

RIO GRANDE INSTREAM INFRASTRUCTURE INVENTORY

Structure Name: EMPIRE CANAL

Reported By: Daniel Boyes

Date: April 1, 2019

Headgate	Latitude	Longitude
Location:	37.581735	-106.10609

Headgate Type: Automated 12' wide radial gates (2)

Headgate Condition: A <input checked="" type="checkbox"/>	Diversion and Other Condition: A <input type="checkbox"/>	River Miles from New Mexico State Line (Point of Diversion):	Structure Submerged: Yes <input checked="" type="checkbox"/>
B <input type="checkbox"/>	B+ <input checked="" type="checkbox"/>	82.24 mi	No <input type="checkbox"/>
C <input type="checkbox"/>	C <input type="checkbox"/>		
D <input type="checkbox"/>	D <input type="checkbox"/>		
F <input type="checkbox"/>	F <input type="checkbox"/>		

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

Structure Description: The headgate sits along the south bank of the river. The concrete is spalling on the river headgate, also noted in 2006 inventory. There is no formal diversion dam, but water is diverted effectively because the headgate is located on the outside of a meander. There is a trash rack along the south bank of the river just upstream of the headgate that does not appear to be functional. There are slots in the headgate upstream of the radial gates to place stop boards. The feeder canal transports water approximately 3.3 miles from the river headgate to the main headgate. At the main headgate, a return flow structure returns any unused water to the river upstream of County Rd 3. The channel is unstable and has migrated significantly both upstream and downstream of the structure. Upstream of the river headgate, meanders are developing due to lateral migration of the river downstream. As the meanders upstream continue to develop, there is a small chance the river will intercept a historic channel, which would cut off this structure. Riprap has been placed on the north bank of the river immediately upstream of the structure. Two bank stabilization projects were installed between this structure and Hwy 285 - one in 2009 and a second in 2010. During low flows, water administration between this structure and the Billings Ditch is difficult. In addition, the flume has difficulty measuring accurately at low flows.

Repair(s) or Improvement(s) Currently Needed: The SMP Technical Advisory Tam (TAT) recommends river headgate repairs to address aging concrete, removal of riprap and installation of enhanced bank stabilization structures and riparian revegetation, channel migration monitoring, and repair or replacement of the flume. Improved bank stabilization would reduce annual maintenance and eliminate the need for heavy equipment operation in the channel and headgate and flume repairs would reduce future infrastructure risks and maintenance.

Comments: The Empire Canal includes priorities 71, 211, 236A, 310A, 335A, 361A, and 361B. The point of diversion coordinates are: 37.601758, -106.130144.

Notes:

Estimated Range of Cost: High

Headgate on the Rio Grande



Headgate outlet (on Rio Grande)



Adjustment headgate outlet



Return flow structure



Rio Grande upstream of diversion



Flume looking downstream

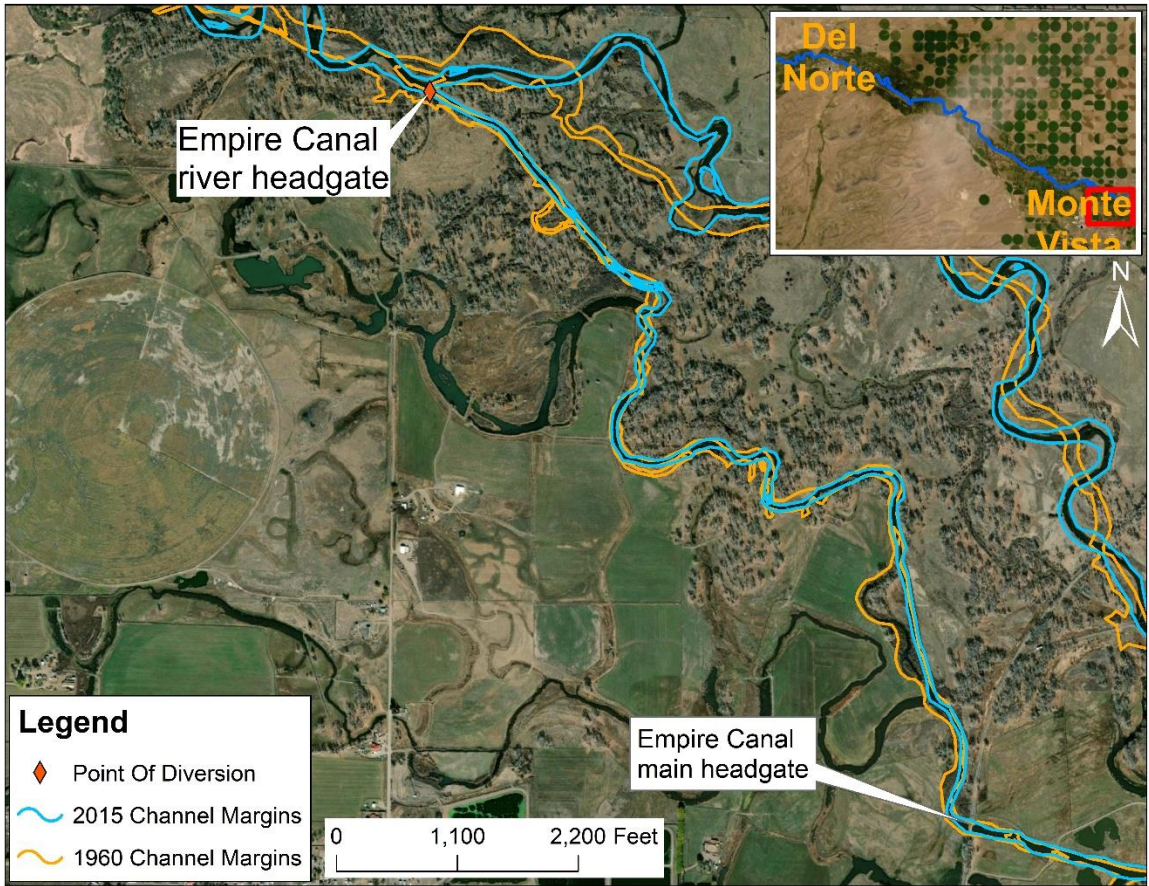


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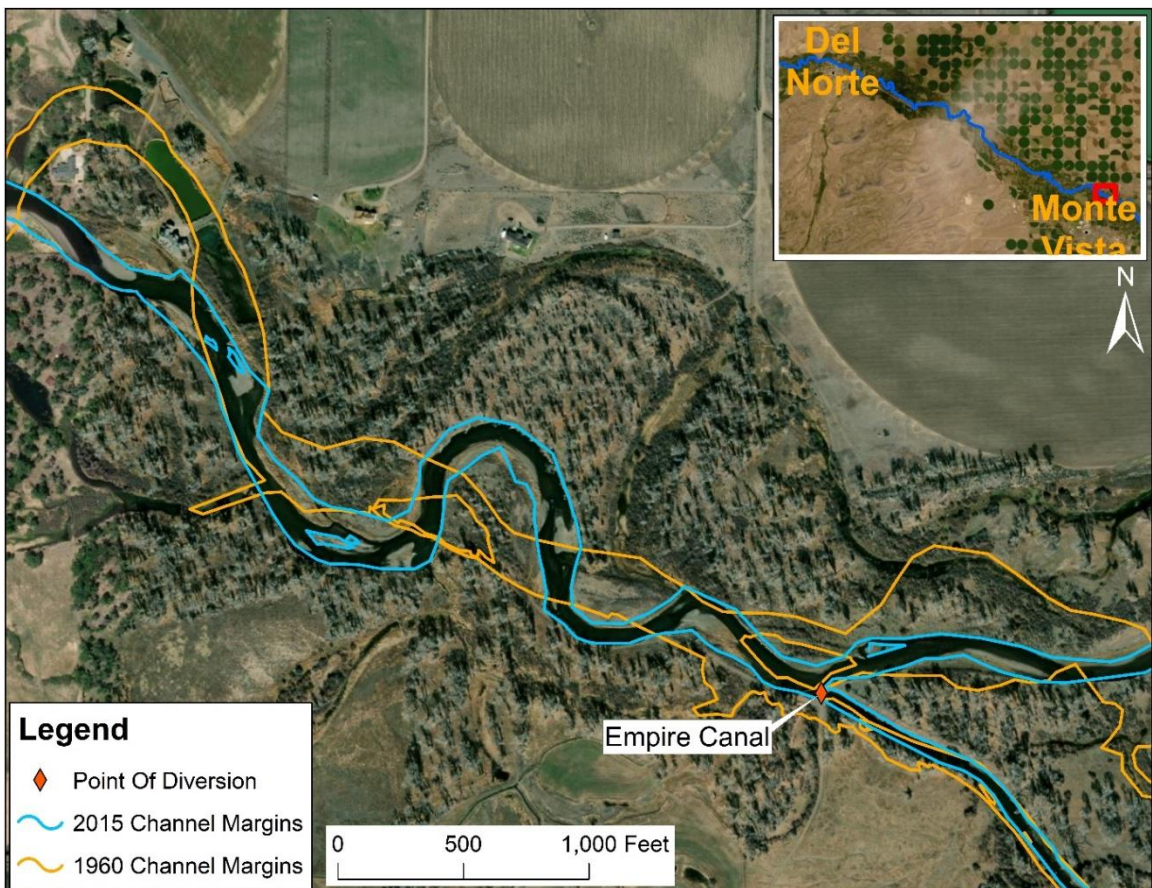
EMPIRE CANAL

PHOTO LOG

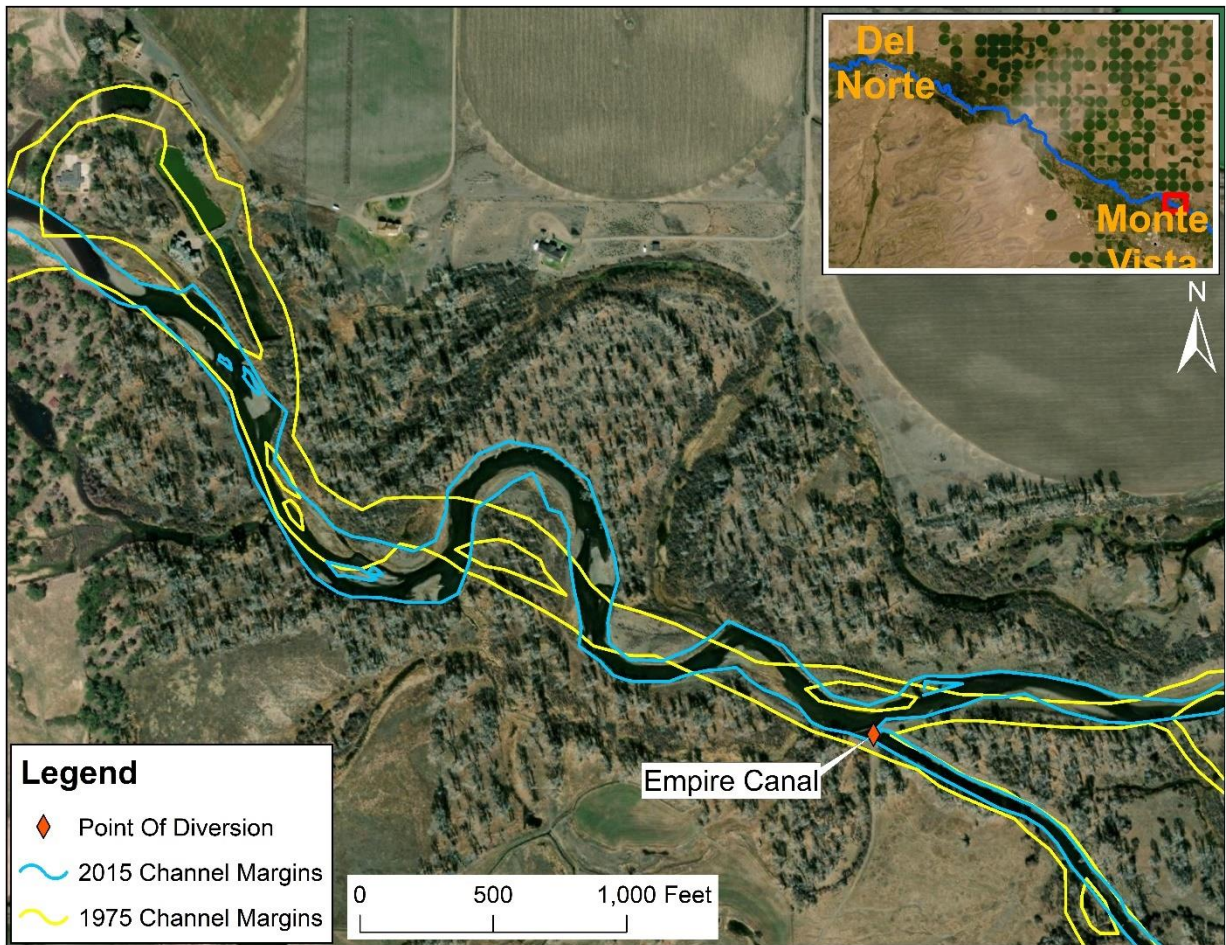
Rio Grande Stream
Management Plan



Empire Canal river headgate and main headgate with 1960 and 2015 channel margins overlaid



Empire Canal river headgate with 1960 and 2015 channel margins overlaid



Empire Canal river headgate with 1975 and 2015 channel margins overlaid. This map illustrates the meander development upstream of the diversion and lateral migration downstream.