

## How to address land use and context

### Why?

Transportation agencies do not and should not play the leading role in land use decisions, but they cannot ignore local land use and development decisions either or dismiss them completely as someone else's responsibility. Land use and development has significant ramifications for the costs to deliver and maintain the state's transportation system. If local land development is not managed carefully along a corridor, it can lead to increased congestion due to more driveways and access points for local businesses, auto-oriented land uses that require driving even for short trips, and a poorly-connected network of parallel local streets to reduce demand on the state-owned arterial. This results in a "need" to expand state highways to accommodate additional traffic that could have been prevented. These types of transportation solutions for land use mistakes are both expensive and ineffective.

At the same time, state DOT investments have significant impacts on local land development. For example, it is generally cheaper for DOTs to purchase extra right-of-way now if they think they may need to expand the facility someday in the future. Yet doing so leads to a loss in development potential within the right-of-way. It also likely leads to a change in the development potential of the adjacent land because different land uses will make sense next to wide highway right-of-way compared to a narrower road. Buildings will need to be set back further from the road, development will be more car-oriented, and this will likely induce more vehicle trips over time.



A narrow main street in Bisbee, AZ on the left and a slightly wider road in Golden, CO in the center match their context and support businesses. On the right, a much wider road—NH State Route 28—serves almost exclusively cars and buildings are set back from the road. (All images from Flickr, left to right: Mr.TinDC; MomentsForZen; Doug Kerr)

The ways state departments of transportation design roads should evolve to meet today's economic and funding realities. In many cases, the objective of moving vehicles through an area as quickly as possible is set as the primary goal but should not be and may even directly conflict with primary community goals like supporting local economic activity. Young workers are choosing to live in cities with vibrant neighborhoods that provide

access to a variety of transportation options, including transit.<sup>1</sup> Businesses across the country are responding by changing how they choose where to locate to attract and retain a talented workforce.<sup>2</sup> Building unique, walkable places with transportation choices has become paramount to remaining economically competitive. DOTs should be an active part of responding to this demand, but currently, they are often an obstacle.

The goal of the agencies and entities involved should be to openly address all of the goals of a transportation investment along with the role that land use decisions play in the performance of the transportation network and vice versa, foster an environment where state, regional, and local agency partners are discussing the tradeoffs between different objectives, and create accountability between land use and transportation decisions. This first requires acknowledging that land use and transportation decisions impact each other. It also requires acknowledging the importance of context; the traditional, oversimplified characterization of roads as either “urban” or “rural” is insufficient. Priorities will be different for a state-maintained roadway where it serves as a town main street compared to five miles away in a transitional commercial area outside of town; the design and operation of the road should reflect those differences.

## Tie state transportation funding to local land use decisions that mitigate vehicle demand

DOTs should encourage local land use decisions that do not undermine the state’s ability to invest limited transportation dollars effectively. They need to bring the relationship between land use and transportation into the open during decision-making. Local land use decisions that are likely to increase auto demand or slow traffic should be made in direct collaboration so that the state DOT can either ameliorate the impacts or make a decision with the locality to accept a lower level of service and promote other regional priorities.

Tying state funding to land use decisions can help create a positive feedback loop to ensure that state transportation investments and local land use decisions are all aiming toward the same goals. DOTs can reward those localities that harmonize their land use with the state’s transportation work by prioritizing those projects for funding while moving the projects of areas that do not to the bottom of the list. Including these priorities in a scoring process or giving a higher match to those that do this can also encourage coordination.

States can also use funding to reward localities that are using strategies to mitigate future travel demand rather than requiring the state to expand roads to accommodate it. Mitigation strategies can include a range of transportation demand management (TDM) approaches like improving the infrastructure for walking, biking, or transit; providing

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<sup>1</sup> Rockefeller Foundation. Access to Public Transportation a Top Criterion for Millennials When Deciding Where to Live, New Survey Shows. April 2014. [www.rockefellerfoundation.org/about-us/news-media/access-public-transportation-top/](http://www.rockefellerfoundation.org/about-us/news-media/access-public-transportation-top/)

<sup>2</sup> Smart Growth America. Core Values: Why American Companies Are Moving Downtown. June 2015. <https://smartgrowthamerica.org/resources/core-values-why-american-companies-are-moving-downtown/>

complementary land uses that minimize the need for new trips; subsidizing other forms of mobility like bike sharing or car sharing; and providing first-and last-mile connections to high-capacity transit like a regular shuttle. These strategies are often significantly less expensive over the long term than expanding roadways to increase capacity.

DOTs can reward those that participate in breaking down barriers between state agencies and local governments and ensure decision making across all public entities is working toward a common goal—providing a safe, efficient transportation system, inclusive of surrounding land uses. Prioritizing projects that already coordinate across levels of government and consider land use is the best way to accomplish this. Simply directing partners to do this is ineffective, especially since changing land use patterns and rules can be politically challenging for local leaders.

Building relationships with stakeholders and other actors such as school districts, developers, universities and other institutions that are making major land use decisions outside of a DOT's processes can help make this happen.

### **Example: Mitigating future demand through TDM strategies in California:**

A number of cities in California are leading the country in shifting toward an approach to land use decisions that actively mitigate future vehicle travel demand. Prompted by California state law SB 743, these cities are making changes to the review process for new development proposals to incentivize traffic reduction rather than requiring developers to expand the transportation network to accommodate the traffic their development would otherwise generate. The new approaches these cities are taking reward developers for using strategies from a menu of TDM approaches. This makes developers partners in an effort to produce people-friendly neighborhoods.<sup>3</sup>

## **Develop guidance on what localities should ask of developers**

States can also develop simple guidance or checklists to help lower-capacity localities make the right requests of developers and determine when they should and should not grant waivers. Some localities simply may not be aware of the impacts their land development decisions have on transportation demand over the long term, let alone the implications for the cost necessary to address the demand. States can make it easier for them by drawing a clear connection between poor development decisions and the state's inability to fund transportation projects to address them.

This could be framed as a checklist of key considerations or asks for developers to help ensure that the localities' future transportation projects can be successful in receiving support and investment from the state.

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<sup>3</sup> State Smart Transportation Initiative. Modernizing Mitigation: A Demand-Centered Approach. September 2018. <https://smartgrowthamerica.org/resources/modernizing-mitigation-a-demand-centered-approach/>

It could include guidance encouraging localities to put better zoning in place or stay firm on existing zoning requirements when negotiating with developers in areas such as:<sup>4</sup>

- Orienting buildings toward the street
- Keeping parking requirements low
- Creating a well-connected local street network
- Clustering development and including a mix of land uses
- Relaxing or replacing LOS standards in development approval
- Not building roads/lanes that are wider than necessary

## Create land use context classifications

Customizing transportation projects to the context of the surrounding community is a key component of Practical Solutions. State transportation agencies traditionally apply the same basic roadway design approach to all of their projects, whether the project is in a rural area, a small town main street, a transitioning or suburban area, or an urban downtown. Typical engineering standards are built around the objective of moving vehicles quickly through an area, and engineers generally default to using the maximum ends of the ranges in their design standards. This comes from embedded assumptions that faster is better, and wider lanes allow vehicles to travel safely at higher speeds. These standards were developed for a specific purpose when we were building the interstate and national highway system, but many states continue to apply them to all projects regardless of the context.

Some states have issued policies or directives requiring that staff should consider land use context during project development, but this rarely produces consistent changes to how projects are designed without further changes to the project development process and standards.

A growing number of states are addressing this by developing context classification systems that clearly define land use categories for staff to consider—such as rural, small town, suburban, urban, and urban core—and what types of design considerations and approaches are appropriate for each. This guidance is usually accompanied by pictures or visual depictions of each land use context category, as well as lists of characteristics to look for in the surrounding area. This might include specific features like block lengths, building density, building height and distance from the street, and whether the development is residential, commercial, industrial, or a mix.

Staff can then use the context classification guidance to make decisions about which strategies are a best fit for the identified need for investment and which specific design features are appropriate. For example, some states have included guidance saying that pedestrians and transit should be the highest priority modes of transportation in urban

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<sup>4</sup> Smart Growth America. Complete Streets In Central Florida. February 2017.  
<https://smartgrowthamerica.org/resources/complete-streets-central-florida/>

areas, and that narrower road and lane widths, pedestrian refuge islands, more frequent crossings, and other features should be considered.

### **Example: FDOT's context classifications**

As part of its Complete Streets Implementation initiative, FDOT has adopted eight context classifications to guide road design decisions. Under this new system, planners and engineers consider existing and future characteristics such as land uses, building configuration, and street connectivity to ensure that roads are designed for the right vehicle speeds, road users, and trip types. The classification system includes the following categories: natural, rural, rural town, suburban residential, suburban commercial, urban general, urban center, and urban core. FDOT's guidance also offers performance measures and indicators for FDOT decision-makers to use in determining the context classification for a road and identifying travel demand for different modes.<sup>5</sup>

### **Example: WSDOT context and modal accommodations**

WSDOT has developed a "Context and Modal Accommodation Report" to help project development teams think through which modes should be accommodated at what level on non-freeway state projects.<sup>6</sup> The report provides a structure for having conversations about and documenting discussions around tradeoffs during early project development. The worksheet establishes a suggested baseline for which modes should be prioritized based on the roadway type and land use context, and then provides a series of factors and questions to consider that could raise or lower the priority of each mode. WSDOT has also integrated this framework into the Practical Design section of the statewide design manual.<sup>7</sup>

### **Example: MnDOT Context Guidance**

While "context sensitive solutions" has been MnDOT's overarching design philosophy in policy since adopted by technical memorandum in 2000, MnDOT recognized that the land use contexts in its existing guidance (rural, urban, and sometimes suburban and small town) fell short of the breadth of real-life development settings around the state. To address this, MnDOT recently developed a thorough technical memorandum defining specific land use types staff should use in considering context.<sup>8</sup>

The new technical memorandum includes nine context types: natural, rural, rural crossroad, industrial/warehouse/port, suburban residential, suburban commercial, urban

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<sup>5</sup> Florida Department of Transportation. FDOT Context Classification. August 2017.

<https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/roadway/completestreets/files/fdot-context-classification.pdf>

<sup>6</sup> Washington State Department of Transportation. Context and Modal Accommodation Report; Context and Modal Accommodation Report Learner's Guide. <https://www.wsdot.wa.gov/planning/default.htm>

<sup>7</sup> Washington State Department of Transportation. Design Manual. <https://www.wsdot.wa.gov/Publications/Manuals/M22-01.htm>

<sup>8</sup> Minnesota Department of Transportation. Technical Memorandum: MnDOT Land Use Contexts: Types, Identification, and Use. June 2018. <http://dotapp7.dot.state.mn.us/edms/download?docId=2056227>

residential, urban commercial, and urban core. MnDOT's memorandum also provides a framework to identify each context type by evaluating surrounding land uses, buildings and structures, parking, and traffic, as well as a matrix with more detailed characteristics for each land use context.

## Develop context-based design standards

While defining context types or classifications is a great first step, it will have limited influence over how staff develop and design projects if they are still using a design manual or guidance that reflects a more traditional emphasis on expanding roads to reduce congestion and moving vehicles through an area as quickly as possible. States need a framework in place to encourage or require the consistent use of context in project decision-making with localities.

One key solution is to update roadway design standards to incorporate context types and provide different standards for different contexts. In more urban and town main street contexts, this should generally include lower acceptable levels of service, lower design speeds to improve the safety of other roadway users and create a more walkable environment, and narrower lane width and turn radii ranges. This is especially beneficial in places where design exceptions would be needed constantly and the design standard would seriously impede the community's goals and quality of life.

States can also work with localities to explicitly define development contexts in which the state will change its design standards as an area transitions. This can mean defining thresholds that will trigger changes in design standards and policies, particularly for urbanizing corridors. For example, a state could determine that if a suburban corridor surpasses a certain number of access points per mile, the DOT will design to a lower level of service for the road. The state would then need to clearly communicate these thresholds to localities. The goal should be to openly address the role that land use decisions play in the performance of the transportation network, foster an environment where state, regional, and local agency partners are discussing the tradeoffs between different objectives, and create accountability between land use and transportation decisions.

### **Example: Florida Design Manual**

In 2017, FDOT revised the FDOT Design Manual (previously referred to as the Plans Preparation Manual) to help transportation engineers and planners better consider community context when planning and designing state roads. For example, the updated FDOT Design Manual allows state engineers to design for lower speeds in more urban areas. The manual guides FDOT staff in picking the best road design for each of FDOT's eight context classifications and to make sure FDOT puts "the right road in the right place." It increases design flexibility and considerations for people walking, bicycling, using transit, and driving, as well as freight. To institutionalize context classification, FDOT now requires

its chief transportation planners in each district to approve the context classification of each project.

### **TDOT: Multimodal design guidance**

The Tennessee Department of Transportation developed a new Multimodal Project Scoping Manual<sup>9</sup> and added a Multimodal Design Chapter<sup>10</sup> to the state's Roadway Design Manual in spring 2018 to support the state's Multimodal Access Policy, which calls for encouraging safe access for users of all ages and abilities through the planning, design, construction, operation, and maintenance of the transportation network. These new resources provide detailed TDOT specific guidance on designing to make roads safe and comfortable for all modes of transportation including how to inform engineering judgment. For example, the Scoping Manual includes a matrix of roadway functional classifications and context classifications (Rural, Rural Town, Suburban, Urban, and Urban Core), and provides guidance on which modes of transportation should be given the greatest priority for each roadway type and context. It also provides visual examples of how to accommodate people walking and biking in various contexts, such as paved shoulders on rural highways.

Staff within TDOT's multimodal division provide feedback on project scopes at key stages in the project development process, and having these new resources has enabled staff to point to clear written guidance about which multimodal treatments are recommended in which contexts when they offer their input. This has already had an impact on the project scopes the multimodal division receives for review. Project teams have been able to use the additional clarity provided by the guidance to bring the right considerations into their projects upfront.

## **Evaluate the costs and benefits of acquiring right-of-way more comprehensively**

States need ways to bring considerations around purchasing right-of-way more directly into an assessments of costs and benefits. This means creating a process to directly evaluate the tradeoff between the costs of right-of-way now versus in the future, compared to the loss of developable land and the trips that will be generated when the road is expanded. States should seek to incorporate these factors into the analyses they conduct for highway expansion projects, particularly in suburban and urbanizing areas.

## **Provide technical assistance to localities**

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<sup>9</sup> Tennessee Department of Transportation. Multimodal Project Scoping Manual. April 2018. <https://www.tn.gov/content/dam/tn/tdot/multimodaltransportation/TDOT%20Multimodal%20Project%20Scoping%20Manual.pdf>

<sup>10</sup> Tennessee Department of Transportation. Roadway Design Guidelines. Retrieved December 2018. <https://www.tn.gov/tdot/roadway-design/design-standards/design-guidelines.html>

As states set expectations for the kinds of projects they will fund, they should also consider the limitations that smaller communities will face when trying to meet these requirements. Communities with small municipal staff and fewer resources could benefit from tools and support. States should provide education or technical assistance to localities on updating comprehensive plans or zoning codes, understanding the state's context classifications, transportation design standards and thresholds, and addressing relationship between development and transportation decisions.

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*The Governors' Institute on Community Design worked throughout 2017-2018 helping a small group of state departments of transportation question and assess the underlying assumptions that result in giant highway solutions for every transportation problem. This memo is part of a series about the states that are finding success through what's known as practical solutions, a way for transportation departments to meet changing demands and plan, design, construct, operate, and maintain context-sensitive transportation networks that work for all modes of travel.*

*The Governors' Institute on Community Design, a program of Smart Growth America, helps state leaders address economic development, housing, transportation, and other pressing issues that relate to how communities grow and develop.*

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