FINAL IRRIGATION ENTITIES AND FACILITIES REPORT
FOR
LINDER ROAD, CHINDEN TO STATE STREET CONCEPT STUDY

ACHD PROJECT NO. 518020
LOCATED IN ADA COUNTY, IDAHO
February 20, 2019
INTRODUCTION:

The following is a summary of irrigation entity and facility information collected for the Linder Road, Chinden Blvd (US 20/26) to State Street (SH-44) Concept Study. This summary also discusses proposed structure requirements and recommendations. Refer to Appendix A for additional information and exhibits. The following summary lists the irrigation entities in a north to south direction along Linder Road to correlate with the exhibits.

1) BALLENTYNE DITCH COMPANY-

Primary Contact: Mike Harrison- Contract Manager
Phone Number: (208) 447-8600

Information from First Contact (4/19/2018):
• Mike Harrison confirmed that Ballentyne Ditch Company has no facilities within the Linder Road Project (north of US 20/26 and South of SH-44)
• No further action is needed.

Irrigation Crossing: N/A
Crossing information: N/A
Proposed Crossing Information: N/A

2) MIDDLETON MILL DITCH COMPANY/ MIDDLETON IRRIGATION ASSOCIATION, INC.-

Primary Contact: Allen Funkhouser
Phone Number: (208) 571-3804

Information from First Contact (4/18/2018):
• Middleton Mill Ditch Company controls the old Middleton Mill Canal south of SH-44. This canal is no longer used for delivery, it is a drain that must be maintained. Middleton Mill Ditch Company retains jurisdiction over the drain.
• Middleton Mill delivery facilities currently in use are north of SH-44 and therefore outside the Linder Road project limits.
• Bryce Farris is the Middleton Mill Ditch Company attorney.

Irrigation Crossing:
• Old Middleton Mill Canal, now functions as a drain.

Crossing information:
• Drain crossing is 12” PVC pipe that was extended under Idaho Transportation Department SH-44 and Linder Road project.
• During a site visit on April 25, 2018 the culvert appeared to not be functioning properly, causing a back-up of overflow water from the existing pond east of Linder Road. No water was flowing on the outlet side.

Proposed Crossing Information:
• The existing culvert will need to be modified (extended or replaced) to accommodate the potential future build out of seven lanes. It is recommended at a minimum to maintain existing delivery capacity and to address maintenance of the culvert.
3) HART DAVIS DITCH COMPANY-

**Primary Contact:** Josh Liddell  
**Phone Number:** (208) 830-3398

**Information from First Contact (4/19/2018):**
- Bryce Farris with Sawtooth Law, (208) 629-7447, is legal representative of Hart Davis Ditch Company.
- License agreement will be required.
- Josh confirmed there are two crossings of Linder Road and are labeled as “north” and “south” crossings on the exhibits.
- The crossings deliver water to the concrete ditch on west side of Linder Road, continues south to Middle Channel.
- Property owner on west side of Linder Road has two turn-outs from the concrete ditch.
- There are more landowners on the east side of Linder Road.
- According to Josh, The Harton Davis Canal does not dead end into the pond west of Linder Road as shown on IDWR database. However, there is a 48” CMP crossing of Linder Road that outlets to the pond and that culvert is not under the jurisdiction of the Hart Davis Ditch Company.

**Irrigation Crossing:**
- Harton Davis Canal

**Crossing information:**
- Crossing is 30” RCP at the south crossing.
- Crossing is 18” CMP at the north crossing.

**Proposed Crossing Information:**
- The existing culverts will need to be modified (extended or replaced) to accommodate the potential future build out of seven lanes. Evaluation of culvert capacity will need to be performed in a future design phase. It is recommended at a minimum to maintain existing delivery capacity.

### TABLE 1: HART DAVIS DITCH WATER RIGHTS SUMMARY

<table>
<thead>
<tr>
<th>Water Right Number</th>
<th>Owner</th>
<th>Priority Date</th>
<th>Max Diversion Rate (cfs)</th>
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<tbody>
<tr>
<td>63-134</td>
<td>State of Idaho</td>
<td>5-31-1864</td>
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<td>63-31772</td>
<td>Hart Davis Ditch Co</td>
<td>5-31-1872</td>
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4) Seven Suckers Ditch Company-

**Primary Contact:** Kristin Doty - Ditch rider and contact for the Seven Suckers Ditch Company  
**Phone Number:** (208) 859-5914

**Information from First Contact (4/27/2018):**
There are nine water rights delivered through the Seven Suckers Ditch including the Idaho Department of Fish and Game, refer to Table 2 below for water right owners.

Seven Suckers Ditch starts on State of Idaho Property with a concrete check dam in the river upstream of Linder Road.

There is a culvert for the ditch under Linder road.

Ditch continues to Middle Channel of the Boise River.

**Irrigation Crossing:**

- Seven Suckers Ditch

**Crossing information:**

- Crossing is 18" CMP culvert.

**Proposed Crossing Information:**

- The existing culvert will need to be modified (extended or replaced) to accommodate the potential future build out of seven lanes. Evaluation of culvert capacity will need to be performed in a future phase of design. It is recommended at a minimum to maintain existing delivery capacity.

### TABLE 2: SEVEN SUCKERS DITCH WATER RIGHTS SUMMARY

<table>
<thead>
<tr>
<th>Water Right Number</th>
<th>Owner</th>
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<td>63-2268</td>
<td>Joanne P Henzler, Mark Allen Henzler</td>
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<td>63-30136</td>
<td>Stephanie A Maulin</td>
<td>6-1-1872</td>
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<tr>
<td>63-31946</td>
<td>Lori Girdner</td>
<td>1-26-1971</td>
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<td>63-32532</td>
<td>Leona Doty</td>
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<td>63-34506</td>
<td>Margret S Clements, Greg L Cunningham</td>
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5) EUREKA WATER COMPANY-

**Primary Contact:** Bill Clayton

**Phone Number:** Bill Clayton- (208) 482-6600 (office), (208) 250-7547 (cell)

Steve Sweet (Consultant) – (208) 342-0091

**Information from First Contact (4/23/2018):**

- Bill Clayton thought extension of the existing culvert may be sufficient to accommodate additional lanes on Linder Road, subject to review of a proposed design by the Eureka Water Company.
Their Consultant later provided a measured peak discharge rate of 32.5 cfs. Culvert modification would need to continue this flow in the Linder Road improvements.

**Irrigation Crossing:**
- Eureka Canal

**Crossing information:**
- Approximately 15-foot span stiff leg culvert.

**Proposed Crossing Information:**
- The existing Eureka Ditch stiff leg culvert will be modified (extended or replaced) to accommodate the potential future build out of seven lanes.
- The proposed culvert will be approximately 150 feet long compared to the existing culvert at 100 feet in length.
- An HY-8 (version 7.5) hydraulic model was used to evaluate hydraulic capacity. The existing culvert low chord provides approximately 4 feet of clearance above the design flow of 32.5 cfs. The increased length of the proposed culvert caused an approximately 0.01 foot increase in upstream water elevation that was mitigated to zero by improving the proposed entrance condition to have wing walls and beveled edges at the culvert face.

**TABLE 3: EUREKA DITCH WATER RIGHTS SUMMARY**

<table>
<thead>
<tr>
<th>Water Right Number</th>
<th>Owner</th>
<th>Priority Date</th>
<th>Max Diversion Rate (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63-145</td>
<td>Eureka Ditch Company</td>
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<td>33.32</td>
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</tbody>
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6) **PIONEER IRRIGATION DISTRICT**-

**Primary Contact:** Mark Zirschky- Assistant Superintendent  
**Phone Number:** (208) 459-3617 (Main Office)  
**Information from First Contact (4/23/2018):**
- Pioneer Irrigation District (PID) operates and maintains the Phyllis Canal, See Table 2 for water right information at the South Channel of the Boise River diversion.
- The existing Linder Road Bridge over the Phyllis Canal has approximately 11 feet of clearance above the top of the canal and does not encroach into the canal.
- The existing bridge crossing over the access road parallel to the Phyllis Canal does not provide sufficient functional clearance for equipment access.
- The Phyllis Canal has sufficient capacity for the normal and peak flow.
- There will be no Bureau of Reclamation involvement on approval.
- A License Agreement with ACHD will be required.
- The operational diversion rate from the South Channel of the Boise River, including the Eureka Water Company water right, is typically no more than 550 cfs. This is based on the normal operating level of the diversion. The maximum water right that can be diverted from the South Channel is 726 cfs.
• Eureka Water Company diverts 33.32 cfs from the Phyllis Canal upstream of Linder Road.
• Conversation on May 8, 2018, Mark indicated that using the total water right as a design flow rate would be acceptable because future improvements to the canal may increase delivery capacity downstream.
• Storm drainage discharge from the Linder Road Project to Phyllis Canal was discussed with Mark. His response was that there are downstream hydraulic capacity concerns if additional flow were introduced to the canal.

**Irrigation Crossing:**
- Phyllis Canal

**Crossing information:**
- Bridge with sufficient hydraulic capacity.

**Proposed Structure:**
- The proposed Phyllis Canal replacement bridge does not encroach into the Phyllis Canal and therefore does not affect hydraulic capacity of the canal. It is anticipated the proposed bridge will provide additional clearance for equipment access, as requested by the Pioneer Irrigation District.

### TABLE 4: PHYLLIS CANAL WATER RIGHTS SUMMARY

<table>
<thead>
<tr>
<th>Water Right Number</th>
<th>Owner</th>
<th>Priority Date</th>
<th>Max Diversion Rate (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>63-145</td>
<td>Eureka Water Company</td>
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7) **ZINGER LATERAL**-

**Primary Contact:** Ben Nielson  
**Phone Number:** (208) 371-8721  
**Information from First Contact (5/21/2018):**
- Ben confirmed they control two irrigation crossings of Linder Road and another crossing of W. Sandy Ct.
• The Zinger Lateral receives drain flow in addition to water rights.
• The 48” RCP crossing was sized to have sufficient capacity for the flow rates in Zinger Lateral and would need to remain at least 48” if an extension is required.
• The 24” has additional capacity and could be reduced in size if required.
• Ben stated that he would be the contact for plan review and approval.

Irrigation Crossings:
• 48” RCP culvert
• 24” RCP culvert
• 12” PVC pipe crossing of W. Sandy Ct.

Crossing information:
• 48” RCP outlets to irrigation manhole on Meridian Temple Property,
• 24” RCP receives waste water from Zinger Lateral,
• 12” PVC is a waste water ditch.

Proposed Crossings:
• All Zinger Lateral crossings were extended or improved during the Linder Rd. – Almaden Drive to Phyllis Canal Project in 2016. The crossings may need to be modified (extended or replaced) for the proposed Linder Road widening to a potential seven lanes. Modified crossings will need to maintain existing water delivery capacity.

8) NORTH SLOUGH LATERAL ASSOCIATION-

Primary Contact: Rod Wagner
Phone Number: (208) 761-0041

Information from First Contact (4/19/2018):
• Rod confirmed there are two branches of the North Slough that cross Linder Road, and also act as irrigation ditches for users.
• The south leg is just north of the parking lot sound wall that is north of Fred Meyers.
• There is a pump station in Fred Meyers parking lot, they are an irrigation user.
• The south leg opens up into a drain going toward Phyllis Canal but some users may take water west of Linder Road.
• The north leg is also called the Zinger Lateral. The north leg goes by the LDS temple, not clear if there is a pump station for this.
• The North Slough crossings of Linder Road were extended as part of the US 20/26 Intersection improvements

Irrigation Crossing:
• North Slough (south leg)

Crossing information:
• 48” RCP culvert.

Proposed Crossings:
• North Slough crossing was extended or improved during the Linder Rd. – Almaden Drive to Phyllis Canal Project in 2016. The crossings may need to be modified (extended or replaced) for the proposed Linder Road widening to a potential seven lanes. Modified crossings will need to maintain existing water delivery capacity.
9) SETTLERS IRRIGATION DISTRICT-

Primary Contact: Mack Meyers
Phone Number: (208) 344-2471

Information from First Contact (4/19/2018):
- Mack stated that the North Slough Lateral Association controls the North Slough.
- The North Slough Lateral Association is responsible for reviewing and approving design plans for any culvert extensions.
- Mack provided contact information for the Zinger Lateral.
- Mack confirmed that Settlers Irrigation District does not have any facilities in the project area. However, the North Slough and Zinger Lateral are within their district boundary and the Settlers Irrigation District needs to be informed of any modifications.

Irrigation Crossing: N/A
Crossing information: N/A
Proposed Crossings: N/A

10) OTHER IRRIGATION FACILITIES-

Primary Contact: Unknown, assumed to be a private ditch

Irrigation Crossings:
- Return flow ditch No. 1

Crossing information:
- The return flow ditch No.1 does not cross Linder Road but runs parallel to it and outlets to the Middle Channel through an 18” CMP culvert. The ditch could be impacted by the Linder Road widening project.

CONCLUSIONS AND RECOMMENDATIONS:

The irrigation facilities summarized in this report will be affected by the planned widening of Linder Road to a potential seven lane configuration. All crossings will need to be modified by either an extension or replacement. At a minimum, the hydraulic capacity of the crossings will need to be maintained to continue existing irrigation capacity and delivery.

Increased capacity of the modified irrigation facilities may be warranted at certain locations to reduce the potential for water accumulation that may pose a risk to Linder Road. ACHD may consider coordinating with the irrigation entities to address pro-active maintenance.

Coordination with the irrigation entities having jurisdiction over the crossings is important to understanding operations, capacity, potential impacts, license agreement requirements, and development of proposed modifications. Design and public involvement activities should include coordination with end users to accommodate water delivery and any modifications of private irrigation structures.
The existing stiff leg culvert crossing of Linder Road at the Eureka Water Company Canal may be extended with improvements to the inlet configuration, for example beveled edges and wing walls, to maintain existing capacity. Replacement of the existing culvert should be accomplished with a culvert having the same or similar dimensions as the existing culvert along with inlet improvements.

The existing and proposed Phyllis Canal structures do not encroach into the canal and therefore will not affect hydraulic capacity. The low chords of the existing and proposed structures are approximately 11 feet or higher above the top of the canal and will not affect hydraulic clearance.

APPENDICES:

- Irrigation Crossing Exhibits
- As-built drawings for the Linder Rd. – Almaden Dr. to Phyllis Canal Project
- As-built drawings for the SH-44, Linder Road to Ballentyne Lane Project
LINDER ROAD, CONCEPT STUDY CHINDEN BLVD. (US 20/26) TO STATE ST. (SH-44) IRRIGATION CROSSINGS 2 OF 2