Wellhead Contingency Plan
Whitworth Water District #2

## System Characteristics

Whitworth Water District #2 has the advantage of ample well capacity, and a widespread distribution system to mitigate the impacts of the loss of a well. The impacts will likely range from negligible to inconvenient depending on which well is affected and the time of year.

There are four systems with multiple wellsites: System 1, System 2, System 3 & 4, and System 8 & 9. The following is a summary of pumping capacity and maximum daily demand for each of the four systems:

| System | | | |
|---|---|---|---|
| | 1 | 0.72 | |
| | 1-A | 2.16 | |
| | Total | 2.88 | 1.66 |
| | 2-A | 2.3 | |
| | 2-B | 4.3 | |
| | Total | 6.6 | 5.6 |
| | 3 | 0.58 | |
| | 3-A | 1.00 | |
| | 3-B | 4.32 | |
| | Total | 5.90 | 7.3 |
| | 8 | 1.08 | |
| | 8-A | 4.32 | |
| | 8-B | 7.20 | |
| | Total | 12.6 | 7.6 |

## Short Term Action Plan

1. System 1: With the largest source out (2-A), the demand on System 1 can be met utilizing excess capacity from System 2. Total pumping capacity for System 1 & 2 = 7.32 MGD (1-A out) which meets the maximum daily demand of 7.26.

2. System 2: The demand can be met utilizing excess capacity from System 1 and 0.72 MGD booster station from System 3. In addition, System 2 has an intertie with the City of Spokane capable of supplying 2500 gpm. Only 900 gpm will be needed from the intertie if Well 2B was out.

3. System 3 & 4: The demand can be met utilizing excess capacity from System 2 and System 8 & 9 as follows:

| | | |
|---|---|---|
| System 2 | Maximum Day Demand | 5.6 MGD |
| System 3/4 | Maximum Day Demand | 7.3 MGD |
| System 8 & 9 | Maximum Day Demand | 7.6 MGD |
| Total | Maximum Day Demand | 20.5 MGD |
| | | |
| Pumping Capacity of System 2 | | 6.6 MGD |
| Pumping Capacity of System 3 (with pump 3B out) | | 1.58 MGD |
| Pumping Capacity of System 8 & 9 | | 12.6 MGD |
| Total Available Pumping | | 20.78 MGD |

With some conservation and rationing the demand can be met.

4. System 8 & 9: The demand can be met utilizing excess capacity from Systems 1, 2 and 3 & 4 and conservation and rationing as follows:

| | | |
|---|---|---|
| System 1 | Max Day Demand | 1.66 MGD |
| System 2 | Max Day Demand | 5.6 MGD |
| System 3 & 4 | Max Day Demand | 7.3 MGD |
| System 8 & 9 | Max Day Demand | 7.6 MGD |
| Total | Max Day Demand | 22.16 MGD |
| | | |
| Pumping Capacity of System 1 | | 2.88 MGD |
| Pumping Capacity of System 2 | | 6.6 MGD |
| Pumping Capacity of System 3 & 4 | | 5.9 MGD |
| Pumping Capacity of System 8 & 9 (with pump 8B out) | | 5.4 MGD |
| Total available pumping | | 20.78 MGD |
| Intertie with City | | 1.4 MGD |

Long Term Action Plan

1. For Systems 1 & 2 the long term action plan would be the same as the short term action plan.

2. For System 3 the development of a well capable of supplying approximately 4.3 MGD which would be sufficient to meet the demand.

3. For System 8 the District is currently working on developing a well capable of supplying approximately 7.2 MGD which would be sufficient to meet the demand if the pump 8B was out.

Recommendations:

Whitworth Water District needs to increase pumping capacity in two portions of their system. In System 3, a new well and pump station capable of pumping 3000 gpm should be developed. The construction cost is estimated to be $303,300.00.

In System 8, a new well and pump station capable of pumping 5000 gpm should be developed. The construction cost is estimated to be $400,600.00.