



Daley's Water Service Pty Ltd  
Specialising in  
Water & Energy Efficiency

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#### Design system capacity

- Maximum application (mm/24 hour) based on infrastructure only.
- It = Flow/Area.

Example:

With a pump flow of 40 L/s irrigating 30 hectares the design system capacity can be calculated to mm/24 hours.

40 L/s x 60 seconds/minutes x 60 minutes/hours x 24 hours

30 hectares x 10,000m<sup>2</sup>/ hectares

= **11.52 mm/24hours**

#### Managed system capacity

- This is the growers management of the system.
- This allows for the pump utilisation ratio (PUR).

Example:

The grower has an electricity tariff that allows pumping on off peak rate which is 10 hours per night. Grower lifestyle only allows the irrigation to run for 6 days per week.

$$\frac{10 \text{ hours/day}}{24 \text{ hours/day}} \times \frac{6 \text{ days/week}}{7 \text{ days/week}}$$

= **PUR of 35.7%**

- It allows for the system application efficiency (Ea %)

Example:

The grower has a traveling gun irrigator. There is approximately 25% of the irrigation lost to the atmosphere, runoff or deep drainage and is not available to the crop.

100% - 25% = **a Ea of 75%**

Example continued:

#### Managed System Capacity

Design system capacity of 11.52mm/day x PUR 35.7% x Ea 75%

**Managed system capacity = 3.08mm/day**

Note:

When in the design phase the following should be considered.

- Water supply rosters?
- Is pump shared with another system?
- Electricity tariffs?
- Lifestyle?
- Labour restraints?
- Repairs and maintenance downtime?
- Expected application efficiency (Ea)?