

# RIO GRANDE DIVERSION INFRASTRUCTURE INVENTORY

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**Structure Name:** BILLINGS D

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**Reported By:** Daniel Boyes

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**Date:** April 1, 2019

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| Headgate  | Latitude    | Longitude |
|-----------|-------------|-----------|
| Location: | 37.59988333 | -106.1127 |

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**Headgate Type:** Manually operated 3' wide steel slide gate

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|----------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---|---|
| <b>Headgate Condition:</b> | A <input type="checkbox"/>            | <b>Diversion and Other Condition:</b> | A <input type="checkbox"/>            | <b>River Miles from New Mexico State Line (Point of Diversion):</b> | <b>Structure Submerged:</b> Yes <input checked="" type="checkbox"/> |
|                            | B <input type="checkbox"/>            |                                       | B <input type="checkbox"/>            |   | No <input type="checkbox"/>   |
|                            | C <input type="checkbox"/>            |                                       | C <input type="checkbox"/>            |   |   |
|                            | D <input checked="" type="checkbox"/> |                                       | D <input type="checkbox"/>            | 81.07 mi  |   |
|                            | F <input type="checkbox"/>            |                                       | F <input checked="" type="checkbox"/> |   |   |

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**Repair(s) or Improvement(s) Completed Since 2006:** None

**Structure Description:** This structure is located near the apex of a meander. Channel migration analysis shows the meander is tightening and may be cut off in the future (see map in report card). If this occurs, the ditch will no longer be functional. A diversion dam composed of rocks and debris directs flow to a short feeder channel with a log trash boom at its entrance. At the end of the feeder channel is a welded steel plate headwall and attached headgate. The headgate does not seal properly. Debris accumulates on the diversion dam and, despite the trash boom, is especially an issue at the headgate. Sediment accumulation is also an issue at this structure. The ditch company also has difficulty diverting water during low flow conditions. Additionally, the flume is too large for the volume of the ditch and does not measure accurately at low flows.

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**Repair(s) or Improvement(s) Currently Needed:** Given the issues identified at this structure, the SMP Technical Advisory Team (TAT) recommends installing a new diversion dam, headgate (with an adjacent sluice), and flume at this location. The TAT also recommends implementing bank stabilization and riparian revegetation, especially upstream of the diversion. CPW recommends fish passage in this reach and the TAT recommends also creating safe boat passage and allowing for adequate sediment transport. A new diversion dam and headgate would improve sediment transport and debris-passing capabilities. Bank stabilization and riparian revegetation would reduce erosion, help prevent the meander from being cut off, and maintain ditch and river function. As an alternative solution, the TAT recommends the ditch company consider moving the point of diversion and headgate upstream to avoid the potential impact of channel avulsion.

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**Comments:** This ditch includes priorities 34, 209, 305, 324, and 349.

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**Notes:**

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**Estimated Range of Cost:** High

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Headgate looking downstream



Headgate outlet



Diversion dam during 2019 spring runoff



Diversion dam looking upstream



Headgate during 2019 spring runoff



Flume looking downstream

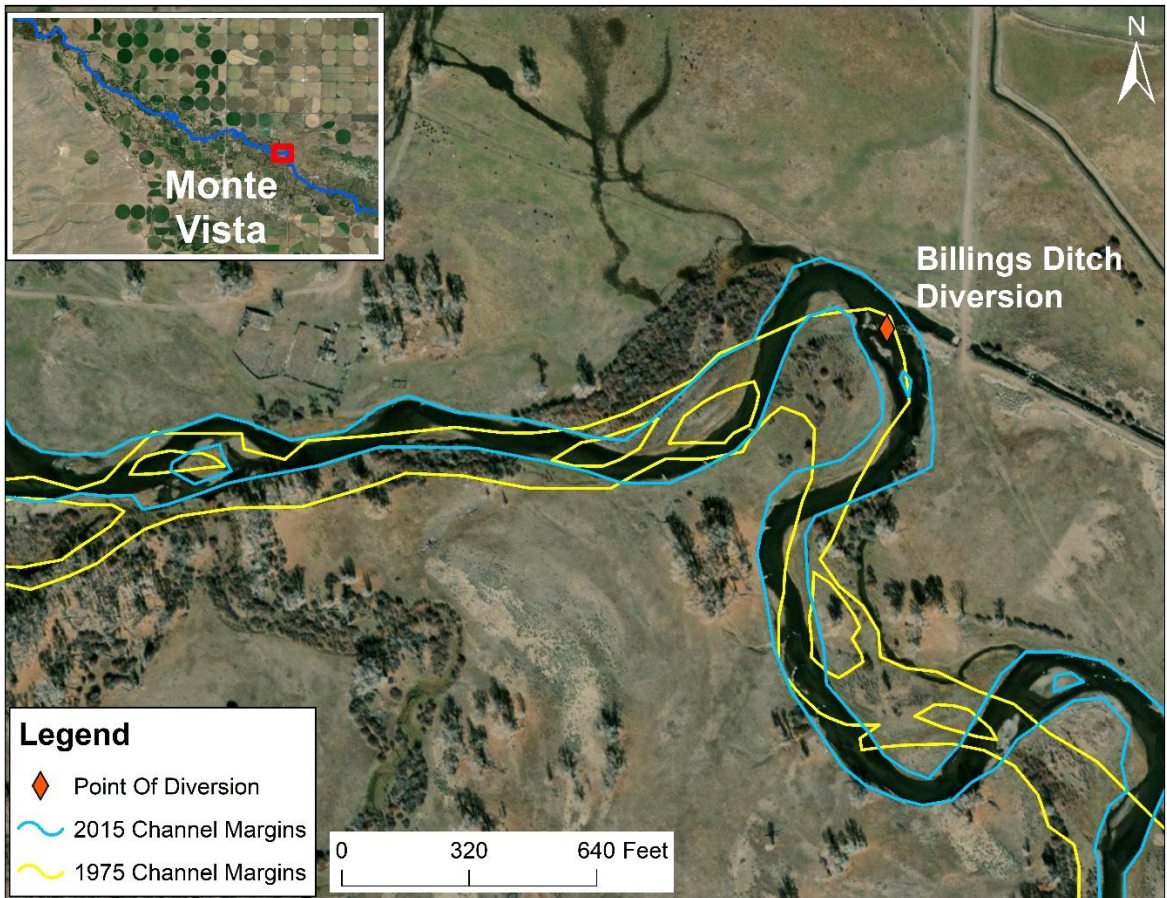


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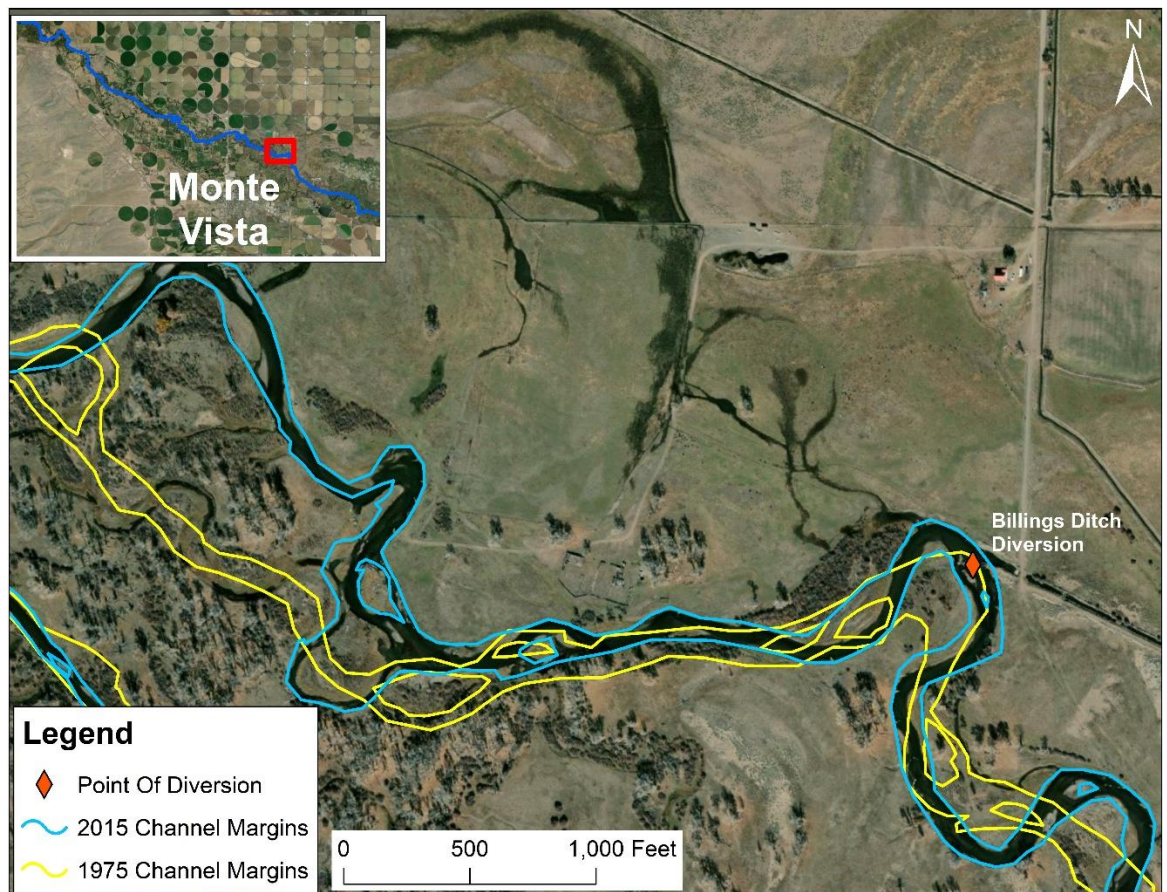
BILLINGS DITCH

PHOTO LOG

Rio Grande Stream Management Plan



Map showing Rio Grande margins in 1975 and 2015. Channel migration analysis shows the channel has migrated north and east since 1975, which has led to increased bank erosion, sediment and debris accumulation, and other challenges for Billings Ditch.



Map of 1975 and 2015 channel margins upstream of Billings Ditch.