

**Presumed Ecology Position  
Stormwater Mixing Zones**

- 1 Stormwater becomes water of the state when it enters natural or modified natural water bodies.
- 2 Ecology, as of 1995, had not established an *approved design storm* for determining stormwater mixing zones. Whether the **design storm** approach is still adhered to is unknown. If adhered to, the recommended design storms/flows would be:
  - a) For the **acute zone**, the **peak flow** generated by the **2-year, 72-hour event** or the **average flow** generated by the **2-year, 2-hour storm**.
  - b) For the **chronic zone**, the **average flow** generated by the **2-year, 72-hour event** (or the **?????? flow** generated by the **3-year, 96-hour storm**).
- 3 Although the 7Q10 (7-day/10-year) receiving water flow has traditionally been considered **critical condition** for continuous discharges, stormwater discharges are not continuous. Other possible critical receiving water conditions could be defined as:
  - a) For the **acute zone**, the **1Q3 flow** (since metal standards are one-hour concentrations not to be exceeded more than once every three years), which can be approximated by interpolating between the 1Q5 and 1Q2 flows.
  - b) For the **chronic zone**, the **5-year mean low flow for the lowest month from August through May**.
- 4 Receiving water background concentration must be considered. The 90<sup>th</sup> percentile concentration based on all available receiving water data should be used when possible. Mixing zones might not be allowed where background concentrations already exceed water quality standards.
- 5 Mixing zone size criteria exceedance may be allowed under certain circumstances. No formal process is currently available for determining whether a mixing zone would meet the prerequisites for a size criteria exceedance. Ecology apparently holds the position that size criteria exceedances can only be allowed for events exceeding the approved design storm. Their apparent position is presumably based solely on WAC 173-201A-100 (10) (c), although paragraph (12) allows size criteria exceedances for other reasons (flow augmentation, public good). Larger zone options being considered include:
  - a) For chronic zones, the full stream width and as far downstream as necessary to ensure complete mixing.
  - b) For acute zones, allow up to the ordinary chronic zone size limit.

1. ANY WAY TO APPROXIMATE 3Y 96H OTHER THAN SIMPLY USING 3Y 72H ?

2. NEED RECEIVING WATER ~~DATA~~ DISCHARGE FOR 2Y 72H, 2Y 2H + 3Y 96H (5Y 72H) STORMS

3. CAN RECEIVING WATER 1Q3 + 5 YR MEAN BE APPROXIMATED ?