

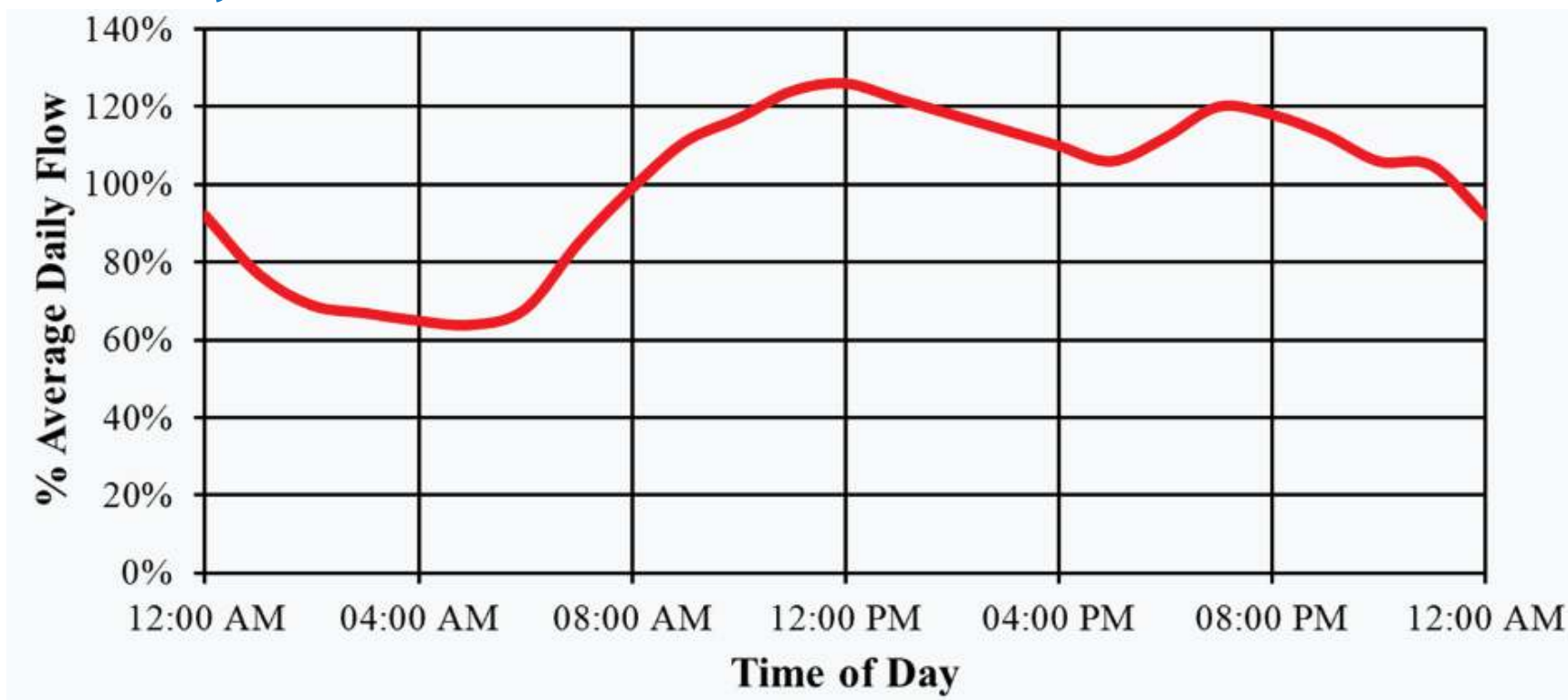
What should the minimum recommended turn down range of a blower & aeration system be?  
What is it based on?

## 8:1

Based on nutrient loading, hydraulic flow, temperature patterns:

2:1 - residential diurnal

## Variable Daily Process Demand:



## 2 : 1 due variable flow & nutrient loading (24h cycle)

*For more information, please contact your regional sales representative or get in touch with us directly:*

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What is it based on?

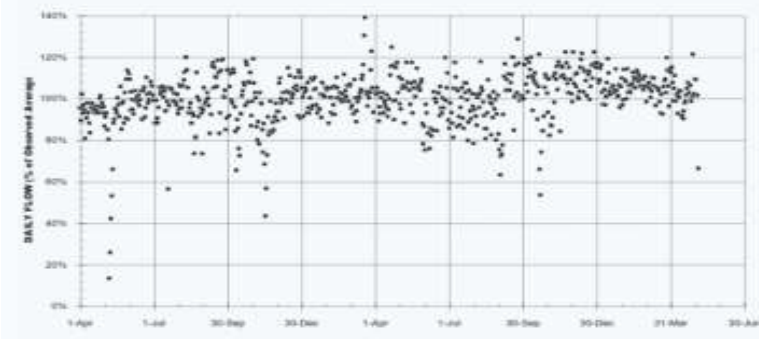
**= 8:1**

Based on nutrient loading, hydraulic flow, temperature patterns:

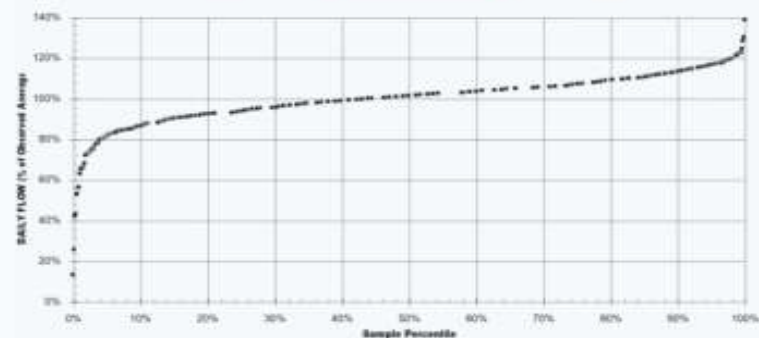
- 2:1 - residential diurnal
- + 4:1 – annual and Yr. 1 to yr. 20+ projected

## Variable Annual Plant Loading:

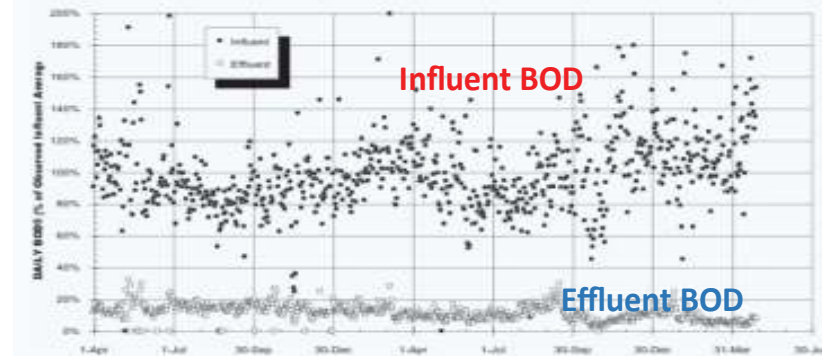
**12 Month of Daily Flow Rate**



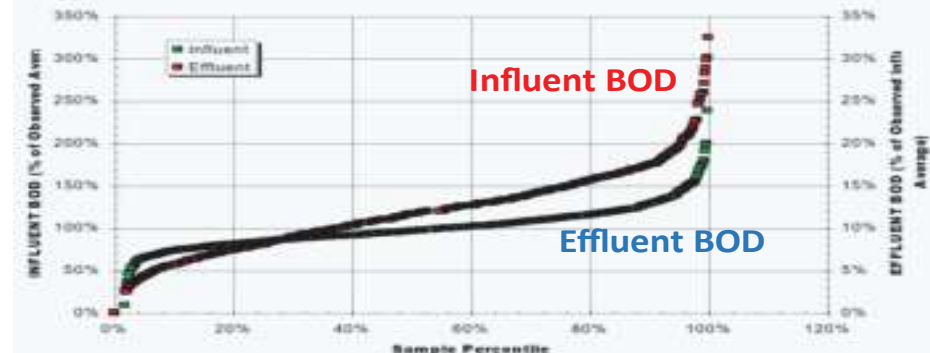
**Flow Probability Plot**



**BOD<sub>5</sub> Variation**



**BOD<sub>5</sub> Probability Plot**



**Variable annual Process Demand up to 4 : 1 from hydraulic flow & BOD strength variations**

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**= 8:1**

Based on nutrient loading, hydraulic flow, temperature patterns:

- 2:1 - residential diurnal
- + 4:1 – annual and Yr. 1 to yr. 20+ projected
- + 2:1 - volatility i.e. extreme weather events; seasonal industries: agriculture, hospitality

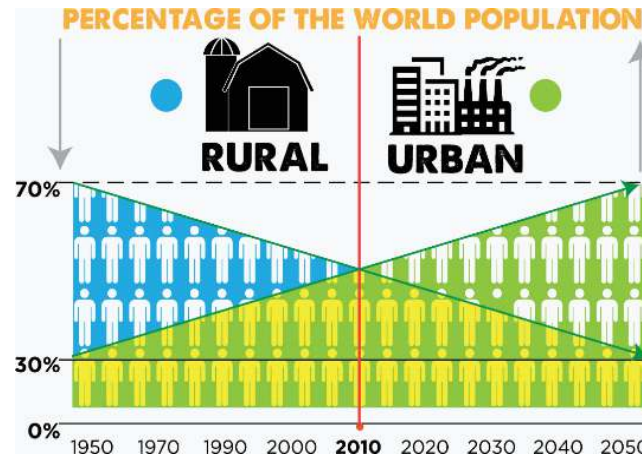
## Volatility

**Projected Growth, Volatility, Unforeseen Changes, & Force Majeure: Modeling for 20 years + project life cycle**

**Economic Cycles,  
Industrial & Structural  
Change**



**Demographic Shifts  
&  
Populations Growth**



**Climate Volatility:  
Higher Frequency of  
Extreme Weather Events**



**Variable Hydraulic flow & organic loading due to volatility – additional turn down required - minimum 2 : 1**

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