Rolling Forward:
Paths to a Sustainable Albuquerque

Key Points

1. Recently, Albuquerque ranked 6th highest in the nation for cyclist fatality rate.
2. One of the best ways to grow NM's outdoor recreation economy is through the development of urban bike infrastructure.
3. Reducing dependancy on motorized vehicles is one of the most effective ways of combating climate change.

Cycling and Sustainability

One of the things Albuquerque is best known for is its access to the outdoors. The city's Open Space Division is one of the strongest in the nation, with over 30,000 acres of publicly accessible natural land and trail networks for hiking, biking, and equestrian activities. Outdoor recreation activities have seen a steady increase over the years, with outdoor recreation being one of the biggest contributors to New Mexico's economy (1). It is perhaps surprising then, that Albuquerque is one of the least safe cities for cyclists in the U.S.A. Albuquerque lacks critical infrastructure necessary for keeping cyclists safe; according to data from the National Highway Traffic Safety Administration (NHTSA), in 2021 Albuquerque had the 6th highest cyclist fatality rate of any major city in the United States (2).

Investing in cycling infrastructure offers more benefits than just safe transportation though. According to Sustainability: a Comprehensive Foundation (3) there are 3 key pillars of sustainability that determine if development projects will see long-term success. Projects should meet social needs, economic needs, and environmental needs. Developing and improving bike infrastructure and facilities meets each of these 3 pillars, and Albuquerque has the opportunity to move towards sustainability by guaranteeing safer transportation, creating jobs and increasing business in urban areas, and reducing environmental impact.

Social Concerns - Safe Transportation

Despite investment in programs like the Esperanza Bicycle Safety and Education Center, which offers free bike safety classes and riding skills clinics, Albuquerque remains a dangerous place for cyclists. In fact, the founder of Esperanza and long time bike safety advocate, Chuck Malagodi, was recently killed while riding his bike. Chuck was the second bike safety educator from Esperanza to be killed in a hit and run while riding their bike, which shows that even when

a person has all the knowledge and skills needed to keep themselves safe while riding, there is still significant danger. A person shouldn't have to be a safety expert in order to navigate their community, and Albuquerque's poor infrastructure costs lives and causes injuries every year. A report from the NHTSA compared crash data between each city in the United States with a population greater than 500,000 (2). In 2021, Albuquerque had 3 fatal crashes between a motor-vehicle and cyclist. With a fatality rate of .53 per 100,000 people, Albuquerque had the 6th highest fatality rate on the list of 37 cities that year. According to crash data compiled by UNM Geospatial & Population Studies (4), between 2019 and 2023, cyclists in Bernalillo county experienced an average of 3 deaths per year, 11 incapacitating injuries (Class A) per year, 69 visible but non-incapacitating injuries (Class B) per year, and only 16.6 crashes per year that resulted in no apparent injury.

Economic Potential

There are more than just negative motivators to increase bicycle infrastructure. The local economy also stands to benefit from multiple modes of transportation. According to a report from the Bureau of Economic Analysis, the outdoor recreation industry in New Mexico grew 1.8% from 2021 to 2022, and in 2023 accounted for 2.4% of the state's overall GDP (1). In a statement from the New Mexico Outdoor Recreation Division, the acting NM Economic Development Cabinet Secretary Jon Clark is credited with saying that "Every corner of our state benefits from the overall efforts to bolster access to the outdoors for all New Mexicans" (5).

While the goal of bike infrastructure in the city is more about transportation than recreation, it is clear the people want to be outside. Where cyclists are concerned, recreation and transportation are closely related. Indeed, New Mexico recreation businesses have made this claim themselves. The state's Outdoor Recreation Division surveyed 105 outdoor recreation businesses in New Mexico between May 15th and June 7th, 2024 with questions designed to "best enable ORD to assist the OR business community moving forward" (6). While this survey was not limited to Albuquerque, Bernalillo County had more businesses represented (21 in total) than any other county. The final section of the survey asked 4 open ended questions which businesses could freely respond to.

What is one thing ORD can do to assist your business to be more successful?	***What emerging trends or opportunities in the OR industry are you excited about or preparing for?***
What is one thing New Mexico should do to grow the state's outdoor recreation economy?	***Please add any other comments or thoughts you have about outdoor recreation in New Mexico.***

Many of the responses to these questions included requests for better bike infrastructure in urban areas such as more bike lanes, multi-use trails, traffic separated bikeways, and to "Encourage community planners to incorporate trails into developmental plans and connect residential areas with schools, parks, etc."(6). When people ride more bikes

they need to buy more bikes, replacement parts, and hire skilled laborers to fix mechanical issues.

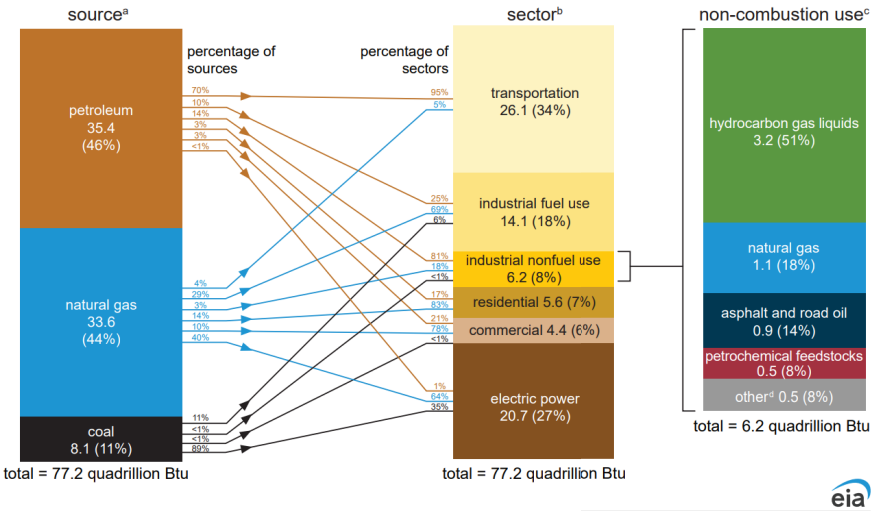
When there is local opposition to creating new bike infrastructure, it is usually under the assumption that these facilities will reduce access to businesses and turn away customers. These fears are understandable, as it is important to maintain a thriving local economy. They are, however, based on an incorrect assumption. Bike shops may reap the most direct benefits from bike infrastructure, but they are certainly not the only type of business that stands to gain. A review of 23 different studies which analyzed the impact of 35 different bike facilities and 4 mixed-use facilities (accessible to pedestrians and riders) found that in almost every case, bike facilities had no negative impact on nearby business (7). In fact, they generally led to a positive economic impact, even in instances where parking facilities or motorized traffic lanes were removed or reduced in order to make room for the bike facilities.

Environmental Health

Modern western society puts many different pressures on the environment. It is estimated that it would take the Earth around a thousand years to remove the carbon dioxide released by fossil fuels between the industrial revolution and now (3). In addition to carbon dioxide, industrialization has led to an increase in air pollutants, toxic chemicals, and other contaminants that degrade the environment (3). The automobile industry is one of the primary contributors to this environmental degradation. According to the Energy Information Administration, in 2023 the transportation sector was responsible for 34% of all fossil fuel consumption in the USA (8). While the general public tends to be familiar with carbon emissions being a problem with the automotive industry, there are many other drawbacks to driving cars. For example, one study found that 5-10% of plastics that ended up in the oceans are produced by the wear and tear of car tires (9). Investing in alternative modes of transportation is a critical step in protecting Albuquerque's natural environment.

U.S. fossil fuel consumption by source and sector, 2023

quadrillion British thermal units (Btu)



Data source: U.S. Energy Information Administration (EIA). *Monthly Energy Review* (April 2024), Tables 1.3, 1.12b, and 2.2—2.6.
Note: Sum of components may not equal total due to independent rounding. See "Extended Chart Notes" on next page.
[a] Each energy source is measured in different physical units and converted to common British thermal units (Btu). See EIA's *Monthly Energy Review* (MER), Appendix A.
[b] Industrial, commercial, and electric power sectors include primary energy consumption by combined-heat-and-power (CHP) and electricity-only plants in the sector. Energy consumed by these plants reflects the approximate heat rates for electricity in *MER Appendix A*.
[c] Fossil fuels not burned to release energy and instead used directly as construction materials, chemical feedstocks, lubricants, solvents, and other products. Includes the 0.2 quadrillion Btu of lubricants consumed in the transportation sector for non-combustion use not shown separately in the chart. See Note 2 "Non-combustion use of fossil fuels" at the end of MER Section 1.
[d] Includes coal and other petroleum products such as lubricants, distillate fuel oil, residual fuel oil, waxes, special naphthas, petroleum coke, and miscellaneous products.

Recommendations

- Bike infrastructure and alternative modes of transportation should be prioritized with the same urgency as motorized traffic.
- The type of facilities that are built impact their safety and ridership. In order to maximize ridership, facilities which provide the most amount of safety should be prioritized wherever possible. One study analyzed the conditions of 690 crashes and determined the types of infrastructure with the lowest chances of crashes (10). Major roads with street parking and no infrastructure were used as the control, and generally had the highest rate of injury. Cycle tracks were the safest facility, with nearly one ninth the risk of injury as the control. Major roads with bike lanes and no street parking had about half the risk of the control, and roads with less traffic were safer in all cases. Shared-lane infrastructure like sharrows or designated bike routes, in which cyclists have to ride in the road with motorized vehicles, offered nearly no reduction in risk when compared to roads with no infrastructure and similar traffic patterns. Shared-lane infrastructure should be avoided wherever possible.
- In order to maximize efficiency and use, it is important to put thought into where in the city these facilities should be built. There are two factors to consider regarding placement. The first is equity; economic and ecological issues disproportionately affect people with little means (11). In order to design a healthy functioning society it is critical to prioritize developments that uplift people in lower socio-economic classes. Infrastructure projects should be started in regions of the city with a vulnerable population, to give those regions better connectivity with the broader city and encourage economic growth in those areas. The second consideration is current use patterns and safety trends, by looking at ridership and crash data. The NM Department of Transportation conveniently compiles data on socially vulnerable population and crash data in the Vulnerable Road Users Safety Assessment (12). This map, or similar data should be used to inform infrastructure decisions.

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