

Mountain Home Plateau

Ground Water Conditions and Management Activities

Presented to the

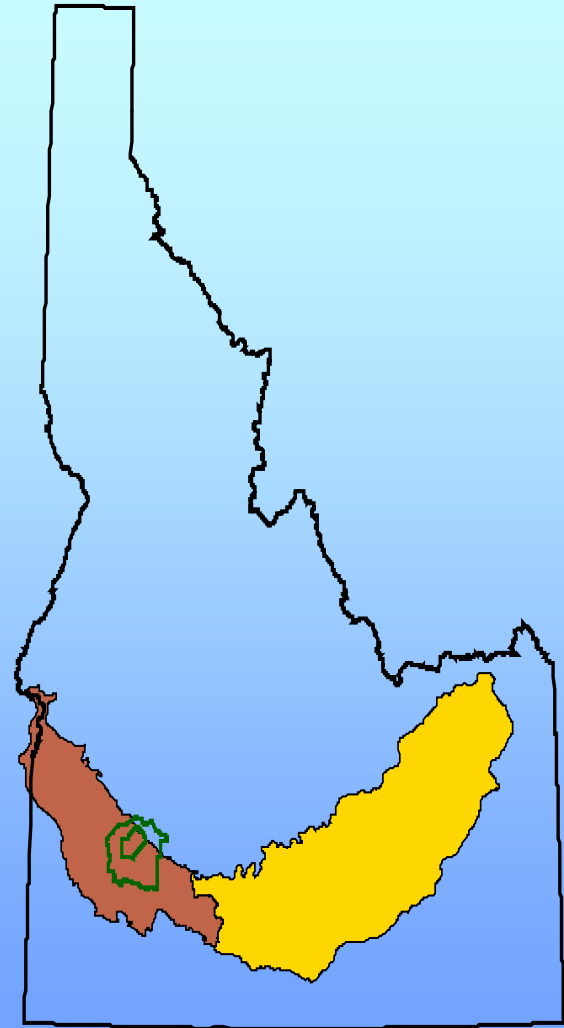
Idaho Legislature Natural Resources Interim Committee

By Helen Harrington, IDWR

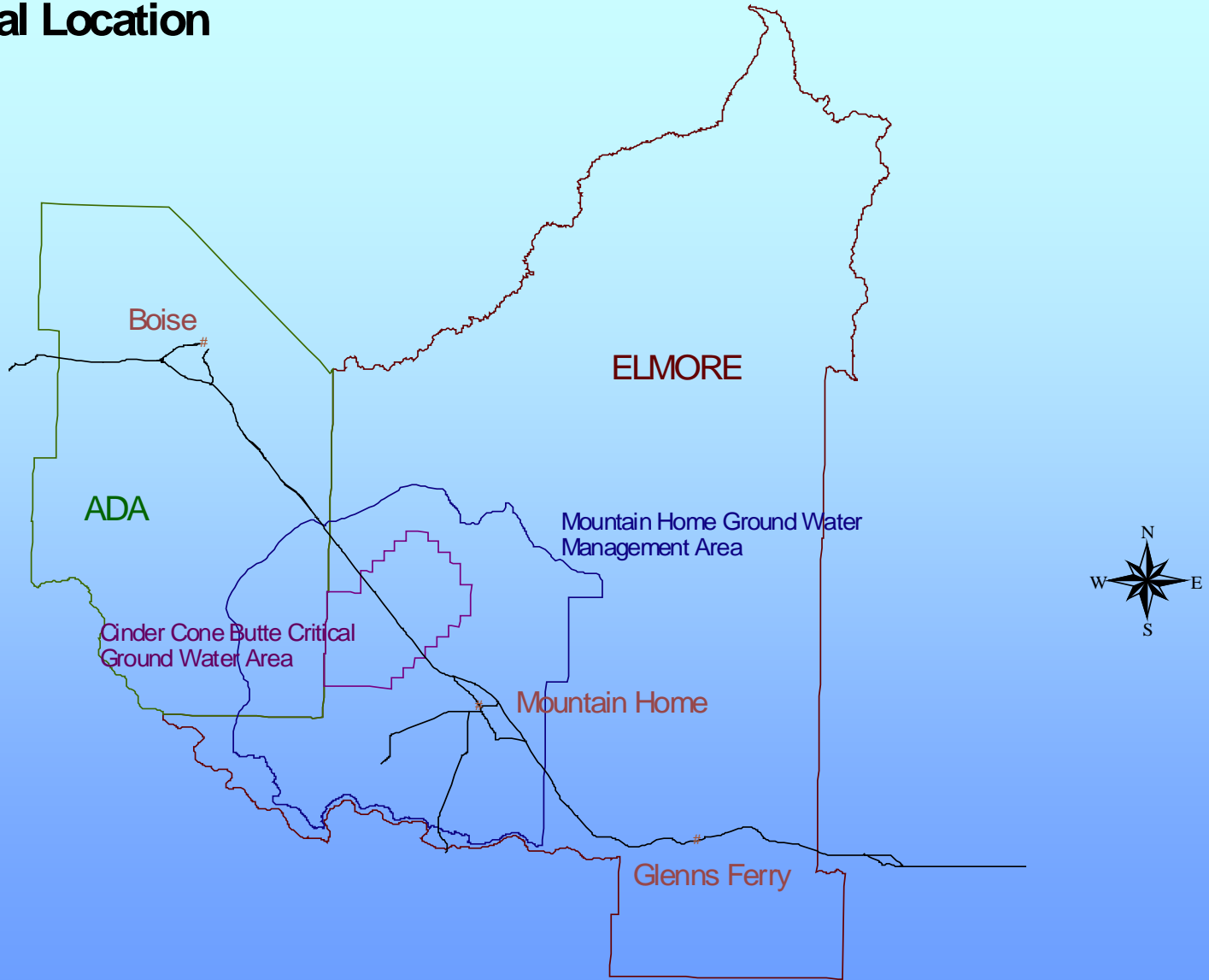
August 5, 2004

Welcome to the Western Snake Plain

- Lake and stream sediments
- Basalt appears as interbeds and cap rock
- Subbasins
- Boundary with ESRP is in the vicinity of King Hill



General Location



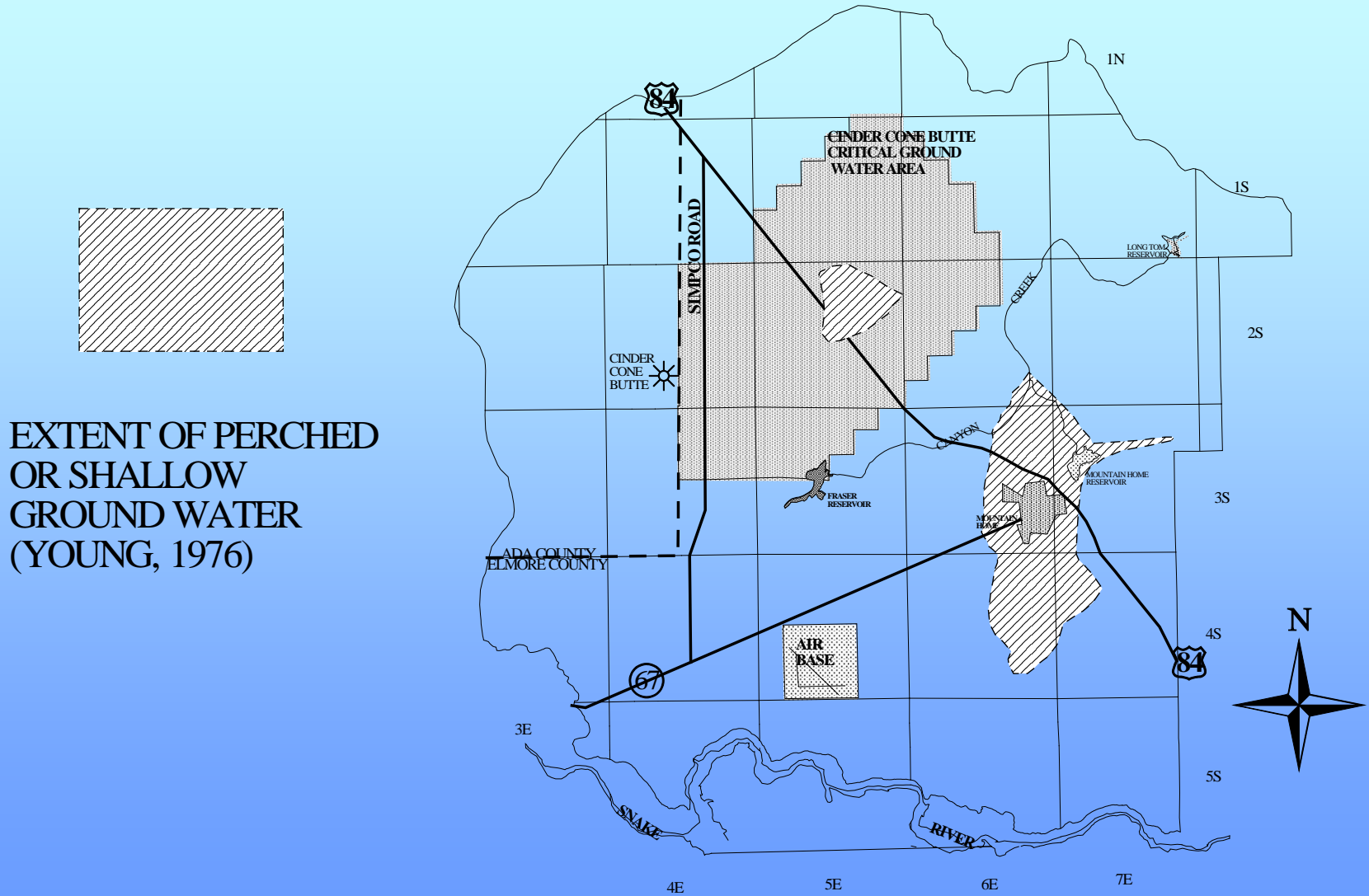
Regional Geology

- Alluvium & terrace gravels
- Snake River Group
- Idaho Group - primary aquifer
- Idavada Volcanics
- Idaho Batholith

Aquifers

- Perched Aquifer
 - Underlies approximately 38,000 acres around Mountain Home and Cinder Cone Butte area
 - Depth to water ranges from 10 feet to several hundred feet below land surface
 - Perched lenses of clay, silt, sand & gravel in the shallow alluvium
 - Recharged from creeks, canals and seepage from Mountain Home Reservoir
 - Perched water discharges to regional system
 - Supplies small domestic and irrigation uses

MOUNTAIN HOME GWMA



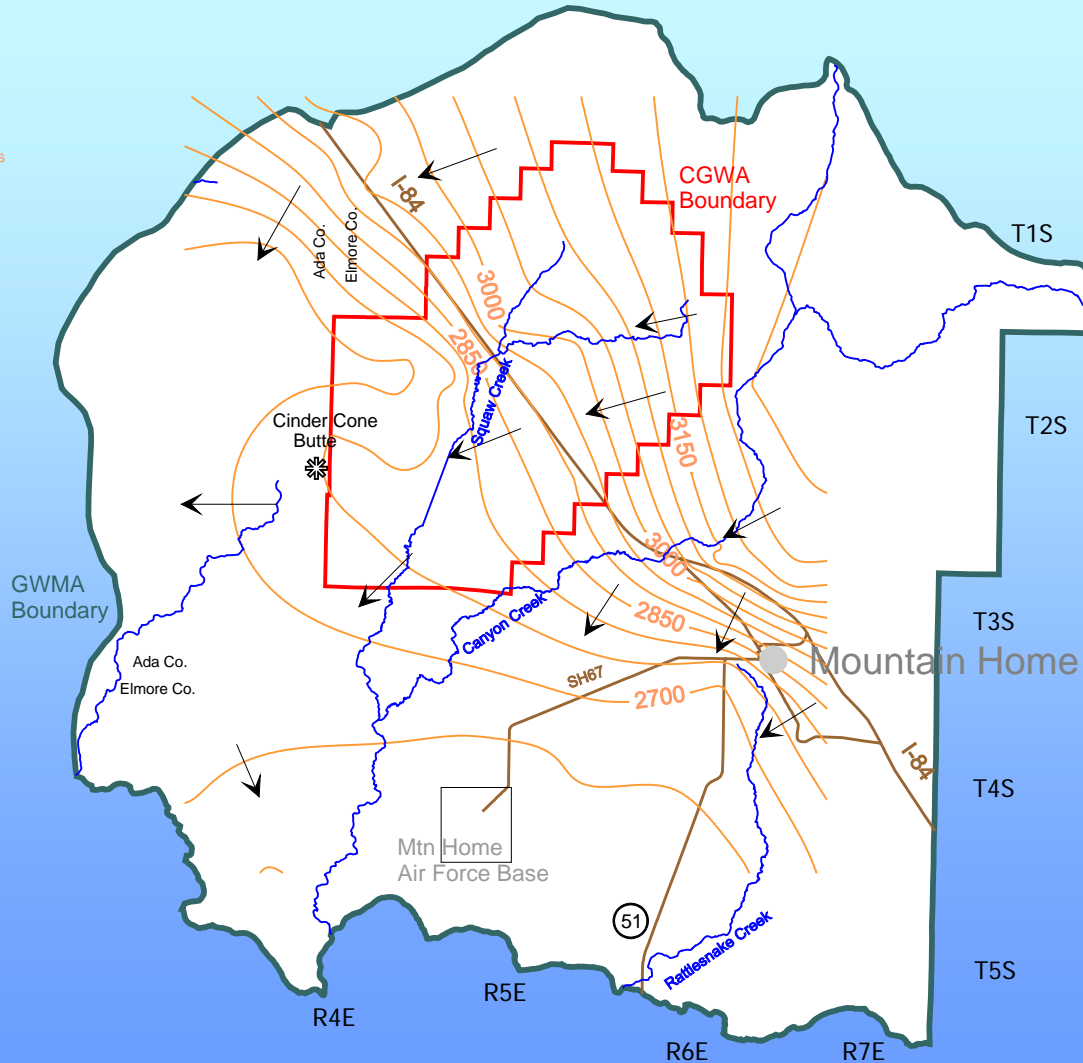
Aquifers (cont.)

- Regional Aquifer
 - Depth to water generally greater than 250 feet
 - Well yields from 10 to 3500 gpm
 - Recharged from precipitation, streams, perched aquifer, infiltration from irrigation
 - Discharges through well pumpage, springs in Snake River canyon and underflow

Ground Water Contours in the Mountain Home Area

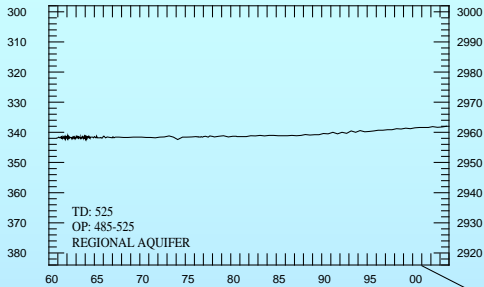
Ground Water Contours
(Spring 2002)

Generalized
Direction of Flow

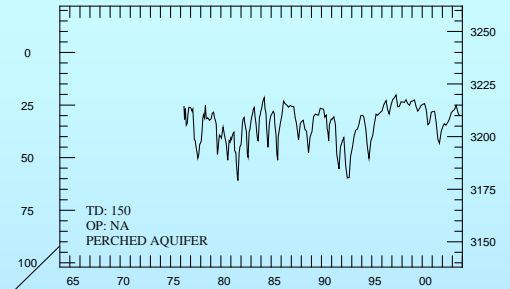


MOUNTAIN HOME GROUND WATER MANAGEMENT AREA AND CINDER CONE BUTTE CRITICAL GROUND WATER AREA Ground Water Hydrographs

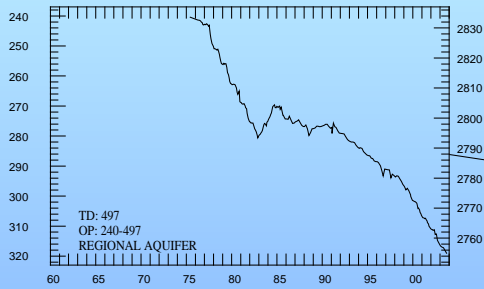
WELL 01S04E-10DAD1



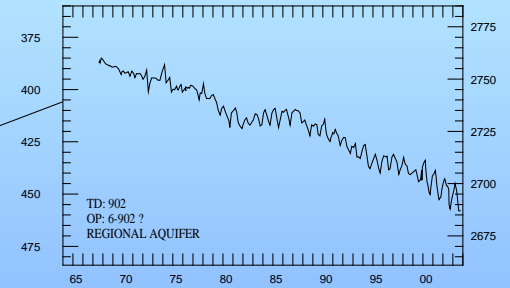
WELL 03S06E-13BBA1



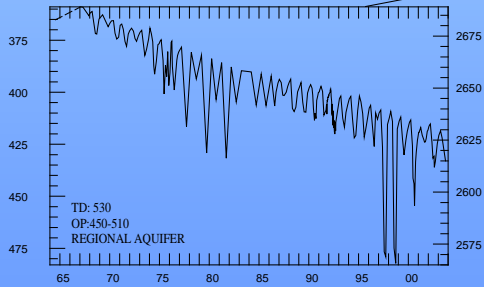
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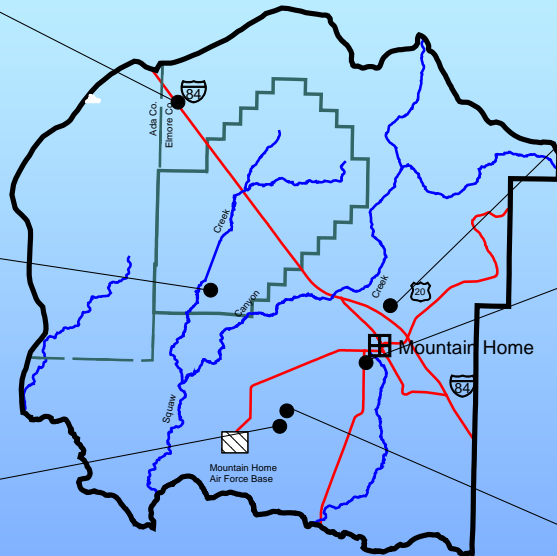
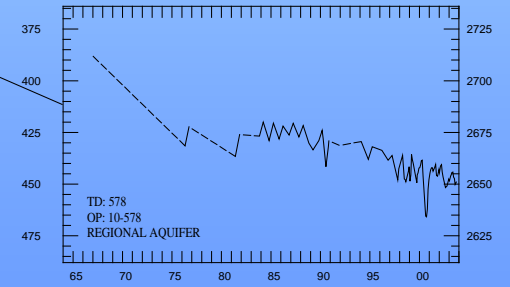
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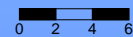
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LEGEND

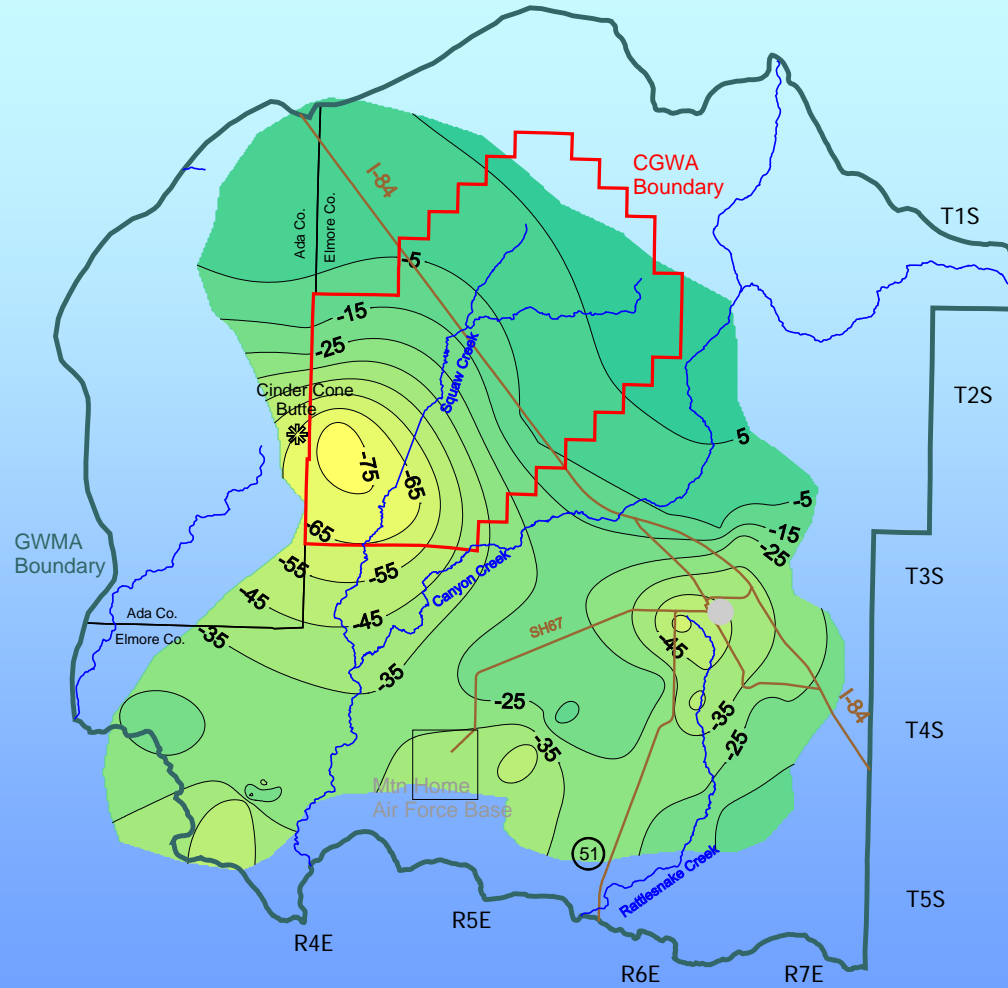
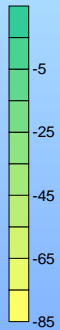
TD: TOTAL DEPTH
OP: INTERVAL AT WHICH THE WELL IS PERFORMED OR OPEN TO THE AQUIFER
WATER BEARING FORMATION
NA: NOT AVAILABLE
----: MORE THAN 1 YEAR BETWEEN DATA POINTS
LEFT SIDE: DEPTH TO WATER
RIGHT SIDE: WATER ELEVATION
BASE: YEAR
ALL MEASUREMENTS IN FEET

Map Scale (in miles)



Ground Water Level Change 1976 vs. 2022 in the Mountain Home Area

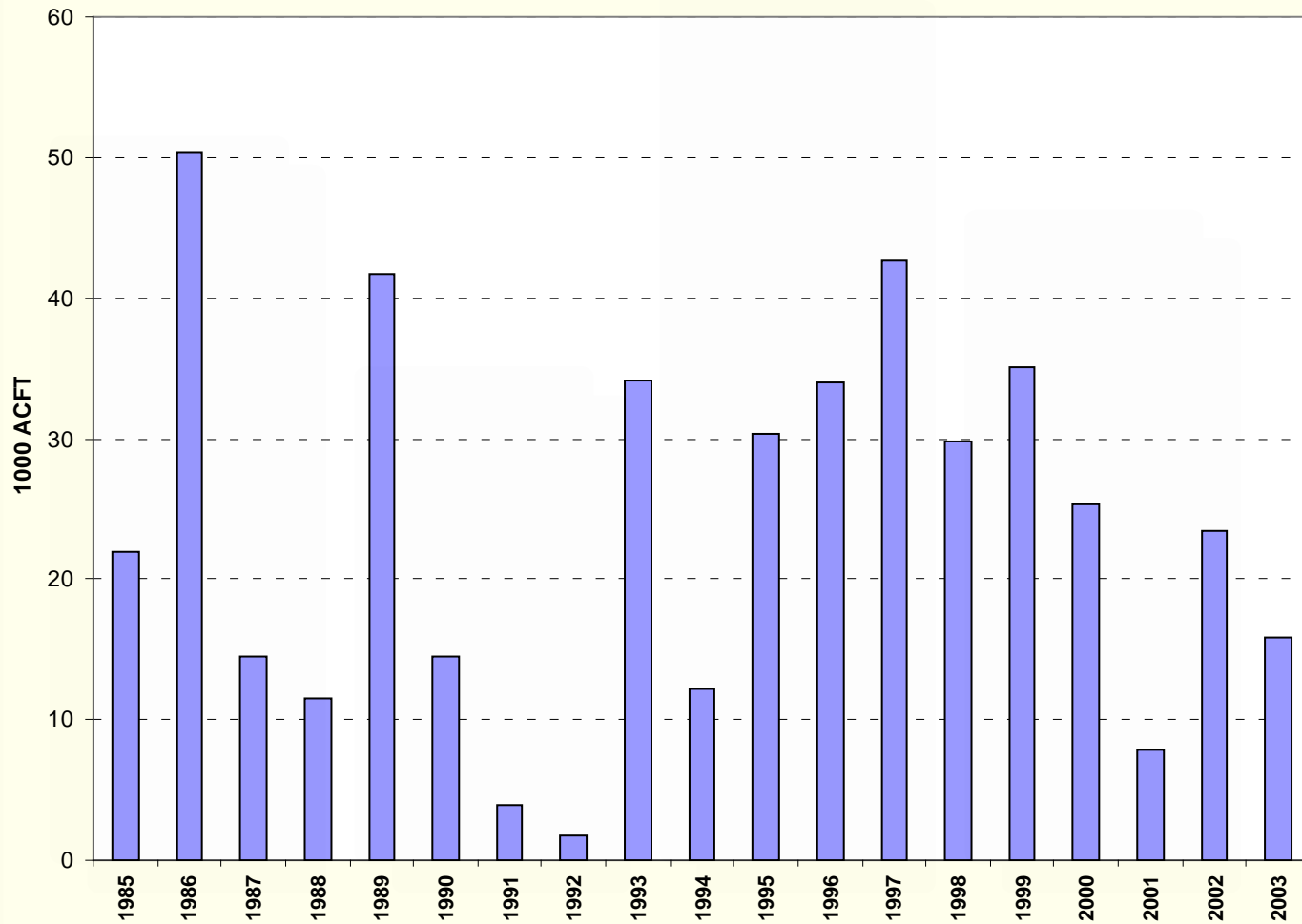
Ground Water Change
(in feet)



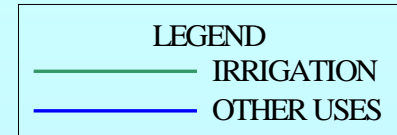
WATER BALANCE

- An accounting of water availability
 - How much water comes in to the basin
 - How much water is used or leaves the basin
- Positive number -water available for current and/or future needs
- Negative number - use exceeds recharge

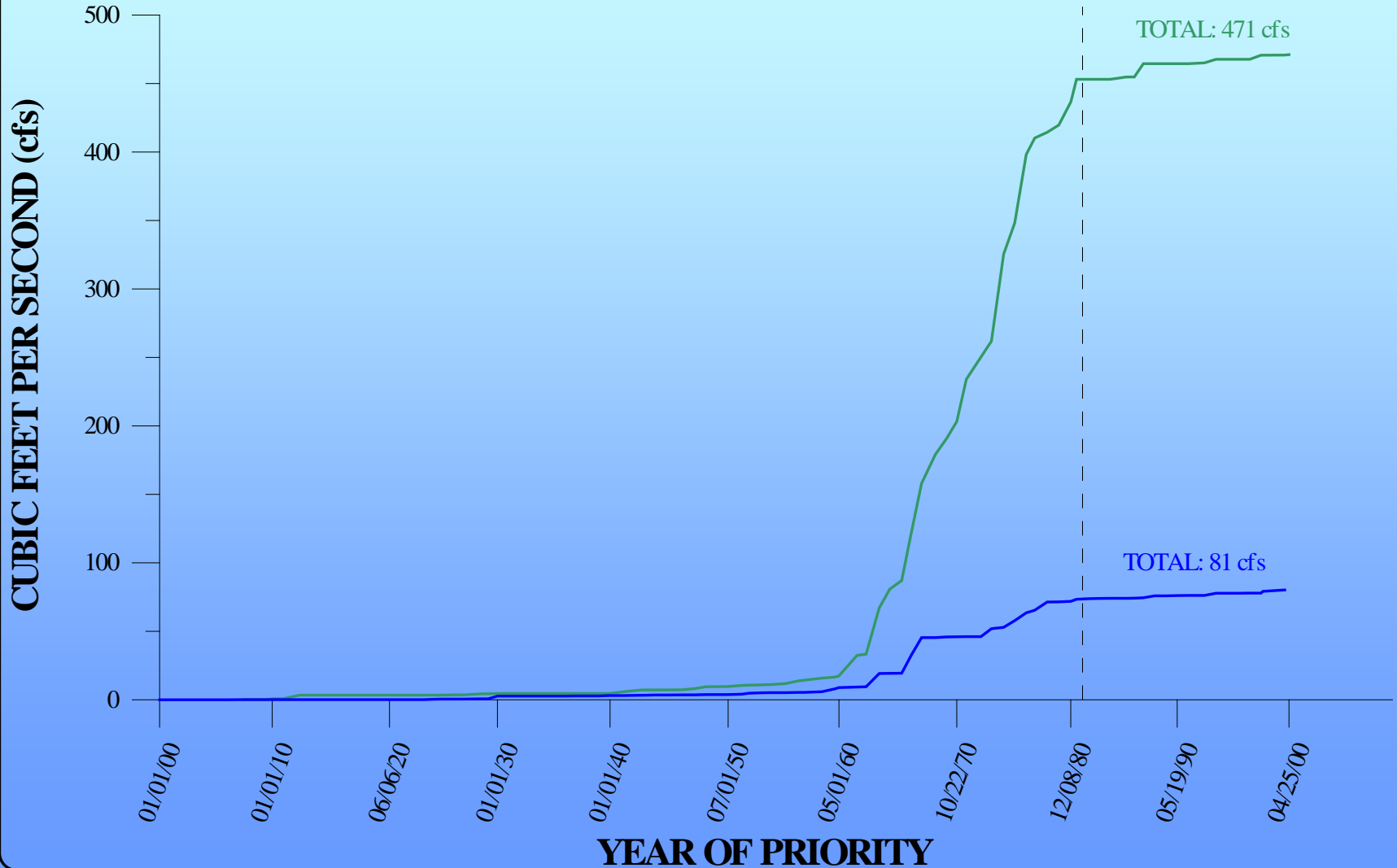
CANYON CREEK AT OREGON TRAIL CROSSING ANNUAL DISCHARGE



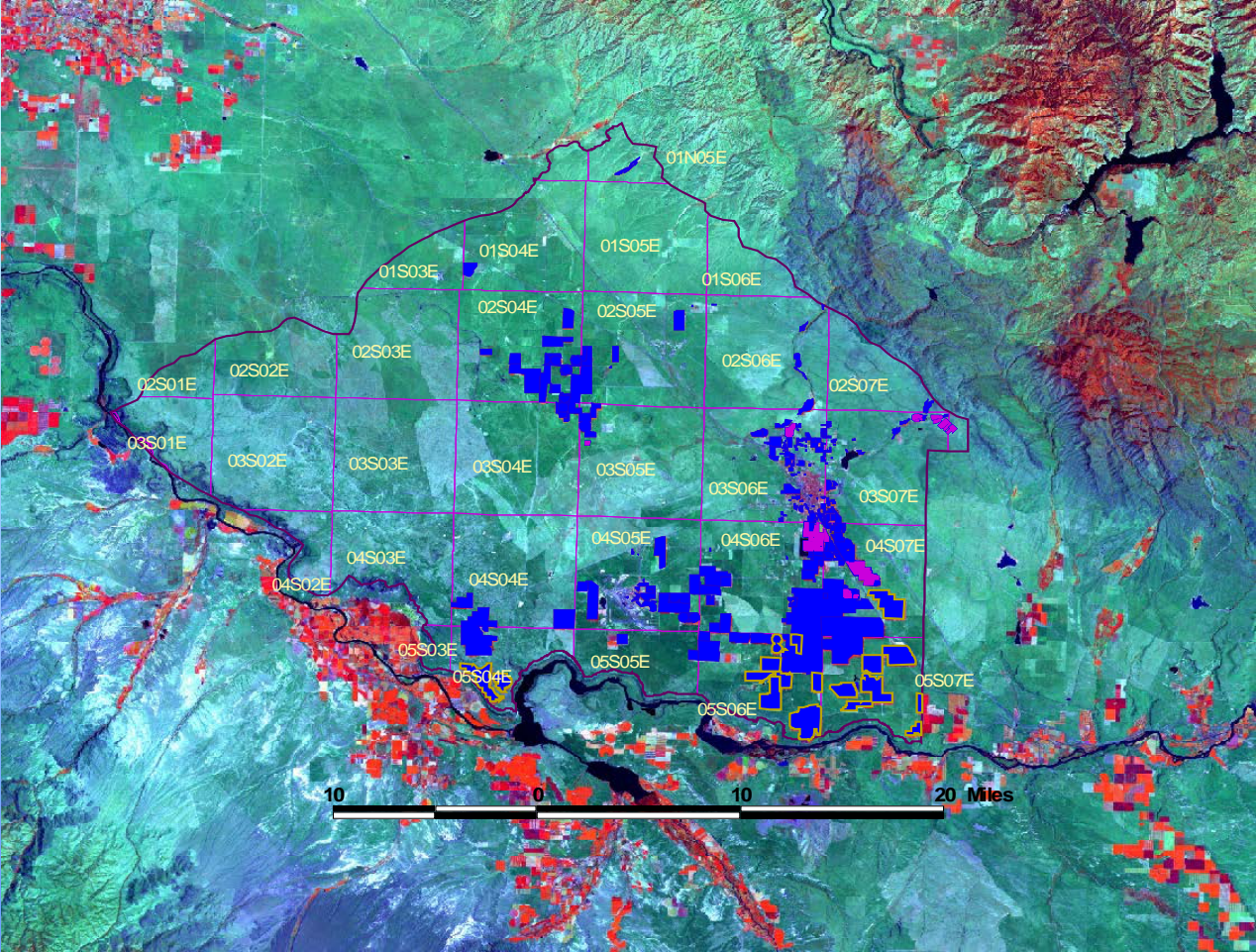
GROUND WATER USE IN THE MOUNTAIN HOME GWMA



CUMULATIVE CFS BASED ON WATER RIGHT PRIORITY DATE



IRRIGATED ACRES



Total Irrigated Acres:	46,328
Ground Water	28,815
Surface Water Snake River	17,513 (15,451)
Surface&GW	5,681

- Acres Irrigated from Snake River
- Supplemental Acres
- Irrigated Acres (1998)
- Study Boundary
- Township/Range

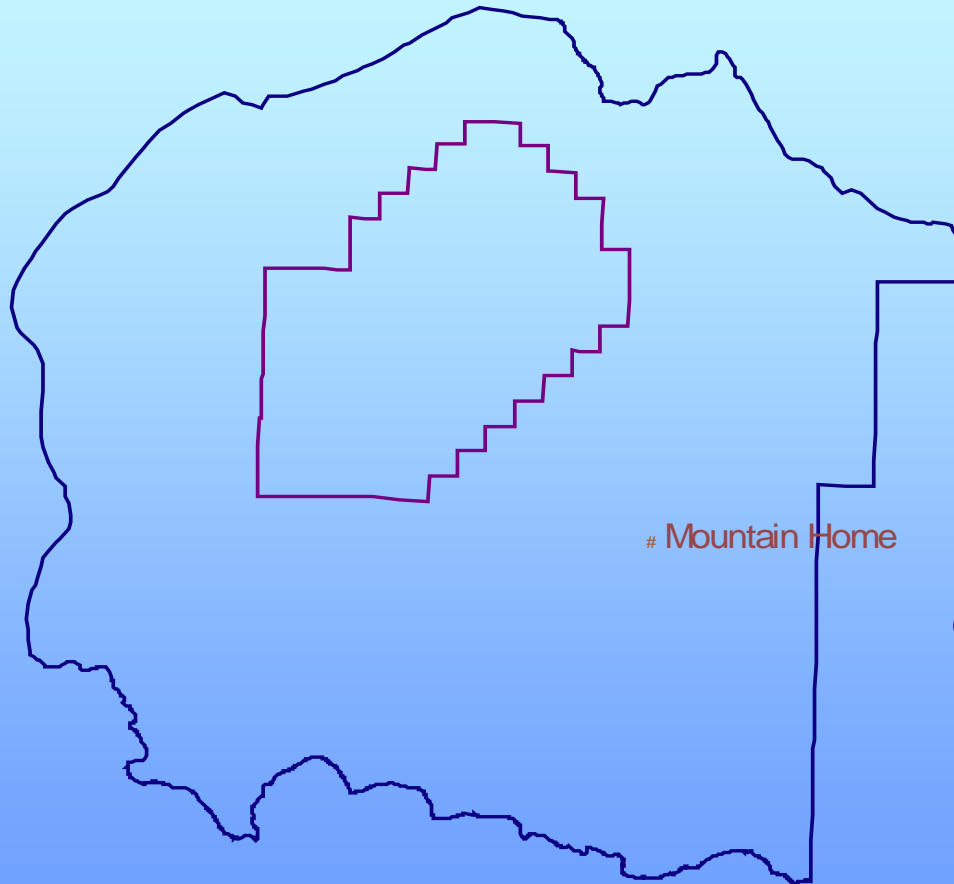


WATER BALANCE (in acre-feet per year)

<u>Basin Inflow and Supply</u>	<u>Supply/Use</u>
Canyon Creek yield	20,900
Little Camas Creek (imported)	9,500
Rattlesnake Creek yield	3,800
Ditto Creek and adjacent areas	4,100
Precipitation on rocky areas	<u>4,400</u>
Total	42,700
 <u>Consumptive Use and Loss</u>	
Loss to Snake River	1,500
Use by irrigated crops	69,600
Use by Municipal and Air Base	<u>2,500</u>
Total	73,600
 Inflow Minus Use	 -30,900

Management Designations

CINDER CONE BUTTE
CRITICAL GROUND
WATER AREA
designated May 7, 1981



Mountain Home

MOUNTAIN HOME
GROUND WATER
MANAGEMENT AREA
designated November 9, 1982



Reasons for Designation

- Rapid agricultural development
- Declines in ground water levels
- Further information showed declines over a larger area
- Pending applications for additional development of ground water

Administrative Restrictions

- Cinder Cone Butte CGWA
 - No new appropriations
- Mountain Home GWMA
 - New appropriations allowed if it is determined that sufficient supply is available and prior water rights will not be injured

Exception: Domestic uses and associated domestic irrigation

Management Strategies

- Creation of advisory committee
 - Established by Director in 1996
 - Local representation, 10 members
 - Objectives:
 - Develop recommendations for ground water management plan
 - Develop ground water recharge program
 - Act as forum for data collection, review and mediation
 - Act as forum for communication with community

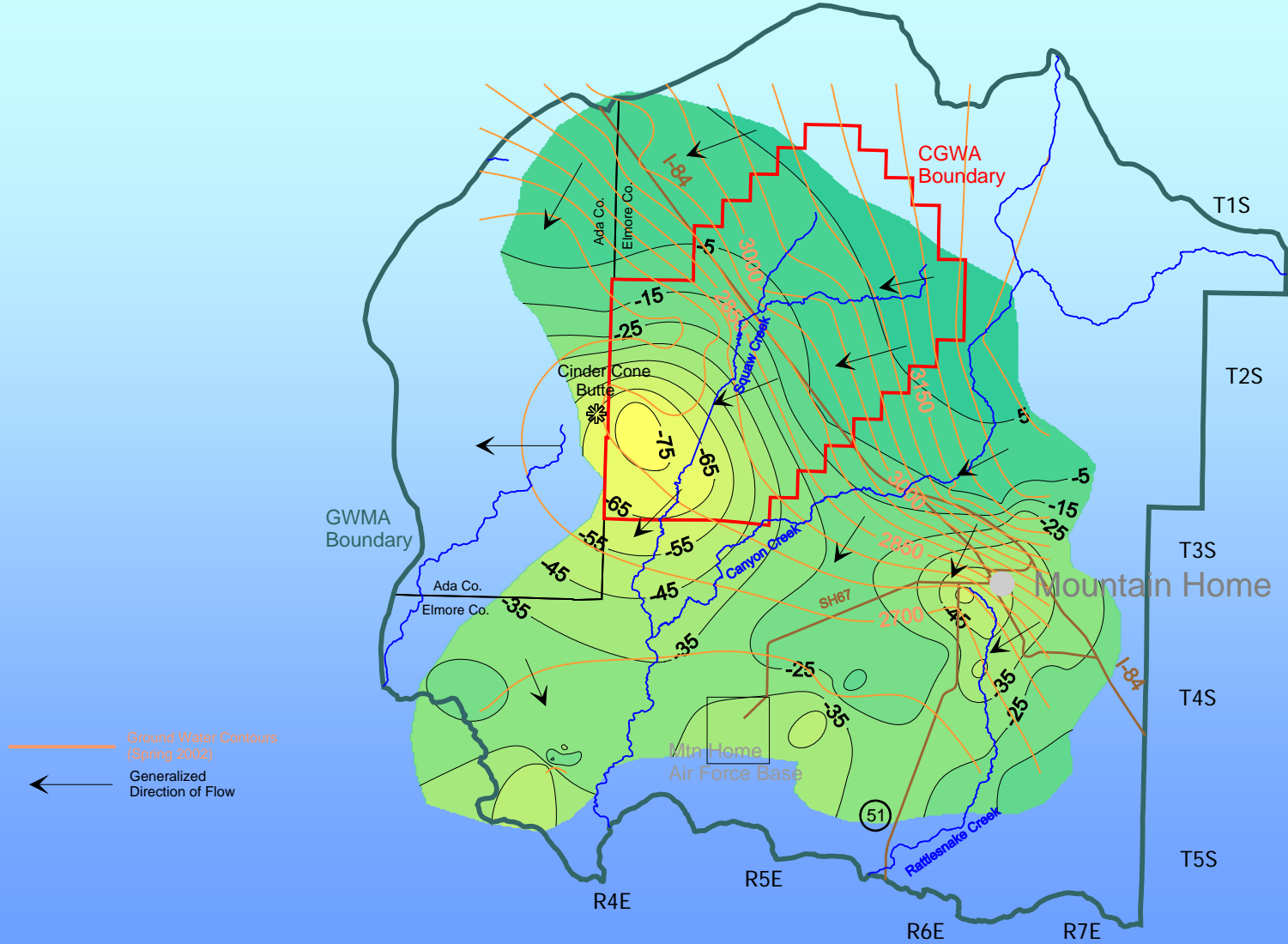
Advisory Committee

- In 1999, a recharge project was initiated.
 - Source: Canyon Creek
 - Method: Infiltration through existing gravel pits
 - Amount recharged: Approximately 1200-1500 acre feet
 - Impact: Undetectable change

Potential Sources for Managed Recharge

- Canal lining from Little Camas Reservoir
- Canyon Creek
 - Highly variable discharge
 - Primary source of water for Mountain Home Irrigation District
- Snake River
 - Requires pumping and transport
 - Water availability
- Other local basins

Boundaries, Ground Water Level Change and Ground Water Contours in the Mountain Home Area



Information Needs

- Subsurface structures controlling water movement
- Ground water level information in specific locations

Thank You