Task 3: State of the Practice Memorandum

21P098: Metropolitan Council Regional Travel Demand Management Study

May 2022

Prepared for the Metropolitan Council

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Introduction

This State of the Practice review was undertaken to inform the development of strategies for the Metropolitan Council Travel Demand Management (TDM) Study. The review identifies innovations and best practices in the TDM industry, both in the United States and abroad, while also focusing on topics and strategies that have the potential to fit with the current needs of the Twin Cities metropolitan region.

Overview

The study team conducted a review of TDM programs, structures, and best practices from across the United States. This review was conducted through an extensive literature review, as well as conducting interviews with peer agencies. Given the focus of the Metropolitan Council's TDM Study on exploring TDM at the regional level, rather than merely identifying individual peer programs with best practices to interview, the team selected peer regions for inclusion in the research. Regions were selected based on their national leadership in TDM and their similarity to the Minneapolis-St. Paul region, either in the number and types of actors undertaking TDM activities (e.g., metropolitan planning organization involvement with local Transportation Management Associations or municipal programs) and/or other service area characteristics (e.g., located in the Midwest).

The State of the Practice Review was conducted via three methods: an extensive literature review, interviews with TDM program partners in peer regions, and utilizing the ICF Team's extensive operational knowledge from work in two peer regions: Atlanta, Georgia, and Washington, DC.

- This TDM State of the Practice review included the following topics, selected via the consensus of the Project Management Team: **Regional Coordination and Service Delivery**: Program structures, roles and coordination, funding, evaluation
- **Policies and Legal Requirements**: Land Use, Complete Streets, Trip and Vehicles Miles Traveled (VMT) Reduction
- **Roadway Management**: TDM for Corridors/Districts, Road Pricing and Tolls, Cordon Area Congestion Pricing, Curb Management, Parking Management
- **Incentives, Marketing, and Communications**: Transit Reduced Fare Programs for Employers and Neighborhoods, Gamification, Marketing Campaigns, Innovative Incentives, Wayfinding and Navigation

While there was interest in exploring infrastructure enhancements (e.g., bus priority), a decision was made to focus on the organizational, policy, and incentives/marketing components of travel demand management given the range of recent and ongoing work on sustainable transportation infrastructure planning and projects in the Twin Cities region. Finally, utilizing information collected via the literature review, TDM best practices in three international locations (Germany, Vancouver, Canada, and New South Wales, Australia) are profiled.

Methodology

Literature Review

Information from best practice programs (including websites, plans, evaluation reports) as well as other forms of literature was reviewed in the development of the state of the practice report sections on policies and legal requirements, land use, roadway management, and incentives, marketing, and communication. In total, 87 peer best practices were reviewed in

the literature review. Findings of the literature review aided in the determination of which peer regions were selected for interviews and further research.

Interviews with Peer Regions

The interviews with peer regions were used to develop a profile for the regions selected for inclusion in the "regional coordination and TDM program structures" section, as well as in the development of information on best practices in the subsequent section of the state of the practice review.

Table 1 provides a list of all peer regions and agencies interviewed. Where possible, several agencies from a peer region were interviewed in a group interview. No interviews were conducted in the Atlanta or Washington, DC regions, given the extent of the ICF team's prior interviews as well as past and present work in these regions. ICF is currently leading the development of a Regional TDM Plan for the Atlanta region, while ICF and subcontractor Foursquare ITP have completed numerous interviews with the Metropolitan Washington Council of Governments (MWCOG) and are currently conducting planning work for MWCOG. Foursquare ITP also currently operates the District of Columbia's TDM program, goDCgo.

Table 1: Peer Region Interviews

Region	Peer Agency/Agencies	Interview Date
Columbus, Ohio	Mid-Ohio Regional Planning Commission (MORPC) and the Capital Crossroads Special Improvement District (CCSID)	March 30, 2022
Denver, Colorado	Denver Regional Council of Governments (DRCOG) and Denver South Transportation Management Association (TMA)	May 4, 2022
Los Angeles, California	Southern California Council of Governments (SCAG)	March 28, 2022
San Diego California	San Diego Association of Governments (SANDAG)	April 19, 2022
Seattle, Washington	Washington State Department of Transportation (WSDOT)	March 28, 2022
Seattle, Washington	Seattle Department of Transportation (SDOT)	March 28, 2022
Seattle, Washington	Commute Seattle	March 30, 2022

Prior to each peer interview, a customized questionnaire along with a summary of their existing TDM structure, programming, and best practices based on the literature review was provided to the interviewees. Each interviewee was provided with the opportunity to review the interview notes and provide desired corrections to the study team.

Travel Demand Management State of the Practice

Regional Coordination & TDM Program Structures

Regional TDM Delivery

The delivery of TDM programs, services, and individual tools varies due to demand (such as the need for employer support to meet local or regional requirements), funding, population and traffic congestion, and the availability of complementary programs and services, such as public transit and transportation management organizations or associations. In each of the regions reviewed, the MPO plays a key role, yet their specific roles vary, including roles that are limited to funding and grant administration, roles that include regular coordination and program oversight, and in some cases, direct administration and implementation. **Table 2**

provides a summary of how travel demand management services are delivered by the various partners in the peer regions reviewed. In several regions (e.g., Atlanta, Denver) the MPO is the primary funder of TDM services delivered by local TMAs, while also providing some TDM services (e.g., ridematching) region wide. In other regions (e.g., Washington, DC) the MPO provides some services that are likely best provided regionally (e.g., ridematching database, larger-scale incentive programs), the delivery of most TDM services are provided via local jurisdiction TDM programs. In yet other regions (e.g., Columbus, San Diego), the MPO is the primary agency responsible for delivery of TDM services, including direct outreach to employers, region wide.

Table 2: Summary of MPO Role in Regional TDM Delivery

Region	Summary of Regional TDM Delivery
Atlanta, Georgia	Atlanta Regional Commission (ARC) administers regional TDM investments and coordinates TDM programs, services, and policies at the regional level, including direct management of Georgia Commute Options, the 20-county region TDM program, and the seven local transportation management associations (TMAs). In order to receive funding, TMAs are required to conduct standardized commuter surveys with employers, provide clean commute percentage data to be used for programmatic impact analysis, highlight and track innovative TDM efforts in their outreach territories, and participate in monthly TDM stakeholder meetings.
Columbus, Ohio	Mid-Ohio Regional Planning Commission (MORPC) is the primary provider of TDM services region wide, including ridematching, incentives, and marketing. MORPC convened the Central Ohio Mode Shift Coalition to bring together all actors whose work includes elements of or impacts TDM in some way. This coalition includes the Central Ohio Transit Authority (COTA) and CCSID, who are MORPC's partners in the delivery of the C-Pass Downtown Transit Pass.
Denver, Colorado	Denver Regional Council of Governments (DRCOG) acts as the central hub in the Way to Go partnership, which is executed through memoranda of understanding with seven local TMAs. In areas where there are no TMAs, DRCOG manages advertising, vanpool, guaranteed ride home, schoolpool (carpool to school), trip planning, and outreach. Where present, TMAs manage local outreach, campaigns, and events and provide reporting. DRCOG holds monthly meetings between stakeholders, including local TMAs, the Regional Transit District, and sometimes Colorado DOT. These meetings are a forum to discuss common goals and exchange information.
Los Angeles, California	The Southern California Association of Governments (SCAG) is the MPO for the six-county Los Angeles region. As the MPO, they focus on planning and do not fund or operate TDM programs. TDM services are funded and delivered by each county transportation commission. SCAG convened a technical advisory committee to support the development of the 2019 TDM Strategic Plan. The committee consisted of local governments, agencies, advocacy organizations, and service providers. In 2021, SCAG formed a TDM Data Standards Technical Advisory Committee to assist in moving towards a data standard and/or a regional TDM database. There are two Air Quality Management Districts with transportation ordinances in the Los Angeles region. The South Coast Air Quality Management District (SCAQMD) has Rule 2202 that requires employers with 250 or more employees to meet average vehicle ridership (AVR) targets or purchase emissions credits ($46/month per employee). The

	Ventura County Air Pollution Control District has Rule 211 which requires employers with 100 or more employees to survey and report about their employees' commute habits and work to encourage sustainable transportation in their employee populations. These ordinances have served to establish a core set of employer-based TDM services in the region.
San Diego California	The San Diego Association of Governments (SANDAG) is the MPO for the San Diego region, including 19 local governments, transit agencies, and tribal associations. SANDAG administers several TDM programs, including guaranteed ride home, bike parking, and vanpool programs. SANDAG also manages iCommute (using a contractor), the region's TDM program, which includes employer outreach and regional marketing programs.
Seattle, Washington	Washington State DOT funds and administers the statewide Commute Trip reduction program. Puget Sound Regional Council (PSRC), the MPO for the four-county central Puget Sound region of Washington State, develops a regional transportation vision, distributes funding in the regional TIP, and provides data for decision-making. Seattle DOT leads many TDM efforts across the city to reduce single-occupancy vehicle travel, such as a broad-based "Flip Your Trip" campaign for West Seattle, South Park, and Georgetown; a telework-focused "Move the Needle" campaign; and a Transportation Equity Program. Seattle DOT collaborates with transit agencies, businesses (including small- and mid-size), transportation network companies, TMAs, property managers, and more. Commute Seattle, and three other TMAs in the region, administer local TDM services to employers and commuters. Much of Commute Seattle's work is funded via contracts with the PSRC and Seattle DOT.
Washington, DC	Metropolitan Washington Council of Governments (MWCOG) provides the regional ridematching database, regional carpool and vanpool incentive programs, the IncenTrip incentive application, delivers the triennial "State of the Commute" regional survey, conducts annual employer surveys, runs a regional awards program for employers and top performing TDM programs, and convenes several regional TDM committees to facilitate collaboration among local TDM programs. Each locality in the Washington, DC region operates their own TDM program, funded with state and local funds.

Range of TDM Program Structures

Each peer region has a different approach to how local and regional TDM services are defined and delivered. However, in each example there is a clear delineation between the regional (typically the role of the MPO) TDM services and services that are delivered locally.

Atlanta, Georgia

The Atlanta Regional Commission (ARC) administers its TDM program on both a regional and local scale. At a regional scale, ARC administers regional TDM investments and coordinates TDM programs, services and policies through its Mobility Services Group, with oversight from Georgia Department of Transportation (GDOT). Georgia Commute Options (GCO) is a regional TDM program that ARC manages, which covers a 20-county region. In addition to GCO, there are locally focused programs administered by Transportation Management Associations (TMAs), often operated by non-profit organizations, community improvement districts, private developers, property managers, and government agencies. These TMA-administered programs are partially funded by ARC but also leverage

membership fees or local funding, and tailor their programs to the unique needs of those in the area.

ARC has also assembled a TDM Coordinating Committee to provide external guidance for TDM planning and programming, while also reinforcing alliance with the ARC Regional Plan. This committee includes employers, transit providers, government representatives, consultants and other key stakeholders.

Additionally, ARC is working with the Georgia Regional Transportation Authority, the Atlanta-Region Transit Link Authority (ATL), and several other local transit providers to develop ATL RIDES, a multi-modal open trip planner mobile app. This app will include live navigation, integrated mobility payment options, and information about a variety of cross-modal options. Customers will be able to compare estimated timing, costs (including gas for driving options), and environmental impacts across all options, which will include all regional transit services, multi-modal links, active transportation, and first and last mile links. A connected data platform will facilitate data-sharing across agencies.[1]

Columbus, Ohio

The Mid-Ohio Regional Planning Commission (MORPC) is the Columbus, OH region's metropolitan planning organization. MORPC covers two counties (Licking County and Delaware County) which include urban, suburban, and rural areas. MORPC is responsible for leading TDM initiatives in the Columbus region with the primary purpose of encouraging employees not to drive alone to/from their place of employment. Its Gohio Commute is the TDM program that allows commuters within the Columbus region to identify and learn about non-SOV modes of transportation to/from work.

Beyond the Gohio program, the Columbus region has had many mobility initiatives (including Smart Columbus). The Central Ohio Mode Shift Coalition is "a regional umbrella for organizations that wish to promote the advancement of TDM within the Central Ohio region." The Coalition's voluntary members are comprised of transportation partners in central Ohio; transit agencies; private transportation companies; and local municipalities. Members benefit from frequent coordination; information exchange; growing technical expertise; and having a seat at the table to shape regional TDM policy. Private operators see their membership as an opportunity to increase ridership on their vehicles and bikes through networking and increase awareness among other members. This consortium will develop into a hub of discussion and research that will help expand upon current TDM activities by exploring new policies and TDM implementation techniques." The Central Ohio Mode Shift Coalition has proved very helpful in ensuring that TDM work is implemented in a collaborative fashion by all partners, across all of the different projects and initiatives that are being implemented at the different levels of government and partner organizations (local government, the Central Ohio Transit Authority, private transportation providers, Ohio DOT, advocacy groups etc.). The creation of the Mode Shift Coalition has led to more thoughtful implementation.

Denver, Colorado

The Denver Regional Council of Governments (DRCOG) works with seven local transportation management associations to coordinate TDM efforts in the Denver region through the Way to Go program. The program was established in part to make efficient use

[1] Federal Transit Administration. 2020. "Integrated Mobility Innovation (IMI Demonstration Project." https://www.transit.dot.gov/sites/fta.dot.gov/files/2021-08/IMI-Fact-Sheets-final.pdf.

of federal Congestion Mitigation and Air Quality (CMAQ) funding,[2] which is passed from the United States Federal Highway Administration (FHWA) to the Colorado Department of Transportation (CDOT), and then to program participants. CMAQ is the most common way that TDM is funded in the region and CDOT distributes these funds and monitors how they are used.[3]

DRCOG acts as the central hub in the Way to Go partnership, which is executed through memoranda of understanding with the local TMAs. These MOUs provide structure and outline funding. DRCOG coordinates larger marketing campaigns which frees up TMAs to focus on local employers, since they have the best understanding of their communities.

Way to Go provides services for employers and commuters, including carpool, vanpool, and employer-supported Guaranteed Ride Home. Through free consulting services, Way to Go can also help employers identify the best routes and transit passes for their employees, along with sharing information about biking and walking strategies and flexible working options, including telework. For commuters, Way to Go also provides information on carshare and schoolpool, which connects neighborhood families to share school transportation responsibilities to participating schools.

Way to Go markets programs such as Bike to Work and Go-Tober, a gamified challenge to employers to have employees choose sustainable commutes during the month of October.[4] In 2021, 21 organizations participated in the challenge, tracking almost 9,000 trips, saving $47,000 in commute costs,[5] and eliminating almost 100,000 vehicle miles traveled.[6]

Los Angeles, California

The Southern California Association of Governments (SCAG) is the MPO for the five-county Los Angeles region. As the MPO, they focus on planning and do not fund or operate TDM programs. TDM services are funded and delivered by each county transportation commission. SCAG produced a TDM strategic plan in 2019; as recommended in the TDM strategic plan, SCAG convened a technical advisory committee to coordinate the numerous organizations delivering TDM programs and services.

There are two Air Quality Management Districts with transportation ordinances in the Los Angeles region. The South Coast Air Quality Management District (SCAQMD) has Rule 2202 that requires employers with 250 or more employees to meet average vehicle ridership targets or purchase emissions credits ($46/month per employee). The Ventura County Air Pollution Control District has Rule 211 which requires employers with 100 or more employees to survey and report about their employees' commute habits and work to encourage sustainable transportation in their employee populations. These ordinances have served to establish a core set of employer-based TDM services in the region.

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[2] DRCOG. n.d. "Working With Way to Go." Denver Regional Council of Governments. https://drcog.org/sites/drcog/files/resources/Working%20with%20Way%20to%20Go%202017_letterhead.pdf.
[3] DRCOG. n.d. "Frequently Asked Questions." Denver Regional Council of Governments. https://waytogo.org/about/frequently-asked-questions.
[4] DRCOG. 2022. "Way to Go-tober." Way to Go. Denver Regional Council of Governments. https://waytogo.org/gotober.
[5] DRCOG. 2021. "Way to Go-tober 2021 By the Numbers." Way to Go. Denver Regional Council of Governments. https://waytogo.org/sites/default/files/attachments/wtg-fl-gotoberbythenumbers-21-11-02-v3.pdf.
[6] DRCOG. 2022. "Way to Go-tober." Way to Go. Denver Regional Council of Governments. https://waytogo.org/gotober.

Each of the five counties in the Los Angeles metropolitan region have a county-based TDM program that is operated by a designated agency.

- L.A. Metro, the public transit agency in Los Angeles County, operates Metro Rideshare / Shared Mobility; services include carpool matching, vanpool services and incentives, guaranteed ride home, bikeshare and bicycling information, an ongoing incentives program for ridesharers (Metro Rewards), and employer services, including assistance with complying with Rule 2202.
- Orange County Transportation Authority operates OC Rideshare; services include telework information and resources, vanpool services and subsidies, and assistance with complying with Rule 2202.
- Ventura County Transportation Commission operates GoVentura; services include vanpool services, bicycle information, online tools and commute cost calculators, and a monthly commuter-oriented newsletter.
- Riverside and San Bernardino counties, commonly referred to as the Inland Empire, have partnered to operate IE Commuter; services include rideshare matching services, vanpool formation and incentives, and incentives programs (a $5/day incentives program for new rideshare registrants and a discount program for ongoing rideshare registrants).
- L.A. Metro, Orange, and Ventura counties have partnered to offer one rideshare matching system to commuters in their respective jurisdictions; Riverside and San Bernardino counties have partnered to offer one rideshare matching system to commuters in their respective jurisdictions.

San Diego, California

SANDAG manages and operates iCommute, the region's TDM program. SANDAG staff directly operate and administer several programs that fall under the iCommute brand, as well as manage and coordinate other elements, such as employer outreach, by way of contract. Through iCommute, SANDAG and their contractors provide commuter assistance, employer services, and support for local jurisdictions. SANDAG also owns and operates the "511" transportation information service, which provides 24/7 information on regional transportation conditions via phone and website, so the iCommute program frequently refers travelers to that service for supporting information.

SANDAG recently internally restructured the TDM program. Initially, TDM planning and operations were all part of one TDM division. Now, TDM staff roles are dispersed throughout different divisions, but the public-facing iCommute program will remain, to provide a one-stop-shop for traveler information. Employer relations, for instance, now falls under the Communications Division, and operations efforts fall under the Toll Operations Center. SANDAG manages a bike parking program, which includes nearly 700 lockers. SANDAG staff are focused on implementing TDM strategies from the regional plan.

SANDAG's regional plan focuses on "Five Big Moves:"

- Transit Leap: This strategy focuses on creating a "network of high-speed, high-capacity, high-frequency transit services" that is integrated with other modes and services.
- Complete Corridors: TDM-related elements of this strategy include managed lanes, active transportation facilities, and transit priority.

- Mobility Hubs: SANDAG has identified 30 Mobility Hubs based on land use, employment, demographics, and travel patterns, and will focus on creating infrastructure that connects people to high-quality transit services.
- Flexible Fleets: SANDAG is exploring how shared, on-demand transit services can enhance mobility within and between Mobility Hubs.
- Next OS (Operating System): Next OS is a vision for a centralized data hub that compiles information from a variety of modes and enhances individual trip planning as well as regional planning.

These five interdependent strategies set a vision for an integrated, multimodal transportation system.

Seattle, Washington

In the Seattle region, there are numerous actors that play legislatively mandated and/or otherwise very active roles in the delivery of TDM services. These include the Washington State DOT (through its administration of the state's Commute Trip Reduction law); the region's MPO, the Puget Sound Regional Council (PSRC); the City of Seattle's Department of Transportation (SDOT); and the Commute Seattle TMA, which serves downtown Seattle. Commute Seattle has contracts with SDOT and PSRC to deliver local TDM services, including employer outreach and property owner assistance. PSRC sets the strategic vision for the Puget Sound region, collects data, tracks performance, and coordinates with agencies and organizations throughout the region. PSRC's regional transportation plan notes that employers and major institutions, local jurisdictions, transit agencies, TMAs, WSDOT, and other transportation providers are involved in TDM implementation. For example, Pierce County, Pierce Transit and an Air Force Base, Joint Base Lewis-McChord, launched GO Transit to manage transportation demand on the base. The program offers free transit services, bicycles, and educational outreach. An average of 5,500 riders use the transit services each day.[7]

Washington, DC

MWCOG provides the regional ridematching database, regional carpool and vanpool incentive programs, the IncenTrip incentive application, delivers the triennial "State of the Commute" regional survey, conducts annual employer surveys, runs a regional awards program for employers and top performing TDM programs, and convenes several regional TDM committees to facilitate collaboration among local TDM programs. Each locality in the Washington, DC region operates their own TDM program, funded with state and local funds.

Funding

Table 3 provides a summary of how TDM is funded in the peer regions, as well as notes on funding limitations and funding levels over time where this information was available. While not unexpected, this review found that federal Congestion Management and Air Quality (CMAQ) funding is used to support TDM activities in all of the peer regions. However, there is also a wide range in other funding sources used to support TDM in the peer regions, including human services funds, voluntary private contributions, mandated developer contributions, in-kind donations from other public and private organizations, property owner

[7] Puget Sound Regional Council. 2018. "The Regional Transportation Plan. Appendix F: Regional Transportation Demand Management Action Plan." https://www.psrc.org/sites/default/files/rtp-appendixf-regionaltdmactionplan.pdf.

self-assessment within business improvement districts, commissions from the sale of transit fare media, state and local general funds, and non-CMAQ state DOT grants.

Table 3: Summary of TDM Funding Sources by Region

Region	Summary of Funding Sources by Region
Atlanta, Georgia	The Atlanta Regional Commission (ARC) funds the GA Commute Options program and grants for local TMAs with CMAQ funding, matched by non-federal funding from the Georgia DOT. TMAs are required to provide matching funding to receive CMAQ funding. The ARC uses CMAQ funding to purchase ride-matching software, licensing for a regional customer relationship management system, fund GRH rides, and maintain internal staff to support the program and oversee the TMA grants.
Columbus, Ohio	**MORPC**: Funds for TDM include CMAQ from the Ohio DOT (they typically receive the full request amount), Federal Transit Administration (FTA) Section 5310 (human services funding), local funds (which are used for activities that are not CMAQ-eligible), event/activity sponsorships from private organizations, and in-kind donations from Central Ohio Mode Shift coalition member organizations.
Columbus, Ohio	**CCSID**: The CCSID's C-Pass Transit Pass program is funded by a six cents per square foot assessment on all property owners in the District. The property owners recently renewed the C-Pass program, and increased their own assessment, for the 2021 to 2025 period to cover a greater portion of the program's cost. When the program was launched, MORPC grants, voluntary contributions from employers, and contributions from the City of Columbus made up the difference in what property owners initially paid and what the program cost.
Denver, Colorado	**DRCOG:** Funds for TDM include CMAQ from the Colorado DOT and match and unmatched grants. The matched grant is primarily used for Bike to Work Day promotions. DRCOG also pursues sponsorships.
Denver, Colorado	**Denver South (TMA)**: Receives a small marketing grant from the Regional Transportation District (RTD) which can be used to promote employer meetings, large community events at RTD stations, and other items that can be billed within the grant. Every business within ½ mile contributes to a mill levy that promotes things like economic development, landscaping, and snow removals and pays for Denver South's employee salaries. Denver South also collects membership fees.
Los Angeles, California	Each of the five county transportation commissions fund TDM in their respective jurisdictions, using a combination of CMAQ funding and local funds, such as Air Quality Management District (AQMD) and local sales tax measures.
Southern California	**Southern California Association of Governments (SCAG)**: SCAG provides grant funding for TDM-related projects. CMAQ is the primary source for TDM programs. Most counties in the region have "Self-Help" sales taxes that generate billions of dollars for TDM-related projects.[8]
San Diego, California	**SANDAG**: SANDAG's TDM programs have been funded entirely by CMAQ funding. To date, SANDAG has allocated $77.7 million towards TDM, including $35 million in the current 2021-2025 Regional Transportation Improvement Program.[9] Looking forward, SANDAG will also use Regional Surface

[8] SCAG. 2019. "Transportation Demand Management Strategic Plan and Final Report." https://scag.ca.gov/sites/main/files/file-attachments/tdm-strategic-plan_scag.pdf?1607732260
[9] SANDAG. 2021. "2021 Regional Transportation Improvement Program." https://www.sandag.org/uploads/publicationid/publicationid_4747_28774.pdf

Region	Summary of Funding Sources by Region
	Transportation Program funding for new shared mobility services and operations, such as first/last mile services and on-demand shuttles.
Seattle, Washington	**WSDOT**: CTR-impacted jurisdictions receive state funds to administer the program via a formula. WSDOT manages the Regional Mobility Grants, and WSDOT reviews and awards local TDM grants through this program and administers the grants.
Seattle, Washington	**Puget Sound Regional Council**: PSRC distributes approximately $260 million per year.[10] The 2021-2024 Regional Transportation Improvement Program includes 12 projects explicitly focused on TDM. These projects are funded primarily by CMAQ and local funds, in addition to some state funds. For example, $3.82 million in CMAQ funds and $1.83 million in local funds are allocated to expand the City of Seattle's TDM programs to reach underserved travel markets. [11]
Seattle, Washington	**Seattle DOT**: Seattle DOT funding comes from a variety of sources. The Commute Trip Reduction program is largely funded through state funds, in addition to SDOT's CMAQ allocation and SDOT General Funds for staff time.[12] In 2014, voters approved the Seattle Transportation Benefits District Proposition 1, which created a sales tax increase and annual vehicle license fee. Through 2020, it provided approximately $45 million annually for the expansion of transit services and low-income transportation access.13 Additionally, in 2015, voters approved Levy to Move Seattle, which provides $930 million over the course of nine years for active transportation, including for programs and bicycle parking.[14]
Seattle, Washington	**Commute Seattle**: Commute Seattle is a program of the Downtown Seattle Association. They are funded via contracts with the City of Seattle and King County Metro to administer specific programs and outreach activities (e.g., Commuter Benefits Ordinance). Commute Seattle also has dedicated funding from the Downtown Transportation Alliance (DTA) to which Sound Transit, King County metro and the City of Seattle also contribute. This dedicated funding is unrestricted in its use. All of the TMA's funding levels have been flat for a decade.
District of Columbia, Maryland, and Virginia	**Regional Commuter Connections program**: Virginia, Maryland and the District provide the funds for the Commuter Connections program.
District of Columbia	**District of Columbia**: Washington, DC's goDCgo program is funded entirely by CMAQ. Since the formation of goDCgo in 2010, the funding for and the scope of the goDCgo program has increased considerably. As the District Department of Transportation is a State DOT, it allocates CMAQ on an annual basis directly to

[10] PSRC. 2020. "2021-2024 Transportation Improvement Program." https://www.psrc.org/sites/default/files/tip2020-overviewof2021-2024regionaltip.pdf.
[11] PSRC. 2022. "Central Puget Sound - Regional Transportation Improvement Program." https://www.psrc.org/sites/default/files/appendixa_tipprojectlist_.pdf.
[12] City of Seattle. 2019. "Commute Trip Reduction Strategic Plan 2019-2023." https://www.seattle.gov/documents/Departments/SDOT/TransportationOptionsProgram/CTR_Final_Plan_20190822.pdf.
[13] Seattle City Council. n.d. "Seattle Transportation Benefit District." https://www.seattle.gov/council/committees/sustainability-and-transportation/seattle-transportation-benefit-district.
[14] Seattle Department of Transportation. 2021. "Seattle Bicycle Master Plan: 2021-2024 Implementation Plan." https://www.seattle.gov/documents/Departments/SDOT/BikeProgram/BMP_Imp_Plan_2021_FINAL.pdf.

Region	Summary of Funding Sources by Region
	the goDCgo program. goDCgo often receives donations (e.g., 3-night stay at a local hotel) from private organizations for use in incentive programs, however, this is not the primary source of incentive funds for the program overall.
Virginia	**Virginia**: County-level TDM programs receive annual operating grants and are eligible to access a variety of state grants, from the Virginia Department of Rail and Public Transportation. Several counties have additional sources of funding, including developer contributions, commissions off the sale of fare media and the administration of corporate commuter benefits, and local general fund funding.
Maryland	**Maryland**: All local county TDM programs except for one (Montgomery County, MD) rely primarily on a state grant.

Policies and Legal Requirements

Land Use Policies

Daily travel decisions are highly impacted by land use patterns. Individuals are much more likely to bike, walk, and take transit in dense, mixed-use areas. Land use policies can play an important role in promoting land development practices that support alternative modes.

There are many ways to for land use policies to encourage development that supports multimodal travel options while minimizing the impact of new development on the transportation network. This may include density bonuses, which permit development at higher intensities if developments address jurisdictional policy goals (e.g., the provision of affordable housing). Developers may also provide less parking than otherwise required by agreeing to provide amenities that support multimodal travel. As this section demonstrates, jurisdictions may also choose to implement district-wide TDM requirements; require TDM-specific plans based on the size of new development; or otherwise establish guidelines that stipulate the impact that development may have.

District-wide TDM Regulation (Boulder, Colorado)

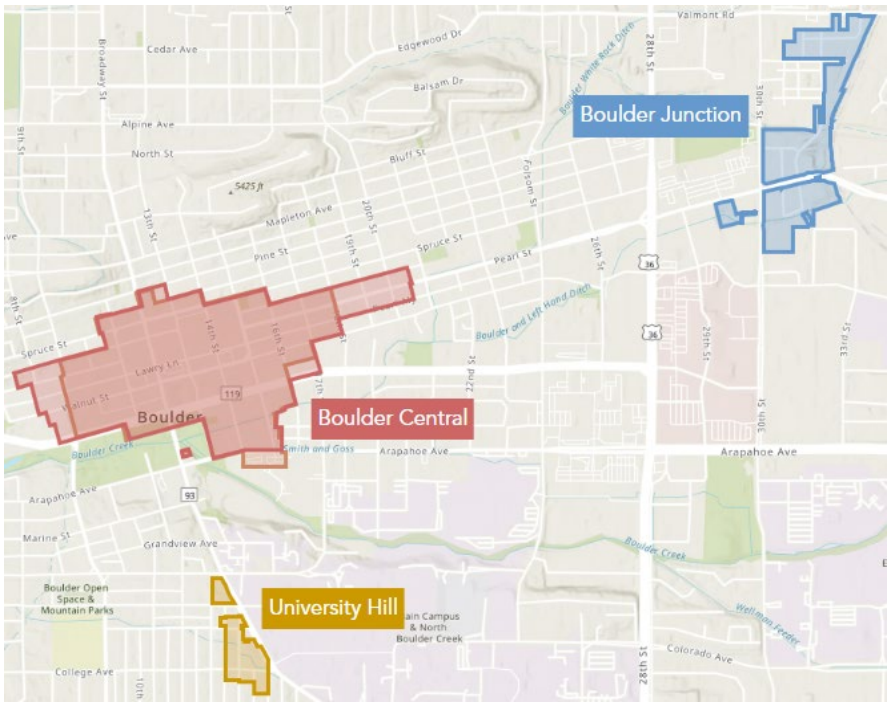

Figure 1: Boulder Districts with EcoPass (Boulder Transportation Connections

The City of Boulder, Colorado provides some examples of how local jurisdictions can incorporate TDM measures into the development process. For Boulder Junction, a mixed-use development, the City created a TDM District for the redevelopment and transition of a 160-acre former industrial area into a new transit-oriented community.[15] Properties within the development are given a trip generation allowance that is the *maximum* number of vehicle trips that can be generated at peak hours. The District as a whole has a goal of reducing the percentage of trips taken by single occupancy vehicles to 45 percent.[16] Achieving this metric will allow Boulder Junction to reach its goal of adding zero new single-occupancy vehicle trips as a result of the development. All residents and workers of the TDM District receive an EcoPass (an unlimited bus and light rail pass), a 50 percent discount on a bikeshare system annual membership, and a no-cost application and $25 in driving credit for a carsharing program membership.[17] This is in addition to other TDM measures that are negotiated for individual buildings in the Boulder Junction TDM District.[18] The City collects funds (in the form of Payment in Lieu of Taxes (PILOT)) from residential and commercial real estate that are used to provide EcoPasses.

Boulder Junction is one of three areas in the City that are part of the City of Boulder Community Vitality Commercial District Sponsored Employee EcoPass Program (EcoPass), in which qualifying employees can receive free transit passes. The other districts include the Central Area General Improvement District (CAGID) / Downtown Boulder Business Improvement District (BID) Area tax district and the University Hill General Improvement District (UHGID) (**Figure 1**).[19] In these areas, employers purchase EcoPasses for qualifying employees. In addition, in downtown Boulder, parking revenues are used to provide EcoPasses for 8,000 employees at local businesses.[20]

Washington, DC Regional Development Policies (Washington, DC)

The Washington, DC region provides some examples of how local jurisdictions have chosen to implement TDM measures into development. Some programs in Northern Virginia have been in place for decades. Collectively, these programs aim to minimize the impact of development on the transportation network.

In 1987, the **City of Alexandria, Virginia** implemented a Transportation Management Plan Special Use Permit (TMPSUP) Program to limit increases in traffic congestion without limiting new development. The ordinance was updated in March 2014. The Program, which is codified in the City's Zoning Ordinance, requires any development project exceeding a designated size to submit a special use permit application, multimodal transportation study, and a transportation management plan (TMP), as shown in **Figure 2**. A 2008 analysis recommended broadening the program's goals and objectives.[21]

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[15] See the Transit Village Area Plan (2007, updated in 2010) at https://bouldercolorado.gov/sites/default/files/2021-03/transit-village-area-plan.pdf for more information about Boulder Junction.
[16] City of Boulder. n.d. "Boulder Junction Transportation Demand Management District." https://bouldercolorado.gov/projects/boulder-junction-transportation-demand-management-district.
[17] Ibid.
[18] City of Boulder. n.d. "Boulder Junction Transportation Demand Management District." https://bouldercolorado.gov/projects/boulder-junction-transportation-demand-management-district.
[19] City of Boulder. n.d. "EcoPass Program." https://bouldercolorado.gov/services/ecopass-program.
[20] Conversation with Chris Hagelin, Acting Transportation Planning Manager, City of Boulder, March 2, 2022.
[21] City of Alexandria. 2008. "Transportation Management Plan Special Use Permit Program Review." https://media.alexandriava.gov/docs-archives/tes/info/tmp-sup-review---final-report-apr-2008-public.pdf.

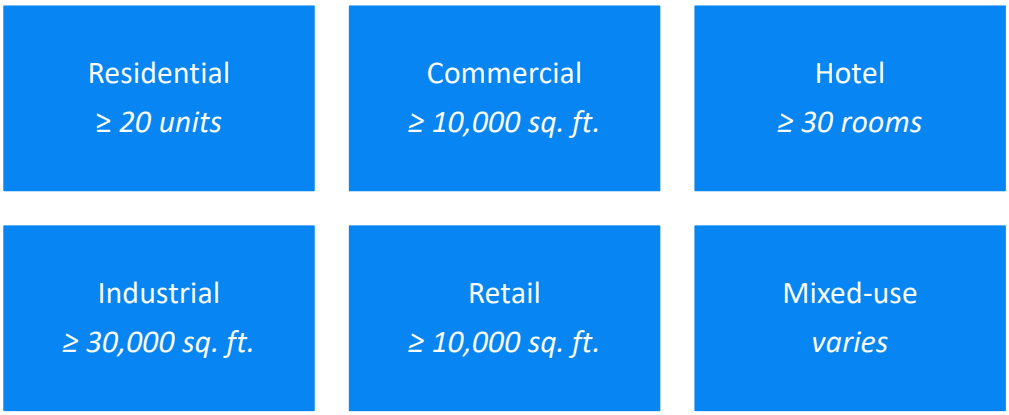


Figure 2: TMP Thresholds in Alexandria, Virginia

Arlington County, Virginia's 1990 TDM for Site Plan Policy aims to reduce peak hour travel by reducing single occupant vehicle trips. All proposed development is categorized based on County planning priorities as well as whether the proposed site forecasts significant traffic congestion. The County uses a TDM matrix to match these categories with TDM strategies. Once the site plan is approved, developers must prepare TDM plans that include a schedule and implementation details before the County will issue a Certificate of Occupancy.[22] The County monitors implementation with annual site visits for all properties that have TDM site plan requirements. These inspections are a way to check whether the site is adhering to the agreed upon conditions, such as providing a transit display board, bicycle parking facilities, etc. Inspections are not intended to be punitive. If a site is found to not be in compliance, the County will work with the developer to help them achieve the stated goal. As of June 2022, there are 234 operational sites and 14 sites that are under construction that have TDM conditions in the County. The County team conducts annual site visits at both types of sites, with the goal of conducting a virtual or in-person site visit at 90 percent of operational sites with TDM or biking parking requirements every 12 months, or around 200 visits per year. Although this is the goal, staffing constraints and time-intensive engagement with construction sites has not made this possible just yet.

In **Fairfax County, Virginia**, the County's Department of Planning and Zoning administers a proffer program, through which the County works with developers to determine the development conditions intended to mitigate a new site's impacts to public infrastructure or facilities. Proffers run with the land in perpetuity and aim to reduce peak hour congestion and the burden placed on the transportation network through trip reduction goals.[23] Generally, trip reduction goals associated with proffers are calculated based on nearby land use, proximity to transit, and Institute of Transportation Engineers (ITE) parking generation rates adjusted for the local context.[24] A report analyzing performance over a seven-year period from 2013-2019 for 13 long-term TDM programs found that these programs surpassed their trip generation goals and, in some instances, exceeded their proffer requirements.[25]

During the so-called applicant control period, the County actively checks to make sure developers are meeting their stated goals on an annual basis. After a certain number of

[22] Arlington Transportation Partners. n.d. "TDM For Site Plans." https://arlingtontransportationpartners.com/programs/property-development/tdm-for-site-plans/.
[23] Wells + Associates. March 22, 2022. "Don't Underestimate Your Property: Forecasting Trips and Managing Density Over the Long Term in Fairfax County, Virginia." https://www.wellsandassociates.com/research/property-trip-forecasting-fairfax-county/.
[24] Ibid.
[25] Ibid.

years, monitoring requirements are relaxed. Reporting requirements were suspended during the COVID-19 pandemic from March 2020 through Fall 2021. The County has developed a TDM toolkit to inform developers on potential development requirements based on the intensity of development, as shown in **Table 4**.[26]

Table 4: TDM Levels of Participation Excerpt (Fairfax County, Virginia)

General TDM Elements	Full	Moderate	Light
Bus Benches	X	X	X
Provide Transportation Kiosk or Information Display	X	X	X
Onsite Transportation Fairs	X	X	X
Website/Online Commuter Store	X	X	X
Participation in FCDOT Rideshare Program	X	X	X
Vanpool Accessible Parking and Drop Off	X	X	X
Non-SOV Preferred Parking (Office Only)	X	X	X
Pedestrian Facilities	X	X	X
Designate Program Manager	X	X	X
Join area Transportation Management Association	If Available	If Available	If Available

Washington, DC's Comprehensive Transportation Review (CTR) is the city's TDM-focused version of the traditional Traffic Impact Study (TIS) that was used prior to 2012. The District Department of Transportation (DDOT) released Guidance for CTR in 2019.[27] These guidelines were updated in 2022.[28] Rather than prioritize assessment of traffic impacts, CTR prioritizes building and site design that will minimize or prevent increases in car traffic while recognizing the availability of parking as a key driver of vehicle trips. The District of Columbia's CTR requirements establish a baseline set of TDM measures required for all applications that enter their CTR process, with additional TDM requirements to be negotiated for applications with higher levels of traffic impacts or excess parking supply **Table 5**.[29]

[26] Fairfax County, Virginia. n.d. "TDM Toolkit for Developers." https://www.fairfaxcounty.gov/transportation/tdm-toolkit.
[27] District Department of Transportation. June 2019. "Guidance for Comprehensive Transportation Review, version 1.0." https://nacto.org/wp-content/uploads/2015/04/CTR-Guidance-June-2019-Version-1.0.pdf.
[28] District Department of Transportation. January 2022. "Guidance for Comprehensive Transportation Review, version 2.0." https://ddot.dc.gov/sites/default/files/dc/sites/ddot/CTR%20Guidance%20-%20January%202022%20Version%202.0.pdf.
[29] Ibid.

Table 5: District of Columbia TDM Requirements by Transportation System Impact

Traffic Impacts	No Traffic Impacts (no intersections degrade to unacceptable levels)	Minor Traffic Impacts at Multiple Intersections (signal timing or cycle length adjustments only)	Minor Traffic Impacts at Multiple Intersections (signal timing or cycle length adjustments only)	Severe Traffic Impacts at One or More Intersections (physical roadway improvements beyond signal timing adjustment)
Parking Supply at or Below Benchmark	Baseline TDM Plan	Baseline TDM Plan	Enhanced TDM Plan	
Parking Supply Up to 10% Over-Parked	Baseline TDM Plan	Enhanced TDM Plan	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Direct Mitigation OR Additional TDM OR Monetary Contribution OR Non-Auto Upgrades OR Performance Monitoring TBD
Up to 20% Over-Parked	Enhanced TDM Plan	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Direct Mitigation OR Additional TDM OR Monetary Contribution OR Non-Auto Upgrades OR Performance Monitoring TBD
Over 20% Over-Parked	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Additional TDM OR Non-Auto Upgrades to be Negotiated	Enhanced TDM Plan + Direct Mitigation OR Additional TDM OR Monetary Contribution OR Non-Auto Upgrades OR Performance Monitoring TBD

Prior to the CTR Guidance released in 2019, developers negotiated TDM measures for each application. The CTR Guidelines created consistent expectations for what TDM measures would be required for each development application. **Figure 3** is a snapshot from the CTR Guidelines of what a portion of what is included in the Baseline TDM Plan requirements for office developments. Information on how to access the complimentary support of the District's TDM program, goDCgo, is also included in the CTR Guidelines.

Office TDM Strategies

Baseline Plan (Office)

Include all of the following:

- Unbundle the cost of parking from the cost to lease an office unit and only hourly, daily, or weekly rates will be charged. Free parking, validation, or discount rates will not be offered.
- Identify Transportation Coordinators for the planning, construction, and operations phases of development. There will be a Transportation Coordinator for each tenant and the entire site. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement and will provide their contact information to goDCgo.
- Transportation Coordinator will conduct an annual commuter survey of employees on-site, and report TDM activities and data collection efforts to goDC go once per year. All employer tenants must survey their employees and report back to the Transportation Coordinator.
- Transportation Coordinators will develop, distribute, and market various transportation alternatives and options to the employees, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.

Figure 3: Snapshot of part of the Office TDM Strategies - Baseline Plan from the District of Columbia CTR Guidelines

Information on how to access the complimentary support of the District's TDM program, goDCgo, is also included in the CTR Guidelines.

Trip Reduction and Vehicle Miles Traveled

Washington State Commute Trip Reduction (CTR) Law

The Washington State Commute Trip Reduction (CTR) Law was originally passed in 1991 to address traffic congestion, air quality, and fuel consumption associated with commuting. The law was updated in 2006 under the CTR Efficiency Act. This act requires counties with a population of 150,000 or more to adopt CTR plans and ordinances targeted at major employers. "Major employers" are defined as 100 or more employees at a single worksite scheduled to begin work between 6:00am and 9:00am. For the 2019-2020 cycle, 779 CTR-affected worksites were surveyed.[30] 600,000 commuters statewide participate in the CTR program.[31]

The TDM Technical Committee (formerly the Commute Trip Reduction Board) oversees CTR and TDM program implementation, works to increase program effectiveness, establishes processes to implement programs, and develops a statewide TDM plan. The original CTR Board began in 1991 with the passage of the law.[32] The TDM Technical Committee, which includes members from transit agencies, WSDOT, local government planners, and employers, replaced this previous CTR Board after a new governance structure went into effect in 2018.[33] The TDM Executive Board advises the TDM Technical Committee on overarching TDM policy.

[30] Email from Rebecca F. Jabbar, Data Analytics at WSDOT, from May 4, 2022.
[31] WSDOT. September 2021. "Commute Trip Reduction Law Update 2021." https://wsdot.wa.gov/sites/default/files/2021-11/Commute-Trip-Reduction-Program-Report-Sept2021.pdf.
[32] WSDOT. November 2019. "2019 Public Transportation Mobility Report." https://wsdot.wa.gov/sites/default/files/2021-10/2019-Public-Transportation-Mobility-Report.pdf.
[33] WSDOT. n.d. "Transportation Demand Management Technical Committee By-Laws." https://drive.google.com/file/d/15V3DVF5DDsmbTKjTms_geQLpBTzlaBe9/view.

CTR in Practice

CTR program administration is decentralized, in contrast to other states that may manage programming from the center out. Washington State develops the statute, guidance, and rules, but power, discretion, and decision-making are left up to the individual jurisdictions. For example, King County Metro originally administered the county's CTR program until some entities, like Seattle, began administering their program independently. Most recently, King County Metro has stopped providing program assistance and grant management. All the affected entities now manage their own programs. TMA roles vary by jurisdiction.

Program funding has remained mostly flat since 2006. The state legislature allocates around $3 million in funding each year. However, the private sector invests heavily in CTR and TDM programming and it is estimated that each $1 the state invests is countered by $2 from the private sector.[34] Local jurisdictions may also contribute funds.

As TDM programs across the country are beginning to broaden their services to serve more than just 9-5 commutes, CTR partners have expressed a desire for more flexibility in the ways in which funds may be used. Analyzing tradeoffs can be challenging, including identifying the best use of existing and additional funds (e.g., whether to spend funding on targeting other, related objectives like other trip markets or areas of the state that are not CTR-affected but may wish to pursue CTR/TDM programming; achieving equity goals; serving shift workers, etc.).

Commute Seattle, which administers the CTR program in the City of Seattle, noted that while the CTR program has been extremely effective in extending commuter benefits to hundreds of thousands of individuals across Washington State, that it is a "legacy program" in how it structures who will receive benefits. The CTR skews to large employers, but also to the freight industry, manufacturers, etc. The people working in these industries would not be likely to obtain commuter benefits without the CTR. As the evolution of the CTR is explored, one potential improvement would be to include more workers, including contract workers and those in the service sector. Commute Seattle staff expressed the belief that eliminating the "peak hour trip" element from the CTR policy would be beneficial from an equity standpoint, as the current CTR currently focuses on peak period commuting and thus excludes people who work shift-based schedules or overnight schedules. Seattle's implementation of their Commuter Benefits Ordinance has already helped the City extend commuter benefits to people who commute outside of the peak period. Finally, many CTR-impacted employers are returning to the office on a hybrid schedule and very few are requiring employees to return to the office full-time. However, people who are working from home are making drive alone trips during the work day for errands and other trip purposes, and the CTR requirements do not address these trips.

WSDOT continues to document the impacts of the CTR Law, as shown in **Table 6.** Moving forward, the TDM Technical Committee and Executive Board and WSDOT will work on an update of the CTR that will incorporate new emphasis areas to address equity and climate in addition to requirements of the initial law.[35] These proposed updates will better serve non-commute travel as well as trips made outside of peak periods and expand the reach of

[34] Interview with Ricardo Gotla, Transportation Demand Management Developer, WSDOT, March 28, 2022.
[35] WSDOT. September 2021. "Commute Trip Reduction Law Update 2021." https://wsdot.wa.gov/sites/default/files/2021-11/Commute-Trip-Reduction-Program-Report-Sept2021.pdf.

traditionally white-collar commuters to capture frontline and shift workers. Updated legislation is scheduled for the end of 2022.

Table 6: Impacts of Washington State Commute Trip Reduction (CTR) Law, 2019 and 2020[36]

CTR Law Metrics	Statistic
Number of worksites participating in the state's CTR program	779
Number of participating CTR commuters statewide	600,000
Statewide VMT reduction from 2007 to 2020 (10.9 miles) to 2018 (7.6 miles) (per employee, per day)	30 percent
Metric tons of greenhouse gas CTR prevented from being released (annual)	175,000
Gallons of gasoline that CTR Participants conserved (annual)	9 million
Cumulative amount CTR participants save by using non-drive-alone modes (2007-2020)	$58 million

WSDOT data indicate that CTR strategies have been successful in encouraging non-drive-alone commutes. The table in **Figure 4** shows survey results from employees working at CTR-affected worksites as well as state and national averages. Although fewer worksites were surveyed in 2019-2020 and there was a rise in telework due to the pandemic, non-drive-alone modes were still much higher than statewide and nationwide averages.[37] Future survey results will probably fall somewhere between 2017/2018 and 2019/2020 values as more CTR-affected employer sites will be surveyed.

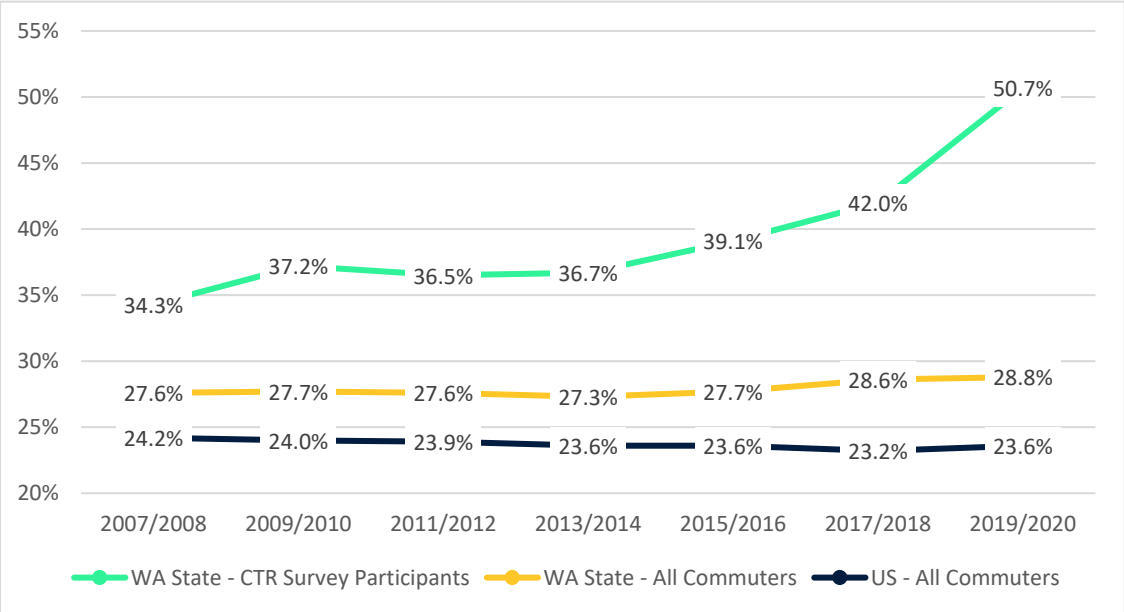


Figure 4: Non-drive Alone Trip Rates

South Coast Air Quality Management District

California is divided into 35 Air Districts, which administer regional air quality planning, monitoring, grant programs, and more.

In 1988, the South Coast Air Quality Management District (SCAQMD) passed Regulation XV, which mandated employer trip reduction programs for employers with 100 or more employees. Regulation XV was repealed in 1995 and replaced in 1996 by Rule 2202, which

[36] Ibid.
[37] Ibid.

increased the threshold from 100 to 250 or more employees. Legislation was also passed that prohibited air districts or public agencies from requiring employers to submit trip reduction plans.[38]

San Joaquin Valley District Governing Board

In 2009, the San Joaquin Valley District Governing Board adopted a trip reduction rule for employers with at least 100 eligible employees (applicability also depends on whether worksites are within an incorporated city, type of employment, and other factors). The rule requires applicable employers to create Employer Trip Reduction Implementation Plans (eTRIPs). These plans must include a set of strategies that encourage employees to use alternative modes of transportation. A study found that 16 percent of eligible worksites submitted eTRIPs in 2015. Of worksites that submitted plans, 40.1 percent submitted commute verification annual reports – so in total, 6.43% of eligible worksites met full compliance in 2015.

Commuter Benefits Ordinance (San Francisco Bay Area)

The Bay Area Air Quality Management District adopted legislation that applies to employers with at least 50 full-time employees. The Bay Area Commuter Benefits Program requires employers to provide commuter benefits, which can include employer-provided shuttles/vanpools; employer-provided transit subsidies; telework policies; pre-tax benefits that allow employees to exclude vanpool or transit costs from taxable income; or other benefits with equivalent trip reduction impacts. The program was adopted in 2014. By the end of 2015, 3,910 employers had registered. Of those 3,910 employers, 45 percent were already offering commuter benefits before the program took effect and 55 percent started offering benefits for the first time in response to the program. Within the first 12 months of implementation, an estimated 85,600,000 miles of vehicle travel and 4,291,300 trips were reduced in response to the program. Additionally, an estimated 44,400 employees switched to an alternative mode, rather than driving alone.[39]

Commuter Benefits Ordinance (Seattle, WA)

The City of Seattle passed a Commuter Benefits Ordinance (CBO) that went into effect on January 1, 2020. The Ordinance requires businesses with 20 or more employees to provide their employees with the option to make pre-tax payroll deductions for transit or vanpool costs. These pre-tax benefits lower tax bills for employees and employers. Commute Seattle helps employers to establish a program or expand the commute benefits they currently offer.

Nearly all (99%) of businesses seek to comply with the Commuter Benefits Ordinance through providing the ORCA Business Passport to their employees. Roughly 60% of ORCA card taps in Seattle are employer subsidized. Two Orca business programs provide employers and their employees with transit options as shown in **Table 7**. Commute Seattle can help employers identify the best program for their employees.

The ORCA Business Passport, for which employers with at least five or employees are eligible, includes unlimited bus trips on providers across the region; unlimited light rail, commuter rail, and monorail rides; and unlimited rides on the Seattle Streetcar, King County

[38] Medina, Hazael Benjamin. 2019. “An Analysis of Local Government Implementation of California’s Parking Cash-Out Law.” https://scholarworks.calstate.edu/downloads/7p88cj57w.
[39] Bay Area Air Quality Management District and Metropolitan Transportation Commission. 2016. “Bay Area Commuter Benefits Program: Report to the California Legislature.” https://www.baaqmd.gov/~/media/files/planning-and-research/commuter-benefits-program/reports/commuter-benefits-report.pdf.

Water Taxi, and Kitsap Foot Ferry. The program also includes a 100 percent vanpool subsidy on transit agency vanpool vans and a 100 percent van share fare subsidy on Metro Transit van share vans in addition to emergency guaranteed ride home. Pricing is based on zones.

The ORCA Business Choice program is ideal for smaller businesses with employees that may use multimodal options. Under this program, individual employees receive monthly benefits which employers add to their ORCA cards. Monthly transit passes are available at retail prices.

Table 7: ORCA for Business Programs

	ORCA Business Passport	ORCA Business Choice
Bus	Unlimited rides	Maybe
Light Rail	Unlimited rides	Maybe
Commuter Rail	Unlimited rides	Maybe
Monorail	Unlimited rides	Maybe
100 percent vanpool fare subsidy	Yes	
100 percent vanshare subsidy	Yes	
E-purse (stored value used on per-trip basis)		Maybe

There is a very low barrier to implementing commuter benefits programs in the Seattle region, as King County Metro provides a software that makes it easy for **employers to manage in-house. Prior to the CBO, Commute Seattle focused their ORCA Business Passport outreach in the Downtown, but that has expanded greatly since the CBO passed. Even though the CBO has been in effect for 4 years, there are still businesses who are only just learning of it. The CBO has been a very effective tool in growing business participation in pre-tax commuter benefits.**

Commuter Benefits and Parking Cashout Laws (Washington, DC)

The DC Commuter Benefits law, part of the Sustainable DC Omnibus Amendment Act of 2014, aims to reduce congestion and improve air quality by encouraging non-drive alone commute modes such as transit, bicycling, and vanpools. Under the DC Commuter Benefits Law, District employers with more than 20 employees (referred to as “covered employers”) must offer at least one of the following:

- **Employee-paid, pre-tax benefits**, by allowing employees to set aside wages on a pre-tax basis to cover commuting costs.
- **Employer-paid, direct benefits**, by offering a tax-free subsidy for transit or vanpools (up to $280 per month).
- **Employer-provided transportation**, providing free shuttle or vanpool services to employees.[40]

The DC Parking Cashout Law, also known as the DC Transportation Benefits Equity Act of 2020, applies to District employers with 20 or more employees that lease parking and provide it to employees for free or with a subsidy. The law requires these covered employers to either offer a Clean Air Transportation Fringe Benefit; or create a Transportation Demand Management (TDM) plan; or pay a Clean Air compliance fee to the District Department of

[40] goDCgo. January 2022. “Employer Commuter Benefits Toolkit.” https://godcgo.com/wp-content/uploads/2022/01/Employer-Commuter-Benefits-Toolkit-2022.pdf.

Transportation (DDOT).[41] TDM plans are subject to DDOT approval and must reduce drive-alone rates by at least 10 percent from the preceding year until the employee drive-alone rate is less than 25 percent. The Clean Air Compliance Fee is $100 per employee, per month.[42] Covered employers are also subject to reporting requirements which vary depending upon their chosen compliance method.

Employer Trip Reduction in Transportation Management Districts (TMDs) (Montgomery County, Maryland)

Montgomery County, Maryland passed legislation aimed at decreasing congestion. This legislation established Transportation Management Districts (TMDs) at six sites across the county. Employers with 25 or more full- or part-time employees in these districts are required to implement a traffic demand management plan (TDM Plan); participate in an annual commuter survey led by the County; and submit an annual report detailing their actions regarding employee commuting options.[43] TMDs are funded with annual fees based on square footage of non-residential floor space; developer parking reduction program fees; parking management revenues; other funds, such as developer agreements, municipal grants, etc.; and the County's general fund.[44]

Roadway Management

TDM strategies can support a more efficient use of roadways, reduce congestion and collision points, and make roadways easier for all users to navigate, especially for bicyclists and pedestrians. TDM strategies have been leveraged in specific corridors and districts to reduce congestion, mitigate congestion during construction projects, and/or promote the use of public transportation or other transportation options.

In roadway management, TDM strategies can materialize in the form of parking pricing, tolls, and discounted transit programs. Pricing, both discounts and surcharges, can have powerful impacts on mode choice. Higher monetary and time costs of parking, tolls, etc. disincentivizes vehicle usage and may encourage people to explore alternative travel modes. Pricing strategies can be implemented along specific corridors to shift trips to the off-peak, shift trips to other less congested routes, and generate revenue to provide supplemental transportation services. Parking management and pricing strategies can reduce "circling" for free parking meter spaces on-street and reduce the demand for parking overall.

TDM strategies can also take the form of physical design in roadway management. Curb management strategies can reduce congestion related to deliveries, support transit-oriented developments, and manage pick-ups and drop-offs at transit stations, multi-tenant buildings, events, or other high-traffic areas.

[41] goDCgo. January 2022. "DC Parking Cashout Law." https://godcgo.com/wp-content/uploads/2022/01/DC-Parking-Cashout-Law-Toolkit.pdf.
[42] Ibid.
[43] Montgomery County, Maryland. n.d. "Welcome to Your Transportation Management District." https://www.montgomerycountymd.gov/DOT-DIR/commuter/tmd/index.html.
[44] Montgomery County, Maryland. May 2016. "Overview of Transportation Demand Management and Transportation Management Districts in Montgomery County, Maryland." https://www.montgomerycountymd.gov/dot-dir/Resources/Files/commuter/GSGTMD%20Advisory%20Committee/TMD%20Overview%20for%20GSGTMDAC%2020160504.pdf.

TDM and Corridors/Districts

I-66 and I-95 Comprehensive TDM and Transit Plans (Northern Virginia)

Express lanes and roadway tolling have been implemented in Northern Virginia since 2014, most notably along I-66 inside the Washington, DC Beltway and I-95 (**Figure 5**). Additional express lanes are currently under construction on I-66 outside of the Beltway. Comprehensive TDM and transit plans were completed for the impacted areas to expand multimodal travel options along the corridors, both during and post-construction.

One study analyzed baseline conditions and future transit service and transportation demand management (TDM) program needs on the I-66 corridor outside of the Beltway.[45] This baseline was used to evaluate the market for transportation services along the corridor and develop a service plan for future commuter transit service and TDM programs.

A similar study for the Fredericksburg Area Metropolitan Planning Organization (FAMPO) focused on I-95.[46] This study made recommendations for transit and TDM services between the region and northern Virginia/Washington, DC. The recommendations included commuter bus routes connecting the region to Northern Virginia and Washington, DC; feeder routes connecting to commuter lots and VRE stations within the region; and TDM measures to improve awareness of and first mile/last mile connections to the recommended services.

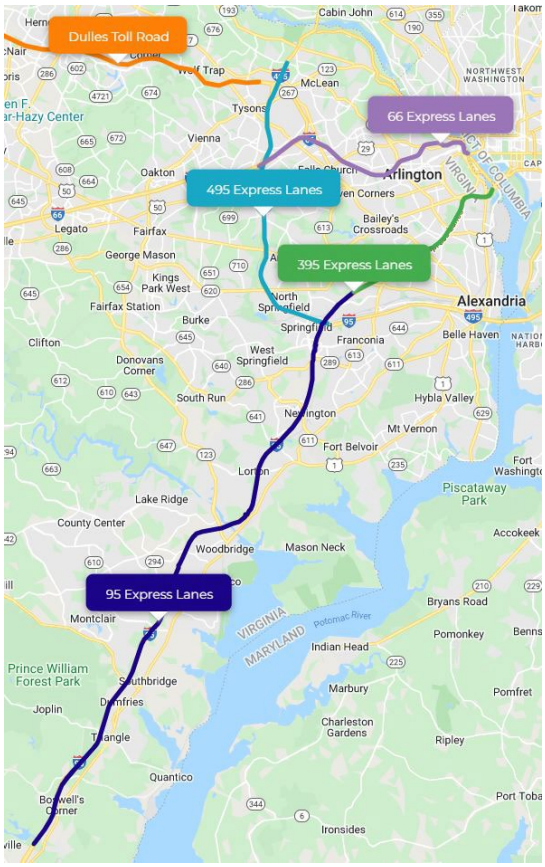


Figure 5: Toll Roads in Northern Virginia (Toll Roads in Virginia)

Express lane tolls, combined with other state and federal funding, are used to fund expanded multimodal options on the I-66 and I-395/95 corridors through the Commuter

[45] Virginia Department of Transportation (VDOT). n.d. "About the Project." https://outside.transform66.org/about_the_project/default.asp.
[46] FAMPO. December 2017. "I-95 Transit/TDM Study." https://www.fampo.gwregion.org/wp-content/uploads/FAMPO_95_Transit_Final_Document_with_Appendix-1.pdf.

Choice program (**Figure 6**). Approved projects must maximize person throughput; improve mobility; support new, diverse travel choices; and enhance safety and reliability.[47]

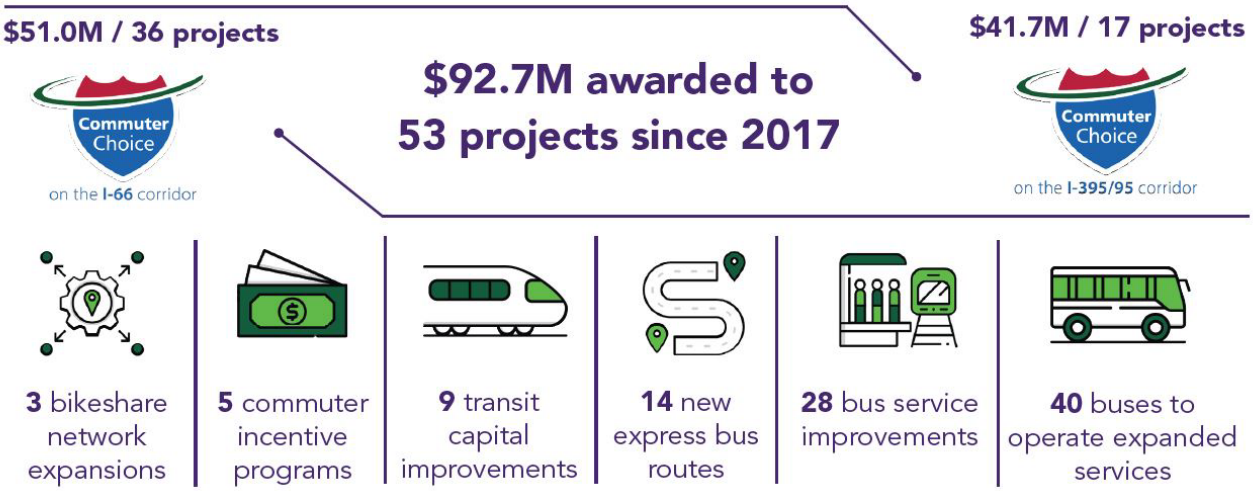


Figure 6: Commuter Choice Projects (NVTC)

Road Pricing and Tolls

As alternative fuel vehicles and become more popular and vehicles become more fuel-efficient, many states face declining fuel tax revenues. In response, some states are considering programs that tax based on road usage, rather than gas usage. Oregon DOT (ODOT) is the first state to implement a road-usage charge program. In 2015, ODOT launched OReGO, a voluntary pay-per-mile road-use fee. Under this program, participants pay 1.9 cents per mile traveled in Oregon. Participants receive fuel tax credits based on miles driven, up to a zero balance. Light-duty passenger vehicles are eligible for the program.[48] OReGO revenues go directly into the State Highway Fund. As of March 2021, over 2,000 participants had signed up for the program.[49]

Cordon Area Congestion Pricing

Congestion and associated air quality issues are often concentrated in certain urban downtown areas and/or employment centers. To mitigate congestion in these areas, some cities have begun to implement cordon area congestion pricing, which charges drivers for entering certain toll areas. The fees may change based on time of day and day of week, and there may be reductions or exemptions for residents and/or low emission vehicles.

The New York State DOT (NYSDOT), Metropolitan Transportation Authority (MTA), and New York City DOT (NYCDOT) are currently working to address high levels of congestion in Manhattan's Central Business District (CBD). Prior to the COVID-19 pandemic, traffic moved at an average of seven miles per hour.[50] This congestion has implications for businesses, tourism, quality of life, and air quality. To address congestion, a CBD Tolling Program has been proposed. Vehicles entering or remaining in the CBD would be tolled once per day.

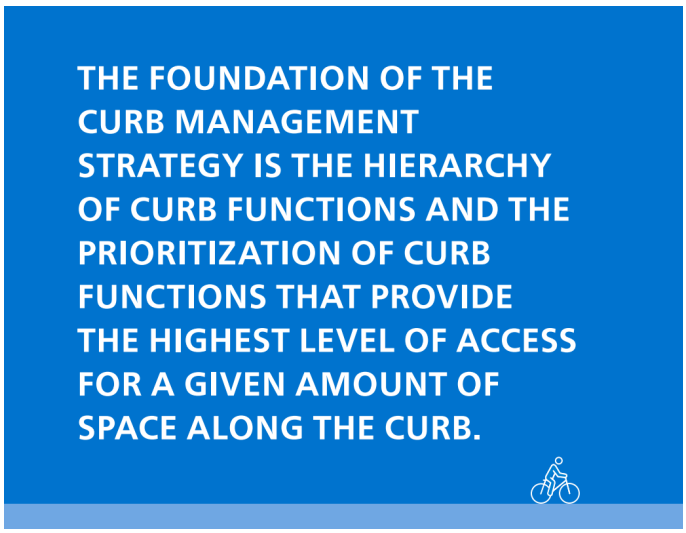
[47] NVTC. n.d. "Commuter Choice." http://novatransit.org/programs/commuterchoice/i-66-commuter-choice/.
[48] ODOT. 2022. "OReGO." https://www.myorego.org/.
[49] Skip Descant. March 2021. Government Technology. "Oregon Tests Voluntary Road-Use Fee to Shore Up Gas Tax." https://www.govtech.com/fs/oregon-tests-voluntary-road-use-fee-to-shore-up-gas-tax.html.
[50] MTA. April 2022. "Central Business District Tolling Program." https://new.mta.info/project/CBDTP.

The toll rates would be variable and would be determined based on traffic flow, air quality, and safety considerations. Toll revenues would serve as a key funding source for the MTA. Currently, an Environmental Assessment is underway for the project.[51]

Curb Management

Curbside areas face many competing demands, including parking, micromobility, active transportation, green infrastructure, transit infrastructure, ridehailing, delivery, and more. The Institute of Transportation Engineers describes curb management as a set of strategies to "inventory, optimize, allocate, and manage the curb space to maximize mobility, safety, and access for the wide variety of curb demands."[52]

Municipalities can use policies and design standards to balance and prioritize different curbside needs. For instance, the Town of Arlington, Massachusetts, has specific bicycle parking space requirements. The standards indicate how many bicycle parking spaces there must be compared to the number of motor vehicle parking spaces.



The San Francisco MTA developed a Curb Management policy[53], published in February 2020, to align transit-first goals with the growing pressures on a "limited shared resource" (the curb). The Curb Management policy outlines several objectives for addressing curb functions going forward, including advancing a holistic planning approach (e.g., simplifying loading zone hours and enforcement, revising curb color coding), accommodate growing loading needs (e.g., right-size loading zones according to context), increase compliance with parking and loading regulations (e.g., standardize loading signage), improve access to up-to-date data, rationalize policies toward private users of curb space (e.g., focus EV charging toward off-street), and develop equity and accessibility.

Additionally, designated loading zones provide places for delivery and for-hire vehicles to stop on congested corridors. Designated stopping places can help prevent conflicts between stopped vehicles and moving vehicles, bikers, and pedestrians. Off-hours delivery programs

[51] Silive.com. February 2022. "MTA outlines next steps for NYC congestion pricing program." https://www.silive.com/news/2022/02/mta-outlines-next-steps-for-nyc-congestion-pricing-program.html
[52] Institute of Transportation Engineers. n.d. "Curbside Management." https://www.ite.org/technical-resources/topics/complete-streets/curbside-management-resources/#:~:text=Curbside%20Management%20seeks%20to%20inventory,wide%20variety%20of%20curb%20demands.
[53] San Francisco Municipal Transportation Agency. February 2020. "Curb Management Strategy" https://www.sfmta.com/sites/default/files/reports-and-documents/2020/02/curb_management_strategy_report.pdf.

can also be used to reduce daytime delivery stops. Multiple cities have adopted parking plans that incorporate designated loading zones and off-hours delivery. In Chicago, there are designated loading zones for commercial vehicles or vehicles with loading zone permits. Building owners can request to designate a loading zone. Vehicles can use these zones for up to thirty minutes. Additionally, there are fifteen-minute standing zones for non-commercial vehicles to do business, such as drop off and pickup) (MPAC, 2015). The Town of Chelmsford, Massachusetts, has zoning requirements that allow for flexibility in parking requirements. If a property owner can demonstrate that the full number of required parking spaces is not needed – because of alternative parking or mobility options available, among other reasons – there can be a reduction in required parking by up to 25 percent.[54]

In Washington, DC, there are designated pick-up/drop-off (PUDO) zones. These zones are dedicated to commercial loading and passenger pick-up and drop-off. The District Department of Transportation maintains an interactive map of all PUDO zones. DC also has zoning specifications for food trucks, ride hailing, and other curb uses.[55]

New York City DOT has implemented a program that targets curb space on residential streets. In New York, the rise of ridesharing services and expansion of e-commerce delivery has contributed to crowded conditions, including double parking, on residential streets. The Neighborhood Loading Zone program designates space for package deliveries, ride hailing, and personal vehicle load/unloading activities. can all take place in Neighborhood Loading Zones.[56]

Parking Management

Parking management programs typically target two key goals: optimizing the use of existing parking spaces and influencing travel behavior. Strategies include dynamic pricing, dynamic wayfinding, dynamic parking reservation, and dynamic overflow transit parking.[57]

San Francisco, CA

From 2011-2013, San Francisco Municipal Transportation Agency (SFMTA) piloted a demand-responsive parking pricing program called SF*park*. The pilot collected information on 7,000 metered spaces and 12,250 spaces in City-owned parking garages. Using this data, the parking management system adjusted prices to match demand and encourage drivers to park in underused areas. The system provided drivers with real-time information on parking availability, which allowed drivers to locate parking spots more quickly and reduce congestion.[58] Eighty percent of project funds came from the Federal Department of Transportation's Urban Partnership Program. In 2017, the SFMTA Board of Directors approved a demand-responsive pricing program that will apply to all of the city's 28,000 on-street metered parking and SFMTA metered parking lots.[59]

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[54] Metropolitan Area Planning Council. July 2015. "Transportation Demand Management Case Studies and Regulations." http://www.mapc.org/wp-content/uploads/2017/10/TDM-FINAL-REPORT-7_15_0.pdf.
[55] ParkDC. 2020. "Programs." https://www.parkdc.com/pages/programs.
[56] City of New York. 2022. "Neighborhood Loading Zones." https://www1.nyc.gov/html/dot/html/motorist/nlz.shtml.
[57] FHWA. 2022. "Active Parking Management." https://ops.fhwa.dot.gov/atdm/approaches/apm.htm.
[58] SFMTA. n.d. "SFpark Pilot Program." https://www.sfmta.com/projects/sfpark-pilot-program.
[59] Ben Jose. SFMTA Blog. 2017. "San Francisco Adopts Demand-Responsive Pricing Program to Make Parking Easier." https://www.sfmta.com/blog/san-francisco-adopts-demand-responsive-pricing-program-make-parking-easier.

San Francisco Bay Area, CA

The Association of Bay Area of Governments (ABAG) and Metropolitan Transportation Commission developed a parking policy playbook for municipalities throughout the region.[60] The playbook is a tool designed to help local jurisdictions to update their parking policies and includes brief overviews of some leading parking management strategies, such as reduced parking maximums, reduced parking for affordable housing, shared parking, etc. Each policy overview also includes case examples from within the region.

Portland, OR

In order to manage parking demand, reduce greenhouse gas emissions, promote equity, and secure sustainable revenue streams, PBOT is planning to implement a set of new pricing strategies for parking and driving.

In 2018, the Portland Bureau of Transportation (PBOT) published a "Performance Based Parking Management Manual," which lays out data-driven guidelines for parking management. These guidelines focus on strategies to reduce parking demand and manage supply, particularly in and around commercial districts. It lays out performance-based pricing strategies, which can involve adjusting pricing and adding time limits to achieve a specified target occupancy level. The manual also covers truck loading zones and other elements of curbside management.[61]

PBOT also formed a Pricing for Equitable Mobility Task Force (POEM) to evaluate pricing options that would help reduce inequities, congestion, and emissions. POEM made several recommendations for reducing the unequal burdens of technology and enforcement, including designing payment systems to reduce barriers for individuals with limited access to bank accounts and structuring tickets and fines by income level.[62]

PBOT is beginning to implement recommendations that came out of the manual and the task force. Beginning in the summer of 2022, a 20¢ Climate and Equitable Mobility Fee will be added to metered parking transactions. This fee is intended to encourage alternative modes. The revenues will help fund active transportation safety infrastructure and subsidy programs for low income residents. In 2023, parking pricing will be demand-based and adjusted for inflation.[63]

Pittsburgh, PA

Pittsburgh manages the cost of parking through two mechanisms: commercial parking taxes and parking rates. The former applies to all non-residential parking in the city, while the latter apply to parking facilities managed by the Pittsburgh Parking Authority's (PPA).

Pittsburgh's commercial parking tax is the highest in the country at 37.5 percent, while having been as high as 50 percent in the past. The Pennsylvania legislature capped

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[60] ABAG. October 2021. "Parking Policy Playbook." https://abag.ca.gov/sites/default/files/documents/2021-10/Parking_Policy_Playbook_compiled_vF20211020.pdf.

[61] Kimley Horn for PBOT. 2018. "Performance Based Parking Management Manual." https://www.portland.gov/sites/default/files/2020-04/portland-parking-management-manual-digital-version-april-2018_v3_reduced.pdf.

[62] City of Portland and PBOT. 2021. "Pricing Options for Equitable Mobility Final Report." https://www.portland.gov/sites/default/files/2021/poem_final_report.pdf.

[63] Garcia, Isabella. March 2022. "Portland to Raise Parking Fees to Recoup Revenue and Disincentivize Driving." Blogtown. https://www.portlandmercury.com/blogtown/2022/03/03/38872084/portland-to-raise-parking-fees-to-recoup-revenue-and-disincentivize-driving.

Pittsburgh's commercial parking tax at the lower rate in 2009. Nevertheless, these progressive parking policies have been credited with helping the city's transition into a mixed-use, multi-modal urban center, that has out-performed metropolitan areas with comparable backgrounds.

Besides high tax rates, PPA manages over 6,700 downtown parking spaces for which it sets parking rates. In 2014, PPA approved a series of annual rate increases in June 2014 in response to the City's Recovery Plan. Although a final increase in 2017 through this budget approval was rescinded, most of the increase was frontloaded in 2014. The next increase was announced in 2019, targeting weekday users in Downtown Pittsburgh, Oakland, and Shadyside to alleviate congestion. Night and weekend rates remained the same. The combined cost of parking tax and fees is not only a deterrence for driving, but it generates about 13 percent of the City's total tax revenue.

The PPA has been reported to be working on a plan to implement dynamic pricing for parking in neighborhoods where there is high demand. Dynamic pricing is responsive to demands, variables, and performance. Meter rates are based on demand in a particular zone at a given time of the day. The goal is to make sure that there are always a few open spaces per block and encourage users to park only on an as-needed basis. While the Authority did implement a pilot program in 2013 and continued its expansion for three years that followed, no further reports on dynamic pricing in Pittsburgh has been made available.

Incentives, Marketing, and Communications

Marketing and communications activities are often the foundation of TDM programs, since they serve to raise awareness of existing transportation options and encourage short- and long-term behavior change. This section includes summaries of marketing campaigns, communications efforts, and incentives programs that have documented achievements in changing traveler behavior and increasing the use of sustainable transportation options.

Transit Reduced Fare Programs for Employers and Neighborhoods

RTD Eco-Pass[64,65,66] (Denver Region, Colorado)

Figure 7: EcoPass (RTD)

The Regional Transportation District (RTD), the local transit agency serving Denver and Boulder, Colorado, coordinates the EcoPass program. EcoPass is an employer- and

[64] RTD. n.d. "EcoPass."http://www.rtd-denver.com/EcoPass.shtml.
[65] City of Boulder. n.d. "Neighborhood EcoPass." https://bouldercolorado.gov/services/ecopass-program.
[66] RTD. n.d. "FlexPass." http://www.rtd-denver.com/FlexPass.shtml.

neighborhood-sponsored pass offering employees unlimited rides on bus and rail services. The EcoPass program has two types of passes:

- **EcoPass for Employees**: Under this program, employers may pay in full or partially subsidize the cost of transit passes for employees. Employees may also pay the full cost of the EcoPass using pre-tax dollars. Benefits to employees include:
  - Unlimited rides on bus and rail services for up to a year;
  - No additional fare for trips to and from the local airport;
  - Tax benefits (passes may be purchased using pre-tax dollars); and
  - Automatic enrollment in the Guaranteed Ride Home program.
- Employers also benefit from this program, reducing payroll taxes, incentivizing employment at a company, and raising company morale. The payment for the pass can be customized: either the employer or the employee (using pre-tax dollars) pays the cost of the pass, or both parties may choose to split the costs. Through the use of RTD's Partner Portal, employers can further customize their benefits by buying and circulating tickets for employees in bulk or on an as-needed basis.[67]
- **Neighborhood EcoPass**: Neighborhoods within the RTD service area may also purchase Neighborhood EcoPass (NECO Pass) for residents. Like the EcoPass for employers, it is a discounted transit pass for use on all RTD modes. All homes within an applying neighborhood must be included in an EcoPass contract, and residents must be approved by a neighborhood association to be eligible. Neighborhoods self-select into the EcoPass program, with interested residents doing the work of surveying neighborhoods to ascertain which households are interested in purchasing an EcoPass. The RTD uses the results of the neighborhood survey to determine the cost to the neighborhood, with the minimum contract amount of $8,000. If the neighborhood has a homeowner's association or neighborhood association capable of entering into legally binding contracts, then the association purchases the NECO passes, however, if it does not then local transportation or TDM agencies (e.g., GO Boulder) purchase and distribute the passes for the neighborhood. While residential EcoPass holders receive the nearly the same level of benefits as employee holders, they are not enrolled in the Guaranteed Ride Home program.

C-Pass (Columbus, Ohio) Downton C-Pass Program (Columbus, Ohio)

The Downtown C-Pass provides unlimited travel on Central Ohio Transit (COTA) buses to employees and residents of the Capital Crossroads Special Improvement District (CCSID), which covers much of downtown Columbus, Ohio. The C-pass program is a partnership between the CCSID, the COTA, and the Mid-Ohio Regional Planning Commission (MORPC) and is funded by property owners in the District and voluntary contributions by corporations who want to reduce drive alone travel in order to reduce the need for parking.[68] The program is available at no cost for employers or employees to join, though employees must work 15 hours per week, on average, to be eligible to participate.[69] Property owners are assessed six cents per square foot.

The C-Pass began as a pilot that later launched as a full program. The Capital Crossroads Special Improvement District (CCSID) is an organization in which downtown property owners pay special assessments to fund a special management district that administers

[67] RTD. n.d. "EcoPass." https://www.rtd-denver.com/fares-passes/ecopass.
[68] MORPC. 2020. "About Our Partnership." Mid-Ohio Regional Planning Commission. https://morpc.gohio.com/regional-programs/downtown-cpass/downtown-cpass-partnership/.
[69] Ibid.

services (such as cleaning) to the downtown area. CCSID is essentially “problem solvers” for downtown property owners. Several years ago, CCSID staff learned that parking had become a major issue for downtown property owners and their tenants. CCSID explored building shared parking garages or remote lots, but these solutions were not feasible, cost effective, or realistic. At that time, the organization’s Executive Director suggested developing a transit pass program similar to one in place for Ohio State University (OSU) students. (OSU Students receive free, unlimited use transit passes.) An initial C-Pass pilot program was launched, funded by a grant from MORPC and in partnership with COTA. Transit ridership among employers participating in pilot program doubled. The results of the pilot proved that the C-Pass program could work.

Figure 8: Downtown C-Pass Advertising (MORPC)

During the pilot phase, MORPC provided training and outreach to participating employers, including information on how to ride the bus. There was also a significant amount of outreach and education with property owners and their tenants on the C-Pass program when it was fully launched in 2018. The C-Pass Program partners (MORPC, CCSID, COTA) worked together to reach property owners, and through them their tenants to promote the C-Pass program and connect new and potential transit riders with key supporting programs including Emergency Ride Home. CCSID led the logistics of the outreach efforts, while MORPC and COTA brought supporting staff and materials to tabling and in-person outreach events at C-Pass buildings. The Ohio Department of Transportation funded the creation of supporting videos on commuting options.

Prior to the pilot’s results, property owners were skeptical that an unlimited use transit pass would be used and could reduce the impact of the parking constraints on downtown property owners. By calling the initial deployment of C-Pass a pilot, it meant that if it didn’t work that no one was committed to doing maintain the program long-term. Today CCSID member property owners have agreed to a transit assessment to fund the C-Pass program. There is a gap between what is funded by CCSID and the cost of the program, and this funding gap is met with a grant from MORPC. MORPC also funded the development of and maintains a member portal, where participating C-Pass companies can enroll employees, privately securely, and easily. The cost to create this member portal was over $100,000. The member portal also groups all for the C-Pass members and sends their credentials to COTA for validation; there is an API between the portal and COTA’s fare management system.

The program has been highly successful. Prior to C-Pass, fewer than five percent of employees in the CCSID took transit to work. The first year that C-Pass was in place, ridership among downtown workers doubled and then tripled. CCSID received feedback that companies were making office space leasing decisions based on whether a particular building was C-Pass eligible. As of 2021, 387 companies were enrolled in C-pass, with over 12,568 employees registered. A pre-pandemic survey found that 34 percent of employers reported that C-pass helps retain employees, and 34 percent reported likewise regarding recruitment. Finally, 52 percent reported that employee morale was boosted because of C-

pass.[70] In one year, transit ridership among workers eligible to use the program had risen from 5 percent to 14 percent. Sixty-eight percent of those using the C-pass attribute its availability as their reason for riding transit and an overwhelming majority (83 percent) of users who switched to transit from other modes did so due to their desire to save money. Nearly all (93 percent) of C-pass users own a vehicle.[71] Despite the impact of the pandemic, CCSID property owners renewed the C-Pass program for the 2021 to 2025 period and they increased their own transit assessment to 6 cents per square foot to pay for a greater proportion of the program's cost.

Everyone, regardless of industry or personal income level, uses the C-Pass. Service and hospitality industry employers in C-Pass eligible buildings have a competitive advantage in recruiting and retaining workers over hotels and other employers in non-C-Pass eligible buildings. Prior to the C-Pass, the expense of commuting and parking made it difficult to hire for low-wage jobs in downtown. Hotels have been particularly enthusiastic participants in C-Pass as it helps them to recruit and retain workers. Tech companies value the C-Pass as a great program that their employees use not only for the commute to work, but also for personal trips. A goal of the C-Pass program is for the C-Pass to be used for all kinds of trips, even though it is distributed primarily via employer tenants.

Gamification and Innovative Incentive Programs

Building on lessons from behavioral economics, gamification is the application of concepts from games to enhance or incentivize certain activities. Rewards, competition, point-tracking, and other elements of games can make activities more appealing. For example, the navigation app Waze includes badges and a leaderboard to encourage user engagement. Many transportation agencies have begun to incorporate gamification into mobile apps and other programs.

Bay Area Rapid Transit (BART) Perks Program (San Francisco Bay Area)

In 2017, BART ran a six-month incentive program in collaboration with the San Francisco County Transportation Authority (SFCTA). The program aimed to reduce crowding during peak travel hours by encouraging transit riders to shift their morning travel outside of the 7:30-8:30AM window.[72] Eighteen thousand riders signed up for the BART Perks program, with an average of 250 Perks participants shifting their travel each weekday. Riders that signed up for the program received cash rewards and were eligible for additional rewards when they shifted their travel out of peak periods. Participants could also play a game to win additional points or cash. Around $35,000 was awarded monthly to program participants and $210,000 in rewards was distributed during the program, which was mostly funded with an FHWA grant aimed at reducing congestion through the use of pricing and incentives as well as a half-cent transportation tax.[73]

BART ran a second phase of the Perks program from December 2018 to June 2019 with a group of 1,900 riders that were recruited from the first phase in order to test out a new platform. The second phase featured customized incentives that were based on station origin, travel history, including travel during peak periods, as well as the participants'

[70] CCSID. n.d. "2019 Annual Impact Report." Special Improvement Districts Downtown Columbus. https://downtownservices.org/wp-content/uploads/2019/02/CCSID-Impact-Report-2019-web.pdf.
[71] Mass Transit. 2019. "C-pass doubles transit ridership in downtown Columbus." https://www.masstransitmag.com/bus/press-release/21093288/capital-crossroads-special-improvement-district-sid-cpass-doubles-transit-ridership-in-downtown-columbus.
[72] BART. March 8, 2017. "Incentives shift BART riders out of the morning rush." https://www.bart.gov/news/articles/2017/news20170308.
[73] Ibid.

average departure time.[74] This phase did not offer rewards for general BART travel, but rather focused on limited-time offers targeted at specific individuals. Some participants did not receive offers, serving as control participants. Participants that received incentive offers shifted their travel to off-peak between 6-20 percent, depending on the offers they received.[75] The program was largely funded through a grant from the Federal Transit Administration.

Transit Incentives (San Diego, California)

SANDAG has recently started testing the use of behavior change strategies in incentives campaigns. To incentivize sustained use of transit, SANDAG asks those individuals to commit to using transit at least eight times throughout that month using a free multi-fare transit card. Those individuals can then use the same transit cards to purchase additional transit passes. When this program initially started, SANDAG observed a very high rate of retention; two thirds of people who activated their free passes transitioned into buying their own passes the following month. During the launch of this program, SANDAG selected participants who expressed a high degree of interest in the program. As the program went on, the process of selecting participants became less strict, and the rate dropped to 50 percent; half of the individuals given a free month of transit purchased their own transit passes after the month ended.[76]

Pedal Ahead (San Diego, California)

SANDAG partnered with local nonprofit Rider Safety Visibility, in addition to other local stakeholders, to launch an e-bike incentive program called Pedal Ahead. Pedal Ahead is a "loan-to-own" e-bike program. Participants commit to riding at least 1,800 miles per year for two years, or approximately five miles per day. They record their mileage on Strava. After two years, participants who hit the mileage target get to keep their e-bikes at no cost. Participants who do not meet the target mileage are offered the opportunity to purchase the bike at a prorated cost. SANDAG plans to expand this program moving forward, and continues to look for ways to ensure that the e-bikes are primarily going to low-income residents.[77]

IncenTrip (Washington, DC Region)[78]

IncenTrip is a free app that gamifies and rewards non-drive-alone commutes for people in the Washington, DC region that launched in 2019. Initial funding that was used to develop the technology came from the USDOT's University Transportation Center program grant, with later funding coming from Federal Highway Administration's Exploratory Advanced Research (EAR) Program and the USDOE's Advanced Research Project Agency- Energy (ARPE-E). On a regional level, IncenTrip is supported by the Commuter Connections Program at the Metropolitan Washington Council of Governments (MWCOG) and aligns with the region's long-range plan, Visualize 2045.

[74] BART. September 2019. "BART Perks Phase II Evaluation Report." https://www.bart.gov/sites/default/files/docs/Perks%20Phase%20II%20-%20FTA%20Final%20Report.pdf.
[75] Ibid.
[76] Interview with Jay Faught and Eva Sanchez, SANDAG. April 5, 2022.
[77] Ibid.
[78] More information about incenTrip can be found at https://incentrip.org/home.html.

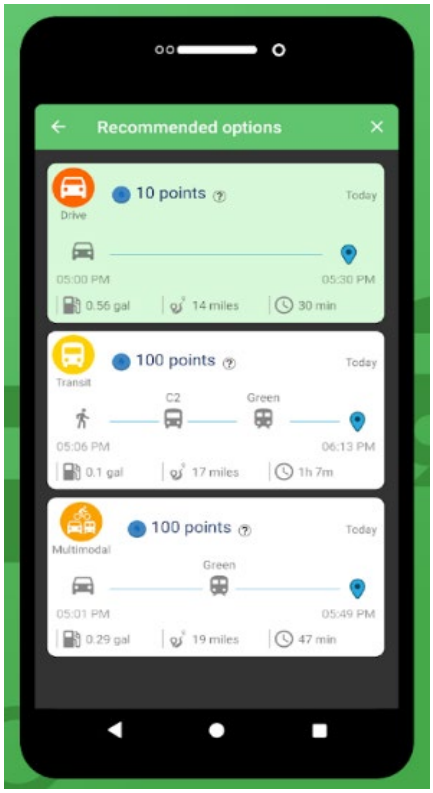

Figure 9: incenTrip screenshot (Google Play)

IncenTrip aims to reduce traffic congestion during weekday peak periods by shifting commuters to other modes. Users can download the app for iOS or Android, enter their home and work locations, and get real-time, multi-modal travel information for their destination. For peak-hours trips, users are rewarded with points based on their chosen mode of travel. The app also evaluates the origin, destination, departure time, whether the trip is a commute, and other travel options available when calculating rewards points.[79] The app logs the trip and its associated points, which can be redeemed for rewards such as gift cards and cash.[80]

Marketing Campaigns

Equity-focused Neighborhood Campaigns (Washington, DC Region)

goDCgo works to encourage the use of sustainable travel options in the District of Columbia and developed marketing campaigns to raise awareness and interest in non-drive alone modes. GoDCgo has also worked on equity-focused campaigns across the District, including Commute Savings Ahead. The campaign sought to raise awareness of the existing affordable transportation programs among income-eligible residents, increase enrollment in these programs, eliminate barriers to multi-modal travel in underserved/underrepresented neighborhoods, and raise awareness of and increase safe travel behaviors within the District. Resources and information about transportation programs are located on the campaign's landing page, which had 1,973 during the March-April 2021 run.[81]

[79] IncenTrip. n.d. "FAQ." https://incentrip.org/faq.html.
[80] Ibid.
[81] goDCgo. n.d. "Commute Savings Ahead." https://godcgo.com/commute-savings-ahead/.

Figure 10: Go Far with No Car Logo (goDCgo)

goDCgo also developed Go Far with No Car.[82] The targeted marketing campaign in DC's Brightwood neighborhood raised awareness of accessible, sustainable travel options among its residents from April-July 2021. Although the neighborhood is heavily populated, area residents often face with first mile / last mile challenges and limited transportation supply since there is no nearby Metrorail station. goDCgo partnered with four multi-family properties in the Brightwood neighborhood to promote their existing mobility options including Capital Bikeshare, dockless vehicles, bus stops, carpool, carshare, and rideshare. Other supporting services included virtual trip planning assistance (using the interactive map), event coordination, direct outreach, and customized resources.

Wayfinding and Navigation goDCgo Interactive Map and Get Around Guides (Washington, DC)

goDCgo also produces materials to help with bespoke navigation throughout the District. These materials include an interactive map on goDCgo's website that provides multi-modal directions (**Figure 11)**.

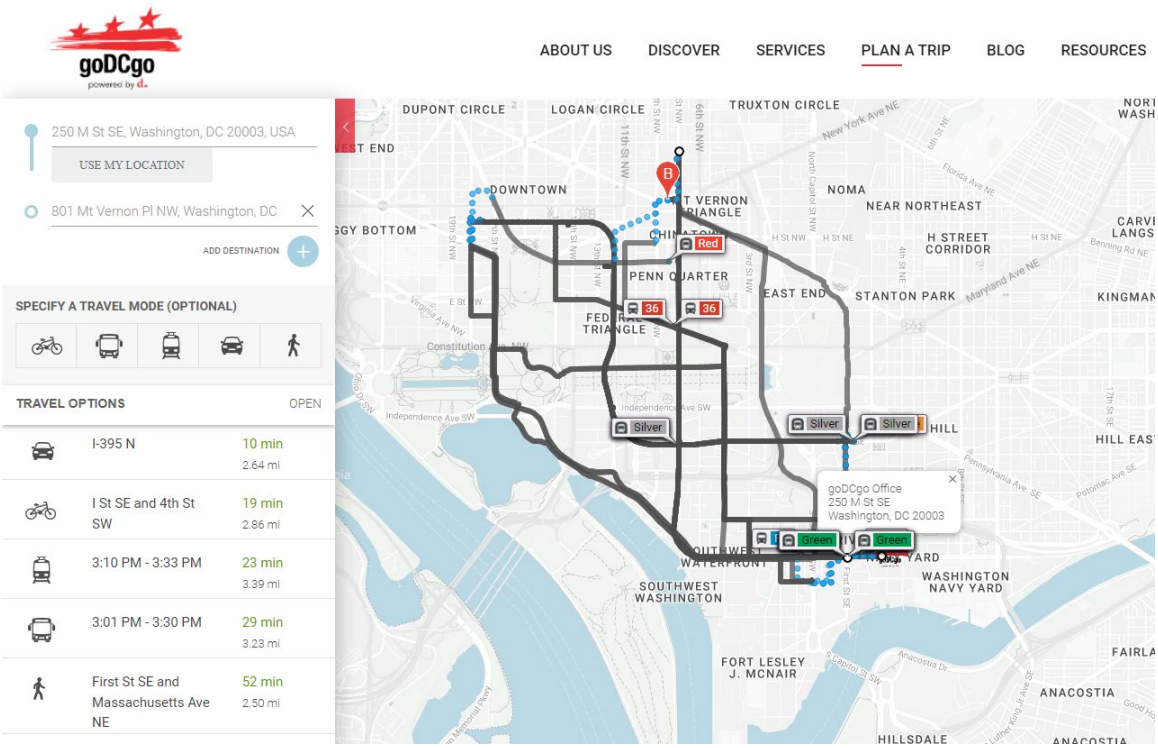

Figure 11: Interactive Map (goDCgo)

[82] goDCgo. n.d. "Go Far with No Car." https://godcgo.com/gofarwithnocar/.

For residential buildings and hotels, goDCgo produces customized Get Around Guides that show nearby transit connections and Capital Bikeshare stations. These guides can be included in prospective and new tenant information packages and attached to hotel booking confirmation emails to encourage non-drive-alone travel (**Figure 12**).

Figure 12: Customized Get Around Guide (goDCgo)

Bloomberg Philanthropies' U.S. Mayors' Challenge (Durham, North Carolina)

Through Bloomberg Philanthropies' 2018 Mayors Challenge, a national competition that encourages cities to devise innovative solutions to the challenges that they face, the City of Durham, NC launched a pilot program to curb the number of commuters driving alone. City leaders collaborated with behavioral science researchers to understand the barriers preventing travelers from changing travel modes, and subsequently provided incentives to encourage new travel habits. The City aimed to reduce SOV trips into the city's core by five percent. The pilot program entailed two main strategies: a personalized route planner and a cash lottery.[83]

[83] City of Durham. 2018. "Durham Reports Successful Pilot Results to Reduce Downtown Traffic Congestion." City of Durham. September 17.

The route planner provides mapped options, time comparisons, and benefits using a planning tool algorithm (**Figure 13**). Commuters who received personalized routes reported using non-

SOV alternatives 12 percent more than those who did not receive the routes. Commuters who swipe GoPass, Durham's transit pass, are entered into a lottery that awards weekly cash prizes. Commuters invited to participate in the bus lottery reported using non-SOV modes 19 percent more often. Participants also reported a higher level of happiness and lower levels of stress during their commutes. These strategies were supplemented by outreach at City Hall events, with resource packets containing transit maps for workers of partnered downtown employers and City staff. Overall, the incentives helped Durham exceed its goals and reduced drive alone trips among participants by more than five percent.[84]

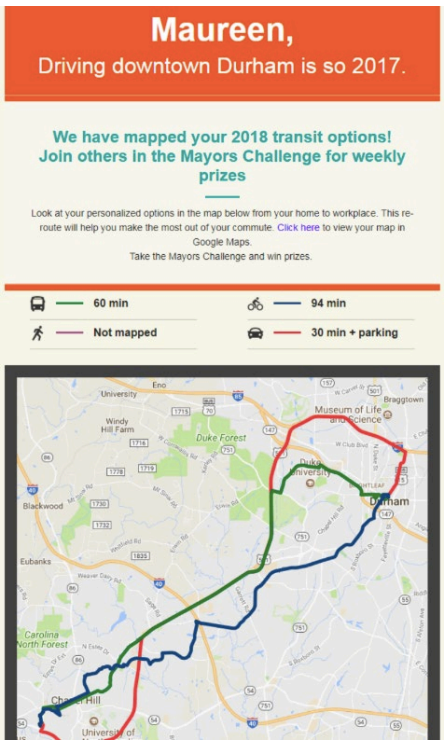

Figure 13: Sample of Personalized Route Map

In October 2018, Bloomberg Philanthropies awarded the City of Durham $1 million in grant funding to expand its successful program. The most recent iteration the program focused on commuting students at North Carolina Central University. The program launched prior to the start of 2019 school year and ran for eight weeks. Over 2,400 off-campus students received personalized route plans to help them explore alternative travel modes to get to campus. While data analysis and summary of findings are still in development, early results show that the program has a promising impact on reducing driving alone.[85]

https://durhamnc.gov/DocumentCenter/View/23775/Durham-Reports-Successful-Pilot-Results-to-Reduce-Downtown-Traffic-Congestion.

[84] Bliss, Laura. 2018. "Durham's Plan to 'Nudge' Drivers Out of Cars." CityLab. October 30. https://www.citylab.com/transportation/2018/10/durhams-plan-to-nudge-drivers-out-of-cars/574264/.

[85] City of Durham. 2019. "The Mayors Challenge team wraps their latest pilot program." Way to Go Durham. December 3. https://waytogodurham.com/the-mayors-challenge-team-wraps-their-latest-pilot-program/.

International TDM Best Practices

In Germany, communications about TDM are most closely tied to improving environmental quality (both emissions and noise pollution) and is less about reducing congestion. For this reason, TDM initiatives in Germany may also focus on fleet electrification. The positive public health impacts of active transportation are a secondary goal. TDM and active transportation as a TDM option is covered by a range of Federal Ministries, including the Ministry of Transport and Digital Infrastructure; the German Energy Agency; the Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection; and the German Environmental Agency, the Umwelt Bundesamt.[86]

Germany: Overview of Travel Demand Management Policies

Federal Initiatives and Plans

On a federal level, Germany's Federal Ministry of Transport and Digital Infrastructure released the National Cycling Plan 3.0 in 2021.87 One of the goals of this plan is to make Germany "a country of cycling commuters," with bicycles becoming the mode of choice. The plan calls for a network of long-distance, higher-speed cycling expressways for commuters over longer distances and close integration with transit to maximize the length of distances that can be covered without using SOVs. In 2018, a policy framework that could form the base of a national pedestrian plan was released.88 In 2020, it was announced that Germany would move forward with developing a national walking strategy.[89]

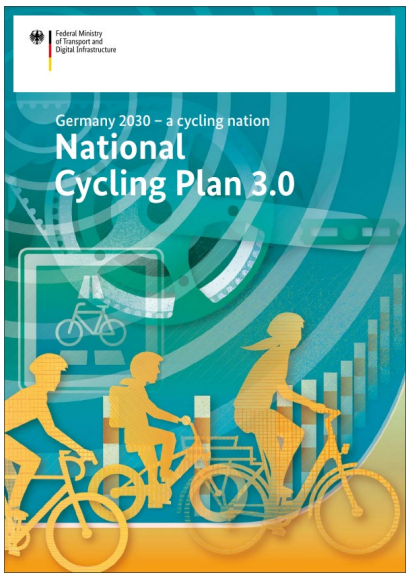

Figure 14: National Cycling Plan 3.0 (BMDV)

[86] Umwelt Bundesamt. n.d. "Mobilitätsmanagement." https://www.umweltbundesamt.de/themen/verkehr-laerm/nachhaltige-mobilitaet/mobilitaetsmanagement#akteure.
[87] Federal Ministry for Digital and Transport. n.d. "National Cycling Plan 3.0." https://www.bmvi.de/SharedDocs/DE/Anlage/StV/nationaler-radverkehrsplan-3-0-en.pdf?__blob=publicationFile.
[88] Umwelt Bundesamt. October 2020. "Let's Go!" https://www.umweltbundesamt.de/publikationen/lets-go.
[89] Walk 21. November 19, 2020. "'Let's Go' – Germany to advance walking with a national strategy." https://walk21.com/2020/11/19/lets-go-germany-to-advance-walking-with-a-national-strategy/.

Federal State Initiatives and Plans

Germany is composed of 16 Bundesländer, or federal states. Federal states have also developed their own TDM plans and policies.

Hesse

The state of Hesse, in central Germany, is home to the country's and mainland Europe's financial center, Frankfurt am Main. Frankfurt is a key transportation and employment hub, with the Frankfurt Airport (over 81,000 employees) and Frankfurt central station, and is the largest city for commuting in the country (with 406,000 daily inbound commuters and 277,000 outbound commuters).[90] As part of the larger Main-Rhine Region, Hesse is part of a key industrial area in Germany. Hesse's Mobility 2035 Strategy notes the importance of improving and building out high-speed cycling networks in areas with high bicycle commuting potential.[91]

Baden-Württemberg

Baden-Württemberg, in southwest Germany, recognizes the important role that the government can serve as an employer that supports and advances environmentally friendly modes of travel. The state has launched several TDM initiatives, mostly aimed at government employees:[92]

- JobTicket BW – As the first of its kind in Germany, state employees get a monthly subsidy of 25€ towards a transit pass. The subsidy is distributed along with the employee's monthly salary direct deposit.
- JobBike – A program for state employees (specifically, civil servants and judges) to lease a traditional or e-bike from one of over 6,000 bike shops in Germany.
- Supportive infrastructure: The state notes that it is not enough to make bicycles available for state employees, but that supportive infrastructure is also required. The state provides financial support of up to 4000€ for the construction of bicycle parking and other bicycling infrastructure (such as showers and lockers) for each office location.
- Electrification of the state's vehicle fleet and the issuance of a collective RFP for the procurement of clean vehicles.
- An employer program to support environmentally sustainable mobility that minimizes carbon emissions, particulate matter, and nitrogen oxides, and financial support for project management and capital investments (such as facilities, buildings, and vehicles).

[90] Hessenschau. January 28, 2022. "Zahl der Pendler gestiegen." https://www.hessenschau.de/panorama/zahl-der-pendler-gestiegen,kurz-ffm-pendler-100.html.
[91] Hessisches Ministerium für Wirtschaft, Energie, Verhkehr und Landesentwicklung. n.d. "Hessenstrategie Mobilität." https://www.mobileshessen2030.de/mm/105_55_Hessenstrategie_Mobilitat_2035_online.pdf.
[92] Ministerium für Verkehr Baden-Württemberg. n.d. "Mobilitätsmanagement." https://vm.baden-wuerttemberg.de/de/verkehrspolitik/nachhaltige-mobilitaet/mobilitaetsmanagement/.

Figure 15: Bicycling Street (Freiburg)

City Initiatives and Plans

Many cities have developed initiatives that combine environmental sustainability (in particular, emissions) and mobility. A few examples from the city of Freiburg im Breisgau (which is also in Baden-Württemberg) are highlighted below.

Table 8: Freiburg im Breisgau Initiatives

Name	Description
Traffic Planning	Description of how transportation planning in the city has moved away from auto dependency since the 1960s.
Bicycle Plan	Goal to increase bicycle mode split to over 30 percent while decreasing crashes simultaneously. Freiburg will spend 16 million Euro on active modes over the next two years.
Strategy Paper on Climate Protection and Mobility	Calls for the expansion of regional bicycle and transit infrastructure for commuters as a priority to reach climate goals. Mentions that the in- and out- commutes have a considerate influence on the emissions in Freiburg; and that the so-called “day population” is important.
Participation in the Climate and Mobility Pilot Program	Freiburg is participating in a pilot program from the Federal State of Baden Württemburg that will help identify initiatives that reduce carbon dioxide emissions in the transport sector. Freiburg has set a goal to become climate neutral by 2038.
Welcome Packet	New residents receive a welcome packet with information about all available modes of travel when they complete their municipal registration. (Note: In Germany, all residents are required to perform an address registration at their local town hall shortly after arrival).
Transit Accessibility	All public transit stations and vehicles are accessible for wheelchairs and strollers.
Discounted transit for people with low incomes	Since 2016, discounted transit is available for recipients of social services.
Bikeshare Discounts	Select subscribers (e.g., students, JobTicket BW holders, monthly transit pass holders) receive discounted bikeshare rides.

E-bike Subsidies

Deutsche Dienstrad is a company that specializes in workplace bicycle leases. One of their purchase models is employer-based and is intended to eliminate the initial high-price barrier. Employers lease e-bikes for their employees from Deutsche Dienstrad, and then pass the lease costs through to their employees through paycheck deductions. The lease includes insurance for theft, vandalism, and injury. At the end of the three-year lease, the employee can elect to purchase their e-bike for the pro-rated price (the purchase price minus the amount already paid through the lease) or continue leasing. According to Christina Diem-

Puello, managing director of Deutsche Dienstrad, there are 1.6 million employees in Germany riding employer-provided e-bikes, 200,000 of which are provided by her company.[93]

Vancouver, Canada

Introduction

Transportation Demand Management (TDM) plans and initiatives in Vancouver, Canada, are less focused on commuter trips than American peers and are more about replacing trips made via private vehicles with other, sustainable modes. The City has developed multiple, integrated plans that link transportation, environmental, and public health goals.

One example is the Climate Emergency Action Plan, which ties transportation to behavior change, equity, climate change mitigation, and environmental quality (**Figure 16**). The Big Move 2 goal (to make 2/3 of trips by active transportation or transit by 2030) is supported by the City's TDM Action Plan. The Climate Emergency Action Plan was developed after the Vancouver City Council unanimously declared a climate emergency in 2019.[94] Another example is the TDM Action Plan, the goal of which is to use promotions and programming to encourage active transportation and transit trips and reduce the number of private vehicle trips. The plan, which builds on the City of Vancouver's Active Transportation Promotions and Enabling Plan (ATPEP), is also a part of the City's climate emergency response. Some of the TDM Action Plan's actions are intended to contribute towards meeting the Climate Emergency Action Plan's goal Big Move 2 goal. The plan has ten strategies, each with several associated actions and metrics. These strategies aim at laying a foundation to successfully implement the plan; launching and supporting programs and campaigns to reduce private vehicle trips; engagement with employers, schools, and tourists; and partnerships and collaboration at internal, regional, and provincial levels; and advocacy to encourage support for TDM at all levels of government.

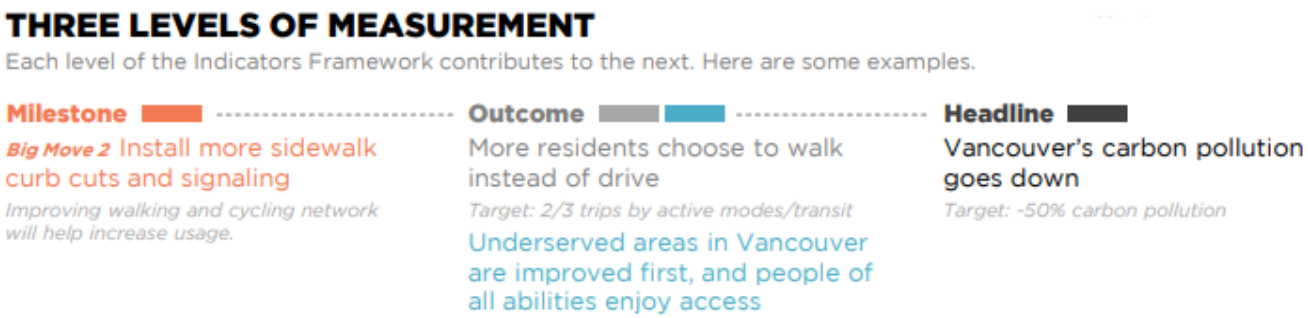

Figure 16: Climate Emergency Indicators Framework (City of Vancouver)

City Plans and Initiatives

City Plans

Table 9 provides an overview of related plans, the year they were approved, and highlights/key metrics, and how they connect with other plans.

[93] Sieg, Klaus. Reasons to Be Cheerful. August 14, 2020. "How Europe Engineered its E-Bike Boom" https://reasonstobecheerful.world/how-europe-engineered-its-e-bike-boom/.
[94] City of Vancouver. October 22, 2020. "Recommendations for How We Move." https://council.vancouver.ca/20201103/documents/p1.pdf.

Table 9: Vancouver, BC City Plans

Plan Name	Year	Highlights/Key Metrics
Transportation Demand Management Action Plan 2021–2025	2021	Top goal is increasing trips made by sustainable modes. Key metric is shifting active transportation and transit mode share to 67 percent of trips by 2030 (from a baseline of 54 percent in 2019). Builds on ATPEP.
Climate Emergency Action Plan	2020	Goal #1: By 2030, 90 percent of people live within an easy walk/roll of their daily needs. Goal #2: By 2030, two thirds of all trips in Vancouver will be made on foot, bike or transit. Some aspects of this recommendation are the development of a Vancouver Transport Pricing Strategy; that staff develop a City-Wide Transportation Demand Management Action Plan; and that staff make recommendations about eliminating parking minimums, instituting parking maximums, and incorporating sustainable transportation in new developments; as well as the management of all curbside space. These goals are supported by The Vancouver Plan (long-range plan) and the TDM Action Plan, respectively.
Active Transportation Promotion and Enabling Plan (ATPEP)	2016	Describes marketing campaigns, school-based programs, and road user education (i.e., it is focused on non-infrastructure-based approaches). Originated as an action from the Healthy City Strategy action plan and supports Transportation 2040 targets.
Healthy City Strategy	2014	Goal: Safe, active, and accessible ways of getting around. Target: Make over 50% of trips by foot, bicycle, and public transit by 2020 (met). These efforts supported by the Transportation 2040 Plan and the Climate Emergency Action Plan.
Transportation 2040 Plan	2012	Long-term strategic plan Prioritizes modes of travel, with walking as the top preferred mode and private automobiles as the fifth and least preferred mode
Greenest City Action Plan	2011	Ten-year plan that hit eight of 18 targets, including both Green Transportation targets:

Plan Name	Year	Highlights/Key Metrics
		50 percent of trips by foot, bicycle, and transit. Reduce average distance driven.

City Initiatives

Table 10 lists City-led initiatives to bolster TDM. This list does not include infrastructure improvements to support active modes and transit.

Table 10: Vancouver, BC City Initiatives

Name	Description
TDM for New Developments By-law, 2019	• City may require TDM plans as part of rezoning and/or development permit applications and for development in certain areas, such as the downtown core. • Points-based system. • Schedule A is a set of worksheets to determine TDM requirements. • Schedule B is a set of fact sheets that detail points; compliance information; development review; and ongoing monitoring and reporting. • Required TDM measures tied to Transportation 2040 and Greenest City.
School Active Travel Program (SATP)	• City engages schools and communities to understand transportation challenges and opportunities. • Key initiatives include infrastructure improvements; active travel education; Walk Bike Roll mini grants; a walking school bus pilot project; and Bike to School Week. • Direct outcome of the Transportation 2040 Plan; also supports the Climate Emergency Action Plan.
Walk + Bike + Roll	• Landing page with information about all sustainable options. • Goal: Encourage and support walking, cycling, and rolling so that 2/3 of all daily trips are made by walk, bike, and transit.
Sustainable Commuting Program (SCP)	• Rebates on transit passes. • Monthly incentives and access to reserved parking for staff who share rides. • Incentives for biking, walking, skateboarding, and rollerblading, such as gift cards for rain gear. • Cycling skills courses and subsidized bike tune-ups. • Guaranteed Ride Home program.
Low-Income Transit Pass Pilot	• Pilot provided free or subsidized single-zone fares to 50–100 people.
Making Streets for People Program	• Program launched in response to COVID-19 that includes Slow Streets; added space for transit boarding and alighting; and making more room for walking, rolling, and cycling.

TransLink

TransLink, Vancouver's public transit agency, also provides the TravelSmart program with a portfolio of services aimed at reducing drive-alone trips.[95] The program is aimed at individuals and businesses and provides toolkits for non-SOV travel modes. TravelSmart also has specialized outreach for newcomers (immigrants and returning residents); seniors; and schools and has developed partnerships with corporate and government entities. TravelSmart for Business helps employers establish a transit pass program for employees at a contribution amount that works best for them and provides information about flexible travel options and offers for Employees.

TransLink finished Transport 2050, which is the agency's long-term strategic plan.[96] A part of this plan includes expanding the reach of TDM in the region, which may be achieved through cost-share initiatives, TravelSmart, and Transportation Management Associations (TMAs). The plan also notes that people may be more open to trying something new in certain instances-such as when moving, changing jobs, or starting school. The agency also explored behavior change and its relation to TDM.[97] The report examines that although people's choices to travel via SOV are thought-out, others are made simply via habit and have the potential to be shifted via behavior change. While the report also notes the importance of so-called "supply-side solutions," such as infrastructure, they are more expensive and tend to be more politically divisive than demand-side solutions like behavior change.

Moving Forward

The most recent Climate Emergency Annual Report offers insight into upcoming Vancouver City Council decisions and actions (**Figure 17**).[98] Parking standards, rezoning, and transport pricing may impact TDM in the City.

[95] TransLink. n.d. "TravelSmart." https://www.translink.ca/rider-guide/travelsmart.
[96] TransLink. n.d. "Regional Transportation Strategy." https://www.translink.ca/plans-and-projects/strategies-plans-and-guidelines/transit-and-transportation-planning/regional-transportation-strategy.
[97] Alta Planning + Design. n.d. "Applying Behavioural Insights to Transportation Demand Management." https://altago.com/wp-content/uploads/Behavioural-Insights-to-Transportation-Demand-Management_FINAL.pdf.
[98] City of Vancouver. n.d. "Climate Emergency Annual Report 2021." https://vancouver.ca/files/cov/2021-ceap-annual-report.pdf.

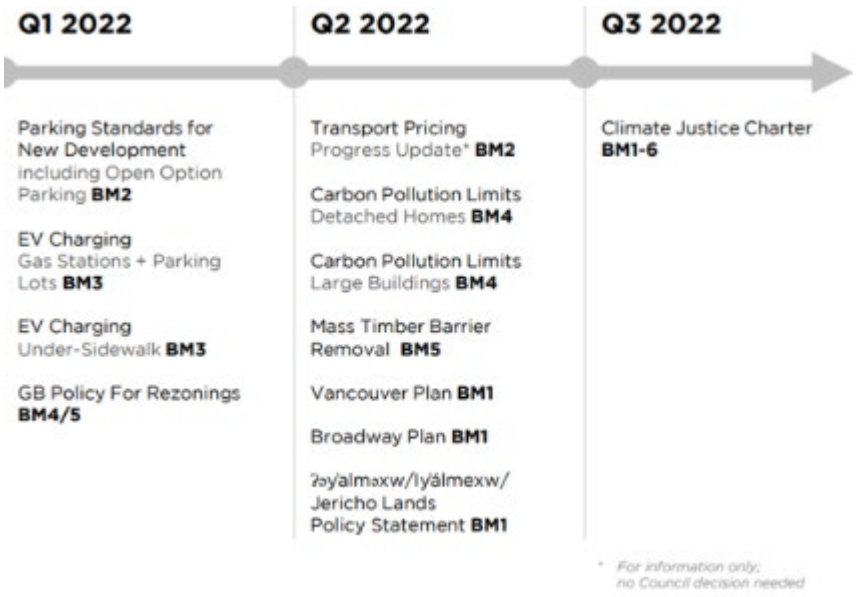

Figure 17: Upcoming Council Decisions (City of Vancouver)

Perth, Australia

Introduction

TDM initiatives in Perth began in response to anticipated population growth. In the mid-nineties, policy makers recognized the impacted that continued automobile use and related road infrastructure would not be sustainable in light of anticipated growth. In Perth, TDM initiatives provide a cost-effective alternative to expanded road infrastructure.[99]

City Plans and Initiatives

Plans

Table 11 provides an overview of related plans, the year they were approved, and highlights/key metrics.

Table 11: Perth City Plans

Plan Name	Year	Highlights/Key Metrics
TravelSmart 2010	1999	• Reports on the TravelSmart's ability to achieve the Metropolitan Transport Strategy's goals.
Metropolitan Transport Strategy	1995	• Goal of shifting 24.5 percent of all car trips to other modes by 2029. • TravelSmart programs began as a response to this strategy.

City Initiatives, Programs, and Studies

Table 12 lists City-led initiatives to bolster TDM. This list does not include infrastructure improvements to support active modes and transit.

Table 12: Perth and Environs Initiatives

Name	Description
Perth Parking Management Act, 1999	• Mandates parking levies for all non-residential parking spaces in the Perth Parking Management Area (which includes the entire City of Perth).

[99] https://www.icevirtuallibrary.com/doi/10.1680/muen.2002.151.1.39.

Name	Description
	• Revenue is used to provide free bus service; a Free Transit Zone; and infrastructure improvements (including bus lanes; cycle paths; pedestrian improvements; and traffic management).
TravelSmart	• Encouraged travel modes other than private automobile. • Implemented using "Individualised marketing" program that provided information to households through schools, businesses, and others that ran their own TravelSmart programs. • Transitioned into the You Move Program.
Your Move	• The Your Move Program is the evolution of behavior change programs and TravelSmart programs. • Your Move has updated branding and a new website that provides information for communities, schools, and workplaces all in one place. • Your Move staff provide free information and consultations to help people change their travel habits.

From TravelSmart to Your Move

The TravelSmart TDM program began in response to the 1995 *Metropolitan Transport Strategy*, which aimed to reduce automobile trips by shifting travel to other modes over the course of decades. The strategy included targets for mode share by 2029, which would be achieved by dispersing would-be automobile travel across other modes, such as cycling and public transit. **Figure 18** shows the base year in red and the 2029 targets in green. It is important to note that these efforts were not intended to reduce the number of trips, but rather the mode of travel.

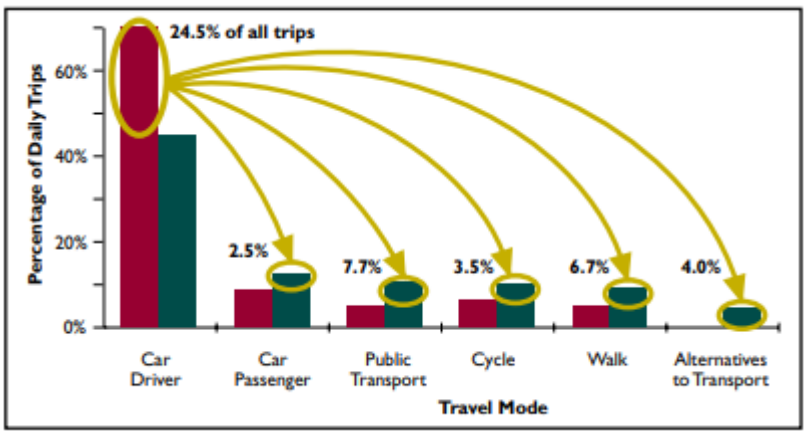

Figure 18: Modal Shift Targets (Government of Western Australia)

Three major principles of TravelSmart included: quantifying the value of the program to multiple stakeholders; gathering community support; and building capacity to deliver the program.[100] The program also had a particular emphasis on measuring the results of behavior change, mostly through household travel surveys, and in-depth interviews, which

[100] James, B. March 2002. "TravelSmart-large-scale cost -effective mobility management. Experiences from Perth, Western Australia." https://www.icevirtuallibrary.com/doi/10.1680/muen.2002.151.1.39.

were then used to estimate the program's value. Marketing and outreach was conducted via "individualized marketing," which provided tailored communications to households based on their likelihood and interest in using alternative modes of travel (which was determined via surveying). By 2008, over 418,5000 residents had been reached.[101] Another critical element of the program was the concept of providing individuals with information and encouragement to cause them to voluntarily change their behavior. Ultimately, the TravelSmart program reduced automobile use by 14 percent while increasing active transportation by 20 percent.[102]

TravelSmart evolved into what is now Your Move. Your Move provides travel resources to the community, schools, and workplaces under one unified brand and website. The website hosts live user stats and program data (e.g., number of welcome packs delivered to participants, vouchers provided to local businesses, etc.) as well as resources for all types of stakeholders. Virtual leaderboards show the top ten TDM leaders in each user category.

[101] Garnaut Climate Chante Review. n.d. "TravelSmart and LivingSmart Case Study – Western Australia." https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.224.9762&rep=rep1&type=pdf.
[102] Victoria Transport Policy Institute. n.d. "Health and Fitness." https://vtpi.org/tdm/tdm102.htm.