ELOIKA LAKE WATER STORAGE & WETLAND RESTORATION

Spokane County Environmental Services
April 13, 2022
OUTLINE

• Little Spokane River Water Issues
• Elevation Datums
• Site History
• Project Schedule
• Project Summary
• Community Impact
• Questions/Discussion
LITTLE SPOKANE RIVER WATER ISSUES

- WRIA 55 – Little Spokane Watershed
  - Snowmelt driven watershed
  - Average of less than 2 in of precipitation during July, August, and September
  - Instream flow established in 1976
- Hirst Decision – 2018
  - Growth Management Act
- Grants by Department of Ecology for streamflow improvement projects

### WRIA 55 Proposed Water Offset Projects

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Offset Quantity (acre-ft/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Right Acquisition</td>
<td>378</td>
</tr>
<tr>
<td>Managed Aquifer Recharge</td>
<td>1,800</td>
</tr>
<tr>
<td>Surface Storage</td>
<td>1,400</td>
</tr>
<tr>
<td>Source Exchange</td>
<td>400</td>
</tr>
<tr>
<td>Little Spokane Water Bank</td>
<td>283.4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4,261.4</strong></td>
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</tbody>
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Table from Watershed Plan Update Presentation, August 26, 2021
Map of Little Spokane River Watershed

Purple highlight is area downstream of Eloika Lake
Little Spokane River Instream Flow
Established Baseflows vs. Gage Data (2002-2012)
Little Spokane River at Dartford Gage

Graph from Watershed Plan Update Presentation, August 26, 2021

- Average daily mean discharge, 2002-2012, at Dartford Station (12-4310.00)
- Minimum daily mean discharge, 2002-2012, at Dartford Station (12.4310.00)
- Baseflow Established in WAC 173-555 for Little Spokane River at Dartford
ELEVATION DATUMS
NGVD29 VS NAVD88

• NGVD29
  • National Geodetic Vertical Datum of 1929
• NAVD88
  • North American Vertical Datum of 1988
  • More accurate due to more data points and advanced technology
• 1907 ft in NGVD29 = 1910.81 ft in NAVD88 at Eloika Lake
• Will use NGVD29 in this presentation
SITE HISTORY

• Used by Native Americans for fishing
• Early 1900s – used for logging
• 1952 – farmers removed a beaver dam at the outlet
  • Widened and deepened the channel without permission
  • Replaced the material, was washed out
• 1960s – Eloika Lake Community Association was formed and reestablished the meander line
  • Meander line: the approximate water edge at mean high-water elevation

1935 2021
SITE HISTORY

• 1970s – peat was excavated from the north and south ends of the lake
  • Relocation of road along south end
• 1986-1997 – Design of a water control structure at the lake outlet, focused on weed management
  • Would maintain lake levels at 1907 feet NGVD29 from April to October, 1903 feet NGVD29 in winter
  • Ended primarily due to lack of funding (Eloika Lake Management District)
SITE HISTORY

  - Eloika Lake identified as a potential area of water storage
- 2009-2010 – Water Storage Feasibility Study by PBS&J
  - Focused on restoring wetlands
- 2011 – Design by Oasis
  - Focused on improved downstream summer flows
  - Proposed summer lake elevation of 1907 feet NGVD29, no drawdown in winter
  - Passive control structure
PROJECT SCHEDULE

- Stakeholder and Property Owner Outreach
  - September 2021 – End of project

- Site investigations
  - October 2021 - August 2022
  - Bathymetric survey: April 25, 2022

- Technical studies
  - May – September 2022

- Design Plans
  - October 2022 – October 2023

- Permitting
  - August 2022 – September 2023

- Construction
  - Estimated start date in early 2024
• Design a water control structure at the outlet of Eloika Lake
• Hold water at 1907 feet from spring until mid-summer
• Release the water in mid summer to increase flows in the Little Spokane river during critical low flow periods
Figure 1
Average Year (2016)
Eloika Lake Outflow and Lake Level with Control Structure
Eloika Lake Water Storage and Wetland Restoration
Eloika Lake Level 2007-2022

Data collected by Mike Helland
- Eloika Lake Aerial Image
- April 17th, 2016
- 1907 ft NAVD29
- April 17\textsuperscript{th}, 2016
- 1907 ft NAVD29
- Eloika Lake Aerial Image
  - South end
April 17th, 2016
1907 ft NAVD29
Eloika Lake Aerial Image
North end
PROJECT SUMMARY
WETLAND RESTORATION

• ~100 acres of wetland restoration at the south end of Eloika Lake
  • Redistributing soil
  • Return of native plant species
• Wetland delineation
  • Late May, early June 2022
• Evaluate benefits and impacts of wetland restoration
COMMUNITY IMPACT

- Wetlands at south end
  - On private property – researching property boundaries, compensation, trespass/taking
- Higher water level throughout the summer
- Increased streamflow helps mitigate water rights shortage

- Water Quality
  - Temperature
  - Phosphorus
  - Aquatic vegetation
- No plans for dredging in this project
QUESTIONS/DISCUSSION