
# A Citizen's Guide to Better Streets

## HOW TO ENGAGE YOUR TRANSPORTATION AGENCY

Project *for* Public Spaces, Inc.

# A Citizen's Guide to Better Streets

PROJECT FOR PUBLIC SPACES, INC.

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## FOREWORD

We strongly believe that now is the time to focus on changing the way that transportation planning is being conducted in the United States! Not only does every community have a network of roads and streets, but people in just about every community we have worked with for the last 34 years, have experienced problems related to their streets—parents feeling that their children can not walk or bike safely to school, older adults becoming housebound and lonely when they no longer drive, obesity rates rising because people have fewer places to walk—these are all reasons why we need to influence the ways that decisions about roads are made. We need a new way of planning our cities that is different from the way it has been done over the last 50 years—a way that uses transportation as a way of supporting positive community development. And because transportation agencies almost always possess the largest public works budgets of any government agency they are potentially the most influential shapers of the American landscape and potential partners in creating better streets that result in more livable and walkable communities.

One of the main obstacles to change is that the transportation establishment has organized itself into a well structured, disciplined and cohesive profession, dedicated to delivering on its perceived mandate to provide Americans with a system of high speed and supposedly safe roads. The industry has managed to influence two generations of planners, politicians, developers, people in construction industries, special interest groups, and the public itself about how planning should be done to achieve these goals. There is a language and terminology, funding mechanisms, curriculum at universities, carefully articulated values and policies that have been institutionalized at a scale that has rarely been matched by any other industry.

On the other hand, Project for Public Spaces (PPS) has found, in our work with communities across the country, a passion by people everywhere for participating in making their communities more livable. The goal of this Citizens Guide is to help individual citizens, including volunteers from organizations, influence transportation decisions to improve communities – to create great streets and great communities!

**Fred Kent**
President
Project for Public Spaces, Inc.

## NOTE FROM THE AUTHOR

Throughout my 34-year career at the New Jersey Department of Transportation (NJDOT), I regularly interacted with the public. From the beginning, it always struck me how frustrated citizens could become by their inability to get what they wanted from their Department of Transportation (DOT) representatives. It also struck me how reluctant my DOT colleagues were to share information with members of the public. Their policy seemed to be "tell them and show them what we are obligated by law, but not a single word more." I was frequently told that we were supposed to figure out what is best for the public and if we revealed too much, it would invite problems. Yet in meeting after meeting, I was often impressed with how insightful most folks were, whether lawyers, blue-collar workers, PhDs or harried homemakers. All had one thing in common: they cared about their community, and they were mad as hell because the DOT had come to town, without warning, with plans to tear down their houses, or chop down all the trees in the neighborhood or widen a highway that would ruin their Main Street.

Over the years, I got myself into trouble here and there trying to help citizens get answers to their questions. On one such occasion, I was rebuked by the Department's Chief Engineer because I had told a Catholic priest how to get the DOT to properly minimize the noise from a new Interstate that was to be built right next to his elementary school. I always felt that someone should write a primer to help citizens interact collaboratively and productively with their DOT—not to undermine the efforts of my agency, but to promote a more democratic process.

This idea jelled in 2006 when my good friend and mentor Anne Canby asked me to present at a workshop in New Haven, Connecticut. She asked me to provide guidance to the attendees—mostly citizen advocates—on how to get better results out of their State DOTs. The presentation I prepared for that day was the inspiration for this guide.

My intent is to discuss not only technical matters, but also some common issues regarding human interaction. Over the years, I never had a problem taking the time to help anyone who called or met me and asked for help…except those individuals who started the conversation by calling me names. Chapter 9, therefore, outlines how to establish a relationship with your DOT staff because, after all, they are people too. The overall tone of my message is one of partnership and collaboration, and how to use those principles to reshape outcomes which work for everyone.

In the following chapters I discuss how to understand the technical and regulatory processes that shape how DOTs make decisions.

Finally, I have included several chapters about how you can influence your DOT to take advantage of the little known and largely untapped flexibility in roadway design that exists in transportation guidelines and manuals. I also offer details on understanding traffic modeling and congestion-performance measures used by the highway industry.

**Gary Toth**
Senior Associate
Project for Public Spaces, Inc.

If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places.

# Introduction

## *Empowering Citizens Who Are Passionate About Creating Better Communities*

Every city, town and neighborhood deserves great streets. However, in most cases, the transportation element has been separated from community planning, which means that community goals often take a backseat to transportation decisions that focus solely on the movement of the automobile.

And the process of getting better streets in communities can be slow and piecemeal unless the way that community and transportation planning have been conducted for the past 50 years is fundamentally changed. This process has to be turned around completely. To create a great community, the vision for the community must be the priority, and the transportation network planned to support that vision. Otherwise, the community's vision amounts to little more than "hammering back" the existing roadway footprint, or retrofitting existing streets with traffic-calming measures to lessen their negative impacts.

In order for our streets to become community "places" and to fulfill the critical ''town square" function that is missing in most communities today, they need to be planned and designed for all user groups, particularly seniors, schoolchildren and those with special needs. A successful street is easy to get to and through, and it welcomes many modes of transportation and pedestrians of all ages. When a place attracts members of these demographic groups, research and observation has shown that it will be comfortable for everyone else too.

Placemaking is a key concept to achieving successful streets and positive impacts on communities. It is not just the act of building or fixing up a street or other public space, it is a comprehensive approach to creating vital public destinations that promote community commitment and involvement. It capitalizes on a community's assets, inspiration and potential, creating good public spaces that promote health, happiness and well-being. And through a process that is holistic and has the idea of Placemaking behind it, streets can become destinations themselves, not simply conduits to travel through.

Is it any wonder that the layout of American communities has been heavily influenced by transportation engineers while citizens, elected officials, planners and advocacy groups have played a minor role? If we can transform the way the transportation establishment views its mandate, we can rapidly and positively affect the quality of communities across the country.

This Citizen's Guide is intended to show people who are passionate about creating better streets and walkable communities how they can influence highway professionals to address transportation in ways that place the most value on people and on places.


100 yds
Road liable to tidal flooding
This road floods each tide


I

# The Transportation Establishment Is Not the Whole Problem

## *Your Community Plays a Role in Traffic and Roadway Expansion Projects*

This guide is primarily about how the average citizen can deal with the single-minded focus of the transportation profession. Transportation agencies have often been guilty of believing that the safety and mobility of the motoring public take precedence over the needs of our communities. Yet, are they the only ones to blame?

Community land uses are too often planned separately from the transportation network. In most cases, prevailing patterns of local growth intentionally isolate housing from shopping and workplaces. The location of residential development in disconnected cul-de-sacs and the location of businesses and stores on state and county highways require nearly all traffic to be funneled onto major arterials.

The traffic directed away from local residential streets does not disappear. Drivers making local trips compete for the same roadway space that through-travelers use. And the same residents who enjoy life on their quiet streets are also commuters and shoppers at varying times of the day. They often perceive a problem only where they experience this traffic congestion (i.e., on major roadways) and enlist their elected officials to pester the Department of Transportation (DOT). Since local land use and county street layouts are not under the control of the DOTs, and the low density, single-use development patterns discourage walking, biking and often public transit are deemed infeasible. The DOT's only option to solve congestion is to widen state roads. This leads to complaints that the DOTs are insensitive to local concerns and destroying communities.

If citizens expect the transportation establishment to respect the character of their local community, perhaps the local community should understand and appreciate the effect of their own planning decisions on traffic movement.

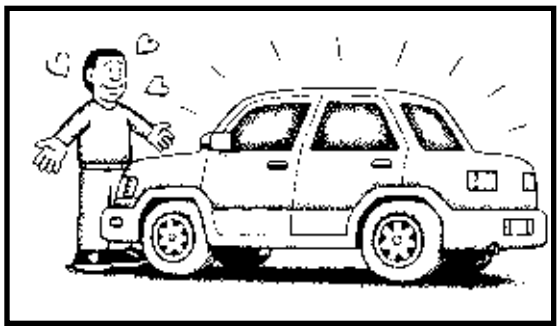
Clearly, if we are to escape this conundrum, communities must acknowledge their role in creating the problem by encouraging too many trips by automobile and too many local trips that are funneled to state highways. It is fashionable, as well as politically expedient, to vilify the transportation establishment for the negative impacts of large-scale road building. The transportation profession has certainly played a huge role in disconnecting the practices of community planning from road and transit building. But consider the possibility that transportation professionals have been painted into a corner. If citizens expect the transportation establishment to respect the character of their local community, perhaps the local community should understand and appreciate the effect of their own planning decisions on traffic movement. Any community seeking to change (i.e., downscale) a planned or existing state highway should partner with their DOT to help solve congestion problems and re-think their own rules and incentives for land uses and road design.

## WHAT CAN COMMUNITIES DO TO IMPROVE TRANSPORTATION?

Below are some of the factors that need to be taken into account when designing quality places to live—and some ways to make it happen.

*1. Make Placemaking and far-sighted land-use planning central to all transportation decisions:*

Traffic planners and public officials need to foster land use planning and Placemaking (a new approach to planning that takes into account the quality of the places we want to see in our communities) at the community level, which supports instead of overloads the transportation network. This includes creating more attractive places that people will want to visit both in existing communities and in new ones being developed. A strong sense of place benefits the overall transportation system. Great places – popular spots with a good mix of people and activities, which can be comfortably reached by foot, bike and perhaps transit as well as cars – put little strain on the transportation system. Poor land use planning, by contrast, generates thousands of unnecessary vehicle-trips




and creates dysfunctional roads, which further degrades the quality of these places. A few transportation professionals are beginning to understand that land use must be integrated into transportation planning although many others still believe that land use is not their business. But roadway projects – whether state, county or local roads that are disconnected from land use planning create too many negative impacts to ignore.

**A strong sense of place benefits the overall transportation system.**

*2. Re-think streets as public spaces:*

Streets take up as much as a third of a community's land. However, under the planning policies and practices of the past 70 years, people have given up their rights to this public property. While streets were once a place where we stopped for conversation and children played, they are now the exclusive domain of cars and often divide rather than unify a community. Even sidewalks along highways and high-speed local streets often feel inhospitable. But there is a new movement to look at streets within the broader context of a community (see the Federal Highway Administration's website on Context Sensitive Solutions: http://www.fhwa.dot.gov/context/index.cfm).

*3. Get more mileage out of our existing roads to maximize our ability to travel on local rather than state roads for local trips:*

The 19th–and early 20th–century practice of creating connected road networks, which are still found in many beloved older neighborhoods, can help us address 21st–century traffic congestion. Mile for mile, a finely woven, closely spaced grid of connected streets has much more carrying capacity than a sparse, curvilinear tangle of unconnected cul–de–sacs (i.e. dead–end streets), which force all traffic out onto the major roads, such as state highways. Unconnected street networks, found in post–World War II suburbs, do almost nothing to promote "vehicular AND pedestrian" mobility. Moreover, if your town's road network is laid out in a basic grid pattern, if new growth is served by a grid network and if redevelopment allows for a fullyconnected grid network, the chances are greater that you, as a local auto driver, will have many more opportunities to avoid state highways for purely local trips. Grid patterns of streets also create an opportunity for greater pedestrian mobility.

*4. Re-envision zoning laws which typically separate rather than combine different land uses:*

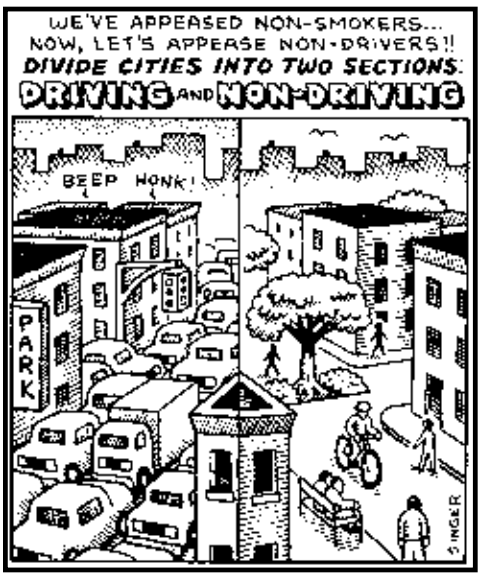
We also must shift planning regulations that treat shops, schools, grocery stores, and day–care centers as undesirable neighbors. The misguided logic of current zoning codes calls for locating these amenities as far away from residential areas as possible. The result is that essential services that we use almost every day end up in isolated zones along busy highways, which are nearly impossible to reach on foot or bike, thus making auto travel the only reasonable means of getting there. This in turn creates needless traffic and chokes the capacity of the road system. We need to bring back the traditional mixed–use neighborhood.

**Streets need to be designed in a way that encourages traffic speeds appropriate for that particular context.**

## IT'S REALLY A RATHER SIMPLE IDEA:

Streets need to be designed in a way that encourages traffic speeds appropriate for that particular context. Freeways should remain high–speed roads but other roads and streets should take into account that these are places for people as well as conduits for cars.

Note that there is a related discussion in Chapter IV, "Understanding the Transportation Planning Process," regarding how local planning decisions impact how your transportation system can either foster or discourage your ability to walk, bike and drive around your town.



Local communities should partner with their elected officials and the DOT to ensure that roadways respect the character of the local area. This chapter highlights four Placemaking strategies that would prevent large volumes of traffic and wide roads needed to accommodate this demand. These include:

1. Make Placemaking and far-sighted land-use planning central to all transportation decisions;
2. Re-envision zoning laws;
3. Get more mileage out of our existing roads;
4. Rethink streets as public spaces.

## HELPFUL RESOURCES

The Federal Highway Administration's Context Sensitive Solutions webpage
http://www.fhwa.dot.gov/context/index.cfm

Context Sensitive Solutions
http://www.contextsensitivesolutions.org/

II

# Initiating a Project On Your Own

*How to Be Successful in Getting What Your Community Wants*

## DEFINING THE PROBLEM:

What if a citizen, community or organization wanted to initiate a new project to address an existing problem with a street or highway? Don't start by asking the DOT or Metropolitan Planning Organization (MPO) for a solution to "fix the highway." Instead, make a list of your concerns. For example, is it too hard for you or your children to cross the street? Do you believe the cars are going too fast, and if so, why is that a problem? Do you believe that wide streets and vehicle speeds are creating divisions within your community?

Make sure you know what level of government is responsible for the road. Is it federal, state, county or local (some roads may be in the hands of a private association)? In fact, whatever the jurisdiction of the road, a good place to begin to share your concerns is with your town or county planner or engineer. Even if the road is a state road, the local planner may have sufficient knowledge to help you fashion a solution or direct you to a person or agency that does. In any event, it always helps to have more local staff on your side or to at least alert them to your concerns.

Unless you have the resources to hire an engineering firm to generate solutions for you, an important thing to remember is to focus your thinking on your perception of the problem, and not your interpretation of the solution. For instance, if you think that it is unsafe to cross a particular intersection, then say "I think that it is unsafe to cross intersection X;" don't immediately demand a traffic signal. You would be surprised by how often a DOT will react to


your specific question by citing all the reasons why a signal is not warranted and never even think about other solutions that might easily fix your problem. Worse yet, they might fulfill your request when another solution would have worked better in the situation.

For example, in 2003, the town of Avon-by-the-Sea, a quaint New Jersey seashore town, cut the ribbon on a $3-million-dollar project that reduced the cross section of New Jersey State Route 71 from four lanes to two with a median and intermittent left-turn lanes. The old four-lane cross section of Route 71 posed a barrier to community cohesion. Most of Avon's population lived on the east side of Route 71, yet most of it public uses were on the west side. It was not an easy process for Avon. The residents did their homework on the highways transportation context and had a collective vision. They persisted for a number of years, and finally convinced the New Jersey DOT (NJDOT) to agree to this rightsizing project. Instrumental in their success was that the community had a clear idea of the problem and a clear vision for a solution, both of which they were able to articulate to NJDOT and the North Jersey Transportation Planning Agency. In this case, the community was able to hire an engineering firm to help visualize solutions. All of these were key factors in getting NJDOT on board with their proposal.

**Avon-by-the-Sea had done its homework on the highways transportation context and had a collective vision. These were key factors in getting NJDOT on board with their proposal.**

Otherwise, there are tools available that can help citizens frame their thoughts, such as the street audit used by the Project for Public Spaces (learn more at www.pps.org)

## GET THE COMMUNITY BEHIND YOU

As a practical matter, it is not likely that you will be successful approaching DOT as a single individual. The first question I would often ask when an individual raised an issue with me is "Where do you stand with respect to your community?" The reason is that there are often many factions within a community, for or against a particular project on a street or highway. Several residents along a highway may think that a four-lane road is too wide and want the DOT to shrink it. Others may feel that the extra lane is necessary for rush-hour congestion or to facilitate getting out of their driveway.

It is politically inappropriate for a DOT to react to the first person who walks through the door. At best, this could waste time and resources when the agency later discovers that the town council and other citizens do not hold the same opinion. At worst, it could lead to political grief for the agency. Therefore, most DOT staff will ignore a complaint or suggestion coming from an individual. So, if you're serious about fixing the problem, get together with your friends and neighbors.

Do your homework on who the other stakeholders might be (e.g., members of the senior center, the supermarket owner, patrons of the town library, families with kids) and engage with them, or at least try to anticipate what their concerns will be. Then try speaking to one of your elected officials.

## DO YOUR HOMEWORK ON AVAILABLE DOT PROGRAMS

Once you agree on the issues, it is useful to find out what kinds of existing programs your DOT has to address your problem. For instance, all state DOTs are mandated to set aside a percentage of their federal funds for a program called Transportation Enhancements, which includes 12 eligible planning activities (http://www.fhwa.dot.gov/environment/te/teas.htm). Most, if not all, state DOTs have bicycle/pedestrian programs or Safe Routes to School programs. All have safety programs, which could cover the safety of bicyclists and pedestrians, as well as that of motorists.

This is not to say that the only way to get something done is through one of these "set aside" programs. But many DOTs are beginning to view community-oriented projects that deal with pedestrians, cyclists, transit service and neighborhood vitality as an important part of their mission. It simplifies matters if your local DOT already has a program or dedicated funding that fits the description of your desired project.

## LEARN WHEN TO ENGAGE THE DOT DIRECTLY AND WHEN YOU WILL NEED TO INVOLVE THE METROPOLITAN PLANNING ORGANIZATION

Okay. You have settled on your definition of the problem; you have gotten your community behind you, and you have done your homework on existing programs that might relate to your issue. Now what?

The answer depends on the nature of the problem and the extent of the solution.

If it appears that the solution is a minor, short-term one, such as re-striping lanes on a street, or minor altering of pavement or curb lines, then it can likely be handled by the DOT's maintenance or operations staff. When you get them to agree, congratulate them on a job well done.

**Many DOTs are beginning to view community-oriented projects that deal with pedestrians, cyclists, transit service and neighborhood vitality as an important part of their mission.**

For larger capital projects, however, the DOT may not have sole discretion to invest in the improvement even if they agree with the community that it's the best solution. This is particularly true if the funding source is federal. If that's the case, and if the investment in construction is more than several hundred thousand dollars, the DOT will likely have to obtain approval from

their Metropolitan Planning Organization (MPO) to move forward. (There's much more information about MPOs in Chapter IV.) If the investment involves a major project to be paid with federal construction dollars, the DOT will have to work with the MPO to obtain a modification to the Regional Transportation Plan and, ultimately, the Transportation Improvement Programs (TIP) (see Chapter IV). If the investment involves initiation of a study, which is normally the case, then the study will likely need to be included in the MPO's Unified Planning Work Program (UPWP). In either case, if you suspect (even before you meet with your DOT) that the solution will be extensive, it would be wise, as noted, to contact to your local-or county-planning or engineering department for support and buy-in: applications for inclusion of a study in the UPWP or a construction project in the TIP must first go through the county.

## *Chapter Highlights*

Local residents and advocates should approach their traffic concerns in a systematic matter by organizing their thoughts before approaching the DOT or MPO. It is important to focus on the community's concerns and not an interpretation of the solution.

1. Get your community behind you: first and foremost, build a constituency of other like minded residents who are also concerned with a particular intersection or stretch of roadway intersection.

2. Do your homework on DOT programs that might be available: research DOT and MPO programs such as the federal Transportation Enhancements program.

3. Learn when to engage the DOT directly and when you will need to involve the MPO: determine whether or not the needed improvements or project fits within the scope of your DOT, or if it is a federal project.

Chapter IV describes the MPO and DOT transportation planning process in detail.

### HELPFUL RESOURCES

Project for Public Spaces "Place Audit"
http://www.pps.org

Unified Planning Work Program (UPWP)—each state has an individual program available online.

III

# Considering the Wider Context of a Project

*Why a Transportation Project Involves More Than Just the Road*

## CONTEXT SENSITIVE SOLUTIONS

Context Sensitive Solutions (CSS)—a new approach to transportation planning that takes wider issues into account—has often been misunderstood as a program focused primarily on granting community wishes. This explains, in part, the resistance of many longtime DOT engineers and planners to the CSS philosophy. In fact, CSS involves looking at multiple contexts, including both transportation goals and community needs. Professional organizations like the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA), both of which promote CSS, have begun to take steps to correct this misconception.

The CSS philosophy looks at the full range of attributes that makes up your community: it is the sum of the physical, social and political elements that makes your town unique. The focus is not entirely on transportation, but rather how transportation can support larger community goals. Mobility is seen as ONE goal, not THE goal. Moreover, CSS seeks to integrate land use planning and transportation planning. Transportation objectives are certainly important but, within CSS, these objectives are defined to serve two critical issues, a) meet commuter and local travel needs, and; b) at the same time, enhance the community's overall quality of life. Transportation is not seen as an end in itself.


**The Venn diagram (above) is helpful to show several contexts which are equally important. Additional factors could be included besides community, environmental, transportation, financial, political and land use.**

A CSS project approach makes it easier, for example, to work with DOT roadway projects that seek wider roads and faster speeds if those proposals are not consistent with (i.e., sensitive to) the context of the project area.

Armed and fortified with CSS's basic principles, you will be better positioned to bargain with those who support large-scale road-building as the prime way of addressing transportation. Their concerns are real but their focus is solely on moving cars and trucks fast, safely and efficiently. They are focused on how the road pavement is used, not necessarily on how that pavement impacts you and the businesses and home surrounding it. Their primary focus is not on sustaining an overall quality of life in your town. Therefore, be aware of their concerns, as described below, and how to deal with those concerns to achieve your goals.

## UNDERSTAND THE MAIN CONCERNS OF TRAFFIC ENGINEERS

Understanding how DOT staff might view the transportation context of a proposed project is critical for you to know when making the case for changes. Three concerns usually figure prominently in the minds of traffic engineers: safety; the role of the particular stretch of road in the overall transportation system; and the characteristics of traffic in the area.

### *Safety*

Safety is the element of the transportation decision-making equation that agencies view as least negotiable. While questions of congestion and goals for vehicular levels of service can be debated, few would contest that the primary aim of DOTs should be to ensure that their systems are safe. Of course, you can have a lively discussion about what is safe and what is not. Is a road improvement that encourages people to drive faster really safer? Most DOT engineers work with balancing scales in their minds – conscious or subconscious – which look something like this:

Interestingly, in instances where community members see the same facts that DOT does, they usually want the same thing – assurance that the road that they or their children travel on is safe.

So how does one find out about the safety of a particular road in order to assess the stated purpose of a project?

See if the agency has a webpage link—such as described in Chapter IX—for projects or studies. Follow those links and see whether they have included crash data in one or more of their reports. Go to the agency's web site, search for "crash data," or "safety," or variations thereof. If that does not work, then find the agency's organizational chart online and see if it has a safety unit. If not, make phone calls to DOT internal divisions in the following order: traffic operations, traffic engineering, design or roadway design, and ask how you might be able to learn the crash-rate data for a particular segment of roadway. Alternately, seek out the agency's Office of Customer Advocacy, sometimes called Community Involvement, Community Relations or something along those lines.

Keep in mind that a reduction in accidents can occur through means other than a large-scale road widening. This includes new pavement striping, better signage, removal of obstructions, more police enforcement, public education, increased local street connectivity and connected commercial parking lots and many, many other strategies.

### *Importance and Function of the Highway Segment in Question*

It's worthwhile to do your homework on the regional versus local travel function of a particular segment of street or highway before going to your DOT. DOT staff is more willing to be flexible in their thinking about road design if they view it as a Main Street with a local function, as opposed to a regional road critical to the movement of people and goods. One does not always have to be a trained transportation professional to figure this out – just look at a map to examine the big picture for any road. If a road passes through the center of a number of communities, for instance, and is paralleled by a large highway, then you can make a good case that its function is largely local even if it is a designated state highway. Logically, drivers in that region making longer trips will seek out the larger road. Challenge your DOT to think this through, and make an argument for lower design speeds, minimum, instead of rigid design standards, and lower vehicular levels of service (see discussion on design speeds, flexible design standards and levels of service in Chapter VII). As an example, it is apparent that Massachusetts citizens in coastal communities north of Boston were successful in this regard. Here, there are speed limits as low as 20 mph in a few locations along Route 127 between Salem and Manchester-by-the-Sea, and generally less than 40 elsewhere.

**For more information on functional classification visit the Federal Highway Administration's website: http://www.fhwa.dot.gov/planning/fctoc.htm.**

You may face resistance from DOT staff due to a roadway classification system already in place known as the "functional classification system." Functional classification is a concept mandated by the federal government almost from the beginning of the Federal Aid program for highway construction in 1916. It was developed as a way to allocate funding, and also to help define the character and design characteristics based on a roadway's function. Most of us have an intuitive understanding that there are roads that are local and residential, other roads that are more regional in nature, and some roads in between that serve to feed traffic between the local streets and the regional system. In the federal functional classification, local streets are termed local streets. Regional roads are called "arterials," which are further subdivided into interstates, other freeways, principal and minor arterials. The roads in between are termed collectors and are further subdivided into major and minor. These classifications are also broken down as either urban or rural. For further information and examples of functional classification, please see the appendix.

*Characteristics of the Traffic*

The reason that people are driving along a road is an important factor in determining the role of the highway in question. Does a road primarily serve recreational travelers, commuters or people running local errands? For example, commuting congestion typically happens during weekday rush hours. Shopping travel causes more congestion on weekends, or during evening hours. Recreational travel is often a seasonal event, particularly in areas outside of the Sunbelt.

**Work-related travel accounts for only 18 percent of all trips in the United States. Social and recreational travel accounts for 27 percent of all trips in the United States.**
**(Travel Article, AAA Newsroom online, June 30, 2005)**
**http://www.aaanewsroom.net/Main/Default**

It is important to think about the differences when approaching your state DOT. These different needs may call for different solutions, rather than a one-size-fits-all approach to traffic. For instance, recreational travelers have more flexibility than commuters when they travel. Furthermore, recreational travel is not a daily event and travelers are often from outside the local region. Put together, the above examples can change the politics of the congestion in question, and perhaps offer a project opponent more opportunities for leverage.

## *Chapter Highlights*

Context Sensitive Solutions (CSS) is a new approach to transportation planning that takes into account not just roadway design, but local community needs.

Understand the main concerns of traffic engineers: DOT staff and engineers have three prominent concerns when designing a roadway. These include: safety, the role of roadway in the overall transportation system, characteristics of traffic in that area.

### HELPFUL RESOURCES:

FHWA's Flexibility in Highway Design
http://www.fhwa.dot.gov/planning/fctoc.htm

Work related travel article
www.aaanewsroom.net/Main/Default.asp?CategoryID=8&ArticleID=392

IV

# Understanding the Transportation Planning and Project Delivery Process

## *Homework Really Pays Off*

This chapter describes the transportation planning process in detail and focuses on how you, the citizen, can enhance the quality of life in your town by influencing decisions about how federal and state money is used to plan, design and build transportation projects near your community. To disburse federal money for transportation projects, the federal government set up a cooperative transportation planning mechanism intended to involve all users of the system through a public-participation process managed by Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (state DOTs).

### FEDERAL AND STATE TRANSPORTATION FUNDING

Federal transportation funds are usually sought by state officials to augment state funding for highways and transit facilities under state jurisdiction (a portion of federal funds can also be made available to towns through certain DOT programs). Federal funds, together with state funds, are also sought by town officials for both state transportation projects, and local projects and programs. You, as a citizen, have a right to be a party to the decision-making process, beginning with the planning and design, and continuing through implementation. But how do you get involved and when? This section explains the process and seeks to demystify its various steps. You can always go to a meeting of your local officials and demand that they "do something" about a problem, but this guide recommends a more reasoned approach.

**Two key organizations responsible for decisions about state and federal transportation funds: Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (DOTs).**

## WHO'S ON FIRST?

This section describes who these organizations are and their functions and responsibilities. It is important to understand this information because if you know how the system works you are better able to get what you want out of it. Remember: preparation leads to progress.

## WHAT ARE MPOS?

An MPO is a transportation policy-making body made up of representatives from local government and transportation agencies with authority and responsibility in federally defined metropolitan planning areas. You should get to know everyone involved. Federal legislation passed in the early 1970s required the formation of an MPO for any urbanized area with a population greater than 50,000. MPOs were created in order to ensure that existing and future expenditures for federally funded transportation projects and programs were based on a continuing, cooperative and comprehensive planning process. MPOs were also created because transportation issues are multi-jurisdictional, impacting both central cities and the towns and suburbs surrounding those cities.

Keep in mind that public involvement in decision-making is a federal requirement, however, such involvement may not be effective in your area for a whole host of reasons which this guide can help you understand.

Federal funding for transportation projects and programs is channeled through the MPO. State funds for transportation, while not specifically required to be part of the MPO process, are often included for the purpose of completeness and because matching state funds are often required to receive federal dollars. Some MPOs focus almost exclusively on transportation, while others seek to integrate transportation and land use planning. However, an MPO's land use plan is usually a composite of the plans of local jurisdictions, such as your town. If alternative land use policies and patterns are identified as desirable by an MPO, these scenarios do not change your town's land use practices unless your town agrees to do so.

Each MPO identifies and evaluates alternative transportation improvement options, prepares a Regional Transportation Plan, develops a Transportation Improvement Program (TIP) for their region and involves the public in decision-making in all phases. Air-quality and congestion management plans are also important MPO functions, particularly in those areas that are not in compliance with federal air quality standards. Most MPOs will not take the lead in implementing transportation projects, but will provide an overall role in coordinating their planning and programming funds for capital projects and daily opera-


tions. An MPO is normally composed of a policy or executive board, a director, staff and technical and citizen advisory committees. Advisory committees might include the following: Land Use and Housing Committee, Regional Transportation Committee, Board Policy Committee, Goods Movement (Freight) Committee, Regional Aviation Committee, Bicycle Committee, Air Quality Committee, and on and on. The meeting times and dates and topics for all these meetings are required to be made public so you can attend and participate.

## WHAT IS A STATE DOT AND WHAT ARE ITS TYPICAL FUNCTIONS?

All states, as well as Puerto Rico, and the District of Columbia, have a DOT responsible for statewide transportation planning, programming and project implementation. DOTs design, build and maintain transportation facilities; MPOs generally do not. Occasionally, local transportation responsibilities fall under the local Department of Public Works or DPW.

State DOTs do the following: combine the regional planned projects developed by regional MPOs into a master Statewide Transportation Improvement Program, filling in the gaps for regions which in some cases are not covered by an MPO. This document becomes the Statewide Transportation Improvement Program (STIP) that designs, builds, rehabilitates and maintains state transportation facilities; and involves the public in planning decisions.

## WHAT ARE THE RELATIONSHIPS AMONG THE MPO, THE STATE DOT AND OTHER TRANSPORTATION AGENCIES?

Transportation planning and decision making must be cooperative because of the diverse jurisdictional responsibility of various parts of the system, including roads maintained by towns, counties, the state and transit operators. As a result, in metropolitan areas, the MPO is responsible for seeking the participation of all relevant agencies and stakeholders in the planning process; similarly, the state DOT is responsible for activities outside metropolitan areas. The MPO and state DOT also work together, and a state DOT staff member usually sits on the MPO board.

## THE TRANSPORTATION PLANNING PROCESS

Once your community has an understanding of the traffic problem at hand, the most effective way to make a difference is to closely study how transportation projects are carried out. These projects pass through many evolving phases as they move from conception to construction. Transportation agencies carry out these phases in slightly different ways. The Federal Highway Administration outlines the five basic phases of the highway development process: planning, project development (preliminary design), final design, right of way and construction. The actual terms used to describe the processes vary from state to state, and not all state DOTs have a discrete phase for each in their project development process. Nonetheless, all projects more complicated than a road resurfacing will probably go through these phases.

**Various planning studies which can lead to a specific project proposal can be initiated virtually anytime. However, if those studies ultimately lead to a recommendation to advance a major project, that project must be listed in the regional Transportation Plan and state Transportation Plan.**

## PHASE 1: PLANNING

### WHY THE PLANNING PHASE IS YOUR BEST OPPORTUNITY TO MAKE CHANGES

The planning phase of the process is the best time to be able to influence the outcome of a project because at this stage the transportation agency does not technically consider it a "project," but rather a "proposal" or a "problem statement." Therefore, if you approach it correctly, you might even be able to keep it from becoming a project.

The planning phase is subdivided into two distinct, but interrelated, processes: long-range planning and programming.

**Long Range Planning** is the stage during which the broad issues, contexts and policies for solving a transportation problem are set, as described below.
**Transportation Improvement Programming (TIP)** as discussed above, is a more politically driven process of project prioritization and funding allocation than of true planning. If your project is not in the TIP, it will not advance!

## LONG RANGE PLANNING

As noted, region-wide and state-wide planning begins with the development of the Long Range Plan. This plan can be a regional plan developed by the MPO or a state plan developed by the DOT. In either case, the federal government requires plans to be updated at least every five years. The Transportation Plan identifies transportation goals, objectives, policies, needs and project proposals. The Transportation Plan normally contains population and employment forecasts, projected development patterns, estimates of new travel demand, travel patterns based on growth forecasts and congestion levels and proposed enhancements and/or expansions of roads, public transit, freight, airports, ports and bicycle facilities. Based on the projections of new travel demand and patterns, major projects include new roads, road widenings, new or expanded interchanges and intersection expansions, bridge widenings, bicycle facilities, and public transit and freight facilities. All originate during this phase, therefore this is the best time, and perhaps the only time, to include whether the transportation investment will be an auto-oriented highway capacity project or a community-building multimodal project.

## TRANSPORTATION IMPROVEMENT PROGRAMMING (TIP)

The time you are most likely to catch wind of a proposed project is during the public debate associated with the prioritization and placement of proposals in the state and MPO TIP. This phase is highly political, with elected officials representing the public sitting on the committee, which oversees the process. This is the point at which you can influence the DOT or MPO to not even start the Project Development Process for a particular proposal. Again, as a practical matter, few citizens have the time or interest to intervene in this phase of planning.

Federally funded projects included in the TIP must be updated annually. State-funded projects are usually included for informational purposes. These project phases included in the TIP are preliminary engineering and final engineering, right-of-way acquisition and construction (or acquisition for transit vehicles). Other phases that can be referenced include "planning studies" (including traffic studies), "concept design" (which is a well-

*The Five Stages of the Transportation Planning Process*

defined analysis of needs and includes a recommended concept design that has met certain environmental criteria, community support requirements and cost considerations) and "feasibility assessment" (which is an analysis of the best recommended alternative to balancing transportation needs, environmental issues and public concerns).

### WHO CONTROLS THIS PLANNING PHASE?

Planning can be undertaken by either the state DOT or MPOs, which are mandated by federal law in all metropolitan regions as noted previously. Usually, the state DOT is the lead agency during Long Range Planning with the MPO in a supporting role. This relationship is usually reversed for the subsequent TIP process, with the MPO in the lead.

## PHASE 2: PROJECT DEVELOPMENT

Most people become aware of a project during the project development process. Project development consists of many phases, including purpose and need assessment, environmental screening, alternative development and selection, public participation, cost estimates and preliminary design. The phases continue up to the preparation of final construction plans, a process which can last anywhere from nine months to many years.

The MPO Project Development Work Program is an extremely valuable document for understanding what planning studies and preliminary engineering projects are underway. This document is updated annually. The technical work described in the program varies from local projects to corridor-wide traffic studies carried out by DOTs, counties or cities.

### WILL THE TRANSPORTATION AGENCY BE WILLING TO MAKE A CHANGE AT THIS POINT?

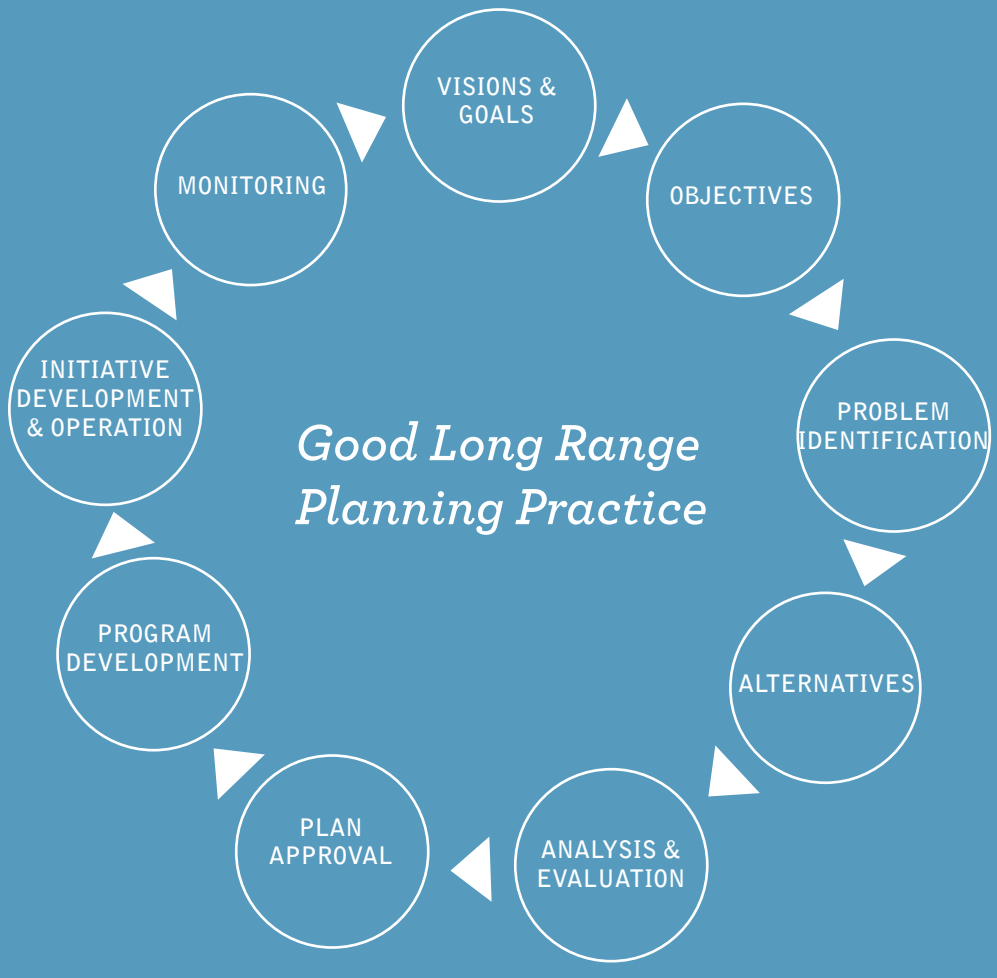
A transportation agency's willingness to make changes to a plan is directly related to where they are in the planning process. During the early stages, public opinion is not only solicited, but the DOT is required to seek it. As a project nears construction, with design plans nearing completion, and any necessary property acquisition already finalized, no transportation agency will welcome public input. From their perspective, this is like remodeling a kitchen and having someone ask you to make changes to the plans after you have paid the architect, ordered the cabinets and appliances and scheduled a contractor to start building in a few weeks.

Once again, use the Internet as a resource to help you figure out where a project is in the project development process. For instance, when you type Mississippi DOT into the browser, you are brought to MDOT's home page, which includes a link for "project studies." The project studies page includes an interactive map that leads you to a list of projects

in your region, including information on upcoming public meetings, study fact sheets, and other project-related announcements. Here you can find when and where public meetings will take place and get a sense of what point the DOT is in the process.

If you do not have access to the Internet or are not comfortable using it, contact the DOT's public involvement office or the main office and ask for information on project status from them.

**It is important to understand that various planning studies which can lead to a specific project proposal can be initiated virtually anytime. However, if those studies ultimately lead to a recommendation to advance a major project, that project, as noted, must be listed in the regional Transportation Plan (required for federally-funded projects).**



## PHASE 3/4: FINAL DESIGN AND RIGHT-OF-WAY

The final design stage begins after proposals have been shepherded through an environmental impact study and public participation process. The exact process can vary widely from state to state. Since the agency has already gone through a project-planning process, which in some states is extensive, they generally consider design part of the final production process. In other words, at this stage, they seldom welcome community input about changing the project. The right-of-way process involves acquiring additional land, if necessary, for the aforementioned project. Minor design adjustments may be necessary that would involve the design team.

This is not to say that if you find something wrong with a project at this point, you should give up. It is just that you will need to engage DOT staff with a more complete understanding of the project itself at this stage.

## PHASE 5: CONSTRUCTION

Projects under construction are very difficult to influence. If you raise objections to a transportation project during this phase, the best you can realistically hope for is a change in the details or timing.

### THE VALUE OF LOCALLY INITIATED PLANNING

It is up to your community to determine whether getting around town requires driving from parking lot to parking lot, or whether it can also be done on foot or bicycle. Local decisions regarding the pattern, type and variety of development and open space are made by members of your planning board/commission or zoning board, and by your council, board of supervisors or mayor. These decisions relate to land use, zoning, subdivision, economic development, parking and development and design decisions, and they are made by citizens who live in your town and serve on your local boards and commissions, and by staff and consultants that your local tax dollars support. These local decisions can have a greater impact on the "walkability" of your town than major transportation projects. Nonetheless, it is the combination of all transportation projects and designs—whether paid for with local, state or federal money—that creates the road and transit network in your town which impacts your quality of life.

## HOW CAN A CITIZEN CONSTRUCTIVELY PARTICIPATE IN THE PLANNING PHASE?

**Local decisions regarding the pattern, type and variety of development and open space are made by members of your planning board/commission or zoning board, and by your council, board of supervisors or mayor.**

Before setting out on a course of action, a citizen needs to find out if a project is in the Long Range Plan of your DOT or MPO, or if it is in the DOT or MPO TIP. Visit your state DOT's website, and search for "planning," "Long Range Plan," or "TIP." You could also go to the website of the MPO in your region and do the same search. If you do not know the name of your MPO, enter your state into the search engine followed by "MPO" and see what turns up. Type in Kansas MPO, for instance, and typically the first link will take you to the Kansas DOT MPO page, where you can find links to the websites of the five MPOs in the state. For a complete listing of MPOs nationally, visit http://www.abag.ca.gov/abag/other_gov/rcg.html. While on your state DOT's site, click on the transportation planning link. You should be taken to a page where you can download the current Long Range Transportation Plan, which includes a wealth of background planning information that can be used later to understand the transportation context of a project (see Chapter III). You can also download an excellent guidebook that explains how to intervene during the planning process: "From the Margins to the Mainstream, A Guide to Transportation Opportunities in Your Community." It is published by the Surface Transportation Policy Project, and can be found on their website. See www.transact.org/PDFs/margins2006/STPP_guidebook_margins.pdf.

Here are some ways you can be engaged in the Long Range Planning, and other phases of the process, to achieve the results you are looking for:

- Attend meetings of your county or local transportation committee or advisory group. You will meet the key staff who manages the local transportation process.Contact your municipal-or-county planning departments to find out about these meetings.
- Visit the DOT and MPO websites to keep abreast of upcoming meetings and planning studies.
- Be included on the MPO, state and county mailing lists.
- Attend a number of different MPO committee meetings including those on transportation, citizen involvement, work program development and so forth. Ask questions at these meetings so you become known to members and staff.
- Attend MPO Board meetings. You will have an opportunity to see and hear the official representative from your area who is a voting member of the MPO Board, as well as their staff. You will also meet key members of the state staff who are well-versed in the planning process. It is usually not a time to initiate a long conversation, but a short introduction to these officials and staff is usually possible and you should seize the chance.
- Reach out to other interested parties who are active in your community such as the heads of local and regional civic groups, environmental groups, parent/teacher associations, environmental groups, business associations, neighborhood associations and the like.
- Write letters to your local elected official and, if possible, try to arrange face-to-face discussions.

## *Chapter Highlights*

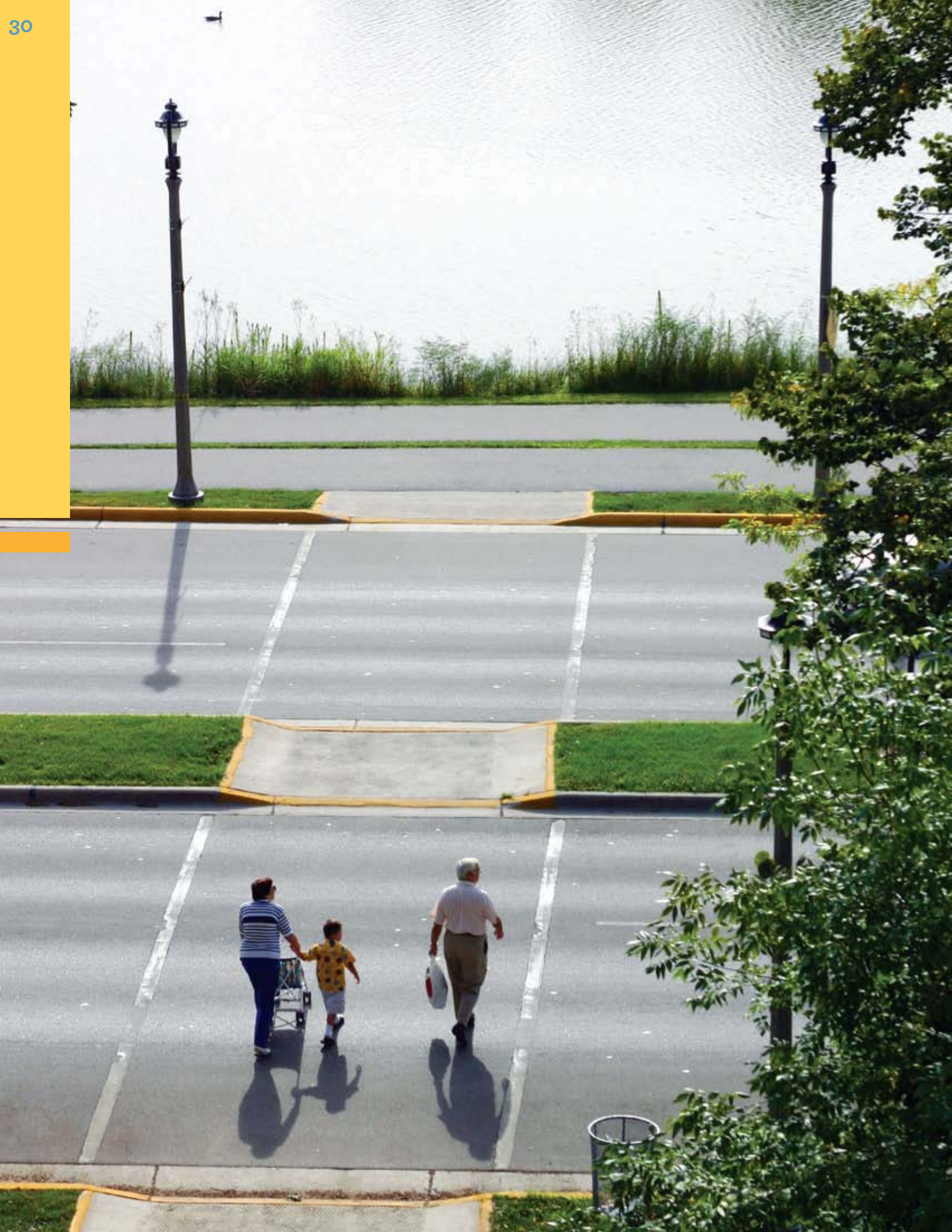
**HOW TO FIND OUT ABOUT PLANNED PROJECTS THAT AFFECT YOU:**

- Go to your state DOT's website and your regional MPO's website. Search for "Planning," "Long Range Planning" or "TIP";
- Using contact information provided on the website or by calling up your local DOT office learn about planned public hearings and attend them;
- Investigate and network with other groups who may have the same concerns as you, and join forces.
- If the project has moved out of Phase 1 (planning), citizens can write letters to elected officials, request a public open house from the DOT, attend city or town council meetings regarding the project, sign petitions.

**HELPFUL RESOURCES:**

For a complete listing of MPOs nationally, visit http://www.abag.ca.gov/abag/other_gov/rcg.html

**"From the Margins to the Mainstream, A Guide to Transportation Opportunities in Your Community."** An excellent guidebook by the Surface Transportation Policy explaining how to intervene during the planning process. Download from www.transact.org/PDFs/margins2006/STPP_guidebook_margins.pdf



V

# Influencing the Final Outcome of Road Projects

## *A 10-Step Checklist of Positive Actions*

The 10-step checklist outlines the basic information you need and the steps you should take to get solutions to your transportation issue. It is provided to assist you in organizing your thoughts. The emphasis is on learning how to work the governmental process to achieve your goal. The checklist is not a substitute for reading the entire Guide. In fact, other Guide chapters are cited throughout the checklist as critical references for attaining your objective.

### *Step 1. Write a "Problem Statement," Summarizing Your Transportation Issue*

This is strictly for your own use. It will help to clarify your thoughts. You could revise the Problem Statement over time as you gain more knowledge about the issue. It will also help you to be consistent in describing the problem to others. Nothing irks professionals more than local citizens who charge forward with ill-thought-out descriptions of perceived problems. To gain an understanding of the problem, make sure you visit the problem location at various times of day and on various days of the week, so you can present a more thorough description of the issue. Do not mention solutions at this point.

In preparing your problem statement it may be helpful to review Chapter I—the role your town plays in transportation planning; Chapter III—the wider context of the project; and Chapter VII—challenging the justifications for large road projects. There is no real shortcut for preparing yourself as you work on your Problem Statement. It's important to gain an understanding about how traffic engineers and transportation planners frame the issue and what role your town plays in setting the stage for the problem or mitigating it. It is also important to have a working knowledge about how roads function and their traffic characteristics. Remember: knowledge is power.

### *Step 2. Discuss the Problem and Gain Support from Friends, Family and Other Interested Parties*

Discussing the problem with others will help clarify what you wrote in your problem statement and, hopefully, begin to build local support for action, as discussed in Chapter II. Citizens concerned about the same issue could include anyone who uses the facility or lives, works or shops near it. Consider speaking to the heads of civic groups, parent/teacher associations, environmental groups, business associations, neighborhood associations and the like. Remember, when you do your homework (Step 1) you will be in a better position to educate others about the issue while enlisting their support. Try something a little bold: take a clipboard and stand near the problem location and ask passers-by their views about the situation – you might be pleasantly surprised what you learn!

### *Step 3. Do Some Basic Online Research*

Go online at home (or in your local library) and find the transportation planning and/or engineering websites for your local, county, state DOT and Metropolitan Planning Organization (MPO) agencies. Placing a telephone call to these agencies for basic data and plans can also be helpful. Seek out transportation and comprehensive planning documents such as Long Range Plans and Transportation Improvement Programs and look for Project Development Work Programs from MPOs. You may wish to widen your search and look for planning studies, reports, traffic-volume data, forecasts of population growth, accident data, road-widening programs, special improvement districts, redevelopment plans, historic district data, economic development plans and the like.

**Seek out transportation and comprehensive planning documents such as Long Range Plans and Transportation Improvement Programs and look for Project Development Work Programs from MPOs.**

Your research might also turn up state funding programs listed on your DOT's or MPO's website.

Identifying and reading plan documents is a critical step because, like beginning any research project, you first have to know if the problem has previously been identified and whether there are plans in the pipeline to fix it. Also, with this basic research, you will know if someone is telling the truth if you are told that "there's a plan to fix the problem." Keep in mind that a "plan" to fix a problem does not necessarily result in a "detailed design" that meets your needs, but it is a beginning. The more you know about what is in the works, the more you can monitor progress, influence decisions and achieve the results you want. (A discussion of "The Project Planning Process" is presented in Step 9.)

### *Step 4. Get "Face Time" with Local Planning and Engineering Staff*

Someone once said that "all politics are local." Start your search for solutions by contacting your local planning or engineering staff. Even if the problem is related to a state highway, you will need the support of your local government staff and local officials. The sooner you meet with them the better. Keep in mind that your town's land use policies affect state highways and, perhaps, the issue can be addressed by local land use design changes. In any event, the initiative you demonstrate by first going through steps 1 through 3 will pay off because your local staff will see that you are serious about finding a solution and that you are not going to give up. A positive first impression is important in any meeting. The more knowledge you have before meeting with local staff, the more leverage you have in enlisting others to find a solution.

You can request a meeting by calling or emailing local staff. You can also contact the mayor and let him or her know that you would like to speak to the appropriate staff about the situation. You can also attend the local planning board meetings and, under the public comment portion of the agenda, outline the issue and seek their advice regarding who you might discuss the issue with in more detail. The more prepared you are, the more professional you will appear. Do not assign blame or show anger – you will have plenty of time to express these views down the road if they choose to not take you seriously. Remember that the local staff deals with issues every day. Present yourself as someone willing to work to solve this problem. Position yourself as part of the solution.

### *Step 5. Make the Case for Short-Term Solutions as Well as Long-Term Fixes*

Although finding solutions should be the job of professionals, make sure that your remarks are framed within a context of finding positive strategies for both the immediate future and the longer term (See Chapter II discussion). Moreover, discuss solutions that are capable of being implemented by the local staff, as well as by other jurisdictions. Do not worry at this point where the funding will come from, and do not get sidetracked by officials' attempts to make you responsible for finding the funds (although, as noted previously, researching funding alternatives on DOT's website can help your search for solutions).

Chapter VII, which focuses on how engineers frame an issue, will be of value to you at this stage, as well as Chapter 6 which discusses design exceptions, liability and traffic calming.

Frame your discussion as a brain-storming exercise to seek all viewpoints. You should demonstrate flexibility in considering ways to deal with the issue. A description of the planning, design and implementation process is described in Chapter IV.


In 2007, PPS participated in PARK(ing) Day to transform metered parking spots into "PARK(ing)" spaces: temporary public spaces.

### *Step 6. Enlist a Local Staff Member to Become the Point Person in Advancing a Solution*

You are a local taxpayer. You are concerned about a transportation issue in your town. You have taken the time to do your homework. You are meeting with local staff. You should not leave the meeting with the local planner or engineer without making it clear that you are depending on him or her to address this issue and advance a solution. The local staff should be willing to investigate the problem further and advise on next steps whether the road jurisdiction or transit issue is local, county or state. Local staff receives calls for help all day long. They, like you, may be "up to their eyeballs" in things to do. How do they set priorities? Here's one way: The "squeaky wheel gets the grease." Become a pleasant squeaker. Make sure he or she knows that you are not going home to forget about this issue. (Chapter II on Initiating a Project will help you through this process.)

### *Step 7. Get Involved in the Local Planning Process*

The value to you of becoming involved in the local planning process is that: a) the local planner will realize you are serious about the specific issue that brought you into his or her office; and b) becoming involved in the local Master Plan or Comprehensive Planning process will place you front and center in local decision making about how your town develops and redevelops. Involvement in the local planning process will also give you a tremen-

dous advantage when approaching state and MPO staff because you will gain a broader prospective of your town's overall planning, development and transportation issues. See Chapter I about the importance of local planning decisions in determining how walkable your community is.

Be aware that many states require Master Plan updates periodically. Therefore, a local plan update process may already be underway. If not, you might start the ball rolling by suggesting that it's time to begin the process! Involving yourself in local planning will also connect you with the development review process, the local process for discussing development projects under review by your planning board, zoning board or town council. You would be surprised to learn how project proposals that seem unrelated to your issue do, in fact, have a direct relationship. Here's the bottom line: tell your local planner you are interested in getting involved in the comprehensive planning process even if you cannot do so immediately.

### *Step 8. For County and State Road Issues, Contact the Appropriate Staff*

Why do you need to also meet with county staff if you already met with your local planning and engineering staff? It's possible that you might not need to do so, depending on the issue, and the local staff's willingness to take on the issue. Most local planning staff have ongoing professional relationships with county staff and state DOT staff and can raise the issue themselves. But if federal funds are needed, county staff together with local staff, in major cities can initiate proposals: a) through the MPO planning process (a discussion of your involvement in the MPO is described in Chapter IV); and b) directly to the state DOT. So meeting directly with county staff offers another forum to present your case and press the issue.

**Most local planning staff have ongoing professional relationships with county staff and state DOT staff.**

Or you can meet with the appropriate state staff to describe the issue. Often the first line of contact is the DOT community relations office. However, if you choose to take this route without first having at least the tacit backing of local staff and/or the mayor or a local councilperson, you may have less success. Democracy works and it works even better with the support of large numbers of people and/or local officials. Many citizens become citizen advocates by going directly to state staff and then, armed with information, approaching the mayor, council and/or local planners for their support.

*Step 9. Understand the Planning Process In Order to Engage MPOs and DOTs on Technical Review Issues*

Before discussing how and when you, as a citizen, can get involved with MPOs and DOTs (Step 10 on the next page), this step emphasizes the importance of understanding the technical steps/activities that comprise the overall process followed by MPOs and DOTs to advance major projects (see Chapter IV). If you have at least a passing understanding of these steps, you will be more focused and directed in your search for solutions when dealing with technical staff. Chapter IV contained a graphic showing how the Federal Highway Administration describes the project-planning process. This graphic is reproduced below:

*The Five Stages of the Transportation Planning Process*


As depicted in the above illustration, there is a plan phase, a design phase (which includes refinements to the original proposal) and a build phase. There are a number of ways to illustrate the phases and you may see many variations. For example, the Federal Highway Administration describes these phases as follows: planning, project development (preliminary design), final design, right-of-way and construction (as described in Chapter IV).

The important considerations for you, at this point, are as follows:

a) Acquaint yourself with the overall process.
b) Find out whether a solution to your problem is already in the pipeline.

**One way to describe the MPO process from its beginning, when the problem is defined, to the end, when the project is implemented, is as the "project pipeline."**

If your issue is in the pipeline, find out its status and what you need to advance the process.

If it is not in the pipeline, begin a discussion about a problem that you need solved and how to have a new planning study initiated. Do not be put off if you are told that you just missed a deadline because in reality all of the above phases are, to a large extent, "rolling phases" where one phase ends just as another is about to begin.

As described below in Step 10, the earlier and more frequently you demonstrate your interest and resolve in focusing attention on finding a solution to a problem, the more likely that you will see your project emerge at the end of the pipeline. Or, if you are not happy with a proposal, you might be able to revise or stop a project already in the pipeline.

*Step 10: Stay Close to the Technical Planning Process and the Staff Managing That Process*

The most successful citizen advocates are those who do their homework and who behave in a persistent but civil and respectful manner. They know when to raise an issue and to whom. They provide solid background information. They can bring in other interested parties sharing the same view. They keep the pressure on staff and officials with consistent communication. And they are at the table when their issue is being discussed.

You should take ownership of the problem and assume that everyone works for you! After all, your tax dollars pay for staff and the projects. However, simply wishing the problem away, writing one letter or speaking at one public meeting is not likely to solve your problem.

**The most successful citizen advocates are those who do their homework.**

Even though public outreach is required at the local, county, state and MPO level, you should not assume you will be notified or that your issue will be discussed. And if you are involved, you should not assume that the DOT or MPO is ready to grant you meaningful participation. As unfortunate as it sounds, even today, too many transportation officials view public involvement as a mandatory step in a process which they are obligated to control "for the public's good." Using the tools provided in this guidebook, you must do some basic research about where the planning decisions are being made (at the local, county, state and MPO level), get on mailing lists for key committees and planning updates, show up at meetings, meet staff, engage elected officials from your town or county who can vote on transportation projects and voice your support publicly for projects you want.

You will be surprised at the positive impact you can have if you confront the task as a citizen advocate armed with facts and determined to work the process to find a solution.

## *Chapter Highlights*

This chapter provides a 10-step approach to solving transportation issues ranging from conceptualizing a problem to becoming a well-respected local advocate. Throughout this process it is important to engage with local DOT or MPO staff whose connections will help rectify a community's transportation concerns in a timely manner.

Remember to be respectful but persistent, and accept nothing less than meaningful participation in the project's decision-making process.

VI

# Opening Up Opportunities for Flexibility

## *Design Guidelines are Flexible, No Matter What the Engineers Tell You*

Many transportation professionals believe that *A Policy on Geometric Design of Highways and Streets*, commonly referred to as the Green Book, developed by the American Association of State Highway and Transportation Officials (AASHTO) is a Bible with a set of design rules and values that cannot be questioned. Someone once said, "Those guys use the Green Book like one might use a cross, to ward off vampires... Back off!" This has led to the perception that design manuals are inflexible, prescriptive and do not allow for creative options to fit projects into communities and various contexts.

Nothing could be further from the truth.

What few designers and even fewer citizens understand is that there is a great deal of flexibility contained within the covers of the Green Book and state design manuals. One just needs to learn how to "own" it. To start, most design values are presented as ranges, with an undesirable goal at one end and a desirable one at the other. Until recently, most engineers had been trained to select the desirable dimension and tenaciously defend it.

But using flexibility to create a good design does not end at simply finding the wiggle room presented in design tables. Most people do not consider that the Green Book and other design manuals provide a set of different ranges for design elements based on several considerations, known as fundamental design controls. The primary design controls are: a) functional classification of the roadways; b) design speed; and c) design for vehicle mix.

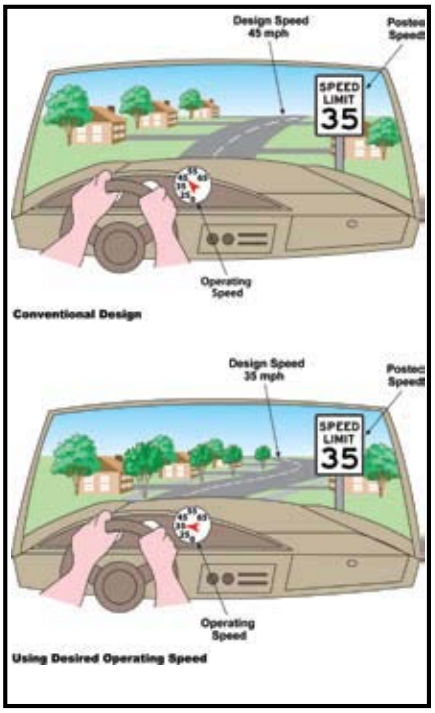
The adjacent terrain is another key factor, but there is little that you can do to change an agency's perception about terrain. The first three are described in more detail below:

The Green Book states that: "The intent of this policy is to provide guidance to the designer by referencing a recommended range of values for critical dimensions. Sufficient flexibility is permitted to encourage independent designs tailored to particular situations."

## A. FUNCTIONAL CLASSIFICATION

Defining arterials, collectors and other roads is not an exact science. Briefly described in Chapter III and further explained in the Appendix, functional classification is a design control that guides a project's outcome, based upon the character of the traffic it will serve. The functional classification system shapes how DOTs think about and design roadways. It is important because:

- It directly influences the selection of many design parameters;
- It indirectly influences other elements because it limits how low the design speed can go;
- It frames the thinking behind the design process.



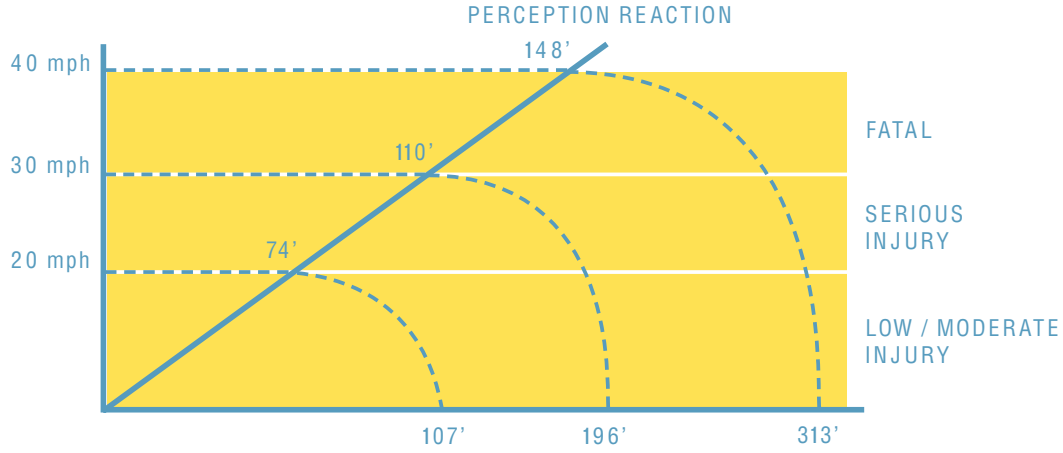

## B. DESIGN SPEED

Further flexibility can be found in design manuals once you understand the concept of design speed. Design speed is a concept based on the science that drivers moving at faster speeds need more time to react to unexpected events on the road, more time to stop their vehicles once the brakes are applied, and more distance to recover once their vehicle leaves the road. This is something that we all know intuitively. For instance, if it takes 2.5 seconds for a driver to react to a stalled car ahead, a car traveling at 60 mph will travel 100 more feet before the brakes are applied than if the car was traveling at 25 mph. Then, once brakes are applied, due to the higher momentum of a car traveling at 60 mph, it would take several hundred more feet for the brakes to actually bring the car to a full stop. Many design standards are based on similar kinds of calculations.

**Design speed** is a concept which goes back more than 70 years and was first introduced due to concerns about increasing crashes on highway curves (NCHRP Report 504, Design Speed Operating Speed, and Posted Speed Practices). In addition, it is a tool created to acknowledge that as speeds go up, motorists need flatter curves or a greater distance to recover from incidents or loss of control.

The Green Book provides ranges for design speeds on various kinds of roadways, based on functional classification and the type of terrain. For instance, the range for arterial streets

in urban areas is 30 to 60 mph, and 20 to 30 mph for local streets. This provides considerable flexibility for the DOT designer when trying to fit a street design into your community, because the selection of a design speed can substantially alter the strictness of the design values for different roadway elements. In the absence of any reason for doing otherwise, highway designers always start by selecting the highest speed in the range. As AASHTO puts it in its Flexibility Guide, a companion to the Green Book, "... many designers consider design speed as a surrogate for design quality... the notion of designing a high quality, low speed roadway is counterintuitive to some highway engineers. Yet, in many cases it is the appropriate solution to a sensitive neighborhood or other street design problem." Furthermore, it is possible that a higher-speed design may actually be less safe than a lower-speed design, based on the specifics of that place and the well-documented direct relationship between speed and crash fatality rates. See the graphic below taken from a recent National Cooperative Highway Research Program Report.



This means that in addition to inquiring about functional classification on a road project, you should also ask about the design speed selected for the project. What is the design speed, and how did they go about selecting it? A high design speed is sometimes warranted, but not always. Designers are supposed to make reasoned decisions in selecting a design speed. Factors such as higher traffic volumes, rates of truck traffic and flat terrain might argue for a higher design speed. Meanwhile, factors such as rolling topography, denser development patterns and high pedestrian activity make a strong case for lower speeds. Transportation professionals are supposed to make a sound engineering decision based on multiple factors, and you have the right to understand, and possibly challenge, the rationale behind the selection.

| Design Speed (mph) | Assumed Speed for Condition (mph) | Coefficient of Friction (f) | Stopping Sight Distance Rounded for Design (ft) | Rate of Vertical Curvature, K (length (ft) per percent of A) | |
|---|---|---|---|---|---|
| | | | | Computed* | Rounded for Design |
| 20 | 20-20 | 0.40 | 125-125 | 8.6-8.6 | 10-10 |
| 25 | 24-25 | 0.38 | 150-150 | 14.6-16.1 | 20-20 |
| 30 | 28-30 | 0.35 | 200-200 | 23.7-28.8 | 30-30 |
| 35 | 32-35 | 0.34 | 225-250 | 35.7-46.4 | 40-50 |
| 40 | 36-40 | 0.32 | 275-325 | 53.6-73.9 | 60-80 |
| 45 | 40-45 | 0.31 | 325-400 | 76.4-110.2 | 80-120 |
| 50 | 44-50 | 0.30 | 400-475 | 106.6-160.0 | 110-160 |
| 55 | 48-55 | 0.30 | 450-550 | 140.4-217.6 | 150-220 |
| 60 | 52-60 | 0.29 | 525-650 | 189.2-302.2 | 190-310 |
| 65 | 55-65 | 0.29 | 550-725 | 227.1-394.3 | 230-400 |
| 70 | 58-70 | 0.28 | 625-850 | 282.8-530.9 | 290-540 |

* Using computed values of stopping sight distance.

In the table above, note how quickly the value for stopping-sight distance increases with design speed. This will in turn will lead to roadway designs that are straighter and flatter, and therefore less flexible in avoiding community and environmental impacts.

There is even a mechanism for selecting design speeds below the values in the AASHTO Green Book, although it should only be used if all else fails and strong reasons exist to do so. For federally funded projects, this would require a design exception. (See discussion in the next chapter.)

The prevailing opinion in the design community is to set design speeds at 5 mph higher than the expected speed that motorists will drive on a roadway, which further limits flexibility in roadway design. This is not mandated by the Green Book, yet this practice has been officially adopted in many state design manuals and unofficially as a prevailing philosophy throughout the profession.

In recognition of the problems this creates, some states are moving away from this practice. For example, New Jersey DOT and Pennsylvania DOT require their designers to select controlling design elements that reflect design speeds equal to desired operating speeds. The Vermont Agency of Transportation revised its State Standards in 1996 to allow a roadway's design speed to be equal to or less than the posted speed. Significantly, there has been no apparent reduction in safety on Vermont roads since this new policy was adopted.

**Desired operating speed is one of the most important concepts described in the Smart Transportation Guidebook. The desired operating speed is the speed of traffic that, in the expert judgment of the highway designer and community planner, best reflects the function of the roadway within the surrounding land use context. Identification of this speed allows the designer to select an acceptable design speed and appropriate roadway and roadside features.**

*PennDOT and NJDOT Smart Transportation Guidebook Executive Summary*

Selection of an appropriate design speed is important not only because of its influence on a roadway's impact on your community, but also because it influences the ultimate operating speed on roads in your neighborhoods and business districts. It is an accepted axiom among highway designers that most drivers will travel on a roadway at the highest speed at which they feel safe. This is often higher than the posted speed limit – sometimes much higher. Therefore high design speeds yield high vehicle operating speeds. This affects pedestrian safety, which in turn can affect the viability of commercial districts and the quality of residential areas. The Green Book itself acknowledges the affect of vehicular speeds on pedestrian activity and, in turn, on the vitality of neighborhoods and commercial areas stating:

*"In general, the most successful shopping sections are those that provide the most comfort and pleasure for pedestrians."*

While the Green Book itself does not specifically address the relationship between high operating speeds and pedestrian comfort and safety, a number of studies have shown that they are inversely related. The need for "Speed Management" is acknowledged in AASHTO's Guide for the Planning, Design and Operation of Pedestrian Facilities. Here AASHTO states:

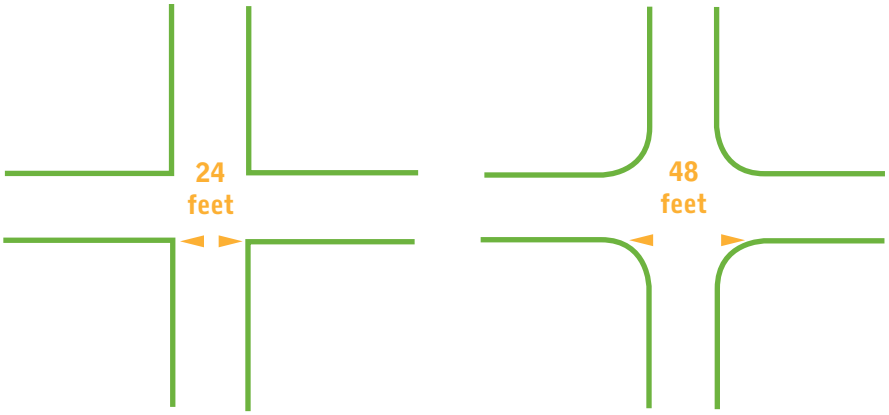
*"The selected design speed should be appropriate for the specific street being designed, including consideration of the anticipated vehicle operating speeds and the anticipated level of pedestrian activity."*

The AASHTO Pedestrian Guidebook suggests that designs should reflect and even encourage speeds of no more than 30 to 45 mph for urban arterial streets, and 20 to 25 for local residential streets. When speaking with DOT staff, be sure to raise questions about the practice of setting of design speeds higher than the expected or desired driving speeds.

## C. DESIGN FOR VEHICLE MIX

Often, highway designers plan for the most extreme circumstances of vehicle types. They may focus on the largest possible trucks known to pass through an intersection and design the entire street with dimensions based on serving that vehicle. This results in very large intersection designs – corners are cut back and configured in large sweeping arcs. While this is intended to ensure the easy passage of large trucks and buses without impeding traffic flow, it has several undesirable ancillary effects:

The distance that pedestrians have to cross increases;
The speed of turning vehicles increases;
More physical space is devoted to streets instead of community uses.




### DESIGN VEHICLE VS. CONTROL VEHICLE:

**Design vehicle:** a vehicle that must be regularly accommodated without encroachment into the opposing lanes when turning.

**Control vehicle:** a vehicle that infrequently uses a facility and must be accommodated, but encroachment into the opposing traffic lanes, multiple point turns, or minor encroachment into the roadside is acceptable.

It is not required or even necessary to base street design on the largest conceivable vehicle that could use that intersection. The Institute of Transportation Engineers/Congress for the New Urbanism Thoroughfare Manual instead suggests selecting the largest design vehicle that will use the road with considerable frequency, particularly in urban areas, downtowns or villages with high pedestrian activity.

There is no mandated use of any particular design vehicle for a given project, according to the AASHTO Guide to Achieving Flexibility. If you see designs for an intersection with very rounded corners (see figure to the right), ask the DOT to explain which design vehicle they designed for and how they selected it. If there are a lot of bus routes passing through the area, designing to accommodate them may be a reasonable choice. However, using the largest tractor trailers as design vehicles in areas of high pedestrian activity is justified only if a large number of those trucks actually use the street, and there is no alternative routing available. A few trucks a day is not a large number!

The pedestrian crossing distance in this highly residential area in a community noted for its walkability is increased from 24 feet to over 100 feet due to a design to accommodate large trucks which almost never turn off of the main highway. This not only makes the intersection crossing distances longer, the sweeping curves induce vehicles to enter residential areas adjacent to the main highway at perilously high speeds.

In the case of design vehicles, it is once again essential to do your homework. This is particularly true if you come across a DOT design which includes wide, sweeping curves at intersections.

## PUTTING IT ALL TOGETHER: DESIGNING FOR FLEXIBILITY

Transportation professionals may sometimes tell you that they cannot make changes to their plans because of legal liability concerns in the event of future accidents (see Chapter VIII). When applied properly, flexible designs do not mean increased liability. The key to avoiding liability is for transportation engineers to avoid making arbitrary design decisions, and even the appearance of them. The decision-making process must follow established procedures and be based on sound engineering judgment. The fact-based rationale leading to all engineering decisions must be well documented.

Design flexibility requires engineering decisions to begin with a thorough evaluation of the area included in the project. Obviously larger improvements will encompass a larger study area. The components of a project's context include:

**Natural environment**

**Community issues**

(including existing property values and the community's vision for the future)

**Land use**

(both existing patterns and a vision for the future)

**Transportation needs**

(in both a local and regional context, including transit, bikes and elderly and young pedestrians)

## OTHER DESIGN CONSIDERATIONS

Transportation engineers should know that the foreword of the AASHTO "A Guide for Achieving Flexibility in Highway Design" (published in 2004) clearly states that AASHTO supports the concepts and principles of flexibility in highway design and feels that all professionals responsible for highway and transportation projects should understand how to accomplish a flexible design solution within the currently accepted design processes and approaches.

The traditional design process typically starts with determining the project's functional classification, design speed, average daily traffic and percentage of trucks. Once this information is gathered, the road designer refers to the roadway geometrics criteria in the Green Book and establishes the appropriate geometric features and dimensions.

On the other hand, a flexible design approach encourages the designer to begin with an evaluation of the project location characteristics – existing roadway features, crash history, environmental resources, existing and future land use, the transportation context of the roadway and community vision. Another key component, which must be thoroughly evaluated, is essential transportation needs.

Transportation needs may be based on, but are certainly not limited to, vehicular safety (crash history), vehicular mobility, pedestrian and bicycle safety and mobility, connectivity to other transportation modes or a combination of these items. Clearly defined needs are central to guiding the development of possible solutions and, ultimately, measuring the success of the selected solution.

Based on the project area's characteristics and needs, the existing roadway and the surrounding network should be evaluated to determine if low-impact, low-cost improvements would be adequate to address documented needs. Only after these improvements have first been evaluated and determined to be inadequate should more extensive improvements, such as a major roadway widening or bypass solutions, even be considered.

Concerns about community and environmental impacts are not the only reason to be flexible in designing streets. Pennsylvania DOT, for instance, emphasizes "cost-effective" design in its CSS and Flexible Design Training Program. It notes that cost-effective design is a principle outlined in the Green Book. The "goal of cost effective design is not merely to give priority to the most beneficial individual projects, but to provide the most benefits to the highway system of which each project is a part."

While citizens and transportation planners naturally want to design and build the ultimate solution for a particular project, it is important to keep in mind that "moderate" improvements (that do not compromise safety) will ultimately allow more improvements to be funded statewide. If you cannot sway your DOT to scale back their plans based on community impacts, then try reasoning with them on a financial basis!


## *Chapter Highlights*

Transportation design guidelines, either from the AASHTO Green Book or state design manuals, allow for flexibility in the construction of roadways. This flexible design approach requires the transportation planner or engineer to first thoroughly evaluate the characteristics of a project site including: the environment, community issues, land use and transportation. Following this initial evaluation, a set of roadway criteria known as design controls influence the design. Three fundamental design controls are:

1. Functional classification of roadways;
2. Design speed;
3. Design for vehicle mix.

### HELPFUL RESOURCES

AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities, http://www.transportation.org/

VII

# Challenging the Justifications for Large Road Projects

## *Do Not Assume That Traffic Projections and "Level of Service" Targets Are Sacred*

When considering new roads and road-widening projects, it is well worth your time to familiarize yourself with the technical, but straightforward language of engineers and transportation planners. This will help you understand their mindset and to speak the same language. Understanding the basic concepts of levels of service and traffic-model forecasting will prove to be a huge advantage.

### "LEVELS OF SERVICE" TARGETS AND WHY THEY ARE IMPORTANT

According to the Highway Capacity Manual, level of service is a "performance indicator of a traveler's satisfaction with the trip." The Highway Capacity Manual (HCM) is a collection of procedures and methodologies for calculating highway capacity and vehicular levels of service. If the AASHTO Green Book is the bible of highway designers, the HCM is the same for traffic engineers. But, in reality, it neither constitutes nor attempts to establish legal standards for highway construction. (For more information see, The Highway Capacity Manual Development and Application: http://onlinepubs.trb.org/onlinepubs/trnews/rpo/rpo.trn129.pdf.)

Level of service (LOS) is rated much like a student's report card, with "A" generally representing the most favorable driving conditions (sometimes described as "free-flow") and "F" representing stop-and-go traffic (see Appendix A for a detailed description of Highway Levels of Service). One rule of thumb for determining LOS on roadways between intersections would be to divide the volume of traffic (number of cars) on that section during a particular hour, by the car carrying capacity of that section. This is often referred to as the volume-to-

**Level of service is a grading system for amount of congestion, using the letter A to represent the least amount of congestion and F to refer to the greatest amount.**

capacity (V/C) ratio. For instance, at a V/C ratio of .71 to .80 (in other words, when the number of cars on a particular roadway segment is at 70 to 80 percent of its capacity), the LOS rating for that segment will likely be "C". At a V/C ratio of 1.0, the LOS will likely be classified as "E" (The Washington County, Oregon's planning department's website gives an excellent description of the relationship among LOS, V/C ratio, operating speeds and flow characteristics. See: http://www.co.washington.or.us/deptmts/lut/planning/ord2002/ord588a/TechAppB3.pdf).

Levels of service at intersections are calculated somewhat differently, using average overall time delay (referred to as control delay) experienced a vehicle by passing through the intersection. See the table below for the parameters.

There are no comprehensive requirements regarding the use of levels of service and V/C ratios in transportation planning and project design. The Green Book and most DOTs provide guidelines for selecting LOS, but these are guidelines only. DOTs are not required to file design exceptions, nor are they subject to legal liability concerns, for selecting a LOS lower than the recommended guidelines. Rather, selection of a target LOS is a policy decision and is based on a particular philosophy on whether to do everything possible to avoid any traffic congestion.

Historically, the design targets for a road project have been selected using anticipated future traffic volumes and desired LOS for the hour during the day with the highest traffic volume (i.e., peak hour). Furthermore, the peak-hour volume chosen is not calculated for the current year, but is generally projected 20 years into the future, or even 20 years past

| LOS | Signalized Intersection | Unsignalized Intersection |
|---|---|---|
| A | ≤ 10 seconds | ≤ 10 seconds |
| B | 10-20 seconds | 10-15 seconds |
| C | 20-35 seconds | 15-25 seconds |
| D | 25-55 seconds | 25-35 seconds |
| E | 55-80 seconds | 35-50 seconds |
| F | ≥ 80 seconds | ≥ 50 seconds |

the projected completion of construction. This practice made sense at the height of Interstate construction when the nation's transportation agencies were investing what ultimately amounted to more than $100 billion for over 44,000 miles of new freeways. When planning these major highways, it was logical to make sure they had enough lane capacity to remain free flowing for at least 20 years after construction.

This logic becomes increasingly less persuasive when applied to roadways with less traffic, which are not major interstate or state roads. Unlike interstates and freeways where there are no pedestrians or buildings with direct access to the road, most of the nation's roadways are places where pedestrians and bicyclists should be allowed to travel comfortably, and where adjacent properties have rights of access onto the roadway, including driveways. These roads, even if they are major arterials on the state highway system, have multiple purposes. They exist not just to move traffic through the area, but they also serve the homes, businesses and people along them. To achieve a high LOS ranking on these kinds of roadways, DOTs would need to widen streets, add lanes, get rid of on-street parking, limit crosswalks, add turn lanes and other often inappropriate strategies.

If streets are designed for the highest peak hour 20 years in the future, they may function successfully for vehicles during that one peak hour, but will be "over-designed" for the other 23 hours of the day and will always function poorly for the surrounding community. Furthermore, until the forecasted growth materializes, the roadway will be over designed, even during the peak hour, during the first five to ten years after construction is completed. Over designed roadways encourage motorists to drive at higher speeds and during off-peak hours. A wide road can turn into a speedway, which can be difficult to cross and unpleasant to walk along. This degrades public spaces between the edges of the road and the adjacent buildings, encourages people to drive short distances, and generally unravels a community's social fabric and lowers quality of life.


The photos above depict two state highways. In the first, every convenience that was mixed into neighborhoods in traditional development patterns is now on the state highway. In the second, you can see that the state highway is relatively free of commercial uses. It is no coincidence that the first is multi lane and congested.

But there is hope. Owing to the growing necessity of keeping costs under control, and fearing project delays due to community opposition to large widening projects, some DOTs are beginning to choose lower LOS targets for non-freeway projects. They are even beginning to accept LOS F (stop-and-go traffic) for one or more hours a day, particularly at intersections. At intersections, where LOS is measured by seconds of delay, a poor LOS F may mean 200 seconds of delay. This could be improved to a better LOS F with only 100 seconds of delay. Such a decision might allow an agency to drop one or more lanes from a proposed intersection design, a significant improvement since each lane requires at least 10 to 12 feet of space from the surrounding neighborhood.

Keep in mind that nowhere is it etched in stone that the LOS targets for a project in your community needs to be set at C, D, or even E. The first questions you should raise when faced with a DOT project that seeks to add lanes to a road or intersections in your community are: What are the levels of service targets for this project? How did the DOT arrive at those targets? Did the DOT consider lower levels of service? Did the DOT consider the possibility of accepting LOS F at the peak hour, provided you could get meaningful improvement for vehicle flow at other hours of the day? Does improving the traffic flow at this location really make much of a difference in the commute, or are the roads which this leads to also congested?

Regarding the latter point, press your DOT to move away from the LOS measures and to calculate travel time savings. This always puts the community and financial costs of widening a roadway in perspective. In New Jersey, when moved to this new measure, it was often realized that the NJDOT was damaging communities and investing tens of millions of precious funding to shave a minute or two off of 45 minute or more commutes!

The impact of setting level of service goals is tremendous. Once a particular LOS target is adopted as a policy, DOTs feel justified and even required to widen roads and intersections to achieve the target. They often present their analysis as if the science behind it removes all cause for challenge. While the V/C (volume of traffic/car-carrying capacity) calculation is mathematical and cannot be challenged once the "V" and the "C" are set, how the future "V" (volume) is estimated is subjective and open to public debate, as is the process of selecting the LOS. Do not let the transportation planners bully you with their "scientific" data and models. As the innovative traffic planner Ian Lockwood likes to say, "challenge the transportation demand gods!"

**If streets are designed for the highest peak hour 20 years in the future, they may function successfully for vehicles during that one peak hour, but will be "overdesigned" for the other 23 hours of the day and will always function poorly for the surrounding community.**

Nowadays, there is increasing discussion about whether current level of service measurement definitions are valid at all. At the 2002 Annual Meeting of the Transportation Research Board, a panel debated this topic extensively, arguing that

this performance measurement, as currently defined, penalizes road designs that aim to provide balance among all road users, not just accommodate cars. See the inset below for more discussion.

For those of you who like the idea of achieving a high LOS that results in as little congestion as possible, remember that wider roads with speeding cars detract from human activities other than driving. It is difficult to walk near these roads without being overwhelmed by cars whizzing by or being threatened by drivers pulling into and out of parking lots. The overall driving and walking experience in your community should be pleasant. The roadway system should support, not detract from, overall quality of life.

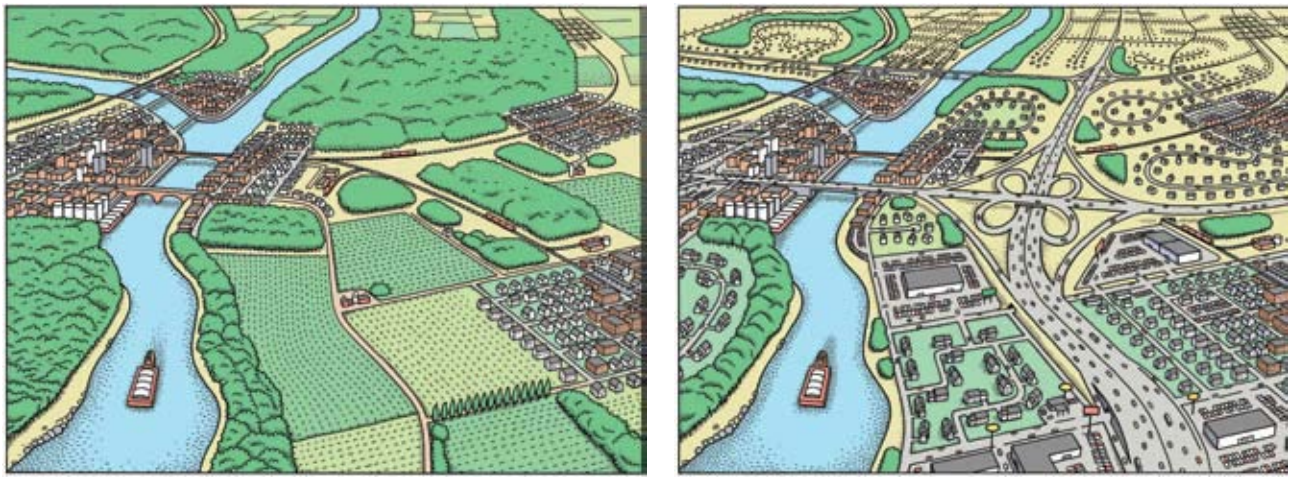
### TRB MEETS, DEBATES LEVEL OF SERVICE

"The Transportation Research Board's annual meeting in Washington last week [January 2002] included a debate over the future of the Level of Service (LOS) measure of road quality… five panelists debated the usefulness of LOS… The majority of the panelists agreed that current LOS measures need to be substantially adjusted, or even scrapped, to allow for a broader definition of effectiveness. Panelists noted that although LOS is the measure used most frequently in traffic impact analysis of new developments, it is easily "gamed" to suit developers' purposes. Several participants also commented that the current LOS measure also usually penalizes roads for providing good pedestrian crossings, frequent bus stops, and similar transportation improvements. The implications of this debate are enormous, as LOS is commonly used as the primary justification for new roads and widenings."

–from STPP Transfer, January 24, 2002, http://www.transact.org/transfer/trans02/01_24.asp

## UNDERSTANDING TRAFFIC MODELING AND TRAFFIC FORECASTING

American transportation planners use many models to forecast future traffic levels. They are all based on data about current and future traffic levels in the study area. Those future estimates are, of course, about the rate and composition of growth in your region as well as the shape (e.g. sprawl with disconnected streets or compact mixed use) and location of that growth. If high rates of growth are used in the model for future traffic, your community may be doomed to a series of roadway widenings or intersection expansions because the model predicts high future traffic volumes and low level of service ratings. If the traditional LOS C or D performance measures are adopted as non-negotiable targets, major road construction will be heading your way. Therefore, it is critical for your community to engage your DOT, and local planners, to take a close look at the LOS performance measures selected (see section above) and the growth assumptions used for traffic modeling.



Traffic forecasting modelers rarely account for the increasing pattern of growth in the form of compact mixed-use developments that are shown forming surrounding the railroad tracks in the sketches above.

Without direction or a reason to do otherwise, transportation planners will assume that growth and land use patterns will continue to occur without regard to the type and level of transportation investment. They will also likely assume that future growth will occur in the business-as-usual pattern of sprawling land uses, which separates businesses from homes and services, and configures new streets to be circuitous and disconnected so that walking and biking become nearly impossible. To re-emphasize a previous point, with no supporting grid of streets to relieve the main roads, the state highway, or county/municipal arterial, will be forced to carry almost all of the new traffic generated by the growth. Many state highways are accommodating not only vehicles traveling through your town, but local trips made by you and your neighbors – trips that could be accommodated on local roads if they were properly connected. Not surprisingly, the model used by transportation planners will generate very high traffic demand figures – particularly on major roadways – and set the stage for large-scale road expansion projects.

What's more, most traffic models also include background traffic growth, which assumes that traffic continues to steadily grow even without any population or employment growth in the area. This practice will further boost the high volumes predicted 20 years into the future. A target LOS of C or D for every road and intersection 24 hours a day, seven days a week, 365 days a year will ruin a downtown or neighborhood shopping district—large roads and high-speed traffic will encourage residents, shoppers and businesses to retreat from the streets, instead of embracing them as valuable public space.

**It is critical for your community to engage your DOT, and local planners, to take a close look at the LOS performance measures selected and the growth assumptions used for traffic modeling.**

This is not the fault of the traffic model; it is the fault of the data that is put into it. In my early years at DOT, we used to say: "Garbage in, garbage out."

As someone who cares about your community, you are responsible for challenging transportation planners (and the municipal officials for whom they work) to justify all of the assumptions they use in preparing these models. For a particular region, there may be several different estimates of projected growth, ranging from conservative to supersonic. Which estimate an agency chooses is very important. Some of these estimates may be valid, but some may be simply based on the unrealistic continuation of past growth trends. I have even seen instances where planners and modelers have based traffic projections on the assumption that every single parcel of land in a community will be developed, no matter how unlikely that scenario.

Please remember that all of these numbers are eligible for debate and negotiation. There is no reason why a citizen cannot raise questions, listen to the answers and raise more questions. This kind of debate may cause elected officials to open their eyes. Citizens sometimes do persuade transportation planners, MPOs, or the modelers themselves to question their assumptions. Citizens have the right to participate in decisions about how intensely they want to grow and what kind of growth they want.

A debate is underway within the transportation planning profession about whether community planning should be based on the outcomes of traffic modeling. Typically, transportation planning and land use/community planning have been done independently, with community planners waiting for the result of the transportation modeling and then accepting with little question which streets need to be widened, extended, or realigned, and where and when new streets need to be added. Almost as an afterthought, the community is then planned around these roads, following the unwritten code that we must never allow E or F levels of service anywhere. The inevitable result is a community plan that gives absolute priority to the movement of vehicles in and out of the town, with neighborhood quality of life of secondary importance.

There is no reason that things must continue to be done that way. If this is happening in your community, demand that your community leaders stop planning the future in this compartmentalized fashion, and stop believing that they have no choice but to accept the results from traffic modeling.

In other words, you can build a great community, but only if transportation, land uses, public facilities (e.g., schools) and recreation destinations are planned in an integrated way. Encourage your leaders to initiate discussions with citizens about creating a vision for what kind of community you want in the future. Then present that collective vision to transportation planners and modelers so they can design a system that supports it! Request that modeling be performed not to shape your streets in advance of community visioning, but instead to identify troublesome locations once the framework of a community plan are laid out.


Even if a particular segment of roadway is experiencing, or predicted to experience, LOS F, there should not be an automatic mandate to eliminate that at all costs. Rather, an informed discussion should take place about how to balance transportation needs and the community's vision. Some streets may need to be designed to carry heavy vehicular loads, but most should be designed to support the community (not vice versa). The streets designed for heavy volumes should be carefully selected and located to be consistent with the community vision, not automatically placed to provide maximum traffic efficiency. They should typically be on the periphery of town, not through the center. In areas of increasing urbanization and development, it is ideal to create an integrated network of connected streets so that the traffic load can be distributed across many streets, allowing the opportunity to make most of them context sensitive and comfortable for people. This will facilitate better community planning and maximize opportunities for walking and biking.

**You can build a great community, but only if transportation, land uses, public facilities (e.g., schools) and recreation destinations are planned in an integrated way. Present a community collective vision to transportation planners and modelers so they can design a system that supports it!**

The best places are ones in which the transportation system serves the community, instead of vice versa, because it allows people to get out of their cars and reduce the traffic demand on local streets. There is a growing body of literature and research that proves mixed-use, walkable neighborhoods can reduce vehicle miles of travel by at least 25%. Current computer models do not yet take this into account. You and your neighbors will have to instruct the traffic modelers to include this consideration into their calculations.

## LESSONS TO LEARN

Be wary when traffic projections and levels of service are invoked as ironclad reasons to design a project a certain way. These measures can be subjective and are rarely balanced with community performance measures. LOS and traffic forecasting are tools, not determinants, in the decision making process. Current practices in planning should be reversed so that a community vision is developed first and then LOS and traffic modeling, if used at all, are employed as tools to help achieve that vision.

## *Chapter Highlights*

Level of service (LOS) is an auto "performance indicator" structured in a grading system in which an "A" which represents the free flow driving conditions, and an "F" represents stop-and-go traffic.

Traffic modeling estimates current and future traffic levels, often 20 years or more into the future, thus determining the need for roadway or intersection expansions. Increasingly, communities are questioning the assumptions inherent in these projections and are seeking to revise the transportation planning process. A community's development plan, which including a vision for its public places, should be created first with a transportation network laid out to support that plan. The current practice of allowing traffic modeling and LOS targets to dictate how the system is designed and forcing communities to react must be transformed.

## SELECTED RESOURCES

The Highway Capacity Model
http://onlinepubs.trb.org/onlinepubs/trnews/rpo/rpo.trn129.pdf
http://onlinepubs.trb.org/onlinepubs/trnews/rpo/rpo.trn129.pdf

Washington County, Oregon LOS, V/C ratio, operating speeds and flow characteristics
http://www.co.washington.or.us/deptmts/lut/planning/ord2002/ord588a/TechAppB3.pdf


STOP

VIII

# Getting What You Want

## *Design Exceptions Are Another Way To Achieve Flexible Design*

State and federal design guidance recognize that it is not always practical or reasonable to meet standardized design guidelines. Standards are based on national norms, and local conditions sometimes call for different solutions. Federal and state design processes, therefore, permit the use of design exceptions, in situations where:

- Community, environmental or economic impacts are significant;
- Designers have already attempted to use all of the flexibility described elsewhere in this document;
- The resulting safety issues of not meeting the standards are well understood, and the risks have been weighed carefully.

If you have been working with your highway professional, and have exhausted all options within the design guidelines in order to achieve the result that you want, it may be time to seek a design exception.

A word of caution—design exceptions are not routine. Design guidelines represent best practices for providing a reasonable expectation of safe driving conditions. These guidelines are not waived indiscriminately.

On the other hand, asking for design exceptions should not be avoided altogether. They are certainly acceptable under state and federal regulations and are recognized as a useful tool when evaluated and applied properly. Highway designers have been using design exceptions since the dawn of the Interstate era, albeit mostly based on economic factors. The practice of using design exceptions to fit a roadway's design into its community context is not as common, but it is equally applicable, nonetheless.

The first chapter of AASHTO's "A Guide for Achieving Flexibility in Highway Design" states:

*"Just as design exceptions should not be sought routinely, acceptance of a design exception should not be viewed as an admission of failure."*

*"... designers should avoid labeling a value that is outside the norm as 'unsafe'... unless he/she has a clear understanding or evidence that it is so."*

*"A properly documented design exception process (which includes a crash analysis, benefit-cost analysis, and a rationale for deviation from the guidelines), supported with meaningful and timely public involvement, is essential for agencies operating within a context-sensitive design environment."*

*"Put simply, it is sometimes the case that a design which meets full design criteria is unacceptable or unachievable for one or more reasons."*

This last statement is very important! AASHTO acknowledges that design exceptions may be warranted when full criteria are either "unachievable" or "unacceptable." Again, many engineers are only willing to consider design exceptions when full criteria are not possible, but they are also an option when designing to standards is not acceptable because of the impact on the community, environment or local economy.

## UNDERSTAND WHAT TYPE OF ROAD IT IS

The National Highway System (NHS) is described in the inset on the next page. It is worthy of mention because work on streets and roads that are not part of the NHS are, by regulation, only subject to state design and construction standards. "If the highway project is not on the NHS, the State does not need FHWA approval for a design exception," states the Federal Highway Administration (FHWA) publication "Flexibility in Highway Design" (1997, Chapter II, pg. 37).

Despite this clear language, many states still approach NHS and non-NHS roadways in the same way. They sometimes mistakenly, or even intentionally, insert an extra step to the design exception process by claiming FHWA will not approve a design exception for the requested design. If you encounter this response, check whether the roadway in question is part of the NHS – which makes up only about 4% of road mileage in the country. You can find out whether a particular segment of highway is on the NHS by going to the FHWA website at: http://www.fhwa.dot.gov/hep10/nhs/.

This is not to say that states should never require design exceptions for non-NHS projects. However, delegating the design exception process to state DOTs and county and municipal engineers encourages a choice of appropriate designs for non-NHS projects. It also allows maximum flexibility so they can custom fit their projects into the wider context of community, financial, environmental and transportation concerns.

THE NATIONAL HIGHWAY SYSTEM is approximately 160,000 miles (256,000 kilometers) of roadway important to the nation's economy, defense, and mobility. Its creation was directed by the Intermodal Surface Transportation Efficiency Act (ISTEA), which sought to consolidate previous national classification systems. ISTEA divided roads into two categories, simply enough, NHS and non-NHS. ISTEA created the mandate for states to follow the Green Book for projects involving the NHS. "Projects (other than highway projects on the National Highway System) shall be designed, constructed, operated, and maintained in accordance with State laws, regulations, directives, safety standards, design standards, and construction standards."

## VIII.I Getting Smart About the Issue of Liability

### *Transportation Professionals Sometimes Exaggerate the Risk of Lawsuits*

No book, article or presentation about flexible highway design would be complete without mentioning the issue of tort liability. The fear of lawsuits is often a factor in the selection of rigid street designs and is one of the chief barriers citizens face when seeking flexibility. It is a powerful event when a professional sits across the table from a citizen and says "we cannot do what you asked because we will be liable." This usually shuts down the dialogue without ever delving into the details. The Executive Director of a Park Commission in New Jersey once complained to me, "you engineers use liability in the same way villagers use a cross to hold back vampires: you hold up the design books and say 'be gone, go away!'"

I watched this happen many times during my career at NJDOT. What I began to learn, however, was that most of the transportation professionals who cited liability had never been sued or even consulted with an attorney. The use of the liability "cross" was at best, innocent. At worst, once we learned how effective it was in shutting down discussion we began to use it as a trump card.

When we actually did consult our attorneys, we learned that courts have recognized that transportation professionals are often faced with the dilemma of making difficult decisions between competing interests. We are expected to consider issues like the safety of pedestrians and the viability of a community alongside the safety of the motoring public. In fact, the AASHTO Green Book states so explicitly: "Emphasis has been placed on the joint use of transportation corridors by pedestrians, cyclists, and public transit vehicles. Designers should recognize the implications of this sharing of the transportation corridors and are encouraged to consider not only vehicular movement, but also movement of people, distribution of goods, and the provision of essential services. A more comprehensive transportation program is thereby emphasized." (AASHTO, Geometric Design of Highways and Streets, 2004, p. xliv).

Urban Ecology's guidebook entitled "Walkable Streets: A Toolkit for Oakland" suggests that when a transportation professional tells you "we can't assume the liability for that" your response should be "while safe street design is extremely important, overdesigned streets can actually be less safe than streets that force drivers to be more cautious." (Chapter 5, p.92).

Readers who are interested in learning more about tort liability in transportation planning are referred to Chapter IV of AASHTO's "A Guide to Achieving Flexibility in Highway Design." Further insight on this topic can be obtained from a paper written by former US Attorney Robert O. Jones, which is posted on the FHWA's Context Sensitive Solutions website. In his paper, Jones reports that "Congress has established statutory requirements and public policy clearly demonstrating that safety...as a primary consideration in design should be balanced with mobility, protection and enhancement of the natural environment, and preservation of community values." ("Context-Sensitive Design: Will the Vision Overcome Liability Concerns?" Robert O. Jones, Thomas B. Deen Distinguished Lectureship, TRB 2004 Annual Meeting http://www.contextsensitivesolutions.org/content/reading/context-sensitive/resources/richard-jones-lecture/).

In summary, it is not my intent to dismiss the issue of liability. It is real and can be appropriately raised by transportation officials and professionals, particularly if transportation decisions appear arbitrary, unmindful of accepted practice and manuals, and fly in the face of evidence in front of the decision maker. However, prevailing practice and design guidance often allow for a wide range of legitimate discussions to take place before one reaches the point where it can be construed that decisions are "out of bounds." Therefore, never

allow the spectra of liability to shut down a conversation about a roadway project before it takes place. When faced with being told "we can't do that due to liability concerns," press on with the conversation being mindful of the following principles outlined elsewhere in this Guide:

1. Design manuals often present standards in ranges from minimum to desirable. Has the designer selected the desirables instead of minimums? (Chapter VI)
2. More flexible design values can be obtained if the designer reduces the design speed selected for the project. Can the design speed be lowered if appropriate? (Chapter VI)
3. Has the designer selected the appropriate design vehicle, or are they designing for the biggest truck that could possibly pass through your community? (Chapter VI)
4. If addition of lanes is included in the project, remember to challenge the selection of the Levels of Service targets and traffic growth assumptions. These are, at least initially, policy decisions, not legal ones. (Chapter VII)
5. Has the designer considered whether a design exception is appropriate? (Chapter VIII)

## VIII. II Calming the Traffic Is the Second Best Solution

### *There Is No Substitute for Designing Good Streets From the Start*

Traffic calming comprises a whole set of design features intended to slow the speed of traffic on community streets. There are several good resources available on traffic calming. My favorite is the 1999 publication, "Traffic Calming: State of the Practice," published by the Institute of Transportation Engineers and the Federal Highway Administration, which can be downloaded at http://www.ite.org/traffic/tcstate.asp#tcsop.

Traffic calming is an important tool to accomplish most of the goals talked about in this book, but I want to offer some additional food for thought: If we design our streets correctly in the first place – design them to be places for people – then we will not need to waste time, energy and money later trying to retrofit a poor design.

**Communities and transportation professionals who seek to create streets where drivers will respect the local context - both residential and commercial - should design these streets using narrow lane widths, street trees, gentle curves and very small, if any, shoulders.**

The picture on the previous page vividly demonstrates how the failure to consider the way a street design will function after it is built creates the opportunity for speeding. This street serves a suburban residential area and was never intended to be a high-speed roadway, yet every element of the street's design encourages motorists to travel at speeds of 40 mph or greater, which is dangerous to pedestrians and incompatible with the surrounding neighborhood. Clearly this was not the intent. Communities and transportation professionals who seek to create streets where drivers will respect the local context – both residential and commercial – should design them using narrow lane widths, street trees, gentle curves and very small, if any, shoulders. This will prevent the need for costly and controversial speed bumps and other traffic calming measures, after the fact.

## *Chapter Highlights*

Design exceptions within federal and state processes can be applied when a community and local DOT or MPO have exhausted all options with the area's guidelines. These are permitted in situations where:

- Community, environmental or economic impacts are significant;
- Designers have already attempted to apply all of the flexibility described elsewhere in this document;
- The resulting safety issues of not meeting the standards are well understood, and the risks have been weighed carefully.

Design guidelines, which represent the best practices for providing safe driving conditions, are not waived indiscriminately. However, design exceptions are increasingly being used to create roadway designs that respect communities, not simply to save on road construction costs.

This paradigm shift towards fulfilling community needs is allowable under government road guidelines and generally does not increase the risk of lawsuits. Liability can be invoked only if it is determined that an agency or individual failed to use due care. Few if any courts will conclude that the safety of pedestrians and the viability of a community is not a reasonable consideration to be added to the design decision-making process.

Traffic calming is a set of design features that slow the speed of traffic on local streets. If streets were initially designed to fit their context and serve as places for people, not just cars, traffic calming might not be necessary, saving local community members and government agencies time, energy and money.

### HELPFUL RESOURCES

Federal Highway Administration, Flexibility in Highway Design
http://www.fhwa.dot.gov/environment/flex/

National Highway System (NHS)
http://www.fhwa.dot.gov/planning/nhs/

AASHTO, A Guide to Achieving Flexibility in Highway Design
http://www.transportation.org/

Urban Ecology, Walkable Streets: A Toolkit for Oakland
http://www.urbanecology.org/walkable.htm

Traffic Calming in Practice
http://www.ite.org/traffic/tcstate.asp#tcsop

IX

# Dealing with Government Bureaucracies

## *You Catch More Flies with Honey Than Vinegar*

It's easy to get frustrated when dealing with government bureaucracies. Much of your experience with government officials probably consists of long periods of time spent trying to reach someone by phone, and when you finally get through to someone, you find that you have reached the wrong department and need to start the process over. Sometimes you are forced to stand in long lines just to start an application process, get a necessary piece of information, or even talk to a person.

Dealing with transportation professionals can bring a whole new level of frustration. For example, your first interaction could involve an expanded or realigned roadway, which almost certainly means that your community is about to be altered in a way most community members do not like.

DOT personnel are usually caught up in their perception of their mission. Having worked inside a government transportation agency for more than three decades, and mingled with colleagues from many other state, county and city DOTs around the country, it is clear to me the transportation profession is too inwardly focused. On the whole, transportation professionals do not pay enough attention to citizens in the communities where they work. The profession's performance measures relate to transportation goals, not community goals. Concepts like free traffic flow, smoothness of pavement and viability of bridge structures dictate most transportation decisions, and the needs of stakeholders and communities receive only lip service.

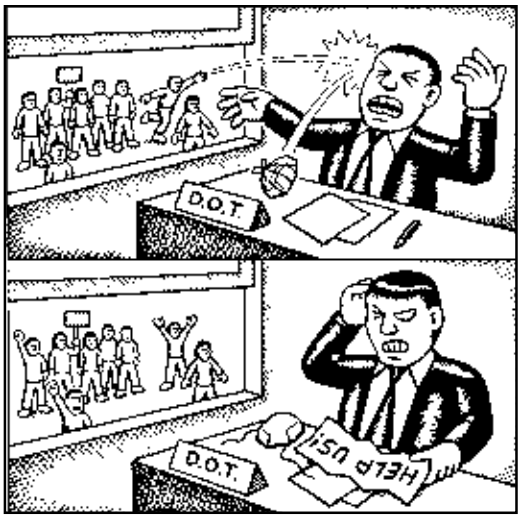
People's frustration with DOT employees may be aggravated by the widespread lack of respect for public employees in America. Many believe that public employees are lazy and do not know what they are doing, and people often mistakenly believe that their salaries and pension funds are the major reason for tax increases.

Is it any surprise that many average citizens cannot resist the temptation to rip into the first DOT staff member who is found? A person may start out calm, but the first time they think they hear "NO," people lose control and get angry – sometimes in subtle ways, sometimes not.

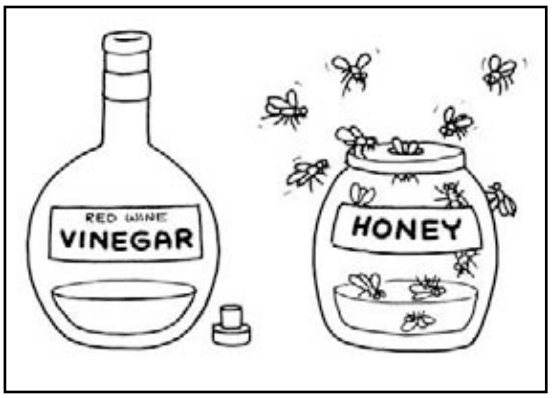
Before resorting to this behavior, however, residents need to consider that engineers and other DOT staff are people, too. They do not like being called names any more than the next person. Even if the conversation is civil and name calling is absent, there can be an apparent mood of hostility that undermines communication. This unspoken tension can incite a DOT employee to withhold anything but the bare minimum amount of information.

The truth is that most public employees – including transportation engineers – have a strong dedication to public service. Contrary to popular belief, they do not want their actions and decisions to anger people. They want to be helpful, which means that treating them with kindness in your initial encounters will bring out the best in them.

Instead of being instinctively angry, we should marvel at how thoroughly the transportation establishment delivered on its perceived mandate to provide Americans with a system of high-speed and safe roads, second to none in the world. The industry created a common "enabling framework for progress" consisting of language/terminology; funding mechanisms; curriculum at universities; values; and policies. Common professional organizations, such as AASHTO, the Transportation Research Board (TRB) and the Institute of Transportation Engineers (ITE) were created to reinforce and standardize this framework. This was done at a scale that has rarely been matched by any other profession. Is it any wonder then that the transportation planning in the U.S. that has affected the shape of our communities, has been dominated by transportation engineers? Meanwhile, citizens, elected officials, planners and advocacy groups have been far less influential. The profession has managed to convince two generations of planners, politicians, developers, construction industries, special interest groups and the public itself about how planning should be done. The current task is to address improvements.




This does not mean that you will always immediately get the answer you want from transportation engineers or feel that they are taking your concerns seriously. Several generations of these professionals have been groomed to believe that wider, straighter and more ubiquitous roads are unquestionably in the national interest. The creation of the interstate highway system set in motion a process




of indoctrination that insisted there was one and only one way to build roads – and that approach is still with us today.

Is this any different than a bank employee who turns down a loan for a new small business that might benefit your community, or a hospital employee who turns away a patient without health insurance? In each case, the employee thinks they are doing the right thing according to the philosophy and guidelines of a powerful organizational culture. In the case of the transportation industry, engineers really were trained to believe that new, high-speed roads provided the greatest good to society and were always justified no matter how much damage they did to communities. From my early years at NJDOT, I can still remember a director of right-of-way acquisition who described the removal of 3,000 low-income homes from one of the state's large cities as "using his surgeon's scalpel to remove the cancer before it killed the patient."

There is no guarantee that you will easily get the information you want by treating the DOT staff with respect. However, there is almost no chance that you will get anyone to listen to your concerns, or think differently about a problem, if you attack, demean or disparage them.

## IX.I Understanding Transportation Engineers

### *How To Get Them to Solve the Problems You Want Fixed*

It is easy to become frustrated when dealing with your Department of Transportation – engineers in particular have a reputation for lacking people skills. The good news is that they have been trained as problem solvers. In college they were coached over and over again to avoid personal opinions, emotional biases and other distractions from the facts. They were taught to simply take the problem statement given to them, gather up as much relevant data as is available, and crank out solutions. They were not encouraged to analyze the problems; they were instructed to simply provide a solution in light of given facts. Sometimes there are not enough facts to reach a solution, so assumptions must be made and when doing so, engineers believe the goal is to stick to accepted practice.

**The new goal for transportation agencies should be to balance the need for highway improvements with the need to safely integrate the road's design into the surrounding natural and human environments.**

Modern DOT engineers have been producing transportation solutions for over half a century based on how the problem has been presented to them by their government officials and society at large. If we want different solutions from engineers today, and it is clear that more and more people do, we need to present to them a different problem. The Context Sensitive Solutions movement is trying to do just that. The new goal for transportation agencies is to balance the need for highway improvements with the need to safely integrate the road's design into the surrounding natural and human environments.

## ENGINEERS AS PROBLEM SOLVERS

It is the time of the French Revolution, and the guillotine was being used each day. They're leading a priest, a drunkard and an engineer to the guillotine.

They ask the priest if he wants to face up or down when he meets his fate. The priest says he would like to face up so he will be looking toward heaven when he dies. They raise the blade of the guillotine, release it, it comes speeding down, and suddenly stops just inches from his neck. The authorities take this as divine intervention and release the priest.

Next the drunkard comes to the guillotine. He also decides to die face up hoping that he will be as fortunate as the priest. They raise the blade of the guillotine, release it, it comes speeding down, and suddenly stops just inches from his neck. So they release the drunkard as well.

The engineer is next. He too decides to die facing up. They slowly raise the blade of the guillotine, when suddenly the engineer says: "Hey, I see what your problem is."

From 2000 to 2004, the NJDOT trained more than 500 of its engineers in the principles of Context Sensitive Solutions. One day of the training session involved the art of Placemaking, during which we took engineers out to a major local street and asked them to look at it from a new perspective. Instead of viewing the street as a transportation planner, we asked them to look at the street from the perspective of a parent walking their child to school, or a local shop owner. It was remarkable that the instant we asked the engineers to look at the street from a different perspective – to solve a different problem – they immediately began to create different solutions. They began to say things like: "This street is too wide" or "The cars are going too fast" or "We need a better crosswalk here."

Try this the next time you deal with a transportation professional from your DOT. Shift the perspective and focus on a different approach to the problem that typically involves a different set of performance measures and data. Keep pressing them to ensure that the solution is sensitive to the community context, not just the transportation context.

## *Chapter Highlights*

Roadway construction, expansions and improvements can often be frustrating for local community members trying to get information or voice an opinion on how the DOT is affecting their neighborhood. Setting aside previous bad experiences with government bureaucracies, you'll find that constructive criticism and a positive demeanor go a long way in working with your local transportation agency. Transportation planners, engineers and local agencies are also doing their part by getting training in the principles of Context Sensitive Solution. Overall, the lines of communication should remain open to ensure that DOTs are sensitive to community needs, not only transportation needs.

X

# Taking Your Issues To the Next Level

## *There Are Effective and Ineffective Ways To Go Over Someone's Head*

Taking your problem to someone higher in the chain of command should not be your first course of action. But do not be afraid to take the discussion to the next level if your concerns are not receiving adequate attention after you have done your homework and attempted to engage with DOT staff. This is best done by first advising a staff member you are working with that you would like to talk to his or her manager and ask for the appropriate contacts. In many instances, you will get a name and possibly even some support. This is much more effective than going over someone's head without their knowledge. The first thing that senior staff members will do when you contact them about an issue is speak with you and then tell you they will be back in touch once he or she talks to the staff with which you have been dealing. Your chances of success are greater if that discussion remains civil and professional.

This is still no guarantee of satisfaction. If you are still frustrated in dealing with your DOT, you might choose to bring in elected officials on your behalf. In general, finding a state or federal representative to present your issue to the DOT carries more weight than a local official, but that does not mean that you should exclude politicians at the local level.

Doing your homework will come in handy in explaining your situation to the DOT. Having responded to many letters written by elected officials, I can tell you that it is easier to dismiss a letter that comes in as a generic, uninformed complaint than a very detailed and specific one. If you have not convinced your representative that he or she should really expend political capital to influence the DOT that will show. Elected officials are used to dealing with many unhappy citizens and, without a solid briefing and a full understanding of the issues, your representative may just make a token inquiry to keep your vote.

If you really want to motivate your representative to influence the DOT, demonstrate that you have researched the issues and are not motivated simply by a "NIMBY" (Not In My Back Yard) mentality. Show that you can offer firm reasons why the DOT's decision is faulty. For example, if you can document the crash rate in the project location is no higher than the statewide average, that may help show the project is a drastic response. You may not always be lucky enough to have such a clear-cut case, but you can be clear in articulating your concerns.

We have the ability to make different choices—starting with the decision to design our streets as comfortable places for people. Downtown streets can become destinations worth visiting, not just thruways to and from the workplace. Transit stops and stations can make commuting by rail or bus a pleasure. Neighborhood streets can be places where parents feel safe letting their children play, and commercial strips can be designed as grand boulevards, safe for walking and cycling and allowing for both through-and local traffic.

We are poised to create a future where priority is given to the appropriate mode, whether pedestrian, bicycle, transit or automobile. To be sure, cars have their place, but the rediscovered importance of walking and "alternative transportation modes" will bring more people out onto the streets—allowing these spaces to serve as public forums where neighbors and friends can connect with one another.

## *Qualities of a Great Street*

What if we were successful in our efforts to create better streets – what would they look like? Project for Public Spaces has identified ten qualities that, in conjunction with the ideas described in this guide above, contribute to the success of great streets.

**ATTRACTIONS & DESTINATIONS** Having something to do gives people a reason to come to a place—and to return again and again. When there is nothing to do, a space will remain empty, which can lead to other problems. In planning attractions and destinations, it is important to consider a wide range of activities for: men and women, people of different ages, different times of day, week and year, and for people alone and in groups. Create an enticing path by linking together this variety of experiences.

**IDENTITY & IMAGE** Whether a space has a good image and identity is key to its success. Creating a positive image requires keeping a place clean and well-maintained, as well as fostering a sense of identity. This identity can originate in showcasing local assets. Businesses, pedestrians and drivers will then elevate their behavior to this vision and sense of place.

**ACTIVE EDGE USES** Building bases should be human-scaled and allow for interaction between indoors and out. Preferably, there are active ground floor uses that create valuable experiences along a street for both pedestrians and motorists. For instance, a row of shops along a street is more interesting and generally safer to walk by than a blank wall or empty lot. Sidewalk activity also serves to slow vehicular traffic. At the very minimum, the edge connection should be visual, allowing passersby to enjoy the activity and aesthetics of the indoor space. These edge uses should be active year-round and unite both sides of the street.

**AMENITIES** Successful streets provide amenities to support a variety of activities. These include attractive waste receptacles to maintain cleanliness, street lighting to enhance safety, bicycle racks, and both private and public seating options - the importance of giving people the choice to sit where they want is generally underestimated. Cluster street amenities to support their use.

**MANAGEMENT** An active entity that manages the space is central to a street's success. This requires not only keeping the space clean and safe, but also managing tenants and programming the space to generate daily activity. Events can run the gamut from small street performances to sidewalk sales to cultural, civic or seasonal celebrations.

**SEASONAL STRATEGIES** In places without a strong management presence or variety of activities, it is often difficult to attract people year-round. Utilize seasonal strategies, like holiday markets, parades and recreational activities to activate the street during all times of the year. If a street offers a unique and attractive experience, weather is often less of a factor than people initially assume.

**DIVERSE USER GROUPS** As mentioned previously, it is essential to provide activities for different groups. Mixing people of different race, gender, age, and income level ensures that no one group dominates the space and makes others feel unwelcome and out of place.

**TRAFFIC, TRANSIT & THE PEDESTRIAN** A successful street is easy to get to and get through; it is visible both from a distance and up close. Accessible spaces have high parking turnover and, ideally, are convenient to public transit and support walking and biking. Access and linkages to surrounding destinations must be a part of the planning process. Automobile traffic cannot dominate the space and preclude the comfort of other modes. This is generally accomplished by slowing speeds and sharing street space with a range of transportation options.

**BLENDING OF USES AND MODES** Ground floor uses and retail activities should spill out into the sidewalks and streets to blur the distinction between public and private space. Shared street space also communicates that no one mode of transportation dominates.

**PROTECTS NEIGHBORHOODS** Great streets support the context around them. There should be clear transitions from commercial streets to nearby residential neighborhoods, communicating a change in surroundings with a concomitant change in street character.

## ACKNOWLEDGEMENTS

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First and foremost, this publication would not be possible if it were not for the willingness of Fred Kent, Kathy Madden and Steve Davies to bring a transportation engineer into the Project for Public Spaces (PPS) family.

Thanks to the Anne T. and Robert M. Bass Foundation, who provided PPS with the funding to pursue this work.

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As noted in the preface, Anne Canby, former Commissioner at NJDOT and now at the Surface Transportation Policy Partnership, indirectly led the creation of this guidebook through her invitation to appear at a series of stakeholder education workshops in 2006.

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We received a great deal of help on the chapters on flexible design, design exceptions and traffic forecasting from several engineers who have practiced roadway design. Jim Snyder and Art Eisdorfer, both formerly of NJDOT, took the time to help make sure that we got the language right. Thanks also to Brian Hare of Pennsylvania DOT, who allowed us to bounce ideas off of him and also helped edit and rewrite several passages in the guidebook.

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## APPENDIX A

# *Highway Levels of Service Descriptions*

Level of Service (LOS) A describes conditions where traffic flows at or above the posted speed limit and all motorists have complete mobility between lanes. LOS A occurs late at night in urban areas, frequently in rural areas, and almost always in car advertisements.

LOS B is slightly more congested, with some limitations on maneuverability; two motorists might be forced to drive side by side, limiting lane changes. LOS B speeds are not necessarily lower than LOS A.

LOS C has more congestion than LOS B, where ability to pass or change lanes is not always assured. LOS C is the target for urban highways in many places. At LOS C most experienced drivers are comfortable; roads remain safely below, but efficiently close to, capacity; and posted speed is maintained.

LOS D is perhaps the level of service of a busy commercial street in the middle of a weekday, or a functional urban highway during commuting hours. Speeds are somewhat reduced, and motorists are hemmed in by other cars and trucks. In busier urban areas, this level of service is sometimes the goal for peak hours, as attaining LOS C would require prohibitively expensive lane additions, roadway widenings and bypasses.

LOS E is when traffic flow becomes irregular and speed varies rapidly but rarely reaches the posted limit. On highways this is consistent with a road that has exceeded its designed capacity.

LOS F is the lowest measurement of efficiency for a road's performance. Flow is forced; every vehicle moves in lockstep with the vehicle in front of it, with frequent drops in speed to nearly zero mph. Technically, a road in a constant traffic jam would be below LOS F. This causes some traffic modelers to use an additional classification for such situations, normally depicted as a series of asterisks, which essentially means the computer modeling breaks down and cannot effectively model the situation.

## APPENDIX B

# *How to Understand Functional Classification*

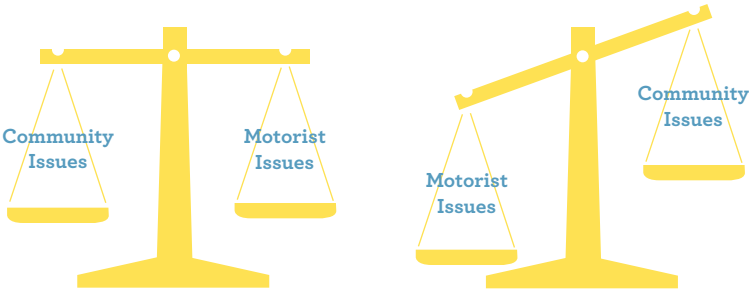
All state roads are designated with a functional classification that identifies how they are seen to fit into the overall road network. Functional classifications are developed for an entire statewide system at once. There is some legitimacy to traffic planners' resistance to changing the functional classification during the development of a particular project. It is usually considered a planning, not a project, function and oftentimes is revisited no more than once a decade. Additionally, design manuals at all levels of government, as well as the authoritative American Association of State and Highway Transportation Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets," otherwise known as the "Green Book," are based on functional classification. The AASHTO Green Book states, "The first step in the design process is to define the function that the facility is to serve." As a practical matter, however, for work on existing roads, the classification has already been predefined at the statewide level, perhaps as much as a decade earlier.

You may need to push your DOT to think about the road in its fuller context, as opposed to what they see in their functional classification maps and tables. This is because assigning functional classification is not an exact science—it requires a lot of subjective judgment, even if it is based on fact. There is also a lot of overlap in the different classes of roads, and there is a tendency among transportation officials to designate an entire length of roadway as one functional classification, even if it clearly serves different functions as it passes from town to town.

For example, Route 1 is classified throughout New Jersey as a principal arterial. Yet, on its path from Trenton near the Pennsylvania border to the George Washington Bridge into New York City, Route 1 functions very differently depending on what communities it is passing through. Between Woodbridge and Trenton, for example, Route 1 serves as a critical regional facility, providing a much-needed connection for moving goods and people between Trenton, Princeton and New Brunswick. Farther east, where Route 1 is essentially paralleled by the New Jersey Turnpike and the Garden State Parkway, Route 1 is relegated to a more local function as it passes through a number of North Jersey communities.

Why should you care about this? First and foremost, most roadway design manuals are based on functional classification. The classification directly affects the flexibility in the range of design options for a particular roadway section. The higher the classification, the more rigid guidelines in the design manuals become. For instance, the specifications of lane and shoulder widths are stricter for major arterials than for collectors and local streets.

The functional classification system shapes how DOTs think about and design roadways. Advocates for change need to get DOTs to think outside the narrow box that functional classification creates. What they sometimes seem to forget is that functional classification is often quite different on paper than the actual function of a road in the real world. Designing roads based on functional classification favors high-speed designs even when conditions on the road itself might not warrant it. More simply stated, your DOTs will be far less likely to design a roadway to minimize its negative impacts on local communities for highways classified as having regional or statewide significance. You should be able to find functional classification maps, or at least information about how to find them, on your DOT's website.




Some states are beginning to explore classification systems based solely on the role of the highway segment in question. Massachusetts Department of Highways is a leader in this philosophy, having introduced area types as a factor in their design process, to be considered along with the roadway type. Their revolutionary Project Development Manual can be seen at: http://www.mhd.state.ma.us/default.asp?pgid=content/designGuide&sid=about.

Pennsylvania DOT and New Jersey DOT, in partnership with the Delaware Valley Regional Planning Commission—the Philadelphia MPO—are also in the process of institutionalizing this thinking in a landmark document called the "Smart Transportation Guidebook for Pennsylvania and New Jersey," which can be downloaded at http://www.dvrpc.org/asp/pubs/reports/08030A.pdf.

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