ACRONYMS AND ABBREVIATIONS

AAWS	Analysis of Adequate Water Supply
ACC	Arizona Corporation Commission
ADMMR	Arizona Department of Mines and Mineral Resources
ADWR	Arizona Department of Water Resources
ADEQ	Arizona Department of Environmental Quality
AGFD	Arizona Game and Fish Department
ALERT	Automated Local Evaluation in Real Time
ALRIS	Arizona Land Resource Information System
AMA	Active Management Area
AWPF	Arizona Water Protection Fund
AZMET	Arizona Meteorological Network
BIA	United States Bureau of Indian Affairs
BLM	United States Bureau of Land Management
CAP	Central Arizona Project
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLIMAS	Climate Assessment for the Southwest
CPC	Center for Plant Conservation
DES	Arizona Department of Economic Security
DOD	United States Department of Defense
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FCD	Flood Control District
GIS	Geographic Information System
gpcd	Gallons per capita per day
gpm	Gallons per minute
GWSI	Groundwater Site Inventory System
HIA	Historically Irrigated Acres
HSR	Hydrographic Survey Report
HUC	Hydrologic Unit Code
ITCA	Intertribal Council of Arizona
LUST	Leaking Underground Storage Tank
maf	Million acre-feet
M&I	Municipal and Industrial
NEMO	Non-point Education for Municipal Officials
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPS	United States National Park Service
NRCD	Natural Resources Conservation District
NRCS	Natural Resources Conservation Service
NWIS	National Water Information System
NWS	National Weather Service
Pan ET	Pan Evaportranspiration
PCE	tetrachloroethene

PDO	Pacific Decadal Oscillation
SNOTEL	SNOpack TELemetry
SRP	Salt River Project
TDS	Total Dissolved Solids
USBOR	United States Bureau of Reclamation
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	Unites States Fish and Wildlife Service
USGS	United States Geological Survey
VRP	Voluntary Remediation Program
WAC	Yavapai County Water Advisory Committee
WIFA	Water Infrastructure Finance Authority
WQARF	Water Quality Assurance Revolving Fund
WRCC	Western Regional Climate Center
WWTF	Wastewater Treatment Facility
WWTP	Wastewater Treatment Plant

Appendix A

Appendix A
Arizona Water Protection Fund Projects in the Central Highlands Planning Area through 2005[1]

CENTRAL HIGHLANDS PLANNING AREA			
Groundwater Basin	**AWPF Grant #**	**Project Title**	**Project Category**
Agua Fria	96-0007	Ash Creek Riparian Protection Project	Stream Restoration
Agua Fria	03-117	Lynx Creek Restoration at Sediment Trap #2	Stream Restoration
Salt River	95-021	Lofer Cienega Restoration Project	Fencing & Habitat Protection
Salt River	95-022	Gooseberry Watershed Restoration Project	Stream Restoration
Salt River	99-083	Cherry Creek Enhancement Demonstration Project	Stream Restoration
Salt River	05-128	Canyon Creek Riparian Restoration Project, Reach 4-5	Fencing & Habitat Protection
Tonto Creek	95-019	Quantifying Anti-Erosion Traits of Streambank Graminoids	Research
Tonto Creek	99-097	Dakini Valley Riparian Project	Fencing & Revegetation
Upper Hassayampa	99-088	Wickenburg High School Stream Habitat Creation	Constructed Wetland Restoration
Verde River	95-001	Stable Isotope Assessment of Groundwater and Surface Water Interaction – Application to the Verde River Headwaters	Research
Verde River	95-003	Sycamore Creek Riparian Management Area	Fencing
Verde River	95-004	Road Reclamation to Improve Riparian Habitat Along the Hassayampa and Verde Rivers	Revegetation
Verde River	95-006	Critical Riparian Habitat Restoration Along a Perennial Reach of a Verde River Tributary	Stream Restoration
Verde River	95-017	Restoration of Fossil Creek Riparian Ecosystem	Research
Verde River	97-030	Walnut Creek Center for Education and Research – Biological Inventory	Research

[1] A map with all Arizona Water Protection Fund grant locations can be found in Volume 1, Appendix C

CENTRAL HIGHLANDS PLANNING AREA (con't.)			
Groundwater Basin	**AWPF Grant #**	**Project Title**	**Project Category**
Verde River	98-047	Upper Verde Adaptive Management Unit	Fencing
Verde River	98-050	Watershed Restoration of a High Elevation Riparian Community	Watershed & Stream Restoration
Verde River	98-055	Horseshoe Allotment: Verde Riparian Project II	Fencing & Upland Water Developments
Verde River	98-057	Upper Verde Valley Riparian Area Historical Analysis	Research
Verde River	98-058	Effects of Removal of Livestock Grazing on Riparian Vegetation and Channel Conditions of Selected Reaches of the Upper Verde River	Research
Verde River	98-059	Verde River Headwaters Riparian Restoration Demonstration Project	Channel Restoration
Verde River	99-078	Aquifer Framework and Ground-Water Flow Paths in Big and Little Chino Basins	Research
Verde River	99-091	Effects of Livestock Use Levels on Riparian Trees on the Verde River	Research
Verde River	03-118	Verde River Riparian Area Partnership Project	Exotic Species Control
Verde River	04-120	Verde River Headwaters 3-D Hydrogological Model Framework and Visualization	Research
Verde River	05-133	Verde Wild and Scenic River Fence Exclosure	Fencing

Appendix B

APPENDIX B
Rural Watershed Partnerships in the Central Highlands Planning Area (2005)

MULTI-PLANNING AREA - Eastern Plateau, Western Plateau and Central Highlands

Watershed Partnership	Primary Participants	Projects & Accomplishments	Issues
Coconino Plateau Water Advisory Council	Flagstaff, Coconino County Williams, Sedona Page, Tusayan TNC, Grand Canyon Trust Doney Park Water Co. Navajo Nation, Hopi Tribe Havasupai Tribe, Hualapai Tribe ADWR, ADEQ State Land, NRCD NAU USBoR, USGS USFS, BLM Grand Canyon National Park Glen Canyon NRA NRCS	• 4 categories of potential water augmentation projects have been identified along with their associated costs. • Groundwater study and conceptual model completed • Phase I Water Demand Study for Coconino Plateau • Growth Impacts Study • Western Navajo Pipeline Study • Development of study for importing C aquifer groundwater east of Flagstaff has been completed. • Flagstaff, Hopi and Navajo are exploring cooperative opportunities for developing C aquifer groundwater. • Flagstaff purchased Red Gap Ranch for possible future development of groundwater. • Hopi HSR initiated. • Conducting Water Appraisal Study to identify current & future demands and alternatives for meeting projected demands. • Developing numeric model	• Excessive growth throughout entire plateau region from Williams to Winslow and from Munds Park to Page • Limited and deep groundwater supplies. • Drought sensitive surface water supplies of Williams, Flagstaff and others • Unsafe dam issues in Williams • Groundwater salinity issues in northeastern part of plateau • Numerous water haulers with few hauling stations that are sometimes cutoff during drought • Unable to get adequate water supply designation under current definition • Growth in Page with no means of additional supply • ESA issues with groundwater usage and impacts on perennial streams • Potential limitation of groundwater usage resulting from reserved groundwater rights of Indians • Uncertainty of Indian water right settlements (LCR & Colorado River) • Proposed San Juan Paiute reservation west of Flagstaff • Potential impacts on springs in Grand Canyon and also on supplies to Havasupai and Hualapai reservations • Access to water development on public lands • Limited groundwater data for entire region • Minor Arsenic issues in Woody Mtn. Well field (9-14 ppb) • Unregulated lot splits • Limited funding resources for planning, projects, infrastructure and studies • Extremely high cost of water augmentation projects

MULTI-PLANNING AREA - Eastern Plateau, Western Plateau and Central Highlands (continued)

Watershed Partnership	Primary Participants	Projects & Accomplishments	Issues
Northern Arizona Municipal Water Users Association (NAMWUA)	Prescott Flagstaff Cottonwood Sedona Chino Valley Prescott Valley Williams Clarkdale Payson	• Projected water demands through 2040 have been identified • A request for 70,000 acre-feet of CAP reallocation water has been submitted to ADWR for consideration.	• Limited supplies to meet projected demands • ESA issues impacting potential ground and surface water supplies • Limited funding resources for planning, projects, infrastructure and studies • Competition from Phoenix/Tucson for CAP reallocation water • Funding for Colorado River infrastructure • Water quality issues in Verde Valley and Flagstaff • Upper Basin/Lower Basin issues with Colorado River affect potential for use

CENTRAL HIGHLANDS PLANNING AREA

Watershed Partnership	Primary Participants	Projects & Accomplishments	Issues
Northern Gila County Partnership- (Mogollon Highlands)	Payson Pine Strawberry Gila County Brooks Utilities Rim Trails WID Pine Strawberry WID Local citizens and special interests Tonto Apache Nation ADWR SRP USFS USBoR USGS	• Comprehensive groundwater study and conceptual model completed. • Conducting Water Resources Management Appraisal Study to identify current & future demands and alternatives for meeting projected demands. • Strategic Plan completed • Feasibility study and cost estimates for Blue Ridge Reservoir pipeline • Obtained approximately 3,500 ac-ft of surface water from Blue Ridge Reservoir. • Development of a numeric groundwater model initiated.	• Limited water resources to meet current demands. • Environmental, supply, treatment, transportation and financing costs associated with augmentation from Blue Ridge reservoir • Numerous private water companies, Arizona Corporation Commission and Domestic Water Improvement District conflicts • Interbasin transfer conflicts resulting from Payson's ability to pump from two different basins • Seasonal demand issues; peaking problems • County encouragement of growth in Pine and Strawberry • Unresolved Indian water rights settlements • Environmental issues pertaining to Fossil Creek • Limited groundwater data for entire region • Costs associated with hauling water • Access to water development on public lands • Infrastructure needs for private water companies • Limited funding resources for planning, projects, infrastructure and studies
Upper Agua Fria Watershed Partnership	Mayer Black Canyon City Cordes Lakes Yavapai County Spring Valley Local Citizens ADWR ADEQ Cooperative Extension State Lands BLM/Agua Fria Nat. Monument USFS	• Watershed Reconnaissance studies • Active recharge site identification study.	• Proposed growth in the Mayer, Bensch Ranch and Spring Valley areas • Limited groundwater supplies • Little or no groundwater data • Groundwater and surface water supplies are very drought sensitive • Potential water quality attributed to local septic systems and discharges from Prescott Valley • Poorly constructed and maintained infrastructure in some areas • Limited funding resources for planning, projects, infrastructure and studies

CENTRAL HIGHLANDS PLANNING AREA (continued)

Watershed Partnership	Primary Participants	Projects & Accomplishments	Issues
Upper and Middle Verde Watershed Groups (Yavapai County Water Advisory Council) (Verde Watershed Authority)	Prescott, Prescott Valley Chino Valley, Paulden Yavapai County, Sedona Camp Verde, Clarkdale Cottonwood, Jerome 24 local special interest groups TNC Yavapai Apache, Yavapai Prescott ADWR, ADEQ SRP, NRCD Cooperative Extension NAU USFS, USGS USBoR, USF&W	• Comprehensive groundwater study and conceptual model • Study of geologic framework of aquifer units and groundwater flow paths of Verde River headwaters using aeromagnetic and gravity data. • Verde River Watershed Study. • Water educational forum conducted for WAC and public with ultimate goal of developing water management plan for Verde watershed area. • Big Chino Subbasin Historical and Current Water Uses and Water Use Projections study. • Riparian demand study of Middle Verde • Numeric groundwater model project initiated. • Prescott AMA groundwater model. • Study of groundwater flow paths for upper and middle Verde using stable isotopes. • Prescott purchased JWK Ranch in Big Chino to import 8,717 ac-ft annually to Prescott and Prescott Valley • Groundwater monitoring program in Big Chino initiated.	• Potential impacts resulting from the transfer of 8,717 ac-ft from Big Chino to Prescott and Prescott Valley • 25,000 to 30,000 approved lots still outstanding in Prescott AMA • Multiple developments currently under construction in the tri-city region of the AMA • ESA issues associated with the Verde • Proposed critical habitat area in Verde Valley for Willow Fly Catcher • New Arsenic standards • Pending Subflow decision • Political and philosophical differences between AMA and Verde Valley • Countywide growth and unregulated lot splits • Indian water rights • Yavapai Ranch Land exchange and Title II implementation (Verde Basin Partnership) • Thousands of private domestic wells already permitted and more being requested daily • Potential water quality impacts on groundwater system from the thousands of septic systems • Potential development rumors of the CVCF Ranch in the Big Chino • Limited funding resources for planning, projects, infrastructure and studies