PLANNING COMPLETED RESEARCH PROJECT

PROJECT NAME: A BIG DATA APPROACH FOR IMPROVING NEBRASKA CYCLING ROUTES
PROJECT NUMBER: SPR-P1(20) M095

RESEARCHERS

Fadi Alsaleem, Daniel Piatkowski, Ali Al-Ramini, and Mohammad Ali Takallou

TECHNICAL ADVISER COMMITTEE (TAC) MEMBERS

NDOT Leader: Ryan Huff
NDOT Members: Craig Wacker and Curtis Nosal
Industry: Julie Harris - Bike Walk Nebraska

SPONSORS

Nebraska Department of Transportation

Federal Highway Administration

FINAL REPORT

Click here to access Final Report

NDOT RECOMMENDATIONS BASED OFF RESEARCH

Click Here to access to Research Readiness Level (RRL) Assessment

PROJECT CONCLUSION

The research team found a strong association between Strava and counter data in Metro areas, for all cyclists at a specific location. Also, the investigation found a correlation between weather conditions and cycling, where the average outside temperature has the most significant effect. However, other factors influence cycling activities like rainfall, wind speed, thunderstorms, and fog in different extents. Weekends and weekdays showed different cycling patterns during peak hours, explained by the fact that most people cannot ride their bike in working hours. The spatial analysis showed that cycling is profoundly affected by the existence of cycling infrastructure. Also, it showed that trails are the most used for recreational activities.
Additionally, including bike lanes and signing within the roadway right of way are the most used for commute purposes. Moreover, the added bike lanes in Lincoln between 2017 and 2019 showed a significant rise in cycling activities. In Omaha, the research showed a significant increase in cycling activities because of the installation of signed bicycle routes. All in all, the research serves to demonstrate the accuracy of Strava cycling data in Nebraska. Furthermore, it demonstrated where and how cyclists choose their routes, which can inform NDOT planning activities around active transportation."

EMAIL
NDOT.RESEARCH@NEBRASKA.GOV

WEBSITE

HEADQUATERS
MATERIALS & RESEARCH DIVISION

RESEARCH HUB