**Essential Maintenance/Improvements.**  Following is a partial list, in no order or priority, of items listed by the independent engineers in the hatchery assessment reports. In an effort to initiate action on these items in FY2018 the subcommittee requested the managers to assist in prioritizing these items for their particular hatchery (by the end of July). Generally, the following list shows items that seemed to warrant prioritization based on the “description/condition” and the “est. remaining life” of the particular item. The intent of this list is to show what items that most likely will be identified by the managers. As you will note some of the listed items can likely be addressed as part of the project’s annual O&M budget.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ITEM** | **DESCRIPTION / CONDITION** | **INSTALL DATE** | **EST LIFE EXPECTANCY (YEARS)** | **EST REMAINING LIFE (YEARS)** | **APPROX REPLACEMENT COST** |
| FLEXIBLE HOSES FOR WATER SUPPLY/ DRAINS | Hoses are getting brittle. | 1997 | 20 | 0 | $27,250 |
| RESIDENCE, PARK MODEL TRAILER | Condition is good, but due for replacement. | 1998 | 15 | -4 | $25,500 |
| SUPPLEMENTAL OXYGEN SYSTEM | Condition is good. | 1998 | 15 | -4 | $10,000 |
| SURFACE WATER SCREENS (2) | Condition could not be determined. No known functional issues. | 1998 | 20 | 1 | $50,000 |
| ELECTRICAL SYSTEM IMPROVEMENTS | Generator currently feeds through main breaker, no power to pumps if breaker fails. | NA | 30 | NA | $5,000 |
| RESIDENCE, CAMP TRAILER | Condition is good, but due for replacement. | 1996 | 15 | -6 | $25,500 |
| BACKUP OXYGEN SYSTEM, DIFFUSERS, REGULATORS & BOTTLES | Condition is good. | 1996 | 20 | -1 | $15,000 |
| BATHROOM/SHOWER BUILDING (225 SF) | Condition is good. Needs air conditioning and ventilation. |  |  |  |  |
| RESIDENCE, CAMP TRAILER (250 SF) | Condition is good. Needs heating and cooling repairs. | 1998 | 15 | 0 | $25,500 |
| SUPPLY HOSES | Need replacement. | 2002 | 20 | 5 | $20,000 |
| RESIDENCE, CAMP TRAILER | Condition is good, but due for replacement. | 2001 | 15 | -1 | $25,500 |
| RESIDENCE, CAMP TRAILER | Condition is good, but due for replacement. | 2002 | 15 | 0 | $25,500 |
| AIR BLOWER FOR IMPROVED AERATION | Need detailed study for cost. | NA | NA | NA | TBD |
| RESIDENCE, PARK MODEL TRAILER | Condition is good but due for replacement. | 2002 | 15 | 0 | $25,500 |
| CONCRETE (308 SF) | Condition is good, but requires extensive labor to maintain due to accumulation of bedload on screen. | 2001 | 50 | 34 | $61,600 |
| ACCESS ROAD | Steep road graded annually. Detailed analysis and design required to develop repair cost. | 1993 | NA | NA | TBD |
| MODIFY SCREENED OUTLET FOR PIT TAG DETECTION | Design required to refine cost. | NA | NA | NA | $7,500 |
| ADD WIRING TO CONNECT BACKUP GENERATOR | Design required to estimate cost. | NA | NA | NA | TBD |
| REPAIR LEAKING OUTLET PIPE | Water appears to be bypassing the outlet pipe. Does not affect rearing. Detailed investigation required to determine repair. | NA | NA | NA | TBD |
| ALUMINUM TROUGHS (14), 21' X 2.75' | Corrosion and pinhole leaks observed, need to be replaced. | 1989 | 30 | 2 | $74,200 |
| ALUMINUM TROUGHS (6), 16' X 1.3' | Corrosion and pinhole leaks observed, need to be replaced. | 1989 | 30 | 2 | $15,000 |
| CHILLER (15 TON APPROX) | Leaks freon, needs to be replaced. | 1989 | 30 | 2 | $42,000 |
| MAIN PANEL BREAKER REPLACMENT | Breakers are old and unreliable. | 1989 | 30 | 2 | $5,000 |
| PRODUCTION WELL #4, 40 HP VFD | VFD needs to be replaced. | 2008 | 15 | 6 | $11,500 |
| DIESEL STORAGE, 2500 GAL BURIED TANK | Could not assess condition of buried tank. Complete assessment by a specialist is recommended. | 1989 | NA | NA | TBD |
| GASOLINE STORAGE, 500 GAL BURIED TANK | Could not assess condition of buried tank. Complete assessment by a specialist is recommended. | 1989 | NA | NA | TBD |
| REPLACE FISH PUMP | Old pump has been rebuilt several times. | NA | NA | NA | $25,000 |
| WELL WATER BACKUP FOR INTAKE SCREEN FREEZING | Detailed study required to define flow required and depth to suitable groundwater. | NA | NA | NA | TBD |
| INSTALL CENTER POSTS, SCREENS AND STOPLOGS | For easier screen and stoplog handling. | NA | NA | NA | $5,000 |
| INSTALL A MAIN SHUTOFF VALVE | New valve needed to perform maintenance on water control valves. | NA | NA | NA | $6,000 |
| REPLACE ELECTRIC LOUVER ACTUATORS | For opening louvers in 205 KW generator room. | NA | NA | NA | $1,500 |
| ALARM SYSTEM - FIRE, WATER LEVELS, TEMPERATURE, POWER, INCUBATION, 144KW HEATER | PLC blacks out during power outages. Would like to replace with web-based system. $50k initial cost with $250/month thereafter. | 1997 | 30 | 10 | $50,000 |
| REPLACE SCREEN REMOVAL GUIDE CHANNELS ON DOWNSTREAM UNIT | Damaged by river debris, does not allow screen to be pulled if damaged. | 1996 | 50 | 29 | $10,000 |
| REPAIR CONCRETE | Multiple areas of significant spalling to be repaired. Detailed inventory of repairs needed to refine cost. | NA | NA | NA | $50,000 |
| CONCRETE ADULT PONDS (2), 15' X 102' | Ponds are functional, but concrete needs repair. | 1996 | 50 | 29 | $382,500 |
| REPAIR CONCRETE | Cracking and spalling on exterior surfaces. | NA | NA | NA | $200,000 |
| ROOF (COMPOSITION) | Needs to be replaced. | 1994 | 20 | -3 | $1,500 |
| ACCLIMATION POND RELEASE PIPE IMPROVEMENTS | Underground release pipe is too small, long and with low gradient to outlet. Fish sometimes die in the pipe due to insufficient velocity to flush them out. Detailed study required to determine specific solution and cost. | NA | NA | NA | TBD |
| JUVENILE BYPASS SYSTEM (220 SF) | Walls of bypass are leaning inward, being held upright by grating, but no apparent threat of collapse. Detailed assessment requiremed to determine repair cost. | 1996 | 50 | 29 | TBD |
| FIRE SYSTEM JOCKEY PUMP, 1.5 HP | Pump burned out and was replaced because leaks in the fire piping system cause frequent cycling. Facility currently operates with the system disabled, which may result in slow system reponse in an emergency due to pipe filling. Cost includes diaphragm tank to keep pipe pressurized | NA | NA | NA | $8,800 |
| CHILLERS (4) 50 TON | Chillers are 25 years old and walls are thin from sand scour. Chillers need to be replaced. | 1991 | 30 | 4 | $194,000 |
| ASPHALT SETTLING POND, 20,680 SF APPROX | Lining is thin and has cracks. Cost is for stripping and relining. | 1990 | 25 | -2 | $56,900 |
| ROOF AND SIDING | Rot in locations from ice dams, Siding and  Roofing is near replacement | 1991 | 25 | ~5 | $30,000 |
| DOMESTIC WELL | Does not produce enough flow | 1991 | 30 | 5 | $25,000 |
| ROOFING AND SIDING | Rot in locations from ice dams, Siding and  Roofing is near replacement | 1991 | 25 | 5 | $30,000 |