

# Western Washington University Bicycle Counters

ENVS 471

As Proposed by:

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## Executive Summary:

Western Washington University currently lacks an up to date method of data collection on bicycle use on its campus. Installation of three counters, two cutting edge “Eco-Totem” bicycle counting displays and one “Eco-Display” bicycle counter at locations along primary routes north and south of campus will provide a foundation for data gathering and a way for cyclists to interact directly with that data. Valuable data acquired from the counters will aid future bicycle infrastructure improvements at Western, which will facilitate the increase of bicycling to campus. The counter displays will also provide incentive by showing cyclists that they are recognized for their contribution in becoming a more sustainable university. The project will be funded by a grant from the Sustainable Action Fund. Maintenance of the counters will be carried out by Western Washington University's Facilities Management.



(Image credits: Eco-Counter)



## Statement of need:

Western's carbon emission reduction goal is to achieve complete carbon neutrality by 2050. Our research shows that installing Eco-Totems on campus would increase the use of bicycles by commuters, reducing the use of automobiles to get to campus and reliance on fossil fuels. The Eco-Totem displays encourage bicycling by adding to the incentive to bike. Seeing the daily count increase while riding past the counter creates a sense of achievement in the cyclist's mind. The yearly count acts as a goal-setting mechanism; with the incentive to reach higher counts each year. Research has also shown that tracking bikes on campus can help during the planning of future bicycle

facilities, such as bike lanes/paths, safety mechanisms, and planning for winter accessibility for bikes.

Similar projects in other cities and campuses such as CSU Monterey Bay and the City of Seattle illustrate some of the benefits of the installation of bicycle counters. CSU Monterey Bay's bicycle counter has provided "reliable, consistent data", according to senior campus planner Matthew McCluney, which has aided their planning of bicycle infrastructure improvements. Since the installation of the Fremont Bridge bicycle counter in Seattle, ridership has increased in 14 of 17 months for which they have year-over-year data. Other case studies in addition to these have shown the positive public reactions to bicycle counters as well as the benefits they provide to planning staffs.

**Objective:**

In order to help Western achieve its goal of Carbon Neutrality we propose to install two Eco-Totems and one Eco-Display on campus to encourage bicycle ridership and collect valuable data for bicycle infrastructure planning. The considered locations for our counters are located shown below:



(Image credits: wwu.edu)

- The location of north campus is to be installed at the intersection of High St. and Oak St. The north side of the university. This location is a bottleneck for all commuters entering campus from the north side.



On south campus we have two locations where the same amount of bicyclists ride by.

- The intersection of Bill McDonald and W. College Way is a prime location for an Eco-totem. Here, bicyclists use the crosswalk and the ramp to come onto campus; with the addition of one Eco-totem, we hope to encourage cyclists to only use the ramp by placing the counter's sensors on the ramp only, keeping bicycles and pedestrians separate for safety concerns. This location is also significantly public, which would allow the counter to be seen by those who bicycle and walk.



- E. College way is a path designated for bicycles to enter campus. Western is working on encouraging the use of these designated paths to keep the pedestrian paths free of bicycles. Installing a low profile Eco-Display at this location would encourage cyclists to ride on these paths rather than using walking paths. The Eco-display is a match for this location because of its low profile, serving its purpose to count and display counts.



### Eco-Counter:

The manufacturer we have chosen to work with is Eco-Counter, a Canadian-based company in Montreal. The counters we would acquire from them use inductive loops installed in the ground whether it is concrete, asphalt, dirt, or brick. These loop sensors are highly sensitive detecting the direction in which a bicycle is coming, and differentiating bicycles from other objects/vehicles passing over them. The installation of these loops is time effective, and the footprint of such is minimal.



**Budget:**

<b>Budget</b>	
<b>Counter:</b>	<b>Cost:</b>
2 Eco-Totems	\$25,000 - \$35,000 each
1 Eco-Display	\$9,000 - \$15,000
<b>Total Estimate</b>	<b>~ \$85,000</b>

Each “Eco-Totem” counter costs between \$25,000 and \$35,000 which includes shipping and installation. Recurring costs would include maintenance of the in-pavement detector loops every 2-3 years (resealing with loop sealant), as well as \$420 per year for the automatic data transmission from the counter to the server for online access. In addition to the standard 2-year warranty there is an optional \$3,000 3-year warranty available.

**Conclusion:**

Western’s existing bicycle facilities are currently lacking a comprehensive method of collecting ridership data on campus. We propose the installation of three cutting edge bike counters to serve the purposes of data collection and encouragement of the use of alternative transportation by adding to the incentives of biking to campus. The data collected aids future improvements for bicycle infrastructure which helps Western become an even more bike-friendly campus. Increasing bicycle ridership amongst commuters will over time help reduce carbon emissions within the Western community.