

Appendix: Cost Estimates

The priority areas identified in the study received both immediate and future improvements. To aid the cities in carrying out these enhancements, short-term and long-term cost estimates were prepared (Table 1). These estimates encompass removal and construction items, signal installations and upgrades, drainage improvements, and a 30% contingency. Public utility improvements or upgrades and private utility relocations are excluded from the cost estimates unless otherwise specified.

Table 1: Priority Area Cost Estimates

	Priority Area	Short-Term	Long-Term
Bismarck	26th Street	\$300,000	\$4,400,000
	7th / 9th Streets	\$425,000	\$3,200,000
	Airport Road	\$950,000	\$2,200,000
	Broadway Avenue	\$200,000	\$2,700,000
	Washington Street	\$150,000	\$3,400,000
Mandan	3rd Street	\$190,000	\$1,400,000 - \$1,600,000
	Main Street	\$80,000	4th Ave NW to Collins Ave: \$100,000 Collins Ave to 6th Ave NE: \$1,000,000 6th Ave NE to Mandan Ave: \$1,200,000
	Shady Acres	\$450,000	\$3,500,000

To aid the MPO and Cities in project prioritization and future budget planning, the project team compiled a list of cost estimates for various facility types identified in the study (Table 2). These estimates are designed to assist city engineering and public works staff in developing planning-level costs for projects. Capital costs were estimated based on the costs of recently completed projects in North Dakota and are presented in 2024 dollars.



Table 2: Capital Improvement Cost Estimates

Facility Type	Annual O+M Cost	Capital Cost	Estimated Life
Shared Use Path (8' wide concrete)	\$1,200 to \$2,000 / Mile	\$1,400,000 to \$1,700,000 / Mile	25+ years
Shared Use Path (10' wide concrete)	\$1,500 to \$2,500 / Mile	\$2,200,000 TO \$2,500,000 / Mile	25+ years
Sidewalks (6' wide concrete)	\$500 to \$1,000 / Mile	\$500,000 to \$600,000 / Mile	25 to 40 years
On-Street Bikeways (8' wide)	\$4,000 to \$5,000 / Mile	\$100,000 to \$150,000 / Mile	20 years
Separated Bikeways (8' wide)	\$1,500 to \$2,500 / Mile	\$2,700,000 to \$3,100,000 / Mile	20 years
Signage Type	Annual O+M Cost	Capital Cost	Estimated Life
Kiosk-Style Signs	Minimal	\$5,000 - \$25,000	20 years
Wayfinding Sign	Minimal	\$1,000 - \$1,500	20 years
Crossing Type	Annual O+M Cost	Capital Cost	Estimated Life
Pedestrian/Bicycle Overpass	\$10,000 - \$20,000 / yr	\$3,000,000 - \$5,000,000	50 years
ADA Curb Ramp Retrofit	Minimal	\$5,000 - \$10,000 / Ramp	25 to 40 years
Half Corner Curb Extension	Minimal	\$20,000 - \$30,000 / Quadrant	25 to 40 years
Full Corner Curb Extension	Minimal	\$35,000 - \$55,000 / Quadrant	25 to 40 years
T-Intersection Curb Extension	Minimal	\$25,000 - \$45,000 / Intersection	25 to 40 years
High Visibility Crosswalks	Minimal	\$1,000 - \$2,500	2 to 5 years
Median/Refuge Island (6' to 8' wide)	Minimal	\$25,000 - \$40,000 / 100 LF	25 to 40 years
Crossing Signs	Minimal	\$500 - \$1,500	7 to 10 years
Signal and Lighting	Annual O+M Cost	Capital Cost	Estimated Life
HAWK (Pedestrian Hybrid Beacon Signal)	\$4,000 - \$6,000 / yr	\$200,000 - \$250,000	20 years
RRFB (Rectangular Rapid Flashing Beacons)	Minimal	\$60,000	20 years
Flashing Warning Sign	Minimal	\$4,000 - \$8,000	10 to 15 years
Signalized Intersection	\$6,000 - \$10,000 / yr	\$500,000-\$600,000	20 years
Pedestrian Omitting Opposing Flashing Yellow Arrow	Minimal	\$3,000	20 years
No Right Turn On Red	Minimal	\$3,000	20 years
Leading Pedestrian Intervals	Minimal	\$3,000	20 years
Relocate Signal Pole	Minimal	\$10,000 - \$25,000 / Pole	20 years
Pedestrian Level Lighting	\$800 - \$1,000 / yr	\$6,000 - \$15,000 / Light	20 years
Street Light at Intersection	\$1,200 - \$1,800 / yr	\$7,500 - \$10,000 / Light	20 years