# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction and Methodology</td>
<td>i</td>
</tr>
<tr>
<td>Contributors</td>
<td>ii</td>
</tr>
<tr>
<td>Walking</td>
<td>1</td>
</tr>
<tr>
<td>Bicycling</td>
<td>3</td>
</tr>
<tr>
<td>Transit</td>
<td>3</td>
</tr>
<tr>
<td>Automobile</td>
<td>3</td>
</tr>
<tr>
<td>Congestion Pricing</td>
<td>4</td>
</tr>
<tr>
<td>Travel Behavior</td>
<td>6</td>
</tr>
<tr>
<td>Land Use Impacts</td>
<td>7</td>
</tr>
<tr>
<td>Freight Transport</td>
<td>9</td>
</tr>
<tr>
<td>Evacuation Planning</td>
<td>12</td>
</tr>
<tr>
<td>Transportation Policy</td>
<td>14</td>
</tr>
<tr>
<td>Guides and Projects</td>
<td>17</td>
</tr>
<tr>
<td>Photo Credits</td>
<td>21</td>
</tr>
</tbody>
</table>

State of Transportation Planning 2010
Introduction & Methodology

The goal of the State of Transportation Planning 2010 by the Transportation Planning Division (TPD) of the American Planning Association (APA) is to highlight important studies and timely topics in our field. We aim to bridge the academic community with professional and citizen volunteer planners.

We hope that this inaugural edition will serve as a reference for selected publications spanning various modes and topics within the field of transportation planning.

A call for contributions was solicited to all members of the TPD and to all divisional and sectional heads within the APA asking for suggestions on publications covering various modes or topics with the field of transportation planning. The call was also solicited to urban planning faculty through the American Collegiate Schools of Planning (ACSP) faculty listserv, known as Planet.

This report contains the contributions submitted across various modes and topics within the field of transportation planning. The intent of this report is not to provide an exhaustive directory of all transportation-related publications. The U.S. Department of Transportation’s National Transportation Library (TRIS: http://ntlsearch.bts.gov/tris/index.do) fulfills that need. This report is a forum for professionals to share the titles and summaries of publications that helps to push the field in new directions.

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Recent studies on walking mostly take a socio-ecological approach to explore contextual determinants of walking. The past decade has seen a dramatic increase in empirical investigation into the relations between the built environment and walking behavior. Many empirical studies distinguish walking for transportation from walking for recreation. Walking for transportation has been consistently found to be positively related to density, proximity to nonresidential destinations, and locations with limited parking. Evidence on recreational walking is less clear and suggests mixed implications. While the majority of walking studies focus on adult populations, there appears to be an increasing number of empirical studies examining walking behavior among specific minority populations such as school children, elderly, women, African Americans, and Latinos. Despite the substantial progress made in walking research, the causality/self-selection issue remains unresolved. Most studies address self-selection by relying on (1) the measurement and control for potential confounding factors such as residential location pref-
erences and personal attitudes towards walking, or (2) sophisticated statistical techniques such as structural equation modeling and propensity score matching. Without prospective designs (experimental or quasi-experimental), it is not possible to say with certainty that changes in the built environment cause changes in walking behavior. Another remaining challenge in the literature is that few studies account for substitutions between walking for transportation and walking for recreation or substitutions between walking and other-forms of physical activity such as gym workouts. In addition, few studies examine the social dimension of walking such as the effects of neighborhood cohesion, family interactions, and peer influences on walking. Finally, changing environmental settings often requires complex stakeholder interactions and can take considerable time. There has been little progress in the literature specifying planning tools and policy interventions that promote walking behavior in different types of context.

Suggested Reading on Walking


Suggested Reading on Transit


Suggested Reading on Automobiles


Suggested Reading on Bicycling


Congestion pricing has gained considerable acceptance in recent years. Congestion pricing incorporates market principles by charging higher prices for using transportation facilities when demand for roadways is high. It is a market- or demand-based strategy designed to encourage the shift of peak period travel to off-peak periods. Congestion pricing is considered a promising mechanism to the current traffic congestion, air pollution, and transportation finance problems as it promotes efficient use of transportation and generates toll revenues according to the usage.

Prior research has largely focused on the demonstration of existing pricing pilot projects and the evaluation of project impacts on travel behavior/demand, highway system performance, and toll revenues. Significant studies have also been devoted to the assessment of public acceptance and outreach efforts. In recent years, research has extended to exploring holistic methods of

By Jianling Li, Ph.D

Dr. Li is a professor at the School of Urban/Public Affairs at the University of Texas at Arlington
addressing traffic congestion and the associated problems, such as incorporating pricing with public transit planning and service provision, land use planning, and other non-toll pricing options. Research has also moved towards quantification of equity impacts of various pricing and operational scenarios, identification of strategies for addressing equity impacts, as well as investigation of political, social, and legislative conditions for the success of pricing projects.

Suggested Reading on Congestion Pricing


Travel Behavior

Suggested Reading on Travel Behavior


Land Use Impacts

By Yingling Fan, Ph.D

For decades, researchers have called for better coordination between transportation and land use. It has been argued that auto-oriented transportation planning in the 1960s-1970s played a significant role in fueling decentralization and urban sprawl. Recognizing the connections between land use and transportation, the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) mandated that Metropolitan Planning Organizations integrate metropolitan land use and transportation planning. Existing operational models on land use and transportation integration include the spatial-interaction DRAM/EMPAL models, the spatial input-output TRANUS and MEPLAN models, the GIS-based California Urban Futures (CUF, CUF-2).
Model, the MUSSA model, the CATLAS (and later METROSIM and NYMTC-LUM) model, and the UrbanSim model. Interested readers are referred to Miller, Kriger, and Hunt’s Transit Cooperative Research Project report on “Integrated Urban Models for Simulation of Transit and Land-Use Policies” in 1998. The recent smart growth movement also highlights the importance of integrating land use and transportation planning. There is a growing literature on the travel reduction impact of mixed-use and transit-oriented developments. Another body of literature highlights the importance of using accessibility measures rather than mobility measures in assessing transportation systems. Accessibility measures take into account the geographic distribution of activities and destinations, which present a new means to integrate land use and transportation.

Suggested Reading on Land Use


Today there are over 25,000 miles of coastal, intracoastal, and inland waterways in the United States which have been providing transportation since before our highways extended from one coastline to another, before our cars and trucks began populating cities and interstates, and before our bridges spanned rivers and lakes. Our nation’s commercial waterways are currently operating at less than capacity but can help get commodities to their destinations faster, easier and with less indirect effects than current means. Trucks can roll directly onto scheduled services (thereby not adding to the average annual daily traffic), trains can move containers to marine terminals where river and ocean-going barges are waiting to be loaded/unloaded, and shippers can specify short sea services to move freight inland.

There are currently over 25 intermodal (container-base) mari-
time services operating in the United States, not including clean-diesel ferry services in over 20 states. The question is how to better integrate America’s commercial waterways into the surface transportation system. Prior to the expanded development of bridges, which made car and truck travel easier, America’s waterways served an important purpose—they connected “disconnected” land masses. In the early twentieth century, boxcars were transported by barge on the East River in New York. In addition, the site of the current Maritime Museum in San Francisco was home to a thriving vehicular terminal that could get one across the bay to either Oakland or Sausalito. Yet, in the 1950s, America began developing more highway infrastructure to improve the economy, provide for urban evacuation, improve the transport of freight between urban metropolitan areas, and improve local economies. This development was beneficial; yet, the role of maritime transportation in an integrated intermodal system has been overshadowed by higher profile investments in road and rail. Ironically, the neglect of maritime transportation has contributed to congestion on highways, urban streets, and even rail corridors.

Urban planners should do their part by adding or expanding the role of commercial waterways in their state, regional and local transportation improvement plans. They can support projects professionally, publicly and financially, helping improve traffic and thereby air quality in their own urban areas; this also means safer roads, potentially less energy expended, and even reduced infrastructure costs. What results is a net improvement for the entire surface transportation system and not just for bicyclists, pedestrians, and commuters.

Suggested Reading on Freight Transport


Suggested Reading Continued


Short-Sea Vessel Service And Harbor Maintenance Tax, October 2005. Prepared for the Short Sea Shipping Cooperative Program by the National Ports and Waterways Institute (University of New Orleans).


Interest in evacuation planning continues to grow due to a variety of natural and anthropogenic events including terrorist attacks, hurricanes, wildfires and floods. A recent report, *Transportation’s Role in Emergency Evacuation and Rentry* (NCHRP Synthesis 392) notes:

> [a]lthough history shows that the topic evacuation has been widely unaddressed within the transportation community throughout the years, interest and involvement from transportation professionals in the field has grown considerably in the past decade. The increased levels of awareness and concern have brought a wealth of new information on the role of transportation into emergency planning and practice. First-of-their-kind plans for transit-based evacuations, regional contraflow, and emergency traffic simulation have all come into being within the last half decade. In many areas, evacuation plans now include transportation modes other than highways, including rail, air, and maritime (Wolshon, 2009, p. 3).

Dr. Renne is an Early Research Professor of Planning and Urban Studies at the University of New Orleans.
Literature on evacuation planning involves the integration primarily of the transportation and emergency management fields. However, it also includes contributions from those with interest in health care, vulnerable populations as well as interest from those in legal, veterinary and other fields. Recent publications have focused on framing topics within the discipline including: preparedness and emergency management planning, contraflow, modeling, the use of transit, carless and vulnerable populations, communications and reentry.

Suggested Reading on Evacuation Planning


In 2007, the U.N. Intergovernmental Panel on Climate Change (IPCC) recommended developed nations reduce greenhouse gas emissions 40 percent below 1990 levels by 2020 and 95 percent by 2050 (IPCC, 2007). Minimizing effects from climate change by maintaining a steady global average temperature was the impetus behind these levels. In 2009, the United States Inventory of Greenhouse Gas Emissions revealed the generation of electricity (34 percent) and transportation (28 percent) as the largest emitters (EPA, 2009).

Transportation systems resulting from modern development trends and planning theories are escalating anthropogenic contributions to climate change. Ensuing patterns of this infrastructure have formed ambling arteries resulting in the Western car culture. Reducing greenhouse gas emissions requires assessing human systems involved in the carbon flux.
Questions over the ability to reach drastic reduction levels, such as the recently adopted California Global Warming Solutions Act (AB32) have been the focus of several case studies. Fundamental conclusions to these studies reveal that no “silver bullet” strategy yields success alone (Yang, McCollum, McCarthy and Leighty, 2008). Rather, a conglomeration of methods to reduce vehicle miles of travel through land use may prove fruitful. These include enhancements in alternative fuels, higher efficiency standards and social marketing techniques through travel demand management (Alexander, 2005; Ewing and Cervero, 2001; Hensher, 2008; Rajan, 2006).

Policies and tools from leading planning and policy researchers on the reduction of vehicle miles of travel indicate that a majority of measures require coordination among agencies of local and state governments for implementation success.

### Suggested Reading on Transportation Policy


Suggested Reading Continued


Submitted Projects & Guides

This section on projects and guides is a collection of works submitted by industry professionals.

Complete Streets New Haven

In response to an increase in pedestrian fatalities, the City of New Haven, Connecticut, developed the Street Smarts safety campaign as a companion to physical improvements modeled after the Complete Streets initiative and elevated traffic code enforcement. Street Smarts is an award winning approach which incorporates attentiveness and patience; as well as the traditional share the road message. In partnership with community organizations, New Haven reaching residents of all backgrounds through media events, direct outreach and one-on-one communication tactics. With over four million impressions and 1,300 “smart driver pledges”, the City has surpassed all of the original program goals in just the first year.

Submitted by Michael Piscitelli
Director
New Haven Department of Transportation
Connections 2030

Connections 2030, the state of Wisconsin’s long-range, multimodal transportation plan was adopted by Secretary Frank Busalacchi in October 2009. This plan defines the state’s vision for transportation through 2030 and identifies the policies that will help guide decision-makers as they address future transportation challenges. The plan is organized around seven themes, rather than by mode (including Preservation, Safety, Economic Growth, Mobility & Choice, Efficiency, Quality of Life and Security). It also includes detailed corridor-based, multimodal maps for each of the 37 priority corridors in the state. These corridor maps serve as an important implementation link between the statewide vision and the DOT region project-level activities. Connections 2030 can be accessed at:


Submitted by Sandy Beaupre’
Director, Planning and Economic Development
Wisconsin Department of Transportation

Multimodal Transportation Concurrency Management Program

Bellingham, Washington’s new systematic approach to multimodal transportation concurrency regulations integrates land use and transportation goals, policies, development regulations, and funding mechanisms to ensure that adequate facilities are available for pedestrians, bicyclists, transit riders, and vehicle users. The new multimodal transportation concurrency regulations are consistent with comprehensive plan land use and transportation goals and policies and the long list of multimodal transportation projects needed to accommodate projected population growth. This innovative new approach is aimed toward achieving Bellingham’s long-term mode shift goals to reduce the percentage of trips made by single occupant vehicles while increasing the percentage of trips made by pedestrians, bicyclists, and transit riders. Find out more at:

http://www.cob.org/services/neighborhoods/community-planning/transportation/index.aspx#TCMO

Submitted by Chris Comeau
Transportation Planner
Bellingham, Washington, Public Works
Bicycling and pedestrian facility guidelines have been updated in the State of New Jersey Roadway Design Manual. It can be accessed at:
http://www.state.nj.us/transportation/eng/documents/RDM/

**Mobility & Community Form Program**

The Mobility and Community Form program seeks to better establish the link between land use and transportation in local planning and development codes. This is a “new urban” program that is based on the transect and leads to form based code. Downloadable workbook, ppt shows, folio, etc. on the website:
http://www.state.nj.us/transportation/community/mobility/

Submitted by Brent Barnes
Director, Statewide Planning
New Jersey Department of Transportation
Building a Quality Arizona

The State Transportation Board allocated resources for an ambitious planning process to identify Arizona’s multimodal transportation needs and a full range of options to meet these needs. It is the first statewide transportation planning effort in Arizona to address truly long-range needs (2030 and 2050); the first to consider all surface modes on an equal footing; the first to include city, county and state systems; and the first to fully integrate principles of Smart Growth, environmental stewardship, responsible economic growth and tribal participation. The Team assembled a series of alternative future scenarios that were evaluated and prioritized to create a comprehensive multimodal framework recommendation for the entire state. More information can be found at:

www.bqaz.com

Submitted by Jaclyn Pfeifer
AECOM
# Table of Contents

**Madeline Brozen**

**Page 1** (from top to bottom)

John Fraissinet:  

**Page 2**  
http://www.pedbikeimages.org/DanBurden  

**Page 3** (from top to bottom)  
Zolk: http://www.flickr.com/photos/zolk/61322422/  
Robotography: http://www.flickr.com/photos/robotography/543120335/  
Bikeportland.org  

**Page 4**  
Washington Department of Transportation  

**Page 5** (from top to bottom)  
Atwater Village Newbie: http://www.flickr.com/photos/atwatervillage/842866223/  
Wikimedia: http://commons.wikimedia.org/wiki/File:ChicagoSkyway11104.jpg  

**Page 6**  
heather: http://www.flickr.com/photos/heather/20597898/  

**Page 7**  
wallyg: http://www.flickr.com/photos/wallyg/170580613/  

**Page 8**  
Mark Strozier: http://www.flickr.com/photos/r80o/62199526/in/set-1344737/  

**Page 9**  
Virginia Department of Transportation  

**Page 10**  
Board of Commissioners of the Port of New Orleans  

**Page 11**  
U.S. Department of Transportation, Maritime Administration  

**Page 12**  
Wikimedia: http://upload.wikimedia.org/wikipedia/commons/2/2c/RitaHoustonEvacuation.  
jpg  

**Page 13**  
Emergency Management Center at Oak Ridge National Laboratory: http://emc.ornl.gov/CSEP-Pweb/graphics/OREMS.gif  

**Page 14:** (from left to right)  
James Oberstar: http://www.house.leg.state.mn.us/hinfo/images/2009/SW020609CongressmanOberstar%28TOMO%29.jpg  
Capitol: http://www.flickr.com/photos/dbaron/3734423379/  

**Page 15:**  
Photoholic1: http://www.flickr.com/photos/lenbo/3189723989/