Call to Order - Meeting called to order at 9:30 AM.

Roll Call Committee Members: (P)=Present; (A)=Absent; (E)=Excused

Lou Jackson (E)	Joel Gray (P)	Deanne Landsverk (P)
Dennis Muretta (P)	Teddy Lovgren (P)	Duane Landsverk (A)
Tim Reber (E)	Brian Smith (E)	Dave Kohler (E)
John McRoberts (A)	Jarred Foss (P)	Karen Kohler (E)
Maureen Glenn (P)	Gary Wilson (P)	Hannah Landsverk (P)
Steve Glenn (P)	Pat Paradise (A)	Eric Landsverk (P)
		Kelly Wieland (P)

Guests: John Ingemi 3-244, Dan Bussler 5-92, Dean Dyson 2-200

Chairperson's Opening Comments: Teddy Lovgren

Teddy opened the meeting by reminding everyone of the following: 1) a celebration of life for Dorothy Powder was being held later in the day (2pm to 6pm) at Dorothy Powder's residence. Dorothy was a Lake Dam Committee member, and all members are encouraged to attend, and 2) a celebration of life is being held for Roger Alberts, a long time Lake Limerick resident, on June 4, 1:30pm in the Big Hall at the Inn. Family and friends are invited. Teddy also reminded everyone that Maureen Glenn's new email is meglenn58@gmail.com. Teddy requested a volunteer to take notes for today's meeting. Dennis volunteered to take notes for this meeting.

Meeting Minutes approval *[Attachment 1]*

Jarred made a motion to accept the May 6th meeting minutes as written and Dennis seconded his motion. No discussion occurred and the minutes were unanimously approved.

Motions to the Board – None for May.

CAM REPORT: Roger *[Attachments 2, 3, 4 & 5]*

Roger was not in attendance, so Teddy summarized his written report (attached).

1) Roger thanked Jared and his work team for clean-up of Log Toy park. His team is planning a similar cleanup at another (TBD) park in the near future.

2) LLCC has received an arborist recommendation that a number of dead trees be removed from Log Toy and Olde Lyme parks. Several Committee members (Dennis, Teddy, Jarred, Joel, Gary) volunteered to do an on-site assessment and provide recommendations to the L/D committee.

ACTION: Committee volunteers to review tree removal recommendations)

3) Roger noted that the pedestrian gate at Anglia provides no control for park entrance (no cypher lock). This will be added as a budget item in next year's forecast. In the interim, Roger recommends it be chain locked so non-members cannot access the park. **A motion was made by Joel and seconded by Dennis to request authorization from the BOD to chain lock the pedestrian gate on Anglia park until a permanent fix can be installed. The motion was approved**. - **See Motions to the Board**

4) It has been reported that a green algae slime exists on some lake shorelines and in some cases, there are dead fish nearby. It was recommended by Dennis that WDFW be contacted and requested to do an on-site assessment.

ACTION: Roger to contact WDFW and request they do an assessment of the algae and dead fish.

Parks Report: Maureen/Steve

Mo and Steve summarized results of the monthly park walk-thru. General condition of the parks is good. *[Attachment 6]*

Docks/Floats Permits: Teddy - Approved one new dock permit for Huston Swain (03-73).

Boat Registrations: Gary

Gary reported he has received two new boat registration requests. He also informed the committee of a serious incident he had with a boater. The boater was driving inappropriately, and Gary cautioned him. The boater got verbally abusive with Gary and continued this behavior for an extended period. The issue is under further investigation by the BOD.

LD Action Item List: Teddy *[Attachments 7]*

Teddy briefly reviewed action items and status. Several action items are discussed in other sections of the meeting. No significant progress was reported on any of the open actions.

SUBTEAM REPORTS

Long Term Lake Health: Brian was not in attendance, so Teddy summarized Brian's monthly report. Highlights were; 1) Brian has rewritten/updated the PARs covering next years planned Phase 1 Feasibility studies for Bird Sanctuary dredging and Cranberry Creek retention ponds, 2) the Lake Advocates work statement and proposal update ($12,468.48) for the Cranberry Creek Stream Walk including evaluation of the Cranberry Lake Storm Water Detention Structure sediment was reviewed the LTLH team and recommended for approval. The approved budget for this effort is $14,000. It is anticipated that this effort will be accomplished in July. **A motion was made by Dennis and seconded by Joel that the BOD authorize the $12.5K expenditure for conducting the Cranberry Creek Stream Walk. The motion was approved**. - **See Motions to the Board**

Parks Improvement: Dennis discussed status of several park improvement initiatives.

1) Swing Mats; Facilities is recommending that swing matts be procured and placed under park swings to control depressions created from children dragging their feet while swinging. Swing mats are heavy rubber mats designed to act as a solid surface under swings. Dennis and Teddy visited Emerald Lake's park that uses a similar mat. We determined the mat was the appropriate size and recommend proceeding with the procurement of these mats for our park swings.   **A motion was made by Dennis and seconded by Joel to request the BOD authorize the purchase of 14 swing matts for all park swings, Estimated cost is $3,250. The motion was approved**. - **See Motions to the Board**

2) Security Cameras An estimate has been received from Bruce Loften (WMG Security) on the cost of procuring and installing security cameras in all parks. The cost estimate is $16,156 plus tax. **A motion was made by Teddy and seconded by Joel to request the BOD authorize $17,800 for the procurement of security cameras in all parks. It was also noted that the Water Committee, who will also be procuring camera systems, should take the lead in evaluating cost reasonableness of the WMG proposals. The motion was approved**. - **See Motions to the Board**

Lake/Dam Operations – Joel noted that all Lake level survey/erosion control survey stakes are in place. Joel's team is also working on a Lake Level management plan.

OLD BUSINESS:

1. Changes Process: Dennis – see action items status above.

2. Reserve Study Updates – Meetings being held with Reserve Study Team every Wednesday thru June.

3. Special Projects Manager – see CAM report

4. Video Conference Capability – Hybrid Meetings being conducted in the Crows Nest.

5. Network Drive for Committee Use – no new status; BoD looking for expertise within the HOA membership to identify solutions.

6. Adopt-a-Park – Jarred: The first Park Cleanup activity held at Log Toy on May 20th to spread bark. Good support from the community.

7. Lake Shore Compliance Audit – see action items status above.

NEW BUSINESS

New business discussions centered exclusively on the Lake Dam input to the current budget planning process. Both the expense budget and project budget proposals for the 2023/2024 budget plan are provided as attachments. The Expense budget input was reviewed and accepted as presented. The Projects budget was discussed at length and the following changes agreed to: 1) the park restroom/outbuilding reroof estimate was increased from $17,450 to $30,000 based on newly received roof bids. If this project is started/completed prior to October 2023, FY2023/24 funding may not be required. 2) Security Camera funding was increased from $10,000 to $18,000 based on the recently received cost estimate. Again, if this project is started/completed prior to October 2023, FY2023/24 funding may not be required. 3) funding for a replacement patrol boat was deferred to 2024/2025. **A motion was made by Dennis and seconded by Gary to approve the Expense and Projects budget plan and submit it to the BOD for inclusion in the LLCC 2023/2024 budget plan. The motion was approved**. - **See Motions to the Board**

A brief discussion took place at the end of the meeting concerning the upcoming July 4th boat parade. It was agreed the parade was the responsibility of the Lake/Dam committee. The committee will start planning for the parade, which includes posting awareness bulletins during the month of June.

ACTION: Gary Wilson to plan for July 4th boat parade

Guest Input   None

Review of Commitments & Action Items: Action items updated.

Review of Motions to the Board: See Below.

Motion to Adjourn: Meeting was adjourned at approximately 11:32pm.

Many thanks to Dennis for providing notes for the Meeting Minutes.

Next Meeting – Thursday, June 29th, 6:30pm via Zoom

Look Ahead:

June 17 – Board of Directors Meeting
June 29 – Lake-Dam Committee Meeting at 6:30pm
July 1 – "Lake Limerick Daze"
Aug 5 – Lake-Dam Committee Meeting
Aug 19 – Board of Directors Meeting
Aug 31 – Lake-Dam Committee Meeting at 6:30pm
Sept 2 – "End of Summer Bash"
Sept 16 – Board of Directors Meeting
Oct 7 – Lake-Dam Committee Meeting

MOTIONS TO THE BOARD

Motion 1 – Recommend the Anglia Park pedestrian gate adjacent to the car gate be chain locked until a permanent fix can be installed (cypher gate/lock) to ensure no access by non-members. This action is supported by both the CAM and Anglia Park Host. *[See Attachment 2 - CAM Report.]*

Motion 2 - The BOD is requested to authorize the $12.5K expenditure for conducting the Cranberry Creek Stream Walk as proposed by Lake Advocates latest SOW/Proposal submittal. The approved budget amount for this activity is $14,000. See Attached Proposal. *[See Attachment 8 – Lake Advocates CCSW Proposal]*

Motion 3 - Request the BOD authorize the purchase of 14 swing mats for all park swings, Estimated cost is $3,250. *[See Attachment 9 - Swing Safety Mat data]*

Motion 4 - The BOD is requested to authorize $17,800 for the procurement of security cameras in all parks based on the proposal submitted by Bruce Loften of WMG Security. It is recommended that the Water Committee, who will also be procuring camera systems, should take the lead in evaluating cost reasonableness of the WMG proposals. *[See Attachment 10 - Security Camera Quote/Specs]*

Motion 5 - The BOD is requested to accept the Lake-Dam FY2023/24 Expense and Projects budget plan, dated 3June2023 for inclusion in the LLCC 2023/2024 budget planning. See Attached Expense and Project budget Spreadsheets. *[See Attachment 11 & 12- LD FY23-24 Operations/Projects Budgets]*

Lake-Dam Committee Meeting Minutes
6 May 2023

Call to Order - Meeting called to order at 9:32 AM.

Roll Call Committee Members: (P)=Present; (A)=Absent; (E)=Excused

Lou Jackson (P)	Joel Gray (E)	Deanne Landsverk (P)
Dennis Muretta (P)	Teddy Lovgren (P)	Duane Landsverk (P)
Tim Reber (E)	Brian Smith (P)	Dave Kohler (P)
John McRoberts (A)	Jarred Foss (E)	Karen Kohler (P)
Maureen Glenn (E)	Gary Wilson (P)	Hannah Landsverk (A)
Steve Glenn (E)	Pat Paradise (P)	Eric Landsverk (A)
		Kelly Wieland (E)

Guests: John Ingemi 3-244, Dan Bussler 5-92, Roger Milliman 3-44, Dean Dyson 2-200, Mike Berni 3-83

Chairperson's Opening Comments: Teddy Lovgren

Teddy opened the meeting noting that today's meeting is be conducted via a hybrid of in-person (Crows Nest) and Zoom.   We have to conclude our meeting by 11am due to event scheduled in the Great Hall today. Agenda format revised to include report out by the 3 Subteams. Teddy requested a volunteer to take notes for today's meeting. Dennis volunteered to take notes for this meeting.

Meeting Minutes approval *[Attachment 1]*

Lou moved and Dennis seconded to approve the April 1, 2023, meeting minutes. Lengthy discussion took place of historical weir board height, Current language in the April minutes states maximum height measured at 10 inches above the spillway (historically). Dave Kohler contested that statement and a discussion ensued. It was determined that weir board height data varies and is inconclusive. Therefore, It was agreed to delete the sentence stating historical maximum height of 10 inches as follows: " ~~Duane stated that there's a lot of ambiguity on the height and that the Lake Level Sub-team utilized the available data that showed the historical Weir board height prior to the redesign of the Weir board system was 10" maximum~~." Dennis moved and Pat seconded the revised April meeting minutes; approved unanimously.

Correspondence: Teddy and Dennis volunteered to be the Lake-Dam POCs for the Reserve Study Update requested by the BoD. The LTLH Subteam is reviewing Lake Advocates Cranberry Creek Sediment Streamwalk Proposal/Contract with comments due back to Roger by the May 19th.

Status of April's Motions to the Board

Motion Approved to establish Weir Board Height at 12 inches measured from the spillway crest.

CAM REPORT: Roger *[Attachments 2, 3, 4 & 5]*

Roger reported on various ongoing activities. This included park cleanup, weir board installation complete, ongoing discussions with Cranberry Creek Org. on storm water retention structure, Bathymetric survey complete and others. Of significance were two items:

- Cranberry lake storm water retention structure, The state has mandated that all culverts be fish friendly which means those in place that do not meet this requirement must be replaced. The current structure at the end of Cranberry lake does not meet the requirements and it may have to be replaced. Discussions are ongoing.
- The Lake patrol boat motor is not running, and cracks exist in the hull. Motor fixes are being determined and a new boat will be required.

ACTION: Lou Jackson and Gary Wilson will outline minimum requirements for a replacement boat.

Roger also discussed a recommendation to place heavy mats under all park swing sets to control bark removal by children dragging their feet while swinging. In general, the committee supported the idea but asked that the parks subcommittee meet with the new facilities manager to directly review the proposal.

ACTION: Dennis (Park Subteam) to meet with Facilities Manager to review condition at the Park and proposed fix.

Parks Report: Maureen/Steve - Teddy summarized recent report *[Attachment 6]*

Docks/Floats Permits: Teddy - New Dock Permit, Huston Swain (03-73) under review.

Boat Registrations: Gary - No new boats.

LD Action Item List: Teddy *[Attachments 7]*

Rule Change Process - Dennis reported he and Dave have discussed a proposed approach for a change process which assures membership awareness of approved changes. A written description of the process is being developed.
No progress/change in status on the other actions

SUBTEAM REPORTS

Long Term Lake Health: Brian reported on a variety of on-going activities including recently completed bathymetric survey of both lakes and related proposal from LA on analysis of results (comments requested) ongoing analysis of Cranberry Creek water retention structure and upcoming lake weed treatment plans.

Parks Improvement: Dennis noted that with the new facility manager in place activities are getting started on each of the 4 park PAR's. Roger confirmed that these projects will continue to be fully funded until completed. More detailed status in future meetings

Lake/Dam Operations – Joel was on excused absence, but Teddy gave a brief description of work in progress. The most notable current effort involves placement of markers around the lake to measure shoreline erosion versus time. A notice is being sent to all members offering them a marker for their beach if they want to participate.

OLD BUSINESS:

1. Changes Process: Dennis – see action items status above.

2. Reserve Study Updates – no new status

3. Special Projects Manager – see CAM report
4. Video Conference Capability – Beta Test of Hybrid Meeting being conducted.

5. Network Drive for Committee Use – no new status; BoD looking for expertise within the HOA membership to identify solutions.

6. Adopt-a-Park – Jarred coordinating with Roger

7. Fishing Derby Status – Dennis reported that the annual Fishing Derby was successfully held with good turnout and reasonable weather. Again, this year, Derby income covered expenses. Our first-time use of on-line ticket sales was also successful.

NEW BUSINESS

1. **2023/24 Budget Planning –** Teddy and Dennis reviewed the Budget charts that address the Process, Project status and Expense spreadsheet. Brian and Pat agreed to support the budget LD budget exercise. Subteam meetings to be held over the next couple of weeks. *[Attachments 8, 9 & 10]*

2. **LD Meeting dates/times for July and September -** Discussed July & September meeting dates that co-inside with LLCC HOA events. The decision was to meet in the evening at 6:30pm via Zoom on Thursday June 29th and August 31st.

3. **Other Topics** – Lou asked about the status of the Pro Shops request to take over management of the Tennis, Pickle Ball and Horseshoes courts by the Pro Shop. John stated that would be a Management (BoD) decision.

Guest Input   None

Review of Commitments & Action Items: Action items updated.

Review of Motions to the Board: None.

Motion to Adjourn: Meeting was adjourned at approximately 10:58 PM; Pat moved, and Lou seconded that the Lake-Dam Committee meeting be adjourned. Motion carried unanimously.

Many thanks to Dennis for providing notes for the Meeting Minutes.

Next Meeting – Saturday, June 3rd 9:30AM In-person at the Crows Nest and via Zoom

Look Ahead:

May 20 – Board of Directors Meeting
June 3 – Lake-Dam Committee Meeting
June 17 – Board of Directors Meeting
June 29 – Lake-Dam Committee Meeting at 6:30pm
Aug 5 – Lake-Dam Committee Meeting
Aug 19 – Board of Directors Meeting
Aug 31 – Lake-Dam Committee Meeting at 6:30pm

Motion to the Board   - NONE

LD CAM Report

June 1, 2023

Parks

- On May 20 Jared coordinated volunteers cleaning up Log Toy including spreading wood chips on the trail; job well done!
- Recommend LD motion to approve purchase of 14 park swing mats $3,505
    o Provides improved safety and reduces labor
- The arborist dangerous trees report including Log Toy and Olde Lyme Parks and 3 greenbelts has been communicated to the Executives; Facilities is getting quotes to remove 29 trees including debris for consideration
- Security proposal received from Washington Guard Services communicated to the Board for consideration during the June 17 meeting. Proposal is for 30 random times night-time patrols per month including walking 7 parks, 3 buildings and 6 water sites @$4,000/mo; at will contract cancellation.
- Recommend the Anglia walker gate adjacent to the car gate be chain locked to ensure no access by nonmembers; supported by the park host; both entrances (vehicle and walker gate near railroad) require key code access.
    o For a potential consideration, adding an additional keypad to the adjacent walker gate would require trenching power to support a magnetic gate lock. Below the asphalt driveway is a powered safety pressure plate keeping the car gate open when activated by a vehicle. This would be expen$ive vs a chain lock.
- Regarding the goose poop on the Inn dock, it is regularly cleaned by Facilities Mon-Fri; my thanks to the volunteer who swept during Sunday evening's karaoke event.
- Regarding the log boom, it was realigned/repaired this week by Facilities; additional anchors are on order.

Dams

- Ken Martig is writing a letter supporting LL's position to maintain the Cranberry dam (storm water detention structure). LL received a proposal from the Cranberry Lake Foundation (CLF) interested in installing a fish friendly culvert at the Cranberry dam; communicated with the Executives and Teddy. This would eliminate the current storm water detention structure that was designed, permitted, and installed 30 years ago to control downstream flooding. Ken's letter is due by June 9th followed with a CLF meeting to be scheduled.

Lakes

Water testing plan
1. Monthly water quality samples are occurring
2. Results sent to LA for graphing/reporting
Data level loggers
1. Hobo Link experienced a server error not capturing May 24-29 data; company has corrected

Lake Advocates

1. Bathymetric analysis report to be delivered by June 30
2. Cranberry Creek soft sediment proposal and forwarded to the LTLH Team for review and recommendation to add core sampling and sediment depth in the Cranberry Lake storm water retention pond.
    i. LD BOD motion is requested
3. Awaiting the 2023 Aquatic plant treatment plan for lakes Limerick & Leprechaun. Rob reports treatments begin in June.

Lake Patrol

1. Recent incident being reviewed

Future projects:

1. Lake Leprechaun dredge will require a bathymetric survey analysis to identify soft sediment locations to create a plan.
2. Plan to mitigate/dredge the Bird Sanctuary based on the Limerick bathymetric survey

PM position

1. Executives are reviewing a recommended candidate. Follow-up information to be provided.

Lake Limerick
BUDGET TO ACTUAL
April 2023

Variance	Lake Dam HOA Budget	Lake Dam HOA Actual		Lake Dam HOA Actual	Lake Dam HOA Budget	Variance	Lake Dam HOA Budget	58%
			Revenue					
$ 700	$ 0	$ 700	Lake Dam - Fishing Derby	$ 1,700	$ 0	$ 1,700	$ 0	
700	**0**	**700**	**Total Revenue**	**1,700**	**0**	**1,700**	**0**	
			Cost of Goods Sold					
0	0	0	**Total Cost of Goods Sold**	0	0	0	0	
700	0	700	**Gross Profit**	1,700	0	1,700	0	
			Operating Expenses					
0	0	0	Advertising and Promotion	99	0	99	0	
(94)	773	679	Insurance Expense	7,918	5,809	2,109	9,674	82%
(1,490)	9,900	8,410	Lake Expense	17,327	22,400	(5,073)	83,600	21%
(3,700)	3,700	0	Licenses and Permits	4,086	3,700	386	3,700	110%
255	0	255	Parks Expense	1,750	12,550	(10,800)	12,550	14%
(950)	950	0	Repairs and Maintenance	0	6,650	(6,650)	16,800	0%
(100)	100	0	Small Tools and Equipment	0	700	(700)	1,200	0%
(34)	100	66	Supplies	247	700	(453)	1,200	21%
(6,113)	**15,523**	**9,410**	**Total Operating Expenses**	**31,427**	**52,509**	**(21,082)**	**128,724**	24%
6,813	**(15,523)**	**(8,710)**	**Operating Income (Loss)**	**(29,727)**	**(52,509)**	**22,782**	**(128,724)**	23%
			Other Income					
6,813	**(15,523)**	**(8,710)**	**Income (Loss) Before Income Taxes**	**(29,727)**	**(52,509)**	**22,782**	**(128,724)**	23%

Line#	Date	Diff Pressure (MX-DP 21156419:21156419-1), psi, 21156419	Absolute Pressure (MX-AP 21156419:21156419-2), psi, 21156419	Temperature (MX-WT 21156419:21156419-3), *F, 21156419	Water Level (MX-DP 21156419:21156419-5), feet, 21156419	Barometric Pressure (MX-BP 21156419:21156419-6), psi, 21156419
1	05/01/23 13:53:40	1.0935	15.6668	59.2	1.7337	14.5732
2	05/02/23 01:53:40	1.09	15.6792	59.4	1.7256	14.5892
3	05/02/23 13:53:40	1.0888	15.6008	60.7	1.7227	14.512
4	05/03/23 01:53:40	1.0839	15.6769	59.2	1.7115	14.593
5	05/03/23 13:53:40	1.0844	15.6004	61.3	1.7127	14.516
6	05/04/23 01:53:40	1.0748	15.6265	60.4	1.6906	14.5516
7	05/04/23 13:53:40	1.0732	15.6192	59.7	1.6868	14.546
8	05/05/23 01:53:40	1.074	15.6325	58.9	1.6887	14.5585
9	05/05/23 13:53:40	1.0735	15.672	58.3	1.6875	14.5985
10	05/06/23 01:53:40	1.0767	15.7081	57.8	1.6949	14.6314
11	05/06/23 13:53:40	1.0714	15.7054	59.7	1.6827	14.634
12	05/07/23 01:53:40	1.0717	15.7339	59	1.6834	14.6622
13	05/07/23 13:53:40	1.0683	15.7413	58.7	1.6755	14.673
14	05/08/23 01:53:40	1.0662	15.722	59.5	1.6707	14.6558
15	05/08/23 13:53:40	1.0599	15.6868	60.2	1.6561	14.6269
16	05/09/23 01:53:40	1.0617	15.7447	60.6	1.6602	14.683
17	05/09/23 13:53:40	1.0594	15.7556	61.8	1.655	14.6962
18	05/10/23 01:53:40	1.0559	15.7448	62.5	1.6469	14.6888
19	05/10/23 13:53:40	1.0569	15.7233	64.3	1.6492	14.6664
20	05/11/23 01:53:40	1.0534	15.7553	64.5	1.6411	14.7019
21	05/11/23 13:53:40	1.0558	15.7614	67.4	1.6468	14.7055
22	05/12/23 01:53:40	1.0491	15.7729	66.7	1.6312	14.7238
23	05/12/23 13:53:40	1.0507	15.7866	68.6	1.635	14.7358
24	05/13/23 01:53:40	1.0433	15.7972	70.7	1.6178	14.754
25	05/13/23 13:53:40	1.0484	15.7793	71.2	1.6297	14.7309
26	05/14/23 01:53:40	1.0458	15.7284	71.4	1.6235	14.6826
27	05/14/23 13:53:40	1.0442	15.6872	71.4	1.6199	14.643
28	05/15/23 01:53:40	1.0386	15.6565	71.6	1.607	14.6179
29	05/15/23 13:53:40	1.0379	15.6521	72.8	1.6054	14.6141
1	05/16/23 01:53:40	1.0289	15.7228	69.1	1.5845	14.6939
2	05/16/23 13:53:40	1.0311	15.7334	71.9	1.5897	14.7023
3	05/17/23 01:53:40	1.0246	15.7059	69.8	1.5746	14.6813
4	05/17/23 13:53:40	1.0266	15.6358	73.8	1.5794	14.6092
5	05/18/23 01:53:40	1.0238	15.6125	74.3	1.5728	14.5888
6	05/18/23 13:53:40	1.021	15.6612	71.9	1.5663	14.6403
7	05/19/23 01:53:40	1.0228	15.7224	70	1.5706	14.6996
8	05/19/23 13:53:40	1.0227	15.7152	71.6	1.5704	14.6925
9	05/20/23 01:53:40	1.0167	15.721	71.4	1.5566	14.7042
10	05/20/23 13:53:40	1.0235	15.727	73.5	1.5721	14.7035
11	05/21/23 01:53:40	1.0181	15.7494	69.7	1.5596	14.7313
12	05/21/23 13:53:40	1.018	15.7602	69.3	1.5595	14.7422
13	05/22/23 01:53:40	1.0141	15.7492	68.1	1.5504	14.7351
14	05/22/23 13:53:40	1.0143	15.7443	70.2	1.5509	14.73
15	05/23/23 01:53:40	1.0141	15.7466	67.1	1.5504	14.7325
16	05/30/23 13:11:58	1.0046	15.6724	66.7	1.1914	14.6678

Lakes, Dams and Parks Work Orders Log: 25 May 2023

Date	Priority (1,2,3)	Work Order Number	Task	Safety Issue (Y/N)	Assigned to	Due Date	Completion Date	Requestor/ Task POC	Project Status
6/20/2022	3	2022-16	Inspect Banbury boat ramp for tree root damage and advise LD committee re: recommended next steps.	N	Rob	6/30/23 11/30/22 11/1/22 7/8/2022		Roger Milliman	5/25/23 -- Met new Facilities Manager (Rob). Rob to rent cement mixer and repair boat ramp with concrete rather than asphalt. On shedule to revised / updated due date. 5/11/23 -- Maintenance to fill with concrete rather than wait for asphalt availability. 04/28/23 -- No change in status 04/13/23 -- No change in status. 3/30/23 -- No change in status 2/23/23 -- Current plan is to use asphalt to repair. Held for availability. CAM will discuss use of concrete as a fix with Norm since sections of the ramp are made from concrete. 02/02/23 -- No Change in status 12/29/22 -- No Change in status 12/16/22 -- No Change in Status. 11/30/22 -- No Change in Status. 11/3/22 -- ramp cut and graveled this week. Area to be asphalted once material is available. Availability is TBD. 10/11/22 -- No Change. On schedule. 9/29/22 -- On Plan. Tree removed, removal of root and re-asphalt to occur by end of November. 9/15/22 -- On schedule. 8/25/22 -- Inspection complete. Repair scheduled as a winter project. New ECD 11/30/22. (Reference 5/11/23 for historical status)
6/23/2022	3	2022-19	Update Dam Operations Manual to address DOE email dated 9 June 2022 regarding emergency drawn down at both Lake Limerick and Lake Leprechaun.	Y	Rob / Roger	TBD 3/31/23 11/15/22 9/30/2022		Roger Milliman	5/25/23 -- No change in status. 5/11/23 -- No change in status. 04/28/23 -- No change in status. Still held for State personnel availability. 4/13/23 -- No change is status. 3/30/23 -- Meeting held with Ken on 3/1; need mtg with DSO to confirm reqmnts; pending DSO personnel to support. 2/23/23 -- Meeting scheduled for 3/1/23 with Ken, CAM and LD to confirm Statement of Work and Deliverables. 02/02/23 -- Recommend 2 hr meeting with Ken Martig/LTLH subteam to scope SOW; Roger to coordinate. 12/29/22 -- Proposal received from Ken Martig. CAM awaiting feedback from LD (requested feedback by 13 January). CAM to also coordinate final agreement with DSO to ensure it addresses DSO's concerns. 12/16/22 -- Ken has yet to respond to proposal request. Roger to reach out to Ken again. 11/30/22 -- Ken Martig has confirmed he needs to work on proposal. No ECD provided. 11/3/22 -- LLCC awaiting proposal from Ken Martig. Inflows to be measured at Cranberry Creek, Leprechaun, and Bird Santuary. 10/11/22 -- Video of butterfly valve test provided to DSO. Ken to provide proposal for in flow/out flow analysis to support modifying emergency Lake Limerick draw down process. New Due Date established. Status prior to October is archieved

Lakes, Dams and Parks Work Orders Log: 25 May 2023

Date	Priority (1,2,3)	Work Order Number	Task	Safety Issue (Y/N)	Assigned to	Due Date	Completion Date	Requestor/ Task POC	Project Status
12/29/2022	3	2022-38	Replace 15 Buoys on Lake Limerick as part of plan to replace 15 buoys per year. Year after year. Status Limerick Buoy Replacement Progress	N	Rob	6/30/23 5/31/2022		Roger Milliman	5/25/23 -- Rob still purchasing materials. LD provided LLCC a BOM spreadsheet to support LLCC Book of Standards. Buoys will be numbered with GPS locations for future management of the buoy system. On schedule to revised due date. 5/11/23 -- inventory assessed. Parts ordered. Project ECD now 30 June. 4/28/23 -- Gerardo to assess current inventory of parts. Rob will work with Roger to order the balance of needed parts to replace this year's 15 buoys. Replaced buoys that are still in good condition will be used to replace worn buoys in other areas of Lake Limerick. 4/13/13 -- Held for new Maintenace Manager (Rob Greves) to
2/21/2023	1	2023-02	Remove dead snags in the water from at Log Toy park fish dock. Also remove dead trees from Log Toy Park and Olde Lyme Park.	Y	Gerardo / Beco?	TBD 4/21/2023		Dennis Muretta	5/25/23 -- Report expected on 26 May. 5/11/23 -- Aroborist hired to assess Log Toy, Olde Lyme and Common Area trees. Report due soon. Request to BOD to remove trees will be based on report. 4/28/23 -- Tree in water at Log Toy removed. CAM to meet with arborist on 1 May to access Log Toy, Olde Lyme, and other LLCC common areas. 4/13/23 -- LLCC to hire arborist to assess trees in parks and certain common areas for safety. Tree removal will be based on arborist's report. 3/30/23 -- No change in status 2/23/23 -- CAM to review and advise. 2/20/23 -- WO Based on park review with LLCC/LD Members 2/20/23
4/13/2023	2	2023-03	Install Data Logger at Lake Leprechaun Dam/Spillway	N	Gerardo	5/1/2023		Roger Milliman	5/25/23 -- No change in status. 5/11/23 -- Limerick Dam data logger repaired. Inn data logger to be returned to vendor for repair. Install at Leprechaun once cellular coverage allows. 4/28/23 -- CAM to replace batteries in data logger at inn confirm that it is functional then install at Leprechaun. Future data downloads will be via Blue Tooth until better cell coverage is available. 4/13/23 -- Leprechaun held for better cell coverage. Lake Limerick datalogger is currenty not reporting data correctly. CAM working with Hood Canal Cable for a solution. 4/13/23 -- Action is a moved to this WO Log Sheet from LD Action Item Status.
4/13/2023	1	2023-04	Request Lake Advocates to provide Report on the results of the Lake Leprechaun Survey. Report to address Camparison to 2015 survey depths, Dredging recommendations including locations, mechanical vs hydraulic, permit requirements, cost estimate, etc.	N	Roger	6/30/23 7/31/2023		Ted Lovgren	5/25/23 -- On schedule. 5/11/23 --Report due 30 June. 4/28/23 -- Bathymetric survey completed for both lakes on 28 April. Data to be provided to LA for reporting back to LLCC. CAM to remind LA of need for recommendation for dredging areas at Lake Leprehcaun. CAM will also request an ECD for the report and provide to Lake Dam Comm. 4/13/23 --Moved from LD A-I List 4/13/23 in order to capture all LLCC / CAM Actions in one place.

Lakes, Dams and Parks Work Orders Log: 25 May 2023

Date	Priority (1,2,3)	Work Order Number	Task	Safety Issue (Y/N)	Assigned to	Due Date	Completion Date	Requestor/ Task POC	Project Status
4/13/2023	2	2023-05	Meet with Cranberry Lake Foundation with LD and BoD member to establish a relationship and assess path forward for Cranberry Creek detention structure and associated retention pond.	N	Roger	TBD ASAP	5/25/2023	Ted Lovgren	5/25/23 -- Relationship established. Permission received from Lori Cox (CLF) for LA to perform stream and retention pond evaluation. 5/11/23 -- Ken to develop LLCC position re: detention structure culvert. LLCC to engage Cranberry Creek Foundation once position is developed, understood and agreed. ECD TBD based on Ken Martig's schedule. 4/28/223 -- Cranberry Lake Foundation has advised LLCC of desire to modify the detention structure. Ken Martig, CAM and possibly someone form LD to meet on next week to review situation and compile facts and data in LLCC's reponse to the Foundation. 4/13/23 -- Action added based on discussion with CAM.
4/13/2023	1	2023-06	We should add revising/updating the Project Manager job description. I pinged Roger and John on this action.	N	John Ingemi & Roger	ASAP		Ted Lovgren	5/25/23 -- CAM tasked with updating job description for BOD review prior to interviewing candidate. 5/11/23 -- BOD Executive Committee to review approach to fill position 20 May. 4/28/23 -- Stake holders met on 27 April to update the PM roles and responsibilities. Executive Committee to review and provide feedback / path forward.
4/28/2023	1	2023-07	Obtain proposal from LA re: stream walk to assess impact of Cranberry Lake outflow into Lake Limerick.	N	Roger	Past Due		Ted Lovgren	5/25/23 -- LD / LLCC comments provided to LA. LA response was expected 5/22ish. CAM to call LA for status. 5/11/23 -- Proposal received. LD to provide comments to Brian Smith by 12 May in order to provide LA with a collective/comprehensive response to their proposal. 4/28/23 -- Added to WO List as not to lose track of this action.
5/23/2023	1	2023-09	Address leaking bathroom roof at Angelia Park	N	Rob	6/15/2023		Steve / Maureen	5/25/23 -- Rob to review and advise. 5/23/23 -- Per Park Maintenance Monthly Report
5/23/2023	2	2023-10	Cut back grasses in the lake at LLCC Parks swim area and dams' frontage.	N	Rob	6/5/2023		Steve / Maureen	5/25/23 -- Facilities to review and advise. 5/23/23 -- Per Park Maintenance Monthly Report
5/23/2023	1	2023-11	Provide another garbage can at Anglia Park	N	Rob	6/6/2023		Steve / Maureen	5/25/23 -- In work. Extra can at log toy also planned. 5/23/23 -- Per Park Maintenance Monthly Report
5/23/2023	2	2023-12	Procure and install swing set safety mats in all parks with swings per Rob's proposal	N	Rob	6/23/2023		Roger Milliman	5/25/23 -- Roger authorized Rob to procure 2 as a test case for possible application in all parks. 5/23/23 -- Per Roger Email on 5/5/23 and addressed within Park Maintenance Monthly Report (Swing Divots)
5/23/2023	2	2023-13	Spray-paint(?) stripe and words "No Parking Beyond this Point"on ground at Tipperary and WDFW Boat Launch.	N	Rob	6/9/2023		Roger Milliman	5/25/23 --"No parking" signs have been installed. Facilities to paint ground to indicate boundry of parking area. 5/23/23 -- Parking issue addressed within Park Maintenance Monthly Report and observed by Park Host, neighbors and LD members as being an issue.
5/25/2023	3	2023-14	Meet with CLF regarding their desire to install fish-friendly culvert at Cranberry Creek detension structure.	N	Roger	TBD		Roger Milliman	5/25/23 - Ken Martig to develop LLCC position re: detention structure culvert. LLCC to engage Cranberry Creek Foundation once position is developed, understood and agreed. ECD TBD based on Ken Martig's schedule.

PARK MAINTENANCE MONTHLY REPORT

DATE _May 20, 2023_

Saturday

ANGLIA BEACH		YES/NO	Needs Attention
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Restroom is cleaned and stocked? (Done Mon & Fri May1-Oct 31	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	All debris removed from spillway?	Yes	
	Safety floats are above the water at the spillway?	Yes	
	Notes: Talked to Matt (Park Host) He would like another garbage can		
	New Life jackets :)		X
	Bathroom Roof Leaking		X
	Beach (shoreline) grass needs to be cut		X
	Fish ladder has lots of muck & a styrofoam toy		

BANBURY PARK		YES/NO	
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Restroom is cleaned and stocked? (Done Mon & Fri May1-Oct 31	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	Notes:		X
	Swings have divets		
	Met Don (Park Host)		
	No one at the Park		

CLUBHOUSE/INN		YES/NO	
	Garbage can(s) empty? (They are emptied Mon & Fri)	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	Are pathways swept?	Yes	
	~~Is the roof free of debris?~~		
	Notes:		X
	Swings have divets		X
	Goose poop on Island		

		YES/NO	Needs Attention
LEPRECHAUN PARK			
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	Debris removed from spillway?	Yes	
	Notes:		
	No one at Park		
LOG TOY PARK		YES/NO	
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Restroom is clean and stocked? (Done Mon and Fri May 1-Oct 31	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	Notes: Swings have divets		X
	Met Dale (Park Host)		
	No goose poop		
	No leaking water fountain		
	Bark nicely spread		
OLDE LYME PARK		YES/NO	
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Restroom is clean and stocked? (Done Mon and Fri May 1-Oct 31	Yes	
	Lawn mowed recently?	Yes	
	Ground debris cleaned up?	Yes	
	Notes: Bicycle frame still on lower level		X
	Swings have divets		X
	Lots of weeds in play space		X
	No one at the Park		
WAY TO TIPPERARY		YES/NO	
	Garbage can(s) empty? (They are emptied Mon & Fri) ¼ full	Yes	
	Dog Station has poop bags available?	Yes	
	Litter picked up?	Yes	
	Restroom is clean and stocked? (Done Mon and Fri May 1-Oct 31	Locked & boarded up	
	Lawn mowed recently?	N/A	
	Ground debris cleaned up?	Yes	
	Notes: Talked to Bill (Park Host)		
	Sanican @ Park		

No parking signs or painted on truck
turn around ground. Not a parking stall.
No one at Park | Bill says he has to tell a lot of
people not to park there.   X

Lake/Dam Committee Action Item Status

As of: 3June2023

Commitments & Action Items	Date Assigned	Assigned To	Due Date	ECD / Status
Define a process for coordinating rule changes with members prior to implementation.	1-Sep-22	Dennis	TBD	Action resulted from discussion of e-foil concerns raised during Sept 1st mtg. Need to establish change process. **6May2023** Dennis provided status update during the LDC meeting - see meeting minutes 15April2023 Dave provided his writeup on a change process for review/evaluation. 7Jan2023 Dave to coordinate with Dennis regarding existing processes for LLCC rules changes and coordination. 5Jan2023 change process (Draft) sent to LD Committee for review/comment.
Inn Island Repair options/contractor quotes need to be assessed for feasibility	1-Sep-22	Pat	TBD	Pat will review the current contractor quotes and options; and provide his assessment to LD. Pat completed his review and recommended the shoreline be repaired with the granite block option. Hanson Excavating has not returned Pat's calls regarding their estimate - ECD for project update 1st Qtr 2023. **4March2023** Pat has attempted contacting Hanson numerous times with no response/call back. **Recommendation is for LDC to pursue other options.**

Lake/Dam Committee Action Item Status

As of: 3June2023

Commitments & Action Items	Date Assigned	Assigned To	Due Date	ECD / Status
Jarred to put together an "Adopt a Park" volunteer group (similar to Greens Committee) to help with special projects associated with LLCC's lakes and parks and have LLCC members monitor the parks on a regular basis.	3-Dec-22	Jarred	TBD	**COMPLETE** Log Toy Park - HOA Member volunteer Cleanup held, Saturday, May 20. Discussions with potential volunteers on-going. Jarred will coordinate with Roger Milliman and Mark Hendricks on framework of the Greens Committee Ambassador Program so there is continuity between committees and members wanting to volunteer
Establish Lake Limerick/Leprechaun Shoreline Guide for LD and Compliance Committees to use as an audit tool in order to begin reigning in the many violations observed (but not often reported) by members.	7-Jan-23	Duane	TBD	Steve and Maureen to assist.
Perform Shorline audit in Spring 2023 for non-compliances; non-permitted boat lifts/docks/floats, unauthorized intrusions/constructions, e.g. beach retaining walls, fences, etc.	7-Jan-23	Lake-Dam	TBD	Placeholder for Spring/Summer LD Committee activity. Volunteers will be needed.
Provide Lake Level data history/files that is basis of motion for 12 inch wier board height.	4-Mar-23	Joel/Teddy	April LD Mtg	**1May2023** Joel provided Teddy picture (JPEG) files of data located in LLCC paper files. Need to convert to PDF and store to LLCC data files for historical reference. See 4March2023 LD meeting minutes.
Replacement Boat for Lake Patrol	6-May-23	Lou and Gary	Status at June LD Mtg	**3June2023** FY23/24 Funding request for replacement of patrol boat has been moved to FY24/25. Lou and Gary to provide recommendation on Boat replacement. Existing 60hp outboard motor is working and could be moved onto a new hull or sold.

Lake/Dam Committee Action Item Status

As of: 3June2023

Commitments & Action Items	Date Assigned	Assigned To	Due Date	ECD / Status
Meet with Facilities Mgr to review Log Toy Park Swing area for installation of scuff mats	6-May-23	Dennis	Prior to June LDC meeting	**COMPLETED** **17May2023** met with Facilities Mgr; recommended purchase of mats but install only at Parks w/Hosts pending install of park secuity cameras. Wood chips applied under swing scuff area will not stay in place. Facilities Mgr has recommended installing scuff mats. Need to confirm installation addresses safety concerns.
Tree Risk Assessment Report - LLCC has obtained an arborists evaluation of trees within common areas including Parks, Green Space, etc. that are recommended for removal. Review the trees listed for Log Toy and Old Lyme Parks to confirm status of the trees.	3-Jun-23	Dennis, Teddy, Jarred, Gary , Joel	Next few days	There are 11 trees at Log Toy and 3 at Old Lyme that are candidates for removal, topping or cutting/leaving as a wildlife snag tree.
Planning for the 4th of July Boat Parade	3-Jun-23	Gary	June	Establish plan and post awareness bulletins during Month of June

PROFESSIONAL SUPPORT AGREEMENT:
AMENDMENT 2
CRANBERRY CREEK SEDIMENT STREAMWALK
May 2023

LAKE ADVOCATES (Lake Advocates is a 501C3 nonprofit organization), will assist the Lake Limerick Country Club (LLCC) with *FY2023 Cranberry Creek Sediment Streamwalk* according to the terms of this agreement.

GOAL STATEMENT: CRANBERRY CREEK SEDIMENT STREAMWALK TO IDENTIFY SOURCE OF SEDIMENTATION TO CRANBERRY COVE (LAKE LIMERICK)

This project is intended to provide additional basic information needed to identify and scope future projects to mitigate the inflow of sediments and nutrients into Lake Limerick.

A substantial quantity of sediment has accumulated in Cranberry Cove over time and had been dredged (suction dredging) in 2016. That increase in Cove depth was diminished over the following years with suspected source of sediment from late winter/early spring flows in Cranberry Creek. The lower portions of Cranberry Creek (below the bridge crossing on E. St Andrews Dr) show visual signs of sand and fine sediment accumulation where stream gradient is lower than further upstream areas.

This project is coupled with the lake bathymetric surveys, especially in Cranberry Cove as part of the Lake Limerick survey. Cranberry Cove is a location here soft-sediment in-filling has occurred since the last dredging project. Mapping bathymetry of Lake Limerick outside of the dredged cove reveals the extent of fine sediment transport into the deeper portion of the Lake.

The goal for this project is to identify and record the potential location of sediment erosion along the length of Cranberry Creek (outlet of Cranberry Lake to inlet of Cranberry Cove). The frequency of occurrence of eroding streambanks and location within the project reach of Cranberry Creek will be recorded. Additionally, a closer examination of sediment transport from the outlet of Cranberry Lake into the upper end of Cranberry Creek will be completed. The extent of sedimentation downstream from the outlet area establishes quantity of sediment contribution to Cranberry Creek from an upstream source. Lastly, measurement of sediment which has accumulated in the Cranberry Lake Stormwater Detention Basin, will provide an idea of how effective that structure has been in reducing sediment inflow to Lake Limerick.

SCOPE OF SERVICES

LAKE ADVOCATES will coordinate the project following the work plan and budget in accordance with the attached Scope of Work.

Compensation

A. Professional Services. For performance of services described above, the LLCC agrees to pay **LAKE ADVOCATES** as detailed in Attachment A. **LAKE ADVOCATES** will submit requests for payments periodically and the LLCC will pay within 30 to 45 days.

B. Travel Expenses and Per Diem. The LLCC agrees to reimburse **LAKE ADVOCATES** for travel expenses and per diem in accordance with Attachment A.

C. Other Direct Expense (ODC) Reimbursements. The LLCC agrees to reimburse **LAKE ADVOCATES** for ODC expenses, when authorized by the LLCC, in accordance with the rates shown in Attachment A.

D. **LAKE ADVOCATES** will coordinate and provide Quality Assurance for field and modeling to generate bathymetric maps of Lakes Limerick and Leprechaun LLCC will reimburse **LAKE ADVOCATES** for time and materials as outlined in sections A, B, and C above. LLCC will have a separate contract with the Executor of the bathymetric survey, i.e., Aquatechnex.

LAKE ADVOCATES is responsible for:

1. Implementing the work plan as specified in the Scope of Work (Attachment 1).
2. Submitting written requests for payment consistent with this agreement.

CLIENT's Responsibilities

The CLIENT is responsible for:

1. Providing required staff or volunteer support when appropriate.
2. Providing access and boat(s) when appropriate.
3. Paying Laboratory directly for analytical services.
4. Paying **LAKE ADVOCATES** according to this agreement.
5. Providing **LAKE ADVOCATES** access to information needed to perform the work plan.
6. Coordinating with the Cranberry Lake Foundation (CLF) for access to that portion of Cranberry Creek lying within CLF property, and for access to the Cranberry Lake Detention Structure retention basin for the purpose of measuring the depth of sediment deposits behind the structure and natural features like emergent vegetation and beaver dams.

TERM

This additional agreement will be effective on March 1, 2023, and continue through September 30, 2023, upon the completion of the project or until the parties agree to terminate.

TERMINATION

This agreement will terminate upon completion of the scope of services or upon sixty (60) days written notice by either party to the other party.

CONSULTANT NOT AN EMPLOYEE

The LLCC will not provide benefits, nor will they withhold income for tax purposes, nor make any direct payment on behalf of **LAKE ADVOCATES** or its contractors or subcontractors for FICA, unemployment, or any other state or federal agency requirements.

In witness thereof, **LAKE ADVOCATES** and LLCC have executed this agreement as of the indicated date:

_____, _____   _____
Robert Plotnikoff   President   Date
LAKE ADVOCATES   (EIN: 47-3933992)

By: _____, _____   _____
       LLCC   Title   Date

INDEPENDENT NON-PROFIT ORGANIZATION (LA) AGREEMENT

THIS NON-PROFIT ORGANIZATION (LA) AGREEMENT (the "Agreement") dated this

_____day of _____, _____

BETWEEN:

Lake Limerick Country Club of 790 E St Andrews Dr, Shelton, WA 98584, USA
(the "Client")

- AND -

Lake Advocates
9515 Windsong Loop NE
Bainbridge Island, WA 98110
(360) 286-0921
(EIN: 47-3933992)

Services Provided

1. The Client hereby agrees to engage LA to provide the Client with services (the "Services") consisting of:

   a) Cranberry Creek sediment erosion survey within the stream channel and along banks.

   b) Sediment depth and composition at outlet of Cranberry Lake (behind the sediment control structure) and immediately below at the beginning of Cranberry Creek.

   c) LA will prepare a technical document that describes current sediment conditions in the channel (sand accumulation) and accumulation behind the sediment control structure. (Detailed description of services are in Attachment A of this document)

Attachment A of Amendment 2

Scope of Services
For
FY2023 Cranberry Creek Sediment Streamwalk to Identify Source of Sedimentation to
Cranberry Cove (Lake Limerick)

Lake Limerick Country Club
Aquatic Plant and Lake Management

Lake Advocates
LakeAdvocates.org
9515 Windsong Loop NE
Bainbridge Island, WA 98110

March 1, 2023, through September 30, 2023

The purpose of this scope of work is to outline a proposal for conducting a sediment streamwalk of Cranberry Creek beginning at the outlet of Cranberry Lake to downstream of the bridge crossing at E St Andrews Drive. Examination of bank erosion throughout this reach of Cranberry Creek as well as the outlet from Cranberry Lake are part of on-call services that Lake Advocates (LA) will provide LLCC. This activity in support of managing Lakes Leprechaun and Limerick for the safe recreation of LLCC members and guests and to help maintain and enhance the aquatic environmental quality of the lakes. Fees are based on time and materials (labor and direct expenses). Specifically, this scope of work is to provide LLCC with on-going services related to aquatic plant management Services as well as on-call environmental support.

The streamwalk survey of Cranberry Creek and the outlet of Cranberry Lake are continuing steps essential for further planning for preventing sediment deposition from reaching Cranberry Cove and further into Lake Limerick. This first step is a continuing effort to qualitatively estimate the extent of a sediment transport and bank erosion problem that affects Cranberry Cove in Lake Limerick. This initial effort to examine Cranberry Creek as a source of fine sediment to the lake will help determine a need for alternatives in either abating sediment transport in the creek, removal before reaching Cranberry Cove, or a combination of these efforts to achieve a reduction of sediment in-filling of Lake Limerick.

In addition, the depth of sediment buildup behind the Cranberry Lake Detention structure will be measured to provide information concerning the structure's potential for reducing the amount of sediment/nutrients flowing into Cranberry Creek and Lake Limerick.

Note, all direct access of Cranberry Lake outlet to Cranberry Creek and Cranberry Creek by LLCC staff and/or volunteers, as well as, LA staff will be coordinated by LLCC for the streamwalk team to have direct access to the public and private areas of Cranberry Lake Outlet and Cranberry Creek under investigation.

Scope of Work

1. **Cranberry Creek Streamwalk Survey**
    a. LA staff will conduct mapping of erosional areas of Cranberry Creek.
    b. Extent of erosional areas and location will be mapped by LA staff.

2. **Cranberry Lake Outlet and Upper Cranberry Creek Sediment/Erosion Survey**
    a. LA staff will identify, photograph, and map sediment sources originating from Cranberry Lake and determine the extent of downstream impact.
    b. Coordinate with LLCC to record lake level at the weir during the bathymetric survey.
    c. Measure depth of sediment in the Cranberry Lake Detention Structure retention pond

3. **Estimate of Location and Extent of Sediment Sources in Cranberry Creek and Outlet of Cranberry Lake**
    a. LA will prepare a Technical Memorandum from sediment erosion data collected in Cranberry Creek and at the outlet of Cranberry Lake including:
        i. Spatial frequency and severity of Cranberry Creek streambank erosion.
        ii. Description of sediment input and location/distance of travel into the upstream area of Cranberry Creek.
        iii. Compilation of evidence to describe source(s) of fine sediment erosion and travel through Cranberry Creek.

Attachment B of Amendment 2

**Fee Estimate
For
FY2023 Cranberry Creek Sediment Streamwalk to Identify Source of Sedimentation to
Cranberry Cove (Lake Limerick)**

**Lake Limerick Country Club
Aquatic Plant and Lake Management
Services from March 1, 2023, through September 30, 2023**

Tasks	Labor/Expenses
Task 1 Cranberry Creek Streamwalk & Cranberry Lake Outlet & CLSWDS sediment survey	$5,000.00
Task 2 Estimating Location & Extent of Erosion in Project Area	$2,800.00
Task 3 Preparation of Technical Memorandum	$4,500.00
Total Labor	$12,300.00
Mileage at $0.585/mile	$168.48
Total Contract for LA	$12,468.48

Proposal: Playground Swing Mats

When it comes to choosing the ideal swing set surface, playground swing mats tend to be the most practical option. These mats can be laid directly underneath the swings, so as kids drag their feet to stop or push off to start, they're making contact with a solid surface. Whether your surrounding flooring is mats, crumb fill, wood chips, sand, or some other loose fill, playground mats for under swings can help to keep it in place.

Swing set mats are popular for many different reasons. They're designed to be durable while also being forgiving, in case of a fall. Because they make up a solid surface, they can greatly reduce the amount of maintenance that you need to perform. This not only saves you labor costs, but also means that you don't constantly have to replenish your loose fill in order to keep the surface beneath your swings covered.

(The following are examples of what is available)

Swing Mat Playground Mat

Swing Mat Playground Mat for schools, public playgrounds, and other areas that will see heavy use, the Swing Mat Playground Mat is up to the challenge. This highly durable mat is rated for outdoor use, and also has a 4-foot ASTM fall height rating for increased safety.

These playground mats for under swings are made from 100% recycled rubber approved by the EPA and measure a full 2 inches thick for superior ground protection and durability. They have a beveled edge which makes for a smooth and safe transition onto and off of the mats.

The Swing Mat Playground Mat makes for a great playground surface for under swing sets in busy areas with lots of traffic.

Blue Sky Fatigue Swing Mats

Blue Sky Fatigue Swing Mats offer superior durability and cushion, the Blue Sky Fatigue Swing Mats are practical and comfortable. They're made of solid rubber and offer a Shore A 50 material hardness rating. The mats feature a 5-year manufacturer's warranty and are suitable for outdoor use.

These playground mats for under swings aren't just durable - they're comfortable, too. Their 3x5-foot measurements means that a single mat provides plenty of coverage underneath and in front of a swing set, and the 110-pound weight ensures that each mat will stay put, even when dry laid.

Choose from four different colors to match your existing playground's color scheme. In addition to being suitable for use under swings, these mats can also be positioned at the base of slides, and also double as workstation anti-fatigue mats.

Playground Mats

Playground Mats in order to keep your loose fill in place and to help prevent bumps and bruises, our

Playground Mats make a great investment. These 1.5-inch-thick mats help to create a bit of cushion underneath swings, while also preventing the development of ruts in your playground surface.

These mats are made from 92% recycled rubber and can be loose laid underneath your swing sets. The mats offer anti-fatigue benefits and are highly durable, backed by a 10-year limited manufacturer's warranty. They measure 36x36 inches and offer plenty of coverage.

Maintaining these mats is easy; just damp mop with hot water and a neutral Ph cleanser.

Things to consider

Selecting:
Amount of traffic: How much traffic will your playground see?
As a public playground, look for durability necessary to withstand higher traffic and use.
Some mats have impressive manufacturer warranties lasting 5 or even 10 years.

Mat size:
How large a space do you want the playground mats to cover?
Mats come in different sizes. They can be placed end-to-end to create a larger area but will be easier to move.
Larger mats have the benefit of being heavier and less likely to be shifted around or moved.

Mat properties:
Consider whether you're looking for a mat simply to protect the ground, or if you're looking for something that can help to keep kids safer. If safety is a priority, then look for a mat with an ASTM fall height rating to help reduce the chance of injury in the event of a fall.

Dry laid or secured?:
Many swing mats are designed to be dry laid, but mats can be shifted around because they're not secured to the ground. If you're looking at a mat that will be dry laid, then look for a mat that's thick and heavy in order to keep it from being moved.

Maintenance:
Always make sure mats you purchase are easy to maintain.
Most mats can be swept off and if necessary, mopped with a neutral household cleanser.

I like the brand sold through Rubber Flooring Inc for several reasons, wheelchair accessibility, construction, quality, price, safety, installation options and a pretty decent warranty of 5 years. Additionally, for the price, they offer a thicker weight which aids in keeping them in place. And the length of 5ft adds better coverage to keep the ground intact, as well as additional weight for the above mentioned reasons.

"These swing mats weigh about 122 lbs, which helps to make them vandal safe, and also gives them the needed stability for aggressive and high traffic play areas. The wheelchair-accessible beveled edge prevents tripping and allows the mats to be buried either partially or completely without presenting a

hazard. These mats are very easy to install and maintain and are backed by a 5 year warranty."

We currently have five swing sets, each with two swings. We also have a larger swing set by the lodge with 4 swings. All totaled, we have 14 swings and would need 14 mats in total.

https://www.rubberflooringinc.com/cart.htmlMerchandise

Subtotal:
$2,547.86
Shipping & Handling:$957.45
Total:
$3,505.31

Justification:

All swing areas can be raked out in around 2.5hrs with two workers. Double the time for one worker.

After leveling the ground under the swings, most had heavy trenching the very next day. on day three they were all trenched down to bare rocks and dirt. (safety issue). I noted in a couple instances the children were laying belly down on the swing seat and digging and tossing the chips with their hands at every pass.

My thoughts on this is, these areas, when dug out are a potential injury concern and beyond that, an ongoing cost concern for the community. If we were to rake these daily, or even every other day, the hours given up to accomplish it would not only add up at fiscal year-end, but also lose us opportunity cost, by tying up workers when their time could be better utilized in other areas. So once done with perhaps some minimal attention in the play areas would be a win/win for Limerick.

Lastly, Installation:

These are dry laid mats. they weigh 120lbs each. These mats are 2in thick. Not only do they offer a decent level of protection for children playing on the swings, they offer two options on installation. Because the edges are tapered, they can be simply laid on the leveled surface and the tapered edges will eliminate slip, trip, and fall hazards, and wheelchair friendliness. They can also be laid in at surface level and the tapered edges can be covered with the playground medium, in our case wood chips. Either was, after leveling the areas under the swings they will go in quickly and need very little further attention other than perhaps blown off during regular weekly park maintenance.

Lake Limerick Security camera project

After our meeting on May 23rd and a visit to each of the site to review camera placement, we would make the following recommendations:

Phase 1: Equipping the 6 water towers with Internet and or hotspot **(yet to be determined)**, add cameras and NVR recorder. Camera placement would be as listed including outside bullet cameras covering the parking area and exterior of each tower. An internal camera would be deployed inside the equipment room to monitor the operation of existing equipment.

Additionally, we would investigate connecting water system monitoring equipment, to be broadcast over the Hotspot or internet connection to the main maintenance building.

Phase 1 Water towers: Equipment:

Well # 1: Requires 3 cameras and supporting equipment!

   1 inside and 1 to parking and 1 to tower

Well # 2: Requires 2 cameras and supporting equipment!

   1 inside cameras to cover entrance, 1 outside.

Well # 3: Requires 4 cameras and supporting equipment!

   1 inside and 3 outside cameras.

Well # 4: Requires 3 cameras and supporting equipment!

   1 inside and 2 outside cameras.

Well # 5: Requires 3 cameras and supporting equipment!

   1 inside and 2 outside cameras.

Well # 6: Requires 3 cameras and supporting equipment!

   1 inside and 2 outside cameras.

Total Cameras   18

Recorders   6

Additional mounting boxes   4

Wire and supporting equipment.

Budget: **$13,836.00**

plus, Tax and Freight

estimate per each location: **6 sites to be installed.**

Pricing assumes that Lake Limerick will supply labor for pulling of wire and camera installation.

Phase 2: Installing cameras on the sites listed below to cover the parking lot and bathroom locations etc. including an 8 channel NVR and supporting equipment for expansion. Deploying hot spots or internet at each of the 6 park areas **(yet to be determined)**.

1. Inn area: Require 2 cameras no additional supporting equipment! Add 2 cameras to the system at the inn to cover the island and tennis court!

2. Leprechaun: No power, no building, would require 2 cameras. Discussed having homeowner next to property host the system, **Not included in budget, if possible, the additional cost would be $1,816.00.**

3. Tipperary: Required 3 cameras! Has a small building for hosting system. Has power and data at pole for Park Host. Driveway 1, Bathroom 1, and dock 1 camera. **(Internet maybe available at pole, Comcast)?**

4. Log Toy: Requires 6 cameras and additional supporting equipment! Long road to site which would require 1 camera, Playground area 1 camera, Cabana has power and would need to support 2 cameras with wireless bridge 1 to dock and 1 facing back to parking area. The bathroom and parking require 2 cameras for a total of 6 cameras not including the fishing dock location which would need additional cabling and equipment **(Fishing dock location not included in Budget). (Internet maybe available at pole), Comcast)?**

5: Banbury: Require 5 cameras, 1 for parking lot, 1 for the bathroom, 1 for playground area, 1 for driveway and 1 for dock area. The site has a host location with power and data drop. **(Internet maybe available at pole, Comcast)?**

6. Anglia: requires 6 cameras, 1 for bathroom, 1 for launch area, 1 for playground area, 1 for gate, 1 for dock, and 1 for dam area. **Has power and data drop at Host location. (Internet maybe available at pole Comcast)?**

7. Old Lyne: Requires 3 cameras. No power and no supporting building. Bathroom 1, basketball court 1, and playground area! A new house is being built next door that may be convinced to host the system. Has power at pole and would require addition of power drop.

Total Cameras:	25
Recorders	6
Wireless Bridge	1
Additional mounting boxes	6

Wire and supporting equipment.   **Budget:**   **$, 16,156.00   Plus Tax and Freight**

Install at 5 sites plus 2 cameras at Inn, 1 additional site not quoted as they do not have supporting power. Pricing assumes that Lake Limerick will supply labor for pulling of wire and camera installation.

Phase 3: Install License plate capture cameras at the entrance or high traffic areas within the Lake Limerick location **(placement yet to be determined).**

Each location would have the same hotspot or internet connection, 4 channel high end NVR, and supporting equipment.

Traffic cameras: estimate per **each location:**

1- 4channel high end NVR

1- License plate camera

And supporting equipment $2,700.00 each, plus freight and Taxes.

Option: Add 2 License plate cameras at road in front of Inn.

1- 4 Channel high end NVR

2 -License plate cameras

And supporting equipment

$3,792.00 plus freight and Taxes.

*The open item yet to be determined before the project can start is the Hotspot or internet connection at each site and responsible party.

No Building, No power, appears house next door maybe open to hosting a couple of cameras

Has small building, power and data at Host site. Cameras to cover roadway Bathroom, 3 cameras unless you want to cover dock at bottom of driveway!

Long driveway, Parking area, 2 dock location, Cabana, Bathroom, and play area.

May require wireless bridge due to distance from power and data, Appears the

cabana has power.

6 cameras, wireless bridge , Switch, and 8 port NVR.

May be able to see dock at point from Inn with Strong PTZ?

Large parking area 1-2 cameras, play area 1 camera, road to or from boat launch1 camera , Dock 1 camera and bathroom 1 camera.. Has power and data being used by Host at site.

Pole to mount equipment, not the most secure?

Coverage Bathroom, launch area, gate access, dock, dam area, playground equipment and picknick area.
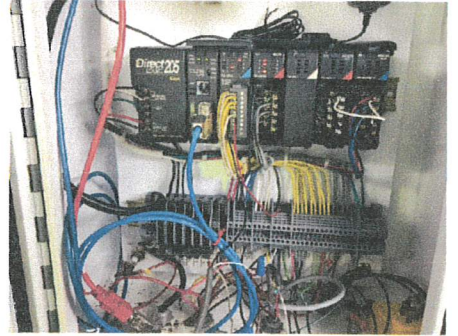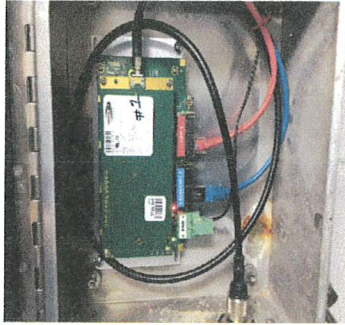
Requires 6 cameras, 8 port NVR. Has power and data at the pole by Host site.
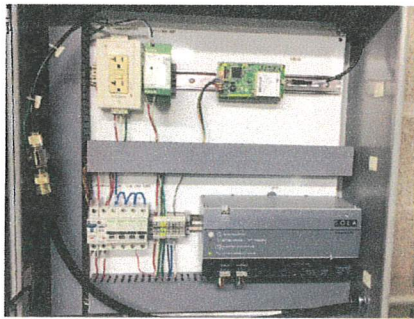

No power or data, requires 3 camera for coverage of bathroom, basketball court and play equipment.

New house next to area, which should be asked if they could host the system, for power and data connection?

Well # 1 by the

Well #5 BY 3rd Tee

Well # 6

DH-IPC-HFW2441T-Z(A)S

4MP IR Vari-focal Bullet WizSense Network Camera

Wiz Sense

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

System Overview

With advanced deep learning algorithm, Dahua WizSense 2 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

Functions

SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

Perimeter Protection

With deep learning algorithm, Dahua Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion) are largely reduced.

- 4-MP 1/2.9" CMOS image sensor, low luminance, and high definition image.
- Outputs max. 4 MP (2688 × 1520)@20 fps, and supports 2560 × 1440 (2560 × 1440)@25/30 fps.
- H.265 codec, high compression rate, ultra-low bit rate.
- Built-in IR LED, and the max. illumination distance is 60 m.
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments.
- Rotation mode, WDR, 3D NR, HLC, BLC, digital watermarking, applicable to various monitoring scenes.
- Intelligent monitoring: Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human).
- Abnormality detection: Motion detection, video tampering, audio detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, and voltage detection.
- Alarm: 1 in, 1 out (Only - ZAS supports); audio: 1 in, 1 out (Only - ZAS supports); supports max. 256 G Micro SD card; built in MIC.
- 12 VDC/PoE power supply, easy for installation.
- IP67, IK10 (optional) protection.
- SMD Plus.

4Mp | SMD Plus | Smart Codec | Perimeter Protection | WDR | IP67

WDR

With advanced Wide Dynamic Range (WDR) technology, Dahua network camera provides clear details in the environment of strong brightness contrast. The bright and dark area can get clear video even in high brightness environment or with backlight shadow.

Cyber Security

Dahua network cameras employ a series of security technologies, including security authentication and authorization, access control protocols, trusted protection, encrypted transmission and encrypted storage. These technologies improve the camera's defense against external cyber threats and prevent malicious programs from compromising the device.

Protection (IP67, Wide Voltage)

IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can work normally after soaking in 1 m deep water for 30 minutes.
Wide voltage: The camera allows ±30% (for some power supplies) input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Technical Specification

Camera

Image Sensor	1/2.9" CMOS
Max. Resolution	2688 (H) × 1520 (V)
ROM	128 MB
RAM	128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.008 lux@F1.5 (Color, 30 IRE) 0.0008 lux@F1.5 (B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	60 m (196.85 ft) (IR LED)
Illuminator On/Off Control	Auto; Manual
Illuminator Number	4 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–360° Tilt: 0°–90° Rotation: 0°–360°

Lens

Lens Type	Motorized vari-focal
Lens Mount	φ14
Focal Length	2.7 mm–13.5 mm
Max. Aperture	F1.5
Field of View	H: 104°–29°; V: 54°–16°; D: 125°–34°
Iris Control	Fixed
Close Focus Distance	0.8 m (2.62 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	64.0 m (209.97 ft)	25.6 m (83.99 ft)	12.8 m (41.99 ft)	6.4 m (20.99 ft)
	T	210.0 m (688.97 ft)	84.0 m (275.59 ft)	42.0 m (137.80 ft)	21.0 m (68.90 ft)

Intelligence

IVS (Perimeter Protection)	Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human)
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.265+; Smart H.264+
Video Frame Rate	Main stream: 2688 × 1520@(1–20 fps)/2560 × 1440@(1-25/30 fps) Sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.

Stream Capability	2 streams
Resolution	2688 × 1520 (2688 × 1520); 2560 × 1440 (2560 × 1440); 2304 × 1296 (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32 kbps–6144 kbps; H.265: 12 kbps–6144 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Manual; Auto
Noise Reduction	3D NR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest (RoI)	Yes (4 areas)
Smart Illumination	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 2688 × 1520 resolution and lower)
Mirror	Yes
Privacy Masking	4 areas

Audio

Built-in MIC	Yes
Audio Compression	G.711a; G.711Mu; G.726; PCM

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; audio detection; voltage detection; defocus detection; external alarm (Only- ZAS supports); SMD; security exception

Network

Network Port	RJ-45 (10/100 Base-T)
SDK and API	Yes
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; NTP; Multicast; ICMP; IGMP
Interoperability	ONVIF (Profile S/Profile T); CGI; P2P; Milestone
User/Host	6 (Total bandwidth: 36 M)
Storage	FTP; SFTP; Micro SD card (support max. 256 GB)
Browser	IE Chrome Firefox
Management Software	Smart PSS; DSS; DMSS
Mobile Client	iOS; Android

Cyber Security	Video encryption; Configuration encryption; Digest; WSSE; Account lockout; Security logs; IP/MAC filtering; Generation and importing of X.509 certification; syslog; HTTPS; 802.1x; Trusted boot; Trusted execution; Trusted upgrade

Certification

Certifications	CE-LVD:EN62368-1; CE-EMC:Electromagnetic Compatibility Directive 2014/30/EU; FCC:47 CFR FCC Part 15, Subpart B

Port

Audio Input	1 channel (RCA port) (Only- ZAS supports)
Audio Output	1 channel (RCA port) (Only- ZAS supports)
Alarm Input	1 channel in: 5mA 3V–5V DC (Only- ZAS supports)
Alarm Output	1 channel out: 300mA 12V DC (Only- ZAS supports)

Power

Power Supply	12 VDC/PoE (802.3af)
Power Consumption	-ZS: Basic: 2.4 W (12 VDC); 3.1 W (PoE) Max. (H.265+intelligence on +WDR +IR on): 8.7 W (12 VDC); 10.1 W (PoE) -ZAS: Basic: 2.4 W (12 VDC); 3.1 W (PoE) Max. (H.265+intelligence on +WDR +IR on): 8.8 W (12 VDC); 10.2 W (PoE)

Environment

Operating Temperature	−30 °C to +60 °C (−22 °F to +140 °F)
Operating Humidity	≤95%
Storage Temperature	−40 °C to +60 °C (−40°F to +140°F)
Protection	IP67, IK10 (optional)

Structure

Casing Material	Metal
Product Dimensions	238.5 mm × 90.7 mm × 90.7 mm (9.39" × 3.57" × 3.57") (L × W × H)
Net Weight	-ZS: 0.73 kg (1.6 lb) -ZAS: 0.76 kg (1.7 lb)
Gross Weight	-ZS: 0.99 kg (2.2 lb) -ZAS: 1.02 kg (2.2 lb)

Ordering Information

Type	Model	Description
4MP Camera	DH-IPC-HFW2441T-ZAS	4MP IR Vari-focal Bullet WizSense Network Camera
	DH-IPC-HFW2441T-ZS	4MP IR Vari-focal Bullet WizSense Network Camera
Accessories (Optional)	PFA130-E	Junction Box
	PFA152-E	Pole Mount Bracket
	PFM321D	12 VDC 1A Power Adapter
	PFM900-E	Integrated Mount Tester
	TF-P100	MicroSD Memory Card

Accessories

Optional:
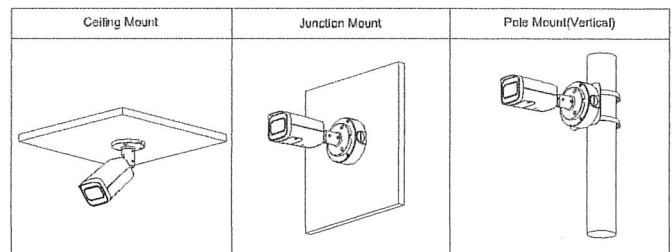
PFA130-E
Junction
Box

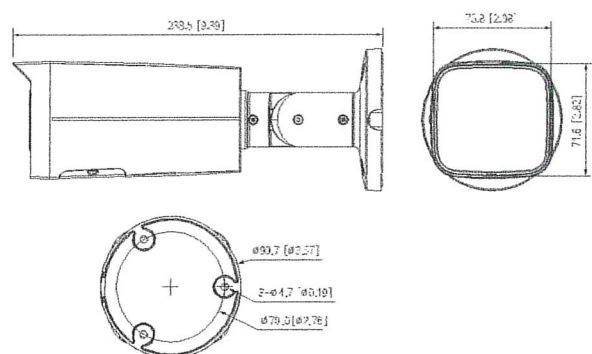PFA152-E
Pole Mount
Bracket

PFM321D
12 VDC 1A
Power Adapter

PFM900-E
Integrated
Mount Tester

TF-P100
MicroSD
Memory Card

Ceiling Mount	Junction Mount	Pole Mount(Vertical)

Dimensions (mm[inch])

DH-IPC-HDBW3441R-ZAS

4MP IR Vari-focal Dome WizSense Network Camera

WizSense

- 4MP, 1/3" CMOS image sensor, low illuminance, high image definition
- Outputs max. 4MP (2688 × 1520)@30 fps
- H.265 codec, high compression rate, low bit rate
- Built-in IR LED, max. IR distance: 40 m
- ROI, SMART H.264+/H.265+, flexible coding, applicable to various bandwidth and storage environments
- Rotation mode, WDR, 3D DNR, HLC, BLC, digital watermarking, applicable to various monitoring scenes
- Intelligent detection: Intrusion, tripwire (support the classification and accurate detection of vehicle and human)
- Abnormality detection: Motion detection, video tampering, scene changing, audio abnormality detection, no SD card, SD card full, SD card error, network disconnection, IP conflict, illegal access, voltage detection
- Alarm: In, out; Audio: In, out; Supports max. 256 G Micro SD card
- 12V DC/POE power supply
- IP67, IK10 protection
- SMD Plus

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

4Mp | SMD Plus | Smart Codec | Starlight | Perimeter Protection | IP67

Series Overview

With advanced deep learning algorithm, Dahua WizSense 3 Series network camera supports intelligent functions, such as perimeter protection and smart motion detection. With starlight technology, this series camera provides a better image effect in the condition of low illuminance.

Functions

SMD Plus

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

Smart H.265+ & Smart H.264+

With advanced scene-adaptive rate control algorithm, Dahua smart encoding technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

Perimeter Protection

With deep learning algorithm, Dahua Perimeter Protection technology can recognize human and vehicle accurately. In restricted area (such as pedestrian area and vehicle area), the false alarms of intelligent detection based on target type (such as tripwire, intrusion) are largely reduced.

Starlight

Dahua Starlight technology mainly applies to the environment of low illumination, and it can provide clear colorful video. Even in the environment of min. illumination, the technology can guarantee the good image effect.

Cyber Security

Dahua network camera is equipped with a series of key security technologies, such as security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage, which improve its security defense and data protection, and prevent malicious programs from invading the device.

Protection (IP67, IK10, wide voltage)

IP67: The camera passes a series of strict test on dust and soak. It has dust-proof function, and the enclosure can works normal after soaking in 1 m deep water for 30 minutes.

IK10: The enclosure can stand the punch more than 5 times from a 5 kg hammer falling from a height of 40 cm (Impact energy is 20J).

Wide voltage: The camera allows ±30% input voltage tolerance (wide voltage range), and it is widely applied to outdoor environment with instable voltage.

Onvif

Technical Specification

Camera

Image Sensor	1/3"4Megapixel progressive CMOS
Max. Resolution	2688 (H) ×1520 (V)
ROM	128 MB
RAM	512 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100000 s
Min. Illumination	0.005 Lux@F1.5 (Color, 30IRE) 0.0005 Lux@F1.5 (B/W, 30IRE) 0 Lux (Illuminator on)
S/N Ratio	> 56 dB
Illumination Distance	40 m (131.23 ft)
Illuminator On/Off Control	Auto/Manual
Illuminator Number	2 (IR LED)
Pan/Tilt/Rotation Range	Pan: 0°–355°; Tilt: 0°–75°; Rotation: 0°–355°

Lens

Lens Type	Motorized vari-focal
Mount Type	φ14
Focal Length	2.7 mm–13.5 mm
Max. Aperture	F1.5
Field of View	Horizontal: 104°–27° Vertical: 55° –15° Diagonal: 124° –31°
Iris Type	Fixed
Close Focus Distance	0.8 m (2.6 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	64.0 m (210.0 ft)	25.6 m (84.0 ft)	12.8 m (42.0 ft)	6.4 m (21.0 ft)
	T	222.0 m (728.3 ft)	88.8 m (291.3 ft)	44.4 m (145.7 ft)	22.2 m (72.8 ft)

Professional, Intelligent

Perimeter Protection	Tripwire; intrusion (Recognition of human and vehicle)
Intelligent Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG(only supported by sub stream)
Smart Codec	Smart H.265+/ Smart H.264+
Video Frame Rate	Main stream (2688 × 1520@1–25/30 fps) sub stream (704 × 576@1–25 fps/704 × 480@1–30 fps) third stream (1280 × 720@1–25/30 fps)
Stream Capability	3 streams
Resolution	4M (2688 × 1520); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)

Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 3 Kbps–8192 Kbps H.265: 3 Kbps–8192 Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
White Balance	Auto/natural/street lamp/outdoor/manual/regional custom
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest(RoI)	Yes (4 areas)
Smart Illumination	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 1920 × 1080 resolution and lower.)
Mirror	Yes
Privacy Masking	4 areas

Audio

Audio Compression	G.711a; G.711Mu; G726

Alarm

Alarm Event	No SD card; SD card full; SD card error; less service time of SD card (smart card supports); network disconnection; IP conflict; illegal access; voltage detection; security exception; motion detection; video tampering; scene changing; input abnormal; intensity change; tripwire; intrusion; SMD

Network

Network	RJ-45 (10/100 Base-T)
SDK and API	Yes
Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; PPPoE; SNMP
Cyber Security	Video encryption; firmware encryption; configuration encryption; Digest; WSSE; account lockout; security logs; IP/MAC filtering; generation and importing of X.509 certification; syslog; HTTPS; 802.1x; trusted boot; trusted execution; trusted upgrade
Interoperability	ONVIF(Profile S/Profile G/Profile T);CGI;P2P;Milestone; Genetec
Scene Self-adaptation (SSA)	Yes
User/Host	20 (Total bandwidth: 64 M)
Storage	FTP; SFTP; Micro SD Card (support max. 256 G); NAS
Browser	IE: IE8, IE9, IE11 Chrome Firefox
Management Software	Smart PSS, DSS, DMSS
Mobile Phone	IOS; Android

Certification

Certifications	CE-LVD: EN62368-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07

Port

Audio Input	1-channel (RCA port)
Audio Output	1-channel (RCA port)
Alarm Input	1 channel in: 5mA 3V–5V DC
Alarm Output	1 channel out: 300mA 12V DC

Power

Power Supply	12V DC/PoE (802.3af)
Power Consumption	<8.5W

Environment

Operating Conditions	-30°C to +60°C (-22°F to +140°F)/less than 95%
Storage Conditions	-40°C to +60°C (-40°F to +140°F)
Protection Grade	IP67; IK10

Structure

Casing	Metal
Dimensions	Φ122 mm × 88.9 mm (Φ4.8" × 3.5")
Net Weight	492 g (1.1 lb)
Gross Weight	663 g (1.5 lb)

Ordering Information

Type	Part Number	Description
4MP Camera	DH-IPC-HDBW3441RP-ZAS	4MP IR Vari-focal Dome WizSense Network Camera,PAL
	DH-IPC-HDBW3441RN-ZAS	4MP IR Vari-focal Dome WizSense Network Camera,NTSC
Accessories (optional)	PFA137	Junction Box
	PFB203W	Wall Mount
	PFA152-E	Pole Mount
	PFA200W	Rain Shade
	PFA106	Mount Adapter
	PFB220C	Celling Mount
	PFB200C	In-Celling Mount
	PFM321D	DC12V1A Power Adapter
	LR1002-1ET/1EC	Single-port Long Reach Ethernet over Coax Extender
	PFM900-E	Integrated Mount Tester
	PFM114	TLC SD Card

Accessories

Optional:

PFA137
Junction Box

PFB203W
Wall Mount

PFA152-E
Pole Mount

PFA200W
Rain Shade

PFA106
Mount Adapter

PFB220C
Celling Mount

PFB200C
In-Celling Mount

PFM321D
DC12V1A Power Adapter

LR1002-1ET/1EC
Single-port long reach ethernet over coax extender

PFM900-E
Integrated Mount tester

PFM114
TLC SD card

Junction Mount	Wall Mount	Wall Mount	Pole Mount
PFA137	PFA137+PFA200W	PFB203W	PFB203W+PFA152-E

Ceiling Mount	In-Ceiling Mount
PFA106+PFB220C	PFB200C

Dimensions (mm[inch])

122.0 [4.80]

88.9 [3.50]   45.5 [1.79]

3-⌀4.5 [⌀0.18]

110.0 [4.33]

DHI-NVR4208-8P-4KS2/L

8 Channel 1U 2HDDs 8PoE Network Video Recorder

- New 4.0 user interface, Security baseline 2.1
- H.264, H.265, Smart H.264+, and Smart H.265+. H.265 auto switch
- Max. decoding capability: 8 × 1080p@30 fps. Supports adaptive decoding
- Supports mainstream cameras of ONVIF and RTSP protocols
- P2P remote surveillance, video play on mobile device
- VGA/HDMI simultaneous video output, maximum resolution of HDMI is 4K
- AI by Camera: Face detection, perimeter protection, IVS, people counting, heat map, and SMD
- Supports remote configuration and management of IPC, such as setting parameters, getting information, and upgrading IPC of the same model in batches

Series Overview

Dahua NVR4000-4KS2/L is introduced as the Lite series NVR that supports for 4K and H.265 encoding technology with excellent performance at an affordable price. For applications where image details are highly required, it delivers the capability of 4K resolution processing. The NVR can be served as edge storage, central storage or backup storage with an intuitive shortcut operation menu for remote management and control.

Due to its cost-effective and easy-to-install design, this NVR is ideal for a wide range of applications such as public safety, water conservancy, transportation, city centers, education, and financial institutions.

The NVR is compatible with numerous third-party devices making it the perfect solution for surveillance systems that work independently of video management system (VMS). It features an open architecture that supports for multi-user access and is compatible with ONVIF Profile S, T, G protocol, enabling interoperability with IP cameras.

Functions

Perimeter Protection by Camera

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improving alarm accuracy.

Face Detection by Camera

Face detection is to detect if there is any human face appearing in the video. This technology adopts a deep learning algorithm to support face detection, tracking, optimization and capturing, and then output the best face snapshot.

SMD Plus by Camera

With intelligent algorithm, Dahua Smart Motion Detection technology can categorize the targets that trigger motion detection and filter the motion detection alarm triggered by non-concerned targets to realize effective and accurate alarm.

People Counting by Camera

With deep learning algorithm, Dahua People Counting technology can track and process moving human body targets to realize the accurate statistics of enter No., leave No., and In Area No. Working with management platform, it outputs yearly/monthly/weekly/daily reports to meet your requirements.

Smart Codec

With advanced scene-adaptive rate control algorithm, Dahua smart codec technology realizes the higher encoding efficiency than H.265 and H.264, provides high-quality video, and reduces the cost of storage and transmission.

DMSS

The DMSS app is available on the iOS App Store and Google Play. It makes surveillance easy and simple, allowing you to remotely access back-end devices, view live video, receive event push notifications, and search for recorded videos from an iPhone, iPad, or Android phone at anytime from virtually anywhere.

Technical Specification

System

Main Processor	Industrial-grade embedded processor
OS	Embedded Linux
Operation Interface	Web/operating in local GUI

Perimeter Protection by Camera

Performance	8 channels
AI Search	Search for pictures by channel, time and event type

Face Detection by Camera

Performance	4 channels
Face Attributes	6 attributes: Gender, age, glasses, expression, mouth mask, and beard
AI Search	Search for pictures by channel, time and face attributes

SMD Plus by Camera

Performance	8 channels
AI Search	Search by target classification (human, vehicle)

Video

Access Channel	8
Network Bandwidth	Access: 160 Mbps; Storage: 160 Mbps; Forward: 64 Mbps
Resolution	8MP; 6MP; 5MP; 4MP; 3MP; 1080p; 720p; D1
Decoding Capability	8 × 1080p@30 fps
Video Output	1 × VGA output, 1 × HDMI output, supports simultaneous video sources output for VGA and HDMI
Multi-screen Display	1 , 4, 8, 9 views
Third-party Camera Access	ONVIF; RTSP

Compression

Video	Smart H.265/H.265/Smart H.264/H.264/MJPEG
Audio	PCM/G711A/G711U/G726/AAC

Network

Network Protocol	HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; RTSP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; DDNS; FTP; Alarm Server; IP Search (Support Dahua IP camera; DVR; NVS; etc.); P2P; auto register
Mobile Phone Access	Android; iOS
Interoperability	ONVIF(profile T/S/G); CGI; SDK
Browser	Chrome; IE9 or later; firefox

Record Playback

Multi-channel Playback	Up to 8 channels for playback
Record Mode	Manual record; alarm recording; SMD recording; smart recording
Storage	Local HDD; network
Backup	USB storage device

Playback Function	1. Play/pause/stop/slow/quick/backward/by frame 2. Full screen, backup (video clip/file), partial zoom in, and audio on/off

Storage

Disk Group	Yes

Alarm

General Alarm	Motion detection, privacy masking, video loss, scene changing, PIR alarm, IPC external alarm
Anomaly Alarm	Camera disconnection, storage error, disk full, IP conflict, MAC conflict, login locked, and cybersecurity exception
Intelligent Alarm	Face detection, perimeter protection (intrusion and tripwire), IVS, people counting, heat map, and SMD alarms
Alarm Linkage	Recording, snapshot, audio, buzzer, log, preset, and email

External Port

Audio Input	1 × RCA input
Audio Output	1 × RCA output
HDD	2 SATA III ports, up to 10 TB for a single HDD. The maximum HDD capacity varies with environment temperature
Alarm Input	4
Alarm Output	2
USB	2 (1 × front USB2.0; 1 × back USB2.0)
HDMI	1 (supports up to 4K resolution output)
VGA	1
Network	1 × RJ-45, 10/100/1000 Mbps self-adaptive Ethernet port
PoE	8

General Parameter

Power Supply	100 V–240 V, 47 Hz–63 HZ, 3.5 A
Power Consumption	< 10 W (HDD not included, idling) Total output power of PoE is 117W, the maximum output power of a single port is 25.5W
Net Weight	2.51 kg (5.53 lb)
Gross Weight	3.79 kg (8.36 lb)
Product Dimensions	375 mm × 327.4 mm × 53.8 mm (14.76" × 12.89" × 2.12") (W × L × H)
Package Dimensions	170 mm × 449 mm × 421 mm (6.69" × 17.68" × 16.57") (W × L × H)
Operating Conditions	−10 °C to +55 °C (+10 °F to +131 °F)
Storage Conditions	0 °C to +40 °C (32 °F to 104 °F)
Operating Humidity	10%~93%
Storage Humidity	30%~85%
Operating Altitude	3000 m (9842.52 ft)
Installation	Desktop mounted
Certifications	CE: EN62368-1; EN55032,EN55024, EN55035, EN61000-3-2, EN61000-3-3 EN50130-4 FCC: Part 15 Subpart B

Ordering Information

Type	Model	Description
8 Channel NVR	DHI-NVR4208-8P-4KS2/L	8 Channel 1U 2HDDs 8PoE Network Video Recorder

Dimensions (mm[inch])

375.0 [14.76]
53.0 [2.09]
327.9 [12.91]
321.5 [12.66]
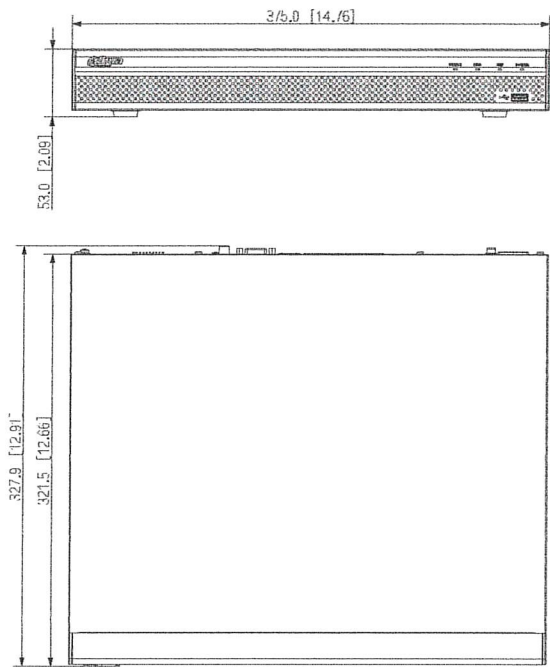
Rear Panel
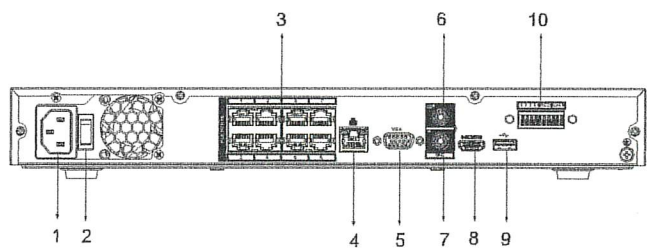
1	Power Input Port	2	Power Switch
3	PoE Ports	4	Network Port
5	VGA Port	6	Mic Out
7	Mic In	8	HDMI Port
9	USB Port	10	Alarm Input/Output

DHI-ITC437-PW6M-IZ-GN

Access ANPR Camera
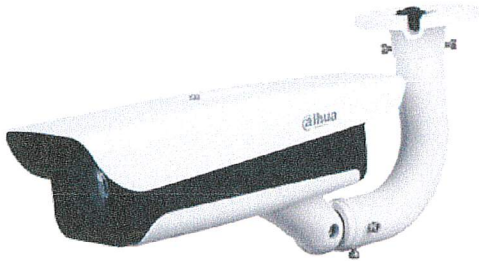
- CMOS image sensor
- Video compression standards: H.265/H.264M/H.264H/H.264B/MJPEG
- Integrated design, IP67

System Overview

The long range access ANPR camera is designed with high-performance CMOS image sensor and independently-developed processor, capable of reading and extracting detailed vehicle information day and night. Intelligent deep learning algorithm allows recognition of vehicle license plate, and vehicle brand, model, logo, and color. The camera is extensively applied to vehicle capture and recognition of community road, parking lot, and other entrance and exit surveillance scenarios.

Functions

High-quality image
Industry-specific CMOS image sensor with high sensitivity, high SNR and excellent WDR provides lifelike images in all weathers.

Complete intelligence
High-performance CPU processor helps extract and analyze information of motor and non-motor vehicles in real-time, providing vehicle feature details for business decision-making.

High-level protection
Integrated design with low power consumption, and IP67 protection grade, suitable for various harsh environments.

Multiple ports
Various signal, data and communication ports, capable of connecting to external devices such as barrier.

Easy installation
Built-in LED illuminator and motorized vari-focal lens, providing ease of installation and commissioning.

Technical Specification

Basic

Illuminator Number	6 IR illuminators, brightness adjustable
Image Sensor	1/1.8" CMOS
Image Resolution	2688 × 1520 (OSD black strip excluded)
Video Resolution	Main stream: 4M (2688 × 1520), 1080p (1920 × 1080), 720p (1280 × 720) Sub stream: 720p (1280 × 720), D1 (704 × 576, 704 × 480), CIF (352 × 288, 352 × 240)
Video Frame Rate	PAL: Main stream (2688 × 1520@25 fps, 1920 × 1080@25 fps, 1280 × 720@25 fps), sub stream: (1280 × 720@25 fps, 704 × 576@25fps, 352 × 288@25 fps) NTSC: Main stream (2688 × 1520@30 fps, 1920 × 1080, 1280 × 720@30 fps), sub stream (1280 × 720@30 fps, 704 × 408@30 fps, 352 × 240@30 fps)
Bit Rate	H.264B: 32 Kbps–32768 Kbps H.264M: 32 Kbps–32768 Kbps H.264H: 32 Kbps–32768 Kbps H.265: 32 Kbps–32768 Kbps MJPEG: 512 Kbps–65536 Kbps
Video Compression	H.264B/H.264M/H.264H/H.265/MJPEG
Picture Encoding Format	JPEG
Noise Reduction	3D NR
White Balance	Full auto, auto color temperature range, customized color temperature
Electronic Shutter Speed	1/50–1/10,000 auto or manual
WDR	96 db
Edge Enhancement	Yes
Exposure Mode	Full auto, customized auto, customized
Iris Control	Auto iris (W:1.33—T:1.34)

Performance

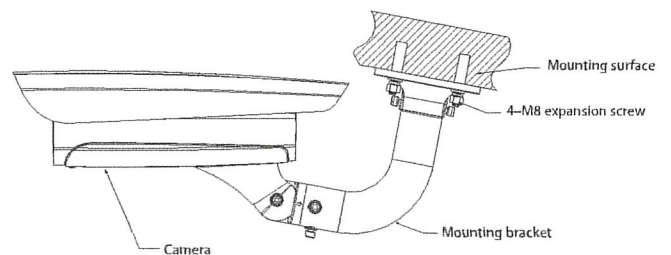|	
Trigger Mode	Video detection; I/O coil

DHI-ITC437-PW6M-IZ-GN

Shutter	Single shutter
Storage	1 built-in TF card slot. Supports Kingston 16 G, 32 G, 64 G, and 128 G; Dahua 16 G, 32 G, 64 G, and 128 G; SanDisk 16 G, 32 G, 64 G, and 128 G
Image Tampering Prevention	Yes. Video/picture can be checked through watermark and verification
Field of View	H: 40.55° (W)–9.33° (T) V: 22.7° (W)–5.3° (T) D: 46.6° (W)–10.63° (T)
Illumination Distance	30 m (98.43 ft)
Capture Distance	8 m–30 m (26.25 ft to 98.42 ft)
Detected Width	6 m–7 m (19.69 ft to 22.97 ft)
Min. Illumination	0.002 lx (built-in illuminator on)
Max. Detection Speed	60 km/h (37.28 miles per hour)
Alarm Event	Alarm for events of no storage card, storage card no space, storage card error, network disconnection, IP conflict, and illegal access
Security	Authorized username and password, MAC address binding, HTTPS encryption, IEEE 802.1x, and network access control
OSD Overlay	Supports overlay of time, address, plate, vehicle (color, type, accuracy), vehicle posture, counterfeit, checkpoint direction, trigger source, and custom
Automatic Network Replenishment (ANR)	Yes. Transfer through platform/FTP
Auto Registration	Yes

Intelligence

Vehicle Detection	Vehicle capture rate ≥ 99%
Vehicle Recognition	Supports recognizing vehicle type, vehicle color, features of driver and front-seat passenger, licensed/unlicensed vehicle. Vehicle recognition rate ≥ 95%
Video Metadata	Yes
Intelligent Track Frame	Intelligent frame display. Supports displaying vehicle plate and vehicle path

Port

Lens Mount	Lens in the camera module
Analog Output	1
Network	1 × 100/1000 M Ethernet port (RJ-45)
RS-485	2
RS-232	1
Alarm Input	3, optocoupler input (on-off input)
Alarm Output	3 ports. 2-channel optocoupler output, 1-channel relay output, which can connect to devices such as barriers
Audio Input	1-channel RCA port
Audio Output	1-channel RCA port

General

Power Supply	12V DC, 24V AC, PoE+
Power Consumption	< 20 W
Operating Temperature	–30°C to +65°C (–22°F to +149 °F)
Operating Humidity	10%RH–90%RH (no condensation)
Casing	Metal + plastic
Protection Grade	IP67
Dimensions	515.2 mm × 124.7 mm × 183.2 mm (20.28" × 4.91" × 7.21") (L × W × H)
Net Weight	1.9 kg (4.19 lb)
Gross Weight	3.8 kg (8.38 lb)
Installation	Bent pole bracket (included)
Lens	Standard 10 mm–50 mm (0.39"–1.97")

Certification

CE, FCC	Yes
RoHS	Yes

Ordering Information

Type	Model	Description
4MP Camera	DHI-ITC437-PW6M-IZ-GN	4MP long range access ANPR camera (850 nm built-in IR illuminator)

Installation

Mounting surface
4–M8 expansion screw
Mounting bracket
Camera

Dimensions (mm[inch])

105.73 [4.16]
515.21 [20.28]
370.46 [14.58]
183.21 [7.21]
124.73 [4.91]
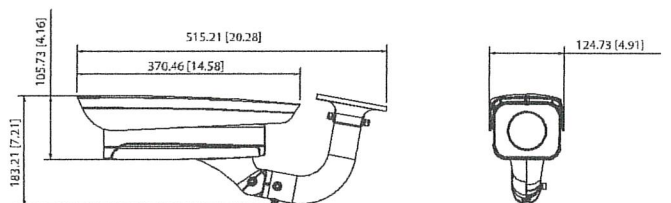
Lake-Dam Committee Expense Budget

3June2023 LDC Approved

		2022 Oct	Nov	Dec	2023 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Total	Comments	BOE
Lake Expenses																
63700.10	Technical Support/Analysis/Testing															
63700.11	Lake Adv	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$30,000	Limerick/Leprechaun	Historical Data
63710.12	AquaTechnex Weed Treatment/Permits								$15,000	$15,000	$15,000			$45,000	Limerick/Leprechaun	Vendor Quote
63710.13	Water Q	$500						$500	$500	$500	$500	$500	$500	$3,500	IEH Labs	Vendor Quote
63700.20	Geese Mitigation									$2,400				$2,400	As Required	Historical Data
63700.30	Lake Limerick Fish Plant/Derby															
63700.31	Spring Fish Plant							$5,500						$5,500	Nisqually Trout	Historical Data
63700.32	Fishing Derby							$2,000						$2,000	Misc. Expenses	Historical Data
63700.33	Fall Fish Plant												$1,500	$1,500	Nisqually Trout	Historical Data
63700.40	Lake Leprechaun Fish Plant							$1,500						$1,500	Nisqually Trout	Historical Data
Total														**$91,400**		
Licenses & Permits																
63805.10	Fishing Derby (WDFW)							$200						$200	Annual Permit	Fee Schedule
63805.20	Dam Operations (Dept of Ecology)							$3,500						$3,500	Annual Permit	Fee Schedule
Total														**$3,700**		
Park Expenses																
65000.1	Repair Inn Island Shoreline (started FY22/23 not completed)							$5,400						**$5,400**	Feasibility Study	LLCC Estimate
65000.2	Park Host Advertisement				550									**$550**		
Total														**$5,950**		
Repairs and Maintenance																
67200.10	Misc. Dam	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	$3,600	Misc. Hardware	Historical Data
67200.20	Misc. Lake	$450	$450	$450	$450	$450	$450	$450	$450	$450	$450	$450	$450	$5,400	Misc. Hardware	Historical Data
67200.30	Misc. Park	$200	$200	$200	$200	$200	$200	$200	$5,600	$200	$200	$200	$200	$7,800	Misc. Hardware	Historical Data
Total														**$16,800**		
Small Tools & Equipment																
67800.10	Misc. Tools	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	**$1,200**	Misc. Hardware	Historical Data
Supplies																
67805.10	Misc. Supp	$166	$166	$166	$166	$166	$170	$166	$166	$166	$166	$166	$170	**$2,000**	Consumables	Historical Data
Liability Insurance		773	773	1,173	773	773	773	773	773	773	773	773	773	9,674		
													GRAND TOTAL	**$130,724**		

LAKE-DAM FY2023/24 PROJECTS BUDGET EXERCISE

3June2023 LDC Approved

Project / Equipment Description	Priority Level	Capital / Expense	Cost Estimate	Provides Safety	Maint'ns Asset	Improves Experience	Comments
Inn Island Rebuild; NW Corner (Ph 1) *	1	Expense	$5,400	X	X	X	Feasibility Study -No hardscape solutions
Inn Island Bridge Upgrade/Rebuild (Ph1) *	1	Capital	$5,400	X	X	X	Bridge Condition Assessment (Structural Engr)
Banbury Park Restroom Upgrade/Update *	1	Capital	$15,000	X	X	X	Year Around Usage
Park Restroom Restroom/Shed Reroof *	1	Capital	$30,000	X	X		Based on Cogent Prop. Need Morris Bid Update
Cranberry Creek Retention Pond (Ph 1) **	1	Capital	$23,760		X	X	Feasibility Study;PAR update needs LDC rvw/apprv
Bird Sanctuary Dredging (Ph 1) **	1	Capital	$13,500		X	X	Feasibility Study;PAR update needs LDC rvw/apprv
Upgrade all Park Restrooms based on Banbury	1	Capital	$60,000	X	X	X	$15K x 4 Park Restrooms
Upgrade Restroom at Log Toy to ADA standard	1	Capital	$5,000	X	X	X	Goal is to fit within existing foot print
Security Cameras installed at all parks	1	Capital	$18,000	X	X	X	Based on WGM $16,156 (plus tax) quote
Procure/Install Metal Picnic Tables **	2	Capital	$16,800	X		X	Replace remaining wood tables with metal
Lake Leprechaun Dredging (Ph 2) **	2	Capital	$54,000		X	X	Detailed Engr/Permitting
Parks Landscape/Amenities Update	2	Capital	$10,000	X	X	X	Conceptual Plan
Sport Court Surface Restoration - See Note 1	3	Capital	$100,000	X	X	X	Asphalt $60K - $100K; Concrete $100K - $150K
TOTAL			$356,860				

Deferred to FY24/25

Project / Equipment Description	Priority Level	Capital / Expense	Cost Estimate	Provides Safety	Maint'ns Asset	Improves Experience	Comments
Cranberry Creek Retention Pond (Ph 2)			$43,200		X	X	Detailed Engr/Permitting (need PH1 completed)
Bird Sanctuary Dredging (Ph 2)			$54,000		X	X	Detailed Engr/Permitting (need PH1 completed)
Replace Lake Patrol Boat with newer used craft			$15,000	X	X		Boat hull beyond repair
Install Cyper Lock on Anglia Park Walk-in gate			TBD	X	X	X	Need to locate contractor to obtain bid

* Approved in FY22/23 Budget but either not started or completed
** Previously proposed; deferred by Board

Note1: $5400 budgeted in FY23/24 Expense Spreadsheet for Sport Court surface spot repairs (Parks Repairs & Maint.)