

Approved November 21, 2013



Governing Board

Tuesday, October 22, 2013, 6:00 P.M.
Talons Cove Golf Course Clubhouse
2200 South Talons Cove Drive, Saratoga Springs, Utah

GOVERNING BOARD MEMBER ATTENDEES

Mayor Jim Dain, Lindon City, Commission Chair*
Senator Deidre Henderson, State Legislature*
Representative Mike Mckell, State Legislature*
Mayor John Curtis, Provo City
Councilwoman Rebecca Call, Saratoga Springs City*
Commissioner Larry Ellertson, Utah County
Ms. Chris Finlinson, Central Utah Water Conservancy District (CUWCD)*
Mr. Robyn Pearson, Utah Department of Natural Resources (DNR)*
Mr. Walt Baker, Utah Department of Environmental Quality (DEQ)
Mr. Dick Buehler, Forestry, Fire, and State Lands (FFSL)
Mr. Neal Winterton, Orem City
Mr. Kirk Hunsaker, Santaquin City*
Mr. Reed Price, Executive Director*

LEGISLATORS ATTENDING

Senator Mark Madsen*
Senator John Valentine
Senator Ralph Okerlund
Senator David Hinkins
Representative David Lifferth*
Representative Kay Christofferson*
Representative Brian Greene
Representative Val Peterson
Representative Dana Layton
Representative Dean Sanpei
Representative Marc Roberts*
Representative Michael Kennedy

ABSENT:

American Fork City, Lehi City, Vineyard Town, Springville City, Woodland Hills, Mapleton City.

OTHER ATTENDEES:

Michael Mills, JSRIP; Henry Maddux*, DNR; Carin Green, ULC; Hilary Arens, DWQ; Rick Black*, ENVIRON; Gretchen Greene; Environ; Arthur Caplan*, Utah State University; Laura Ault, FFSL; Gene Shawcroft*, CUWCD; Val Hale, Utah Valley Chamber; Joel Racker, Utah Valley Convention & Visitors Bureau; Ivan Djambov, Office of the Legislative Fiscal Analyst; a scout troop;

**Denotes that they attended with a guest.*

1. Welcome, introductions and dinner

1 Mayor Jim Dain, Commission Chair, welcomed those attending the event. He recognized the board members
2 present as well as the legislators and other guests. He invited all to find a seat, go through the dinner line, and
3 that the presentation about Utah Lake would begin around 6:30 p.m.
4

1 **2. Presentation and discussion on long-term plans for Utah Lake**

2 At approximately 6:45 p.m., Mr. Reed Price, Executive Director of the Commission expressed his
3 appreciation for all present for taking time out of their busy schedule to come and learn about the Commission's
4 plans for Utah Lake to improve the quality of life in our region. He extended a special welcome to the scout
5 troop which came to learn as well.

6 Mr. Price shared some of the history that led up to this event. Several months prior, Rep. Mike Mckell, who
7 represents the legislature on the Commission's board, suggested an event be held to inform legislators about the
8 Commission and the issues the lake faces. Over the past several months, planning efforts have been going on
9 with Rep. McKell as well as with Senator Deidre Henderson.

10 A brief history of the lake's importance and significance was shared with the group. Pioneers who arrived in
11 the Salt Lake valley moved south and settled the area. The lake sustained them through difficult times. It was a
12 great fishery that provided much-needed protein.

13 As life got easier, the lake took on a new role. The lake became a source of recreation to the residents. At
14 one time, the lake had over 20 resorts that dotted the shoreline. Residents would frequently congregate at the
15 lake to recreate in the water and on the shoreline.

16 With increased industrialization, the lake became polluted as many industries would dump waste into the
17 Provo River which ended up in the lake. At the time, they did not realize the harm that could be done.

18 The lake was an important source of water for agricultural purposes in Utah County as well as for residents
19 in Salt Lake County.

20 Over time, the lake became less utilized for various reasons. Reasons include competing forms of recreation
21 such as community pools, television, etc. There are also more developed natural areas in the mountains and
22 surrounding region that are inviting to area residents.

23 Mr. Price continued with a history of the Utah Lake Commission. Back in 2003, Utah County mayors began
24 discussing in their monthly Council of Governments (COG) meeting how they could work together to help Utah
25 Lake become a better resource to the communities. They quickly learned that the lake was owned by the state
26 of Utah and managed by the Utah Division of Forestry, Fire & State lands. Because of this, the state was invited
27 to work with the Utah Lake Study Group as they considered ways to help each other with their management
28 responsibilities at or near the lake.

29 After considering several organizations that were created to help manage lakes around the country, the
30 Study Group decided to form a Commission which would serve an advisory role to its members and begin
31 working toward the improvement of the resource. In 2007, Rep. Steve Clark sponsored Concurrent Resolution #1
32 which passed unanimously at the legislature which allowed the state and municipal governments to work
33 together to improve the lake.

34 With the establishment of the Commission, a master planning process was initiated in 2007 to create a
35 vision for the lake and to establish goals and objectives that would achieve the vision. A process began to
36 ENVISION what the lake could become, and then actions would be taken over time to ENHANCE the lake so that
37 the public could once again ENJOY the resource.

38 During the planning process (ENVISION), input was received from many lake stakeholders as well as from the
39 general public. Goals and objectives were created for five different plan elements, including Land Use, Natural
40 Resources, Recreation, Transportation, and Public Facilities. The planning process was completed and the plan
41 adopted in June, 2009. The plan is also the Comprehensive Management Plan for the Utah Division of Forestry,
42 Fire & State Lands.

43 After adoption, the Commission, despite its small budget, began moving forward to implement the plan by
44 seeking grants and leveraging its funding and created partnerships to make great improvements at the lake.

45 The focus of the Commission includes efforts to improve water quality through carp removal; shoreline
46 restoration through phragmites removal; education and outreach to the public; and coordination and
47 communication amongst its members.

48 Several years ago, DWQ initiated a TMDL study on Utah Lake and identified that it was an impaired body of
49 water because of high levels of phosphorus and total dissolved solids in the water. At the same time, an effort to
50 begin removing carp from Utah Lake to improve the lake's ecosystem to benefit wildlife, water quality,

1 recreation and other uses started. DWQ decided to hold any decisions relating to the TMDL in abeyance to see
2 what the results of carp removal did to the lake's water quality.

3 A video of the carp removal process during both the summer and winter was shown. Ten years ago, a study
4 showed that there was an estimated 35 Million pounds of carp in the lake. To date, over 12 Million pounds has
5 been removed. Anecdotal evidence from lake users suggests that visible improvement in water clarity is
6 improving.

7 The next area of focus for the Commission is phragmites removal. Phragmites is an invasive plant that grows
8 over 12 feet tall and is very dense along much of the lake's shoreline. It has very little wildlife habitat, making
9 access to the lake impossible in many areas. A video was shown of some of the treatment efforts and the results
10 of those efforts around the lake. Mr. Price recognized the partners in the removal program including FFSL, Utah
11 County Weed Division, and the Utah Dept. of Agriculture and Food. Pictures of showing the before and after
12 stages of several treatment locations were also shown.

13 The Commission is also focused on education and outreach. It wants the public to understand and embrace
14 the resource. Surprisingly, the most energetic supporters of the lake are those who have moved here recently.
15 They don't understand why the lake is not used more. A negative perception is passed down from generation to
16 generation. Efforts the Commission takes to educate the public include events such as the Utah Lake Festival. A
17 nationally televised collegiate bass fishing tournament was held at the lake last September. Organizers were
18 surprised to see such a resource so close to large populated areas. Lesson plans have also been created to teach
19 common core concepts to fourth grade students. Teachers who use the lesson plans qualify to attend field trips
20 at the lake that are sponsored by the Commission. A goal for a nature center has been identified to help
21 promote not only the lake, but resources available throughout the region. Planning efforts to identify what
22 would be needed in a nature center have been initiated. Working with FFSL, an effort to create an Adopt-a-
23 Shoreline program to encourage public involvement in keeping the resource clean and usable has begun. As
24 efforts continue to restore the shoreline, the public is beginning to use it more. With increased use, comes
25 increased abuse. The help of the public will help to curb the abuse and keep the resource clean. It is anticipated
26 to have the program operational in key areas by spring of next year.

27 Relating to the Commission's role to communicate and coordinate activities at the lake, the Commission
28 meets regularly to stay informed on the efforts that are underway and to strategize ways to keep efforts moving
29 forward. There are 12 local governments on our board, three state agencies, representation from the Central
30 Utah Water Conservancy District, as well as from the state legislature. A public advisory group consisting of lake
31 stakeholders with a keen interest in the lake provides us with another point of view of how the Commission can
32 continue its efforts. A wide range of interests is represented in the group, including the Utah County Chamber,
33 Utah Valley Convention and Visitors Bureau, developers, environmentalists, recreationists, agriculture interests,
34 and more.

35 The Commission has been working toward enhancing the lake since the Master Plan was adopted in 2009.
36 This past summer, they conducted a survey of Utah County residents to see if their efforts were focused on areas
37 that were important. A survey was sent to a random sample of almost 1,500 residents asking specific questions
38 about their attitude toward the lake; how much they use the lake; what types of facilities they use; what types of
39 improvements they would like to see; and what their attitude was toward paying for those types of
40 improvements.

41 Results showed that there was broad support for our current efforts to remove carp and phragmites. The
42 survey showed that the public would like to see improvements to recreational opportunities as well. This
43 includes improved and more sand beaches; more parks; and an improved and expanded trail system. The public
44 feels that the lake is important environmentally as well, particularly water quality. There is an understanding
45 that economic and quality of life benefits will come as improvements are pursued.

46 Data was presented about lake use showing about 280,000 trips to the lake. Main uses include motor
47 boating, wakeboarding/waterskiing, walking, jogging, swimming, and picnicking.

48 The presentation then focused on the need for continued carp removal and looking at the best use for them.
49 Representatives from ENVIRON Corp, the firm contracted to conduct the study of carp removal. Dr. Gretchen
50 Greene, Rick, Black from ENVIRON and Arthur Caplan from Utah State University were introduced.

1 Mr. Rick Black reviewed a bit of the lake's history. In the mid to late 1800s, there were as many as six
2 commercial fisheries on the lake, indicating a very healthy fishery. The lake averages 9 feet deep, with a
3 maximum depth of 14 feet. It is considered a shallow lake. Carp were introduced by the federal government as
4 a sustenance fish and protein source to replace depleted supplies due to overfishing.

5 Shallow lakes have very unique ecosystems. Invasive species, such as carp, can disrupt the ecosystem. Carp
6 are bottom feeders. Their feeding habits impact the small phytoplankton and zooplankton, aquatic vegetation,
7 young and small fish. The bottom-feeding carp cause problems by stirring up the sediments. This blocks the
8 sunlight to the vegetation and uproots the vegetation as well. It also stirs up nutrients found in the sediments,
9 such as phosphorous. This promotes algae growth. When algae grows and dies, it decomposes and depletes the
10 water of oxygen. Algae growth also grows on the underwater vegetation as well. This stops photosynthesis of
11 the plant, causing it to die. When the plants die, wave action that was once decreased and mitigated by
12 underwater vegetation, causes the sediment to become more suspended in the water column. It allows other
13 plants such as phragmites to come in and take their place. There is no longer good habitat for young fish.
14 Cooling effects of vegetation are lost. There is a more uniform, not diverse habitat. The result is a decrease in
15 the more-desirable fish.

16 In 2005, the Millennium Ecosystem Assessment was released. It was an international synthesis by over
17 1,000 of the world's leading biological scientists that analyzes the states ecosystems and provides summaries and
18 guidelines for decision makers. It provides guidelines to define economic benefits to improving natural
19 resources. Ecosystem Services is defined as the services that a natural resource provides to humans, and to
20 other natural resources. It's divided into three different groups. 1. Ecological: things that disrupt an ecosystem;
21 2. consumptive uses: activities such as fishing; and 3. passive uses: includes the aesthetics. Ecosystem services
22 exist throughout our communities. ENVIRON was asked to see how the ecosystem services of the lake would be
23 improved through continued and successful carp removal.

24 In 2009, it was estimated that there were 5.6 Million adult carp in the lake. Over the past several years,
25 efforts to remove carp have been successful. It is now estimated that there are 3.5 Million carp in the lake.

26 Literature suggests that there are two phases that a shallow lake can be in. The first is the turbid, dirty-
27 looking water where the sediment is suspended. The other is a beautiful, pristine water condition. To go from
28 one state to another is like a teeter totter. It can quickly go from one state to another. Research shows that if
29 you can remove 75% of the population of carp, this would allow essential components of a clear lake to return,
30 thus allowing the lake to turn from a turbid state to a clean state.

31 If carp are removed, something else will flourish. There is a myriad of species that will consume the energy
32 currently taken up by the carp.

33 ENVIRON looked at several ecosystem services that would improve once the carp are removed.
34 Their study placed values on just some of the ecosystem services that will be improved with carp removal. Mr.
35 Black noted that carp removal alone will not bring about the fruition of achieving the vision for the Utah Lake
36 Master Plan, there are many other projects that need to be accomplished, including creating beaches, trails,
37 improving access, and other recreational opportunities.

38 Dr. Gretchen Greene continued the presentation. She started by stating the questions that ENVIRON was
39 asked to review. The first was: What is the potential economic benefit of carp removal? The second was: What
40 is the most economically feasible method of disposing carp removed from Utah Lake?

41 Ecosystem services were used to answer the first question. They looked at the gains to the community in
42 terms of improved recreation and water quality looking at both active and passive use values. They also used a
43 method of benefits transfer, which means that they have reviewed numerous economic journals looking for
44 values that economists have developed for changes in environmental conditions, using appropriate numbers for
45 the case of Utah Lake. They looked at cost benefit analysis, where an investment is made now in hopes of
46 receiving a benefit or return at some point in the future.

47 The first category they looked at was non-fishing recreation. Using information provided, there were
48 approximately 117,000 non-fishing trips to Utah Lake per year. Their estimate was that there would be an
49 additional 14, 000 trips that are non fishing related because of the benefits received from carp removal. The

1 value of those trips to the community is \$400,000 per year, which is a net present value of \$4.3 million over 20
2 years.

3 The next category they looked at was fishing recreation. Using information provided, there were
4 approximately 147,000 fishing trips to Utah Lake. The catch rate at Utah Lake is presently about 1/3 fish per
5 hour (one fish every three hours). Dr. Greene made a comparison of Utah Lake with Strawberry Reservoir, where
6 the catch rate is much higher, and has much higher visitation per year. Utah Lake is much larger and can
7 accommodate much more fishing trips. Studies were conducted to see how the catch rate and number of visits
8 would be improved with carp removal. Their forecast was an increase of 107,000 new trips per year, averaging
9 \$3.0 million economic benefit per year, which is a net present value of \$30 million over twenty years.

10 Not included in the cost/benefit analysis were increases in other trip related expenditures that are needed
11 or add to the recreation experience. Their estimate was that there would be just under \$6.0 million in extra
12 expenditures in the economy. The reason these benefits could not be included in the study was because if the
13 resident did not spend the money on the trip, they would have spent it on something else in the local economy.

14 Total recreational value, looking at both fishing and non-fishing recreation comes to \$3.3 million per year or
15 \$34 million over 20 years. Dr. Greene expressed her professional opinion that these numbers are very
16 conservative on all levels. She stated that she would not be surprised if the recreational value increased a lot
17 more than their estimates.

18 The next category they examined was passive uses, improvements to improved water quality improvement.
19 Even people who do not use the lake want to have improved water quality. These passive uses total to just
20 under \$3.0 million, or around \$30 Million over twenty years. Ecosystem services benefits from carp removal for
21 both passive use and recreational use provide a conservative estimate of \$6.0 Million annually, with a net
22 present value just below \$64 Million over 20 years.

23 Dr. Greene also looked at the benefits to home values with improved water quality through carp removal.
24 Using the Hedonic Pricing analysis, where economists are able to look at how the value of homes in an area will
25 improve with improved water quality. The study looked at homes along the lake and homes within 1,500 feet of
26 the shoreline. They identified 33 single family homes adjacent to the lake and 1,300 within 1,500 feet. They
27 estimated an increase of just under 7% in home value for the lake front homes and 4% improvement for those
28 within 1,500 feet due to improving water quality measures. There are many vacant properties that may become
29 more attractive with the improved water quality, but were not included in the study. The total market value
30 change is \$14 million dollars, which translates to \$1.0 million of increased revenues to local municipalities in net
31 present value.

32 Other ancillary benefits of carp removal that were identified, but not analyzed include potential benefits to
33 regulatory efforts such as the TMDL on Utah Lake and the Jordan River and how the removal efforts would allow
34 other more desirable species to flourish to serve the same purpose as a fish hatchery.

35 The next question that was studied was to try to determine the best way to dispose of the carp. The current
36 method of disposing carp at composting facilities or landfills was considered as well as the idea of constructing a
37 carp processing facility to create fish meal. Continuing the current method, \$5.7 Million would be needed over
38 the next ten years to be successful. To construct and operate a fish processing facility, assuming some revenue
39 kickback to the state would ultimately cost, \$4.4 million. This assumes a lease of the building bringing revenue of
40 just over \$700,000 and profit sharing of just over \$400,000 over ten years. It also includes the value of the
41 building of \$1.3 million. The cost to keep the project moving for the next ten years is \$5.3 million to continue
42 moving forward status quo; \$5.7 million to construct and operate the plant including a portion of the revenue
43 being returned to the state.

44 Senator Valentine asked if the decommissioning costs of both options were the same. It was answered that
45 the plant will continue to be useful, that it is an asset. If the removal efforts were abandoned, there would need
46 to be decommissioning costs, but they were not included in the study.

47 The final results of how to best dispose of the carp showed that the continuing annual harvest activities
48 implies a net present value of \$5.7 in payments over time. It also shows that the feasibility of the fishmeal
49 processing plant depends on market prices, organizational and management structure, as well as finding a willing

1 private partner to agree to appropriate terms. Building a fishmeal plant would require an upfront investment of
2 approximately \$5.4 million in net present value terms.

3 Rep. Dana Layton asked if there was an assumption that the carp removal would stop at some point. It was
4 explained that because it is an invasive species and eradication was not possible there would always be a
5 maintenance effort. Estimates are that it would be between 10% and 20% of current costs.

6 Mr. Black began the conclusion of the presentation. He talked about the lake having two different futures.
7 He showed what the current conditions of the lake and showed some examples of what the lake could become if
8 improvements continue.

9 Mr. Price concluded the meeting. He reminded those present that the lake is a state-owned resource. The
10 Utah Lake Commission, in cooperation with the state, is working together to find solutions to the issues the lake
11 faces. The lake gets used a lot, however it is underutilized and can better benefit our communities if we make
12 some improvements to it. Carp removal is probably the most urgent goal of the master plan that needs to
13 continue. There are other improvements as well including trails, beaches, and improved access points. The
14 Commission has gone through the envisioning process. Currently, the Commission is in the enhancement phase.
15 Eventually, they will be in the enjoyment phase, where the entire community embracing it.

16 Mr. Price asked that the legislators be aware of the lake's needs and to support efforts to make
17 improvements and to help find funding to do so. He asked for questions and comments from the group.

18 19 **3. General comments from board members, legislature, and the public**

20 Mr. Joel Racker commented on the nationally televised fishing tournament held at the lake. Those
21 visiting were very impressed with the resource, but mentioned that the carp was the only deterrent for them to
22 come back soon. The Utah Valley Convention and Visitors Bureau is anxious to see the improvements on the lake
23 because it will help draw people to our area. He commended the Commission for their efforts to help the lake.

24 Rep. Christofferson asked how long it would take to get the "one unit" of improvement to water quality. Dr.
25 Greene said they would not be visible until after the main push to remove the carp ended, which would take six
26 years. Mr. Henry Maddux said that there is anecdotal evidence that it is already occurring. He estimated that it
27 would be much more visible in the next three years.

28 Mr. Walt Baker acknowledged that there is some merit to the carp stirring up nutrients from the sediments
29 of the lake impacting water quality. He stressed that there needs to be an effort to eliminate the pollutants from
30 the source. This includes the wastewater treatment plants of the municipalities that discharge to the lake.

31 Mr. Robyn Pearson spoke to the need of carp removal and of the benefits of a fish processing plant. If
32 nothing is done, the lake will not improve. He talked to the benefit of having a building near the lake to aid other
33 actions at the lake as well.

34 35 **4. Adjourn**

36 Mr. Price expressed appreciation to Talons Cove for letting the Commission use the facility for the meeting.
37 He also thanked those who took time out of their busy schedules to attend the meeting. He asked them to
38 contact him as they had questions about the lake. The meeting adjourned at 7:58 PM.