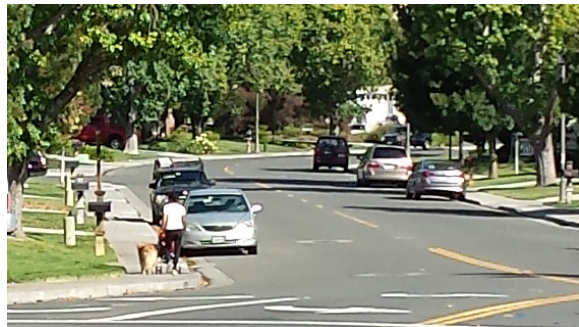


City of Novato

General Plan 2035 Policy White Paper



COMPLETE STREETS POLICIES SEPTEMBER 2014



White Paper Purpose

The General Plan white papers are intended to inform and elicit discussions regarding key policy issues relevant to updating the 1996 Novato General Plan. The policy direction provided through the white paper process is considered to be preliminary and will be used by staff when crafting policies and programs for the draft General Plan. All draft policies and programs will be reconsidered upon review of the draft General Plan and its accompanying environmental impact report (EIR).

The Issue

In 2008 the State of California adopted the California Complete Streets Act, which requires cities and counties, upon substantive revision of the circulation element of a general plan, to modify their respective circulation element to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways, including motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and users of public transportation. The Complete Streets Act is premised on the notion that a balanced, multimodal transportation network would serve to reduce greenhouse gas emissions, make the most efficient use of transportation infrastructure, and improve public health by encouraging physical activity by shifting short trips in the automobile to biking, walking, and the use of public transit.

The purpose of this White Paper is to define and describe Complete Streets planning and design principles, provide guidance on well-written Complete Streets policies, offer examples of Complete Streets policies adopted by other public agencies, and offer draft policy and program statements that may be considered for inclusion in the update of the General Plan Circulation Element. The Bicycle and Pedestrian Advisory Committee, Design Review Commission, and Planning Commission are requested to consider the information provided in this White Paper and provide policy recommendations to the City Council regarding Complete Streets.

Defining Complete Streets

The Complete Streets planning and design methodologies, with appropriate policy support, redefine how we use our streets and how we spend our money to improve them. This is accomplished by balancing allocation of space in the roadway right-of-way to provide safe and effective facilities that can be used by all transportation modes and users. Complete Streets are designed and operated to empower users of all ages and abilities to safely move along and across streets in a community, regardless of how they are traveling. As the National Complete Streets Coalition simply states, “Complete Streets are streets for everyone.” They make it easy to walk to the market, take the bus to work, and bike to the park.

Complete Streets are streets for everyone.

The Complete Streets approach brings together advocates from many different interest groups, including older Americans, public health agencies, transportation practitioners, bicycling and walking advocates, local business supporters and many others. Complete Streets policies and programs can be written to support many community goals, including increasing transportation choices, improving transportation safety, supporting the local economy, supporting public health, supporting local community building, and improving environmental goals. Support has increased since 2003 when the first Complete Streets policies emerged in the United States. Two articles in the American Planning Association’s *Planning*, dated May 2014 discuss the reasons why Complete Streets policy and design continue to grow in popularity and

garner stronger support from public agencies and professionals. These articles are included as an attachment to this white paper (reprinted with permission from the American Planning Association).

Complete Street Design Elements

Complete Streets are comprised of elements that make getting around safer and more efficient. When designing Complete Streets, solutions should be context-sensitive and flexible. Every community is unique and has different needs. Roadways designed using a Complete Streets approach may include sidewalks, bike lanes or cycle tracks¹, “sharrows”², wide paved shoulders in rural and semi-rural areas, special bus lanes, accessible and comfortable transit stops, frequent and safe crossing opportunities, median islands, accessible pedestrian signals, curb extensions or “bulb outs,” narrower travel lanes, roundabouts and many other possible treatments that are selected based on the context of surrounding land uses and activities. Examples of these facilities in Novato follow later in this white paper.

Alternative modes become viable, seamless, and attractive options for transportation.

Jurisdictions should provide Complete Streets design guidelines that are clear, practical and multimodal, allowing for flexible decision making. Another element to flexible design is to develop street typologies that reflect surrounding land uses. While many jurisdictions already have classifications for streets within their communities, these are generally based on vehicle volumes and have minimum required cross-sectional widths. Guidance can be provided by a city with an updated street types system that would incorporate the needs for multiple modes and could be broken into zones rather than specific width requirements. Following are descriptions for street types relevant for the City of Novato that incorporate Complete Streets design elements. The sample cross-sections shown below are examples of how these design elements can be used in the street typology, and were created using StreetMix³. It is important to reiterate that the depicted cross-sections are indeed examples since a key component of using street typologies is to maintain flexibility in order to appropriately blend with the surrounding context.

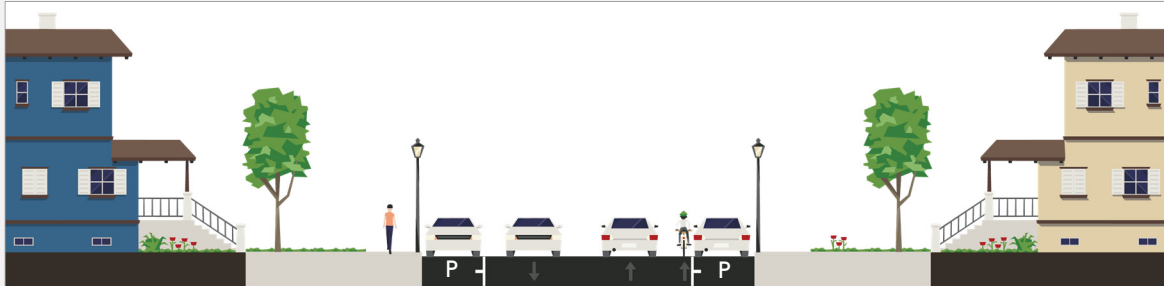
¹ A cycle track is a one-way or two-way on-street exclusive bicycle facility that is physically separated from vehicles, often with hardscaped, landscaped or striped buffers or islands.

² “Sharrows” or shared-lane markings are used to indicate travel lanes that are meant to be shared by both vehicular and bicycle traffic. They are often found where there is insufficient space for bike lanes on roadways.

³ <http://streetmix.net>

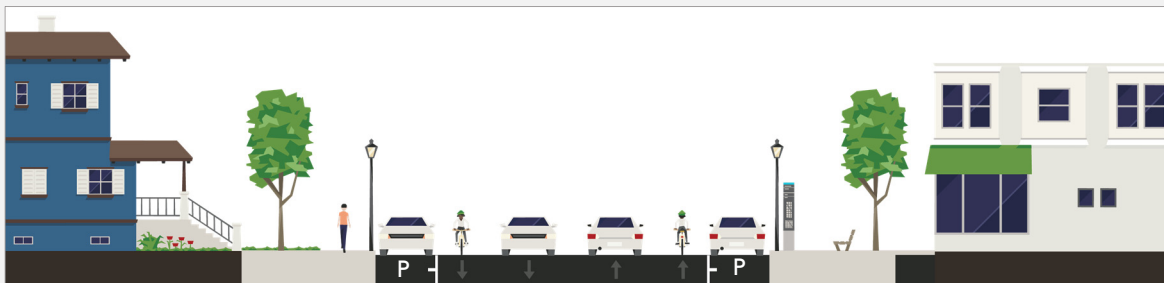
Street Typology with Complete Streets Design Elements

Local Street



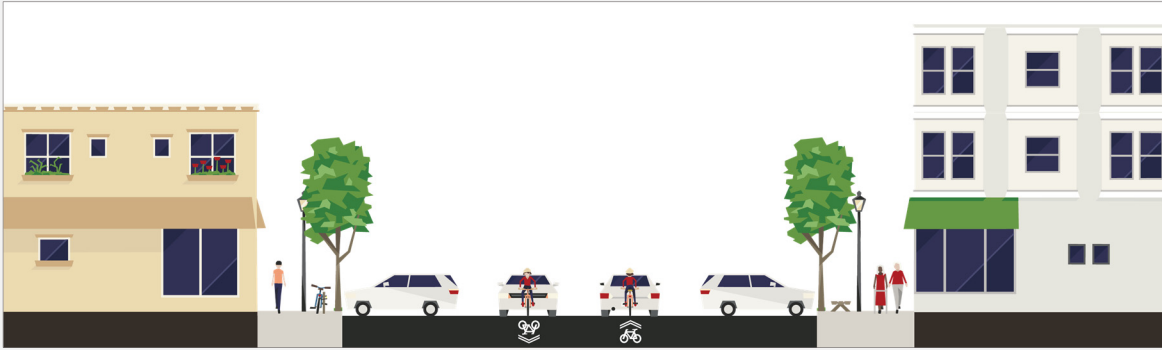
- Generally neighborhood streets providing access to homes and schools
- Low vehicular speeds
- Include street trees
- Include pedestrian-scale or conventional street lighting at intersections (at a minimum)
- Include sidewalks and pedestrian/bicycle crossing amenities at intersections with larger streets

Avenue



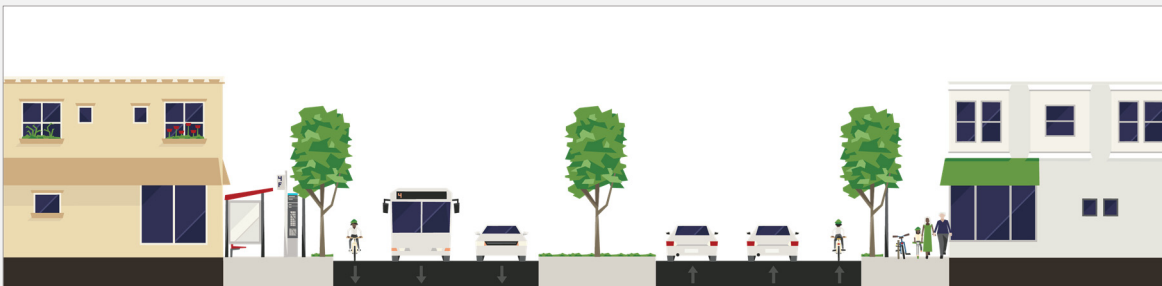
- Provide access between retail areas and local streets
- Should include bicycle lanes or routes
- Have clearly marked crossings and use “bulb-outs” to reduce crossing distance
- Have some transit service, with benches and shelters at bus stops
- Include street trees and street lighting (pedestrian-scale, conventional, or combination)
- Olive Avenue is an example of this type of street, connecting local residential streets to Redwood Boulevard

Main Street



- Provide primary access to retail and shopping in denser areas
- Typically include parking
- Walking and bicycling should be considered the primary modes
- Some segments could be closed off to vehicular traffic to create promenades either permanently or for special events, such as farmer’s markets
- A transit facility should be nearby
- Include street trees, pedestrian-scale lighting, wayfinding signs, and other street furniture
- Grant Avenue is Novato’s “Main Street,” with many local restaurants, retail shops, and services

Boulevard



- Include medians, typically landscaped
- Should provide both local and regional transit service with benches and shelters at bus stops
- Have wide sidewalks and/or buffers between moving traffic and pedestrian areas for comfortable walking
- Provide bicycle lanes or a multi-use path for bicycle commuting
- Have enhanced pedestrian and bicycle crossings
- Include continuous street lighting (pedestrian-scale, conventional, or combination)
- Examples of this street type include Novato Boulevard and Redwood Boulevard

Complete Streets in Novato

Successful examples of Complete Streets elements that have been implemented in Novato are shown below.

Complete Street Elements in Novato

Olive Avenue at Westwood Drive *Avenue Street Type*

- Near school
- Use of yellow markings for high visibility school crosswalk
- Accessible curb ramps
- Sidewalks on both sides of street
- Radar feedback sign for speed
- Clearly indicated bike lanes
- “Bulb-outs” at intersection help to slow vehicles along Olive Avenue



Wilson Avenue between Center Road and Sierra Vista *Avenue Street Type*

- Narrowed vehicle lanes
- Medians installed to create frontage roads for residential access and parking
- Sidewalks are along the frontage roads
- Street trees
- Bike lanes (including on frontage roads where they exist)

Grant Avenue between Reichert Avenue and Redwood Boulevard
Main Street Type

- Central commercial district
- Angled parking
- Narrow through lanes
- Wide sidewalks
- Bicycles may mix with lower speed vehicles
- “Bulb-outs” at intersections reduce crossing distance for pedestrians
- Street trees and pedestrian-scale lighting
- Crosswalks are marked and have complementary signage
- At uncontrolled approaches crosswalks should have high visibility by using either speed tables, stamped and/or colored pavement, or striping
- Wayfinding signs for parking and pedestrian directions



Redwood Boulevard between Vallejo Avenue and Olive Avenue
Boulevard Street Type

- Separated vehicle traffic
- Wide medians installed at centerline as well as along sides to create frontage roads
- Parking and local access provided on frontage roads
- Medians reduce crossing distance for pedestrians
- Bicycle lanes on frontage roads
- Transit stops along frontage roads
- Further enhancements could include narrowing vehicle lanes and providing additional pedestrian crossing amenities

Hangar Avenue at San Pablo Avenue
Avenue Street Type

- Wide sidewalks with curb ramps
- Clearly striped bike lanes
- Marked crosswalks
- Potential enhancement could include a “mini roundabout,” which would reduce the number of vehicle lanes as well as pedestrian crossing distance



Alameda del Prado near Calle Arboleda

Avenue Street Type

- Narrowed through lanes
- Landscaped medians help to calm traffic and narrow pedestrian crossing distances
- Continuous sidewalks
- Transit access with bus pullouts
- Clearly marked bike lane
- Potential enhancements include the addition of high-visibility crosswalk markings and/or active pedestrian crossing flashers

Tamalpais Avenue between Novato Boulevard and Center Road
Avenue Street Type

- Wide striped shoulder shared between bicycles and parking
- Lane widths reduced
- This road shares access to mixed land uses, including assisted living, apartments, medical offices, and single family residential
- Potential enhancements include bulb-outs at intersections and high-visibility pedestrian crossings



Oak Grove Drive near Palmer Drive
Local Street Type

- Residential neighborhood
- On-street parking
- Right-sized travel lanes
- Street lighting
- Continuous sidewalks on both sides of street

Complete Streets Policy

Mandates on the establishment of Complete Streets policies are already in place at the State and regional levels. This guidance has been established to assist jurisdictions, such as the City of Novato, to incorporate Complete Streets into their own community plans and roadway design requirements. The creation and adoption of Complete Streets policies and programs is important to demonstrating a commitment to consistently design and operate roadways with all users in mind. In addition, clear policy direction and supporting programs assist agency staff, developers, design professionals, and decision makers in designing, assessing, and rendering decisions on improvements to existing streets and the development of new roadways.

In 2007 the Novato City Council adopted Resolution No. 107-07, which directs staff to consider and include multi-modal transportation elements in new development and capital improvement projects within the City. The purpose of this resolution, adopted prior to enactment of the Complete Streets Act of

2008, was to affirm the City's commitment to multi-modal transportation improvements and to maintain eligibility to receive grant funding for such improvements from the Metropolitan Transportation Commission. A copy of Resolution No. 107-07 is attached for reference.

Although the City has already made a policy commitment to multimodal transportation improvements, it remains necessary to include Complete Streets policies and programs in the updated Novato General Plan to comply with the requirements of the Complete Streets Act of 2008.

For More Information on Complete Streets and the Complete Streets Act

The California Complete Streets Act

http://www.leginfo.ca.gov/pub/07-08/bill/asm/ab_1351-1400/ab_1358_bill_20080930_chaptered.pdf

Caltrans Deputy Directive, Complete Streets – Integrating the Transportation System, DD-64-R1

http://www.dot.ca.gov/hq/tpp/offices/ocp/complete_streets.html

NACTO

<http://www.nacto.org/usdg/>

Regional Transportation Plan Guidelines (2010 Amendments)

http://www.catc.ca.gov/programs/rtp/2010_RTP_Guidelines.pdf

Plan Bay Area

<http://onebayarea.org/plan-bay-area.html>

Sample “Best Practice” Complete Streets Policy

The publication titled *The Best Complete Streets Policies of 2013* by Smart Growth America and National Complete Streets Coalition identifies the following ten key components to well-written Complete Streets policy language.

1. Vision
2. All users and modes
3. All projects and phases
4. Clear, accountable exceptions
5. Network
6. Jurisdiction
7. Design
8. Context sensitivity
9. Performance measures
10. Implementation steps

Following are several sample Complete Streets policies exemplifying this list that have been utilized in other California jurisdictions.

Cotati

Ensure that the City's circulation network is a well-connected system of streets, roads, highways, sidewalks, and bicycle/pedestrian paths that effectively accommodates vehicular and non-vehicular traffic in a manner that considers the context of surrounding land uses and the needs of all roadway users.

Support establishment of special assessments of affected property owners in order to provide funding to install walkways and fill gaps in the existing pedestrian network.

In semi-rural areas and locations where sidewalks are not planned, provide wide shoulders to accommodate pedestrians and bicyclists.

Coordinate with SMART in seeking opportunities to fund and construct improvements that improve multimodal access to the Cotati rail station.

Huntington Park

The City of Huntington Park will design, operate and maintain a transportation network that provides a connected network of facilities accommodating all modes of travel ... will actively look for opportunities to repurpose rights-of-way to enhance connectivity for pedestrians, bicyclists and transit ... [and] will require new developments to provide interconnected street networks with small blocks.

Redwood City

Ensure that the City's transportation impact fee program provides adequate funding for necessary transportation improvements that will benefit all travel modes, while also incentivizing development that is less dependent on expensive new transportation infrastructure.

Support using the concept of complete streets to design, construct, operate, and maintain city and private streets to enable safe, comfortable, and attractive access and travel for pedestrians, bicyclists, motorists, and transit users of all ages, abilities, and preferences. Use the complete streets concept to better link the Port, Seaport Center, Pacific Shores, and other employment centers with Downtown and other nearby areas.

Hermosa Beach

Living streets in the City of Hermosa Beach will be inviting places – with engaging architecture, street furniture, landscaping, and public art – that foster healthy economic development.

The City will work with agencies and neighboring communities to incorporate living streets principles into regional transportation networks.

Draft Complete Streets Policies for Novato

Following are a series of policies and programs addressing complete streets that may be appropriate for inclusion in the City of Novato's forthcoming update of the General Plan Circulation Element. These policies are intended to bring a robust Complete Streets focus to the General Plan, consistent with requirements set forth by the State of California and Metropolitan Transportation Commission. Note that in addition to the following "complete streets" focused policies, the updated Circulation Element will also likely include new and expanded policies and programs related to operational (rather than physical) characteristics, coordination between transportation and land uses, and funding. Once the draft complete streets policies and programs have been considered through the white paper process it is likely that other programs and policies of the Circulation Element may need minor modifications to maintain consistency. Any modifications will be considered once the draft General Plan is ready for review.

NEW
GOAL "A"

Provide Complete Streets throughout the City.

NEW POLICY
"A1"

Focus on a Complete Streets approach

Make Complete Streets practices a routine part of Novato's planning, design, and operation of its circulation network consistent with the other objectives, policies, and programs of the General Plan.

NEW
PROGRAM
"A1.1"

Provide training for City staff on Complete Streets best practices on an ongoing basis in order to facilitate the design, planning, and review of roadway and development projects.

NEW
PROGRAM
"A1.2"

Establish a set of performance standards for multimodal circulation, monitoring performance over time and through the development review process. Such performance standards may include multimodal level of service "grades" such as those determined through methodologies in the *2010 Highway Capacity Manual* (Transportation Research Board), or through establishment of a "checklist" set of criteria that identifies multimodal facilities that are present on a facility (for example, the presence of enhanced crosswalks, bicycle lanes, pedestrian-scale lighting, bus shelters, buffers between pedestrian and auto zones, bicycle racks, bus stop lighting, and other factors).

NEW POLICY
"A2"

Build and retrofit streets to have a multimodal focus

When developing plans for new or retrofitted roadways, incorporate infrastructure that enhances multimodal circulation in addition to auto circulation, such as sidewalks, bike lanes, pedestrian refuge islands, accessible curb ramps, transit shelters, and pedestrian-scale lighting.

NEW
PROGRAM
"A2.1"

Revise the development standards of the Novato Municipal Code to include complete streets design principles to aid in the design and assessment of new or retrofitted roadways. Revised design standards shall be drafted in a manner providing flexibility to address a wide range of street and neighborhood contexts.

REVISED
PROGRAM
20.6

~~Construct bike routes according to the standards established by CalTrans' Planning Development and Design Criteria for Bikeways. Alternative designs may be required in environmentally sensitive areas.~~ Incorporate pedestrian and bicycle facilities into the

design and construction of roadway improvements. Construct bike facilities according to the standards established by Caltrans and/or the National Association of City Transportation Officials (NACTO), adjusting as necessary to minimize impacts to environmentally sensitive areas. *Program relocated to support new policy A2*

NEW POLICY
"A3"

Reasonable Improvements for Safe Travel

Complete Streets infrastructure should provide safe and reasonable travel to users; however, such infrastructure may be excluded under specific circumstances.

NEW
PROGRAM
"A3.1"

The City Engineer will provide written approval of an exemption where documentation and supporting data indicate the cost would disproportionately exceed the need or probable future use of the facility over the long term, there is an absence of current and future need, or if significant adverse impacts outweigh the positive effects of the infrastructure. Interdepartmental communication among the Public Works, Community Development, and Parks, Recreation and Community Services Departments will ensure that proper documentation and supporting data for an exemption is accurate.

REVISED
GOAL 4

Develop a circulation transportation system that is safe and efficient, and that encourages citizens to walk, bicycle or use mass transit. *Formerly Objective 4*

NEW POLICY
"B1" (Add under
Goal 5)

Enhance Connectivity to SMART

Improve connectivity to SMART commuter rail stations and the SMART bicycle-pedestrian path.

NEW
PROGRAM
"B1.1"

Coordinate with SMART and TAM in seeking opportunities to fund and construct improvements that expand multimodal access to Novato rail stations.

NEW
PROGRAM
"B1.2"

In coordination with Marin Transit, work to ensure that effective transit linkages are in place between SMART rail stations and the City's primary activity/employment centers.

NEW
PROGRAM
"B1.3"

Coordinate closely with SMART to ensure that the planned on- and off-street SMART multi-use path safely and conveniently ties into the City's existing and planned bicycle and pedestrian network.

REVISED
PROGRAM
15.4

~~Explore feasibility of establishing an intracity transit system.~~ Continue to work with Marin Transit to provide improved headways, longer service hours, expanded service areas, and safe, convenient, and comfortable facilities throughout the City.

REVISED
POLICY 20

Comprehensive Bicycle Path System

~~Establish a comprehensive and safe and maintain a system of bicycle routes facilities that connects all parts of the City~~ are consistent with the City of Novato Bicycle Plan.

REVISED
PROGRAM
20.5

~~Distribute~~ Develop maps and information depicting and describing of Novato's bicycle routes at public buildings, the library, schools and other public places for posting on the City's website.

- REVISED PROGRAM 20.9

Continue the bicycle safety programs offered by the Police Department and the Marin County Safe Routes to School Program. Work with schools and community organizations to expand both youth and adult cyclist training and orientation programs.
- NEW PROGRAM 20.10

Ensure that all traffic signals in Novato include bicycle detectors that function for both steel and non-steel framed bicycles.
- NEW PROGRAM 20.11

As staffing resources permit, develop a program to regularly inspect and maintain all bicycle lanes, paths, and bicycle parking facilities including sweeping, trimming of vegetation, and general maintenance.
- REVISED PROGRAM 21.2

Work with public transit providers to place bicycle parking at bus stops (including secure, weatherproof bike parking at key locations), and to ~~increase the number of buses able to take bicycles~~ ensure that all transit vehicles are equipped to carry bicycles.
- REVISED POLICY 22

Pedestrian Facilities
 Promote, provide, and maintain a safe and convenient pedestrian system, including (but not limited to) consideration of lighting, road surface conditions, access points, signage, and roadway crossings.
- REVISED PROGRAM 22.1

Require development projects to include a sidewalk, path, or shoulder on all streets as deemed appropriate by City staff, and routinely include projects to close gaps in the pedestrian system on existing streets through the City's CIP.
- REVISED PROGRAM 22.2

~~Continue to Provide traffic controls~~ pedestrian safety enhancements such as bulbouts, high-visibility signs and markings, pedestrian warning signals, and other amenities in areas with high volumes of pedestrian movement traffic.
- NEW PROGRAM 22.3

Review traffic signal timing plans to ensure adequate crossing times for all users at signalized intersections.
- NEW POLICY "CI" (Add under Goal 6)

Safe Routes to Schools
 Prioritize transportation improvements that strengthen pedestrian and bicycle safety for students traveling to and from schools.
- NEW PROGRAM "CI.1"

Assist with the preparation and updating of Safe Routes to School (SR2S) plans for schools that serve the Novato population.
- NEW PROGRAM "CI.2"

As part of the development review process, ensure that new development projects provide bicycle and pedestrian improvements to facilitate the implementation of adopted Safe Routes to School plans.
- NEW PROGRAM "CI.3"

Actively pursue grants and other funding sources to complete improvements identified in Safe Routes to School plans.

REVISED
POLICY 23

Access Improvements.

~~Support improved access to public transportation by people with disabilities~~ Create an accessible circulation network that is consistent with guidelines established by the Americans with Disabilities Act (ADA), allowing mobility-impaired users such as the disabled and elderly to safely and effectively travel within and beyond the City.

NEW
PROGRAM
23.3

As staffing resources are available, review transportation corridors to identify barriers encountered by persons with disabilities, including locations where there are not ADA-compliant curb cuts and ramps, and address such obstacles in the Capital Improvement Program, to the extent that funding for such activities is available.

NEW
PROGRAM
23.4

Continue to make accessibility improvements that eliminate barriers created by utility infrastructure (such as poles that obstruct accessibility).

Recommendation Options

As discussed above, the City is required by state law to incorporate Complete Streets policies and programs into its General Plan. However, state law does not dictate the form or content of such policies and programs. Given this circumstance, the Bicycle and Pedestrian Advisory Committee, Design Review Commission, and Planning Commission have broad discretion when developing recommendations to the City Council regarding Complete Streets. Potential recommendations may take the form of the following options or combinations thereof:

- Recommend the draft goal, policy, and program statements noted in the section above
- Recommend amended versions of the draft goals, policies, and programs listed above
- Recommend additional goals, policies, and programs to be combined with those discussed above

The recommendations of each committee and commission will be forwarded to the City Council for final direction to staff. Staff will use the City Council's direction as the basis to prepare goal, policy, and program language that will be incorporated into the draft General Plan. Once the draft General Plan is completed it will be re-circulated through the City's various boards, committees, and commissions prior to consideration by the City Council.

COMPLETE STREETS COME OF AGE

Learning from Boston and other innovators.

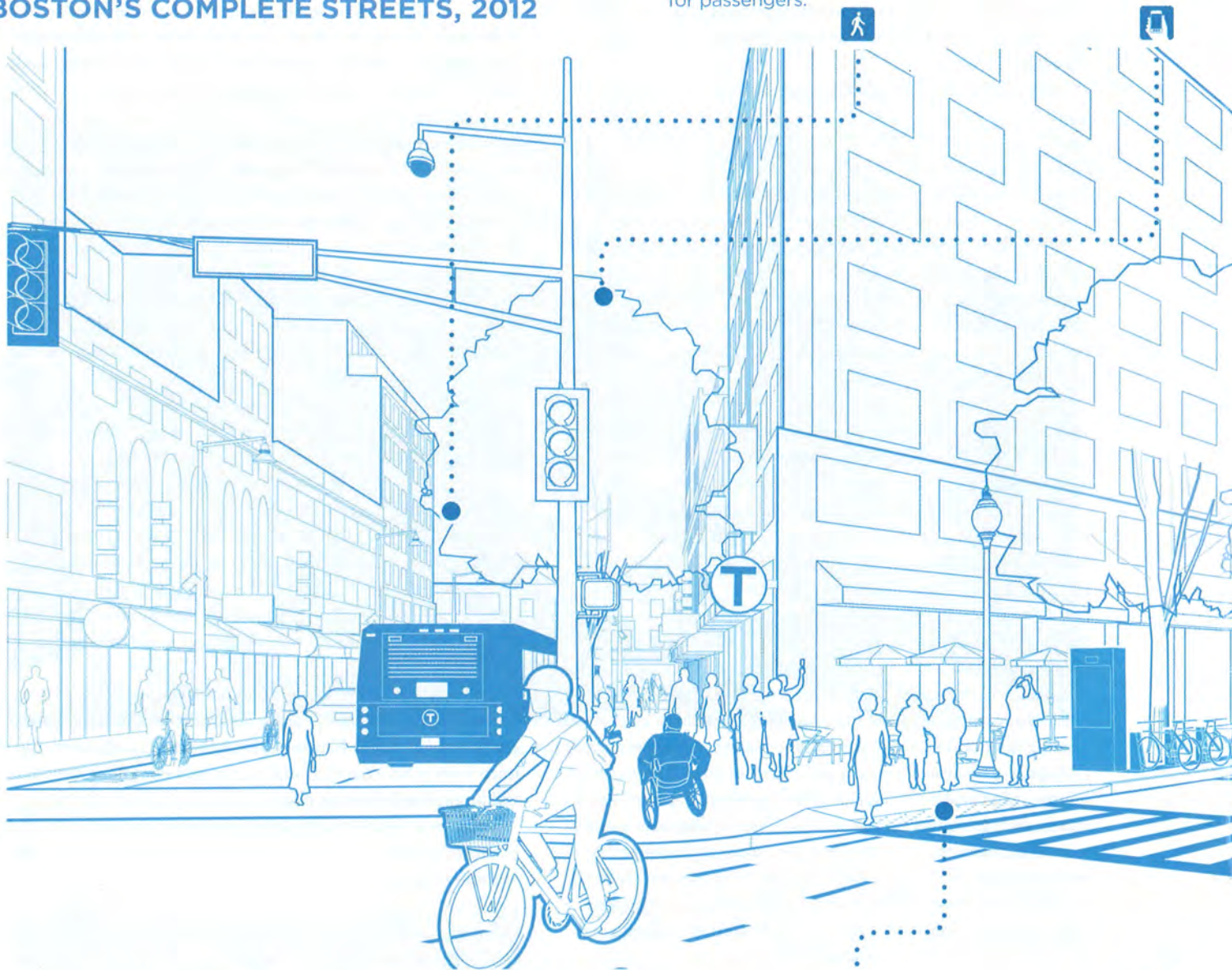
By Corey Zehngbot and Richard Peiser

VISION

BOSTON'S COMPLETE STREETS, 2012

Bus Lanes and Transit Prioritization at intersections improve the reliability of routes with high passenger volumes. Shelters with amenities and next bus information improve convenience for passengers.

Intelligent Signals and Traffic Cameras manage traffic flow in real-time. They facilitate vehicle progression and reduce wait times, improving fuel efficiency and reducing GHG emissions.



Electric Vehicle Charging Stations support the adoption of a new generation of clean-fuel vehicles. Linked to smart electric grids that use alternative energy sources such as solar and wind, they will help reduce dependence on fossil fuels and combat climate change.

Ease of Maintenance informs the design of roadways and sidewalks, favoring durable materials and maintenance agreements for special features to enhance the life and upkeep of Boston's streets.

Accessible Surfaces with smooth slip-resistant materials for sidewalks and crosswalks create comfortable walking environments that make streets welcoming for people of all ages and abilities.

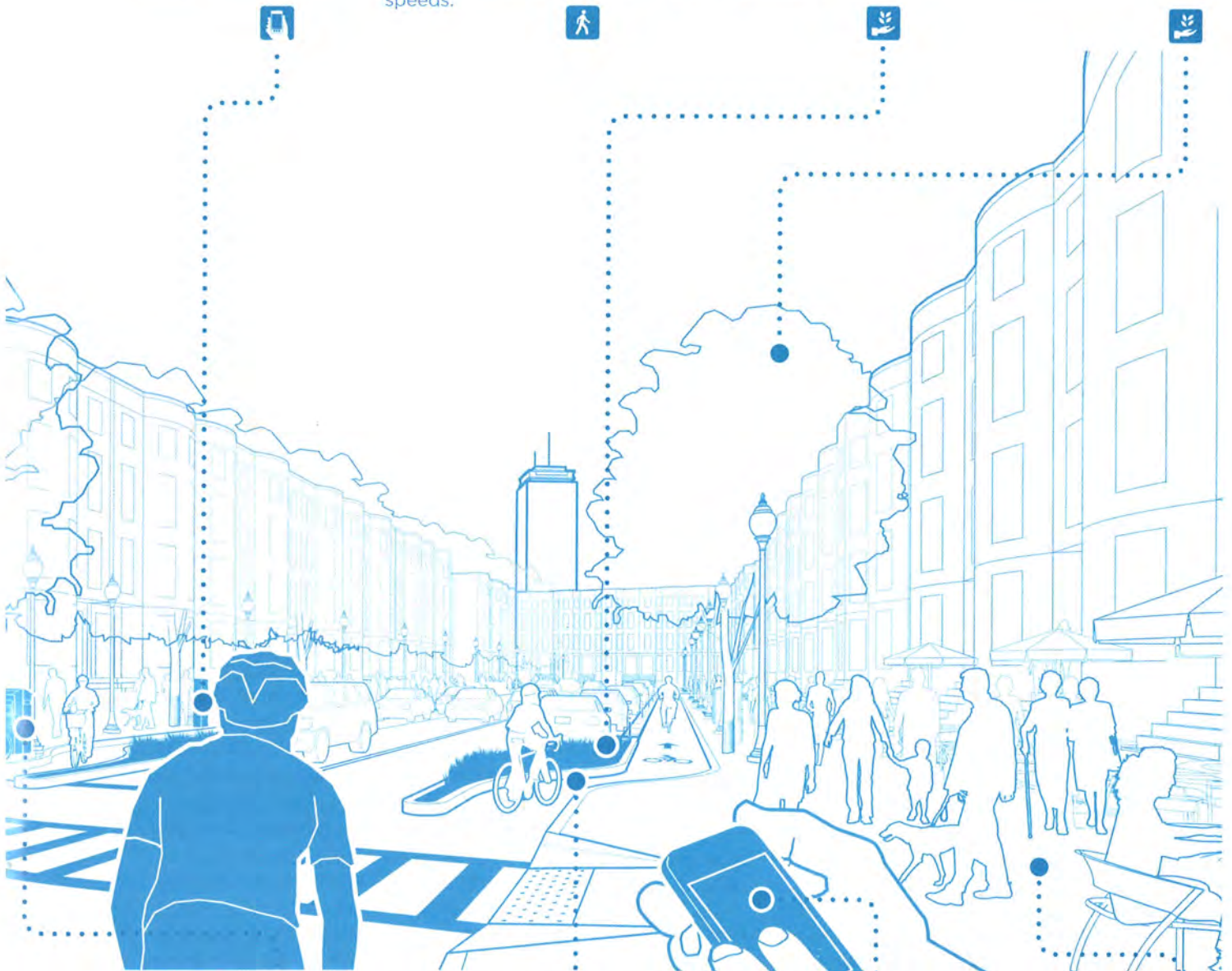
Permeable Surfaces for roadways and sidewalks help reduce flooding and erosion and preserve capacity in storm drains and combined sewers.

Bicycle- and Car-Share Stations provide the convenience of personal transportation, low costs, and energy savings without the need for car ownership.

Minimum Lane Widths assist in the accommodation of pedestrians and bicyclists when the available public right-of-way is limited in width. Narrower roadways also result in safer vehicle speeds.

Rain Gardens and other greenscape elements at key locations divert stormwater directly to the soil. Maintainable rain gardens can filter pollutants, improve air quality, and provide greenery on the street.

Street Trees with sufficient rooting volume to thrive provide shade and beauty, support wildlife habitat, and reduce air pollution and energy consumption.



Smart Meters that accept prepaid cards, payment by mobile phones, and allow for variable pricing facilitate more efficient use of limited curbside space.

Bicycle Lanes and Cycle Tracks create a citywide network that increases safety and encourages more people to bicycle.

Digital Tags and Information Panels integrated with street furniture and building facades enable wayfinding, community bulletin boards, trip planning, and place-based social networking.

Wide Sidewalks with unobstructed accessible pathways encourage walking. When combined with proper lighting, street trees, and vibrant street walls, they are inviting, safer, and contribute to placemaking.



THE

COMPLETE STREETS MOVEMENT is coming of age, making this a good time to take stock. ¶ Now 10 years old, complete streets policies came into being in late 2003 in response to car-centric planning. The term “complete streets” was coined by America Bikes as it was developing a new policy initiative with the goal of ensuring the same rights and safe access for all users of streets, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. ¶ Common features include ample sidewalks, improved standards for street tree planting and other landscape elements, bike lanes, dedicated bus lanes, comfortable and accessible transit stops, frequent crossing opportunities, median islands, and curb extensions. ¶ The movement spread rapidly. The National Complete Streets Coalition was formed in 2005; its founding members included the American Planning Association as well as America Bikes, Smart Growth America, and others. By the end of 2012 there were nearly 500 complete streets policies in place nationwide, according to an analysis by Smart Growth America. Though some of these policies are simply single-page ordinances, others are comprehensive guidelines. In addition, in the past decade, “complete streets” has become part of the lay vocabulary, not just a term used by transportation planners and streetscape advocates.

In addition to Boston’s *Complete Street Guidelines*, San Francisco’s *Better Streets Plan* (2011) and New York’s *Street Design Manual* (2009) are some of the most comprehensive. Chicago (*Complete Streets Chicago*, 2013), Atlanta (*Connect Atlanta Plan/Street Design Guidelines*, 2013), Portland (*Portland Pedestrian Design Guide*, 1998), and other big cities likewise offer good examples, as do midsized cities such as Minneapolis (*Access Minneapolis*, 2008) and Louisville (*Complete Streets Manual*, 2007).

College towns such as New Haven (*New Haven Complete Streets Design Manual*, 2010) and Charlotte (*Urban Street Design Guidelines*, 2007), in particular, have passed ordinances that have made complete streets

the cornerstone for streetscape design and implementation.

Out East

With remarkable speed, Boston and cities across the country have embraced the concept of “street as space,” thereby making more effective use of streets, their largest real estate asset.

Recognizing that 56 percent of city-owned lands are in the public right-of-way, the Boston Transportation Department in 2008 defined a set of aspirational complete streets goals that went beyond multimodal accommodation to emphasize green infrastructure and advances in streetscape design made possible through technology

such as the use of structural soil to extend the life of street trees and the use of sensors to provide real-time information on parking availability.

Subsequently, BTM spent more than three years working with two consultants, Toole Design Group and Utile, Inc., to develop graphic guidelines, while also implementing tangible pilot projects. This dual approach was to make real—through compelling visuals and visible changes to streets throughout the city—the three core principles of Boston’s *Complete Streets Guidelines*: multimodal, green, and smart.

Although they were completed less than a year ago, there has been sufficient time and work to identify both the precedents and descendants of Boston’s guidelines.

Boston’s approach placed strong emphasis on graphic representation, but through illustration. The conventional approach has been to appropriate photographs from other cities—often from overseas—to illustrate “best practices.” San Francisco’s *Better Streets Plan* and New York’s *Street Design Manual* are good examples. These cities rely heavily on the use of photographs, while creating a framework that is clear, compelling, and cuts across jurisdictional boundaries.

Boston, however, developed three-dimensional perspective illustrations, along with the occasional photo, that placed streetscape elements in a context with an unmistakable Boston flavor. The city also recognized that the Federal Highway Administration’s classification system for streets (locals, collectors, and arterials) was insufficient for urban environments. Consequently, Boston identified a novel set of urban street types—such as “downtown mixed-use” and “shared streets”—that supported complete street strategies.

These techniques—along with a web portal for real-time feedback collection, even before formal adoption by the city—have been embraced by other cities and national organizations. The National Association of Transportation Officials recently used similar graphic conventions for their *Urban Street Design Guide* and made their website the primary conduit for distribu-



ILLUSTRATION BY JASON LEE



Left-side bicycle lanes on Commonwealth Avenue are one example of how Boston balanced new concepts with the city's historic urban fabric.

tion of their guidelines.

Boston's website was designed to function as an educational tool for cities across the world, a virtual space where diverse audiences could explore the tenets of complete streets design, monitor development of the guidelines in real time, and view proposed and real projects.

Not so different from emerging planning tools like MindMixer or Streetmix, the website was intended to make the process tangible, transparent, and engaging. Currently, an interagency group is formalizing a framework for implementation.

Taking stock

The three pillars of Boston's complete streets design help to demonstrate complete streets thinking in the past, present, and future.

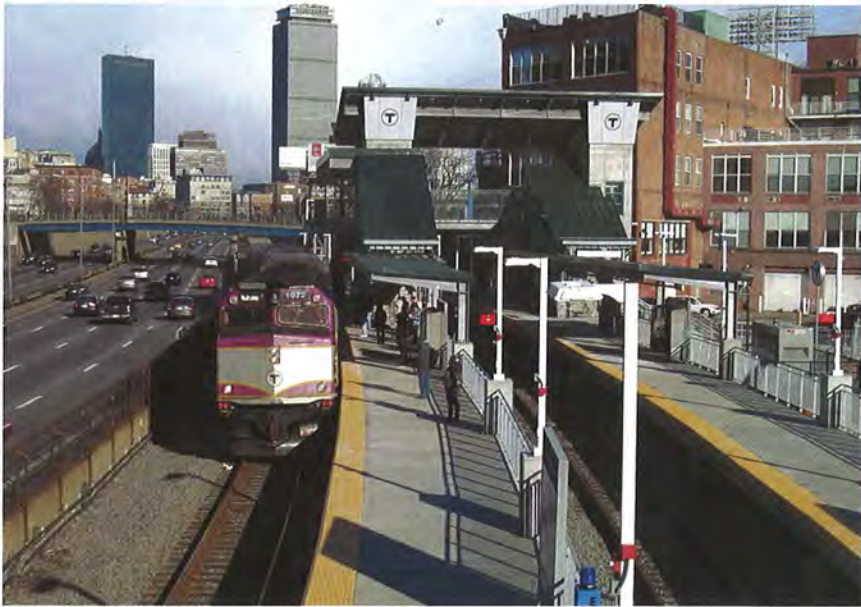
MULTIMODAL Boston is naturally a walking city. It has one of the highest mode-splits for walking in the U.S., but, in keeping with national trends, the city also has seen a dramatic increase in bicycle use. Bicycle ridership has doubled since 2007; the city has added more than 80 miles of bike lanes; a bicycle-share program, "Hubway," was launched in 2011 and has expanded every year since; a bicycle network plan was adopted; and the first helmet vending machine in the U.S. was introduced.

The most challenging aspect of accommodating bicycles has been respecting and hybridizing new concepts within Boston's historic urban fabric. The left-side bicycle lanes next to the Commonwealth Avenue Mall are excellent examples. Foregoing the right-side bike lane convention, pedestrian

and bicycle accommodations were colocated down the center of Commonwealth Avenue, one of Boston's most picturesque avenues.

Though controversial when introduced in 2012, this anomalous bike lane is now an accepted feature of Boston's Back Bay. More recently, Boston was awarded a \$15 million grant from the FHWA for Connect Historic Boston, an initiative for which the city and the National Park Service have partnered to connect transit to Boston's history.

Still basking in the Boston Red Sox 2013 World Series win, the city also has just completed the new Yawkey commuter rail station, which will bring commuters, residents, and visitors within a five-minute walk of Fenway Park. This will replace a dilapidated platform with limited service.



Expanded service and a newly renovated Yawkey commuter rail station, which is within a five-minute walk of Fenway Park, will serve Boston's rapidly developing Fenway neighborhood.

Built with state funds, this accessible commuter station will serve people coming to the rapidly developing Fenway neighborhood—with peak service on game days.

GREEN Introducing more trees and “greenscape” elements into Boston’s urban environment has established positive aesthetic, health, and environmental effects. Nevertheless, just a few years ago, Boston was putting down nonpermeable asphalt

and planting trees in undersized tree pits. Today, the city is installing permeable paving systems, structural soil, and large tree pits (as specified in the *Complete Streets Guidelines*) that allow for proper ground water infiltration. It’s all part of a comprehensive and systemic green strategy.

One example is Peabody Square in Dorchester, where vestigial roadway was reclaimed as open space, and permeable sidewalk



At Peabody Square in the historic Boston neighborhood of Dorchester, vestigial roadway was reclaimed as open space, complete with pervious sidewalks and rain gardens.

walks and rain gardens were installed. Created in tandem with a refurbished transit station, the reconfigured roadway not only improves traffic flow, but creates a plaza for outdoor cafe seating adjacent to new restaurants and housing.

Green doesn’t always have to mean landscape; another pilot program for parklets supports the seasonal conversion of parking into open space, supporting sustainability more broadly by offering an open space alternative to parking. This program is expanding in 2014, concurrent with other parklet programs in cities across the U.S.

SMART The decision to highlight “smart” as a core principle was Boston’s way to differentiate its *Complete Street Guidelines*, but perhaps natural for a city whose ties to education, pragmatics, and technology are culturally entrenched.

Peering into the future is never easy, but it has become clear that cities are entering a new era of complete streets design, as smart elements like electric vehicle charging stations, in-ground parking sensors, transportation demand management tools, and transportation-focused smartphone apps proliferate in Boston and in other cities across the country.

“Smart” and “technology” should not be used interchangeably—being smart is in part about leveraging technology. Cities should be smart about how complete streets concepts can adapt to different environments, recognizing that a one-size-fits-all approach won’t work. Making use of a city’s best assets will yield the greatest success.

Part of the larger emphasis on “smart city” design, new rideshare businesses like Uber and Lyft are changing transportation in expected locales like San Francisco, but also in cities like Houston, where cars are unquestionably dominant. As part of the sharing economy, these companies are already transformative, though cities and states are wrestling with the appropriate regulatory mechanisms. Complete streets can and will be part of this conversation, particularly as the conceptual underpinnings of “shared streets” naturally align it with the sharing of underutilized assets more broadly.

As better, more adaptive streetscape infrastructure is put in place, we are likely to see growth in smart hardware in addition to less-visible software. The design and technology of cars, bikes, and their complementary rideshare programs will evolve.

Walking for Health—in Healthy Communities

By Jay Walljasper

IT'S CERTAIN that debates about health care will escalate this year as congressional elections draw near. But there's a new twist in the discussion that might bring people together: the simple fact that physical activity, especially walking, shows remarkable promise for improving Americans' overall health and reducing skyrocketing medical costs.

Recent medical studies show that engaging in physical activity for as little as 30 minutes a day can prevent or help treat conditions such as diabetes, breast and colon cancer, depression, dementia, anxiety, osteoporosis, cardiovascular disease, obesity, and high blood pressure.

More will emerge when the U.S. Surgeon General's office releases a call to action on walking, which some observers compare to the landmark 1964 Surgeon General's report on the dangers of smoking. The call to action was initiated by former Surgeon General Regina Benjamin, who was so impressed by medical data on walking that she added trails to her health clinic in rural Alabama. The project is being carried forward by interim Surgeon General Boris Lushniak.

This growing attention to the role of walking also focuses on taking steps to make our communities more walkable, which positions city planning as a key element of the solution.

Despite the interest of the surgeon general, the push for walking and walkability is not a top-down effort. A full-fledged walking movement is emerging, which made a high-profile debut at the National Walking Summit held last fall. The event attracted more than 375 participants representing 235 organizations from 41 states and Canada, ranging from the PTA to AARP, the NAACP, the PGA, the American Lung Association, and Marriot Inc. Key groups coordinating the movement include America Walks, a coalition of more than 400 locally based advocacy groups, and Everybody Walk!, a collaborative of organizations convened by the nine-million-member health care nonprofit Kaiser-Permanente.



Boston's parklet program offers an open space alternative to parking. Parklets are seasonally converted parking spaces that are enhanced with landscaping, seating, or other design elements.

Concurrently, smaller scale innovations like smartphone-controlled bike locks are starting to emerge, in addition to larger scale advancements like induction-charged buses. These designs will create challenges that agencies and the guidelines did not anticipate. Both Boston and New York conceived of their design guidelines as living, evolving documents that can be updated regularly.

Takeaways

As the next version of complete streets comes into focus, one can expect implementation challenges despite public and interagency buy-in. And though complete streets can cost more depending on the proposed features, cities have an obligation to take the long view.

A simple cost-benefit analysis of installing wider sidewalks and street trees might require more upfront capital costs, but this

is not a sophisticated way of evaluating complete streets elements. Structural soils might be more expensive, but the operational costs over the long term will be lower as these trees will live longer and yield intangible benefits like shade, beauty, and improved air quality in cities.

Early criticisms, such as retail businesses suffering from lack of adjacent on-street parking or the public being concerned about unmet vehicular needs, have been repeatedly debunked. Streets that attract diverse users are seen as a key to economic revitalization, despite the fact that there will inevitably be some who do not benefit.

Cities have also learned that complete streets are not just about multimodal accommodations. Efforts to "green" the city are necessary complements; Chicago's Green Alleys program is one example of a city recognizing that better allocation of streets also includes landscape elements.

Tactical urbanism, or temporary, low-cost interventions often achieved through paint and off-the-shelf items, has offered tremendous support to the complete streets movement, though typically not formalized in city guidelines. Helping to alleviate blight or simply improve an average street through temporary measures can have profound positive effects.

Complementary to complete streets goals, but not necessarily under their auspices, advocates and city agencies should recognize and partner where appropriate to create streets that are complete in both conventional and unconventional ways.

Perhaps the greatest takeaway from the first decade of complete streets is that peo-

ple value choice. Not every street can provide the same level of service for all users, but a true complete street offers choices.

Similarly, complete streets offer designers, planners, and engineers more tools in their toolbox for designing streets; technology is simply accelerating and growing the availability of those options. We've already seen how a decade of work can induce change; it's exciting to speculate what the future will bring. ■

Corey Zehngebot is a senior urban designer and architect at the Boston Redevelopment Authority, and served as the project manager and creative director for the design of Boston's *Complete Streets Guidelines*. Richard Peiser is the Michael D. Spear Professor of Real Estate Development at the Harvard Graduate School of Design.

Bob Sallis, a family physician from Fontana, California, who spoke at the summit, says, "Walking is like medicine for my patients. . . . If walking was a pill or medical procedure it would be on *60 Minutes*." Side effects, he adds, may include weight loss, improved mood, better sleep, and stronger bones.

Biking, jogging, dancing, swimming, gardening, aerobics, or playing sports will also boost your health, Sallis notes, but walking stands out as the most appealing and easiest exercise for most people. There's no cost, and it doesn't require special clothes, equipment, or facilities.

Walking is the nation's favorite physical activity, according to a Centers for Disease Control and Prevention publication, with six in 10 Americans walking for at least 10 minutes in the previous week. Adults walk six percent more often than in 2005, and walking for transportation accounts for a surprising 11 percent of all daily trips, according to the U.S. Department of Transportation. This includes 35 percent of trips to work, 40 percent to stores, and 46 percent to school or church if these destinations are within one mile of home. These statistics drive home the point that better health is linked to creating more walkable communities.

Still, 52 percent of us don't get the recommended minimum of 150 minutes of physical activity a week (double that for children), according to the CDC. Rates of inactivity are higher for women, seniors, and residents of the South and Midwest.

The aim of the walking movement is to get Americans back on their feet by encouraging us to make a habit out of taking a morning or evening stroll, walking the kids to school or sports practice, organizing a lunchtime hike with coworkers, or spicing up our weekends with a jaunt around town. But this depends on how safe, comfortable, and convenient it feels to walk in our communities. A host of factors—from vehicle speeds and fear of crime to the prevalence of sidewalks and mixed use developments—affect how often and how long people will walk. ■

Jay Walljasper—author of *The Great Neighborhood Book*—writes, speaks, and consults about how to create stronger communities. His website is www.JayWalljasper.com.

RESOURCES

- ONLINE** Smart Growth America's *Complete Streets Policy Analysis*: www.smartgrowthamerica.org/tag/complete-streets-policy-analysis.
MindMixer is an online community engagement tool; see www.mindmixer.com.
Streetmix is an online platform that allows users to reconfigure or remix various street components; see streetmix.net.
Do complete streets harm adjacent businesses? See Emily Drennen's presentation, "Economic Effects of Traffic Calming on Urban Small Businesses," available at www.bikewalk.org/2004conference/sessions/28_Business_calm/TrafficCalming_summary.pdf.
Learn more from *Complete Streets*, PAS Report 559, published by the American Planning Association in 2010 and available at www.planning/store.
New York City's "Economic Benefits of Sustainable Streets" evaluated street-level retail and restaurants to measure economic gains as a result of complete streets: www.nyc.gov/html/dot/downloads/pdf/dot-economic-benefits-of-sustainable-streets.pdf.

- DEFINITIONS** The Collaborative Lab, Rachel Botsman's "innovation consultancy," defines the sharing economy as an economic model based on sharing underused assets from spaces to skills to stuff, for either monetary or other types of benefits. Botsman is the coauthor of the 2010 book *What's Mine is Yours: The Rise of Collaborative Consumption*.

- MORE** Do complete streets cost more? That question was addressed by James Shapard and Mark Cole, senior engineer and design section manager, respectively, in the Charlotte (North Carolina) Department of Transportation. Their presentation at the Transportation Research Board's 2013 annual meeting was called "Do Complete Streets Cost More than Complete Streets?"
The Victoria Transport Policy Institute has weighed in with *Evaluating Complete Streets: The Value of Designing Roads For Diverse Modes, Users and Activities*. One of its conclusions: Three groups are worse off in the complete streets movement: motorists who want to drive faster, urban fringe residents and property owners, and local merchants who rely on street parking.

For more about Uber, Lyft, and other rideshare services, see "Not Your Daddy's Taxi" in *Planning*, May/June 2013.

CITY COUNCIL OF THE CITY OF NOVATO

RESOLUTION NO. 107-07

RESOLUTION DIRECTING STAFF TO CONSIDER AND INCLUDE MULTI-MODAL TRANSPORTATION ELEMENTS IN DEVELOPMENT AND CAPITAL IMPROVEMENT PROJECTS WITHIN THE CITY OF NOVATO

WHEREAS, the City of Novato acknowledges the benefits and value of reducing vehicular modes of travel and replacement with other modes of travel such as public transit, walking and bicycle riding; and

WHEREAS, the City of Novato has established the framework in its Code, General Plan and Capital Improvements Program for improvements to accommodate all modes of travel and to assist the travel of those in the community who are disabled in a safe and convenient manner; and

WHEREAS, the City of Novato has developed a Bicycle Plan and standards for bicycle support facilities such as bicycle parking, lockers, and showers in its department standards; and

WHEREAS, the City of Novato has specified the conditions for requirement of bicycle support facilities in its Code and ordinances; and

WHEREAS, City staff is responsible to ensure the installations of improvements for all modes of travel through the review of private developments and capital improvement projects.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Novato directs its staff to consider the installation of multi-modal transportation elements in each project in the City of Novato and to implement the installation of those improvements within the framework of its Code, General Plan, and established guidelines.

* * * * *

I HEREBY CERTIFY that the foregoing resolution was duly and regularly adopted by the City Council of the City of Novato, Marin County, California, at a meeting hereof, held on the 11th day of September, 2007, by the following vote, to wit:

AYES:	Councilmembers	Dillon-Knutson, Eklund, Leland, MacLeamy
NOES:	Councilmembers	None
ABSTAIN:	Councilmembers	None
ABSENT:	Councilmembers	Gray



 City Clerk of the City of Novato