**High Performance Sport New Zealand**

**Competition Venue Weather**

Preparing our athletes to perform in all conditions abroad

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Editors:

Date created: March 2020

Last updated: 9/03/2020

# **Purpose and motivating question**

An enduring question at HPSNZ is “*what is the weather going to be like at venue X in month Y*”. Environmental conditions can vary significantly across international venues and this places different demands on physical performance.

For the upcoming Olympic and Paralympic Venue, significant resource has enabled a growing understanding of the heat demands of the Tokyo environment – hence prompting pragmatic heat strategies in training and habits – but what about other competition venues?

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| **Why** | Athletes and coaches can be better prepared for environments in which they compete by being equipped with facts about the weather. |
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| **How** | HPSNZ providers can provide accurate information and relevant recommendations to assist training and operational preparation for upcoming competitions. By leveraging global weather data sources, answers to the above question can be found quickly, consistently, and for any venue and time period. |
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| **What** | Intelligence can create a self-service tool to allow a user to select an international city and time period, for which relevant weather data can be presented. These data will be historical records from weather stations and global weather models. Output data is summarised into digestible and meaningful metrics that a provider can communicate to sports. |

**Initial engagement**

Initially Ben did a dashboard for Tokyo Venues

Data gathering for this was a pain and resource was additive

Ben realized the question was enduring… must be a better way

Chris came across DarkSky API, which NZ Cricket use to record ball-by-ball venue weather

Ben began working on a Shinyapps tool to take inputs and produce outputs

Version 1 complete

Feedback phase – asked innovation/intelligence/PTA “holy trinity”

Demonstration to Cycling and select physiology team members

Version 2 complete

Made available to wider physiology team

Chris approved financial

# **Implementation**

In the initial phase

# **Next steps**

The nature of this solution as a web application allows for continual improvements in software development style. New versions of the tool can be implemented as user demands change, and minor changes can be quickly made (for example, adding new cities to the venue list can be done very quickly).

## Ongoing responsiveness

To value responsiveness and a focus on empowering the end user, Intelligence must have an ongoing commitment to responding to received feedback. Source code has been written in a shareable and readable way and stored in a Github repository for transparency and future access.

## NIWA review

Intelligence engaged with NIWA (National Institute of Water and Atmospheric Research) to assess the underlying quality of methods the weather primer tool uses. HPSNZ can leverage NIWA’s undeniable scientific and meteorological expertise to ensure the quality of data analysis and messaging for our original purpose.