Chloramine Conversion Treatment Cost Comparison & Other Concerns

Council Water Committee November 13, 2013
Granular Activated Carbon Cost to Meet Stage 2 D/DBP & Bromide Regulation

- DWSP Water Treatment Design Estimate for Post Membrane GAC contactors (2012)$^1$:  
  - Capital cost = $16.2M  
    - Capital Recovery (30 years @ 6% interest) = $1,162,023/yr  
  - Annual O&M cost = $4.24M  
  - Total Annualized Capital and O&M = $5,406,855  
  - $0.49/1,000 gallons treated

- California Urban Water Agencies Estimate of Annualized Capital and O&M (2012)$^2$:  
  - $0.53/1,000 gallons treated  
  - 30 mgd = $5,803,500/yr

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$^1$ 2008 Estimate of $15M Capital and $4M O&M Inflated at 2%/yr for 3 years  
$^2$ Triennial Public Health Goals 2013 Report
Impact to Water Rates

- Current Water Rate = $1.60/ccf
  - 1 ccf = 748 gallons
- Cost for GAC Treatment:
  - $0.49/1,000 gallons or $0.37/ccf
- New Water Rate = $1.60 + 0.37 = $1.97/ccf
  - 23% Rate Increase!
- Current Chloramine Conversion Total Annual Capital and O&M is included in current rates
Opposition to Chloramine Use

- Recent communications state chloramines will leach lead and copper from distribution pipes and cause corrosion problems
  - Opponents cite the work of Marc Edwards, a professor of civil engineering at Virginia Tech
  - Reference materials provided to dispel this perception
- Argument to avoid chloramines not scientifically-based, rather political pressure
  - Tulsa, Oklahoma
  - Charlottesville, Virginia
In Summary

- Chlorine alone as a residual disinfectant can no longer be used to control microbial growth in the water distribution system
- GAC is cost prohibitive to implement
- Lead leaching from pipes after conversion to chloramines is no more likely than leaching from chlorine use, provided pH is controlled
  - No history of lead and copper problems in our water system