

TRANSPORTATION DEMAND MANAGEMENT

Program Details

Department of Transportation

City of Madison

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Key abbreviations:

BRT: Bus Rapid Transit (referring to the East-West BRT Corridor in Madison)

DU: Dwelling (or residential) unit

HOV: High occupancy vehicles

SOV: Single occupancy vehicles

TDM: Transportation demand management

TMA: Transportation management association

TOD: Transit-oriented development

VMT: Vehicle miles traveled

DRAFT



1. INTRODUCTION

1.1 Planning for transportation demand management in Madison

Transportation demand management (TDM) refers to a package of policies and strategies designed to increase transportation system efficiency and shift travel patterns to reduce the number and length of single-occupancy vehicle (SOV) trips.

Various planning documents in Madison indicate the need for a TDM program. These include the “Imagine Madison” Comprehensive Plan which stipulates the implementation of TDM strategies to serve high intensity development, the “Madison in Motion” Transportation Plan that recommends administering a TDM initiative and the latest Climate Forward agenda that pushes for sustainable, low-carbon transportation modes.

Figure 1: Relevant planning goals and strategies in Madison

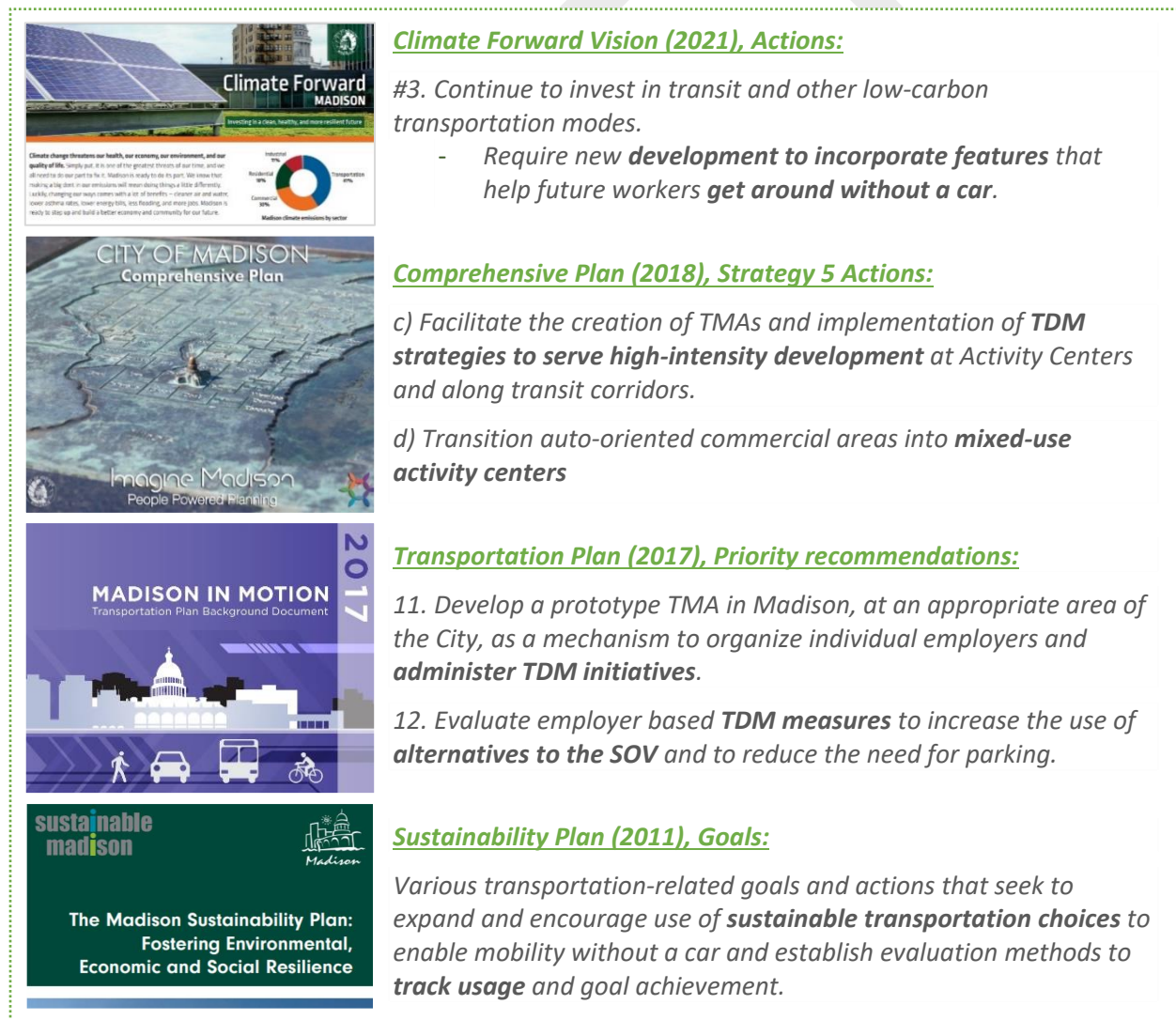
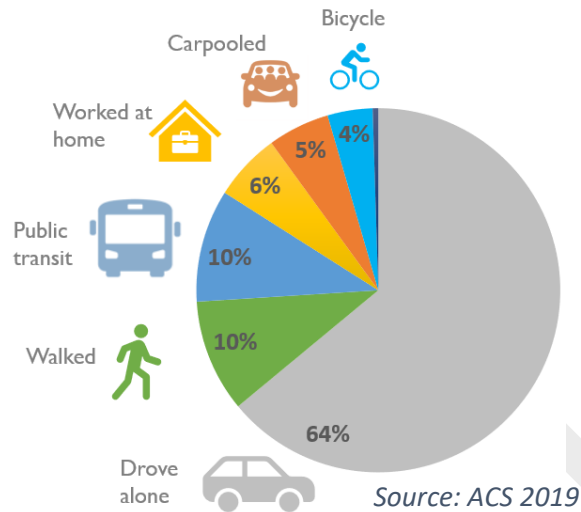
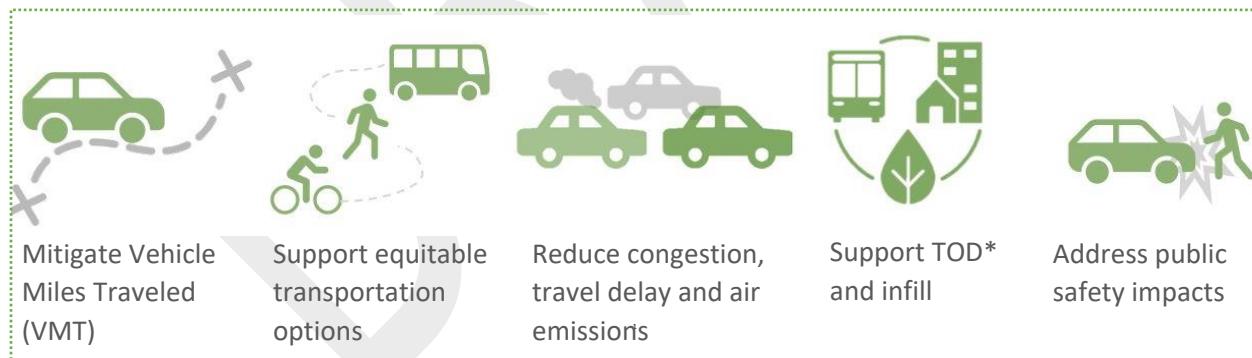


Figure 2: Means of transportation to work in Madison



Roughly two-thirds of work-related commute trips in Madison are SOV trips. By encouraging alternative ways of commuting and limiting new car travel, TDM policies can help preserve road capacity and limit negative impacts of systemwide traffic (measured as vehicle miles traveled or “VMT”) such as air emissions, noise, and congestion, while also proactively addressing localized issues of public health and safety, livability, and multimodal access. It does this by improving sustainable transportation choices, infrastructure, and services. These added community benefits make projects more tenable than those that add little more than traffic.

Figure 3: Purpose of TDM and community benefits



1.2 Existing TDM efforts in Madison

Madison requires TDM measures such as bike parking and direct pedestrian access of all new developments and requires more extensive measures in some cases. The city boasts a state of the art TDM program at the UW Madison campus, and numerous firms and governmental units also offer some form of TDM to their employees. Under the city's current land use ordinances, TDM measures are

*TOD: Transit-oriented development

sometimes required for conditional uses, planned developments, big box stores, and “employment campus” and “mixed use center” districts.

Figure 4: TDM references in Madison’s Zoning ordinance

Conditional Use

Give consideration to TDM measures and participation in a transportation management association. (section 28.183)

Employment Campus District

Requirement of a master plan for any rezoning submittal which needs to have a TDM plan with measurable goals, strategies, and actions to encourage non-SOV. The TDM plan would be managed by a property owners' association or other acceptable entity, which would need to provide annual implementation reports to the Traffic Engineer. (section 28.087)

Mixed Use Center District

The City Traffic Engineer may require a TIA to determine the impacts of the District. A TDM plan may be required to resolve traffic and parking concerns. (section 28.066)

Big box retail (by the Urban Design Commission)

Single retail business establishments of or over 40,000 sq.ft. with 100 or more full-time employees are required to have a TDM Plan (updated every 2 years) or participate in a TMA. Provide either a full priced monthly bus pass (Madison Metro), or atleast 3 of the following to all employees: ridesharing/ carpool matching; preferred parking for ride sharers; secured bicycle parking, showers and lockers; employee commuting subsidies or awards; emergency ride home program; employer-subsidized bus passes; provision of real-time transit information; or other options to discourage SOV use. (section 33.24)

Planned Development District

A TDM plan may be required to resolve traffic and parking concerns. The Plan shall include measurable goals, strategies, and actions to encourage travelers to use alternatives to driving alone, especially at congested times of day. These could include carpools and vanpools; public and private transit; promotion of bicycling, walking and other non-motorized travel; flexible work schedules; parking management programs, etc. (section 28.098)

However, the current requirements lack consistent standards and predictable application. TDM plans and measures have been required on an ad hoc basis, at the discretion of city authorities. Some of the larger, more prominent developments with existing TDM plans include institutional campuses (UW-Madison, Madison Area Technical College), UW Health, the Moxy hotel, Archipelago Village and Madison Yards.

There are some TDM-related initiatives at the regional level as well – Madison Area Metropolitan Planning Organization implements the Rideshare, etc. program, for commuters and employers in a 48-county area of central and southern Wisconsin and northern Illinois. The program seeks to reduce congestion and pollution and provide commuters with travel options and personal transportation cost



savings. The program is in partnership with Metro Transit, the State Vanpool Program, Dane County, City of Madison, UW-Madison, and other public/private employers throughout the area, helping develop in-house rideshare programs as well.

BICYCLE INFORMATION

Wondering about the ins and outs of biking on campus? Look no further!

CARPPOOL

Have some friends to drive with? We administer a carpool program for faculty and staff. Benefits available for small and large groups.

EMERGENCY RIDE HOME

The Emergency Ride Home (EHR) Program supplies emergency cab vouchers for employees who don't drive to campus.

SAFEWALK

SAFEwalk is a walking companion service available to all students, faculty, staff, and UW visitors! Call/text 608-262-5000.

BIKESHARE

Did you know UW, UW Health, and UW affiliate employees and students are eligible for discounted bikeshare memberships?

CARSHARE

Did you know there are cars to rent on campus? Zipcars are located throughout campus.

FLEX PARKING PROGRAM

Can you bike, bus, carpool, vanpool, or walk most of time? The Flex parking program is for those few times when driving is necessary.

VANPOOL

Large groups (8-15 people) can rideshare in a state-owned passenger van, sharing costs.

CAMPUS BUS

All things bus! Fare-free campus buses are coordinated by Transportation Services.

CUSTOM ROUTE PLANNING

Submit this form to get a customized transportation info based on your preferences and interests.

EMPLOYEE BUS PASS

Transportation Services administers an employee bus pass program, available at a greatly subsidized cost. Students can get passes through ASM.

UW-Madison is a national leader in campus-based TDM and has the most successful and comprehensive TDM plan in Madison so far. It is a component of the UW-Madison Campus Master Plan, that is updated every 10 years. A Commuter Solutions unit has been set up, dedicated to TDM, with the goal to reduce the amount of SOV coming to campus. TDM measures offered include abundant, convenient bicycle parking, weather bike protected lockers, free campus bus routes and subsidized Metro Transit passes for students and employees, emergency ride home program, carpool/vanpool options, car sharing & BCycle bike share facilities.

Source: UW-Madison Facilities Planning

1.3 Advantages of the proposed citywide TDM program

Current TDM requirements in the city help limit the traffic impacts from development, but some mitigation of those impacts might still be required. City staff and partners are currently considering reforms to standardize this process and implement more consistent requirements. Madison seeks to build on best practices and successful programs implemented across the country, and has designed a fair, consistent, and effective citywide TDM program, that is focused on managing trips from new and expanding development/buildings. Developers applying for building permits in the city would submit a TDM plan with their application, which would comprise of measures selected from a menu of options to meet TDM requirements. The requirements would be based on the project's land use, size and proposed parking capacity.

The proposed citywide TDM program would offer various advantages, highlighted below:

- ✓ **CONSISTENCY** – Uniform requirements across Madison with targets based on project size and proposed parking capacity.
- ✓ **CHOICE** – A menu with a range of TDM measures, from simply installing wayfinding signs to providing a land-use mix.
- ✓ **CLARITY** – Straightforward requirements and measure options through a simple online tool.

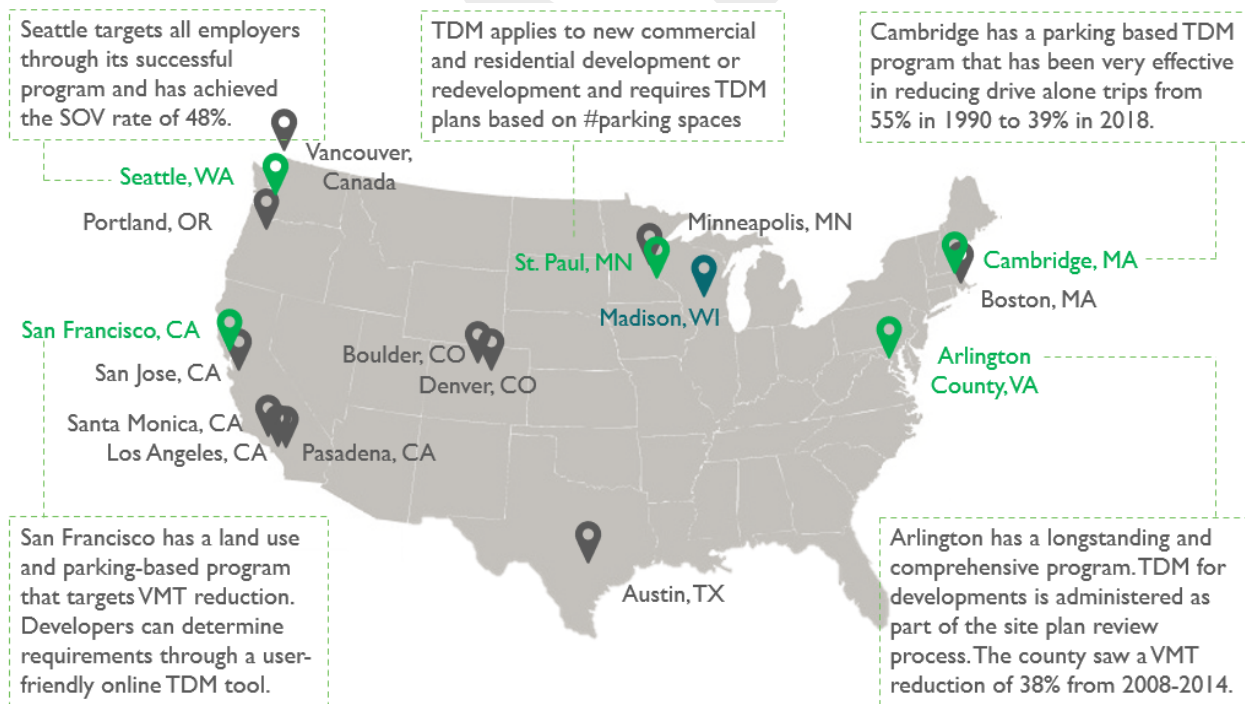


- ✓ **CREDIT** – Projects are acknowledged for meeting existing city requirements such as bicycle parking provision and pedestrian access.
- ✓ **CONVENIENCE** – Streamlined approval process for new or expanded buildings, that minimizes the need for external assistance.
- ✓ **COMMUNICATION** – Traffic-reducing elements of a project are summarized for the public and policymakers.

1.4 National best practices

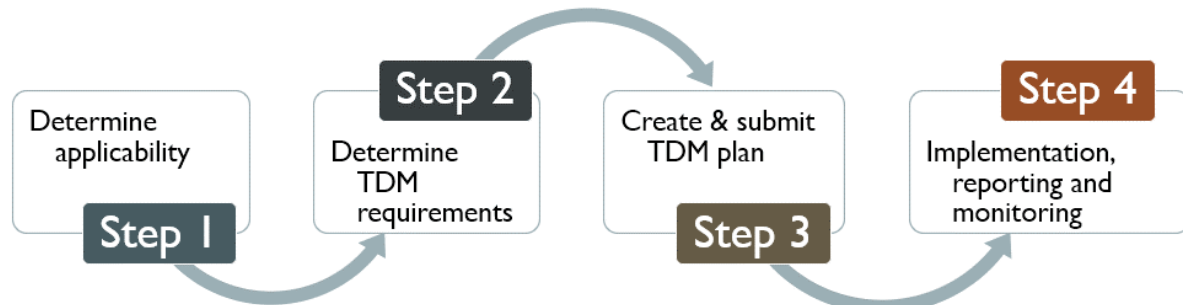
Throughout the U.S., more communities are adopting TDM programs—choosing to address transportation needs and traffic impacts by managing travel demand instead of continuously adding road capacity. Some of those communities, which informed the program development process in Madison, are shown in the figure below. Refer to [Appendix C](#) for a matrix summarizing successful TDM program structures and requirements in some other cities across the country. By implementing the proposed program outlined in this document, Madison will join the ranks of these other leading cities and in many ways advance the state of practices in TDM even further, subsequently making progress toward its long-term goals related to sustainability and multimodal access.

Figure 5: Existing TDM programs reviewed



2. TDM PROCESS

The entire TDM process can be broadly divided into four steps which have been explained in detail below. Refer to [Appendix B](#) for hypothetical project examples that illustrate how the program would work for different uses.



Step 1: Determine applicability

TDM applies to new and expanding developments seeking building permits with residential and/or non-residential uses (commercial, employment, institutional). Table 1 lists out the size thresholds, exemptions and eligible uses for each of the four broad land use categories.

Table 1: Land use categories and TDM applicability

| Land use category | Applicability | Eligible uses (as defined in Madison's Zoning Code) |
|--------------------|--|--|
| Residential | Applies to all proposed residential developments with 10 or more dwelling units, including residential components of mixed-use projects. Affordable housing projects are given some relaxation via point credits | <i>Multi-family dwelling; Adult family home; Community living arrangement; Cohousing community; Housing cooperative; Dormitory, fraternity, or sorority; Assisted living, congregate care, skilled nursing facility.</i> |
| Employment | Applies to all employment uses with over 10,000 sq. ft. of floor area including offices, service centers, storage and distribution centers, industrial uses, etc., as given alongside. Exemptions: - Uses with less than 10,000 sq. ft. of floor area. - Developments located in Employment Campus Districts with approved master plans. | <i>Offices; Artist, photographer studio, etc., Insurance office, real estate office, sales office; Telecommunications center; Artisan workshop; Wholesale Bottling plant; Laboratories - research, development, and testing; Limited production, processing, and storage; Mail order house; Printing and publishing; Recycling collection center, drop-off station.</i> Industrial uses: <i>Brewery; General manufacturing; Hazardous waste collection, storage or transfer; Light manufacturing; Recycling center; Asphalt, concrete batching or ready-mix plant; Concrete, asphalt and</i> |

| Land use category | Applicability | Eligible uses (as defined in Madison's Zoning Code) |
|----------------------|---|--|
| | | <i>rock crushing facility; Extraction of gravel, sand, other raw materials; Motor vehicle salvage; Lumberyard.</i> |
| Commercial | <p>TDM measures would be required only with respect to employees since the focus is on reducing employee SOV trips. Visitor/patron measures are optional and would get additional credit.</p> <p>Exemptions:</p> <ul style="list-style-type: none"> - Developments with less than 10 proposed parking stalls. - Uses with less than 40,000 sq. ft of floor area and proposed parking less than 1.25 times their respective parking minimums. - Daycare services including day care center, nursery school and animal daycare facilities. | <p>General retail: <i>Animal boarding facility, kennel; Bank, financial institution; Business sales and services; Laundromat, self-service; Liquor store; Package delivery service; Payday loan business; Service business with or without showroom or workshop; Small appliance repair; Building materials; Drive-through sales and services, primary and accessory; Dry cleaning, commercial laundry; Furniture and household goods sales; Garden center; Greenhouse, nursery.</i></p> <p>Food services: <i>Catering; Coffee shop, tea house; Restaurant; Restaurant-tavern, tavern, brewpub.</i></p> <p>Recreational and entertainment: <i>Health/sports club; Indoor recreation; Private club, reception hall; Outdoor recreation; Theater, assembly hall, concert hall; Adult entertainment establishment, adult entertainment tavern.</i></p> |
| Institutional | <p>TDM measures would be required only with respect to employees since the focus is on reducing employee SOV trips. Visitor/student measures are optional and get additional credit.</p> <p>Exemptions:</p> <ul style="list-style-type: none"> - Developments with less than 10 proposed parking stalls. - Uses with less than 40,000 sq. ft. floor area and parking less than 1.25 times their parking minimums. - Elementary and middle schools. - Institutions with campus masterplans. - Places of worship, public safety facilities. | <p>Hotel/lodging: <i>Bed and breakfast establishment; Hotel, inn, motel; Lodge.</i></p> <p>Educational: <i>Public and private high schools (Grade 9 and above); Arts, technical or trade schools; Colleges, universities.</i></p> <p>Health: <i>Clinic, medical, dental, or optical; Medical laboratory; Physical, occupational or massage therapy; Veterinary clinic, animal hospital; Hospital</i></p> <p>Others: <i>Library, Museum</i></p> |

For mixed use developments, TDM requirements for each use must be considered and met separately. Measures being jointly implemented for the development can be counted towards the point target for each land use, provided they are accessible for each use. Parking should be assigned for all uses to



determine use specific TDM targets. If parking is shared amongst the different uses, their respective parking maximums would be considered for determining their targets.

Step 2: Determine TDM requirements

TDM requirements are assigned using a point-based system and depend on the development's land use(s), size tier and proposed parking capacity. Size tiers are defined differently for the four use categories – dwelling unit for residential uses, student enrollment for educational uses and floor area for all other non-residential uses. Parking ratios also vary across the different uses – for residential uses, the TDM requirements are based on the ratio of parking stalls per dwelling unit; for employment uses it depends on the number of stalls per 500 sq.ft. of floor area; and for commercial and institutional it depends on the ratio of proposed parking to use-specific parking minimums (Refer [Section 28.141 \(4\) \(f\)](#) in Madison's Zoning code). A higher value in these two factors would imply a higher TDM target for the development. TDM targets would range from five to forty points for each use and can be determined using the tables provided below.

Table 2: TDM requirements for different land uses

| | Small | Low-Medium | Medium | High-Medium | Large |
|---|-----------------------------------|-------------------------|--------------------------|---------------------------|-------------------|
| RESIDENTIAL USES | 10-25 DU | 26-50 DU | 51-100 DU | 101-150 DU | > 150 DU |
| EMPLOYMENT USES | 10,000 - 25,000 sq. ft. | 25,001 - 50,000 sq. ft. | 50,001 - 100,000 sq. ft. | 100,001 - 150,000 sq. ft. | > 150,000 sq. ft. |
| Parking Stalls per Dwelling Unit (DU) or 500 sq. ft. floor area* | Mitigation points required | | | | |
| < 0.5 | 5 | 8 | 10 | 12 | 15 |
| 0.5 - 0.99 | 10 | 12 | 15 | 18 | 20 |
| 1.0 - 1.49 | 15 | 18 | 20 | 22 | 25 |
| 1.5 - 2.0 | 20 | 22 | 25 | 28 | 30 |
| 2.0 - 2.5 | 25 | 28 | 30 | 32 | 35 |
| 2.5 + | 30 | 32 | 35 | 38 | 40 |

| | Small | Low-Medium | Medium | High-Medium | Large |
|---|-----------------------------------|--------------------------|---------------------------|---------------------------|-------------------|
| COMMERCIAL USES* (with ten or more proposed parking stalls) | < 40,000 sq. ft. | 40,001 - 100,000 sq. ft. | 100,001 - 150,000 sq. ft. | 150,001 - 200,000 sq. ft. | > 200,000 sq. ft. |
| Ratio of proposed parking to use-specific parking minimum (PM) | Mitigation points required | | | | |
| Under PM | no TDM | 8 | 10 | 12 | 15 |
| 1 - 1.25 times PM | no TDM | 12 | 15 | 18 | 20 |
| 1.25 - 1.5 times PM | 12 | 15 | 18 | 20 | 22 |
| 1.5 - 1.75 times PM | 15 | 18 | 20 | 22 | 25 |



| | | | | | |
|--------------------------|-----------|-----------|-----------|-----------|-----------|
| 1.75 - 2 times PM | 18 | 20 | 22 | 25 | 28 |
| 2+ times PM | 20 | 22 | 25 | 28 | 30 |

| INSTITUTIONAL USES* | Small | Low-Medium | Medium | High-Medium | Large |
|---|-----------------------------------|--------------------------|---------------------------|---------------------------|-------------------|
| Educational uses | < 500 students | 501 - 1000 students | 1001 - 2000 students | 2001 - 5000 students | > 5000 students |
| All other institutional uses specified in Table 1 | < 40,000 sq. ft. | 40,001 - 100,000 sq. ft. | 100,001 - 150,000 sq. ft. | 150,001 - 200,000 sq. ft. | > 200,000 sq. ft. |
| Ratio of proposed parking to use-specific parking minimum (PM) | Mitigation points required | | | | |
| Under PM | no TDM | 8 | 10 | 12 | 15 |
| 1 - 1.25 times PM | no TDM | 12 | 15 | 18 | 20 |
| 1.25 - 1.5 times PM | 10 | 15 | 20 | 22 | 25 |
| 1.5 - 1.75 times PM | 15 | 20 | 25 | 28 | 30 |
| 1.75 - 2 times PM | 20 | 25 | 30 | 32 | 35 |
| 2+ times PM | 25 | 30 | 35 | 38 | 40 |

** Floor area is defined in Madison's Zoning Code as the sum of the gross horizontal areas of the floors or parts of a building devoted to the use, measured from the exterior faces of the exterior walls or from the center line of walls separating two buildings. It does not include porches, garages, or space in a basement or cellar when used for storage or incidental uses.*

***For unspecified uses under commercial and institutional use categories, the parking minimum of the use with the highest parking requirement among all uses specified for the zoning district where the site is located, shall be used to calculate the ratio of proposed parking to parking minimums. (Refer [Section 28.141 – Table 28I-3](#) in Madison's Zoning code).*

Step 3: Create and submit TDM plan

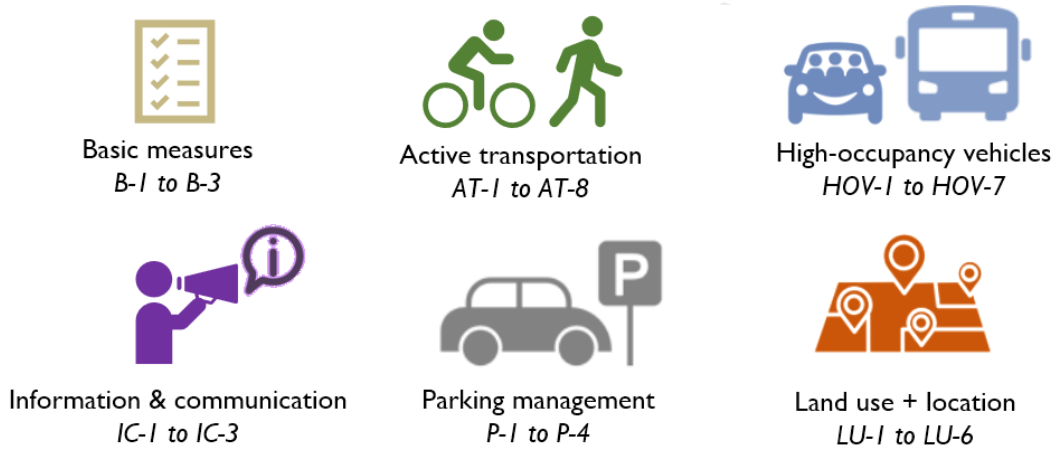
The next step requires developers or building owners to choose TDM measures from a menu to meet the assigned point target. They would then need to prepare a TDM plan with descriptions of the selected measures and submit it for review and approval, along with a nominal fee to cover administrative review of the plan.

The TDM menu comprises of 35 measures in six primary categories and a seventh miscellaneous category. The six primary categories are – Basic (B), Active Transportation (AT), High Occupancy Vehicles (HOV), Information and Communication (IC), Land Use and Location (LU) and Parking Management (P). The basic measures are mandatory for all projects, irrespective of land use and parking capacity. This includes designating a TDM coordinator and two other measures that are already required under existing development regulations i.e., providing bicycle parking and pedestrian access.



Under each of these broad categories, there are multiple measures to choose from. Each measure is worth points ranging from one to ten, which are based on efficacy in reduction of vehicle miles traveled (VMT)², documented best practices, and contextual relevance for Madison. Several measures offer sub-options where different points are awarded in proportion to the level of implementation and/or conditions being met.

Figure 6: TDM Measure Categories



Some additional options are provided under a seventh category “Others” (O). Building owners can earn points for delivery-related facilities, for joining a transportation management association or may even choose to pay an in-lieu fee, instead of meeting the point requirement through a TDM measure. Building owners can also propose any other TDM measure that is not on the list. They may then be awarded points at the discretion of the city staff. Table 3 given below lists out the thirty-five measures included in the menu of TDM options. The next section explains each of these measure categories along with their respective options. [Appendix A](#) provides information on applicability, points, and compliance requirements for all the measures in the TDM menu.

Table 3: TDM menu (proposed)

| Measure Category | Code | TDM Measures | Achievable points |
|------------------------------|------|---|-------------------|
| Basic (mandatory for all) | B-1 | Assign a TDM coordinator | 1 |
| | B-2 | Provide pedestrian path to sidewalk for continuous access | 1 |
| | B-3 | Provide bike parking as required by city standards | 1 |
| Active Transportation | AT-1 | Enhanced access to bike parking (segregated, indoor parking) | 1-2 |
| | AT-2 | No drive aisle crossing - provide direct pedestrian access | 1 |
| | AT-3 | Develop or fund off-site bike infrastructure | 2-8 |
| | AT-4 | Provide bike user facilities (lockers, maintenance station, etc.) | 1-3 |

² California Air Pollution Control Officers Association (Aug 2010). *Quantifying Greenhouse Gas Mitigation Measures*. Retrieved from: <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>



| | | | |
|-----------------------------------|-------|---|------------|
| | AT-5 | Provide a shared fleet of bikes for on-site users | 2 |
| | AT-6 | Install a bike share station or offer discounted memberships | 1-5 |
| | AT-7 | Develop or fund off-site pedestrian infrastructure | 2-8 |
| | AT-8 | Develop or fund traffic calming measures | 2 |
| High Occupancy Vehicles + Transit | HOV-1 | Offer vanpool options or shuttle service | 3-5 |
| | HOV-2 | Provide car share service/ shared fleet of cars | 1-4 |
| | HOV-3 | Implement an Emergency Ride Home program for employees | 1 |
| | HOV-4 | Pay for cab or Transportation Network Company rides to BRT | 2 |
| | HOV-5 | Offer discounted transit passes | 2-8 |
| | HOV-6 | Build or fund off-site transit facilities | 1-8 |
| | HOV-7 | Implement transit measures for patrons/visitors/students | 2 |
| Information & Communication | IC-1 | Marketing and informational campaigns on non-SOV options | 1-4 |
| | IC-2 | Install multimodal wayfinding signs | 1 |
| | IC-3 | Install a real-time bus/shuttle/vanpool arrival screen | 1 |
| Land Use + Location | LU-1 | Provide affordable housing | 1-10 |
| | LU-2 | Location efficiency determined by walk score (use online tool) | 1-5 |
| | LU-3 | Provide two or more land uses on-site | 2-6 |
| | LU-4 | Establish on-site or locate within ¼ mile of a daycare facility | 2 |
| | LU-5 | Provide other trip-reducing facility (e.g., on-site food service) | 1 |
| | LU-6 | Locate within a quarter mile of all-day transit service | 3 |
| Parking Management | P-1 | Implement a priced parking program | 3-10 |
| | P-2 | Have a shared parking agreement with nearby land uses | 2 |
| | P-3 | Contract with an off-site parking supplier (e.g., city garage) | 1 |
| | P-4 | Provide free or preferentially sited carpool parking | 2 |
| Others | O-1 | Delivery-related measures | 1 |
| | O-2 | Pay in-lieu fee to permanently achieve a point | As desired |
| | O-3 | Join a transportation management association | 1 |
| | O-4 | Provide other innovative measures, not listed here | 1-4 |

Step 4: Implementation, reporting and monitoring

Once the TDM plan is approved, building owners would be required to implement the measures specified in their plans. Developments may also choose to enroll or participate in a Transportation Management Association for additional assistance with on-site TDM operations. The city will track and monitor program implementation and set reporting requirements for developments, to ensure compliance with their respective TDM plans.



APPENDIX A: TDM MENU

The following section describes the seven measure categories mentioned above, along with information on each of the thirty-five measures in the TDM menu. Refer to the attached [spreadsheet](#) for detailed information on TDM measures including applicability, sub-options, achievable points and compliance requirements.

3.1 Basic measures (B)

This category includes three basic measures that are required to be implemented by all projects, irrespective of land use and proposed parking capacity. These include designation of a TDM coordinator, as well as provision of bicycle parking and pedestrian access. Measures B-2 and B-3 acknowledge and provide credit to developers for meeting existing city requirements.

Table 4: Basic measures

| S. No. | Measure & Options | Points |
|------------|--|--------|
| B-1 | Assign a TDM coordinator Designate a coordinator to manage TDM requirements and implementation. | 1 |
| B-2 | On-site pedestrian path to sidewalk Provide continuous access to building entrances from the street to the sidewalk, as required by existing city standards. | 1 |
| B-3 | Provide bike parking Provide bicycle parking as required by existing city standards. | 1 |

3.2 Active transportation measures (AT)

This category of measures encourages the use of active modes of transportation, specifically trips made by walking or cycling. Encouraging trips by active modes also help improve “first mile” and “last mile” connectivity between transit stations and the origin and/or destination of trip makers. The measures listed ahead to make travel by active modes safer and more convenient through enhanced access to bicycle parking, pedestrian and bike infrastructure improvements for better connectivity, provision of street furniture, bike user facilities such as showers and clothes lockers and bicycle repair and maintenance facilities, shared bicycle fleets, bike share facilities and discounted memberships and traffic calming measures.

Table 5: Active transportation measures

| S. No. | Measure & Options | Points |
|-------------|---|------------|
| AT-1 | Enhanced access to bike parking In addition to Basic-3, implement one or both the options listed below. | 1-2 |
| Option A | Segregated access to bike parking with no stairs Provide a convenient and segregated access to the bike parking area without stairs (e.g., on the same level as the entrance, or via a ramp or elevator). | 1 |
| Option B | Locational advantage | 1 |

| S. No. | Measure & Options | Points |
|-------------|--|------------|
| | <i>Locate the bike parking in a covered, indoor space, less than 100 feet from the main entrance.</i> | |
| AT-2 | No drive aisle crossing Access points/stairs should be located such that pedestrians do not have to cross parking lot drive aisles. | 1 |
| AT-3 | Off-site bike infrastructure Develop or provide funding for off-site bicycle infrastructure (bicycle lanes, cycle tracks, new crossings, bike-ped paths, etc.). Points would be awarded based on monetary value i.e., 2 points for every \$18,000 invested in an off-site improvement. | 2-8 |
| AT-4 | Bike user Facilities Provide one or more of the following bike user facilities. Options B and C should ideally be located adjacent to the bicycle parking area or storage room and connected to the elevator/lobby. | 1-3 |
| Option A | Provide bike lockers <i>Provide 1 locker for every 20 DUs or 30 employees for secure, long-term storage of bikes.</i> | 1 |
| Option B | Provide bike maintenance facilities <i>Provide a bicycle repair and maintenance station for on-site employees, tenants, residents, and visitors.</i> | 1 |
| Option C | Provide clothes lockers and showers <i>Provide 1 shower along with 5 clothes lockers for every 50 bike parking spaces</i> | 1 |
| AT-5 | Shared fleet of bikes for on-site users Provide an on-site shared fleet of free/rental bicycles for use by residents or employees. | 2 |
| AT-6 | Bike share Develop or locate next to a bike share station, part of the existing bike share network in Madison, that can be accessed and used by residents/employees/visitors, or offer discounted bikeshare memberships. | 1-8 |
| Option A | Install a bike share station <i>Install a bike share station as part of the existing bikeshare network, within a quarter-mile walking distance of the development, that can be accessed and used by residents/employees.</i> | 4 |
| Option B | Provide memberships to employees and residents <i>Offer at least one annual bike share membership to each DU and/or full-time employee (two points for 50 percent discount, four points for complimentary).</i> | 2 or 4 |
| Option C | Locate close to bike share station <i>Development is located within a quarter-mile walking distance of an existing bike share station that can be accessed and used by residents and employees.</i> | 1 |
| AT-7 | Off-site pedestrian infrastructure Develop or provide funding for off-site bicycle infrastructure (wide sidewalks, new crossings, connections to bike-ped paths, etc.). Points | 2-8 |



| S. No. | Measure & Options | Points |
|-------------|--|----------|
| | would be awarded based on monetary value i.e., 2 points for every \$18,000 invested in an off-site improvement. | |
| AT-8 | Traffic calming Develop or provide funding for traffic calming measures such as speed humps and roundabouts. | 2 |

3.3 High occupancy vehicle measures (HOV)

HOV are commonly defined as vehicles that are occupied by more than one person, or more than two people (depending on the vehicle type) for the purposes of governing high occupancy vehicle travel lanes. The premise of this category is to get multiple people heading in the same general to make that trip in a high occupancy vehicle (HOV). This in turn reduces single-occupancy trips and the associated negative effects. For the purposes of the TDM Program, this category of measures is focused on public transit (Madison Metro buses), vanpools, private shuttle services and car sharing, as detailed further. These measures encourage residents, visitors, tenants, and/or employees to use sustainable transportation options, and may also support ongoing use of such options through a direct financial incentive.

Table 6: High occupancy vehicles and transit measures

| S. No. | Measure & Options | Points |
|--------------|--|------------|
| HOV-1 | Vanpools / Shuttle bus Provide vanpool options or shuttle services to every employee/resident. Points will be awarded as follows: Vanpools for employee commutes along with active on-site promotion of the vanpool option and/or pre-tax program for employees to cover the fees, 3 points; School buses and campus shuttles, 3 points; Shuttles circulating within one-mile radius of the site, 3 points; Shuttles from major transit hubs, residential areas and activity centers would earn 4-5 points depending on peak-hour headway. | 3-5 |
| HOV-2 | Car share Make car share vehicles available for use by residents/employees, or provide discounted annual memberships, to reduce the need for individual vehicle ownership. | 1-4 |
| Option A | Provide a shared fleet of cars <i>Provide cars for shared use by employees or residents, not including commercial vehicles.</i> | 4 |
| Option B | Provide car share parking space <i>Contract with a car-share provider (such as Zipcar) to place vehicles on site for use by car-share provider's customers.</i> | 2 |
| Option C | Car share memberships <i>Offer complimentary or discounted car share memberships to every DU or employee for using car-share.</i> | 1-2 |
| HOV-3 | Emergency Ride Home program Implement a program that provides compensation to employees who do not drive to work, for a ride home in case of any emergency. | 1 |



| S. No. | Measure & Options | Points |
|--------------|---|------------|
| HOV-4 | Pay for Transportation Network Company (TNC) rides to BRT Pay for TNC (Uber, Lyft, etc.) or taxi rides for employees to access and use BRT as their primary commuting mode. | 2 |
| HOV-5 | Offer discounted transit passes Offer discounted monthly transit passes or an annual transit pass to every household or employee. | 2-8 |
| Option A | For employees/residents <i>Provide one monthly transit pass to every employee or DU. Points are based on the discount percentage: Two points for 25 percent subsidy, four points for 50 percent subsidy; six points for 75 percent subsidy; and eight points for free passes.</i> | 2-8 |
| Option B | For visitors/students <i>Enroll in Madison Metro's commuter pass program for educational institutions to offer discounted passes to students. For uses such as hotels and convention centers, offer guests/patrons contributions equivalent to 25, 50, 75, or 100 percent of the cost of a public transit day pass for each registered guest, for the number of days the visitor has booked travel, up to 7 days.</i> | 2-5 |
| HOV-6 | Contribute to bus facilities Build or fund off-site transit facilities, including shelters, stations, bus pull-offs, and real-time arrival screens. | 1-8 |
| HOV-7 | Transit measures for patrons/visitors/students These are intended as optional measures for commercial and institutional uses to encourage the use of public transit by patrons, visitors and students. | 2-4 |
| Option A | Transit ticket validation <i>This measure would involve offering transit pass validation to all patrons i.e., a discount or a similar benefit for taking transit.</i> | 2 |
| Option A | Two-ride passes <i>Provide free two-ride passes for patrons/clients/visitors.</i> | 2 |
| Option B | Sell Madison Metro passes <i>Sell Madison Metro transit passes to visitors, patrons or students. All potential beneficiaries should be clearly informed about the availability of transit passes through appropriate signs or communication channels.</i> | 2 |

3.4 Information and communication measures (IC)

This category of measures is focused on ensuring that residents, tenants, employees and visitors are well-informed about the transportation options open to them. This can be done through programmatic measures such as tailored marketing campaigns, employee orientations, distribution of welcome packets, informational events, etc. This can also be done by installing multimodal wayfinding signs and screens to provide real time information on sustainable transportation options such as transit or shuttle arrival times, availability of bike share bicycles at docking stations, etc.



Table 7: Menu of Options – Information and Communication

| S. No. | Measure & Options | Points |
|-------------|---|------------|
| IC-1 | Marketing & informational campaign Organize tailored marketing and communication campaigns - host events and/or provide incentives to encourage alternative transportation (some examples - bikeshare demos for tenants, happy hours to gather input on commuter surveys, bike maintenance classes, etc.) provide welcome packets, conduct employee orientation, provide information on housing within half mile distance for employees, etc. | 1-4 |
| Option A | Welcome packet and annual promotional campaign <i>Provide informational material/brochures on TDM and various sustainable transportation options as part of a welcome packet and conduct an annual promotional campaign.</i> | 1 |
| Option B | Employee orientation and annual promotional campaigns <i>Introduce TDM and sustainable transportation options during the employee orientation and conduct more than one tailored marketing campaign annually.</i> | 1 |
| Option C | Financial incentives <i>Offer all employees or DUs a financial incentive to try sustainable transportation options. This could include one 10-ride transit pass per employee or dwelling unit or other incentives such as cash, gift cards or vacation time.</i> | 1 |
| Option D | Personal consultation and information center <i>Establish an information center/system with a staff person available as the direct point of contact for tenants/employees/residents to disseminate information on TDM measure and sustainable transportation options.</i> | 1 |
| IC-2 | Multimodal wayfinding signs Provide all-weather multimodal wayfinding signage to public and active transportation facilities and to major destinations and public amenities. | 1 |
| IC-3 | Real-time bus/shuttle/vanpool arrival screen Install and operate a screen displaying real-time travel information for relevant bus, shuttle or vanpool service located within a quarter-mile walking distance. | 1 |

3.5 Land use and location measures (LU)

The measures in this category are focused on land use choices and locational attributes that reduce overall Vehicle Miles Traveled. For example, affordable housing units are known to result in lower VMT than market rate units. This typically occurs because there is a lower auto ownership rate among individuals in affordable units, thus, fewer trips are made by private vehicles. Also, increasing the land use diversity in an area, by providing a neighborhood amenity such as a grocery store, may also reduce



VMT. Establishing a childcare facility on-site or within walking distance could help reduce the number of trips made by private vehicles or distance traveled, respectively, due to the convenient location.

Table 8: Land use and location measures

| S. No. | Measure & Options | Points |
|-------------|--|-------------|
| LU-1 | Affordable housing Providing affordable housing warrants point credits. One point is awarded for every 20 percent of units that are offered at or below 60 percent of Annual Median Income (AMI) and/or for every 10 percent of units that are offered at or below 30 percent of AMI. | 1-10 |
| LU-2 | Location efficiency Provide or locate near amenities that reduce the need to drive – points are awarded based on walk score i.e., walking routes to destinations in the neighborhood area such as grocery stores, schools, parks, restaurants, and retail. | 1-5 |
| Option A | For non-commercial uses Refer to Walk Score , which scores location efficiency on a scale from 0 to 100. Points are awarded as follows: 50-59, 1 point; 60-69, 2 points; 70-79, 3 points; 80-89, 4 points; 90-100 points, 5 points. If multiple street addresses are present in a building or development, points will be based on the average value. | 1-5 |
| Option B | For commercial uses Refer to Walk Score , which scores location efficiency on a scale from 0 to 100. To calculate points awarded, take the original Walk Score and add 5 points for every new storefront being added at the time of application, and calculate the percentage increase. TDM points are awarded as follows: 1-20 percent increase, 1 point; 21-40 percent increase, 2 points; 41-60 percent increase, 3 points; 61-80 percent increase, 4 points; 81+ percent increase, 5 points. | 1-5 |
| LU-3 | Add land use mix Provide two or more land uses onsite, allowing users to drive less. Qualifying land uses are: Residential, employment, commercial, manufacturing, and institutional (education, health, civic facility). Points are awarded as follows: no single use is less than 1 percent of gross floor area, 2 points; no single use is less than 4 percent of gross floor area, 3 points; no single use is less than 8 percent of the gross floor area. | 2-6 |
| Option A | Two land uses | 2-4 |
| Option B | Three land uses | 4-6 |
| LU-4 | Provide daycare facility Provide an on-site daycare facility or be located within walking distance of one. Only one of these options would be awarded points. | 2 |
| Option A | Off-site facility <i>Development is located within a quarter-mile walk of a daycare facility. The daycare facility must be available to users of the site seeking TDM points.</i> | 2 |
| Option B | On-site facility | 2 |



| S. No. | Measure & Options | Points |
|-------------|---|----------|
| | <i>Establish an on-site daycare facility, to be used by residents or employees. Points are additive to land-use mix points awarded under LU-3.</i> | |
| LU-5 | Provide other specific trip-reducing service Provide any other trip-reducing service for building users, such as on-site food service for employees, pet-care service, laundry, playroom, dog walking/park. | 1 |
| LU-6 | Transit service Development is located within a quarter mile walk of a bus stop served by a route that runs at least every half-hour for at least 12 hours each weekday. | 3 |

3.6 Parking management measures (P)

This category of measures is focused on discouraging trips made by private vehicles (particularly single occupancy vehicles) by controlling the supply of accessory parking spaces through measures such as unbundling the cost of a parking space from the cost of housing and/or not providing free parking as a benefit of employment. Further, priced parking creates the opportunity for an individual to weigh the cost of parking against the cost of taking a sustainable transportation mode on a daily basis. Other measures such as preferential parking for high occupancy vehicles can discourage drive-alone trips.

Table 9: Parking management measures

| S. No. | Measure & Options | Points |
|------------|--|----------|
| P-1 | Priced parking program This measure deals with establishment of priced off-street parking. | 5 |
| Option A | Cash out for employees <i>Offer all full-time employees the choice to forgo free parking for an in-lieu cash payment of at least \$50 per month.</i> | 5 |
| Option B | Direct charge to employees <i>Charge employees at least \$50 per month to park, with an option to forgo that fee by not parking.</i> | 5 |
| Option C | Unbundled for residential uses <i>Lease or sell parking separately to residents from residential space. Fees/leases for parking must be optional.</i> | 5 |
| Option D | Unbundled for employment or commercial tenants <i>Lease or sell parking to employers or commercial tenants from space for those land uses. Fees/leases for parking must be optional.</i> | 3 |
| Option E | Hourly or daily parking charges <i>Directly charge building users who have not purchased ongoing parking rights at least \$1/hour to park. Points earned for this measure can be in addition to other points in P-1.</i> | 5 |
| P-2 | Shared parking agreement Keep parking capacity below the applicable parking minimum by sharing parking with a nearby land use, or allow users at another land use to park | 2 |



| S. No. | Measure & Options | Points |
|------------|--|----------|
| | on-site such that that facility has parking capacity below applicable parking minimums. | |
| P-3 | Off-site parking Keep parking capacity below the applicable parking minimum by contracting with an off-site parking supplier, including but not limited to city Parking Utility ramps. | 1 |
| P-4 | Carpool preferential/free parking Provide free or preferentially sited parking for carpool vehicles for employees, shoppers, students, or others as applicable. | 2 |

3.7 Other measures(O)

This category offers some additional options to meet TDM requirements. Projects may receive a point for delivery related measures and can receive a point for joining a city-approved Transportation Management Association. Building owners have the additional option to propose any other TDM measure that is not on the list. They may then be awarded points at the discretion of the city staff. Building owners may also choose to pay a one-time fee, for permanently achieving a point, in lieu of implementing any other listed TDM measure.

Table 10: Other Measures

| S. No. | Measure & Options | Points |
|------------|---|-------------------|
| O-1 | Delivery measures Provide delivery services or amenities to facilitate deliveries to help to reduce the need for individual vehicle ownership. | 1 |
| Option A | Delivery supportive amenities <i>Provide an area for receipt and temporary storage of deliveries.</i> | 1 |
| Option B | Pick-up/drop-off space <i>Delineate a separate space within the property for short-term pick-up/drop-off or loading/unloading from a delivery vehicle.</i> | 1 |
| Option C | Delivery services <i>Provide delivery services that reduce VMT from single-stop motorized deliveries. Qualifying services include deliveries by bicycle, on foot, or in a delivery vehicle that makes multiple stops.</i> | 1 |
| O-2 | In-lieu fee Pay \$10,000 in lieu of other measures, to permanently achieve a point. | As desired |
| O-3 | Join a Transportation Management Association (TMA) Enroll or participate in a TMA for implementing TDM measures. | 1 |
| O-4 | Innovative measure Provide measures not listed here – these would be reviewed by the city staff and points would be awarded at their discretion. | 1-4 |



APPENDIX B: HYPOTHETICAL PROJECT EXAMPLES

B.1 Residential Use

Step 1: Determine applicability

Project information

- **Property:** 7400 block of Raymond Road
- **Use:** Residential (20 percent units at or below 60 percent of annual median income)
- **No. of DUs:** 100
- **Proposed parking capacity:** 150 stalls

Based on the information provided above, the proposed number of residential units is above the threshold of ten units. TDM requirements would be applicable under the residential use category.

Step 2: Determine TDM requirements

Based on the information provided, the project would fall under **Medium** size tier and the proposed parking rate per dwelling unit (DU) is **1.5 stall/DU**. Referring to the TDM target table for residential use given below, this project would need to achieve a **target of 25 points**.

| | Small | Low-Medium | Medium | High-Medium | Large |
|--|-----------------------------------|------------|-----------|-------------|----------|
| Residential | 10-25 DU | 26-50 DU | 51-100 DU | 101-150 DU | > 150 DU |
| Parking Stalls per Dwelling Unit (DU) | Mitigation points required | | | | |
| < 0.5 | 5 | 8 | 10 | 12 | 15 |
| 0.5 - 0.99 | 10 | 12 | 15 | 18 | 20 |
| 1.0 - 1.49 | 15 | 18 | 20 | 22 | 25 |
| 1.5 – 1.99 | 20 | 22 | 25 | 28 | 30 |
| 2.0 - 2.5 | 25 | 28 | 30 | 32 | 35 |
| 2.5 + | 30 | 32 | 35 | 38 | 40 |

Step 3: Create and submit TDM plan

The project would need to provide bike parking and pedestrian access according to city requirements and assign a TDM coordinator to earn three points for the basic measures. To meet the remaining 22 points, the building owner can choose from other measures in the menu. Since it is an affordable housing project, it would also earn some points based on the percentage of affordable units. A sample list of measures that could be carried out to meet the target is provided below.



| Measure Code | TDM Measures | Points achieved |
|---------------------|--|-----------------|
| B-1 | Designate a TDM coordinator | 1 |
| B-2 | Pedestrian path to sidewalk | 1 |
| B-3 | Bike parking – city standards | 1 |
| AT-1 | Enhanced access to bike parking <i>Option A: Segregated access to bike parking with no stairs</i> <i>Option B: Covered bike parking within 100 ft. from entrance</i> | 2 |
| AT-3 or AT-7 | Off-site bike or pedestrian infrastructure | 4 |
| AT-4 | Bike User Facilities <i>Option B: Provide bike repair and maintenance facilities</i> | 1 |
| AT-8 | Traffic calming measures | 2 |
| HOV-2 | Car share <i>Option A: Shared fleet of cars for use by residents</i> | 4 |
| IC-1 | Marketing and informational campaign <i>Option A: Welcome packet and annual promotional campaign</i> | 1 |
| IC-2 | Multimodal wayfinding signs | 1 |
| LU-1 | Affordable housing (20%) | 2 |
| P-1 | Priced parking program <i>Option C – Unbundled for Residential</i> | 5 |
| TOTAL POINTS | | 25 |

Step 4: Implementation, reporting and monitoring

Pay a nominal review fee for administrative processing of the TDM application. Once the TDM plan is approved, building owners would be required to implement the measures specified in the plan. The City would monitor the implementation to ensure compliance with the plan and may set some reporting requirements.



B.2 Employment Use

Step 1: Determine applicability

Project information

- **Property:** 100 block of E. Main Street
- **Use:** Office
- **Floor area:** 110,000 sq. ft.
- **Proposed parking capacity:** 220 stalls

Based on the information provided above, the proposed gross floor area is above the threshold of 10,000 sq.ft. TDM requirements would be applicable under the employment use category.

Step 2: Determine TDM requirements

Based on the information provided, the project would fall under **High-Medium** size tier and the proposed parking rate is **1 stall per 500 sq. ft. gross area**.

| | Small | Low-Medium | Medium | High-Medium | Large |
|--|-----------------------------------|------------------------|--------------------------|---------------------------|-------------------|
| Employment | 10,000 - 25,000 sq. ft. | 25,001 -50,000 sq. ft. | 50,001 - 100,000 sq. ft. | 100,001 - 150,000 sq. ft. | > 150,000 sq. ft. |
| Parking Stalls per 500 sq. ft. gross area | Mitigation points required | | | | |
| < 0.5 | 5 | 8 | 10 | 12 | 15 |
| 0.5 - 0.99 | 10 | 12 | 15 | 18 | 20 |
| 1.0 - 1.49 | 15 | 18 | 20 | 22 | 25 |
| 1.5 – 1.99 | 20 | 22 | 25 | 28 | 30 |
| 2.0 - 2.5 | 25 | 28 | 30 | 32 | 35 |
| 2.5 + | 30 | 32 | 35 | 38 | 40 |

Step 3: Create and submit TDM plan

The project would need to provide bike parking and pedestrian access according to city requirements and assign a TDM coordinator to earn the three base points. The project earns another nine points based on its location – three points for being within a quarter mile walking distance of a bus stop with all day transit service, five points for a walk score of over 90 and a point for being within a quarter mile walking distance of an existing bike share station. To meet the remaining ten points, the building owner can choose from other measures in the menu. A sample selection of measures to meet the target is provided below.

| Measure Code | TDM Measures | Points achieved |
|---------------------|--|-----------------|
| B-1 | Designate a TDM coordinator | 1 |
| B-2 | Pedestrian path to sidewalk | 1 |
| B-3 | Bike parking – city standards | 1 |
| AT-6 | Bike share station <i>Option C: Located within a quarter mile of an existing bike share station that can be accessed by employees</i> | 1 |
| HOV-5 | Offer transit passes to all employees <i>Option A: 50% discounted passes</i> | 4 |
| IC-1 | Marketing and informational campaign <i>Option B: Employee orientation and promotional campaigns</i> | 1 |
| LU-2 | Location efficiency (walk score value – 95+) | 5 |
| LU-6 | Transit Service (within quarter mile walking distance) | 3 |
| P-1 | Priced parking program <i>Option A – Cash out for employees</i> | 5 |
| TOTAL POINTS | | 22 |

Step 4: Implementation, reporting and monitoring

Pay a nominal review fee for administrative processing of the TDM application. Once the TDM plan is approved, building owners would be required to implement the measures specified in the plan. The City would monitor the implementation to ensure compliance with the plan and may set some reporting requirements.



B.3 Commercial Use

Step 1: Determine applicability

Project information

- **Property:** 2100 block of Regent Street
- **Use:** Grocery store
- **Floor area:** 20,000 sq. ft.
- **Proposed parking capacity:** 65 stalls
- **Use-specific parking minimums:** 50 stalls (1 per 400 sq. ft.)

Based on the information provided above, since the proposed number of off-street parking spaces is above the threshold of ten, TDM requirements would be applicable under the commercial use category.

Step 2: Determine TDM requirements

Based on the information provided, the project falls under **Small** size tier. The ratio of the proposed parking to the use-specific parking minimum is **1.30 times the parking minimum**. Referring to the TDM target table for commercial use given below, this project would need to achieve a **target of 12 points**.

| | Small | Low-Medium | Medium | High-Medium | Large |
|---|-----------------------------------|-------------------------|---------------------------|---------------------------|-------------------|
| Commercial | < 40,000 sq. ft. | 40,001 -100,000 sq. ft. | 100,001 - 150,000 sq. ft. | 150,001 - 200,000 sq. ft. | > 200,000 sq. ft. |
| Ratio of proposed parking to use-specific parking minimum (PM) | Mitigation points required | | | | |
| Under PM | no TDM | 8 | 10 | 12 | 15 |
| 1 - 1.24 times PM | no TDM | 12 | 15 | 18 | 20 |
| 1.25 - 1.49 times PM | 12 | 15 | 18 | 20 | 22 |
| 1.50 - 1.74 times PM | 15 | 18 | 20 | 22 | 25 |
| 1.75 - 2 times PM | 18 | 20 | 22 | 25 | 28 |
| 2+ times PM | 20 | 22 | 25 | 28 | 30 |

Step 3: Create and submit TDM plan

The project would need to provide bike parking and pedestrian access according to city requirements and assign a TDM coordinator to earn the three base points. The project earns another point for improving location efficiency by providing a commercial amenity. To meet the remaining eight points, the building owner can choose from other measures in the menu. A sample selection of measures to meet the target is provided below.



| Measure Code | TDM Measures | Points achieved |
|---------------------|---|-----------------|
| B-1 | Designate a TDM coordinator | 1 |
| B-2 | Pedestrian path to sidewalk | 1 |
| B-3 | Bike parking – city standards | 1 |
| AT-2 | No drive aisle crossing | 1 |
| AT-6 | Bikeshare membership/station <i>Option B: Offer discounted memberships to all employees</i> | 2 |
| IC-2 | Real time transit arrival screen | 1 |
| LU-2 | Location efficiency (improvement to existing walk score) | 1 |
| LU-6 | Transit Service (within quarter mile walking distance) | 3 |
| O-1 | Delivery measure <i>Option C – Non-motorized deliveries or a multi-stop delivery service</i> | 1 |
| TOTAL POINTS | | 12 |

Step 4: Implementation, reporting and monitoring

Pay a nominal review fee for administrative processing of the TDM application. Once the TDM plan is approved, building owners would be required to implement the measures specified in the plan. The City would monitor the implementation to ensure compliance with the plan and may set some reporting requirements.



B.4 Mixed Use

Step 1: Determine applicability

Project information

- **Property:** 2900 block of University Ave
- **Use:** Residential + Commercial (retail)
- **No. of DUs:** 50
- **Commercial Floor area:** 10,000 sq. ft.
- **Proposed parking capacity:** 110 stalls (residential: 70 stalls; commercial: 40 stalls)
- **Retail parking minimum:** 25 stalls (1 per 400 sq. ft.)

Based on the information provided above, TDM requirements would be applicable separately under the residential and commercial use categories.

Step 2: Determine TDM Requirements

For residential use, the project falls under **Low-Medium** size tier and the proposed parking rate per dwelling unit (DU) is **1.4 stall/DU**. Referring to the TDM target table for residential use given below, this project would need to achieve a **target of 18 points**.

| | Small | Low-Medium | Medium | High-Medium | Large |
|--|-----------------------------------|------------|-----------|-------------|----------|
| Residential | 10-25 DU | 26-50 DU | 51-100 DU | 101-150 DU | > 150 DU |
| Parking Stalls per Dwelling Unit (DU) | Mitigation points required | | | | |
| < 0.5 | 5 | 8 | 10 | 12 | 15 |
| 0.5 - 0.99 | 10 | 12 | 15 | 18 | 20 |
| 1.0 - 1.49 | 15 | 18 | 20 | 22 | 25 |
| 1.5 – 1.99 | 20 | 22 | 25 | 28 | 30 |
| 2.0 - 2.5 | 25 | 28 | 30 | 32 | 35 |
| 2.5 + | 30 | 32 | 35 | 38 | 40 |

For commercial use, the project falls under **Small** size tier. The ratio of the proposed parking to the use-specific parking minimum is **1.60 times the parking minimum**. Referring to the TDM target table for commercial use given below, this project would need to achieve a **target of 15 points**.

| | Small | Low-Medium | Medium | High-Medium | Large |
|------------|------------------|--------------------------|---------------------------|---------------------------|-------------------|
| Commercial | < 40,000 sq. ft. | 40,001 - 100,000 sq. ft. | 100,001 - 150,000 sq. ft. | 150,001 - 200,000 sq. ft. | > 200,000 sq. ft. |



| Ratio of proposed parking to use-specific parking minimum (PM) | Mitigation points required | | | | |
|--|----------------------------|----|----|----|----|
| Under PM | no TDM | 8 | 10 | 12 | 15 |
| 1 - 1.24 times PM | no TDM | 12 | 15 | 18 | 20 |
| 1.25 - 1.49 times PM | 12 | 15 | 18 | 20 | 22 |
| 1.50 - 1.74 times PM | 15 | 18 | 20 | 22 | 25 |
| 1.75 - 2 times PM | 18 | 20 | 22 | 25 | 28 |
| 2+ times PM | 20 | 22 | 25 | 28 | 30 |

Step 3: Create and submit TDM plan

The project would need to provide bike parking and pedestrian access according to city requirements and assign a coordinator in-charge of TDM for the entire development to earn the three base points for both the uses. Other infrastructure-related measures such as building off-site pedestrian infrastructure and wayfinding signs would be counted for the both the uses as well. The residential use earns points for mixed use due to the presence of on-site retail use. Programmatic measures would earn points for one or both uses, based on whether they are directed towards residents and/or employees.

| Measure Code | TDM Measures | Points achieved | |
|---------------------|---|-----------------|------------|
| | | Residential | Commercial |
| B-1 | Designate a TDM coordinator | 1 | 1 |
| B-2 | Pedestrian path to sidewalk | 1 | 1 |
| B-3 | Bike parking – city standards | 1 | 1 |
| AT-6 | Bike share <i>Option B: Offer discounted memberships to all employees</i> | | 2 |
| AT-7 | Develop off-site pedestrian infrastructure | 2 | 2 |
| IC-1 | Marketing and information campaign <i>Option B: Employee orientation and promotional campaign</i> | | 1 |
| IC-2 | Multimodal wayfinding signs | 1 | 1 |
| LU-2 | Location efficiency <i>Option A: For non-commercial uses (walk score of 80+)</i> <i>Option B: Improving walk score through commercial amenities</i> | 4 | 1 |
| LU-3 | Provide land use mix (two uses) | 3 | |
| P-1 | Priced parking program <i>Option A – Cash out for employees</i> <i>Option C – Unbundled for Residential</i> | 5 | 5 |
| TOTAL POINTS | | 18 | 15 |



Step 4: Implementation, Reporting and Monitoring

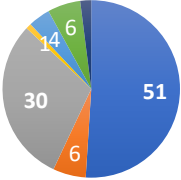
Pay a nominal review fee for administrative processing of the TDM application. Once the TDM plan is approved, building owners would be required to implement the measures specified in the plan. The City would monitor the implementation to ensure compliance with the plan and may set some reporting requirements.

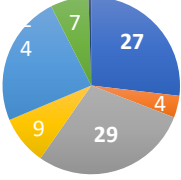
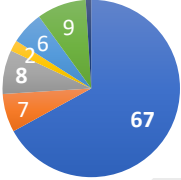
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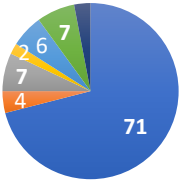
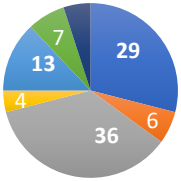


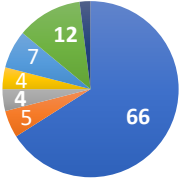
APPENDIX C: TDM PROGRAMS IN OTHER CITIES

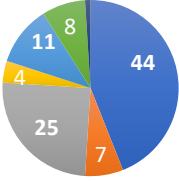
Mode-share Key: ■ SOV ■ Carpool ■ Public Transit ■ Bicycle ■ Walking ■ Work from Home ■ Other

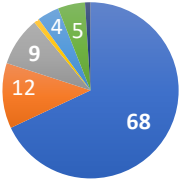
| Location | City profile (2019 ACS) ⁱ | Program goal and applicability | TDM requirements | Reporting and monitoring |
|--|---|--|---|---|
| Arlington County, VAⁱⁱ | <p>Population: 236,842</p> <p>City Area: 26 sq. mi.</p> <p>Pop. Density: 9,110 pp. sq. mi.</p> <p>Mode share:</p>  | <p>Arlington County Commuter Services was established as a TDM agency in 1989 to reduce traffic congestion, parking demand, promote HOV infrastructure and improve air quality and mobility which manages several TDM-related programs. TDM for Site Plans targets developers and property managers for large residential and commercial development. The underlying goal is to reduce SOV trips and change commuter travel habits in Arlington by offering more and better choices at the building level.</p> | <p>TDM strategies must be laid out as site plan conditions, for adoption along with the site plan, required under the Administrative Regulations Governing the Submittal of Site Plans (A.R. 4.1).ⁱⁱⁱ</p> <p>Upon approval of their site plan and conditions, TDM plans are prepared by developers to lay out schedule and details about TDM strategies. The strategies are tailored to address the transportation impacts of the project, based on the TDM Policy Matrix (1990). This matrix provides a framework of requirements based on land use category (consistency with Arlington's General land use plan) and size classification. TDM plans also contain information about participation and funding, and each building must join a TMA and pay fees to said organization.</p> | <p>Annual site visits are conducted by the Site Plans team and annual reports outlining the TDM activities must be submitted by the site plan building. Surveys of commuting patterns of on-site employees or residents are required at two-, five- and ten-year intervals and after the tenth year, the county may require data collection in five-year increments. Enforcement action up to and including referral to the Zoning Administrator and escalating fines, are allowed.</p> |
| Cambridge, MA^{iv} | <p>Population: 118,925</p> <p>City Area: 6.4 sq. mi.</p> <p>Pop. Density: 18,601 pp. sq. mi.</p> <p>Mode share:</p> | <p>A Parking and Travel Demand Management Ordinance was adopted in 1998 and made permanent for developers in 2006. Participation is triggered when an owner of non-residential property proposes to add parking spaces above the registered number. The program</p> | <p>The number of parking spaces determines TDM requirements. For projects with 5-19 spaces, Small Project PTDM plans need to be prepared which require 3 TDM measures from many options such as installing showers and lockers, membership with a TMA and offering a financial incentive for walking or biking to work. For projects with 20 or more spaces Large PTDM Plans are required with SOV mode</p> | <p>Annual monitoring and reporting are required for Large Project PTDM Plan. The annual reporting consists of surveying building employees and patrons, counting car and bike parking spaces available every two years, and the status of implemented TDM measures. These are</p> |

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| |  | has been credited for reducing driving by 10% and increasing transit use by 13%, as of 2017. | share commitment, a more comprehensive set of TDM measures and annual monitoring and reporting. Developers need to commit to reduce SOV rate for their development to 10 percent below the average rate for the census tract in which their development sits. | validated by the city through bi-annual driveway/lot utilization monitoring. The city may enforce and address non-compliance by charging \$10 per parking space per day until the trip reduction requirements are met and can shut down a non-compliant parking facility. |
| Denver, CO^v | <p>Population: 727,211 City Area: 153 sq. mi. Pop. Density: 4,744 pp. sq. mi.</p> <p>Mode share:</p>  | Denver recently introduced a new TDM ordinance (in Spring 2021) for new development to help balance the demand on city transportation infrastructure by reducing vehicle trip generation and promoting utilization of the city's transit, bicycle and pedestrian infrastructure. The ordinance establishes three development tiers by number of residential units or square feet of non-residential space – tier 0 properties are exempt; Tier 1 includes smaller developments (25-49 residential units, 25000-50000 sq.ft. non-residential area); tier 2 includes larger developments (50+ residential units, 50000+ sq.ft. non-residential area). | TDM plans have to be submitted as part of the Site Development Plans. Tier 1 properties have to assign a TDM coordinator, achieve a target SOV commute rate and implement infrastructure-based TDM measures. Tier 2 properties additionally need to implement programmatic measures, verify implementation of measures, and conduct a biennial commute survey. The measures and SOV target rate required of developers correspond to the land use (residential, commercial & office, industrial), size tier geographic location, and access to high-capacity transit. SOV targets may vary and are generally lower in more dense areas. | A pre-occupancy inspection will be conducted to verify construction of infrastructural TDM strategies. Annual reports are required to verify implementation of TDM strategies as per the approved TDM Plan. Tier 2 properties need to conduct biennial tenant surveys to ensure the Maximum SOV rate is being achieved. In case of failure to implement TDM measures, the Certificate of Occupancy will not be issued. For programmatic strategies, a grace period of six months will be provided after issuance of the certificate, to demonstrate measure implementation. |
| Pasadena, CA^{vi} | <p>Population: 141,040 City Area: 23 sq. mi.</p> | The goal of Pasadena's Trip Reduction ordinance is to encourage alternative transportation modes and off- | Transportation plans are required for smaller developments (25,000 sq. ft. – 75,000 sq. ft.) while TDM plans are required for larger developments (75,000 sq. ft. and above). | Annual TDM Status reports need to be submitted which require reporting on change in employees' means of |

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| | <p>Pop. Density: 6,143 pp sq. mi.</p> <p>Mode share:</p>  | <p>peak hours by implementing requirements of LA County MTA's Congestion Management Program. It applies to non-residential projects and non-residential components of mixed-use development based on floor area, and multi-family residential projects based on the number of residential units. The TDM program is a condition of property ownership.</p> | <p>Developments are required to designate a minimum 10 percent of employee parking as preferential parking spaces for carpool and vanpool vehicles, provide employees with commuter-matching services and trip reduction information, provide bicycle parking facilities and/or other non-auto enhancements.</p> <p>All projects must strive to meet an average vehicle ridership (AVR) of 1.5 starting after the first year. Projects located within a TOD area or downtown need to meet an AVR of 1.75 in 3 years.</p> | <p>transportation, average vehicle ridership calculations, vehicle counts, status of commuter facilities and incentives provided, as well as involvement in a TMA.</p> <p>If the AVR requirement is not met, the City shall work with the owner to identify modifications to the TDM Program which are to be revised within 60 days. Other enforcement measures include proceedings to revoke approval of a TDM Plan, administrative penalty and a stop-work order.</p> |
| San Francisco, CA ^{vii} | <p>Population: 881,549</p> <p>City Area: 46.9 sq. mi.</p> <p>Pop. Density: 18,795 pp. sq. mi.</p> <p>Mode share:</p>  | <p>The goal is to reduce VMT generated in new development projects through a citywide TDM program established in the Planning Code (Section 169), effective since March 2017. Applies to all new multi-family residential or group housing developments over the threshold of 10 units; new non-residential development with 10,000 sq. ft. of occupied area; and change of use resulting in 25,000 or more occupied square feet of non-residential use, or properties applying for an increase in parking spaces. 100 percent</p> | <p>New development projects are required to develop a TDM plan that offers on-site infrastructure and programs to prioritize alternatives to driving alone according to a point-based system. There is no measurable performance goal such as a VMT or SOV mode-share target. Targets are established based on the land uses associated with the development projects (there are four established land use categories) and the number of accessory parking spaces proposed for the land use – the more parking that is created, the higher the point target for the development.</p> <p>Developers need to choose from a menu^{viii} with 26 TDM measure options and a total of 68 sub-options, grouped into 8 categories – active transportation, car share, delivery,</p> | <p>The program involves regular monitoring, inspections and required reporting from developers. Pre-occupancy staff visits are conducted to verify inclusion of all planned physical measures. An on-site TDM coordinator is required to be designated and regular reports documenting compliance need to be submitted. Enforcement and administration are managed by the Planning Department which collects an ongoing fee from approved projects to support the monitoring and reporting work.</p> |

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| | | affordable housing projects are exempt from the program. | family, HOV, information & communication, land use and parking management. Points are awarded for the measures based on likelihood to achieve VMT reduction (derived from literature study/academic research). | |
| Santa Monica, CA^{ix} | <p>Population: 90,401 City Area: 8.4 sq. mi. Pop. Density: 10,743 pp. sq. mi.</p> <p>Mode share:</p>  | Santa Monica Municipal Code (Chapter 9.53) establishes a TDM ordinance that applies to both developers and all employers, except the very small ones with less than 10 employees. | <p>Employers need to strive to achieve, and developers of non-residential developments need to achieve the applicable AVR targets, which are defined separately for different land uses and locations (districts). Developers need to submit a Developer TDM Plan if they exceed 7500 sq. ft. floor area for non-residential use and 16 DUs for residential uses.</p> <p>Employers with 10-29 employees need to submit Worksite transportation plans and those with 30 or more employees need to submit an Emission Reduction Plan (ERP) with mandatory parking cash out programs. The ERP requires four key elements: attending a class to become certified as an Employee Transportation Coordinator; survey of employees' commuting patterns; implementation of strategies to increase biking, walking, riding transit, and carpooling to the worksite; and payment of an annual transportation fee. Discounts are given to employers who successfully reduce drive-alone trips and meet the target vehicle reduction assigned by the city.</p> | <p>Annual plans need to be submitted, indicating the amount of Mobile Source Emission Reduction Credits purchased or as part of the ERP, employers have to submit detailed reporting on the transportation habits of employees. This information is provided annually to the City of Santa Monica by completing plan forms.</p> <p>Non-compliance strategies include revoking any approval of an ERP or WTP or revoking the business license held by any violator. Violating any provision of the Article of the Municipal Code shall be guilty of an infraction – and a fine or imprisonment may be possible.</p> |

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| Seattle, WA* | <p>Population: 753,655</p> <p>City Area: 83.9 sq. mi.</p> <p>Pop. Density: 8,987 pp. sq. mi.</p> <p>Mode share:</p>  | <p>Washington state's 2006 Commuter Trip Reduction Efficiency Act requires its metro areas to reduce employee commute trips to large workplaces by car and per capita VMT. The TDM program in Seattle targets employers/businesses with over 100 employees working at a single site between 9am – 6pm, to reduce employee commute trips. There is a separate Transportation Management Program for new commercial buildings with over 100,000 sq.ft. of gross area, that have smaller employers. Conditions are set as a part of the site development review process for them.</p> | <p>Based on the number of employees. Drive alone reduction goals established geographically calculated by dividing the total drive-alone trips by the total trips made to their location. TDM measures are divided into three categories and employers have to implement two strategies from each category.</p> <p>Category A: Employee information and amenities – real time transportation information, flexible work schedule, employee shuttles, rideshare matching, bicycle parking facilities, guaranteed ride home.</p> <p>Category B: Subsidies and modal support – transit subsidies, carpooling subsidies, vanpooling provision, Pre-tax transportation benefits.</p> <p>Category C: Parking management – Increased charges for SOV parking, daily rate (rather than monthly), preferential HOV/ bicycle/ micromobility parking, carshare parking, parking cash-out program.</p> | <p>Each employer is required to have an Employee Transportation Coordinator (ETC) and conduct commuter surveys and submit biennial reports. If an employer does not appoint an ETC, distribute information, implement a program or survey employees as required, then the City of Seattle can levy a civil penalty of \$250 per day.</p> |

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| St. Paul, MNⁱⁱ | <p>Population: 308,096</p> <p>City Area: 52 sq. mi.</p> <p>Pop. Density: 5,927 pp. sq. mi.</p> <p>Mode share:</p>  | The TDM requirements applies to commercial and residential development or redevelopment. | <p>TDM applicability is based on the number of parking spaces in a new development. If the development exceeds the threshold of 100 spaces, a TDM plan is required to be submitted.</p> <p>Each TDM Plan has several key components and requirements can vary based on the development location. A typical goal might be to have a 10 percent of trips made by bike, or 20 percent of trips made by transit. Five of the eight outlined strategies are recommended to be included in the plan which include measures related to rideshare programs and services, transit services and products, active transportation programs and infrastructure and promotional marketing and campaigns.</p> | <p>Annual reports need to be submitted after the first and second year to the Zoning administrator to demonstrate 'good faith efforts towards implementing the TDM measures which should include follow up survey results, expenditures and TDM implementation evidence.</p> <p>In case of failure to comply or submit a timely annual report, the security agreement (development's two-year TDM plan budget) is held for another year, after which it is released/ forfeited based on the administrator's assessment.</p> |

ⁱ U.S. Census Bureau (2019). *American Community Survey 1-year estimates*. Retrieved from Census Reporter <<http://censusreporter.org/>>

ⁱⁱ Arlington Transportation Partners. *Arlington TDM for Site Plans program*. Retrieved from <https://arlingtontransportationpartners.com/programs/property-development/tdm-for-site-plans/>

ⁱⁱⁱ Arlington County. *Administrative Regulation 4.1*. Retrieved from https://arlingtonva.s3.amazonaws.com/wp-content/uploads/sites/31/2019/06/AdminReg4.1_May2019_FINAL.pdf

^{iv} City of Cambridge. *Parking and Transportation Demand Management Ordinance*. Retrieved from <https://www.cambridgema.gov/CDD/Transportation/fordevelopers/ptdm>

^v Denver Department of Transportation and Infrastructure. *Transportation Demand Management*. Retrieved from <https://www.denvergov.org/Government/Departments/Department-of-Transportation-and-Infrastructure/Programs-Services/Transportation-Demand-Management>

^{vi} City of Pasadena. *TDM requirements*. Retrieved from <https://www.cityofpasadena.net/transportation/community-mobility/transportation-demand-management/>

vii San Francisco Planning Department. *Standard for the Transportation Demand Management program*. Retrieved from <https://sfplanning.org/transportation-demand-management-program>

viii San Francisco Planning Department. *Appendix A – TDM measures*. Retrieved from https://default.sfplanning.org/transportation/tdm/TDM_Measures.pdf

ix City of Santa Monica. *Transportation Demand Management*. Retrieved from <https://www.smgov.net/departments/pcd/transportation/employers/>

x Seattle Department of Transportation. *Commute Trip Reduction program*. Retrieved from <https://www.seattle.gov/transportation/projects-and-programs/programs/transportation-options-program/commute-trip-reduction-program>

xi Move Minnesota. *Transportation Demand Management: Build Capacity or Change Behavior*. Retrieved from <https://www.moveMN.org/transportation-demand-management-build-capacity-or-change-behavior/>