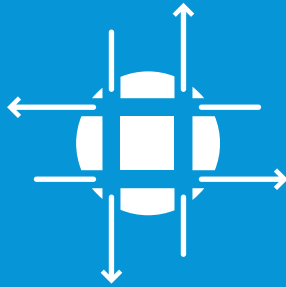


CNU PROJECT FOR TRANSPORTATION REFORM

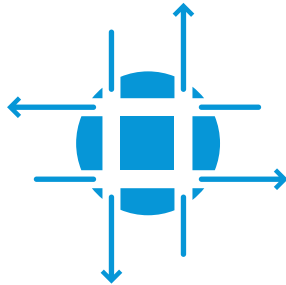
Sustainable Street Network Principles



CONGRESS FOR THE NEW URBANISM

CNU PROJECT FOR TRANSPORTATION REFORM

Sustainable Street Network Principles



CONGRESS FOR THE NEW URBANISM



PREAMBLE

The Congress for the New Urbanism recognizes that cities—within the context of their surrounding regions—are the social, cultural, and economic foundation of human civilization. We assert that the street network provides the setting for commerce and social interaction, and that construction, operation, and maintenance of the street network is primarily to serve people and society. →

We assert that current transportation engineering addresses only limited individual components of the region's street network. This results in a fragmented and inefficient system that fails to adequately engage the social, environmental, and economic aspirations of communities.

We advocate a return to the historic understanding of the street network as a fundamental framework for safe, livable communities, where the human scale of the individual and the act of walking represent the basic unit of design.

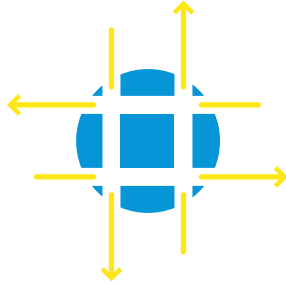
We dedicate ourselves to re-establishing the relationship between the street network and natural systems. Instead of degrading the environment and depleting natural resources, street networks must support and sustain the ecology of place.

We believe that our scarce economic resources should focus on opportunities rather than problems, and that funding for the street network must respond to rational economic factors.

We propose the following principles to guide public policy, development practice, transportation planning and engineering, and urban design.



PRINCIPLE 1
**CREATE A STREET NETWORK THAT SUPPORTS
COMMUNITIES AND PLACES**



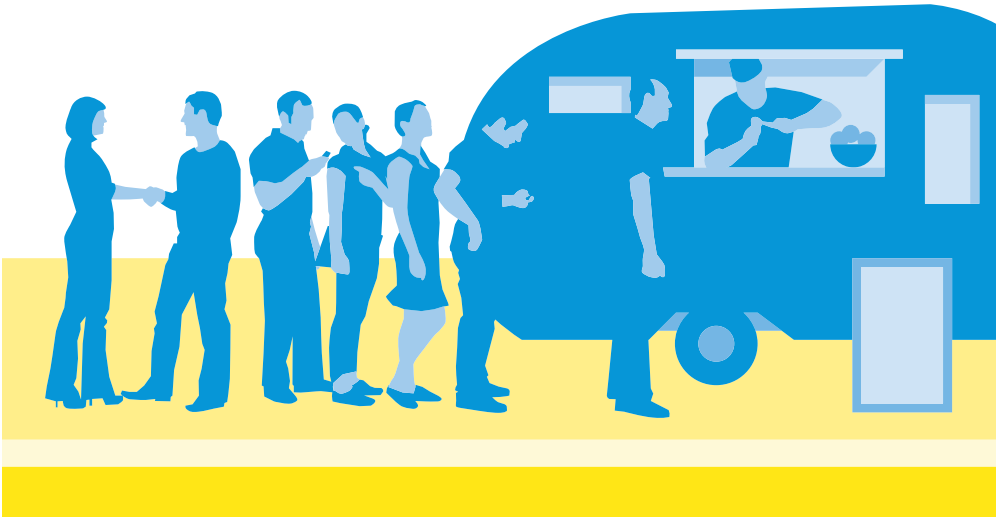
Street networks fulfill a basic need in human society. They connect people to each other and to destinations. Street networks are not just about transportation and infrastructure, but also about the movement of people, goods, ideas, and wealth. They foster economic activity and provide public space for human interaction. Street networks form an effective, flexible framework for building a community, in every sense of the word.



PRINCIPLE 2
CREATE A STREET NETWORK THAT ATTRACTS AND SUSTAINS ECONOMIC ACTIVITY



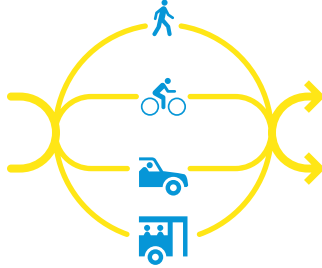
Street networks provide a template for a rich combination of housing, shopping, and transportation choices. They support a robust mix of culture and commerce. Sustainable street networks are magnets for business, light industry, jobs, and economic opportunities.



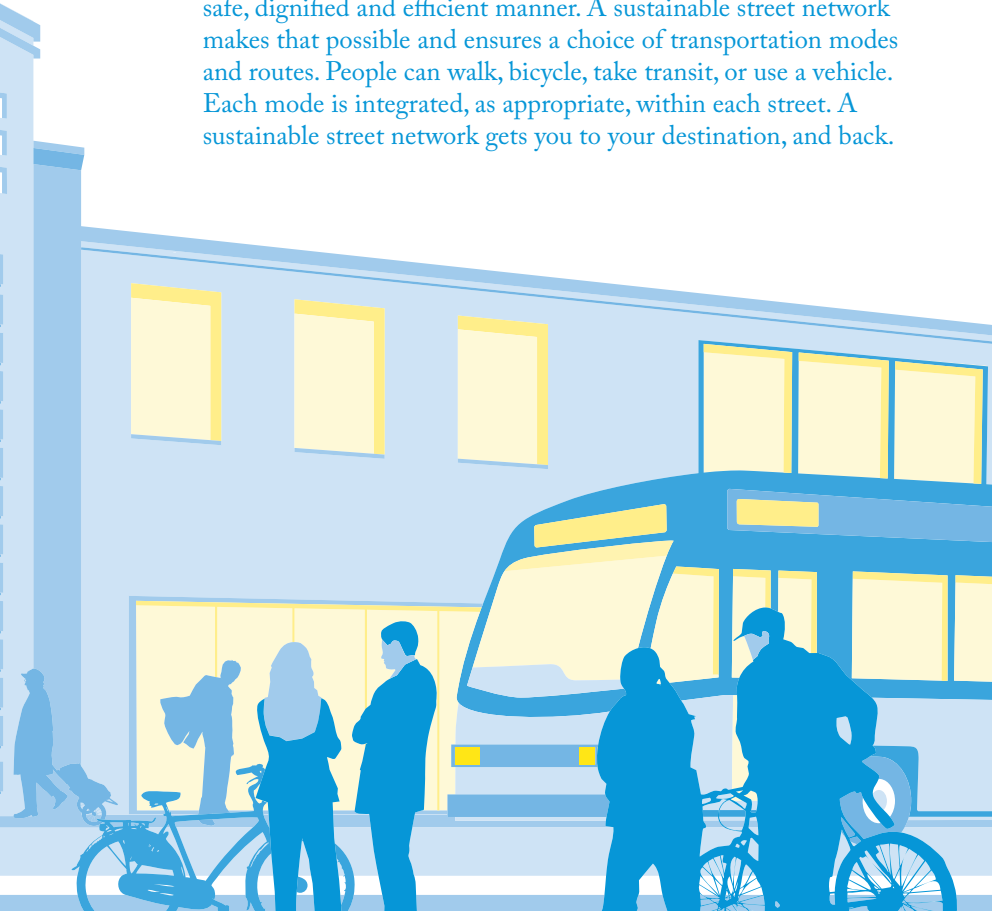




PRINCIPLE 3
MAXIMIZE TRANSPORTATION CHOICE



All people should be able to travel within their community in a safe, dignified and efficient manner. A sustainable street network makes that possible and ensures a choice of transportation modes and routes. People can walk, bicycle, take transit, or use a vehicle. Each mode is integrated, as appropriate, within each street. A sustainable street network gets you to your destination, and back.



PRINCIPLE 4
**INTEGRATE THE STREET NETWORK WITH
NATURAL SYSTEMS AT ALL SCALES**



A sustainable street network respects, protects and enhances the natural features and ecological systems of its urban environment. The result? A balanced and symbiotic community. It integrates stormwater treatment into street design and incorporates stormwater flow and wildlife habitat zones into the street network. The sustainable street network responds to natural features, resources, and systems by adjusting street density and connectivity. The sustainable street network considers the broad spectrum of relationships to natural systems, including those that are site specific, regional, and global.



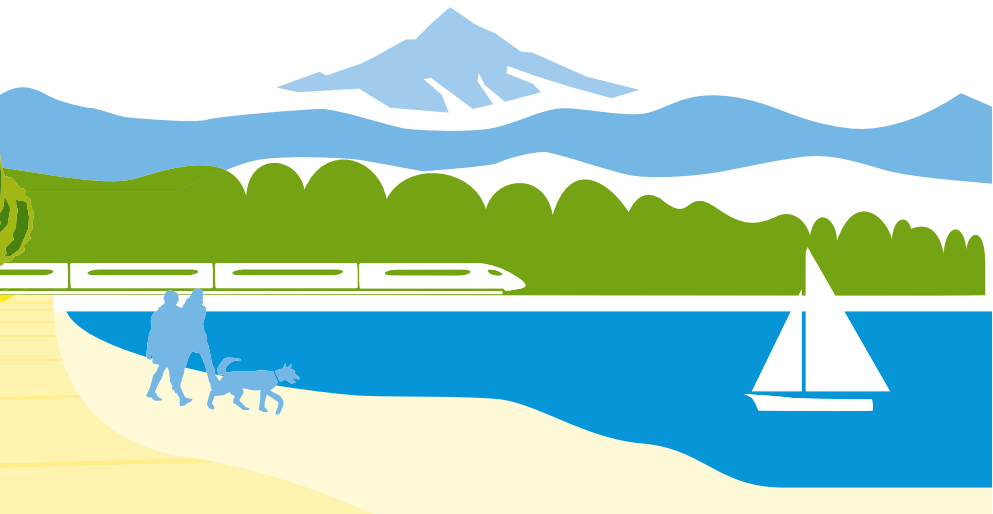




PRINCIPLE 5
RESPECT THE EXISTING NATURAL
AND BUILT ENVIRONMENT



The scale and orientation of streets in the network celebrate the unique local and regional characteristics of the natural and built environment. These include architectural features, climate, geography, topography, and history.



PRINCIPLE 6
EMPHASIZE WALKING AS THE FUNDAMENTAL UNIT
OF THE STREET NETWORK



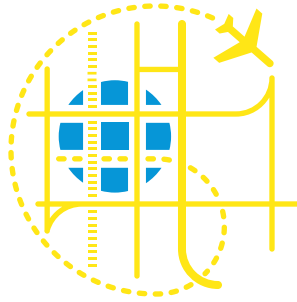
Our most valued urban places are principally designed for the use and enjoyment of people on foot. This requires a finely woven fabric of streets and blocks that offer direct, varied pedestrian routes made interesting through careful design.



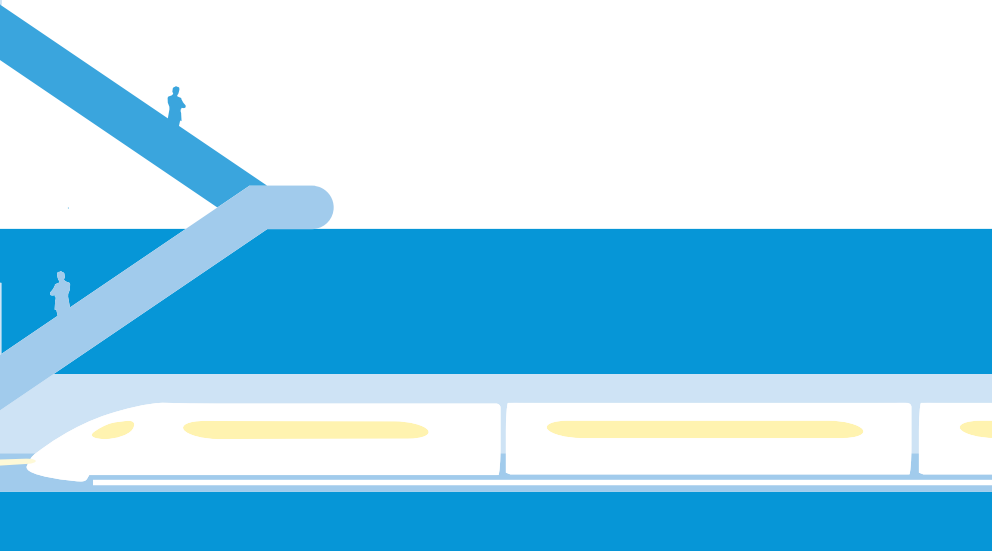


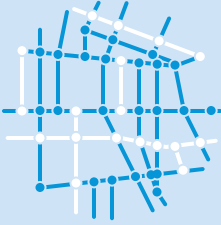


PRINCIPLE 7
CREATE HARMONY WITH OTHER
TRANSPORTATION NETWORKS



The street network is a foundation for the design and evolution of other transportation systems, including highways, rail, freight and air travel. A sustainable street network integrates these systems. It provides flexible mobility, easy and legible movement between modes, and helps turn transit meeting points into attractive and valuable civic places.





Key Characteristic 1

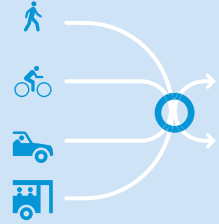
A web of streets and travel modes that maximize connectivity

Well-connected street networks improve mobility by allowing people to travel more directly. This makes destinations more accessible by walking, and enlarges the capture area surrounding transit stations. Such highly connected street networks have been shown to reduce vehicle miles traveled, traffic congestion, and vehicle delay. They permit traffic to diffuse across the larger street network when demand becomes excessive on any individual route. They have also been proven to reduce emergency response times.

Key Characteristic 2

Desirable places where multiple networks overlap

There are multiple mode-specific networks and in some places they overlap. For example, pedestrian, bike, transit, and car networks may overlap on the street. In other places they may be separate, on trails or rails. The sustainable street network coordinates these connections and creates a quality environment where they overlap.





Key Characteristic 3

Inherently complex

Sustainable street networks feature a rich array of street and route types—rather than just the same “flat” design used many times over. The amount and variety of streets determine a community’s character, and whether it functions as a coherent whole or as disconnected islands separated by a few big streets.

One flaw of contemporary network practice is a branching hierarchy in which local streets only flow to collectors and collectors only flow to arterials. The conventional dendritic pattern creates highly specialized streets that skew traffic volumes toward the arterial system and encourage high speeds throughout.

By contrast, sustainable street networks connect all types of streets with one another. Boulevards, mews, avenues, and alleys all intersect. Individual streets can be less specialized, vehicle speeds can be reduced, and the network can function more efficiently.

Key Characteristic 4

Major streets designed and spaced properly

In a sustainable street network, major streets are the “Great Streets” of their cities and towns. These streets, generally classified as arterials and collector streets, are multimodal and designed to integrate with adjacent land uses.

These streets have the greatest potential for large-scale placemaking and for providing physical space for social, civic, and commercial activity. The street design may accommodate different modes and different speeds within a single cross section. For instance, a multiway boulevard can support faster speeds in the center, and slower speeds and different modes—cycling and walking—in the outside lanes.

Spacing major streets too far apart forces them to have multiple lanes to carry cars. That impacts their potential pedestrian and bicycle use and severely erodes their placemaking capacity. Inadequate street spacing also causes motorized traffic to encroach on neighborhood routes designed only for lighter traffic volumes. Where transit routes align with boulevards and avenues, street spacing affects the efficiency and accessibility of transit service. Proper spacing and design of major streets also mitigates detrimental air quality and health impacts on surrounding neighborhoods.





Key Characteristic 5

All streets safe and walkable

All streets are safe and walkable in a sustainable street network, no matter how many vehicles they accommodate, or how continuous they are across sections of a town, city, or region. This is both a safety and a public health issue. The design of street networks has a profound effect on physical inactivity and traffic fatalities. Sustainable street networks support travel by active modes—such as walking and bicycling—thereby increasing physical activity and reducing obesity.

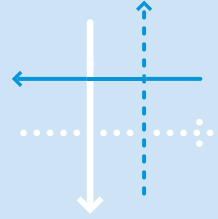
These networks also help moderate the driving behaviors that cause traffic accidents. Drivers must learn to watch for pedestrians, bicyclists and transit users everywhere. Street networks help achieve speed management goals, in both urban and suburban areas. It paves the way to creation of safe, healthy, vibrant neighborhoods.

Key Characteristic 6

Wide variety of street types, each with a role in the network

The sustainable street network consists of all types of streets that accommodate many different travel modes. Some streets are designed to serve traffic in all forms. Others are designed to be quiet with only the occasional vehicle. Some span across a city, while others are less continuous to control traffic speed and volume.

In a sustainable street network, all streets have a role and are designed to serve the people of the community—today and well into the future.



Project Background

The Congress for the New Urbanism (CNU) is the leading organization promoting walkable, mixed-use neighborhood development and sustainable, healthy communities. For nearly 20 years, the principles in the Charter of the New Urbanism have helped promote new standards in livability, including: compact, walkable blocks; housing choices for people of diverse ages and income levels; integration of schools, stores, and other destinations reachable by walking, bicycling, or transit; and a human-scaled public realm framed by appropriately designed buildings.

In 2002, the CNU Project for Transportation Reform joined the Institute of Transportation Engineers (ITE) and the Federal Highway Administration (FHWA) to publish guidelines for the design of major streets. The result, *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, was published in 2010 as an ITE Recommended Practice.

These guidelines are an important collaboration between the CNU and traffic engineers. They depart fundamentally from conventional engineering practice and support the goals of the CNU Charter with clear guidance for the design of streets. However, comparatively little attention has been paid to the design of the transportation networks which these streets comprise. Without better guidance, the larger goals of the Charter will be unattainable. This is because most conventional network planning overemphasizes mobility for vehicles by maximizing speed and minimizing travel delay, through conventional level-of-service measures. These measures address freight movement and interregional transport, but fail to meet transportation needs for people. Such a vehicle-centric system also ignores the complex transportation needs within a metropolitan region, where destination accessibility is what matters.

The proof is in the numbers. The U.S. has the world's highest level of vehicle miles travelled (VMT) per capita, but has higher traffic fatality rates than any developed nation. Traffic delay per capita has more than doubled since 1982. Transportation system performance has degraded in spite of public investment of more than \$200 billion per year in transportation infrastructure.

The current policy has been a safety, environmental, societal, and fiscal failure. Therefore, the CNU Project for Transportation Reform calls for the nation to completely reform the design and operation of regional transportation infrastructure. Only then can engineers move beyond a focus on the individual components of the system to a comprehensive, network-level approach that places priority on community goals.

To promote the integrated design of a sustainable street network into our communities the CNU Project for Transportation Reform offers the CNU Sustainable Street Network Principles.

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