DATE:	Revised June 21, 2024
TO:	City of Spokane
FROM:	Parametrix
SUBJECT:	Spokane Priority Bicycle Network Process Documentation
PROJECT NAME:	Spokane Priority Bicycle Network

Introduction

The following memo describes the revised prioritization framework and methodology for identifying the priority bicycle network for the City of Spokane. This process was developed in coordination with City staff and included feedback milestones from agency partners, the City's Bicycle Advisory Board, and community.

The framework is informed by available data, input from project stakeholders, current best practices, and city staff review. Selection of the priority network followed an iterative process that provided the ability to best reflect local context. The attached matrix provides additional detail on specific categories, measures, and data sources.

Evaluation Process

Evaluation of proposed network segments used a combination of quantitative and qualitative data. Quantitative data, such as population density or proximity to key destinations, relied on available spatial data and third-party data sources, such as Replica. Qualitative data included input from City staff on aspects such as feasibility, as well as manual review of aspects such as connectivity. The project team evaluated the Future Network layer provided by the City. This included both existing and proposed facilities and is broken into distinct project segments.

Since the result of this project is a priority network as opposed to a ranked project list, the project team used a multi-part evaluation process. This process included:

- **Step 1: Evaluate measures using quantitative data. (Table 1)**
  The result of this step was a total score for each network segment. The score helped the project team identify key network links and assess network patterns based on a combination of data.

- **Step 2: Review results and assemble draft priority network.**
  Using the scores produced in Step 1, the project team identified high priority segments and routes. Additionally, the use of Replica data, which uses anonymized data from location-based devices to capture local travel patterns, informed high-demand areas. The project team assembled a priority network using this information, with an emphasis on:
  - Direct routes that connect destinations and areas of high demand
  - Routes that provide for continuous travel and connections to other priority routes
  - Inclusion of key network links, such as the Centennial Trail
  - Evaluating network spacing options and trends

- **Step 3: Review network and evaluate measures using qualitative data. (Table 2)**
  The City and project stakeholders reviewed the draft priority network to confirm route selection. Using Felt, an online interactive mapping tool, stakeholders and community members had an opportunity to provide input on the priority routes, identify routes that better reflect current travel patterns, and identify preferred priority route connections. Table 2 in the attached matrix outlined example information that could be considered in this step, such as high-use routes, as well as factors such as feasibility, planned project opportunities, maintenance, and user experience.

- **Step 4: Finalize Network Draft**
  Based on feedback provided by the City and stakeholders, City staff refined the Bicycle Priority Network (BPN). This included removing segments identified in the draft network; adding new or alternate segments that were not included in the draft; as well as identifying a selection of routes that represent an Expanded Priority Network (EPN). The EPN includes routes and segments that are not part of the spine but are important connections that should be advanced as opportunities arise. The complete BPN and EPN were then consolidated into a final dataset. Final processing steps included:

  o Applying quantitative prioritization scores to new segments in both the BPN and EPN.

  o Adjusting quantitative scores of BPN segments based on changes in segmentation.

  o Documenting data attributes in the accompanying Data Dictionary.

Table 1: Step 1 Evaluation - Quantitative Data

CATEGORY	CRITERIA (GIS Field Name)	DEFINITION	SCORING NOTES	SCORING	
Access to Destinations This category assesses the route's proximity to places people want to go and considers from where people might be traveling. Areas with higher concentrations of destinations will be higher priority, while fewer destinations will be lower priority. For the purposes of this measure, proximity is defined by straight-line distance and does not necessarily reflect door-to-door access to destinations.	Education (Access_Educ)	Proximity to educational opportunity. Destinations include public elementary, middle, and high schools, as well as higher education institutions.	• **High Score:** Route travels adjacent to an educational institution. • **Medium Score:** Route travels within 1/4 mile of an educational institution. • **No Score:** Route does not provide connectivity within ¼ mile of an educational institution.	5	30
	Recreation (Access_Rec)	Proximity to recreation locations, including parks, green spaces, and trails.	• **High Score:** Route travels adjacent to or through a recreational space. • **Medium Score:** Route travels within 1/4 mile of a recreational space. • **No Score:** Route does not provide connectivity within ¼ mile of a recreational space.	5	
	Transit (Access_Transit)	Proximity to transit, including bus stops and transit stations.	• **High Score:** Route travels adjacent to a transit facility. • **Medium Score:** Route travels within 1/4 mile of a transit facility. • **No Score:** Route does not provide connectivity within ¼ mile of a transit facility.	5	
	Economic (Access_Econ)	Proximity to areas with higher employment density or areas identified as an activity center. Density will be evaluated at the block group level; data will be categorized by quintiles, with the top quintile qualifying for the highest score.	• **High Score:** Route travels adjacent to or through an area with high employment density or an area identified as an activity center. • **Medium Score:** Route travels within 1/4 mile of an area with high employment density or an area identified as an activity center. • **No Score:** Route does not provide connectivity within ¼ mile of an area with high employment density or an area identified as an activity center.	5	
	Services (Access_Serv)	Proximity to services, including healthcare centers (e.g., hospitals), civic destinations, and food sources.	• **High Score:** Route travels adjacent to or through an area with services. • **Medium Score:** Route travels within 1/4 mile of services. • **No Score:** Route does not provide connectivity within ¼ mile of services.	5	
	Population Density (Access_PopDen)	Proximity to areas with higher population density relative to the City of Spokane. Density will be evaluated at the block group level; data will be categorized by quintiles, with the top quintile qualifying for the highest score.	• **High Score**: Route travels adjacent to or through an area with high population density. • **Medium Score:** Route travels adjacent to or through an area with moderate population density. • **No Score:** Route travels adjacent to or through an area with low population density.	5	

CATEGORY	CRITERIA (GIS Field Name)	DEFINITION	SCORING NOTES	SCORING	
Equity This category evaluates routes based on the proximity or service to/through areas identified as disadvantaged. Data used in this category will provide consistency with equity measures used in state and federal funding sources.	Transportation (Equity_Transpo)	Does the route provide service to/through areas identified as disadvantaged? Disadvantaged areas are those within the top quintile of results.	• **High Score:** Route directly connects to/through disadvantaged areas. • **Medium Score:** Route travels within 1/4 mile of disadvantaged areas. • **No Score:** Route does not provide connectivity within 1/4 mile of disadvantaged areas.	10	30
	Health (Equity_Health)	Does the route provide service to/through areas identified as disadvantaged? Disadvantaged areas are those within the top quintile of results.	• **High Score:** Route directly connects to/through disadvantaged areas. • **Medium Score:** Route travels within 1/4 mile of disadvantaged areas. • **No Score:** Route does not provide connectivity within 1/4 mile of disadvantaged areas.	10	
	Climate Change (Equity_ClimateCh)	Does the route provide service to/through areas identified as disadvantaged? Disadvantaged areas are those within the top quintile of results.	• **High Score:** Route directly connects to/through disadvantaged areas. • **Medium Score:** Route travels within 1/4 mile of disadvantaged areas. • **No Score:** Route does not provide connectivity within 1/4 mile of disadvantaged areas.	10	
Safety This category evaluates proximity to freight and high frequency transit (HFT). It should be noted that while category is intended to guide route selection toward more comfortable and safer corridors, improvements made through implementation of the bicycle network may mitigate current conditions. This measure should be considered closely with assessments of feasibility.	Freight/High-Frequency Transit Route (Safety_FrghtHFT)	Is the route co-located with identified freight routes or high frequency transit routes?	• **High Score:** Route is not co-located with a freight route or high-frequency transit route. • **No Score:** Route is co-located with a freight route or high-frequency transit route.	25	25
User Experience This category evaluates measures related to user experience of a route. Elements such as shade (via street trees) and lighting for visibility may have impacts on user comfort and experience. Additional user experience factors are recommended in Step 2.	Lighting (UserExp_Light)	Does the route currently have lighting to facilitate visibility?	• **High Score:** Route currently includes lighting along the length of the corridor. • **Medium Score:** Route includes some lighting, but the lighting is not consistent for the length of the corridor. • **No Score:** Route includes limited or no lighting.	5	10
	Street trees (UserExp_StTrees)	Does the route currently have street trees located along the route?	• **High Score:** Route currently includes street trees along the length of the corridor. • **Medium Score:** Route includes some street trees, but street trees are not consistent for the length of the corridor. • **No Score:** Route includes limited or no street trees.	5	

Table 2: Step 3 Evaluation - Qualitative Data

CATEGORY	CRITERIA	DEFINITION	SCORING NOTES
Feasibility This category evaluates measures related to feasibility of implementation. These measures cover a broad range of questions that may influence feasibility and include topics to guide discussion with other staff, departments, and agencies. As a secondary step in the evaluation process, this category is intended to inform selection among competing routes or provide the basis for review.	Cost	At a high level, is the expected cost of implementing this route feasible? For example, is there sufficient ROW to accommodate the needed improvement; can the facility be accomplished through restriping or other low-cost measures?	• **High Score:** Expected cost of implementing the route is feasible. • **Medium Score:** Expected cost of implementing the route is significant but potentially feasible. • **No Score:** Expected cost of implementing the route is not feasible.
	Regional Consistency	Does the project align with other local or regional plans? For example, is the route identified in the regional bike network? Is the project in alignment with upcoming projects?	• **High Score:** Project aligns with other local and regional plans. • **No Score:** Project does not align with other local and regional plans.
	Maintenance	Ability to maintain facilities to standard, including practices related to snow clearing/storage, regular cleaning, and ongoing maintenance.	• **High Score:** Ability to maintain facilities along route to standard. • **No Score:** Cannot maintain facilities along route to standard.
Network Connectivity This category assesses the completeness of the network and the ability of routes to connect to other routes. This category includes evaluation of key connections, existing intersection infrastructure, and inclusion of key corridors/signature routes. Elements of this category are scored quantitatively, while other elements require qualitative evaluation. As a secondary step in the evaluation process, this category includes measures that will guide a more manual review of segment selection, including informing selection among multiple higher priority routes.	Key Corridors and Connections	Does the route connect to key routes, either those representing signature corridors (e.g., Centennial Trail) or required connection points, such as river crossings?	Manual review of high priority corridors will help identify if adjustment must be made so that key routes and corridors are included.
	Segment Connectivity	Does the route connect to other high priority routes? Are there opportunities to create a low-stress complete and connected network if route is currently disconnected?	Manual review of high priority corridors will help identify if adjustment must be made to provide for a complete and connected network.
	Key connection points	Does the route use existing crossing infrastructure, such as pedestrian or traffic signals or other enhanced crossings?	Manual review of high priority corridors will help identify if adjustment must be made to provide for a complete and connected network. For example, if two parallel corridors are both high priority, the project team will review the corridors to determine if one has a higher prevalence of existing low-stress crossings.
	Network Density	*Note: This measure will be defined through the evaluation process and inform network development principles. For example, when reviewing prioritization results, the project will assess network spacing and identify expected frequency of routes.*	*Preferred measures will be defined through the prioritization and refinement process.*

CATEGORY	CRITERIA	DEFINITION	SCORING NOTES
Safety This category evaluates safety-related measures to inform route selection, including crash history and level of traffic stress. It should be noted that while category is intended to guide route selection toward more comfortable and safer corridors, improvements made through implementation of the bicycle network may mitigate current conditions. This measure should be considered closely with assessments of feasibility.	Crashes (Safety_Crash)	Does the corridor have a history of serious injury and/or fatal crashes involving people on bicycles?	Consider prioritizing corridors without a history of serious crashes. Evaluate feasibility of providing low-stress, separate bicycle facilities if location along a high-crash corridor is preferred.
	LTS (Safety_LowStress)	Is the route low-stress (i.e., LTS 1 or 2)?	Consider prioritizing existing low-stress corridors where feasible. Low-stress corridors may require less intervention or leverage existing investments.
User Experience This category evaluates route grade as related to user experience of a route.	Topography (Safety_Topo)	Does the route provide a relatively flat path of travel for people bicycling?	Prioritize flatter routes. While steep routes may be included in the final network based on necessity, consider the relationship between grade and out-of-direction travel required to travel via a flatter route.