Breaking the Trend of Auto Dependency

Group 3 - The Multimodals

(Dale Bracewell, Sean Coleman, Jason Crawford, Carrie Falkenrath, Amir Rizavi and Danielle Scharf)

Objective

Our objective is three-fold: document the societal concerns over the trend of auto dependency; identify ways in which transportation professionals contend with auto dependency; and suggest how ITE, as an organization, can develop new policies and initiatives (or alter existing ones) to best support its members as they face the challenge of auto dependency.

We aim to achieve this objective by:

- determining current realities associated with auto dependency;
- identifying stakeholders who affect and get affected by this phenomenon; and
- delving into potential ethical implications.

What is auto dependency?

We currently live in an auto-centric environment. This is especially true in many major metropolitan areas in the United States and Canada. Our society thrives on an independent spirit and freedom of choice, and the automobile is ingrained within our culture as a key aspect of this independence. Many US cities “grew up” during the birth and explosion of the car culture and, as a result, were planned to accommodate personal vehicles with sprawling land uses – often abandoning healthy transit systems along the way. To this day, transit continues to be saddled with negative attitudes due to the automobile’s favor as the transportation mode that represents the individual freedom that our society glorifies. Making matters worse is the fact that, in many areas, little regard has been placed on higher density land uses for a number of decades. Lower density development, in turn, has further precipitated the cycle of auto reliance.

Automobile dependency is defined by Todd Litman as “high levels of per capita automobile travel, automobile-oriented land use patterns, and reduced transport alternatives. Automobile dependency increases many costs: higher vehicle expenses, reduced travel choices, increased road and parking facility costs, congestion, accident damages, and a variety of environmental impacts. Beyond an optimal level, excessive automobile dependency may reduce economic productivity and development. A more balanced transportation system can provide many benefits to consumers and society.”¹ It is more simply defined as “a situation in which the city develops on the assumption that automobile use will predominate so that it is given priority in its design, infrastructure, and operation.”² According to Litman, automobile oriented cities devote up to three times as much land to roads and parking as

traditional, pedestrian-oriented cities. Motorists devote up to four times as much personal wealth on automobile costs than they would on public transit costs.

It should be noted that critiquing our auto-centric transportation system does not imply that automobile use is inherently “bad” and public transportation is the altruistic mode. Litman further adds that the automobile is a tool in our transportation toolbox just like bicycles, buses, trains, and our legs. The goal of creating a balanced transportation system is no more “anti-automobile” than a healthy, balanced diet is “anti-food”.

What are the effects of auto dependency?

There are strong arguments for decreasing automobile use in favor of safer, more sustainable, and more equitable modes. Today, there are over one billion cars on Earth. Worldwide, motor vehicle accidents killed 1.2 million people in 2012 and injured 50 million more according to the World Bank’s Global Road Safety Partnership. Automobile emissions contribute heavily to air quality problems in urban areas and are responsible for more than 25 percent of all greenhouse gas emissions in the United States. Wide boulevards and freeways sever communities by inhibiting social interactions and pedestrian travel, and while few of the very poor own vehicles throughout the world, they often receive the brunt of the negative impacts of increased car ownership and travel. An auto-centric transportation system has negative land use and economic impacts as well.

Who or what is influencing auto dependency today?

While there is much pressure to reinvest in our established highway and arterial networks (with a particular focus on bridges, many of which have reached the end of their design life), cost-effective mobility and system decisions need to be made. The choices we make as a society will either reinvest in the past that incubated and promoted auto dependency to our current system, or will create more balanced opportunities to innovate and enhance our travel choices and quality of life.

For the first time, there are societal trends that are actually encouraging decision-makers to question the benefits of a continued auto dependent culture: the current declining health trends are believed to be influenced by a more sedate and auto-dependent culture; an aging demographic (in less than 20 years one out of every five individuals will be 65 years or older with greater mobility challenges not always met by the single occupant vehicle); and younger generations who place a greater value on social

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6 Source: www.census.gov/population/international/files/97agewc.pdf
networks than vehicle networks (evidenced by a surprising trend of reduced driver’s licenses for their demographic). 

However, there are still barriers discouraging more walking, cycling, and transit including longstanding transportation policies and standards that essentially assume auto-centric design is the preferred and desired public outcome. Revising such policies and standards in urban contexts has been acknowledged as an acceptable way of accommodating more population and job growth with constrained land use and street rights of way but it has, to date, been a much harder and slower process to see similar positive trends in the rest of our transportation planning context.

**How is auto dependency being addressed in society today?**

Automobile dependency is seen as an issue of environmental sustainability as well as of social and cultural sustainability. The phenomenon is most commonly tied to urban sprawl and its related design implications of single-use and low density zoning (e.g. housing subdivisions, strip malls, a lack of pedestrian facilities).

There are a number of planning and design concepts aimed at combating automobile dependency (and urban sprawl), including: smart growth, compact cities, urban intensification, urban growth boundaries, new urbanism, district regionalism, circular flow land use management, and transit-oriented, bicycling-oriented, and pedestrian-oriented development. Most of these approaches focus on the physical urban design, urban density and land use zoning of cities, and have been presented, tested, and refined by various groups, including:

- The Environmental Protection Agency (through its Smart Growth Program, [www.epa.gov/smartgrowth/index.htm](http://www.epa.gov/smartgrowth/index.htm))
- Smart Growth Network ([www.smartgrowth.org](http://www.smartgrowth.org), founded by EPA, lists ITE as a partner)
- Smart Growth America ([www.smartgrowthamerica.org](http://www.smartgrowthamerica.org), a national coalition)
- The Center for Neighborhood Technology (CNT, [www.cnt.org](http://www.cnt.org), an “innovations laboratory”)
- Surface Transportation Policy Partnership (STPP, [www.transact.org](http://www.transact.org), a national coalition)
- Congress for the New Urbanism (CNU, [www.cnu.org](http://www.cnu.org))
- The National Resources Defense Council (NRDC, [www.nrdc.org/smartgrowth/default.asp](http://www.nrdc.org/smartgrowth/default.asp))
- The Urban Land Institute (ULI, [www.uli.org](http://www.uli.org))
- Transportation for America (T4A, [www.t4america.org](http://www.t4america.org))
- American Planning Association (APA, [www.planning.org](http://www.planning.org))
- American Institute of Architects (AIA, [www.aia.org](http://www.aia.org))

These organizations reach out to a wide network of transportation professionals to inspire policies and design standards that are more supportive of sustainable modes of transportation and better land use and transportation integration. Their efforts have resulted in focused initiatives, such as the National

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Association of City Transportation Officials (NACTO) urban street and urban bikeway design guides, and programs, such as the Green Lane Project.\(^8\)

At last, conversation is increasing among elected officials and others to address this issue. As reported by the Dallas Morning News\(^9\), many discussions at the 2014 New Cities Summit and 2914 US Conference of Mayors focused on alternatives to autos such as public transit and biking.

**Why should the Institute of Transportation Engineers (ITE) address auto dependency?**

A balanced transportation system that meets the needs of all users can help ease our infrastructure costs and burdens, retract our sprawling land use patterns, and improve the quality of life for our communities. The purpose of the Institute as defined in the ITE Constitution is to “enable transportation and traffic engineers, transportation planners, and other professionals with knowledge and competence in transportation and traffic engineering to contribute individually and collectively toward meeting human needs for mobility and safety.” Given this directive, ITE should be at the forefront of this important societal challenge in helping our industry move towards a more balanced transportation system.

Because of the collective experience, history, and education of the organization and its members, ITE is strategically positioned to explore, understand, and then illustrate how a balanced transportation system can affect the health and prosperity of the cities and communities we live and work in. We have the experience to instigate the necessary conversations about the realities of auto dependency and then to unite travelers in a compelling vision that aspires to incorporate more walking, cycling and transit as preferred ways of moving around to jobs, places of leisure, education, and other activities.

One final note: although ITE as an organization is dedicated to meeting the public’s mobility and safety needs, its membership also comprises many private companies. It could be considered self-serving for ITE to promote only transportation ways and means that are revenue-generators (major construction/infrastructure). By exploring non-motorized alternatives and opportunities, ITE is confirming its role as an unbiased professional organization.

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\(^8\) The Green Lane Project is a PeopleForBikes program that helps cities build better bike lanes. The Project hosts workshops and study tours for city leaders and officials and delivers grants for implementing bike lanes. [http://www.peopleforbikes.org/green-lane-project](http://www.peopleforbikes.org/green-lane-project)

What related policies or programs does ITE already have in place?

Additional background on the current efforts is included in the Appendix. Current efforts such as the Mega Issues and ITE’s Policies may address more than our defined problem of breaking the trend of auto dependency, but they also bring to light several potential gaps where additional effort can be made. In addition, there are several related endeavors that are in direct conflict with this goal. For example, the promotion of fuel efficient and alternative fuel technologies is still a promotion of the single occupant vehicle. While these technologies are proven methods of reducing environmental impacts, they undermine the struggle to break away from auto dependency.

Mega Issues
ITE has identified both “Designing for All Users” and “The Nexus of Energy, Environment and the Economy” as two of the five of its current “Mega Issues,” which are technical or policy topics that represent significant issues facing the transportation community, and are topics in which ITE has recognized its responsibility to play a leadership role. Mega issues are brought to ITE’s International Board of Direction (IBOD) for in-depth discussion. The intent of this discussion is to identify the priority roles that ITE should play and the specific areas that are most significant for ITE members. A white paper and summary of the ITE Board of Direction discussion is provided for these issues on ITE’s website.

Note that while these recommendations were presented to the IBOD, no formal action was taken, so any related recommendations have not been formally adopted or prioritized as focus areas by the IBOD. As a result, a formal board summary on this topic was not available for reference.

Much of the work surrounding these mega issues appears to be taking place at the council/task force level. “Designing for All Users” is presumably being addressed by the Pedestrian and Bicycle Council and the Transit Council. “The Nexus of Energy, Environment and the Economy” is presumably being addressed by the Sustainability Task Force of the Planning Council, and likely even more in depth by the Climate Change and Energy Subcommittee.

Climate Change and Energy Subcommittee
Formed in fall 2008, the Climate Change and Energy Subcommittee is a multi-disciplinary group with representatives from each of the ITE councils, that examines how the Institute should address climate change and energy concerns. The task force adopted its mission statement in early 2009: Facilitate transportation solutions that incorporate global climate change and energy concerns spanning the range of ITE member interests. ITE conducted a member survey in fall 2009 to help identify those member interests that could best be served by task force activities. The task force has also developed a roadmap to guide activities and identify roles where ITE can serve as content provider, advocate, convener, or clearinghouse. In general, the role of ITE members will not be deep in either the science or the politics of climate change and energy policies, but rather in practical transport applications and solutions.  

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ITE Policies
ITE sets forth a formal position on topics by means of a policy. An ITE policy is a published statement, adopted through established procedures. Existing ITE policies that best support ITE’s position relative to breaking away from auto dependency include the following:

- Planning and Design Policies:
  - D-4 Transportation and Land Use Management
  - D-6 Travel Demand Management
- Operations Policies:
  - O-6 Programs to Increase Vehicle Occupancy
  - O-7 Pedestrians and Bicycles
- Environmental, Economic, and Social Policies:
  - E-1 Balanced Goals
  - E-2 Environmental Impact Review
  - E-3 Air Quality
  - E-5 Equitable Transportation for All Persons
  - E-6 Climate Change and Transportation

What greater role can ITE play in strategically addressing the issue of auto dependency?

Many ITE members recognize the importance of breaking away from auto dependency and providing a balanced transportation system. It is a major issue at the forefront of our industry today. ITE, as the leading organization of choice for transportation professionals, must take a leadership position on this topic. Some suggested ways in which ITE can take a stronger role are provided below as a series of goals and action items.

Goal #1
Be consciously aware of perpetuating the trend of auto dependency when determining which new technologies or methodologies to support. ITE should consider the greater goal of a balanced transportation system when evaluating new technologies.

Action Items:
- For example, while ITE should support new technologies that may improve system efficiency, like the automated vehicle, it should also foster amongst its members that improved vehicle efficiency alone will not serve to achieve the goals of a balanced transportation system including walking, biking, and transit. Consider expanding upon the functionality of the new automated vehicle technology with the goal of a balanced system in mind, such as automated transit.
- Another example of a new technology that ITE could easily support is the electric bicycle as it more directly contributes to the goal of breaking the auto dependency trend. While it doesn’t have the same scale of health benefits as a traditional bicycle, it is a new technology that would serve to reduce dependence on the single occupant vehicle.
Goal #2

Action Items:
- These types of methodologies should be considered by those committees responsible for updates to these manuals. It is important that analysis methodologies require the determination of pedestrian and transit trips (not just vehicular trips), and that public and private development and design initiatives make a conscious effort to plan for and accommodate all modes of travel.

Goal #3
Provide a clearinghouse of information for our members that includes resources and success stories.

Action Items:
- This information could be provided on ITE’s website under the Technical Information tab as one of the topics listed on the right hand side of the page. It should include white papers, case studies, presentation slides, links to other organizations, etc. The “Context Sensitive Solutions” page is a good model for this topic.
- We recognize this will require some work to maintain and keep current. Therefore, it is recommended that this task be assigned to an existing council or task force, such as the Pedestrian and Bicycle Council or the Planning Council. One of these councils may choose to create a new task force or assign the effort to an existing task force, such as the Sustainability Task Force. Perhaps the online content could eventually be maintained/perpetuated by ITE Headquarters.
- As the webpage content continues to evolve and partnerships are formed (Goal #5), an independent website (such as www.breakingautodependency.com) could be developed. This standalone website could be marketed by ITE for its members, the general public and non-transportation professionals. This should be considered a long-term recommendation and could be implemented in stages by the task force assigned to this effort. This would provide an opportunity for ITE to be a resource for others outside of our profession/membership.
Goal #4
It is recognized that public investment revenues are grossly inadequate and could be further affected by the potential to move away from the single-occupant vehicle. ITE can play a significant role in making the case for effective mechanisms of revenue-raising that can produce the needed funds.

Action Items:
- Advocate for smart, sustainable solutions to our transportation funding inadequacies; build on what others have already done in this arena, such as Transportation for America (http://t4america.org/). Ensure that funding mechanisms are in place to not only support highway infrastructure, but also transit investments, transit-oriented development (TODs) grants, and walkable community initiatives.
- Take a prominent role in advocating an increase in transportation funding and a stronger prioritization for other modes.
  - Partner with the US Chamber of Commerce and economic think tanks (e.g., ENO Center for Transportation) in tying balanced transportation funding to the economic benefits of mixed uses with multiple transportation options.
- Utilize clearinghouse (Goal #3) with a module dedicated to innovative local, municipal, and state transportation funding options to facilitate a grass-roots investment movement.
  - In other words, big changes in moving away from an auto-centric funding mechanism to a more balanced distribution will more than likely not come from the Federal level, but rather from local and state government.
- Encourage ITE members to advocate and provide supporting evidence/material to them to bring a grass-roots movement in City Council Chambers, County Commissions, and State Legislatures.

Goal #5
ITE should demonstrate leadership in advancing the discussion on the nexus of land use planning and the transportation network for all modes by facilitating a strategic council with other professional associations and organizations with similar public good goals regarding sustainable urban environments.

Action Items:
- Identify strategic partner professional associations and organizations. These may include:
  - Urban Land Institute
  - American Planning Association
  - Council for New Urbanism
  - Smart Growth America
  - American Public Transit Association
  - American Society of Civil Engineers
  - League of American Bicyclists
  - Association for Commuter Transportation
  - US Chamber of Commerce
  - International Council of Shopping Centers
  - National Home Builders Association
  - National Multifamily Housing Council
- Organize initial strategic council meeting inviting selected associations and organizations.
- Facilitate initial meeting of strategic council to commonly develop mission charter.
Goal #6
Review existing ITE policies and guidelines for inconsistencies related to the goal of breaking the trend of auto dependency.

Action Items:
- The following are examples where improvements could be made to existing policies:
  - G-11 NATIONAL HIGHWAY SYSTEM: Rather than “encourage upgrading and rehabilitation of the National Highway System” beyond its original purpose as a defense system, acknowledge that the predominant use of highways is now regional vehicle travel by advocating for an equivalent effort on a National Transit System for all large urban centers with a population > 500,000.
  - O-4 SPEED CONTROL: Rather than “advocate for the establishment of speed zones and other speed controls” that tend to focus only on the safety and efficiency of vehicle operations, advocate for speed controls that offer transit, pedestrian and bicycling priority.
  - S-9 PERIODIC DRIVER RETESTING: Rather than only supporting “the practice of periodic driver retesting in recognition that highway safety depends on safe driver operation in the driver vehicle roadway system”, advocate for comparable policies that support walking, cycling, and transit such as teaching elementary school children how to safely ride their bikes?
- Furthermore, we should be holding ourselves accountable to the policies that we already have. For example:
  - G-1 FUNDING: Identify benchmarks to grade whether our industry is making a tangible effort to “support a predictable, dependable and adequate source of transportation funding for all modes”.
  - D-4 TRANSPORTATION AND LAND USE DEVELOPMENT: Partner with land use planning organizations in an effort to “urge coordination of land use planning and transportation system planning” including “educate and increase awareness of elected officials and the public”.
  - D-8 LOCAL ROAD AND STREET DESIGN GUIDELINES: Address recent publications from NACTO and the National Complete Streets Coalition in regards to our ITE design guidelines and reflecting “a proper balance of accommodation of all modes?”
  - E-3 AIR QUALITY: Put forth studies that address the reality of the predominance of car travel and what affect that is having on how we “support the goal of attaining and maintaining atmospheric conditions that are conducive to human health and well-being”.
  - E-5 EQUITABLE TRANSPORTATION FOR ALL PERSONS: Provide guidance to our members so they may effectively champion reallocating road space in their communities to “support policies that provide equitable accessibility and mobility for all persons”.

In summary, ITE must take a leadership role in breaking the auto dependency trend. This is important to its members and will continue to gain prominence in future.
What related policies or programs does ITE already have in place?

ITE has identified both “Designing for All Users” and “The Nexus of Energy, Environment and the Economy” as two of the five of its current “Mega Issues,” which are technical or policy topics that represent significant issues facing the transportation community, and are topics in which ITE has recognized its responsibility to play a leadership role. Mega issues are brought to ITE’s International Board of Direction (IBOD) for in-depth discussion. The intent of this discussion is to identify the priority roles that ITE should play and the specific areas that are most significant for ITE members. A white paper and summary of the ITE Board of Direction discussion is provided for these issues on ITE’s website.

The in-depth discussion of the IBOD on “Designing for All Users” resulted in many different potential focus areas. The following elements were determined to be the highest priority based on IBOD rankings and could play a significant role in establishing ITE’s position in reducing auto dependency:

- ITE should serve as a key provider of technical information to facilitate and promote flexible design. ITE must also partner with other organizations and serve as an advocate to ensure acceptance and adoption of flexible design criteria;
- ITE should serve as a provider and clearinghouse of professional development materials addressing designing for all users. As a provider, ITE should develop tools such as informational reports, recommended practices, web seminars, web briefings, on-line learning, sessions and seminars;
- One of the most significant challenges in designing for all users is to understand the safety and operational impacts of alternative designs. ITE should serve as a provider and disseminator of existing research on this topic. ITE should also partner with other organizations to identify gaps in existing resources and establish a framework for funding new research; and
- ITE should work with the ITE Pedestrian and Bicycle Council to provide technical materials necessary to accommodate pedestrians and bicyclists. ITE should also serve and an advocate for integrated planning and design processes that provide for the safe and efficient movement of pedestrians and bicyclists. ¹¹

The white paper on “The Nexus of Energy, Environment and the Economy” suggests that ITE members can be great educators in the field, working in their communities and states and at the national level, becoming a trusted source of sound advice and understanding regarding many of the interrelated factors involved in this issue. ITE professionals can take the role of strongly advancing those areas where their expertise is undisputed. Some of these areas include:

- Promoting enhanced operations: ITE must become the central advocate for expanded utilization of improved operations capabilities to reduce fuel consumption and GHG emissions through improved traffic flow.
- Promoting eco-driving: This approach, focused on the driver’s behavior, is a natural fit with enhanced operations, utilizing the best of the experience being tested in other countries, where savings of up to 10 percent have been observed.

¹¹ Adapted from Designing for All Users Mega Issue Overview, ITE, 2006.
• An extensive public information program: One of the great disappointments of the recent surge in fuel costs has been the failure of governments at all levels to address public concerns and assist them in responding. Public recommendations such as traveling at slower speeds, assuring correct tire inflation and fewer start stop cycles could have been responsive and helpful. More broadly, the promotion of carpooling, working at home and revised work schedules could have had immediate benefits to travelers and society but were almost totally without discussion. ITE membership can undertake that role going into the future, documenting the strong and immediate benefits of such approaches.

• Advancing a more effective planning process: It is a given today that the planning process is too slow and clumsy for current and future needs. ITE can play a very effective role in assuring that prospective legislation and subsequent regulation recognizes the need for a rigorous, professional, quantitative process conducted in a timely fashion. A major part of that will be a shared sense of need for performance measurement and performance-based decisions.

• Advancing progress in infrastructure adaptation: It is recognized that adapting existing infrastructure and operations to changing weather patterns will be an important facet of concern in transportation. In many of these areas and particularly with respect to emergency management, the profession will have a powerful role to play.

• Advancing the research agenda: Many of the areas of concern identified here are areas of weakness in understanding and experience. A strong research agenda must be defined, justified, funded and managed. ITE is a natural player in this arena. Its members must be active participants in the research process.

• Taxation: It is recognized that public investment revenues are grossly inadequate. ITE can play a significant role in making the case for effective mechanisms of revenue-raising that can produce the needed revenues.

• Vehicle efficiency and fuel technologies: Perhaps the central transportation issue of the current era will be how fast, and with what effects, the nation’s vast fleet of about 250 million vehicles can be turned over. One important aspect will be which vehicles with which technologies and fuels are to be promoted. Finally, the system implications of these new vehicle fleets need to be assessed, including their traffic implications and safety consequences.

• More effective legislation and regulation: Because transportation is not properly appreciated in public policy, ITE must be a leader in making the case for the value and importance of transportation. A large part of this will be in being prepared to demonstrate the value of transportation to society in both economic and social terms. If transportation goals can be met by everyone staying home and goods not moving, we need to rethink our goals. The profession can provide the leadership at all levels of government in making that case.12

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- **Planning and Design Policies:**
  - D-4 Transportation and Land Use Management
  - D-6 Travel Demand Management
    - “through improved management of person and vehicle trip demand and reduce the dependence on and use of single occupant vehicles where feasible”

- **Operations Policies:**
  - O-6 Programs to Increase Vehicle Occupancy
    - “Urges continuing development of viable public transportation and shared-ride programs to increase vehicle occupancy”
  - O-7 Pedestrians and Bicycles
    - “The safe and efficient movement of pedestrians and bicycles should be an integral part of the planning, design, operation, management, and maintenance of transportation facilities”

- **Environmental, Economic, and Social Policies:**
  - E-1 Balanced Goals
    - “Provide mobility while maintaining a balance”
  - E-2 Environmental Impact Review
    - “consider the effects that transportation projects would have on the natural, physical, societal, and economic environment”
  - E-3 Air Quality
    - “conducive to human health and well-being”

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13 Adapted from *Climate Change and Energy Concerns: What Can an ITE Member Do?*, ITE Journal, 2010.
While the above discussions on ITE’s mega issues and policies may address more than our defined problem of breaking the trend of auto dependency, they also bring to light several potential gaps where additional effort can be made. In addition, there are several related efforts that are in direct conflict with the effort to break away from auto dependency. For example, the promotion of fuel efficient and alternative fuel technologies is still a promotion of the single occupant vehicle. While these technologies are proven methods of reducing environmental impacts, they are in conflict with the effort to break away from auto dependency.