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MEMORANDUM

October 28, 2022

To: Chris Comeau, FAICP-CTP
Organization: City of Bellingham
From: Michael Hintze, AICP, Brian Almdale, Quinn Kelly
Project: Bellingham Bicycle and Pedestrian Master Plan

Re: Pedestrian Network Prioritization Framework

The full completion of the City's pedestrian network is a long-term goal. Based on the practical and fiscal limitations, not all pedestrian projects can be implemented at once. In general, the City will pursue projects based on a prioritized project ranking, which will be determined using an objective and transparent set of criteria. This ranking should not be viewed as a mandate to complete projects in a particular order, but rather a measure of which projects best meet the overall goals of the Pedestrian Master Plan (PMP). The order in which projects are built will depend on many factors, including budget/cost, local funds and state/federal grant funding availability, active development, and other implementation opportunities.

Once the recommended pedestrian network is finalized, it will be prioritized based on the following criteria:

- **Safety**: Crash reduction, Posted speed, Traffic volume
- **Equity**: Socioeconomic characteristics of neighborhood
- **Accessibility**: Identification as a priority facility in the ADA Transition Plan
- **Connectivity**: Proximity to schools, commercial areas, parks, and transit stops
- **Trip potential**: Number of jobs and housing units/people

These criteria are similar to those included in the 2012 PMP, with the addition of the ADA Transition Plan, an update to equity measures, the replacement of crossing type with Pedestrian Level of Traffic Stress (PLTS)[1], and the consolidation of some redundant criteria. While there are many other criteria that could be included, we seek to keep the framework as simple as possible for two reasons:

1. It will make the prioritization framework more transparent and easier to communicate to the public
2. It will be easier to replicate the prioritization in the future

The prioritization framework will be based on a point system, wherein each criterion will earn a project a certain number of points and the sum of those points will determine where projects are ranked. The table below summarizes the proposed PMP project scoring system:

[1] The Oregon Department of Transportation (ODOT) developed a methodology for evaluating the suitability of pedestrian crossings. The framework applies simple logic similar to Bicycle Level of Traffic Stress to the pedestrian environment. The methodology considers basic details including the speed of cross traffic, crossing distance, and mitigating features like signals and refuge islands. The thresholds identified by ODOT result in a Pedestrian Level of Traffic Stress (PLTS) score from PLTS 1 through PLTS 4 representing the following conditions, as described in ODOT's *Analysis Procedures Manual*.

Table 1: Pedestrian project prioritization criteria

Factor	Criteria	Measure	Points
Safety (6-10 points possible)	Crash reduction	Weighted crashes on a per mile basis based on sliding window analysis, or per intersection for intersection projects	3
	Posted speed *(Corridors Only)*	Highest posted speed limit in project area: » 2 points for ≥ 35 MPH » 1 points for 30 MPH	2
	Lane Count *(Corridors Only)*	Number of lanes: » 2 points for 4-5 lanes » 1 point for 2-3 lanes	2
	PLTS *(Intersections Only)*	Pedestrian Level of Traffic Stress score » 3 points for PLTS 4 » 2 points for PLTS 3 » 1 point for PLTS 2	3
Equity (4 points possible)	Socioeconomic factors	Washington Environmental Health Disparities Map, Socioeconomic factors[2] » Projects in communities with highest disparities will be prioritized	3
		» Project within ¼ mile of low-income housing	1
Accessibility (3 points possible)	Prioritized barrier removal locations	Facility Priority Designation in the ADA Transition Plan: » Projects that have highest priority designation receive highest point	3
Connectivity (4 points possible)	Proximity to schools	Project is within 1 mile of a K-12 public school	1
	Proximity to Urban Villages and commercial clusters	Project is within ½ mile of an Urban Village or a major commercial cluster	1
	Proximity to parks	Project is within ½ mile of a public park or regional public trail access point	1
	Proximity to transit stops	Project is located near WTA transit service: » Within ½ mile of High Frequency Transit Network stop » Within ¼ mile of other bus stop	1
Trip Potential (4 points possible)	Population	Projects near the most people measured in housing units are prioritized (housing units within 1/10 mile of location-based need; points assigned based on proportional distribution, e.g., 75% percentile receives 1.5 points.	2

[2] The WA Environmental Health Disparities Map is a statewide tool developed by the UW Department of Environmental & Occupational Health Sciences (DEOHS) in collaboration with partners across Washington, informed by input from affected communities through 11 statewide listening sessions. The socioeconomic factors include educational attainment, housing burden, linguistic isolation, poverty, race, transportation expense, and unemployment. See the full report for more information about the tool's development and methodology.

Factor	Criteria	Measure	Points
	Employment	Projects near the most jobs are prioritized (jobs within 1/10 mile of location-based need; points assigned based on proportional distribution, e.g., 75% percentile receives 1.5 points.	2

Methodology

These criteria are applied to all 140 intersection project locations and 3,127 sidewalk segments using the following methodology:

Safety

The crash reduction criteria uses crash data from WSDOT filtered for pedestrian crashes between 2017 and 2021. Crashes are assigned to intersection projects if they occurred within 150 feet of the intersection center point. For corridors, crash reduction is measured using a sliding window analysis. This analysis counts crashes along 1-mile segments of each roadway, in 1/10th-mile increments, and assigns a score to each roadway segment based on the severity of pedestrian crashes. The number of roadway lanes and posted speeds are applied to corridor projects using roadway data provided by the City of Bellingham. The PLTS scores for road crossings are calculated based on the number of lanes, speed limit, AADT, and crossing control (e.g., stop control, flashing beacons, etc.). As each intersection project location may have multiple PLTS scores, depending on the number of crosswalks in the intersection, the maximum PLTS score for a given intersection is assigned to each intersection project location. In other words, each intersection project receives a PLTS score based on the *most* stressful crossing within the intersection.

Equity

The Washington Environmental Health Disparities Map ranks Census Tracts on a 1-10 scale based on a variety of socioeconomic, environmental exposures and effects, and sensitive population indicators. Only the socioeconomic factors (including no high school diploma, unaffordable housing, transportation expense, limited English, living in poverty, people of color, unemployment) were used in the analysis. The ranking was applied to all intersection and corridor projects based on the Census Tract in which each project is located. For corridor projects that pass through multiple Census Tracts with different ranks, the highest rank along the project corridor is applied. The score is then linearly scaled, such that a project in a Census Tract with a ranking of 10 will receive all 3 points, while a project in a Census Tract with a rank of 5 will receive 1.5 points. The low-income housing criteria score is calculated based on the number of low-income housing units within ¼-mile of the project location. Low-income housing units include rental units built with HOME or HUD funds as well as Section 8 subsidized units that do not overlap with the HOME and HUD units.

Accessibility

Location Index Scores for sidewalks from Bellingham's ADA Transition Plan are assigned to corridor projects based on geographic overlap. Intersection projects receive the maximum Location Index Score from all curb ramps within the intersection. Project corridors and intersections that were not analyzed in the ADA Transition Plan receive a score of 0 for this factor.

Connectivity

Scores for each connectivity criteria are calculated based on the straight-line distance between the intersection or corridor project to each of the key facility types: schools, urban villages, parks and regional public trails, and WTA transit stops. For the purpose of this analysis, the combined parks and trails layer excludes private trails, short

neighborhood connectors (e.g., paths connecting adjacent cul-de-sacs), and non-park or private open space (e.g., cemeteries, golf courses, and wooded areas).

Trip Potential

The number of housing units within 1/10th-mile of intersection and corridor projects is calculated using housing unit estimates at the parcel level, provided by the City of Bellingham. Employment within 1/10th-mile is based on 2021 estimates at the Transportation Analysis Zone (TAZ) level, also provided by the City of Bellingham. These TAZ-level estimates are allocated to projects based on the amount of overlap between the 1/10th-mile radius around the intersection or corridor and the TAZ. For example, if the 1/10th-mile radius area around an intersection project contains 25% of the geographic area of a TAZ, and that TAZ has an estimated 1,000 employees, the intersection project is assigned an employment estimate of 250.