

Water work group – 5-21-08 mtg

30 year vision

100 gallons per person per day (or some number lower than the current average of about 200 gallons per person per day) 80,000 gal per year

Increase in waste water effluent reuse

No net increase in water use over current levels

Actually have a flowing Spokane River that will support fish and other uses or even restore the river to a healthier state

Reduction in carbon emissions that come from water system use, maintenance, etc.

See reclaimed waste water as a benefit instead of a liability

Ensure that the public recognizes the water resources of this region as a finite resource that is not to be squandered and wasted

Plan with natural systems as a design criteria (low impact development standards and green building) – natural drainage, wetlands, trees, etc

More pervious surfaces for aquifer recharge – handling storm water on-site

Problems:

- Local cultural aesthetic sets high value on green lawns all during the summer – no conservation ethic locally (still on course from habits of last 100 years)
 - Not enough good examples of water conserving alternatives
 - City keeps golf courses, parks, athletic fields all very green and watered all summer
 - Chemicals for lawn care make it hard to reuse the water, and chemicals likely migrate into water system
- Lack of pervious (impermeable) surfaces
 - Loss of recharge to the aquifer (impact)
 - Increased storm water runoff (impact)
 - Thermal pollution (impact)
 - Increased infrastructure requirements (impact)
 - Warmer water runoff (vulnerability)
 - Increased runoff rate/flooding/erosion (vulnerability)
 - Financial concerns (vulnerability)
- Costly to run storm water through wastewater treatment processes
 - Higher rates (impact)
 - High energy usage (impact)
 - High infrastructure costs and maintenance increase costs(impact)
 - Increased costs of treatment as system grows (impact)
 - Increase in possibility and severity of sewer overflow events (vulnerability)
 - Longer maintenance schedule
 - Compliance issues with discharge permits
- Water rates are too low
 - People use too much water
 - More power to get the water where it is used
 - No incentive to reduce usage

- Infrastructure needs
- Is it legal to raise water rates to a specific level? What about low SES citizens?
 - Very complex issue that must be balanced
- Funding must be specifically balanced to ensure a “profit” isn’t made
- Water rate doesn’t reflect elevation of delivery site, amount of pumping needed to get it there (re cost of energy to pump and GHG related to that energy)
 - As people move onto the sides of the valley, cost to pump water to those users will increase
 - Water doesn’t cost as much as it should cost. Final delivery point.
 - Vertical sprawl up the hillside
 - Rate issues
- City’s biggest water users are City facilities (buildings, pools) and properties – need to conserve water within City government
 - Empty pools and ponds
 - Irrigation issues with parks
 - Health and safety concerns with using reclaimed water
 - Previous comments included
 - If water becomes too expensive, then dry pools, dry ponds, unusable parks, fire hazards
 - High treatment of water for reuse could increase the amount of GHG emissions
 - Cost to clean water for reuse, and how much it would cost (money, energy and GHG) to move that water to a use location. Is waste water expensive to use?
 - Energy cost to do a lot of water processes could be too expensive or not available in the future
- City waters lawns during the heat of the day
- Much of irrigation system on City property (parks) is NOT underground (hoses)
- City’s water sold outside city limits – to support sprawl?
 - Away from city center or outside city limits could limit availability of water
 - Also cost to get that water out to those locations
 - Can you turn off a city’s tap if you no longer have water rights available
 - Specifically Airway Heights, West Plains, FAFB
 - GHG implications for agreements. Make that city address conservation or GHG emissions in that location
 - Outside entities will act in their own best interests and could have an impact on Spokane.
- Lack of awareness that aquifer’s not an infinite supply of water
- River and aquifer cross 2 states – political issues re management (401 certification process), need to set an appropriate in-stream flow (to influence extent of development in Idaho)
- People not aware enough of different water consumption in winter vs. summer
- Spokane is one of the highest per capita water consumption cities in the West
- Old technology limits City’s ability to tell consumers how much water they’re using on a regular basis
- Old technology requires City staff to drive around a lot to read lots of meters, costs a lot to replace meters and technology not proven re what to move toward

- Most of City water meters read by walking routes in person, read on a bi-monthly basis – need to get technology in place to allow drive-by metering so can read from a passing vehicle (work with Itron on this?)
 - Some meters do send automatic signals now
 - Large service area that requires many vehicles for upkeep on system resources and infrastructure.
- Do charges for water and wastewater support excessive irrigation? (not charged for wastewater “deduct” from amount of water used because assumed it drains into ground)
- Do water rates subsidize NPS pollution? Hard to identify, control and clean up diffused non-point sources
 - How does ag runoff in Hangman Creek area impact water quality? Fertilizers, pesticides
 - Sediment washed into river from developments that de-nude the hillsides – don’t take erosion control seriously enough here on construction sites
- How will future population growth in Spokane accelerate development, water use?
- How much future population growth can wastewater capacity & interceptors handle?
- People don’t know if it’s legal to capture rainwater, not sure what they’re allowed to do to reuse grey water
 - How much treatment of grey water is needed before allowed to reuse it?
 - Is that a good use of energy to treat all that gray water? (King Co. doesn’t think so) – how to balance cost of energy against benefit of conserving water? (example of peak oil issues vs. climate adaptation issues if we have lower stream flow in future)
 - How does cost drive choice of whether to apply gray water to land or run it back into the river?
- City can’t compete with private sector to help customers identify water leaks
- Wastewater treatment people don’t like garbage disposals
- Deicers used in winter and spring road cleaning practices have impact on runoff water quality
- Not enough emphasis on maintaining and replacing mature urban forest – trees provide important functions related to water management
- River health: red-banded trout declining (indicator of water quality, temperature, flow)
 - Flow related to shutting down water in the summer, summer water flows come from Lake Coeur d’Alene so add to aquifer and result in cooling the flow (because of river-aquifer interface) -- need more study to understand this better?
 - Temperature related to amount and quality of shoreline vegetation
- Ecosystem service benefits are undervalued
- Lack of site assessment in pre-project planning: soils, vegetation, hydrology, sun orientation – all related to water quality
- Need to get U.W.’s Climate Impact Group to do finer grain assessment of Spokane region (re climate adaptation)
- Some changes have to be made at the state level re: how water rights are issued, WA-ID sharing of aquifer
 - Potential for down stream water rights to claim they lost water from your reclamation efforts vs. statute that says if you go to the trouble to clean it up, it’s yours

- Issues related to pharmaceuticals, pcb's etc. in wastewater need state regulation, need standards for these types of chemicals
- Emerging health & water quality issues related to products put back into waste stream and river (chemicals, pharmaceuticals, endocrine disrupters, pcb's, personal care products, hospital waste streams – show up in fish mutations) – ways to screen for these? Some studies coming but no good answers yet
 - Energy used and costs incurred in addressing? More cost effective to address at source or at treatment plant? City does do industry level pre-treatment at large users or where EPA says a consumer needs to be regulated
- City's pilot projects to reuse treated wastewater: using energy due to trucking water to golf courses
- Operational problems associated with trying to reuse methane at wastewater treatment plant
- Air quality (odors) drift from wastewater treatment plant
- Energy efficient pumps at Water Dept. were water cooled – being traded out for pumps that require A/C (energy use)
- DOH has reservations about tapping into heat from water mains as an thermal source (due to concerns about backflow prevention)
- Losing the energy value of water where need to reduce pressure at some pumps
- Issues with fire flow, increased frequency in possible fires if water prices become too high because people no longer water their lawns. Also a potential problem with a move to xeriscaping.

Solutions:

- Don't need all parts of parks to be green all summer
- All public facilities should demonstrate water conservation
- Water rate structure should charge a lot more for excessive use
- Consider cost of producing/delivering water vs. rate of water use
- Reward people who use low level of water
- Change water rate structure to reflect which pressure zone a customer is in
- Promote to City water customers how they can get on website to see how much water they used last year (show past and current consumption in gallons instead of units on City utility bills)
- Need disincentive to use garbage disposals
- Need to be allowed to put some compostable food waste into yard waste bins
- City has starting reuse pilot projects (using treated wastewater) on 2 golf courses + 2 yr. pilot study looking at 5 different filtration technologies (re phosphorous and suspended solids)
- Steam reduction turbines at wastewater treatment plant (coming in next 4 years)
- Infill for industry and citizenship within the current Spokane boundaries.
- Saving water (through hydropower use reduction) helps in water resource protection.
- Better coordination between water, sewer system and parks for water conservation throughout the city. Dedicated program? Water stewardship as a stand alone program.
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Impacts and Vulnerabilities

- **Energy intensive efforts to handle larger system**
- **Spokane River and SVRPA could be damaged with increased usage**
- **Distribution of water / sewer will become an issue as Spokane expands past its current boundary. Increases in pumping for both sewer systems and for water systems. Increased energy requirements for both of these.**
- **Does wholesaling water and providing sewer services for the entire region cause a negative impact to the city of Spokane? Direct service vs. wholesale from the city of Spokane.**
- **Urban sprawl could become an increasingly important issue when looking at sustainability. Requires more energy to pump water there.**
- **What happens when cities that Spokane whole sales water to grow past the ability of Spokane to provide that water?**
- **Double hit on water resources when increased power is needed. IE, hydropower in the region would increase demands on water resources as need to pump water/sewage increases.**
- **Reduction in available water during high demand periods because of shifting water regime.**
- **Flooding/runoff**
- **Areas where septic systems/drywells will not be useable could increase with increased flooding issues**
- **Lack of long term planning in infrastructure – water and wastewater (only have 10 years plans currently)**
- **No coordinated planning (long term) between water, wastewater, parks etc.**
- **Many area of parks that do not have the infrastructure to do automated watering during the most beneficial times.**
- **Loss of revenue from people being unable to pay for water and sewer services as energy, water and sewer prices increase.**

Data:

- **7% water leakage rate now (low!)**
- **Somewhat stable water usage in Spokane even though growth has occurred. Possibly from leakage reductions.**

Partnership opportunities:

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Related to other topic areas:

- **Need to be able to recycle other materials**

Work group leader(s):

- Brian Walker
- Doug Busko

Work group meetings:

- Wednesdays, 1st & 3rd of each month until the end of August, 5:30-7:30 p.m., City Hall conference room 2B (on 2nd floor)
 - Next meeting: May 21st