Newman Lake Flood Control Zone District
2016 Flood Control Facility Inspection Report

Inspection Date: September 22, 2016

Participants: Spokane County Engineering/NLFCZD Staff
Marianne Barrentine, PE
Randall Kirk, P.E.

Outlet Structure:

Lake Level:
2124.38 feet with both gates closed.

Gates:
Gates were not tested on date of inspection, gates will be tested when opened this fall. The gates need greased. One zerk fitting is missing and needs replaced. As noted in previous inspections, there is some minor rusting of steel gates and frame around the gate openings (downstream side) and some occasional pitting but it is not structurally significant. Have gates and gate control mechanisms epoxy coated next summer. (gates tested and found functional 11/1/16)

Gages:
The lake gage was wiped down and is readable. Needs replacement within a year or two.

Structural Integrity:
The beams and concrete are still in good condition. There are no cracks in the walls and some concrete pitting from 2123.00 feet downward. The sill is still in good overall condition with minimal signs of scour on the downstream side. The downstream riprap is still in place. The deck grating is in good condition and clipped down.

Trash Rack:
The trash rack has surface rust from 2123.60 feet on down but still in good condition. A small amount of trash should be removed. Trash racks should be painted with an epoxy coating when the gates are painted.

Log Boom:
Log boom is still functional but needs replacement. Pursue with advisory committee if someone will donate logs. Dock floating against boom needs to be removed. (Dock Removed 11/1/16)

Other:
- Trash and debris piled on far side of grating needs to be removed. (Done 11/1/16)
- Cut and remove tree growing next to wall (downstream/road corner) (Done 11/1/16)
- Block hole under chain link fence. (possibly use tree mentioned above) (Done 11/1/16)
- Prune limbs that are growing into fence. (Done 11/1/16)
- Remove and haul off debris dumped against second gate. (Done 11/1/16)
- Spray lily pads in upstream channel next summer

**Channel Water Control Structure:**
Overall, the structural integrity is good as in previous years. The concrete is still in good condition with the exception of some spalling at the top of the roll gate. As noted since 2007, there are small cracks at the corner of both abutments. They have not appeared to change significantly since last year but staff will continue to monitor the cracks. The west side wing wall crack is still approximately 3/10 inch wide. The downstream side of the channel is still in good condition with some erosion on the east side about 25 feet downstream that should continue to be monitored in future inspections. The gates were not tested and will be tested later this fall. Water appears to be leaking under or through the gate, may not be closed all the way (obstruction under gate). Will investigate further this fall when gate is opened. The gates need to be greased. The staff gage is readable, but should be replaced. Screws holding the “guard rail extension” on are coming loose and need to be repaired. (gate tested and found functional 11/1/16)

**Outlet Channel:**
Water is in the channel between the Outlet Structure and the Channel Water Control Structure. Access is limited through this area.

**Outlet Structure to Starr Road Bridge:**
Channel banks appear to be in good condition with some gradual sloughing and minor bank failure downstream of the outlet gate. Some natural meandering is beginning upstream of the private bridge. Monitor lily pad growth and consider spraying next summer.

**Starr Road Bridge to Channel Water Control Structure:**
The banks appear to be in good condition and well vegetated. The gabion baskets along the bridge look good. Staff gage close to needing to be replaced.

**Channel Water Control Structure to Moffat Road:**
Channel banks are in good condition and mostly well vegetated. The gage at Moffat Road has some rust, but is still readable. Only one weir board present. Wild rose should be trimmed along banks above culvert. Brush in channel 300’ upstream of Moffat Road should be removed. (Brush Removed 11/1/16)

**Moffat Road to Lincoln Road:**
The banks appear to be in good condition. The top of bank erosion areas noted four years ago are still present, but do not appear to have worsened. In several locations between Moffat Road and Eller Driveway brush and fallen trees need to be removed. (Brush Removed 11/1/16)
**Lincoln Road to Eller Driveway:**
The upstream bottom of the Lincoln Road culvert is still deteriorating. There is some concern with the bank stabilization near Eller’s pond but it hasn’t noticeably changed since the 2012 inspection. As noted in a previous report, there is erosion and sloughing of the driveway edge above the middle culvert of Eller’s driveway at Marven Lane. Large tree in inlet of culvert at Lincoln Road. *(Tree removed 11/1/16)*

**Eller Driveway to Sump:**
This section of channel was walked and appeared to be in very good condition with some bank sloughing along the corner bends just downstream of Eller’s driveway. There was some minimal debris scattered downstream of Eller’s driveway to the sump and some undercut trees just past the yellow house at the bend. Some scour was present along the S curve just downstream of Eller’s but not changing much since last year. Much of the channel in this area is composed of bedrock, boulders, and cobbles.

Overall, the operating condition of the Outlet Channel is in good condition.

**Sump Area:**
**Condition of exposed gravels:**
The gravels look very good. There was no observable silt buildup present during the inspection.

**Dikes:**
The separation dikes and overflows are in good condition. The Gabion baskets are also in good condition. There is minimal scouring at the pipe outlet. The trash rack fence is holding up well.

**Gages:**
Both gages are in good condition.
Lake Dike:
Inspection Date: May 10, 2016

Participants: Spokane County Engineering/NLFCZD Staff
Marianne Barrentine, P.E.

NRCS Staff
Kelly Scott, P.E.

Basic Notes:
• From outlet gate to old outlet channel/structure no obvious change from last year.
• Board/pile 1984 repair look about the same and are in good condition.
• Found yellow flag iris at old outlet gate.

Discussion Items:
• No obvious issues at the tree. NRCS recommends leaving tree in place for now.
• NRCS working on survey of dike.

Moving Forward:
NRCS has contracted with a consulting firm to perform a dam assessment which will include hydraulic calculations for a dam breach analysis to address the Department of Ecology proposed classification of the dam as a high risk dam.
Figure 1: Lake View from Outlet Gate (above)

Figure 2: Outlet Gates and Weir Structure (above left)
Figure 3: Debris to be cleared at Outlet Gate (above right)

Figure 4: Dock Above Log Boom to be Removed (above left)
Figure 5: Outlet Channel Downstream View from Outlet Gate (above right)
Figure 6: Upstream View of Channel from Airfield Bridge (above right)

Figure 7: Downstream View of Channel from Airfield Bridge (above)

Figure 8: Gage at Starr Road Bridge
Figure 9: Upstream View from Channel Control Gate (above left)
Figure 10: Channel Outlet Gate Downstream Side (above right)

Figure 11: Upstream side view of Channel Control Gates (above left)
Figure 12: Outlet channel downstream view of Control Gates (above right)

Figure 13: Outlet Channel upstream from Moffat Road. (above)
Figure 14: Debris in Channel Below Moffat Road

Figure 15: Debris to be removed at Lincoln Road

Figure 16: Debris to be removed above Ellers Driveway
Figure 17: View of Sump Inlet Fence/Gage (above)

Figure 18: Sump Inlet Pipe and Trash Rack (above)

Figure 19: Sump
Figure 20: Old Outlet Structure

Figure 21: Yellow Flag Iris

Figure 22: View Looking North From Dike
Figure 23-25: Dike Repair Area
Figure 26: Tree Growing on Dike

Figure 27: Dike Looking West