

WHAT

- Heavier rainfall totals 30% greater
- Summer rain up to 25% higher
- Increase frequency of rainfall - rainy days up 10%
- Increase frequency of thunderstorms
- Higher intensity thunderstorms
- Larger hailstones
- Greater fog incidence
- Greater smog "
- Longer durations of fogs and smogs

URBAN
PRECIPITATION
THUNDERSTORMS
FOGS

WHY

- Heat island effect creates a dome of warm air above cities
- This warm air rises giving low pressure
- This creates convergence as air is drawn in from the surrounding countryside
- This encourages convection and the growth of cumulus and cumulonimbus cloud and more electrical charge
- The convective uplift and greater instability leads to more energetic thunderstorms
- More convective uplift causes larger hailstones to form.
- The orographic effect of tall buildings increases uplift.
- Particulate pollution and aerosols produces more hygroscopic and condensation nuclei that help cloud droplets form.

WHY

- Fogs mostly occur Oct - March when nights are longer and air cools to the dew point temperature
- More particulates = more condensation nuclei
- Heat lost to space to produce a ground inversion and RADIATION fog
- Lower wind speeds in cities all the inversion to form.
- More pollutants give smogs which are thicker and prevent the sun from penetrating. last longer.