

2024 CITY OF ALBUQUERQUE BIKEWAY AND TRAIL FACILITIES PLAN

APPENDIX D: BIKEWAY EVALUATION PROCESS: OVERVIEW AND METHODOLOGY





Background

Purpose

As part of the 2024 *Bikeway and Trail Facilities Plan*, the City of Albuquerque revised an existing Bikeway Evaluation Process to reflect plan goals and emerging city policy priorities. The Bikeway Evaluation Process includes nine criteria across six priority categories that consider project benefits such as safety, equity, land use, access to destinations, and network connectivity. Scores for each criterion can be totaled by project and project scores may be compared to one another for prioritization purposes.

The evaluation criteria rely on a variety of existing datasets from the City of Albuquerque and the Mid-Region Council of Governments (MRCOG), including crash data, the Vulnerability Index, and the High Fatal Injury Network (HFIN), as well as datasets developed for the 2024 Plan, including level of traffic stress and trip potential analysis.

This document describes the criteria used in project prioritization and explains their link to plan goals and city policy priorities. While the criteria are specifically applied to the project list developed for the 2024 Plan, the evaluation process utilizes Census data and datasets that are regularly updated by MRCOG or City staff and therefore can be easily adapted for consideration of future projects.

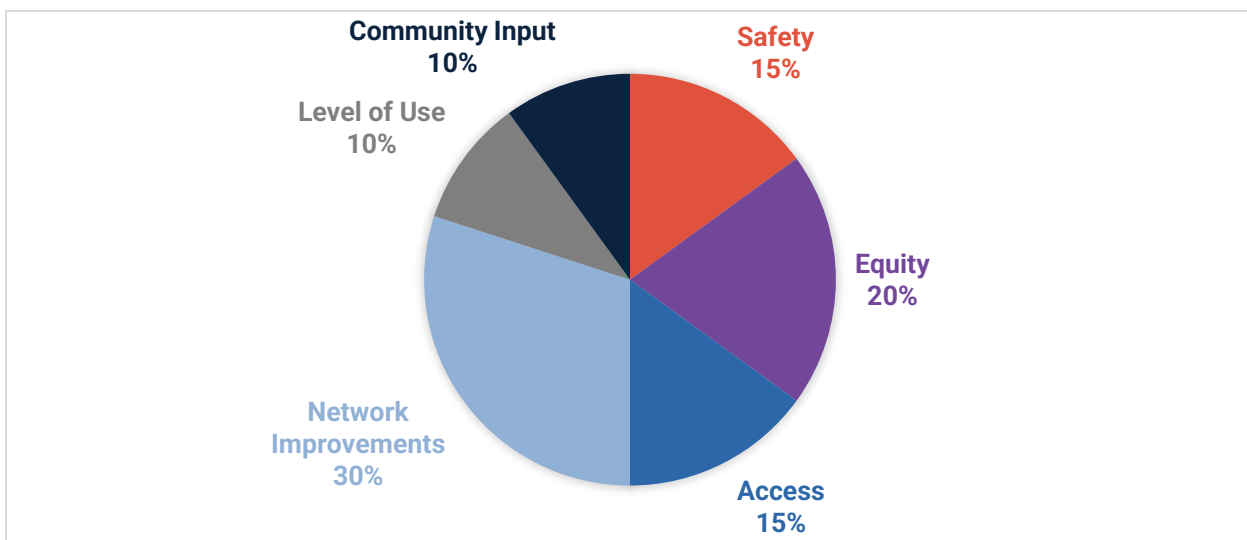
Project Selection Considerations

Evaluation criteria reflect benefits associated with a particular project and the results of prioritization are intended to inform decision-making. However, it is important to note that projects may not always be implemented based on their priority ranking, and other factors are considered as part of project selection, including staffing, financial resources, and technical feasibility of a project. Some projects may also be implemented through ongoing resurfacing and restriping efforts that take place as part of the Annual Complete Streets Maintenance Program. To reflect these considerations, the 2024 Plan includes the potential timeframe for implementation (plausible near-term and long-term) and magnitude of cost estimates for all projects.



Evaluation Criteria: Summary Table

Category	Criterion	Description	Max Score
Safety	Bicyclist-Involved Crashes	Points awarded based on the number of recorded crashes along the project corridor or a parallel route (if the project is along a neighborhood street or a trail).	3
	High Fatal Injury Network	Points awarded for projects located along an HFIN corridor or parallel route within 1/3-mile.	3
Equity	Vulnerability Index	Presence of vulnerable communities in the project area, including population groups that are most likely to rely on biking as a form of transportation; based on the Vulnerability Index.	8
Access	Destinations	Based on access provided to key destinations, such as schools, parks, transit stations, and community centers.	3
	Comprehensive Plan Centers	Based on access provided by project to designated Comprehensive Plan Centers.	3
Network Improvements	Facility Needs	Based on existing Bicycle Level of Traffic Stress (LTS) scores, with projects along higher stress facilities generating more points.	4
	User Comfort	Points awarded based on whether a proposed facility meets FHWA bikeway selection guidance.	4
	Network Spine	Based on whether project is along or intersects with a network spine that provides critical connections across the city.	4
Level of Use	Potential For Bicycle Trips	Based on a trip potential analysis that considers the share of short-distance trips (i.e., less than 2 miles) in the project area.	4
Community Input	Community Input	Based on input provided through an online survey map of proposed projects.	4
Total			40





Safety

Metric: Bicyclist-Involved Crashes

Overview

Bicyclists are particularly vulnerable to crashes involving motor vehicles and are disproportionately likely to suffer severe injuries compared to motorists. Quality infrastructure that reduces conflicts between vehicles and bicyclists is a high priority in the 2024 Plan. The inclusion of this criterion is based on the premise that enhanced bikeways are needed in locations that currently have high numbers of crashes.

Scoring Methodology

Points are awarded based on the recorded crashes along the project corridor (or parallel routes within 0.25 miles if the project is along a local road or a multi-use trail) for the most recent 5-year period for which crash data is available. The number of bicyclist-involved crashes is normalized based on the project length to allow for comparison of all projects, regardless of length.

Project Location Characteristics	Points
One or more fatal bicycle-involved crashes OR high rate of bicyclist-involved crashes	3
Medium rate of bicyclist-involved crashes	2
Low rate of bicyclist-involved crashes	1
0 non-fatal bicyclist-involved crashes	0

Note: The most recent crash data at the time of the completion of the 2024 Plan was from 2018-2022.

Metric: High Fatal Injury Network

Overview

Expanded bikeways are an important part of the City’s commitment to Vision Zero, which sets a goal of zero fatalities and serious injuries by 2040. As part of the Vision Zero Year in Review (2023), the City of Albuquerque created an updated and simplified HFIN network comprised of priority safety corridors. The HFIN considers locations with high numbers of severe crashes compared to the City overall. Creating safer conditions for people biking along these high-risk corridors – or quality facilities on a parallel route – aligns with Vision Zero’s goal of protecting vulnerable road users and eliminating all traffic-related fatalities.

Scoring Methodology

Points awarded for projects located along HFIN corridor or a parallel route within 0.33 miles of an HFIN corridor.

Project Benefits/Location Characteristics	Points
Project located along or within 0.33 miles of HFIN corridor	3
Project intersects with multiple HFIN corridors	2
Project intersects with one HFIN corridor	1
Project is not located along/does not intersect with HFIN corridor	0



Equity

Metric: Vulnerability Index

Overview

Bikeway investments can address equity-related concerns by prioritizing projects that are likely to benefit historically marginalized groups or populations that are more likely to depend on bicycling as a means of transportation. Providing quality transportation infrastructure in these areas is a critical means of improving access to jobs and services and supporting healthy lifestyles. The Mid-Region Council of Governments (MRCOG) maintains and regularly updates a Vulnerability Index that considers economic, demographic, housing, and transportation factors and can be used to identify populations that are at increased risk of traffic violence. Data is available at the census tract level and features a composite percentage ranking based on combined population variables, with higher values indicating greater levels of vulnerability.

Table 1: Vulnerability Index Variables

Type	Variables
Economic	Unemployment, poverty
Demographic	Gender, seniors, youth, disability, race (persons of color), ethnicity (Hispanic/Latino), English proficiency, foreign born, educational attainment, single-parent households
Housing	Multifamily, mobile homes, crowding, group quarters
Transportation	Vehicles available

Scoring Methodology

Points are awarded based on a weighted average vulnerability score among the portions of census tracts that intersect with a 0.25-mile buffer around the project area.

Project Benefits/Location Characteristics	Points
Average vulnerability score for project area in <i>highest</i> quintile (80-100%)	8
Average vulnerability score for project area in <i>fourth</i> quintile (60-80%)	6
Average vulnerability score for project area in <i>third</i> quintile (40-60%)	4
Average vulnerability score for project area in <i>second</i> quintile (20-40%)	2
Average vulnerability score for project area in <i>lowest</i> quintile (0-20%)	0



Access

Metric: Access to Major Destinations

Overview

A useful bicycle network relies on access to major destinations, including schools, parks, major transit stops and community facilities. The City of Albuquerque maintains a spatial data inventory of destinations, classified as either major or minor depending on the number of trips generated by each destination type.

Table 2: Destinations by Type

Destination	Type	Destination	Type
ART Stops	Major	Park/Open Space (<10 acres)	Minor
Charter School	Minor	Park/Open Space (>10 acres)	Major
Community/Senior Center	Major	Private Schools and Universities	Minor
Cultural Site (e.g. Museum, Theater)	Major	Public School (ES, MS, HS)	Major
Hospital	Major	Public University (UNM, CNM)	Major
Library	Major	Rail Runner Stations and Transit Park-and-Ride Facilities	Major
Medical Clinic	Minor	Transit Stops Along Frequent Routes (i.e. one bus every 15 minutes or less)	Minor

Scoring Methodology

Points are awarded based on whether a project provides access to one or more destinations, with access to major destinations generating higher points. Projects that provide access to multiple destinations receive the most points. A project or corridor is considered to provide access if it passes within 0.25 of a destination.

Project Benefits	Points
Access to 3 or more major destinations	3
Access to 2 major destination or 3 or minor destinations	2
Access to ≤ 2 minor destinations	1
No access to major or minor destinations	0



Metric: Comprehensive Plan Centers

Overview

The Comprehensive Plan identifies a series of designated Centers where development should be concentrated and where trips could be made more easily by walking or biking. Comprehensive Plan policy guidance asserts that Centers should be linked together through a range of transportation options, including bikeways.

Scoring Methodology

Points are awarded based on whether a project provides access to one or more designated Comprehensive Plan Centers, with projects that link together multiple Centers receiving the most points. A project or corridor is considered to provide access if it passes within 0.25 miles of a Center.

Project Benefits	Points
Access to multiple Comprehensive Plan Centers	3
Access to one Comprehensive Plan Center	2
No access to Comprehensive Plan Center	0

Network Improvements

Metric: Facility Needs

Overview

The 2024 Plan uses a Bicycle Level of Traffic Stress (LTS) analysis to quantify how stressful it is to bike on a particular street. LTS is based on the premise that a person's level of comfort on a bicycle increases as separation from vehicular traffic increases, or as traffic volume and speed decrease. Roadways with high LTS levels create barriers for people biking and require the greatest level of improvements in order to provide conditions that appeal to people of all ages and abilities.

Scoring Methodology

General bikeway projects: Points in this criterion are based on the average LTS scores for the segments along a project route. The average score is weighted based on the length of each segment. Higher average LTS scores indicate the greatest room for improvement in user comfort level.

Multi-use trails and bike boulevards: For multi-use trails and bike boulevards located along low-stress neighborhood streets, the barriers to bicycling are typically crossings of major streets. For these project types, points are awarded based on the number of enhanced crossings (i.e., PHBs or RRFBs) along the project route.

Project Benefits/Location Characteristics		Points
Corridors/LTS Scores	Enhanced Crossings	
Average LTS > 3.5	≥4 enhanced crossings along project corridor	4
Average LTS = 2.51-3.5	3 enhanced crossings along project corridor	3
Average LTS = 1.51-2.5	2 enhanced crossings along project corridor	2
Average LTS = 1.25-1.5	1 enhanced crossing along project corridor	1
Average LTS = 1	Zero enhanced crossings	0



Metric: User Comfort

Overview

Bikeways are most likely to be utilized – and to appeal to users of all ages and abilities – if they provide a high level of user comfort. The 2024 Plan references the FHWA [Bikeway Selection Guide](#) for appropriate facility types based on the roadway conditions and surrounding context.

Scoring Methodology

Projects are awarded points if the proposed bikeway matches the recommended facility type contained in the FHWA [Bikeway Selection Guide](#), based on the posted speed limit and traffic volumes.

Project Benefits	Points
Proposed project <i>meets</i> FHWA facility selection guidance	4
Proposed project <i>does not</i> meet FHWA facility selection guidance	0

Metric: Network Spine

Overview

The 2024 Plan identifies a network of longer distance bikeways, or spines, which provide connections across the city. These spines include both existing and proposed facilities. A network is most useful when these spines feature low-stress, high comfort facilities.

Scoring Methodology

Projects along network spines receive maximum points in this criterion. Projects that intersect with network spines and provide connections to these critical facilities also receive points.

Project Benefits	Points
Project along existing or proposed network spine	4
Project intersects with multiple network spines	2
Project intersects with network spine	1
Project does not intersect with a network spine	0



Potential Level of Use

Overview

A primary goal of the 2024 Plan is to create a useful and safe network that increases the overall share of trips that are taken by bicycle. Rather than consider existing bicycling trips, which depends on limited counts data or app-based tools such as Strava that are biased toward wealthier and recreational riders, the evaluation process utilizes *trip potential* data that synthesizes Census and commercially available data on travel behavior to model the number of short distance trips that take place at a small geographic level (e.g., block groups). Short distance trips are generally a function of population density and nearby employment opportunities, which attract work and shopping/service trips. Locations with high shares of short distance trips therefore indicate the potential for more bicycling trips if quality infrastructure were provided.

Scoring Methodology

Points are awarded based on the share of trips that originate and/or terminate in the project area that are less than two miles in length. The total share of trips is based on a weighted average of conditions in the Census block groups along the project area.

Project Benefits	Points
Highest quintile of short distance trips	4
Fourth quintile of short distance trips	3
Third quintile of short distance trips	2
Second quintile of short distance trips	1
Lowest quintile of short distance trips	0

Community Support

Overview

Input on proposed projects for the 2024 Plan was possible through an online survey map in which participants could indicate their highest priorities. The survey map was available through the project website and hardcopy sticker maps at pop-up events and the in-person community meeting.

Scoring Methodology

Points are awarded based on the number of votes in favor of each project.

Note: Additional projects were identified after the survey map was administered. In these cases, project benefit points were awarded based on the number of positive public comments for the nearest parallel facility

Project Benefits	Points
Highest quintile of public comments	4
Fourth quintile of public comments	3
Third quintile of public comments	2
Low number of public comments	1
No comments received	0



Discussion/Future Considerations

Relationship to Vision Zero Project Evaluation

As part of the City of Albuquerque Vision Zero Initiative, the Department of Municipal Development adapted the Bikeway Evaluation Process to prioritize streets on the HFIN for safety improvement projects. The **HFIN Evaluation Process** retains similar criteria and basic structure of the Bikeways Evaluation Process but includes changes to individual metrics to ensure applicability to a wider range of projects and to align with Vision Zero goals.

Use of Strava Data

Previous versions of the Bikeway Evaluation Process utilized Strava data as a measure of existing bicycling rates along a project area. However, Strava captures an incomplete picture of bicycling behavior since the data only reflects users of the app, who tend to be higher income and engage in more recreational trips. By contrast, the trip potential analysis utilized in the updated evaluation process considers the *demand* for short distance trips.

Potential Applications of the Bikeway Evaluation Process

The Bikeway Evaluation Process was initially applied to projects identified on a priority bike gap closure list developed by the Greater Albuquerque Bicycling Advisory Committee (now GAATC) and to recommendations that emerged from the *I-25 Bicycle Accessibility Study*. The process may be more broadly applied in the future as a screening process for City bikeway, pedestrian, and/or trail projects. Among the potential applications include:

- General priority project lists
- Priority gap closure needs
- Potential projects contained in the Long Range Bikeway System

Ongoing Data Updates

The Bikeway Evaluation Process utilizes existing datasets, including the HFIN and the Vulnerability Index, as well as other data derived from the Census and other publicly and commercially available sources. Future application of the evaluation process will require ongoing updates.