

City of Joliet  
Alternative Water Source Study, Phase II  
**Questions & Answers – Part 3**  
12-20-19

The following are questions (in black) received at the Environmental Commission Meeting held on December 10, 2019. Answers (in blue) are provided by the project team.

1. Are the costs for the distribution system modifications included in the cost estimates for each of the alternatives?

*Yes, the costs presented for each alternative includes the construction costs associated with distribution system modifications. The distribution system modification improvements were developed using the City's hydraulic model to determine the pipe network required to provide the same level of pressure and fire protection with the single point supply versus the current multiple point supply with existing wells. Distribution system modifications were identified for each of the two receiving stations that were identified – Ridge Road Standpipe on the west side of the City and Fairmont & Garvin Pump Station on the east side of the City. The costs for the distribution system modifications are significant – over \$100 million (including contingencies).*

*The construction cost estimates include ALL improvements required for the implementation of the new water source.*

2. Are the costs for the well collector network improvements in the cost estimates for each of the alternatives?

*The costs for the well collector network improvements have only been included in the cost estimates for the alternatives that have been noted as having an online well water back-up supply. An online well water back-up supply has been assumed for the Illinois River alternatives and the Kankakee River – Towpath Lane alternative.*

3. Do any other Cities/Villages use the Illinois River as a potable raw water source upstream of Peoria (Illinois American)?

*No. Illinois American Peoria is currently the only community which uses the Illinois River as a potable raw water source. Note that this is not unusual. Only two communities use the Fox River as a potable raw water source and only two communities currently use the Kankakee River as a potable raw water source. Historically, the groundwater aquifers have been a more cost effective potable raw water source, especially for smaller communities, versus having a river water source.*

4. What is the true timeline for depletion of the aquifer? 2030? 2040? What does that mean?

*Per groundwater modeling completed as part of the Phase I Study (see [www.rethinkwaterjoliet.org/reports](http://www.rethinkwaterjoliet.org/reports) for a copy of the Phase I Study Report), the Illinois State Water Survey determined that the City's existing wells would be depleted to the point of no longer being able to meet the City's Maximum Day Demand by 2030.*

5. Why is the City considering whether an alternative could or could not be used as a regional solution when making their decision on new water source? The City should have regional partners onboard before deciding on a new water source.

*A regional solution is anticipated to reduce costs for Joliet customers due to economies of scale and more customers to distribute costs. Therefore, a regional solution would be beneficial to Joliet residents. Feedback received from potential regional partners during the Phase II Study indicated most did not want to seriously consider partnering until they knew which new water source Joliet would be selected (refer to Appendix C of the Phase II Report for more information). Once a new water source is selected, the City will engage in more formal discussions with potential regional partners in 2020.*

6. The previous Q&A Part 1 looked at utilizing two existing quarries in the Joliet area (one near Rowell Avenue & I-80 and one near S. Chicago St. and Mills Rd.). Why was the Vulcan quarry near Laraway Road not considered – it is larger and deeper which would result in significantly more storage?

*The Vulcan quarry is still in operation and with no indication of when it might halt operations. Therefore, it cannot be considered given the City needs to have a new water source online by 2030.*

*The issue remains that between the Phase I and Phase II Study, IDNR changed the low flow condition for the Kankakee River to be a minimum of 600 cfs, which is a higher river level than what was previously assumed. If the City were to obtain a withdrawal permit for the Kankakee River, the City would not be able to withdraw water from the Kankakee River whenever the water level goes below 600 cfs. With this new low flow condition, the resulting annual average number of low flow days increased to 5 days (using the last 50 years of records) and the annual maximum number of low flow days increased to 84 days (using the last 50 years of records). (Note that if we use the last 102 years of records, the annual average number of low flow days is 14 days and the annual maximum number of low flow days is 120 days.) The number of low flow days increases when more communities use the Kankakee River. Trying to cobble together different back-up supplies (existing wells and large off river reservoirs) to achieve sustainability of the Kankakee River is not recommended because it could limit the City's growth past 2050 and it would limit the ability to be a regional solution.*

7. Why can't the City tap into neighboring communities (like New Lenox) that have Lake Michigan Water?

*During the Phase I Study, Lake Michigan Water systems closer to the City of Joliet such as Oak Lawn that provides water to New Lenox and Illinois American that provides water to Plainfield were evaluated to determine if they have enough excess capacity to supply the projected water demands for the City of Joliet (30 MGD). None of the nearby Lake Michigan Water Systems had sufficient capacity so the City had to focus on locations where sufficient capacity was available, which are all unfortunately a substantially longer distance from Joliet.*

8. Was a pilot test performed on the Illinois River?

*No, a pilot test was not performed. If the Illinois River option was selected, a 12-month pilot test would be required for any new water source (including a new Lake Michigan water source). This would be performed in conjunction with the corrosion control study required by IEPA.*

9. Why does the slide regarding the dropping aquifer levels only show three wells (Wells 15, 17 & 28)?

*These wells have been shown because they are at the highest risk due to their well construction, specific capacity (gpm/foot) and proximity to the Sandwich Fault. After these wells are dewatered, the other wells in the City follow shortly behind in becoming dewatered as a result of the higher demand on these wells through redistribution of demand off of the depleted wells.*

10. Did the Study consider the Illinois River sampling conducted by the USGS and compare it to the sampling performed in Phase II?

*Information on the sampling results from the USGS sampling performed on the Illinois River was originally used in the discussion with IEPA at the end of Phase I/beginning of Phase II. However, IEPA indicated that the USGS sampling was not comprehensive enough so it could not be used for the determination of the Illinois River being a viable raw water source. After the three months of sampling was completed by the City, sample results from the Illinois River were compared with the USGS sample results. The comparison was focused on water quality parameters that included ammonia, nitrate, nitrite and phosphorous. It was determined that these parameters compared well between the USGS sampling and the sampling performed by the City. Information on the sampling performed by the City can be found in Appendix G of the Phase II Report.*

11. Has the disposal of solids from the Illinois River been included in the cost of the Illinois River alternatives?

*As noted in Appendix I of the Phase II Report, it has been assumed that the river water intake would be designed to minimize sediment from entering the raw water pump station and transmission main. It has also been assumed that the raw water transmission main would be sized to have a minimum velocity of 2 feet per second at minimum flows to prevent sediment from settling in the transmission main (to minimize maintenance and cleanout of the transmission main). Therefore, sediment that does enter the transmission main would be transported to the water treatment plant where it would settle out in the treatment process. Disposal of sludge byproduct from the water treatment plant has been included in the O&M costs for the water treatment plant.*

12. What is the blended ratio of Illinois River water to well water assumed?

*In order to have an online back-up supply, at least one well will need to be running at all times in order to maintain pressure in the new well collector network. Based on groundwater modeling performed by the Illinois State Water Supply during the Phase I Study, it was determined that the existing wells could sustain a maximum online continuous non-emergency supply of 10% under the 30 MGD demand scenario. The resulting raw water blend would be 90% (or more) Illinois River water and 10% (or less) well water. A higher percentage of well water would not be able to*

*be supported continuously and would result in depletion of the aquifer to the point of not having the existing wells as a back-up supply.*

13. In the IEPA letter of November 6, 2019, IEPA indicated that some parameters were not sampled and would need to be sampled and that they draw no conclusions from the sampling performed. The report indicated that IEPA determined that the Illinois River could be used as a raw water source. Which is true?

*In addition to the letter received on November 6, 2019, email correspondence was provided by IEPA which indicated that they did not see any red flags in the sample data which would prevent the Illinois River from being utilized as a raw water source and that the water quality sampling data did not suggest that advanced treatment would be required if the City were to utilize the Illinois River as a raw water source. As noted in Appendix G of the Phase II Report, if selected as a water source, additional river water sampling would need to be performed to have at least 12 months of sampling data for IEPA to review and provide a definitive conclusion. Since this has not been completed, it is a risk associated with this alternative.*

**This is the third and final Q&A. If you have any further questions that you would like to have answered, email [rethinkwater@joliet.gov](mailto:rethinkwater@joliet.gov). The City will determine if there are enough questions for an additional Q&A document.**