TDM – Efficient, Affordable and Largely Untapped

Over the four decades of their use, Transportation Demand Management (TDM) strategies have often proven to be far more cost-effective than expanding road capacity, while avoiding the undesirable impacts. TDM consists of measures to make the existing transportation system more efficient, partly by reducing drive-alone trips and shifting trips to off-peak hours.

A new volume addressing the subject, Sustainable Transportation Planning: Tools for Creating Vibrant, Healthy, and Resilient Communities,[51] states that a comprehensive set of TDM measures can realistically cut traffic and parking demand by more than 15%. Some recommended strategies are as follows:

- Employer-Based Transit Pass Subsidies reduced auto commuting by 24% in Bellevue, Washington, and by 16% in Santa Clara, California. Mountain View has required some new developments to provide free passes to all employees.
- Employee Parking Cash-Out Programs (providing cash in lieu of a parking space) have decreased parking demand an average of 27%, including 26% in transit-poor areas. (California law requires parking cash-out for certain employers of 50+ employees, and cities and counties may enforce the law, as of January 1, 2010.)
- Requiring Unbundling Parking Costs from Rent, which consists of charging for parking separately from residential or commercial rents, reduces parking demand 10-20% (and reduces trips). It also spares non-drivers from subsidizing others' parking spaces, and makes the parking cost more visible. Unbundling parking costs can be required in development standards.
- Development Requirements for Providing Bicycle Facilities such as showers, lockers, and secure bike parking. The American Planning Association's Bicycle Facility Planning guidance[52] recommends providing bike parking equivalent to 5-10% of auto parking spaces, depending on the use.
- Promoting Market Mechanisms to make the cost of driving more visible. These include car-sharing, pay-as-you-drive (PAYD) insurance, paid parking, and others. PAYD insurance is now available from at least three insurance companies operating in California.

Complete Streets complement TDM programs. For example, the recently concluded federal Non-motorized Transportation Pilot Program, which provided funding for four communities to improve walking and biking infrastructure and to conduct encouragement activities, found PM peak bicycling increased 49% and walking increased 22% over four years.[53] Most of these trips were made for meeting daily needs, displacing vehicle trips.

In 2012, SANDAG published a TDM manual highlighting best practices and successful strategies: Integrating Transportation Demand Management Into the Planning and Development Process: A Reference for Cities. The report will be available on SANDAG's website.

Traffic Congestion as a Planning Tool

The authors of Sustainable Transportation Planning argue that some degree of traffic congestion is inevitable, and that most successful cities locate their congestion bottlenecks strategically. Two examples worth noting are:

- In its 1997 Transportation Plan, Vancouver allowed traffic to reach saturation in areas where the city prioritized urban design and the convenience and safety of other modes (i.e., Complete Streets) above traffic flow. Despite dramatic growth in population and employment, the number of vehicle trips into and within Downtown Vancouver and adjacent neighborhoods has decreased over time.
- Santa Monica's 2010 Circulation Element[54] update concluded that it could best manage its traffic by allowing congested intersections at the edges of the community to remain congested, effectively "metering" traffic entering the heart of the community.

Jurisdictions are of course free to maintain roadway capacity such that every vehicle trip is accommodated everywhere, at all times. However, as discussed in previous chapters, it is important to consider what is lost in the way of safety, noise, aesthetics, public health outcomes, small businesses, and other quality of life factors. The current planning paradigm does not ensure these trade-offs are considered when LOS standards are adopted or renewed. Factoring in trade-offs occurs only when a jurisdiction takes it upon itself to embark in a new policy direction.

Conclusions

1. Vehicle Level of Service (LOS) is often a barrier to implementing Complete Streets, and leads to streets that are less safe or impractical for walking, bicycling, and transit use.
2. Some cities (e.g., National City and San Jose) have designated districts, corridors, or intersections where walking, bicycling, and transit are prioritized, and further road expansion is prohibited. LOS F is considered acceptable in these locations.
3. Vehicle LOS can be supplemented by use of Multi-Modal LOS (MMLOS) methodologies, one of which is included in the 2010 Highway Capacity Manual. MMLOS is not yet widely used, but is designed to compare the trade-offs in the service quality for each mode when considering alternative designs, and requires additional data collection.
4. San Francisco is preparing to replace the LOS metric with "Auto Trips Generated," in order to incentivize developers to minimize new vehicle trips and to fund improvements for walking, bicycling, and transit. Other cities will likely follow suit if this system proves successful.
5. The traditional planning paradigm assumes traffic will grow steadily with time, but traffic volumes in the U.S. have leveled off in the last 10 years, and both young adults and retiring Baby Boomers exhibit a strong preference for walkable, transit-accessible neighborhoods.
6. Traffic planning also assumes traffic volumes are predictable based on land uses. However, evidence shows a large portion of trips are flexible, and traffic tends to equilibrate with available capacity. Therefore, it may make more sense to build streets serving all modes rather than trying to predict and meet vehicle traffic demand.
7. Transportation Demand Management (TDM) methods are often overlooked, but can be far more cost-effective than capacity improvements. Comprehensive TDM strategies reliably provide 15% reductions in trips and parking demand, which can solve most peak hour congestion problems. Complete Streets complement TDM investments.

COMPLETE STREETS UNDER CEQA

The California Environment Quality Act (CEQA) requires state, local, and other agencies to evaluate and disclose the environmental impacts of their actions, and to mitigate these impacts to the extent possible. Environmental review is often expensive, lengthy, and provides a convenient target for litigation. By including traffic congestion as an environmental impact – something the CEQA statute does not require – it also traps traffic planners/engineers in a vicious cycle of widening roads to accommodate vehicle trips, which in turn induces more people to use cars. In this way, CEQA can be a roadblock, or a lengthy detour, to implementing Complete Streets. There are strategies available to overcome the CEQA barrier.

CEQA Guideline Revisions

In response to Senate Bill 97 (2007), the California Natural Resources Agency amended the CEQA Guidelines in March 2010 to include analysis and mitigation of greenhouse gas emissions (motor vehicles being the largest source), as well as potential negative impacts of traffic mitigation on bicyclists, pedestrians, and the environment. As the Agency stated,

> *"[E]vidence…indicates mitigation of traffic congestion may lead to even greater environmental impacts than might result from congestion itself.*[55]

Revisions to the CEQA Environmental Checklist Form[56] included the following changes to the Transportation/Traffic section.

Table 5-1 Revisions to the CEQA Environmental Checklist Form

Previous Language	Replaced With
Would the project: (a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	Would the project: (a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Previous Language	Replaced With
Would the project: b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	Would the project: b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
Would the project: f) Result in inadequate parking capacity?	(Parking provision deleted.)
Would the project: g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	Would the project: f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Significantly, the CEQA Checklist revisions allow the use of transportation performance measures other than LOS (Chapter 4), instead emphasizing performance of the system as a whole. Additionally, consideration of a project's impacts on all modes is emphasized, while consideration of parking supply is eliminated entirely. (See Chapter 4.)

Reducing Unnecessary CEQA Costs and Delays

Complete Street projects can greatly improve the urban environment (Chapter 2), including pedestrian and motorist safety, land use, aesthetics, air quality, greenhouse gas emissions, and noise, and are initiated by cities for this purpose. Yet, CEQA Checklist threshold criteria can trigger environmental review, including mitigated negative declarations and full environmental impact reports, particularly for larger projects. Because of the threat of lawsuits, many cities spend considerable sums on environmental documentation, sometimes in excess of the project's actual cost.

How can locally-initiated Complete Street projects be implemented without unnecessary costs and delays due to CEQA review? Several options are available:

A Good Plan

Roadway and other infrastructure projects must conform to the General Plan and any other guiding documents. Many CEQA issues arise because the governing planning document was not internally consistent or not specific enough. If a document states that pedestrian and bicycle access take precedence over LOS considerations in a certain area of town, the CEQA document can cite and rely on this directive.

Clear Project Goals

Prior to the start of a major street project, the jurisdiction should invite stakeholders to help establish a clear set of project priorities and goals, which the City Council may then be asked to bless. If this step is taken, the CEQA process can cite project priorities established by the jurisdiction. In this way, declaring "overriding considerations" of any environmental impacts are easily explained and justified.

Categorical Exemption

Many Complete Street projects meet CEQA exemption criteria,[57] particularly if the total right-of-way width and facility uses will remain the same (per Section 15301(1)(c)). Local examples include Rock Springs Road in San Marcos and Allison Avenue in La Mesa (see photos). Re-striping projects (per Section 15282(j)) are also exempt. Whenever relying on an exemption, especially a common sense exemption, it is good practice to draft a memo for the file documenting how the conclusion that the project was exempt was reached. In addition, project sponsors should file a notice of exemption after approval of the project in order to trigger the applicable statute of limitations.

Rock Springs Road, San Marcos
Photo: City of San Marcos

Allison Avenue, La Mesa
Photo: City of La Mesa

Amend Local CEQA Thresholds

Local jurisdictions may raise the threshold criteria for determining when Mitigated Negative Declarations and Environmental Impact Reports are required for street improvements. This can best be done through the process of adopting a comprehensive Complete Streets Policy (Chapter 3).

Ministerial versus Discretionary Permits

Cities are given wide latitude to establish what project types are ministerial (allowed by right) and which require discretionary permits. Within highly urbanized areas, the potential environmental impacts of the two are often not much different. Thus, cities that want to encourage infill development can avoid unnecessary CEQA review by establishing under which circumstances permits will be ministerial, reducing the number of discretionary categories. More specifically, cities can eliminate requirements for conditional use permits for mixed-use developments and reduce the number of planned or special district permits. The use of form-based codes can also provide certainty to the city or residents while avoiding discretionary reviews.

17th Street Pedestrian Plaza, San Francisco

Inspired by New York City's conversions of excess pavement into plazas, residents of San Francisco's Castro district sought a similar treatment at the 17th & Castro transit stop. Partly to reassure skeptics, the project started as a completely reversible, low-budget pilot project. Sidewalk extensions and sitting areas were painted onto the pavement, and inexpensive concrete planters served as protective bollards. Once in place, the reclaimed pedestrian areas were immediately embraced by the neighborhood, demonstrating pent up demand. Residents partnered with the city to install more substantial planters, street furniture, and landscaping. The result was rapid implementation and a genuine sense of community investment and ownership.

Photos: Steven Kyle Weller via stevenkyleweller.com

Tiering from a Programmatic EIR

Complete Street programs can be described and undergo CEQA review as a stand-alone "project," or as part of a General Plan update. In this way, Complete Street conversions can avoid project by project CEQA review by referring to a programmatic EIR, so long as each project is consistent with the described program elements. This means the General Plan or Community Plan update process is an excellent opportunity to establish Complete Street goals and objectives which may then justify implementation without requiring the delay and cost of project-level CEQA review. For example, National City[58] adopted a general plan update and related documents which incorporated Complete Street plans, all of which underwent CEQA review.

Exempt Pilot Projects

In a two-year period, New York City was able, without environmental reviews, to complete dozens of Complete Street projects, including dedicating half the width of some streets to cycle tracks and converting other streets entirely to pedestrian plazas. This was done by treating these projects as pilot projects. The CEQA statute does not explicitly recognize pilot projects, but this avenue should be explored in individual cases. By definition, a pilot project is a temporary installation that is reversible if evaluation shows the goals of the project are not met. In no case has New York found it necessary to remove fairly dramatic Complete Street conversions, since motorists quickly adjusted to the changes, and residents embraced the new facilities created.

Statutory Exemption

In the long term, it may be appropriate for the California legislature to amend CEQA to statutorily exempt Complete Street projects if certain conditions are met, in the same way that safety projects included in the Regional Transportation Improvement Program are exempt from federal air quality conformity analysis. The State has shown periodic interest in CEQA streamlining for compact developments requiring less driving.

Form-Based Code

Form-Based Codes (FBC) are development requirements or options focusing on form rather than uses. FBCs, discussed more fully in Chapter 6, replace or overlay conventional zoning, in a particular district, corridor or citywide. FBCs can specify or suggest street dimensions and features as well. Examples include the Lancaster (Blvd) Specific Plan,[59] the Beach and Edinger Corridor Specific Plan in Huntington Beach,[60] and two corridor plans in the City ofVentura, the Midtown Corridor[61] and the Victoria Avenue Corridor.[62]

La Boheme, a mixed-use, infill project, 30th Street, San Diego
Photo: Greg Konar

Streamlining for Transit-Oriented Development (TOD)

SB 375, which is designed to promote compact infill development offers CEQA permit streamlining for transit priority projects located within half-mile of transit. While the premise behind transit priority projects is sound, it is generally acknowledged by local planning experts that the qualifying criteria are too limiting and the incentives too weak to interest developers. At this writing, the State's Office of Planning and Research is conducting rulemaking to implement CEQA streamlining provisions for infill development as mandated by SB 226 (2011).[63] Complete Street projects may be included as an element of a TOD.

Conclusions

1. Local governments interested in Complete Streets frequently struggle with CEQA, or the perceived barrier CEQA represents, when retrofitting a street to serve all users, or when reviewing private developments that will impact traffic.
2. Complete Street projects which maintain the current right-of-way and modes served can qualify for a CEQA exemption. Examples can be found in San Marcos and La Mesa.
3. CEQA delays for more extensive Complete Street retrofit projects can be minimized or avoided by adopting appropriate General Plan policies or a freestanding Complete Streets program which has itself undergone CEQA review.

4. For development review, CEQA provides flexibility to local governments to establish their own significance thresholds, and to require project mitigation that improves walking, bicycling, or transit facilities rather than expanding roadway capacity for vehicles.
5. The 2010 revisions to the State's CEQA Guidelines emphasizes consideration of project impacts on all transportation modes, rather than prioritizing vehicle flow over all other modes. The Project Checklist allows the use of transportation measures other than Level of Service, if a jurisdiction so chooses.

THE IMPLEMENTATION TOOLBOX

Design Guidance for Complete Streets

Although local governments may legally develop and test their own design standards, very few have the resources to do so. Therefore, a frequent question concerning Complete Streets is whether the concept is compatible with state, federal or professional traffic design guidelines. The following are recommended design resources, with deviations from current design guidelines as noted:

Model Design Manual for Living Streets

Ryan Snyder Associates & UCLA School of Public Affairs, Luskin Center for Innovation, 2011.[64]

This manual is a significant resource all cities should examine whether or not they are interested in providing Complete Streets. The Living Streets manual is a comprehensive treatment on Complete Street design techniques that specifically fit within the parameters of existing traffic engineering "bibles" (AASHTO,[65] MUTCD, HDM, etc.). The manual includes legal standing of street manuals, performance measures, street networks and classifications, traveled way design, intersection design, universal pedestrian access, pedestrian crossings, bikeway design, transit accommodations, traffic calming, the streetscape ecosystem, place-making for streets, designing land use around streets, retrofitting suburban streets, and community engagement.

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

Institute of Transportation Engineers & Congress for New Urbanism, 2010[66]

This path breaking guide is a collaborative report by ITE and the Congress for the New Urbanism which provides guidance on how Context Sensitive Solutions principles can be employed in the process of planning and developing walkable urban thoroughfares. ITE's involvement in the document lends legitimacy to the CSS approach, describing it as compatible with the flexibility that is inherent in the AASHTO "Green Book" (Policy on Geometric Design of Highways and Streets).

NACTO Urban Bikeway Design Guide

National Association of City Transportation Officials (updated continuously)[67]

The NACTO Urban Design Bikeway Guide is an online resource designed to provide cities with state-of-the-practice bicycling facilities. While each design has been tested in an American city, some designs have not been approved for inclusion in the requisite engineering bibles. Indeed, this resource was created specifically to support more rapid approval of proven, innovative designs. U.S. Secretary of Transportation Ray LaHood has endorsed the NACTO guide and many U.S. cities are actively using it.

Main Streets: Flexibility in Design and Operations

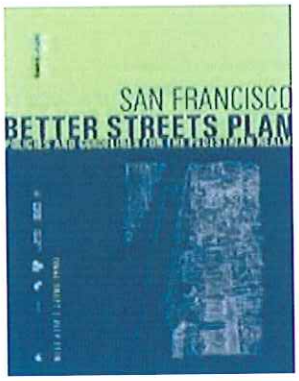
Caltrans 2005[68]

This is a concise booklet emphasizing Caltrans's commitment to make state highways that also happen to be local main streets more livable. The booklet identifies context sensitive solutions and livable community concepts that can assist communities and Caltrans in balancing community values with concerns for safe and efficient operations for travelers, pedestrians, bicyclists, transit users, and highway workers.

Leading Complete Street Guidelines, Plans and Programs

The following are leading examples of guidelines, plans, or program documents that reflect Complete Street principles.

City of San Francisco Better Streets Plan (2010)[69]



The Better Streets Plan provides a unified set of standards, guidelines, and implementation strategies for building and maintaining San Francisco's pedestrian environment. It carries out the intent of San Francisco's Better Streets Policy which requires best management practices in environmental planning and pedestrian oriented, multi-modal street design, and incorporation of sustainable water management techniques. The Better Streets Plan strongly emphasizes collaboration between City agencies to comprehensively plan for streets.

NYC Sustainable Streets Strategic Plan (2008) and Progress Report (2009)[70]

These two resources comprise a detailed transportation plan with clear goals and implementing actions that set a new direction in transportation policy for the City of New York. The plan contains benchmarks and performance standards that were used to evaluate progress in the 2009 Progress Report. The strategic plan underpins the impressive transformation of New York's streets during the past several years.

NYC Street Design Manual (2009)[71]

An outgrowth of the Sustainable Streets Strategic Plan, the NYC Street Design Manual is a leading example of a context sensitive street design manual for a large city.

Ada County Highway District Livable Street Design Guide (2009)[72]

One of the first comprehensive street design manuals to embrace the concept of livability and the potential for street design to change the character of existing areas, the Ada County manual also employs context sensitive street classifications.

Downtown Lancaster Specific Plan (2008)[73]

The Downtown Lancaster Specific Plan is a good example of how a specific plan can be used to coordinate Complete Street improvements with form based code zoning. The highly successful Lancaster "BLVD" project fulfills the plan's vision for the Boulevard District, one of seven in the downtown area. The plan also illustrates how potential conflicts with LOS standards can be resolved at the plan level.

City of Charlotte Urban Street Design Guidelines (2007)[74]

The USDG is an excellent example of street design guidelines intended to create Complete Streets on a city-wide basis. The guidelines are keyed to new context sensitive street types that overlay traditional functional classifications.

Sacramento Council of Governments Complete Street Resource Toolkit[75]

The toolkit is an online collection of useful resources related to Complete Streets, and part of the Sacramento Area's Council of Government's (SACOG) Complete Streets technical assistance program. The Caltrans-funded toolkit is funded through a Caltrans grant, and is continually maintained and updated through user input.

Moving Beyond Prevailing Street Design Standards: Assessing Legal and Liability Barriers to More Efficient Street Design and Function[76]

This paper clarifies the legal standing of prevailing road design guidelines, and discusses how cities can avoid legal liability when using road design techniques inconsistent with prevailing guidelines.

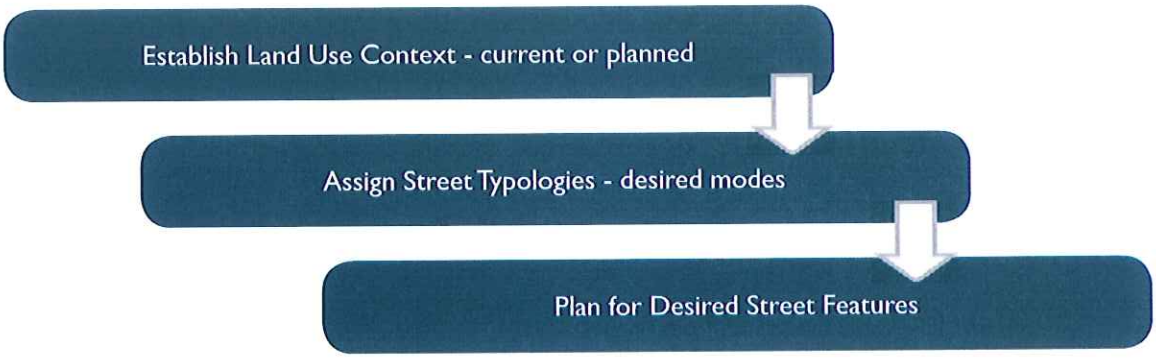
National Complete Streets Coalition Website[77]

A one-stop online source for Complete Street information including facts, fundamentals, resources, policy and advocacy support.

Context-Sensitive Implementation and Assessment Tool

This section describes a context sensitive implementation approach that can help cities move beyond current regulatory barriers to more rapid deployment of Complete Streets programs. As shown in Figure 6-1, the process involves acknowledging the current or future land use context in each area and then planning for streets that will support the desired context. This process aims to avoid the mismatch between street design decisions and desired land uses – for example building a wide boulevard to accommodate traffic through a neighborhood Main Street area, thereby degrading the qualities that draw traffic there.

Figure 6-1. Context-Sensitive Planning Process for Complete Streets



Context is the Key

Context Sensitive Solutions (CSS) is a Federal Highway Administration initiative[78] embraced by both AASHTO and Caltrans.[79] CSS is "a collaborative, interdisciplinary approach that involves all stakeholders in providing a transportation facility that fits its setting." In short, CSS aims to avoid the "one size fits all" street design approach that necessitated the Complete Streets concept in the first place.

Street Typology versus Functional Classification

For decades, a street's functional classification has been assigned based on whether it serves local or more regional traffic, and its traffic volume. Finer distinctions about the local land use character on a given segment of the street have been given less consideration. In addition, federal incentives have long favored choosing the highest possible classification.[80] These circumstances have led to dangerous situations, for example, transit passengers accessing a bus stop on a regional arterial must interact with high-speed, high-volume traffic, with tragic results.[81] On such streets, bicycling and walking have been neglected as legitimate modes of travel on a neighborhood-serving street.

The implementation of context sensitive Complete Street programs is still evolving and cities have taken a variety of approaches. The methods documented in Designing Walkable Urban Thoroughfares: A Context Sensitive Approach and further articulated in the Model Design Manual for Living Streets (both discussed above) can be customized to meet local needs and are compatible with the most advanced corridor and land use planning tools. Both documents recommend reclassifying all streets using customized, context-sensitive typology, rather than the traditional functional classifications (Table 6-1 provides an example). This approach is especially important in addressing the needs of specialized streets such as main streets, drives, transit malls, bike boulevards, festival streets, and shared space streets.

Street Typology Examples

The City of Charlotte, North Carolina, uses six context-sensitive street typologies: Main Streets, Avenues, Boulevards, Parkways, and Local Streets.[82] Similarly, the City of San Marcos introduced street typologies in its updated General Plan, mixing new typologies with more traditional classifications: Multi-Way Boulevard, Arterial, Arterial with Enhanced Bike/Pedestrian Facilities, Freeway, Collectors, Bicycle/Pedestrian Trails, Neighborhood Streets, Industrial Collectors, and Main

Table 6-1. Common Context-Sensitive Street Typologies for Urbanized Areas (ITE/CNU)

Street Type	Role	Characteristics
"Boulevard" (conventionally arterials)	Traverses and connects districts and cities; primarily a longer distance route for all vehicles including transit.	Designed for high vehicle capacity and moderate speed, traversing an urbanized area. Boulevards serve as primary transit routes and should include bike lanes and safe pedestrian access to transit stops. They may be equipped with dedicated bus lanes or side access lanes buffering sidewalks and buildings. Many boulevards also have landscaped medians.
"Avenue" (conventionally collectors)	Traverses and connects districts, links street with boulevards. For all vehicles including transit.	Designed for moderate to high vehicular capacity and low to moderate speed acting as a short distance connector between urban centers and may be equipped with a landscaped median.
"Street" (conventionally local street)	Serves neighborhoods, connects to adjoining neighborhoods; serves local function for vehicles and transit.	A local, multi-modal facility suitable for all urbanized zones, frontages, and land uses. A street is urban in character, with raised curbs (except where curbless treatments are designed), drainage inlets, wide sidewalks, parallel parking, and trees in individual or continuous planters aligned in an alley. Character may vary in response to the commercial or residential uses lining the street.
Alley/Lane	Link between streets; allows access to garages.	A narrow street, often without sidewalks. Alleys and lanes connect streets and can provide access to the backs of buildings and garages.

Street. The City of New York, whose context is more heavily weighted toward its dense urban setting, employs five context-sensitive street typologies: General Street, Boulevard, Slow Street, Transit Street, and Pedestrian-Only Street. Once a street or portion of a street is classified as a certain street type, the street design should reflect that classification and future land use decisions along the street should also reflect that classification.

Reclassifying streets around typologies shifts the focus from capacity and traffic flow to context and the full functioning of the street. In this approach, project planning, project review, and environmental documentation must account for how a private development or infrastructure improvement project supports or detracts from the broader functionality of the street. It also shifts the focus from Level of Service, whether vehicular or multi-model LOS, to qualitative standards that consider how the street contributes to the community. That is the objective.

The functional street classifications will remain to the extent required by State law. But the goal is to move entirely toward a context-sensitive street classification system. Once the streets are reclassified, the next step is to identify the potential and need for context sensitive/Complete Street retrofit. This is discussed further in Chapter 8.

More Effective Planning Tools

In addition to using context-sensitive street typologies, leading cities implementing comprehensive Complete Street Programs have adopted two additional tools: five-year Transportation Action Plans and more inclusive public participation.

Five-Year Action Plans

As a bridge between the long-term vision (general plan) and annual budget (Capital Improvement Program), a mid-term plan seems necessary to make steady progress implementing transformational change. WalkSanDiego's study[83] of successful Complete Street programs around the nation found that most utilize five-year Transportation Action Plans, usually supplemented by an annual update or "report card" (discussed in the next chapter). Example plans include:

- Charlotte's Five-Year Transportation Action Plan[84]
- New York City's (Five-Year) Pedestrian Safety Action Plan[85]
- Seattle's (Five-Year) Strategic Transportation Plan[86]
- Redmond, Washington's Transportation Master Plan and Five Year Transportation Status Report[87]
- Boulder's Transportation Master Plan (updated every five years)

Five-year action plans allow elected officials, city staff, and participating stakeholders to avoid the temptation to focus only on immediate issues, and instead to think strategically about what specific data-gathering and investments will be needed to implement the community's transportation vision.

Project Checklist

With the realization that street design affects so much more than traffic flow, leading Complete Streets programs have been successful in part because they endeavored to break down silos between city departments. In addition to regular meetings between departments, some cities have instituted a Project Checklist that is circulated for a sign-off from each interested department when street designs are in process. The best known example comes from the City of Seattle.[88] Metropolitan Planning Organizations also use project checklists to ensure funding for street improvements adhere to Complete Street goals. Examples include the Bay Area's Metropolitan Transportation Commission,[89] and the Mid-Ohio Regional Planning Commission.[90]

Inclusive Public Participation

As emphasized in the Key Assumptions of this report (Chapter 1), building Complete Streets is as much about the design process as the outcome. Cities such as Charlotte and Portland have placed great emphasis on involving all types of users in the design of streets. For example, Charlotte's six-step design process[91] is based on three underlying assumptions:

1. The process will involve a variety of stakeholders. The number of stakeholders and discussions will vary, depending on the magnitude and consequences of the street(s) to be designed.

2. The resulting street will be as "complete" a street as possible, in order to meet the multimodal objectives defined in the Transportation Action Plan.

3. The steps in the decision-making process will be well-documented. The documentation will clearly describe the major trade-offs made among competing design elements, how those were discussed and weighed against each other, and the preliminary and final outcomes. Thorough documentation will ensure that all stakeholders' perspectives are adequately considered in the final design.

The National Complete Streets Coalition is documenting the economic and financial advantages of Complete Streets, including the cost savings involved in designing for all users.[92] Involving stakeholders – especially traditionally absent voices – early and often in the design process can improve the final design, avoid costly delays, and prevent expensive retrofits later.

The Sacramento-based Local Government Commission (www.lgc.org) is updating its best practices report for public consultation aimed at working with stakeholders to implement better-functioning communities, including Complete Streets. Look for this manual in 2013.

The Standard Land Use Planning Toolbox

For long-term success implementing Complete Streets, the planning processes and documents familiar to local government staff and elected officials should be utilized.

General Plan

General Plans are State-required planning policy documents[93] that typically include both a vision for the community and plans for particular improvements. By law, General Plans must undergo CEQA review, thus smoothing the way for their implementation. A General Plan update is therefore the ideal opportunity for making a long-term commitment to Complete Streets (see Chapter 3). Some of the ways various cities have done so are as follows:

- The Complete Streets Act AB1358 (2008) requires updated General Plan Circulation Elements to "plan for a balanced, multimodal transportation network." Some cities have taken this to heart, reworking both the process and priorities for designing or retrofitting streets.
- Recognizing that land use and street design act in concert to create a safe and inviting environment for all modes, some cities (e.g., Chula Vista) have **combined the Land Use and Circulation Elements** into a single element. The intent is to restructure these elements around the enormous contribution that Complete Streets and other design issues can play in revitalizing neighborhoods and communities.
- General Plans can call for **Corridor Plans** and **Specific Plans** focusing on targeted transformation areas (e.g., National City). Such plans may include tailored design and development guidelines and overlaid zoning. In these situations, street design should be the main policy focus and the land use coordinated to support it.

» In the City of San Diego and the County, officially adopted **Community Plans** are an opportunity to work with local stakeholders on establishing targets and design approaches for future Complete Street treatments, per policy language and goals established in the General Plan.

Bicycle and Pedestrian Master Plans

These plans are an extension of General Plan policy and a bridge to Complete Streets implementation, but are usually project-focused rather than policy and context-centered. Since most bicycle and pedestrian master plans in the San Diego region continue the conventional approach of minimizing impacts on vehicle traffic, they may augment, but are not a substitute for a comprehensive Complete Street policy or plan.

Zoning Code

Conventional zoning codes emphasize land use and density, height, setbacks, parking and related regulations but often neglect the street interface. Mixed-use and Transit Oriented Development (TOD) overlay zones, and other specialized zoning have been used to enhance the development/street interface and are very compatible with Complete Street concept plans. Design guidelines may also be used in conjunction with conventional zoning codes.

Form-Based Codes

Form-Based Codes (FBC) are a specialized type of zoning that emphasizes building types and their relationship to the street rather than land use and density. Permitted uses are specified, but densities typically are not. Mixed-use is encouraged. The greater control over the appearance of buildings and the ability to establish a consistent street wall makes FBCs an ideal choice for main street applications and to compliment Complete Street corridor transformations. The Cities of Miami[94] and El Paso[95] have recently adopted comprehensive FBCs to ensure more effective planning decisions and better design, including Complete Streets.

FBCs may also be used in conjunction with Specific Plans. Because the regulations are highly prescriptive and implemented through ministerial permits, FBCs are not typically used with design guidelines. They also require more effort to develop which can limit their application to relatively few areas within a city. **Hybrid Form Based Codes** are essentially zoning codes which have areas of both form based zoning and conventional zoning. This is the most likely application scenario for form-based codes in cities with limited resources or a low tolerance for political risk.

Other Implementing Ordinances

Ordinances such as the subdivision ordinance or public works codes are also used by jurisdictions to govern the uses and development standards of the built environment within a City/County that affect the design of streets. The Street Design Guidelines are generally included within this regulatory category.

Design Manuals

Design Manuals may be developed for certain areas, i.e., a particular corridor, or may apply city-wide. Complete Streets principles can be incorporated in design manuals pertaining to street design, streetscape/frontage/landscape requirements, or bicycle or pedestrian facilities.