

RIO GRANDE

DIVERSION INFRASTRUCTURE INVENTORY

Structure Name: COSTILLA D (CANAL)

Reported By: Daniel Boyes

Date: April 10, 2019

Headgate	Latitude	Longitude
Location:	37.55271667	-106.95066667

Headgate Type: Mechanically operated 10' wide radial gate

Headgate Condition:	A <input 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 checked="" type="checkbox"/>		B- <input checked="" type="checkbox"/>	64.99 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

Repair(s) or Improvement(s) Currently Needed: The diversion dam functions well for water users, but reduces channel capacity at this location. If it is reconstructed, its capacity should be increased, thereby improving river function and reducing the likelihood of the river reclaiming an historic channel during a high flow event. The concrete riprap upstream of the diversion could be replaced with boulder structures that are engineered to improve river function and reduce hazards for boaters and livestock. The flume functions moderately well, but its measurement accuracy could be improved. Fish and boat passage as well as riparian restoration should be considered as part of any repairs or improvements.

Structure Description: This structure is located on the outside bend of a meander below the apex of the bend. A trapezoidal concrete diversion dam diverts river flow into the feeder channel on the east bank of the river. The feeder channel is ~1,000 ft long and directs river flow to the headgate. There is a steel trash rack at the entrance of the feeder channel. The flow measurement device is a concrete rated section. Channel capacity is limited here, primarily due to the diversion dam. There are several historic channels near the current channel, suggesting channel avulsion was historically prevalent here. For this reason, it is assumed that channel avulsion from the current channel to a historic channel during a flood event is possible. Immediately upstream of the structure, the river has not migrated significantly since the 1960s (see maps below). This is due in part to riprap and concrete rubble that was placed upstream of the diversion on the east bank of the river to stabilize banks. Downstream of the diversion, channel avulsion has occurred historically and there is potential for meander cutoffs. The slope of this ditch is very flat, so it backs up when Excelsior Ditch water is in priority, resulting in a significant issue for water users.

Comments: The headgate is relatively new and functions well. This ditch is a priority 293.

Notes:

Estimated Range of Cost: Low

Headgate looking downstream



East bank of Rio Grande looking upstream



Headgate outlet



Diversion dam looking downstream



Diversion dam and feeder ditch



Measurement structure looking downstream

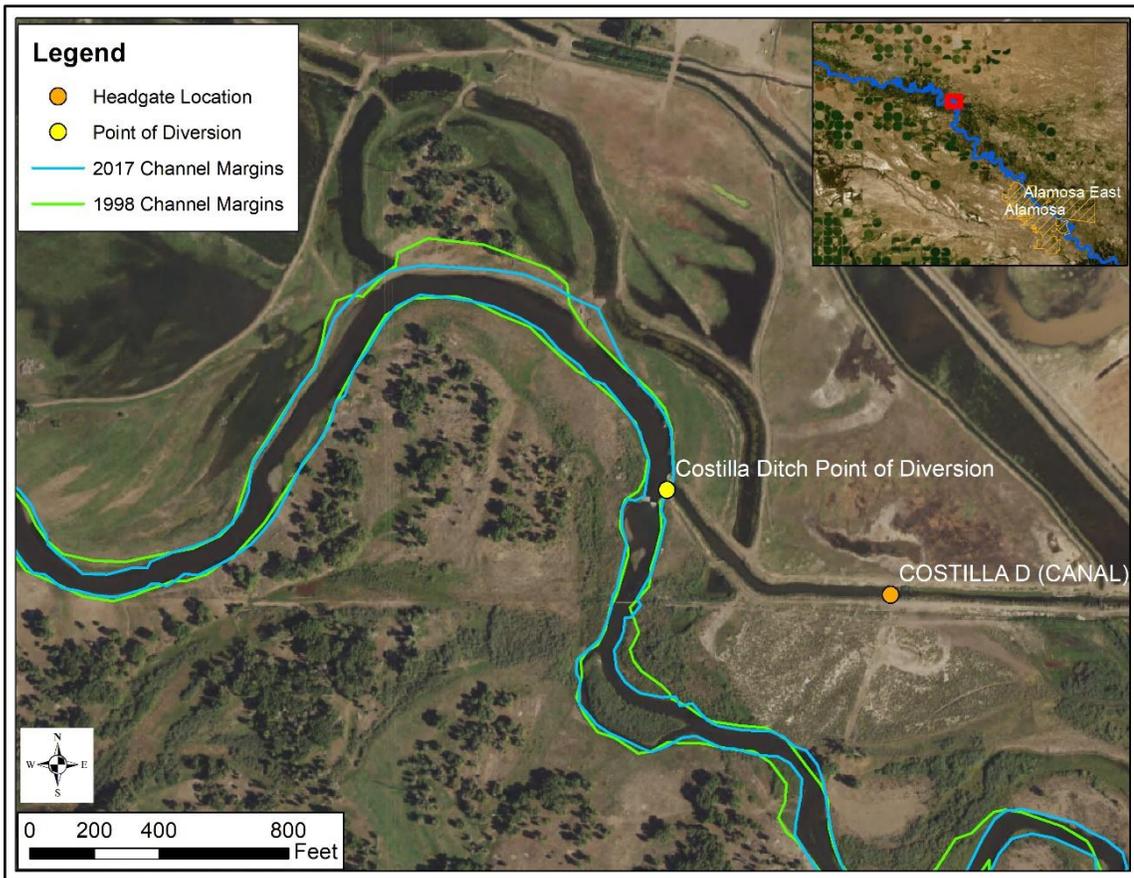


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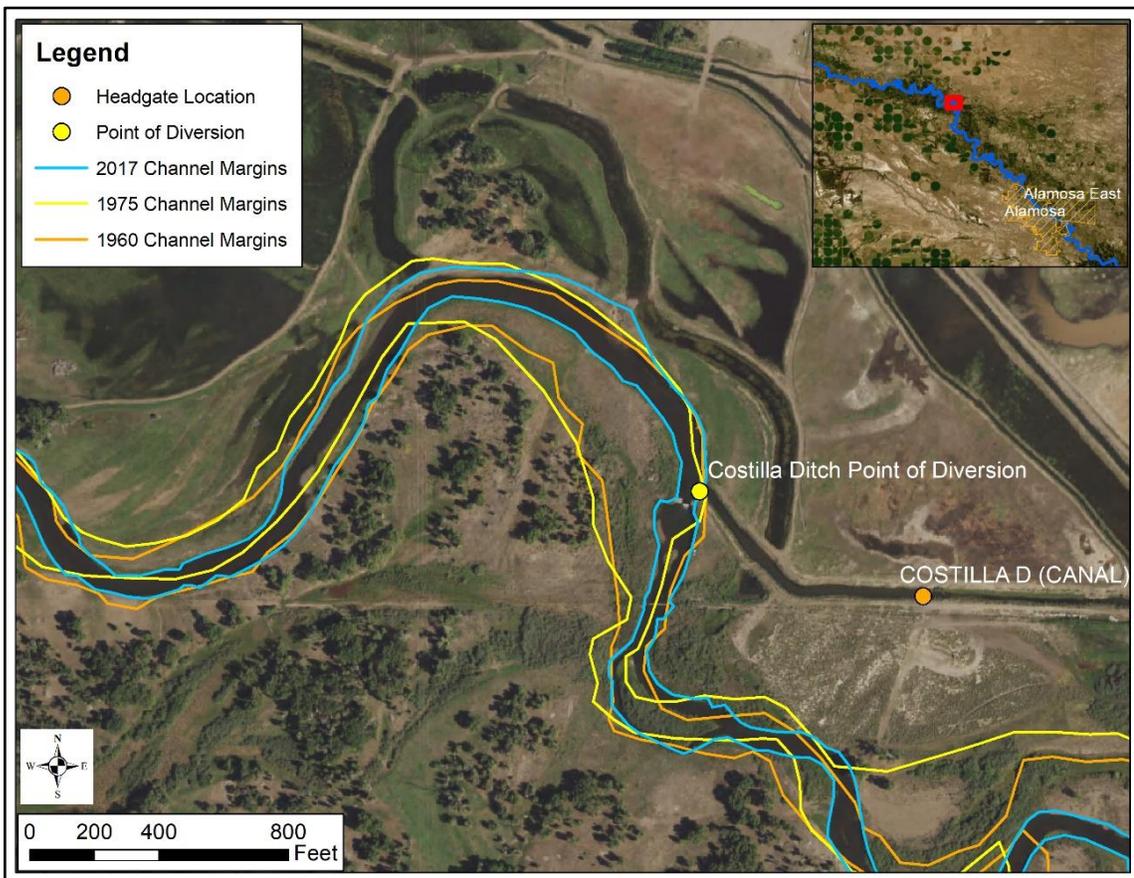
COSTILLA DITCH (CANAL)

PHOTO LOG

**Rio Grande Stream
Management Plan**



Map showing point of diversion with 1998 and 2017 channel margins overlaid.



Map showing point of diversion with 1960, 1975, and 2017 channel margins overlaid.