

REDUCE THE USE OF PAPER HAND TOWELS ON CAMPUS

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Description: The use of paper towels in Humboldt State University's public restrooms is wasteful, messy, and costly. This project aims to reduce the amount of paper towels consumed by Humboldt State University by installing at least one Dyson Airblade dB hand dryer in restrooms while requiring paper towel composting until paper towel dispensers are phased out. Installing electric hand dryers in restrooms can have a quick payback because it reduces the amount of money spent on paper towels, custodial hours, and waste disposal. If HSU ceased all paper towel usage it would reduce greenhouse gas emissions by 76 metric tons CO₂e per year.

Recommendation: Reduce the usage of paper hand towels on campus to reduce costs, environmental impact on landfill, reduce greenhouse gas, and to increase sustainability on campus. Conduct a campus-wide analysis to determine which restrooms can accept an electric hand dryer, and then develop an implementation plan to install units. Require composting of paper hand towels while phasing out hand towels and moving forward with installation of electric hand dryers.

SCALE AND SCOPE: Composting of paper towels would include campus wide and the installation of electric hand dryers that would include all new constructed facilities and for existing facilities where feasible.

Timing: Hand dryers for new construction and significant remodels

Participants: Planning, Facilities (Recycle, Custodial) Construction

Impact	Estimated Resource Costs	Estimated Benefits
FINANCIAL	\$1,854 cost per unit + install; \$40-60 in electricity cost per unit/yr; \$25 waterhog rug to go under unit (or connect a floor drain if new construction)	Possible 40% payback of towels over a few years with dryers; reduced labor costs; reduced solid waste tip fees.
ENVIRONMENTAL	Construction noise, dryer noise, footprint of facility could change, additional electricity consumption of 250 - 550 kWh/yr	Reduce paper towels in landfill. Campus sustainability increased. Embedded reduction in manufacturing, transportation, and disposal of towels.
SOCIAL	Budget concerns, acceptability and participation	Health benefits of hand dryers. Reduced maintenance.

Dollar Spent/GHG Reduction: $-\$1,052/MTCO_2e$ over 20 yr period (Negative cost abatement)

In 2015 an analysis was conducted by HEIF to support the installation of Dyson Airblades to replace paper towel dispensers in nine campus restrooms.¹

- In 2014 HSU Facilities spent \$54,257 on paper towels, and an additional \$2,256 to dispose of used paper towels for a combined total of \$56,513.
- Average \$1,200 paper towel cost per restroom per year.
- Installation cost for nine hand dryers is estimated at \$16,683 (cost of unit plus labor and materials to install unit).
- Payback periods range from 2.3 to 4.6 years, depending on the current paper towel consumption in those restrooms.
- Installation of nine hand dryers in the selected restrooms would yield four metric tons of CO₂e savings per year.

Assumptions:

- Hand dryers are Dyson Airblades and cost remains at about \$1350.00
- Restrooms have the physical requirements for hand dryers (space and electrical access).
- Assumes not all restrooms would be fitted with hand dryers.
- Increased capacity for composting paper towels and a collection method is developed for towels.
- Assume no need to purchase additional compost bins - custodial would convert existing bins to collect paper towels.
- Energy calculations based on \$0.12/kWh

References:

1. *Hand Dryer Proposal: Spring 2015*, Goldstein, B. Humboldt Energy Independence Fund