

Bicycle Braking Distances using AASHTO Standards

NYSDOT says asphalt surfaces allow for speeds of 20mph, and above

AASHTO'S formula for bicycle braking distances¹:

$$S = \frac{V^2}{30(f \pm G)} + 3.67V$$

MPH on dry, flat surface	FEET PER SECOND (FPS)	REACTION TIME IN FEET 3.67V	BICYCLE BRAKING DISTANCE $D = \frac{V^2}{30f}$	TOTAL BRAKING TIME Reaction Time + Physical Braking	CAR EQUIVALENTS FOR TOTAL BRAKING TIME (Ave car size: 15ft)
1	1.5 ft	3.67 ft	.10 ft	3.77 ft	<car
5	7 ft	18.35	2.6	20.95	1.5 cars
10	15 ft	36.7	10.41	47	3 cars
15	22 ft	55	23.44	78.44	5 cars
20	29 ft	73.4	41.66	115	7.5 cars
25	37 ft	91.75	65	157	10.5 cars
30	44 ft	110	93.75	203.75	14 cars

Wildlife around the Putnam Trail in Van Cortlandt Park:

Salamanders, chipmunks, many species of turtles, bullfrogs, ducks, birds, rabbits, wild turkey, butterflies, raccoon, skunk, deer, muskrat. Some are active at night/others during the day, or both

¹ S= stopping sight distance in feet, V = speed, mph. f = coefficient of friction (body/bike against the environment). G = grade of path

Braking distance = a person's reaction time + physical braking time. **Average reaction time AASHTO uses** = 2.5 seconds. **Coefficient of friction**

AASHTO uses = .32 SOURCE: "FHWA-HRT-04-103 Characteristics of Emerging Road Users and Their Safety," pp 88-90

<https://www.fhwa.dot.gov/publications/research/safety/04103/04103.pdf>

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