

Appendix

Updated: 1/3/2025

Standard Specification

<https://www.mass.gov/lists/construction-specifications>

This link leads to the general page for MassDOT Construction Specifications. The specifications for non-motorized traffic counters are included in Subsection 871 of the document titled “2024 Standard Specifications for Highways and Bridges: Division II: Construction Details”

MS2 Links

MS2 is the data warehouse MassDOT currently uses for both vehicular data and bicycle/pedestrian data. Data collected around the state is integrated into MS2, quality controlled, and made publicly available. Periodic training will be available for those interested in uploading their bicycle and pedestrian count data to MS2 to contribute to the statewide database.

MassDOT is continually adding new sensors into MS2. All available data can be found here.

<https://mhd.ms2soft.com/tdms.ui/nmds/dashboard?loc=mhd>

Federal Highway Guidance

The Federal Highway Administration publishes a Traffic Monitoring Guide (TMG), which includes a short overview of nonmotorized counters, detailed information on current counting technology, and information on what patterns to expect from non-motorized count data. The webpage also includes links to a guide on reporting data in the TMG Format.

Previous iterations of the TMG have included a separate chapter on nonmotorized count data, but the current version (2022) covers the topic throughout the manual.

<https://www.fhwa.dot.gov/policyinformation/tmguid/>

Pre-Approved Counters and Vendors

Pre-approved counters have undergone accuracy testing by MassDOT on real-world facilities at various times of day on weekdays and weekends to determine accuracy of counts in varying traffic conditions. The devices listed in the tables below are all included on the state Qualified Traffic Equipment list and have all been determined to meet the terms of the standard specification for nonmotorized traffic counting equipment. Some of the vendors also have vendor profiles on the State procurement system COMMBUYS.

MassDOT Pre-Approved Permanent/Continuous Counter Information (current as of July 2021)

Vendor	Counter	Modes	Sensors	Facilities	Power Source	Webpage Link
Eco-Counter	Urban ZELT	Bicycles	Inductive Loops	Trails	Battery	Urban Zelt
Eco-Counter	Urban MULTI	Bicycles & Pedestrians	Loops and Infrared	Trails	Battery	Urban Multi
Roadsys LLC	HI-TRAC CMU	Bicycles & Pedestrians	Piezo and infrared	Trails	Battery + Solar	HI-TRAC CMU
Miovision	TrafficLink System	Bicycles & Pedestrians	Overhead Camera	Intersections	Terminal Block Wiring	TrafficLink
Iteris	NEXT Platform	Pedestrians	Overhead Camera	Intersections	Terminal Block Wiring	NEXT
Migma	MigmaCount	Pedestrians	Camera	Trails	Battery or AC	MigmaCount

- Permanent counters, also called continuous counters, are installed at a pre-selected location and remain there for their lifespan. They include a permanent fixture, such as inductive loops or piezoelectric tubes embedded in pavement and are usually more expensive but more durable than temporary counters.
- Certain permanent counters can receive power from existing signal infrastructure, while others may use solar power, direct power or a replaceable battery. It is important to consider the power source when choosing a counter for a location.
- Permanent counters should be used when an intersection or segment of trail is to be monitored over a long period of time.
- Permanent counters are useful for establishing long-term seasonal factors based on population, type of roadway/trail, time of year, etc. A comprehensive network of permanent counters at a variety of locations can help to establish how data from temporary counts are affected by the location and time of year for the count.

MassDOT Pre-Approved Temporary Counter Information (current as of July 2021)

Vendor	Counter	Modes	Sensors	Facilities	Power Source	Webpage Link
Eco-Counter	Mobile MULTI	Bicycles & Pedestrians	Infrared and Road Tube	Trails	Battery	Mobile MULTI
Roadsys LLC	SDR Radar traffic classifier	Bicycles	Radar	Trails	Battery + Solar	Datacollect SDR
Miovision	Scout	Bicycles & Pedestrians	Camera	intersections	Battery	Scout
Migma	Migmacount Mobile	Pedestrians	Camera	Trails	Battery	MigmaCount Mobile

- Temporary counters are placed at a location for a short period of time, from just a few hours up to two weeks, depending on the vendor. They are useful in different applications than permanent counters, such as before/after studies analyzing the impact of a new development.
- Temporary counters should be employed where data is desired for just a short period of time, and where longer-term data is not worth the expense.
- Generally, temporary counters are battery-powered, and less expensive than permanent counters.
- Data from temporary counts are easier to understand when seasonal factors have been established by permanent counters in similar locations to where the counts take place.