Trail Speed Study

Locations:

The following locations have been selected to conduct speed data collection.

Urban Trails:

Greenway Trail @ Uintah Underpass, Popcycle Bridge, and Cimarron Underpass.

Midland Trail @ Trail's End.

Cottonwood Trail @ Cottonwood Park.

Singletrack:

Red Rock Canyon: Mesa Trail @ Greenlee Intersection, Lion Trail @ Intersection with Red Rock Rim Trail (near toe of the landfill), Lower Codell Trail @ Red Rock Rim Trail.

Stratton Open Space: Arroyo Grande.

Ute Open Space: Nachos.

Palmer Park: Palmer Point Trail, Grandview Trail, Greencrest Trail

Directional:

Stratton: Chutes, Ladders. Ute: Downhill area.

Methods and Challenges:

Speed data is collected using commercial radar guns with an accuracy of +/- 1mph. Radar guns are unable to measure speeds under 10mph, so a constant variable is substituted for any bike observed at a speed of less than 10mph- at present, this variable is assigned @ 6.5mph. Data is collected and tracked via spreadsheet.

As of January 2022, limited data has been collected, in part because bike traffic has varied significantly based on weather and other variables such as time of day. Staff availability has been limited to perform data collection. Urban Trails have produced the most data, and have the most e-bikes. Singletrack trails have yielded limited data, and staff have observed very few e-bikes on these trails. Staff have yet to observe e-bikes on directional trails.

Matthew Sutton (Incline Administrator) has recently joined the team to assist with data collection and analysis during the Incline Off Season. He will primarily be focusing on data collection at our Urban Trail locations. Matthew has also been investigating additional data sources to bring to the study such as Strava Metro data. This addition should allow much more data collection moving forward.

Weather is our current challenge going into 2022. Cold winters appear to reduce the number of cyclists out, however the goal is to take advantage of any warmer days and catch those recreational cyclists

enjoying the warmth. As it warms up in March/April, we should see numbers increasing and therefore so will our data.

Throughout the winter we will also work on the final report structure, that can be updated as we collate data.

Results:

e-bikes have represented ~32% of observed bikes on urban trails, and ~5% of bikes observed on singletrack trails. Staff have been able to positively identify all bikes encountered.

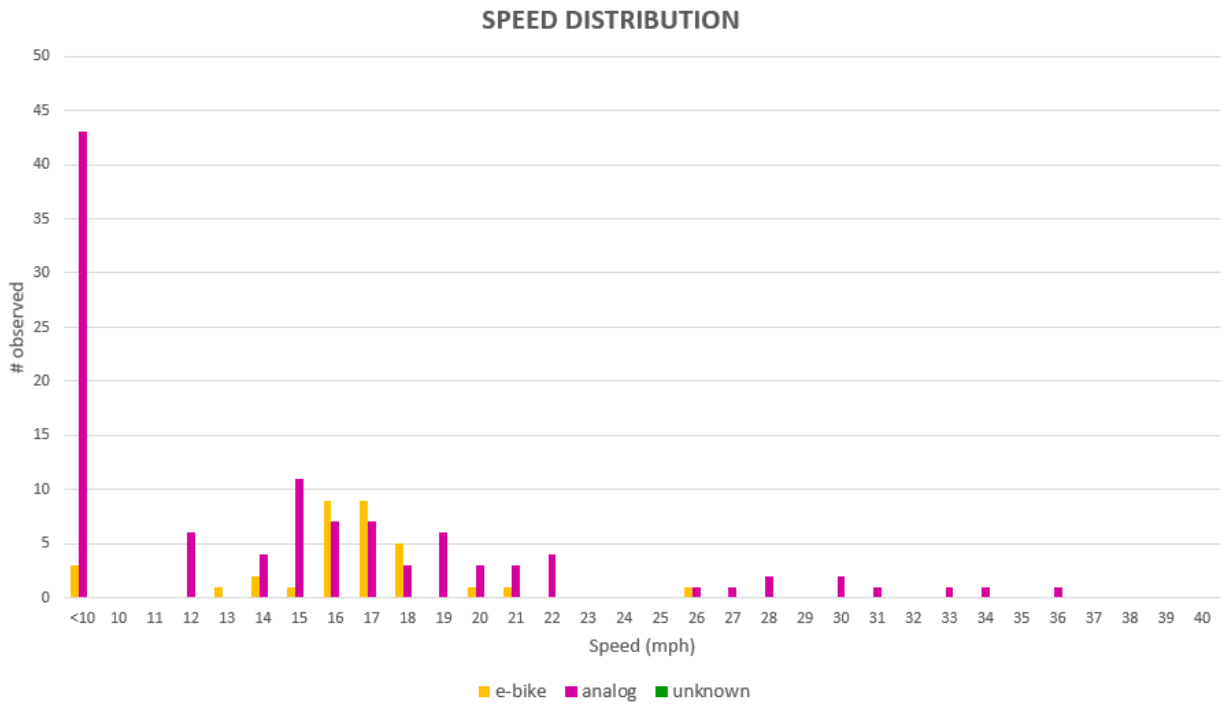
Our speed surveys have shown that e-bikes are on average 4.2 mph faster than analog bikes on uphill trail segments (11.6 vs 7.4 mph), 1.1 mph slower on downhill trail segments (17.7 vs 18.8 mph), and 0.5 mph faster on level trail segments (11.8 vs 11.3 mph).

e-bikes has a comparable speed to analog bikes on urban trails (15.6 mph vs 15.5 mph). Due to limited sample size we are unable to draw meaningful conclusions regarding e-bike speed on singletrack and directional trails.

Anecdotal reports from rangers on singletrack trails corroborate the general trends outlines above: e-bikes are faster on uphill trail segments, comparable on level surfaces, and slower on downhill trail segments. To date, rangers have not encountered e-bikes operating at reckless or dangerous speeds.

Data Summary:

AVERAGES BY DIRECTION								
AVERAGE OF ALL UPHILL	e-bike	11.6	analog	7.4	unknown	Insufficient Data		
AVERAGE OF ALL DOWNHILL	e-bike	17.7	analog	18.8	unknown	Insufficient Data		
AVERAGE OF EVEN GRADE	e-bike	11.8	analog	11.3	unknown	Insufficient Data		
AVERAGES BY CATEGORY, ALL DIRECTIONS								
AVG URBAN TRAIL SPEED	e-bike	15.6	analog	15.5	unknown	Insufficient Data		
AVG SINGLETRACK SPEED	e-bike	11.8	analog	9.5	unknown	Insufficient Data		
AVG DIRECTIONAL SPEED	e-bike	Insufficient Data	analog	Insufficient Data	unknown	Insufficient Data		
AVERAGE OVERALL SPEED	e-bike	13.7	analog	12.5	unknown	Insufficient Data		
# OF EACH TYPE	URBAN TRAIL	e-bike	33	analog	69	unknown	0	Total 102
	SINGLETRACK		2		39		0	41
	DIRECTIONAL		0		0		0	0
	TOTALS		35		108		0	143
TOTAL COMMENTS	POSITIVE	NEGATIVE	COMPLAINT	NUETRAL/?	ALL			
	0	0	0	2	2			


SPEED DISTRIBUTION
50
45
40
35
30
25
20
15
10
5
0
observed
<10 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
Speed (mph)
e-bike
analog
unknown