Rio Environmental Report* – FACT SHEET

	Measure	History	Implications
TEMPERATURE	*Day:* 20-35^{o}C *Night:* 15-23^{o}C	Consistent with the past 6 years of data during this time period.	Temperatures ≥ 27^{o}C cause increased physiological strain and can impair performance.
HUMIDITY	*Day*: lower during the day as temperature increases (40-70% RH at 22-32^{o}C). *Night*: humidity high at night (80-100% RH at 14-18^{o}C).	Consistent with the past 6 years of data during this time period.	Humidity levels during the day should not impede athlete's cooling ability.
RAINFALL	*August:* 20 mm *Days:* 4/31	Consistent with the past 6 years of data during this time period.	Predicted to be low during Games time.
WINDSPEED	*Velocity:* 1.7-12.3 km/h *Direction:* variable	Consistent with the past 6 years of data during this time period.	Predicted to be consistent and stable during Games time.
AIR QUALITY	Based on annual smog (PM_{10}) levels, air quality in Rio is slightly higher (64 µg/m^3) than WHO limits (50 µg/m^3). Highest near traffic.	From 2008-2011 air quality has gradually declined (31%) due to increasing population, fuel emissions and construction in urban areas.	Athletes predisposed to respiratory illnesses are at an increased risk of exacerbating respiratory symptoms in areas of high traffic. This will have an impact on performance.
WATER QUALITY (TAP)	The quality of tap water and restaurant ice was <u>extremely</u> poor.	From 2001-2010 some indices of water quality have improved while others have declined due to high rates of urbanisation and low levels of waste water collection/treatment.	Individuals at risk of waterborne-illness and/or wound infection with potential to cause suboptimal performance or result in an inability to compete.
WATER QUALITY (OPEN WATER)	The water quality at fresh water and sea water venues was <u>extremely</u> poor.	As above.	Increased risk of waterborne-illness and wound infection.

*An environmental investigation was conducted in Rio de Janeiro from the 29th of July - 19th of August, 2013.
Weather variables, air quality and water quality were monitored across the four Olympic Zones for the Rio Olympics in 2016.

Rio Environmental Report – Comparison SHEET

	Rio	vs. Auckland	vs. London	vs. Beijing
Heat	20-35°C	↑	↑	→
Humidity	40-70%	↓	↑	↓
Rainfall	20 mm	↓	↓	↓
Wind	2-12 km/h	↓	↓	→
Air Pollution	Poor	↑	↑	↓
Water Pollution	**Extremely Poor**	↑↑	↑↑	↑

	Recommendations
Temperature	▪ *Rio can be both hot <u>and</u> humid and in combination challenges the athletes' performance.* ○ Use a heat acclimatisation (before) and cooling (during) strategy. ○ Carefully consider pre-Olympic location (similar temp/humidity).
Air Quality	▪ Pollution cannot be adapted to and minimising exposure is the only viable strategy. ○ Limit exposure in and around traffic ○ Screen for and manage respiratory conditions (by team physician/physiologist).
Water Quality *(Tap)*	▪ *Currently significant water shortage and tap water contamination* ○ Tap water and restaurant ice should not be consumed in any way. ○ Use bottled water (instead of tap) to clean any scratches or open wounds.
Water Quality *(Open Water)*	▪ *> 50% of sewage is untreated causing the contamination of sea/fresh water* ○ For water sport athletes, avoid swallowing sea/fresh water. ○ Showering and washing one's face (with wet wipes) is advised after training/competing in open water. ○ Cover open wounds with waterproof barrier dressings and avoid subsequent contact with water until healed. ○ Ensure appropriate vaccinations have been received at least 3 months before travelling to Rio.