

**ARE VERMONT POLICYMAKERS READY TO MANAGE TRAVEL DEMAND?**

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**ABSTRACT**

Many state climate action plans mention reducing vehicle miles traveled (VMT) through Transportation Demand Management (TDM) approaches as a primary strategy for reducing greenhouse gas (GHG) emissions from transportation. Rural states with dispersed settlement patterns are perceived to have greater difficulty in meeting GHG reduction goals through reducing travel demand than states with urban populations and urban transit systems. Using a political process framework developed by Kingdon, this study investigates issue salience and policy viability to determine whether policymakers in the rural state of Vermont are ready to reduce travel demand. One hundred and forty one state legislators and twenty-two state agency officials were surveyed. In-depth interviews were conducted with fourteen key legislators, state policy-makers, and advocates. Interviewees perceived current patterns of travel as problematic. Although many informants supported alternative modes such as public transit and carpooling via park and rides, they seldom included management of travel behavior as a policy option. This research indicates that political barriers still exist to managing travel demand at the state level in Vermont. The opportunity to increase the political viability of TDM as a policy area in the near future is discussed.

## INTRODUCTION

Thirty states have adopted greenhouse gas action plans with a number of policy instruments designed to achieve state greenhouse gas (GHG) reduction goals (1). One primary strategy mentioned in many state plans is the reduction of vehicle miles traveled (VMT) through Travel Demand Management (TDM) approaches (2). However rural states with dispersed settlement patterns are perceived to have greater difficulty in meeting GHG reduction goals through managing travel demand than, for example, states with urban populations and urban transit systems. The Vermont Agency of Transportation calls its goal to reduce VMT in its rural state “extremely challenging” despite current increases in fuel prices (3). Several studies have found that TDM strategies are more effective where there are public transit options or walkable development patterns (4, 5, 6, 7) both often lacking in rural areas. Vermont has a population density of 65.8 (8), making it the twenty-first most sparsely populated state in the country. It also has the fifth highest average VMT per capita (9).

Transportation Demand Management (TDM) refers to a wide variety of methods for improving the efficiency of an existing transportation system (10). The range of options includes outreach, technology improvements, and improving the accessibility of alternative modes. This range has manifested as travel feedback programs (11), individualized marketing (12,13), and incentives for using public transit (5). TDM has been found to be an effective strategy for reducing VMT in urban areas (12, 13), and a cost-effective way to reduce emissions from transportation compared to other strategies such as alternative fuels and fixed-route transit (14). The Vermont Governor’s Commission on Climate Change report included recommendations for VMT reduction goals and TDM-related strategies. However, it is not clear what potential TDM policies have for wider political success in Vermont.

Kingdon (16) provides a framework for identifying the political salience of issues and feasibility of policies. He found that government agendas are set by a confluence of problems and publicly prominent participants. Agenda setting occurs when problems in the form of crises trigger the need for policy; then, national mood, organized political forces, and government actors interact to define the agenda. Once an issue makes it onto the agenda, policy options are winnowed via a political process. Kingdon found that five political conditions determine whether policies will be seriously considered: technical feasibility, value acceptability within the policy community, tolerable cost, anticipated public acquiescence, and a reasonable chance for receptivity among elected decision makers. This framework illuminates the critical features that, when properly assessed, can indicate not only whether a policy option is politically feasible in and of itself, but also whether it is related to an issue of sufficient salience to make it onto the political agenda. Because each of these criteria is subject to interpretation, an examination of how key policy actors perceive and talk about issues and policies indicates whether the criteria are met for a given policy situation.

## METHODS

For this study, both survey and interview data were gathered. Survey responses were collected for 141 of the 180 Vermont state legislators and 22 of 30 state agency officials with responsibilities to transportation energy, an overall 80% response rate. In-depth interviews were conducted with 14 legislators, state policy-makers, and advocates cited by policy-makers as influential in the transportation energy policy arena.

The perspective of government actors and other publicly prominent participants was sought with regards to values, problem perceptions, and influences. These three broad data categories invoke each of Kingdon’s ten criteria (see Table 1).

Values, or concerns, are the fundamental interests that are the basis of political conflict (14) and relate to Kingdon’s criteria of value acceptability within the policy community. Problems are phenomena that negatively impact our values, or areas of concern, and must be first perceived as such in order for an issue to become a matter of policy (13). Responses that related to policy preferences in the interviews supplied data with regards to Kingdon’s criteria of value acceptability within the policy community, technical feasibility, tolerable cost, anticipated public acquiescence, and receptivity among elected

**TABLE 1 Relationship of Data Categories to Kingdon's Policy Process Framework**

Phase	General Criteria	Specific criteria	Query
Agenda setting	Perceived problem	Shared definition	Problem perception
		Public mood	Problem perception
		Crisis	Problem perception
	Participation of publicly prominent participants	Government actors	(Interviewees)
		Organized political forces	(Interviewees), Influence
Policy feasibility	Politics	Technical feasibility	Policy preferences
		Value acceptability	Values/concerns, policy preferences
		Tolerable cost	Policy preferences
		Anticipated approval by public	Policy preferences
		Anticipated approval by elected decision-makers	Policy preferences

decision-makers (self-identified for the elected interviewees, or as perceived by advocates). Survey responses had a slightly different relationship to the criteria. Surveyees were asked to list policies that they thought as attainable in Vermont. These open-ended responses regarding policy options were much less nuanced than the interview responses, and therefore were useful towards only two criteria: value acceptability among the policy community and receptivity of elected decision-makers. Questions about information sources served as proxies for the organization of political forces.

The interviews were transcribed and coded for emergent themes. The survey and interview results were then assessed according to whether they were related to, or were compatible with, TDM. Finally, the viability of TDM as a policy direction was evaluated using Kingdon's full framework.

## RESULTS

Overall there was some convergence among the interviewees, all publicly prominent figures in the transportation energy policy arena, with regards to values and problem definitions. However there was less convergence between them with regards to policy preferences. There were also no clear trends across the surveyed policymakers for any of the criteria. Further, informants in neither group discussed demand management strategies to any great degree. This suggests that transportation energy use as a problem is gaining some attention as an area of policy need among the responsible public actors, but that transportation energy use has not achieved placement on the political agenda as far as the full policymaking community is concerned. Vermont policymakers are likewise not ready to adopt TDM policies, due perhaps to the relatively low political prominence of transportation energy use as an issue, or of TDM as a needed policy area. To assess whether TDM will be politically viable in the near future, interview and survey responses are explored below in more detail with regards to whether the values, problem definitions, and policy preferences of political decision-makers and other publicly prominent figures in this policy arena are compatible with TDM approaches.

### Values

Many of the values identified by interviewees and in open-ended responses by the surveyees were compatible with TDM strategies (see Table 2).

Environmental concerns were cited the most often. TDM was an appropriate method to mitigate negative impacts on most of the environmental concerns identified. The most salient concern overall

**TABLE 2 Values**

Value	Specific area of concern	Tally of prominent figures (interviews) <sup>a</sup>	Tally of all decision-makers (surveys)	TDM-related?
Environment	Climate Change	<b>11</b>	22	Yes
	Pollution	10	3	Yes
	Air quality	7	2	Limited
	Sustainability	6	10	Yes
	Landscape	5	0	Yes
Economic	Cost of energy	10	0	Yes
	Affordability	8	13	Maybe
	Tax burden	7	2	Maybe
Social	Varied <sup>b</sup>	8	3	Maybe
	Infrastructure	6	12	No
Public mood	Public awareness	5	0	Maybe

<sup>a</sup> Number in bold indicates that interviewees mentioned the item several times, indicating relatively higher salience compared to items with similar tally numbers but which are not bolded.

<sup>b</sup> There was no clear priority among these values, but they were all related to overall social good: future generations, social services, public good, quality of life, social capital, pride in Vermont, peace.

amongst publicly prominent actors was climate change as caused by anthropogenic carbon dioxide emissions. Also, more surveyees mentioned climate change than any other concern, but in absolute terms only about 16% of them did so. Reducing travel demand also reduces carbon dioxide emissions. Sustainability is a broad term used here to encompass the stated concerns of energy conservation and limited resources; TDM allows conservation of resources by reducing transportation energy use. TDM also reduces pollutants from gasoline-burning personal vehicles such as the carcinogen benzene and smog precursors nitrogen oxides and carbon monoxide (17), although it is less suited to address the contribution to emissions by diesel-burning freight vehicles.

Economic concerns were the next most cited. These had mixed compatibility with TDM. TDM strategies reduce transportation energy expenditures, and therefore in theory have a positive impact on affordability (a term used in Vermont that usually refers to bringing down the high cost of living for average Vermonters). However impacts on affordability and the tax burden can vary depending on actual policy mechanisms implemented. For example, increasing incentives for public transit by raising gas taxes can benefit those living in the handful of places in Vermont covered by bus service, but would adversely affect those living in rural Vermont without access to public transportation and must drive to access services.

Social concerns regarding future generations, public good, and social capital could be compatible with TDM, insofar as they are strengthened by reducing transportation energy use and increasing the use of healthy alternatives such as biking and walking. Walking and taking the bus can also be seen to serve social capital to the extent that they allow intermingling of community members more than single occupancy vehicles do. Pride in Vermont as discussed by informants was related to air quality, and so can also be benefited by TDM as mentioned above. Informants related peace to energy reliance on unstable regions of the world; reduction of such reliance is also compatible with TDM. Infrastructure is included here as a social concern because informants discussed it in terms of public safety and mobility, both social values. Maintenance of existing infrastructure is, strictly speaking, not in conflict with TDM because by definition it does not change the transportation system. However in the responses, there was a potential

conflict. As one informant explained, any new or existing transportation program is in competition with the same pool of funding currently insufficient to rehabilitate and maintain Vermont roads and bridges. Additionally, some informants were explicitly interested in new infrastructure such as bypasses.

Public perception is a general concern of the public official or elected representative, and relates to the public mood criterion for issue salience. In this case, public awareness, or public demand, is a general policy driver that can work for or against TDM depending on the topic. At the time of this study, there was no consensus among informants as to any particular topic related to transportation energy that they saw as uppermost in the mind of the public.

### Problems

Societal features and political causes were seen as the primary problem areas (see Table 3). It should be noted with regards to the survey tallies below that survey questions did not prompt for responses regarding problem definitions, such that low counts in that column do not necessarily reflect low salience of that problem among that group.

**TABLE 3. Problem Definitions**

General problem	Specific cause	Tally of prominent figures (interviews) <sup>a</sup>	Tally of all decision-makers (surveys)	TDM-related?
Societal	Norms	<b>12</b>	2	Yes
	Low development density	9	0	Limited
Political	Funding insufficient	<b>10</b>	2	Maybe
	No leadership	8	8	Maybe

<sup>a</sup> Numbers in bold indicate that interviewees mentioned the item several times, indicating relatively higher salience compared to items with similar tally numbers but which are not bolded.

The problem of societal norms correlate well with TDM strategies, in that they directly address the problems of “automobile dependency” and “Americans’ love affair with their cars” cited by interviewees. There was also strong agreement among the prominent figures that societal norms were the primary problem; on the other hand, surveyees only mentioned problematic norms twice. Some implications of low development density, such as the rural nature of the state, may not be tractable to TDM strategies, because, as discussed in the introduction, TDM has commonly been applied in urban settings. As a few informants pointed out, however, some TDM strategies such as rideshare matching and vanpool programs, may be effective in rural areas for reducing the use single occupancy vehicles, and therefore VMT and transportation energy use.

Insufficient funding is listed here as a political problem, because funding in government is a matter of setting budgets, and therefore of political prioritization (18). Several interviewees mentioned this problem more than once, although the wider pool of policymakers seemed less aware of it. This problem could be amenable to TDM insofar as TDM approaches are as relatively cost-effective in a rural region as they are in urban areas; studies indicating this are not currently available. Lack of leadership is neither congruent nor incongruent with TDM strategies. However, a few informants asserted that there was a lack of leadership on the general issue area of transportation energy, which likewise means that there is a lack of effective political champions of TDM in the state.

### Policies

Most of the policy options indicated by informants were unrelated to TDM (see Table 4). In the data on vehicle efficiency, it is worth noting that policies mentioned were primarily financial

**TABLE 4 Policy Preferences**

Policy area	Specific option	Tally of prominent figures (interviews) <sup>a</sup>	Tally of all decision-makers (surveys)	TDM-related?
Vehicle efficiency	Incentives for fuel efficient vehicles	4	24	No
	Penalties for fuel inefficient vehicles	2	16	No
	Raise gas tax	2	11	No
	Relate fees to efficiency	4	3	No
Expand facilities	Support rail (passenger or freight)	8	40	No
	Support public transit	<b>11</b>	24	No
	Support rail for freight only	1	21	No
	Support park and rides	9	14	No
TDM	Education	8	10	Yes
	Support rideshare	7	8	Yes
	Support bike/ped	3	2	Yes
	Incent alternative	3	0	Yes
Land use	Smart growth	9	5	No

<sup>a</sup> Number in bold indicates that interviewees mentioned the item several times, indicating relatively higher salience compared to items with similar tally numbers but which are not bolded.

inducements and that incentives were somewhat more favorably viewed than penalties. Also, overall, mandates were rarely mentioned. In general, the wider pool of decision-makers was relatively articulate with regards to vehicle efficiency-related policies. Expansion of facilities such as rail, public transit, and park and rides, were the most popular options among interviewees, and mentioned the most often by the surveyees as attainable policies. Smart growth was discussed by many interviewees but seldom extensively; it is not a TDM policy option, though smart growth would certainly enable TDM in the future. The responses directly related to TDM included education, support for rideshare, support for biking and walking, and incentives for the use of alternatives. These were mentioned by several people but discussed very little.

The remaining criterion to be addressed is whether political forces are organized and oriented towards TDM. Although particular agency divisions did come up as trusted sources of information, overall results did not indicate that any coalitions had yet organized around transportation energy. Interviewees in fact were more likely to point to those who were not cooperating or leading, as mentioned earlier.

## DISCUSSION

Is transportation demand management a viable policy for Vermont? This data, reconfigured according to Kingdon's framework (see Table 5), suggests that Vermont is not yet ready to manage demand, although it could be in the near future with significant advocacy activity.

The interviews indicate that, between individuals in the most crucial policymaking positions with regards to transportation energy – that is, publicly prominent participants - there is a high level of

**TABLE 5 Kingdon's Political Process Framework Applied to Vermont and TDM**

Phase	General Criteria	Specific criteria	Currently aligned with TDM?
Agenda setting	Problem	Shared definition	Yes
		Public mood	No
		Crisis	No
	Participation of publicly prominent participants	Government actors	Limited
		Organized political forces	No
	Policy feasibility	Politics	Technical feasibility
Value acceptability			No
Tolerable cost			Unknown
Anticipated approval by public			No
Anticipated approval by elected decision-makers			No

agreement on the problem definition. Societal norms leading to high transportation energy consumption, such as development patterns, high rates of travel, and automobile dependency, are seen as the primary problem. This would suggest that in Vermont, key policymakers might view travel demand policies favorably. However, according to the data collected for this study, the full policy community does not recognize this problem definition. Even more revealing was that interviewees did not think that the public finds current levels of transportation energy use or travel demand to be problematic, and therefore key policymakers to not recognize the problem to be at the level of crisis that is amenable to policymaking (15). This was true even for the handful of individuals who were very concerned about high costs of gasoline; the issues of transportation energy costs and travel demand were disconnected. Further, government actors were not coordinated with each other or with non-governmental forces, neither around a problem definition nor on their values. This group of decision-makers is not actively advancing the issue of travel demand on the political agenda.

As for policy options, demand management was never discussed explicitly. Of the solutions that were discussed, a limited number of people mentioned policies that would be compatible with TDM; among these were education and support for unspecified carpooling policy. Particularly for surveyees, it is not known what types of carpooling initiatives they would support through policy. In addition, many of the publicly prominent figures interviewed said that behavior is hard to manage; one advocate even mentioned in passing that problematic driving patterns were not a matter of policy. This suggests that TDM is not seen as technically feasible, may not be acceptable from a value-based perspective, or that an unfavorable reception by the public is anticipated. The paucity of discussion of TDM strategies also suggests a lack of overall knowledge of TDM, and likewise of the costs and benefits of different TDM strategies.

In contrast, those surveyed and interviewed were relatively supportive of public transit and park and rides. This suggests that they are willing to supply the opportunity to change behavior, but not necessarily to initiate policies or programs that would deal with behavior directly. These preferences are potentially problematic given the funding problem identified by many informants; bus services and rail improvements in a rural state such as Vermont are costly. However if these actors prove willing to champion these alternatives, future TDM initiatives will be able to access them and be more likely to succeed.

In general, the survey responses suggest that policymakers who do not have core responsibilities

to transportation energy have much less knowledge about its policy implications. This conclusion is supported by interview information that indicated a high degree of specialization within both the legislature and the agencies, and deference to the specialists within those bodies. This lack of knowledge as to policy options and how they impact areas of concern is on the one hand an opportunity to introduce demand management strategies. On the other, the specialization aspect is a barrier in that non-specialists have little time to learn about policies and issues outside their area of responsibility.

Overall, interview and survey data indicated that transportation energy use has been an area of low policy salience. As a result, few options have been discussed in the public forum, resulting in poor recall or knowledge of policy options. However, a few interviewees argued that transportation energy may become more salient in the near future. At this juncture, providing policymakers with more information on the benefits of TDM policy options may change what they are willing to champion (19).

## CONCLUSION

This study finds that Vermont is not ready to manage travel. However they may be an opportunity in the near future, because key decision-makers see transportation energy consumption via high rates of travel as the primary problem negatively impacting environmental, economic, and social areas of concern. In order for this problem definition to develop into actual travel management policies, strategic framing of TDM solutions must address areas of current concern and perceived problems. From there, opportunity exists to educate policymakers as to how and which state-level TDM policies can reduce VMT, a key goal in the Vermont Agency of Transportation's climate change action plan.

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