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February 22, 2008

Ms Michelle Stamates, Engineer
Board for Financing Water Projects
Nevada Division of Water Resources
901 South Stewart, Ste 4001
Carson City, NV 89701-5249

Subject: **Responses to Questions from Board for Financing Water Projects**
Metropolis Water Irrigation Restoration Project
Wells, Nevada

Dear Ms. Stamates:

This letter responds to your letter dated October 2, 2007. Also, monthly progress reports will be sent to you shortly.

Each of the questions are repeated below (in italics) for your convenience. The answers are provided following each question.

1. *During the June 2007 site visit, you mentioned that SRK was completing a vegetative study and an endangered species study and a cultural assessment for the BLM for the purpose of providing an easement for the new road that will be constructed in order to build a new Bishop Creek Dam. Please provide an update on the results of SRK's work and the status of the BLM easement or any changes that have occurred as a result of that study.*

The paragraph describes the environmental studies. SRK has completed the biologic studies on the dam, the pool, the access road and the recreation area. The report has not been written as of Feb 2008. The cultural resources have not been completed because the Programmatic Agreement (BLM with District) has not been completed. The District is waiting for BLM to complete the Agreement. The environmental assessment field work has not been completed. Environmental Assessment Report has not been completed. It will resume in the spring 2008.

Changes have been made in the environmental assessment scope of work. BLM originally viewed the project (the Board) as a source of money to pay for a large cultural resource study for the California Immigrant Trail. Subsequently, they recommended that a study include all lands within 2.5 miles on all sides of the dam, irrigation structures and the access road. This would have been 9000 acres.

After realizing that the Board could not fund the environmental studies and after several meeting with Vernon Dalton (through January 2008), BLM has changed their requirements to 150 meters on all sides of the proposed facilities. This has reduced the environmental cost from an estimated $840,000 down to about $340,000 (latest cost estimate, Feb 2008).

Environmental costs are extremely difficult to estimate. This paragraph describes the latest estimates. The cost for the cultural survey is about $300,000. Additional costs for the EA are about $40,000. These estimates do not include the costs which will be added for mitigation, if a gravesite is found. None of these costs are included in the Budget funded by the Board of Water Financing. The District has not found a source of financing for the environmental costs, yet.

2. *Please provide the minimum pool required by the Nevada Department of Wildlife (NDOW) to support fish in the Bishop Creek Reservoir and also the minimum pool necessary to have a recreational area as currently shown in the preliminary design report. The Bishop Creek Reservoir Feasibility Study — Phase I prepared by SEA for NDOW, August 1992, indicated that NDOW would contribute funds in exchange for a minimum pool agreement of adequate magnitude to sustain a sport fishery and the related recreational facilities. It is clear that for a viable fishery and recreation area, assurances of minimum pool levels are critical. What is the status of possible contributions from NDOW at this point in time?*

   It is not anticipated that NDOW will participate in the Metropolis project. NDOW has been contacted relative to funding options. They have stated (2005) that they could not participated except on a very small scale. Regardless of the level of participation, NDOW would always retain control of the water levels in the reservoir and this is not acceptable to the water district.

   Metropolis will utilize the water in the reservoir to the maximum efficiency possible. At this point, Metropolis does not plan to make a fishery of the Bishop Creek pool. Boating will be part of the recreation facilities. A fishery has never been part of the plan.

3. *You indicated that neither electrical power nor potable water would be made available at the recreational area. Please provide information on the amenities that will be provided,*

the entity that will operate the proposed recreational area and timing on the construction of the recreational area. Will any of the recreation fees be available to the District or will the entity operating the recreation area keep all revenue?

The Bishop Creek Recreation Facility (BCRF) will be an area-wide multi-facility outdoor recreation destination, located on the south bank of the Bishop Creek Reservoir. Access to the area will be from Highway 93. The area is located approximately 3 miles west of the highway. BCRF is located on public lands administered by the BLM. The proposed disturbance on public land, including a portion of the road, boat ramp and campground is 4.8 acres.

The BCRF will provide:

a. Water sports
b. Day use and picnicking
c. Camping
d. Hiking
e. Interpretive display

The facilities will include a boat ramp; five camp pads each equipped with an outdoor cooking grill, a round fire pit and a picnic table; a playground area; a comfort station and parking for cars, trucks and vehicles pulling trailers. Four of the camp pads will also have backing parking spaces for two vehicles each. In addition to the back-in parking, there are 15 single vehicle parking stalls and 5 parking stalls for vehicles with trailers, boat or RV. The boat ramp is designed for easy access.

The facility will include a comfort station but there will be no running water. There will be no electricity to the comfort station. There will be no lighting at the facility.

Metropolis Water Irrigation District is seeking a governmental agency that would accept the responsibility to manage the recreation facility. The District does not have an agreement with any agency to manage the recreation facility, yet.

4. *Please provide figures on the number of acres irrigated in the District in past 25 years along with the estimated precipitation by year. This accounting should separate acres irrigated using surface water and ground water.*

The entire District is approximately 3455 acres. For the last 25 years, only about 1545 acres have been irrigation by surface irrigation water. There are two Lateral canals, Lateral A which irrigates approximately 1,345 acres and Lateral B, which irrigates

approximately 200 acres. All ditches and structures associated with conveyance are located on private lands.

In addition to the 1545 acres of surface irrigation, approximately 287 acres of land within the District are irrigated by private wells. Another, approximately 119 acres, are irrigated using a combination of groundwater and surface water.

Attached is a table representing the Monthly Precipitation for NOAA Collection Sites from the years 1961-2000. The estimated monthly and annual average rainfall is represented in the table. The average annual rainfall is 11.37 inches.

5. *Please explain the risk factors driving the requirements to design the dam for the full probable maximum flood (PMF) event. Are there any mitigating factors that might allow the Division of Water Resources to lower the requirements to the ½ -PMF event?*

The Nevada Dam Safety Guidelines read as follows:

"The following flood criteria should be used when designing a spillway given the different dam hazard designations (NAC 535.240):

"High Hazard: Probable Maximum Flood (PMF) on all dams.

"Significant Hazard: PMF if no provision for a spillway is incorporated into the design or it is classified as a "large" dam. The greater of 1/2PMF or a "500-year" flood (0.2 percent chance of exceedence in any year) for "medium" and "small" dams.

"Low Hazard: "100-year" flood (1 percent chance of exceedence in any year) on all dams…."

"The size of a dam in Nevada is defined as follows (NAC 535.130):

"Small Dam: - has an embankment less than 20 feet in height and reservoir capacity less than 100 acre-feet.

"Medium Dam: - is any dam that is neither small nor large.

"Large Dam: - has an embankment height greater than 50 feet or a reservoir capacity greater than 10,000 acre-feet."

Bishop Creek Dam is a large, high hazard dam. The guidelines do not give options for using smaller spillway criteria. However, Mr. Michael Anderson has stated that a smaller

spillway capacity may be acceptable if it could be shown that by increment evaluate, no additional damage will result from the full PMF relative to the ½-PMF.

Dyer Engineering initially believed that the dam would easily qualify for the smaller spillway, however, Mr. Michael Anderson, NDWR, has said that it is unlikely that Bishop Creek Dam would qualify for a smaller spillway design capacity.

Dyer Engineering has determined that the Bishop Creek Dam can be modified to pass the PMF without adding additional fill. However, a concrete wall approximately five feet high would be needed on the crest of the proposed dam. The additional cost is expected to be in the range of $250,000, which is not a significant increase in the overall cost.

6. *During the trip, it was stated that the Metropolis Irrigation District was required by the State Engineer to release water at 6 cfs from April 15 — Oct 15 annually. Please explain what this 6 cfs represents and why it is required.*

Based on information reviewed by the NDWR, the Main Canal has a direct flow water right of 6.32 cfs from Bishop Creek. The Canal also has supplemental supply rights of 3.68 cfs from Trout Creek and Spring Creek combined. Additionally, the Main Canal crosses Burnt Creek at STA 345+20. While the Burnt Creek flow does not enter the Main Canal, the flow is included in the total available water right.

The NDWR data for the Main Ditch indicates direct flow rights totaling 11.38 cfs. This includes 2.72 cfs associated with Trout Creek, 0.96 cfs associated with Johnson and Spring Creek and 1.375 cfs from Burnt Creek.

The District requested that NDWR and their attorney Vaughan and Hull review their rights to storage water. The follow letters summaries their findings:

"The Bishop Creek Reservoir Dam or what is also known as Metropolis Dam may store the entire flow of Bishop Creek and Tributaries, where the current owner of record is the Pacific Reclamation Water Company, as authorized under Permits 1000 and 1807, Certificate 2850, from August 15 to April 15 of the following year. Additionally, those waters pursuant to the Humboldt River Decree under Claim 608 which a portion has subsequently been changed by Permits 11126, 11127, and 11128, Certificates 2846, 2847, 2848, and 2849, respectively: may also store the water for the irrigation of 3,455 acres at a rate of 3.0 acre-feet per acre or 10,365 acre-feet per season. This does not preclude the ability to have carryover storage for the next irrigation season." (See Appendix II-B; NDWR, May 20, 2005)

"...Permits 1000 and 1807, which have been certificated, state that the entire flow of Bishop Creek could be stored during the period of August 15th to April 15th. As the flow of Bishop Creek during that period has not been determined, it is not possible for them (NDWR and Mr. Ricci) to provide an actual figure as to the storage. However, he (Mr. Ricci) does state that water which is stored during the period of August 15th to April 15th can be carried over into the next ensuing years. For example, if there had been 3,000 acre-feet in the reservoir in the spring of 2005, it could have stored the total amount allowed under Proof 00608 plus any flow up to April 15th." (See Appendix II-B; Vaughan and Hull, LTD., letter dated July 26, 2005)

7. *Current estimates put the cost of construction of a new dam at Bishop Creek at $9-$10 million. Even if a grant of 85 percent is made available, it appears that the District may still have issues with making the 15 percent match to the grant. Also, with only 7 users in the District, this would be the largest per user grant given. Please provide a listing with entity and amounts of all of the funding committed to the construction of the dam to date. It was suggested that the District propose funding a larger amount of the project cost rather than expecting a state grant of 85 percent of the estimated project cost. Please provide possible alternatives for additional funding of the cost of the replacement dam.*

The following groups have committed money to the project. Elko County and the City of Wells have made contributions for the past three years:

Elko County:	Committed $250,000	Paid:	$100,000
City of Wells:	Committed $20,000 per year,	Paid:	$ 20,000 per yr. for three yr.
NDOT:	Committed $420,000 (cost of ramp)	Paid:	$0 (cost of on-ramp)
Metro Water District:		Paid:	$150,000 (estimated)

Metropolis Water Irrigation District has embarked on this project with encouragement from the Board of Water Financing. The District initiated the work with an understanding between the Board and the District that if funding were not available to do the project, the Board would not pursue the final design effort. The final design of approximately $576,000 was approved by the Board and the District is committed to pay the 15% with the help of the above entities.

The primary funding complication is the result of environmental requirements by the BLM. BLM requires extensive cultural resource surveys in the area of the California-Immigrant Trail.

The District has a couple of possible alternative source for additional funding. No other sources have been identified. These two potential sources include:

1. Nevada Division of State Lands, up to $50,000 (50%/50% match) for recreational facilities. Applications for this money are not due until the end of the year 2008.
2. Nevada Division of State Lands, up to $40,000 (50%/50% match) for trail construction. Applications for this money are not due until January 2009.

The District has met with Elko County Commissioner Mike Nanini and Senator Ensign's office staff to explore other sources of funding. The Senator has not identified any potential sources of funding. However, the staff in Senator Ensign's office have been very helpful in working with BLM. Elko County continues to push for this project but have already committed their limit. BLM will listen to County Commissioner Mike Nanini and the Senator's staff. This has produced great results in terms of clarifying environmental requirements.

8. *It is unclear how the District plans to fund the restricted capital replacement account for the grant amount as required by the Board's policy. The original plan appeared to be a fee per acre or per acre-foot of water used; however, the number of actual acres irrigated in the district does not appear to show that the District would net sufficient revenue for this purpose. Please provide an accounting of the average and maximum number of acres irrigated in the District and the plan for funding the restricted capital replacement account.*

   The District plans to assess the water users by the acre of irrigated land. Approximately 2000 acres of land will be assessed at a rate of up to about $24.00 per acre (described at the "ability to pay" amount, 2005). This would provide an income of $48,000.00 per year. This should be adequate to maintain the facility.

9. *Based on the reservoir yield information provided in the Metropolis Irrigation Restoration Project Preliminary Design Report, the results of a synthetic stream flow record analyzed through monthly reservoir operation computer studies identified an average annual inflow to the Bishop Creek Reservoir of 6,780 acre-feet. Your operation study showed that 2,140 acre-feet of that inflow must be passed through the reservoir to supply downstream water rights leaving an average of 4,640 acre-feet annually for reservoir storage. Evaporation and seepage losses from the reservoir were estimated at 1,100 acre-feet annually resulting in an average annual storage supply of 3,500 acre-feet. Are there any restrictions on water storage rights for Bishop Creek and will the State Engineer allow the storage of the 4,640 average acre-feet per year in the reservoir or are there other downstream users on the Humboldt that have rights to year-round flows in Bishop Creek?*

   Please refer to the responses in Question #6 above. There appears to be no restrictions on water storage rights, provided it is operated as specified by the State Engineer in Item #6.

10. *If there came a time when the senior water rights holders downstream of the Metropolis Irrigation District decided that they wished to participate in the opportunity to impound water in the reservoir either for their own use at a later time or for other reasons, is the current dam design capable of accommodating additional water? If not, what would be required to be changed or added to the design to include additional water storage?*

The District could not include storage for additional downstream water users without increasing the volume of the reservoir. If downstream users would like to store their water in Bishop Creek Dam, the dam should be designed and constructed now for that day. None of the downstream uses have expressed interested in this storage. Based on hydraulic calculations, it appears that the drainage basin will not support a storage volume larger than the proposed dam size of about 17,200 acre-feet.

In 1945, the State Water Engineer Issued certificates nos. 11125, 11126, 11127 and 11128 which abrogated Proof No. 0068 in the Humboldt River Adjudication to those certificates. These certificates approved a diversion of 11.375 cubic feet per second of surface water within an area of 3,455.1 acres of land. In addition, there had been pending in the State Water Engineer's office an application for the storage of water within the constructed Metropolis Reservoir, and Certificate No. 1000 and 1807 was issued at the time allowing storage of water from the flow of Bishop Creek during the non-irrigation season for the period of August 15-April 15, annually. Therefore, Pacific Reclamation Water Company and now Metropolis Water Irrigation District, hold a right to the diversion of 11.375 cubic feet per second during the irrigation season plus a storage right during the non-irrigation season.

Thank you for the opportunity to have worked with you on this important project. We are eagerly moving forward on the next phase of the project, the final design. If you have any questions regarding this letter, please do not hesitate to call us.

Sincerely,

DYER ENGINEERING CONSULTANTS, INC.

Dan L. Dyer, P.E.
Civil/Environmental Engineer

cc: Mr. Vernon Dalton

Monthly Precipitation for NOAA Collection Sites (1961-2000)*													
	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual*
Wells													
Average Total Precipitation (in.)	0.80	0.85	0.94	0.93	1.23	1.07	0.49	0.67	0.81	0.83	1.05	0.97	10.62
Average Total Precipitation (in.)	0.90	0.92	1.03	0.96	1.25	0.84	0.41	0.51	0.83	0.81	0.97	0.88	10.29
Average Total Precipitation (in.)	0.91	0.79	0.86	0.91	1.23	0.99	0.41	0.45	0.74	0.68	0.95	0.93	9.85
Average (All from Above↑)	0.87	0.85	0.94	0.93	1.24	0.97	0.44	0.54	0.79	0.77	0.99	0.93	10.25
Metropolis													
Average Total Precipitation (in.)	1.12	1.09	1.32	1.34	1.80	1.06	0.59	0.72	0.91	1.21	1.53	1.18	13.80
Average Total Precipitation (in.)	1.28	1.10	1.16	1.24	1.70	1.29	0.73	0.91	0.96	1.13	1.50	1.39	14.38
Average Total Precipitation (in.)	1.15	1.01	1.19	1.22	1.71	1.33	0.64	0.75	0.92	1.14	1.54	1.20	13.80
Average (All from Above↑)	1.18	1.07	1.22	1.27	1.74	1.23	0.65	0.79	0.93	1.16	1.52	1.26	13.99
Mala Vista													
Average Total Precipitation (in.)	1.35	0.77	0.75	0.79	1.31	0.98	0.38	0.20	0.37	0.53	0.96	1.05	9.43
Average Total Precipitation (in.)	0.86	1.04	0.54	0.79	1.57	1.52	0.47	0.28	0.60	1.26	1.07	1.02	11.03
Average (All from Above↑)	1.11	0.91	0.65	0.79	1.44	1.25	0.43	0.24	0.49	0.90	1.02	1.04	10.23
Deeth													
Average Total Precipitation (in.)	1.16	0.87	1.19	1.38	1.69	1.13	0.41	0.47	0.75	0.83	1.12	1.03	12.02
Average Total Precipitation (in.)	1.16	1.12	1.38	1.35	1.79	0.97	0.42	0.57	0.85	0.93	1.17	1.01	12.72
Average Total Precipitation (in.)	1.01	0.97	1.22	1.23	1.76	1.24	0.48	0.67	0.78	0.91	1.21	1.05	12.53
Average (All from Above↑)	1.11	0.99	1.26	1.32	1.75	1.11	0.44	0.57	0.79	0.89	1.17	1.03	12.42
Average (All Sites)	**1.07**	**0.95**	**1.02**	**1.08**	**1.54**	**1.14**	**0.49**	**0.54**	**0.75**	**0.93**	**1.17**	**1.06**	**11.73**

Average Monthly Precipitation per Collection Site (NOAA 1961-2000)