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**MEMORANDUM**

**To:            Technical Advisory Council Members**

**From:        Trevor Clements and Kimberly Brewer**

**Subject:     January 6, 2006 Technical Advisory Council Conference Call Summary**

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A conference call for the Lake Maumelle Technical Advisory Council (TAC) was convened January 6, 2006 at 2:00 pm CST. Twelve of fourteen members were in attendance, along with three Policy Advisory Council members (see attached attendance record). Trevor Clements moderated the call, and was supported in technical discussion by Kimberly Brewer, David Pizzi, and Heather Fisher on behalf of Tetra Tech, Inc.

Trevor Clements took roll call, and then reminded TAC members of the context of the call. The Policy Advisory Council has adopted goals and objectives for the Lake Maumelle Watershed Management Plan. Our technical approach is to establish indicators for the objectives, and then assessment methods for those indicators that will support evaluation of various management alternatives. One of our first applications of the assessment methods will be in the form of a baseline analysis. The purpose of the analysis is to establish a point(s) of reference to guide management plan development. This is accomplished by comparing existing conditions in the lake and watershed to future conditions assuming that no additional management policies or programs are established. The results provide a view of impacts to be expected if no action is taken, and should help us all to better understand the magnitude of what should be addressed by the management plan to achieve the goals and objectives.

In previous TAC calls, we have established the set of indicators and modeling and assessment methods that would be used. The chosen framework reflects three scales of evaluation: site level, subwatershed, and whole watershed with the lake. The topics for this meeting focused on two key areas: 1) Future land use/development assumptions to use for the baseline analysis, and 2) Low Impact Development (or LID for short) information to relay to the Policy Advisory Council. The Policy Advisory Council specifically asked to see this information, and therefore Tetra Tech want input from the TAC on these particular topics of importance. The land use/development assumptions set the stage for the baseline analysis and thus the management plan development that follows. Additionally, it is apparent that stakeholders have varied opinions on the applicability of LID in the Lake Maumelle watershed, so technical input from the TAC is being sought on what Tetra Tech is proposing to present to a lay audience.

**Future Land Use Assumptions for the Baseline Analysis**

Trevor reiterated that we must have an estimate of future land use to conduct the baseline analysis, but emphasized that this task is quite challenging because so many different factors affect how an area develops including: demand for different types of development; water and waste treatment service availability; population growth; roads and level of traffic congestion; and proximity to desirable areas.

There is no absolute definition because of the uncertainty in these factors. The good news, however, is that we don't need to be perfect in this estimate. A reasonable approximation of what the future may hold is all that is required, so that relative magnitude of impact that should be managed is better understood to guide management. Therefore, Tetra Tech wants the TAC input on whether the proposed future land use assumptions described in the draft memo sent to member constitute a reasonable approximation of future buildout.

Before asking for TAC members to answer that question, Trevor went over how the preliminary estimates were developed (members were referred to the draft memo that was sent out the previous week). Tetra Tech first obtained input from local planners, realtors, and engineers on several key factors including regulations, policies, population, and the other factors affecting demand. Based on those discussions and additional research, Tetra Tech established some preliminary assumptions regarding future water and wastewater treatment service availability, development densities, and locations in the watershed for different types and levels of development with respect to proximity to the lake. GIS analysis was then used to estimate developable land, distribute development into hydrologic modeling units, and estimate the total number of households in the near lake and remainder of watershed zones. Household projections were then compared to extrapolations from Metroplan population estimates from several studies.

The topic was then opened up for discussion. Jim McKenzie asked whether the lot sizes presented represented average or actual lot sizes. Trevor answered that they reflect averages, including all other land covers in the developed area except for roads that had been removed.

Bruno Kirsch asked Roger Miller whether it would be appropriate to assume that septic tanks would be used in the steep sloped areas. Munsell McPhillips and Carl Stapleton also concurred that onsite treatment would be unlikely; package treatment plants or single family discharging systems are more likely. Trevor indicated that Tetra Tech was in dialog with Arkansas DEQ and that there were no prohibitions for discharges to water supplies nor for discharges to dry streams, so discharging systems would likely be pursued by developers.

Jim McKenzie indicated that he was not in agreement with the large lot assumptions being proposed. He feels that with an aging population and a desire to be near the lake, that there will be pressure for higher density development (condominiums, garden apartments, and smaller more affordable lots). He pointed to dense development around other lakes in Arkansas and around the country where there were no controls in place.

Trevor then indicated that, in the time since the draft memo had been sent to TAC members, Tetra Tech had been looking at increasing the density based on further analysis and discussion with local engineers. Less weight was put on recent sales, and more weight was put on the expectation of the majority of residential lots being developed with an overall average of 3 to 5 acres. Trevor revealed that this would increase the number of expected new homes in the near lake zone by 50 percent to 4500. The group discussed the revised assumptions and most agreed that the revisions made for a more reasonable basis for a baseline analysis. However, Jim McKenzie indicated that he thought that the density should be even higher around the lake to reflect demographics and the lake attraction.

Trevor then stated that Tetra Tech had also been discussing internally the idea of testing sensitivity of the baseline analysis to the land use assumptions by evaluating a second scenario representing higher density. The group concurred that this would be a good idea. Kimberly and Trevor indicated that they would like any input from those willing to participate given the short time frame before materials needed to be sent out to the Policy Advisory Council. An updated summary will be prepared, sent to TAC members for very quick review, and then the refined version will be sent out to PAC members on Thursday, January 12.

## **Low Impact Development (LID)**

Members were directed to the draft Section 4 of the primer on watershed management options, addressing low impact development (LID). David Pizzi from Tetra Tech provided a brief overview of the material, and then opened the topic to discussion.

Munsell McPhillips commented that she thought the material was well-written; clear and concise for the lay reader.

A question was asked as to whether LID has been previously used in the context of source water protection. Kimberly provided the example of Huntersville NC. A question was then posed about the application of LID on steep slopes. Munsell brought up the research being done by Villanova University, and a project in the Boulder Colorado region.

Regarding Table 4-1, Bruno asked for clarification on where the information came from. It was pointed out that the list did not include the ASCE online database.

Jim McKenzie stated that the conservation design component has much promise for implementation in the Lake Maumelle watershed. However, he stated the importance of having engineers trained in its use on the front end rather than trying to retrofit plans after they have already invested in other designs. Several in the group echoed the importance of educating engineers, designers, and developers in LID practices.

Tetra Tech posed the question as to whether members were aware of any potential impediments to the implementation of LID. The only response was that the Master Street Plan may need to be updated if grass swales are used in place of curb and gutter. Munsell McPhillips offered that in her experience, where regulatory provisions presented difficulties in implementation, variances can be successful work-arounds.

Tetra Tech thanked the Council members for their participation in the call, and invited them to attend the January 19 PAC meeting. The next TAC calls were set for February 2 and March 2 at 2 PM Central Time. Tetra Tech will send out a reminder and a draft agenda one week in advance of the next call. The meeting was adjourned.

## Technical Advisory Council Member Attendance

Meeting Date: January 6, 2006

(P indicates present; NP indicates not present)

### MEMBER NAME

### REPRESENTING

<u>P</u>	Brazil, Ken	ARKANSAS NATURAL RESOURCES COMMISSION
<u>NP</u>	Cassart, Dick	ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
<u>P</u>	Clingenpeel, Alan	U.S. FOREST SERVICE
<u>P</u>	Cranmer, Morris	UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
<u>NP</u>	Green, Reed	U.S. GEOLOGICAL SURVEY
<u>P</u>	Hymel, Stephanie	AUDUBON ARKANSAS
<u>P</u>	Kirsch, Bruno	CENTRAL ARKANSAS WATER
<u>P</u>	Malone, Walter	LITTLE ROCK DEPARTMENT OF PLANNING & DEVELOPMENT
<u>P</u>	Mckenzie, Jim	METROPLAN COUNCIL OF LOCAL GOVERNMENTS
<u>P</u>	McPhillips, Munsell	DELTIC TIMBER CORPORATION
<u>P</u>	Miller, Roger	ARKANSAS DEPARTMENT OF HEALTH
<u>P</u>	Pope, Ashley	PULASKI COUNTY DEPARTMENT PLANNING & DEVELOPMENT
<u>P</u>	Shannon, John	ARKANSAS FORESTRY COMMISSION
<u>P</u>	Stapleton, Carl	UNIVERSITY OF ARKANSAS AT LITTLE ROCK, ENVIRONMENTAL HEALTH SCIENCES

### OTHERS

<u>P</u>	Crawford, Marie	CENTRAL ARKANSAS WATER
<u>P</u>	Marsh, Andrew	CENTRAL ARKANSAS WATER
<u>P</u>	Alston, Kam	CENTRAL ARKANSAS WATER
<u>P</u>	Brewer, Kimberly	TETRA TECH, INC.
<u>P</u>	Butcher, Jon	TETRA TECH, INC.
<u>P</u>	Clements, Trevor	TETRA TECH, INC.
<u>P</u>	Fisher, Heather	TETRA TECH, INC.
<u>P</u>	Pizzi, David	TETRA TECH, INC.
<u>P</u>	Herb Dicker	POLICY ADVISORY COUNCIL MEMBER
<u>P</u>	Pat Dicker	POLICY ADVISORY COUNCIL MEMBER
<u>P</u>	Kate Althoff	POLICY ADVISORY COUNCIL MEMBER