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Russell M. McGlothlin
Brownstein Hyatt Farber Schreck, LLP

Jena Shoaf Acos
Brownstein Hyatt Farber Schreck, LLP

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THE GOLDEN RULE* OF WATER MANAGEMENT

*Russell M. McGlothlin** & *Jena Shoaf Acos***

I. Introduction

California follows a "Golden Rule" of water management, which requires management of the state's water for maximum beneficial use. This principle is codified at Article X, Section 2 of California's Constitution. However, the Golden Rule has a qualifier—an asterisk—which requires that water management "preserve water right priorities to the extent those priorities do not lead to unreasonable use."[1] We call this qualifier the *Mojave* Rule, named after the California Supreme Court's decision in *City of Barstow v. Mojave Water Agency*.[2] The Golden Rule* is the foundation of water management in California and the *Mojave* Rule is the key qualifier.

This article explores the Golden Rule* as a lens to analyze perplexing water management issues and controversies, including the tension between "public" and "private" interests affected by water management; balancing the countervailing interests of adaptable water management on the one hand, and water supply reliability and legal certainty on the other; the demarcation between reasonable water regulations and a taking of a water right; and the dual roles of the courts to both adjudicate the rights of the litigants and advance implicated social welfare interests affected by water management.

These issues are analyzed here in two parts. Part II explains the overarching constitutional obligation on public agencies and the courts to manage water resources for maximum beneficial use in a manner that

*Russell McGlothlin is a shareholder in the Santa Barbara office of Brownstein Hyatt Farber Schreck, LLP and is a member of the firm's Natural Resources Department. His practice is focused on water law and policy in California and the western United States.

**Jena Shoaf Acos is an associate in the Santa Barbara office of Brownstein Hyatt Farber Schreck, LLP and a member of the firm's Natural Resources Department specializing in water law and policy.

[1] City of Barstow v. Mojave Water Agency, 5 P.3d 853, 864 (Cal. 2000).

[2] City of Barstow v. Mojave Water Agency, 5 P.3d 853 (Cal. 2000).

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reasonably preserves common law water rights. This part discusses the underlying nature of a water right and water right priorities in California and how the Golden Rule* balances the tensions that underlie water management. Part III discusses application of the Golden Rule*. This part explains how the rule may be used to assess whether a water management regulation will sustain legal challenge, the courts' duty to apply the Golden Rule* in water management conflicts, operation of the Golden Rule* in the recently enacted Sustainable Groundwater Management Act (SGMA), projections concerning the Golden Rule* in future groundwater basin adjudications, and how the rule may apply to conflicts concerning the use of subterranean storage space for groundwater storage and conjunctive use programs. A postscript provides an update on recent California legislation enacted to streamline the judicial procedures applicable to groundwater adjudications and to ensure that future groundwater adjudications are managed consistent with SGMA.

II. Understanding the Golden Rule*

A. The Beneficial Use Principle

The Golden Rule* begins with the beneficial use principle. Central to water law throughout the United States,[3] the principle prohibits the wasting of water resources and requires that water only be used for beneficial purposes through reasonable means.[4] In California, the beneficial use requirement is mandated by Article X, Section 2 of the state's Constitution, which provides, in part:

> [T]he general welfare 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

[3] *See, e.g.*, Alaska Const. art. VIII, § 13 (West 2015); Ariz. Rev. Stat. Ann. § 45-141(a) (West2015); Cal. Const. art X, § 2 (West 2015); Fla. Stat. §§ 373.019(16), .223(1) (Westlaw 2015); Ga. Code Ann. § 12-5-91 (West 2015); Haw. Rev. Stat. §174-49(a) (West 2015); Idaho Code Ann. § 42-104 (West 2015); 525 Ill. Comp. Stat. 45/6 (West 2015); Ind. Code Ann. § 14-25-1-1 (West 2015); Ky. Rev. Stat. Ann. § 151.110(1)(a) (West 2015); Miss. Code Ann. § 51-3-1 (West 2015); Neb. Rev. Stat. Ann. § 46-702 (West 2015); Nev. Rev. Stat. Ann. § 533.035 (West 2015); N.M. Const. art XVI, §3 (West 2015); N.C. Gen. Stat. Ann. § 143-215.12 (West 2015); N.D. Cent. Code § 61-04-01.2 (West 2015); Or. Rev. Stat. Ann. § 537.525(3) (West 2015); S.D. Codified Laws § 46-1-4, -8 (West 105); Tex. Water Code Ann. § 11.025 (West 2015); Utah Code Ann. §§ 73-1-3, 73-3-1(4) (West 2015); Wyo. Stat. Ann. § 41-3-101 (West 2015).

[4] *See, e.g.*, Cal. Const. art. X, § 2; Miss. Code Ann. § 51-3-1 (West 2015); S.D. Codified Laws § 46-1-4 (West 2015).

> exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.[5]

California's courts have explained that the Constitution "declares the state's policy to achieve maximum beneficial use of water and prevention of waste, unreasonable use and unreasonable method of use."[6] Application of the policy is fact-dependent. The policy does not prescribe a uniform management protocol across the state, but considers each specific circumstance in seeking to maximize water's social utility through a balancing of social, economic, and environmental interests—the "triple bottom line."[7]

The interests balanced under Article X, Section 2 have developed over time along with evolving societal norms and technical sophistication.[8] Historically, the beneficial use principle largely focused on avoiding wasteful uses and preserving water for consumptive uses.[9] Modern application of the principle requires comprehensive consideration of environmental and other diffuse public interests.[10] As a result, maximizing the beneficial use of water does not require that water be put to maximum beneficial consumptive use, but rather requires optimizing of the net social utility achieved from balancing the costs and benefits of all potential uses of water, including non-consumptive uses.[11]

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[5] Central & West Basin Water Replenishment Dist. v. Southern California Water Co., 135 Cal. Rptr. 2d 486, 495 (Ct. App. 2003) (citing CAL. CONST. art X, § 2).

[6] Erickson v. Queen Valley Ranch Co., 99 Cal. Rptr. 446, 450 (Ct. App. 1971); *see also* Central & West Basin Municipal Water Dist. v. Water Replenishment Dist. of So. Cal., 150 Cal. Rptr. 3d 354, 359-360 (Ct. App. 2012); California American Water v. City of Seaside, 107 Cal. Rptr. 3d 529, 536 (Ct. App. 2010); Hi-Desert Cty Water Dist. v. Blue Skies Country Club, Inc., 28 Cal. Rptr. 2d 909, 919 (Ct. App. 1994).

[7] Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 45 P.2d 972, 1007 (Cal. 1935) ("What may be a reasonable beneficial use, where water is present in excess of all needs, would not be a reasonable beneficial use in an area of great scarcity and great need. What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time."); *accord* People *ex rel*. State Water Res. Control Bd. v. Forni, 126 Cal. Rptr. 851, 855 (Cal. Ct. App. 1976).

[8] *See* Tulare Irrigation Dist. 45 P.2d 972, 1007 ("What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time."); Joslin v. Marin Mun. Water Dist., 429 P.2d 889, 894 (Cal. 1967) ("[A] reasonable use of water depends on the circumstances of each case"); *In re* Water of Long Valley Stream Sys., 599 P.2d 656, 665 (Cal. 1979) ("[A] reasonable use of water varies with the facts and circumstances of the particular case").

[9] *See generally*, DAVID H. GETCHES, WATER LAW IN A NUTSHELL 137–38 (4th ed. 2009); *see also* Tulare Irrigation Dist., 45 P.2d 972, 1007 (holding that field flooding to exterminate rodents was wasteful and non-beneficial). "Consumptive use" includes using water for domestic, agricultural and industrial purposes.

[10] *See infra*, section III.B.

[11] Frank J. Trelease, *The Model Water Code, the Wise Administrator, and the Goddam Bureaucrat*, 14 NAT. RESOURCES J. 207, 211 (1974) (noting that "[w]hat is to be maximized is welfare from water use, not water use itself"); *see also* 1 Robert E. Beck & Owen L. Anderson,

B. The Asterisk: The *Mojave* Rule

Although California law demands maximum beneficial use of its water resources, the state's courts have acknowledged the sanctity of water rights.[12] The California Supreme Court's opinion in *City of Barstow v. Mojave Water Agency* is instructive.[13] In *Mojave*, the Mojave Water Agency and the majority of groundwater users within the Mojave River Groundwater Basin agreed to a stipulation that proportionately allocated groundwater production rights among the users, irrespective of common law water right priorities.[14] The stipulating parties asked the court to impose the stipulated judgment on all parties, including on a group of landowners who objected to the stipulation on the grounds that they possessed superior overlying right.[15] The stipulating parties argued that the proportional allocation was legally justified on equitable grounds, and the trial court ruled in their favor. On review, the Court of Appeal disagreed and sided with the objecting landowners.[16] The California Supreme Court affirmed the Court of Appeal's decision, holding that while the trial court has the power to order a court-supervised management plan—or "physical solution"—to protect the groundwater basin, "an equitable physical solution must preserve water right priorities to the extent those priorities do not lead to unreasonable use."[17] Hence, the "*Mojave* Rule" requires due regard for common law water right priorities.

C. Water Rights Embody a Social Compact

A water right is a usufructuary right; that is, it imparts only the right to *use* water on a recurring basis, not the right to *own* water. A water right is nonetheless a form of property that affords rights to control, consume, earn income from, and, in many cases, transfer the entitlement.[18]

Water and Water Rights, Elements of Prior Appropriation, § 12.02(c)(2) (Amy L. Kelly ed., 4th ed. Lexis Nexis/Matthew Bender 2011).

[12] City of Barstow v. Mojave Water Agency, 5 P.3d 853, 862-64 (Cal. 2000); Hi-Desert Cty Water Dist. v. Blue Skies Country Club, Inc., 28 Cal. Rptr. 2d 909, 917–19 (Ct. App. 1994).

[13] City of Barstow v. Mojave Water Agency, 5 P.3d 853 (Cal. 2000).

[14] *Id*. at 870–71.

[15] See discussion of water right priorities, *infra* at Subpart II.D.

[16] City of Barstow v. Mojave Water Agency, 75 Cal. Rptr. 2d 477 (1998).

[17] City of Barstow v. Mojave Water Agency, 5 P.3d at 864; *see also* Hi-Desert Cty Water Dist. v. Blue Skies Country Club, Inc., 28 Cal. Rptr. 2d 909, 919 (". . .we are mindful of the constitutional mandate to protect the parties' rights in a manner that minimizes waste while maximizing beneficial use of the water in controversy. . .").

[18] Government agencies also frequently treat water rights as property for other purposes, such as taxation. The tax assessor may separately assess water rights depending on the tax regime of a particular state. *See, e.g.,* In re Booth, 15 Haw. 516, 516 (1904); Cal. State Board of Equalization,

Water rights, as a form of property, are also entitled to certain protections against uncompensated taking by the government.[19] The scope of protected property interests encompassed in a water right is limited, however, by the essential character of water as a socially-important "common-pool" resource.[20]

A water right essentially embodies a social compact between the state and the water diverter whereby the diverter is afforded a right to divert and use water on a recurring basis, provided that the diverter adheres to certain important social norms.[21] Reflecting the critical social importance of the resource, a water right is inherently limited by the beneficial use doctrine; no right may attach to a wasteful or unreasonable use.[22] Similarly, the law abhors speculative behavior that fails to make active use of the limited supply; hence, many water rights may be forfeited for extended non-use.[23] Likewise, reflecting the shared and transient nature of the resource, the quantity of water afforded by a water right may be restricted to avoid unreasonable impacts to other consumptive users of water or to the environment or other non-consumptive interests.[24] Indeed, perhaps the fundamental underlying purpose of water law

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Assessment of Water Companies and Water Rights, Part II: Assessment of Water Rights, Assessors' Handbook § 542 (AH 542), 6 (2000), http://www.boe.ca.gov/proptaxes/pdf/ah542.pdf. Similarly, water rights' owners may exchange their water rights for like-kind property pursuant to Section 1031 of the Internal Revenue Code. *See* Rev. Rul. 55-749, 1955-2 C.B. 295.

[19] *See* Arizona v. California, 460 U.S. 605, 620 (1983); Dugan v. Rank, 372 U.S. 609, 625 (1963); Ivanhoe Irrigation Dist. v. McCracken, 357 U.S. 275, 290–91, 296–97 (1958); United States v. Gerlach Live Stock Co., 339 U.S. 725, 733–36 (1950) (discussing multiple times in which Congress acknowledged and provided funding to compensate for the taking of water rights); Int'l Paper Co. v. United States, 282 U.S. 399, 407 (1931); State Dep't of Ecology v. Grimes, 852 P.2d 1044, 1054–55 (Wash. 1993) ("A vested water right is a type of private property that is subject to the Fifth Amendment prohibition on takings without just compensation."); *see also* Russell M. McGlothlin and Scott S. Slater, *No Fictions Required: Assessing the Public Trust Doctrine in Pursuit of Balanced Water Management,* 117 U. DENV. WATER. L. REV. 53, 54, 86–89 (2013).

[20] *See* Joslin v. Marin Mun. Water Dist., 429 P.2d 889, 893–94 (Cal. 1967); Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200, 210 (Cal. Ct. App. 2014).

[21] *See infra*, notes 22-24.

[22] CAL. CONST. art X, § 2 (West 2015); *City of Barstow,* 5 P.3d at 863; California v. Riverside Cnty. Superior Court, 93 Cal. Rptr. 2d 276, 281 (Cal. Ct. App. 2000); Jordan v. City of Santa Barbara, 54 Cal. Rptr. 2d 340, 353 (Cal. Ct. App. 1996).

[23] Cal. Trout v. State Water Res. Control Bd., 225 Cal. Rptr. 184, 204 (The statutory requirement of due diligence does not countenance a scheme placing water rights in cold storage for future use); North Kern Water Storage Dist. v. Kern Delta Water Dist., 54 Cal. Rptr. 3d 578, 581 (Cal. Ct. App. 2007). Neither the riparian or overlying right, however, is dependent upon use of water and cannot be lost by abandonment; nonuse can impact the right if the water is appropriated or prescribed by another user. Lux v. Haggin, 10 P. 674, 753–54 (Cal. 1886); Fall River Valley Irrigation Dist. v. Mt. Shasta Power Corp., 259 P. 444, 448 (Cal. 1927).

[24] *See* City of Pasadena v. City of Alhambra, 207 P.2d 17, _ (providing for the reduction in pumping by all users to avoid continued overdraft of the groundwater basin an accompanying undesirable physical results); CAL. WATER CODE § 1257.5 (West 2011) (allowing the SWRCB to establish streamflow requirements as it deems necessary to protect fish and wildlife as conditions in

is to manage the imposition of externalities among competing users of the "common pool" resource. As discussed further *infra* at Part III.A., avoiding the externalities of unbridled use of water is the essence of the caveat to the *Mojave* Rule: preservation of water right priorities to the extent those priorities do not lead to unreasonable use.

D. Basic Water Right Priorities in California

California has developed a dual system of water rights in which both landowner-based water rights (riparian and overlying rights) and appropriative rights are recognized.[25] Riparian and overlying rights arise from ownership of property abutting, or contiguous to, a watercourse or overlying a groundwater basin.[26] Riparian and overlying rights afford the landowner only the right to use water on the riparian or overlying land. Between landowners, riparian and overlying rights are considered correlative, or equal in priority, to the rights of all other owners of property that abut or overlie the common supply. Absent adjudication by a court or the State Water Resources Control Board (SWRCB), the quantity of water a riparian or overlying landowner can divert is only limited by the correlative nature of the right and the constitutional requirement of reasonable and beneficial use.[27]

In contrast to riparian and overlying rights, the doctrine of prior appropriation entitles a prospective user to appropriate water for use on non-riparian or non-overlying land so long as the appropriated water is surplus to the present cumulative needs of users with more senior rights in the area, including landowners exercising riparian or overlying rights and more-senior appropriators.[28] Priority among appropriators is based on a first-in-time, first-in-right system whereby the earliest appropriator

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diversion permits and licenses). *See generally* Jesse A. Boyd, Note, *Hip Deep: A Survey of State Instream Flow Law From the Rocky Mountains to the Pacific Ocean*, 43 Nat. Resources J. 1151 (2003) (discussing how one may change instream flows in Rocky Mountains, Great Basin, and Pacific states to benefit the fishery resource).

[25] *City of Barstow,* 5 P.3d at 853.

[26] *Id*. at 863; Cal. Water Serv. Co. v. Edward Sidebotham & Sons, Inc., 37 Cal. Rptr. 1, 7 (Cal. Ct. App. 1964); Vineland Irrigation Dist. v. Azusa Irrigating Co., 58 P. 1057, 1059–60 (Cal. 1899).

[27] *City of Barstow,* 5 P.3d at 872; City of Santa Maria v. Adam, 149 Cal. Rptr. 3d 491, 501–02 (Cal. Ct. App. 2012); Los Osos Valley Assocs. v. City of San Luis Obispo, 36 Cal. Rptr. 2d 758, 762 (Cal. Ct. App. 1994); Tehachapi-Cummings Cnty. Water Dist. v. Armstrong, 122 Cal. Rptr. 918, 924–25 (Ca. Ct. App. 1975); Niles Sand & Gravel Co. v. Alameda Cnty. Water Dist., 112 Cal. Rptr. 846, 852–53 (Cal. Ct. App. 1974).

[28] United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 168 (Cal. Ct. App. 1986). Priority between appropriative users is predicated on the rule of first in time being first in right. For water rights initiated after 1914, that date is usually determined by the date on which the original application was filed with the SWRCB. *See* Cal. Water Code, § 1450 (West 2015).

has the strongest right. Appropriative surface water rights initiated before December 19, 1914, do not require an appropriation permit from the SWRCB.[29] Surface water appropriated after December 19, 1914, is subject to the Water Code's statewide comprehensive regulatory process and requires a discretionary permit or license from the SWRCB.[30]

Appropriations of groundwater flowing within a "subterranean stream" are also subject to the SWRCB's permitting jurisdiction, but appropriations of "percolating" groundwater are not.[31] Rights to percolating groundwater are instead subject to judicial determination and curtailment as necessary.[32]

Appropriators may also acquire prescriptive rights to percolating groundwater against landowners possessing overlying rights.[33] An appropriator may perfect a prescriptive right where the appropriator continually pumps groundwater from an overdrafted groundwater supply for a period of at least five consecutive years without a landowner lawsuit to enjoin the taking of non-surplus groundwater by the appropriator.[34] The

[29] Under the early (pre-1914) doctrine of prior appropriation, the first party to appropriate water from a natural watercourse and apply the water to a beneficial use was deemed to possess the paramount right to the use of that water. Jennison v. Kirk, 98 U.S. 453, 457–58 (1878); Tartar v. Spring Creek Water & Mining Co., 5 Cal. 395, 398–99 (Cal. 1855). Thus, as between appropriators, the controlling rule of priority is often described as the rule of first-in-time, first-in-right. Tulare Irrigation Dist. v. Lindsay–Strathmore Irrigation Dist., 45 P.2d 972, 990–91 (Cal. 1935); United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 168 (Cal. Ct. App. 1986).

[30] *See* Cal. Water Commission Act, Stats.1913, c.586, p.1012; CAL. WATER CODE § 1225 (West 2015); *see also* People v. Shirokow, 605 P.2d 859, 865 (Cal. 1980).

[31] Wat. Code § 1200; North Gualala Water Co. v. SWRCB, 43 Cal. Rptr. 3d 821.

[32] *City of Barstow,* 5 P.3d 853.

[33] *See, e.g*., City of Los Angeles v. City of San Fernando, 123 Cal. Rptr. 1, 69 (Cal. Ct. App. 1975).

[34] Originally, the California Supreme Court determined that once the overdraft period began, all pumping was adverse to other users and dormant landowners. The court developed the doctrine of "mutual prescription" and required proportional reductions in to use. City of Pasadena v. City of Alhambra, 207 P.2d 17, 35 (Cal. 1949). The mutual prescription approach was later modified in a case involving the use of water by public agencies. In *City of Los Angeles v. City of San Fernando*, the court made a significant change in the doctrine of mutual prescription by holding that Civil Code section 1007 is applicable to groundwater adjudications. City of Los Angeles v. City of San Fernando, 537 P.2d 1250, 1318 (Cal. 1975). Under Civil Code § 1007, neither private parties nor public entities can obtain prescriptive rights against public utilities, municipalities or other public entities. CAL. CIV. CODE § 1007 (West 2015). As a result, when Civil Code § 1007 is applied to groundwater adjudications, prescription is no longer mutual. Private pumpers can then only obtain prescriptive rights against other private pumpers. Under current California groundwater rights law, a municipal or other public groundwater pumper is in a preferred position once overdraft begins. Although public entities generally have a junior priority during surplus basin conditions, traditional water right priorities are altered by prescription. Under *City of Los Angeles v. City of San Fernando*, municipalities and other public entities that extract groundwater during a period of overdraft may develop prescriptive rights and thereby eliminate the common law priority afforded to overlying landowners. City of Los Angeles v. City of San Fernando, 537 P.2d 1250, 1314 (Cal. 1975). The public pumpers' groundwater use is adverse to private groundwater pumpers and particularly adverse to those overlying owners not extracting groundwater during the prescriptive period. However, even though public

effect of prescriptive rights is to place the appropriator in an equal priority position with the landowners, who—absent the development of prescriptive rights—enjoy senior priority to groundwater over appropriators in times of shortage.

E. The Golden Rule* Balances Important Countervailing Interests

The Golden Rule* promotes both the societal interests of maximum beneficial use of limited water resources and the sanctity of individual water right priorities as dual interests and aspects of management.[35] The Rule places an onus on decision-makers—whether a local or state agency or the court—to fully consider, balance, and promote both interests to the extent reasonably feasible.[36] In doing so, the Golden Rule* demands a balancing of countervailing social interests. These include the tension between consumptive and non-consumptive interests, the rights of the individual water user versus the interests of other users and the broader public welfare, and adaptability versus water supply dependability and legal certainty. For example, the goal of maximum beneficial use requires some degree of adaptable management to reallocate water among consumptive uses and between consumptive and non-consumptive purposes. However, legal certainty and water supply reliability are important to promote beneficial water-dependent investments and enterprises.[37] Of course, absolute certainty—guaranteed protection of existing quantities of water supply—is neither practical nor economically efficient.[38] The desire for legal certainty cannot trump the need to adapt and modify water use over time.[39]

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pumpers cannot lose water rights by prescription, their acquisition of prescriptive groundwater rights can be limited by an overlying owner's "self-help" – determined through the maximum amount of groundwater pumped by the overlying owner during the prescriptive period. *See* Hi-Desert Cty Water Dist. v. Blue Skies Country Club, Inc., 28 Cal. Rptr. 2d 909, 915 (Ct. App. 1994).

[35] Hi-Desert Cty Water Dist. v. Blue Skies Country Club, Inc., 28 Cal. Rptr. 2d 909, 919 (". . .we are mindful of the constitutional mandate to protect the parties' rights in a manner that minimizes waste while maximizing beneficial use of the water in controversy. . .").

[36] *Id.; City of Barstow,* 5 P.3d at 864.

[37] *See* Brian E. Gray, *The Shape of Things to Come: A Model Water Transfer Act for California*, 14 Hastings W.-Nw. J. Envtl L. & Pol'y 623, 624, 638, 657 (2008); *see also* Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 Iowa L. Rev. 631, 702 (1986) ("Undoubtedly, the most difficult problem facing environmental and natural resources law is to reestablish some level of certainty and security in private interests in natural resources").

[38] *See* Richard A. Posner, Economic Analysis of Law 68 (8th ed. 2011) ("Economic theory implies that property rights will be redefined from time to time as the relative values of different uses of land [or in our case water] change.").

[39] It should also acknowledge that optimal water management often requires partial sacrifice of important societal interests to accommodate other overriding interests to maximize overall public

These core tensions inform the legitimate expectations of both private individuals and the public at large. The public may reasonably expect that water resources will be managed to maximize society's welfare consistent with contemporary values, changing hydrologic factors, and improved technology.[40] Private water users may reasonably expect that the *Mojave* Rule will be followed in the distribution of regulatory burdens[41] among competing water users.[42] Harmonizing the goals of maximum beneficial use and respect for water right priorities is the essence of the Golden Rule.*

III. Application of The Golden Rule*

A. When a Water Regulation "Goes Too Far" and When It Is "Just Right"

The two-part Golden Rule* provides a helpful perspective to evaluate the legality of water management regulations. Consistent with the rule's first part—the constitutional policy for maximum beneficial and waste prevention—the state possesses broad police powers to regulate water resources consistent with this policy. Under the rule's second part—the asterisk—water management by the state or its subdivisions must exhibit a reasonable effort to preserve water right priorities consistent with the *Mojave* Rule. Another way to view this duality is to recognize that a core underpinning of water management is imposition of the individual burdens of water management, including pumping restrictions and pump assessments. How those burdens are distributed on individual private water users matters in relation to the reasonableness of the impact on private rights and the reasonable expectations inherently embodied within them. The distribution of burdens of water management is the locus of the *Mojave* Rule, which instructs that the burdens must be imposed consistent with common law water right priorities.[43]

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welfare. For instance, we may need to tolerate a use that is less than optimally efficient out of respect for water right priorities and the legal certainty that the priority system affords. Conversely, we may need to sacrifice legal certainty to allow for reasonable and necessary adaptability of the management system. In fact, in an absolutist view, it could be argued that the two principles comprising the Golden Rule*—maximum beneficial use and preservation of water rights—are inherently in conflict with one another. However, by juxtaposing each principle, the Golden Rule* demands management that balances these competing interests, and in so doing, seeks to achieve optimal overall welfare.

[40] *.See e.g.*, Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200 (Cal. Ct. App. 2014) (upholding mandatory restrictions imposed by the SWRCB on diversions from Napa River to avoid low water levels injurious to fish habitat).

[41] *See infra,* Subpart III.A.

[42] *City of Barstow,* 5 P.3d at 862–64.

[43] *See supra*, Subpart II.B .

A public agency's adherence to the *Mojave* Rule in distributing the burden of a water regulation among competing water users will likely immunize the agency from legal challenges, including regulatory takings arguments.[44] This is so because an individual may not claim a property interest in an unreasonable use of water.[45] Thus, a water management regulation developed to maximize beneficial use or prevent waste of water should be upheld against legal challenge if the regulation adheres to water right priorities in the imposition of the individual burdens of the regulation.[46] Conversely, a water regulation that ignores the asterisk on the Golden Rule* and contravenes the *Mojave* Rule may be legally assailable on several grounds, including a regulatory takings claim.[47]

Case law provides examples of the necessary balanced approach required by the Golden Rule*. For example, although it is appropriate for the state to ensure sufficient stream outflow in order to manage salinity, the courts have held that it is not appropriate for the state to impose the burden of that regulation on just one senior priority water right holder.[48] However, the courts have held that it is appropriate for the SWRCB to curtail significant withdrawals by similarly situated landowners whose collective withdrawals impose a significant adverse impact to instream habitat and where the regulation is applied equally on those landowners, which hold correlative—i.e., equal—riparian rights.[49]

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[44] *See* McGlothlin*, No Fictions Required, supra* note 19, at 82–86.

[45] *See, e.g*., Joslin v. Marin Mun. Water Dist., 429 P.2d 889, 893 (Cal. 1967); Peabody v. City of Vallejo, 40 P.2d 486, 496 (Cal. 1935).

[46] *See infra* notes 49–51 and accompanying text.

[47] *See, e.g*., El Dorado Irrigation Dist. v. State Water Res. Control Bd., 48 Cal. Rptr. 3d 468, 494–95 (Cal. Ct. App. 2006) (holding that state could not burden only a senior water right holder in contravention of water rights priority law without sufficient justification). Although the court decided this case pursuant to an administrative mandamus action, the same reasoning could apply in an inverse condemnation context; *see also* McGlothlin*, No Fictions Required, supra* note 19, at 86–89.

[48] When issuing curtailment orders, the SWRCB must recognize water right priorities. In *El Dorado Irrigation Dist. v. State Water Res. Control Bd.*, the SWRCB had imposed a permit term on the El Dorado Irrigation District, but not on junior appropriators, that required it to stop diversions in certain circumstances to "meet [Sacramento-San Joaquin] Delta water quality standards or other in-basin demands." El Dorado Irrigation Dist. v. State Water Res. Control Bd., 48 Cal. Rptr. 3d 468, 477–78 (Cal. Ct. App. 2006). The El Dorado Court found that the permit term improperly contravened the Irrigation District's priority water right while allowing junior appropriators to continue diversions.

[49] *See generally* People ex rel. State Water Res. Control Bd. v. Forni, 126 Cal. Rptr. 851 (Cal. Ct. App. 1976); *see also Light* 173 Cal. Rptr. 3d at 217–18. In *State Water Resources Control Board v. Forni*, the SWRCB ordered vineyards along the Napa River to stop drawing river water for frost protection because the river became depleted at times of peak demand. To respond to the water users' claim that their use was beneficial and therefore reasonable, the *Forni* Court stressed that "what is reasonable use or reasonable method of use of water is a question of fact to be determined according to the circumstances in each particular case." *Forni*, 126 Cal. Rptr. at 855. In a similar recent case concerning the Russian River, *Light v. State Water Resources Control Board*, the Court confirmed that fact-specific approach. The *Light* Court found that "[w]hen the supply of water in a

The reasonableness of a water management regulation is informed by local circumstances. For example, where groundwater rights are undefined in quantity and largely unmanaged, the courts have held that a county may exercise its police power to condition a well permit to require pumping limitations in order to avoid overdraft of the basin.[50] However, a similar well permit condition restricting a party from exercising a quantified water right that is subject to robust management (e.g., pursuant to a groundwater adjudication) would likely be held to be arbitrary and a regulatory taking of protected private property.[51]

As the discussion above reveals, whether a regulatory burden on water users is an appropriate exercise of sovereign police power or a regulatory taking is a matter of the reasonableness of countervailing public and private expectations, which are, in turn, shaped and informed by the specific circumstances. Practically applied, the Golden Rule* allows a public agency or a court to restrict the combined consumptive use from a common source where necessary for sustainable management.[52] However, the *Mojave* Rule requires reasonable efforts to preserve water right priorities in distributing the burden of accommodating the collective reduction among individual users.[53]

B. Judicial Application of the Golden Rule* Through the Physical Solution Doctrine

In any water controversy, the Golden Rule* imposes dual duties on the court. The court must adjudicate competing rights among the litigants. However, in water right actions the court also bears a "public" duty to promote the constitutional policy of maximum beneficial use.[54]

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particular stream system is insufficient to satisfy all beneficial uses, water rights users must curtail their use." *Light* 173 Cal. Rptr. 3d at 218.

[50] Allegretti & Co. v. Cnty. of Imperial, 42 Cal. Rptr. 3d 122, 130–31 (Cal. Ct. App. 2006). *See also* In re Maas, 27 P.2d 373, 374–75 (1933) (upholding a county ordinance preventing groundwater extractions for a wasteful or unreasonable purpose).

[51] There is a meaningful distinction between the restriction applied within the well permit upheld in *Allegretti* (*supra*, note 50) and a similar restriction in a permit issued for a well in a managed basin with quantified proportional pumping allocations. In the groundwater basin at issue in *Allegretti,* there was no overarching management plan quantifying and limiting proportional shares of the basin's safe yield, as is frequently the case in adjudicated basins. In an adjudicated basin, with discrete quantified allocations, arguably there is no reasonable ground for the well permitting entity (e.g., a county) to further restrict groundwater pumping beyond that set forth in the judgment imposed by the court. In fact, an exercise of police powers in a manner that contravenes the judgment will likely be held unlawful. *See Seaside*, 107 Cal. Rptr. 3d at 536.

[52] *See supra,* note 49–51 and accompanying text.

[53] City of Barstow v. Mojave Water Agency, 5 P.3d 853, 869 (Cal. 2000).

[54] Rancho Santa Margarita v. Vail, 81 P.2d 533, 563 (Cal. 1938); City of Lodi v. East Bay Mun. Util. Dist., 60 P.2d 439, 450–51 (Cal. 1936); *see also* Tulare Irrigation Dist. v. Lindsay–Strathmore Irrigation Dist., 45 P.2d 972, 1010 (Cal. 1935); *City of Barstow*, 5 P.3d at 868–69.

This public duty requires courts to rely upon their equitable powers to implement a "physical solution," if feasible, to maximize the beneficial use of the resource.[55] Through a physical solution, the court may alter and improve upon the water use limitations established by the common law.[56] For example, in a groundwater adjudication, a physical solution can quantify and limit groundwater rights, including overlying rights, which under common law principles, are only restricted by the constitutional reasonable and beneficial use requirement.[57] Likewise, a physical solution can allow for the application of improved groundwater management techniques such as the transfer of overlying rights and the carryover of un-pumped rights—options not afforded by the common law.[58] A physical solution can also include management by a court-appointed watermaster, special water shortage provisions, groundwater replenishment protocols, and other equitable provisions.[59]

In developing a physical solution, the court is limited by the two fundamental principles of the Golden Rule.* First, the physical solution must promote the sustainable and maximum beneficial use of water.[60] Second, the physical solution must adhere to the *Mojave* Rule by structuring the burden of water management consistent with right priorities.[61] Hence, a court may not compel a senior water right holder making a reasonable and beneficial use of water to incur a material expense in

[55] *City of Lodi*, 60 P.2d at 450 ("Since the adoption of the 1928 constitutional amendment, it is not only within the power but it is also the duty of the trial court to admit evidence relating to possible physical solutions, and if none is satisfactory to it to suggest on its own motion such physical solution. The court possesses the power to enforce such solution regardless of whether the parties agree."); *Rancho Santa Margarita*, 81 P.2d at 562 (holding that "it is the duty of the trial court to ascertain whether there is a physical solution of the problem that will avoid waste and which will not unreasonably or adversely affect the rights of the parties"); California American Water v. City of Seaside, 107 Cal. Rptr. 529, 536–37 (Ct. App. 2010) (finding that "[c]ourts are vested with not only the power but also the affirmative duty to suggest a physical solution where necessary, and they have 'the power to enforce such solution regardless of whether the parties agree.'"); Hillside Memorial Park & Mortuary v. Golden State Water Co., 131 Cal. Rptr. 3d 146, 158 (Ct. App. 2011) (holding that "[s]ince the adoption of the 1928 constitutional amendment, it is not only within the power, but it is also the duty of the trial court to admit evidence relating to possible physical solutions, and if none is satisfactory to it to suggest on its own motion such physical solution.").

[56] *Rancho Santa Margarita*, 81 P.2d at 562–63.

[57] *See Tulare Irrigation Dist.*, 45 P.2d 972; *see also*, *Rancho Santa Margarita*, 81 P.2d at 562–63.

[58] *See e.g.*, Seaside, 107 Cal. Rptr. 3d 532–33 (discussing aspects of the physical solution imposed by the judgment governing the Seaside Groundwater Basin, including transfers and carryover of decreed allocation). Such opportunities are a product of the physical solution ordered by the court that are not available pursuant to pre-adjudicated water rights under the common law; *see* also *infra* note 86.

[59] *See* City of Pasadena v. City of Alhambra, 207 P.2d 17, 23, 34 (Cal. Ct. App. 1949).

[60] *City of Barstow*, 5 P.3d at 869 (citing *Hillside Water Co. v. Los Angeles* 76 P.2d 681, 685–686 (Cal. 1938)).

[61] *Id.* at 864–65.

order to accommodate water use by those with junior priority rights.[62] However, a determination concerning whether a water use is reasonable and beneficial and what is a material expense must be made on a case-by-case basis in light of local circumstances.[63]

Historically, the physical solution doctrine has been applied as an affirmative defense against parties seeking to enjoin a junior priority water right holder's use of water. In these cases, in lieu of an injunction that would reduce the cumulative beneficial uses supported by the common supply, the courts imposed a mandatory injunction upon the junior water right user to remedy any material harm to the senior water right holder (e.g., a physical delivery of water).[64] In these cases, the courts' duty to seek a physical solution was based on the need to avoid a waste of water so it remained available for beneficial consumptive use.[65] Historically, environmental and other diffuse public interests were rarely, if ever, cited as a basis for imposing a physical solution. That is no longer the case.[66]

The modern principle of maximum beneficial use arguably demands comprehensive consideration and balancing of environmental interests and other non-consumptive uses. The California Supreme Court has required thorough consideration of such environmental considerations in its application of the public trust doctrine in *National Audubon Society v. Superior Court*.[67] In *National Audubon*, the court acknowledged that the

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[62] *Id.* at 869–70 (citing City of Lodi, 60 P.2d at 450–51).

[63] *See* People ex rel. State Water Res. Control Bd. v. Forni, 126 Cal. Rptr. 851, 855–56 (Cal. Ct. App. 1976) (finding that direct diversions from a stream by senior priority riparian water users during high demand periods for vineyard frost protection constituted an unreasonable use, and upholding the SWRCB's requirement that riparians construct storage to avoid deleterious effects of direct diversion during such high demand periods).

[64] *See* Peabody v. City of Vallejo, 40 P.2d 486, 497 (Cal. 1935) (stating that "[t]he suggestion of the plaintiffs that in the event the trial court should find a physical solution which would minimize or eliminate any damages otherwise recoverable, it should do so by appropriate order, is helpful . . . [and plaintiffs may propose] a solution of the difficulties and uncertainties in safeguarding the rights of the parties.").

[65] *See* Rancho Santa Margarita v. Vail, 81 P.2d 533, 562 (Cal. 1938) (holding that "it is the duty of the trial court to ascertain whether there is a physical solution of the problem that will avoid waste and which will not unreasonably or adversely affect the rights of the parties. No injunction should be granted if its effect will be to waste water that can be used."); *see also City of Lodi*, 60 P.2d at 449–50 (declaring that "[u]nder such circumstances the 1928 constitutional amendment, as applied by this court in the cases cited, compels the trial court, before issuing a decree entailing such waste of water, to ascertain whether there exists a physical solution of the problem presented that will avoid the waste, and that will at the same time not unreasonably and adversely affect the prior appropriator's vested property right. In attempting to work out such a solution the policy which is now part of the fundamental law of the state must be adhered to.").

[66] *See infra*, notes 67–70.

[67] Nat'l Audubon Soc'y v. Superior Ct., 658 P.2d 709, 724 (Cal. 1983); *see also* Scott S. Slater, *California Water Law and Policy*, Overview, §1.11 (6th ed., Lexis Nexis/Matthew Bender 2013) (explaining that "the environment was not a real partner in water rights and water quality

beneficial use principle could also be applied, as an alternative to the public trust doctrine, to mandate consideration of environmental interests in water management decisions.[68] An appellate court similarly explained in the recent case of *Hillside Memorial Park and Mortuary v. Golden State Water Company* that: "[i]n exercising its broad equitable powers in seeking a physical solution, the trial court may and should take into account environmental concerns."[69] Further, common and statutory law in other states, which may be instructive to future California court deliberations, has recognized ecological concerns within the reasonable and beneficial use principle.[70]

The law is also evolving in how the physical solution doctrine is pled and applied by the courts. The doctrine has historically applied as an affirmative defense.[71] It now appears that the courts recognize that a plaintiff can plead for a physical solution to foster maximum beneficial use of water resources as a remedy in its own right.[72] Parties in two recent cases—*Santa Maria Valley Water Conservation District v. City of Santa Maria* and *California American Water v. City of Seaside*— framed a cause of action for declaratory relief for a physical solution.[73] Both

decisions until the late 1960s" and that "[w]ith increased environmental regulatory restrictions and the emergence of the National Audubon public trust doctrine, however, there is a continuing effort to give the environment its fair share of water from existing uses.").

[68] *Id*. at 726. *See* McGlothlin*, No Fictions Required, supra* note 19, at 77 (arguing that the beneficial use doctrine provides a preferable doctrine for the protection of environmental interests because it does not rely on legal fiction, ambiguous standards, and narrow doctrinal constraints).

[69] Hillside Mem'l Park and Mortuary v. Golden State Water Co., 131 Cal. Rptr. 3d 146, 159 (Ct. App. 2011).

[70] *See, e.g*., COLO. REV. STAT. ANN. § 37-92-103(4) (West 2015) (defining "beneficial use" to include appropriations for instream recreational and environmental uses); HAW. REV. STAT. ANN. § 174C-3 (West 2015) (defining instream uses as beneficial uses of water for instream purposes and listing examples); VA. CODE ANN. § 62.1-10(b) (West 2015) (defining "beneficial use" to include instream uses and listing examples); Pagosa Area Water & Sanitation Dist. v. Trout Unlimited, 170 P.3d 307, 314 (Colo. 2007) ("Maximum utilization does not mean that every ounce of Colorado's natural stream water ought to be appropriated; optimum use can be achieved only through proper regard for all significant factors, including environmental and economic concerns."); Dep't of Parks v. Idaho Dep't of Water Admin., 530 P.2d 924, 928 (Idaho 1974) (finding that aesthetic and recreational uses are beneficial uses even though not included in a list of beneficial uses set forth in state constitution); In re Water Right Claim No. 1927-2, 524 N.W.2d 855, 858 (S.D. 1994) (explaining that beneficial use is an evolving concept that can be expanded consistent with changing societal values).

[71] *See, e.g.*, Peabody v. City of Vallejo, 40 P.2d 486, 497 (Cal. 1935) ("The suggestion of the plaintiffs that in the event the trial court should find a physical solution which would minimize or eliminate any damages otherwise recoverable, it should do so by appropriate order, is helpful . . . [and may propose] a solution of many of the difficulties and uncertainties in safeguarding the rights of the parties.").

[72] *See* City of Santa Maria v. Adam, 143 Cal. Rptr. 3d 491, 509 (Cal. Ct. App. 2012); California Am. Water Co. v. City of Seaside, 107 Cal. Rptr. 3d 529, 536 (Cal. Ct. App. 2010).

[73] Second Amended Complaint for Determination of Water Rights, Declaratory and Injunctive Relief at 10-12, California Am. Water v. City of Seaside et al., Monterey Cnty Superior Ct., No.

causes of action successfully asserted that it was necessary for the court to determine, impose, and retain continuing jurisdiction over a physical solution upon the parties who pump water from the Basin.[74]

Given these recent decisions, it appears that a physical solution may now be properly pled as either a defense to a request for injunction or as an equitable remedy. If a physical solution is presented as an equitable remedy, the court has the power to implement the measure, provided there are sufficient protections for the parties possessing senior water rights.[75] Regardless of how a physical solution is pled, the goal and elements of the doctrine remain unchanged: to provide coordinated management of the water supply and thereby maximize the beneficial use of the resource.[76]

C. The Golden Rule* and the Sustainable Groundwater Management Act

The Golden Rule* is also reflected in SGMA, enacted in 2014.[77] SGMA mandates that groundwater throughout the state be sustainably managed to avoid undesirable groundwater conditions, including unreasonable groundwater depletion, subsidence, seawater intrusion, and ecosystem degradation. The act provides for local water districts, cities, and counties to elect to become groundwater sustainability agencies (GSAs.)[78] GSAs are required to adopt groundwater sustainability plans (GSPs) for groundwater basins within the state designated as medium

M66343 (Sept. 31, 2004); Cross-Complaint of Southern California Water Company for Declaratory and Injunctive Relief and Adjudication of Water Rights at 10–11, Santa Maria Valley Water Conservation Dist. v. City of Santa Maria, Santa Clara Cnty Superior Ct., No. CV 770214 (March 2, 1999).

[74] Second Amended Complaint for Determination of Water Rights, Declaratory and Injunctive Relief at 10–12, California Am. Water v. City of Seaside et al., Monterey Cnty Superior Court, No. M66343 (Sept. 31, 2004); Cross-Complaint of Southern California Water Company for Declaratory and Injunctive Relief and Adjudication of Water Rights at 10–11, Santa Maria Valley Water Conservation Dist. v. City of Santa Maria, Santa Clara Cnty Superior Court, No. CV 770214 (March 2, 1999).

[75] *See* City of Santa Maria, 143 Cal. Rptr. 3d at 509; *Cal. Am. Water Co.*, 107 Cal. Rptr. 3d at 536; *see also* City of Barstow v. Mojave Water Agency, 5 P.3d 853, 864 (Cal. 2000) (stating that "an equitable physical solution must preserve water right priorities to the extent those priorities do not lead to unreasonable use.")

[76] *Cal. Am. Water Co.*, 107 Cal. Rptr. 3d at 532; *see also* City of Santa Maria, 143 Cal. Rptr. 3d at 509.

[77] Cal. Water Code §§ 10720 et seq. (West 2015).

[78] *Id.* §§ 10735.2(a)(1), 10722.4(d). Although SGMA permits the election of a GSA for any basin, the Act requires that a GSA be identified for all medium- and high-priority groundwater basins by June 30, 2017, or within two years from the date of reprioritization of a basin as medium- or high-priority. *Id*. § 10735.2(a)(1). Counties will be presumed to be the GSA for all unmanaged basins. *Id.* § 10724(a). However, the county may decline this responsibility. *Id.* § 10724(b).

and high priority by the California Department of Water Resources.[79] A GSA must develop a GSP to curtail overdraft and other continuing adverse groundwater conditions within twenty years of implementation of the GSP.[80] To achieve these goals, SGMA grants significant management powers to GSAs, including powers to regulate groundwater extractions[81] and impose fees and assessments.[82] However, SGMA does not authorize GSAs to determine or impair common law water rights.[83] Adjudications of groundwater rights are left to the courts.

In practice, balancing basin yield with groundwater demands under SGMA will frequently require reductions in both cumulative and individual groundwater production, as well as significant assessments to fund groundwater replenishment programs and other solutions.[84]A GSA's imposition of production allocations and assessments on groundwater users should be consistent with underlying water right priorities in order to avoid a successful legal challenge.[85] For example, a GSA might seek to create different classes of allocations that impose different responsibilities for rampdown of production and liability for pump assessments, together with different opportunities that correlate with overlying, appropriative, and prescriptive rights.[86] However, disagreements over the

[79] *Id.* §§ 10722.4, 10726.4(b), 10720.7(a)(2), 10733. Although the Act requires GSAs for all medium- and high-priority basins to adopt a GSP (or an alternative that complies with the Act) by January 31, 2022, a GSP must be adopted by January 31, 2020 for all basins subject to critical overdraft conditions. *Id.* § 10720.7(a)(1). The Act does not require the development of a GSP for basins that DWR ranks as low- or very low-priority basins; GSPs are voluntary for these basins. *Id.* § 10720.7(b). Although not mandatory, the Act encourages and authorizes basins designated as low- and very low-priority to be managed by a GSP pursuant to the Act.

[80] *Id.* §§ 10721(u)-(w), 10727.2(b)(1).

[81] *Id.* § 10726.4(a)(2).

[82] *Id*. §§ 10735.2(a), 10730.2.

[83] *Id*. §§ 10720.5(b), 10726.4(a)(2), 10726.8(b), 10735.8(h).

[84] *Id*. §§ 10726.2, 10726.4.

[85] *See supra,* Subpart III.A.

[86] The operable judgment in the Seaside Groundwater Basin is illustrative. It creates two classes of production allocation: "Standard Production Allocation," which is roughly similar to appropriative rights, and "Alternative Production Allocation," which is a landowner-based right that is similar to an overlying right. Both allocations are restricted to a maximum annual production quantity. This reflects a compromise by the landowners in that overlying rights are not fixed in quantity. However, the Standard Production Allocation producers bear the burden of ramping down production to bring collective allocations into balance with the basin's safe yield as well as the cost of management and replenishment imposed through pumping assessments. The Alternative Production Allocation producers (i.e., the landowners) do not bear such costs. This is consistent with the superior priority of overlying rights held by landowners under the common law. Similar to common law restrictions applicable to overlying rights, the landowners (Alternative Production Allocation Producers) cannot transfer their allocation, engage in basin storage, or carry over their Alternative Production Allocation from year to year. Only the Standard Production Allocation producers enjoy these benefits. However, the Alternative Production Allocation producers may convert their rights to Standard Production Allocation. Once they do so, their rights are subject to all prior rampdown and subject to the pumping assessments imposed on Standard Production Allocation. After conversion,

status of underlying common law water rights—e.g., whether prescriptive rights have developed—may persist among groundwater users or between the GSA and certain groundwater users. In these circumstances, groundwater adjudications may be necessary to resolve water right claims and harmonize applicable water rights within a groundwater management plan.[87]

D. The Golden Rule* and Future Groundwater Basin Adjudications

Groundwater adjudications may be unavoidable for basins in which water management conflicts persist. Once complete, a groundwater adjudication generally provides valuable legal certainty and an efficient means of basin management.[88] Basin stakeholders may also use a groundwater adjudication constructively through a "friendly adjudication," whereby the parties settle the case via a stipulation to a proposed judgment presented for consideration to the court.[89]

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the new Standard Production Allocation, which was converted from Alternative Production Allocation, is transferable. Thus, the formerly landowner-based right, which was "locked" on the property, can be transferred in exchange for compensation. This creates a means to take advantage of market-based reallocations of water rights, which incentivizes conservation, reveals the "true" price of water, and reallocates water from lower to higher-valued uses, in a manner that would not be available under the common law. Amended Decision, California Am. Water v. City of Seaside et al., No. M66343 (Monterey Cnty Superior Court, filed Sept. 31, 2004); SGMA provides similar opportunities to cap the quantity of overlying rights and then allow the transfer of those rights. Cal. Water Code § 10726.4 (West 2015).

[87] The greater the compromise and collaboration of the local stakeholders, the better and more efficient management are likely to be whether done under SGMA or pursuant to an adjudication. One significant difference between a groundwater adjudication and the GSP development process under SGMA, however, is that the court can issue a final adjudication and allocation of water rights so long as it is consistent with water right priorities. SGMA, by contrast, does not afford a GSA the power to determine water rights. Water rights are central to the key aspects of water management, particularly establishing allocations, ramping down excessive production, and setting pumping assessments. Adjudications tackle the water rights "question" directly. is the efficient and prompt future dispute resolution through the court's continuing jurisdiction as opposed to the prospect of a new litigation arising under SGMA management and possibly nullifying aspects of the GSP or otherwise disrupting basin management. The difference can be as stark as a six- to eight-week proceeding for a motion, hearing, order and return to management under a post-judgment proceeding versus a multi-year litigation under an SGMA conflict.

[88] *See* Kelly J. Hart, *The Mojave Desert as Grounds for Change: Clarifying Property Rights in California's Groundwater to Make Extraction Sustainable Statewide*, 14 Hastings W.-Nw. J. Envtl. L. & Pol'y, 1213 (2008); Scott S. Slater, *California Water Law and Policy*, Adjudication, §11.05 (6th ed., Lexis Nexis/Matthew Bender 2013).

[89] The stakeholders may intentionally and collaboratively avail themselves of the court's equitable powers by presenting the court with a stipulated judgment, which among other matters, may: (1) determine water rights, (2) impose a comprehensive management plan (i.e., a physical solution) under the court's supervision, and (3) establish a means for prompt and efficient resolution of future disputes pursuant to the court's reserved and continuing jurisdiction over the case.

1. Comprehensive Groundwater Basin Management Through the Physical Solution Doctrine

Just as SGMA has upped the ante for groundwater management by local agencies, future groundwater adjudications will also have to further evolve to ensure sustainable groundwater management. Adjudications will need to ensure that judicial groundwater management is as rigorous in protecting groundwater as is required by SGMA. Where past adjudications only involved—and were binding on—existing water users and significant landholders, future adjudications will likely need to comprehensively bind all land overlying a basin to avoid new, unaccounted for demands on the basin.[90] And although past adjudications largely focused on avoiding continued overdraft and ensuring water supply for consumptive uses, as discussed *supra* in Part III.B.1, environmental and other non-consumptive interests are now factors that a public agency or court must consider and balance against other social and economic interests to achieve optimal beneficial use of the resource. Future adjudications will need to comprehensively consider these interests.

To be effective in many overdrafted basins, groundwater management must limit the expansion of groundwater use by overlying landowners as well as appropriators. One significant problem is the prospect of unused, dormant overlying groundwater rights being put to use, thereby adding new demand on an overburdened basin. This problem has been addressed in the surface water context but not with respect to groundwater. In prior surface stream adjudications overseen by the SWRCB pursuant to Sections 2500 et seq. of the Water Code,[91] the senior priority rights of dormant riparian landowners[92] have been capped through the "subordination" of those dormant riparian rights.[93] Prior groundwater adjudications have refused to expand similar managerial constraints on dormant overlying rights because the adjudications were not

[90] A comprehensive adjudication is also necessary to allow for subordination of landowners with dormant overlying rights (*see infra* note 94 and accompanying text) and to allow for adjudication of the rights associated with federal lands and tribal lands. The McCarran Amendment, 43 U.S.C. §666 (1952); *see* also Scott S. Slater, *California Water Law and Policy*, The McCarran Amendment, §15.36 (6th ed., Lexis Nexis/Matthew Bender 2013).

[91] The statutory adjudication provisions set forth in Water Code Sections 2500 et seq. apply to surface water and groundwater flowing within a subterranean stream (*see* Water Code Sections 1200 et seq.) but do not apply to adjudications of percolating groundwater, which is handled by the superior courts.

[92] A "dormant" riparian or overlying right is a right that could be exercised, but has not been to date. It may include riparian or overlying lands that are making no use of on-site water or that could use more water under the common law than the existing use.

[93] *See* In re Waters of Long Valley Stream Sys., 599 P.2d 656, 666, 668, (subordinating the priority of dormant riparian rights and recognizing that the future uncertainty associated with dormant riparian rights inhibit long-range planning and management).

comprehensive.[94] In order to achieve sustainable groundwater management, a public agency or court must constrain unbridled expansion of groundwater use by overlying landowners and the California Supreme Court has hinted that a similar subordination of dormant overlying rights to groundwater will likely be necessary in the future.[95] We can expect that courts will render future groundwater adjudications comprehensive and will subordinate dormant overlying rights in a manner similar to the subordination of riparian rights in prior surface stream adjudications.[96]

2. *Application of the Golden Rule* to The Conjunctive Use of Groundwater Storage Space*

The Golden Rule* also applies to the use of groundwater storage space for conjunctive use.[97] Although the law is incomplete in this area,[98] the fundamental principles of the Golden Rule* apply. The courts have recognized that underground storage space is inextricably linked to basin management and groundwater availability and have held that groundwater storage space is subject to the California's constitutional requirement for maximum beneficial use of water resources.[99] The California Supreme Court has also acknowledged the benefit of active management of subterranean storage space in its opinion in *City of Los*

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[94] Wright v. Goleta Water Dist., 219 Cal. Rptr. 740, 750 (Cal. Ct. App. 1985).

[95] City of Barstow v. Mojave Water Agency, 5 P.3d 853, 868 n.13 (Cal. 2000).

[96] As of the writing of this article, legislation is pending within the California Legislature (Assembly Bill 1390), which would require the joinder of all groundwater rights holders and would afford a means to serve all landowners within a groundwater basin adjudication through a notice included within annual property tax mailings. This process would cause the adjudication to become comprehensive, presumptively overcoming the reason for disallowing the subordination of dormant overlying rights set forth in *Wright v. Goleta*, *supra*, note 94.

[97] The term "conjunctive use" means the conjunctive use of surface and groundwater resources, which typically involves the intentional replenishment or storage of a non-native surface water supply, such as imported water, captured storm water, or recycled water, within a groundwater basin for later extraction and use.

[98] *See* Gregory A. Thomas, The Future Of Water Law Reform In California A Quarter Century After The Governor's Commission, 36 McGeorge L. Rev. 495, 529–531 (2005); Victor E. Gleason, *Water Projects Go Underground,* 5 Ecology L.Q. 625, 630 (1976); Ronald B. Robie, Ronald R. Robie & Patricia R. Donovan, *Water Management of the Future: A Groundwater Storage Program for the California State Water Project,* 11 Pac.L.J. 31 (1979); Russell Kletzing, *Imported Groundwater Banking: The Kern Water Bank—A Case Study,* 19 Pac.L.J. 1225, 1250 (1988); Susan M. Trager, *Emerging Forums for Groundwater Dispute Resolution in California: A Glimpse at the Second Generation of Groundwater Issues and How Agencies Work Towards Problem Resolution*, 20 Pac.L.J. 3 (1988); Anne J. Schneider, *Groundwater Rights in California: Background and Issues*, Governor's Commission to Review California Water Rights Law at 76 (Staff Paper No. 2, 1977).

[99] Cent. & W. Basin Water Replenishment Dist. v. So. Cal. Water Co., 135 Cal. Rptr. 2d 486, 505 (Cal. Ct. App. 2003); Water Replenishment Dist. of So. Cal. v. City of Cerritos, 135 Cal. Rptr. 3d 895, 903 (Cal. Ct. App. 2012).

Angeles v. City of San Fernando.[100] In that case, the Court condoned temporary groundwater extractions in excess of a basin's long-term average replenishment for the purpose of intentionally lowering water tables to create additional dewatered storage space and to induce additional basin recharge that would otherwise be "rejected" and lost through surface outflow to the ocean.[101]

The California Supreme Court has also embraced the developed water doctrine as applied to groundwater storage.[102] The developed water doctrine confers on entities responsible for intentionally developing and storing water in the basin a right to recapture the basin's augmented yield attributable to the intentionally stored water.[103]Under the "no-injury rule," however, the storage and recovery of non-native water in a basin may not materially diminish the quantity or quality of groundwater available for those possessing rights to the basin's native supply.[104] The "fruits-of-one's-labor" principle inherent in the developed water doctrine harmonizes with the reasonable expectations of the storing entities and affords legal certainty, which promotes beneficial investment in groundwater storage and conjunctive use programs. Requiring that the storing party may not harm native groundwater users also harmonizes with the reasonable expectations of native groundwater rights holders. While those entities cannot prohibit innocuous conjunctive use activities in the basin—as that would thwart the state policy of maximum beneficial use—they can reasonably expect that the conjunctive use activities will not materially harm their native groundwater rights. Here, the Golden Rule* is again evident, providing a green light to maximize beneficial use of groundwater resources while affording reasonable protections to water rights and the expectations embodied with them.

The law applicable to conjunctive use of groundwater storage space was most recently advanced in relation to a 15-year controversy over rights to store water in the Central Basin and West Coast Basin.[105] These two groundwater basins underlie southwestern Los Angeles County and

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[100] City of Los Angeles v. City of San Fernando, 537 P.2d 1250, 1309 (Cal. 1975).

[101] *Id.*

[102] *See* City of Los Angeles v. City of Glendale, 142 P.2d 289, 294–95 (Cal. 1943); *see also City of San Fernando*, 537 P.2d at 1296–97.

[103] *See City of San Fernando*, 537 P.2d at 1296–98;*City of Glendale*, 142 P.2d at 294?–95.

[104] *See City of San Fernando*, 537 P.2d at 1297–98; *City of Glendale*, 142 P.2d at 294–95; *So. California Water Co.*, 135 Cal. Rptr. 2d at 504–05; *see* also Gregory A. Thomas, The Future Of Water Law Reform In California A Quarter Century After The Governor's Commission, 36 McGeorge L. Rev. 495, 530 (2005).

[105] *See So. Cal. Water Co.*, 135 Cal. Rptr. 2d at 490–92; Hillside Mem'l Park and Mortuary v. Golden State Water Co., 131 Cal. Rptr.3d 146, 150–52 (Cal. Ct. App. 2011);.*City of Cerritos*, 135 Cal. Rptr. 3d at 900–01.

have been managed since the 1960s pursuant to court judgments.[106] A comprehensive management structure was recently adopted by the Los Angeles Superior Court in the form of amendments to the two governing judgments pursuant to stipulations among the parties.[107] The stipulations were reached after years of negotiation and litigation between holders of adjudicated groundwater rights and local water agencies, which included three appellate decisions.[108] The Court of Appeal decision in *Central Basin* (2001) confirmed that the beneficial use principle applies equally to groundwater storage space as it does to the groundwater held within the storage space.[109] The Court of Appeal decision in the Central Basin (*Cerritos*) case (2012) and the West Coast Basin (*Hillside*) case (2011) further clarified that the court's duty to maximize beneficial use of water resources affords it the ability to sculpt the physical solution for basin management embodied in the judgment to promote beneficial uses of the storage space in a manner consistent with the parties' underlying water rights.[110] The first of these appellate court decisions, *Central Basin* (2001), also made clear that a right to a proportionate quantity of the groundwater supply, as adjudicated in the judgments, did not, per se, afford a correlative proportional right to the basin's dewatered storage space.[111] In one sense, this ruling was consistent with the beneficial use principle, which only sanctions an appropriative right to use water resources to those that put the resource to beneficial use and that refuses a right to those seeking to squat on the right for future speculative purposes.[112]

What was left undecided by the Central Basin and West Coast Basin decisions is the basis for priorities among competing users to limited storage space. While we know that a native groundwater right does not bestow appurtenant rights to use the basin's dewatered storage space,[113] it is not clear how courts will resolve future conflicts over competing uses of storage space. An earlier case, *Niles Sand and Gravel Company*

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[106] *So. Cal. Water Co.*, 135 Cal. Rptr. 2d at 491; *Hillside Mem'l Park and Mortuary*, 131 Cal. Rptr. 3d at 151; *City of Cerritos*, 135 Cal. Rptr. 3d at 899.

[107] Amended Judgment, California Water Service Co. v. City of Compton, Case No. C506806 (Los Angeles Cnty Superior Ct., filed July 21, 1945); Amended Judgment, Central and West Basin Water Replenishment District v. Adams, Case No. C786656 (Los Angeles Cnty Superior Ct., filed January 2, 1962).

[108] *So. Cal. Water Co.*, 135 Cal. Rptr. 2d 486; *Hillside Mem'l Park and Mortuary*, 131 Cal. Rptr. 3d 146; *City of Cerritos*, 135 Cal. Rptr. 3d 895.

[109] *So. Cal. Water Co.*, 135 Cal. Rptr. 2d at 492.

[110] *Hillside Mem'l Park and Mortuary*, 131 Cal. Rptr. 3d at 150; *City of Cerritos*, 135 Cal. Rptr. 3d at 898.

[111] *So. Cal. Water Co.*, 135 Cal. Rptr. 2d at 499; *Hillside Mem'l Park and Mortuary*, 131 Cal. Rptr. 3d at 150; *City of Cerritos*, 135 Cal. Rptr. 3d at 898.

[112] *See* Cal. Trout v. State Water Res. Control Bd., 225 Cal. Rptr. 184, 199.

[113] *So. Cal. Water Co.*, 135 Cal. Rptr. 2d at 498-99.

v. County of Alameda, referred to a "public servitude" over groundwater storage space.[114] Some have argued that the case suggests a priority to use dewatered storage space on behalf of public water supply entities.[115] Such an interpretation likely reads too much into the case's holding. The reference to a "public servitude" in *Niles Sand and Gravel* is better understood as a short-hand characterization of the important public welfare inherent in the groundwater resource and the application of the beneficial use doctrine, which prohibits the waste of groundwater resources as was occurring in the case.

No case has set forth a clear rule for deciding priorities between entities competing to undertake conjunctive use activities within the same dewatered underground storage space. However, we can predict how the Golden Rule* might apply. So long as competing conjunctive use activities each satisfy the beneficial use principle, respect for the reasonable expectations of the parties should be afforded. For instance, if one party has previously made significant investments in infrastructure to facilitate a conjunctive use program at a time when there was not an apparent shortage of storage space to support the program, that party might make a reasonable claim to make repetitive and regular use of the necessary storage space. Such a right to repetitive use of the storage space is necessary to protect the party's investment against a newcomer seeking to develop competing programs that would interfere with and strand the earlier party's investment. In this respect, some form of first-in-time, first-in-right priority might apply to future conjunctive use controversies. However, like application of the Golden Rule* generally, the inquiry will certainly be case and fact specific.

IV. Conclusion

Water management is perhaps the most interesting of all resource allocation subjects. No other resource is quite like water, with its variable, shared, and transient character and its critical importance to both public welfare and private enterprise. Water law, however, may also be the most confusing of all natural resource laws, particularly in California, which recognizes both riparian and appropriative rights and divides authority to regulate different water supplies among state agencies, local agencies, and the courts.

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[114] Niles Sand & Gravel Company v. Alameda Cnty. Water Dist., 112 Cal. Rptr. 846, 848, 853 (Cal. Ct. App. 1974) (holding that a landowner was not entitled to compensation for storage of water by water district beneath its property that interfered with its sand and gravel operation and characterizing the district's authority to store water underground as a "public servitude").

[115] *See* Victor E. Gleason, *Water Projects Go Underground,* 5 Ecology L.Q. 625, 657–58, 665–66 (1976).

Underlying the myriad of statutory water laws and court decisions that comprise California's water law is a core principle that we have coined the Golden Rule*. This two-part rule requires that California's water resources be managed for maximum beneficial use, but also demands that water management seek to preserve water right priorities. As we have discussed above, application of the Golden Rule* balances diverse tensions that are inherent in water management. The rule demands consideration of public and private interests, it balances the competing goals of adaptability and legal certainty, and it allows evenhanded regulations while thwarting regulations that trample the reasonable expectations of proprietary water users. In demanding such a balanced approach, the Golden Rule* provides the foundation to achieve maximum welfare from our limited water resources.

V. POSTSCRIPT

In our article, *The Golden Rule* of Water Manag*ement, we discuss the Sustainable Groundwater Management Act of 2014 ("SGMA") and the role of groundwater adjudications in the management of groundwater in California. SGMA was a bold first step toward managing California groundwater. However, it left key issues unresolved. SGMA does not provide for a determination of groundwater rights and how they relate to both pumping allocations and obligations to fund basin replenishment and management. SGMA also does not set definitive criteria for determining a basin's sustainable yield and for resolving other technical matters that inform the amount of groundwater that may legally be pumped from a basin and who is allowed to do so. Further, SGMA does not establish a procedure to resolve disagreements over which local agency or combination of agencies will assume the role of the "groundwater sustainability agency." These difficult issues must either be resolved through negotiation or litigated through a groundwater basin adjudication.

As discussed in *The Golden Rule of Water Management*, groundwater adjudications, once complete, typically afford efficient and sustainable groundwater management by limiting cumulative groundwater production to the basin's "safe yield," establishing programs to enhance the basin's yield, adjudicating groundwater rights, and assigning individual pumping allocations among the parties. Adjudications also typically allow for voluntary transfers of pumping allocations and maintain the court's continuing jurisdiction to oversee the management plan, adapt the plan over time, and resolve future disputes. The significant downside of groundwater basin adjudications has been the time and expense required

to complete them; some adjudications have lasted several decades or longer.

The potential delay attendant to a groundwater basin adjudication, as they have traditionally been litigated, is inconsistent with SGMA's goal of achieving sustainable groundwater management within 20 years of the adoption of a "groundwater sustainability plan" under SGMA. Recent legislation addresses this problem. AB 1390 (Alejo) and SB 226 (Pavley) were signed by Governor Brown on October 9, 2015, to reform judicial procedures applicable to groundwater adjudications. These new laws establish new procedures in the Code of Civil Procedures to ensure that future groundwater adjudications comprehensively adjudicate all groundwater rights within a basin in an expedited and less expensive manner. They also ensure that future groundwater adjudications complement and function harmoniously with the groundwater sustainability goals set forth in SGMA. Together, SGMA and the new groundwater adjudication reforms enacted this year provide a complete set of new laws to ensure that groundwater is sustainably managed in California.