs are increasingly questioning the utility of highway expansion, recognizing that the benefits of new capacity are likely to be short term due to "triple convergence" — driving diverted from other routes, times of day, and modes — and "induced travel" — the additional and longer trips made because of the greater mobility provided by expanded roadways (Downs, 1992; Taylor, 2002; Handy and Boarnet, 2014). In addition, an increasing number of MPOs have begun to depart from the longstanding "predict and provide" approach to regional planning and have increasingly recognized that their investment choices help steer the region's growth and development. Such an approach has led to a renewal of interest in land use forecasting and its linkages to travel demand, and to investigations of factors affecting business and household location in the new geography of metropolitan areas, where subcentres are common, business activity is global as well as local, and telecommunications are increasingly an alternative to physical transport (Soja, 2011).

In short, the 3-C process has proved over time to be an effective vehicle for ***enabling***, though not mandating, sustainability planning. Table 2 depicts the "layering" of federal and state mandates that help explain the emergence of integrated transport-land use-environmental planning by some U.S. MPOs.

The U.S.' lengthy experience with the 3-C planning process and MPOs is instructive with regard to what it takes to establish an effective regional transportation planning process with linkages to other important policy issues such as emissions and sustainability. In particular, lessons have been learned about setting the right size and scope, incorporating local representation, and dealing with process challenges.

Table 2. Federal and state mandates that helped prompt sustainability planning by MPOs.

Policy	Effects and implications
Regional Transportation Plan (RTP) process: 1962, 1973 Highway Acts	Establishes requirements for "3-C" planning process (continuing, cooperative, comprehensive). Rules finalized by mid-1970s required establishment of MPOs to conduct long range Regional Transportation Plans (RTPs) and interim short-range plans.
RTP + National Environmental Policy Act (NEPA) (1970) and state-level "mini-NEPAs"	Requires modelling of project impacts and alternatives. Increases focus on environmental analysis and mitigation, and legal pressure from possibility of citizen enforcement.
RTP + Clean Air Act amendments (1990)	Requires that RTPs demonstrate "conformity" with regional air quality standards. Induces more sophisticated modelling of plan impacts, and greater focus on land use impacts for transport emissions.
RTP + Intermodal Surface Transportation Efficiency Act (ISTEA) (1991) and successors	Establishes multiple goals for RTPs, increases modal flexibility and amount of funds programmable by MPOs, imposes requirement for fiscal constraint (plans must be based on "reasonably" expected revenues), calls for public participation plans, establishes congestion management requirements.
RTP + Title VI of Civil Rights Act of 1964, and environmental justice mandates, e.g., EO 12898 of 1994	Requires that MPOs address equity impacts of RTPs and provide for public participation processes.
Combined effects	Institutional layering of RTP mandates push MPOs to improve transport efficiency, consider land use impacts, and provide for public participation in plan development.

ADD IT ALL UP = an institutional track contributing to MPO sustainability planning

Source: Barbour, 2020.

SETTING THE RIGHT SIZE AND SCOPE

Under U.S. federal law and regulations, an MPO's boundaries are to cover the urbanized area as designated by the U.S. Census Bureau plus additional areas anticipated to urbanize in the next 20 years (23 USC 450.312-314). New MPOs that have been established in smaller agglomerations reach the MPO minimum size of 50,000, and existing MPOs have been newly designated as TMAs as their populations have grown. However, many MPOs in the U.S. share boundaries with other MPOs and have overlapping commute sheds, a situation that has led to the federal government issuing detailed guidance on processes for amending boundaries or developing agreements on how to handle the overlap (23 USC 450.312-314).[8] Most MPOs have not altered their formal boundaries but instead have planning agreements with neighbouring MPOs detailing how they will handle overlaps.[9]

From a governance perspective, maintaining organizational boundaries and dealing with boundary issues through multi-organizational agreements has provided stability to the U.S. system (at least in comparison to Canada's more fluid governance arrangements) while at the same time responding to the realities of regional change. However, the stable boundaries and governance structure also can have disadvantages. Coordinating with jurisdictions that are not part of the MPO, but are increasingly linked to it economically, is often complex and at times contentious.[10]

An issue that has arisen in some areas of the country is that commute patterns have expanded into other MPOs' territory as workers seek less costly housing. This has led to lengthy commutes, traffic congestion, demands for new inter-area transit services, and conflicts among the MPOs and their member local governments over whose residents the housing should serve. As discussed later in this paper, this has proved to be a problem for the San Francisco Bay Area, where growth has expanded from the original nine counties ringing the Bay to additional counties to the east and south. For years, regional planners have relied on communities beyond the MPO's eastern and southern borders to provide a portion of the housing needed to support the Bay Area's job-rich centres. However, because of the problems associated with the resulting land use and commuting patterns, regulators recently have mandated that plans must stay within the MPO boundaries, a step that will require challenging levels of densification within the region.

The Bay Area example illustrates the complexity of boundary setting. Initially organized around shared interests in protecting the San Francisco Bay and associated river deltas, other factors including highway investments and sub-centering of the region have led to urban growth expanding beyond the ecological boundaries of the region and have made the MPO boundaries smaller than the realities of urbanization. Southern California offers an example of the other extreme: there, the region included in the MPO is so large that it incorporates subareas with vastly different economic bases, housing needs, and political inclinations, a situation that has led the MPO to establish regional districts as well as an 86 member council to represent the varying communities of interest.

A MULTILEVEL GOVERNANCE MODEL INCORPORATING LOCAL REPRESENTATION: STRENGTHS AND LIMITATIONS

MPOs provide a *planning interface* for coordinating programs and investments initiated and administered by multiple government sources at the federal, state, and local levels (Sciara and Handy, 2017; Goldman and Deakin, 2000). This is a major strength of the MPOs — allowing for a clear view of how projects fit together and also where gaps may persist. The intention is for the regional plans and programs to assess the transportation system and its relation to urban development thoroughly and then propose projects that will improve regional welfare. Nevertheless, the MPO approach does not guarantee that the system will be well integrated, in large part because as currently constituted, implementation authorities are dispersed and not necessarily consistent with one another.

A key issue is the level of authority for project selection that the MPO is given. For the smaller MPOs not designated as TMAs, in most locales state transportation officials or transit operators are responsible for selecting the projects under their respective purviews and can modify the program of projects put forth by the MPO, withholding funds or approvals if they disagree with a project or the priority being given to it. However, for the larger urban areas designated as TMAs, the MPO holds the programming authority.[11] This assignment of responsibility is consonant with the substantive expertise and leadership that the larger MPOs have exhibited over the years.

California has gone farther than this, giving all of its MPOs major programming responsibility and doing so well before the TMAs were given responsibility nationally: through SB 45, adopted in 1997, California MPOs were made responsible for programming state transportation funds allocated to the urban regions (75 percent of all state funds). This MPO programming authority carries important consequences, because a project not included in a California RTP is ineligible to seek matching funds from the federal level, and most locally-generated transportation projects rely on multiple sources of funding (Sciara and Handy, 2017).

Furthermore, MPOs' planning and programming authority should not be confused with project sponsorship, funding, or administration. One California study conducted in 2011 found that, on average, MPOs directly controlled only 15 percent of capital funds in RTPs (Rose, 2011). MPOs exert little autonomous authority when it comes to directly initiating projects or levying funds to pay for them because they have few independent sources of funding: they receive planning funds from federal, state and local sources, but for projects, the MPO-controlled funds are modest. Likewise, MPOs do not control land use, which is delegated by state governments to localities in most parts of the U.S., nor do most of them have authority over other infrastructure, such as water supply, sewer systems, electricity, or telecommunications, all of which can be critical elements for such strategies as infill transit-oriented development (TOD). This situation means that implementation of MPO regional plans depends heavily on action from others: some MPOs have left it at that, while others have actively engaged in collaborative implementation planning with those who can move projects forward and/or have used MPO resources, limited though they may be, to provide incentives.

Another key issue with regard to local representation is the form that the governing board takes. As noted earlier, this varies considerably among the MPOs. Issues in formulating the board include how

the members are selected (e.g., a small number of representatives selected by a committee of the member jurisdictions, a small number of representatives with service rotating through the list of jurisdictions, or a large committee with all jurisdictions having direct representation); whether and to what extent other stakeholders are included (on the board as voting members, as ex officio members, or as members of separate advisory boards); geographic representation (whether it is important for specific parts of the region to be represented); and voting procedures (whether votes should be population-weighted, and number of votes needed for a quorum and for adoption of a plan). In current U.S. practice, MPOs also include other key stakeholders on the policy board, including state agency representatives, transit operators, freight operators and ports. In most instances these participants are ex officio.

An issue that a number of U.S. MPOs faced in the past is that they were based on voluntary organizations and every so often a jurisdiction that was unhappy with the direction taken by the majority would threaten to withdraw. Some states responded to such controversies by legislating the composition of the MPO — the San Francisco Bay Area's Metropolitan Transportation Commission is one such instance — and the federal government responded by mandating federal and governor approval of the MPO in order for federal funds to flow.

THE IMPORTANCE OF PERFORMANCE FOCUS AND EVIDENCE-BASED ANALYSIS

While MPOs originally followed the "predict and provide" approach to planning, an increasingly common technique that MPOs have used for analyzing plan performance has been to conduct "scenario analysis," in which MPOs' alternative ways forward (scenarios) are evaluated and compared to a "business as usual" (trends extended) scenario. By evaluating and comparing alternatives, MPOs can consider trade-offs and potential co-benefits among plan options, and assess how to optimize performance of a "preferred plan scenario" for adoption.

Traditionally, most RTP scenario analysis had considered transport alternatives primarily in terms of whether investments in transit rather than highways would lead to more desirable outcomes, or in connection to mobility and air quality impacts, examining whether transit investments plus demand management strategies would result in cleaner air. These early scenario plans tended to assume a projected land use pattern extrapolated from existing trends and local land use plans, taken largely as given (Wachs and Dill, 1999). As MPOs began to examine transit-oriented development proposals and broader sustainability goals, they began to model and evaluate – in addition to multimodal transportation proposals and air quality impacts – climate protection (e.g., impacts on greenhouse gases per capita), preservation of natural habitat and greenspace, economic development, and housing location and type (including multi-unit, compact and affordable housing) (Barbour, 2020). RTPs are also increasingly modelling social equity factors, such as the impacts on different population groups and communities.

The new, more integrated sustainability-oriented approach that some MPOs have adopted turns land use as well as transport elements of the package into variable elements. Scenarios thus become packages of transport policy and program options considered in combination with land use policy and program options. In this context, the scenario modelling process has facilitated not only consideration of the potential consequences of decisions, but also a search for better approaches that address multiple performance criteria.

For MPOs using this approach, a main goal has been to encourage official adoption of a plan scenario that accommodates more compact development located near transit, as a means to improve accessibility through greater use of transit, walking, and biking (Barbour, 2020). However, this approach has also required that MPOs work more closely than before with local governments, which control land use decisions in most U.S. states. For many MPOs, this has been a daunting challenge.

Thus, the sustainability orientation that some U.S. MPOs have adopted emerged from within the 3-C process as a product of institutional layering of new mandates, as well as recognition of limits of traditional strategies in light of shifting conditions. But given the ambitious scope of these MPO efforts, what authority and resources do MPOs actually command over transportation projects and policies, let alone land use policy-making? The answer is not very much, meaning that MPOs often encounter a mismatch between ambitions and implementation capacity.

SUMMING UP: KEY LESSONS

As discussed above, regional planning in the U.S. evolved over many years and regional planning for transportation and related issues likewise has been years in the making, with MPOs gradually being assigned more responsibility. In particular, U.S. federal-level reforms adopted in the 1990s changed the planning framework for MPOs, giving them more carrots and sticks — control over more resources and flexibility over funding choices — while also stiffening air quality management responsibilities.

In contrast, during this same time period, Canadian provinces became more inconsistent actors in metropolitan land use and infrastructure planning (Taylor, 2019). A handful of provinces, including Ontario, transferred some public transit planning, and sometimes also operations, to regional bodies. But while municipal land use planning regulation was increasingly complex, the institutions dedicated to managing transportation and land use in concert at a metropolitan scale languished (ibid).

Proactive regional decision-making reemerged in Ontario two decades later, when strong plans and policies affecting regional growth were adopted in the mid-2000s, including the Greenbelt policy and the Growth Plan for the Greater Golden Horseshoe. In addition, the creation of Metrolinx in 2006 precipitated the province's largest transit expansion agenda since the 1960s (Taylor, 2019). The province's approach to growth management and planning has resulted in high levels of transit provision and more compact urban development patterns than in most U.S. metro areas. However, in spite of regional governmental authority having been established in many parts of Ontario, no systematic coordinating function exists that is similar to an MPO system, with a single regional body conducting multimodal transportation planning. This structure may provide a useful model for Ontario and its regional and municipal governments to consider.

4. SB 375 – CALIFORNIA EXPANDS THE SCOPE OF REGIONAL PLANNING FOR SUSTAINABILITY

California's Sustainable Communities and Climate Protection of 2008, commonly referred to as Senate Bill (SB) 375, gained national attention as "the nation's first law to combat greenhouse gas emissions by reducing sprawl" (New York Times, 2008). The law calls for the state's eighteen MPOs to develop, adopt, and periodically update their long-range transportation plans so that, in conjunction with regionally coordinated land use plans, they are capable of reducing greenhouse gas emissions by specific state-mandated amounts over the duration of the plans. This overarching performance constraint directs attention to achieving efficient and sustainable transport and development patterns. SB 375 further requires that the regional plans be consistent with local government land use plans for accommodating housing at all income levels. The combination of these elements has effectively turned the federally mandated 3-C process into a mandate for sustainability planning.

BASICS OF SB 375

California adopted SB 375 as a component of the state's climate policy portfolio. Two years prior, in 2006, California adopted ambitious targets for GHG reduction (in Assembly Bill 32, a.k.a. AB 32), calling for reducing GHGs to 1990 levels by 2020 across all sectors of the economy, in line with reductions recommended by international climate scientists. The state then extended and strengthened its targets in 2016 (in Senate Bill 32, a.k.a. SB 32).

California's GHG reduction goals have catalyzed various policies and programs to reduce emissions from transportation. The California Air Resources Board (CARB), tasked with overseeing implementation of the state's climate policies, adopted a three-pronged approach for reducing transport-related GHGs, which at 40 percent constitutes the largest share by industry sector across the state's economy (CARB, 2022a). CARB's three main policy levers for reducing transportation-related GHGs are: first, to improve vehicle technologies, second, to reduce environmental damage from vehicle fuels, and third, to reduce driving (CARB, 2017, 2022b).

Technology-forcing policies such as fuel and engine efficiency improvements have been critical for California's short-run achievements in reducing transport-related GHGs, and they are expected to play a large role in making long-run gains. However, CARB's studies have shown that, by themselves, new vehicle technologies and cleaner fuels are not likely to be sufficient to meet the state's emissions reduction targets by the deadlines set under state law (CARB, 2017, 2022b). Zero-emissions transport relies upon zero-emissions electricity production, which will be very costly to achieve. Technological improvements to vehicles and fuels will also be costly, take time to be fully implemented, and require new infrastructure, such as electric charging stations. Thus, reduced driving is needed to meet state goals. In addition, over the long run, more efficient mobility enabled through integrated transport and land use patterns can help ensure that technological gains are not undermined by increases in driving.

While previous work aimed at reducing driving had focused on transit and non-motorized transport options, the approach taken by CARB has been to support integrated land use and transportation planning, especially transit-oriented development, in conjunction with support for using non-auto travel modes. This was an approach that had attracted the interest of a number of cities across the U.S., and several California MPOs had been exploring alternative land use-transportation scenarios in search of a way to comply with federal and state air quality mandates and respond to community concerns about congestion and sprawl. SB 375 built upon these early efforts and institutionalized coordinated land use-transportation planning as a way to reduce GHGs while meeting other critical state and regional goals.

SB 375 broadens the responsibilities of the state's eighteen MPOs by requiring that each MPO develop, in conjunction with its periodically updated Regional Transportation Plan (RTP), a Sustainable Communities Strategy (SCS). The SCS is a projected "development pattern ... [that, when] integrated with the transportation network, and other transportation measures and policies," is designed to achieve specific per capita GHG reduction targets set by the California Air Resources Board (CARB) for automobiles and light trucks over the duration of the RTP/SCS (California Government Code §65080 [b] [2] [B] [vii]).

SB 375 further requires that RTP/SCSs be consistent with local government land use plans for accommodating housing at all income levels, required under California's Regional Housing Needs Assessment (RHNA) process. In California, MPOs generally coincide with Councils of Government (COGs), forums of local governments that among other responsibilities administer RHNA plans. Under these plans, the MPO/COG allocates to each local jurisdiction its so-called "fair share" of projected regional housing needs, to be accommodated through appropriate zoning measures. While the RHNA process was originally designed primarily as a fair housing law, it has increasingly also been used as a policy tool to increase housing production and encourage infill. An additional land use requirement imposed by SB 375 is that RTP/SCSs provide enough new housing within each region's borders to accommodate projected household growth over the plan's duration, a mandate aimed at discouraging "sprawl" development.

These basic elements of SB 375 make the law a mandate for sustainable development planning. SB 375 combines an environmental mandate for transportation (the GHG reduction target) with land use planning requirements aimed at promoting equity and environmental efficiency (through RHNA consistency and the "no spillover growth" mandate). These basic elements integrate the "3 Es" of sustainable development: economic development, equity, and environmental quality. Furthermore, SB 375 integrates long- and short-range planning for transportation and land use in an ongoing, iterative fashion because MPOs must make their short-range (four-year) TIP consistent not only with their long-range RTPs, but also with local eight-year RHNA plans. Additionally, SB 375 beefed up requirements for public participation in plan development, thereby helping to make the planning process more transparent and capable of incorporating stakeholder input.

SB 375 explicitly calls on MPOs to evaluate strategies found to be useful in reducing the need to drive and associated harmful emissions (Transportation Research Board, 2009; Cambridge Systematics, 2009; Burbank, 2009; U.S. DOT, 2010; Greene and Plotkin, 2011; Brown et al., 2021). These strategies not only include expanded transit, carpooling and vanpooling, active transportation facilities and services, and pricing strategies — measures that MPOs have been analyzing since the 1970s — but

also land use measures (such as upzoning) that can facilitate compact development near transit and provide support for other transport measures. In addition, SB 375 calls upon MPO plans to evaluate pricing techniques, such as roadway tolling and parking pricing, which make solo driving less competitive compared with other modes. SB 375 also implicitly supports "fix it first," a strategy that would reduce the likelihood of induced travel by emphasizing maintenance and operations (M&O) and rehabilitation of existing highways rather than their expansion of transportation networks (Kahn and Levinson, 2011).

To support the plans' development, SB 375 called for new state guidelines (adopted in 2010) for MPO modelling techniques to evaluate land use and transport interactions (including modal splits, maintenance and rehabilitation needs, and accessibility and equity measures) that enable the MPOs to "assess the effects of policy choices, such as residential development patterns, expanded transit service and accessibility, the walkability of communities, and the use of economic incentives and disincentives" (Senate Bill 375, 2008, §1(g)). The modelling standards were deemed necessary because many of the smaller MPOs had limited land use modelling capabilities and had continued to rely on outdated travel models that were not capable of analyzing non-motorized modes, parking policies, specialized lanes, or induced travel impacts.

SB 375 thus built upon the lessons learned by MPOs that had been working to improve their transportation models, plans, and programs — in response to federal and state mandates, local concerns, and/or environmental advocacy. In essence, SB 375 institutionalized such "pilot studies," making scenario planning a standard procedure in the state.

Although SB 375 promotes key components of sustainability planning, some aspects of the law have undermined its chance of success, and these weaknesses were evident from the start. In particular, the lack of adequate provisions to ensure RTP/SCS implementation has hampered the law's success, proving to be its Achilles heel. Although a major reason for changing the planning paradigm was to consider land use as well as transportation alternatives, MPOs do not control land use, and SB 375 explicitly defers to local authority over land use decisions. Thus, the MPOs lack the authority to implement the land use elements of their scenarios and local governments are not required to alter plans and policies to conform to regional plan goals. Furthermore, for many years, few state programs provided concrete support to achieve SB 375 goals — indeed, in early years after the law's passage the state government removed or constrained important policy tools that had supported infill development and multimodal mobility, by cutting billions of dollars in transit operating funds and greatly reducing the redevelopment powers of local governments (by which they had used tax-increment financing authority to fund downtown redevelopment and affordable housing).

For these reasons, various observers pointed out early on that SB 375 fails to effectively match the responsibility assigned to MPOs for GHG reduction with adequate authority or resources to carry out policies and programs deemed necessary to achieve plan goals (Barbour and Deakin, 2012; Barbour, 2016; Sciara, 2014, 2020). Because SB 375 relies essentially on voluntary cooperation and coordination among localities for plan development and implementation, its success depends on the wider framework of policies and incentives that influence local land use choices, and whether that framework induces localities to want to comply with regional plan goals. Given that the state government determines the legal framework of fiscal, regulatory, and planning authority and responsibility enjoyed by local governments, the capacity and incentive for localities to comply with

RTP/SCS goals and objectives can be seen to be at least as much a state as a local or regional responsibility.

THE FIRST ROUND OF MPO PLANS AFTER PASSAGE OF SB 375

MPO plans developed after passage of SB 375 have incorporated the strategies commonly associated with sustainable transportation: expansion of transit and active transport facilities and service, transportation demand strategies (such as carpooling and transit pass programs), and pricing techniques that make solo driving less competitive compared with other modes. Post-SB 375 plans in the largest four metro areas of the state (in the San Francisco, Los Angeles, San Diego, and Sacramento metro areas, which together contain 84 percent of the state's population) allocated more spending for transit than for highways and roads, and for maintenance, operations, and rehabilitation of existing facilities than for expansion, than in pre-SB 375 plans. To these transportation strategies the MPO plans have added land use policies to facilitate compact development near transit, and they have allocated more new housing and commercial development to infill zones than pre-SB 375 plans had done (Barbour, 2016, 2020).

Compared to pre-SB 375 plans, however, the changes have been mainly incremental. Transportation-air quality plans have proposed transit, TDM, and pricing strategies since the 1970s. Federal policy and funding have been moving for some years toward a greater emphasis on maintenance and repair and less new capital investment, as have California programs. Many California MPOs were already moving in the direction of sustainability-oriented plans and programs: the MPOs in the state's four largest metropolitan areas had already, for more than a decade before SB 375 was adopted, been developing plans with objectives and performance measures extending well beyond improving roadway mobility, to also address multimodal accessibility and environmental quality, equity, and economic productivity.

The biggest difference, then, was that plans after SB 375's passage included measures linking transportation and land use to a far greater extent than had been done before. In particular, housing goals and impacts also became far more central for MPOs post-SB 375, as state legislation was strengthened to address widespread concerns about housing affordability.

The question was whether the increases contemplated in the plans would be sufficient, and implemented quickly enough, to achieve the policy goals the state had mandated.

THE STATE ROLE IN IMPLEMENTATION

From the outset, there was concern that the state was not providing enough support for the actions envisioned in SB 375. The reduction in transit funding and the recession of redevelopment powers mentioned previously were especially worrisome to the advocates of the SCSs, as they were widely seen as reducing the wherewithal for plan implementation.

The situation began to change about five years after SB 375's passage. Senate Bill 743, passed in 2013, led to revised state guidelines that reoriented traffic impact analysis and mitigation (remediation), required under the California Environmental Quality Act (CEQA), to focus on reducing

VMT rather than on alleviating traffic delay. Also in 2013, the state began funding California Climate Investments programs on an ongoing basis using greenhouse gas cap-and-trade revenue: included among the programs is the Affordable Housing and Sustainable Communities (AHSC) Program, which provides competitive grants to locally-initiated projects for affordable housing, transit, and active transport projects that are projected to help reduce GHG emissions. In 2017, state gasoline and diesel fuel taxes were increased through passage of Senate Bill 1, providing $5 billion annually for transportation purposes. While most of the funds from this tax increase are reserved for roadway maintenance and rehabilitation, a portion of the funds are directed toward transit and active transportation.

Housing supply and affordability concerns have also received much attention from state lawmakers, who passed numerous housing bills, which cumulatively constitute a "wholesale transformation" of the state's housing policy (Fulton, 2019). The legislation has stiffened enforcement of RHNA compliance, streamlined housing approval procedures, strengthened the state's density bonus law, and extended inclusionary housing requirements to cover residential rental projects, among other objectives. In adopting these policy measures, the state government has asserted a stronger role in prodding localities to support housing production, inducing them to update their housing policies and to promulgate clearer, more systematic and up-front conditions of development approval, so as to limit negotiation and delay (Elmendorf, 2019; Stephens, 2020).

A major policy breakthrough also occurred in 2019 when the state initiated the ground-breaking Regional Early Action Planning (REAP) Grants program. Although the funding is modest ($125 million for the first round, and another $510 million in 2021, with grants extending through 2024), the program responds to complaints long made by MPOs and others that MPOs lack adequate resources or authority to adopt and/or fund many of the policies needed to ensure SCS implementation (Stephens, 2022; Barbour and Sciara, 2023; Higgins, 2023). The first round of REAP funding supported planning activities, while the second funds both planning and implementation (e.g., infrastructure). MPO strategies for using the funds must be state-approved and meet specific purposes, for projects to support infill development, mode-shifting, affordable and fair housing, and VMT reduction, all in a fashion that furthers RTP/SCS goals. Funding can be suballocated to local agencies.[12] State policy, then, has been providing increased support for SCS implementation. Whether it is sufficient to move the plans into on-the-ground successes remains in debate, however — especially with many transit operators still reeling from the effects of COVID-related ridership losses and continuing work-at-home preferences.

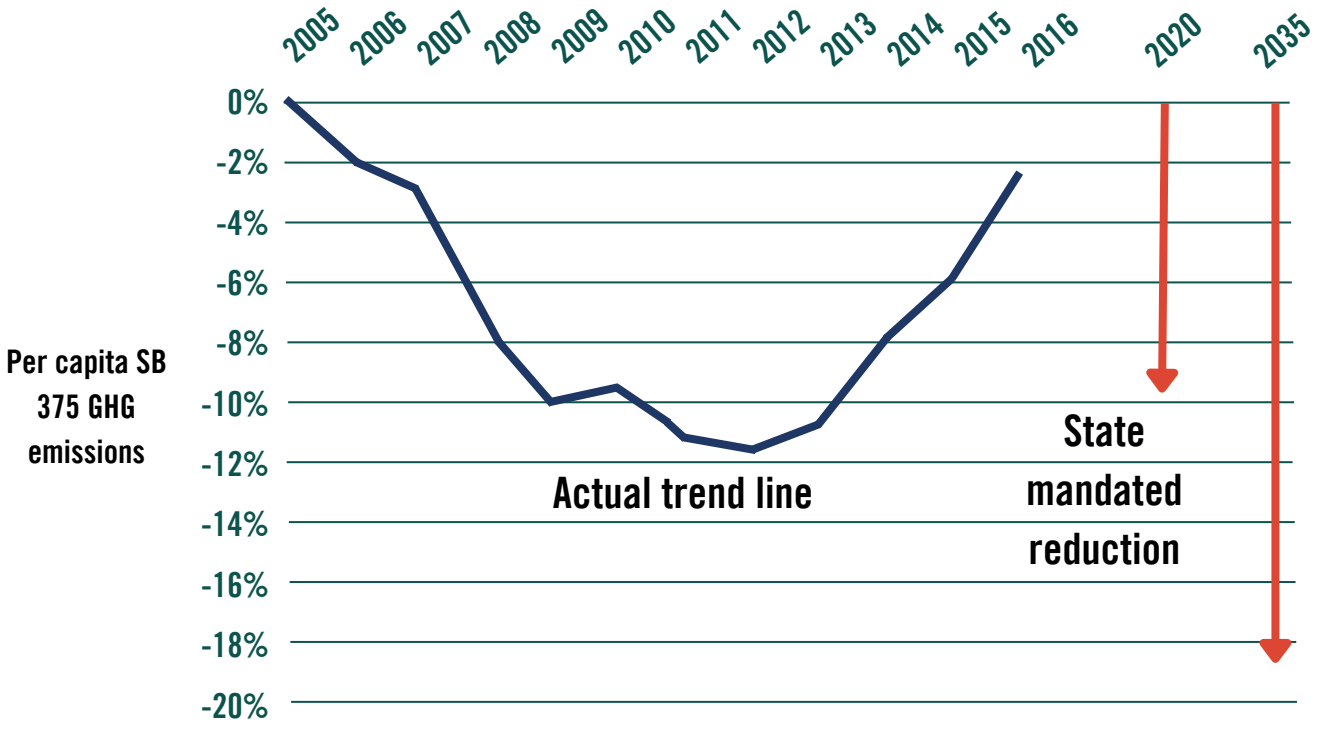
Changing climate goals have added to the challenge. In 2016, the legislature and governor extended California's overall GHG reduction target beyond its original sunset date of 2020, codifying a new goal of a 40 percent reduction in GHGs from 1990 levels by 2030 across all sectors of the economy. Pursuant to this action, in 2017 and 2018 CARB renegotiated GHG reduction targets with the MPOs, proposing stiffer targets for MPOs for 2035 than those adopted originally in 2010. The large four MPOs countered that deeper reductions would be difficult to achieve absent adoption by the state government of aggressive policies to support SB 375, including road and parking pricing, mileage-based user fees, more dedicated funds for multimodal transport, and "direct support" for regional plan implementation through state incentives for infill (CARB, 2018a; Ikhrata et al, 2017).

Ultimately, CARB adopted more stringent targets in 2018 for the MPOs, though not as stiff as the Board had initially proposed: to address the gap in per capita reductions between the adopted targets and the level the Board has identified as necessary, the Board committed to ongoing deliberations with MPOs on adoption of new policy measures (CARB, 2018a).

Debates about SB 375 continued during 2018, as the Air Resources Board released a required report to the state legislature on MPO progress under the law. The report concluded, "California is not on track to meet greenhouse gas reductions expected under SB 375" (CARB, 2018b, p. 3). This conclusion was based on evaluation of 24 data-supported indicators, of which the most concerning was a sharp rise in VMT and GHGs per capita starting after 2013. The report also identified various barriers to SB 375 success, one being local zoning and permitting practices that constrain housing production and/or make it more expensive.

The disheartening findings of the CARB report prompted renewed discussion about roles and responsibilities for achieving the law's goals as well as the strategies for doing so. CARB adopted a new direction for monitoring SB 375 implementation in 2018, aiming to pay less attention to technical aspects of MPO scenario modelling and more to performance monitoring and adoption and implementation of best practice programs and strategies from plan to plan (CARB, 2018a).

Figure 2. Estimated per capita SB 375-related GHG emissions statewide from 2005 to 2016, and state-mandated GHG reduction targets for California's four largest MPOs (CARB 2018b).



The state-level policies that the four large California MPOs called on CARB to support underscored the need for a multi-level policy "package" to support SB 375 goals, including action from state government on road pricing. While the MPOs' arguments were not new – analyses dating back decades had shown that substantial VMT cuts would be feasible only with substantially higher costs of driving and substantially expanded travel alternatives – their points were underscored with an expanded body of research about the importance of gas taxes or road user charges, congestion pricing, and parking pricing (e.g., Alberini et al., 2021; Goetzke and Vance, 2021; Manville and Shoup, 2005) as well as by new research that demonstrated the synergies among driving costs, compact development, and the availability and use of transit, ridesharing, and non-motorized modes (e.g., Axsen et al., 2020; Lee and Lee, 2013; Zhang and Zhang, 2017; Guo et al., 2011; Ding et al., 2018).

Two recent travel demand modelling efforts conducted in California, including one by the California Department of Transportation (Caltrans), underscored the value of adopting this same synergistic policy package. The studies showed that pricing policies, including VMT fees and parking pricing, could reduce VMT and associated GHGs more effectively than modelled infill development or improvements to transit and active transport facilities and service (Brown et al., 2021; Caltrans, 2021). But the modelling results also underscored that combining the strategies would produce synergistic benefits, achieving more than the sum of the individual strategies on their own. Thus, infill development and the provision of pricing, transit and active transport should be viewed as complementary strategies – even more so, as interdependent – for their effectiveness in reducing GHGs.

THE LOCAL ROLE IN IMPLEMENTATION

While the MPOs have called attention to necessary state actions on pricing and transit investments to ensure effective implementation of SB 375, most of the land use strategies included in MPOs' plans would necessitate local government action in the form of revised land use plans and zoning, more aggressive housing policies, less time-consuming development approval processes, and the like. However, the proposed changes have proven to be controversial in a number of communities, and the evidence to date shows that local action has been slow and partial. It therefore is useful to examine the causes for these local responses. The evidence to date indicates that barriers to implementation at the local level include the costs of the measures and the lack of funding to overcome infrastructure constraints, but especially, the persistence of land use controls that work against higher densities (Barbour et al., 2021). Frequently the underlying cause is opposition to community change, in social composition as well as in physical character and aesthetics.

Most local jurisdictions in California say they seek infill development near transit (a.k.a. transit-oriented development, or TOD), to support neighbourhood revitalization, mobility and accessibility improvements, and affordable housing (Barbour et al., 2021). Localities use a variety of tools to support TOD, in particular, density bonuses, streamlining of environmental review as required under CEQA, development of neighbourhood plans ("Specific Plans"), upzoning and mixed-use zoning, and reduced parking requirements, according to recent surveys (ibid). Nevertheless, TOD remains more challenging to implement than new "greenfield" development at the edge of urban areas (Barbour et al., 2021). In general, infill development involves more complicated planning, finance, and regulatory techniques, and entails higher costs for land and construction than greenfield development (Carlton and Fleissig, 2014; Fleissig and Carlton, 2009).

Research indicates that substantial physical capacity exists in California's metropolitan areas to absorb new infill development at densities matching the surrounding area (Landis and Hood, 2005; Baron et al., 2018). The market has responded, as multifamily housing units have increased statewide over recent decades: after comprising generally below one-quarter of all housing permits issued annually in the state during the 1990s, the multifamily share of permits began growing in the 2000s and has exceeded half of annual permits in most years since 2010 (author's calculation from U.S. Census Housing Permits Survey data). If development were allowed to occur more densely than is permitted within existing zoning limits across California, infill capacity would be even higher. Various research studies indicate that land use constraints, especially low-density zoning, exacerbate California's housing under-supply, leading to higher prices and more crowding (Quigley and Raphael, 2005; Kahn et al., 2010; Kok et al., 2014; LAO, 2015; Jackson, 2016). Yet single-family zoning is common, with about two-thirds of land in California localities zoned for single-family housing, and less than one quarter for multifamily development (Mawhorter et al., 2018). This pattern has persisted even in central cities. For example, in San Francisco, the share of residential land zoned for single-family is about 38 percent, in Los Angeles about 70 percent, and in San Jose nearly 90 percent (Manville et al., 2020). Even the central cities have generally targeted infill development for designated growth zones while protecting single-family neighbourhoods from upzoning (Barbour et al., 2021).

Permissive zoning provides no automatic guarantee of more infill housing in a given locale. Market feasibility can be challenging, with high development costs in infill zones due to high land costs, the need for clearance or site remediation, high construction costs, and difficulty in assembling land parcels, among other factors. Meanwhile, political barriers can also be significant, and not just in single-family zones. For example, as cities have attempted to funnel infill along existing transit corridors, they have sometimes also fueled controversies about densification and its impacts into such areas, which are often home to low- and middle-income households living in existing multi-unit housing. Although research indicates that gentrification in California has not, overall, led to displacement of existing residents (LAO, 2015; Chapple and Zuk, 2020), such findings do not always allay fears about localized impacts, and in some places, including San Francisco and Los Angeles, extremely intense conflicts have erupted about new development near transit (Barbour et al., 2021).

In spite of high-visibility conflicts over infill proposals in California, the main barriers that California planners cite for achieving their cities' TOD goals are policy-related factors, in particular difficulty in assembling land parcels and lack of adequate transit facilities and service levels – with these factors considered to be more of a challenge, according to planners, than either resident opposition or lack of market interest (Barbour et al., 2021). The finding on transit provision points to the need to address TOD and transport goals in a coordinated way. The most vocal resistance that arises to new TOD projects often relates to concerns about congestion and the lack of adequate travel alternatives, and planners must be prepared to respond.

Research on strategies adopted by California cities to promote TOD points to certain effective approaches, one of which has been to develop specific plans that include upzoning and affordable housing requirements, while also providing a basis for CEQA and permit streamlining to ease new development (Barbour et al., 2021). Such plans are developed with intensive engagement of residents, property owners, business owners, and developers, aiming to achieve substantial stakeholder buy-in. This strategy has enabled some cities, including Los Angeles and El Cerrito, to

align sometimes competing goals for improving housing production and multimodal transport options and access, while addressing local concerns about "neighbourhood character" and furthermore making development less costly and contentious for developers.

ASSESSING PROGRESS TO DATE

In our assessment, concerns about the success of SB 375 are misplaced if they focus only upon inadequate action taken by MPOs or local governments' reluctance to implement infill strategies.

The regional plans can be viewed as successful in achieving what they were mandated to do, namely, to demonstrate how each urban region can achieve GHG reductions through integrated land use and transport planning, if the policies and programs included in the plans are carried out on the ground. The increasingly visible gap between plans-versus-reality should not be blamed on MPOs, which lack the resources and authority to implement the plans. Instead, the gap points to the failure of the governmental entities that do have the necessary resources and authority, especially the state government. In this fashion, recent debates about SB 375's effectiveness can be seen as constituting a long-overdue conversation about inter-governmental roles and responsibilities. However, although the conversation has been launched, effective solutions remain elusive.

The evidence to date supports the negotiating stance taken by the MPOs in their recent deliberations with CARB, that stronger state-level policy action is needed in adopting pricing strategies, providing multimodal transport funding, and supporting and/or mandating local land use planning favouring higher densities, mixed uses, and infill development – the synergistic policy combination needed to achieve the state's climate policy goals. State policies increasing fuel taxes, supporting congestion pricing or other road use fees, and encouraging more efficient provision and management of parking could make a significant difference in the transportation system's performance and could provide the wherewithal to fund transit and other low emission transport measures at a higher level. Given the evidence that land use strategies not only are effective on their own but enhance the performance of transport actions, the state could also aid, incentivize, or mandate additional local plans supporting growth patterns that reduce auto dependence. State policies and funding also could help alleviate local government concerns about the costs and impacts of affordable housing development and other infill policies, by helping to defray the added costs of needed infrastructure and services.

EXAMPLE: LEARNING FROM PLAN BAY AREA

Among California MPOs, and MPOs nationally, the Metropolitan Transportation Commission (MTC) – the MPO for the San Francisco Bay Area – has been a sustainability planning leader. This leadership is evident in the MPO's technical methods, its transportation funding choices, land use ambitions, and policy innovations for inducing plan-supportive local land use.

The most recent iteration of the Bay Area region's RTP/SCS, called Plan Bay Area 2050 (PBA 2050), provides a far larger share of funding for transit, active transport, and "fix-it-first" projects (maintenance, rehabilitation, and operations), in comparison with new capital spending, than the

other three large MPOs in California (Barbour and Thoron, 2023). PBA 2050 allocates one-quarter of project funding toward roadways and three-quarters towards transit and active transport, and only one-fifth of roadway funding is directed to new facilities.

Moreover, PBA 2050 calls for a highly compact growth strategy compared to the three other large regions (Barbour, 2016). Why so? MTC has a history of pushing the envelope in aiming for more ambitious plan objectives than other MPOs in California (and nationally). One reason is responding to pressure from environmental and equity stakeholders in the region. Another reason is that SB 375 mandates have been more constraining in the Bay Area than in other regions, making it harder to "push the needle" through new transportation investments, and thus requiring land use action. In particular, the "no-spillover" constraint in SB 375 has posed a challenge – the requirement that each MPO, in planning for projected household growth associated with projected employment growth in the region, must accommodate the housing growth within the MPO regional boundaries. This situation presents a challenge for MTC, given that the agency's official boundaries, encompassing the well-known nine-county Bay Area region, were designated many decades ago, and so much spillover growth has occurred since then that the U.S. Census now designates five additional surrounding counties as falling within the greater regional Consolidated Statistical Area, based on commuting patterns.

To address the challenges, MTC has pursued innovative techniques for modelling and selecting plan strategies. MTC's approach to performance measurement has included defining performance targets, not just indicators, for example, and has employed innovative performance measures for addressing controversial issues, such as measuring projected gentrification and displacement. MTC has pursued multiple rounds of scenario modelling varying both land use and transportation elements in developing each iteration of its RTP/SCS and has sought to make the modelling transparent and useful in plan-decision-making, such as by inviting various stakeholder groups to help design scenarios for investigation.

A further modelling innovation in MTC's most recent PBA 2050 is a new method for assessing plan performance. MTC combined scenario analysis of alternative packages of land use and transport options (the plan scenarios), with scrutiny of individual projects proposed for inclusion in the plan. With the intention of understanding how individual projects and strategies could perform in an uncertain future, the MPO first designed three "what-if" scenarios depicting different contextual conditions that could arise due to different economic growth rates, and varying levels of federal environmental and immigration regulation. Then, the plan's 100 largest proposed projects were evaluated using social cost-benefit analysis and equity scoring, to examine performance under the three different sets of conditions. Strategies and projects that performed well across multiple "futures" were considered to be more resilient and were prioritized for inclusion in the plan. In addition, project sponsors (such as local governments, county transportation agencies, and transit agencies) were allowed to suggest modifications to improve their project's performance, in order to be eligible for regional discretionary monies. This strategy provided an incentive and method for stakeholders to buy in to the plan and its goals.

One interesting finding from MTC's analysis was that the freeway pricing strategy was projected to prevent a 20 to 30 percent rise in travel times on freeways, while enhancing transit ridership and exerting a greater impact on reducing GHG emissions than all of the transit projects included in PBA

2050 combined, totaling more than $100 billion in costs. However, road pricing was also found to present equity concerns warranting mitigation and complementary transit and last-mile strategies.

The steep challenge that MTC has faced in achieving its compact growth scenario provides a salient example of the catch-22 described above – the conundrum that MPOs face in developing RTP/SCSs that are capable of meeting state requirements, but which, in doing so, must rely on action by others to ensure their plans are realized. MTC's newest RTP/SCS is the most ambitious so far in addressing affordable housing needs. The plan's housing strategies include preserving existing affordable housing, at a projected implementation cost of $237 billion, and constructing enough deed-restricted affordable homes to meet needs for all low-income households, at a projected cost of $219 billion. The plan's economic development strategies include establishing a statewide guaranteed universal basic income, something that would have to be accomplished at the state level, and which MTC does not control. The total cost for these three strategies would exceed the entire RTP/SCS budget for transportation projects and programs.

The plan-versus-reality discrepancy also characterizes the transportation strategies in the RTP/SCS, which have become increasingly ambitious, incorporating, for example, the adoption of per-mile user fees at the federal, state, and regional levels as well as congestion pricing on managed lanes at the regional level, and parking pricing and tax increment value capture strategies at the regional and local levels. The plan envisions per-mile tolling not just as a revenue-raising technique, but also as a way to discourage excessive driving and make other modes more competitive.

In its recent evaluations of RTP/SCSs, CARB has critiqued some MPOs, including MTC, for relying on such uncertain and insecure strategies. CARB's concerns about implementation feasibility are clearly warranted, following upon the heels of CARB's assessment that earlier regional plans under SB 375 have not been adequately implemented. However, CARB's critiques do not fully acknowledge nor address the implementation dilemma that MPOs face. The MPOs have incorporated increasingly ambitious multilevel policies in their RTP/SCSs, but they lack the authority or resources to carry them out. An effective policy package requires action from the state and local levels – from the entities with actual implementation authority. Rather than complain about overly ambitious, infeasible MPO plans, attention from state policy-makers would be better directed toward considering how to foster adoption and support for the state, regional, and local policies that are needed to ensure that SB 375 can succeed.

At the same time, the MPOs are not powerless, and the Bay Area MPO has long been a leader in policy innovation to incentivize supportive land use policy-making by localities. Its programs provide a useful model for Canadian policy-makers to consider. Since adoption of SB 375, MTC has developed and continually expanded programs and policies to induce plan-supportive action by localities – making the transportation-land use connection effective on the ground.

An important first step was establishing the One Bay Area Grant (OBAG) program, which began in 2012 with about $100 million in annual funding. OBAG now allocates approximately $200 million annually to local transportation enhancement projects. Eligible projects are to be located mainly in Priority Development Areas, designated by localities in coordination with the MPO, targeted for infill development near transit. The OBAG program further conditions the awarding of funds upon the locality's RHNA compliance, actual housing production, and adoption of "complete streets" policies.

The funds that MTC uses for the OBAG program are its discretionary funds from the Federal Highway Administration's Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement (CMAQ) program (Cauchois, 2023). STP funds can be used flexibly for a wide range of project types, including improvements to highways, bridges, transit, pedestrian, and bicycle facilities, and transportation system management and demand management, as well as planning and safety activities. CMAQ funds must be directed to new or expanded transportation projects, programs, and operations that help reduce emissions and meet the requirements of the Clean Air Act. For OBAG, these funds are "repackaged" for purposes that further MTC's regional goals.

In 2022, MTC adopted a new Transit Oriented Communities (TOC) policy to replace a previous TOD Policy in place since 2005, which conditions the next upcoming cycle of OBAG funding to areas within ½ mile of existing and planned fixed-guideway transit stops and stations (regional rail, commuter rail, light rail, BRT, ferries). Furthermore, areas receiving funds for new development must meet specified standards for density and affordable housing, anti-displacement policies, parking requirements, and station area access policies.

These programs show that discretionary funds can be an important strategy for engaging local governments in plan implementation, translating regional plan goals into concrete, on-the-ground implementation measures that incentivize local support.

CONCLUSION: KEY LESSONS

SB 375 represents more of an evolution than a revolution in planning practice, as it explicitly built upon and codified actions and strategies already initiated by California's largest MPOs, undertaken to respond to federal and state mandates for clean air and congestion relief. In SB 375, California has taken the federally-mandated MPO planning framework and used it as a venue and vehicle to support an expansive sustainability planning process, building upon and codifying planning innovations already tested by the state's largest MPOs. The law combines overarching performance targets for the environment (in particular, for GHG reduction, which prompts a focus on efficient development patterns) and equity (through the state's RHNA "fair share" process for accommodating affordable housing across all localities).

The performance focus of SB 375 has led to systematic consideration of land use-transport interactions and a deeper, evidence-based understanding of what it will take to meet GHG goals in the broader framework of a sound economy, social equity, and a healthy environment. It also has led to development and use of sophisticated yet (relatively) transparent analytical methods – incorporating stakeholder input – for comparing implementation strategies and their impacts. This policy combination has turned the 3-C MPO planning process from one that merely enables sustainability planning to one that, in California, mandates it.

The law's most notable successes to date are its focus on evidence-based performance objectives, its analysis of progress, and its creation of an ongoing state-wide conversation (and increasingly, debate) about intergovernmental responsibilities for sustainable development policy-making and action. The Achilles heel of SB 375 has come increasingly into sight, however – namely the lack of effective and adequate measures to ensure RTP/SCS implementation. While implementation failures hardly

constitute an unusual concern for policy analysts, effective policy solutions will be needed if SB 375 is to have any chance of accomplishing its goals.

The MPOs analyses show that to achieve California's ambitious targets for the reduction of transportation GHG emissions, highly ambitious integrated transportation-land use packages would be needed, combining major investments in transit and non-motorized modes with significant road and parking pricing, infill and densification strategies, and affordable housing supports. Both state and local actions would be required to implement these packages, involving changes that would be politically difficult. As MPOs cannot change fuel taxes, implement road charges, or alter local land use plans on their own, they must rely on incentives and persuasion to move their plans forward.

However, MPOs do have leverage for change. As the San Francisco Bay Area example illustrates, an MPO that chooses to use available discretionary funding to incentivize local planning and action can make significant progress, even with relatively modest funding amounts. Nevertheless, another important lesson is that on its own, even a highly innovative regional agency needs the support of state-level regulatory, finance, and funding mechanisms that influence local land use and transportation. For many years after SB 375's passage, the state government relied on the MPOs and localities to achieve the law's goals through planning coordination alone, without providing substantial support. To ensure that SB 375 succeeds, the state government will need to do more.

APPLICABILITY TO CANADA

Canada's governance arrangements for growth planning and management differ from those in the U.S., but pertinent lessons can still be drawn from the SB 375 experience for how federal, state (provincial), regional, and local plans and priorities for transportation and land use can be coordinated and aligned.

Canada has not put in place a similar framework as in SB 375 – to require ongoing, iterative/cyclical, performance-oriented planning that integrates goals and objectives for both multimodal transport and land use, and which links plans and priorities from the provincial to the regional and the local scales. Therefore, the sort of conversation/debate currently underway in California about achieving performance goals for integrated planning, and assigning responsibilities for achieving them, has been lacking. Yet in some ways Canada is well positioned to move forward with such a planning process.

When it comes to state- or regional-level policy intervention into local land use decisions, Canada has far stronger institutional prerogatives established at the provincial level than in most U.S. states. For example, recent efforts by Ontario's premier to open up portions of the Greenbelt for development, and to endorse density increases near transit stations with Minister's Zoning Orders, are hard to imagine in the California context. The state's strong "home rule" tradition has mitigated against many recent legislative efforts to assert stronger state-level policy intervention over land use, such as by mandating upzoning near all high-quality transit stations, a state legislative proposal that sparked intense conflict statewide, even reaching the front pages of the *New York Times*.

However, the political controversies that have surrounded the proposed development in the Greenbelt, widely viewed as having been motivated by interest in helping developers, point to shortcomings of the Westminster system. At the local level as well as the provincial scale, research indicates that planning and policy-making to induce TOD is often politicized: Biggar and Siemiatycki (2020, p. 197) found that the negotiation of density bonuses with developers in the City of Toronto through community benefit agreements has mainly been the purview of ward councillors – not city planners – and public perception of the process has prompted many commentators to refer to it as "let's make a deal planning." The authors contend that "the high volume of cash transactions put aside and pooled for future community benefits makes it unclear whether a rational 'nexus' between a proposed development and the location of public benefit will transpire" and that "the site-specific composition of this planning activity in Toronto is indicative of…'splintered planning'…[and] one-off deals that create a fractured and disconnected vision for [the] city."

Comparing Ontario to California, it is evident that TOD is politically controversial in both places, but for somewhat different reasons. In California, as in Canada, many conflicts have been localized, involving NIMBY resistance to upzoning and density, as well as concerns about gentrification and displacement. In California, the political conflicts have also been elevated to the state-level policy arena, as the state has been attempting to exert a more assertive role in promoting housing production, such as through mandating systematic upzoning near transit.

In Canada, by contrast, the controversy and politicization of TOD at the provincial level has been more part and parcel of both provincial and local policy-making that is perceived as self-interested and lacking transparency. While controversy over TOD policy in California can be very protracted and hard to resolve, it is relatively more useful, at least over the long run, for debates to address differences in perceptions of policy priorities and objectives, rather than mainly concerns about lack of trust of self-interested politicians and untransparent decision processes.

In short, Canadian and American urban areas and regions share a number of concerns, and the U.S. MPO framework – and California's SB 375 framework in particular – could serve as starting points for discussions about planning processes that would deliver well for Canada's metropolitan regions. Canadians could adjust policies to avoid problems that the U.S. has encountered and take advantage of Canadian laws, funding, and political practices that would facilitate effective implementation.

5. LEARNING FROM CALIFORNIA: APPLICATIONS FOR THE CANADIAN CONTEXT

In the U.S., the MPO governance structure and planning process has provided an effective venue for the emergence of sustainability-oriented regional planning in many U.S. regions, notably in California. MPO planning has evolved to produce performance-oriented multimodal plans and programs supporting projects that implement the plans, are coordinated with land use and urban development, and meet important federal and state performance goals. We have identified weaknesses as well as strengths in how the model has evolved and been implemented in California. But we believe that planners and policy-makers in other states/provinces and regions can learn much from this "recipe" for sustainability planning.

Although some Canadian metropolitan areas have adopted elements of this planning approach, Canada has not put in place a similar national framework for ongoing, iterative/cyclical, performance-oriented planning that integrates goals and objectives for both multimodal transport and land use, and which links plans and priorities from the provincial to the regional and the local scales, in furtherance of clear performance goals. Observers of planning in Ontario have underscored the need for a process of this type, especially for the Toronto metropolitan area. In particular, Siemiatycki and Fagan (2019) recommend (in sum):

- Thinking regionally in terms of structures, and thinking locally less, especially when it comes to narrow self-interest;
- Establishing clear objectives for planning and metrics for evaluating performance of the choices being made;
- Increasing the importance of evidence in developing and evaluating policies and actions, drawing examples from like-minded countries and cities as well as from local data;
- Improving service coordination among transit agencies and across all modes of transportation;
- Integrating transportation and land-use planning more effectively by encouraging mixed-use, transit-oriented development near rapid transit stations and land use patterns that support cycling and walking;
- Optimizing public engagement and transparency while guarding against process stasis;
- Ensuring that the GTA enjoys stable, coordinated, predictable long-term transit funding from the federal and provincial governments and through other funding mechanisms, for both new construction and ongoing maintenance.

In part this difference from the U.S. approach is due to the difference in systems of governance and funding channels. Unlike in the United States, where federal money has constituted the backbone of many major infrastructure initiatives, it is the provinces who have historically provided the lion's share of funding for urban infrastructure over the last six decades in Canada, with responsibility to build and maintain systems shifting over time toward municipalities (Doern, Stoney, and Hilton, 2021). In another key difference, provincial governments are not constitutionally required to pass balanced budgets as many states are, and can run deficits to fund large-scale programs.[13] As a result, provinces have been less reliant on federal funding in Canada than in the United States, which

has limited the conditions Ottawa could place on funding transfers. However, with the Permanent Transit Fund as a predictable and dedicated funding channel, the federal government can provide an incentive to regions to coordinate and prioritize as a condition of funding.

Below we spell out and summarize key elements of what we think an effective regional planning model for sustainable development should incorporate.

1. FEDERAL DIRECTIVES, FUNDING, AND INCENTIVES SHOULD ESTABLISH THE FRAMEWORK FOR REGIONAL PLANNING AND MOTIVATE ACTIVE COLLABORATION WITHIN IT, WITH PROVINCIAL BUY-IN.

The promise of steady and predictable funding through the Permanent Transit Fund provides an incentive for collaboration, but regions also need a guarantee that a 3-C type structure of continuing, cooperative, and coordinated planning will be honoured in the long term to encourage problem-solving *within the context of the region* as opposed to through individual agreements with the federal and provincial governments. Though side deals are a political reality, linking the majority of funding to regional collaboration can provide legitimacy to new regional governance structures. Harmonizing the PTF with other infrastructure funding packages could also streamline the planning process and make for more efficient collaboration. It is important that both federal and provincial governments buy in to the regional process and lend it political support through a combined framework or authority: building such a structure will be an important step in the PTF process. Municipalities also have a role to play in recognizing that they have a strong, collective voice that can serve as a counterweight to provincial power, but only if they work together.

In addition, while provinces have constitutional authority over municipal affairs, and may already have established regional structures in certain policy areas, they must be encouraged to devolve further authority for the process to local actors, while establishing a framework and a mandate for collaboration and preserving that space as the main venue for integrated problem-solving. Regions also need a degree of autonomy to establish their own governance structures. Representation from federal and provincial governments, while useful, should be limited: regional planning organizations must be genuinely regional in composition to represent local preferences and avoid the perception of political interference or an “agenda” from other orders of government. Reflecting on feedback from our interviews, there is little incentive to collaborate when regional actors perceive a risk that their plans and decisions will be overruled or made redundant by a change in government. Part of establishing the frame is assuring that there are clearly articulated policies and objectives for plans and project selection, rather than decisions made based on personal relationships or logrolling, because a clear policy frame will contribute to the legitimacy of the planning process in the eyes of both participants and the public.

2. THE GEOGRAPHICAL SCOPE SHOULD REFLECT THE ECONOMIC REGION. THE TOPICAL SCOPE SHOULD COVER ALL TRANSPORT MODES AND THEIR INTER-RELATIONSHIPS TO LOCATION AND LAND USE ALTERNATIVES.

In order for integrated planning to be effective, each region should encompass the whole commute shed. In Toronto, ongoing collaboration would ideally include the communities covered by the Greater Golden Horseshoe and Places to Grow plans, which also overlap with the Metrolinx service area. With a large number of cities and multi-tiered governance structures, such a collaboration will not be easy, but has the potential to make greater progress and more efficient use of infrastructure.

Any transit plan must be combined, and evaluated together with other transportation modes, such as highway and active transportation, as mode choice often represents a tradeoff for both investors and commuters. Plans also should consider land use and development alternatives and evaluate how transportation options will affect location and land use decisions, and vice versa. The current practice in Ontario of investing in highway and transit expansion simultaneously has been an expensive exercise in continuing current mode share patterns, as drivers have no incentive to change their behaviour until traffic growth reduces highway performance again. The province's Draft Transportation Plan for Southwestern Ontario provides a useful example of what a multimodal plan might look like for this area (though could be improved upon as it fails to include land use and is at too large a scale to be locally representative).

Partially in response to high housing costs, Toronto's commute shed is expanding rapidly, just as the San Francisco Bay Area's did in recent decades. MPOs in that region began to overlap and have had to develop new working relationships in order to provide transportation infrastructure that connects their jurisdictions to effectively serve the population moving between them. Canada can prepare for future changes of this kind by periodically evaluating the size and representation of a regional structure and establishing mechanisms allowing it to evolve as commute patterns shift.

3. THE DECISION-MAKING TEAM SHOULD INCLUDE ELECTED OFFICIALS SUPPORTED BY TECHNICAL EXPERTS.

Elected officials are important to lend legitimacy to the decision-making process. Whether elected or appointed, the selection of representatives must credibly represent local interests, and bypass the current debates about single-tier or two-tier structures in the regions surrounding Toronto. This includes areas within cities that have traditionally not been well-served by transit, such as Scarborough. The unofficial Mayors' Council that emerged in Toronto during COVID is an example of the kind of local structure that could be formalized, expanded, and staffed to establish a truly regional body.

MPOs in the U.S. usually include other key stakeholders on their policy boards, including transit operators and freight service providers, and federal and state officials often sit ex officio. A successful regional body for the Toronto region should at a minimum incorporate leadership from Toronto's different transit bodies (where it does not eliminate these organizational boundaries altogether). The TransLink structure in Vancouver serves as a successful example here, with oversight from a Mayors'

Council on Regional Transportation and two additional members appointed directly by the province (Tremblay-Racicot et al., 2023).

The work of developing detailed plans also calls for a permanent and politically agnostic staff of subject matter experts. Successful MPOs such as MTC in the Bay Area employ a sizeable professional planning staff to advise board members. Most MPOs also augment their staff from time to time by bringing in additional experts on specific issues of concern, such as new technologies or travel needs of older people.

Part of the reason Metrolinx has not been able to serve as a truly regional body, despite having the right geographical scope, is because it is perceived as lacking this independent expertise. Its mandate and operational remits are also separate from the region's largest transit system (the TTC), stymying efforts toward truly integrated regional transit. Reforming Metrolinx in the Toronto area might take the form of returning to a version of its original governance structure, which included elected officials from across the region on its leadership team – elected officials were instrumental in creating The Big Move, the organization's first comprehensive regional transportation plan.

4. ALL ORDERS OF GOVERNMENT SHOULD ADOPT PERFORMANCE MEASURES TO PUT THE FOCUS ON ACHIEVING DESIRED OUTCOMES.

Defining a set of outcome-oriented goals and associated performance objectives and measures for desired development patterns, addressing land use and transportation in a coordinated fashion, and identifying key environmental, economic, and equity implications are critical to effective sustainability planning. Establishing a policy framework focused upon achieving integrated, outcome-oriented goals for multimodal transport and land use in a regional framework can help ensure that inter-governmental collaboration is directed to achieving agreed-upon goals, rather than getting distracted by disputes about respective roles and institutional authorities. SB 375 provides an example of such an approach, where the focus of state policy is a mandate for regional cooperation to achieve an outcome-oriented performance target for GHG reduction, without micromanaging how regional agencies and localities should work to implement it. The key to success is identifying a limited number of simple goals from the beginning, and linking transportation spending to which strategies can most effectively reach them. The end goals – whether in air quality, land use, housing production, or congestion reduction – must come first.

Federal air quality mandates propelled the MPO framework to advance toward a sustainability orientation, and SB 375 built upon and extended that focus to include greenhouse gas reduction (through efficient development patterns) and affordable housing. Other federal and state laws have added requirements for attention to economic impacts, civil rights, and additional social and environmental policies, and many MPOs include additional performance measures on issues of regional concern (such as vulnerability to sea level rise or fire risk) in evaluating their plans and implementation progress.

In Canada, an important step is to link federal climate goals with the actions cities can take, and make these goals binding at the regional level so cities understand how the policies and projects they are proposing contribute to meeting national targets. The federal government can also provide guidance

for how it will prioritize plans, and which measures it perceives have the most potential to achieve the "3 Es" of sustainability – economy, environment, and equity – simultaneously. Clearly articulated aims will help to focus regional conversations and planning, and jumpstart their own prioritization processes.

5. DIFFERENT ORDERS OF GOVERNMENT SHOULD CAREFULLY IDENTIFY IMPLEMENTATION MEASURES BASED ON RELIABLE EVIDENCE OF WHAT WORKS AND MUST ACKNOWLEDGE WHAT ACTIONS MUST BE TAKEN, BY WHOM, TO ACHIEVE DESIRED OUTCOMES.

Implementation measures (policies, programs, and projects) for achieving plan goals should be identified based on empirical evidence about which strategies have been shown to work for achieving sustainable development goals. For example, SB 375 explicitly advanced, for MPOs to consider, a "policy package" of synergistic elements that have been found, based on research, to be effective in supporting sustainable development patterns, including road and parking pricing strategies; funding for transit and active transport; travel demand management programs; and compact land use, especially located near transit. However, regions must also be empowered and supported from the federal level to do what actually works to achieve overarching goals within differing circumstances and conditions – and even when some policies are politically unpopular, such as road tolls or parking restrictions near transit.

In the U.S., the elements of such policy packages require action at multiple levels of government, because authority for growth management has been divided, for example with localities controlling land use. The same is true in Canada: decision-making and responsibility are shared across different orders of government and partnership is critical for success, as can be seen in the Vancouver approach which has incorporated local government input and oversight of regional transportation planning in support of successful strategies and outcomes.

6. THE EVALUATION PROCESS SHOULD INCLUDE MULTIPLE, SOPHISTICATED ALTERNATIVE PLAN SCENARIOS AND PROJECT ALTERNATIVES.

Scenario planning, which consists of evaluating alternative scenarios of "packages" of transport options in conjunction with alternative land use options, is critical to evaluating and understanding the implications of plan choices for achieving performance goals (e.g. for VKT, air quality, housing affordability, and more). In addition, specific projects (especially large ones) can also be evaluated and compared for performance through such a plan-making process, in the fashion recently adopted by the San Francisco Bay Area MPO.

Decision-makers need to be able to evaluate, select, and communicate their recommended investments thoughtfully, which this sort of evaluation process makes possible. Effective scenario planning requires good data from many sources (on expected job growth, housing, current travel behaviour, and current road and transit use), as well as models and other analysis tools that will support the prediction and assessment of future conditions under different scenarios. Capacity to do

this differs widely across and even within regions. Finding and synthesizing the needed information can be a hurdle even in larger areas: we have heard repeatedly that access to consistent, high-quality, easy-to-use data is an issue and that modelling has always been done in a dispersed or even fragmented way. In Toronto, for example, the provincial and municipal governments currently use different models. In order to move ad hoc project planning to integrated systems planning for land use and transportation, the federal government could offer guidance about where information can be found and how it should be used, to create a consistent evidentiary base that underpins useful dialogue.

Both data and decision-making must also be transparent so the public can understand and engage with plans. Some existing agencies and planning processes have been criticized as opaque or failing to incorporate local perspectives. Broadening access to data also helps democratize the process.

In California, pressures from advocacy groups have helped to propel MPOs to consider a wide range of urban futures and more detailed and sophisticated analyses of social and environmental impacts. Toronto is fortunate to have a public that is engaged in, and well informed about, transit issues, and which has been willing to offer credible opinions about how transit planning should proceed. As an example, in the space of 18 months in 2013 an extraordinary number of proposals were advanced to address the issue of sustainable financing for Metrolinx, including by the Toronto Board of Trade and a specially-convened Transit Investment Strategy Advisory Council, in addition to the one prepared by the organization itself. In addition to showing the importance of transit to a variety of actors in the region, they also evidenced a broad level of agreement that the burden for transit funding should be shared across the region and by a variety of groups, from businesses to property owners to drivers.[14] Encouraging such stakeholder participation and tapping into their insights will be critical to ensuring public buy-in and advancing regional goals.

7. EXPERTS AND KEY STAKEHOLDERS NEED A SEAT AT THE TABLE.

Researchers from area universities have frequently played important roles in collecting and organizing critical data, developing and implementing sophisticated analysis methods, assisting in policy design, and conducting evaluation studies. Their advice and assistance in developing databases, models and analyses, and policy options can be invaluable. In addition, incorporating input from other key stakeholders into a regional conversation provides another critical form of expertise on issues related to improving economic prospects, multimodal connectivity and alignment, affordable housing, neighbourhood character, and more.

The Toronto area is fortunate to have one of the best model systems in the world at the University of Toronto's Transportation Research Institute, and a number of municipalities in Ontario are already using it for planning. The next step is to coordinate this modelling and planning on a broader scale. Various regions in the U.S. have also benefited from such models being publicly available: in addition to introducing transparency into the planning process, they allow external researchers to probe the assumptions within the model and propose alternate suggestions.

8. FLEXIBILITY IN ORGANIZATIONAL ARRANGEMENTS CAN ACCOUNT FOR DIFFERENT LOCAL CULTURES.

Structures need to be sufficiently consistent across the country to allow the federal government to compare them, prioritize funding for specific projects, and ensure fairness, yet flexible enough to be responsive to local variation. In Canada, working with the provinces to align federal targets with provincial priorities is a constitutional necessity, but can also help to legitimize the planning process by linking transit to provincial goals such as housing construction.

In the U.S., MPOs were established by building upon regional planning institutions where they existed, or by establishing collaborations among state and local entities that gradually developed into formal organizations. New regional agencies created through state action have been rare. Over the years, additional guidelines were developed for MPOs' institutional arrangements and planning processes as experience showed what was effective, with the basic framework remaining unchanged but additional provisions added to accommodate and respond to differences in the problems and needs of the varied metropolitan areas. Adapting to the realities of the Canadian landscape will likewise require flexibility in organizational design. Canadian urban areas vary significantly in size, capacity and resources, and some have already established regional planning processes to varying degrees. While this may appear to make it difficult to develop and implement a nationwide approach to regional sustainability planning, the U.S. experience suggests that focusing on desired engagement in planning and decisions, and on measures of performance for desired outcomes, can be a workable way forward.

In Canada, regional governance frameworks can evolve from existing metropolitan arrangements that are supported by provincial governments, such as the Metropolitan Region Boards of Alberta or the Regional Service Commissions found in New Brunswick, which already have local government participation and which are authorized in provincial law. This would allow regions to work through and build upon the existing institutional arrangements, while applying consistent performance metrics to measure progress. While provincial governments vary in size and involvement in regional planning, it is difficult to imagine any infrastructure prioritization program being successful long-term without their political support. However, grounding metropolitan investments in a regional plan would likely result in a more strategic and cost-effective set of investments than the current project-by-project approach has produced. It also would provide flexibility in what specific actions are taken, to better match investments to the local and regional environment, social conditions, and political needs.

9. GOVERNMENTS AT MULTIPLE LEVELS NEED TO MAKE SECURE COMMITMENTS TO SHORT- AND LONG-RUN IMPLEMENTATION MEASURES.

The process does not work if agencies at multiple levels of government do not make secure commitments to carrying out the implementation measures adopted in the plan. This has been a key lesson of SB 375, as detailed in this paper. Secure commitments require not only identifying ongoing and stable funding sources and regulatory provisions, but also linking short-run actions to ongoing progress in long-term plan implementation, so as to ensure that plan strategies are not deferred to "out years" of the plan and are instead phased to ensure a trajectory of accomplishment on the way toward long-run goals.

10. MONITORING NEEDS TO BE CYCLICAL AND TRANSPARENT TO ALLOW PROCESSES AND PROPOSALS TO BE UPDATED OVER TIME.

Short-term progress needs to be monitored and constantly evaluated in reference to achieving long-term goals. When short term progress is found to be "off track" for achieving long-term plan goals, then consequences need to be applied to ensure that plan stakeholders get back on track. While the U.S. system – with its separate executive and legislative branches – provides a built-in mechanism for progress-tracking through the different branches of government seeking to hold each other to account, the fusion of executive and legislative branches within the Westminster system makes this kind of reporting back less common, particularly if limited progress has been made. One mechanism to encourage more accountability could be between orders of government, with required reporting of outcomes for federal-provincial-regional projects. Making such reports publicly available would be a break from current practice, but could bring more transparency to the process of planning and funding major projects.[15]

The U.S.' and California's experience are stories of evolution, not revolution. Legal and regulatory requirements have been gradually ramped up, as regional organizations and their local, state and federal partners have built up a body of experience on successes and failures and have identified best practices. Regional models in Canada may not fully realize comprehensive, integrated planning from the outset, but can take the opportunity of the PTF to establish an institutional framework that will encourage information-sharing and build trust, and which can be iterated upon over time.

Further research on the prospects for regional planning in the Canadian context could produce valuable insights. In particular, a closer look at the land use and transportation planning currently being done in the major metropolitan areas listed in Table 1 could uncover institutional arrangements, planning strategies, and implementation measures that could be of value in other Canadian metropolitan areas. In addition, further analysis is in order to evaluate the degree to which U.S. experience transfers to the Canadian context with its parliamentary system of governance, a smaller federal presence, and fewer but perhaps institutionally stronger provinces than their state counterparts.

ENDNOTES

1. In addition, there is something of a tradition for Toronto and the San Francisco Bay Area to compare notes on regional planning: See "A critical commentary on metropolitan transportation problems," Bay Area Rept. to the Toronto Centennial on Metropolitan Problems, prepared by the Inst. of Governmental Studies, University of California, Berkeley, p. 12, June 1967.

2. Toronto's Greater Golden Horseshoe includes the counties and regions surrounding the Greater Toronto Area with a total population of 9.8 million people. For comparison, the San Jose-San Francisco-Oakland Combined Statistical Area, which comprises the planning area for the Bay Area's MPO, has a population of 9.7 million. Both metropolitan areas are centres of innovation, education, and immigration.

3. See for instance https://canurb.org/publications/the-state-of-canadas-cities-report/

4. Much of the early lobbying for street paving and other street improvements was undertaken by cyclists before the automobile became a predominant force in urban areas.

5. Later critics also noted that the plan was advocated by urban elites and that their values, rather than the values of the population more broadly, were reflected in the plan's objectives and projects. See, e.g., Kantor, 1973.

6. ISTEA was followed by the Transportation Equity Act for the 21st Century (TEA-21) in 1998, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, the Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012, the Fixing America's Surface Transportation Act (FAST) in 2015, and the Infrastructure Investment and Jobs Act in 2021.

7. With the state Governor's consent, areas with a smaller population may opt to be designated TMAs.

8. Federal law does not permit areas that are nonattainment for U.S. air quality standards to change MPO planning boundaries without specific permission, because Clean Air Act provisions require ongoing monitoring and reporting of air quality and air quality plan implementation; changing the boundaries would lead to inconsistencies that could make progress tracking difficult or impossible.

9. Specific situations in which formal agreements are required by federal rules include multiple MPOs in a single air quality nonattainment area; multiple MPOs in a single urbanized area; an urbanized area whose boundaries are primarily in one MPO but extend into another MPO; and (case by case) the situation where a federally-funded transportation project would cross MPO boundaries.

10. Issues include which MPO will make the decisions on plans for the overlapping areas and how the funding and staffing for the overlapping planning and projects will be provided (Morley et al., 2020).

11. Under current federal law, MPOs select all transit and highway projects except those on the National Highway System (Interstates and other major facilities), those in tribal lands, and those on federal lands (23 CFR 450.332).

12. See https://www.hcd.ca.gov/grants-funding/active-funding/reap2.shtml.

13. In California and a number of other states, local option transportation sales taxes, mostly enacted at the county (subregional) level, became a major source of funding in the 1980s and thereafter, as federal and state funding declined as a share of most transportation project costs. The dominance of local funding has been identified as a factor in resistance to strong state and federal direction of planning processes. Even so, securing federal funds has remained an important objective and the continuing availability of such funds is contingent on metropolitan planning, which helped keep the MPO planning process relevant and local officials engaged.

14. Each of them also called for a far greater role for the federal government in financing transit through a permanent fund, which indicates a certain alignment with the goals of this program, in addition to each other.

15. The authors are grateful to Zack Taylor for his comments on this point.

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ACKNOWLEDGMENTS

We are grateful to Professor Karen Chapple of the University of Toronto's School of Cities for commissioning this paper, and to her and her staff for organizing a discussion session on the draft paper in October 2023. We learned a great deal from the nine experts who discussed Canadian metropolitan planning issues with us in interviews, as well as from the discussion with session participants, who provided many valuable comments and suggestions, However, we are solely responsible for the content of the paper and for any errors or omissions that may remain.

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SCHOOL OF CITIES WORKING PAPERS, NO. 1, 2024