

State Engineer's Office Colorado River Basin Webinar

August 19, 2021

Kevin Rein, P.E., State Engineer

Mike Sullivan, P.E., Deputy State Engineer

Division of Water Resources

Topics for tonight

- *Brief Update Only - Yampa River Over-Appropriation Status*
- *Measurement Rules*
- *Review; Compact Compliance Strategy*

What Does Over-Appropriation Mean?

A stream system is considered over-appropriated when at some or all times of the year, the water supplies of said stream system are insufficient to satisfy all the decreed water rights within that system.

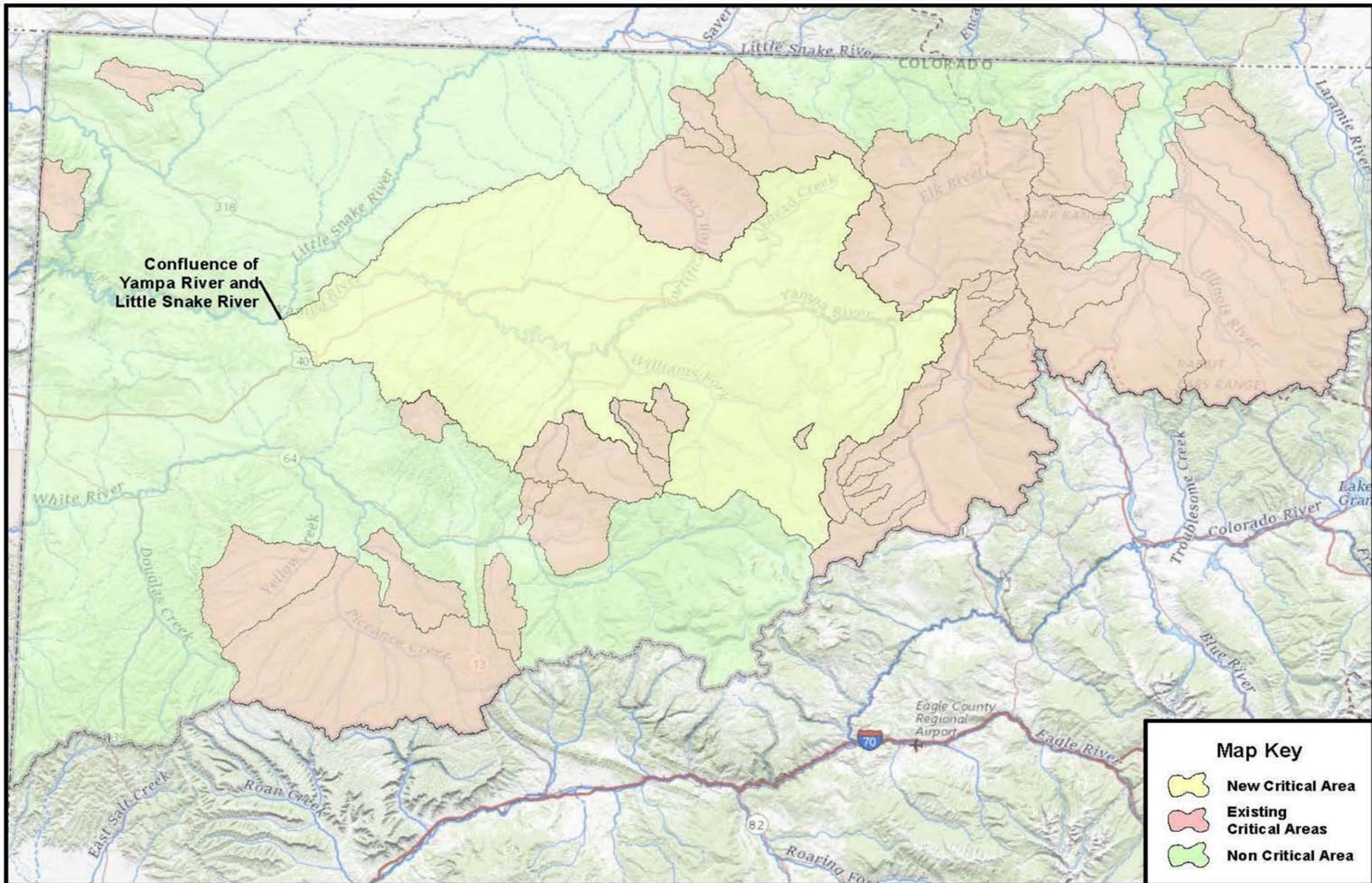
What Does a Formal Determination Mean?

- *No change to surface water appropriations*
- *No change to surface water administration*
- *Significant change to well permitting*

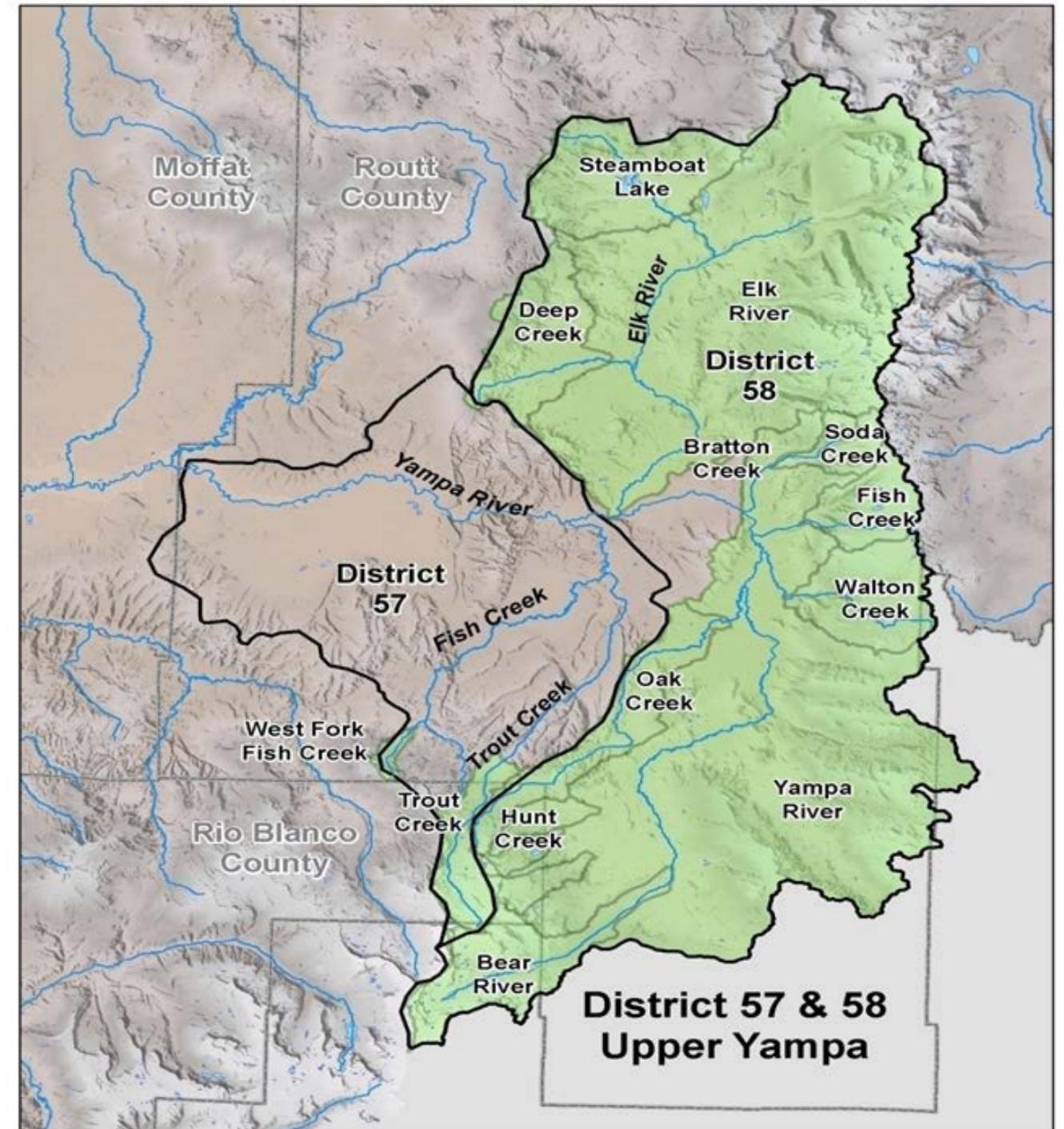
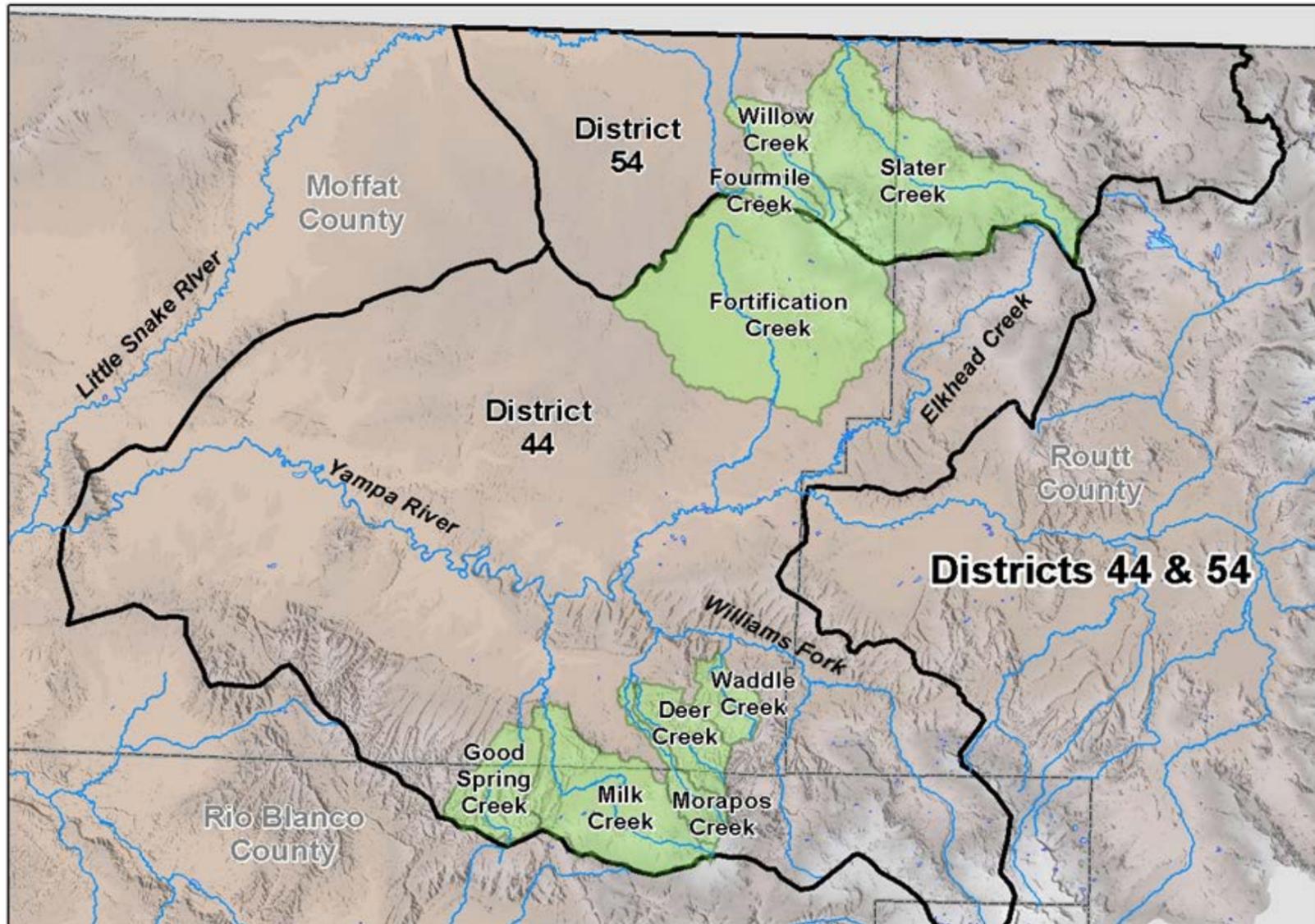
What Part of the Basin Will be Affected?

Those areas of the Yampa River basin upstream of the Little Snake River that are not already considered over-appropriated.

(Some of the basin is already considered over-appropriated.)



Yampa River Over-Appropriation



New Well Permit Applications

Not Over-Appropriated

- *Well permits can be issued under a finding of no injury*
 - *Delayed impacts to the stream are not injurious*

Over-Appropriated

- *In limited situations, domestic well permits can be issued under a presumption of no injury*
- *Most other well permits; residential, commercial, irrigation, and others will need an augmentation plan*
 - *Delayed impacts to the stream would injure those that are short*

What is a Plan for Augmentation?

A plan to replace out of priority depletions in time, place and amount

What is the process from here?

- ✓ *Written report submitted to State Engineer on March 17, 2021*
- ✓ *Notice of the recommended designation was given through the SWSP notification list on March 19, 2021 and through a press release on March 23, 2021*
- ✓ *30-day comment period from time of notice*
 - *Respond to comments received and continue public outreach*
 - *Decision will be made by State Engineer*
 - *Date set when basin will be considered over-appropriated*

Topics for tonight

- *Brief Update Only - Yampa River Over-Appropriation Status*
- *Measurement Rules*
- *Review; Compact Compliance Strategy*

Components of Measurement Rules

- **Statutory Authority (section 37-84-112, C.R.S.)**
 - “(1) The owners of any irrigation ditch, canal, flume, or reservoir in this state, taking water from any stream, shall erect where necessary and maintain in good repair, at the point of intake of such ditch, canal, flume, or reservoir, a suitable and proper headgate of height and strength and with embankments sufficient to control the water at all ordinary stages and suitable and proper measuring flumes, weirs, and devices and shall also erect and maintain in good repair suitable wastegates where necessary in connection with such ditch, canal, flume, or reservoir intake.”
 - Understand “...where necessary...”

Why Measurement Rules?

- First, why measurement at all?

Why Measurement At All?

- Old Water Administration Axiom:

**“You can’t administer
what you can’t measure”**

- What does that mean?

Why Measurement Rules?

- Manage the need ahead of time
 - Consistency and transparency for all water users
 - Recognize all scenarios
 - Plan for options and alternatives
 - Technical and administrative guidance
 - Stakeholder involvement
 - Efficient implementation

Where Are We Now?

- Many diversions have adequate control and measurement devices in place
- Reliability of devices and the data
 - Some diversions need initial, repaired, or upgraded measurement devices

Components of Measurement Rules?

- Components of Measurement Rules
 - Statutory Authority (section 37-84-112, C.R.S.)
 - Objective, Scope, Applicability,
 - Definitions
 - Measurement Methods, Functional Standards
 - Reporting
 - Enforcement

Components of Measurement Rules

- Objective, Scope, Applicability
 - Objective:
 - Basins with increasing demand, over-appropriation, need for administration
 - Augmentation plans, need for verification of operation
 - Data to plan for and implement Compact Compliance Administration
 - Scope and Applicability
 - Surface water, groundwater
 - Colorado River Basin? Statewide?

Components of Measurement Rules

- Measurement Methods, Functional Standards
 - Surface water
 - Flumes, weirs, current meters, radar, alternative
 - Groundwater
 - Totalizing Flow Meter, Power Consumption Coefficient?
 - Accuracy and verification standards
 - Consider geography, source, administrative need

Components of Measurement Rules

- Reporting and Enforcement
 - Frequency of measurement and reporting, types of information,
 - Administration-based, by decree, Compact administration requirements
 - Enforcement
 - Ensure compliance
 - Consider geography, source, administrative need

Process (steps)

- Use APA (Administrative Procedures Act) Process
 - Informal outreach by State Engineer's Office (Right now)
 - Draft initial rules
 - Scheduled stakeholder meetings, review draft rules, gather information and input (Fall 2021)
 - File rules with Secretary of State
 - Continued stakeholder discussions, amend as appropriate
 - Schedule hearing (no water court)
 - Final rules

Process (phasing)

- **Begin with Division 6 (Why?)**
 - Division 6 has had limited calls, no long history of curtailment
 - Measurement was not as critical
 - However, it is changing
 - Water users are aware of the issue, this will bring more structure to the discussion
 - Division 6 can bring success to be used in other divisions
 - Continue with other West Slope divisions after initial work in Division 6

Process (on the ground, actual meetings)

- DWR has contacted local roundtables, conservancy districts, county personnel, and others
 - Assist in planning, coordinating, communication
 - Work with them as partners in getting the word out, Use them as another resource to represent stakeholder interests

Topics for tonight

- *Brief Update Only - Yampa River Over-Appropriation Status*
- *Measurement Rules*
- *Review; Compact Compliance Strategy*

Understand Compact Compliance Strategy

Why are we talking about a Compact Compliance Strategy instead of Compact Curtailment?

- *A discussion about curtailment only: “Common assumption”*
 - If and when Colorado is “out of compliance,”
 - the State and Division Engineers need *only* curtail water use according to priority of appropriation,
 - Colorado will then again be “in compliance,”
- The “common assumption” oversimplifies the situation. The actual discussion, and potential course of action is more complex

Understand Compact Compliance Strategy

But what does the
Upper Colorado River Compact say (Article IV)?

- a) "Curtailment" may be necessary, if the flow at Lee Ferry is not met
- b) UCRC sets "quantity" and "time" of curtailment for each state
- c) The state determines how to meet compact compliance obligations
 - *Compact Compliance Strategy* addresses a), b), and c).

Understand Compact Compliance Strategy

- *Multi-faceted, holistic approach that addresses a), b), and c),*
 - a) What is the strategy if “curtailment” is necessary?
 - b) How does direction from the UCRC influence the strategy?
 - c) How does Colorado’s latitude influence, actually, form the strategy?
- *Therefore, the State Engineer’s actions are part of a Compact Compliance Strategy, not Compact Curtailment*

Understand Compact Compliance Strategy

- Consider the South Platte River Compact:
 - Flows at Julesburg less than 120 cfs, April 1 - October 15?
 - Curtail all diversions in WD 64 junior to June 14, 1897
 - Colorado is in compliance
 - Colorado does not take any special actions before compliance becomes an issue

Understand Compact Compliance Strategy

- Consider the La Plata River Compact:
 - From February 16 - November 30, determine flows at Hesperus gauge
 - If flow at the gauge is less than 100 cfs
 - Curtail diversions (in priority) to ensure delivery of one half that amount at the state line on the following day
 - Colorado is in compliance
 - Colorado does not take any special actions before compliance becomes an issue

Understand Compact Compliance Strategy

- Consider the Colorado River Compact:
 - The states of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years...
 - That is the recognized (Upper Basin States') standard for maintaining compact compliance,
 - What is compliance? How do we maintain it?

What Influences Compact Compliance Strategy?

- What influences Compact Compliance Strategy?
 - Probability that based on UCRC determination, Colorado would need to take action and implement Compact Administration,
 - Upper Colorado River Compact; UCRC role,
 - Develop an approach,
 - Implement Compact Administration as a part of Compact Compliance Strategy.

Probability of need to take action, Compact Administration

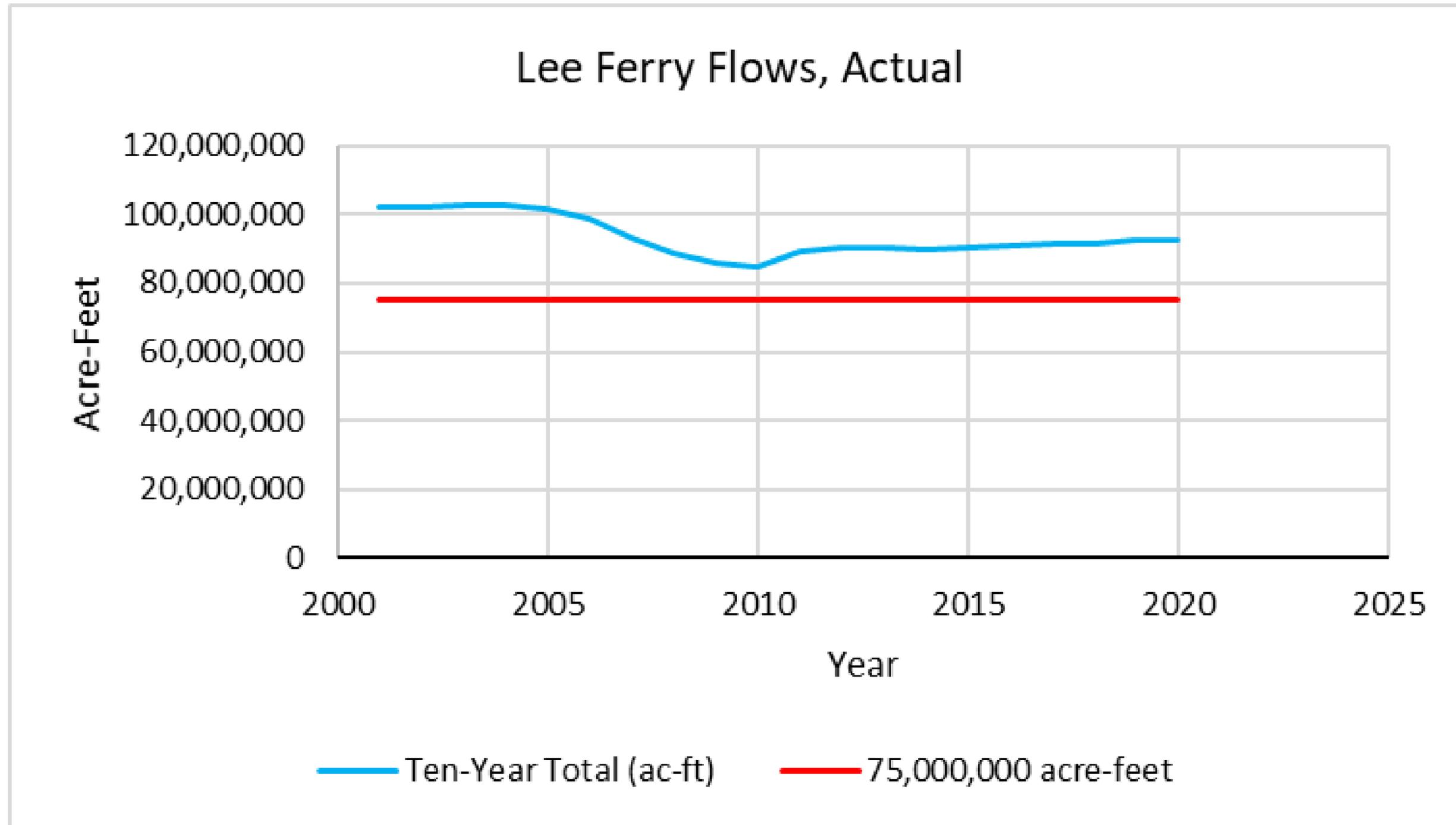
Year	Annual Lee Ferry Flow (ac-ft)	Ten-Year Total (ac-ft)
2001	8,361,000	101,872,000
2002	8,347,000	102,197,000
2003	8,372,000	102,432,000
2004	8,348,000	102,475,000
2005	8,395,000	101,628,000
2006	8,507,000	98,603,000
2007	8,421,000	93,150,000
2008	9,180,000	88,890,000
2009	8,406,000	85,866,000
2010	8,437,000	84,774,000
2011	12,753,000	89,166,000
2012	9,542,000	90,361,000
2013	8,289,000	90,277,000
2014	7,590,000	89,519,000
2015	9,157,000	90,282,000
2016	9,138,000	90,913,000
2017	9,170,000	91,661,000
2018	9,171,000	91,653,000
2019	9,264,000	92,511,000
2020	8,436,000	92,509,000

Remember the “Curtailment may be necessary” standard.

Probability of need to take action, Compact Administration

Year	Annual Lee Ferry Flow (ac-ft)	Ten-Year Total (ac-ft)
2015	9,157,000	90,282,000
2016	9,138,000	90,913,000
2017	9,170,000	91,661,000
2018	9,171,000	91,653,000
2019	9,264,000	92,511,000
2020	8,436,000	92,509,000

Outlook of the need to take action, Compact Administration



Outlook of the need to take action, Compact Administration

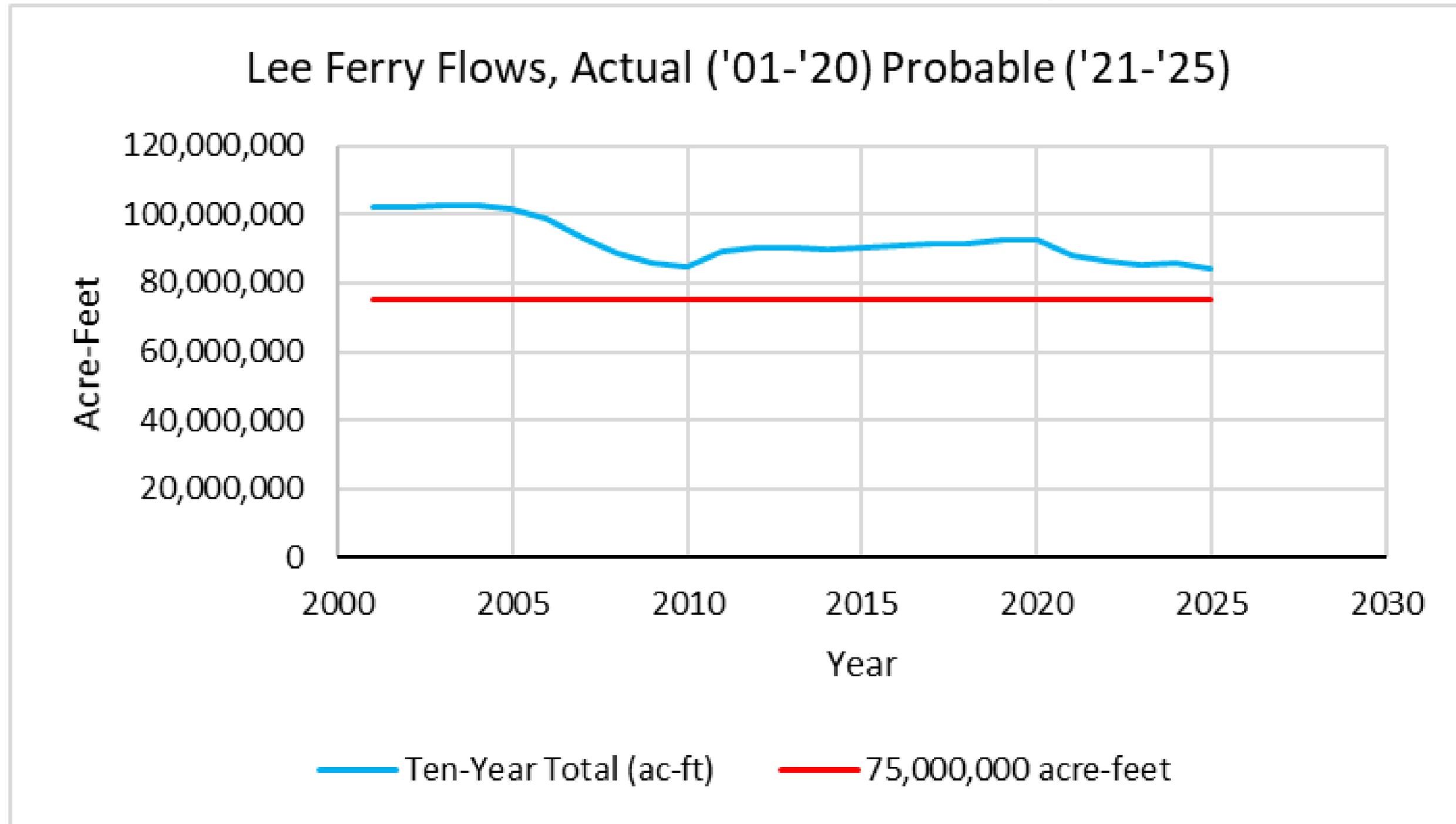
- 2017-2020 Actual Totals
- 2021-2022; Current projection, October 2020 24-Month Study*
- 2023-2025; Conservative SEO assumption, for planning only = 7,480,000 acre-feet*
- Acknowledge Mexico “obligation”

* Consider 150,000 ac-ft gain in river, Powell to Lee Ferry

- Sources:
 - 72nd Annual Report of the UCRC
 - USBR 24-Month Study (May, 2021)
 - '07 Guidelines

Year	Annual Lee Ferry Flow (ac-ft)	Ten-Year Total (ac-ft)
2017	9,170,000	91,661,000
2018	9,171,000	91,653,000
2019	9,264,000	92,511,000
2020	8,436,000	92,509,000
2021	8,380,000	88,137,000
2022	7,630,000	86,225,000
2023	7,630,000	85,566,000
2024	7,630,000	85,606,000
2025	7,630,000	84,079,000

Outlook of the need to take action, Compact Administration



Probability of need to take action, Compact Administration

- Probability of need to take action and implement Compact Administration;
 - Currently (2019) the Upper Basin States' delivery stands at 92,981,000 acre-feet,
 - The reservoir operations direct deliveries at least in amounts that exceed the outlook depicted in the prior slide

Low probability between now and 2026

What Influences Compact Compliance Strategy?

- What influences Compact Compliance Strategy?
 - Probability of a UCRC determination, that Colorado would need to take action. **Probability is low, near term**
 - Upper Colorado River Compact; UCRC role. **Many unknowns,**
 - Implement, if and when necessary. **Many unknowns, many unidentified alternatives.**
 - Current SEO activities