Upper Elkhorn Voluntary IMP: Proposed Controls

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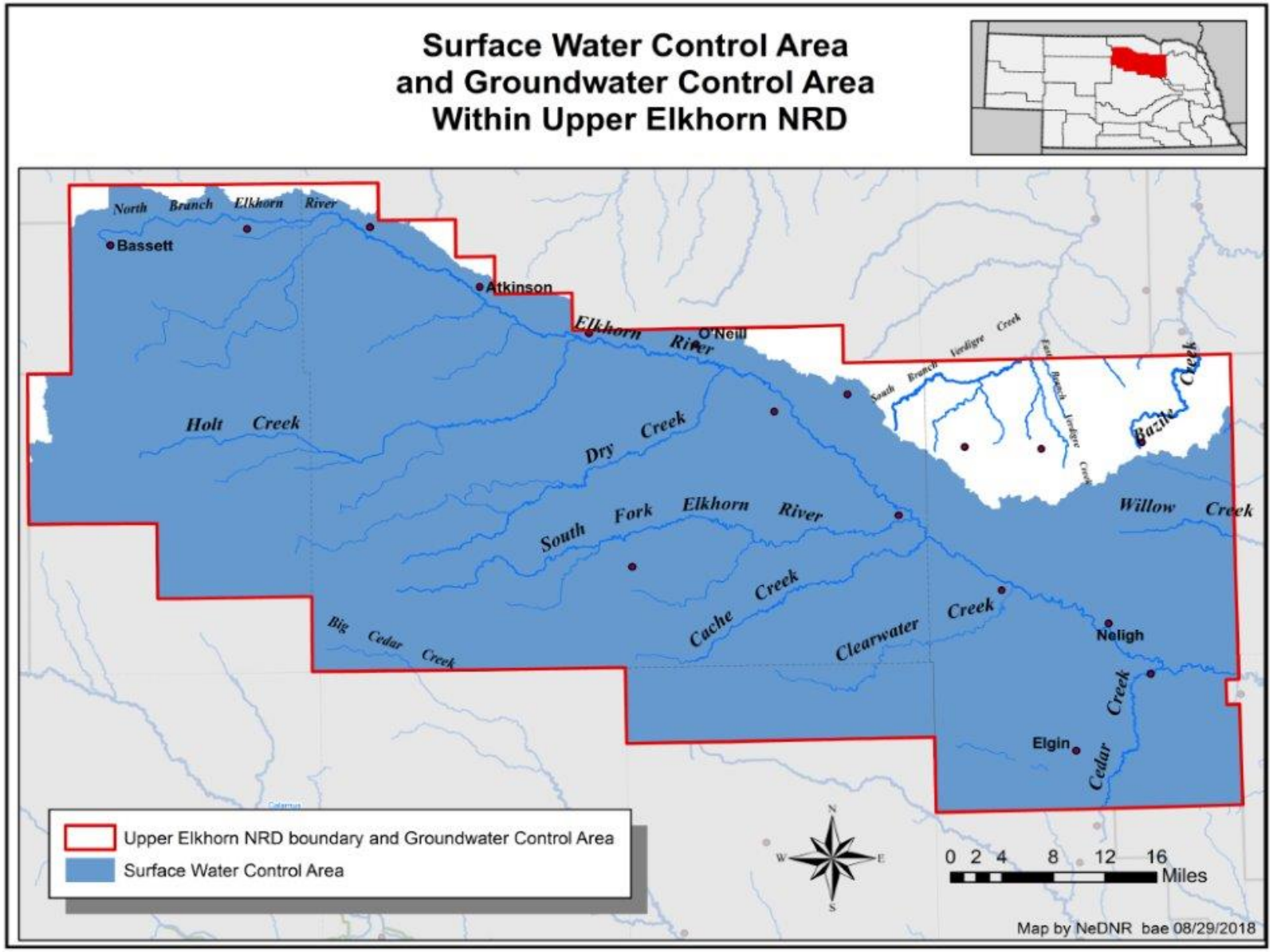
Control Areas

- GW control area: entire district
- SW control area: portion of Elkhorn River and Loup River basins (Lower Platte) included within District boundaries



Controls

Groundwater Controls (LENRD)

- District will limit new groundwater uses to 50% of the annually available stream depletion over the Basin Plan's first five-year increment, which concludes on December 31, 2021

Controls

Surface Water Controls (NeDNR)

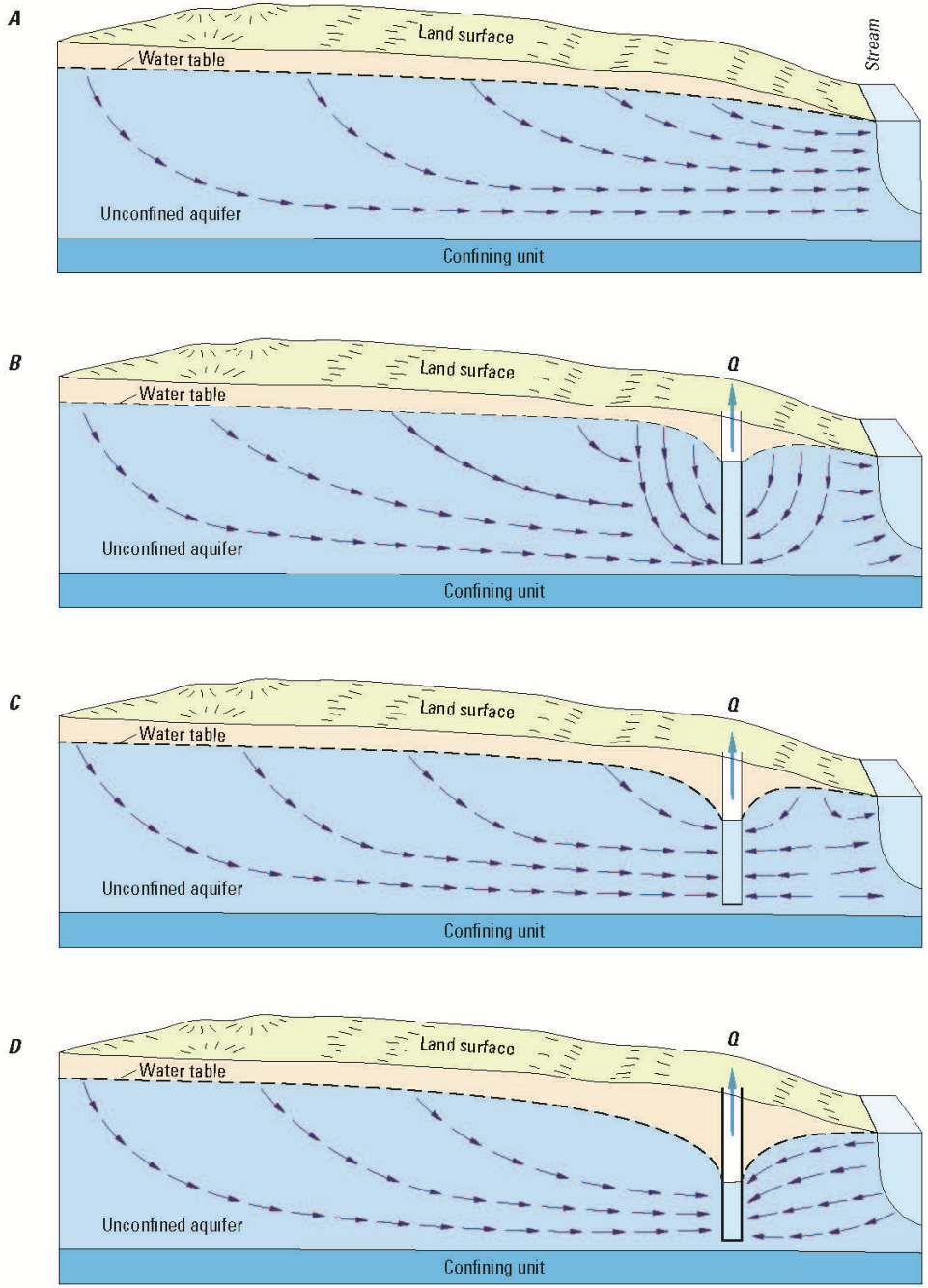
- Department will limit new surface water uses to 50% of the annually available stream depletion over the Basin Plan’s first five-year increment, which concludes on December 31, 2021

Stream Depletions 101

A. Pre-development conditions
B. Pumping from aquifer storage

C. Interception of groundwater baseflow

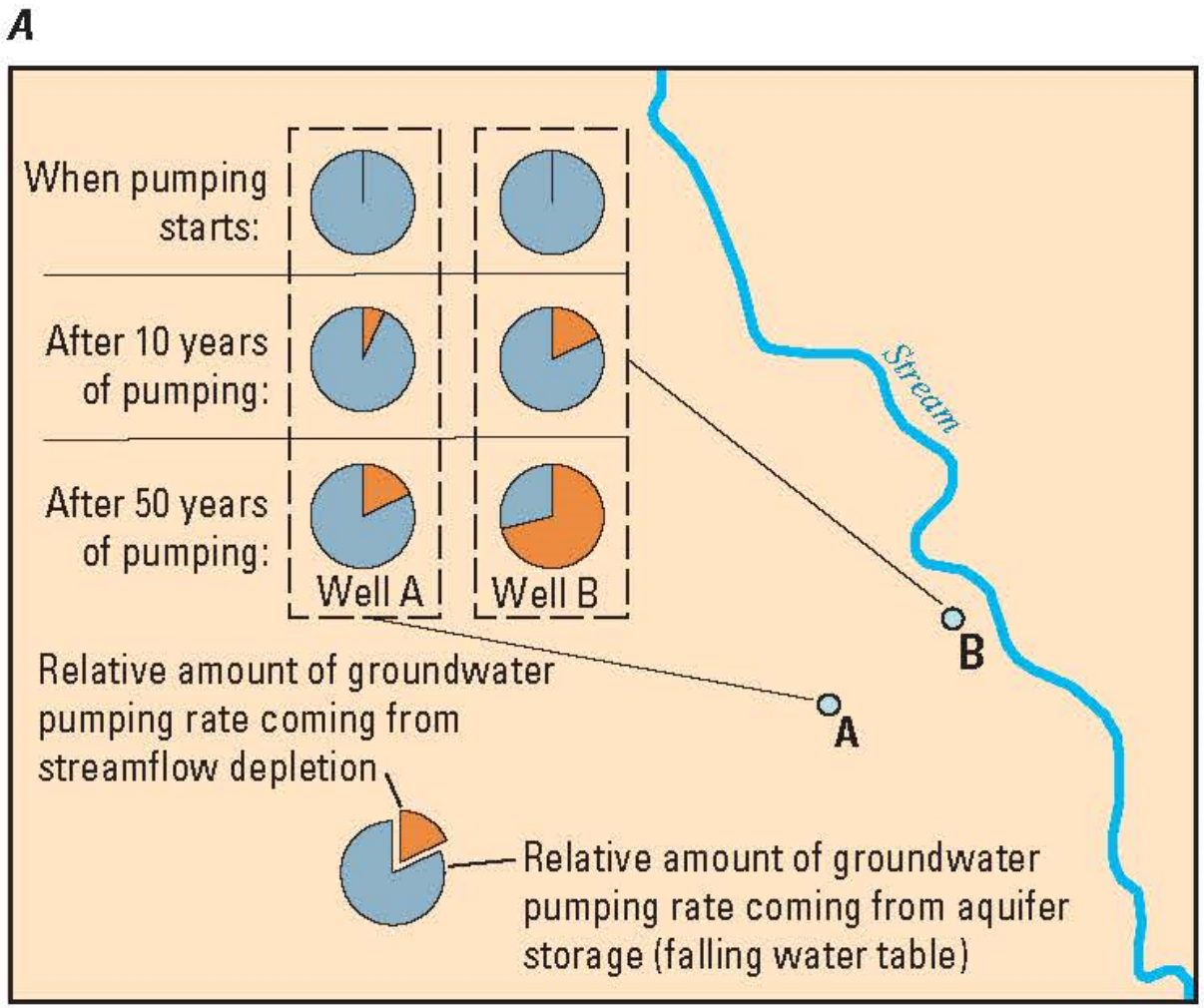
D. Interception of groundwater baseflow and induced infiltration

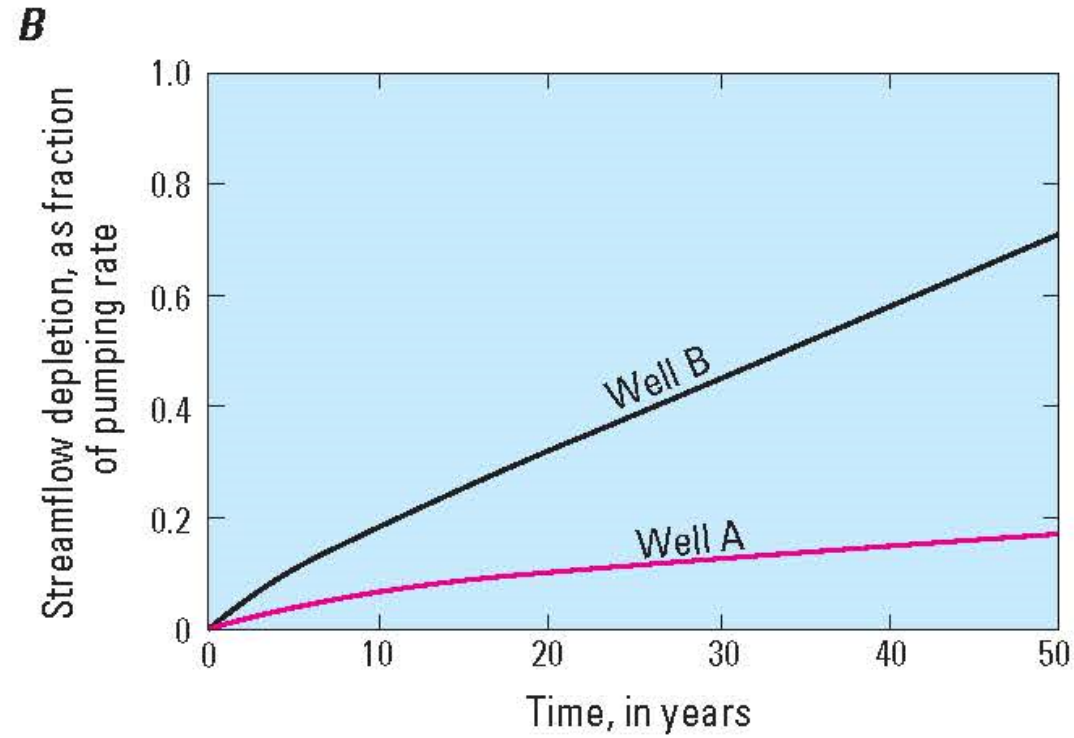


Stream Depletions 101

- Factors that affect timing, rates, and locations of streamflow depletion:
  - Geology and hydraulic properties of the aquifer
  - Aquifer size/volume
  - Geometry of stream
  - Well location (vertical and horizontal distance from the stream)
  - Pumping rates and operational characteristics

Stream Depletions 101





How allocations are calculated

Starting total allocation (both NeDNR and LENRD) = 1,504 AF)		
	NeDNR Portion	**NRD Portion**
Allocations	752 AF	752 AF
Permits issued 2016-2017	0 AF	110 AF
	TOTAL = 110 AF	
New allocations through 2021 = 50% of (total allocation – total used) = .5 x (4514 AF – 340 AF = 4174 AF)	697 AF	697 AF
(Example) permits issued 2018	50 AF	150 AF
	TOTAL = 200 AF	
New allocations through 2021 = .5 x (4174 AF – 400 AF = 3774 AF)	597 AF	597 AF