

Arizona Water Settlements Act Evaluations of Stakeholder Proposals and FY14 Work Plan

Presentation

to the

**Interim Water and Natural Resources
Committee**

by the New Mexico Interstate Stream Commission

October 14, 2013



FY14 AWSA Work Plan

- Nine Elements
- Total = \$2,845,000
- Appraisal level evaluations

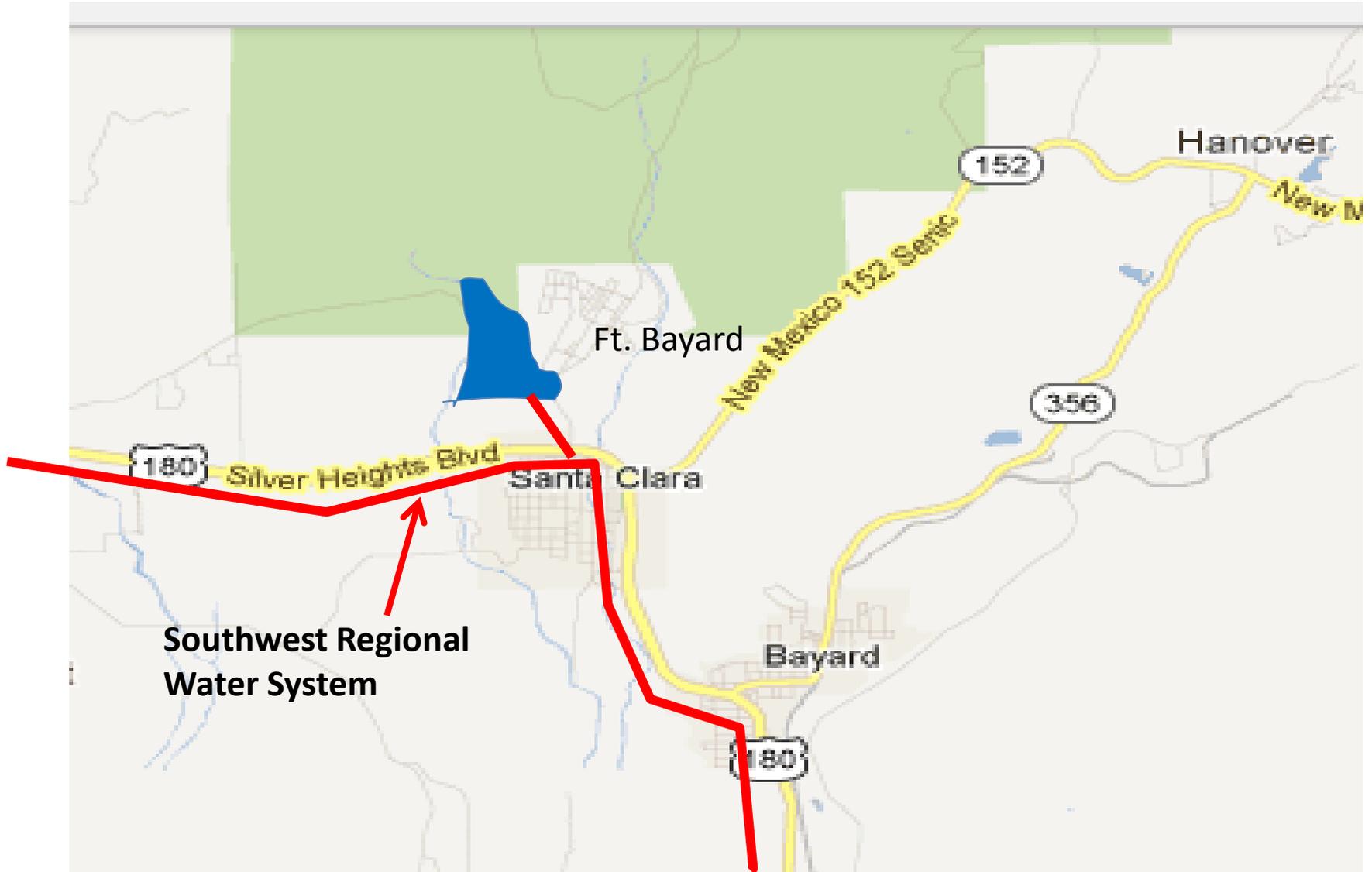
For Every Stakeholder Proposal Evaluate:

- Technical feasibility and design options
- Environmental impact assessment
- Cultural considerations
- Economics
- Water Supply

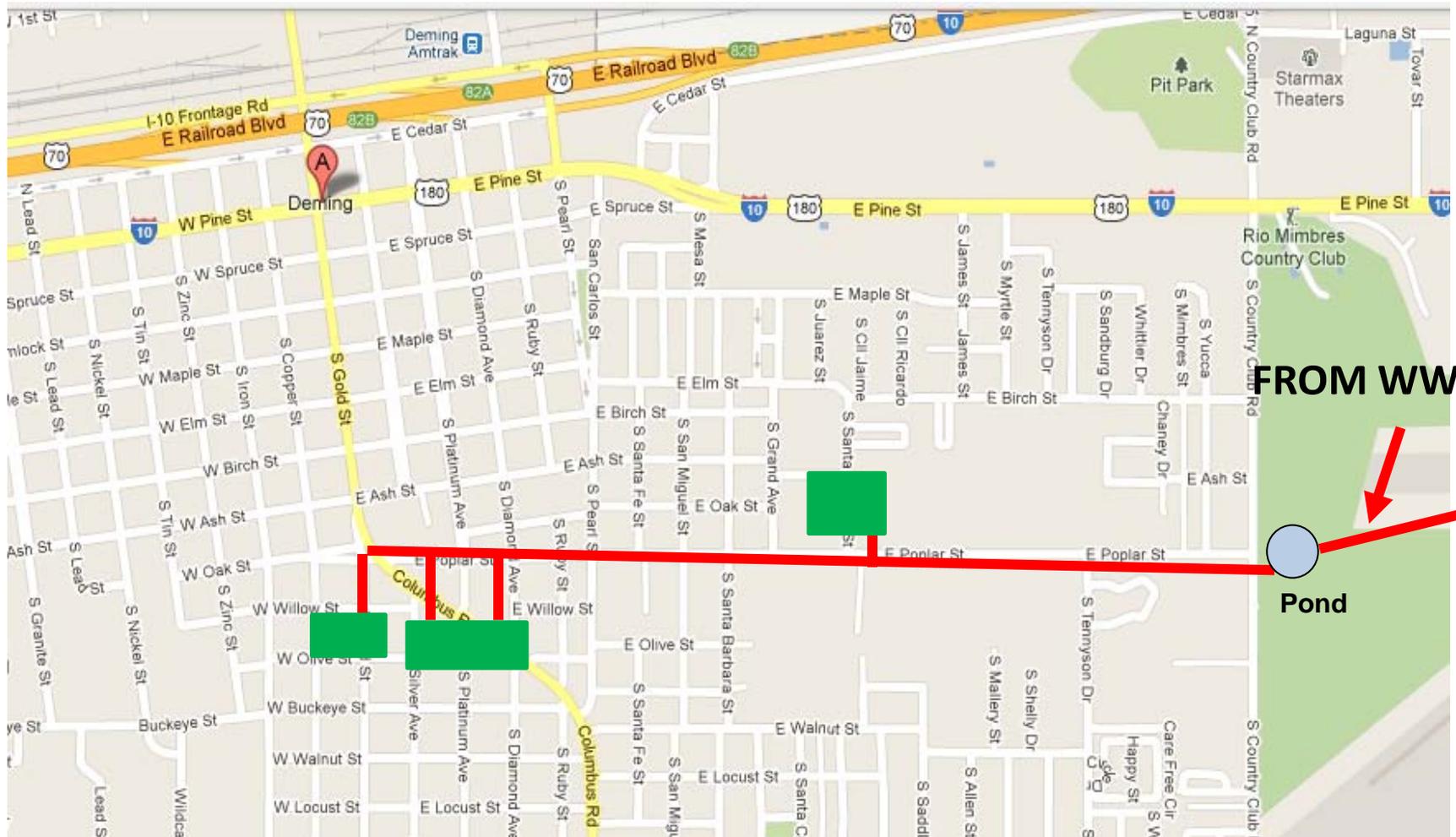
Element 1: Assess and Evaluate Effluent Reuse Proposals

- \$187,000 (completes FY13 work)
- Deming, Grant County, and Grant County Water Commission
- Bayard proposal withdrawn

Grant County Reservoir

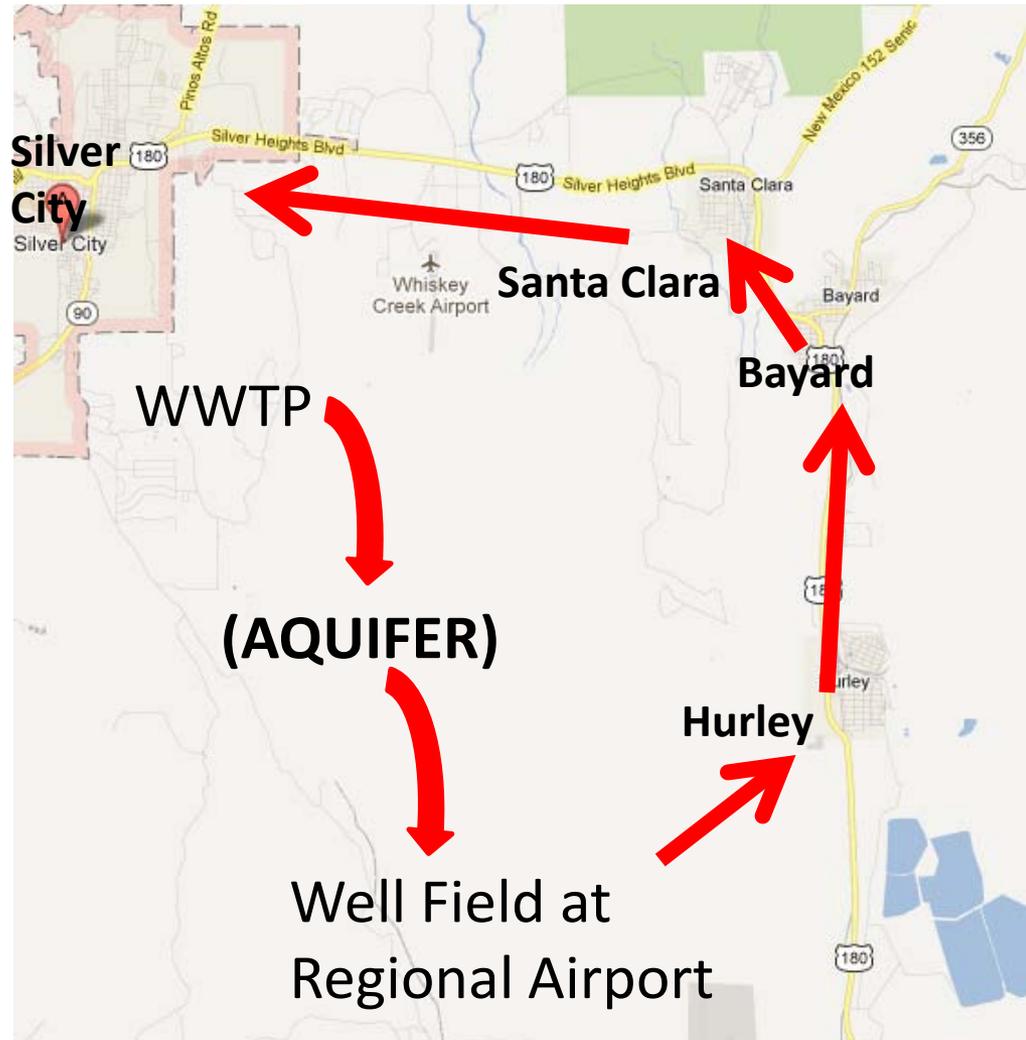


Deming Effluent Re-Use



Grant County Water Commission Municipal Supply System

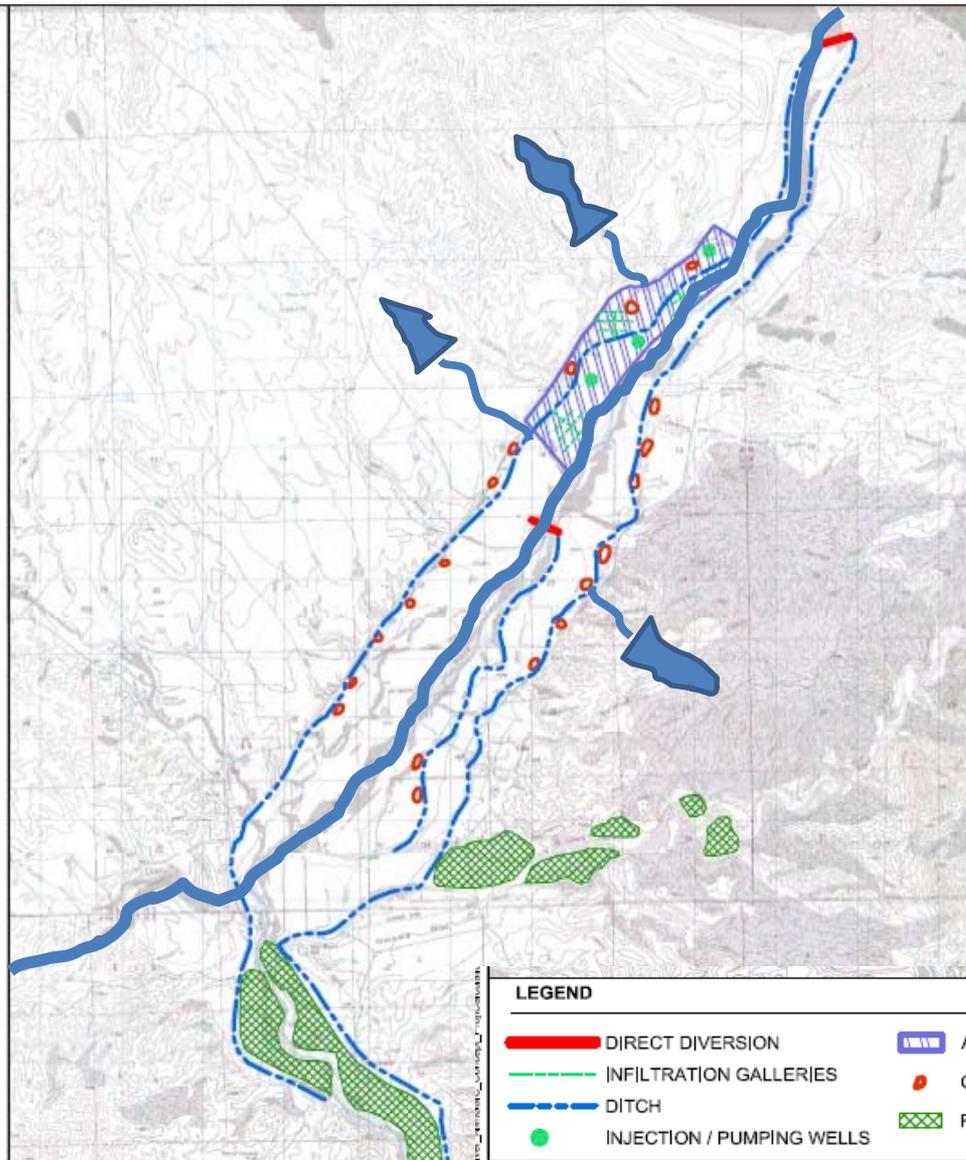
- Effluent from WWTP dumped in aquifer.
- Return flow credits pumped out at Airport well field
- Pipeline to Hurley, Bayard, Santa Clara, Silver City



Element 2: Technical Evaluation of Diversion and Storage Proposals

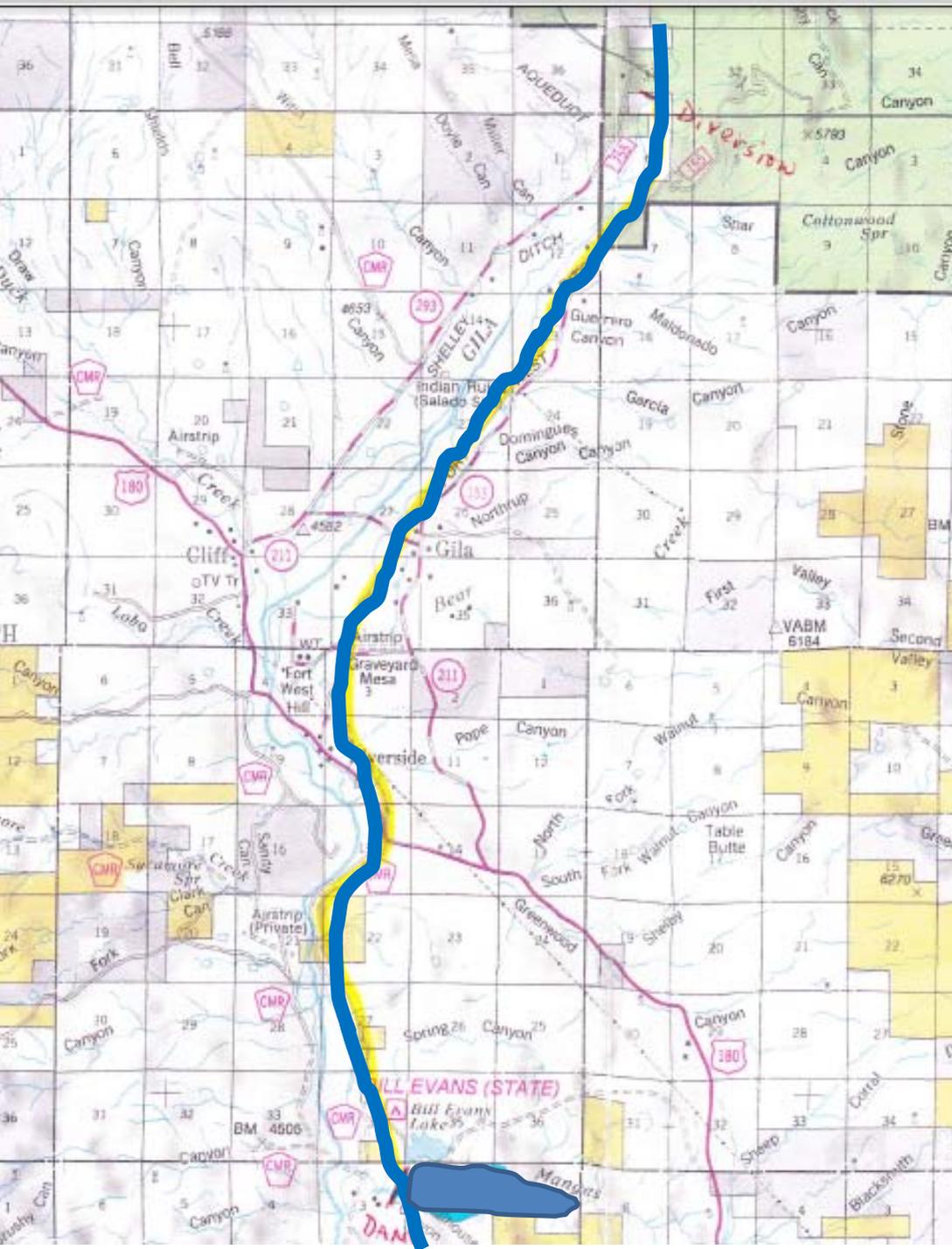
- \$720,000
- Gila Basin Irrigation Commission
- Hidalgo County
- Regional Water System

Gila Basin Irrigation Commission



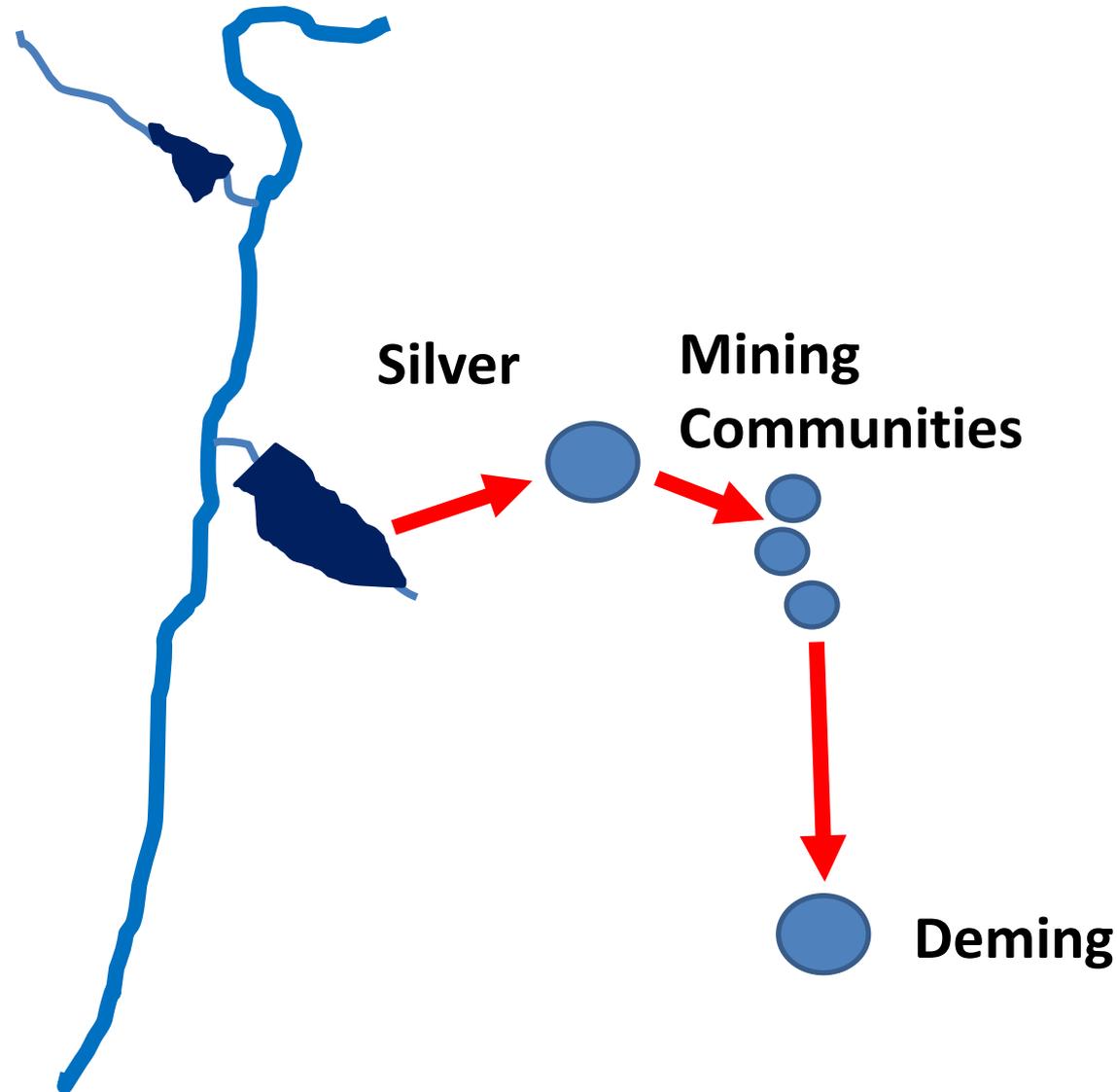
- Improve existing diversions
- Divert AWSA water and store in holding ponds, ditches, side canyons, aquifer
- Release during low flows for farms and river

Hidalgo Co

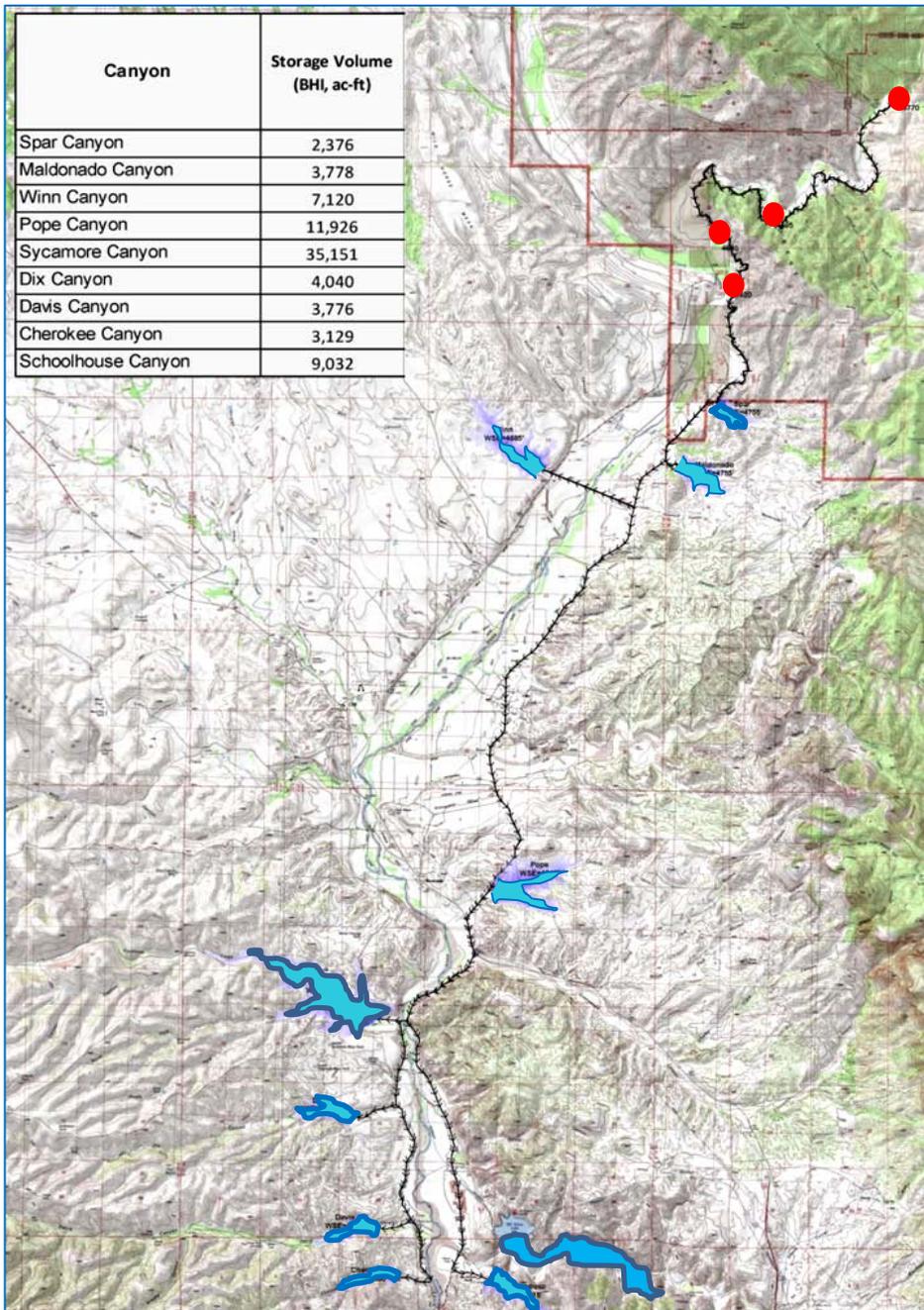


- Storage in Schoolhouse Canyon
- Smaller storage near Viriden
- Releases for irrigation and river during low flows

Southwest Regional Water System



- Divert from Gila.
- Store off stream.
- Releases to protect river.
- Regional Water Supply System.



Potential Reservoir and Diversion Locations

Legend

- Diversion Point
- Conveyance Alignment
- 🌊 Storage Location

Element 3: Assess Agricultural Conservation Projects

- \$25,000
- Pleasanton, Luna, and Sunset/New Model Acequia Improvements
- Ten Catron County Ditches
- Drip Irrigation Study Complete

Element 4: Assess Municipal Conservation

- \$100,000 Pilot Project
- \$50,000 to Silver City for smart irrigation
- \$50,000 to Deming for low flow toilets, xeriscaping, retire swamp coolers

Element 5: Assess Watershed Restoration Projects

- \$25,000
- Expert consultant to assess all five proposals
- May convene a watershed restoration workshop with outside experts

Element 6: Ecologic Assessments of Proposals and Baseline Ecologic Studies

- \$1,365,000
- Broad-based independent panel of experts
- Includes FWS, academics, NM G&F, Reclamation, TNC, consultants

Element 7: Legal Support

- \$100,000
- Focused on potential NEPA/ESA
- NEPA required on any BLM or Forest Service lands

Element 8: Economic Analysis

- \$250,000
- Support, add to Reclamation work

Element 9: Planning Consultation and Facilitation

- \$75,000
- Facilitate public meetings, disseminate materials, and public involvement
- Will continue throughout the AWSA process, including NEPA

Completed and In-Progress Studies and Evaluations

WORK EFFORT	COMPLETION
Low water use crop study	Completed
Groundwater/SW model, Phase I	Completed
Groundwater/SW model, Phase II	Prelim January 2014 Final June 30, 2014
IHA comparison, Phase I	Completed
IHA comparison, Phase II	1-Jan-14
Ecologic data compilation	Completed
Biologic resource surveys	1-Jan-14
Cultural surveys	1-Jan-14
Climate change study	Completed
Wetlands study	30-Jun-14
Economic Studies	30-Jun-14

WORK EFFORT	COMPLETION
PHABSIM, PVA for birds, fish	Prelim January 2014 Final June 30, 2014
Macroinvertebrate studies	Prelim January 2014 Final June 30, 2014
Riparian/flow correlations	Prelim January 2014 Final June 30, 2014
Municipal conservation	30-Jun-14
Acequia improvement projects	1-Dec-13
Re-Use projects evaluation	1-Nov-13
Watershed projects	Prelim January 2014 Final June 30, 2014
Geomorphologic study	Completed
Diversion/Storage Technical/Engineering	Prelim January 2014 Final June 30, 2014
Drip irrigation study	Completed
Meetings/Facilitation	Through 2014

2004 Arizona Water Settlements Act:

- An annual average of up to **14,000 acre-feet** of additional water in the Gila Basin in New Mexico
- Up to **\$128 Million** in non-reimbursable federal funding

To decide how to allocate the water and funding, the ISC adopted the following policy:

ISC Gila Policy

"The Interstate Stream Commission **recognizes the unique and valuable ecology of the Gila Basin**. In considering any proposal for water utilization under Section 212 of the Arizona Water Settlements Act, the Commission will **apply the best available science** to fully assess and mitigate the ecological impacts on Southwest New Mexico, the Gila River, its tributaries and associated riparian corridors, **while also considering the historic uses of and future demands for water in the Basin and the traditions, cultures and customs affecting those uses.**"

– ISC formally adopted September 2004

The Three Main Tenets of the ISC Gila Policy:

- **Recognize the unique and valuable ecology of the Gila Basin.**
- **Apply the best available science.**
- **Consider the historic uses of and future demands for water in the Basin and the traditions, cultures and customs affecting those uses.**

In short, find a way to meet environmental and water demands at the same time: Synergy

There are 10 conditions that must be met before NM can divert the AWSA water.

- The most restrictive is a limit of 140,000 acre-feet in any running 10-year period .
- For each month, NM cannot divert until minimum daily flows are bypassed.

Minimum Bypass Flows

<u>MONTH</u>	<u>MINIMUM BYPASS (cfs)</u>	<u>% to 350 cfs MAX</u>
January	82.5	0.80
February	137.5	0.80
March	292.5	0.80
April	432.5	0.80
May	437.5	0.75
June	442.5	0.75
July	442.5	0.75
August	442.5	0.75
September	442.5	0.75
October	267.5	0.80
November	152.5	0.80
December	75.5	0.80

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(The maximum that can be diverted at any time is 350 cfs. This was chosen to ensure flood functionality will not be impaired .)



Minimum Bypass Flows

<u>MONTH</u>	<u>MINIMUM BYPASS (cfs)</u>	<u>% to 350 cfs MAX</u>
January	82.5 150	0.80
February	137.5 150	0.80
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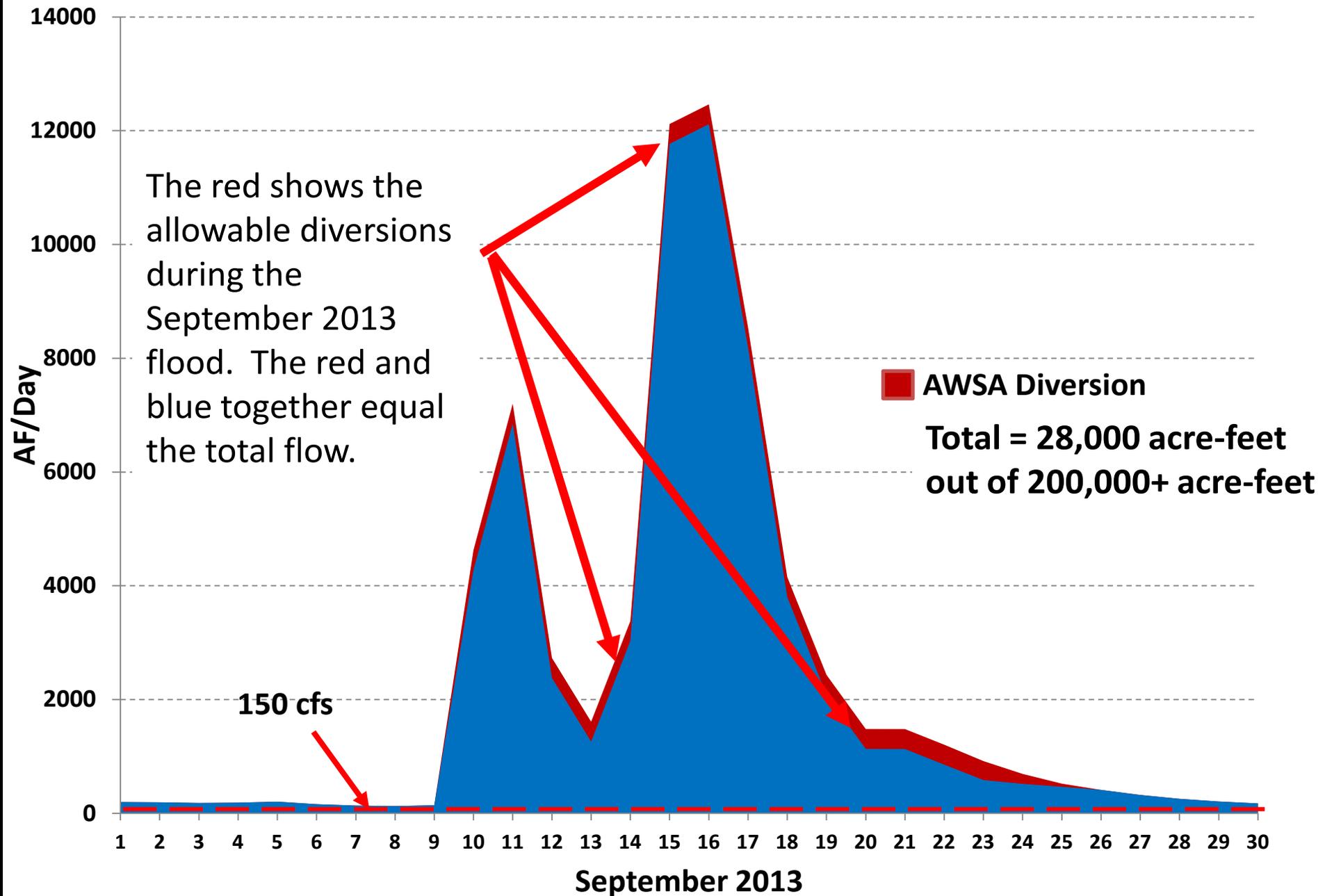
(Median flow is **73 cfs**)

Gila River September 11, 2013

- 11,000 acre-feet per day
- Max = 57,000 acre-feet per day
- 200,000 + acre-feet to AZ in Sept



September 2013 Flood at Gila near Gila

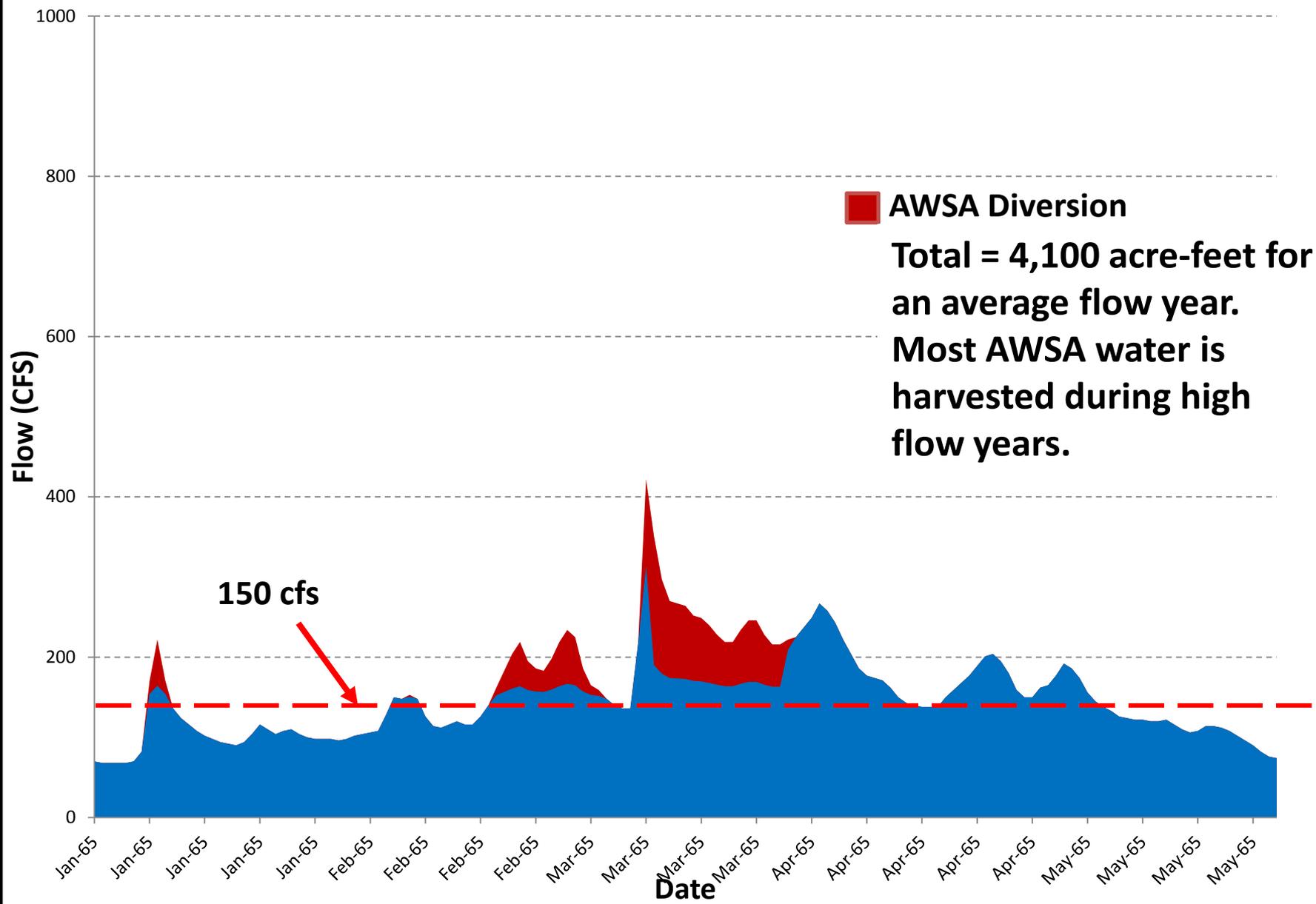




Gila at 137 cfs

- 75% of flows occur at lower than 137 cfs**
- 89% of flows occur at less than 150 cfs, the minimum that NM must bypass before diverting.**

January to May 1965 — “Average Year”

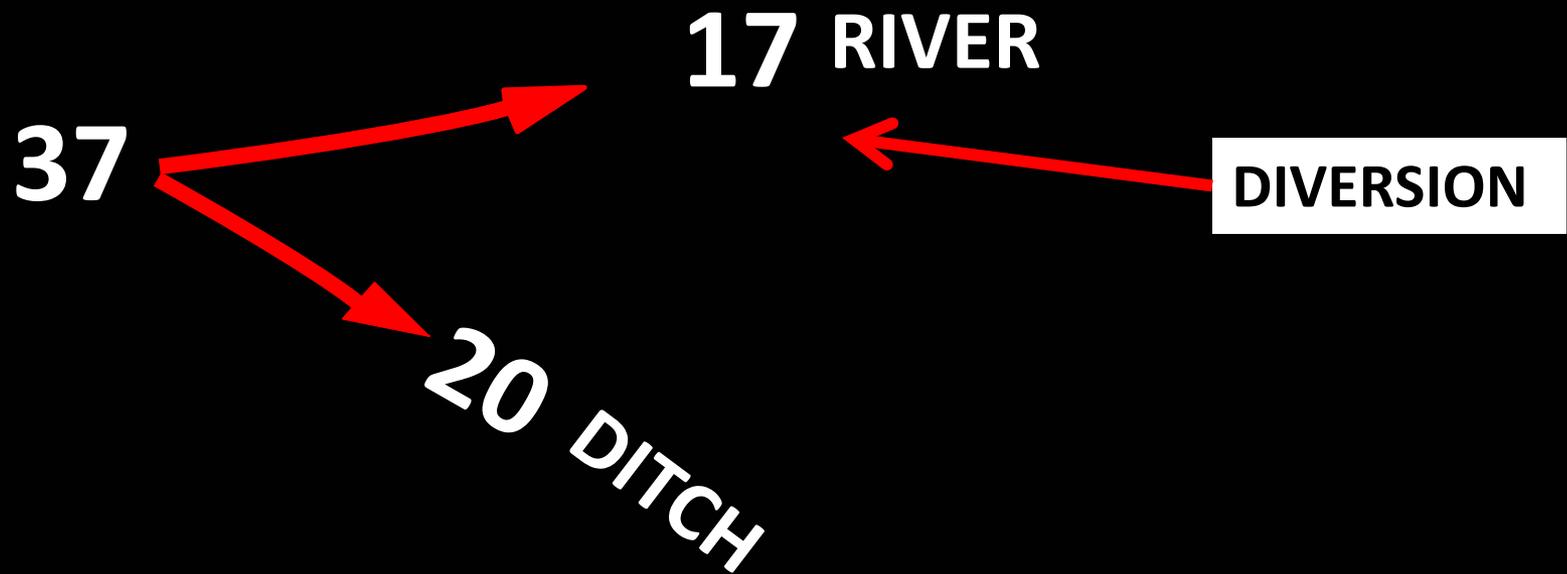


**The Gila River below Redrock
June 2011**



Why the river dries:

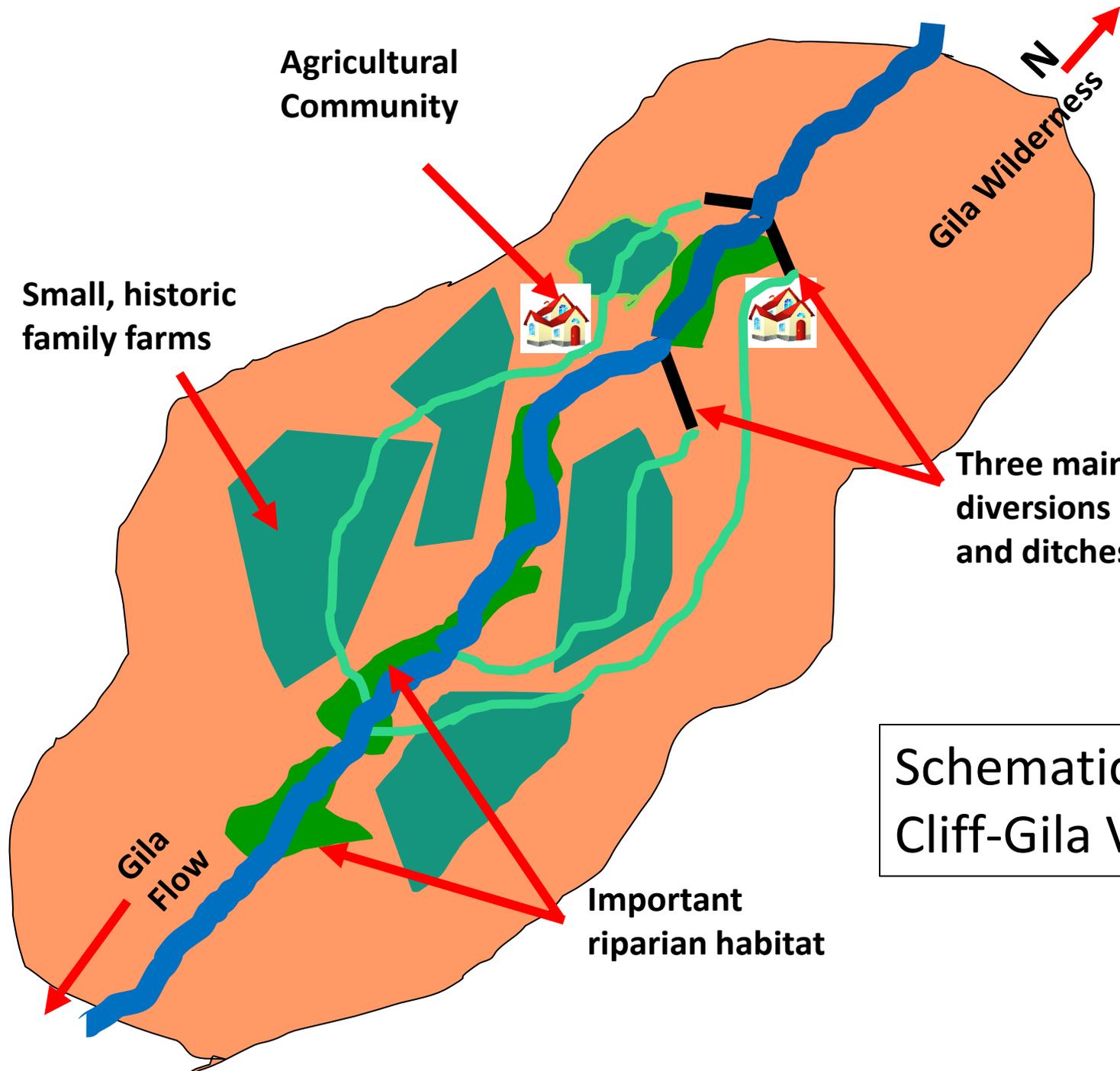
On OCTOBER 11, 2012, there were 37 cfs in the river; 20 cfs was diverted into the first of three diversions, leaving only 17 cfs for the river and the other diversions.



A wide, rocky riverbed in a valley during low flow. The riverbed is composed of numerous dark, rounded stones and boulders of various sizes, interspersed with patches of green grass and small plants. The riverbed extends into the distance, where a small stream of water is visible. The surrounding landscape is lush with green trees and shrubs, and mountains are visible in the background under a clear blue sky.

**June 2013
Gila River
Cliff-Gila Valley**

**During low flows, the river
can dry for significant
distances.**



**Agricultural
Community**

**Small, historic
family farms**

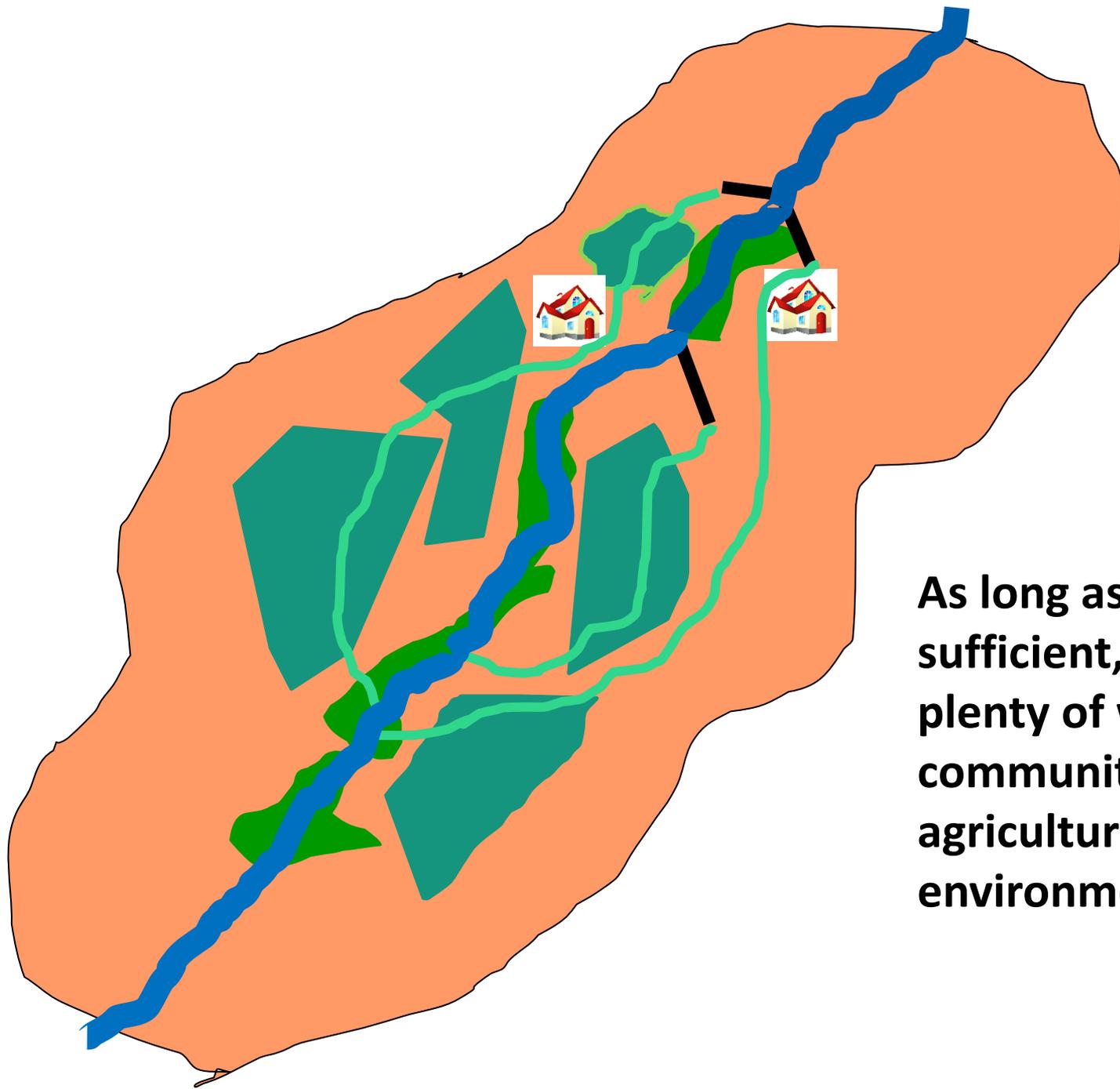
**Three main
diversions
and ditches**

**Important
riparian habitat**

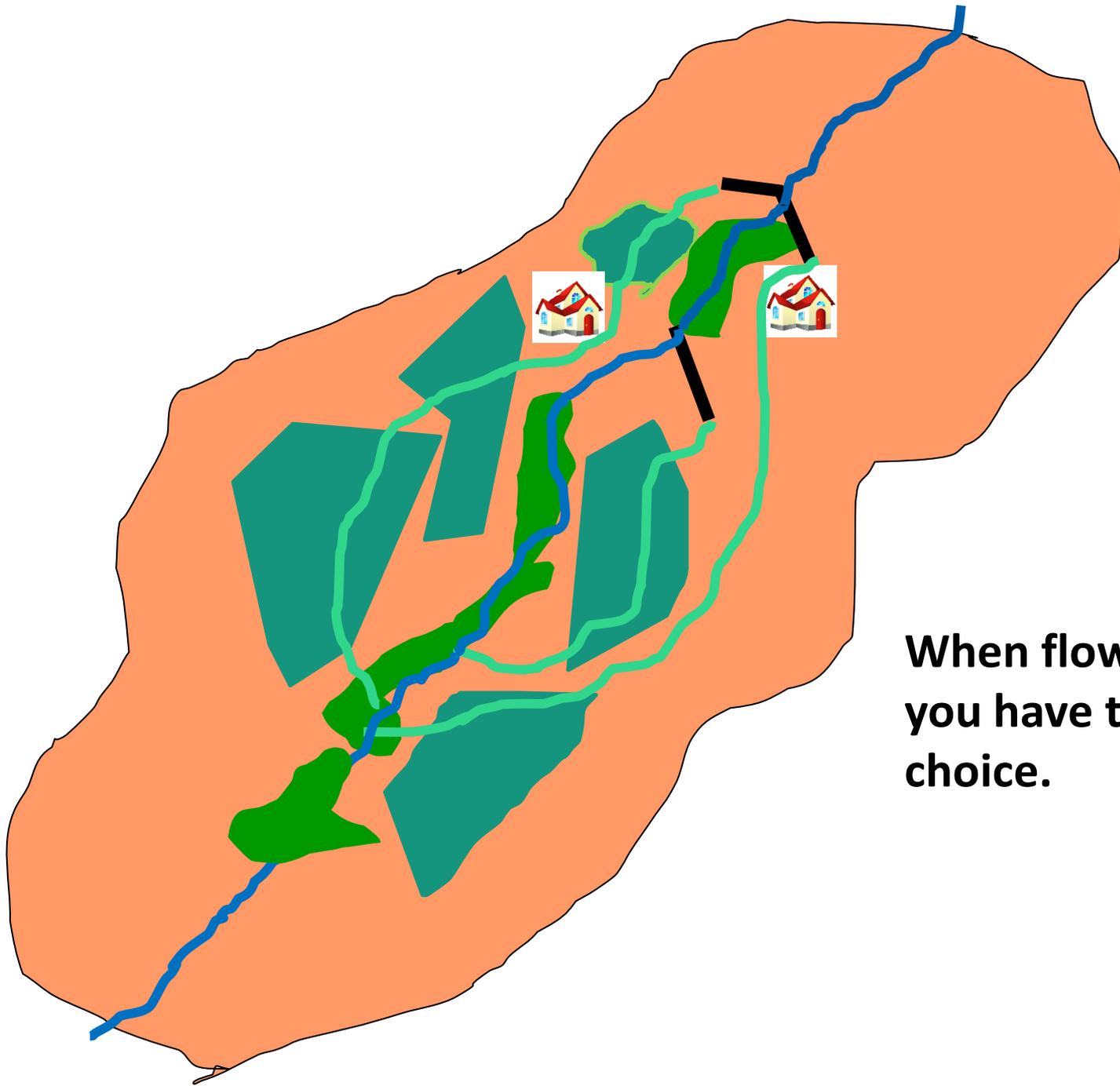
**Schematic of the
Cliff-Gila Valley**

N
Gila Wilderness

**Gila
Flow**

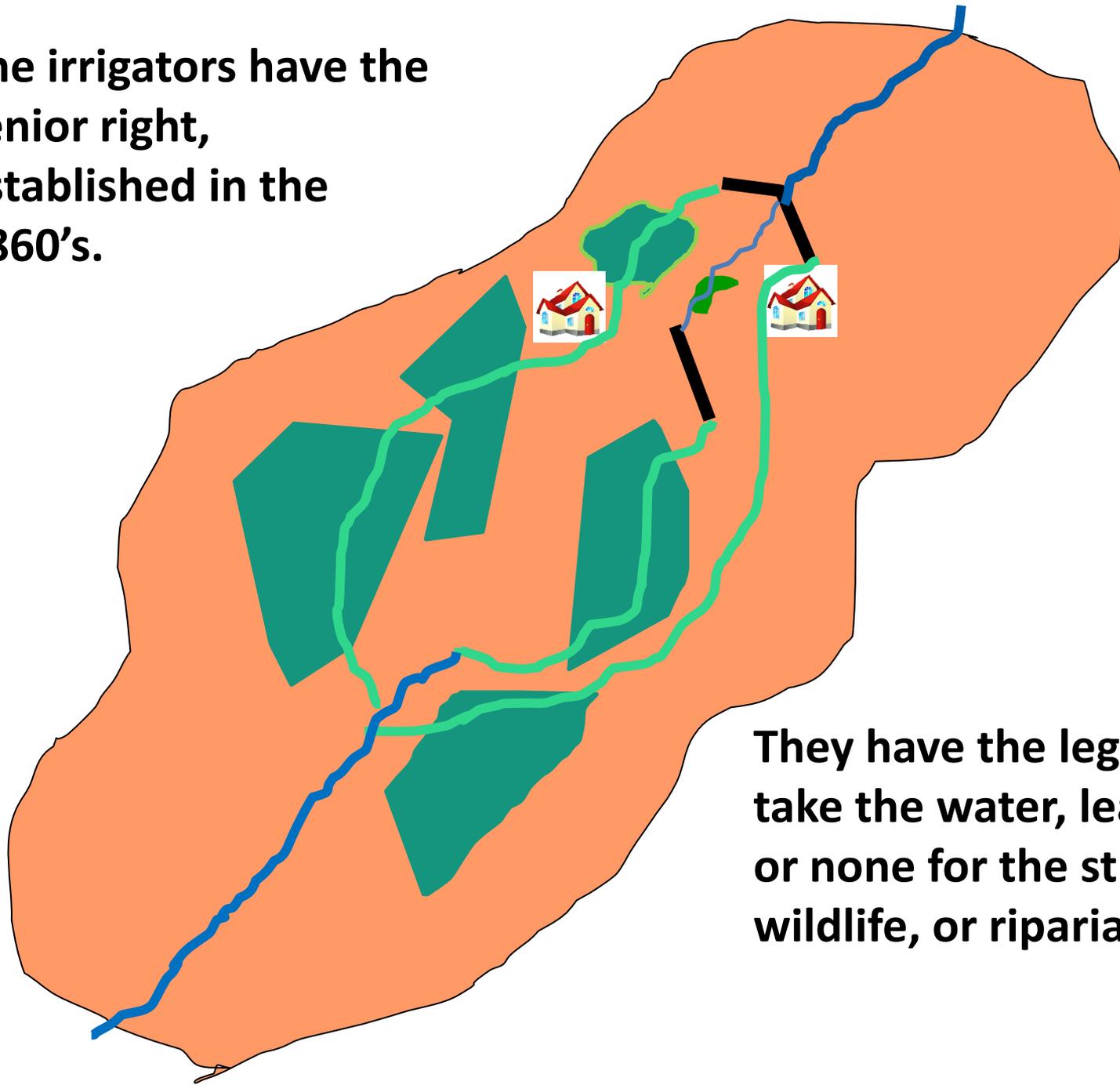


As long as flows are sufficient, there is plenty of water for communities, agriculture and the environment.



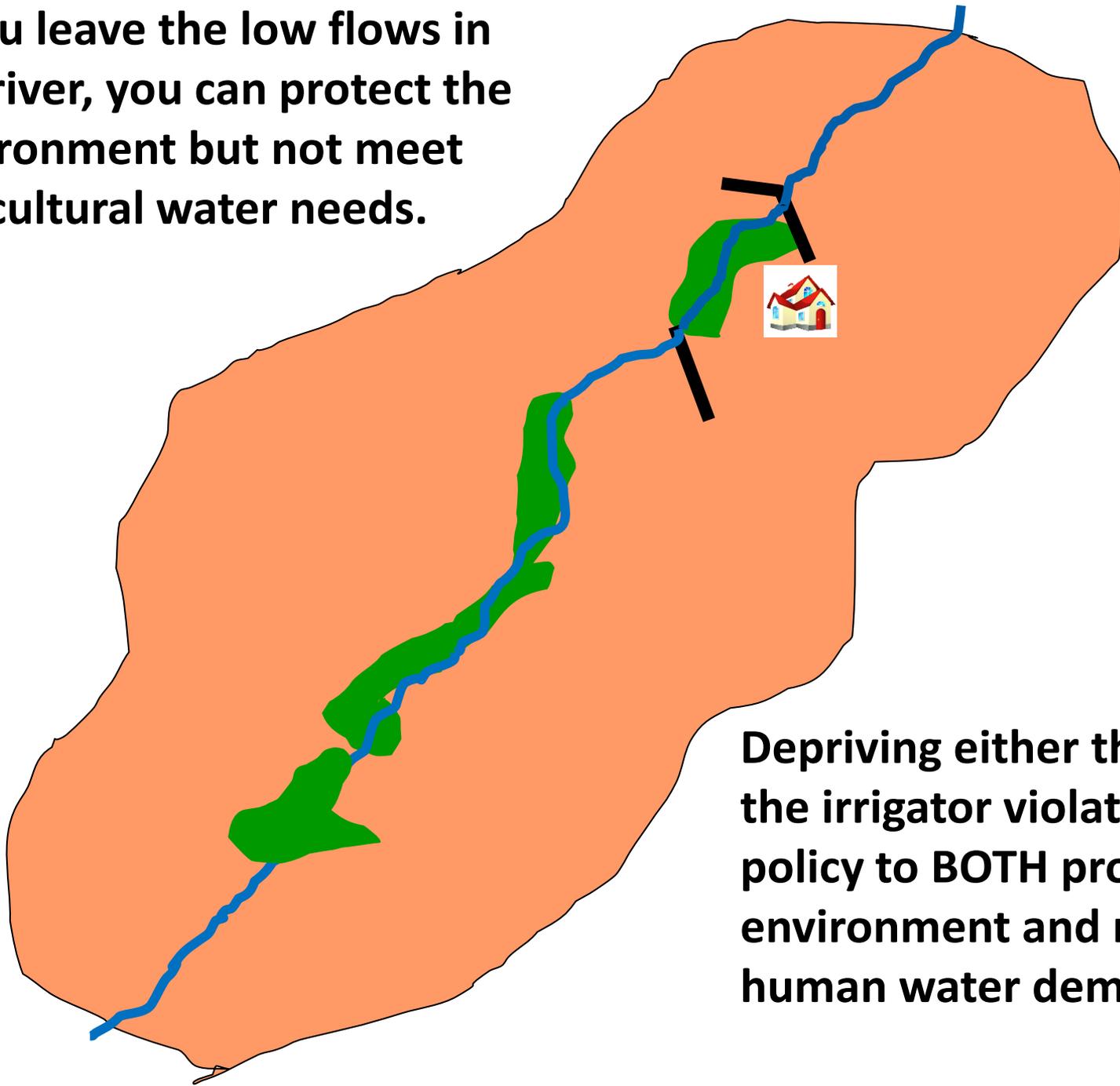
**When flows get low,
you have to make a
choice.**

The irrigators have the senior right, established in the 1860's.



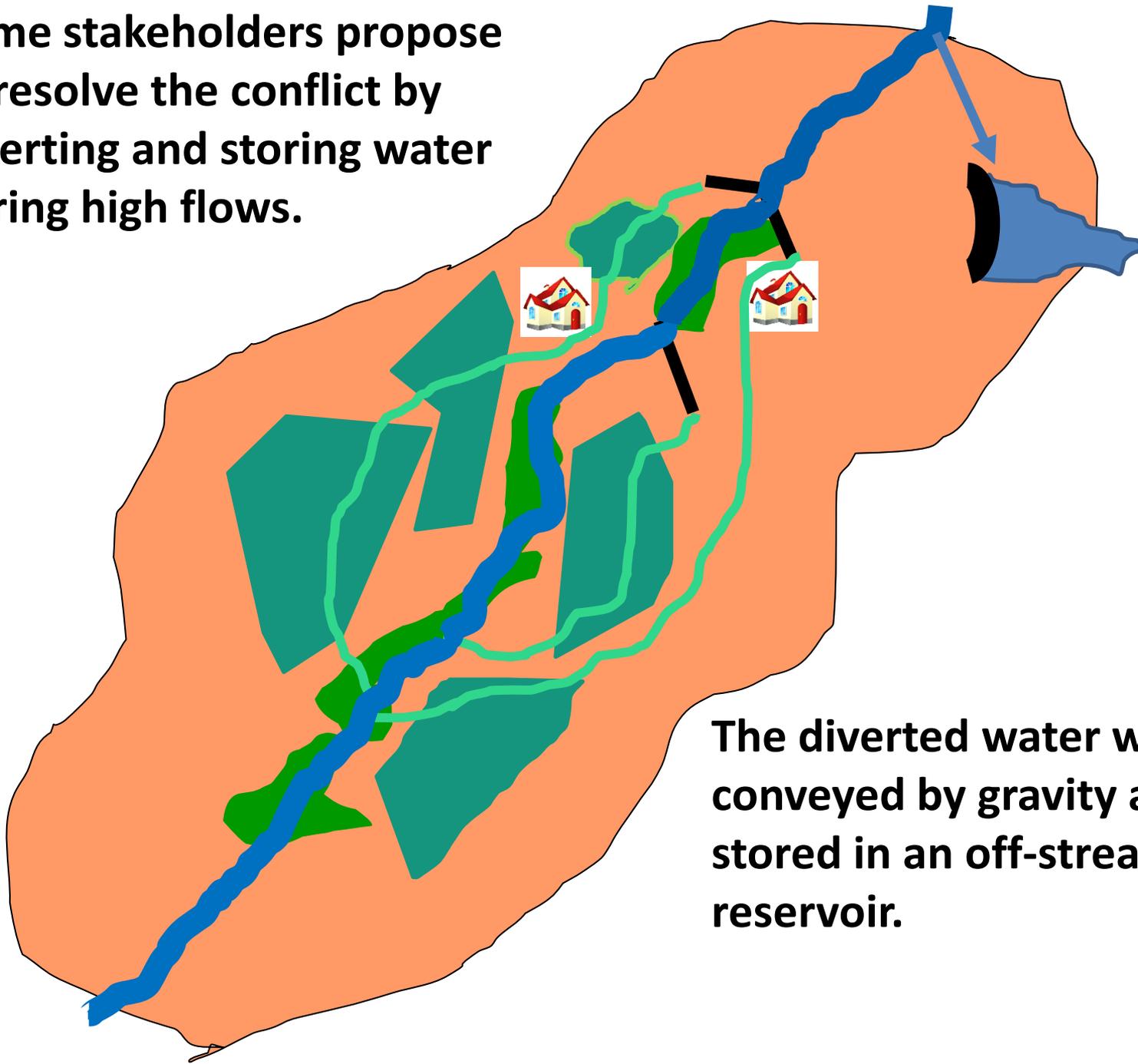
They have the legal right to take the water, leaving little or none for the stream, wildlife, or riparian habitat.

If you leave the low flows in the river, you can protect the environment but not meet agricultural water needs.



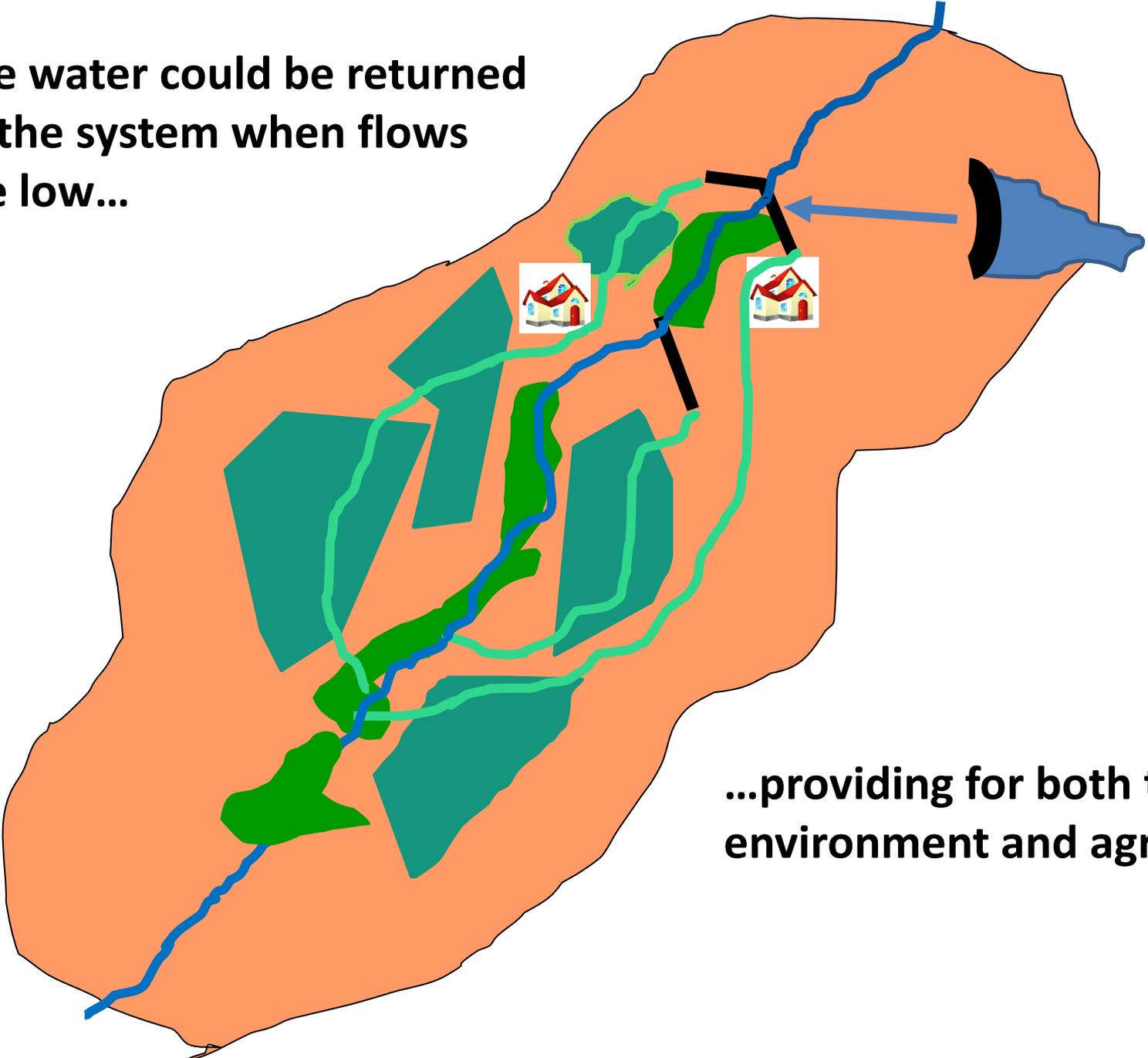
Depriving either the river or the irrigator violates the ISC policy to BOTH protect the environment and meet human water demands.

Some stakeholders propose to resolve the conflict by diverting and storing water during high flows.



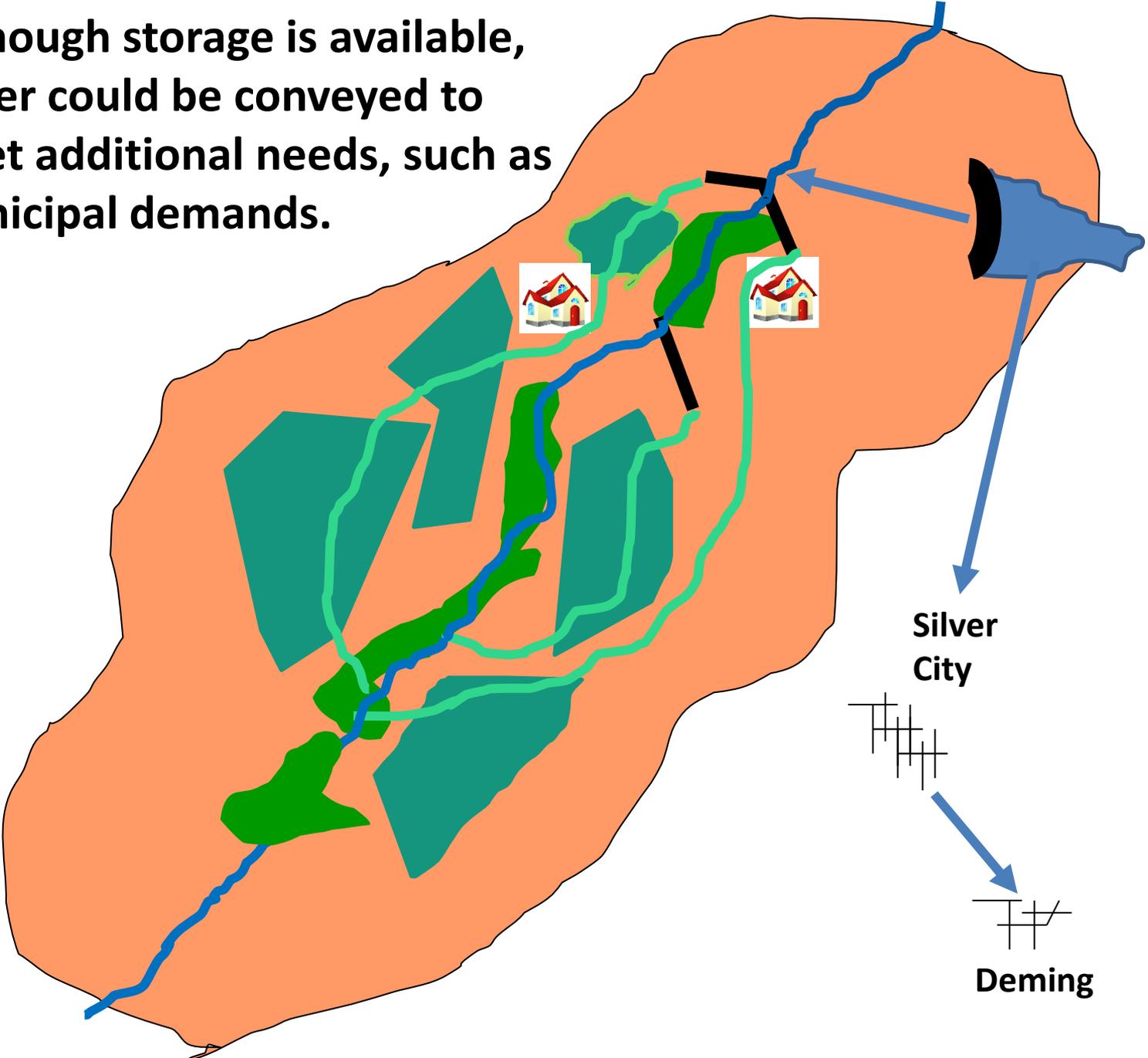
The diverted water would be conveyed by gravity and stored in an off-stream reservoir.

The water could be returned to the system when flows are low...



...providing for both the environment and agriculture.

If enough storage is available, water could be conveyed to meet additional needs, such as municipal demands.



Silver City

Deming

**June 2013
Cliff-Gila
Valley**

**Stakeholders feel the
AWSA provides the
opportunity to turn
periodic drying...**





...to a healthy river

Change stressed and drying riparian habitats...

JUNE 2013





**...to a healthy and vibrant
bosque**

**Change fields fallowed by
drought...**

July 2012



A landscape photograph showing a transition from a rocky, scrubby foreground to a lush green agricultural field in the middle ground, with a cloudy sky above. The foreground is filled with dry, brownish vegetation and scattered rocks. The middle ground features a large, vibrant green field, likely a pasture or crop field, surrounded by dense green trees and shrubs. In the background, there are rolling hills and a small building visible on the right. The sky is filled with soft, white and grey clouds, suggesting an overcast day.

**...to a robust, sustainable
agricultural economy**



Change a stagnant regional economy to ...

...new businesses and jobs.



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