Overview of Truckee Meadows Water Resources

SB487 Legislative Committee
February 25, 2008

EXHIBIT D – WESTERN WATER
Document consists of 21 pages.
Entire Exhibit provided.
Meeting Date: 2-25-08

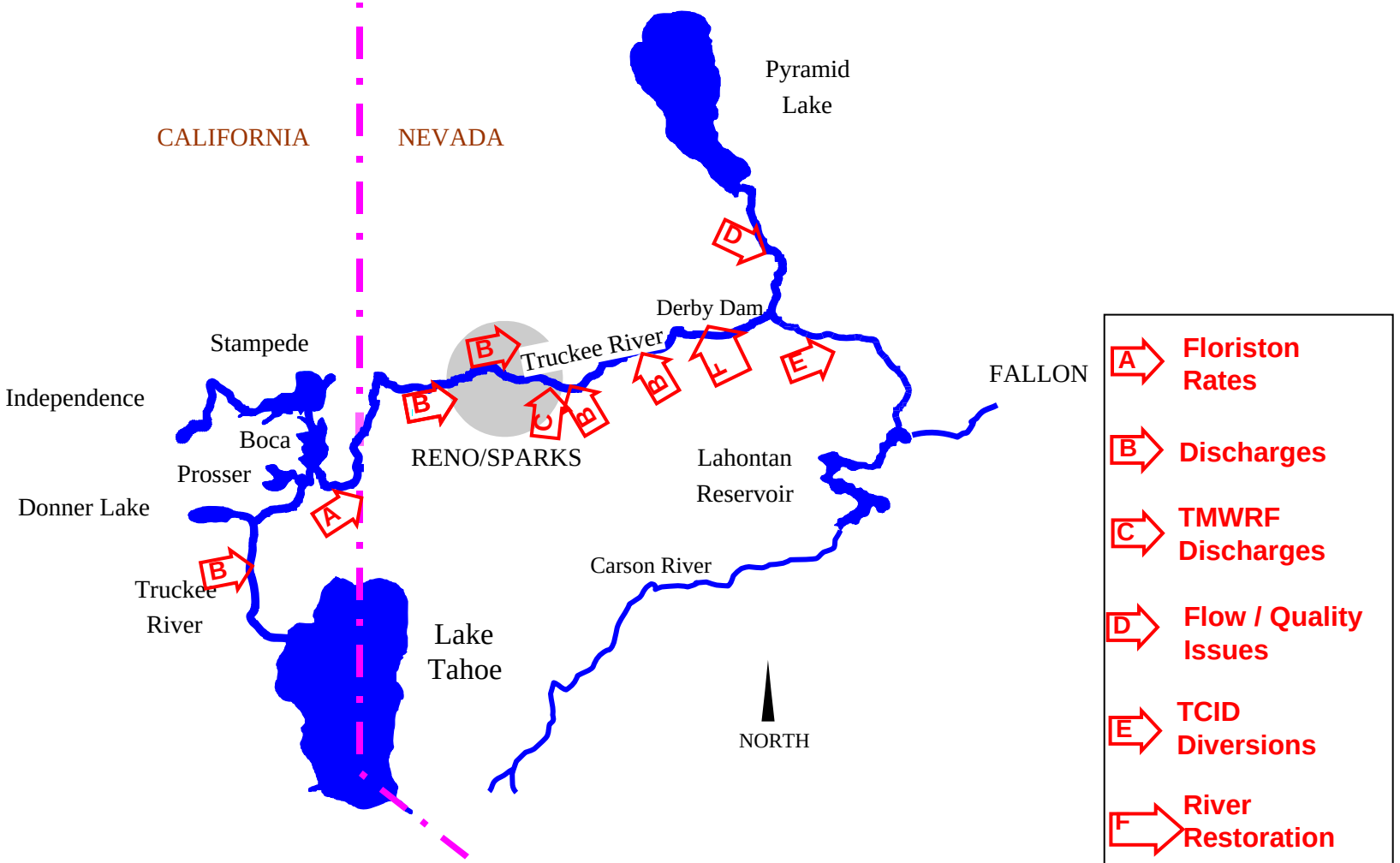
Total Water Management

- Evaluates the inter-relationships of Resources
- Looks for Highest and Best use of Resource
- Employs “Conjunctive Use Management”
- Integrates planning efforts for supply, reuse, sewer discharges, stormwater, water quality etc.
- Regional Approach

Integrated Water Resources

- ***Surface Water***
  - Truckee River
  - Creek Waters (Thomas, Whites, Galena, Hunter; Steamboat)
- ***Groundwater***
  - Municipal Wells
  - Domestic Wells
  - Importation (eg: Vidler, Intermountain, Aqua Trac)
  - Recharged Surface water (Truckee Meadows, Lemon Valley, Stead)
- ***Storage***
  - Donner & Independence & Interim Storage Contract (Boca, Stampede)
  - Recharge to Aquifer
  - Huffaker Reservoir
- ***Wastewater/Reclaimed Effluent***
  - Truckee Meadows Water Reclamation Facility
  - Reno/Stead Plant
  - South Truckee Meadows Water Reclamation Facility
- ***Environmental Water***
  - 6700 Acre Ft TROA Commitment
  - Water Quality Settlement Water ($24million split between Local & Federal funds)
- ***Stormwater***
  - Quantity/Quality
- ***Conservation/Demand side management***

The Truckee River System



Conjunctive Use

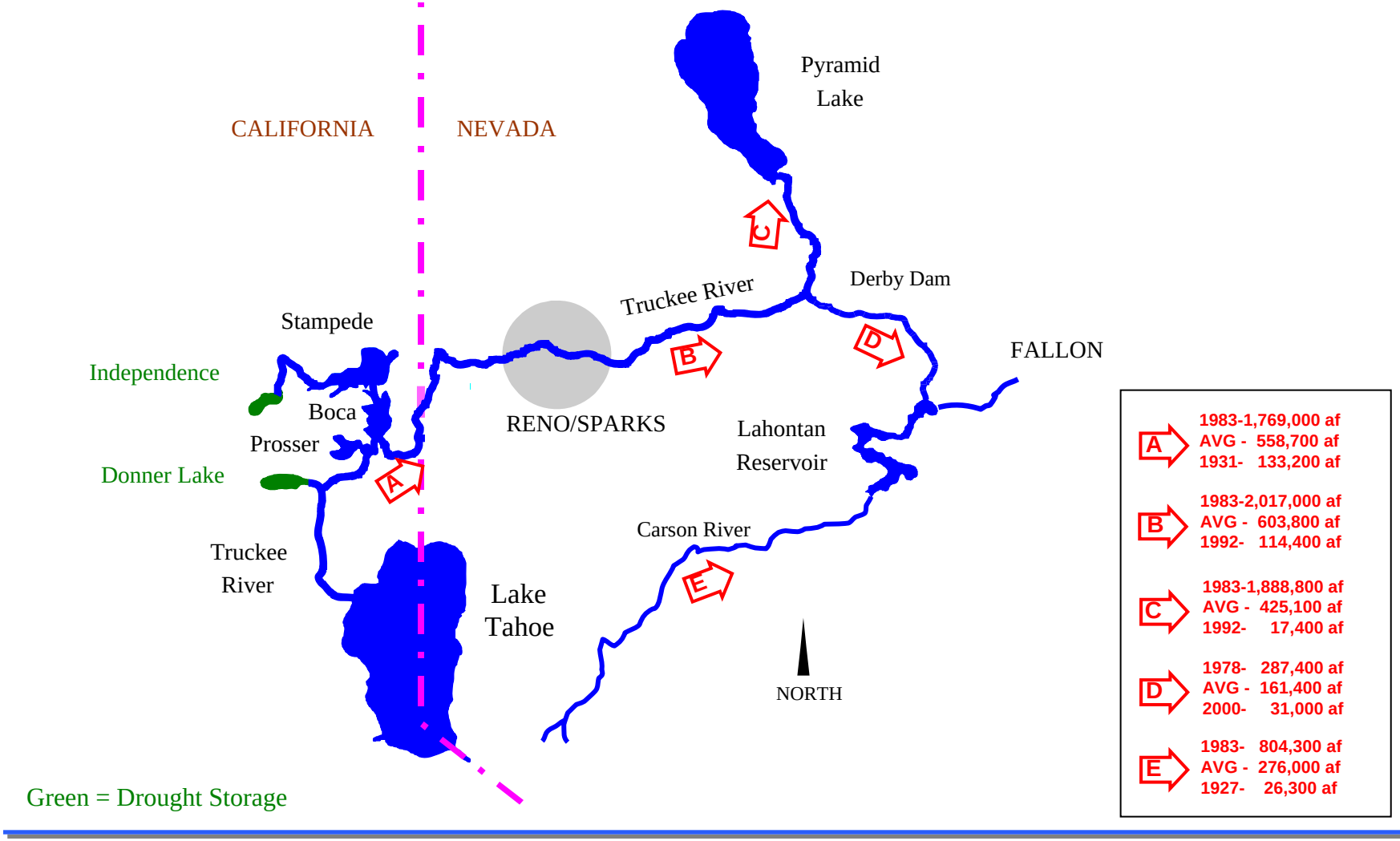
- Designation of Resource in Planning
  - Drinking or reclaimed
  - Surface or Ground and from where
- Maximize the use of surface water & reclaimed when available
- Use Groundwater after surface as needed
  - Avoid pumping in excess of basin yield
  - Peaking & droughts
  - Minimize Septic Systems to protect quality
- Recharge Aquifers
  - Improve water quality
  - Store for droughts
- Finally, use drought storage water if necessary

Resource Scheduling

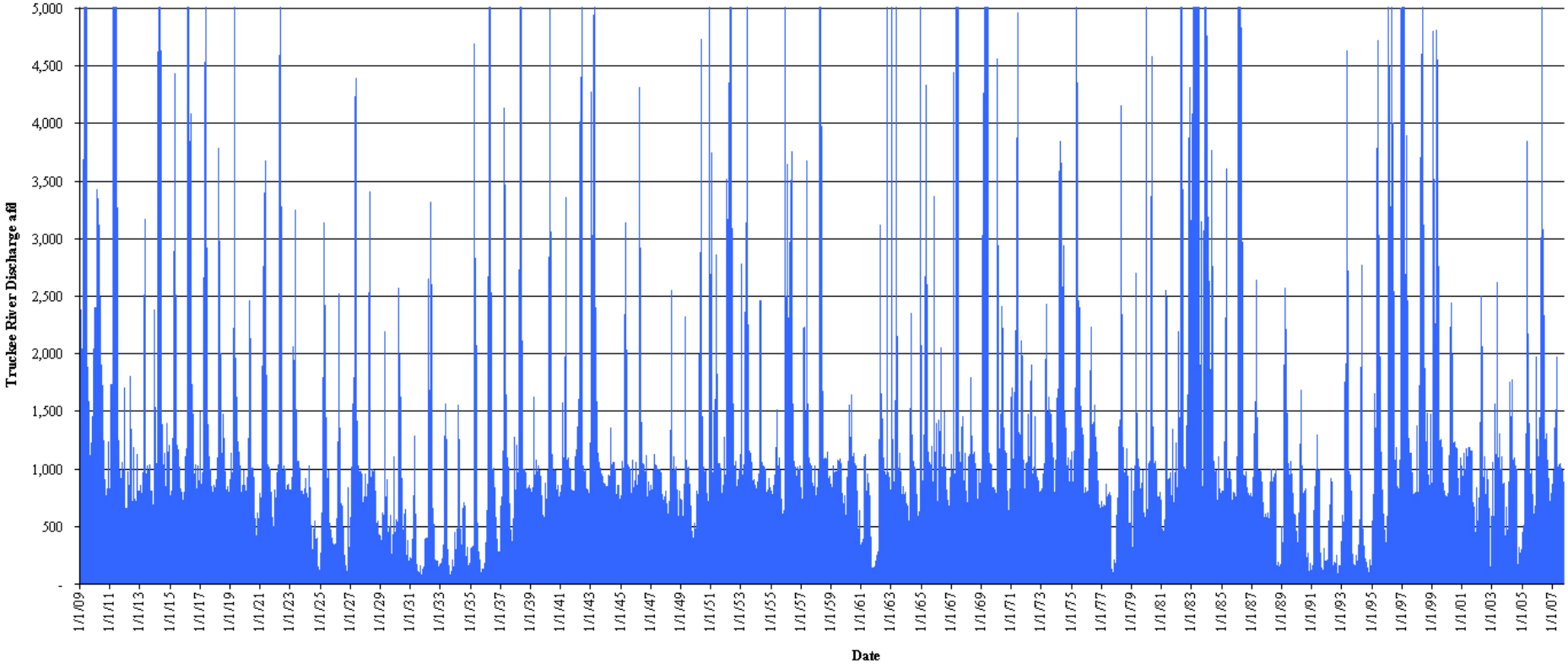
- Pursue integration of resource planning efforts at the regional level including all resource options
- Evaluate regional facility plans for integration
  - Evaluate Regional Reclaim System alternatives
  - Evaluate Drinking water Facility Plans and associated costs of integration
  - Evaluate Wastewater Facility Plans and associated costs of integration
- Design and Construct Facilities beneficial to integrate resources and provide for scheduling activities
- Pursue limited capabilities for scheduling available within today's limitations
- Examples – North Valleys Reclaimed, Spanish Springs Surface water, South Truckee Meadows Plan

The Truckee River Operation and TROA

The Truckee River System

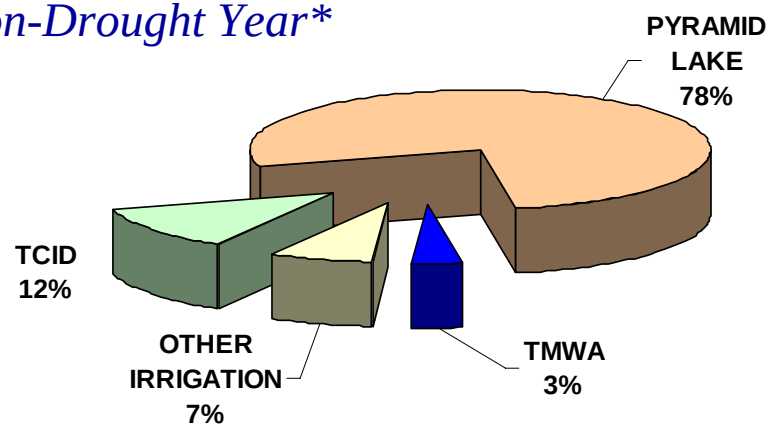


Daily Truckee River Flow 1909 to 2007



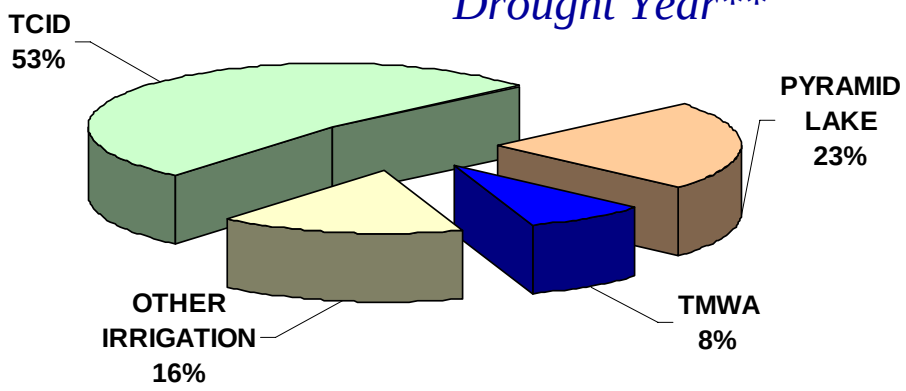
Users of Truckee River Water

*Non-Drought Year**



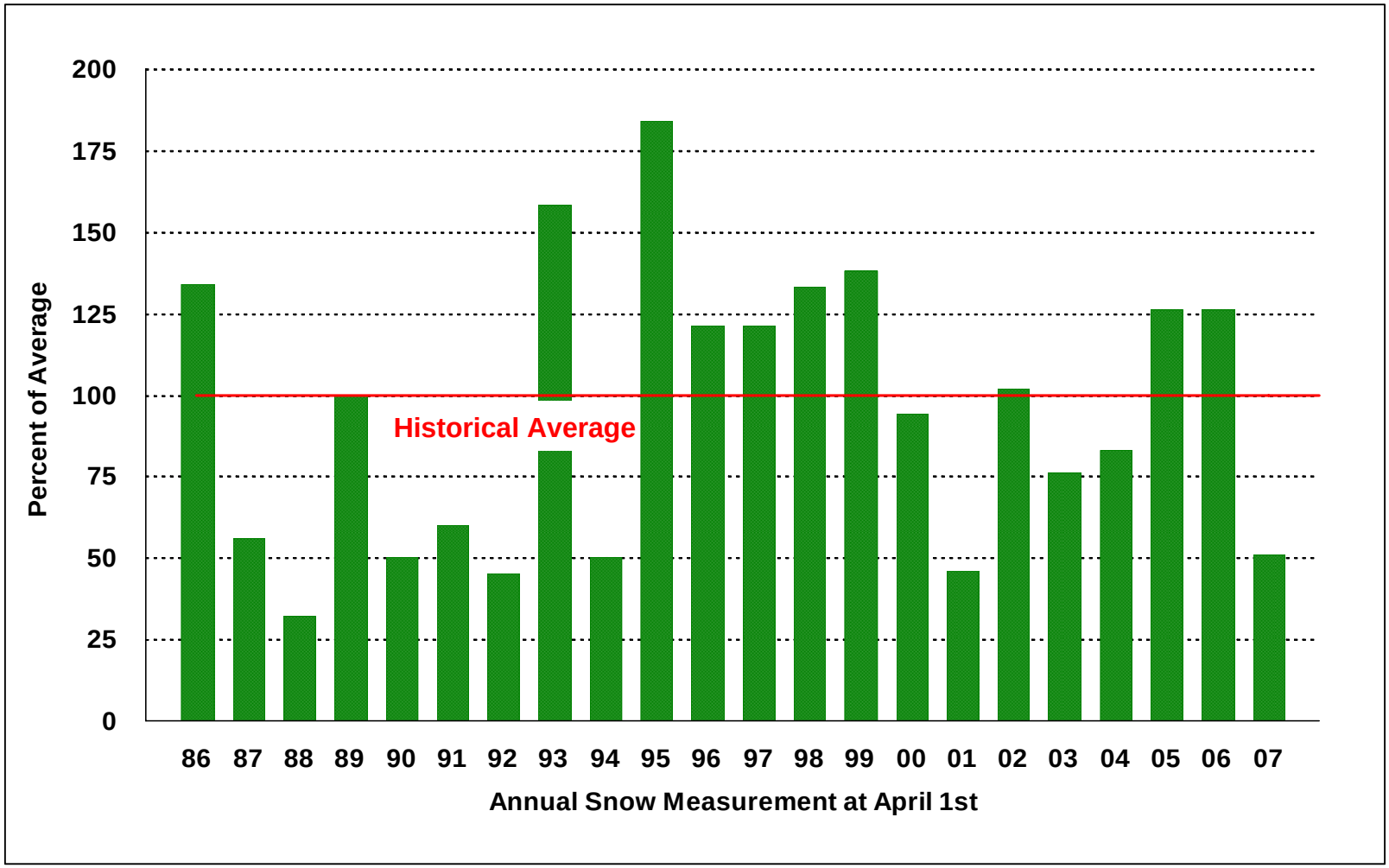
* ~881,000 acft Avg. 1985-87, 1993, 1995-2000, 2005-06

*Drought Year***

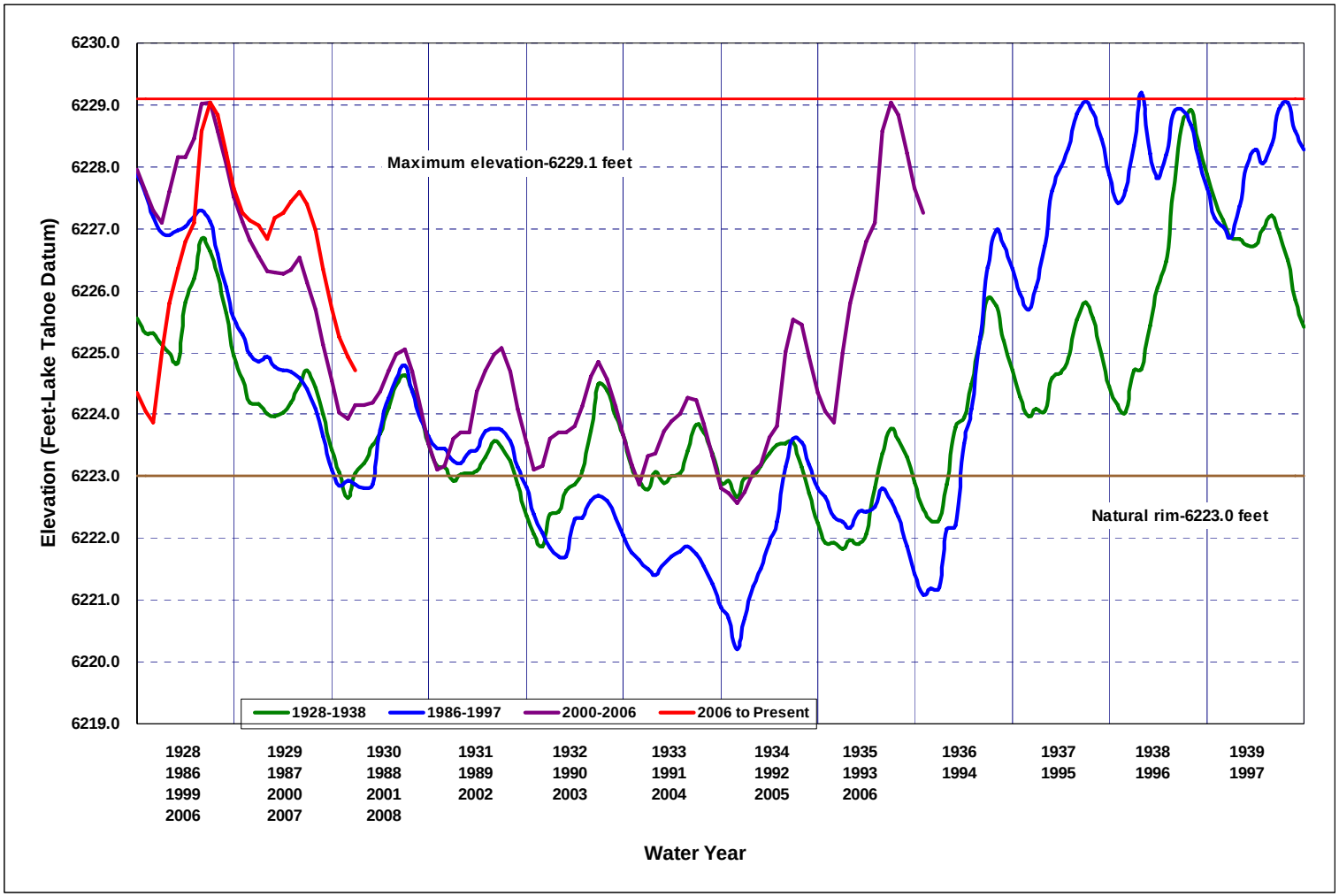


** ~345,000 acft Avg. 1988-92, 1994, 2001-04

Snowpack for Truckee River Basin



Tahoe Elevations During Droughts



Negotiated River Settlement

- Truckee River issues resolved by Public Law 101-618 (1990)
- Allows flexibility for Truckee River operations for needs of Supply, Quality, Environment, and Recreation
- Truckee River Operating Agreement (TROA) must be completed for Settlement to take effect

Negotiated River Settlement Benefits

- Increase drought storage for Truckee Meadows up to 55,000 AF
  - Sufficient to meet demands up to 119,000
- Ratify interstate allocation of water between California and Nevada
- Emergency Water Supplies
- Enhance in-stream flows, water quality & reservoir levels for recreational uses
- Ability to expand supplies with drought protection

Contributions to the Settlement by Truckee Meadows

- Mandatory conservation plan
- Water meters on unmetered customers
- Give unused stored water to fishery
- Pay USBR for storage space
- Diversion to hydroelectric plants allowed to vary with compensation from USBR
- Give up claims to unappropriated water
- 6700 ac-ft of water quality commitment

Water Resource Inter-relationships

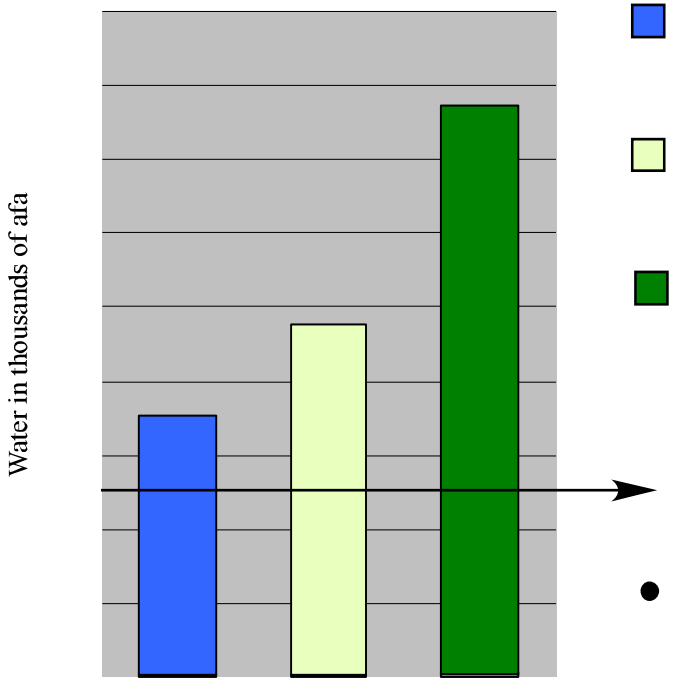
Water Supply Links

- Development of new resources including importation and creek resources necessary
- Competition for water rights between Supply & Quality/in-stream flow needs
- Effluent Reuse provides alternative resource
- Land use plans exceed resource availability
- Quality impacted by discharges from Septic systems and by naturally occurring compounds
- Quality and quantity impacted by storm-water runoff

Land Use Plans & Resources

Future Water Demand vs. Supply

Truckee Meadows Regional Plan "build-out" water demand estimates exceed identified water resources.



- Identified water resources with good near-term potential availability are estimated at 175,300 afa.
- TMSA[1], 20-year horizon, population ~ 750,000
  Estimated water demand 236,000 afa.[2]
- FSA[1] 100-year horizon, population ~ 1.2 million
  Estimated water demand 383,000 afa.[2]

1. TMSA - Truckee Meadows Service Area; FSA - Future Service Area.
2. Assumes water use pattern similar to past, with no enhanced water conservation.

Current Commitments approximately 137,000 afa.

- Reno, Sparks and Washoe County are developing master plan amendments that will refine these water demand estimates.

Environmental Links

- Storm-water impacts both quality and quantity of water in rivers and creeks
- Non-point source discharges impact quality
- Endangered Species and habitat restoration needs
- River health and restoration opportunities
- Source water protection (surface and groundwater)
- In-stream flows and river flow regimes (TROA)
- Ecosystem restoration/maintenance

Waste Water Links

- **Discharges from sewer plant to River**
  - Impact water quality including Nutrient Loads & Total Max. Daily Load's
  - Tribes proposed Water Quality Control Plan impacts ability to discharge
  - Impact on water quantity for in-stream flows in lower river –Water Quality Settlement Agreement
  - Treatment options and costs related to quality
  - Tribe will not allow discharge of imported groundwater to river
  - May require alternative disposal
- **Effluent Reuse**
  - Limited to groundwater component of river supply
  - May require dedication of water for in-stream return flows
  - Provides alternative use, disposal and resource
  - Limited in applicability due to regulations
- **Septic Systems**
  - Contaminate groundwater
  - Non-point source discharge to rivers and creeks

QUESTIONS?