

## Wind Speed and Direction Methodology

(Last rev. 07/11/2024)

The Parque Natural Metropolitano (PNM) station (Figure 1) is located on the north edge of Panama City. It is attached to a large construction crane.

The original crane, erected in 1995, was dismantled in 2021. A new 70m crane, located approximately 10m away, was put into operation in January of 2022.

Wind speed and direction were measured between 1995 and 2008. using a Campbell Scientific 3-cup anemometer and wind vane located at the 25m station (Figure 3). This measurement was abandoned when it was decided that the data from 25m was an inadequate surrogate for canopy-level values (where they are really needed).

A RM Young Wind Monitor Model 05103 anemometer (Figure 4) was installed to the side of the new crane tower, a few meters below the operator's cabin.

Wind speed and direction are sampled once every 10 seconds. The average, minimum and maximum values are recorded at the end of every 15-minute interval.

Sensor elements are replaced with newly recalibrated sensors every year according to the manufacture's recommendations.

Unfortunately, there are no overlapping data between the old and new locations that could be used to derive a correlation between them.

Figure 1



Location of the Parque Metropolitano Crane stations.

Figure 2



Original PNM crane (left column) and new crane (right)

Figure 3



PNM tower showing met. station approximately at the middle of the tower

Figure 4



RM Young Wind Monitor