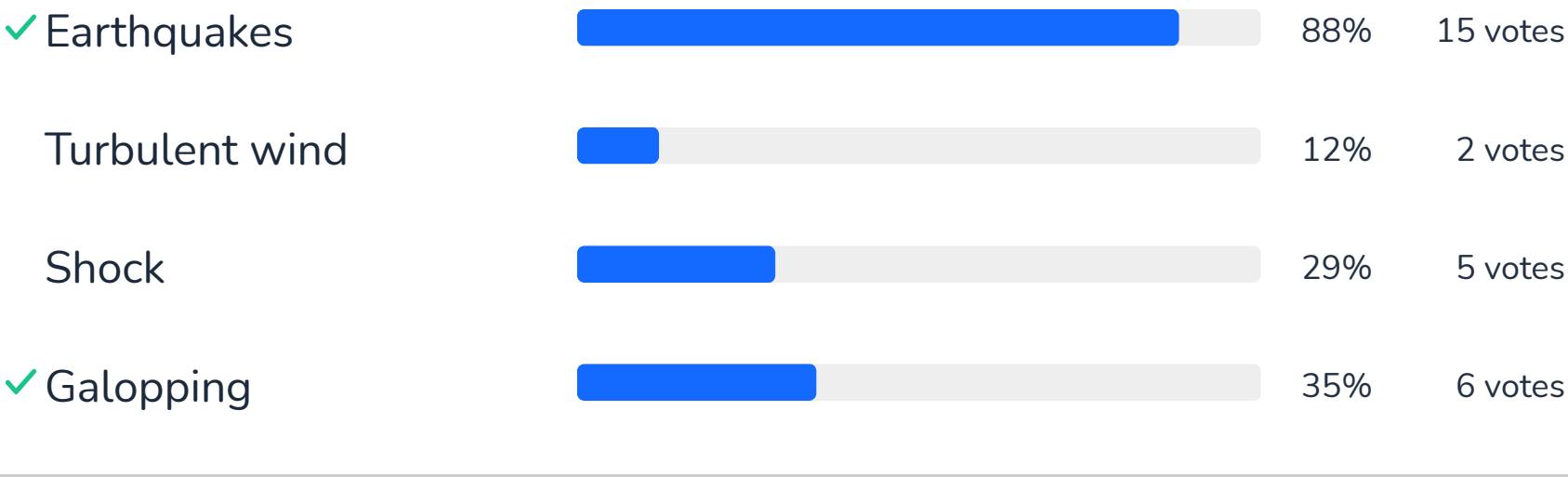
VIB2021: Design and Remedial Measures

Number of participants: 24

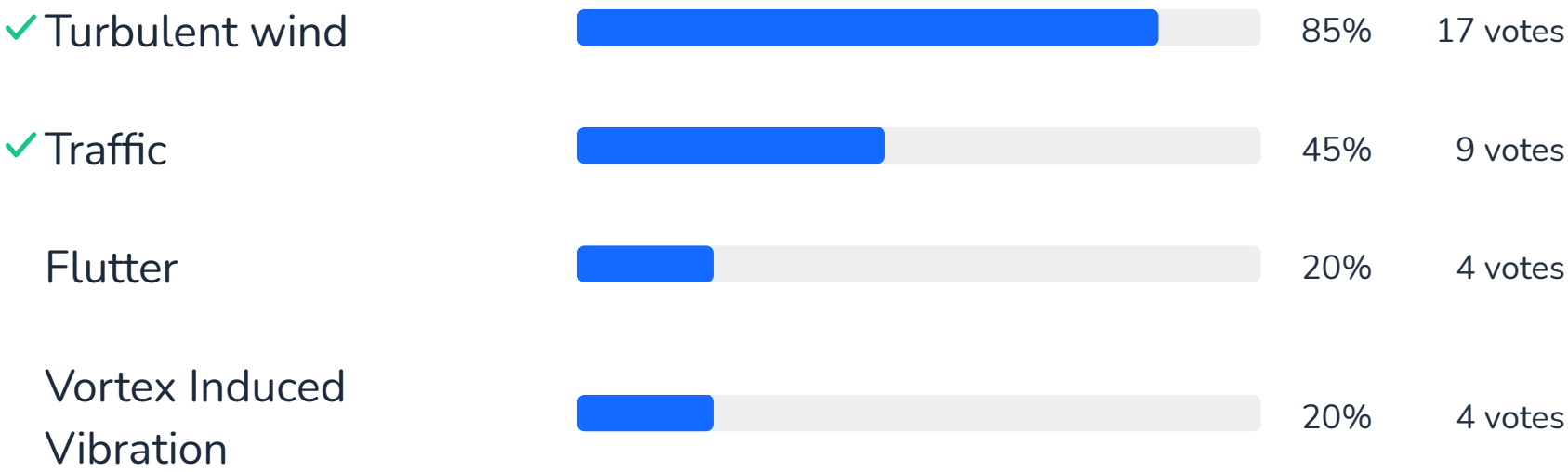
1

The following sources of excitations can be considered as narrow band and generally excite one main mode of a structure



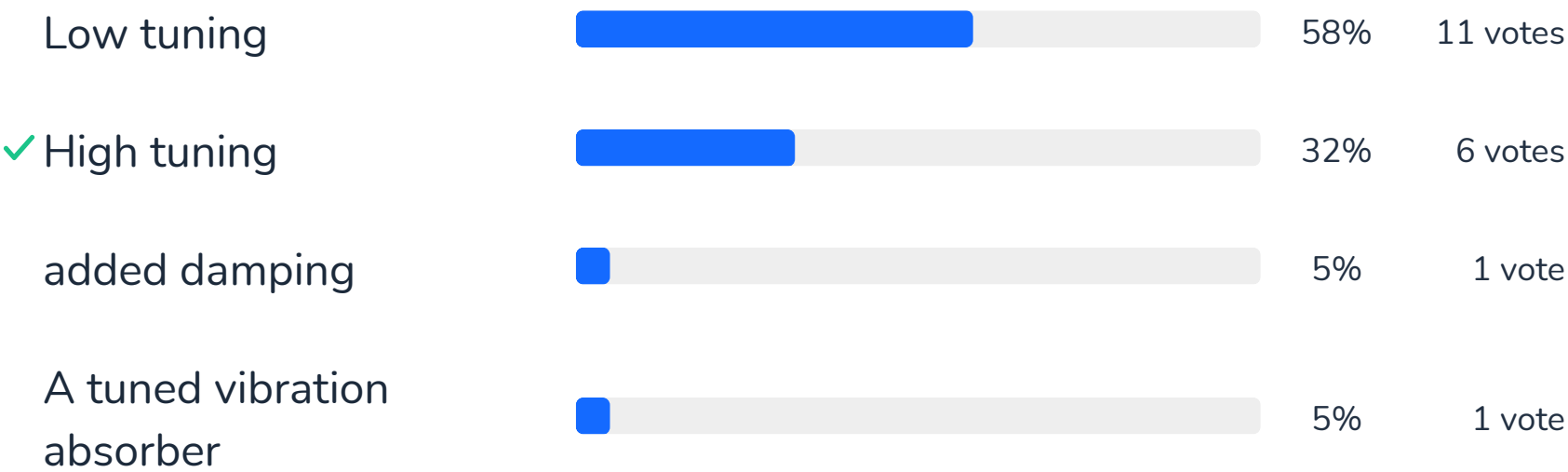
2

The following sources of excitation can be considered as broadband and generally excite several modes of a structure



3

The FRF represented in the figure corresponds to a structure which has been designed with



4

From the point of view of performance, which of these two solutions (high and low tuning) is best, and why ?

Adding damping

Low tuning because the amplitude of the response of the system is lower when excited at higher freq wrt lower

Resonant frequency should not matchthe forcing frequency

Low tuning, since the amplitude of vibration becomes 0 at natural frequency

Low tuning, lower amplitude in the graph

Low tuning because forces are in sismic region

Low tuning, vibration amplitudes after resonance are lower then before

1

High tuning because with low tuning the force can excite higher frequencies

High tuning, because we can change all the natural frequencies

low tuning since the response is lower at higher frequencies

High tuning due to harmonics

Low tuning to avoid subsequent modes

High tuning

5

If high or low-tuning cannot be achieved on a structure, what are the alternatives to lower the level of vibrations ?

Added damping, vibration isolation

All the ones named in the video can be used (?)

Stiffening
Added damping
TMD
Vibration isolation
Reshaping (ico wind induced vibrations)

Damping

added damping, a tuned mass damper, reshaping

TMD, insulation, reshaping, add damping

Damping

Adding damping

Damping

Damping