

Despite the plethora of Citi bikes littering the streets, biking in New York City is a daunting challenge. Protected bike lanes end abruptly, requiring the biker to weave among cars to reach their destination. Even protected bike lanes sit flush against the roads with no physical separation, which can be intimidating in wider roads where cars zip by. To combat these issues, cities should create an interconnected, grid-like bike network with physical separation from the roads and adopt safety measures at intersections.

Connected bike networks not only improve safety but also promote environmentalism by stimulating ridership. For instance, between 2006 and 2013, the city of Seville, Spain grew their bike network from 12 km of protected bike lanes to 152 km blanketing the entire city. As a result, the number of bike trips increased 435%, while bike-motor vehicle crashes dropped by 61% (Marqués & Hernández-Herrador, 2017). A larger study of 10 American cities that made concerted efforts to connect their bike networks found evidence of increased ridership with a simultaneous reduction in crashes and injuries across all 10 cities (Pucher and Buehler, 2016).

Some attributes that define a connected bike network include access, coverage, and comfort. Access is the ease with which people can arrive at key destinations, while coverage is the degree to which people can access all destinations. One way of increasing access and coverage is to install contraflow bike lanes on one-way streets to allow cyclists to travel opposite traffic. This solution deters wrong-way cycling and keeps cyclists off sidewalks. Meanwhile, comfort reflects the degree to which bikers feel safe from motor vehicular traffic.

One way to increase traffic is to increase the physical separation between roads and bike lanes through objects such as planters, bollards, curbs, and jersey barriers. Not only does this increase the perception of safety among cyclists, but it also reduces the risk of drivers mistakenly swerving into bike lanes. This is especially important when vehicular speeds or volumes are high, and city planners should carefully consider materials used in the separators. Compared to concrete and steel, polyurethane, heavy-duty plastic, or flexible rubber bollards better balance protection against heavier-weight vehicles and the safety of cyclists in case of a crash.

Finally, the majority of bicycle-car collisions occur at intersections. City planners should implement bicycle traffic signals that give cyclists a few seconds' head start so they're visible to turning drivers, as well as colored bike lanes that remind drivers that the intersection is a shared space. In 2014, the city of Fort Collins, Colorado decided to build over- and underpasses that allow cyclists to bypass intersections. 2 years later, *Bicycling Magazine* recognized Fort Collins as the #3 best cycling city, highlighting its system of 45 over and under-passes, which has resulted in a very low cyclist fatality rate.

Cycling has myriad benefits, ranging from promoting environmentalism to improving physical and mental health to increasing equity for socioeconomically disadvantaged communities. As such, cities are well-incentivized to invest in safety measures for cyclists.

### Works Cited

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