

Transportation Demand Management

City of Madison

Program Brief (Draft)



April 2021

WHAT IS TDM?

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.

Existing TDM efforts in Madison

Madison's land use review processes seek to manage growth in accordance with the city's plans and policies, while minimizing uncertainty and costs to project proposers. Our current practice needs improvement to achieve both these goals.

The city requires TDM measures such as bike parking and direct pedestrian access of all new developments and requires more extensive measures in some cases. Under the city's current land use ordinances, TDM measures are sometimes required for conditional uses, planned developments, big box stores, and "employment campus" and "mixed use center" districts. Some of the larger, more prominent developments with TDM plans include institutional campuses (UW-Madison, Madison Area Technical College), UW Health, the Moxy hotel, Archipelago Village and Madison Yards. Madison 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.

The current requirements help limit the traffic impacts from development, but some mitigation of those impacts might still be required. Staff and committees are currently considering reforms to standardize this process and implement more consistent requirements.

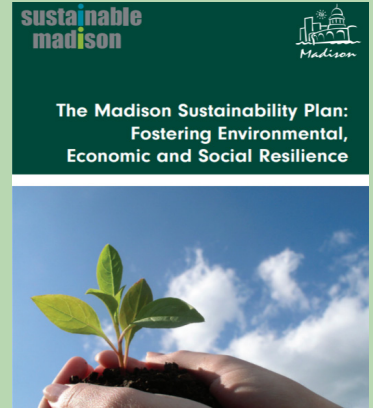
The infographic is a grid of 10 cards, each describing a different TDM program. Each card has a title in blue, a red horizontal line, and a brief description. The programs listed are: BICYCLE INFORMATION, BIKESHARE, CAMPUS BUS, CARPOOL, CARSHARE, CUSTOM ROUTE PLANNING, EMERGENCY RIDE HOME, FLEX PARKING PROGRAM, EMPLOYEE BUS PASS, SAFEWALK, and VANPOOL.

University of Wisconsin, Madison is a national leader in campus-based TDM. It is a part of the UW-Madison Campus Master Plan, 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.

Source: UW-Madison Facilities Planning

PLANNING FOR TDM IN MADISON

Madison's Planning Goals

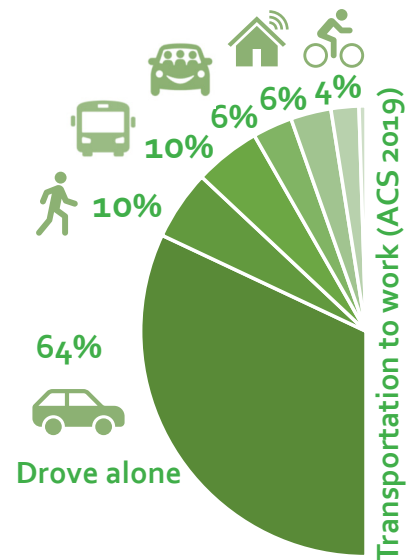


In the "Imagine Madison" Comprehensive Plan (2018), the fifth strategy stipulates the implementation of TDM strategies to serve high intensity development.

Two priority recommendations in Madison's Transportation Plan are focused on administering a TDM initiative to increase non-SOV travel and reduce the need for parking.

Madison's Sustainability Plan seeks to maximize the use of alternative transportation infrastructure and track vehicle miles traveled.

Roughly two-thirds of work-related commute trips in Madison are drive-alone trips. By encouraging alternative ways of commuting and limiting new car travel, TDM policies can help preserve road capacity and reduce negative impacts of systemwide traffic (measured as vehicle miles traveled or "VMT") such as 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.



Purpose and community benefits

<p>Mitigate VMT</p>	<p>Support equitable transportation options</p>	<p>Reduce congestion, travel delay and air emissions</p>	<p>Support TOD* and infill</p>	<p>Address public safety impacts</p>
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*Transit-oriented development

MADISON'S PROPOSED TDM PROCESS

City staff and partners have considered best practices from around the country to design a fair, consistent, and effective TDM program to reduce SOV trips. It comprises of four broad steps:

STEP 1: Determine applicability

- TDM applies to new and expanding developments seeking building permits, including residential and/or non-residential uses (commercial, employment, institutional).

STEP 2: Determine TDM targets

- Determine TDM requirements based on land use, development size, and number of proposed parking stalls, using a point-based system.

STEP 3: Create and submit TDM plan

- Select measures from TDM menu to meet the assigned point target and prepare TDM plan.
- Submit TDM plan for approval and pay a nominal fee to cover administrative review of the Plan.

STEP 4: Implementation and monitoring

- Upon approval, building owners need to implement measures specified in their TDM plans.
- The city will track and monitor program implementation and set reporting requirements.
- (*Optional*) Enroll in a Transportation Management Association for additional assistance with onsite TDM operations.

Advantages of the proposed program



CONSISTENCY – Requirements are uniform across Madison with targets based on project size and proposed parking capacity.



CHOICE – Offers a menu with a range of TDM measures, from simply installing wayfinding signs to providing a land use mix.



CLARITY – Program provides 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 – Approval process is streamlined 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.



Which factors influence TDM requirements?

LAND USE(S)



Requirements and measures vary across residential and non-residential (employment, commercial, institutional) uses.

DEVELOPMENT SIZE



Requirements are proportional to the development size, i.e., number of residential units or non-residential floor area.

PROPOSED PARKING



The proposed parking capacity is an important factor. Higher parking ratios mean more TDM requirements.

Which developments qualify for TDM?

RESIDENTIAL USES



Proposed developments with 10 or more dwelling units, including residential component in mixed-use projects.

Exemptions:

- Residential uses with less than 10 dwelling units
- Affordable housing (via point credits of up to 10 points)

EMPLOYMENT USES



Employment uses with over 10,000 sq. ft of floor area including offices, service centers, industrial uses, etc.

Exemptions:

- Employment uses with < 10,000 sq.ft. of floor area

COMMERCIAL USES



For all qualifying commercial uses, TDM would be required only with respect to employees.

Exemptions:

- Developments with < 10 proposed parking stalls
- Developments with < 40,000 sq.ft. of floor area and proposed parking < 1.25 times the parking minimum
- Visitors/patrons exempt

INSTITUTIONAL USES



Applies to hotels, educational uses (high schools and above), health and other facilities, only with respect to employees.

Exemptions:

- Developments with < 10 proposed parking stalls
- Developments with < 40,000 sq.ft. of floor area and proposed parking < 1.25 times the parking minimum
- Elementary and middle schools, daycares
- Places of worship

How is the TDM target assigned?

Individual requirements for each development that qualifies for TDM would range from five to forty points depending on the land use and two other factors i.e., size and proposed parking. A higher value in these two factors would imply a higher TDM target for the development.



For residential uses, the TDM requirements are based on the ratio of parking stalls per dwelling unit; for employment uses it would depend on the number of stalls per 500 sq.ft. of gross area; and for commercial and institutional it would depend on the ratio of proposed parking to use-specific parking minimums.

Table 1: TDM targets for residential and employment 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. of 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 - 1.99	20	22	25	28	30
2.0 - 2.5	25	28	30	32	35
2.5 +	30	32	35	38	40

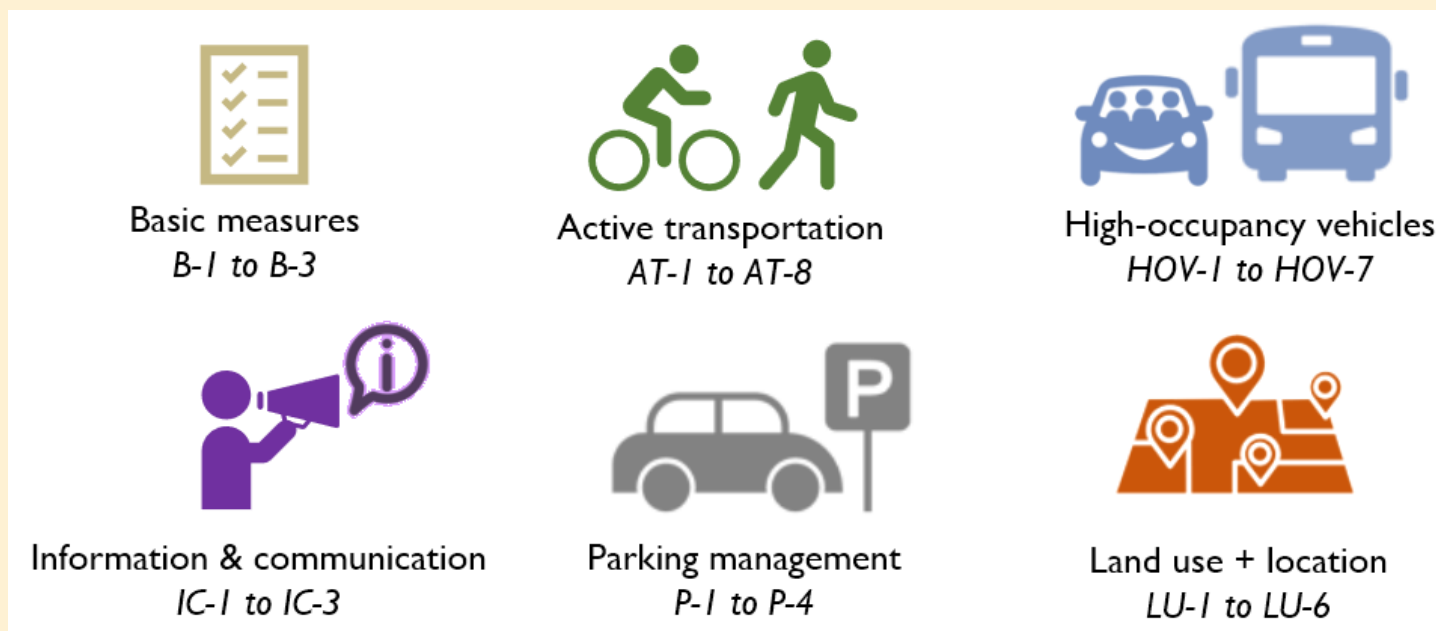
Table 2: TDM targets for commercial uses

COMMERCIAL USES	< 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
1.00 - 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

What should the TDM Plan include?

- The TDM menu comprises of 35 measures in six primary categories and a seventh miscellaneous category. The last category also includes the option that allows building owners to propose any innovative TDM measure that is not on the list.

MEASURE CATEGORIES



- Three basic measures are required of all projects, including two that are already required under existing development regulations.



TDM Coordinator



Bike Parking



Pedestrian Path

- Choose from 32 other options listed in the table on the next page to meet the remaining points in the TDM target.
- Each measure is worth points ranging from 1 to 10, which are based on efficacy in reducing vehicle travel*, documented best practices, and contextual relevance for Madison. A number of measures have [sub-options](#) where different points are awarded based on the level of implementation and/or conditions being met.
- Include descriptions of the selected measures in the TDM plan and submit for review and approval.

*Based on VMT reduction rates from the research report: *Quantifying Greenhouse Gas Mitigation Measures*, California Air Pollution Control Officers Association (Aug 2010).

Menu of TDM measures

Table 3: TDM measure options

Measure Category	Code	TDM Measures	Points
Basic	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
	AT-5	Provide a shared fleet of bikes for on-site residents/employees	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	HOV-1	Offer vanpool options or shuttle service to employees/residents	3-5
	HOV-2	Provide car share parking or memberships, or a 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	Provide discounted transit passes to employees/residents	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	Promote and inform residents/employees about non-SOV options	1-4
	IC-2	Install multimodal wayfinding signs	1
	IC-3	Install and operate 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 1/4 mile of a daycare facility	2
	LU-5	Provide other trip-reducing facility such as on-site food service	1
	LU-6	Located within a quarter mile of all-day bus 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 parking for carpool vehicles	2
Others	O-1	Delivery-related measures (on-site storage, pick-up/drop-off area)	1
	O-2	Pay in-lieu fee to permanently achieve any number of points	
	O-3	Join a Transportation Management Association	1
	O-4	Provide other innovative measures, not listed here	1-4

Active Transportation



AT-4: Bike user facilities



AT-6: Bikeshare station



AT-7: Pedestrian infrastructure

High Occupancy Vehicles



HOV-1: Vanpool / shuttle



HOV-2: Car-share parking



HOV-5-7: Transit measures

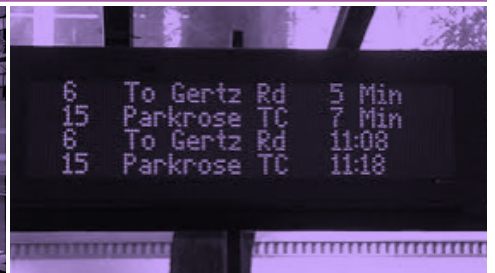
Information & Communication



IC-1: Promotional campaign



IC-2: Wayfinding signs



IC-3: Real-time arrival screen

Land Use & Location



LU-3: Mixed use development



LU-4: Childcare facility

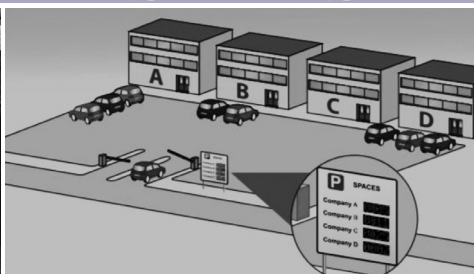


LU-6: Proximity to transit service

Parking Management



P-1: Priced parking



P-2: Shared parking



P-4: Carpool preferential parking

HYPOTHETICAL EXAMPLE *(employment)*

Steps 1 & 2: Determine applicability and TDM requirements

Project information

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

Based on this information:
Size Tier: High-Medium
Parking rate: 1 stall per 500 sq.ft floor area
TDM Target: 22 points

	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 and assign a TDM coordinator to earn the three base points. The project earns eight points based on its location, for proximity to all-day transit service, and for a high walk score. The remaining 11 points can be met through other measures from the menu. A sample selection 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
HOV-5	Provide transit passes; <i>Option A: 50% discounted passes for employees</i>	4
IC-1	Marketing and informational campaign; <i>Option B: Employee orientation and promotional campaigns</i>	1
IC-3	Real time transit arrival screen	1
LU-2	Location efficiency (walk score value – 95+)	5
LU-6	Transit service (within quarter mile)	3
P-1	Priced parking program; <i>Option A – Cash out for employees</i>	5
	Total Points	22

Step 4 : Implementation and Monitoring

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.

HYPOTHETICAL EXAMPLE *(residential)*

Steps 1 & 2: Determine applicability and TDM requirements

Project information

- **Property:** 7400 block of Raymond Road
- **Use:** Residential (20% affordable)
- **Number of dwelling units (DUs):** 100
- **Proposed parking capacity:** 150 stalls

Based on this information:

Size Tier: Medium

Parking ratio: 1.5 stalls per dwelling unit

TDM Target: 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	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

Other than the three base points, the project earns points for providing affordable housing, based on the percentage of affordable units. The remaining 20 points can be met through other measures from 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-1	Enhanced access to bike parking; <i>Option A: Segregated access to bike parking with no stairs; Option B: Locational Advantage</i>	2
AT-3 or 7	Off-site bike or pedestrian infrastructure	4
AT-4	Bike User Facilities; <i>Option B: Provide bike 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 & informational campaign; <i>Option A: Resident welcome packet</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 and Monitoring (Same as previous example)

HYPOTHETICAL EXAMPLE *(commercial)*

Steps 1 & 2: Determine applicability and TDM requirements

Project information

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

Based on this information:

Size Tier: Small

Parking ratio: 1.30 times PM

TDM Target: 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 parking minimum	Mitigation Points required				
Under PM	no TDM	8	10	12	15
1.00 - 1.24 times PM	no TDM	12	15	18	20
1.25 - 1.49 times PM	12	15	18	20	22
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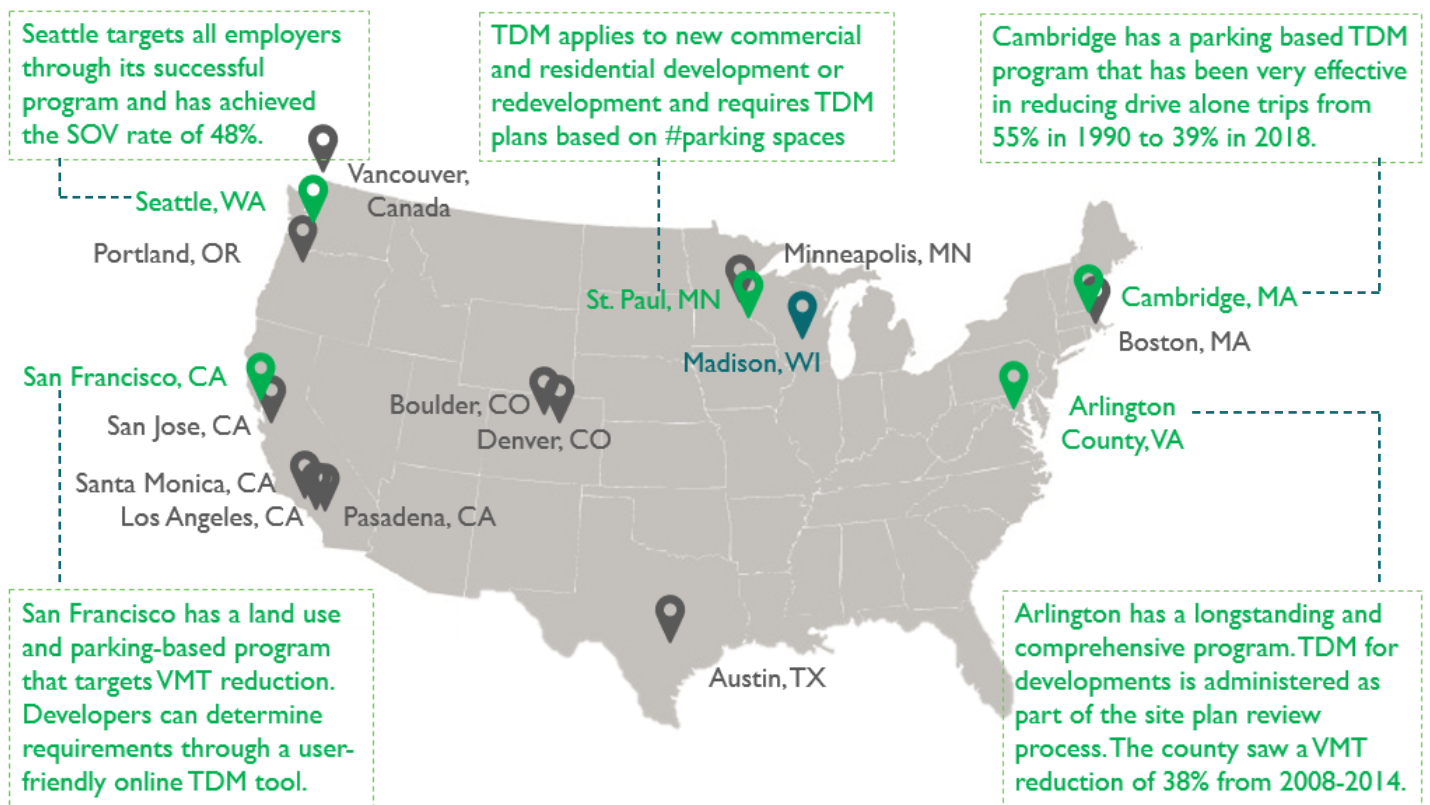
Step 3: Create and submit TDM plan

In addition to the three base points, the project earns four points for improving location efficiency through a commercial amenity and proximity to all-day transit service. The remaining 5 points can be met through other measures from the menu. A sample selection of measures 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	Offer discounted bike share memberships to employees	2
IC-3	Real time arrival screen for transit	1
LU-2	Location efficiency (score improvement)	1
LU-6	Transit service (within quarter mile)	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 and Monitoring (Same as previous example)

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 map below. By implementing the program outlined here, 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.



If you have any questions or comments, please email us at: tlynch@cityofmadison.com (Thomas Lynch, Director of Transportation, City of Madison)