



# Building the Columbia River Drought Insurance Program

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Policy Advisory Group Meeting

Presented by

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# Summary

1. Legislative Direction—"Solve the Interruptible Problem"
2. How big is the problem? How many interruptibles?
3. How often do droughts occur? How severe of a drought do we plan for?
4. What are our supply side options?
5. What are our demand side options?
6. Building a Drought Insurance Program ('07-09 biennium)

# Legislative Direction

RCW 90.90.020(3)(c): “The department of ecology shall focus its efforts to develop water supplies for the Columbia river basin on... A **new uninterruptible supply of water for the holders of interruptible water rights** on the Columbia river mainstem that are subject to instream flows or other mitigation conditions to protect stream flows.”

# How Big is the Problem?

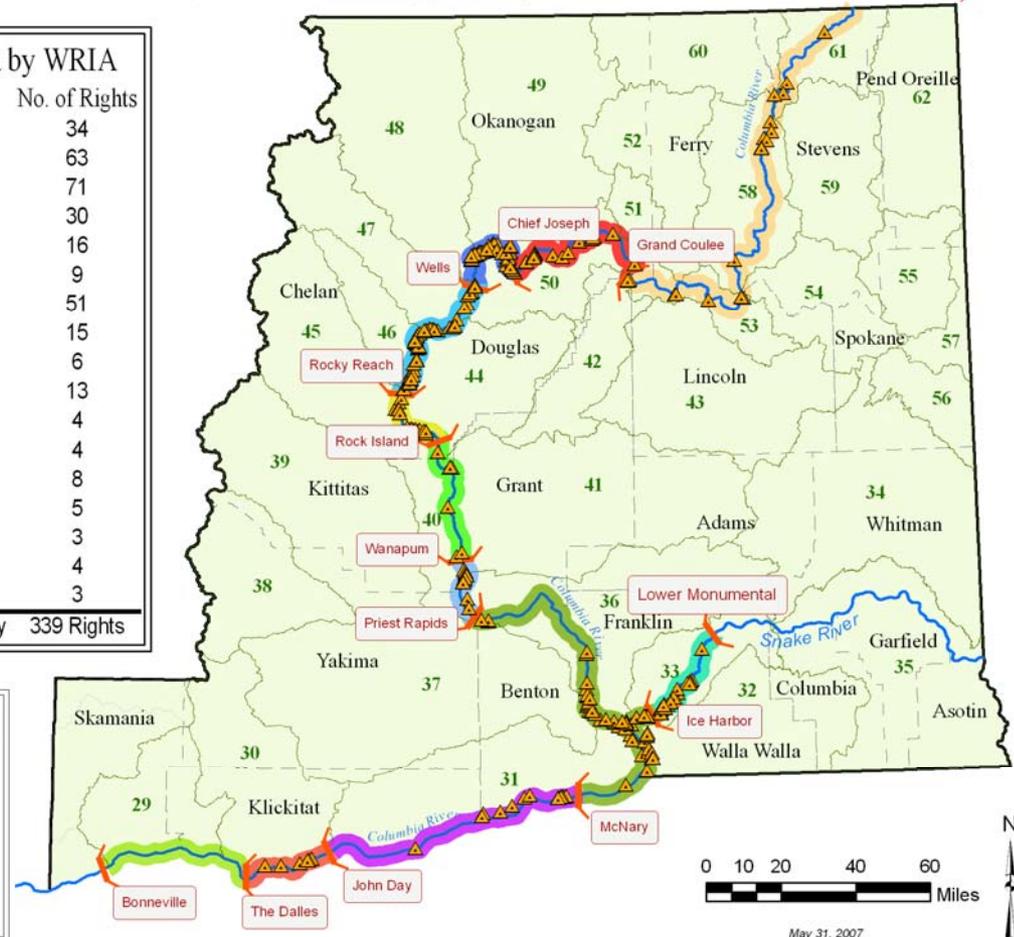
- 339 interruptible water rights in the Columbia 1-mile corridor (~1500 cfs, ~260,000 ac-ft)
- 41 Interruptible water rights outside the Columbia 1-mile corridor (~85 cfs, ~15,000 ac-ft)
- Other water rights subject to "mitigation conditions" (e.g. Quad Cities Permit, changes/transfers)

## Interruptible Water Rights within the Columbia River Program

Draft

\* Interruptible Qa by WRIA

WRIA	Qa (afy)	No. of Rights
33	101,340	34
31	51,699	63
50	28,522	71
40	26,742	30
36	16,463	16
32	10,815	9
44	9,825	51
49	4,355	15
48	4,137	6
47	2,966	13
53	1,732	4
45	1,411	4
30	474	8
46	412	5
41	390	3
58	150	4
61	34	3
<b>Total</b>	<b>261,466 afy</b>	<b>339 Rights</b>

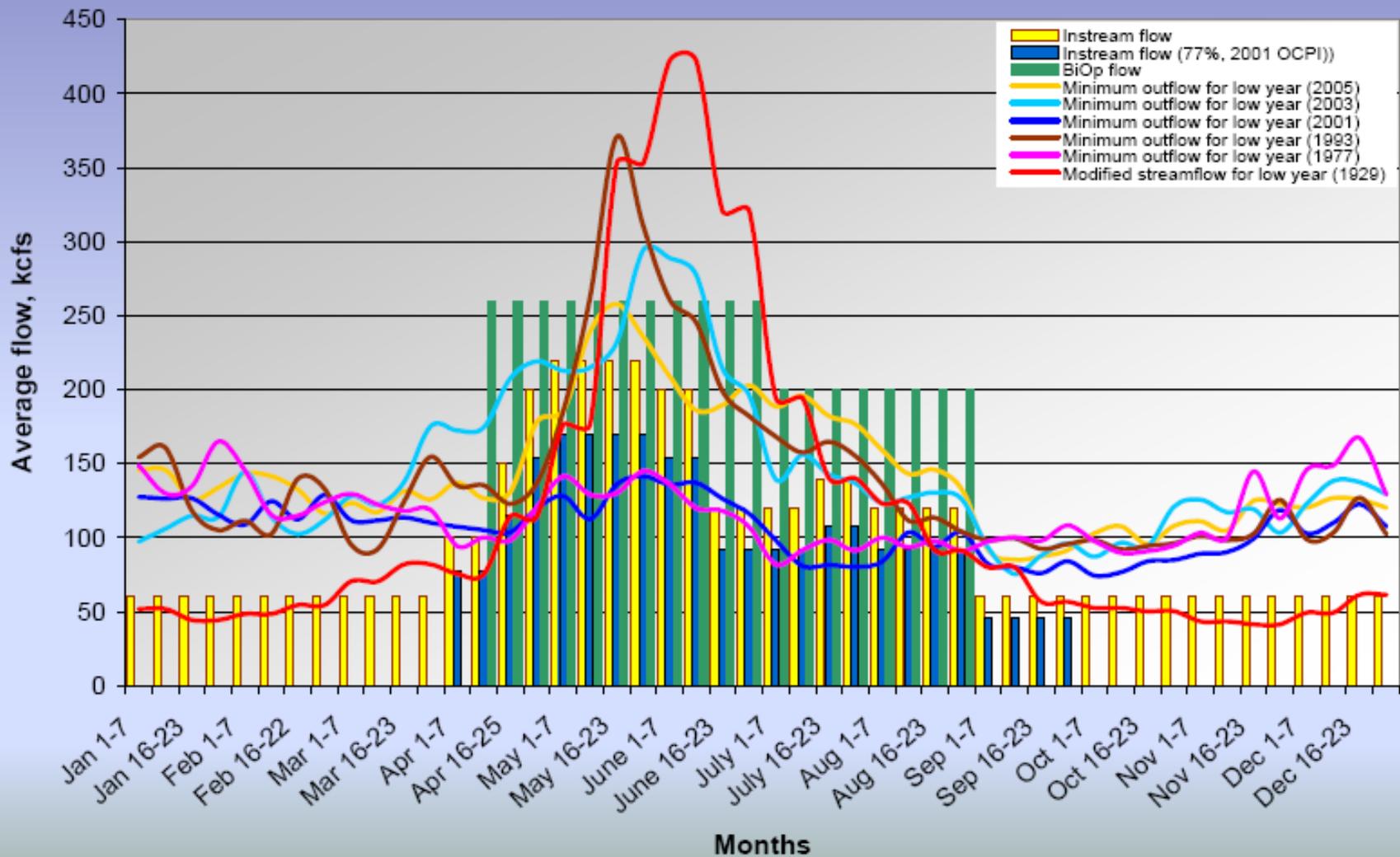


\* Replacement water is only needed the weeks in which interruption will occur.

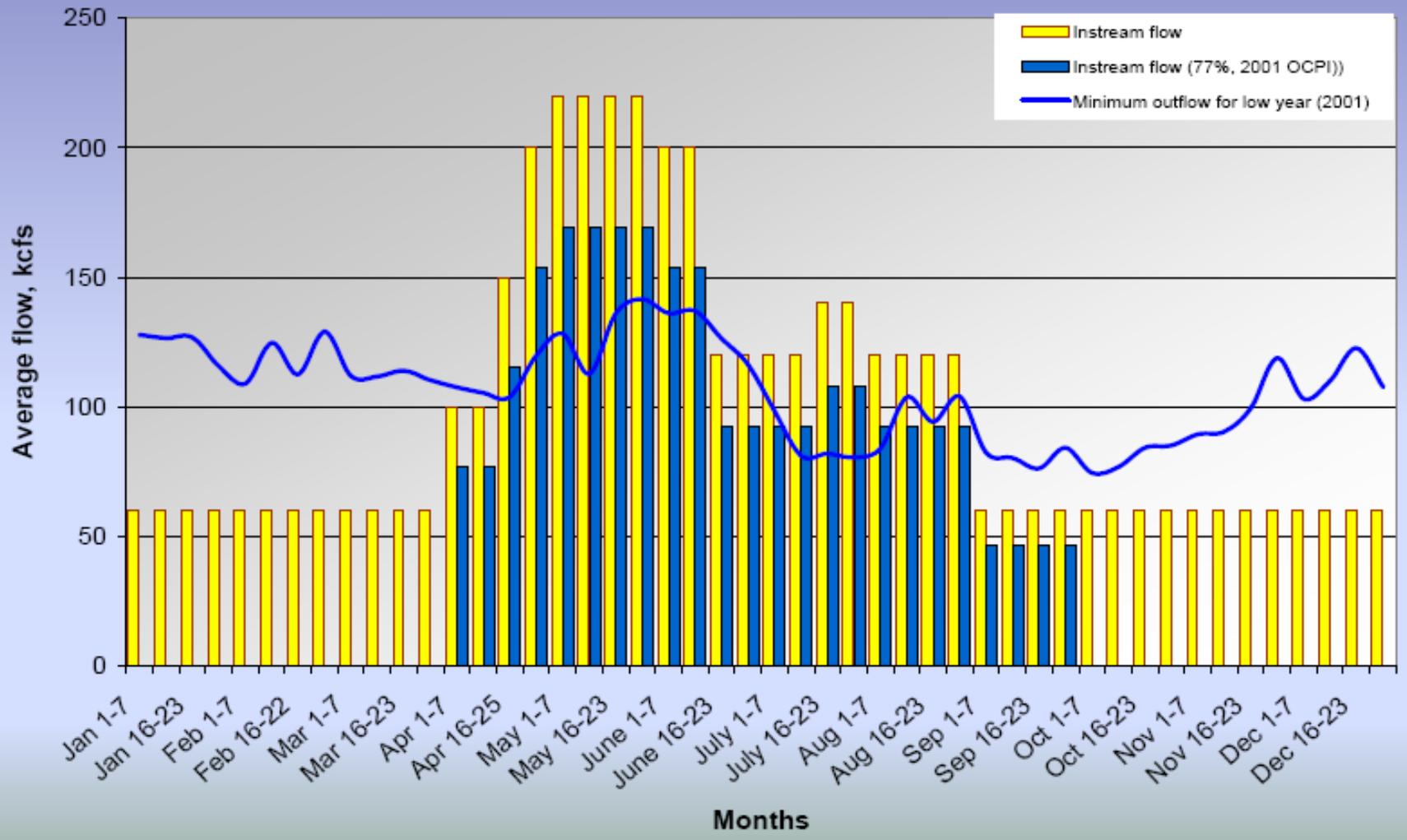
# How Often Do Droughts Occur?

- WAC 173-563 adopted in 1980 set instream flows on the Columbia River
- Rule uses a trigger (60 MAF forecast @ Dalles) and adopted flows
- Director can reduce adopted flows by 25% under an OCPI determination
- 2001 only time instream flow enforcement program implemented
- Other droughts in history would have triggered program (e.g. 1977)
- Other low flow years (e.g. 2005) did not trigger the program, but 1980 flows not met during these years
- What will climate change do? Frequency and severity of droughts?

# Minimum Outflows and Flow Target for McNary Dam



# Minimum Outflows and Flow Target for McNary Dam



# 2001 Drought Case Study

- March 1st forecast @ Dalles = 55.4 MAF
- Approx. 330 water right holders notified, weekly updates to 1-800#
- Ecology developed a drought program for 2001
- Ecology used permitting staff to verify compliance with program requirements (meters + 80% of users field verified)

# 2001 Drought Case Study

- 2001 Supply Side Strategies
  - Paid BPA \$1 million for 40,000 ac-ft of leased water from “load buydown”
  - Director made OCPI determination and reduced instream flows by 23%
    - Reduced weeks of interruption from 17 to 12 weeks
- 2001 Demand Side Strategies
  - Encouraged early changes/transfers
  - Required conservation to 80% of a full water duty (3.1 ac-ft)
  - Limited expansion of water rights ( $\leq$ last 3 years)
  - Other intangibles (apple market collapse, Enron-affected power market)

# Building a Drought Insurance Program?

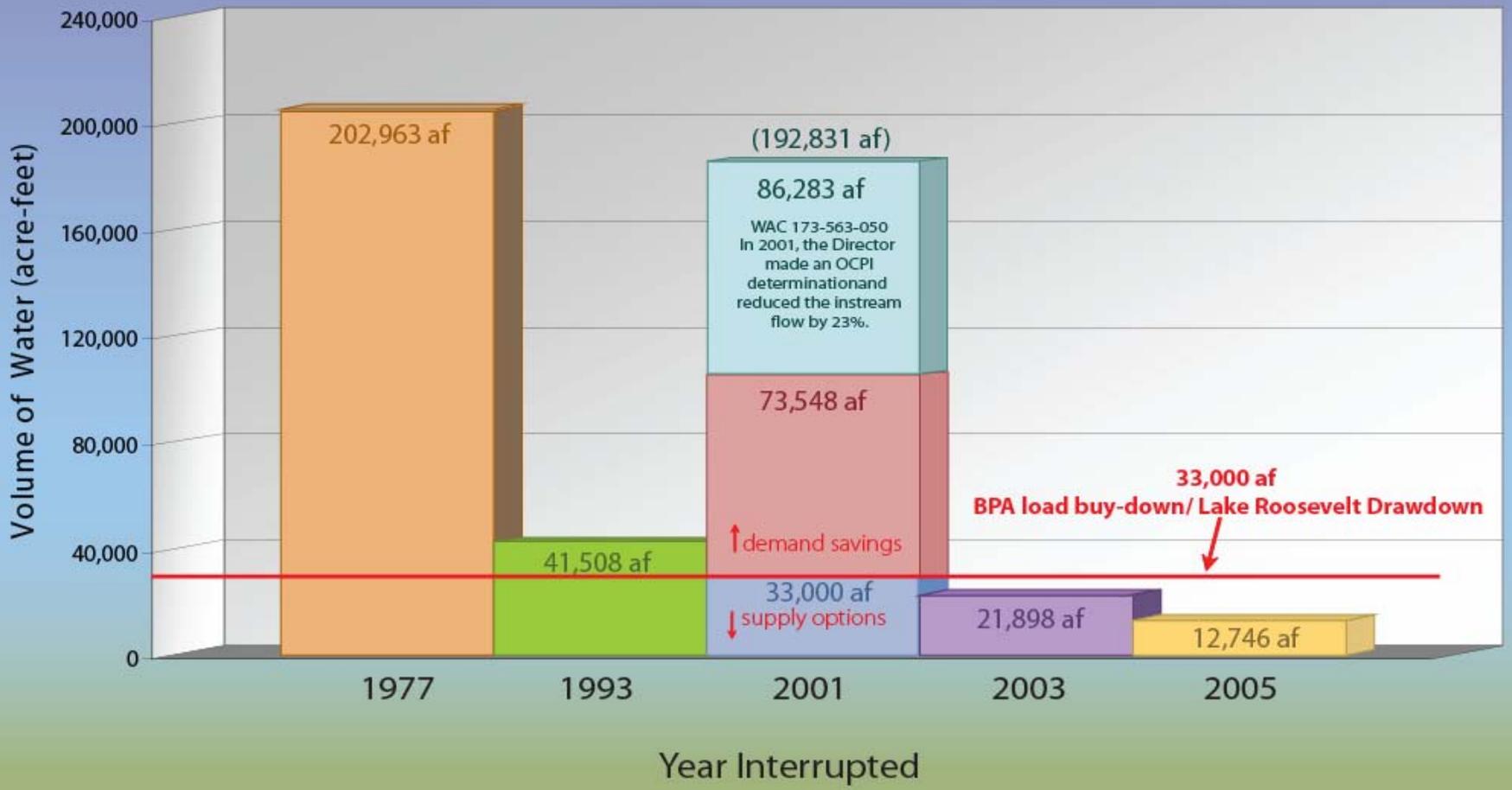
## Program Elements

- Proactive vs. Reactive?
- How much to plan for?
- Sources of supply (supply side solutions?)
- How much Risk should users assume?  
(demand side solutions)
- Summary of approach for '07-09 biennium

# Building a Drought Insurance Program?

## Proactive Planning: How Much to Plan for?

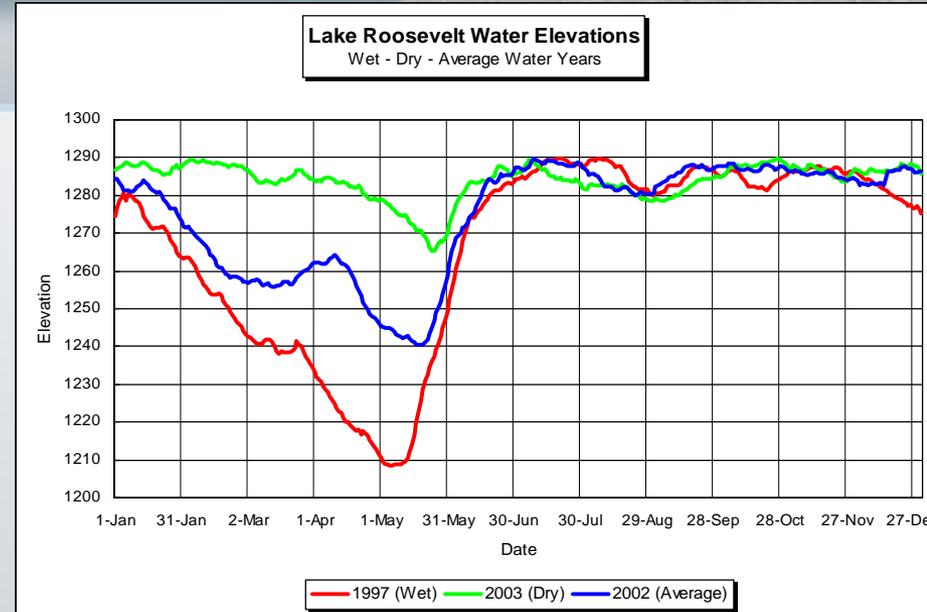
### Total Water Interrupted in Low Flow Years at McNary Dam



# Building a Drought Insurance Program?

## Supply-Side Solutions (Volume)

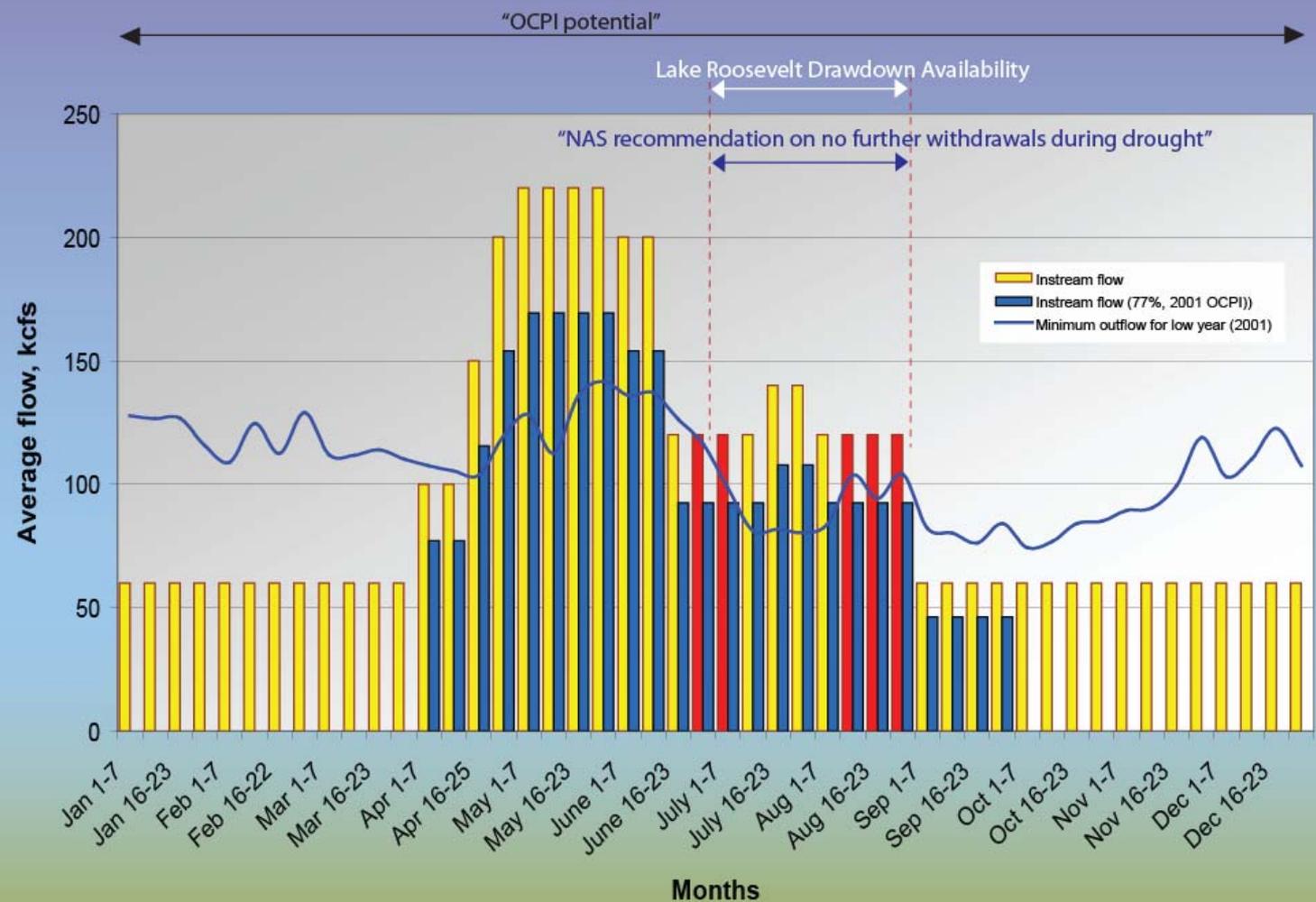
- Lake Roosevelt Drawdown (33,000 ac-ft)
- Other storage options
- Critical Flow Adjustment via OCPI
- Dry year lease auctions
- Drought year partnership options (e.g. BPA)
- Emergency Wells (Yakima Basin Model)



# Building a Drought Insurance Program?

## Supply-Side Solutions (Timing)

### Instream flow periods changed by OCPI at McNary Dam



# Building a Drought Insurance Program?

## Demand Side Solutions

- Encouraging changes and transfers: water markets
- Crop duty reductions
- Irrigation efficiency and conservation promotion
- Acreage limitations
- Metering and compliance

# Building a Drought Insurance Program?

## Approach Summary: Long-Term Need

1. About 200,000 ac-ft combined supply and demand side options for parity with 2001 program
2. About 275,000 ac-ft in supply side options for no interruptibility in any drought and flexibility to deliver water where and when it is needed



Storage (af) (Supply-Side)	
2001	33,000
1977	35,000
1929?	260,000

OCPI (af) (Supply-Side)	
2001	86,283
No July/Aug?	9151
No OCPI?	0

Conservation (af) (Demand-Side)	
2001	73,548
None?	0

# Building a Drought Insurance Program?

## Approach Summary: 2007-09 Biennium Approach

1. (Supply) Lake Roosevelt Drawdown (33,000 ac-ft in 2008?)
2. (Supply) Dry year lease auction (ac-ft TBD)
  - a. \$1 million to run auction in 2007
  - b. Coordination with auction partners (WRC, WWT, DFW)
  - c. 10 and 20 year dry year leases
  - d. Run auction in Fall 2007
  - e. Negotiate and secure lease options for 2008
3. (Supply) OCPI (not in July/August) (9,151 ac-ft based on 2001)
4. (Demand) Parity with 2001 program (73,548 ac-ft based on 2001)

# Building a Drought Insurance Program?

## Approach Summary: 2007-09 Biennium Approach (cont'd)

5. Total drought program available = 115,699+ ac-ft (192,831 ac-ft in 2001). Difference is OCPI choice (77,132 ac-ft).
6. 77,132 ac-ft deficit to be made up from dry year lease auction and small storage/conservation projects in 2008 funding cycle.



**Questions?**