

# Groundwater Governance in the U.S.

## Appendix B: Qualitative Survey Responses

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May 2013



COLLEGE OF  
AGRICULTURE  
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## Part II

### Q1: Are there formal groundwater policies, rules, or regulations in the state?

**AK:** Alaska Statute Chapter 46.15 Water Use Act, and Alaska Statute Chapter 46.03 Environmental Conservation, below is a URL for additional info: <http://www.legis.state.ak.us/basis/folio.asp>

**AL:** Alabama Water Resources Act (1993) Alabama Safe Drinking Water Regulations Underground Injection Control Program.

**AR:** Arkansas Code Annotated section 15-22-901 et seq.

**AZ:** Groundwater Management Act (1980) and its amendments and ADWR's Rules governing well drilling, well impacts, etc.

**CA:** California Water Code Sections 1075t0 et. seq. but these statutes concern voluntary groundwater management planning and program implementation. California Water Code Section 1200 relates to an antiquated misnomer of subterranean streams. California categorizes groundwater as either a subterranean stream flowing through a known and definite channel or percolating groundwater. Groundwater that is a subterranean stream is subject to the same water right permitting requirements as surface water. California has no statewide water right permit process for regulating the use of percolating groundwater. A subterranean stream meets the following four characteristics: (1) A subsurface channel must be present; (2) The channel must have relatively impermeable bed and banks; (3) The course of the channel must be known or capable of being determined by reasonable inference; and (4) Groundwater must be flowing in the channel.

**CO:** 1965 Ground Water Management Act (statutory); 1969 Water Rights Determination and Administration Act (statutory); Statewide Nontributary Groundwater rules; Denver Basin Rules; basin-specific ground water use rules; basin specific well measurement rules; Artificial Recharge Extraction Rules, case law.

**CT:** Groundwater Quality Standards, Remediation Standards Regs, Water Diversion Regs, Aquifer Protection Regs.

**DC:** DC Water Pollution Control Act DC Law 8-103 dated 1983; Groundwater Regulations 21 DCMR 1150; Water Quality Monitoring Regulations 21 DCMR Chapter 19.

**DE:** Ground (and Surface) water use is regulated by the state's Water Allocation Regulations and program procedures; Groundwater quality is indirectly regulated through a host of related rules and regulations such as the Public Water Supply Regulations, Petroleum Storage tank regulations, Wastewater disposal regulations, source water protection statute, water well construction regulations, and others.

**FL:** Florida has a ground water rule that classifies types of ground water based on TDS, provides ground water standards, and sets requirements for permitted entities that discharge to ground water. Florida also has a UIC rule.

**GA:** Rules for Groundwater Use, Chapter 391-3-2 Georgia Water Wells Standards Act, O.C.G.A. 12-5-120

**HI:** 174C-HRS 1987;13-167,168,169,170,171 - HAR 1988 (et al.).

**ID:** Numerous statutes in Title 42 of Idaho Code governing ground water allocation, administration, and management.

**IL:** 35 IL Adm. Code 620, Groundwater Quality 1991 35 IL Adm. Code 601, 615, 616 and 617, Technical Standards, 1991.

**IN:** Water Resource Management - IC 14-25-7 (1983); Water Rights: Emergency Regulation - IC 14-25-4 & Rule 312 IAC 12 (1983); Great Lakes Compact - IC 14-25-15 (2009).

**KS:** K.S.A. 82a-730 - prior appropriation act, allows groundwater rights in closed areas to not report a due and sufficient reason for non-use; KSA 82a-1020, IGUCAs and LEMAs. Special regs for Groundwater Management Districts.

**KY:** All public water supplies that utilize groundwater are required to develop a Wellhead Protection Plan. Groundwater Protection Plans are required by all entities that have the potential to cause pollution of groundwater resources.

**LA:** On Water Resource Mgmt. La. Administrative Code, Title 43, Part VI, Subpart 1:  
[http://dnr.louisiana.gov/assets/OC/env\\_div/gw\\_res/43vPartVICh1-7.pdf](http://dnr.louisiana.gov/assets/OC/env_div/gw_res/43vPartVICh1-7.pdf) See also: Managing Louisiana's Groundwater Resources: An Interim Report to the Legislature, March 2012, at:  
<http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=907>

**MA:** Water Management Act MGL 21G and accompanying regulations 310 CMR 36.00 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D and accompanying regulations 313 CMR 4.00 MGL Chapter 111 section 160 and Drinking Water Regulations 310 CMR 22.00 and accompanying guidelines. All three apply to surface and groundwater.

**MD:** Applicable statutes are in the Environment Article, Annotated Code of Maryland. Applicable regulations are primarily in the Code of Maryland Regulations Title 26.

**ME:** Significant Groundwater Wells 2007 Land Use Protection Commission (various dates); Transport of Water Act (1987); various amendments.

**MI:** Safe Drinking Water Act, 1976 PA 399, as amended, MCL 325.1001 et. seq. Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), MCL 324.3101 et. seq. Part 201, Environmental Remediation, of the NREPA, MCL 324.3101 et. seq. Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended, MCL 333.12701-12715. Part 327, Great Lakes Preservation, of the NREPA, MCL 327.32701 et. seq.

**MN:** Minnesota Statutes, chapter 103A. Water policy and information •Minnesota Statutes, chapter 103G. Waters of the State (primary regulatory statute) •Minnesota Statutes, section 103G.801, Great Lakes – St. Lawrence River Basin Water Resources Compact Minnesota Rules, parts 6115.0010-6115-0120. Permit, inspection and monitoring Minnesota Rules, parts 6115.0600 – parts 6115.0600 – 6115.0810. Water appropriations and use permits and use management plans. Minnesota Rules, part 6115.0770. Water conservation must be employed.

**MO:** Well construction rules-10 CSR 23 Water well drillers act-RSMo 256.600-256.640 Major water users law-RSMo 256.400-256.433 Safe Drinking Water Regulations-10 CSR 60 Safe Drinking Water Law-RSMo 640.100-640.140 Water Pollution Law-RSMo 644 Waste Disposal Well Law-RSMo 577.155 Water Resources Law-RSMo 640.400-640.435 Southeast Missouri Water District Law-RSMo 256.643-256.660.

**MS:** Mississippi Code Annotated Sections 51-3-1 to 51-3-107 (1985 statute) Surface Water and Groundwater Use and Protection Regulations [LW-2] (1988 regulation).

**MT:** Water quality and water use statutes and rules.

**NC:** I'll report on the ones administered by the Division of Water Resources: Water Use Act of 1967 (G.S. 143-215.11-.22, 1967-2009), Central Coastal Plain Capacity Use Area (15A NCAC 2E, 2002-08-01), Registration of Water Withdrawals and Transfers (G.S. 143-215.22G and .22H). North Carolina also has statutes and rules about well construction and ground water standards.

**ND:** Article XI N.D. Constitution (1889). NDCC61-01(Waters of the State -various dates). NDCC 61-03 (State Engineer - various dates). NDCC 61-04 (Water Appropriation Rules and Statutes - various dates). NDAC 89-03-01(Water Permits - various dates). NDAC 89-03-02 (Modification of a Water Permit - various dates). The North Dakota Department of Health, N.D. Department of Agriculture, and the N.D. Public Service Commission (Reclamation and Mining) also regulate various groundwater activities.

**NE:** Nebraska Groundwater Management and Protection Act, integrated management plans, local groundwater management plans and rules and regulations.

**NH:** Large Groundwater Withdrawals RSA 485-C:21 - August 1998 Env-Wq-403 (originally adopted in 2001/re-adopted in 2009).

**NJ:** Water Allocation Permitting Rules (N.J.A.C. 7:19) 1983 NJ Water Supply Management Act (N.J.S.A. 58:1A) (init act 1981; several revisions).

**NM:** NM Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17 NM Water Quality Control Commission Regulations 20.6.3 NMAC NM Water Statutes N.M.S.A. 1978 § 72-12-1 through 78-13-12. Rules and Regulations Governing the Appropriation and Use of Groundwater in New Mexico

**NV:** Nevada Revised Statutes Chapters 533 and 534 primarily.

**NY:** NYS ECL 15-1525.

**OH:** Primary - ORC 6111 - Water Pollution Control; ORC 1521 - Division of Soil and Water Resources; ORC 1522 - Great Lakes-St. Lawrence River Basin Water Resources Compact; ORC 3701.28 - Department of Health - Private Water Systems. Related: ORC 3734 - Solid and Hazardous Waste; OAC 3745 - Ohio EPA. Other sections of the administrative code reference ground water protection, monitoring and clean-up activities.

**OK:** Title 82 Oklahoma Statutes Sections 1020.1 and following (present law enacted in 1972); Oklahoma Administrative Code 785:30.

**OR:** Oregon Revised Statute (ORS) 537.535 Appropriation of Groundwater ORS 537.730 Designation of Critical Groundwater Area ORS 537.531 Aquifer Storage and Recovery ORS 537.747 Water Well Constructors.

**PA:** There are no overarching stand-alone statutes, policies, rules or regs just for ground water. Pennsylvania's Clean Steams Law (enacted 1937) is the primary statute for protection of "waters of the Commonwealth" which includes "underground water". Ground-water quality protection is addressed in a piecemeal fashion through specific statutes or regulations for various activities (mining, oil/gas, waste management, safe drinking water, etc.). The Water Resources Planning Act (2002) required the development of a new State Water Plan with periodic updates and implementation of water withdrawal registration/reporting.

**RI:** Groundwater Protection Act (RIGL 46-13.1); RI Water Pollution Act (46-12); Wetlands Act (2-1-20); RI Water Resources Board statutes (46-15 and others), RI Water 2030 (Planning Report). Rules deriving from these and other statutes that in some way address groundwater protection are too numerous to list here.

**SC:** S.C. Groundwater Use and Reporting Act, 1969 S.C. Groundwater Use and Reporting Regulation.

**TX:** Statute: Texas Water Code, Title 2 Water Administration, Subtitle E Groundwater Management (esp. Chapter 36) Rules: Texas Administrative Code Chapter 356 (Groundwater Management).

**UT:** Section 73-3 Utah Code since 1935 required regulation of groundwater. Thirteen groundwater management plans available on the Division's web site at: [waterrights.utah.gov](http://waterrights.utah.gov) under "Law/Agreements, Groundwater Management Plans." Also, groundwater policies by region under "Programs, Water Rights, Rules/Procedures, Appropriation Policy."

**VT:** Environmental Protection Rules, Chapter 12, Groundwater Protection Rule and Strategy  
Environmental Protection Rules, Chapter 24, Groundwater withdrawal Reporting and Permitting Rules  
Environmental Protection Rules, Chapter 21, Water Supply Rule.

**WA:** Water Resources Groundwater Laws (RCWs): Ch. 18.104 RCW - Water well construction, 1971 Ch. 36.36 RCW - Aquifer protection areas, 1985 Ch. 90.03 RCW - Water code - 1917 act, 1917 Ch. 90.36 RCW - Artesian wells, 1890 Ch. 90.44 RCW - Regulation of public ground waters, 1945 Ch. 90.54 RCW - Water resources act 1971, 1971 Water Resources Groundwater Rules (WACs): Ch. 173-539A WAC, Upper Kittitas Groundwater Rule, 2010 Ch. 173-517 WAC, Quilcene-Snow Instream Resources Protection and Watershed Management Program - WRIA 17, 2009 Ch. 173-528 WAC, Water Resources Management Program for the Salmon-Washougal Basin, WRIA 28, 2008 Ch. 173-527 WAC, Water Resources Management Program for the Lewis Basin, WRIA 27, 2008 Ch. 173-545 WAC, Water Resources Management Program - Wenatchee River Basin, Water Resource Inventory Area (WRIA) 45, 2007 Ch. 173-532 WAC, Water Resources Program for the Walla Walla River Basin, WRIA 32, 2007 Ch. 173-160 WAC, Minimum Standards For Construction And Maintenance Of Wells, 1971 Ch. 173-162 WAC, Regulation And Licensing Of Well Contractors And Operators, 1998 Ch. 173-503 WAC, Instream Resources Protection Program -- Lower And Upper Skagit Water Resources Inventory Area (WRIA 3 And 4), 2006 Ch. 173-546 WAC, Water Resources Management Program--Entiat River Basin Water Resource Inventory Area - WRIA 46, 2006 Ch. 173-505 WAC, Instream Resources Protection and Water Resources Program, 2005 Ch. 173-157 WAC, Underground Artificial Storage and Recovery, 2003 Ch. 508-12 WAC, Administration Of Surface And Ground Water Codes, 1992 Ch. 508-14 WAC, Columbia Basin Project -- Ground Waters, 1988 Ch. 173-154 WAC, Protection Of Upper Aquifer Zones, 1988 Ch. 173-150 WAC, Protection Of Withdrawal Facilities Associated With Ground Water Rights, 1988 WAC 173-134 WAC, The Establishment Of A System Of Authorizing The Withdrawal Of Artificially Stored Ground Waters, 1988 Ch. 173-134A WAC, Quincy Ground Water Subarea Management Policy, 1988 Ch. 173-132 WAC, Duck Lake Ground Water Management Subarea, 1988 Ch.

173-130A WAC, Odessa Ground Water Subarea Management Policy, 1988 Ch. 173-128A WAC, Odessa Ground Water Management Subarea, 1988 Ch. 173-100 WAC, Ground Water Management Areas And Programs, 1988.

**WI:** Chapters 160 (1983) and 281.34, Wisconsin Statutes enacted 1983 Chapters NR140, NR820 (1985 rev 2010), 850, 852, 856, 860 (2011), Wis. Administrative Code.

**WV:** WV Code Chapter 22 Article 12.

**WY:** W.S. Title 41. Water State Engineer's Office Regulations and Instructions, Part II, Ground Water (1974) State Engineer's Office Regulations and Instructions, Part III, Water Well Minimum Construction Standards (2011).

## **Q2: Have you observed substantial changes in how groundwater is managed in the state over the past few decades?**

**AL:** The Alabama Water Resources Act provided broad management and guidance associated with both surface and groundwater withdrawals.

**AZ:** Very little groundwater regulation existed prior to 1980. Use of groundwater is now regulated within AMAs and groundwater transportation is also regulated.

**CA:** With the passage of Assembly Bill 3030 in 1992 Groundwater Management Act, which lays out the general framework and additional authorities for local agencies to develop and implement groundwater management plans, a new era of voluntary, non-regulatory groundwater management was born. And with the passage of Senate Bill 1938 in 2002, additional required and recommended components were added including the carrot versus stick approach requiring local agencies to develop and implement GMPs to be eligible for state funding for groundwater projects. An additional impetus is of course the Water Bonds (Proposition 13, 50, 84 and 1E) that have provided 100's of millions of dollars for groundwater projects in the last decade and a half.

**CO:** The basic premise of ground water's connection to surface water and incorporating ground water use into priority administration has been the law for over 40 years. However, changing hydrologic conditions, changes to river call conditions, and other factors have led to tighter administration and inclusion of other non-traditional uses in administration.

**CT:** Additional protection requirements for protection of public water supplies.

**DC:** More interest in preventing contamination from impacting the resource.

**FL:** Our rules have been in place since the 1980s.

**GA:** More control of agricultural withdrawals in southwestern Georgia.

**HI:** 174C became law in 1987 enabling the State to manage construction of all wells, reports of ground water use, estimates of ground water availability, and allocation of ground water in certain threatened (designated) areas.

**ID:** Conflicts between junior-priority ground water users and senior-priority surface water users have developed, causing enactment of administration of ground water by the state.

**IL:** Groundwater resources are being protected for present and future use by the implementation of the groundwater quality standards (35 IL Adm Code 620, 1991).

**IN:** Registration of Significant Water Withdrawal Facilities in the state, permitting of ground water withdrawals within the Great Lakes Basin in Indiana, and liability for small capacity well failures caused by high capacity ground water withdrawals.

**KS:** Metering of wells required, annual water use reports required (fines for late reports), increased penalties for recurring overpumpers. Most of the major aquifers are modeled. And more conservation planning occurring.

**MD:** One example is that about fifteen years ago the procedures for evaluating water appropriation permits were modified.

**ME:** Large commercial withdrawals are permitted now. Withdrawals near surface sources may require

review. Groundwater is still a property right, and can be regulated based on impact.

**MI:** Addition of water withdrawal regulations, changes in groundwater quality standards for discharges and clean ups, and drinking water.

**MN:** Increased use of and reliance on groundwater is starting to cause conflicts between users and impacts on natural resources. Political emphasis on groundwater regulation is increasing, particularly during times of drought.

**MO:** The enactment of the federal Safe Drinking Water Act resulted in the development of numerous state laws and regulations used to implement the requirements of the Act at a state level.

**MS:** Mississippi had no statutes or regulations that addressed groundwater management until 1985.

**MT:** Connection between surface water and groundwater has been recognized; public water supply regulations have evolved.

**NC:** Aquifer storage and recovery systems are now being permitted. A long standing situation of overuse of confined aquifers in the coastal plain is now being regulated by the Central Coastal Plain Capacity Use Area

**ND:** In response to demand for water for oil field industrial use (fracking), the State Engineer has developed policies to allow more timely and efficient distribution of water in western North Dakota. Policies include issuance of temporary permits from surface water bodies (predominantly ponds and sloughs) and temporary conversion of irrigation use permits to industrial use permits.

**NE:** Management of hydrologically connected waters came to the forefront in the late 90s and comprehensive legislation was adopted in 2004.

**NH:** Since a new law was passed in 1998, a large groundwater withdrawal (>57,600 gallons in any 24-hour period) from a well-constructed after July 1998 cannot be approved unless it is demonstrated that it will not result in an unmitigated adverse impact to existing water users or water resources. Additionally, a water conservation program must be put into place. Prior to the passage of the 1998 law, there were minimal regulatory requirements associated with developing a new large groundwater withdrawal.

**NV:** Moving from agriculture to urbanization. Also, Nevada was the fastest growing state for about 22 years and it is the driest state in the nation - those two facts presents water problems.

**OK:** Conjunctive use management of stream water and groundwater in one basin has just begun.

**OR:** During the late 1980s, Oregon Administrative Rules Chapter 690, Division 9 (OAR 690-09), addressed the issue of hydraulic connection between surface water and groundwater. New applications for groundwater use have been more carefully evaluated for hydraulic connection with surface water in order to protect senior surface water rights, including instream water rights.

**RI:** Evidenced by the rules that have been promulgated over the past 30 years for groundwater protection and remediation; and the rules and policies reflecting increased awareness of water supply issues in the state.

**SC:** There is increased regulation of large withdrawals (>3 million gallons per month) in the State. Currently, groundwater withdrawals in 15 of the 46 counties are being regulated.

**SD:** South Dakota Codified Law Title 34 and 46.

**TX:** Implementation of regional planning, creation of groundwater conservation districts, introduction of concept of "desired future conditions" of groundwater resources.

**VT:** Greater legislative interest in regulating it.

**WA:** Through permit decisions, court cases, and laws and regulations, over the past few decades Washington has moved toward fully recognizing and managing surface and groundwater as a single resource.

**WI:** Increased.

**WV:** With the passing of the Clean Water Act, Groundwater Protection Act and the Water Resources Protection and Management Act, GW management has been greatly improved over the past 30 years.

## **Q6: Are there programs or settlements addressing international, interstate or Native American groundwater issues in the state?**

**AK:** Alaska Statute Chapter 46.15.035(a) "Water may not be removed from the hydrologic unit from which it was appropriated to another hydrologic unit, inside or outside the state, without being returned to the hydrologic unit from which it was appropriated nor may water be appropriated for removal from the hydrologic unit from which the appropriation is sought to another hydrologic unit, inside or outside the state, without the water being returned to the hydrologic unit from which it is to be appropriated, unless the commissioner . . ." Below is a URL for additional info: <http://www.legis.state.ak.us/basis/folio.asp>

**AZ:** Transboundary Aquifer Assessment Program. See answer to #7 below.

**CA:** Colorado River Quantification settlement between multiple states, the US and including local agencies. American Canal Settlement between US, CA and Mexico. Klamath River.

**CO:** Nine interstate compacts; two interstate agreements; one international treaty with Mexico; Federal Reserved water rights for Native American tribes.

**DE:** None that I am aware of EXCEPT for a New Jersey delineated Sole Source Aquifer which extends beneath a small area of the State of Delaware and which requires special review for federal funded projects.

**GA:** Coastal Sound Science Initiative to develop information and tools to manage saltwater intrusion along the Atlantic Ocean coastal plain.

**IA:** Iowa Administrative Code, Chapter 52.

**ID:** Ground water use has been included in Native American water rights settlements such as the Shoshone Bannock (Fort Hall) Agreement and the Nez Perce Agreement.

**IL:** 615 ILCS 50/ Level of Lake Michigan Act.

**IN:** Indiana's implementation of the Great Lakes Compact under IC 14-25-15.

**KS:** Local Enhanced Management Areas and Intensive Groundwater Use Control Areas allows for conservation plans to address groundwater declines to be addressed through mandatory reductions in ways allowed through prior appropriation alone.

**MI:** Great Lakes Compact. International Joint Commission (IJC) water quality agreements apply to Michigan as U.S. EPA rules are revised.

**MN:** Great Lakes Water Resources Compact.

**MT:** Treaty with Canada, reserved water right compacts with tribes, other states, and federal government (NPS, Forest Service).

**ND:** Quantification of Reserved Indian Water Rights on-going negotiations. American-Canadian issues associated with the Souris and Red River of the North.

**NE:** Interstate compacts and agreements.

**NH:** States in New England coordinate as needed when a groundwater related issue near a state border occurs.

**NJ:** Delaware River Basin Commission.

**NM:** The NM Interstate Stream Commission oversees 8 interstate compacts and is involved in interstate disputes on the Rio Grande, Colorado River, San Juan, and Pecos River, all of which involve issues associated with groundwater withdrawals. In addition there are settlements and disputes involving Native American water rights in the Espanola Groundwater Basin and on the San Juan River, tributary to the Colorado River.

**NV:** Adjudication of both surface and groundwater frequently require settlements on reserved rights of the tribes.

**NY:** Great Lakes Compact and Agreement.

**OH:** For a portion of Ohio, ORC 1522 Great Lakes-St. Lawrence River Basin Water Resources Compact

**OK:** Only stream water.

**OR:** Oregon Water Resources Department works with tribal governments on both surface water and



groundwater issues, including tribal claims to water.

**UT:** Resolved federal reserved water rights issues with the Shivwits Tribe. Currently working with the Ute Tribe and Navajo Nation to resolve their water right issues.

**VT:** Vermont has agreements with New Hampshire and Quebec, Canada for resource sharing.

**WA:** There was a settlement for the federal case regarding groundwater rights on the Lummi Reservation in Whatcom County.

**WI:** Wisconsin law requires consultation with sovereign tribes on any withdrawal subject to regional review under the Great Lakes Compact.

**WV:** State code 22-26 requires us to address any interstate transfers of our states waters.

**WY:** Modified North Platte Decree (2001) Amended Bear River Compact (1978) Upper Niobrara River Compact (1962).

## **Q8: Are there water conservation regulations applicable to groundwater use in the state law?**

**AK:** Title 11 Alaska Administrative Code 93.290(2) " a stop order to a person who, by means including free-flowing wells or drainage into lower strata underground, wastes water without putting it to a beneficial use;" Additionally, Alaska Statute Chapter 46.15.035(b)"The commissioner shall establish, by regulation, a water conservation fee for a use of water in which the water is removed from the hydrologic unit from which it was appropriated to another hydrologic unit inside or outside the state, without the water being returned to the hydrologic unit from which it was appropriated. The fee established under this subsection shall be graduated to encourage the conservation of water." Below is a URL for additional info: <http://www.legis.state.ak.us/basis/folio.asp>

**AZ:** Within AMAs, conservation requirements are established for industrial, municipal and agricultural sectors in the Management Plans.

**CA:** State Constitution Article 10 requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

**CO:** Designated Basin Rules (Designated Ground Water Basins); Section 37-90-137(4), C.R.S. (allocation of nontributary ground water.

**CT:** As part of a diversion permits and water supply planning regulations.

**DE:** Regulations Governing the Allocation of Water (3/1/1987).

**FL:** Water management districts are delegated by statute to manage water supply.

**GA:** Flint River Basin Regional Water Development and Conservation Plan, March 2006 Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion, June 2006.

**HI:** Conservation programs underway & various county ordinances requiring low-flow conservation plumbing and wastewater reuse in some areas.

**IA:** Iowa Administrative Code, Chapter 52.10.

**ID:** None specific to ground water use.

**IL:** ILLINOIS GROUNDWATER LAW: THE RULE OF REASONABLE USE, 1985 Illinois Department of Natural Resources, Office of Water Resources.

**IN:** Conservation requirements associated with the permitting of water withdrawals under IC 14-25-15 (Great Lakes Compact). Voluntary water conservation for other non-permitted withdrawals within the Great Lakes Basin and the remainder of the state.

**KS:** IGUCA and LEMAs, K.S.A. 82a1020.

**LA:** See above: La. Admin. Code, Title 43, Part VI, Subpart 1.

**MA:** Water Management Act MGL 21G and accompanying regulations 310 CMR 36.00 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D and accompanying regulations 313 CMR 4.00 MGL Chapter 111 section 160 and



Drinking Water Regulations 310 CMR 22.00 and accompanying Guidelines All three apply to surface and groundwater.

**MI:** Part 327, Great Lakes Protection, of the NREPA, MCL 32701 et. seq.

**MN:** See No. 1.

**MS:** Miss. Code Ann. Section 51-3-1.

**MT:** Controlled groundwater area statute 85-2-506, MCA.

**NC:** Water conservation measures for drought (G.S. 143-355.2, 2008).

**ND:** Regulation of flowing wells in the Fox Hills aquifer.

**NE:** Nebraska Groundwater Management and Protection Act.

**NH:** Statute - 485:61 Rules for Water Conservation, 2002 Rule - CHAPTER Env-Wq 2100 WATER CONSERVATION; 2005.

**NJ:** N.J.A.C. 7:19.

**NV:** Nevada Revised Statutes Chapter 540.

**NY:** NYS ECL 15-1501.

**OK:** Oklahoma Groundwater Law-82 Oklahoma Statutes, Sections 1020.1 et seq (1020.9, 1020.15, 1020.2, 1020.11). Groundwater Law adopted in 1972. Protection of natural flow of springs by amount of groundwater withdrawn found in 82 O.S. Section 1020.9A, adopted in 2003).

**OR:** Conservation is encouraged. Oregon Revised Statute (ORS) 537.455 and ORS 537.465 deal with water conservation, and the process of taking a portion of conserved water and applying it to new uses or lands, while leaving a portion instream.

**PA:** Drought regulations (4 Pa Code Chapter 118 & 119).

**RI:** Water Use and Efficiency Act 2009 (RIGL 46-15.3-4).

**SC:** S.C. Groundwater Use and Reporting Regulation. A "Best Management Plan" for water use and water conservation designed to protect water quality and reduce water consumption must be included in the application for a groundwater withdrawal permit.

**TX:** Texas Water Code Chapter 36.108 (d-2) requires balance between "highest practicable level of groundwater production and the conservation, preservation, protection, recharging, and prevention of waste of groundwater..."

**UT:** But must stay within appropriated amounts.

**VT:** 10 Vermont Statutes Annotated (VSA), Chapter 48.

**WA:** Conservation requirements apply to public water systems, many of which use groundwater.

**WI:** Section 281.346, Wisconsin Statutes (2009).

**WV:** Under Drought conditions the Division of Homeland Security and Emergency Management has a conservation plan. (Annex U).

**WY:** W.S. 41-3-909 State Engineer; powers generally W.S. 41-3-115 Application for use of water outside the state.

## **Q9: Does state law explicitly recognize or address the connection between surface water and groundwater?**

**AL:** While not stated explicitly, there are policy documents alluding to the importance of the interconnection between ground and surface water resources. Both are explicitly defined as waters of the state in state law.

**CA:** Only Section 1200 which includes antiquated misnomer of subterranean streams.

**CO:** Water Right Determination and Administration Act (Section 37-92-101 et seq, C.R.S.).

**CT:** Water quality standards, remediation standards regs, water supply regs.

**GA:** Georgia Flint River Drought Protection Act, O.C.G.A. 12-5-540, 2000 Legislative Session.

**HI:** High-level dike confined or (some) perch ground water aquifers have an assumed 1 to 1 relationship.

Pump tests are required of all wells > 50 gallons per minute to help assess relationship & other localized ground/surface water modeling efforts.

**IA:** Iowa Administrative Code, Chapter 52.1.

**ID:** Numerous statutes in Title 42 of Idaho Code and numerous court decisions clarifying the intent of the statutes.

**IL:** Groundwater Under the Direct Influence of Surface Water 611.212, 2006.

**IN:** Statewide assessment of water resource availability (ground water and surface water)

**KS:** K.S.A. 82a-730.

**LA:** There has been a divide b/t surface and ground; in 2012, state legislature expanded Groundwater Resources Commission to include surface water, now under the name of the Water Resources Commission; no explicit state law, but dawning recognition of the interconnectedness of both; also see Act 955 of 2010, on cooperative endeavor agreements to move large groundwater users to surface water sources

**MA:** Water Management Act MGL 21G and accompanying regulations 310 CMR 36.00 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D and accompanying regulations 313 CMR 4.00 Both laws apply to surface and groundwater.

**MD:** Not certain about this answer.

**MI:** Venting groundwater requirements for discharges and clean ups. Part 31, Water Resources Protection, of the NREPA, MCL 3101 et. seq. Part 201 Environmental Remediation, of the NREPA, MCL 20101 et. seq.

**MN:** See No. 1, but particularly Minn. Statutes, section 103G.287, Subd. 2.

**MT:** MT Supreme Court decision TU v. DNRC addressed groundwater / surface water connection in 2006, HB 831 from the 2007 legislative session was passed in response to this decision and is codified in 85-2-360 through 85-2-364, MCA.

**NE:** Nebraska Groundwater Management and Protection Act requirements for integrated management plans in certain areas.

**NH:** Statute - Groundwater Protection Act - 485-C:1 Statement of Purpose. Statute - STATE DAMS, RESERVOIRS AND OTHER WATER CONSERVATION PROJECTS - 481:1 Declaration of Policy.

**NM:** NM Water Statutes N.M.S.A. 1978 § 72-12-1 through 78-13-12. Rules and Regulations Governing the Appropriation and Use of Groundwater in New Mexico.

**NV:** The law doesn't explicitly address the connection (arguably), but our office interprets the law such that the two are connected. Hydrology dictates that the two are connected!!!

**OK:** Only one groundwater basin in Oklahoma has been designated a sole source aquifer and the amount of groundwater withdrawn must be protective of spring and stream flows (see 82 O.S. 1020.9A, adopted in 2003). Aquifer is the Arbuckle-Simpson groundwater basin and was the subject of intensive study.

**OR:** Oregon Administrative Rule (OAR) Chapter 690 Division 9 from 1988 addresses connection between surface and groundwater for new applications for groundwater rights.

**RI:** Shallow groundwater systems are recognized statewide in the implementation of rules and policies as being closely connected to surface water.

**SD:** SDCL 46-5.

**TX:** Edwards Aquifer Authority Act (EAA Act 1.14(a)(5)) recognizes "the extent of the hydro-geologic connection and interaction between surface water and groundwater."

**UT:** It addresses impairment. In basins that are shown to be interconnected, efforts are made to prevent impairment between the two sources.

**WA:** RCW 90.44.030, 1944.

**WI:** Section 281.34, Wisconsin Statutes (2003, revised 2009).

**WV:** State code 22-26 requires the state water plan to recognize the connection between surface and groundwater.

**WY:** W.S. 41-3-916 Priority of rights when 1 source of supply.

## Q10: Does state law explicitly address groundwater quality?

**AK:** Chapter 46.03 Environmental Conservation, below is a url for additional info:

<http://www.legis.state.ak.us/basis/folio.asp>

**AL:** The Alabama Dept of Environmental Management implements EPA requirements for recent enhancements to groundwater quality standards for public water systems.

**AZ:** Environmental Quality Act (1986) created ADEQ and the Aquifer Protection Program.

**CA:** Dickey Water Pollution Act, Cal. Stats. 1949, Ch. 1549, enacted July 28, 1949 Porter-Cologne Water Quality Control Act, Cal. Stats. 1969, Ch. 482.

**CO:** Better answered by the Water Quality Control Division.

**CT:** Water quality standards, remediation standards regs, water supply regs.

**DC:** Not statute law but Groundwater Regulations 21 DCMR 1150.

**FL:** By way of the ground water rule.

**GA:** Rules for Safe Drinking Water, Chapter 391-3-5, 1977 Rules for Water Quality Control, Chapter 391-3-6, 1964.

**IA:** Code of Iowa, 455B.271.

**IL:** 35 IL Adm Code 620, Groundwater Quality, 1991.

**IN:** Water quality regulations under the authority of the Indiana Department of Environmental Management.

**KS:** Contaminated groundwater systems are remediated.

**LA:** See Title 43 above.

**MA:** Water Management Act MGL 21G and accompanying regulations 310 CMR 36.00 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D and accompanying regulations 313 CMR 4.00 MGL Chapter 111 section 160 and Drinking Water Regulations 310 CMR 22.00 and accompanying Guidelines All three apply to surface and groundwater.

**ME:** Water Classification, 1976: all GW classified as "A" suitable for drinking. There is a "B" which has not been applied to any aquifer.

**MI:** Discharge standards for groundwater discharges, and groundwater cleanup criteria Part 31, Water Resource Protection, of the NREPA, MCL 3101 et. seq. Part 201, Environmental Remediation, of the NREPA, MCL 20101 et. seq. Part 213, Leaking Underground Storage Tanks, of the NREPA, MCL 21301 et. seq.

**MN:** See No. 1.

**MO:** Water Resources Law establishes special water quality protection areas. Water Pollution Law regulates contaminants that may enter groundwater.

**MT:** Title 75 MCA, not my area of expertise.

**NC:** Ground water classification and standards (G.S. 143-214.1, 15A NCAC 02L)

**ND:** You need to contact the N.D. Department of Health for specific statutes and dates.

**NH:** Groundwater Protection Act - RSA 485-C.

**NJ:** Ground Water Quality Standards (N.J.A.C. 7:9C).

**NM:** NM Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17 NM Water Quality Control Commission Regulations 20.6.3 NMAC.

**NV:** In NRS 533 and 534, it is addressed generally. Our sister agency, Division of Environmental Protection deals with water quality extensively.

**NY:** NYCRR Part 703.

**OK:** Groundwater quality standards have recently been established (82 O.S. Section 1084.1 and following-1993; Oklahoma Administrative Code Title 785: Chapters 45 and 46).

**OR:** Need to contact staff at the Oregon Department of Environmental Quality.

**RI:** Groundwater Protection Act of 1985 (RIGL 46-13.1); RI Water Pollution Act (RIGL 46-12).

**SC:** S.C. Pollution Control Act, 1969 S.C. Safe Drinking Water Act Underground Injection Control Program.

**SD:** SDCL 34A-2.

**TX:** Texas Commission on Environmental Quality regulations.

**UT:** You'll have to check with DEQ for references.

**VT:** 10 Vermont Statutes Annotated (VSA), Chapter 48.

**WA:** Ch. 90.48 RCW, Water Pollution Control, 1973 Ch. 90.54 RCW - Water resources act 1971, 1971.

**WI:** Chapter 160, Wisconsin Statutes (1985).

**WV:** WV Code Chapter 22 Article 12.

**WY:** For water quality issues, please contact the Wyoming Department of Environmental Quality - Water Quality Division.

## **Q11: Does state law consider the water needs of groundwater dependent ecosystems?**

**AK:** Alaska Statute Chapter 46.15.020(b)(1) "The commissioner shall adopt procedural and substantive regulations to carry out the provisions of this chapter, taking into consideration the responsibilities of the Department of Environmental Conservation under AS 46.03 and the Department of Fish and Game under AS 16;" below is a URL for additional info: <http://www.legis.state.ak.us/basis/folio.asp>

**AL:** Not explicitly defined.

**CT:** Water quality standards, remediation standards regs, water supply regs.

**DC:** Not explicitly but wetlands are covered in the DC Water Pollution Control Act of 1983.

**FL:** Water management districts are required to establish minimum flows and levels for critical waters, including ground water, and ecosystem impacts is one of the considerations.

**GA:** Georgia Flint River Drought Protection Act, O.C.G.A. 12-5-540, 2000 Legislative Session.

**IL:** Illinois has a Class III Special Resource Groundwater designation. 35 IL Adm Code 620.230, 1991.

**LA:** Not explicitly; however, see Managing Louisiana's Ground Water Resources, as well as Louisiana's 2012 Coastal Master Plan, at <http://www.coastalmasterplan.la.gov/>

**MA:** Water Management Act MGL 21G and accompanying regulations 310 CMR 36.00 Interbasin Transfer Act: M.G.L. c.21, §§ 8B-8D and accompanying regulations 313 CMR 4.00 Both laws apply to surface and groundwater.

**MD:** Maryland law and statute include statements of policy that authorize the Maryland Department of the Environment to control appropriation of surface water and groundwater to conserve and protect water resources of the State.

**ME:** Significant groundwater wells (above) are part of the Natural Resources Protection Act. A well, to be permitted, must demonstrate no adverse impact on wetlands or streamflows.

**MI:** Water withdrawal legislation considers impacts to streams Part 327, Great Lakes Protection, of the NREPA, MCL 327.32701 et. seq.

**MN:** See no. 1.

**MT:** Indirectly through protection of instream flow rights, probably other ways through water quality regulations.

**ND:** Public Interest NDCC 61-04-06 (various dates).

**NE:** Indirectly through some instream flow provisions contained in integrated management plans.

**NH:** RSA 485-C:21, V-c, (f) & (g).

**NJ:** N.J.S.A 58:1A.

**NV:** This is a tough one. The appropriation of Nevada's groundwater is based on capturing discharge which in many cases is ET from phreatophytes. In many cases, water is appropriated to the detriment of the phreatophytes.

**NY:** NYS ECL 15-1501.

**OH:** For a portion of Ohio, ORC 1522 Great Lakes-St. Lawrence River Basin Water Resources Compact, For

new ground water withdrawals greater than 1 MGD from within the Lake Erie Watershed.

**OK:** Only spring protection in the one basin, wetlands, fisheries, and endangered species--generally through water right permitting process.

**OR:** If springs, streams, rivers, or lakes are present, OAR 690-009 evaluates hydraulic connection between these surface water sources and proposed new groundwater appropriations. I do not believe that groundwater dependent ecosystems are specifically called out in any of our statutes and rules. The Nature Conservancy is working on this issue with the US Geological Survey's Portland, Oregon office.

**RI:** Water Use and Efficiency Act 2009 (RIGL 46-15.3-4).

**TX:** Edwards Authority Act has a central purpose of maintaining spring flows at San Marcos and Comal Springs.

**VT:** 10 Vermont Statutes Annotated (VSA), Chapter 48.

**WA:** Ch. 90.54 RCW - Water resources act 1971, 1971.

**WI:** Section 281.34, Wisconsin Statutes (2003, revised 2009).

**WV:** WV Code Chapter 22 Article 12.

### **Q13: Are the courts active in groundwater issues in the state?**

**AL:** When necessary.

**AR:** We've had a couple of appellate decisions over 20 years ago.

**AZ:** Groundwater disputes are largely handled by ADWR's administrative processes and appeals. Surface water disputes are handled by the courts.

**CO:** Far too numerous to list.

**CT:** do not have that information available.

**DE:** Recent involvement has been on conflicts between water users and impacts to shallow well users.

**HI:** Hawaii Supreme Court - Waiahole Ditch (Oahu), Na Wai Eha (Maui), Waiola Molokai, Robinson Estate (Kauai).

**ID:** There have been numerous court decisions over the past decade dealing with this issue in Idaho.

**IL:** Central Illinois Public Service Company vs. Pollution Control Board, 116 ILL.2d 397.

**IN:** Recent Supreme Court decision regarding ground water ownership, Town of Avon, Indiana.

**KS:** There has been an A.G. opinion on if the Chief Engineer could initiate an IGUCA within a Groundwater Management District.

**LA:** However, see Managing Louisiana's Ground Water Resources, particularly on governance and recent Attorney General opinions, pp. 23-30.

**MD:** There have been court cases related to groundwater use but this is not common.

**ME:** Maddox v. Giles, Maine Supreme Judicial Court, 1999: sustained groundwater as a property right.

**MI:** There are several relevant Michigan court decisions that affect groundwater issues. One of the more recent cases is Anglers of the AuSable, Inc. et. al, v MDEQ, et. al. Supreme Court Nos. 13863-66.

**MT:** District court decisions on appeal of administrative decisions, Supreme Court decisions.

**ND:** Historically, very little case law exists dealing with groundwater disputes.

**NH:** 2004-601, APPEAL OF THE TOWN OF NOTTINGHAM & a. (NH Supreme Court) Bassett v. Salisbury Mfg. 43 N.H. 569 (1862) Purdie v. Attorney General (143 N.H. 661 (1999).

**NJ:** Only with respect to specific permitting appeals.

**NM:** This is mostly relevant to water quantity decisions. Aamondt water rights case; recent case on Active Water Resources Management regulations.

**OK:** Messer-Bowers Co. v. State ex rel OWRB 8 P.3d 877 (2000); Jacobs Ranch, LLC v. Smith (Case No. 2006 OK 34); Kline v. State ex rel OWRB; Chickasaw and Choctaw Nations v. Gov. Fallin and OWRB (W.D. Okla. -- pending) and Tarrant Regional Water District v. Herrmann, et al. 656 F.3d 1222 (Petition for Writ of Certiorari filed by Tarrant in U.S. Supreme Court--pending).

**SD:** Hines v SD.

**TX:** Day v. Edwards Aquifer Authority (2012) Houston & T.C. Railway Co. v. East (1904) Many others...

**UT:** many cases since 1935.

**VA:** But in general, Virginia courts have heard cases dealing with what groundwater rights property owners have. Questions of liability for groundwater withdrawals that affect karst areas also have been heard in Virginia courts.

**WA:** There are many.

**WI:** Lake Beulah Management District v. Dep't of Natural Res., 2011 WI 54 (July 6, 2011) and Lake Beulah Management District v. Village of East Troy, 2011 WI 55 (July 6, 2011).

### **Q15: Do regulations differ for each water user types listed above (e.g. municipal use vs. irrigation)?**

**AK:** In regard to water quality, public water supply sources are more tightly regulated than that of private domestic wells.

**AL:** There are additional requirements for all public water systems.

**AZ:** Permitting of domestic wells is regulated. Use of water from those wells is not. Separate water rights and conservation programs are established within AMAs for each use sector individually.

**CA:** Regulations only for testing and reporting of drinking water supplies to Dept of Public Health.

**CO:** Statutory regulation and court-decreed water rights address different types of use differently. It's too detailed to explain in the context of this survey.

**FL:** Consumptive use regulations apply to higher-volume users, public water systems must comply with drinking water requirements, which include sampling and reporting.

**GA:** Non-farm groundwater user regulated by Rules for Groundwater Use and Water Well Standards Act, farm groundwater user regulated only by Water Well Standards Act.

**HI:** Well Construction standard requirement differ amongst size, end use, type of water needed. In Ground Water Management areas different measures of reasonable use are applied depending on use and public trust uses have a higher priority.

**IA:** see Code of Iowa 455B.271. Specific restrictions for irrigation. Specific restrictions for certain aquifers.

**ID:** In home domestic use may be exempt in the event of curtailment of ground water use - all others are subject to same requirements. Cities may condemn senior rights to avoid curtailment.

**IL:** Quality Regulations vs. Quantity Regulations.

**KS:** Perfection periods are typically longer for public water suppliers than irrigators. However, all are under the same priority system.

**LA:** Primarily, our regulatory interest is in aquifer protection, with a strong interest in well registration and management, both for industrial, agricultural, and public supply; not much difference in terms of regulation.

**MD:** Water appropriation regulations are different for agricultural users than for other users.

**ME:** only bottled water withdrawals are effectively regulated. Large industrial withdrawals may be regulated if they are associated with a Site Location of Development permit.

**MI:** Different regulations for community or non-community water supplies. Water withdrawal legislation addresses irrigation.

**MN:** For example, public water suppliers have extra responsibility to do water supply planning and employee conservation measures that are not equally applied to agricultural irrigators.

**MO:** There are different regulations for each user type. However, the overall intent is the protection of groundwater.

**MS:** Potable water supply is provided the highest priority of use. State policy allows for the permitting of different volumes depending on specified beneficial use.

**MT:** only to the extent that small groundwater uses (mostly for domestic purposes) are exempt from



permitting requirements.

**NC:** registration of water withdrawals has a higher threshold for irrigation versus other types of users (1,000,000 gpd vs. 100,000 gpd).

**ND:** Refer to NDCC 61-04, NDAC 89-03-01 and 02. Also Health Dept., Public Service Commission, and Geological Survey regulations.

**NH:** Depending how much water is used, the large groundwater withdrawal permitting requirements are triggered if a new groundwater withdrawal will exceed 57,600 gallons over any 24-hour period. Additionally, groundwater used by public water systems must comply with drinking water standards

**NJ:** Highest quality water reserved for potable purposes or other activities requiring high quality sources. Next rule iteration will propose to prohibit non-potable, consumptive uses from high quality ground water. N.J.A.C. 7:19.

**NM:** They do not differ for groundwater quality.

**NV:** I'm applying the word "regulations" to include statutory language. Municipalities are treated differently in many instances to accommodate their issues, i.e. need infrastructure, at the mercy of growth, etc.

**NY:** Some users are exempt from some of the requirements.

**OH:** Water withdrawal facility registration (>100,000 GPD) are the same for all users, but there are differences in regulations between private and public water systems in Ohio. For example, well construction and water sampling requirements.

**OK:** Waste by depletion and waste by pollution determinations required for the issuance of permits differ.

**OR:** Municipal water rights, both surface water and groundwater, are not subject to forfeiture after 5 years of non-use. Municipal rights also have some additional flexibility.

**PA:** See response to question #1 above.

**RI:** Agriculture has fewer restrictions on use.

**SC:** Water quality regulations differ among the various water user types. Regulations regarding groundwater withdrawals apply only to large users in certain areas of the State.

**VT:** Based upon EPA prioritization smallest water systems have fewer regulations with more regulation as the system size increases.

**WA:** Some inchoate municipal water rights are considered valid. The State Attorney General issued an opinion on permit-exempt withdrawals that allow some large withdrawals to occur without water rights.

**WI:** Overall groundwater quality and quantity regulations are consistent for all users, construction standards intended to protect groundwater differ somewhat between potable and non-potable wells.

**WV:** Drinking groundwater regulations, both public and private, are more strict than industrial groundwater regulations.

## **Q16: Does your state encourage the use of voluntary measures for addressing groundwater issues?**

**AK:** Individuals can volunteer to have water levels in their well monitored.

**AL:** The Alabama Clean Water Partnership works with a number of state and federal agencies to address issues relating to both ground and surface water.

**CA:** California Water Code Sections 1075t0 et. seq. but these statutes concern voluntary groundwater management planning and program implementation.

**CO:** We are not averse to it, but there is no formal program to encourage it.

**CT:** Technical guidance, BMPs, information/education, incentives.

**DC:** Most of the concerns relate to contamination issues. Property owners who are responsible parties are encouraged to enter the Voluntary Clean Lands Program if there is onsite contamination that is not already under regulatory oversight.

**DE:** Primarily regarding water conservation efforts.



**FL:** BMPs for agricultural water consumption and nutrient reduction, informal programs for water use and water quality improvements.

**HI:** Commission offers and pays for mediation to settle disputes between parties if both are agreeable. Conservation program encourages efficient use of ground water.

**ID:** The state has engaged in a series of cooperative aquifer planning and management efforts throughout the state to avoid conflicts.

**IL:** Illinois encourages local groundwater protection measures in addition to state groundwater protection regulations.

**IN:** Water Rights: Emergency Regulation Statute (IC 13-2-4) allows for voluntary resolution of ground water rights issues.

**KS:** Local Enhanced Management Areas allows for a locally defined conservation plan within a GMD, that if accepted and ordered by Chief Engineer can have mandatory restrictions.

**LA:** See CEA agreements, Act 955 of 2010.

**MD:** Unsure of the intent of this question, however Maryland has a drought management and response plan that requests voluntary water use reductions under certain scenarios.

**MN:** Particularly by the agricultural community.

**MO:** For municipal and industrial uses the state encourages leak detection and reduction measures from systems as well as complete metering of water delivery and usage. For irrigated agriculture production the state recommends development of irrigation water management plan and/or high efficiency practices. During periods of drought the state encourages water conservation measures at various levels.

**MS:** Ag producers have been encouraged to implement water conservation practices.

**MT:** To a limited degree through state water planning, not sure on water quality side.

**ND:** Regulate discharge on flowing wells in the Fox Hills aquifer.

**NH:** Water Conservation Groundwater Protection Private well testing.

**NJ:** Conservation programs.

**NM:** NM has a Voluntary Remediation Program. Also the NM Water Quality act requires that the administering agency seek voluntary compliance before pursuing enforcement.

**NV:** But only as it fits within the law.

**OH:** For some issues (e.g. Voluntary Action Program (clean-up of old properties), Ohio Administrative Code 3745-300; community public water system source water protection planning.)

**OK:** Metering, backflow prevention valves encouraged---water well construction standards mandatory

**OR:** We strongly support voluntary measures to solve water issues.

**PA:** Wellhead protection program is voluntary.

**RI:** State and water suppliers issue drought advisories to encourage reduced use.

**SC:** The Wellhead Protection Program is voluntary and allows for increase protection of source areas that supply water to public supply wells.

**VT:** Source Water Protection plans are required for public community and non-transient, non-community water systems.

**WI:** Wellhead protection plans and ordinances are required only for municipal wells constructed after May 1, 1992. All public water systems are encouraged to identify wellhead protection areas and take protective actions.

**WV:** Our state encourages the public to protect the quality and quantity of the states groundwater.