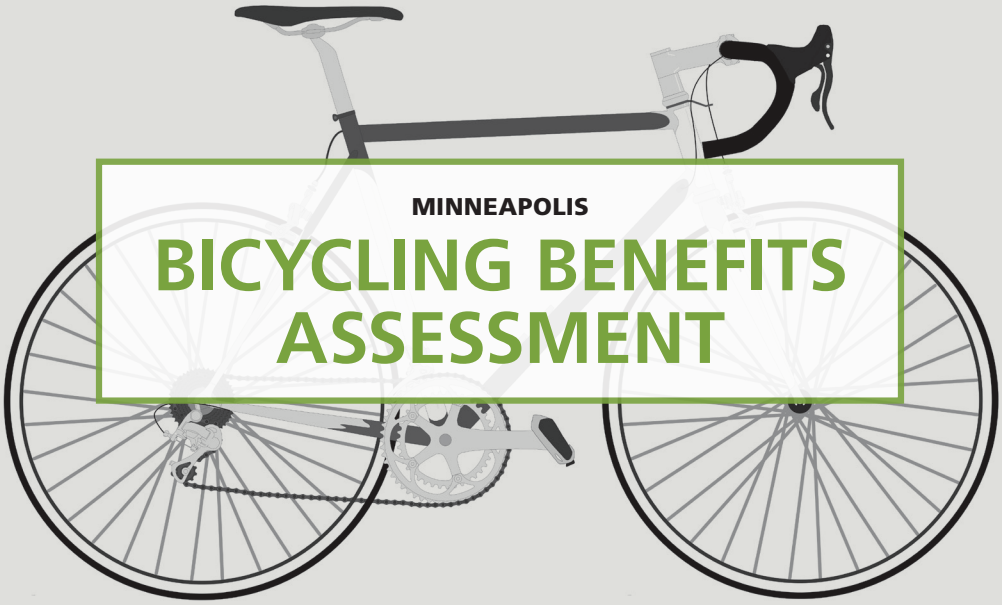


MINNEAPOLIS

BICYCLING BENEFITS ASSESSMENT

In 2015, the City of Minneapolis updated its Bicycle Master Plan with a list of **55 prioritized miles of potential protected bikeways**.

This update recognized that many residents will not choose to bicycle as part of daily life without facilities that create some separation from traffic. Developing this infrastructure will require major investment and commitment from the City of Minneapolis.

Bicycle infrastructure has a direct impact on many aspects of a community. These impacts include a variety of health, environmental, and transportation factors that affect the everyday lives of residents and visitors. Quantifying these factors and understanding the magnitude of their impact on the community enables a more informed policy discussion on how to best invest in the transportation network.

This assessment was completed at the request of the Minneapolis Bicycle Coalition. The Coalition is interested in understanding the potential economic impact of doubling the percentage of residents that commute regularly by bicycle. It should be noted that this a very conservative estimate of overall bicycle use in the City of Minneapolis. Recreation and non-commute trips are likely greater than commute trips, however, reliable data sets for these trip types are not consistently available. The Minneapolis Bicycling Benefits Assessment quantifies the potential benefit of doubling the commute modeshare in the City of Minneapolis.

CONTINUED...

METHODS AND SUMMARY RESULTS

The City of Minneapolis Bicycling Benefits Assessment utilizes a standardized model developed by Alta Planning + Design for calculating health, environmental, and transportation benefits of increased bicycling. The method estimates the benefits associated with current levels of bicycling and creates a projected estimate of the increased benefits that could result if the city doubled its current bicycle commute modeshare of 3.7%* to 7.5% by 2020.

The model projections are based on 2013 five-year estimates from the US Census Bureau. The modeshare data is extrapolated through the use of varied multipliers which are derived from national studies and quantified in terms of monetary value where appropriate. The model used for this study utilizes over 50 multipliers in order to extrapolate daily, monthly, and annual trip rates, trip distances, vehicle trips replaced, emission rates, physical activity rates, and other externalities linked to an increase in bicycling.

It should be noted that despite the extensive primary and secondary research incorporated into the benefits analysis model, it is not possible to accurately predict the exact impacts of various factors. Accordingly, all estimated benefit values are rounded and should be considered order of magnitude estimates, rather than exact amounts.

The model generally takes a conservative approach to quantifying benefits. For example, many of the active living-related benefits of bicycling can be difficult to quantify, such as improved mental health, reduced stress, improved opportunities to education, connection to nature, and sense of place. Health benefits were estimated using literature that links bicycling facilities with increased levels of physical activity, decreased health care costs, and improved air quality. This analysis estimates that doubling rates of bicycling in Minneapolis would result in approximately 21% of Minneapolis residents meeting the Centers for Disease Control and Prevention's recommended amount of physical activity (just from bicycling), and approximately $1.8 million in annual healthcare savings.

Changes in hydrocarbon, particulate matter, nitrous oxides, carbon monoxide and carbon dioxide were analyzed. Each pound of emissions is assigned an equivalent dollar amount based on how much it would cost to clean up the pollutant or the cost equivalent of how much damage the pollutant causes the environment. In total, the vehicle miles traveled reduced as a result of doubling the rate of bicycling may result in over $1.5 million in savings from reduced vehicle emissions per year.

The most substantial benefits of doubling rates of bicycling in Minneapolis accrue as a result of their direct transportation impacts. Monetary savings can be estimated from the reduction in costs associated with congestion, vehicle crashes, road maintenance and household vehicle operations. These amounts are calculated using national estimates were estimated in the amounts of $3.2 million, $23.3 million, $7.0 million, and $26.5 million, respectively.

If the City of Minneapolis doubled current rates of bicycling, the total health, environmental and transportation-related economic benefits would amount to approximately **$63.5 Million**.

*The model is based on 2013 5-year American Community Survey Estimates. These represent the best balance of precision and currency of the datasets available from the US Census Bureau between the Decennial census and 1-year estimates.

What would be the annual benefits from doubling biking in Minneapolis by 2020?

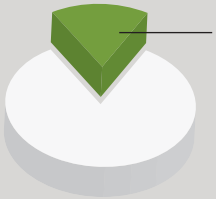
MILES BIKED

108,225,000

Miles Biked Per Year

That's the equivalent of **4,300 Trips Around the Earth!**

ANNUAL PHYSICAL ACTIVITY FROM BICYCLING



21%

of Minneapolis Residents **Meeting the CDC Recommended Hours of Physical Activity Just from Bicycling** (~30 minutes per day)

VEHICLE MILES TRAVELED

46,602,000

Fewer Miles Travelled by Automobiles Every Year

MINNEAPOLIS 2020

REDUCED VEHICLE EMISSIONS

$1,560,000

Savings from **Reduced Vehicle Emissions** per Year

HOUSEHOLD VEHICLE OPERATION COSTS

$26,563,000

In **Reduced Household Operation Costs** per Year

MAINTENANCE COSTS

$6,990,000

In **Reduced Road Maintenance Costs**

CONGESTION COSTS

$3,262,000

In Cost Savings from **Reduced Traffic Congestion**

COLLISION COSTS

$23,301,000

In Cost Savings from **Reduced Motor Vehicle Collision-Related Costs**

REDUCED HEALTHCARE COSTS

$1,813,000

In Annual **Healthcare Savings**

Total Annual Health and Economic Benefits

$63,489,000

These calculations are based on conservative, research-backed estimates. This report was done in November 2015 by Alta Planning and Design as an independent contractor for the Minneapolis Bicycle Coalition.