

Livability in State Departments of Transportation

by

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ABSTRACT

The term “livability,” as it relates to transportation, is not well defined at the state level. The nationwide discussion of livability increased with the creation of a national level, joint Interagency Partnership for Sustainable Communities between the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development, and the Environmental Protection Agency. This initiative has identified six principles of livability (US HUD, USDOT, US EPA, 2009), including: 1) Provide more transportation choices; 2) Promote equitable, affordable housing; 3) Enhance economic competitiveness; 4) Support existing communities; 5) Coordinate policies and leverage investment; and 6) Value communities and neighborhoods. The goal of this project was to determine if State DOTs had defined “livability,” and if so, are they incorporating it in their policies, procedures, and projects in a meaningful way.

Researchers reviewed the websites of 51 State DOTs, including the District of Columbia, to learn if the DOT has a definition of “livability” or “livable community.” If a definition of livability was found, then these sources (i.e. website, literature) were also reviewed for information on how the definition and livability principles are being implemented. In addition, if a definition of livability was found and information was found on how the State DOT is implementing livability principles, researchers also reviewed and searched each website to learn whether or not progress on implementing livability principles and goals is being tracked or measured.

Researchers found a definition of “livability” or “livable community” for about half of State DOTs (28 of 51, including the District of Columbia). The most common theme that ran throughout most of the livability definitions was public health and safety. This was followed closely by the theme of economic development and access to good jobs, with definitions including related wording. About half of the livability definitions included a reference to providing transportation options. All State DOTs that had a definition of livability had some means of implementing it. However, few, if any, State DOTs have livability-specific programs or advisory councils. Rather, livability is incorporated, and in some cases, made a priority through other initiatives and projects. Of the 28 State DOTs that were found to both have definitions of “livability” and be implementing it in some manner, four have performance measures either already in use or being developed. Livability appears to be an all-encompassing and integral part of all processes in some DOTs, while playing only a minor role in others. For livability to truly be implemented, it seems State DOTs need to make livability more than a goal; they need to make livability a mindset.

1. INTRODUCTION

Webster’s Dictionary broadly defines “livability” as “suitability for human living” (Merriam-Webster.com, 2016), but what does this term mean as it relates to states or individual communities, and specifically to transportation?

Indeed, there is no “one size fits all” definition of livability; it should vary by state and even by community to meet local livability ideals. And the term livability, as it relates to transportation, is not well defined. However, federal agencies can and do play a role in defining and cultivating livability.

Several previous nation-wide efforts and initiatives have had goals that align with livability. For example, context-sensitive solutions, new urbanism, complete streets, and walkable communities are all initiatives that embody at least some of the ideas behind livability. Historically, livability principles were being promoted as far back as 1929 by New-York-based social planner Clarence Perry who introduced “neighborhood units” as a part of the 1929 Regional Plan of New York. His plan featured a walkable community with centrally located public amenities within a half mile radius (Hoch, et al. 2000).

The nation-wide discussion of livability increased with the creation of a national level, joint Interagency Partnership for Sustainable Communities between the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development and the Environmental Protection Agency. This initiative has identified six principles of livability (US HUD, USDOT, US EPA, 2009):

- **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers as well as expanded business access to markets.
- **Support existing communities.** Target federal funding toward existing communities through such strategies as transit-oriented, mixed-use development, and land recycling to increase community revitalization, improve the efficiency of public works investments, and safeguard rural landscapes.
- **Coordinate policies and leverage investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

In a previous study (McGowen et al., 2012) designed to determine the meaning of livability for Montana and the role of transportation, officials from six other State DOTs were interviewed. None had a definition of livability, though three were working toward setting a definition. It is likely that many more states did not have definitions at that time.

The goal of this project was to determine if State DOTs had defined “livability,” and if so, are they incorporating it in their policies, procedures, and projects in a meaningful way. To achieve this goal, a number of tasks were completed, beginning with determining if State DOTs have a definition of livability, as it relates to transportation.

For the DOTs that have a definition:

- Ascertain and describe the commonalities among the definitions.
- Understand how the definition is being implemented.

For the DOTs that have a definition and are implementing livability principles:

- Describe the commonalities among states in how livability principles are implemented.
- Learn whether or not progress is being tracked or measured.

2. METHODOLOGY

2.1. State DOT Website Review

Researchers reviewed the websites of 51 State DOTs, including the District of Columbia, to learn if the DOT has a definition of “livability” or “livable community.” If a definition was not found, researchers did searches to learn if each State DOT defines “sustainability” or “sustainable.” If so, this definition was reviewed to see if it relates to livability or not. In addition to the main website text, researchers searched for literature linked to the website and reviewed plans and other appropriate documents.

If a definition of livability was found, then these sources (i.e. website, literature) were also reviewed for information on how the definition and livability principles are being implemented. In addition, if a definition of livability was found and information was found on how the State DOT is implementing livability principles, researchers also reviewed and searched each website to learn whether or not progress on implementing livability principles and goals is being tracked or measured.

In some cases, the search function on the State DOT website obviously was not yielding the desired results. For example, the search function may have returned an error message, or was only yielding results directly from the website and not associated documents. In these cases, either a Google search was done, using terms such as “livability Oklahoma Department of Transportation” or “livable Oklahoma Department of Transportation,” or a Google search that only searched the State DOT website was available in some cases. In addition, the website itself was searched “manually.”

2.2. Summarize Findings

In the final list of definitions, only those that were found on the State DOT website or in documents from the DOT were included. Some of these may include definitions very similar to federal or other definitions, but were presented as the definition used by the state. Alternatively, definitions found in documents such as Tribal Transportation documents that were linked to the State DOT website but were not specifically associated with or funded by the DOT were not included.

Researchers compared all definitions of livability found during the website review. Similarities among definitions were analyzed qualitatively, as well as with some basic summary statistics. Researchers also compared definitions to federal or other national-level definitions. Similarities in how DOTs implement livability principles were qualitatively analyzed, and information on whether or not State DOTs are tracking progress toward livability is presented.

3. RESULTS

The results of research such as this study are, by nature, subjective. However, for ease of interpretation and sharing results with the reader, the authors have summarized the results with basic statistics (i.e. percentages). Individual State DOT livability definitions collected from this research are provided in Appendix A.

In addition, it is important to note that while every reasonable effort was made to find definitions, it is possible that the results presented are missing definitions from some State DOTs, either because the definition is not available online or because researchers were unable to locate it online.

Alternatively, researchers assumed that definitions found online and in State DOT documents are definitions embraced by the DOT, unless it was otherwise noted with language such as “for the purposes of this memo....”

3.1. Definitions of “Livability”

Researchers found a definition of “livability” or “livable community” (hereafter, both will be referred to as “livability”) for almost half (25) of 51 State DOTs. Three (6%) that did not have livability definition had a definition of “sustainability” or “sustainable” (hereafter, both will also be referred to as “livability”) that related to livability. Forty-five percent (23 of 51) did not have a definition of livability.

It is interesting to note that of the 28 total for which definitions of livability were found, only two DOTs, the District of Columbia and Oregon have the definition on their website. All other definitions were found in State DOT documents.

3.1.1. Definition Sources

Some DOTs adapted or even adopted definitions from other sources. Five used the same or very similar language to the definition used by the FHWA, “Livability in transportation is about leveraging the quality, location, and type of transportation facilities and services available to help achieve broader community goals” (FHWA, 2011).

The New Mexico DOT uses the definition also used by the American Institute of Architects, “...a livable community recognizes its own unique identity and places a high value on the planning processes that help manage growth and change to maintain and enhance its community character” (FHWA, 2011; AIA, 2005).

The Massachusetts DOT defines livability as, “the use of transportation investments to improve the standard of living, the environment, and quality of life for all communities. Livable communities are places where transportation, housing, and commercial development investments have been coordinated so that people have access to adequate, affordable and environmentally sustainable travel options.” The first part of this definition appears to be based on the AASHTO definition, “use transportation investments to improve the standard of living, the environment, and quality of life for all communities, rural, suburban, and urban... providing more transportation choices for families, by walking, biking, and transit...” (AASHTO, 2010; FHWA, 2011). The other part is based on the definition found in the U.S. DOT Strategic Plan: FY2010-FY2015: “Livable communities are places where transportation, housing and commercial development investments have been coordinated so that people have access to adequate, affordable and environmentally sustainable travel options” (FHWA, 2011).

3.1.2. Definition Themes

The most common theme that ran throughout most (57%) of the livability definitions was public health and safety. This includes references to recreational access and to safety (e.g., safe streets, maintained road network). This was followed closely by the theme of economic development and access to good jobs, with 54% of definitions including related wording.

Half of the livability definitions included a reference to providing transportation options. Some definitions used the phrase “transportation options” or “transportation choices,” while others referred to “multimodal” options. Others referred to one or more specific transportation modes, such as biking, walking, or transit. Half of the definitions also noted access to quality and/or affordable housing or neighborhoods as being an integral part of livability.

Sustainability, the environment, and/or ecological quality was included in 46% of definitions. However, it should be noted that this includes the three definitions of sustainability that were analyzed when a livability definition was not available. If the sustainability definitions are taken out of the analysis, then 10 (40%) of the remaining 25 definitions include sustainability, the environment and/or ecological quality.

Ensuring access to quality education is included in ten (36%) of the definitions found, and a good quality of life or good living conditions is in nine (32%) of the definitions. Eight (29%) of the definitions include social equity, civic engagement, and/or positive social interactions, including positive race relations.

Twenty-one percent of the definitions found incorporated the idea of a desirable or attractive place to live as being a part of livability, and unique community values, character, and/or identity was included in 21% of the definitions found.

3.2. Implementation of Livability Definitions

Few, if any, State DOTs had livability-specific programs or advisory councils. However, all State DOTs with a definition of livability had some means of implementation. Livability is incorporated, and in some cases, made a priority, through other initiatives and projects.

States implemented livability with policies, plans, projects, advisory committees, or investments that maintained or enhanced public health and safety and multimodal transportation. For example, many State DOTs specify that livability considerations are incorporated with Complete Streets policies, Context-Sensitive Solutions and/or Safe Routes to School programs. In addition, some DOTs have advisory boards or planning committees that focus on other initiatives (e.g. sustainability, bicycle and pedestrian safety) but have a goal of creating livable communities. Other examples include specific projects, such as geometric adjustments for intersection safety, or through the planning process, in which public health and safety are used with the general concept of livability as priority ranking criteria.

3.3. Measuring Implementation of Livability Principles

Of the 28 State DOTs that were found to both have definitions of “livability” and be implementing it in some manner, four have performance measures either already in use or that are being developed.

The District of Columbia DOT (DDOT) performed three livability studies in different areas. Each report emphasized the need for performance measures. Two of the studies focused primarily on quantitative measures, such as reduction in vehicle miles traveled, job creation and growth, bicycle crash frequency, and traffic volume on key streets. One study put equal emphasis on quantitative and qualitative performance measures:

"For a project to be focused and effective in meeting state project goals and objectives, it is essential to measure performance of the process and the products that will span a continuum from day one to time horizons that will extend out to years in the future. And since the essence of livability involves fulfilling the expectations of individuals, families and communities, the measurement process must include gauging the perceptions of people as well as the performance of physical elements. This means qualitative measures based upon survey research should play as important a role as quantitative measures based upon field measurements (DDOT and PB, 2011)."

The Massachusetts DOT is removing the current Monsignor William J. Casey Overpass and replacing it as part of the Casey Arborway Project. Several livability principles are being incorporated into the project. For example, bike and pedestrian facilities are being enhanced, and permeable pavers are being used to help water newly planted trees within the project area. "During the planning phase of the Casey Arborway Project, MassDOT advanced a new method of evaluating the design to include an assessment of mobility and livability benefits. The Measures of Evaluation (MOEs) that were subsequently developed broke new ground for identifying, defining, and measuring livability principles based on the communities' interest in integrating holistic sustainable concepts into the designs" (MassDOT, 2012).

The Washington State DOT has a Livable Communities Policy that defines "livable communities" and sets forth policy, strategy, and performance measures. Performance is measured by posing this question: "What is the degree to which local governments are achieving the vision in their comprehensive plans, specifically the effective allocation of land use and the achievement of density goals?" And communities are surveyed "to assess their level of satisfaction with the creation and implementation of community based designs for transportation projects" every other year (WSDOT, 2010).

In their Strategic Management Plan, the California DOT (Caltrans) outlines "a clear direction for meeting statewide objectives" and "provides performance measures that monitor success" for various goals, including their livability goal. "Some performance measures are in development..." "These measures will consider factors such as multimodal proximity to jobs and housing, air and noise pollution from the transportation system, gross state and federal product output, and climate change impacts." CalTrans is also working toward having a livability score in use by December, 2016 (Caltrans, 2015a).

4. CONCLUSIONS

The goal of this project was to determine if the 51 State DOTs, including the District of Columbia DOT, had defined “livability,” and if so, are they incorporating it in to their policies, procedures, and projects in a meaningful way. Though there is no “one-size fits all” definition of livability, there are several goals that were found in many State DOT definitions, including public health and safety, economic development and access to good jobs, providing transportation options, access to quality affordable housing/neighborhoods, sustainability, the environment, and/or ecological quality. These goals generally align and overlap with the six livability principles that the Interagency Partnership for Sustainable Communities between the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development and the Environmental Protection Agency identified (US HUD, USDOT, US EPA, 2009):

- Provide more transportation choices
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate policies and leverage investment
- Value communities and neighborhoods

Livability is an overarching concept that ties many of these goals together with transportation, including motorized and non-motorized options. It makes sense that livability goals cross over with many other tasks, policies, and plans that DOTs have in place and carry out each day. This is seen in the definitions that State DOTs use, as well as in how it is implemented. It is difficult to implement one livability principle separate from another. For example, biking and walking addresses public health as well as environmental concerns; reducing motor-vehicle congestion may include encouraging biking, walking, and/or public transit, while also reducing emissions and directly or indirectly increasing public health and safety by cleaner air, reduced chance of accidents, or even increased time for recreation when people are spending less time commuting.

DDOT aptly verbalizes this sentiment that many DOTs seem to share, whether or not it is stated that such actions are directly related to livability.

"What is the Goal? Livability sounds like a buzzword; but it is a big idea. DDOT is taking up the challenge and making it a goal to translate that idea into actual actions. Outcomes will be aimed at on the ground changes such as enhanced pedestrian crossings, more accessible bus stops, geometric adjustments that support intersection safety, increased green spaces, attractive streetscapes, signage for better driver information, updates to traffic signal timing, and speed controls in sensitive areas.

DDOT continues to work toward the livability of the District by:

- Making communities cleaner, healthier, more affordable, and more attractive to businesses.
- Providing more transportation options, enhancing safety, and lowering transportation costs.

- Protecting and preserving habitats and historic design.
- Helping to address the challenges of climate change” (DDOT, 2016).

Because livability is such an overarching concept, and because it is implemented in a variety of different ways, under a variety of initiatives, policies, and projects, it may be difficult to measure directly. However, several DOTs are measuring performance through community surveys as well as with quantitative measures of specific goals, such as reduction in vehicle miles traveled and traffic volume on key streets.

Though all of the State DOTs that had definitions are implementing it in some manner, livability appears to be an all-encompassing and integral part of all processes in some DOTs, while playing only a minor role in others. For livability to truly be implemented, State DOTs need to make livability more than a goal; they need to make livability a mindset.

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6. APPENDIX A

Individual State DOT livability definitions collected from this research are provided below in Table 1.

Table 1: Individual State DOT livability definitions collected from this research.

State	Livability Definition
Alabama	None
Alaska	"...connecting the quality and location of transportation facilities with broader community-based values such as access to good jobs, affordable housing, and transportation choices." (Alaska DOT&PF, 2012)
Arizona	None
Arkansas	None
California	"Livability, a component of sustainability, describes the degree to which the environment improves human quality of life. Transportation facilities improve livability when they support accessible multimodal travel options, economic development, ecological quality, social equity, public health and safety, and vibrant public spaces which encourage positive social interactions." (Caltrans, 2015b)
Colorado	1.) "Livability in transportation 'is about using the quality, location, and type of transportation facilities and services available to help achieve broader community goals such as access to good jobs, affordable housing, quality schools, and safe streets,'" (CDOT, 2011). 2.) "Livability concepts refer to the synergy between transportation, land use and the environment." (Felsburg, Holt, & Ullevig, 2011)
Connecticut	"...Livable Communities, meaning that neighborhoods are physically and socially more desirable places to live." (Dewberry, Earth Tech, Inc. and Fitzgerald & Halliday, Inc., 2009)
Delaware	None
District of Columbia	"Livability is a term that refers to community quality of life as experienced by the people who live, work, and recreate there. Livability recognizes that strong communities rely on the interplay among key development areas including transportation, public health, housing, cultural resources, and the natural environment." (DDOT, 2016)

State	Livability Definition
Florida	1.) "The combined factors which together contribute to the unique context of a community's quality of life - including the built and natural environments, economic prosperity, social stability and equity, educational opportunity, and cultural, entertainment, and recreational choices." (FDOT, 2010). 2.) "Livability encompasses those elements of home and neighborhood that contribute to welfare, health, convenience, mobility and recreation." (FDOT, 2014). 3.) "Livable Communities - Neighborhoods, communities or regions with compact, multidimensional land use patterns that ensure a mix of uses, minimize the impact of cars, and promotes walking, bicycling and transit access to employment, education, recreation, entertainment, shopping and services." (FDOT, 2014)
Georgia	"Livability can be thought of as a combination of various attributes which define how attractive a given place is to live. The attributes associated with livability include clean air and water, safe streets, positive race relations, affordable homes, quality public schools, greenery and open space, uncongested roads and low taxes, among other things." (GDOT, 2015)
Hawaii	None
Idaho	None
Illinois	"Sustainable transportation may be defined as transportation impacts that are so low that they no longer provide reason for concern about people's health or the natural environment. In addition, sustainable transportation strategies help achieve the planning objectives of improving the economic and social well-being." (DiJohn et al., 2010)
Indiana	None
Iowa	"A livable community has a well-connected transportation network with many transportation choices and better facilities, which in turn provides access to quality jobs, housing, schools and other amenities." (Iowa DOT, 2012)
Kansas	None
Kentucky	None
Louisiana	None
Maine	None

State	Livability Definition
Maryland	"Improved 'quality of life' or livability as determined by perceptions of street safety, walkability, and quality of retail, services, and jobs available at the community level." (MDOT, 2002)
Massachusetts	"The use of transportation investments to improve the standard of living, the environment, and quality of life for all communities. Livable communities are places where transportation, housing and commercial development investments have been coordinated so that people have access to adequate, affordable and environmentally sustainable travel options." (MassDOT, 2011)
Michigan	None
Minnesota	None
Mississippi	"Livability is about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, and safer streets and roads." (MDOT, 2015)
Missouri	"Sustainability is the act of balancing the environmental, community, and economic needs of the man-made and natural environments in which we live for present and future generations." (Sun et al., 2009)
Montana	<i>proposed definition:</i> "Provide a transportation system that emphasizes a safe, maintained road network; allows for multimodal transportation opportunities; and considers local community values." (McGowen et al., 2012)
Nebraska	None
Nevada	"...Livability is about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets." (NDOT, 2013)
New Hampshire	"...efforts that tie the quality and location of transportation facilities to broader opportunities such as access to well-paying jobs, affordable housing, quality schools and safe streets." (NHDOT, 2010)
New Jersey	None
New Mexico	"A livable community recognizes its own unique identity and places a high value on the planning processes that help manage growth and change to maintain and enhance its community character." (FHWA, 2011; AIA, 2005)

State	Livability Definition
New York	1.) "...livable communities, those that support more compact development and are more oriented to walking, bicycling and transit use." (NYSDOT, 2009). 2.) "having choices other than driving" (NYSDOT, 2013)
North Carolina	"Livable communities balance travel between modes by accommodating pedestrians and cyclists for both recreational and utilitarian trips." (Kimley-Horn and Associates, Inc., 2011)
North Dakota	None
Ohio	None
Oklahoma	None
Oregon	"ODOT's programs support economically vibrant and livable communities, where people have a variety of transportation choices and are better connected to essential services." (ODOT, 2016)
Pennsylvania	"Partnering to build great communities for future generations of Pennsylvanians by linking transportation investments and land use planning and decision-making." (PennDOT, 2010)
Rhode Island	None
South Carolina	None
South Dakota	"Although the definition and ideas of sustainability varies from one person to another, the FAA's Sustainable Master Plan Pilot Program identifies sustainable actions as those that: -Reduce environmental impacts -Help maintain high and stable levels of economic growth -Help achieve social progress through a broad set of actions that ensure organizational goals are achieved in a way that is consistent with the needs and values of the local community" (SDDOT, 2010)
Tennessee	None
Texas	None
Utah	None
Vermont	"Active community environments also share the characteristics of livable communities - cities, towns, and villages where it is as easy to travel by foot, bicycle and transit as by motor vehicle." (NCBW, 2002)

State	Livability Definition
Virginia	"Livable Communities - enhancement of living conditions for communities through transportation policies that provide multi-modal options including non-motorized modes." (VDOT, 2016)
Washington	1.) "'Livability' is a concept that conveys an image of a future that is enduring, vibrant, responsible (civic), and offers a desirable quality of life." 2.) <i>proposed definition</i> : "Livable Communities provide & promote civic engagement and a sense of place through safe, sustainable choices for a variety of elements that include housing, transportation, education, cultural diversity and enrichment and recreation." (WSDOT, 2010)
West Virginia	"Local community livability can be thought of as a combination of various attributes which define how attractive a given place is to live. Attributes associated with livability can include clean air and water, safe streets, affordable housing, quality schools, open space, uncongested roads, low taxes, etc." (WV DOT, 2013)
Wisconsin	"U.S. Department of Transportation Secretary Ray LaHood defined a livable community as 'a community where you can take kids to school, go to work, see a doctor, go to the grocery store, have dinner and a movie, and play with your kids in a park, all without having to get into a car.' In general, livability is defined as a combination of attributes that define how attractive a given place is to live. These attributes typically include clean air and water, safe streets, positive race relations, affordable homes, quality public schools, greenery and open space, un-congested roads and low taxes." (WisDOT, 2014)
Wyoming	"Livability is a combination of attributes that determine how attractive a certain place is to live. These attributes try to tie quality and location of transportation facilities to access to broader opportunities such as good jobs, affordable housing, quality schools, safe streets, green space, clean air and water, and other similar characteristics." (WYDOT, 2015)