System-wide Pedestrian Planning Efforts: An Analysis of Current Planning Trends

Andrew Andrusko[1, 2] & EunSu Lee[3]

1 Transportation and Urban Systems Program, North Dakota State University, Fargo, ND 58102; (email)andrew.andrusko@ndsu.edu; (Tel):651-234-7798
2 Minnesota Department of Transportation, Metropolitan District, Office of Planning, Program Management and Transit
3 Upper Great Plains Transportation Institute, North Dakota State University, Fargo, ND 58102; (email)eunsu.lee@ndsu.edu; (Tel)701-231-6448; (Fax)701-231-1945

ABSTRACT

In response to a growing awareness of the desire toward walkable, safe urban communities, many government agencies are evaluating their pedestrian planning decisions. With a culture shift away from suburban areas toward urban communities the issues of pedestrian safety and pedestrian improvements are the topic of many local forums. In defining these issues and developing new policies, agencies are drafting pedestrian plans. There are numerous pedestrian plans published by agencies ranging from state departments of transportation to cities and townships. The content of these plans vary widely. Few common practices exist today, and little research has been performed to identify if any common trends exist. In order to address this gap in research this study will evaluate current trends on pedestrian planning efforts by analyzing plans from twenty-five states. Individual elements analyzed include the an analysis of the span of the policy included in the plan, the funding, major components, the vision, the goals & objectives and the performance measures. This paper also discussed broad observations in terms of the potential impacts to transportation planning practices and investments in pedestrian improvements. This study found significant variability in the practices of pedestrian planning efforts across the United States in state departments of transportation. There is no one standard for how individual pedestrian plans should look, the elements or components that each plan contains and the overarching issues that a plan should address. This research identified several key trends and identified the key elements that are present in nearly half of the nation's bicycle and pedestrian plans. This paper provides a preliminary discussion in the area of determining the quality of individual published plans and how practitioners can improve pedestrian plans to ensure that the public needs are being addressed.

Keywords: Pedestrian Planning; Pedestrians and Bicyclists; Plan Quality; Planning and Forecasting; Methodology

INTRODUCTION

In response to a growing awareness of the desire toward walkable, safe urban communities, many government agencies are evaluating their pedestrian planning decisions. With a culture shift away from suburban areas toward urban communities the issues of pedestrian safety and pedestrian improvements are the topic of many local forums. In defining these issues and developing new policies agencies are drafting pedestrian plans.

Some of these pedestrian planning efforts were first described in detail by John Fruin in his monograph *Pedestrian Planning and Design*. These planning processes "describe and quantify the space people need to walk, queue, crowd and wait. … To access buses, trains, planes, elevators and escalators" (Fruin 1971). While researchers of that time period looked at the pedestrian issues holistically including detailed examinations of architectural accessibility, many current transportation plans do not. The process of the 1970s is markedly different from those of today. The needs, goals and outcomes have diverged in terms of expectations. While it was unlikely that pedestrians would become a part of the complete street during the peak point of the expanding highway system, it would become a pivotal element of current pedestrian plans.

There are numerous pedestrian plans published by agencies ranging from state departments of transportation to cities and townships. The content of these plans vary widely. Few common practices exist today, and little research has been performed to identify if any common trends exist. In order to address this gap in research, this study will evaluate current trends on pedestrian planning efforts by analyzing plans from twenty-five states. Individual elements analyzed included an analysis of the span of the policy included in the plan, the funding, major components, the vision, the goals & objectives and the performance measures. This paper will also discuss broad observations in terms of the potential impacts to transportation planning practices and investments in pedestrian improvements. The conclusion of this research will develop a recommended simple model of a standardized pedestrian plan.

SCOPE, SCALE AND DIMENSION OF PEDESTRIAN PLANNING EFFORTS

History

Traditionally settlements relied on patterns of development that allowed for easily access on foot. Classical forms like the Roman *templum*, the grid patterns seen in ancient Chinese settlements and in Teotihuacan. It is easily seen that even organic developments tended to allow for ease of access by foot to provide for the main form of mobility of the majority of the population.

This tendency toward planning the city form from the perspective of the pedestrian became increasingly less favored with the invention of the train and the automobile. By the 1950's civil engineers, architects and urban planners had embraced the futuristic visages reminiscent of the designs embraced by Le Corbusier in his in book *Towards a New Architecture*.

As a result of this change in technology and philosophical approach, urban design in the United States has focused primarily on the transportation planning of goods, services, and people on the roadway or railway network. As will be discussed in future sections, few states have enacted statewide pedestrian specific plans. In contrast many large urban cities have begun a trend of reintroducing the pedestrian as an integral part of the transportation system. This change is being seen as a major step forward by advocates.

Because walking is considered a part of everyday life there are few advocacy groups dedicated to promoting pedestrian policies or issue in government in the United States. The focus of pedestrian related transportation engineering has traditionally been on how to reactively address safety concerns at locations with high conflicts or risk with automobile traffic. Local coalitions have formed around site specific issues but generally do not reach a sustained and organized presence focused on pedestrian issues foremost. Many are local neighborhood groups, borough, or ward councils.

Another major factor is that in relation to safety, there has also been a growing focus on addressing the needs of the disabled in the transportation system. The Americans with Disabilities Act of 1990 specified that all public facilities were to be accessible to all. As a result many designs and engineering specifications were developed to meet the needs of the physically disabled. This in turn was grouped together with the needs of pedestrians as the design of sidewalks, sidewalk ramps, boulevards, trails and other pedestrian ways are now defined by accessible specifications.

In terms of policy and planning practices, new ideas have ranged over time. The most prominent of which is the ideal of complete streets. The National Complete Coalition Streets Coalition has defined this paradigm as:

> *"…the development and implementation of policies and professional practices that ensure streets are safe for people of all ages and abilities, balance the needs of different modes, and support local land uses, economies, cultures, and natural environments."*

The complete streets approach has been adopted by many practitioners in introducing more elements of pedestrian planning in predominately residential areas. Examples of this are streetscape designs that reconstruct the road, as well the sidewalk, landscape elements, furniture, fixtures and accessible features. Complete streets policies have been adopted as a consideration into the transportation preliminary design processes in many states and local governments. As a result the Federal Highway Administration has adopted approval policies toward implementing complete streets in normal transportation planning and design practices.

In relation to complete streets - proponents from other specialties within the fields of architecture, urban planning and development have defined another approach called *the New Pedestrianism*. Members of the Congress for New Urbanism have created New Pedestrianism as an advanced model of development that focuses more solely on the pedestrian. It utilizes what are often termed traditional development patterns which closely emulate those that existed prior to the advent of the suburbs and highways. These are higher density pedestrian scale planning models that focus on ways of connecting people on foot to important places like their residence, employment, grocery stores, health care and recreational facilities.

Prior to the 1990s, there were few attempts at providing statewide policies or plans specifically for pedestrians or walking. After this time period, newer ideas and approaches brought forward the practice of identifying walking as an important element of the transportation system. Because planning for pedestrians is relatively newer statewide activity there are no standardized elements, approaches or goals that have been used to determine overall plan quality. Peer review has focused primarily on the context of individual plans.

Previous Research and Publications

The Federal Highways Administration Volpe National Transportation Center developed guidance published in September, 2014 based on interviews with nine individual states and documents from fifteen states (Biton, Daddio and Andrew 2014). This document titled *The Statewide Pedestrian and Bicycle Planning Handbook*, focused on directions and generalized guidance across all areas of the Bicycle and Pedestrian Planning process. While this document does provide a broad view of the different issues involved it did not discuss the issue of plan quality.

The information provided here-in takes a larger dataset then that of the Volpe study. While this paper is intended as a theoretical approach it is intended to allow for discussion between practitioners. Additionally, the Statewide Pedestrian and Bicycle Planning Handbook did not focus specifically on pedestrian planning as a separate, unique process but rather as a combined product.

Scope

There exists a body of academic work focusing on the design issues relating to pedestrian facilities. There are few academic voices that looked at analyzing adaptable methods of introducing pedestrian planning on a system wide level. Individual policies have focused on including considerations for pedestrians, bicyclists and Americans with Disabilities. However, little research has been completed in determining recommendations on pedestrian plan standards. This is to say how should a pedestrian plan be designed? What elements should a pedestrian plan include? How should a pedestrian plan establish its goals and objectives? This paper will analyze the body of existing pedestrian plans that have been published by state departments of transportation. It will illustrate current trends and features of pedestrian planning.

This paper utilizes existing published plans from twenty-five state departments of transportation to establish existing trends within pedestrian plans. These trends were tallied in a compendium and analyzed in Microsoft Excel to illustrate comparative similarities or differences. As a result of these trends, a discussion of current transportation planning theory is utilized based on the standard approaches published by the American Planning Association in 2014 and the Institute of Transportation Engineers. The authors recognize that the practice of urban planning has a variety of approaches and methodologies. Further that a one size fits all approach is not appropriate given that the context is a key element of proper planning process. This paper does not attempt to provide a one size fits all approach but rather to provide some key elements from which to develop a qualitative model which can be used to improve existing pedestrian planning elements. This research is analogous to similar studies undertaken in the broader field (see Berke and Conroy, 2000).

A theoretical model pedestrian plan framework was then created to recommend the design and features of a system-wide or agency wide pedestrian plan. From this a conclusion and a summary of future academic research was written.

PEDESTRIAN PLANNING TRENDS

Introduction and Major Components

There exists a wide variety of approaches toward developing pedestrian policies and plans. A variety of different formats and specific objectives are described. For example, the Idaho Bicycle and Pedestrian Transportation Plan of 1995 included both planning concepts and engineering specifications. Other plans provided for both physical infrastructure and health related planning for pedestrians. One example of this are the strategic goals to improve healthiness and economics in the North Carolina Statewide Pedestrian and Bicycle Plan of 2013. Because there is a wide range

of publication dates and revisions there is also variability in the type of approaches to pedestrian planning. For example, some older plans did not include separate policy and technical committees to advise the plan elements. While newer plans tended to have several committees to provide input and guidance as to how the plan should be created.

Many statewide pedestrian plans are combined or dominated by content that discusses bicycle planning and/or concerns related to the Americans with Disabilities Act. Only two statewide plans and the Federal District of Columbia specifically focus on pedestrians as a separate planning effort. These were the Hawaii Department of Transportation Statewide Pedestrian Master Plan of 2013, the District of Columbia Pedestrian Master Plan, and the Wisconsin 2001-2020 Pedestrian Policy Plan. The other plans analyzed consisted of combined planning efforts generally following the form of Statewide Bicycle and Pedestrian Plan (see Data Table 1, Appendix A.

Plan Similarities

Despite the variability of the plans, the vast majority had several similar plan elements. These elements are listed in order below:

1. Introduction
2. Existing Conditions
3. Goals and Objectives
4. Performance Measures
5. Implementation Plan or Transition Guidance
6. Design Recommendations
7. Public Input/Stakeholder Involvement Plan

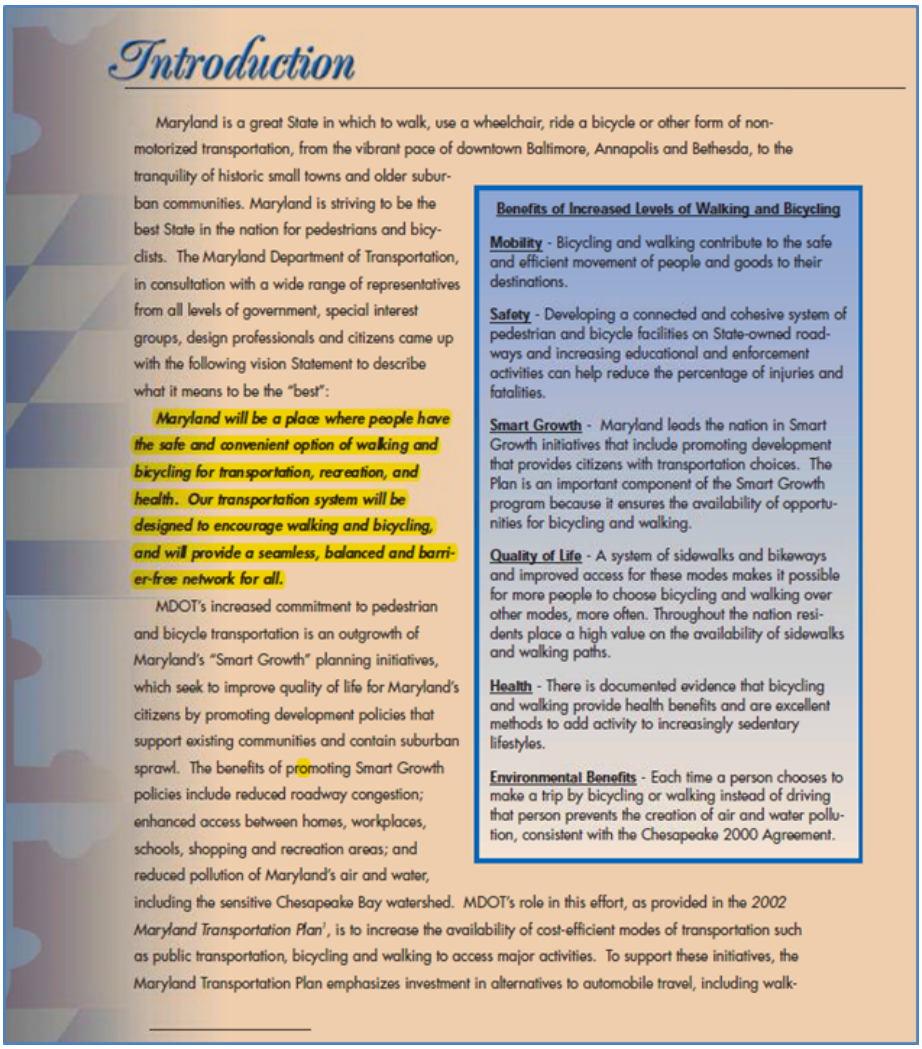
The following will discuss trends found in each of these elements. Graphs will be used to provide illustrations for the reader to understand these trends.

Introduction

The introduction sections of a number of statewide pedestrian plans include information on the current responsible authority, the planning authors, the technical or policy committees involved and may or may not include a discussion of the mission and or vision for pedestrians.

This example from the Maryland Department of Transportation includes key benefits relating to bicycling and walking activity as well the vision statement for the plan (highlighted in yellow). The vision statement is sometimes replaced with a mission statement which discusses the overall purpose of the state in pedestrian activities.

Numerous plans contained descriptions of the relationship of sidewalks, trails, pedestrian ways to the roadway system. Over 90% of the plans analyzed had discussion of the roadway system. In addition, over 90% of plans discussed safety as a significant priority in the introduction section of the plan (Appendix A, Data Table)



Introduction

Maryland is a great State in which to walk, use a wheelchair, ride a bicycle or other form of non-motorized transportation, from the vibrant pace of downtown Baltimore, Annapolis and Bethesda, to the tranquility of historic small towns and older suburban communities. Maryland is striving to be the best State in the nation for pedestrians and bicyclists. The Maryland Department of Transportation, in consultation with a wide range of representatives from all levels of government, special interest groups, design professionals and citizens came up with the following vision Statement to describe what it means to be the "best":

Maryland will be a place where people have the safe and convenient option of walking and bicycling for transportation, recreation, and health. Our transportation system will be designed to encourage walking and bicycling, and will provide a seamless, balanced and barrier-free network for all.

MDOT's increased commitment to pedestrian and bicycle transportation is an outgrowth of Maryland's "Smart Growth" planning initiatives, which seek to improve quality of life for Maryland's citizens by promoting development policies that support existing communities and contain suburban sprawl. The benefits of promoting Smart Growth policies include reduced roadway congestion; enhanced access between homes, workplaces, schools, shopping and recreation areas; and reduced pollution of Maryland's air and water, including the sensitive Chesapeake Bay watershed. MDOT's role in this effort, as provided in the *2002 Maryland Transportation Plan*[1], is to increase the availability of cost-efficient modes of transportation such as public transportation, bicycling and walking to access major activities. To support these initiatives, the Maryland Transportation Plan emphasizes investment in alternatives to automobile travel, including walk-

Benefits of Increased Levels of Walking and Bicycling

Mobility - Bicycling and walking contribute to the safe and efficient movement of people and goods to their destinations.

Safety - Developing a connected and cohesive system of pedestrian and bicycle facilities on State-owned roadways and increasing educational and enforcement activities can help reduce the percentage of injuries and fatalities.

Smart Growth - Maryland leads the nation in Smart Growth initiatives that include promoting development that provides citizens with transportation choices. The Plan is an important component of the Smart Growth program because it ensures the availability of opportunities for bicycling and walking.

Quality of Life - A system of sidewalks and bikeways and improved access for these modes makes it possible for more people to choose bicycling and walking over other modes, more often. Throughout the nation residents place a high value on the availability of sidewalks and walking paths.

Health - There is documented evidence that bicycling and walking provide health benefits and are excellent methods to add activity to increasingly sedentary lifestyles.

Environmental Benefits - Each time a person chooses to make a trip by bicycling or walking instead of driving that person prevents the creation of air and water pollution, consistent with the Chesapeake 2000 Agreement.

Figure 1. Introduction of the Maryland Bicycle and Pedestrian Plan

Additionally, 70% of plans had a well-defined vision. In contrast 29% of plans did define a specific vision, but rather explained had a purpose statement instead (Figure 2).

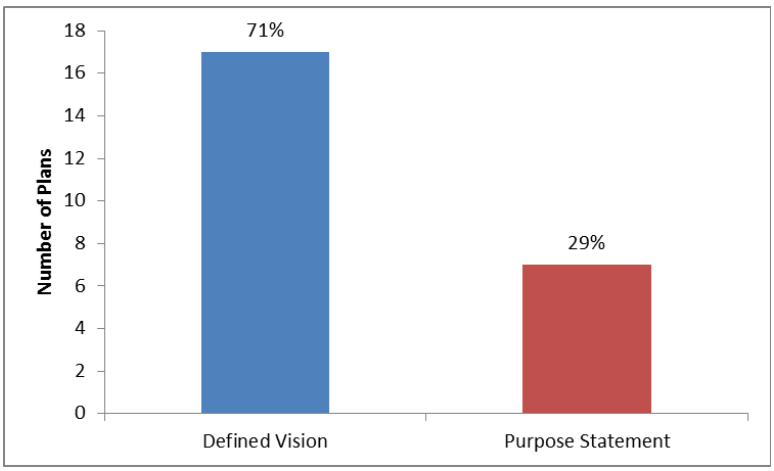


Figure 2. Vision Statements in Pedestrian Plans

Public Input/Stakeholder Involvement Plan

There were numerous methods of incorporating public outreach and stakeholder involvement. As in Figure 3, there are contrasts based on the year of the pedestrian plan and the type of the pedestrian that are important factors as to how these groups were incorporated into the process. For example, older plans tended to have one singular project team and stakeholder groups. While later plans included separate stakeholder and project team groups. In addition, those plans that focused specifically on pedestrians tended to have separate a stakeholder group and a technical group as depicted in the Hawaii Master Pedestrian Plan in Figure 3.

ACKNOWLEDGEMENTS

The project team would like to express sincere gratitude to all of the public officials, pedestrian advocates, and citizen participants who shared their time, energy, and talents in the development of this Statewide Pedestrian Master Plan.

Technical Advisory Committee
HDOT Design Branch
HDOT Highway Safety Branch Office
HDOT Project Coordination and Technical Services
HDOT Traffic Branch
HDOT Hawaii District Office
HDOT Kauai District Office
HDOT Maui District Office
HDOT Oahu District Office
County of Hawaii Planning Department
County of Hawaii Department of Public Works
County of Hawaii Mass Transit Agency
County of Kauai Planning Department
County of Kauai Department of Public Works
County of Kauai Transportation Agency
County of Maui Planning Department
County of Maui Department of Public Works
County of Maui Department of Transportation
City and County of Honolulu Department of Transportation Services
City and County of Honolulu Public Transit Division
Federal Highway Administration (ex-officio)

Speciality Resources
Department of Land and Natural Resources
HDOT Landscape
HDOT Right Of Way Branch
HDOT Office of Civil Rights
Disability and Communications Access Board (DCAB)

Stakeholder Category	Organization
Pedestrian	Get Fit Kauai
Bicyclist	Peoples Advocacy for Trails Hawaii
Senior	AARP
ADA	Eye of the Pacific Guide Dogs /Hawaii Center for Independent Living
Vehicle	DTRIC Insurance
Transit	Transit Rider
Education	Department of Education
Student	UH Department of Urban and Regional Planning Student
Developer	Land Use Research Foundation of Hawaii
Resident/Neighborhood Board	Maui Resident
Business Owner	Hawaii Chamber of Commerce
Health	Kaiser Hospital
Tourism	Outrigger Hotels
Enforcement	Honolulu Police Department
Cultural Resource	Oahu Aha Moku
Public at Large	American Planning Association
Public at Large	General public

ACKNOWLEDGEMENTS

The following individuals provided valuable time and indispensable input in the development of the *Statewide Bicycle and Pedestrian Plan.*

Project Team

Betsy Jacobsen – CDOT Bike/Ped Unit Manager (Bike/Ped Plan Project Manager)
Kate Dill – CDOT Performance & Policy Analysis Unit
Carol Gould – CDOT Occupant Protection Program Manager
Bill Haas – Federal Highway Administration (FHWA)
Vanessa Henderson – CDOT Environmental Programs Branch
Terry Huddleston – CDOT Pedestrian Safety and Speed Enforcement Coordinator
Sandi Kohrs – CDOT Planning and Performance Branch Manager
Tracey MacDonald – CDOT Division of Transit and Rail
Michelle Scheuerman – CDOT Planning Section Manager
Amy Schmaltz – CDOT Planning Liaison
Karen Schneiders – CDOT Region 4 Planner
David Valentinelli – CDOT Region 5 Engineer

Stakeholder Group

Sergeant Chris Augustine – Colorado State Patrol
Aaron Fodge – North Front Range MPO
Dr. Eric France – Kaiser Permanente
Dan Grunig – Bicycle Colorado
Andy Hill – Department of Local Affairs (DOLA)
Leslie Levine – LiveWell Colorado
Wade More – City of Durango, Safe Roads Coalition
Jessica Osborne – Colorado Department of Public Health and Environment (CDPHE)
Karen Ryan – LiveWell Colorado
Tareq Wafaie – Department of Local Affairs (DOLA)
Bert Weaver – Clear Creek County

Hundreds of webinar and online survey participants from around the state also provided valuable input in the plan's development, and Consultant Team members BBC Research & Consulting, LiveWell Colorado, and Jack Faucett Associates contributed expertise in establishing performance measures.

Statewide Bicycle and Pedestrian Plan

Figure 3. Comparison of Colorado Statewide Bicycle and Pedestrian Plan and Hawaii Pedestrian Master Plan

Existing Conditions, Goals and Objectives and Performance Measures

Nearly all of the plans contained information in regards to individual existing conditions. Some plans like the Colorado Statewide Bicycle and Pedestrian Plan:

> *"Advocacy groups often do not agree among themselves on what types of facilities or programs will best serve them. An accurate and comprehensive statewide inventory of bicycling and walking facilities and existing conditions does not currently exist as a baseline for measurement."*

While other plans such as the Alabama Bicycle and Pedestrian Plan determined the reverse, it identified individual facilities, programs, funding and conditions for each District within the Alabama Department of Transportation.

Nearly all of the plans included information regarding goals and objectives. While only about 58% of the plans included information regarding performance measures. This reflects the current trend towards performance based planning as desired in federal law.

Funding

There is a trend of incorporating funding information into pedestrian plans (Figure 4). While the majority of plans illustrated the funding sources and described major investment priorities there was also a significant percentage that did not identify funding. The major advantage of detailing these areas is primarily to link the strategic policies to the programming process. In relation to this, those plans with detailed design recommendations and engineering specifications did not necessarily specify funding or a program of intended pedestrian improvements.

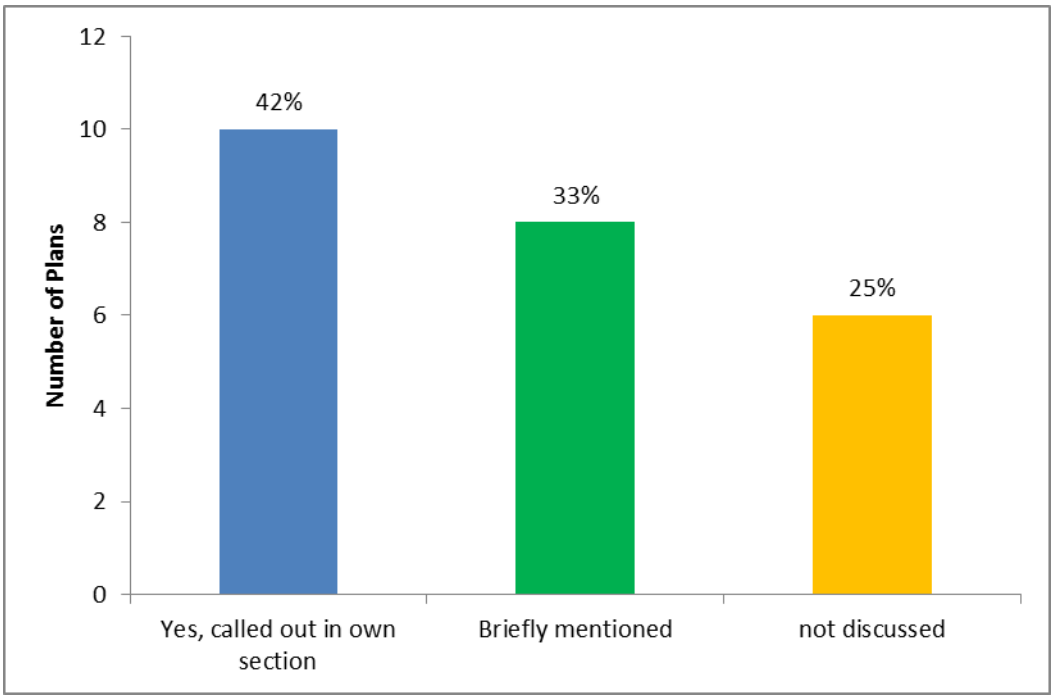


Figure 4. Was Funding Mentioned in the Pedestrian Plan?

Design Recommendations

Many of the plans included design recommendations or engineering specifications as an intermediate form of guidance. Some of the pedestrian plans act as a single point of guidance for planning and engineering. Over 62% of plans provided for some amount of design guidance. However, as the Federal Highways Administration Statewide Pedestrian and Bicycle Planning Handbook put it: these "are primarily policy plans" (Biton, Daddio and Andrew 2014). Generally, there was a correlation between length of the plan and the whether the plan included design guidance. Plans that included design recommendation tended to be lengthy and often included detailed information as to how Americans with Disabilities Act improvements would be included in future pedestrian projects.

Interestingly there was no correlation between the page length and time (Figures 6 and 7). Because there was no established practice in pedestrian planning various plans utilized different formats based on their application to agency practices. In the case of plans containing design recommendations or engineering specifications the pedestrian plan also served as a manual of technical guidelines that would be applied to a variety of construction projects.

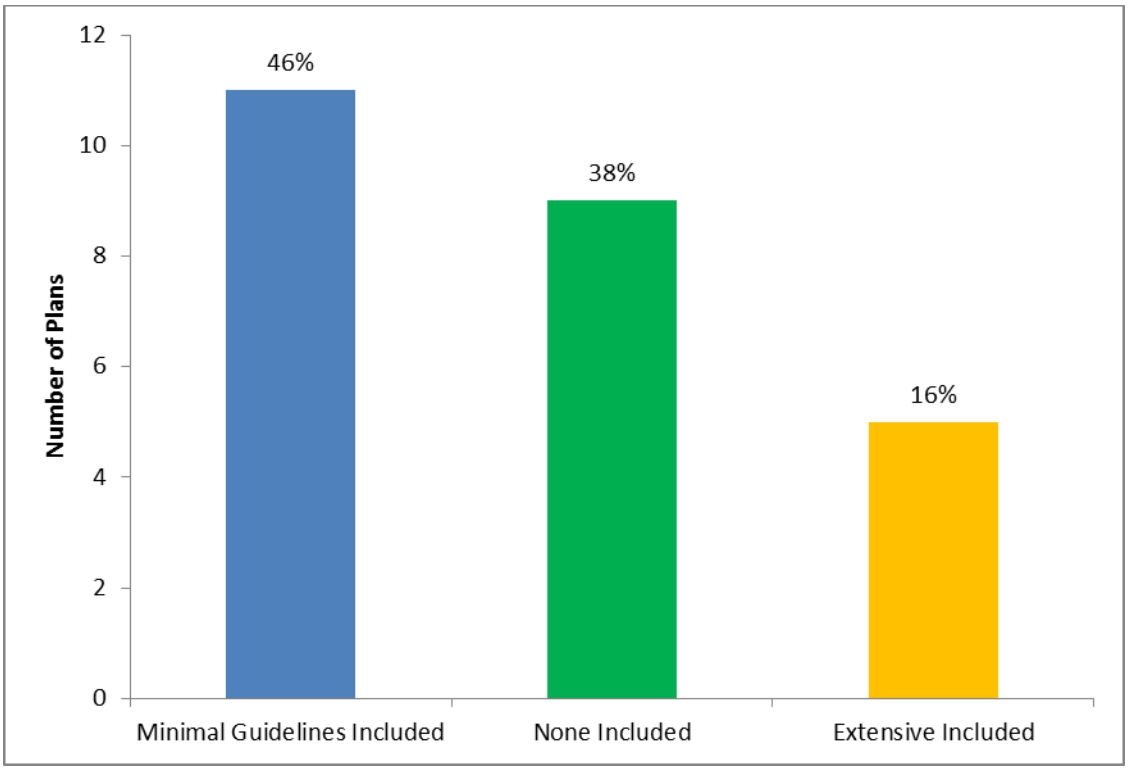


Figure 5. Number of Design Guidelines Included in Pedestrian Plans

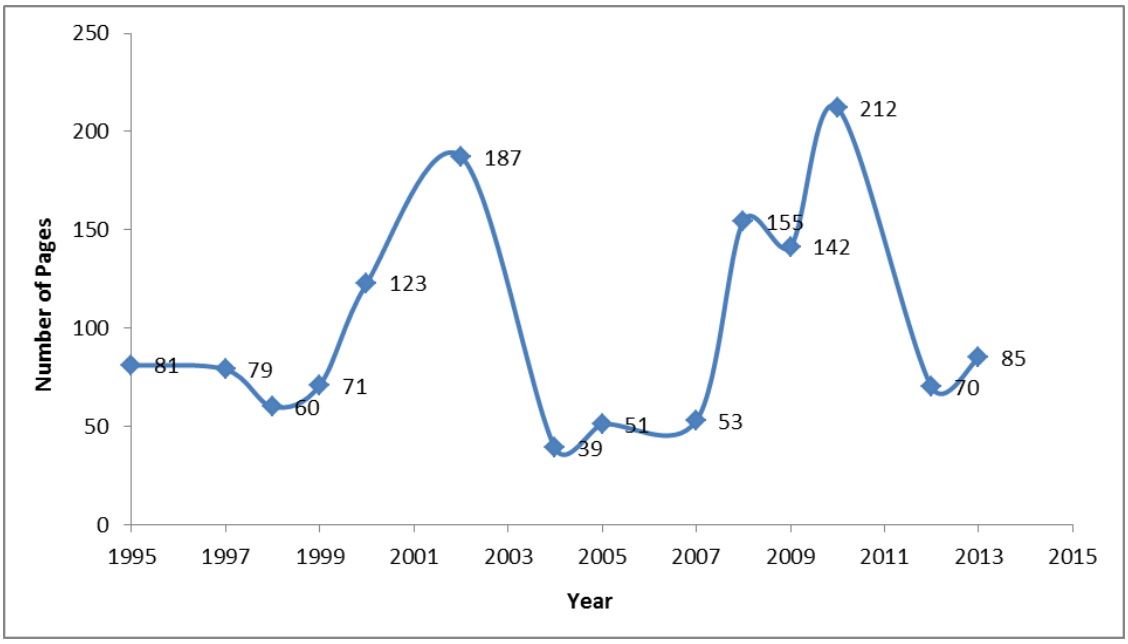


Figure 6. Page Length of Published Pedestrian Plans over Time
(R value shows no correlation between page length and time)

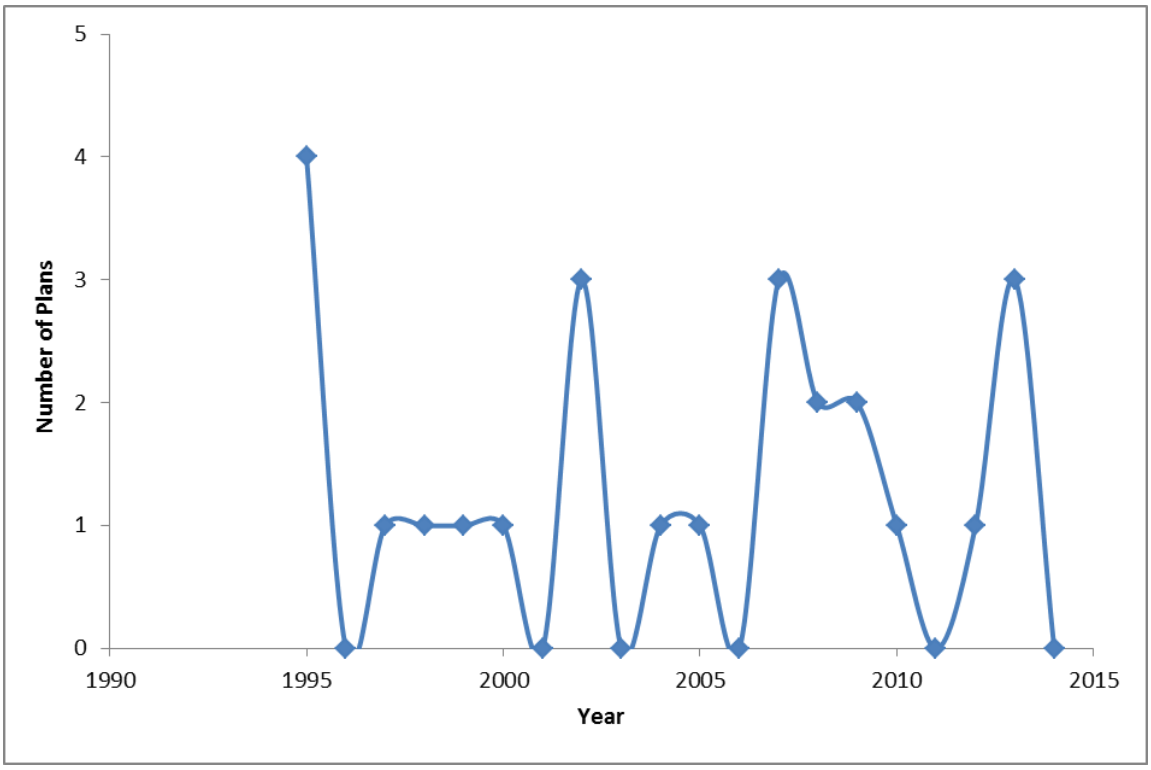


Figure 7. Number of Plans Overtime

Use of Consultants

In analyzing pedestrian plans, 95% of the plans utilized a consultant for assistance in developing the plan or process. In addition to this, 33% of plans were developed completely by an outside consultant on behalf of the state with state oversight from the bicycle and pedestrian program or office (Figure 7). As a result of this several specialized consultants are utilized in the majority of bicycle and pedestrian plans. It is unknown how many overall practitioners specialize in this area outside of the official process.

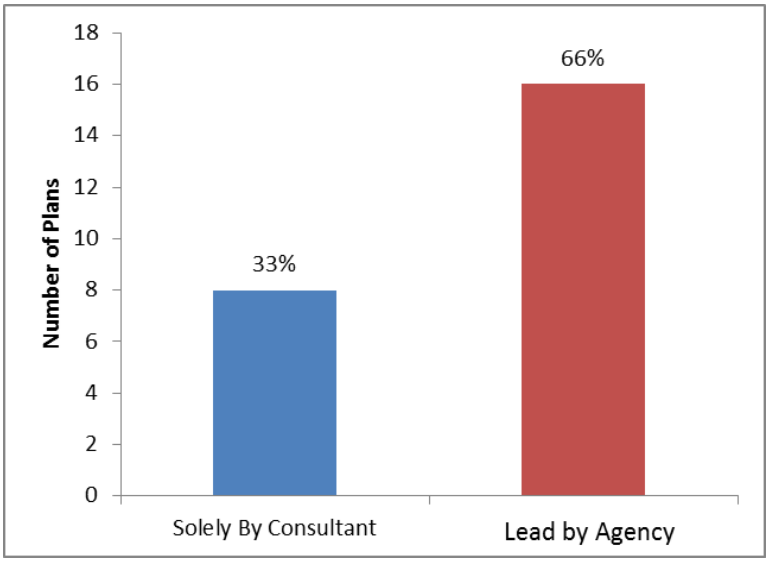


Figure 8. Use of Consultants on Pedestrian Plans

SUMMARY OF IMPACTS ON CURRENT PLANNING

Because there is such variability no standard principles have been defined for which practitioners look to follow. While this provides flexibility in the format and in the approval process it creates some confusion for the public as each plan applies individual laws, policies and approaches differently. The quality of each plan can vary from state to state.

Under ideal circumstances the peer review process would be simplified and a basic model pedestrian plan could be implemented. This would allow some content to be arranged similarly as is the case in model state laws. One similar example to this is that each state is required to have a statewide transportation improvement program or plan and 3C process (continuing, continuing, and cooperative) to meet eligibility requirements for federal funding. Another would the implementation of standard state zoning and planning enabling acts.

MODEL PEDESTRIAN PLAN

The model pedestrian plan developed through the analysis of individual plan elements in the twenty-five statewide pedestrian plans analyzed consists of several broad components. These components are defined as:

- *Introduction* - stating basic information including an executive summary signed by the responsible authority. The introduction should include a list of authors, committee members and describe the basic planning process. The introduction should also outline the mission or visioning statement and the overall document structure.
- *Public Input/Stakeholder Involvement Plan* – a discussion of how public input was taken, and how individual stakeholders were integrated into the planning process to create the plan.
- *Existing Conditions* – sometimes also titled existing programs, this section will describe what are statewide conditions overall, what could be improved and potentially what programs already exist to address pedestrian improvements.
- *Goals and Objectives* – this section will describe those goals and objectives that support the mission or vision statement described in the introduction. This is often the heart of the document and provides important direction.
- *Implementation Plan or Guidance* – this section discusses the way that individual goals will be carried out or met and how individual objectives are used in day to day operations. If an implementation plan is not available or ready to be included in the plan some interim guidance should be provided.
- *Performance Measures* – this section should discuss how individual goals and objectives are tracked, what data and information will be used to understand how the organization is achieving their state mission or vision.
- Optional: *Design Guidance* – because pedestrian plans are planning type projects they may not necessarily need to include design guidance. As described previously a number of plans include design guidance to act as a singular resource for both policy makers and designers. Therefor this paper considers this section optional as needed.

Other Plan Considerations

Because each planning process produces context specific products there is no one proper length or style in which these plan elements should be defined. Length was not found to be correlative to quality, for example, Alabama's Bicycle and Pedestrian Plan lacked goals & objectives, a proper, vision statement and performance measures. The use of graphics, tables, quotes, letters of support and other data is helpful in providing a more accessible, easily understandable plan. In some examples, those plans that contain a variety of graphics were more likely to be accepted by the public over those documents that were highly technical. As a result of these considerations this paper believes the planning professional should exercise their own discretion in determining the formatting, use of graphics, the length and other features of the plan.

In addition, planners should recognize that the while the plan represents a single point in time, it is also a continuous policy document that influences other agency decisions. For that reason, performance measures make up an important point of feedback for updating and revising plans that have already been adopted.

CONCLUSION

There is significant variability in the practices of pedestrian planning efforts across the United States in state departments of transportation. There is no one standard for how individual pedestrian plans should look, the elements or components that each plan contains and the overarching issues that a plan should address. This research has identified several key trends and identified the key elements that are present in nearly half of the nation's bicycle and pedestrian plans. This paper has provided a preliminary discussion in the area of determining the quality of individual published plans and how practitioners can improve pedestrian plans to ensure that the public needs are being addressed. This paper has utilized similar standard urban planning approaches to analyzing and discussing plan qualities and provides an academic discussion only.

Further research into determining standards for plan design and elements can help to better communicate broad national issues in transportation planning for pedestrians. As this research has shown there are similarities in the design, elements and concepts within statewide pedestrian plans.

REFERENCES

American Planning Association. "Complete Streets Resources ." 2014. https://www.planning.org/research/streets/resources.htm (accessed 2014).

Berke, Philip, and Maria Conroy . "Are We Planning for Sustainable Development?" *Journal of the American Planning Association* , 2000: 21-23.

Biton, Anna, David Daddio, and James Andrew. *Statewide Pedestrian and Bicycle Planning Handbook.* Government Policy Guideance, Cambridge: John A Volpe National Transportation Systems Center, 2014.

Evenson, K R, S B Satinsky, D A Rodriguez, and S A Aytur. "Exploring a Public Health Perspective on Pedestrian Planning." *Health Promotion Practice*, 2012: 204-213.

Fruin, John. *Pedestrian Planning and Design.* Metro Association of Urban Designers and Environmental Planners, 1971.

Moudon, Anne, Paul Hess, Mary Snyder, and Kiril Stanilov. "Effects of Site Design on Pedestrian Travel in Mixed-Use, Medium-Density Environments." *Transportation Research Board Record 1578*, 1997: 48-55.

National Complete Streets Coalition. "Complete Streets." *Smart Growth America.* 2014. http://www.smartgrowthamerica.org/complete-streets.

Schneider, R J, R M Ryznar, and A J Khattak. "An Accident Waiting to Happen: A Spatial Approach to Proactive Pedestrian Planning." *Accident Analysis & Prevention*, 2002.

Untermann, R.K. Accomodating the Pedestrian: Adapting Towns and Neighborhoods for Walking and Bicycling. Van Nostrand Reinhold, 1984.

Appendix A. Data Table

Agency	Safety	Roadway	Health	Prepared Solely by Consul	Vision Statement	Funding	Goals & Objecti	Year	Design Guidelir	Length of Plan (in pa	Executive Summary	Performance Measu
Alabama Department of Transportation	X	X		No	rpose statement no direct vis	Briefly mentioned	No	2010	Yes, Extensive	132	Yes	No
Alaska DOT (ALDOT)	X	X		No	ation system that affords use	called out in own se	Yes	1995	Yes, Extensive	54	Yes	Yes
Arizona Department of Transportation (ADOT)	X	X	X	Yes	fortably, and safely walk or bi	ed in Goals and Obj	ific goals related to per	2013	No	101	Yes	Yes
Arkansas State Highway and Transportation Department	X	X		No	rpose statement no direct vis	called out in own se	Goals, no objectives	1998	Yes, Minimal	38	Yes	No
Colorado Department of Transportation (CDOT)	X	X	X	Yes	ure projects and promotional	programs, to help ac	Yes	2012	No	79	Yes	Yes
Connecticut Department of Transportation (CTDOT)	X	X		Yes	ecticut by providing for the s	called out in own se	Yes	2009	No	Multisection	Yes	Yes
Delaware Department of Transportation (DelDOT)	X	X	X	Yes	In Phase 2	Briefly mentioned	Yes	2007	No	71	Yes	No
District of Columbia Department of Transportation (DDOT)	X	X	X	Yes	Yes	Briefly mentioned	Yes	2009	Yes, Minimal	123	Yes	Yes
Florida Department of Transportation	X	X		Yes	rpose statement no direct vis	Briefly mentioned	Yes	1999	Yes, Extensive	200	No	No
Georgia Department of Transportation	X	X		No	n where walking and bicyclir	Briefly mentioned	Yes	2007	Yes, Minimal	40	No	Yes
Hawaii Department of Transportation (HiDOT)	X	X	X	No	ic and social sustainability; f	called out in own se	Yes	2013	Yes, Minimal	322	Yes	Yes
Idaho Department of Transportation	X			No	Idaho will become a place w	Briefly mentioned	Yes	1995	Yes, Minimal	39	No	No
Kansas Department of Transportation	X	X		No	rpose statement no direct vis	called out in own se	Yes	1995	No	51	Yes	No
Maryland Department of Transportation	X	X	X	No	alth. Our transportation system will be designed to encourage walking a			2002	No	66	Yes	Yes
New Hampshire Department of Transportation	X	X		No	recognizes, supports and encourges bicycling a		yes	2000	Yes, Minimal	42	yes	No
New Jersey	X	X		Yes	tate where people choose to	Briefly mentioned	Yes	2004	Yes, Minimal	51	Yes	Yes
New York State Department of Transportation	X	X		No	Mission to make NY State a place where walking		Yes	1997	No	45	Yes	No
North Carolina DOT (NCDOT)	X	X	X	No	is a place that incoporates v	called out in own se	Yes	2013	Yes, Extensive	264	Yes	Yes
Oregon Department of Transportation (ODOT)	X	X	X	No	fortable and convenient plac	Briefly mentioned	Yes	1995	Yes, Extensive	267	Yes	Yes
Pennsylvania Department of Transportation (PennDOT)	X	X		No	th confidence, safety and security in every comm		Yes, Minimal	2007	No	16	No	No
Tennessee Department of Transportation (TDD)			X	No	way and pedestrian networks enhance the quality		Yes	2005	Yes, Minimal	212	Yes	No
Vermont Agency of Transportation (VTrans)	X	X	X	Yes	The State of Vermont has	Briefly mentioned	Yes	2008	No	70	Yes	Yes
Washington State Department of Transportation	X	X		No	rpose statement no direct vis	called out in own se	Yes	2008	Yes, Minimal	52	Yes	Yes
Wisconsin Department of Transportation (WisDOT)	X			No	rpose statement no direct vis	called out in own se	Yes	2002	Yes, Minimal	143	Yes	Yes
Wyoming Department of Transportation Systems	X			No	rpose statement no direct vis	called out in own se	Yes	2002	Yes, Minimal	60	No	No

Appendix B. List of Statewide Pedestrian Plans Analyzed or Referenced

#	AGENCY/DEPARTMENT OF TRANSPORTATION	NAME OF PLAN AND YEAR
1	Alabama Department of Transportation	Alabama Department of Transportation Bicycle and Pedestrian Plan, 2010
2	Alaska DOT (ALDOT)	Alaska Bicycle and Pedestrian Plan, 1995
3	Arizona Department of Transportation (ADOT)	ADOT Statewide Bicycle and Pedestrian Plan Update, 2013
4	Arkansas State Highway and Transportation Department	Arkansas State Bicycle and Pedestrian Transportation Plan, 1998
5	Colorado Department of Transportation (CDOT)	Statewide Bicycle and Pedestrian Plan, 2012
6	Connecticut Department of Transportation (CTDOT)	Connecticut Statewide Bicycle and Pedestrian Transportation Plan, 2009
7	Delaware Department of Transportation (DelDOT)	Delaware Statewide Pedestrian Action Plan: Phase 1: Policy and Analysis Document, 2007
8	District of Columbia Department of Transportation (DDOT)	Pedestrian Master Plan, 2009
9	Florida Department of Transportation	Florida: Pedestrian Planning and Design Handbook
10	Georgia Department of Transportation	Pedestrian & Streetscape Guide, 2003
11	Hawaii Department of Transportation (HiDOT)	Statewide Pedestrian Master Plan, May 2013
12	Idaho Department of Transportation	Idaho Bicycle and Pedestrian Transportation Plan, 1995
13	Kansas Department of Transportation	Kansas Bicycle and Pedestrian Transportation Plan, 1995
14	Maryland Department of Transportation	Twenty Year Bicycle & Pedestrian Access Master Plan, 2002
15	New Hampshire Department of Transportation	New Hampshire Statewide Bicycle and Pedestrian Plan, 2000
16	New Jersey	New Jersey Bicycle and Pedestrian Master Plan
17	New York State Department of Transportation	The New York State Bicycle and Pedestrian Plan, 1997
18	North Carolina DOT (NCDOT)	Walk Bike NC: North Carolina Statewide Pedestrian and Bicycle Plan, 2013
19	Oregon Department of Transportation (ODOT)	Oregon Bicycle and Pedestrian Plan, 1995
20	Pennsylvania Department of Transportation (PennDOT)	Bicycle/Pedestrian Master Plan, 2007
21	Tennessee Department of Transportation (TOD)	Bicycle and Pedestrian Plan, 2005
22	Vermont Agency of Transportation (VTrans)	Vermont Pedestrian and Bicycle Policy Plan, 2008
23	Washington State Department of Transportation (WSDOT)	Washington State Bicycle Facilities and Pedestrian Walkways Plan, 2008-2027
24	Wisconsin Department of Transportation (WisDOT)	Wisconsin Pedestrian Policy Plan, 2001-2020
25	Wyoming Department of Transportation Systems Planning	Wyoming Bicycle and Pedestrian Transportation Plan, 2002