

Benefits of Bike Lanes and Paved Shoulders

Bike lanes and paved shoulders have been found to have a benefit-to-cost ratio of approximately 5 to 1 (Texas Transportation Institute, 1989) and reduce crashes by 49 percent (FHWA, 1987). Another study found the provision of bike lanes and paved pathways result in a 9 to 1 benefit-to-cost ratio (North Carolina State University, 2004). Following is a partial list of benefits to bicyclists, pedestrians, and drivers.

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Tucson, AZ, January 2005***

1. Increased travel area is provided for bicyclists, pedestrians and motorists. Safety is improved for bicyclists being passed by overtaking motorists and for motorists who will not have to travel out of the travel lane in order to pass bicyclists.
2. Highway capacity is improved for both bicyclists and motorists through provision of separate travel space and increased clearances.
3. Space is provided for motor vehicles to stop partially or completely out of the travel lane because of mechanical difficulty, a flat tire, or other emergency.
4. Space is provided to escape potential crashes or reduce their severity and for motorists who have left the travel lane to return to the lane.
5. Emergency vehicle access through congested areas is substantially improved as motorists are able to pull into the bike lane or shoulder to allow emergency vehicles to pass.
6. The sense of openness created by bike lanes and paved shoulders improves the ability to drive the roadway. Drivers are less likely to drop the right side wheels of their cars off the pavement edge, which can significantly reduce over-correction crashes, head on crashes, and rollovers.
7. Increased safety is provided for right-turning vehicles due to increased radii at intersections and driveways and rear-end crash potential is reduced. Safety is increased for vehicles turning right from a side street onto the main street that has bike lanes—there is increased maneuverability for vehicles to avoid hitting the curb or hitting vehicles in an adjacent lane.
8. Increased space is provided for roadway work such as maintenance of utilities.
9. Increased space is provided to discharge storm water from the travel lanes, increasing safety for users and capacity of the roadway.
10. Pavement life is increased due to structural support given to the pavement edge, reducing the raveling effect caused by heavy trucks and other motor vehicles traveling on the edge of pavement or traveling immediately adjacent to the gutter pan.
11. Space is provided for bus stops, particularly if the lanes or shoulders are widened at the stops.
12. Increased safety is provided for motorists to avoid fixed objects such as telephone and signal poles due to provision of additional clear zone area.
13. Improved space is provided for motorists to pass on the right of left-turning vehicles on paved shoulders (unless pedestrians or bicyclists present), where allowed by State law.
14. Air quality benefits are provided due to provision of space for bicycle travel and to reduced particulate matter from vehicles traveling on unpaved shoulders.
15. Safety is improved for pedestrians due to the buffer space provided by bike lanes between sidewalks and traffic. Pedestrian safety is also improved because bicyclists are more likely to ride in bike lanes rather than on sidewalks.