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# CIRCULAR



## Research Problem Statements Ridesharing and Transportation Demand Management

**RESEARCH PROBLEM STATEMENTS**

**RIDESHARING AND TRANSPORTATION DEMAND MANAGEMENT**

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**The Transportation Research Board** is a unit of the National Research Council, which serves as an independent advisor to the federal government on scientific and technical questions of national importance. The Research Council, jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine, brings the resources of the entire scientific and technical community to bear on national problems through its volunteer advisory committees.

## **PREFACE**

An important mission of the Transportation Research Board is the identification and stimulation of research towards the solution of problems facing the transportation industry. One of the ways the technical committees use to meet these goals is to develop research problem statements that define needed research in their area of expertise. It is hoped through this activity to provide guidance to financial sponsors of research, such as governmental agencies, research institutions, non-profit organizations, foundations, industry, the academic community and others in the allocation of the scarce transportation research funds and manpower.

The problem statements in this Circular represent the efforts of two TRB units, the Committee on Ridesharing and the Task Force on Transportation Demand Management. For each of the eleven needs there is a short statement of the problem, the objective of the research, possible implementation of the research study, and a statement of the anticipated effectiveness of the research results. The Committee and Task Force ranked each of the eleven problem statements into high, medium and low priority. Their ranking and a composite priority ranking is given as well.

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**PROBLEM NO. 1**
**Title:** *Alternatives to Free Destination Site Parking*

**Problem:** The relationship between free parking at the commute destination and mode choice has been well documented in recent years. Little research has been done, however, to describe, develop or evaluate different methods of introducing a charge for parking at employment sites for the first time. Similarly there has not been a thorough assessment of the impact of peripheral parking systems as an alternative to on-site free parking.

**Objective:** Review existing examples where parking subsidies have been removed or reduced in some manner (e.g. through transportation allowances) and document the impacts recorded. Develop additional approaches to removing parking subsidies and evaluate for potential mode shift and employee/management reactions. Review existing information on peripheral parking systems and conduct studies to determine system-wide impacts and effect on mode shift. Conduct literature and case study review. Undertake longitudinal research on cases where free parking is or will be eliminated, or peripheral parking systems instituted. Explore through focus groups, commuter and employer reaction to alternatives to on-site free employee parking.

**Key Words:** Parking. Subsidies. Transportation Mode Split. Satellite Parking. Parking Shuttles

<b>Priority:</b>	Committee on	TDM Task
<u>Composite</u>	<u>Ridesharing</u>	<u>Force</u>
High	High	High

**Benefits:** Should lead to new, more innovative ways of removing parking subsidies that do not invoke strong opposition. This in turn may lead to the more rapid elimination of parking subsidies for single occupant vehicle travel.

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**PROBLEM NO. 2**
**Title:** *Enforcement of Preferential HOV Parking*

**Problem:** A common ridesharing incentive has been the use of reduced rate parking for carpools and vanpools, or the actual setting aside of premium spaces close to buildings for ridesharing vehicles. These programs are sometimes implemented voluntarily by local jurisdictions

and employers/developers or in some cases as a result of governmental mandates associated with new developments. Usually this practice requires a certification process. Noncompliance by the sponsors of these preferential parking programs and actual cheating by the would-be carpoolers has been identified in some areas.

**Objective:** Determine the extent to which certified carpools and vanpools are actually complying with the ridesharing requirements for preferential parking treatment. Also determine level of HOV parking program compliance on the part of employers and developers required to have programs. Identify alternative enforcement procedures for carpool parking certification and evaluate comparative effectiveness. Determine how widespread and severe the problem of carpool parking violations is. Identify and assess various monitoring and enforcement techniques for both problems of carpool parking violators and developers/employers not complying with required parking programs.

**Key Words:** Carpool/Vanpool Parking. Carpool Parking Certification. Parking Enforcement

<b>Priority:</b>	Committee on	TDM Task
<u>Composite</u>	<u>Ridesharing</u>	<u>Force</u>
Medium	Medium	Medium

**Benefits:** Should lead to improved management of carpool parking incentive programs and increase the effectiveness of the program.

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**PROBLEM NO. 3**
**Title:** *Parking and the Marketability of New Development*

**Problem:** Members of the development and financial community often maintain that large amounts of free parking are necessary in order for a new development to be competitive in the marketplace. No empirical evidence exists to uphold or refute this claim.

**Objective:** Measure the relationship between parking supply, cost, and a development marketability. Conduct case studies and develop information programs that can be used to better educate the transportation, development and financial communities about the impacts of parking provision on development marketability.

**Key Words:** Parking. Marketability. Parking Supply

**Related Work:** ITE parking supply and demand research.

**Priority:**

<u>Composite</u>	Committee on	TDM Task
High	<u>Ridesharing</u>	<u>Force</u>
	High	High

**Benefits:** Should lead to increased acceptance of using parking policies to help manage traffic problems. Will also lead to development of more sophisticated parking/transportation management programs that are more sensitive to real or perceived problems of marketability.

#### PROBLEM NO. 4

**Title:** *Transportation Demand Management Effectiveness*

**Problem:** A few separate studies of demand management program effectiveness have yielded inconsistent findings. More research needs to be conducted in order to identify the conditions and mix of TDM strategies which are most effective.

**Objective:** Conduct formal evaluations of TDM programs to determine effects on mode split and traffic impacts. Information and findings should be specific to urban v. suburban location, large vs. small employer, type of employee, parking conditions, and transit service availability. Conduct cross-sectional studies with control groups and longitudinal analyses tracking mode split and traffic volumes of sites implementing TDM programs. Develop information to be used to modify and tailor TDM strategies to work sites with specific characteristics.

**Key Words:** Demand Management. Ridesharing. Ridematching. Vanpools. Parking Management. Flexible Working Hours. HOV Promotions.

**Related Work:** Comsis draft TDM analysis and mode shift summary spreadsheet, Seattle HOV/TSM Program Evaluation.

**Priority:**

<u>Composite</u>	Committee on	TDM Task
High	<u>Ridesharing</u>	<u>Force</u>
	High	High

**Benefits:** Will lead to more effective use of TDM impact fees, better establish tradeoffs between TDM measures and capital improvements, and help establish the credibility, where warranted, of TDM measures with local jurisdictions and the development community.

#### PROBLEM NO. 5

**Title:** *Impact of Variable Work Hours on Transit/HOV Use*

**Problem:** Recent studies have indicated that some forms of flexible work schedules inhibit ridesharing in suburban, transit-poor locations.

**Objective:** Evaluate variable work hour arrangements (e.g. flextime, four 10-hour day week, staggered) in different urban and suburban settings to determine their effect on ridesharing and transit use. Compile and analyze data from transit and ridesharing agencies, employers, and governmental agencies and on forms of variable work hours that encourage transit and ridesharing use.

**Key Words:** Flextime. Variable Work Hours. Ridesharing. Transit

**Priority:**

<u>Composite</u>	Committee on	TDM Task
Medium	<u>Ridesharing</u>	<u>Force</u>
	High	Medium

**Benefits:** Will lead to variable work hour programs that will maximize mode shift and spreading of peak traffic demand.

#### PROBLEM NO. 6

**Title:** *Assessment of Transportation Management Associations*

**Problem:** Many different types of TMAs have been formed throughout the country with distinctive organizational structures, origins, and functions (e.g. private vs. public, mandated vs. voluntary). Very little information is available documenting the effects of TMAs.

**Objective:** Conduct comprehensive evaluations of the impacts at various forms of TMAs on transportation mode split, private sector involvement, resources brought to bear on transportation problems, effectiveness of coordination with public agencies, reasons for creation, etc.

**Key Words:** TMA. Public-Private Partnerships

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Medium	<u>Ridesharing</u>	<u>Force</u>
		Medium	Medium

**Benefits:** Will lead to improvements in TMA productivity that will increase ridesharing effectiveness and private/public support.

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#### PROBLEM NO. 7

**Title:** *Ridesharing and Demographic Travel Pattern Changes*

**Problem:** Dispersal of land use and commute patterns, two worker households and increasing numbers of linked trips during the commute pose a challenge for increasing ridesharing market share.

**Objective:** Determine how specific demographic and land use changes are affecting the potential for ridesharing and identify new ridesharing products and support services. Develop modifications or enhancements to ridesharing services.

**Key Words:** Demographic Change. Rideshare Market Segmentation

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Medium	<u>Ridesharing</u>	<u>Force</u>
		Medium	Medium

**Benefits:** Will lead to more specialized ridesharing services.

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#### PROBLEM NO. 8

**Title:** *Ridesharing and Technological Change*

**Problem:** Advancements in microcomputer technology and emerging work on in-car information systems and automated highways pose as yet unidentified challenges and opportunities for ridesharing services.

**Objective:** Determine how these technological changes can be used and designed to make ridesharing more convenient, and to establish a travel time competitive advantage for HOVs. Define a set of applications of new technological advances that will promote greater HOV use (e.g. same day ridematching service).

**Key Words:** Smart Vehicles. Intelligent Vehicle Highway Systems. Ridematching

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Low	<u>Ridesharing</u>	<u>Force</u>
		Low	Low

**Benefits:** Will lead to new uses of ridesharing services and consideration of HOV applications in highway and vehicle smart system development.

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#### PROBLEM NO. 9

**Title:** *Pricing Ridesharing Services*

**Problem:** Research needs to be undertaken to determine the effect of various pricing strategies of ridesharing services on the demand for such services.

**Objective:** Determine if charging for some ridesharing services to employers and individuals will improve productivity without reducing demand. Develop case studies showing the effect of charging for some limited services.

**Key Words:** Pricing. Ridesharing Services

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Low	<u>Ridesharing</u>	<u>Force</u>
		Low	Low

**Benefits:** Expansion of resources available for ridesharing service provision to the public and to employers.

**PROBLEM NO. 10****Title:** *Vanpool Incentives***Problem:** A few isolated vanpool incentive studies have been inconclusive regarding the effectiveness of fare incentives for vanpool formation.**Objective:** Conduct additional studies to better determine impact of vanpool "seed" and fare incentive programs in increasing vanpool ridership. Develop improved vanpool incentive programs.**Key Words:** Vanpool. Incentives. Fare Elasticity

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Low	<u>Ridesharing</u>	<u>Force</u>
		Low	Medium

**Benefits:** Will lead to more effective design and use of vanpool promotions and fare offers.**PROBLEM NO. 11****Title:** *Rideshare Marketing and Employer Size***Problem:** Most ridesharing agencies target medium to large sized employers (greater than 500 employees). Historically these types of programs have been most effective. However, the majority of the nation's work force is employed by firms with fewer than 500 employees. Therefore a significant portion of the employee market is not targeted.**Objective:** Conduct a series of studies to identify how rideshare marketing to medium and small sized employers can be made more successful. Develop new marketing strategies for small employers.**Key Words:** Marketing. Employment Size. Cost Effectiveness

<b>Priority:</b>	<u>Composite</u>	Committee on	TDM Task
	Medium	<u>Ridesharing</u>	<u>Force</u>
		Low	Medium

**Benefits:** Potential exist to improve significantly ridesharing market share by penetrating more effectively a large segment of the work force.