

High Groundwater Issues

A scenic view of a river or stream flowing through a lush, green landscape. The water is calm and reflects the surrounding greenery. The banks are lined with tall grasses and various trees, including a large, prominent tree on the left. The sky is a clear, bright blue with a few wispy clouds. The overall atmosphere is peaceful and natural.

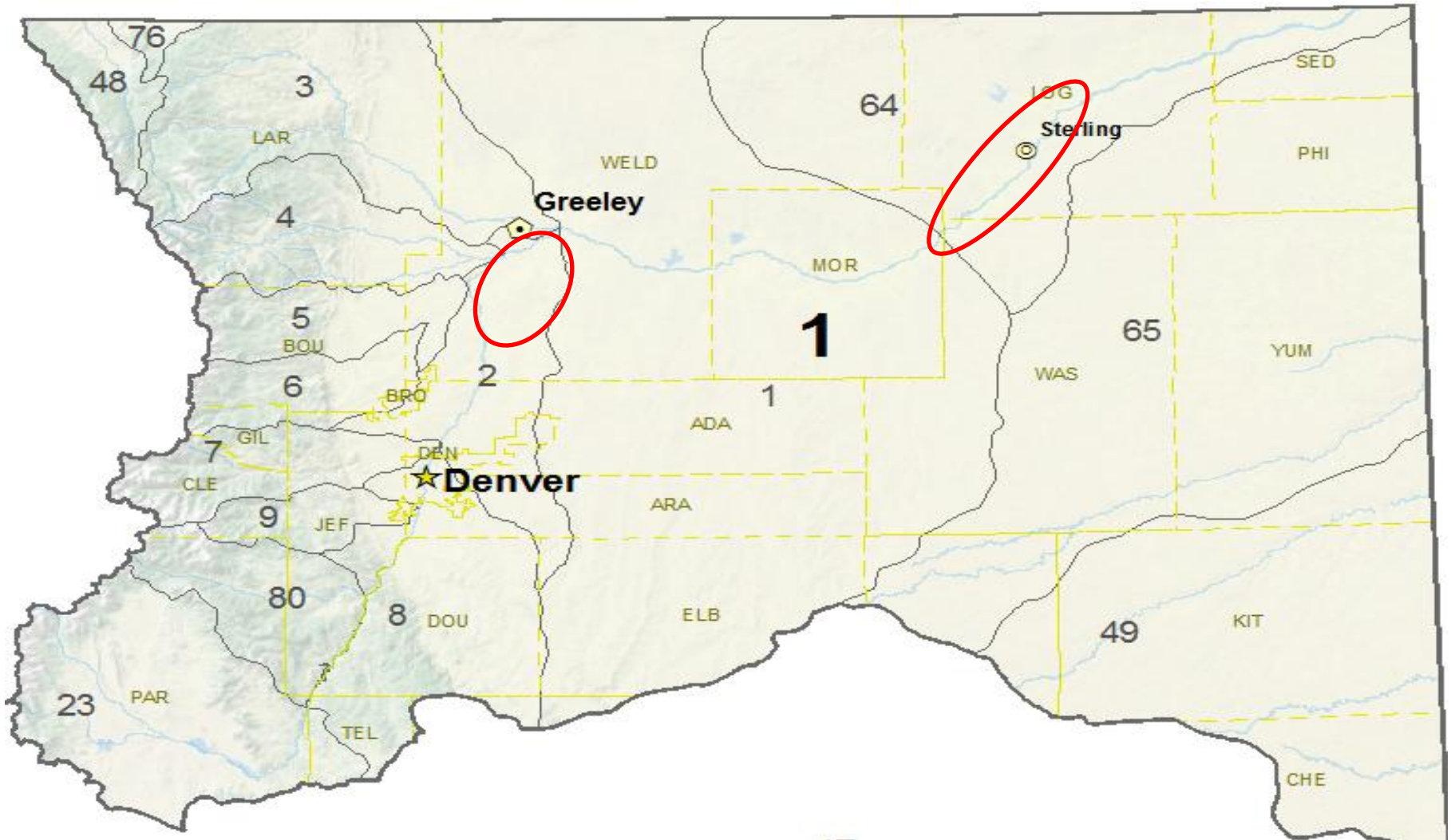
Sterling Public Meeting

April 11, 2012

Dave Nettles, Division Engineer

South Platte Near Sterling

Main Areas of High Groundwater Complaints



**Mass balance equation controls
the groundwater levels**

**Change in Storage = Inflow -
Outflow**

INFLOWS

- **Natural**
 - **Precipitation**
 - **High Stream flow**
- **Artificial**
 - **Un-intentional**
 - **Ditch and Reservoir Seepage**
 - **Irrigation Deep Percolation**
 - **Intentional**
 - **Non-historic Ditch Recharge**
 - **Recharge Basins**

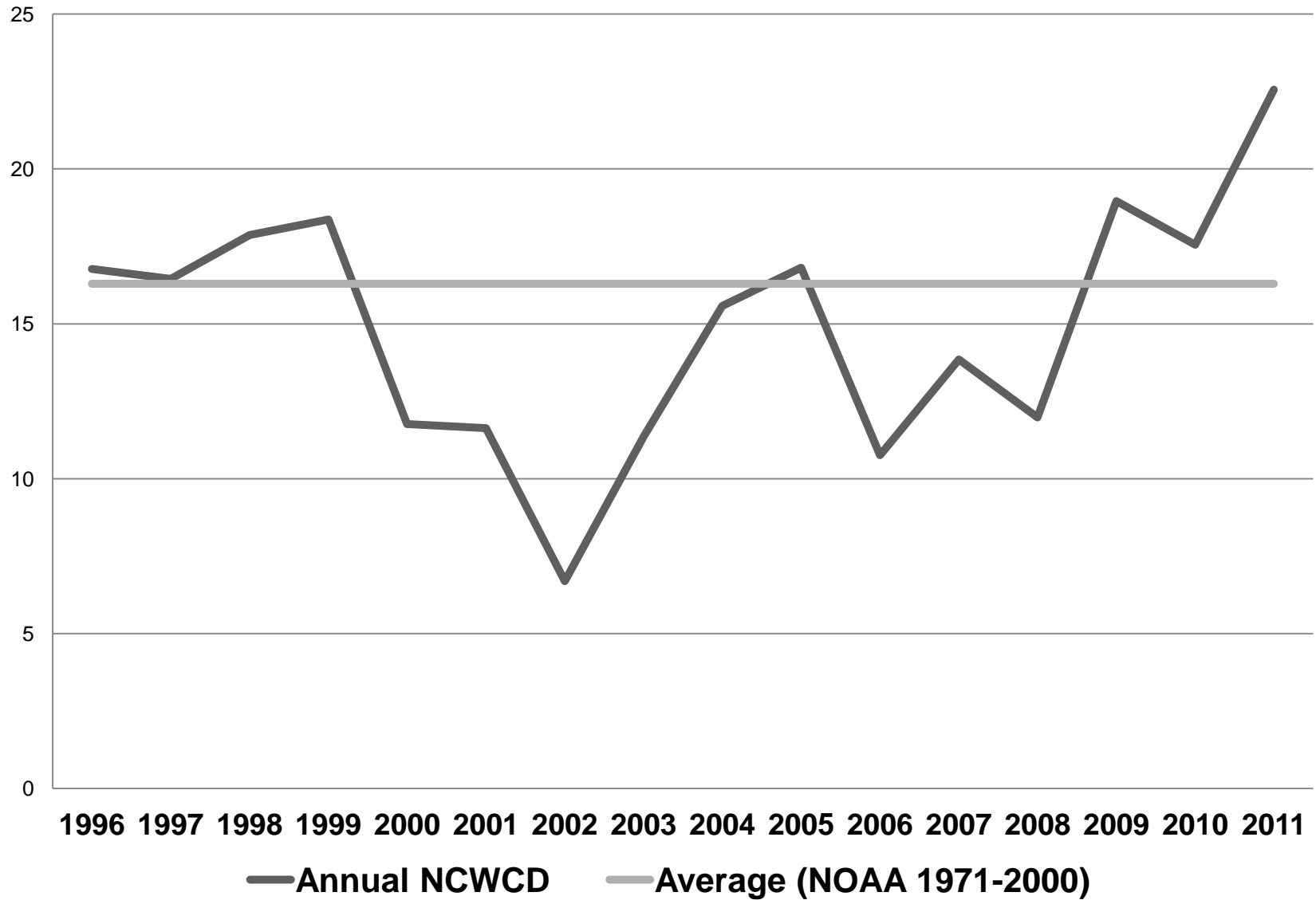
OUTFLOWS

- **Natural**
 - **Stream Discharge**
 - **Phreatophyte Consumption**
 - **Natural Groundwater Pond Evaporation**
- **Artificial**
 - **Groundwater Drainage System Discharge**
 - **Consumptive Well Pumping**
 - **Planted Phreatophyte Consumption**
 - **Artificial Groundwater Pond Evaporation**

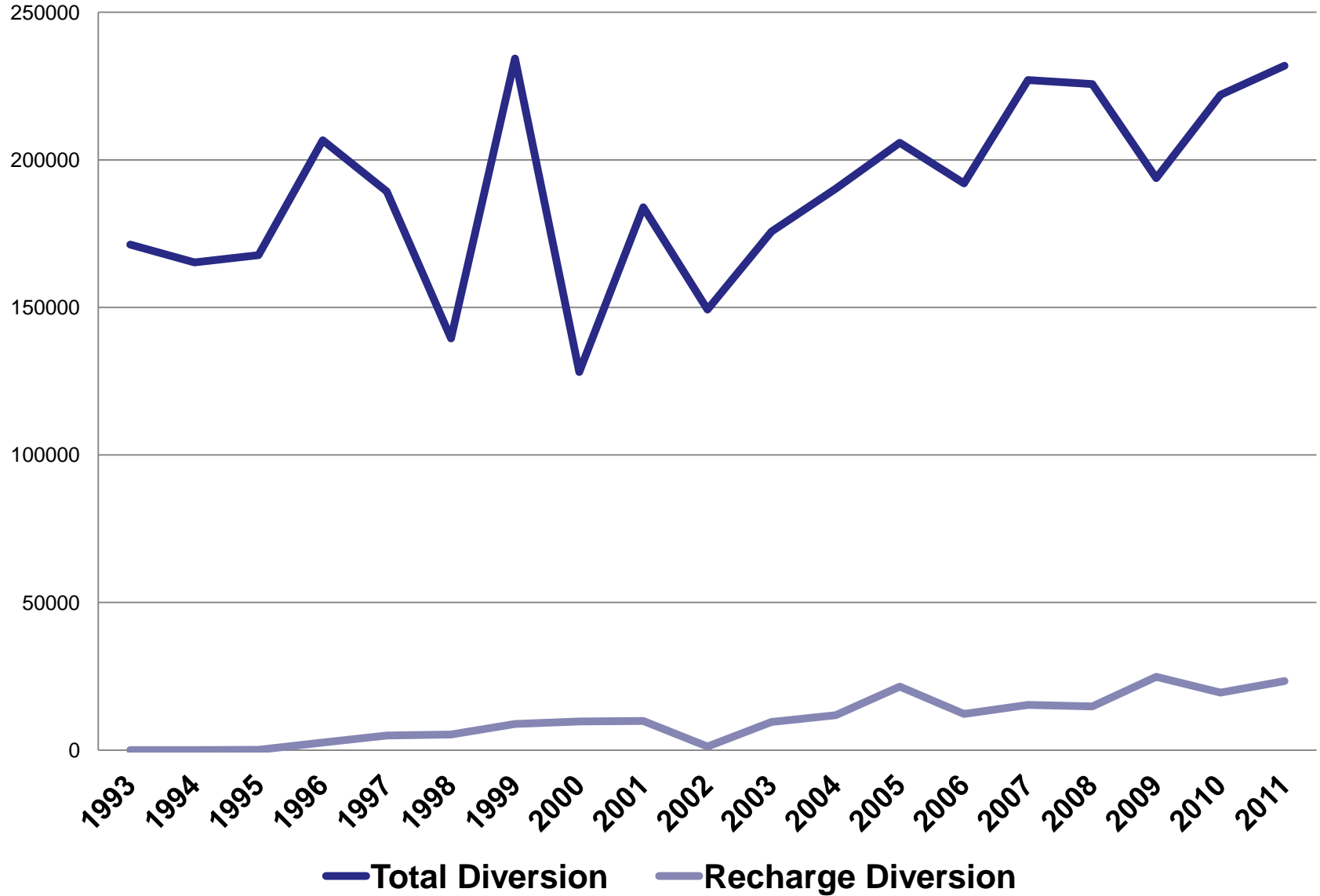
SOME COMBINATION OF THESE FACTORS IS RESPONSIBLE FOR HIGH GROUNDWATER

- **Increased Natural Inflows**
- **Increased Artificial Intentional Inflows**
- **Increased Artificial Un-intentional Inflows**
- **Reduced Natural Outflows**
- **Reduced Artificial Outflows**

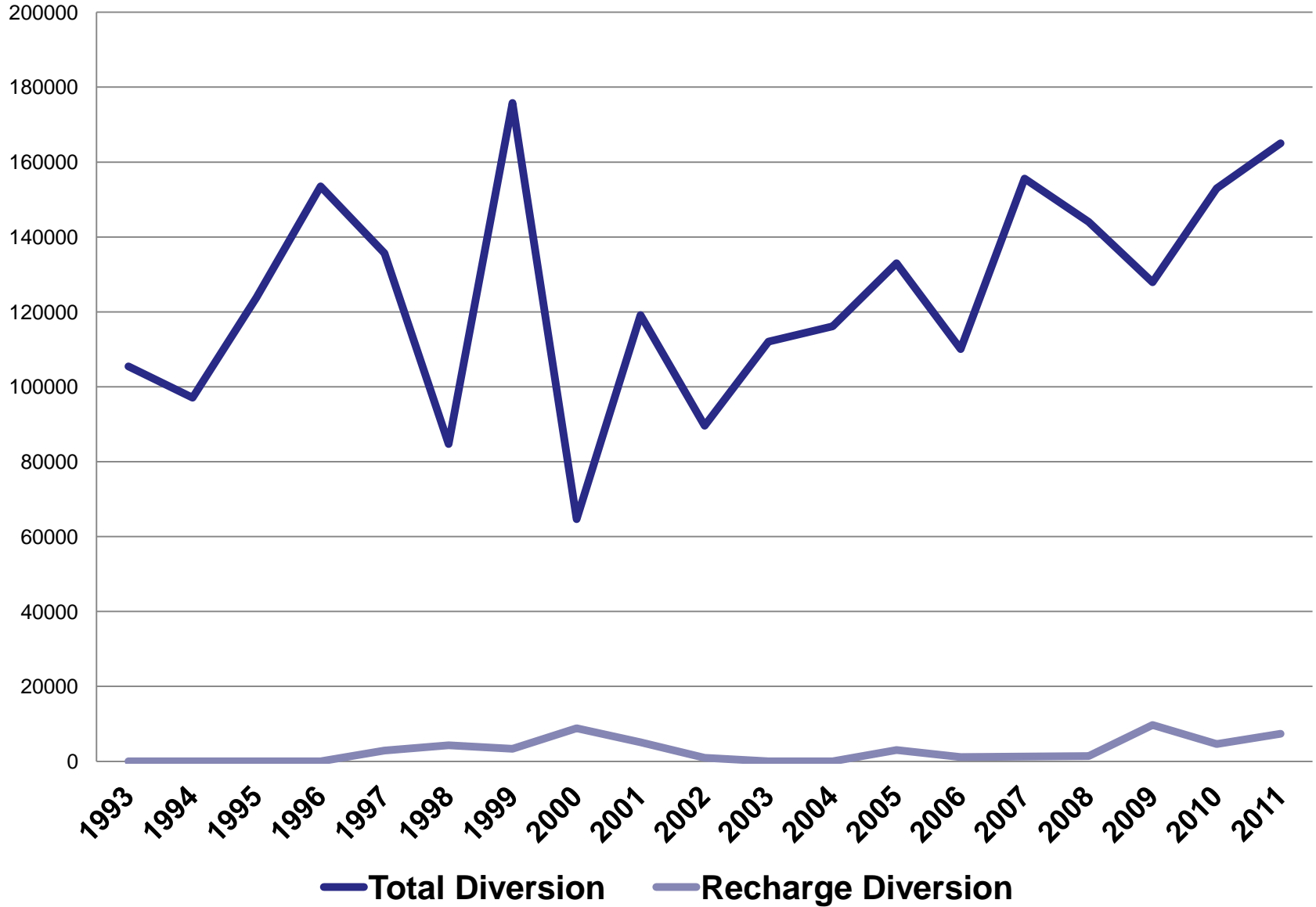
Sterling Precipitation (inches)



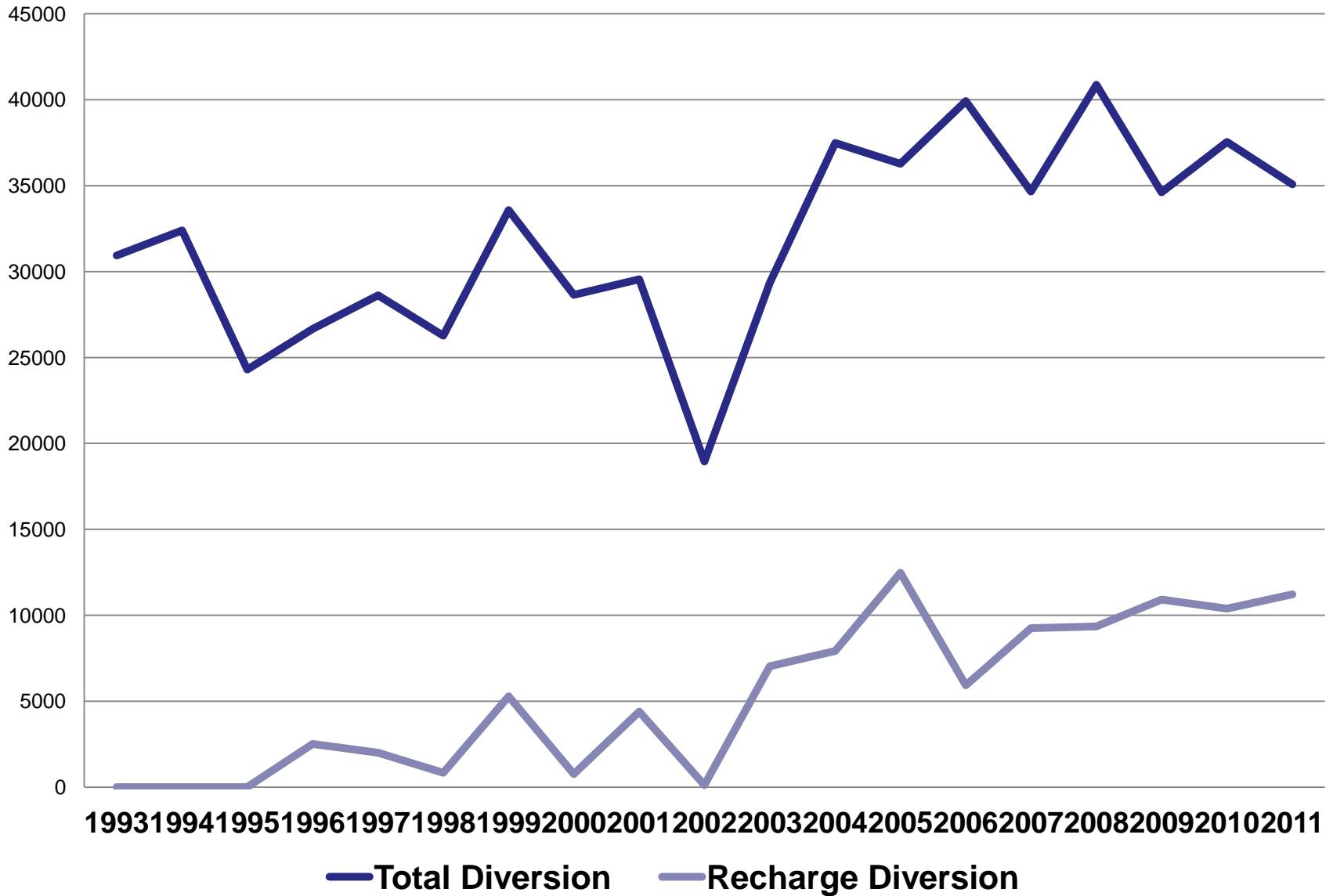
Total Sterling Area Ditch Diversions (AF)



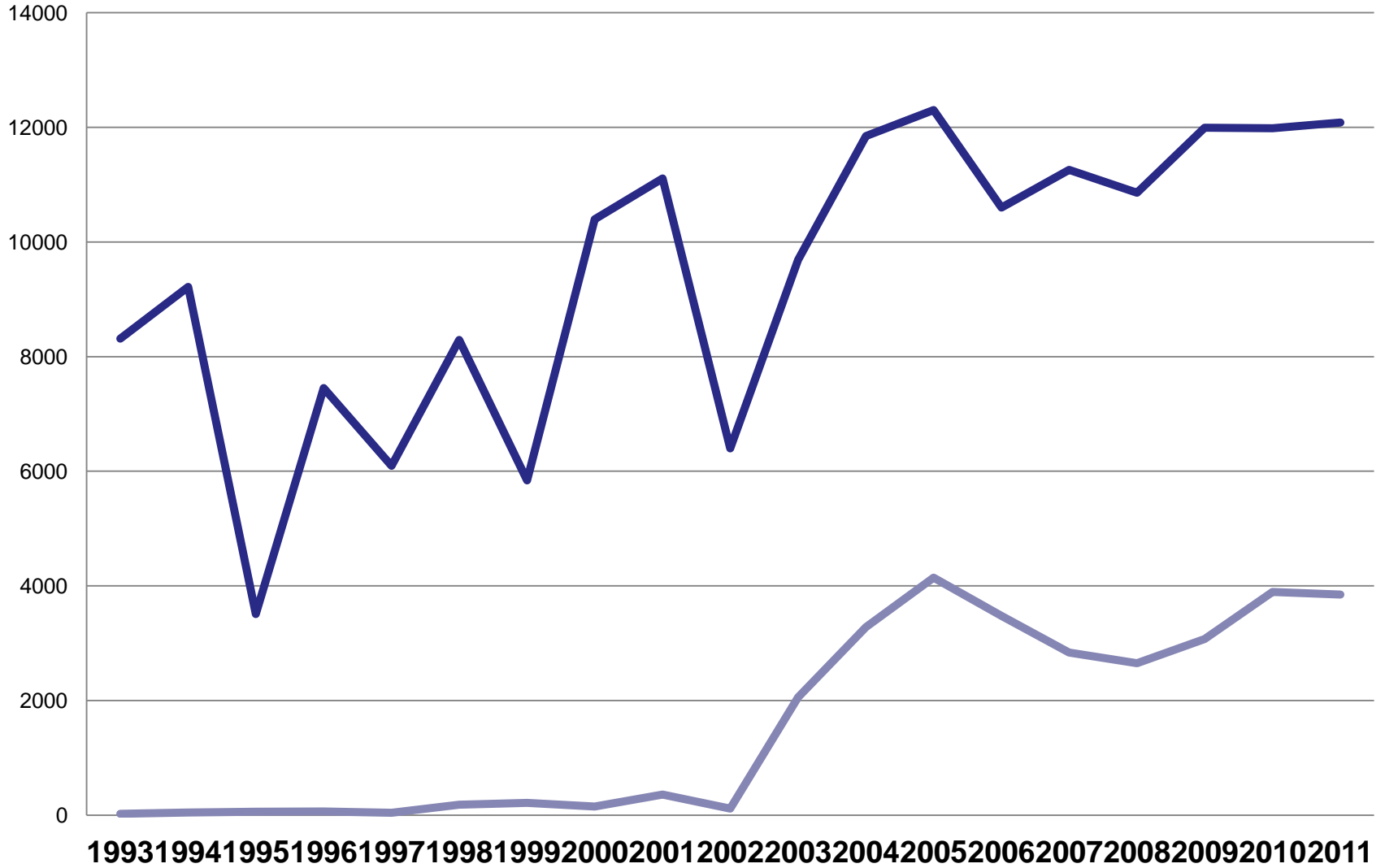
North Sterling Diversions (AF)



Farmers Pawnee Diversions (AF)

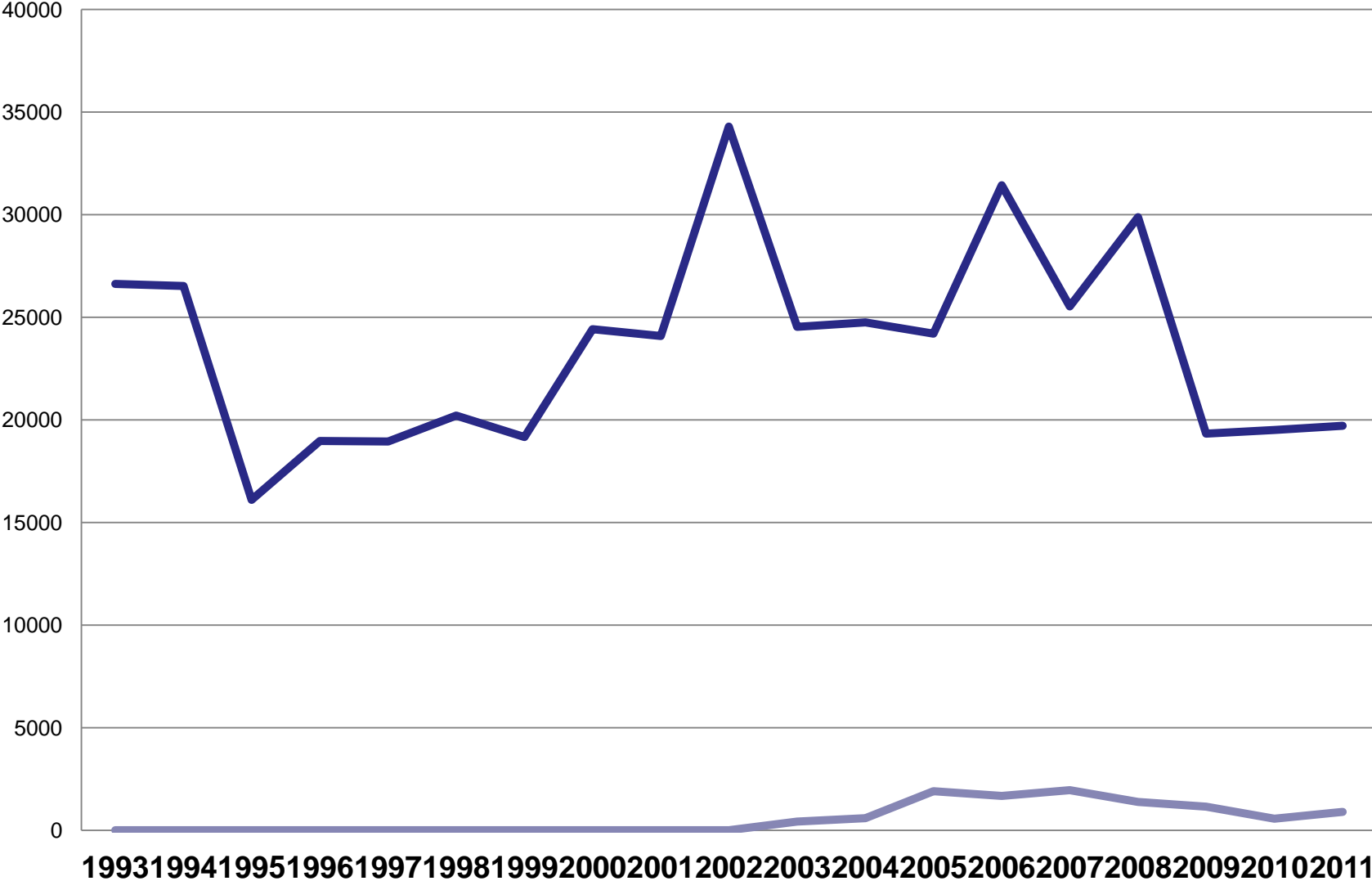


Springdale Diversions (AF)

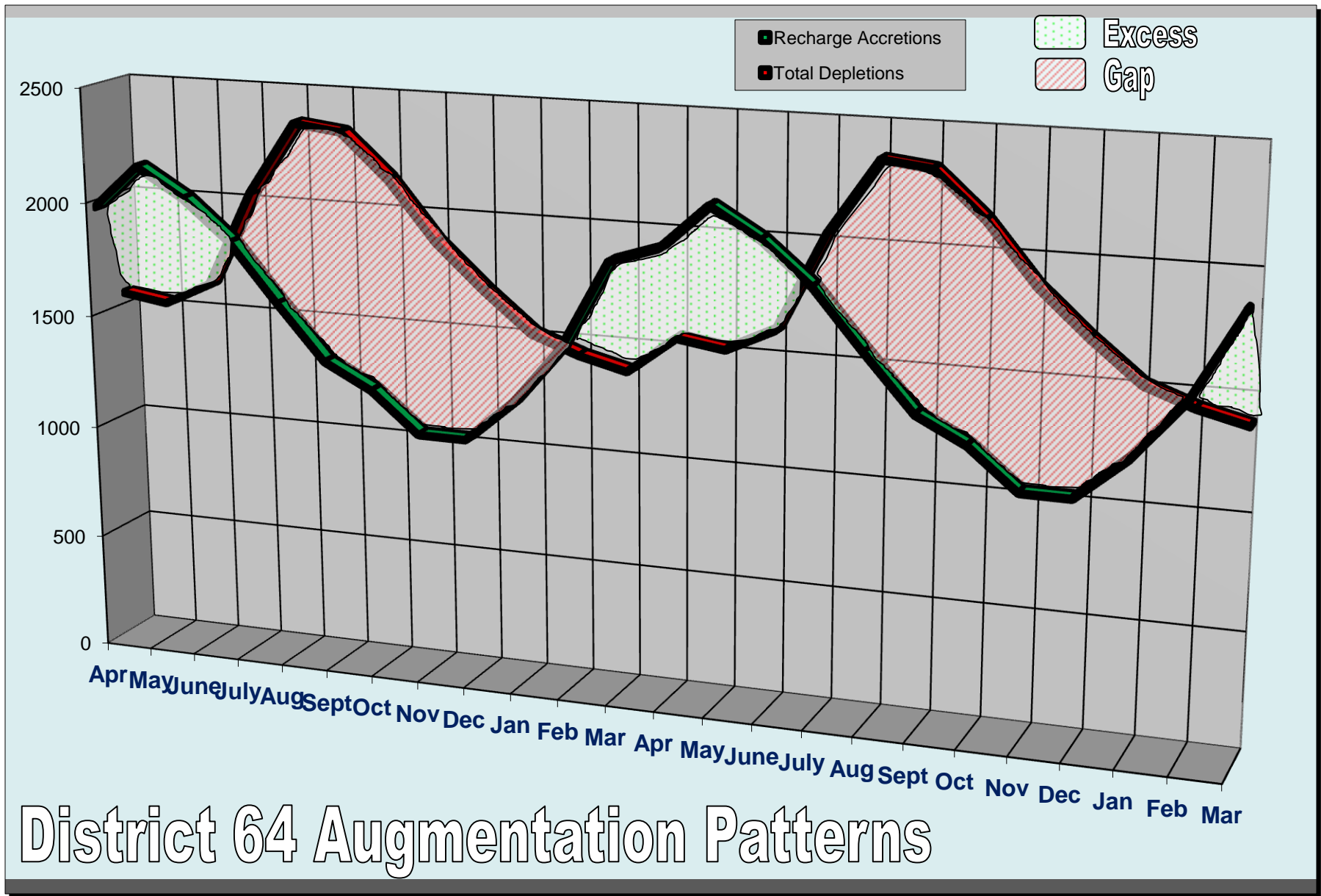


— Total Diversion — Recharge Diversion

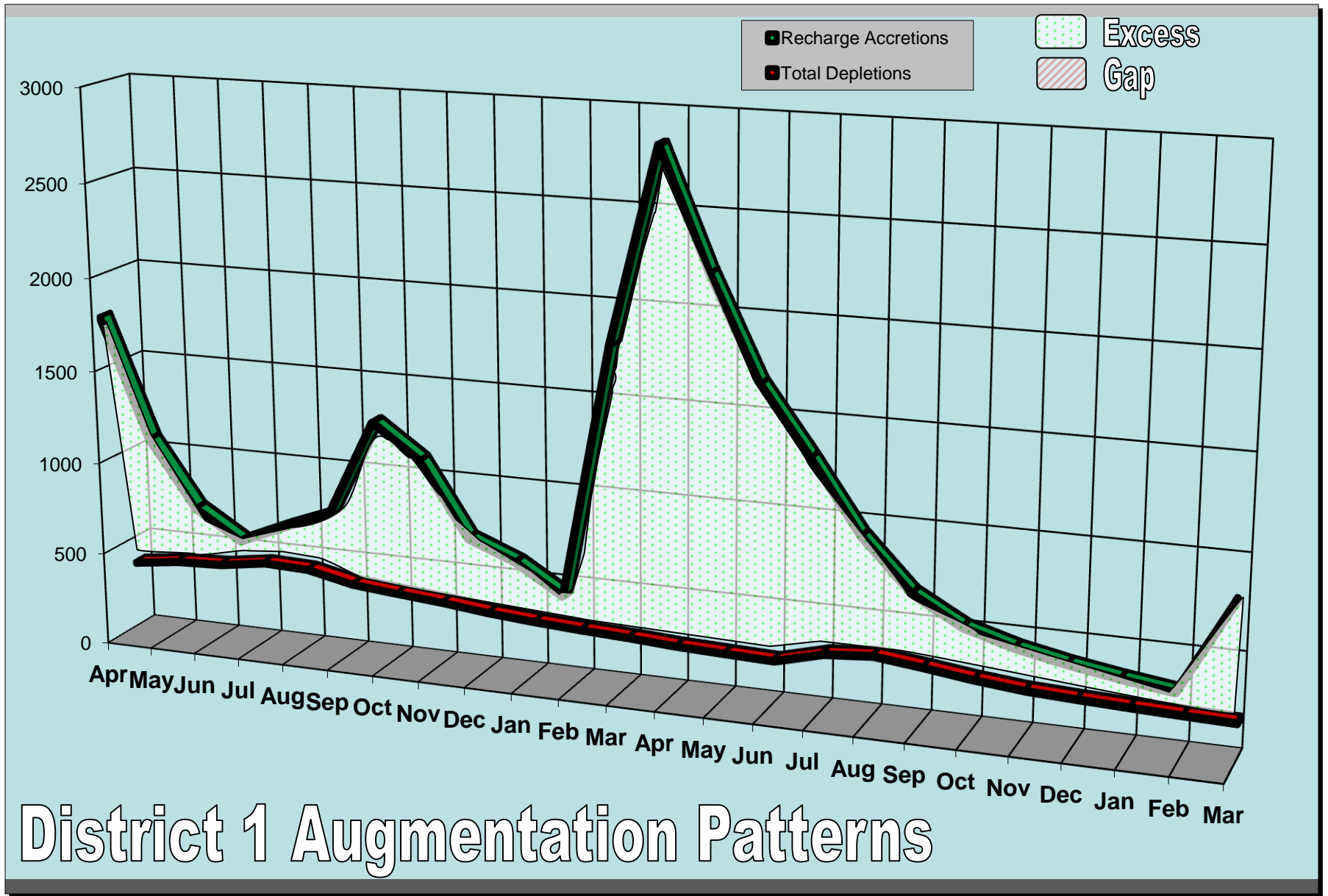
Sterling No. 1 Diversions (AF)



— Total Diversion **— Recharge Diversion**



District 64 Augmentation Patterns



District 1 Augmentation Patterns

REGULATORY AUTHORITY

- **Division Engineer shall order diversions discontinued:**
 - **To the extent the water is not necessary for application to a beneficial use;**
 - **To the extent the water is needed by a senior water right for beneficial use;**
 - **If a well causing out-of-priority depletions is not in an augmentation plan or substitute water supply plan.**