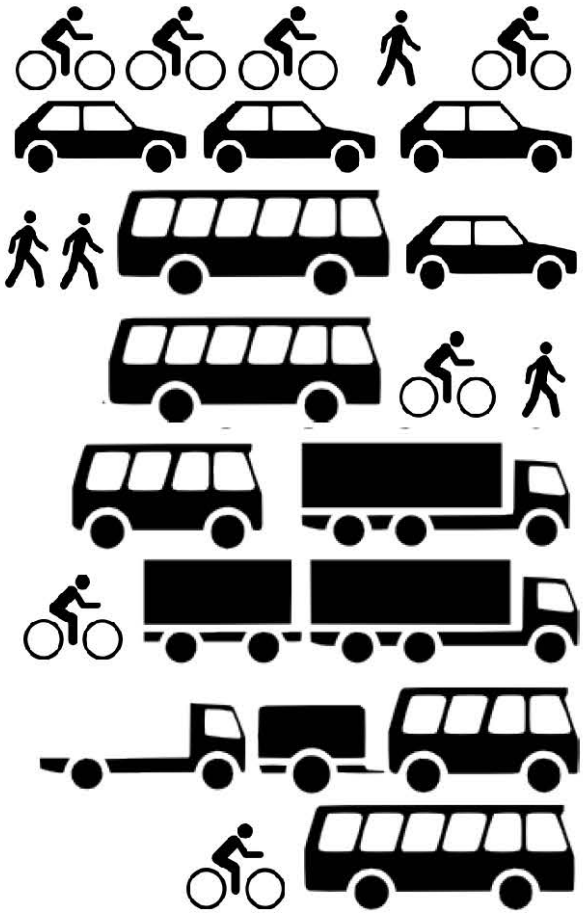
Michigan Livable Communities
Demonstration Project

Southeast Michigan: Transportation Demand Management Strategy for Major Construction Projects



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Smart Growth America
Making Neighborhoods Great Together

Completed in collaboration with the Michigan Department of Transportation and Michigan State Housing Development Authority.

MDOT Michigan Department of Transportation

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Acknowledgements

Many individuals and organizations contributed their time and expertise to the preparation of this report.

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Any errors and all interpretations are the responsibility of Smart Growth America. Please direct questions about this report to Roger Millar, PE, AICP, Vice President: rmillar@smartgrowthamerica.org, (406) 544-1963.

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Executive Summary

The SEMCOG region is on the cusp of dramatic change. A number of major capital construction projects are on the horizon to break ground in the coming weeks and years.

In an already congested region, these major construction projects have the potential to inconvenience local and regional travelers. But they also have the potential to provide another kind of traveler experience.

Transportation demand management (TDM) is a broad suite of strategies that meet travel and connectivity demands by raising the awareness, use, convenience and attractiveness of alternative travel options and/or moving certain trips to times when roadway facilities are congested (or eliminating the need to travel all together!).

The SEMCOG region has an abundance of resources that provide a strong foundation for TDM as a mitigation strategy to reduce or eliminate the potential inconvenience of these major construction projects. These resources include not only the physical facilities of alternate routes, bicycle networks, and transit services; but also the institutional resources of a coordinated regional planning agency, a creative Department of Transportation and committed local agencies, advocates, and service providers.

This report is the product of a collaborative project. Smart Growth America, a national non-profit focused on sustainable growth policies and practices, provided technical assistance to a diverse group of stakeholders coordinated through the Southeast Michigan Council of Governments.

The project defined the opportunity of TDM in the region and its application in association with these pending mega-projects; assessed available infrastructure and institutional assets to build on; and defined an implementable strategy for pursuing action.

The project focused on four major capital projects:

1. M-1 Rail on Woodward Avenue
2. I-96 major rehabilitation
3. I-94 reconstruction
4. I-75 major improvements

The strategic implementation plan includes tailored strategies for transportation demand management in the unique context of each one of these project areas. It also recommends broader actions for pursuit on a larger scale including regional tools and employer encouragement and participation.

The project concludes with identification of recommended performance measures to evaluate the effectiveness of the individual strategies and their effect on travel in the corridor and larger region.

This technical assistance report provides a starting point. It is a starting point for action as much as it is a framework for continued dialogue and partnership.

Project Overview

Transportation demand management uses what you HAVE to provide the mobility you NEED to accommodate the growth and economic regeneration you WANT.

In 2013, the Michigan Sense of Place Council, representing numerous state agencies under the direction of Governor Snyder, engaged in a partnership with Smart Growth America to provide technical advisory services to six communities of Michigan pursuing livable communities initiatives. The six communities were the Southeast Michigan Council of Governments (SEMCOG), ReImagine Washtenaw (Washtenaw County), the Tri-County Council of Governments, the City of Grand Rapids, the Northwest Michigan Council of Governments, and the City of Marquette. As part of the Federal Partnership for Sustainable Communities program, the program seeks to coordinate federal funding directed to housing, transportation, and other infrastructure in communities to create more livable places where people can access jobs while reducing pollution and also saving time and money.

The assistance was in two primary areas – community mobility management and strategic transportation demand management (TDM). The Southeast Michigan Council of Governments (SEMCOG) region has a number of very large transportation infrastructure projects programmed or desired to advance in the next few years. The construction associated with implementation of these projects may introduce significant disruption to traditional travel patterns in the region. SEMCOG and Michigan Department of Transportation (MDOT) project managers, and other members of the Modal Choice Working Group convened by SEMCOG, opted to focused on TDM as a potential strategy to mitigate the impact of these mega-projects and provide additional choices and better travel information and services to the traveling public.

TDM is a general term for strategies that increase overall system efficiency by encouraging and enabling a shift from single-occupant vehicle (SOV) trips to non-SOV modes. TDM strategies may also look to shift trips from peak period (high-demand) hours to times when more capacity is available. SOV trip reduction strategies include increasing travel options, enhancing non-motorized networks and connections for bicyclists and pedestrians, providing incentives and information to encourage and help individuals modify their travel behavior, and reducing the physical need to travel through transportation-efficient land uses. The cumulative impact of a comprehensive set of TDM strategies can have a significant benefit on system efficiency, accommodation of new growth, and success of a metropolitan area. TDM programs are usually implemented by public agencies, employers, or via public private partnerships.

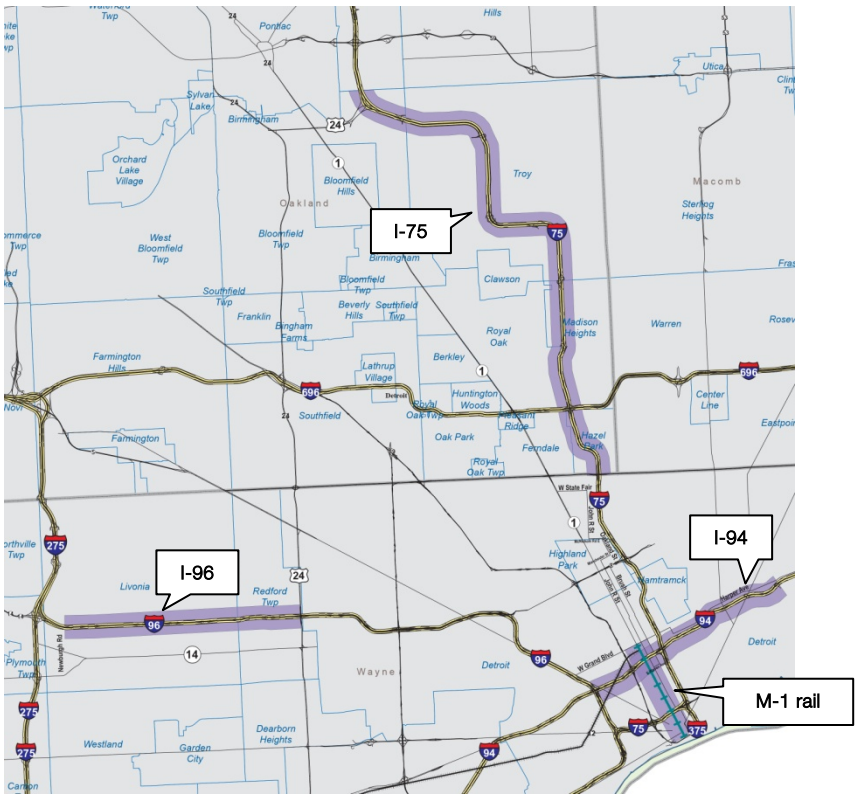
The project progressed in three distinct stages: 1) review of national leading practices and assessment of existing local resources and opportunities, 2) discussion of alternative approaches and strategies, and finally 3) development of an action strategy for implementation. This report is the culmination of these three phases and their associated findings.

SEMCOG Pilot Opportunity

Over the next two to six years, southeast Michigan will initiate several major infrastructure construction projects (Figure ES-1). These projects impact high demand corridors used by tens of thousands of workers, residents, students and freight vehicles every day.

MDOT and SEMCOG seized the strategic opportunity this presents to implement TDM to address impacts to travelers. These programs may have ancillary benefits to advancing alternative transportation options in the region and their use. Transportation Demand Management strategies offer an opportunity for Michigan Department of Transportation engineers, SEMCOG and jurisdictional partners to complete these construction projects in the shortest amount of time, with the greatest cost efficiency, and the least disruption in regional mobility. Strategically deployed, such strategies may also have the benefit of improving connectivity and access, particularly for disadvantaged populations. Linking TDM efforts across capital construction projects may not only achieve an economy of scale, but also facilitate outreach and understanding of alternative mobility options for the region at large and support and strengthen a foundation for continued broad and effective TDM in the region long after the capital projects are completed.

Figure ES-1 Map of Planned Major Capital Projects



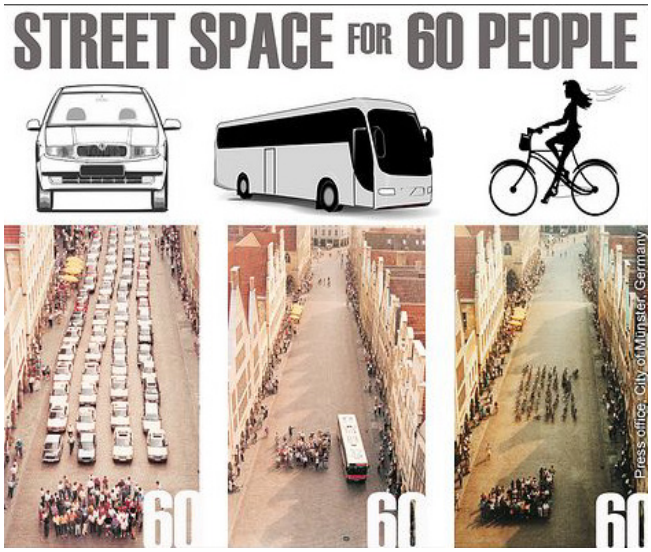
1 State of the Practice

Despite common perception, few places in the Southeast Michigan region experience a consistent traffic problem. There are segments of roadway, however, that have a rush hour problem. The nearly universal hours of the traditional workday mean that legions of workers, students, and visitors converge on our streets and transit systems at the same time making them seem congested, while in reality, outside of the limited rush hour period and on other streets in the system, there is abundant unused capacity.

Transportation Demand Management (TDM) seeks to do two things – 1) promote more efficient modes of travel to move more people in the same amount of roadway space (Figure 1-1) along the most congested corridors, and 2) spread the travel demand across more hours of the day or alternative travel routes to take advantage of space and capacity when it's available (Figure 1-2).

TDM is typically achieved by providing incentives and information to encourage and help individuals modify their travel behavior, or by reducing the need to travel at all through transportation-efficient land uses. The cumulative impact of a comprehensive set of TDM strategies can have a significant benefit on system efficiency thereby accommodating new development and economic growth, and facilitating the movement of freight using the existing roadway facilities. TDM programs are usually implemented by public agencies, private sector employers, or via public private partnerships.

Figure 1-1 Roadway Space Consumption



Road space occupied by 60 people in cars, a bus, and on bicycles
Source: City of Munster, Germany

Figure 1-2 Time of Day Capacity Constraints

Peak Direction Rush Hour Traffic - Washington, DC
Source: http://livewirepast.wordpress.com

Target Audience

Transportation demand management is about providing choice and convenience. Travelers can generally be categorized into four broad types: (Figure 1-3)

Figure 1-3 Generalized traveler types*

Typology	Description
Convinced and committed	Regular transit, telecommuting, or non-motorized travel users; early adopters either by commitment , choice or condition (economic limitations to travel choice)
Confident, but cautious	Travelers who may have used non-private auto travel modes in the past or occasionally, but do not use them routinely; perhaps because they have other choices and/or they feel alternate modes do not conveniently and reliably meet their needs.
Curious, but skeptical	Travelers who have not tried alternative travel modes, but would consider trying them if they had sufficient information about how to use them and confidence that the option would meet their needs and be reliable.. Lack of information, and skepticism about reliability is a major barrier to current use.
No way, no how!	Travelers who may or may not have tried alternative commutes, but are nonetheless not interested in using them even occasionally.

*Adapted from City of Portland, Oregon bicycle planning program

Typically the largest segment of the traveling public is “confident, but cautious” or “curious, but skeptical.” These travelers typically lack information or are unconvinced alternative travel or parking management can meet their needs. These groups are the primary target of TDM efforts, however the “no way, no how!” travelers are often equal beneficiaries as those who are willing to shift their travel patterns now have the ability or motivation to thus freeing capacity on the road for the drivers that remain.

Leading Practices

TDM is a common term today. Most places associate it with measures such as transit benefits, carpool matching, and telecommuting. All are very important measures, though still often lightly used, but the leaders in transportation demand management go much farther in adopting comprehensive and ambitious strategies. Leading practices include:

- Integrated TDM programs across multiple employers and institutions, and closely coordinated with the municipality and transit authorities (e.g. transportation management associations or TDM coordinators);
- Strong regional leadership and coordination of transportation demand management strategies, often including mode split targets with regular measurement and reporting of performance and progress;

- Pricing and incentives to influence mode choice and travel demand (e.g. demand-responsive parking pricing, parking cash-out, or transit or bicycle benefits);
- Adoption of public policies that imbed transportation demand management (and predictability) into the land development process; and
- Broad and effective public outreach and promotion programs that not only improve the public's awareness of alternative modes, but actively assist them in their day to day travel planning and choices.

Tools and Techniques

In addition to these broad approaches, there are also a wide range of specific and effective tools utilized in successful TDM programs (Figure 1-4).

Figure 1-4 Common Transportation Demand Management Tools

Approaches	Programs
Expanded Transportation Options	▪ Enhanced bicycle and pedestrian facilities ▪ Free or reduced fare transit pass programs ▪ Vanpool, carpool, rideshare and ride-matching programs ▪ Car share programs ▪ Employer shuttles
Incentives and policies	▪ Travel subsidies or benefits ▪ Guaranteed ride home programs that provide taxi vouchers for travelers who typically rideshare, bicycle or take transit to work but need an emergency ride home for a qualified reason ▪ Flexible schedules, compressed work week and telecommuting ▪ Employer assisted housing and live-near-work programs ▪ TDM requirements in the zoning and development code

Approaches	Programs
Parking management	▪ Variable market rate on-street pricing (a.k.a. performance parking) ▪ Unbundling parking (leasing or selling parking spaces separately from the rent or sale price) ▪ Rush hour parking user fee (fee applied during high congestion hours to encourage travel before or after peak period) ▪ Parking cash-out (employees given a choice between a free parking space or the cash equivalent of the cost to provide that space) ▪ Shared parking and park-once districts (one parking space serves multiple land uses and trip purposes) ▪ Pay-what-you-use monthly parking permits ▪ Priority parking for shared-use vehicles ▪ Parking occupancy tracking and guidance systems ▪ Parking maximums for new development ▪ Park and ride facilities ▪ Secure and covered bicycle parking
Education and outreach	▪ Travel planning apps and services ▪ Promotion campaigns ▪ Employer outreach and engagement ▪ Events and activities to raise awareness ▪ Travel coaching and mentoring

Organizational Structures

Choosing the TDM strategies to employ are only half the equation. The other half is how these tool are applied and by whom. To be effective and sustainable, TDM strategies must be appropriate to the organizational structure through which they will be carried out. In some regions, a public or private entity takes the lead and manages implementation; in many, a public-private partnership is set up to access the advantages of each.

Figure 1-5 Organizational Structures to Implement Transportation Demand Management

Structure	Elements
Transportation Management Organizations / Associations	▪ Typically non-profit organizations ▪ Executed in partnership with local or regional governments ▪ Eligible for state and federal aid funds for congestion management and air quality
Private entities	▪ Entities of a private for-profit employer or non-profit institution ▪ Generally privately funded (or through partnership) ▪ Less state or federal funding typically means greater flexibility in the types of programs offered ▪ With fewer participants and targeted clients, may have more limited effect on the broader area

Structure	Elements
Public agency	▪ Often regional transit providers, municipal transportation agencies, or metropolitan planning organizations ▪ As a public entity, can have broad reach, but may have limited staffing and inability for staff to devote sufficient focused time on the effort
Individual coordinators	▪ Reside in each individual employer or institution ▪ Serve only the employees of that employer ▪ Privately funded ▪ May be difficult to orchestrate collective and unified action for a district or region

.

Funding and Partnerships

Funding transportation demand management initiatives can be enhanced through partnerships and especially by the creation of a transportation management organization, or TMO. While businesses themselves can offer employee transportation benefits and in some cases take advantage of federal tax incentives. TMOs have much greater flexibility with raising funding and accessing additional funding streams. These can include:

- District assessment/tax - Assessments levied through a TMO or other type of business improvement district can help fund TDM programs and are often the largest source of income for these entities.
- Parking revenue - Parking revenue can be used on an individual employer level but also on a larger scale, especially if the organization is allowed to collect revenue from parking meters.
- Direct employer contributions - Direct contributions to services is the most common type of funding, especially for smaller-scale or early-phase efforts. Contributions can be assessed based on a formula or collected as part of dues for a TMO.
- Local government contributions - For special projects, local governments sometimes supply grants or potentially state or federal funding for certain types of initiatives, such as directly-operated transit. Typically, governmental contributions are not allocated on an ongoing basis.

Performance Measurement

No matter what type of strategy an area decides to implement, keeping track of its effect on the region is critical to maintaining participant momentum and supporting funding. For some measures, such as transit service, tracking the number of passengers supplies an acceptable metric to measure success. However, the primary goal of TDM measures is to reduce single-occupant vehicle travel in an area. Therefore, measuring the trip reduction impact is a more telling method for gauging success. The table below displays the estimated effects of each type of strategy and combination of strategies. When viewing the table, bear in mind that if used in combination, the impact of the strategies is not necessarily cumulative; for instance, a combination of transit vouchers and parking charges would not likely result in a 50% reduction of trips.

Figure 1-6 Impact of Selected Employer-Based TDM Strategies

Strategy	Details	Employee Vehicle Trip Reduction Impact
Parking Charges[1]	Previously Free Parking	20%-30%
Information Alone[2]	Information on Available SOV Alternatives	1.4%
Services Alone[3]	Ridematching, Shuttles, Guaranteed Ride Home	8.5%
Monetary Incentives Alone[4]	Subsidies for carpool, vanpool, transit	8-18%
Services + Monetary Incentives[5]	Example: Transit vouchers and Guaranteed Ride Home	24.5%
Cash Out[6]	Cash benefit offered in lieu of accepting free parking	17%

1 Based on research conducted by Washington State Department of Transportation.

2 Schreffler, Eric. "TDM Without the Tedium," Presentation to the Northern California Chapter of the Association for Commuter Transportation, March 20, 1996.

3 Ibid.

4 Washington State Department of Transportation.

5 Schreffler (1996).

6 Donald Shoup (1997), "Evaluating the Effects of California's Parking Cash-out Law: Eight Case Studies," Transport Policy, Vol. 4, No. 4, 1997, pp. 201-216. http://www.commuterchallenge.org (accessed November 2, 2007).

2 Local Practices and Opportunities

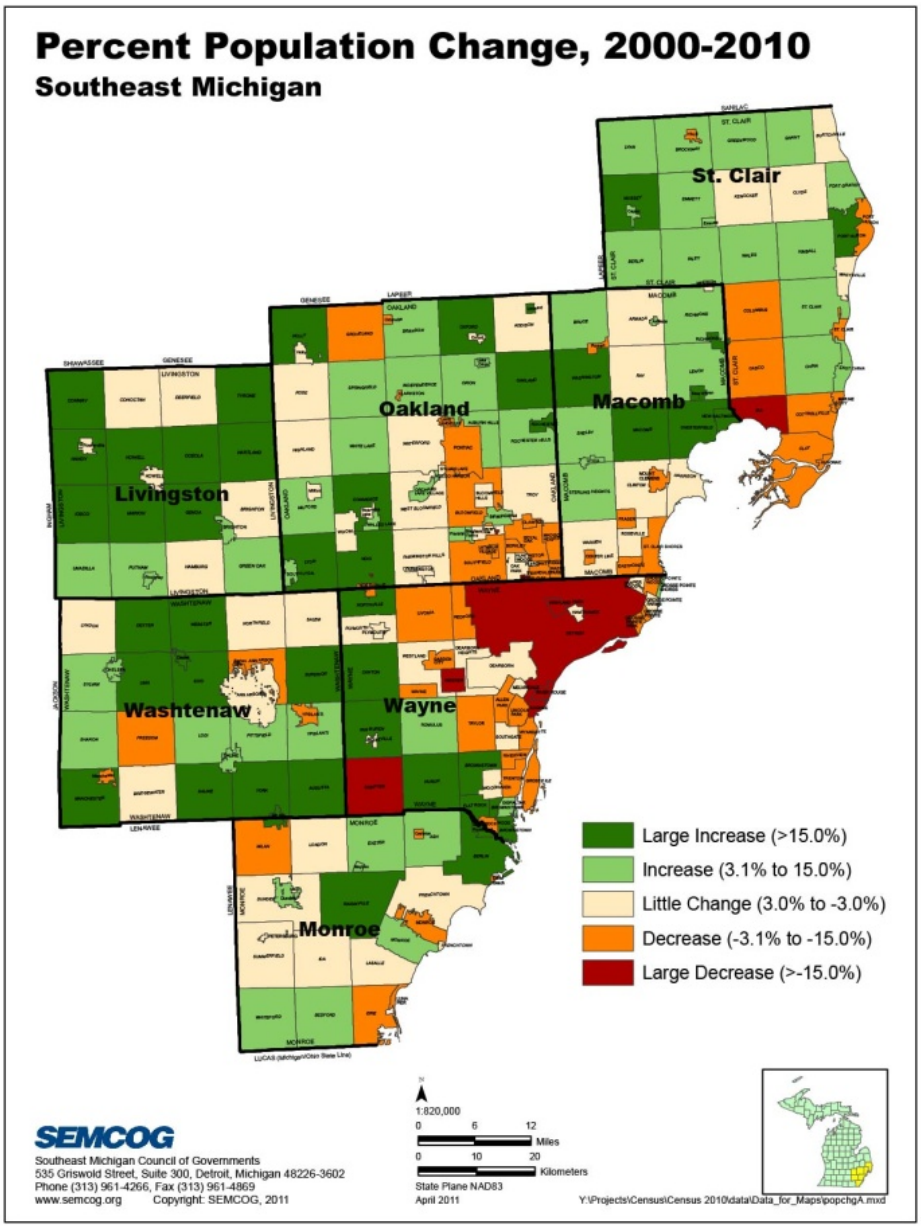
Overview

The Southeast Michigan Council of Governments (SEMCOG) is a regional planning agency and the designated Metropolitan Planning Organization (MPO) for the area encompassing Wayne, Macomb, Washtenaw, St. Clair, Monroe, Livingston, and Oakland Counties. SEMCOG membership is open to counties, cities, villages, townships, school districts, and community colleges. With well over 100 member jurisdictions, SEMCOG is responsible for regional transportation planning, providing technical assistance to members, and reviewing federal grant applications, among other responsibilities. Both St. Clair and Washtenaw Counties have their own transportation planning agencies (St. Clair County Transportation Study and Washtenaw Area Transportation Study, respectively) the perform a number of coordinating functions for their sub-region, and submit any projects in these county-specific Transportation Improvement Plans (TIPs) to SEMCOG for modeling and adoption as the MPO. Monroe County is a member of both SEMCOG and the Toledo Metropolitan Area Council of Governments. Monroe County, SEMCOG, and TMACOG have entered into a MOU committing to work together and incorporate each others' projects in their respective work plans.[1]

Population in the SEMCOG region is centered in Detroit and its inner suburbs, which cover portions of Wayne, Oakland, and Macomb Counties. Livingston and Washtenaw Counties have population centers in South Lyon-Howell and Ann Arbor, respectively. In general, the northern and western edges of the SEMCOG region are non-urbanized. To the eastern and southern edges, population pockets pop up where Michigan borders Canada and Ohio. Region-wide population according to the 2010 Census totaled 4,704,743, a decline of 2.7% since the 2000 Census (Figure 2-1).

[1] **"Memorandum of Understanding between Monroe County, Michigan and the Southeast Michigan Council of Governments and the Toledo Metropolitan Area Council of Governments." 2009.** http://www.semcog.org/uploadedFiles/Programs_and_Projects/Transportation/Planning_Certification/MOU%20with%20TMACOG.pdf

Figure 2-1 Population Change



Existing Studies and Efforts

SEMCOG covers a large and diverse region, in which numerous planning and implementation efforts are ongoing. This section lists the projects most relevant to transportation demand management (TDM) opportunities, including long-range plan priorities and investments, modal plans including transit expansions, corridor projects, and non-motorized projects. Studies are listed by geographic scope, from regional down to local. (Figure 2-2).

Figure 2-2 Major Plans and Initiatives in the SEMCOG Region

Initiative	Overview
Direction2035, SEMCOG	This regional long-range plan acts as the basis for inclusion of projects in the shorter range TIP. SEMCOG identified $2.8 billion in annual transportation needs, with an expected actual allotment of $1.3 billion per year. *Direction2035* includes more than 1,800 projects in six categories: bridges, walking and cycling, transit, pavement, congestion and safety. In June 2013, SEMCOG's Policy Committee adopted the region's 2040 long-range plan which is presently under review by FHWA and FTA.
Comprehensive Regional Transit Service Plan, 2008	The *Comprehensive Regional Transit Service Plan* builds on the 2001 study *Improving Transit in the SEMCOG Region* and provides detailed implementation steps for the transit vision plan created by the Regional Transit Coordinating Council in 2007. Highlights of the 2008 plan include recommendations for improving existing transit service and establishing regional rapid transit. A major recommendation from the study was the need to form a regional transit agency to implement the envisioned network. After several failed attempts, Michigan passed a bill authorizing the Regional Transit Authority in December 2012.
Detroit Future City Framework	The Detroit Works Project began in 2010 as a visioning project begun by Mayor Bing and spearheaded by 14 members of the business, government, and non-profit communities. This group solicited (and gained!) broad public input that resulted in a series of short and long-term actions for the city, framed under the umbrella of the *Detroit Future City Framework*.[2]

[2] http://detroitworksproject.com/the-framework/

Existing Travel Conditions in the SEMCOG Region

Infrastructure in the SEMCOG region consists of:

- 27,700 miles of roads, of which 5,200 miles are truck routes
- 3,500 bridges
- 2,000 miles of fixed route bus service
- 500 miles of walking/biking facilities
- 1,000 miles of active rail
- 35 airports
- 5 marine ports
- 7 intermodal terminals

Travel in the region is primarily by car (84%), with another 8% of commuters using carpool/vanpool, 2% taking transit and 2% walking.

Of the over 27,000 miles of public road, 51% are categorized as being in fair condition and 16% as good, while 30% are designated as being in poor condition. 8,000 miles of roadway are federal aid facilities.

Freeways and Freight

Southeast Michigan is served by a number of major interstates and highways. The city of Detroit and region are oriented around a system of arterial spokes that converge in the downtown core.

I-75 is one of three major north-south freeways in the state. I-75 is the only one that continues on to and across the Mackinac Bridge and on to Sault St. Marie and Canada. Within the SEMCOG region, I-75 is among the most heavily traveled, and congested, commuter and freight routes.

I-94 is the state's most significant east-west truck freight corridor connecting Detroit all the way across the state via Jackson and Kalamazoo eventually to Chicago. I-94 cuts through the downtown core of Detroit and continues on to Sarnia, Ontario.

I-96 is a critical economic corridor linking Detroit to Lansing and Grand Rapids and similarly a heavily traveled corridor.

The north-south aligned I-275 and east-west oriented I-696 create a beltway of sorts through the suburban jurisdictions surrounding the regional center. I-275 connects to the international airport. I-696 serves some of the most heavily populated centers of the region and as such, routinely experiences a high level of congestion.

Freeways in the SEMCOG region generally consist of three to four lanes per direction, and in general a free-flow highway can accommodate 1,800 vehicles per lane per hour. Currently 1,470 miles of roads are congested (18% of federal-aid roads or 5% of all roads), causing 2.9 hours of delay per 1,000 vehicle miles traveled.[3]

Transit

The region is supported by several transit agencies (Figure 2-3). Transit in the region generally performs fairly well given the size of the region and the funding available. The southeast Michigan region spends $75 per capita per year on transit, while in larger

[3] **SEMCOG's long range goal is to reduce delay to 2.8 hours per 1,000 miles of travel**

metropolitan regions this figure averages $184.[4]

Multiple agencies provide transit services in the Southeast Michigan region.

Detroit DOT

DDOT runs 36 bus routes in the immediate Detroit service area. Fares are $1.50 with a monthly pass costing $47.

The agency recently released its draft Five-Year Service Plan[5] with several key changes including: transition five high ridership routes to Express (including Woodward and Gratiot), opportunity to tap into desire for High-Occupancy Vehicle (HOV) or High-Occupancy Toll (HOT) lanes, identification of transit priority corridors of Eight Mile Road, Grand River Avenue, Gratiot Avenue, Michigan Avenue, and Woodward Avenue, and locating CBD park and rides in recognition of reverse commuting pattern

Detroit People Mover

This downtown loop is run by the Detroit Transit Commission. The nearly 3 mile long loop has 13 stations. According to the American Public Transit Association it has successfully moved more than 2 million people annually since 2006, however does require a relatively high subsidy averaging a cost of approximately $3/passenger mile for the 75 cent ride. The People Mover does not accept DDOT or SMART transfers and it is estimated to cost approximately $10 million to integrate the People Mover with the other regional systems.[6]

Suburban Mobility Authority for Regional Transportation (SMART)

This agency's service area reaches out from Detroit and into Monroe, Wayne, Oakland, and Macomb Counties. SMART operates 43 fixed transit routes and averages 34,000 weekday riders. The average length of its fixed route is 7 miles. The agency owns 591 vehicles including paratransit and community service vehicles. Point to point trips on the system cost $2.00 per trip. Monthly passes are $66. Trips from park and ride lots are $2.50 or $82 for a monthly pass.

Lake Erie Transit (LET)

Lake Erie Transit serves Monroe County residents with eight fixed routes, dial-a-ride by town, and a county-wide lifeline curb-to-curb service. Fares are $1. LET carries 370,856 passengers per year, owns 24 vehicles, and employs 68 people.

Blue Water Area Transit (BWAT)

The Blue Water Area Transportation Commission runs seven fixed routes within the City of Port Huron and Gratiot Township in St. Clair County on 40-minute headways. Two express routes, on I-94 and M-29, provide free transfers to SMART route 560. In May 2009, Blue Water Area Transit carried 81,775 total trips. The agency has applied for FTA funds to build a new bus hub and transfer center replacing the current facility on Quay Street. BWAT plans to construct a new

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[4] **Comprehensive Regional Transit Service Plan, P. 5**

[5] http://www.detroitmi.gov/Portals/0/docs/deptoftransportation/pdfs/ddot_fiveyearplan08.pdf

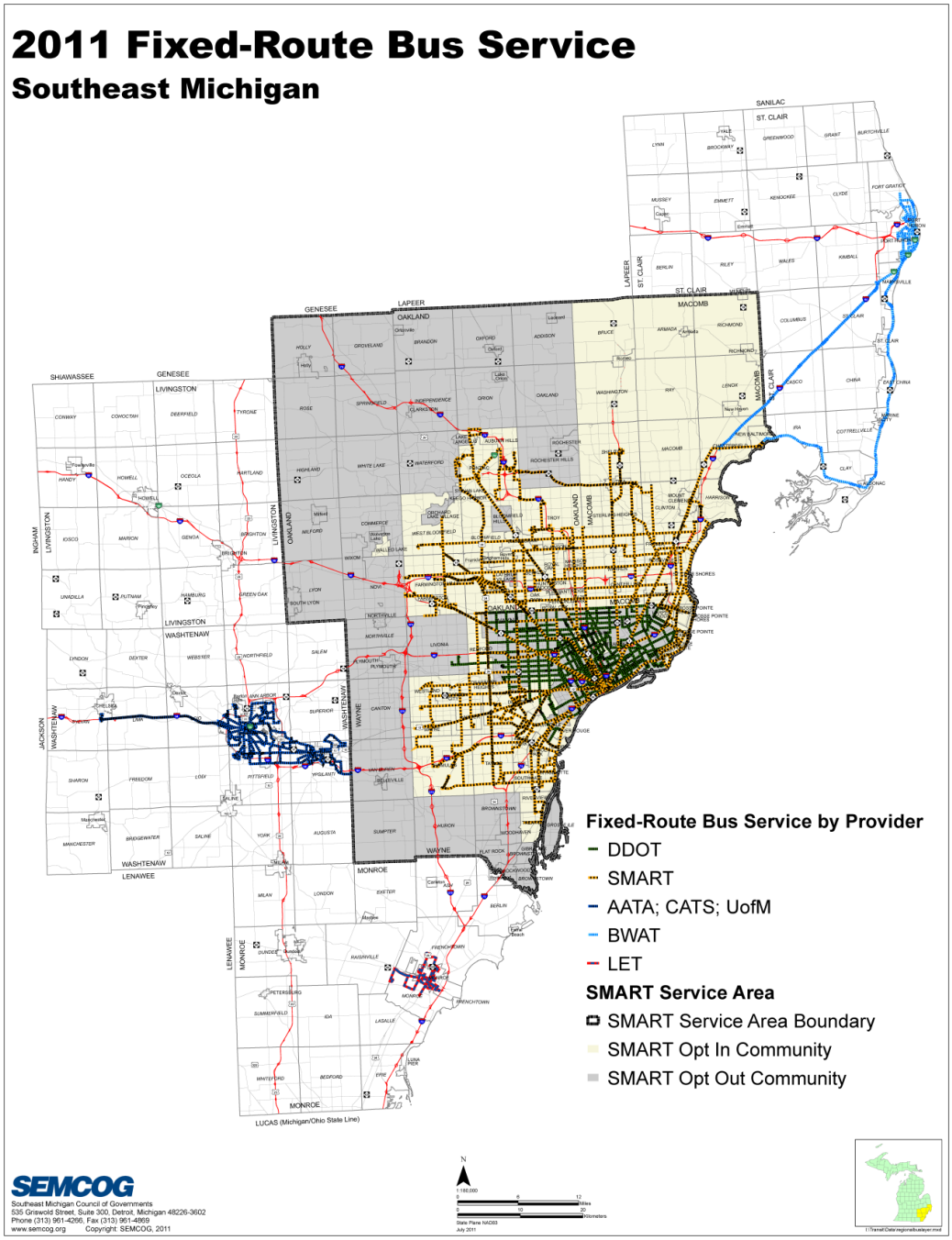
[6] **Comprehensive Regional Transit Service Plan, P. 7**

$9.86 million downtown transfer center. Other transit priorities identified in its long-range plan include further expanding hours of service to connect with more SMART buses and, if funded locally, having county-wide transit.

Ann Arbor Transportation Authority (AATA)

The Ann Arbor Transportation Authority (AATA; operating as “TheRide”) provides public transit services to the City of Ann Arbor and to other surrounding communities through contract service agreements, including Ypsilanti. In 2012, TheRide provided over 6.4million rides, a 6% increase over 2011 and a single-year ridership record. TheRide’s total operating budget in FY 2012 was $30.36 million.

Figure 2-3 Transit Network



Ridesharing and Vanpools

MichiVan, Michigan rideshare (MiRideshare), vRide and other providers offer vanpools and ride sharing options in the SEMCOG region. vRide is a full service vanpool provider covering payment transactions, vehicle maintenance, and rider matching services. Vanpools operate throughout the SEMCOG region.

SEMCOG maintains MiRideshare which is the region's carpool matching system. MiRideshare is an online system that matches drivers with riders to share the commute. Currently more than 6,000 users have registered and saved, on average, $3,000 per year. SEMCOG estimates that in 2012, MiRideshare reduced vehicle miles traveled (VMT) by 12 million miles and emissions by 12 million pounds.

The program also runs a fairly successful annual commuter challenge event attracting 700 participants in 2012 – a 180% increase.

Pedestrian and Bicycle Facilities

SEMCO supports better walking and bicycling by providing technical assistance to members, hosting accessibility workshops, and producing bicycle maps. Efforts are generally geared toward expanding the region's trail network, rather than filling in gaps on the street network, but SEMCOG has undertaken a non-motorized plan that will document on and off-street conditions. The region has 500 miles of existing or under construction walking and cycling facilities.

In conjunction with MiRideshare, SEMCOG has recently launched MiBikematch to match potential cycling commuters with others in their area traveling their route to further increase the attractiveness of bicycle commuting options.

Detroit area employers, led by Quicken Loans Chairman Dan Gilbert, have just recently launched a localized bike sharing program in downtown Detroit. Provided by Zagster, the dockless bike system allows members to take bicycles for the hour or the day as needed and provides another option for short trips around the downtown core.

Other Regional TDM Programs

The region also has a number of smaller or more unusual TDM programs serving travelers and improving systems:

Transportation Alternatives Program (TAP)

This is a competitive grant program that funds projects such as nonmotorized paths, streetscapes, and historic preservation of transportation facilities, that enhance Michigan's intermodal transportation system and provide safe alternative transportation options. These investments support place-based economic development by offering transportation choices, promoting walkability, and improving the quality of life..[7] Applications are jointly evaluated by SEMCOG and MDOT. SEMCOG's Regional Clearinghouse Review Committee (RC2), which is comprised of elected officials, make the final project selections.

[7] http://www.semcog.org/TAPCall.aspx

Guaranteed Ride Home (GRH)

GRH is managed by the local rideshare offices; in this case, both SEMCOG and AATA have a shared web site. Registered carpool and vanpool commuters are reimbursed for taxi, bus, or rental car cost to get home in the case of emergencies. Participants may claim GRH up to twice per month or six times per year.

Park and Ride

AATA and SMART operate park and ride lots. SMART has 21 park and rides and operates 3 park and ride routes; AATA operates six park and ride facilities. In 2001, *Transportation Demand Management (TDM) in Southeast Michigan*[8] estimated that SMART partners with local businesses in the region to 1,500-2,000 parking spaces. SMART does not collect utilization information at its facilities.

[8] **Transportation Demand Management (TDM) in Southeast Michigan. Southeast Michigan Council of Governments (SEMCOG). May 2002.**

Employer-Based Transportation Programs

Major institutions in Southeast Michigan have implemented their own transportation demand management programs. These programs provide a good foundation for further expansion and demonstration to other area employers and institutions (Figure 2-4).

Figure 2-4 Existing TDM Programs at Major Employers

Entities	Transit	Parking	Others
Wayne State University	Wayne State operates a complimentary Main Campus shuttle and a Medical Campus shuttle.	Eight parking structures and 44 surface lots (accommodating 13,000 cars) Parking fees are $260-$340 for students and $300-$380 for staff per semester	A Campus Alternative Transportation Map shows city and SMART bus routes as well as bike rack locations
Detroit Medical Center	DMC operates 12 shuttles for patients, visitors, and staff. The Central Campus shuttle is in operation all day, while the other shuttles connecting parking structures to the Central Campus or connecting different hospital branches are generally available during peak hours and run on 10-minute headways. DMC's Midtown Shuttle connects to Wayne State University.	All DMC employees are assigned a parking space.	
Ann Arbor and Washtenaw County ▪ City of Ann Arbor ▪ University of Michigan ▪ Eastern Michigan University ▪ Washtenaw Community College ▪ Veteran Administration Hospital, Ann Arbor	Please see Washtenaw Report for institution's TDM measures and programs	Please see Washtenaw Report for institution's TDM measures and programs	Please see Washtenaw Report for institution's TDM measures and programs

3 Major Projects

Several major infrastructure projects occurring or desired over the next TIP cycle present a great opportunity to integrate short and long-term TDM measures into capital construction.

I-75 (from 8 Mile Road to M-59 in Oakland County)

I-75 consists of six lanes connecting downtown Detroit through Oakland County and north through Central Michigan and into Canada. I-75 is shown as a congested corridor[9] and capacity expansion to I-75 in Oakland County is listed as a priority in *Direction 2035*.[10] Two segments of the corridor are listed among the top 10 congestion priority freeways.[11] The 17.7 mile corridor will be widened to four lanes per direction, with the new lane designated as HOV. During construction, the goal is to keep existing lanes open; however, this is a very difficult goal to achieve. MDOT conducted initial environmental reviews 7-8 years ago. At that time, the public was split regarding desire for more general purpose versus HOV lanes on I-75. Oakland County has been a major supporter of the project and using the new capacity for HOV. Congestion levels on the corridor fluctuate; average daily traffic (ADT) on the corridor ranges anywhere from 103,000 to 174,000. Flows on I-75 are almost evenly split into bi-directional peaks. People who live in Detroit travel to Macomb County and into Oakland County for work; Oakland County residents travel north to Flint or south to Detroit. Currently there is no funding for the project and cost is estimated at $830 million. Construction is targeted to begin in 2017 or 2018 with a 20-year build-out.[12] *Directions 2035* states that even with capacity expansion projects such as this one, it is expected that congestion will remain at current levels from the present to 2035.[13]

Figure 3-1 I-75 project area

9 http://www.semcog.org/uploadedFiles/Programs_and_Projects/Planning/Long_Range_Transportation_Plan/CongestionDeficiency.pdf

10 http://www.semcog.org/Direction2035_Transportation_Projects.aspx

11 http://www.semcog.org/Direction2035_Needs_Priorities.aspx

12 Susan Datta, MDOT, phone interview 4/10/13

13 *Directions 2035,* page 4 of full PDF.

I-96 (from Telegraph to Newburgh Roads in Wayne County)

I-96 is an eight-lane, below-grade highway starting at I-275 and connecting to downtown Detroit. MDOT is reconstructing 7 miles of I-96 within the City of Livonia and Redford Township in Wayne County and repairing 37 bridges, including interchanges. Cost is projected at $150 million or more and is 80% federally funded, with the local match provided by the state and City of Livonia under Act 51.[14] The 100% design plans will be completed by June 30, 2013, with construction set to begin in 2014. The project's expected lifetime is 20+ years. MDOT has surveyed the public to understand preferences for aesthetics and construction staging. Of the 1,787 respondents to the construction survey, 56% preferred a full closure of I-96 to achieve a shorter construction period (current prediction is that the road will be closed for one year).[15] Bypass routes are I 94, I 696, I-275, M-39, and US-24.

I-94 (from I-96 to Conner Avenue)

I-94 from I-96 to Conner Avenue is a key link in the regional system and has been identified as a top priority for congestion mitigation for more than 15 years.[16]

The project would reconstruct and improve the corridor to address maintenance, safety and congestion concerns. It includes widening the corridor to eight lanes, renovating 10 priority bridges, connecting the current service roads into a continuous local network, and providing non-motorized and transit accommodations along service roads. The project measures 6.7 miles long and will cost $1.5 billion. The project will be completed in phases. MDOT has completed preliminary conceptual design and engineering but will pursue innovative project delivery for the project. MDOT has begun renovating bridges, such as the Van Dyke Bridge, currently underway, and creating designs for a second bridge.

TDM and maintenance of traffic are major priorities for the project. MDOT plans to work on the service roads first, to allow local traffic to use the new continuous roads. The new service roads will include bike lanes; most of the 65 replaced bridges over the highway will also have bike lanes and improved local connections to reknit communities on either side of the facility. MDOT hopes to initiate construction in 2014 and ideally complete the project in 4-5 years. [17]

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[14] **Act 51 created the Michigan Transportation Fund, which is replenished through road user taxes such as the gas tax, vehicle registration fees, and other miscellaneous fees. See** http://www.michigan.gov/documents/act51simple_28749_7.pdf.

[15] **Additional project information at 96fix.com.**

[16] http://www.semcog.org/Direction2035_Needs_Priorities.aspx

[17] **Terry Stepanski, MDOT, phone interview 4/11/13.**

Figure 3-2 I-94 Project area

Source: I-94 Final Environmental Impact Statement

M-1 Streetcar

Funding has been acquired and construction is targeted to begin on Phase I, the portion within the city limits, in late 2013. The full 3.3 mile streetcar is projected to cost approximately $163 million, which includes $20 million from FHWA for road reconstruction and bridge replacement that can happen coterminous with the streetcar construction lumped together in one contract. M-1 Rail has committed more than $100 million, and the FTA has awarded a previous TIGER I grant slated for the larger light rail project to streetcar, in addition to $6.5 million in planning funds to ramp up the Regional Transit Authority. The balance will be covered by state and local funds.[18] Given the new developments and retail establishments pending downtown, MDOT wants to move construction in the downtown portion forward quickly as Woodward Avenue will likely require full closure for periods of time and the goal is to minimize impacts to new residents and businesses.[19] If construction remains on schedule, Phase II will begin in Spring 2014 and the streetcar will be operational by the end of 2015. Outside the city portion of the alignment, Woodward Avenue has a nine-lane cross section. During construction, the street will be narrowed to one lane per direction plus a center turn lane. This configuration has been used in the past for other construction projects, and the road generally functions fine; the corridor is not especially busy outside of peak times, and people know to find an alternate route. After construction, the cross-section will consist of seven lanes, including parking lanes. Light rail and the streetcar are viewed as economic development tools as well as mobility tools; thus MDOT has not completed calculations on potential VMT reduction or potential mode shift from driving to transit. Given the low levels of congestion on Woodward Avenue, the project funding does not include financial resources specifically for TDM measures. Woodward Avenue is not slated to be a bicycle route; parallel Cass Avenue is the future designated facility.

[18] http://www.dot.gov/briefing-room/us-transportation-secretary-ray-lahood-announces-25-million-woodward-ave-streetcar

[19] Phone interview with Jonathan Loree, MDOT, 4/9/2013. Dan Gilbert has recently purchased several buildings along Woodward Avenue http://www.huffingtonpost.com/2013/03/19/1001-woodward-detroit-dan-gilbert_n_2907932.html

Figure 3-3 Woodward Streetcar Project area

Source: MDOT

Figure 3-4 Planned Major Capital Construction Projects

Project	Location	Length	ADT	Estimated Cost (2013 dollars)	Initiation	Duration
M-1 Rail/Woodward Avenue Streetcar – Economic development and revitalization project providing local circulation and connectivity. At completion, nine-lane corridor will be reduced to seven-lanes.	Downtown Detroit	3.3 miles	20,400[20]	$165 million	2013	2 years
I-96 (from Telegraph to Newburgh Roads)[21] – Interstate maintenance project for eight-lane, trenched highway. The project includes the repair of 37 bridges, including interchanges.	Livonia	7 miles	138,900[22]	$150 million	2014	1 year
I-94 (from I-96 to Conner Avenue) – Interstate maintenance, safety and congestion mitigation project to widen interstate facility from six to eight lanes, renovating 65 bridges (10 priority bridges), and converting current service roads to a continuous multimodal local network.	Downtown Detroit	6.7 miles	144,082[23]	$1.5 billion	*2014*[24]	4-5 years
I-75 from 8 Mile Road to M-59 – Interstate maintenance and safety project includes capacity improvement reconstruction and widening, one additional lane per direction designated as HOV in the peak hours. Highway exhibits bi-directional peaks.	Bloomfield, Troy, Madison Heights, Hazel Park	17.7 miles	138,500[25]	$830 million	2017/2018	

The combination of a diverse foundation of organizational and service resources and the necessity to mitigate the impacts of several, potentially concurrent, major infrastructure projects creates both an opportunity and an urgency to define a realistic and effective transportation demand management strategy for the region. Although challenges are substantial, the region is also fortunate to have a number of unique opportunities to seize (Figure 3-4).

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[20] Source: MDOT 2011 Average Daily Traffic Maps. http://mdotcf.state.mi.us/public/maps_adtmaparchive/pdf/2011adt/Downtown_Detroit.pdf.http://mdotcf.state.mi.us/public/maps_adtmaparchive/pdf/2011adt/Downtown_Detroit.pdf

[21] Additional project information at 96fix.com.

[22] MDOT 2011 Average Daily Traffic Maps. Counts taken along the I-96 project area were averaged to calculate an overall ADT. http://mdotcf.state.mi.us/public/maps_adtmaparchive/pdf/2011adt/Detroit_Metro_Area.pdf.

[23] MDOT 2011 Average Daily Traffic Maps. Counts taken along the I-94 project area were averaged to calculate an overall ADT. http://mdotcf.state.mi.us/public/maps_adtmaparchive/pdf/2011adt/Downtown_Detroit.pdf.

[24] Only if funding is identified and project advances as design-build.

[25] Due to its length and varying land uses, ADT along this corridor varies greatly from 103,000 to 174,000 according to the MDOT project manager. These numbers were averaged to come up with a general overall ADT to use for the purposes of this analysis.

Figure 3-5 SEMCOG Major Project TDM Challenges and Opportunities

Challenges	Opportunities
▪ **Regional integration:** The SEMCOG region is enormous with many diverse communities, cultures, and stakeholders and strong sub-areas. ▪ **Project funding:** Some of the major projects (namely I-75 and I-94) lack full funding at present. Projects may need to be divided and phased which could both raise project costs and present challenges to some TDM measures. ▪ **Limited employer engagement:** While the M-1 Rail project is a national example of private sector leadership in transit and TDM, other major employers in the SEMCOG region have not demonstrated tremendous energy in embracing TDM strategies or providing programs and investments to support alternative travel on a significant scale.	▪ **New Regional Transit Authority:** Establishment of the new RTA presents new opportunities for collaboration, leadership and coordination. ▪ **Energetic private sector leaders:** Dan Gilbert and other private sector leaders have demonstrated a strong commitment to Detroit and the region, setting new standards and trying bold new approaches. ▪ **Diverse transit services:** The region is rich with transit options provided by SMART, DDOT, DTC, institutions and private employers which present a great opportunity to link transit integration with broader TDM efforts. ▪ **Corridor critical mass:** With a number of major capital projects planned, there is a potentially unprecedented opportunity to use TDM as a maintenance of traffic/traffic mitigation strategy and demonstrate its efficacy.

4 Alternative Approaches

A range of options for applying TDM in the various corridors were developed and discussed. However, beyond just identifying potential strategies, the region and project owners must contemplate organizational structures for implementation, monitoring, and evaluation of the TDM programs. At present, there are several existing or emerging agencies engaged in various elements of TDM but no clear regional leader or provider who takes charge of all TDM activities.

Strategies are organized around the major capital projects. Although presented separately, the tools and strategies are not mutually exclusive and actually provide the greatest outcomes when applied in tandem.

Figure 4-1 Alternative Transportation Demand Management approaches for SEMCOG Major Projects

Project	Alternative Approaches
Woodward Avenue Streetcar	• TDM Marketing and User Information - Developing a targeted and effective TDM marketing campaign to inform affected travelers of available alternatives and programs. - Developing a localized travel planning app to assist with multimodal trip planning around the disturbed area - Organizing events and competitions to encourage affected travelers to try a different commuting mode for a day or week. • Transit benefits and enhancements - Develop a Universal Transit Pass (a.k.a. UPass or Eco Pass) an unlimited ride transit pass distributed to all members of a targeted user group (e.g. residents or workers within ½ mile of Woodward) - Pursue and encourage fare integration to ensure the pass or other fare media could be used across all transit providers. - Explore rerouting and enhancing transit services on or parallel to Woodward Avenue. Pilot limited stop services along these corridors and/or branded bus services with an identifiable wrap. • Bicycle opportunities - Install protected cycle tracks along John R Street or Cass Avenue –OR-- consider conversions to one of these corridors to make them a bicycle boulevard (low volume vehicle corridor) to provide an attractive alternative route to Woodward; - Explore agreements with upstream business or property owners to establish "park and pedal" lots to intercept auto commuters before the central core and construction area and allow them to transfer to bicycle for the last segment of their journey. - Plan social rides and events, building off and promoting the MiBicyclematch system. - Ensure adequate secure and abundant bicycle parking downtown in both buildings and the public space.

Project	Alternative Approaches
I-96	• TDM Marketing and User Information - Targeted and effective TDM marketing campaign; - Localized travel planning app - Events and competitions - Strongly promote and raise awareness of the commuter benefit program that provides for a tax break for alternative commuting. • Transit benefits and enhancements - Universal Transit Pass - As SMART does not currently service this corridor, project owner may wish to explore introducing SMART service as a travel alternative during the period of construction. • High occupancy travel and ride sharing - Strongly market and encourage vanpool and carpool matching for travelers affected by the construction. As ridesharing promotional staffing and resources are limited, additional program capacity may be necessary to fully leverage this mitigation possibility. - Ensure convenient access to park and ride lots and explore the opportunity to create more park and ride opportunities using available parking resources such as large retail surface lots. - Designate a reserved high-occupancy vehicles (HOV) lane during the construction period. Doing so may require new authorization and enforcement capabilities. Allow freight to use this lane as well. • Bicycle promotion - Provide maps and information on available bicycle routes, specifically the parallel trail, and share information on the effectiveness of bicycle commuting from both a health and personal finance perspective. - Promote bicycle use for shorter intra-corridor trips in particular and assist local municipalities in making these connections complete, comfortable, and convenient. - Plan and promote social rides and events.

Project	Alternative Approaches
I-94	• Parking and congestion - Explore strategies for introducing demand-responsive parking pricing in the downtown to dissuade commuters from driving in as the most competitive (time plus money) option. While the private sector will set parking costs, the municipality or state could explore the imposition of a fee for parking arrivals that occur during the most congested period of the day to minimize auto pressures on the constrained construction zone during active periods. - The project may implement remote or satellite parking facilities. Mobile technologies can inform travelers of parking availability and real-time information on connecting transit services. Such satellite lots would need to be linked to the downtown by a frequent and appealing shuttle or circulator bus service. - Project management team, SEMCOG and municipalities can encourage employers who have a substantial number of employees utilizing the I-94 corridor to offer employees a parking cash out – literally cash if they promise not to drive to work. - If staffing and program capacity could be increased, the region's commuter choice program could expand work to develop and promote employer TDM programs. - As the corridor is already highly congested and will only become more so during the construction period, the state and region may wish to explore congestion pricing for the corridor and alternative routes in close proximity to encourage off-peak travel and facilitate reliable traffic flow during the construction period. • Transit benefits and enhancements - Given the project location in the heart of the most urbanized part of the region, the project may be able to minimize daytime intra-area trips through the provision of an efficient and attractive downtown shuttle in the vicinity of the project area. This shuttle could be combined with remote or satellite parking allowing workers to leave their vehicles outside of the affected area. - A number of local institutions already operate private shuttles in the vicinity of the project area. Integrating private shuttles can not only reduce the traffic caused by the shuttles themselves, but can be more cost effective, provide better service, and raise the profile of all. - Pursue a Universal Transit Pass - Support fare integration.

Project	Alternative Approaches
I-75	• TDM Marketing and User Information - Targeted and effective TDM marketing campaign; - Localized travel planning app • Telework, flexible schedules and activity node hoteling - Broadly promote telework (or "cyber commuting") among employers as a part-time or temporary option during the most congested construction periods to remove vehicles from the corridor altogether. - Encouraging employers to utilize flexible schedules would allow workers to travel during less congested periods, typically outside of the peak hours thus reducing pressure on the corridor. - Hoteling is much the same concept as telework, except that rather than working from home, the worker reports to a satellite location, often a co-working environment. Not only does this reduce commuting pressure on the corridor, but it also provides an economic development opportunity for some of the outlying suburban locations. • Transit benefits and enhancements - Utilize the highway project to design and implement a parallel higher speed, high quality transit facility, potentially on Woodward Avenue. This may be full or partial implementation of the contemplated Woodward Avenue BRT line. - Expand the vanpool program to provide project subsidy to additional vanpools formed specifically around the corridor. These would be beyond the 400 in the region currently subsidized through CMAQ resources. • High occupancy travel and ride sharing - Explore additional "business based" park and ride lot opportunities along the corridor and establish appropriate agreements. Maintain access to existing MDOT park and ride locations. - Designate a reserved high-occupancy vehicles (HOV) lane during the construction period. Doing so may require new authorization and enforcement capabilities. Allow freight to use this lane as well.

Implementing Entity

While all of the above alternatives for transportation demand management mitigation strategies for the major construction projects are theoretically viable, the organization, agency, authority or individual through which they are implemented is a major factor in the effectiveness of the TDM measure. There are several options for implementers of the TDM measures.

Transportation Management Association

Many cities or core business areas have a transportation management association (TMA) that is dedicated to marketing, implementing, tracking and promoting various broad TDM measures. There are roughly 150 TMAs around the country today, including Ann Arbor's high performing getDowntown! program through the Ann Arbor Transit Authority (AATA). Given the large geography of the SEMCOG region, the widely dispersed project areas, and the highly diverse context of the affected areas and traveler demand, a centralized TMA is unlikely to be an appropriate mechanism for all projects, however could be effective for the core area projects such as the Woodward Avenue Streetcar and I-94 reconstruction. With the growing capacity of the Regional Transit Authority (RTA), however, the RTA can play a vital and increasing role in several recommended TDM measures, especially those involving transit services, programs and promotion.

Collaborative Committee

More loosely structured than a formal Transportation Management Association, TDM strategies can be effectively coordinated and advanced through a collaborative committee structure. The existing Modal Choice Steering Committee currently performs some of these functions. Implementation would need to occur through individual participating agencies or stakeholders as such committees commonly lack independent funding or budgets.

Regionally-Staffed Program

SEMCOG presently has designated staff who promote and advance commuter choice and the commuter benefit program in the region. The staff have had marked impact on the region and have supported TDM in major capital construction projects in the past, however the reach of staff is limited given the limited capacity and resources. SEMCOG staff play a vital and effective role in bringing partners together to implement some of these TDM alternatives if additional program resources could be found and allocated.

DOT Project Managers

The capital project managers themselves have pursued one or more of the alternative TDM approaches and have demonstrated some success in this. However, MDOT project management staff are not experienced TDM managers, nor should they be. Project managers must focus on the nuts and bolts of project delivery and can lend only partial attention to the intricacies involved in many of these recommended TDM measures.

Project Contractors

In many similar major capital construction projects, project contractors – typically a program management contract – are responsible for TDM mitigation measures. This can be quite effective as these program managers can hire TDM specialists and give focused attention to the unique needs of the project. TDM effectiveness can be a performance measure in overall contract performance and accountability.

Private Employers

In the near term, private employers may be the most effective TDM implementers. For many employers, developing a transportation demand management strategy of their own will be a benefit both to their bottom line as well as to the talent dividend – the ability to successfully compete for the leading talent in the industry. At present, only a handful of SEMCOG area employers (outside of the Ann Arbor subarea) demonstrate a strong TDM program, however this can quickly change with the example of one or two catalytic leaders.

Partnership

It will likely take multiple players and partners to successfully implement TDM mitigations for projects of this size and complexity. These various partners will need to continue to work in close collaboration and communicate regularly. The Mobility Choices working group will likely continue to have a vital role to play as these projects proceed from planning to implementation,

Figure 4-2 Alternative Strategies Implementation and Cost Comparison Matrix

Program	Lead Entity	TDM Impact	Estimated Timeline	Estimated Cost [26]
Marketing	SEMCOG; TDM coordinator	High	Medium (6-12 months)	$100,000+ for marketing campaign; $35,000-$50,000 for full-time coordinator
Travel Planning App	SEMCOG or MDOT	High	Medium (6-12 months)	$100,000 but could have broad application
Events and competitions	TDM coordination	Low	Medium (6-12 months)	Variable; cost is generally in staff time
Universal Transit pass	SEMCOG, RTA, MDOT	High	Medium (6-12 months)	Potentially substantial, but highly effective
Fare integration	Transit Agencies	Medium	Long (12-18 months)	Coordination time; setting up billing
Rerouting and new services	Transit providers, w/ project owner	High	Medium (6-12 months)	$100,000 - $1 million+ depending on service and facility provided
Promote new services	MDOT, SEMCOG, RTA, transit operators	High	Short 3-6 months (after deployment)	Potentially minor if leveraging existing marketing

[26] Costs are general estimates based on project experience in other communities.

Program	Lead Entity	TDM Impact	Estimated Timeline	Estimated Cost [26]
Downtown shuttle system	Downtown business groups; transit providers	High	Long 12-18 months	$250,000+ per year for limited turnkey contracted service
Integrate private shuttles	Major institutions; transit providers	High	Long 12-18 months	Low cost to region
Park and ride	TDM coordinator, RTA, MDOT	Medium	Medium 6-12 months	Varies widely (contracted private facility or publically acquired land)
Employer-based incentives	TDM coordinator; employers	Medium	Short (3-6 months)	Likely need additional, at least temporary, TDM staff expansion (1 FTE)
Telecommuting	Private employers, TDM coordinator	Low	Short (3 to 6 months)	Relatively minor cost to both region and employers
Hoteling/third place	Private employers; land use/econ dev	Low to moderate	Short (3 to 6 months)	Relatively minor cost – planning and education
Flexible work schedule	Private employers	Low	Short (3 to 6 months)	Relatively minor cost
Parking pricing	State, local jurisdictions	High	Medium to long (6 to 18 months)	Highly variable
Parking cash out	Private employers	High	Medium (6 to 12 months)	Can be substantial, but may also result in substantial savings

5 Implementation Plans

Overview

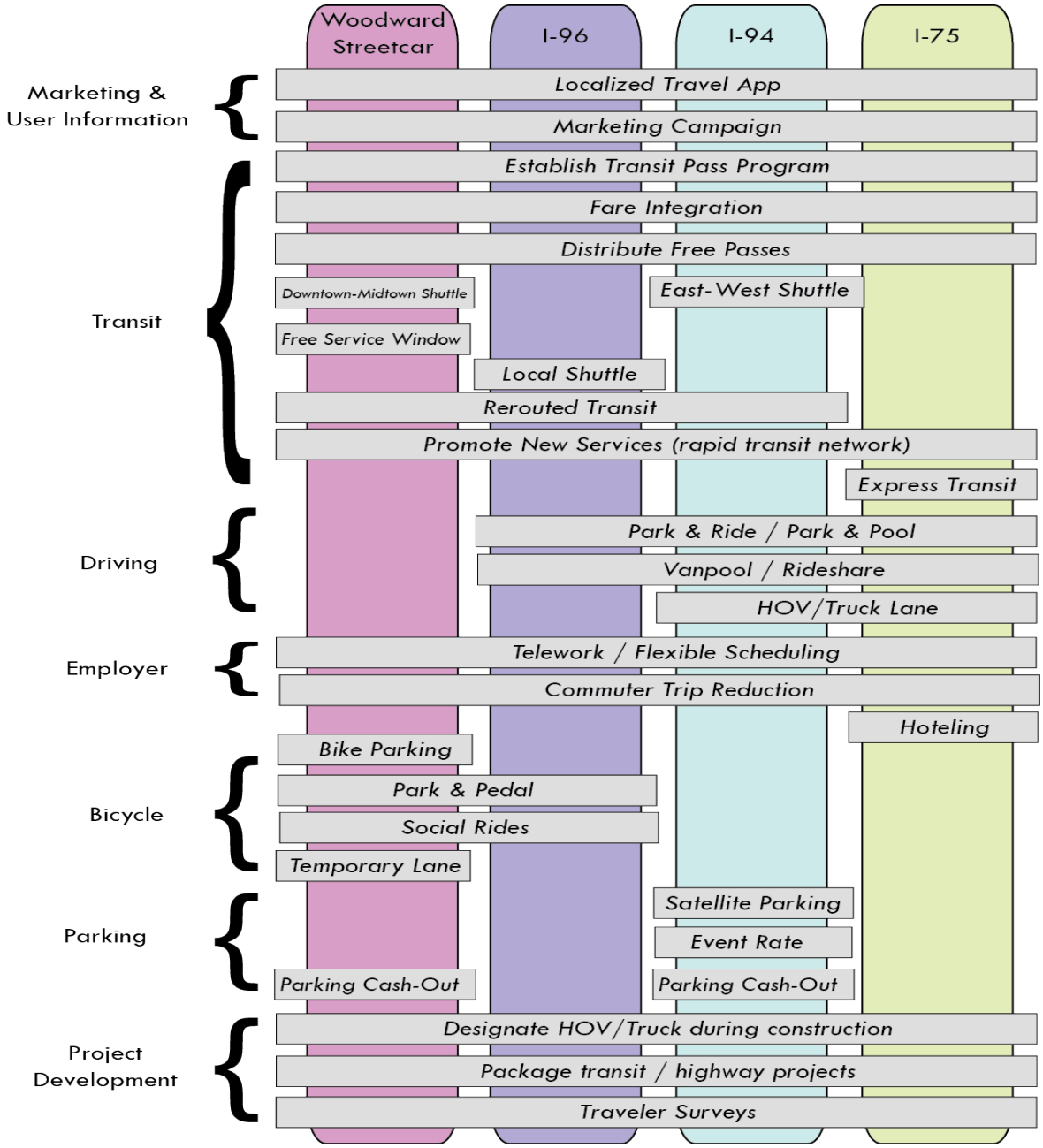
The Modal Choice Steering Committee carefully reviewed the diverse alternatives for TDM mitigations for the various projects. A final implementation strategy was developed based on the feedback received

Implementation plans are organized by Strategy Sector (e.g. transit, parking, etc.) and then contain the strategy name or action item, a brief description, steps for implementation, estimated order of magnitude cost, potential funding sources, and lead partner for implementation.

Certain strategies are universal across all or most of the four projects, and are programs that can provide an overall regional mobility benefit.

A summary of all the strategies is shown in Figure 5-1.

Figure 5-1 Summary of Strategies



Regional Programs and Initiatives

A number of strategies are broadly applicable across the region and will be most cost effective and influential when consistently applied across the region. These strategies can be at the core of a regional TDM program.

Figure 5-2 Regional TDM Programs and Initiatives

Recommended Action	Description	Critical Steps	Lead Entity	Estimated Cost
Information and Outreach				
Localized multimodal travel planning app	Building from information available on MiDrive and other available data feeds, incentivize the development of a regional app to increase knowledge of alternative travel opportunities and benefits of each option.	1. Establish a client committee representing modal data providers 2. Explore options for app development through private sector competition or program 3. Determine desired consumers and use 4. Clarify any necessary approval processes for launch and adoption	Potential entities include SEMCOG, MDOT, transit providers, or private sector	$100,000 CMAQ eligible
Develop broad TDM marketing campaign	Marketing campaigns can spike demand for alternative transportation modes. Some transit marketing campaigns have increased ridership between 33% and 50% during a short timeframe (such as one or two weeks). In the longer term, not all systems have proven sustained ridership increases, but some report between 3% and up to 11% increases one year later.	1. Establish the lead entity for marketing. It may be a universal entity across all projects (advised) or separate campaigns associated with each project separately. 2. Procure professional marketing and message development services. 3. Determine incentives and events to promote and disseminate	Potential entities include SEMCOG, RTA or project owners	$50 - $100,000 / yr for regional campaign CMAQ eligible and/or as component of capital project funds.
Employer-based programs				
Promote employer TDM programs	Employers may assist in minimizing congestion during construction AND improve the happiness and productivity of their workers by offering TDM benefits such as telework or flexible scheduling, bicycle benefits and facilities and, raising awareness of commuter benefits.	1. Identify staff from one or more agencies to provide TDM outreach. 2. Maintain the Mobility Choices working group for coordinated effort. 3. Identify resources to expand staffing capacity for outreach	Potential entities include SEMCOG, RTA, project owners and/or TMA	Varies widely based on level of dedicated effort

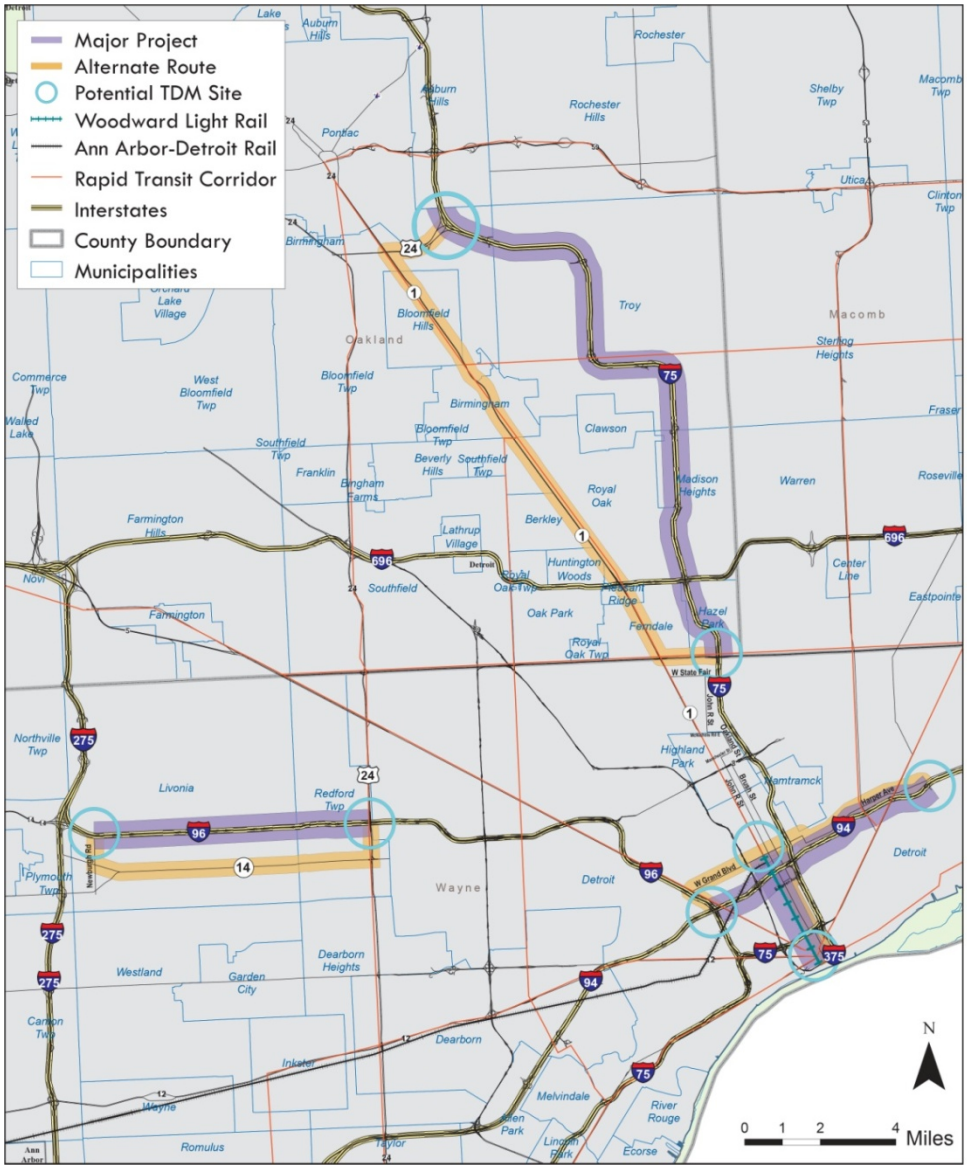
Recommended Action	Description	Critical Steps	Lead Entity	Estimated Cost
Explore creation of a commute trip reduction program.	Commute Trip Reduction (CRT) programs often require by law that employers over a certain size develop policies to reduce SOV trips. Even without a law, Michigan and the SEMCOG region can still establish such a program through employers.	1. Identify major employers with more than 100 employees along each corridor. 2. Establish a list of viable alternatives for employees, such as ridesharing or transit. 3. Tie performance goal for each employer to annual Commuter Challenge.	MDOT or SEMCOG	Minimal (outreach)
Transit programs and services				
Establish a transit pass program	Eco-passes, sometimes called U-passes or Universal passes, provide unlimited transit service, often across a number of transit providers. A fully branded, region-wide, EcoPass program should be established for use by large and small employers alike.	1. Establish a common forum for pass development and distribution 2. Conduct outreach with employers 3. Establish a formula for employer pass fees. 4. Market and distribute passes in conjunction with major projects. 5. Evaluate use and effect	RTA or TMA (if established)	Staff costs Printing costs Pass should cover service costs
Distribute free transit passes during construction	Providing free transit passes to commuters or travelers affected by construction-related congestion can raise awareness and encourage experimentation with transit commuting or use.	1. Include transit passes as a strategy for maintenance of traffic in the road design manual. 2. Document transit service alternatives to corridor travel 3. Develop and distribute passes and information	MDOT and RTA or transit providers	Cost ranges depending on estimated cost of passes and affected population
Integrate fares across transit providers	Fare integration allows the use of the same fare media (farecard, pass or account) across multiple transit providers easing system legibility and use	1. Set goals for integrated fare program (e.g. seamless transfers, easier boarding, more riders, etc.) 2. Document policies and policy differences across agencies 3. Create a Memorandum of Agreement outlining provisions of partnership	RTA and various transit providers; MDOT can facilitate	Initial costs can be substantial for system development and technology but value is usually returned

Recommended Action	Description	Critical Steps	Lead Entity	Estimated Cost
Project Development Practices				
Strategically program transit and highway projects	Transit system improvements, such as planned premium transit lines, can often relieve the burden on constrained highway detour routes and provide travel alternatives for typical corridor commuters. Strategically programming and phasing these projects to ensure transit systems are in place in advance of major highway construction projects provides a benefit to both as well as regional commuters and economy.	1. Maintain, restructure and/or repurpose the Modal Choice working group to assess opportunities for greater synergy between planned transit and highway projects in the TIP programming. 2. Develop process to allow the working group timely review, discussion and preparation of recommendations. 3. Explore the use of strategic decision-making software systems such as Decision Lens or similar.	SEMCOG	No cost (unless software system is deployed) – process change only
Permit designation of HOV/freight lanes in construction zones	Although designation a lane for high occupancy vehicles (2 or more persons) during peak hours can theoretically nearly double lane capacity, presently Michigan law does not have provision for enforcement of HOV designated lanes. Likewise, allowing the use by large highway freight vehicles can reduce air quality impacts and facilitate goods movement.	1. Modify code to enable enforcement of HOV designated lanes. 2. Introduce designation of HOV into the project development manuals (e.g. road design manual)	MDOT	Staff time
Conduct travel surveys to best target traffic mitigation tools	Travel surveys help planners understand how a corridor is used – whether predominantly for commuter thru trips or intra area connecting trips. This information is vital to creating TDM and maintenance of traffic plans that meet the needs of the local traveling public	1. Include travel surveys as part of the planning and engineering design and development process.	MDOT and SEMCOG	Minimal component of overall planning and design project costs

Project-Specific Strategies

Many of the above broad-based strategies are applicable to each of the project corridors to greater or lesser degrees, however each corridor also lends itself to unique strategies given its size, the nature of trips made along the corridor, and its context in the overall transportation network. The four mega projects considered here are of dramatically different lengths, serve different trip purposes, and have very diverse alternative routes and modes available to them (Figure 5-3).

Figure 5-3 Planned Major Projects and Alternate Routes



M-1 Streetcar

The 3.3 mile long M-1 streetcar project on Woodward Avenue will likely be the first major project initiated. The first phase of the project is fully funded. Construction will require full or partial closure of Woodward Avenue at various times.

Recommended TDM strategies are intended to both mitigate the impacts of the Woodward construction as well as to begin to encourage the use of the new transit service. Recommended strategies include targeted marketing and travel planning, transit approaches, bicycle improvements, and parking management.

M-1: TRANSIT STRATEGY

5. Establish universal transit pass
6. Integrate fares
7. Reroute transit service
8. Leverage the People Mover
9. Operate Downtown-Midtown shuttle
10. Offer Free service window

The first two strategies are discussed in the region-wide approaches section. Universal passes could target major institutions and employers including Wayne State University, Detroit Medical Center, Hentry Ford Health Systems, Blue Cross/Blue Shield, Compuware and Quicken Loans.

Construction will disrupt the heavily used bus routes currently on the avenue. As transit will need to be rerouted during construction, it is an opportune time to experiment with branded services, express services, skip stop service, and/or the reestablishment of SMART service into the city center.

The People Mover intercepts Woodward Avenue at two points thus providing some relief to travel demands on the lowermost portion. TDM programs for impact mitigation should consider distribution of People Mover passes separately or as a component of a Universal Pass system.

Detroit Medical Center presently operates a private shuttle between downtown and Midtown. This shuttle may provide some relief during the construction period but at present only operates for DMC affiliates at a limited number of hours per day. Providing an open extended hour service would provide this benefit to all corridor travelers and another option for travel around the region.

When the streetcar is operational, project owners may wish to consider a limited period free-ride window to acclimate travelers and potential riders to the new service and as a reward for enduring the construction.

M-1: PARKING MANAGEMENT

1. Promote parking cash out

Parking cash out programs pay employees NOT to utilize parking. The parking cash out benefit provided, while substantial to the employee, is typically substantially less than the cost to developers or employers of providing off street parking.

Quicken Loans is a major local employer with over 1,000 employees who offers a parking

cash out benefit of $150/month. Research in California has shown that at $150/month, parking cash-out has the power to reduce parking demand to 70% of parking supply.[27] In the SEMCOG region, 92% of auto commuters drive alone. If parking cash-out were provided to 3,000 employees in the Midtown or Downtown area, it could potentially result in a reduction of 2,760 vehicles.

M-1: BICYCLE SOLUTIONS

1. Establish attractive cycle facilities
2. Create park and pedal lots
3. Host social rides and events
4. Provide secure bike parking in downtown
5. Further promote bike share options

Cass Avenue and John R provide parallel alternate routes to Woodward Avenue. Cass Avenue is deemed a bicycle-friendly road. A bicycle facility on this corridor would protect bicyclists even if traffic volumes increase and can increase the bike share of trips. Alternatively, operational changes could be made on the corridor do decrease vehicle volumes and speeds to make the corridor an attractive bicycle boulevard for an even higher quality pedestrian accommodation.

While commuting distances in the Detroit region are often not conducive to cycling for the whole trip, many workers would enjoy the opportunity to cycle for the "last mile" of their journey to avoid areas of heavy congestion. This can be facilitated through the arrangement, through private agreement, to allow the use of surface parking lots on the periphery of the core of the downtown as "park and pedal" lots where commuters could leave their vehicle (securely) and bike the last segment of their journey.

Hosting social rides or events is a way to raise the profile of cycling as a mode alternative while at the same time continuing the momentum for the M-1 rail project itself.

To make cycling into and around the core viable, adequate secure bicycle parking must be provided. This can be encouraged in private garages as well as provided in the street's public space. Adequate bicycle parking enables the shorter, intra-zone trips to occur thus keeping vehicles out of the construction zone at the valuable non-peak periods when work is typically more intense.

Detroit is a new entrant into the world of bike share with a system provided by private employers and sponsors. Although use is currently limited, the system is scalable and could rapidly expand and provide yet another convenient travel alternative for people making shorter trips in the zone of construction.

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27 http://ww2.cityofpasadena.net/councilagendas/2007%20agendas/Feb_26_07/Pasadena%20Traffic%20Reduction%20Strategies%2011-20-06%20DRAFT.pdf, See page xii.

I-96 major rehabilitation

I-96 is funded and currently at 90% design completion. The corridor is 7 miles long and is undergoing resurfacing and maintenance that will close the entire roadway for at least one year. Proposed bypass routes are I 94, I 696, I-275, M-39, and US-24.

I-96: TRANSIT STRATEGIES

1. Distribute free transit passes
2. Relocate and enhance transit service

Users of the Fenton park & ride arrive not via I-96, but come from communities to the south and west of the park and ride location. Another park & ride lot is located at Graham Fields on Beech Daly Road, just north of I-96. Direct mailing transit passes to households in affected ZIP codes would assist in better understanding the travel market and the willingness to consider transit.

The SEMCOG travel demand model reveals that many trips along I-96 are intra-corridor travel. The area has no SMART service at present, but given that I-96 will be completely closed, the opportunity exists to test the waters for interest in a local circulator. Major destinations in the corridor include F and M Shopping Center and the Henry Ford Medical Center. Potentially the local destinations could contract, either with a private operator or with SMART, to run a cutaway-style shuttle along 5 Mile and Plymouth Road where destinations are clustered.

Nearby Grand River Avenue is designated as BRT in the future rapid transit network. Currently there is no service on the avenue east of Telegraph Road. The I-96 project provides opportunity to test the corridor with commuter-oriented service to start, which may also modestly relieve displaced I-96 traffic on other corridors.

To be successful and effective, new services or routes must offer premium services at high frequencies (approximately every 10 minutes), especially during peak hours.

Transit service could be further enhanced by permitting bus-only use of shoulder facilities following construction.

I-96: STRATEGIES FOR DRIVERS

1. Promote vanpool and ridesharing
2. Expand park & ride opportunities

The current subsidized vanpool program in the region is maxed out with 400 vanpools, a number agreed upon with MDOT. However, interest exceeds the current cap. Eighty vanpools are running paid for by commuters rather than subsidized by MDOT. As part of several of the major construction examples around the country, vanpools were subsidized to decrease congestion. Each vanpool can carry up to 15 people and has on average 8 participants. Vanpools have been highly successful in the SEMCOG region and should be expanded during major construction projects.

Coordination between MDOT and SMART is needed to ensure the Fenton park & ride remains operational and easy to access during construction. SMART is considering either moving or adding a park & ride on Grand River Avenue, less than 1 mile north of I-96 and provides a direct connection to downtown.

Park & ride is a popular and viable option for the SEMCOG region. Park & ride lots can be

publically provided, as with the SMART and MDOT lots, or can be through contract agreement with property owners with large lots underutilized in the peak hours such as shopping malls and grocery stores.

I-94 reconstruction and expansion

I-94 covers seven miles of one of the region's most heavily used highways, carrying roughly 140,000 vehicles per day[28] including a large amount of truck traffic vital to the region's economy. Estimated project cost in today's dollars is $1.5 billion. This multimodal project includes new bicycle lanes, improved transit facilities and better local connections between neighborhoods.

I-94 TRANSIT STRATEGIES

1. Establish a transit pass program
2. Integrate fares across providers
3. Initiate an east-west shuttle
4. Introduce & promote new services

As with previous projects, transit passes and fare integration are recommended as region-wide priorities and discussed in the previous section.

In tandem with the north-south Midtown-Downtown shuttle discussed in the Woodward Avenue project, an east-west shuttle can be packaged into I-94's construction funds as the project is still evolving through the funding process. MDOT plans to complete work on the service roads first to maintain some through capacity. An east west shuttle, either on the service roads or on Warren Avenue, creates a T-shape shuttle system. Note that DDOT's Route 14 currently runs on Warren Avenue; this shuttle will supplement the service but be geared toward attracting the choice traveler. Service may be provided through a private operators such as Metro Cars.

Building on this concept, Warren Avenue is slated for rapid transit service as part of the regional transit network plan. As part of the east-west shuttle and future rapid transit system, the project can begin to conduct surveys, reach out to stakeholders, and if possible begin design and acquisitions for the future service as part of planning and developing the shuttle as yet another opportunity to move travelers off of I-94 to enable partial shutdown of that corridor for efficient construction. In order to provide efficient service, the shuttle route will need to be established on a corridor not affected by the congestion associated with construction.

I-94 DRIVING AND FREIGHT

1. Designate one lane per direction as HOV/freight

MDOT plans to keep two lanes per direction open on I-94. Designating one lane per direction as HOV effectively doubles the capacity. I-94 is also a major freight corridor important to the economy. Allowing freight to use the HOV lane will help minimize the impact of construction on freight delivery schedules. Today I-94 carries 144,082 vehicles per day, or 24,000 vehicles per lane on average, or 16% of the ADT. By adding HOV, that reduces ADT by 16%.

[28] **MDOT 1012 Average Daily Traffic (ADT) Map. http://mdotcf.state.mi.us/public/maps_adtmaparchive/pdf/2012adt/Detroit_Metro_Area.pdf . Accessed September 2013**

HOV is an excellent program but will require enabling legislation first. During construction on Michigan Avenue, MDOT designated the right lane as HOV; however, the agency found that Michigan's vehicle code does not define carpool or HOV lanes, thus citations do not stand up in court and the designation is unenforceable.

HOV facilities would provide substantial benefits to transit travel as well.

In order to implement HOV, Michigan will need to amend its code

I-94 PARKING MANAGEMENT

1. Allow higher parking rates during special events
2. Create satellite parking lots for special events
3. Promote parking cash out

To foster equity, Detroit caps its parking rates. However, during special events such as baseball games, rates should be higher to encourage transit or carpooling as well as to recover from non-residents the externalities caused by driving. City-owned maximum daily rates are no more than $15. Olympia Entertainment, by contrast, charges as high as $25. Two hours before game time at Comerica Park (or at other major sports or cultural venues) allow city lots to raise their rates and match Olympia Entertainment's rate at $25. Detroit The city should be permitted to raise rates at least two hours prior to a game at Comerica Park or other major venues and to allow rates to be competitive with private owners. These additional funds should be dedicated to DDOT to provide special event shuttles to maintain equity of access to the games.

In the past, DDOT has run successful shuttle services from the zoo and Stair Fairgrounds for special events, but sufficient operating funds are a challenge. With the dedication of parking funds discussed above, satellite parking with shuttle service should be reliably restored not only during the construction period but as a routine service.

As previously described in the Woodward Avenue project section, parking cash out programs can have substantial impact on drive alone rate and meaningfully reduce auto demand and congestion during the construction period. These strategies should be embraced and promoted among area employers and institutions.

I-75 reconstruction and expansion

I-75 is the longest corridor at 17 miles and travels through several communities. The I-75 project will be completed in phases, potentially stretching over a decade or more. This may result in a prolonged period of disturbance for residents and travelers in the northern quadrant of the region.

I-75 TRANSIT STRATEGIES

1. Enable and promote new services
2. Run express service on I-75

Woodward Avenue is an alternate route to I-75. It is also identified as a future bus rapid transit corridor. With a small amount of funds, relative to maintenance of traffic, the Woodward Avenue BRT could be established and capitalized in its early years. Combined with designation of a significant number of temporary park and ride lots and a Universal Pass, this pilot corridor implementation could provide a viable alternative for a large number of current I-75 drivers and have the happy consequence of spring-boarding establishment of the regional rapid transit network. Woodward Avenue is DDOT's highest ridership route and has demonstrated demand for rapid service.

SMART has expressed interest in a highway-running express service during construction. SMART would require 6 months of lead time, but could then make available 20 vehicles for service. This service would require a dedicated HOV lane or shoulder operations to operate effectively.

It is unlikely that both I-75 express bus service and Woodward Avenue BRT would be required, however either offers a viable and effective transit option

I-75 EMPLOYER SOLUTIONS

1. Promote telework and flexible schedules
2. Encourage hoteling agreements or co-working spaces
3. Promote commuter benefit programs

Telework and flex scheduling are discussed in the regional strategies section, however, given the level of inter-county commuting, an especial mention of telework is warranted here as a strategy for I-75 that can truncate the amount of travelers trying to drive the length of the corridor.

The new work force is mobile, and can work remotely from anywhere with a high-speed internet connection. While telecommuting is one option, "hoteling" or "co-work" places are increasingly popular with both workers and employers. These "third spaces" provide an office environment, but closer to home thus increasing employer confidence in reporting schedules and work product, while increasing employee satisfaction without needing long commutes. Some communities along the I-75 corridor have opportunities for co-work or hoteling spaces, thus the strategy can be both a traffic mitigation as well as an economic development benefit. Such arrangements could be eligible for mitigation funds to strategically reduce rent, support fit outs, and promote opportunities to entrepreneurs willing to establish co-work or remote-work environments.

Commuter benefits, as previously discussed, are tax benefits available to workers for alternative commuting practices

I-75 STRATEGIES FOR DRIVERS

1. Expand vanpool programs
2. Establish new park & ride locations
3. Designate one lane as HOV during construction

As mentioned in previous projects, vanpooling is a popular program in the region but is presently at its funded limit. Project funds could be used to subsidize and fund additional vanpools, at a very reasonable rate, to mitigate traffic impacts and provide an effective alternative for drivers.

Overall, the region needs more park and ride and carpool locations. Along I-75, Oakland Mall has indicated willingness to become a park and ride or carpool location. MDOT has also planned some new carpool lots to be paired with the I-75 project; it makes sense to open these immediately rather than wait until construction.

MDOT will be implementing HOV through the project, but in order to further encourage transit or carpool/vanpool use, one of the two open lanes per direction can be designated HOV. Michigan will need to define carpool/HOV lanes in its vehicle code for this to be enforceable. Similar to I-94, this designation can decrease cars by 16% by basically doubling capacity.

Figure 5-4 Estimated Trip Reduction Summary

Project	Current AADT	Est. Project cost	Initiation	Duration	Potential Future	Potential TDM
Woodward Avenue Streetcar	20,400	$165 M	2013/4	2 years	14,179	30.5%
I-96 from Telegraph to Newburgh	138,900	$150 M	2014	1 year	118,718	14.5%
I-94 from I-96 to Conner Avenue	144,082	$ 1.5 B	2017/18	4-5 years	97,030	32.7%
I-75 from 8 Mile Road to M-59	138,500	$ 830 M	2017/18	4-10 years	94,911	31.5%

		Overall	M-1 Rail	I-96	I-94	I-75
Marketing	Travel App	0.20%	0.2%	0.2%	0.2%	0.2%
	Marketing	0.20%	0.2%	0.2%	0.2%	0.2%
Transit	Transit Pass	-2.32%	7.1%		0.118%	
	Fare Integration	0.00%	0.043%		0.043%	
	Free Pass	-0.93%	1.0%	1.0%	1.0%	1.0%
	Shuttle	-0.93%	1.2%		0.2%	
	Rerouted Transit	-0.93%	1.0%			
	Enhance Transit Service	0.00%		1.0%		
	Express Transit	-0.05%				1.0%
Automobile	Park & Ride/ Park & Pool	-0.10%		0.1%		0.1%
	Vanpool	-1.80%		1.0%	1.0%	1.0%
	HOV	-8.00%			16.0%	16.0%
Employer	Telework	-9.72%	10.0%	10.0%	10.0%	10.0%
	Commuter trip reduction	-3.02%	3.0%	3.0%	3.0%	3.0%

		Overall	M-1 Rail	I-96	I-94	I-75
Parking	Hoteling	0.00%				
	Satellite Parking	0.00%			0.3%	
	Event Rate	0.00%				
	Parking Cash-Out	-2.78%	6.8%		1.6%	

6 Where to Begin?

With such a large region and so many projects, it can be daunting to determine where to begin in developing and deploying TDM in the SEMCOG region.

We recommend focusing on three primary activities:

1. Development of a multimodal, integrated travel planning app and information.
2. Supporting and enabling the Regional Transit Authority to take on complicated issues of fare integration, Universal Passes, and other key initiatives.
3. Continuation of the Modal Choice Steering committee to lay the groundwork for other broad reaching strategies such as strategic programming and effective marketing and outreach to employers and travelers.

These three actions are timely, achievable and strategic and can have profound positive influence on utilizing TDM strategies in the planned major capital projects, projects yet to come down the pipeline, and general project implementation in the SEMCOG region.