APPROVED
June 20, 2011

TECHNICAL COMMITTEE MEETING

Monday, May 23, 2011, 8:30 A.M.
Historic Utah County Courthouse, Suite 211
51 South University Avenue, Provo, Utah

ATTENDEES:

Greg Beckstrom, Provo City
Ben Bloodworth, Forestry, Fire, and State Lands
Adam Cowie, Lindon City
Greg Flint, Santaquin City
Jim Hewitson, Lehi City
Ty J. Hunter, Utah Division of Parks and Recreation
Chris Keleher, Department of Natural Resources
Ann Merrill, State Division of Water Resources
Richard Nielson, Utah County

ATTENDEES:

Mike Mills, June Sucker Recovery
Reed Price, Utah Lake Commission
Sarah Sutherland, Central Utah Water Conservancy District
Dave M. Wham, Division of Water Quality

VISITORS:

Dee Chamberlain, Saratoga Springs HOA
Hilary Arens, DEQ/DWQ

ABSENT:

American Fork City, Eagle Mountain City, Genola Town, Highland City, Orem City, Pleasant Grove City, Saratoga Springs City, Springville City, Vineyard Town, Woodland Hills Town, U.S. Army Corps of Engineers, and Salt Lake City Department of Public Utilities

1. Welcome.

Chairman Greg Beckstrom called the meeting to order at 8:33 a.m. He welcomed the Technical Committee members and visitors.

2. Review and approve minutes from the April 25, 2011 meeting.

Mr. Beckstrom asked for discussion, comments, or corrections for the minutes of the meeting held on April 25, 2011. He had two corrections. First, page two, line 44 read, "FFSL cannot move forward the positive recommendation or the agreement in place from the Transportation Commission." He changed it to read, "FFSL cannot move forward until there is an agreement in place from the Transportation Commission." Second, page seven, line 36, read, "Mr. Beckstrom asked if Utah Lake was sinking by filling in with sediment and/or is the two imbalanced." It should read, "Mr. Beckstrom asked if Utah Lake was sinking or filling in with sediment and/or are the two in balance."

It was motioned by Mr. Jim Hewitson to approve the minutes as corrected, and it was seconded by Vice Chair Chris Keleher. The motion carried and it was unanimously approved.

3. Update from the Committee Chairman.

Mr. Beckstrom gave an update on the Commission's activities:

The Transportation Commission met earlier in May pertaining to the bridge crossing of Utah Lake. A set of rules was drafted for review of the bridge and will be available for a 60-day public comment period on June 1. After the rules become available, Mr. Price will notify Committee members how to access the rules to comment. If Committee members had concerns or recommendations, joint discussion might occur regarding the rules. Mr. Price said the Transportation Commission was charged by the Utah State Legislature to become involved in the review process. The Transportation Commission is to address the financial components, maintenance, schedules, design, etc. They will then determine if the project proponent responded to the questions appropriately and decide whether to support the proponent. Mr. Beckstrom said the questions would lay a significant framework for reviewing and approving both current and subsequent bridge proposals across Utah Lake. He said any input, concerns, or recommendations set before the Governing Board and Transportation Commission would be given important weight and consideration regarding the evaluation. Mr. Price reminded the Committee FFSL is addressing environmental components of the proposal and the Commission's questions were forwarded to them to consider in their evaluation. Mr. Harward was made aware of the issues.

Mr. Beckstrom announced Utah Lake has a high water level, and on May 23, 2011, it was 1.5 feet above compromise level. He said it is at one of the highest levels in 25 years, but is not where it was during the 1980s. Mr. Nielsen said a lot of water was coming down the mountain, with the rivers in the canyons nearing capacity, and snow melt will be going into the lake. Mr. Beckstrom asked about the Santaquin Canyon slide. Mr. Nielsen said the mountain was saturated, and a mudslide came down on the road but it was nothing major. Referring to lake elevation, Mr. Dee Chamberlain said the dock ramps in Saratoga Springs were now floating docks.

Mr. Price reminded everyone Utah Lake Festival was being held on June 4 at Utah Lake State Park, from 10 a.m. to 2 p.m., and is free to the public. The Utah Lake Commission works with the June Sucker Recovery Implementation Program (JSRIP), and several cities to hold the event. It is expected over 3,500 visitors will attend. Mr. Mike Mills appreciated the support JSRIP has received from the cities and said it would be a fun event. Mr. Price thanked Mr. Ty Hunter, Ranger, from the Utah Lake State Park. Mr. Hunter commented on the lake level, stating every few inches of elevated water are lost parking areas. The whole south side is closed down to vehicles to save pavement and not to break the asphalt; the north break is closed, and water is slowly inching to the flood berm. The water level will be kept in consideration. He asked if there were local areas to park vehicles and shuttle to the lake.

Mr. Beckstrom said he was reasonably confident the north bank of the river on the lower area near the state park would be breached between the rising elevation of the lake and the high flows of the river. A possibility is the only access to the state park will be Center Street, as the north access would be closed for a time when the peak flows arrived. With the area under water, it would provide an opportunity for those studying the Provo River delta restoration project. Two shuttle parking areas could be school and church parking lots, but are too far from the park. Mr. Hunter said they would limit the amount of cars and people allowed into the park for the festival due to the water level. Provo City, the state park, and county may discuss the event's parking situation.

Mr. Price said two days of field trips were held for over 500 fourth grade students in the past month and were a success. Carin Green did an excellent job coordinating with specialists around the county to reinforce the curriculum lessons created, experience the lake first hand, and have a fun day. They participated in sessions including a nature walk, studied wetlands; casting a fishing pole, hoisting a sail, phragmites and invasive species. The JSRIP brought fish to tag and the kids to handle. Robert Carter had a history lesson of Utah Lake. The Commission has had positive feedback from the specialists, teachers, and students.

Mr. Hewitson asked if there was a study group to evaluate the high water effects on the phragmites. Mr. Price said not at this time, but the Phragmites Removal Team (PRT) will observe whether the

phragmites would grow further out into the lake, not to come up, whether it is dormant, or it was killed and were anxious to see the results. The water level makes it difficult for the Land Tamer to accomplish much work. The majority of work to be done will be spraying herbicide with a helicopter. Mr. Hunter commented he understood if phragmites has constant pressure from wave action, it tends to suppress growth and not grow out. Mr. Price told the Committee PRT had received a $30,000 grant for phragmites removal and shoreline restoration, which will purchase chemicals for the removal.

4. Jordan River TMDL presentation by Hilary Arens, Jordan River Basin Coordinator at the Utah Division of Water Quality.

Ms. Hiliary Arens is the Jordan River Basin Coordinator with the Utah Division of Water Quality and specializes in TMDL studies. She was asked to report on the Jordan River TMDL and how it relates to Utah Lake.

The Jordan River TMDL is complex and very technical. As a result, EPA is allowing a phased-TMDL study. DEQ studied what is causing dissolved oxygen (DO) impairment, details of the fine (FPOM) and coarse (CPOM) particulate organic matter in the Jordan River, and its relationship specifically to Utah Lake. Data has been collected over the past ten years. In 1996, the main emphasis of the data originally collected was from the monitoring stations and it focused on possible nutrients and the changes. The limited data DEQ has shows it is organic matter causing the impairment. DEQ has data enough to send it back to EPA, however, the division is still learning.

DEQ has three requirements to fulfill:

1. Submit a schedule for how DEQ will move forward into the next phase.
2. When and how they will collect additional data.
3. Specific implementation actions for the different stages.

The Jordan River has a number of uncertainties. Organic matter (OM) has uncertainties and characteristics including the sources, transport, composition, and seasonal patterns. DEQ hypothesizes there is a big flush of coarse or larger particulate organic matter in spring runoff and flash summer storm events. DEQ needs to figure out timing when it is coming in, how it breaks down the CPOM to a more FPOM, where, and how it settles in the Jordan River, and the strategies to reduce organic matter. In Utah, there has not been a TMDL focusing on organic matter and DEQ is breaking new ground.

Ms. Arens showed the stages or phases of the TMDL study to be submitted to EPA including studies on the effects of FPOM and CPOM. She showed graphs including uses, nonsupport (NS) areas, and impairments. Mr. Price asked if nonsupport meant not supporting a beneficial use. Ms. Arens confirmed his understanding. She explained each water body in every state is given a beneficial-use rating. They are given water quality standard numbers of whether it is drinking water, irrigation, recreation, cold water fisheries, warm water, etc., with the rating in any particular order, as irrigation is as important as recreational purposes. If they are not supported by numbers, it gets a nonsupport rating. It is the state's job to write a plan, implement it, and work with stakeholders to get the water back on the list according to the Clean Water Act so it supports the beneficial uses again. The DEQ is focusing on the DO impairment, because it is the most complex and the one the division decided to tackle first.

Mr. Beckstrom asked where the dividing boundary was and Ms. Arens said at the surplus canal at 2100 South. The surplus canal takes 80 percent of the Jordan River and goes out to the airport while 20 percent stays in the Jordan River, and heads north. Using a QUAL2Kw model, data is collected for a number of years, and then the model is populated. The model can be manipulated after data has been gathered for years. Once it is calibrated, the model can be validated. Certain items can be put in or taken away to see how the model will react. The DEQ hypothesized there was a nutrient problem causing the DO impairment. If the two compliance points are met at the two chosen locations, DEQ has

done their job. If the DO is meeting the levels in the two compliance points, it is used as a measurement for meeting the entire regional demands. It has to reach is 4.5 mg per liter, which is the standard for the Jordan River.

DEQ looked at the numbers of Burnham Dam and Cudahy Lane. They need to have reached 4.5 for DEQ to say by manipulating the different nutrients, changing the nutrients in the Jordan River, and then DEQ can get a result and something to work towards to fix the equation. By changing the phosphorus, nitrogen, or ammonia levels, the 4.5 were not being reached at both the compliance points. DEQ started to look at what was causing the DO problem. DEQ looked at organic matter and learned by manipulating the model and reducing the organic matter, they could reach the levels needed for the Jordan River. There is a little bit of organic matter that comes in as either CPOM or FPOM. FPOM is considered less than one mm in diameter and CPOM is bigger. As it rolls through the river and breaks down, it breaks into smaller and smaller pieces and could be dissolved organic matter. A number of different sources of organic matter come into the Jordan including treatment plants, storm water, Utah Lake tributaries, diffuse runoff (outside of areas collected by storm water catchments), and return flows.

Mr. Price asked why Utah Lake was considered a nonpoint source when it seemed like it should be one. Ms. Arens said point sources are regulated with permits. Utah Lake doesn't have a discharge permit and that is why it is considered a non-source point. Mr. David Wham said they didn't want a discharge permit from Utah Lake. Mr. Price asked if it meant they don't know what organic loadings are coming from the Utah Lake because it is not regulated and so it is not monitored. Mr. Wham said no. Ms. Arens said it is how it is defined as a non-source point. Storm water is tricky because it is permitted but it comes from a nonpoint source but is a point source not permitted as an exit to the Jordan River.

Ms. Arens said Utah Lake is mainly contributing to the Jordan. An eutrophic lake produces blue - green algae biomass that, in the summer and late fall, really contributes a high amount of algae to the Jordan River. The algae eventually die off and contribute to the organic matter available for bacterial compositions. She showed graphs and data collected by Dr. Sam Rushforth at Utah Valley University and other sources. She explained cell volume, with total algae biomass, cyanophyta, three-day algae travel time and discussed the effects of phytoplankton. What comes out of Utah Lake is affecting the Jordan River phytoplankton as it moves down. VSS measurements were begun in 2007. They use their data model in synoptic samplings. She explained the correlation of VSS and TSS.

In the next phase (Phase II) of TMDL, DEQ will continue monitoring DO and storm water. They will create an organic matter budget, needing to know when and where it is coming in, what the characteristics are, and how it is affecting DO. They are going to do outreach and education, and start assigning waste load allocations to point sources and allocations for both CPOM and FPOM. In seven years, a revised TMDL will be submitted to EPA reflecting the data that has been accumulated.

Then Phase III would be adopted and a revised TMDL, design work on how to meet the waste load allocations, design, and implement best management practices for storm water. By 2028, it is hoped all the water quality standards will be met. All point and nonpoint sources need to bear the responsibility of reducing the organic matter to reach the DO standards. Something needs to happen on the Jordan River to make it better so the fisheries can thrive better than at present.

Mr. Beckstrom requested clarification of his understanding. He said the essential problem being studied was DO in the lower Jordan River. The DO was impairment to the Jordan River is primarily to the fishery. The impediment to the sufficient DO is the abundance of organic matter, and phytoplankton is a major contributor to that organic matter. Ms. Arens said he was correct and phytoplankton was a direct contributor. Mr. Beckstrom said the current level of research suggests a significant percentage of phytoplankton is coming from Utah Lake as opposed to the tributaries below Utah Lake. Ms. Arens concurred his understanding, specifying phytoplankton. She said the cyanophyta in Utah Lake is coming down some of the tributaries where there were return flows. Mr. Beckstrom said the next questions

DEQ may need to answer is what is creating the phytoplankton in Utah Lake, does Utah Lake have extraordinarily high levels of phytoplankton compared to other lakes, and if so, why.

Mr. Wham said the algae levels in Utah Lake are considered in the eutrophic or nutrient rich category. There is a lot of sediment oxygen demand DEQ needs to add to the model to make it work. Sediment oxygen is not explained by the model and it is not explained by the algae growth and the die-off from there. There are years of leaf litter and material washing off the curb and landscaping to the river and then flushes downstream, which is what the DEQ hypothesizes is causing the huge sediment oxygen demand. DEQ doesn't have the sources of it characterized. Ms. Arens said the sediment oxygen demand is what the model predicts, what those levels should be, and use the infield data, which is the difference DEQ will explain.

Mr. Beckstrom asked what the regulatory significance was of phase one; if it actually has impacts on permits or was it something occurring with later phases. Ms. Arens said in phase one, the bulk allocations show nothing is going to change, there are no permits changing, it is simply showing the progress DEQ has made thus far. DEQ has been working on this phase for a long time and wants to make forward progress, so EPA has allowed bulk allocations to be submitted and the next phases will break up point and nonpoint sources. Other studies for future phases deal with how DEQ will deal with Utah Lake, where the major sources of organic matter are coming from, what implementation tactics can mean due to changes, and what is going into the Jordan River. Mr. Wham added as a division they wouldn't do any reductions or scenarios on Utah Lake because there is uncertainty of what could be done, and if there were significant reductions it would affect June sucker and other things. An Interlocal Group, comprised of all the wastewater treatment plants in Salt Lake County, are advocating including Utah Lake, wanting reductions and to take an ecosystem-wide approach. They have had preliminary discussions with the cities in Utah County about joining the Interlocal Group.

Mr. Beckstrom asked for other questions. Mr. Dee Chamberlain asked what caused the reduction of cyanophyta over the distance going north, if it was dilution or settling out. Ms. Arens said she would hypothesize it was both die off and dilution. Mr. Wham said a lot gets taken off in the canals and then shows back up later; they are dying all along and dropping when both dilution and die off occur. He said Dr. Rushforth said the lake species are not just growing in Millcreek but are coming from Utah Lake. The characteristics are the same and there is not enough travel time to grow a new population of algae between here to there.

5. Other discussion items.

There were no other business or discussion items.

6. Confirm that the next meeting will be held in Suite 212 of the Historic Utah County Courthouse on Monday, June 20, 2011 at 8:30 AM.

Mr. Beckstrom reminded the Committee their next meeting will be held in Suite 212 of the Historic Utah County Courthouse on Monday, June 20, 2011 at 8:30 a.m. He warned the meeting might be cancelled and moved to July secondary to the comment period of the bridge across Utah Lake. Mr. Price will notify the Committee in early June concerning the meeting.

7. Adjourn.

Mr. Beckstrom adjourned the meeting at 9:33 a.m.