REFERENCES TO CHAMPAIGN COUNTY IN RWSP COMMITTEE MAY 15, 2009, DRAFT REPORT

The draft final report ***A Plan to Improve the Planning and Management of Water Supplies in East-Central Illinois*** is open for public comment at www.rwspc.org . (A hyperlink at the website enables one to record comments upon it by email.) The listing below contains all explicit references to Champaign County and some selected information bearing upon the county s water resources but does not comprehend the range of topics in the near-90- page report. The report s Table of Contents, pages i iv, is an overview of the context of this list.

Dwain Berggren, Environmental Representative of the Regional Water Supply Planning Committee contact: bwysocki@uiuc.edu .

[Chapter] 2. Findings

[page 10] lines 879 - 881: Limitations on surface water supplies in eastern half of region.

[10] 899 - 04: Champaign County (CC) well provides example illustrating decline in head, drawdown, etc.

[10] 906 - 12: Wide cone of depression emanating in CC extends into adjacent counties.

[10] 914 - 31: Varying rates of recharge in region. [Mahomet Aquifer in County confined by overlying layers of relatively impermeable, compact glacial mud (till).] Aquifer directly recharged by leakage from Middle Fork River in the NE corner of CC.

[12] 964 - 68: Differences in drawdowns in CC and Havana lowlands result from different geology.

[15] 1115 - 76: Computer modeling of groundwater flow simulates effects of water withdrawals on Mahomet Aquifer in county for three demand scenarios. Results of Wittman simulations for Illinois American Water. Present and possible heads above and below Mahomet Aquifer. [See discussion of management of head to avoid effects of dewatering, Sustainable Water Supplies Chapter 3.]

[17] 1177 - 80: Aquifer withdrawals generally have reduced groundwater flow to streams. Parts of shallow aquifers in CC are dewatered.

[17] 1182 - 87: CC withdrawals reverse groundwater flow in Mahomet Aquifer from predevelopment 10mgd southerly outflow to 3 mgd northerly inflow from Piatt. [Pre-development (natural) groundwater flow through CC followed the flow direction of the pre-glacial river down the gradient of the old bedrock valley south and westward from Indiana to the Illinois River Valley.] Expanding cone of depression from Champaign well field.

[17] 1189 - 93: Simulations show greatest effects of summer withdrawals is in confined aquifer.

[18] 1233 - 44: Models indicate that groundwate development may have reduced baseflow discharge to upper Sangamon River about 35 to 40 percent since 1930. Streams dry out in drought periods in some demand scenarios.

[19] 1246 - 80: Discussion of various scenarios. Probability of extreme climate scenarios unknown and changes in drawdown as result of such changes not simulated for this report. [More resources for studies needed.]

[19] 1283 - 1322: Future Water Availability good summary section

[27-8] 1621 - 1753: Summary of Key Findings Very useful, concise overview and restatement of Chapter 2. Note particularly 1648 - 57, 1680 - 89, 1691 - 97, 1699 - 1703.

[Chapter] 3. Recommended Regional Water Supply Plan

[ ] 2022 - 48]: This is a short list of necessary work for later studies.

The pdf linked to the website did not copy page 41 which contains several significant findings. The initial sentences of these are listed here.

[41] 18 lines: The Committee finds that partial or total dewatering of a confined aquifer is a sign of stress that should be avoided. The Committee recommends that withdrawals …. .

[41] 2 lines: The Committee recommends that implementation of the recommended standard to protect the confined Mahomet Aquifer not be delayed until other standards are developed.

[41] 4 lines: The Committee recommends that the sustainability of pumping to capacity by Illinois American Water be reevaluated to include additional withdrawals from the Mahomet Aquifer by other communities and industries out to 2050, with consideration of drawdown in pumping and non-pumping wells.

[41] 11 lines: Current engineering practices typically allow for loss of about one third of saturated thickness in high-capacity production wells in unconfined aquifers. ... Heads in some wells finished in shallow aquifers the Glasford Aquifer in and around Champaign-Urbana, for example are likely to continue to decline and more wells finished in the Glasford Aquifer are likely to go dry with increased withdrawals from the Mahomet Aquifer. Implementing a standard to prevent dewatering of the confined Mahomet Aquifer is expected to reduce further adverse impacts in the Glasford Aquifer.

Appendix 1. East-Central Illinois in Perpective

[63] 3347 - 51: CC and other counties selected to illustrate issues in the region.

[65] 3416 - 25: Very great age of water in storage in confined area of Mahomet Aquifer demonstrates natural processes do not restore it quickly as is the case in its unconfined area.

[65] 3441 - 48: Stream leakage recharges Mahomet Aquifer in and near CC.

[65] 3450 - 53: Effects of groundwater withdrawals and wastewater discharges: Champaign-Urbana discharges affect Salt Fork and Kaskaskia.

[67] 3503 - 11: Natural and human-made hydraulic connections between surface water and groundwater.

[68] 3594 - 3600: CC facilities supply communities distant from aquifer.

[71] 3705 - 08: Reference to Table 1.1. 84% of total withdrawals in region made by CC and four other counties.

[72] 3731 - 34: Growing water demand in CC and two others was one reason to designate East Central Illinois as a priority water quantity planning area.

[73 - 4] 3743 - 3810: Water withdrawals in Champaign County. History of water supply development; early studies; beginning of computer modeling in 60s; present water production, declining well heads, anticipated demands and simulations of effects on resource. What does water supply sustainability mean?

[78] 3957 - 61: In region drawdown currently is greatest in the confined aquifer in Champaign County.

.....end of document, May 18. 2009