Your action plan displays the top 10 measures your city can take to improve conditions for cyclists and grow ridership in the short term, while devising a more comprehensive, long-term approach to support cycling as a viable transportation mode.

Actions are categorized into three types: Policies, Education and Awareness-building, and Infrastructure.

Actions are weighted according to their relative impact in terms of expanding access, security, safety, and awareness of cycling. Actions also include a score for time and cost to implement. These scores can help to compare individual actions, and to prioritize action plans according to different criteria.
Action Plan for Ciudad de México

**Municipal code amendments to extend legal protection to cyclists**

**ACTION TYPE** Policies

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Amending state or municipal codes to include clear penalties for vehicle violations that put cyclists at increased risk, such as not observing speed limits, parking in bicycle lanes, or close-passing, can improve interactions between cyclists and drivers by providing legal protections for cyclists should a crash occur. For example, in the Netherlands, liability for damages falls to the “more powerful road user,” which requires drivers to prove they took every measure possible to avoid contact with a cyclist to not be at fault. Unclear ordinances regarding rights-of-way and proper yielding lead to confusion and unsafe conditions for vulnerable road users like cyclists. For example, the Massachusetts State Code vaguely states that after passing a cyclist, a vehicle driver can only make a right turn crossing a bicycle lane if the driver is traveling a “safe distance” from the cyclist and at a “safe speed”, but does not define that distance nor speed. Clear ordinances should be communicated to drivers through public awareness campaigns, driver’s education classes, or similar programs.

- Establish clear penalties for violations that put cyclists at risk.
- Clarify rights of way and proper yielding of lane+s.
Action Plan for Ciudad de México

Safe passing laws for vehicles

**ACTION TYPE** Policies

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Many bicycle crashes occur when cars try to pass cyclists too closely. The practice of ‘close-passing’ is dangerous enough to deter would-be cyclists from sharing the road with cars. Adopting safe passing laws for vehicles—which typically require drivers to leave one meter of space when passing a cyclist—can help to reduce this aggressive driving practice and improve safety for cyclists. Funding and support should also be designated for safe passing enforcement. In 2018, the UK passed a law banning the practice of close-passing. In addition to the new law, the government will offer additional training to driving instructors to ensure that cyclist safety is at the forefront when conducting lessons with new drivers. Police forces have additional funding to cite drivers for not complying with the close-passing ban.¹

¹ UK Department of Transport. 2018, Government Focus on Cycling Awareness and Training in Boost to Cycle Safety.
**Action Plan for Ciudad de México**

**Bicycle master plan and funding**

**ACTION TYPE** Policies

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Bicycle master plans describe a long-range strategy for making cycling a viable transportation option in a city, region, or country. Cities across the world, including Los Angeles and Bogotá, have their own bicycle master plans; in Europe, the Netherlands and Austria have national bicycle master plans. A successful master plan should include a strategy for developing bicycle infrastructure in a city, with an emphasis on designating, connecting, and expanding bicycle routes, as well as fostering a safe environment for cycling. Bicycle master plans must also take the existing conditions of a city, including current land use and climate, into account. Phoenix, for example, includes plans to use public art as a way of shielding people from the city’s heat and exposure to the sun. Considerations for how proposed projects within the plan will be financed, as well as draft budgets, should be included.

Before 2005, it had been almost 30 years since Washington, DC had updated its official bicycle plan. Before updating the plan, officials from the District Department of Transportation (DDOT) traveled to Amsterdam and Copenhagen to better understand how to develop a culture more friendly to cycling. The main takeaway was to treat cycling as an activity for everyone, rather than a specialized hobby for everyone else to drive around. The city’s updated Cycling Master Plan provided a long-term vision for the future of Washington, DC as a bicycle city. The plan includes three main goals: improving and expanding facilities; adopting cycle-friendly policies; and ramping up education, awareness and enforcement. Over the decade following the release of the updated plan (2006-2016), the mode share of bicycle commuters grew almost 150%, reaching nearly 5% in 2017—the second highest bicycle mode share in the country behind only Portland, Oregon. In 2018, the city earned the League of American Bicyclists’ “Gold” status for bicycle-friendly communities.

#3

- Develop a bicycle master plan
- Develop a budget to support bicycle master plan implementation

**RESOURCE:**

- Sample Bicycle and Pedestrian Master Plans (Alta Planning)
- Bicycle Network Planning & Facility Design Approaches (FHWA Global Benchmarking Program)

**WHERE THIS WORKED:**

Before 2005, it had been almost 30 years since Washington, DC had updated its official bicycle plan. Before updating the plan, officials from the District Department of Transportation (DDOT) traveled to Amsterdam and Copenhagen to better understand how to develop a culture more friendly to cycling. The main takeaway was to treat cycling as an activity for everyone, rather than a specialized hobby for everyone else to drive around. The city’s updated Cycling Master Plan provided a long-term vision for the future of Washington, DC as a bicycle city. The plan includes three main goals: improving and expanding facilities; adopting cycle-friendly policies; and ramping up education, awareness and enforcement. Over the decade following the release of the updated plan (2006-2016), the mode share of bicycle commuters grew almost 150%, reaching nearly 5% in 2017—the second highest bicycle mode share in the country behind only Portland, Oregon. In 2018, the city earned the League of American Bicyclists’ “Gold” status for bicycle-friendly communities.

Action Plan for Ciudad de México

Cycling advisory committee or working group

**ACTION TYPE** Policies

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If capacity does not exist, or there is low political will in government to develop plans for growing cycling, a working group could convene public and private sector stakeholders to identify policy priorities. For example, after identifying cycling as a strategy to reduce congestion and harmful greenhouse gas emissions, Toulouse, France developed a cycle working group that consisted of the city, the public transport authority and operator, and regional representatives. The working group focused on developing a guide to promote cycling, and on introducing a bikeshare system. Similarly, bicycle advisory committees (BACs) are made up of city residents appointed by a local government body to advise the latter on bicycle planning and policies, and can be useful to better understand cyclist concerns. Because they are part of the government structure, BACs can improve transparency and ensure meaningful public input on emerging projects. The Bicycle Advisory Council in Austin, Texas has been actively involved in advocating for and planning a project to connect on-street bicycle and sidewalk networks, and Washington, DC’s BAC submitted comments critiquing the city’s dockless mobility rules adopted in November 2018.

**RESOURCE:**
Making Bicycling and Walking a Norm for Transportation Agencies: Best Practices for Bicycle and Pedestrian Advisory Committees (League of American Bicyclists)

- Form a multi-stakeholder cycling advisory committee
Financial incentives can help to promote the purchase and use of bicycles. Some countries’ tax codes enable employers to offer tax benefits to commuters who drive or, in some cases, take public transit to work. Extending these benefits to employees who cycle to work could help to encourage commuting by bicycle by offsetting costs associated with purchasing and maintaining a personal bicycle. For example, employers in Belgium can credit staff for each kilometer cycled between their home and workplace, with the country paying out over €93 million (US$104 million) to commuter cyclists in 2015. The Netherlands piloted a similar program in 2018 that enables employers to pay staff €0.19 per kilometer cycled per day to work. Bari, Italy is set to launch a pilot in February 2019 that credits participating cyclists not only for kilometers cycled to and from work, but for non-commuting bicycle trips as well, albeit at a lower rate per kilometer.

Offering subsidies or rebates can help mitigate some of the financial burden of purchasing a bicycle, particularly in places without a strong bikeshare system. Similar to credits for purchasing electric vehicles, in Sweden, the government granted a subsidy of 25%, or up to €1,000 (US$1,120), for purchasing an electric bicycle.

1 Bike Europe. 2017, Nordic’s E-Bike Sales Increase, But Markets Tend to Differentiate.
**Action Plan for Ciudad de México**

**Review import tariffs on bicycles**

**ACTION TYPE** Policies

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High bicycle prices in many countries are often due to high import taxes or value added taxes (VAT). In African countries, the high price and diminishing stock of bicycles is due to their classification as “luxury items.” Markups on border prices have ranged between 200% and 500% in Tanzania, Ethiopia and Ghana, making bicycles unaffordable for the vast majority of the population\(^1\). Reducing or removing import tariffs on bicycles, and/or reclassifying them as non-luxury goods, would make bicycles more affordable and contribute to a more robust stock of available bicycles for purchase.

Action Plan for Ciudad de México

Expand and fund enforcement efforts

**#7**

- Train enforcement officers to identify driving behavior that puts cyclists at risk
- Deploy enforcement officers on bicycles
- Cite and/or fine vehicles blocking cycle lanes

**ACTION TYPE** Policies

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To foster a safe cycling environment, cities need to invest resources into training enforcement officers to cite driving behaviors that are dangerous to cyclists, such as close-passing, and ensure that parked vehicles and other obstacles do not block cycle lanes. Cities should develop training programs that introduce enforcement officers to common safety concerns of cyclists, and frame these concerns with specific data on bicycle crashes and injuries. Further, enforcement officers on bicycles as opposed to vehicles could lead to a better understanding of cycling conditions. Washington, DC’s Department of Public Works recently began sending officers out on bicycles to experience the uncomfortable conditions cyclists face throughout the city. Officers on bicycles may also be able to address safety issues in real time or respond more quickly to reports and incidents.

Additionally, efforts already in place to keep designated bus lanes clear, such as dedicated tow-truck enforcement teams, could be expanded to cycle lanes. Traffic cameras could also help to ensure that unprotected cycle lanes remain clear of parked vehicles by photographing the license plates of and ticketing vehicles driving or parking in cycle lanes. Seoul implemented a similar program to address the issue of private vehicles using bus-only lanes. Monitoring cycle lanes and issuing tickets for parking violations will help to establish norms for drivers not to block these lanes.
Reduce vehicle speeds

ACTION TYPE Policies

Lower vehicle speeds have been consistently linked to reductions in fatal crashes, particularly between vehicles and cyclists. A 2018 study commissioned by the International Transport Forum recommends that speeds on roads often used by pedestrians and cyclists¹ be limited to 30 km/h (just under 20mph)². Reduced speeds can be implemented two ways: (a) lowering posted speed limits and enforcing them or (b) self-enforcing street design. The design of self-enforcing roads encourages drivers to comply with posted speed limits because of traffic-calming elements and heightened awareness of the presence of cyclists and pedestrians. Traffic-calming measures can include roundabouts and narrowed lanes, while awareness of cyclists and pedestrians can be improved through raised or painted intersection crossings, curb extensions or bulb-outs, or more frequent intersection crossings. Self-enforcing street designs may also be useful in cities where corruption (i.e.: enforcement officers issuing citations) may obscure more formal enforcement of road speeds.

RESOURCE:
Streets for Walking and Cycling (ITDP + UN Habitat)
Urban Bikeway Design Guide (NACTO)

#8

- Establish and enforce low speed limits for vehicles
- Implement traffic-calming infrastructure for self-enforcement

² International Transport Forum. 2016, Zero Road Deaths and Serious Injuries: Leading a Paradigm Shift To a Safe System.
## Low/zero emission zone

**ACTION TYPE** Policies

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Typically implemented as a measure to improve air quality, low emission zones either restrict access to certain types of polluting vehicles, with only alternative fuel, hybrid, and/or electric vehicles permitted to enter the area, or require polluting vehicles to pay a fee to drive within the area. Zero emission zones, which ban all non-electric vehicles from entering, can help improve cycling conditions because they can lengthen trip times for the majority of cars, making driving less convenient. This could shift people away from cars for some trips. Fewer high-polluting vehicles on streets in low or zero emission zones also increases safety, air quality, and comfort for cyclists and pedestrians.

- Implement a cycle-friendly low or zero emission zone
Vehicle parking policies

**ACTION TYPE** Policies

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Mandated parking minimums, which require developers to provide vehicle parking regardless of whether it is needed or used, result in valuable urban space wasted on parked cars—or the potential for parked cars. Parking minimums increase the cost of housing, reduce density, and limit overall mobility. In addition to freeing up space for housing and other critical uses, reducing or eliminating parking minimums, adopting parking maximums (as was done in Mexico City in 2017) and increasing the price of on-street parking to reflect the true cost of that space are all reforms that could indirectly encourage mode shift to non-car alternatives. In early 2019, Rio de Janeiro reduced parking requirements from one space per housing unit to 0.25 spaces, and now requires one bicycle parking space per housing unit. The reform also removed parking minimums for housing units within 800 meters of a transit stop. Freed-up space that had been reserved for on-street parking can be reallocated to infrastructure that supports cycling and walking, making streetscapes more comfortable for non-car modes.

- Reduce or eliminate off-street vehicle parking minimums
- Adopt vehicle parking maximums
- Adopt bicycle parking minimums

**RESOURCE:**
- Less Parking, More City (ITDP)
- Parking and the City (Donald Shoup)
Congestion pricing

**ACTION TYPE** Policies

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Congestion pricing has two direct outcomes: (a) making drivers more aware of the true costs of driving during peak periods, and (b) encouraging drivers to substitute driving during peak periods with making that trip at a different time or using a different transportation mode. Congestion pricing disincentivizes single-occupancy vehicle trips and shifts travelers to non-car modes not subject to the congestion charge, like cycling, walking, and public transit. Thus, congestion pricing requires strong and competitive alternatives to driving—namely, frequent transit and safe, comfortable cycling and walking routes—that can adequately support those who choose not to or cannot afford to pay the congestion charge. Revenues generated from congestion pricing can be designated to cycling and walking infrastructure and related improvements. However, congestion pricing requires a high level of political will and stakeholder buy-in, which could be barriers to its implementation.

- Implement a charge for single-occupancy vehicle trips
- Designate revenues to support cycling and walking infrastructure improvements
**Action Plan for Ciudad de México**

**Fuel taxes**

**ACTION TYPE** Policies

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Historically, gasoline and other fuel taxes have funded transportation infrastructure improvements like roadway maintenance. However, in many places, these taxes have not been increased in decades and do not accurately reflect the negative impacts of heavy vehicle use; the federal gas tax in the United States has not been raised since the early 1990s, although certain states have raised state gas taxes since then\(^1\). Increasing fuel taxes can disincentivize private vehicle use and encourage a shift to cycling, walking, or public transit where available, especially for short and non-essential trips. Revenues from fuel taxes can also support pedestrian and cycling infrastructure projects, as has been done in Colorado (where local governments have the option to apply gas tax revenues to any transit project including active transportation) and other states\(^2\). However, research shows that fuel taxes can disproportionately affect lower-income groups, who may not be able to substitute a less expensive mode or trip in response to a fuel tax increase\(^3\). Concerns also arise around the impact on fuel tax revenues of a societal shift away from gasoline-powered vehicles in favor of hybrid and electric vehicles.

\(^1\) City of Chicago. 2019, Roadmap for the Future of Transportation and Mobility in Chicago.
\(^2\) Advocacy Advance. 2014, State Revenue Sources that Fund Bicycling and Walking Projects.
**Cycling education**

**ACTION TYPE**  
Education and Awareness-building

**IMPACT**  

**TIME**  

**COST**

In many places, not knowing how to ride a bicycle is a major deterrent to choosing cycling as a transportation mode. Learn to ride programs held at community centers or other local locations that teach people how to ride a bicycle can help address this gap. Women-only classes, family classes, or classes offered in different languages can help reach residents who may be wary to learn to ride. In the Netherlands and Belgium, learn-to-ride classes offered by a local nonprofit are available for immigrants. Offering cycling lessons in public schools, as is done in many places, including Portland and Washington, DC, is a long-term strategy to create a constituency of confident bicycle riders. Mexico City hosts an annual Summer Bicycle School, held in community locations such as the Historical Center of Mexico City, the Chapultepec Forest, and the Aragon, which has trained over 30,000 people of all ages. In addition to educating students on cycling, Tamil Nadu, in southern India, provides students at government schools with free bicycles.

Additionally, not knowing how to fix minor mechanical issues can prevent people from cycling regularly. Accessing bicycle maintenance shops can be difficult for many cyclists, especially those living in cities without a strong cycling culture. Encouraging bicycle maintenance workshops or stands at community events to introduce riders to basic bicycle maintenance procedures, such as rust removal or brake tightening, could help riders feel more confident knowing they can address minor mechanical issues themselves.

**WHERE THIS WORKED:**

- Establish public learn to ride classes
- Implement cycling lessons for children in public schools
- Partner with local mechanics to offer workshops at public events

The Ministry of Transport and Telecommunications in Santiago, Chile discovered that women only comprised 10% of cyclists in the city. From 2007 to 2012, the Ministry implemented a cycling master plan that quadrupled the number of cycle tracks, but failed to attract female riders. Macleta (Women on Bikes), a local NGO in Santiago, discovered that few women knew how to ride and many were afraid to use bicycles in the city. To encourage women to cycle, Macleta offered two levels of classes: a ‘Learn to pedal’ course for beginners and a ‘Get off the sidewalk’ course for women who knew how to ride a bicycle, but were uncomfortable with riding around the city. Women and girls now constitute 37% of cyclists in the city.
Action Plan for Ciudad de México

Awareness campaigns for cyclists and drivers

ACTION TYPE Education and Awareness-building

One major aspect of bicycle security is understanding where and how to properly lock up a bicycle. Public education campaigns that explain the benefits (and risks) of various lock types and locking techniques could decrease bicycle theft, boost revenue at local bicycle shops selling locks, and increase bicycle security overall. Public education campaigns may also focus on drivers sharing the road with cyclists, or humanizing cyclists, as was the message of the “All Drivers” campaign in Cleveland, Ohio. In the Netherlands, it is common to learn a practice known as “the Dutch reach”. This method of opening car doors, which involves reaching across the body to open the door with the far hand, forces people to turn their bodies and look out the window, ensuring that no cyclists are approaching, before opening the door. In the Netherlands, the Dutch reach is incorporated into drivers’ license exams, establishing norms for drivers to be aware of cyclists when exiting a vehicle.

• Develop public education campaigns on bicycle security
• Develop “share the road” education campaigns
• Incorporate cyclist safety measures into drivers license exams
Action Plan for Ciudad de México

Bicycle registration incentives

**ACTION TYPE** Education and Awareness-building

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Incentive programs that encourage riders to register their bicycles with local police may reduce instances of bicycle theft. Unlike bicycle licensing, which typically carries a fee and implies that cyclists should pay for their use of street space, the goal of bicycle registration incentive programs should not be to raise revenue. There should not be a penalty for cyclists who choose not to register their bicycles. Instead, riders should be encouraged to register their bicycles so that police can more easily track stolen bicycles back to their owners. Bicycle registration programs are popular on university campuses, where bicycle thefts can be common.¹

¹ Barrett, N. 2013, Contest offers incentives for bicycle registration, hopes to decrease theft.
For decades, car-free day events have encouraged people to go about their day without relying on a personal vehicle, generating awareness around the use and benefits of car alternatives like biking, walking, and public transit, particularly for short trips. Car-free days can increase both pedestrian and cycling activity and safety by restricting cars on major roads or throughout the entire city. While many cities hold an annual car-free day, like Paris, which closes an 8-km stretch from the Arc de Triomphe to the Place de la Nation once every year, some cities hold weekly or monthly events limiting car traffic. These are typically referred to as Ciclovías (in Latin America) or Open Streets events.

More than just getting people out of their cars for one day, open streets events can be useful in institutionalizing political commitment to expand cycling and pedestrian activity. For example, Bogotá, which has held an annual Ciclovía since passing a referendum in 2000, expanded its network of bicycle lanes and added more bicycle parking spaces at public transit stations for its 2015 Ciclovía. In 2009, a law incorporated Ciclovía as a strategy to prevent obesity. These measures have had at least some impact, with a recent study finding that people over the age of 60 were more likely to walk 150 minutes or more per week if they live along a Ciclovía route. Over the past three decades, the Ciclovía route increased from 13 km and 140,000 riders to over 100 km and as many as 2 million people every Sunday.
Infrastructure pilots

**ACTION TYPE** Education and Awareness-building

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Tactical urbanism and similar types of pilot projects are flexible, inexpensive, and short-term, but are typically used as “proof of concept” to advance longer-term goals. These types of projects, which have been implemented in cities around the world, can be useful in building public support for cycling infrastructure by allowing people to directly experience safety improvements as opposed to theorizing their benefits. Often, easy-to-acquire materials like paint, planters, cones, or street furniture can transform a streetscape in a matter of hours. For example, at a busy roundabout intersection in Cairo, ITDP and UN-Habitat set up a live demonstration of bicycle lanes and widened pedestrian refuge islands using cones. Traffic continued to make its way through the intersection without noticeable slow-downs. It is important, however, to focus pilots on large enough corridors or service areas to generate observable behavior change and to have a plan to implement successful pilots and interventions permanently.

**RESOURCE:**
Tactical Urbanist’s Guide (StreetPlans)

- Demonstrate the benefits of cycling infrastructure using low-cost, temporary interventions
### Critical mass and group rides

**ACTION TYPE**  
**Education and Awareness-building**

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Critical mass rides have taken place in cities around the world, and typically draw large groups of cyclists to respond to social movements or to support better conditions for cycling. Critical mass rides are a way for cyclists to claim space on the street and raise awareness. Similarly, group or community rides can also focus on activism, aiming to help people become more comfortable cycling in cities where they may feel otherwise unsafe on a bicycle. For example, in Johannesburg, where many streets remain unpaved and drivers are often unconcerned about the safety of cyclists, an informal group of cyclists has begun organizing group rides to improve cyclist comfort and driver awareness. Community rides can also help to connect people with others like them who also have an interest in cycling (all-female group rides, elderly rides, family rides, etc.). Group ride participants may go on to do further work in the community to advocate for the interests of cyclists.

In 2002, funding for the construction of dedicated cycle paths in Budapest was eliminated, with the justification that “hardly anybody uses them”. In response, cycling advocates joined together to show that there was, in fact, demand for a cycle-friendly city. In 2004, Critical Mass Budapest formed to promote cycling as a healthy, fast, inexpensive and environmentally friendly mode of transport, and to encourage the local population to use their bicycles for transportation, not just for recreation or sports. Critical Mass Budapest organized ride in less than two weeks that attracted more than 4,000 people. The number of people cycling daily in Budapest doubled for three years in a row after 2004, a virtually unmatched rate of growth. Since then, a Critical Mass demonstration has taken place twice each year (on Earth Day and Car-Free Day), growing to an estimated 100,000 participants in 2013. Critical Mass Budapest organizers cited the turnout at critical mass rides to demand political action and increase municipal budget allocations for cycling improvements. As a result, the Hungarian parliament formed a cycling faction with representatives from all political parties. Spending on cycling infrastructure became a budget line item—the Bike Path Fund—with a dedicated 3% of the annual road development budget. This decision was made with a unanimous vote, and the efforts of Critical Mass Budapest were a discussion topic at the parliamentary session.

**WHERE THIS WORKED:**

- Provide support for critical mass rides
- Organize group rides to build cycling awareness
Action Plan for Ciudad de México

Bicycle parking and safe routes maps + signage

ACTION TYPE: Education and Awareness-building

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Bicycle parking is another area that awareness-building campaigns could highlight. It is important that cyclists are aware of bicycle parking locations throughout the city; not knowing if there is bicycle parking at a desired location can be a deterrent to making that trip by bicycle. Cities can increase awareness of bicycle parking throughout the city by installing visually interesting or branded racks, and/or distributing maps that show where (and what types of) bicycle parking is available to help people better plan trips via bicycle.

Strengthening wayfinding signage will also help to alert cyclists to preferred bicycle routes, and ensure that drivers are aware of these routes. Directional signs can help cyclists identify bicycle-friendly routes, as well as alert cyclists to nearby transit connections or landmarks. Unique pavement markings that denote streets as part of the bicycle network, such as those used on designated “bicycle boulevards” in US cities like Berkeley or Minneapolis can also help to signal to drivers that cyclists will be present on those roads.

#19

- Publish a city map with bicycle parking locations and safe cycling routes
- Install or update wayfinding signage

RESOURCE:
Urban Bikeway Design Guide (NACTO)
Action Plan for Ciudad de México

On-street network of bicycle lanes

**ACTION TYPE** Infrastructure

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Bicycle infrastructure, which includes protected and unprotected cycle lanes, neighborhood greenways, low-speed streets, and protected intersections, should be implemented as part of a connected network, designed to ensure that cyclists have various safe route options between destinations. Much the same as sidewalks, cycle lanes should be well lit, both to ensure cyclists are visible to one another and drivers, and to create an environment where people commuting by bicycle feel safe regardless of the time of day. Cycle lanes should also be maintained over time—particularly to minimize damage from potholes or other road quality issues—and should include features that reflect city conditions (i.e.: trees planted along bicycle lanes in cities with high daytime temperatures).

To improve the safety and visibility of cyclists on major roads, protected bicycle lanes—which use planters, parked cars, posts, or curbs to physically separate cyclists from vehicle—are preferred. Protected lanes have been linked to an increase in ridership, and can help to decrease bicycle crashes and injuries. For example, after implementing a bicycle lane on Kinzie Street, a busy street in downtown Chicago, the street saw a 55% increase in bicycle ridership.

### #20

- Install protected bicycle lanes and/or add protection to existing lanes
- Ensure bicycle lanes connect to form a network throughout the city
- Ensure lanes are well-lit, well-maintained, and reflect city conditions

**RESOURCE:**
- Global Street Design Guide (NACTO)
- Streets for Walking and Cycling (ITDP + UN Habitat)
- Design Manual for Bicycle Traffic (CROW)
Action Plan for Ciudad de México

Street design treatments

ACTION TYPE Infrastructure

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Cycle-friendly street design treatments can further improve cyclist safety and comfort, and contribute to a connected network of bicycle lanes. For example, filtered permeability allows through-access for pedestrians and cyclists, but restricts through-access for motor traffic. This can be achieved through a physical closure using bollards or curbs, through the creation of one-way streets for vehicles (two-way for cyclists), or through signage. Similarly, completely pedestrianizing certain streets frees up space for non-car modes, and for other uses like green space. In Barcelona, the pedestrianized street network, known as “superblocks,” is supported by a commitment to build 300 km of bicycle lanes and a frequent bus network. These alternatives intend to ensure that walking, cycling, and taking public transit become the fastest, most convenient modes for the majority of trips.

1 Bausells, M. 2016, Superblocks to the rescue: Barcelona’s plan to give streets back to residents.
#22

**Quick-build cycle lane networks**

**ACTION TYPE** Infrastructure

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Cycle lanes are some of the most visible infrastructure that protects cyclists, communicating to drivers that cyclists have a right to space on the street. The increased safety that comes from a network of bicycle lanes, as opposed to disconnected lanes, can seriously encourage ridership. Several cities have taken a “quick-build” approach to installing bicycle lanes, which has led to significant increases in bicycle counts and overall ridership. In 2016, Canadian cities Calgary and Edmonton voted to implement “minimum grid” networks of protected lanes that use flexible materials like planters and bollards to allow for alteration and adaptation as needed after lanes are installed. Since the lanes were installed in 2017, Edmonton’s bicycle counts have nearly doubled, and a road safety review is underway to evaluate the impact of the cycle lane network on cyclist safety. In Calgary, bicycle counts doubled and the percentage of female cyclists increased by 8% during the 18-month pilot program following the installation of the city’s quick-build bicycle lane network.

The most well-known example of a quick-build cycle lane network is in Seville, Spain. In 2006, the city passed its Urban City Masterplan, which conceived of a segregated bicycle lane network to support Seville’s transport system, and a Bicycle Master Plan was approved in 2007. A local cyclist advocacy group known as A Contramano contributed to proposals for the design of the cycle lane network. In just two years, Seville built a connected 77-km network of fully separated cycle lanes, and completed 43 additional kilometers by 2013. Many of the bidirectional lanes were converted from on-street parking spaces. Daily cyclist counts rose by almost 600% from 330 in 2006 to 1,935 in 2011, and daily average trips grew from approximately 13,000 to over 72,000. Bicycle mode share grew from 5% to almost 9%, and private vehicle mode share fell by 11% over the same period.

**WHERE THIS WORKED:**

- Design and implement a quick-build network of protected cycle lanes

**RESOURCE:**

Quick Builds for Better Streets (PeopleforBikes)

2 Marques et al. 2015, How infrastructures can promote cycling in cities: Lessons from Sevilla.
Intersection treatments

ACTION TYPE Infrastructure

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Intersections are typically where cyclists feel most vulnerable, and unsafe intersections that force vehicles and cyclists to merge into a shared lane or cross lanes to turn have caused cyclist deaths\(^1\). A variety of treatments can be implemented at intersections to make cyclists more visible to drivers and reduce instances of mixing. These treatments can be relatively inexpensive, such as extending painted cycle lanes through intersections for added visibility or adding painted bicycle boxes in front of waiting traffic. Others, albeit more expensive and complex, such as installing and integrating bicycle-specific traffic signals, or fully protected intersections that allow cyclists to navigate through the intersection without having to mix with vehicle traffic, can offer additional protection. This approach, implemented most notably in a few cities in the Netherlands, can be particularly attractive if protected lanes are being planned for (or already exist on) intersecting roads\(^2\).

- Extend painted cycle lanes through intersections
- Paint bicycle boxes in front of stopped traffic at intersections
- Install bicycle traffic signals
- Integrate fully protected intersection designs into plans for protected cycle lanes

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2 Hembrow, D. 2014, The myth of the "standard Dutch junction".

### Bikeshare

**Action Plan for Ciudad de México**

**Bikeshare**

**ACTION TYPE: Infrastructure**

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Bikeshare systems have been effective in addressing myriad barriers to cycling, notably concerns about cost, bicycle theft, storage, and maintenance, as well as in helping facilitate one-way bicycle trips. Bikeshare has also been successful at introducing people to urban cycling for commuting as well as recreational purposes, and has been combined with citywide efforts to shift mode share away from private cars for short trips. Ensuring that bikeshare is accessible to all—through requirements that operators provide alternatives for people without smartphones, strong internet access, and credit cards, as well as through equitable distribution of bicycles and stations—is a critical element of successful system design.

Over the past decade, bikeshare systems have diversified to meet the needs of people making many different types of trips. Tandem bicycles are offered in bikeshare systems like Detroit’s in the US, and Rosario’s in Argentina, and can meet the needs of people with limited mobility or visual impairment. Private bikeshare operator, Zagster, offers a cargo tricycle which can be integrated into any Zagster bikeshare fleet. Tandem, cargo, and other alternate bicycle types meet specific needs that traditional bikeshare may not, and these are typically more expensive to purchase for personal use.

GPS-enabled dockless bikeshare systems eliminate the need for expensive station infrastructure and present opportunities for scaling bikeshare to achieve better systemwide coverage and performance. Dockless bicycles may also be preferable for trip chaining, since they do not have to be locked at a station. Cities entering into partnerships with private companies offering dockless bikeshare should carefully consider resource and staffing needs to design and manage the program, particularly if multiple operators are providing service.

**WHERE THIS WORKED:**

**RESOURCE:**

The Bikeshare Planning Guide (ITDP)

2 Secretaria del Medio Ambiente. 2018, Presenta Sedema encuesta de percepción sobre uso de la bicicleta en la CDMX.

1. Design and implement a bikeshare system
2. Require access alternatives for low-income groups, and users without smartphones and/or credit cards
3. Expand user base by integrating non-traditional bicycle types
4. Integrate bikeshare with transit through a common form of payment and/or reduced fare transfers
Action Plan for Ciudad de México

**E-bikeshare**

**ACTION TYPE**: Infrastructure

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Electric bikeshare has been growing in popularity since 2013. Pedal-assist electric bicycles have been integrated into existing public bikeshare systems in Paris, Barcelona, Mexico City, and other cities, and are also offered by privately-financed bikeshare operators. Some cities have implemented fully electric bikeshare systems. The battery-powered boost offered by pedal-assist bicycles can be attractive to riders in hilly cities, cities with high average temperatures, and those with destinations far from one another. Pedal-assist bikeshare can also appeal to commuters who do not want to get sweaty while traveling to work or change clothes when they arrive. Other electric micromobility modes, such as standing electric scooters, can provide similar benefits when offered as part of shared schemes. E-bikeshare may pose additional costs to public bikeshare systems because the bicycles are more expensive and stations may need to be replaced or retrofitted with charging capabilities. However, research indicates that electric bicycles and e-scooters may be attractive to people who would not consider riding a pedal bicycle, indicating a greater opportunity for mode shift and related benefits.

**#25**

- Create an e-bikeshare system or add e-bikes to existing bikeshare
- Consider potential to attract new users with e-bikes, and potential operating cost increases

**RESOURCE:**
- The Bikeshare Planning Guide (ITDP)
- Electric Micromobility White Paper (ITDP)
Cities crosscut by waterways present an inherent challenge for cyclists. Bridges built for vehicles to cross such waterways are often uncomfortable and difficult to traverse on a bicycle, with cyclists often forced to share lanes with cars or dismount and walk. Adapting the built environment by retrofitting existing bridges can improve comfort and safety for cyclists. Similarly, in cities where pedestrian flyovers are common, like Guangzhou and Kuala Lumpur, or with neighborhoods connected by pedestrian stairs, like Rio de Janeiro and Beirut, installing wheel ramps on these structures can make navigating them with a bicycle easier. While bicycle riders will likely still need to dismount, wheel ramps ensure that riders do not need to carry their bicycle to use a flyover or pedestrian staircase. Wheel ramps on rail station stairs can make bicycle-train trips easier to facilitate as well.

Portland’s Tilikum Crossing, which does not allow cars, provides a comfortable connection for cyclists, pedestrians, and public transit riders between the city’s east and west sides. Copenhagen’s Cykelslangen, an elevated bicycle path, provides a throughway across the harbor and connects two lively waterfront neighborhoods on opposite banks of the Sydhavnen River. While car-free bridges may not be feasible in many locations, retrofitting existing bridges to improve comfort and safety for cyclists could encourage use and improve connectivity. In São Paulo, the Av. Antartica bridge was retrofitted with a two-way cycle track that opened in 2016, and scheduled maintenance of the city’s Laguna Bridge included adding a protected bicycle path and pedestrian path. As was the case in São Paulo, such retrofits, including building new, widening or adding protection to existing cycle lanes, could be made in tandem with planned bridge maintenance, widening, or similar activities.
Bicycle master plan and funding

ACTION TYPE Infrastructure

Bicycle parking and storage facilities provide convenience, safety, and security for cyclists. Adequate bicycle parking—located in well-lit areas with moderate pedestrian traffic—especially at or near transportation hubs and other central destinations, can significantly reduce the risk of bicycle theft and may encourage people to consider purchasing their own bicycle. Research shows a link between areas with denser bicycle rack concentrations and higher bicycle ridership. Parking should accommodate non-traditional bicycles, like three-wheelers and cargo bikes, when possible. Since bicycle parking is typically in high demand around key destinations, such as schools, transit stations, and commercial or employment centers, one method of increasing the volume of bicycle parking is to incentivize developers to install bicycle parking—both traditional bicycle racks and indoor bicycle storage—as part of new and renovated developments. In Copenhagen, for example, new developments are required to include bicycle parking that meets a set of minimum requirements. The city’s Municipal Plan requires four bicycle parking spaces per 100 square meters of floor area for residential developments and workplaces. Establishing a citywide standard for the design and placement of bicycle racks can help reduce the time and resources spent analyzing each installation individually. Finally, siting self-service bicycle repair stations, which typically provide a free air pump and tools for basic repairs, near bicycle parking facilities can help to ease concerns about riders experiencing unexpected maintenance issues.

1 Sens, J. 2010, Relating Bike Racks and Bike Ridership.

#27

- Adopt a citywide standard for bicycle parking design and placement
- Install public bicycle parking
- Implement development incentives for installing bicycle parking and indoor storage
Action Plan for Ciudad de México

#28

**Premium bicycle parking**

**ACTION TYPE** Infrastructure

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Premium bicycle parking, including covered parking, secured facilities, and rentable lockers improve on standard bicycle racks by offering additional protection from the weather and theft. Made almost entirely of metal, bicycles rust when left exposed to rain or snow, and rusty bicycle chains can make for an unpleasant riding experience. For this reason, covered bicycle parking made available at high-volume destinations, like schools, museums, commercial districts, and tourist attractions, can make cycling a more attractive option, especially in cities where precipitation is common. Secure parking facilities for bicycles, common in the Netherlands and Japan, operate like parking garages, providing covered storage and the security of an attendant. Alternatively, some cities, including Paris, offer rentable lockers for long-term bicycle parking. This can be particularly helpful in areas where people may not have space in their homes or apartments to store a bicycle. Rentable bicycle lockers could also be installed at rail stations, as is the case in Washington, DC, to encourage cycling as a first-last mile solution.

- Install covered bicycle parking and/or rentable lockers at high-volume destinations
- Build secure long-term parking facilities