

## PUBLIC COMMENTS FOR IBR PROGRAM COMMUNITY ADVISORY GROUP– NOVEMBER 4, 2021 MEETING

Received between August 31 – November 2, 2021

Bob Ortblad

9/26/21

Active Transportation Community Working Group *(please share with all group members)*

I watched the Sept.23 Zoom meeting. During the two-hour presentation/discussion a high bridge's extremely long +2,000 foot and steep 4% grade or a bridge's frequent bad weather was not addressed.

Any new high bridge will be extremely difficult for both bicyclists and pedestrians. The elderly and mobility limited will not be able to cross a high bridge.

A new bridge will require a +100-foot climb, about the height of a ten-story building.

Please study pages 25 to 27 of the "[Brief Dutch Manual for Bicycle and Pedestrian Bridges](#)"

Besides a strenuous bridge grade, wind and rain will often buffet both bicyclists and pedestrians.

Please study the attached graphic that presents a low grade and weather-protected immersed tube tunnel (ITT) as an alternative to a high bridge.

Unfortunately, the IBR administration has prematurely eliminated an ITT option based on an incorrect assessment of an ITT under the wrong barge channel.

*\* ADA compliant versions of the attachments can be made available upon request*

David Rowe

10/4/21

Attached are some comments to the Citizens Advisory Group.

*\* ADA compliant versions of the attachments can be made available upon request*

Bob Ortblad

10/29/21

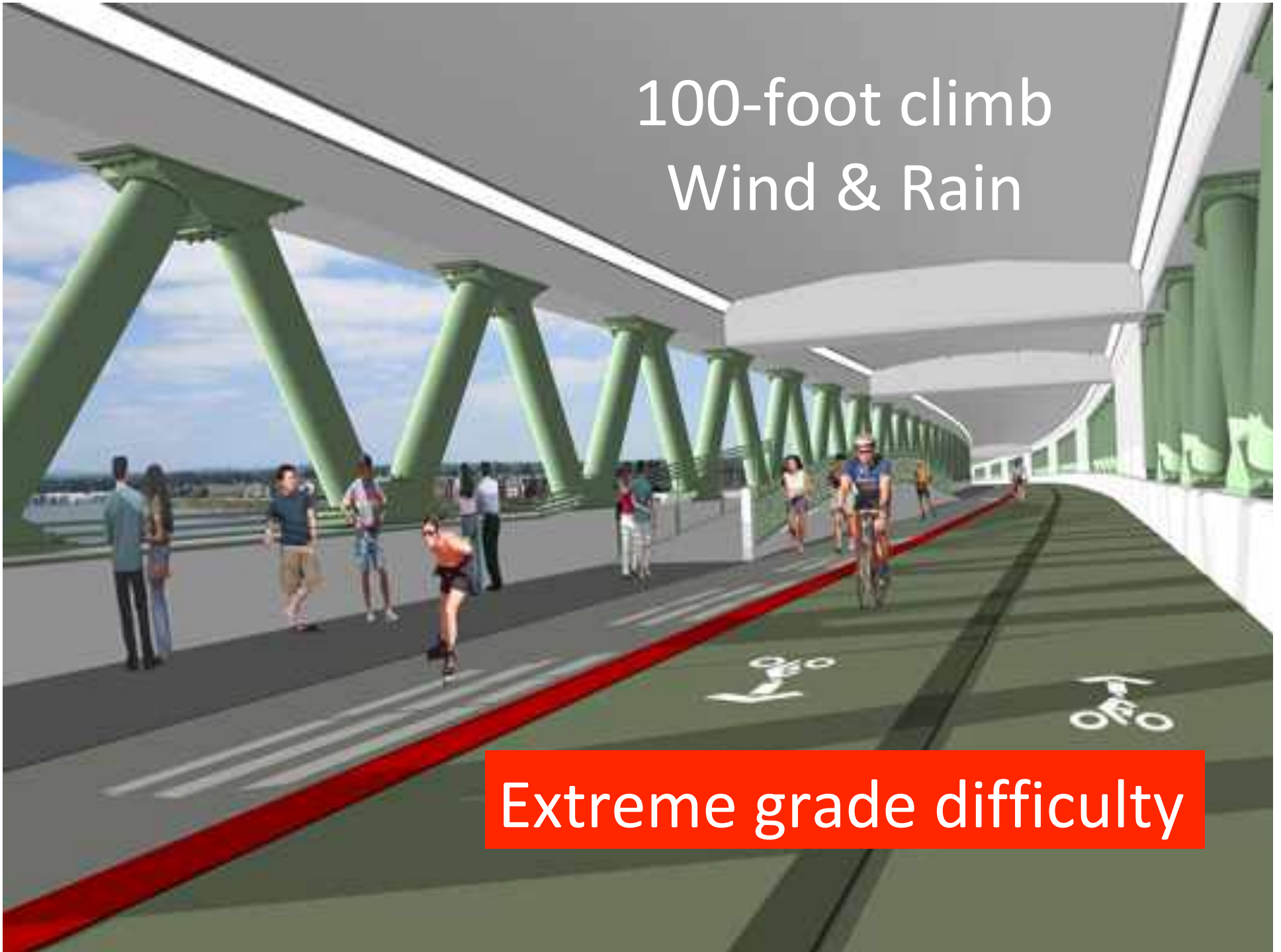
Interstate Bridge Replacement Program

Please accept the attached “CAG Public Comment”

*\* ADA compliant versions of the attachments can be made available upon request.*

# 100-foot climb Wind & Rain

Extreme grade difficulty





Shorter  
Less Grade  
Weather Protection





Reference:

[https://www.youtube.com/watch?v=Yu6GAsKRv\\_g](https://www.youtube.com/watch?v=Yu6GAsKRv_g)

<https://bicycledutch.wordpress.com/2019/03/13/the-scheldt-tunnel-in-antwerp/>

<https://bicycledutch.wordpress.com/2011/03/29/maastunnel-rotterdam/>

# BRIEF DUTCH DESIGN MANUAL FOR BICYCLE AND PEDESTRIAN BRIDGES

by ipv Delft

## 3.1 THE BASIC GUIDELINES

The longer and steeper the ramp, the more difficult cyclists will find it to traverse. In this, the average grade of a slope plays a much larger role than its length. The difficulty of a ramp (Z) can be calculated as the square of the average grade multiplied by its length, or as the square of the height difference divided by its length:

$$Z = (H/L)^2 \times L = H^2/L \text{ [6]}$$

**Table 3.1** Examples of slope height, length and difficulty

H[m]	L[m]	%[%]	Z[m]
2,50	31	8,0%	0,2
5,00	250	2,0%	0,1
5,00	125	4,0%	0,2

H = height difference

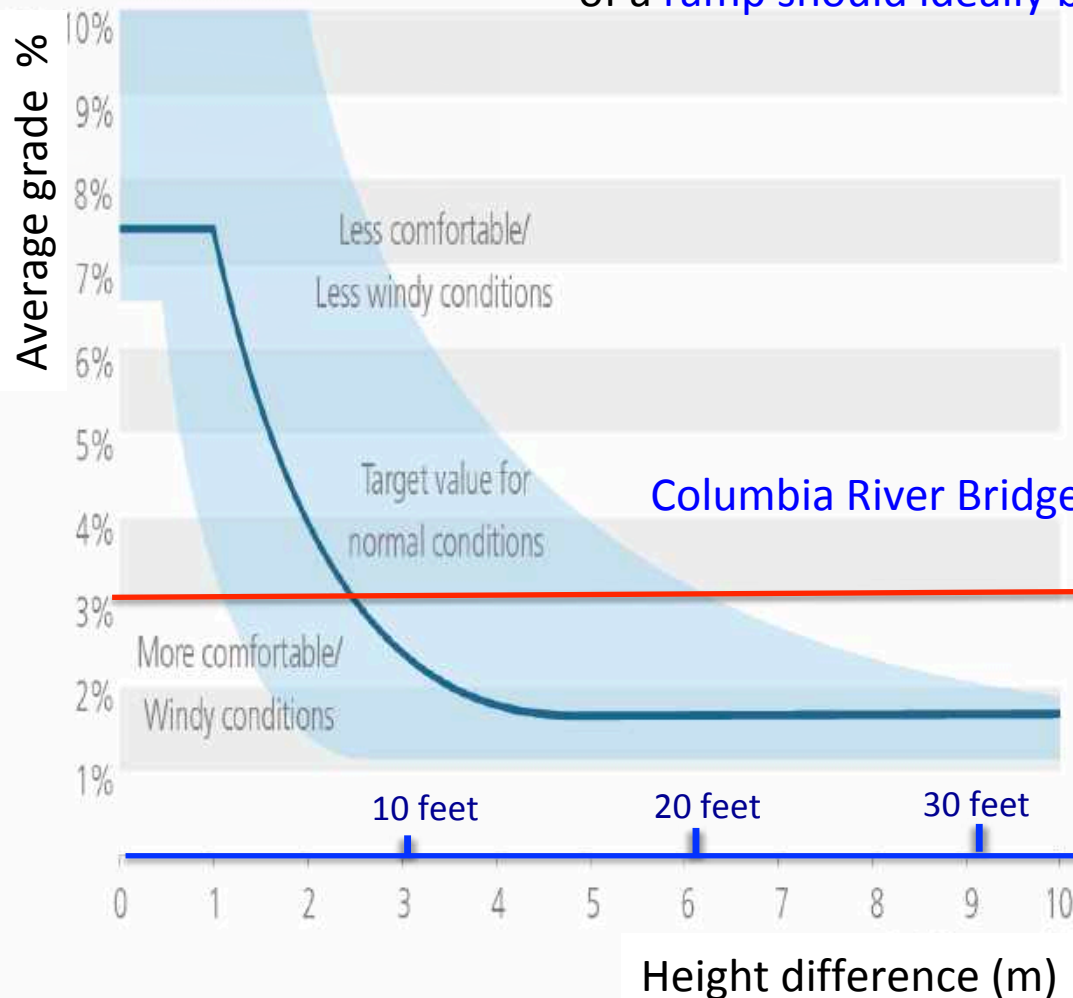
L = length

Z = difficulty



# Ramp Difficulty Z metric

Based on an average middle-aged cyclist under normal circumstances and with average wind conditions, the difficulty of a ramp should ideally be 0.075.



Ideal  
 $Z = 0.075$

Moderate  
 $Z = 0.100 = (5\text{m} \times 5\text{m})/250\text{ m}$

Extreme difficulty\*  
 $Z = 1.50 = (33\text{m} \times 33\text{m})/732\text{ m}^*$









off the chart difficult  
100 feet

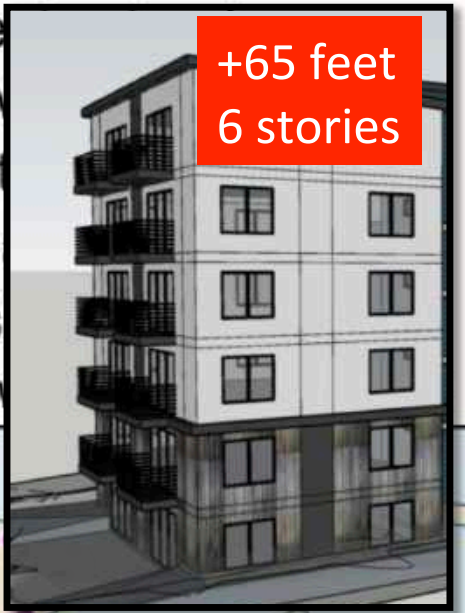
\*33m = 100 feet 732m = 2,400 feet



**AASHTO** 5% - steeper grades allowed according to:  
 5-6% for up to 800 ft  
 7% for up to 400 ft  
 8% for up to 300 ft  
 9% for up to 200 ft

14

-  New or improved multi-use path
  -  Existing multi-use path
  -  New or improved on-street facility\*
  -  Existing on-street facility
  -  Highway improvement
  -  Proposed new highway
  -  Proposed park
  -  Proposed transit
- \*On-street facility = Side



+65 feet  
6 stories

Spiral Climbs  
+65 foot  
1,000 feet +6.5% grade

Total grade length  
1,000+1,400=2,400'  
Total 100' climb

EXISTING BRIDGES

Havden



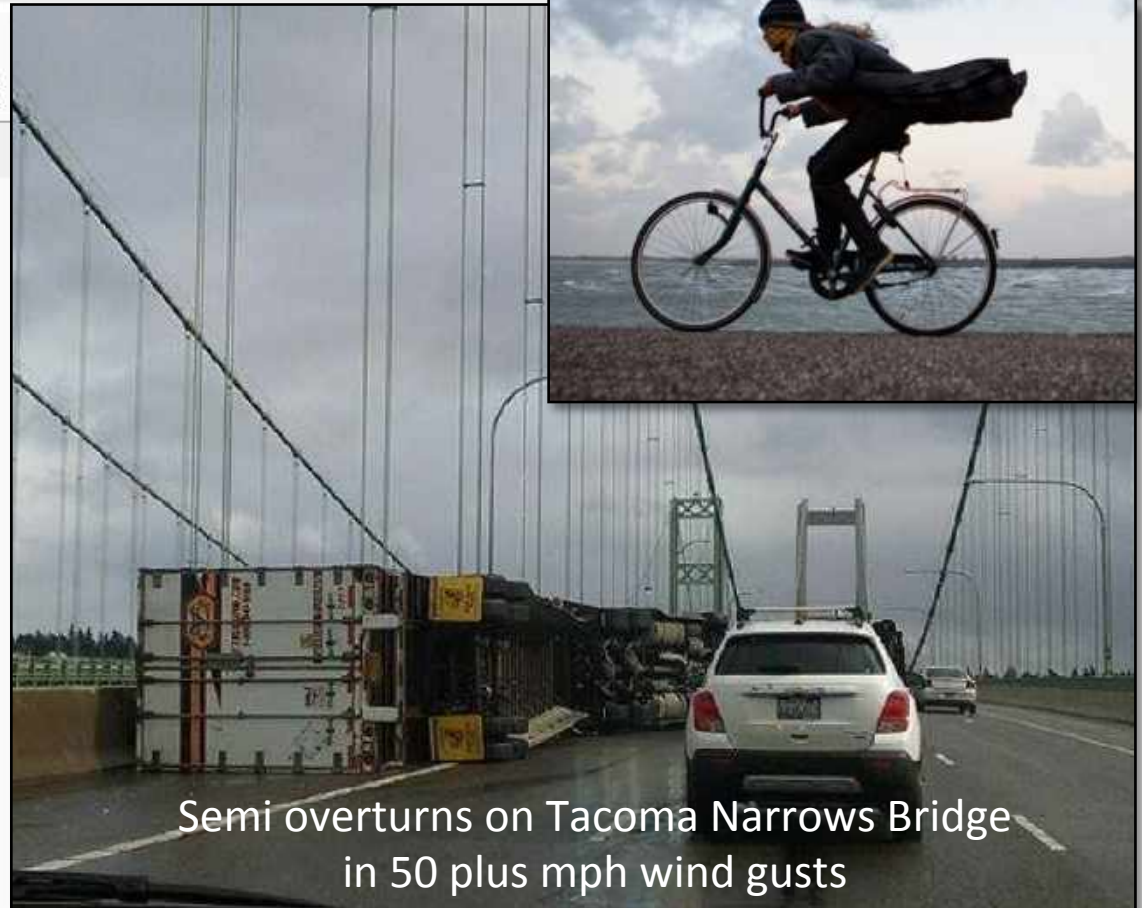
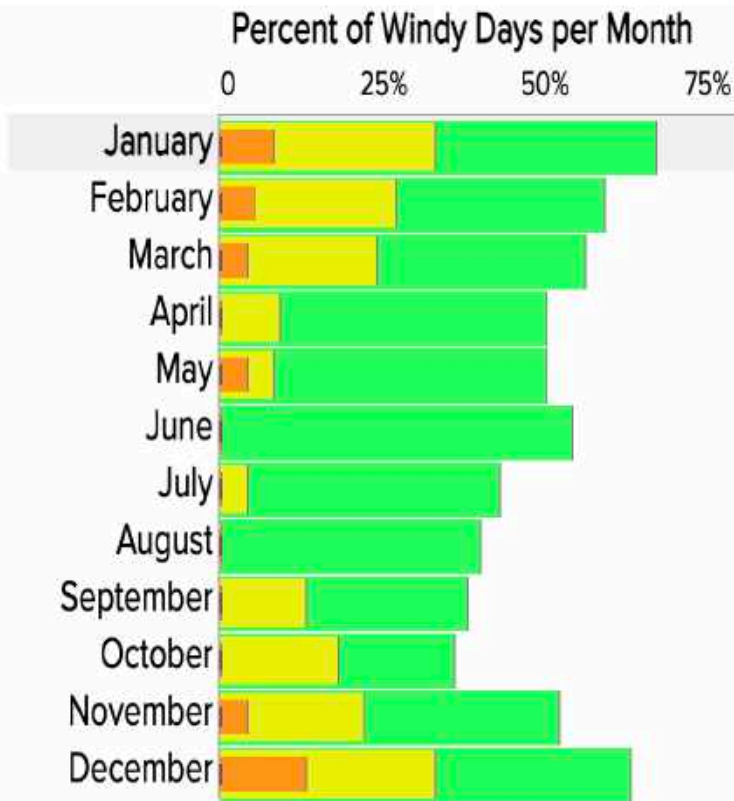
# Wind Statistics

# Wind Vancouver WA

All Time (data from 2007 to 2021) ▾

Average ▾

Daylight ▾



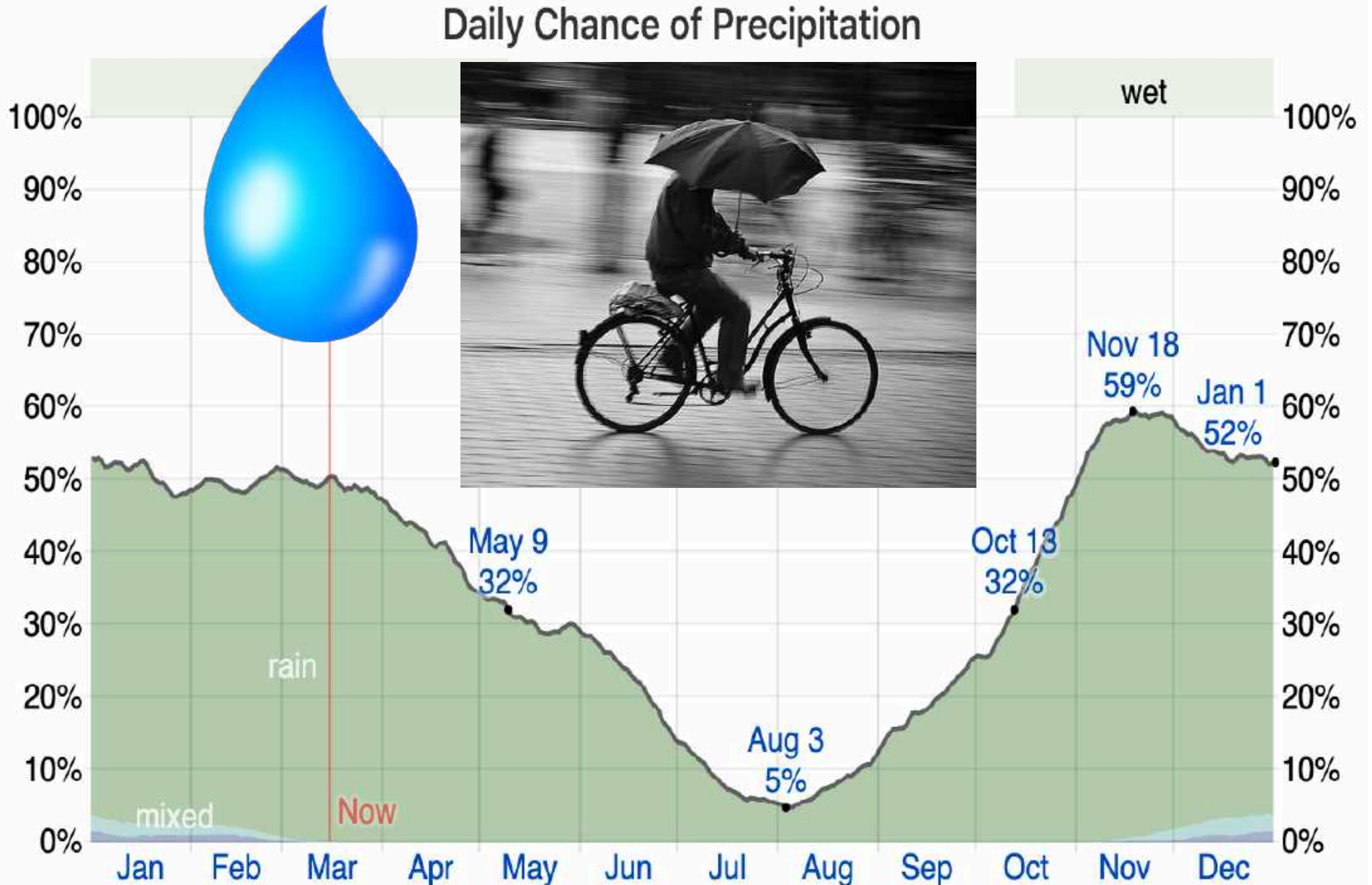
Cycling in the wind can potentially cut your speed in half

20 mph winds can make a temperature of 40° F feel like 30° F

■ > 10 mph   ■ > 15 mph   ■ > 20 mph   ■ > 25 mph   ■ all

# Vancouver WA

## Daily Chance of Precipitation



The CRC and the current IBR Program freeway bridge designs are from the last century. If a 10 or 12 lane bridge is built Clark and Skamania counties will resemble LA and Orange County freeway system in 50 years.

I am disappointed the IBR program is on a path to implement the citizen opposed CRC design that does little to address climate change. From the very beginning the scope of study excluded studying the passenger rail opportunities that are just one mile away from I-5. Travelers now cross the Columbia River from Vancouver to Portland in 15 minutes by rail on the Amtrak Cascades train. Faster than any automobile crossing the Columbia. A tall 12 lane bridge will only bring more cars to Clark County. Compared to a freeway it would take less taxpayer money to develop a private-public partnership with the railroads in expanding the capacity of existing railroads. Passenger trains could travel from Ridgefield-LaCenter, Washougal-Camas areas and Battle Ground just by expanding the current freight rail lines. Electric passenger rail cars are the most greenhouse gas reducing transportation modes available.

A regional rail passenger study by the IBR Program needs to be done to reduce climate change in the I-5 corridor.

Dave Rowe

Commuter to Lake Oswego from Battle Ground, WA



The IBR’s “Stacked alignment option” has at least three major problems.

Bob Ortblad MSCE, MBA

# 1. Derailment

**Stacked Alignment a catastrophic risk**

5,000 tons/truss  
500' long  
40'

150'

800 passengers

250'

Weak Liquefiable Soil

Strong Soil

**Derailment causes:**  
broken rail  
defective wheel  
ice  
heat\*  
wind speed  
earthquake  
sabotage

\*116 degrees  
June 28, 2021

\* The drawings shown do not represent the opinion or work of the IBR program



Uses same trains as DC metro

Metro 7000-Series Safety Problems Could Have Led To 'Catastrophic Event,' Service Limited This Week

<https://dcist.com/story/21/10/18/wmata-metro-7000-series-safety-derailment-catastrophic-delays/>

Over half of Washington, D.C., Metro rail cars pulled after derailment

<https://www.nbcnews.com/news/us-news/over-half-washington-d-c-metro-rail-cars-pulled-after-n1281814>

One DC Metro Train Derailed Three Times In A Day

<https://jalopnik.com/one-dc-metro-train-derailed-three-times-in-a-day-1847922741>



7000-Series

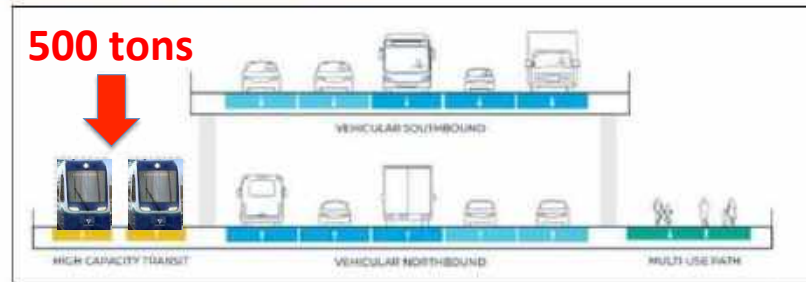


## 2. Asymmetrical loading



250 tons- asymmetrical loading

Figure 4. Stacked alignment option



asymmetric load 500-foot truss span

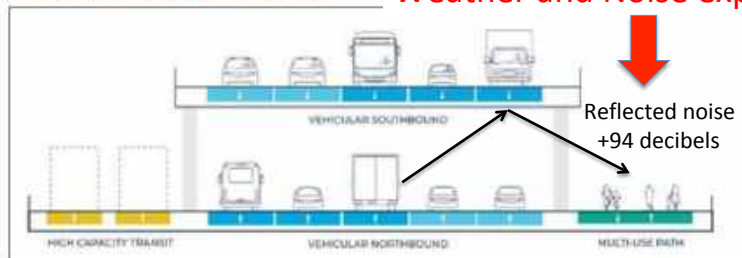
\* The drawings shown do not represent the opinion or work of the IBR program

## 3. Weather and Noise exposure



Figure 4. Stacked alignment option

Weather and Noise exposure



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