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Twenty Years of Local Groundwater Export Legislation in California: Lessons from a Patchwork Quilt (Part 2)

by

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economic concerns.[266] The ordinance then lists a series of 26 definitions ranging alphabetically from "aquifer" to "zone of saturation."[267] Within that series, the ordinance defines "mining" as: "[p]umping from groundwater bodies greatly in excess of replenishment."[268] It then prohibits mining "when the water is transported from the basin."[269] Finally, the ordinance establishes a permit system to license groundwater pumping where the pumper intends "to use it or sell it outside the area in which said pumping affects the natural available water supply."[270] The county board of supervisors can only grant a permit if it concludes that "the permit will not bring about an overdraft, will not bring about saltwater intrusion, will not adversely affect transmissivity within the aquifer, and will not adversely affect the water table."[271] The ordinance requires the

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266. Butte County, Cal., Code § 33-1 (Supp. 1978) (groundwater "of critical importance to the economy of this county").

267. *Id.* §§ 33-2.1 to 33-2.26.

268. *Id.* § 33-2.12. *See also supra* notes 88-109 and accompanying text ("mining" as hydrological term).

269. *Id.* § 33-3. More fully, section 33-3 states:

> It shall be unlawful to conduct any mining for water within this county, or for the owner of real property to allow groundwater of any nature, or connate water, to be mined *where the water pumped is transported from the basin.*

Id. § 33-3 (emphasis added). The ordinance does not expressly define "basin." Section 33-2.1 defines "aquifer" as: "A geologic formation that stores, transmits and yields significant quantities of water to wells and springs." *Id.* § 33-2.1.

270. Section 33-4 states:

> It shall be unlawful to pump groundwater of any nature or description, or for a property owner to allow such pumping on his land, in order to *use it or sell it outside the area in which said pumping affects the natural available water supply* without first obtaining a permit as provided in this chapter.

Id. § 33-4 (emphasis added). Under section 33-5, the Butte County Health Department receives permit applications. The county environmental director begins an environmental review. The Health Department consults with county departments and state agencies. Ultimately, the Health Department reports to the county board of supervisors (Board). *Id.* § 33-5.

Under section 33-6, the Board holds a hearing. In that hearing, the Board considers evidence of "all effects the proposed permit would have, on the affected groundwater, and the affected aquifer or aquifers, including, but not limited to, the hydraulic gradient, hydrology, percolation, permeability, piezometric surface, porosity, recharge, safe yield, saltwater intrusion, specific capacity, spreading water, transmissivity, usable storage capacity, water table and zone of saturation." *Id.* § 33-6; *see generally id.* at §§ 33-2.9 to 33-2.26 (defining these terms). *See also infra* notes 320-21 (respectively addressing permits issuance, annual review, amendments, and appeals).

271. Butte County, Cal., Code 33-7 (Supp. 1978). Section 33-2.13 defines "overdraft" as: "[t]he condition of a groundwater basin where the amount of water withdrawn by pumping exceeds the amount of water replenishing the basin over a period of time. Also as the point at which extractions from the basin exceed its safe yield plus any temporary surplus." *Id.* § 33-2.13. Section 33-2.19, in turn, defines "safe yield" as: "[t]he maximum quantity of water

board of supervisors to "impose such conditions upon the permit so as to prohibit overdraft . . . ."[272]

The mining prohibition and permit requirements thus provide two separate limitations on a groundwater pumper's potential ability to export groundwater beyond the county boundaries. The poorly drafted provisions make difficult any attempt to determine their theoretical impacts on groundwater exports.[273] Nevertheless, the two provisions appear to set up a two level regulatory scheme. First, the ordinance purports to ban entirely any pumping at rates "greatly in excess of replenishment," at least where "the water pumped is transported from the basin." The ordinance makes no provision for waivers of the basin export ban, or mitigation in lieu of a ban. Second, where basin export pumping may not reach the levels necessary to trigger the absolute mining ban, the permit process allows only those exports that will not cause overdraft or harm the aquifer's capacity to store groundwater of suitable quality.

a. Mining Prohibited

The mining ban provision raises five principal questions about its impact on groundwater exports. First, does it apply even to those exports from the county where the water will be used on land overlying the same groundwater basin, but in another county? Second, over what time frame must extractions from a basin greatly exceed replenishment? Third, what is the "groundwater body" relevant to the comparison of extraction and replenishment rates? Fourth, who is a "miner" under the act? Finally, does

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which can be withdrawn annually from a groundwater supply under a given set of conditions *without causing an undesirable result*. The phrase 'undesirable result' is understood to refer to a gradual lowering of the groundwater levels resulting eventually in depletion of the supply." *Id.* at § 33-2.19. *See also id.* at §§ 33-2.20, 33-2.23, 33-2.25 (discussing, respectively, "saltwater intrusion", "transmissivity", and "water table").

272. *Id.* 33-7.

273. Vance Severin, Program Manager, Division of Environmental Health, Department of Public Health, Butte County, informed the author that, at least since 1979, when he began working at the office, he was "not aware that any permit applications have been received, or permit issued under the provisions of Chapter 33." Letter of Vance Severin, Butte County Dep't of Public Health, to Gregory Weber (Oct. 26, 1992). Four possibilities exist to explain the lack of interest in obtaining export permits. First, there simply may have been no demand for such exports. Second, potential exporters may have concluded that their exports were either outright banned by the ordinance or that a permit would not issue. Third, potential exporters may have concluded that the transaction costs added by the permit process made a potential export uneconomical. Finally, potential exporters may have concluded that the ordinance created such uncertainty as to make even the calculation of transaction costs too difficult to estimate, thereby leaving the costs of a potential export too difficult to estimate.

it does it ban all mining, or only mining where the water is transported from the basin?[274]

First, on its face, the mining ordinance applies only to exports where the water is transported "out of the basin." As previously noted, the ordinance does not expressly define "basin."[275] The unfortunate use of "groundwater basin" unduly muddies the ordinance's meaning. As noted above, an enormous range of choices exists for the definition of a "groundwater basin."[276] This range highlights the uncertainty inherent in the ordinance's mining ban. A full treatment of the legal impacts on water exports of the adoption of any one of these choices is beyond this article's scope. Instead, the article will consider the impact on exports of two lateral boundaries with increasingly narrow geographic range.

The broadest possible definition of "groundwater basin" applicable to Butte County would be the adoption of the state Department of Water Resources' (DWR) survey results. According to the DWR, only two "groundwater basins" underlie Butte County: the Sacramento Valley groundwater basin and the Sacramento Valley Eastside Tuscan Formation Highlands.[277] Both of these basins underlie multiple counties in the Sacramento Valley.[278] If the DWR definitions were used to identify the groundwater basins relevant to the mining ban, the ban would not prevent exports from Butte County if the water would be used on lands

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274. The Butte County Code publishers have resolved this ambiguity in favor of the latter interpretation. They captioned this code provision: "[Mining prohibited where water transported.]" Butte County, Cal. Code § 33-3 (Supp. 1978). These headnotes are added by an editor "for stylistic reasons," i.e., "to keep the code's sections consistent with one another." *See* Memo from Brad Epstein to Gregory Weber (Oct. 29, 1992), reporting on telephone conversation with code editor Lori Story (Oct. 26, 1992).

The weight to be attached to this publisher added heading is uncertain. Where a portion of a code expressly states that chapter headings and titles have no interpretive force, courts will ignore them. *See, e.g.*, People v. Moore, 40 Cal. Rptr. 121, 124-25 (Cal.App. 1964). Absent such a disclaimer, courts state: "[a] code's title and chapter headings will properly be resorted to in doubtful cases for determination of the legislative intent." People v. Weltsch, 149 Cal. Rptr. 112, 115 (Cal. App. 1978). It seems inappropriate to ascribe legislative intent to the interpretations of a publisher, at least not where the headings are added after enactment, and the legislature has not affirmatively ratified such headings by later amendments to such code sections or chapters.

275. *See supra* note 269. *But cf.* Imperial County, Cal., Code § 56301 (1972) (amended 1978) (defining groundwater "basin").

276. *See supra* notes 66-80 and accompanying text.

277. Bulletin 118-75, *supra* note 1, at 95. Despite an extensive glossary of groundwater terms, Bulletin 118-75 does not itself attempt to define "groundwater basin." *Id.* at 4-5. In Bulletin 118-80, issued in response to Water Code section 12924, DWR redefined several basins after "consideration of political boundary lines." Bulletin 118-80, *supra* note 12, at 8.

278. *See* Bulletin 118-75, *supra* note 1, at 57.

in other Sacramento Valley counties that underlie the same aquifer from which the water was pumped in Butte County.[279]

Adoption of the Butte County borders to define the relevant portion of the DWR identified groundwater basins would greatly narrow the ordinance's definition of "groundwater basin."[280] Such a narrower definition of "groundwater basin" would correspondingly broaden greatly the mining ban's sweep. Under such a definition, any transportation of water across the Butte County borders would be subject to the mining ban.[281]

Second, regardless of the definition of "groundwater basin," the mining ban only applies if "[p]umping from groundwater bodies [is] greatly in excess of replenishment."[282] This definition does not specify the time frame over which to compare extraction and replenishment. In addition, it does not establish relative criteria for the comparison: how great a discrepancy is "greatly in excess"? If a court were to engraft some sort of "reasonable" time frame for comparing extraction with replenishment, the mining ban would not necessarily restrict all out of basin exports.[283]

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279. *Compare* Tehama County, Cal., Code § 9.40.020 (1992) (mining banned where water transported from the county); *see infra*, notes 413-21 & accompanying text; *see also* Inyo County, Cal., Code § 7.01.020(g) (1980) (defining groundwater basin partially, along county lines).

280. *See* Schneider, *supra* note 59, at 101 ("county" line a possible basin limit).

281. Under either definition, the mining ban seems to apply to those *intra* county water transports that might pump water from the county portions of the two DWR identified basins up the foothills above the valley floor.

282. Butte County, Cal., Code § 33-2.12 (Supp. 1978).

283. This particular incidence of vagueness implicates two different principles of statutory interpretation. On the one hand, where statutes fail to specify a time frame for notice or compliance with a statutory requirement, courts may imply a "reasonable" time. *See, e.g.*, Dougery v. Bettencourt, 6 P.2d 499, 503 (Cal. 1931) (reasonable time to record a certificate of sale). On the other hand, a statute may be so vague as to be void. *See, e.g.*, Cranston v. City of Richmond, 710 P.2d 845, 849-859 (Cal. 1985).

As noted elsewhere, the Butte ordinance gives alternative definitions of "overdraft." Butte County, Cal., Code § 33-2.13; *see also supra* note 271; *infra* notes 312-20 and accompanying text. Initially, it defines it as a condition where "the amount of water withdrawn by pumping exceeds the amount of water replenishing the basin *over a period of time*." Butte County, Cal., Code § 33-2.13 (1978). By itself, this portion of the overdraft definition merely begs the time period question. It does, however, suggest that "mining" and "overdraft" present questions of degree. Under this portion of the definition, "overdraft" could occur whenever pumping exceeds replenishment (within the appropriate time period) *however slightly*. In contrast, mining requires pumping to exceed replenishment *greatly*.

The alternative "overdraft" definition compresses the open ended "period of time." It defines "overdraft" as: "the point at which extractions from the basin exceed its safe yield plus any temporary surplus." *Id.* Section 33-2.19 then defines "safe yield" as:

> [t]he maximum amount of water which can be withdrawn *annually* from a groundwater supply under a given set of conditions without causing an

Third, the definition of "mining" fails to identify the "groundwater bodies" relevant to the comparison of extraction and replenishment rates. The ordinance does not itself define "groundwater bodies." It does separately define several types of groundwater bodies, such as aquifer,[284] connate water,[285] and groundwater.[286]

If the relevant "groundwater body" under the "mining" definition is the entire groundwater "basin" from which water is pumped, then "mining" only occurs if the "[basin wide] pumping is greatly in excess of [basin-wide] replenishment." Such an interpretation would both greatly complicate proof of "mining" and greatly restrict the circumstances under which "mining" could be found. Alternatively, an interpretation of the relevant "groundwater body" under the "mining" definition as a specific sub-portion of a groundwater basin would ease proof of "mining." For example, under such a narrower "groundwater body" definition, "mining" might occur whenever pumping from a particular source of confined groundwater were "greatly in excess of replenishment" of that particular source. Indeed, the best textual support for this narrower interpretation comes from the definition of "confined groundwater" itself. Section 33-2.7 defines "confined groundwater" as "[a] *body of groundwater.*"[287] Because "confined" groundwater implicitly contrasts with the separately defined "free" or "unconfined" groundwater, an identifiable source or stratum of free groundwater likely is also a "groundwater body" under the "mining" definition.

Fourth, the mining ban does not link "mining" with the acts of any specific pumpers. Assume that pumping from a groundwater body by pumpers who use water within the basin already greatly exceeds replenishment. Does that make any out of basin exporter automatically a "miner," even if that individual has prescriptive rights and that individual's pumping rate is not "greatly in excess of replenishment"?[288]

> undesirable result. The phrase, "undesirable result" is understood to refer to a gradual lowering of the groundwater levels resulting eventually in depletion of the supply.

Id. §§ 33-2.19. Ultimately, "mining" and "overdraft" may produce the same result: depletion of the groundwater supply. In context, mining appears to be rapid overdraft.

284. Butte County, Cal., Code § 33-2.1 (Supp. 1978). That section defines "aquifer" as: "[a] geologic formation that stores, transmits and yields significant quantities of water to wells and springs." *Id.* This is a standard definition. *See supra* notes 66-80 and accompanying text.

285. Butte County, Cal., Code § 33-2.4 (Supp. 1978).

286. *Id.* § 33-2.6. That section defines "groundwater" as: "[w]ater in the zone of saturation. Groundwater is presumed to be percolating, although it does occur in known and definite channels." *Id.* The ordinance separately defines "free" and "confined" groundwater. *See id.* §§ 33-2.8, -2.7 (respectively addressing free and confined groundwater types).

287. *Id.* § 33-2.7 (emphasis added).

288. As noted above, traditional groundwater rights law allocates pumping rights in overdrafted basins to pumpers who use the water on land overlying the basin; since, in an

The ordinance does not directly answer this matter. To the extent the ordinance merely purports to prevent appropriators who have not established a prescriptive right to take from an overdrafted basin, it duplicates state decisional law. If, however, the ordinance attempts to also bar prescriptive users from exports, it completely eliminates a class of rights recognized by state decisional law.

The last major question about the impact of Section 33-3 on exports arises from ambiguous punctuation. The section states: "[i]t shall be unlawful to conduct any mining for water within this county, *or* for the owner of real property to allow groundwater of any nature, or connate water, to be mined *where the water pumped is transported from the basin*."[289] The ambiguity involves the application of the "where . . . basin" clause. Does it qualify *both* "any mining . . . this county" *and* "or for the owner . . . to be mined," *or* only the latter clause? If it qualifies both clauses, then an in-basin pumper can "mine" with impunity, while an out-of-basin exporter may not mine at all. If, however, it qualifies only the latter clause, then no pumper can mine. For convenience, the latter interpretation shall be called the "broad," or complete ban; the former interpretation, the "narrow," or geographically limited ban.

Support for the broad interpretation of section 33-3 comes from a literal reading of its text, a comparison of its punctuation with the punctuation of section 33-4, and from the legislative findings in section 33-1. First, arguably, the lack of a comma between "to be mined" and "where . . . basin" creates two separate restrictions within section 33-3: the clause before the section's first "or" makes an actual pumper liable, while the clause after the first "or" also makes liable an owner who permits a pumper to mine. Under this interpretation, the first clause bans *all* mining within the County; the second clause, however, only penalizes those non-pumping owners who allow mining for transport beyond the basin.

Second, additional, indirect support for this broad interpretation also comes from a comparison with the permit requirement's wording.[290] Section 33-4 states:

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overdrafted basin, there is no "surplus" for appropriation, offbasin users can only obtain appropriative rights. *See supra* notes 114-50 and accompanying text. The Butte ordinance would appear to prevent off-basin exports by prescriptive rights holders.

For an outline of prescriptive rights, see *supra* notes 115, 133.

289. Butte County, Cal., Code § 33-3 (Supp. 1978) (emphasis added).

290. Courts interpret statutes by reference to the entire legislative scheme of which each individual statute is a component. *See, e.g.*, People v. American Bankers Ins. Co. of Florida, 284 Cal. Rptr. 617, 621-22 (Cal. App. 1991).

> "It shall be unlawful to pump groundwater of any nature or description, or for a property owner to allow such pumping on his land, in order to use it or sell it outside the area in which said pumping affects the natural available water supply without first obtaining a permit as provided in this chapter."[291]

Like the mining ban, the permit requirement addresses both actual pumpers and non-pumping owners who allow pumping to occur. Unlike the mining ban provision, however, the permit ban inserts a comma between the non-pumping owner provision and the qualifying phrase "*in order to* use or sell it outside the area."[292] The punctuation of section 33-4 thus does not purport to make *all* pumpers or owners get a permit; rather, it limits the permit requirement to only those pumpers or property owners who meet the geographical "sale or use" condition. To be consistent grammatically with the permit provision, the mining provision should have had a comma between the phrase "to be mined" and "where the water pumped is transported from the basin."[293]

Third, the legislative findings in section 33-1 provide the final support for this broad reading. That section declares that "the protection of groundwater *within the county* is of major concern to [county residents]."[294] Groundwater mining should fit within this concern whether or not the water is "transported from the basin."

Despite this declaration and the inconsistencies with section 33-4, an interpretation of the mining provision that penalized *all* actual miners, but only penalized those non-pumping owners who allowed miners to transport groundwater from the basin, makes little sense for four reasons. First, little justification appears for banning all mining, but then penalizing only those non-pumping owners who allow the actual miners to transport the water out of the basin. Second, the ordinance should be interpreted in light of the circumstances that lead to its passage. The county apparently enacted the ordinance in response to fears that exporters would take county groundwater during the 1976-77 drought. Since the problem the county sought to address was the impact of large scale water exports, the mining ban appears to be an effort to conserve supplies for local residents, without in itself forcing local pumpers to change their own behavior.[295] Third, as noted above, unless the "transported from the basin" restriction applied to all mining, the ordinance

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291. Butte County, Cal., Code § 33-4 (Supp. 1978).

292. *Id.* (emphasis added).

293. *See supra* note 268 ("mining" defined). Faced with inconsistent punctuation, courts have not found themselves always bound to give different meanings to differently punctuated statutes. *See* People ex. rel. Busch v. Projection Room Theater, 550 P.2d 600, 650 n.2, (Cal.) (Tobriner, J., dissenting), *cert. denied*, 429 U.S. 922 (1976) .

294. Butte County, Cal., Code § 33-1 (Supp. 1978) (emphasis added).

295. The ordinance's findings, however, do not limit themselves to concerns about exports. *See id.* § 33-1.

would present substantial enforcement problems determining "who" is the "miner."[296] Finally, as discussed below, the permit requirement provision's unambiguous geographical "sale or use" limitation demonstrates that the county did not intend all pumpers, or non-pumping owners, to have to comply with a potentially onerous and politically unpopular permit procedure.[297] In this light, enforcement of a complete ban on "mining" could have potentially given the county the power to reduce pumping by all pumpers. Without a clearer evidence of intent to allow the county to limit all pumping, the likely enormous political opposition to such a sweeping ordinance makes it very difficult to believe that the county intended to regulate all pumpers indirectly when it failed to impose permit requirements directly on all pumpers.

b. Permit Requirement

The permit requirement adds additional uncertainty over the legality of potential exports. As noted above, section 33-4 only requires a permit if the water pumped will be used or sold "outside the area in which said pumping affects the natural available water supply."[298] This phrase echoes the Imperial ordinance's "area of influence" provision.[299] Like the Imperial ordinance, however, the Butte ordinance does not define the italicized phrase.[300] In particular, it addresses neither the geographical nor the temporal scope of the "affected area."

Pumping might "affect the natural available water supply" in an "area" in several ways.[301] In the broadest sense, pumping reduces the supply in the groundwater basin.[302] Thus construed broadly, only pumping for sale or use outside of the groundwater basin would require a permit. Such a broad interpretation of "affected area" would parallel the mining prohibition. As noted above, most likely the ordinance only bans mining where the water is "transported from the basin."[303] Similarly, a broad interpretation of "affected area" would only require a permit if the water were used or sold outside the groundwater basin.

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296. *See supra* text accompanying note 288.

297. *See supra* note 19 (agricultural interests oppose groundwater management).

298. Butte County, Cal., Code § 33-4 (Supp. 1978) (emphasis added).

299. *See supra* notes 241-45 and accompanying text.

300. Imperial County, Cal., Code § 56301(b) (1978).

301. Pumping might "affect" both the quantity and quality of the water constituting the "natural available water supply." For example, in a coastal county, pumping might accelerate salt water intrusion. *See, e.g.*, Schneider, *supra* note 59, at 104. Inland, pumping across otherwise water impermeable geologic strata may lead to mingling of water of different qualities. *See, e.g.*, Bulletin 118-75, *supra* note 1, at 121-23. The following discussion focuses solely on the local impacts on water *levels* in the area affected by a particular pump.

302. This reduction occurs at least until replenishment.

303. *See supra* notes 274-97 and accompanying text.

In most instances, however, an individual pumper will have almost no *perceptible* effect on a large groundwater basin. For example, DWR estimates that the Sacramento Valley groundwater basin (which partially underlies Butte County) has 113,650,000 acre-feet of storage capacity in its 5,000 square mile area.[304] Maximum well production rates are 4,000 gallons per minute.[305] Given the slow rate at which water will rearrange itself within a large basin after pumping, it may take years for even a large pumper in Butte County, near the north end of the basin, to have an impact on the groundwater level in the south end of the basin.[306] Meanwhile, a large pumper will almost certainly have very pronounced *local* impacts on the aquifer.[307] These local impacts likely provide alternatives to a basin wide definition of "affected area."

The most pronounced local aquifer impact from pumping is the "cone of depression."[308] As discussed above, this cone represents a temporary depletion in the groundwater surround the well as pumping occurs. The land surface from the center of the well to the edge of the cone of depression describes the local area most demonstrably "affected" by pumping.[309] For convenience, this discussion adopts a Tehama County convention and describes this local area as a well's "radius of influence."

Adoption of such a "radius of influence" to define "affected area" for purposes of the permit requirement would force virtually all exporters to apply for a permit.[310] Before the county board of supervisors (board) will issue a permit, however, the applicant must establish that the permit: 1) will not bring about overdraft; 2) will not bring about saltwater

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304. Bulletin 118-75, *supra* note 1, at 60. The aquifer's usable storage capacity is 22 million acre-feet. *Id.*

305. *Id.* At 325,851 gallons per acre-foot, four thousand gallons per minute equals about 6,500 acre-feet per year.

306. *See, e.g.*, Bulletin 118-75, *supra* note 1, at 17.

307. *See supra* notes 82-85 and accompanying text (discussing the "cone of depression").

308. *Id.*

309. Tehama County defines the surface area overlying the "cone of depression" as the "radius of influence" of a well. Tehama County, Cal., Code § 9.40.010.16 (1992).

310. The only exception would be a pumper who owned or used contiguous pieces of property on both sides of the Butte County line. If the radius of influence of the well on the Butte County parcel extended beyond the Butte County parcel to the contiguous parcel in the adjoining county, such an exporter would not require a permit.

Adoption of the "radius of influence" as the "affected area" for the permit provision would have potentially broad application to purely *intra*-county pumping. Indeed, taken literally, any pumper who used water on portions of the well-site parcel that extended beyond the radius of influence would require a permit. By the same token, use of the water beyond the radius of influence on a contiguous parcel would also require a permit. The ordinance does not, however, make any exception for such uses. Tehama County, Cal., Code §§ 9.40.030, .040 (1992); *see infra* notes 426-29 and accompanying text.

intrusion; 3) will not adversely affect transmissivity within the aquifer; and 4) will not adversely affect the water table.[311] Of these requirements, the overdraft prohibition presents the principal to a potential groundwater exporter.

The definition of "overdraft" poses an interpretive problem identical to one posed by the mining ban.[312] As it did with the mining ban, the ordinance defines "overdraft" in terms of a "groundwater basin."[313] As noted above, however, the ordinance does not define "groundwater basin."[314] Were "groundwater basin" interpreted to mean a DWR identified "groundwater basin," then overdraft would need to be measured across that entire basin. This poses practical proof difficulties when dealing with a 7,000 square mile aquifer, such as the Sacramento Valley groundwater basin. If, however, "groundwater basin" referred to a smaller segment of a multiple county, DWR identified basin, then "overdraft" would be established by the pumping and replenishment patterns in just that smaller segment. Such a smaller segment might include only the portion of a multiple county DWR identified basin that underlies Butte County. A narrower definition of "groundwater basin" magnifies the relative impact of any one well on a basin's water storage. It also increases the likelihood that an exporter would have to get a permit.

Slight and indirect support for an interpretation of "groundwater basin" narrower than a DWR identified basin comes from the alternative definition of "overdraft."[315] Drawing from the California Supreme Court's opinion in *Los Angeles v. San Fernando*,[316] the ordinance defines "overdraft" in part as: "the point at which extractions from the basin exceed its safe yield plus any temporary surplus."[317] This definition, too, refers to the otherwise undefined "basin." Nevertheless, its inclusion of the vague "safe yield" reference allows incorporation of a concern with localized pumping effects.[318]

Under the ordinance, a "groundwater supply's" "safe yield" is exceeded when pumping exceeds the maximum annual rate that can be withdrawn without causing a "gradual lowering of the groundwater levels resulting eventually in depletion of the supply."[319] Large pumps

311. Butte County, Cal., Code § 33-7 (Supp. 1978); *see also infra* note 320.
312. *See supra* notes 274-97 and accompanying text.
313. Butte County, Cal., Code § 33-2.13 (Supp. 1978); *see supra* note 271.
314. *See supra* notes 275-81 and accompanying text.
315. *See supra* note 271 ("overdraft" contains alternative definitions).
316. 537 P.2d 1250, 1309 (1975); *see supra* notes 141-50 and accompanying text.
317. Butte County, Cal., Code § 33-2.13 (Supp. 1978).
318. *See supra* note 271.
319. Butte County, Cal., Code § 33-2.19 (Supp. 1978).

within Butte County could reduce the groundwater levels locally without pushing the entire 7,000 square mile Sacramento Valley groundwater basin into overdraft. Nevertheless, the gradual local reduction of the groundwater levels effectively depletes the *locally usable* portion of the overall basin supply.[320] Such local depletion would arguably be an "undesirable effect" within the meaning of the "safe yield" definition. Narrowing the definition of "groundwater basin" to include the portion of a basin locally affected by large scale pumping correspondingly broadens the potential sweep of the permit requirement.

No easy interpretive solution appears to resolving the question of the scope of the permit requirement. The failure to identify the groundwater bodies involved, and the use of the vague categories of "safe yield," and "overdraft" make difficult any reconciliation of the competing interpretive possibilities.

The permit requirement places a final restriction on potential exports. The county retains the right to review the permit annually.[321] The county health department has the right to reduce pumping under the permit if overdraft later occurs.[322] Thus, a permit holder retains no automatic priority if, for example, pumpers not required to obtain a permit later increase their extractions and cause overdraft.[323]

In summary, a pumper who wished to export groundwater from Butte County faces substantial uncertainty when attempting to determine the scope of the county export restrictions. The ordinance's failure to define "groundwater basin" or "affected area" makes it nearly impossible to determine when an exporter might need, or be able to obtain, a permit. Under even the broadest sense of those terms, however, a pumper who sought to transport water entirely out of the Sacramento Valley groundwater basin (or the Sacramento Valley Eastside Tuscan Formation Highlands groundwater basin) as defined by the DWR, will undoubtedly need a permit. The weaknesses in the "mining" prohibition make it

320. Section 33-7 raises an additional interpretive problem. Under that section, the board must determine that a permit "will not *bring about* an overdraft." Butte County, Cal., Code § 33-7 (Supp. 1978) (emphasis added). Arguably, if a basin is already overdrafted at the time of the permit application, then a new permit applicant's pumping will not "bring about" a condition that already exists. The final sentence of section 33-7, however, states: "[t]he board shall impose such conditions upon the permit *so as to prohibit overdraft*." *Id.* This provision should apply equally to applicants who either "bring about" *or* "exacerbate" overdraft.

321. Butte County, Cal., Code § 33-8 (Supp. 1978).

322. *Id.*

323. If the only pumpers who need a permit are "appropriators" within the meaning of the common law, then the renewal process merely restricts the possibility that prescriptive rights will accrue should overdraft occur. If, however, the permit process extends to overlying users or prescriptive rights holders, then the scheme restricts rights otherwise established by judicial decision.

impossible to determine the limits of the county board of supervisor's discretion to approve a permit.

2. *Glenn County*

a. Findings and Definitions

As originally enacted in 1977, the Glenn County groundwater ordinance was virtually identical to the Butte County ordinance. Except for one minor difference in phrasing, the legislative findings are identical.[324] Its definitions of "mining," "overdraft," and "safe yield" are identical.[325] Except for one minor variance, the Glenn County permit requirement mirrored the Butte County requirement.[326] The permit application process and necessary findings were also identical.[327]

b. Substantive Provisions

The original Glenn County ordinance's only major difference from its Butte County counterpart involved the last phrase of the mining ban.[328] As noted above, Butte County limits at least some of its mining ban's geographic impact with the phrase, "transported from the basin."[329] Glenn County, however, originally concluded its mining ban provision with the phrase, "transported from the immediate area of its natural groundwater basin."[330]

The precise meaning of the italicized portion of this provision remains unclear. It raises problems similar to those created by the

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324. *Compare* Glenn County, Cal., Code § 20.04.010 (1991) *with* Butte County, Cal., Code § 33-1 (Supp. 1978) (both noting virtually identical findings).

325. *See* Glenn County, Cal., Code §§ 20.04.140, .150, .210 (1977) (discussing respectively, mining, overdraft, and safe yield).

326. Glen County's code states "[i]t *is* unlawful to pump . . ." and Butte County's code states "[i]t *shall be* unlawful to pump . . . ." *Compare* Glenn County, Cal., Code § 20.04.410 (1977) (emphasis added) *with* Butte County, Cal., Code § 33-4 (Supp. 1978) (emphasis added).

327. *Compare* Glenn County, Cal., Code §§ 20.04.420 to 20.04.450 (1977) *with* Butte County, Cal., Code §§ 33-5 to 33-8 (Supp. 1978).

328. With the exception of the last phrase, and Glenn County's elimination of commas offsetting "or connate water," the two counties' mining ban provisions are otherwise virtually identical. The Glenn County punctuation does not solve the problem noted above caused by the lack of a comma between "mined" and "where." *See supra* notes 268, 289-97 and accompanying text.

329. Butte County, Cal., Code § 33-3 (Supp. 1978); *see supra* notes 275-81 and accompanying text.

330. Glenn County, Cal., § 20.04.400 (1977) (emphasis added).

Imperial ordinance's "area of influence."[331] The ordinance defines neither "immediate area" nor "natural." Whatever its precise meaning, compared to the Butte County provision, this last phrase of the Glenn County provision connotes a much narrower geographic area in which "mining" might be permissible.

The 1990 amendments to section 20.04.400 ended the confusion created by the final phrase.[332] Section 20.04.400 now ends: "where the water pumped is transported *outside of the county except as provided in this chapter.*"[333] The substitution of "outside of the county" for the "immediate area" eliminates the predecessor's geographical confusion. Some additional confusion, however, creeps back in with the new phrase's final tag, "except as provided in this chapter." On its face, nothing within the chapter directly purports to allow mining under any circumstances.

The 1990 amendments also eliminated much of the confusion created by the original permit requirement's "area in which said pumping affects the natural available water supply."[334] The current ordinance simply substitutes "county" for the vague predecessor. Under the 1990 amendments, any exporter will have to obtain a permit.

Compared both to the original Glenn County ordinance, and its Butte County counterpart, the current Glenn County ordinance raises several fewer questions about its scope. Still, while any potential exporter knows that it will have to apply for a permit, the above noted problems with the definition of "overdraft" and "groundwater basin" leave ample uncertainty over any potential permit approval.[335] Similarly, the failure to define "groundwater basin," and the other problems with the definition of "mining," leaves uncertain the ultimate scope of the mining ban as a limitation on the board of supervisor's power to grant a permit.

3. *Modoc County*

a. *Findings and Definitions*

The Modoc County ordinance sets forth purposes identical to those announced by the Butte and Glenn provisions.[336] The ordinance,

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331. *See supra* notes 241-45 and accompanying text.

332. Glenn County, Cal., Ordinance No. 971, § 1 (1990).

333. *Id.* (codified at Glenn County, Cal., Code § 20.04.400 (1991)).

334. Glenn County, Cal., Code § 20.04.410 (1977) (amended at § 20.04.410 (1990)).

335. As with the Butte County ordinance, no one has yet applied for a permit to export water from Glenn County. Letter from John Benoit, Planning Director, Planning Department, Glenn County, to Brad Epstein, Research Assistant (Oct. 22, 1992).

336. Modoc County, Cal., Code § 13.08.010 (1991).

however, is much more compact than its cousins. For example, its definitions section eliminates sixteen provisions found in the Butte and Glenn versions, including a definition of "mining."[337] Similarly, and again unlike the Butte and Glenn versions, the Modoc permit requirement does not direct the issuing authority to consider any of those sixteen provisions.[338]

With one exception, the definitions contained in the Modoc ordinance are identical to those contained in its Butte and Glenn cousins.[339] The sole major exception is the definition for "groundwater basin area."[340] Modoc defines it as: "an area overlying a geologic formation or interconnected series of geologic formations which store, transmit and yield significant quantities of water to wells and springs."[341] By itself, this initial portion of the definition provides little guidance for determining where one basin begins and another ends. The ordinance, however, partially clarifies the definition by specifying: "the groundwater basin areas in the county shall be deemed to be coextensive with [five specific basins and watersheds]."[342]

b. Permit Requirements

The Modoc County permit provisions solves the punctuation problems plaguing the Butte ordinance.[343] It also avoids unnecessary uncertainty.[344] The requirement applies only for an extraction that will be conveyed "outside the groundwater basin area in which it is

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337. Unlike Butte and Glenn counties, Modoc County does not define "artesian well," "conjunctive use," "connate water," "culture (land use)," "groundwater," "groundwater, confined," "groundwater, free (unconfined)," "hydraulic gradient," "hydrology," "imported water," "mining," "percolation," "permeability," "piezometric surface," "porosity," or "salt water intrusion." *See id.*

338. Modoc County, Cal., Code § 13.08.050 (1991).

339. The identical definitions include the following terms: aquifer, overdraft, recharge, safe yield, specific capacity, spreading water, transmissivity, usable storage capacity, water table, and zone of saturation. *See* Modoc County, Cal., Code §§ 13.08.020(A), (C)-(K) (1991).

340. Modoc County, Cal., Code § 13.08.020(b) (1991) (emphasis added).

341. *Id.*

342. *Id.* These five areas are: 1) "the Surprise Valley watershed;" 2) "the Goose Lake watershed;" 3) "the Tulelake Basin;" 4) "the upper Pit River watershed to the Canby Bridge;" and 5) "the lower Pit River watershed to the southern end of Big Valley." *Id.*

343. The ordinance states: "In Modoc County, it is unlawful to pump groundwater of any nature or description, or for a property owner to allow such pumping on his land, in order to convey it *outside the groundwater basin area in which it is pumped* without first obtaining a permit." Modoc County, Cal., Code § 13.08.030 (1991) (emphasis added).

344. Of course, it is fraught with the uncertainties inherent in the use of "overdraft" and "safe yield."

pumped."[345] Since the ordinance generally defines "groundwater basin area" in terms of watershed, any one who intends to pump water out of the watershed needs a permit.

C. *1980 Sees Two Very Different Approaches: Sacramento and Inyo Counties*

1. *Sacramento: Is Concise Nice?*

In February 1980, Sacramento County enacted its water export ordinance.[346] Unlike any of the other counties, it also applies to surface water.[347] The ordinance simply states: "Ground or surface water shall not be transported in any manner from Sacramento County to any point outside the county, except pursuant to a permit . . . ."[348] The ordinance eschews any attempt at hydrological precision. Rather, it leaves the entire decision in the discretion of the county engineer. That discretion is limited in three broad ways. First, the export must be "in conformance with county water planning policies."[349] Second, the export may not "impose liability on the county or the [Sacramento County] water agency."[350] Third, the export may not "cause adverse impacts on the source, the area of use, or the environment."[351]

The Sacramento County ordinance avoids all of the drafting pitfalls that plague the rest of the ordinances. It represents the opposite extreme from the attempts to ground ordinances in hydrology. Rather than attempting to define "overdraft," "safe yield," or "mining," words fraught with pseudoscience, it simply uses "adverse impacts." Such an

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345. Modoc County, Cal., Code § 13.08.030 (1991).

346. Sacramento County, Cal., Ordinance No. 410, § 2 (Feb. 26, 1980) (adding § 15.08.095 to the Sacramento County, Cal., Code).

347. *Id.*

348. *Id.* The last clause of the ordinance exempts water purveyors who provide water service in two or more counties within a defined surface area. *Id.*

349. Sacramento County, Cal., Code § 15.08.095(2) (1989). The policies include those of the County Board of Supervisors per se, and the County Water Agency, a separate agency empowered with water management authority. *See* Cal. Water Code-App. §§ 66-1 to 66-55 (West 1968 & Supp. 1993).

350. Sacramento County, Cal., Code § 15.08.095(2) (1989); *see supra* note 349 (water agency empowered).

351. Sacramento County, Cal., Code § 15.08.095(2) (1989). Subsection (2) does not itself expressly prohibit the engineer from approving a permit that raised planning conflicts, created liability, or adversely impacted any area or the environment. Subsection (3), however, specifically prohibits the engineer from issuing a permit that "is inconsistent with the general plan of the county of Sacramento, the water plan of the Sacramento County water agency, or a specific plan of the county or water agency which may be affected." *Id.* § 15.08.095(3).

approach would certainly be superficially more intelligible to an attorney or judge called to enforce its terms. At the same time, the undefined appeal to "adverse impacts" loses any sense of predictability.[352] Does it include a de minimis threshold? Or does any lowering of the water table mean that an existing in-county pumper, or even a future in-county pumper, can complain of the greater and more expensive pumping lift? To what extent does it authorize the engineer to consider third party impacts, such as on potentially displaced agricultural workers? Is depriving the County of water that it might need some day "an adverse effect"? Nowhere is the line drawn.

2. *Inyo County: True Basin Management?*

Later in 1980, Inyo County became the next county to address groundwater exports.[353] Unlike all of the other ordinances, the Inyo ordinance does more than merely restrict exports. Rather, the ordinance authorized a groundwater management scheme that, at least incidentally, imposed some requirements on all pumpers within the identified basin. The impetus for the ordinance, and the principal focus of its restrictions, were the extractions by the City of Los Angeles from the Owens Valley groundwater basin.

Los Angeles' extractions from the Owens Valley for export to the City are legendary in California water lore.[354] After Los Angeles sought to increase groundwater exports from Owens Valley in the early 1970s, Inyo County began a series of lawsuits against the City claiming that its increased pumping required compliance with the then-newly enacted California Environmental Quality Act (CEQA).[355] The County realized that eventually the City would be able to meet CEQA's procedural requirements.[356] Faced with the legislature's inability to pass state wide

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352. Like Butte and Glenn Counties, Sacramento County reports: "[it has] not been able to discover any circumstance . . . where either an export permit application has been submitted, or where the County has sought to enforce this ordinance." Letter from Steven P. Rudolph, Deputy County Counsel, Sacramento County to Gregory S. Weber (Nov. 13, 1992). Mr. Rudolph continued: "It is also relevant to note that the County has no knowledge of groundwater having been or being exported from the County." *Id.*

353. Inyo County, Cal., Owens Valley Groundwater Management Referendum Measure A (Nov. 4, 1980) (enacted).

354. *See, e.g.*, Marc Reisner, Cadillac Desert 54-107 (1986).

355. CEQA requires review of a project's environmental impacts, along with a discussion of alternatives and attempts to mitigate the identified impacts. *See* Cal. Pub. Res. Code §§ 21000-21177 (West 1986 & Supp. 1992). The lawsuits led to a series of published decisions generally upholding Inyo County's position. *See generally* Rossmann & Steel, *supra* note 18, at 916-25 (discussing decisions).

356. Rossmann & Steel, *supra* note 18, at 924.

groundwater management legislation,[357] on November 4, 1980, Inyo County voters enacted Referendum Measure A: the "Owens Valley Groundwater Management" ordinance.[358]

a. Findings and Definitions

Unlike the short findings provisions of the Imperial, Butte, Glenn and Modoc ordinances, and the nonexistent findings from the Sacramento ordinance, the Inyo ordinance contains seven paragraphs of findings and declarations.[359] Compared to most of the other ordinances, however, the portion of its definitions section addressing export is much terser.[360] After a standard "groundwater" definition,[361] the ordinance clarifies that it applies only to the portion of the Owens Valley groundwater basin within Inyo County.[362] It does not separately define "overdraft," "export," "safe yield" or "mining."[363] Its only other definition of note is "groundwater extraction;" this it defines as: "removal of groundwater by artificial means from the groundwater basin, *or reduction by artificial means of natural recharge from surface water into the groundwater basin.*"[364]

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357. During the 1976-77 drought, Governor Edmund Brown, Jr., created the Commission to Review California Water Rights Law. Cal. Executive Order No. B-26-77 (May 11, 1977); *see* Rossmann & Steel, *supra* note 18, at 926. The Commission ultimately recommended enactment of sweeping, state legislation to regulate groundwater. *See* Final Report, *supra* note 6, at 135-254. To date, those reforms have not been enacted.

358. Rossmann & Steel, *supra* note 18, at 929-30. Rossmann and Steel set out the full text of the initiative ordinance as Appendix A to their article. Rossmann & Steel, *supra* note 18, at 951-57.

359. Inyo County, Cal., Code § 7.01.010 (1980). These include: 1) the historical importance of the Owens Valley groundwater basin to the county; 2) the importance of the basin to the state; 3) the need to mitigate and remove adverse environmental effects caused by groundwater extraction; 4) the environmental and economic effects of lack of basin management; 5) the county's "paramount right and duty to govern the management and extraction of resources within its jurisdiction;" 6) the need to adopt a comprehensive regulation that "consider[s] environmental and economic factors in the area of origin and the are of use," conjunctive use of surface and groundwater supplies, and water conservation measures; and 7) the need to create a management plan to implement the other findings. *Id.*

360. The exception is Sacramento's ordinance, which lacks any definition section.

361. Inyo County, Cal., Code § 7.01.020(g) (1980) (stating "all water contained within the zone of saturation").

362. Inyo County, Cal., Code § 7.01.020(g) (1980). Bulletin 118-75 identifies this basin as underlying both Inyo and Mono Counties. Bulletin 118-75, *supra* note 1, at 73. The ordinance thus limits some of the confusion resulting from multiple basin counties, since it focuses the permit requirements on the intracounty basin conditions.

363. The ordinance's permit provisions do not use any of these terms. Inyo County, Cal., Code §§ 7.01.030-7.01.041 (1980); *see infra* notes 365-79 and accompanying text.

364. Inyo County, Cal., Code § 7.01.020(h) (1980) (emphasis added). The list's terseness might be explained partially by the ordinance's contemplation that the county undertake a

b. *Water Management Plan*

The groundwater management plan forms the heart of the Inyo ordinance. The initiative ordinance directed the county to prepare a plan that incorporated 12 specific points.[365] The required elements focus on local environmental and economic concerns.[366] The plan must include "surface and groundwater . . . to the extent that they are interchangeable in terms of their use."[367] It requires identification and quantification of the groundwater basin's water resources.[368] Finally, the water management programs developed should be "consistent . . . to the extent feasible, with the County's land use plans and the needs of the parties holding water rights."[369]

c. *Permit Program*

At first glance, the Inyo ordinance appears to establish comprehensive groundwater extraction controls applicable to all pumpers within the Owens Valley groundwater basin. Section 7.01.040 states: "[n]o person, farm, corporation, or governmental agency . . . shall within the Owens Valley Groundwater Basin extract water from that basin by any

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"Water Management Plan." *Id.* § 7.01.030. The plan's drafters might have defined additional terms relevant to the plan's details.

365. *Id.* § 7.01.030.

366. Nine of the twelve factors address local conditions. The initial factor summarizes them all: "[t]he paramount protection of Inyo County's citizens, environment and economy." *Id.* § 7.01.030(a). The other seven detail this general concern: "[c]orrection or mitigation of observed significant environmental damage"; "[m]aintenance of the groundwater table at a depth that will support natural vegetation and wildlife, minimize air pollution and enable natural springs to flow"; "[m]aintenance of the groundwater table at a depth that will not cause excessive drilling or pumping costs for other groundwater uses"; "[p]reservation of groundwater quality;" "[i]mposition, whenever feasible, of measures to avoid or mitigate anticipated adverse environmental effects"; "[s]atisfaction to the extent feasible of the needs of the agricultural sector of the Owens Valley through the distribution of water for local irrigation and to increase the acreage devoted to agriculture other than open range"; "[r]eduction in the extent to which ground levels sink as a consequence of groundwater extraction"; and "[r]esults and adequacy of the extractor's environmental monitoring program." *Id.* § 7.01.030.

The remaining three factors include: "[s]atisfaction of the needs of the extractor, taking into consideration the extractor's alternative sources of supply and its conservation policies and practices"; "consideration of the needs and practices of all water users in the state, and the status of the state's entire water resources"; and "[c]onsideration of guidance received from governmental agencies other than the applicant." *Id.*

367. Inyo County, Cal., Code § 7.01.030 (1980).

368. *Id.*

369. *Id.*

artificial means without first obtaining a written permit."[370] Unlike the other ordinances considered so far, this one establishes seven detailed permit application requirements.[371] It greatly broadens the list of other governmental bodies whose comments the Inyo County Water Director will solicit.[372] The permit may only be issued if "consistent with the groundwater management plan."[373] Unlike the other ordinances examined so far, the Inyo ordinance does not detail extensive hydrological factors for the decision makers. Rather, it simply directs the director to base the permit decision "upon a review of hydrologic, environmental, and economic consequences of the proposed groundwater pumping."[374] In addition, it requires detailed monthly extraction reports[375] and imposes fees to pay for the program's administration.[376]

Despite the apparently broad sweep of the permit program, the exemptions may have shielded the numerical majority of pumpers from the permit requirement.[377] The ordinance exempts all small, local

370. *Id.* § 7.01.040. The section exempts "an agency of the United States government to the extent federal law preempts this ordinance." *Id.*

371. *Id.* § 7.01.041. The ordinance requires seven categories of information: 1) detailed technical well information, including monthly extraction rates; 2) estimated time periods for pumping; 3) description of adverse environmental effects; 4) possible changes in surface water uses, including those that might mitigate identified environmental harms; 5) beneficial uses of the ground and surface water available to the applicant; 6) identification of ultimate end uses of the water; and 7) alternatives to the export. *Id.*

372. It requires consultation with thirteen different local, state, and federal agencies. *Id.* § 7.01043.

373. *Id.* § 7.01.043(d).

374. *Id.* § 7.01.043(d). The above mentioned requirement that the permit be consistent with the water management plan incorporates the detailed "hydrologic, environmental, and economic" factors germane to that plan. *See supra* note 366. Thus, while on the surface, the Inyo ordinance permit requirements seems to be only slightly more detailed that the Sacramento ordinance, *supra* note 348, in combination, sections 7.01.030 and 7.01.043(d) make Inyo's the most detailed of all the ordinances in the range of factors considered. At the same time, the Inyo ordinance avoids the pseudo hydrological "overdraft," "safe yield," and "mining" central to most of the other schemes. In its place, section 7.010.30 details many of the types of concerns with water levels that other ordinances seek to include within their "overdraft," "safe yield," and "mining" definitions. While the Inyo versions require some interpretation, *see, e.g.*, Inyo County, Cal. Code § 7.01.030(d) (1980) ("excessive drilling or pumping costs" not further defined), they generally avoid the interpretive baggage that accompanies "overdraft," "safe yield," and "mining."

375. Inyo County, Cal., Code §§ 7.01.045, 7.01.046 (1980).

376. *Id.* § 7.01.060. The fees are imposed according to the "number of acre feet of pumped groundwater applied for." *Id.*

377. This was what the City of Los Angeles alleged in its litigation successfully challenging the ordinance. *See* Judgment On The Pleadings, City of Los Angeles v. County of Inyo, No. 12908 (Cal. Super. Ct. Inyo County July 13, 1983) (allegations listed in papers supporting motion decided by this judgment). The exemptions apply only to the permit requirement. All pumpers, however, must comply with the well registration and reporting requirements. *See* Rossmann & Steele, *supra* note 18, at 944.

pumpers who do not sell or exchange water.[378] The exemptions shift the program's focus to control of the exports by the basin's biggest pumper: the City of Los Angeles.[379]

D. *Nevada County: Inyo Model Directly Applied to Exports*

Enacted in 1986, the Nevada County ordinance follows the same general format of findings, definitions, prohibitions, and permit procedures. In key areas, it borrows most heavily from Inyo. Both in some of its definitions and in the extensive development of the permit procedures, however, the Nevada County ordinance substantially departed from the then current models available from Butte, Glenn, Imperial, Inyo and Sacramento Counties. Although no longer enforced as a *county* ordinance, it has been repealed and reenacted as an ordinance of the state created Nevada County Water Agency.[380] It continues to serve as a model.[381]

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378. The ordinance creates two classes of such pumpers. The first class includes pumpers who extract less than 5 acre feet per year for overlying uses. Inyo County, Cal., Code § 7.01.070 (a) (1980). The second class includes those irrigators who extract 100 acre feet or less water per year on less than 20 total acres of overlying land. *Id.* § 7.01.070(b). The ordinance authorized the Water Department Director to recommend removal of an exemption for cumulative negative environmental effects. *Id.* § 7.07.071.

379. Shortly after the ordinance's enactment, the City filed two lawsuits to block its enforcement. In City of Los Angeles v. County of Inyo, Civ. No. 12908 (Cal. Super. Ct. Inyo County July 13, 1983) (case decided on motion for summary judgment), the trial court upheld the City's claim that the ordinance was preempted under state law. *Id.* The County appealed, and ultimately, the parties settled the dispute. Stipulation and Order for Judgment, City of Los Angeles v. County of Inyo, Civ. No. 12908 (Oct. 18, 1991). In the 60 page settlement, the County agreed not to enforce the ordinance against the City. *Id.* at 58-59. In turn, the City agreed to a participate in a joint long term groundwater management plan. *Id.* at 5-58.

The plan addresses "groundwater mining:" "The goal is to avoid long term groundwater mining from aquifers of Inyo County." *Id.* It then implicitly defines "mining" by limiting "annual groundwater pumping so that the total pumping from any well field area over a 20 year period (the then current year plus the 19 previous years) does not exceed the total recharge to the same well field area over the same 20 year period." *Id.* In limited circumstances, such as after the initiation of a groundwater recharge program, or if appropriate "for other relevant reasons that are consistent with [the management plan's] goals and principles," pumping may exceed this rate. *Id.*

380. In Truckee-Donner Pub. Util. Dist. v. County of Nevada, No. 35920 (Cal. Super. Ct. Nevada County Dec. 8, 1988) (decided on motion for summary judgment), the trial court ruled that the ordinance was preempted under Cal. Const. art. XI, § 7. Order Granting Plaintiff's Motion For Summary Judgment And Denying Defendant's Miotion For Partial Summary Judgment at 3, Truckee Donner Pub. Util. Dist. v. County of Nevada, No. 35920 (Cal. Super. Ct. Dec. 8, 1988). Following the trial court's ruling, the county repealed the ordinance. *See* Minute Order Ruling On Motion To Dismiss at 1, Truckee-Donner Pub. Util. Dist. v. County of Nevada, No. 35920 (Cal. Super. Ct. Apr. 18, 1988). In addition, the county decided not to appeal. *See* letter of Melanie K. Wellner, Deputy Counsel, Nevada County,

Indeed, it has directly inspired several portions of the proposed Sutter County ordinance. Despite its improvements over the then available models, however, it suffers from some of the same definition problems.

1. *Findings and Definitions*

The Nevada County findings apparently borrowed their first two provisions from the Butte and Glenn models.[382] A third provision, preventing the ordinance's application to overlying users, had no direct predecessor.[383] An additional provision reinforces the ordinance's limitation to water pumped from "state-identified groundwater aquifers."[384] The only Nevada County aquifer identified by the California Department of Water Resources in Bulletin 118-75 is the Martis Valley (Truckee Valley) aquifer.[385]

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to Gregory S. Weber (Oct. 29, 1992). Instead, sitting as board of supervisors of the Nevada County Water Agency, the county board of supervisors reenacted the county's groundwater export ordinance as the water agency's ordinance. *Id.* The Nevada County Water Agency "has some broad powers to manage groundwater." *Id.* These powers included the power to commence an "action or proceeding . . . to declare rights in the natural flow of any . . . subterranean supply of waters . . . or to prevent unlawful exportation of water from . . . [the] . . . agency." Cal. Water Code-App. § 90-13 (West 1968); *see generally* Cal. Water Code § 60230(g) (West 1966 & Supp. 1993) (water replenishment districts have same, uncertain powers); *supra* note 180. The Nevada County Water Agency ordinance also exempted the Truckee Donner Public Utility District from the export control ordinance. Letter from Wellner, *supra.*

381. Many of the Nevada provisions found their way into the draft Sutter County groundwater export ordinance circulated for comment in the summer of 1992. *See, e.g.*, Proposed Sutter County, Cal., Code § 1540-020(b) (1992) (discussion draft circulated Aug. 1992) (defining "export of groundwater" identically as in Nevada County, Cal., Land Use And Development Code § L-X 6.2(D) (1986)); Proposed Sutter County, Cal., Code § 1540-020(i) (1992) (discussion draft circulated Aug. 1992) (defining "overdraft" identically as in Nevada County, Cal., Land Use And Development Code § L-X 6.2(N) (1986)).

382. The first two sentences of the findings mirror the Butte and Glenn models. Nevada County, Cal., Land Use And Development Code § L-X 6.1 (1986).

383. The third sentence of the findings states: "It is not the intent of this ordinance to affect the withdrawal of use of groundwater by an overlying landowner or occupier which withdrawal is for domestic use or irrigation on the overlying parcel." Nevada County, Cal., Land Use And Development Code § L-X 6.1 (1986).

384. Nevada County, Cal., Land Use And Development Code § L-X 6.1 (1986) concludes: "It is also not the intent of this ordinance to regulate groundwater except that groundwater contained in state-identified aquifers." Originally, the ordinance addressed only "identified" aquifers. *See* Nevada County, Cal., Land Use And Development Code §§ L-X 6.1, L-X 6.2(K) (1986) (adding the term "identified aquifers"). Just two months after its enactment, the Nevada County Board of Supervisors amended the ordinance to clarify that the only "identified" aquifers were those identified by the state in Bulletin 118-75. Nevada County, Cal., Land Use And Development Code § L-X 6.1, L-X 6.2(K)(2) (1986) (amended by Nevada County, Cal., Ordinance No. 1370 (March 24, 1986).

385. Bulletin 118-75, *supra* note 1, at 97. The Nevada County ordinance does not itself

The explicit limitation of the ordinance to specified "state-identified" aquifers eliminates much of the definitional confusion plaguing the Butte and Glenn provisions.[386] In addition, the Nevada ordinance makes three major definition changes. First, it eliminates any definition or discussion of "mining." Second, it simplifies the definition of "overdraft."[387] Third, it adds a new definition for "export of groundwater."[388] While the elimination of the "mining" provision greatly eliminates much of the confusion plaguing the Butte and Glenn ordinances, the "overdraft" and "export" changes add their own interpretive wrinkles.

The ordinance's simple "overdraft" definition eliminates the second, alternative definition contained in the Butte and Glenn models. It simply defines "overdraft" as: "[t]he condition of a groundwater basin where the amount of water withdrawn by pumping exceeds the amount of replenishment."[389] In so simplifying the definition, Nevada County loses the explicit definitional link between "overdraft" and "safe yield."[390] Since "safe yield," as defined identically in the Butte and Glenn provisions, presents its own interpretive problems, the loss of the explicit linkage with "overdraft" may avoid some definitional confusion.[391] Nevertheless, the simplification makes even more glaring the definition's lack of a time frame for comparing extractions and replenishment.[392]

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mention Bulletin 118-75. To avoid any confusion about what the ordinance means by a "state-identified" aquifer, the ordinance expressly states that "Martis Valley (Truckee Valley)" is the only state identified aquifer. Nevada County, Cal., Land Use And Development Code § L-X 6.2(K) (1986).

386. *See, e.g., supra* notes 275-81 and accompanying text.

387. Nevada County, Cal., Land Use And Development Code § L-X 6.2(N) (1986); *see infra* text accompanying note 389.

388. Nevada County, Cal., Land Use And Development Code § L-X 6.2(D) (1988).

389. Nevada County, Cal., Land Use And Development Code § L-X 6.2(N) (1988). As such, the "overdraft" definition follows the Bulletin 118-75 formulation. *See* Bulletin 118-75, *supra* note 1, at 4. The provision eliminated came from the Supreme Court's gloss on "overdraft" in *Los Angeles v. San Fernando*. *See supra* notes 141-50 and accompanying text.

390. Nevada County's "safe yield" definition is identical to the Butte and Glenn models. *Compare* Nevada County, Cal., Land Use And Development Code § L-X 6.2(V) (1988) *with* Butte County, Cal., Code § 33-2.19 (Supp. 1978) *and* Glenn County, Cal., Code § 20.04.210 (1977). Although the Nevada County ordinance does not explicitly link "safe yield" and "overdraft," the ordinance directs the Planning Director both to consider a proposed export use's impact on "safe yield" and to "specify the safe yield per year for export water for each permit holder." Nevada County, Cal., Land Use And Development Code §§ L-X 6.6, 6.7 (1986).

391. *See supra* notes 312-20 and accompanying text.

392. The loss of express linkage between "overdraft" and "safe yield" reduces the potential for clarification of "overdraft" that might occur after any resolution of the "safe yield" conundrums. While those conundrums are substantial, as noted above, the "safe yield" definition does provide some factors relevant to the determination of an appropriate time

The major definitional uncertainty added by the Nevada County ordinance comes from its "export of groundwater" definition. The ordinance defines that term in pertinent part as: "[r]emoval of water from a state-identified groundwater aquifer by any means to anyplace *outside the immediate groundwater basin.*"[393] The ordinance, however, neither defines nor otherwise explains "*immediate* groundwater basin."

The ordinance's "groundwater basin" definition provides the only clue to the meaning of "immediate." It defines "groundwater basin" as: "[t]he geographic area underlain by a state-identified groundwater aquifer, *including recharge and discharge areas.*"[394] An "immediate" groundwater basin could thus simply be the state identified groundwater aquifer without the recharge and discharge areas.

Any other interpretation necessarily involves finding some nonarbitrary line with which to separate "immediate" and "non-immediate" areas of a groundwater basin. The findings' provision addressed to overlying owners offers a vague suggestion. As noted above, the findings announce that the ordinance has no effect on "the withdrawal or use of groundwater by an overlying landowner or occupier which withdrawal is for the domestic use or irrigation on *the* overlying parcel."[395] The italicized "the" is ambiguous when applied to a pumper who withdraws water from the aquifer from a well on one parcel for use on a different parcel that also overlies the aquifer. Arguably, such a use might be beyond the "immediate" area from which the water was extracted.[396]

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frame for comparing extractions and replenishment. *See supra* notes 312-20 and accompanying text.

In addition to leaving the time frame matters unaddressed, the "overdraft" simplification does nothing to address the problem of determining who is causing overdraft. *See supra* note 288 and accompanying text.

393. Nevada County, Cal., Land Use And Development Code § L-X 6.2(D) (1986) (emphasis added). The definition adds: "[e]xportation includes pumping of groundwater for (1) direct discharge into a surface water system which conveys water out of the groundwater basin or (2) resale to a customer or user who will convey the water out of the groundwater basin." *Id.*

394. Nevada County, Cal., Land Use And Development Code § L-X 6.2(G) (1988) (emphasis added).

395. Nevada County, Cal., Land Use And Development Code § L-X 6.1 (1988) (emphasis added).

396. As noted above, the law has not entirely determined whether such a use is within the overlying right. *See supra* note 115. On the one hand, if such a use were *not* an "overlying" use, then the Nevada ordinance "immediate" area limitation might be unnecessary. On the other hand, even if state decisional law does not recognize such an overlying right, the Nevada "immediate area" limitation might be attempting to regulate extractions that are otherwise within the "overlying rights" recognized by decisional law.

The ordinance's "permit conditions" provision indirectly and ambiguously addresses the distinction between immediate and non-immediate use in the groundwater basin. Section L-X 6.7 states: "The Planning Commission shall place no conditions upon or

2. *Substantive Provisions*

Unlike Butte and Glenn counties, Nevada County does not expressly address groundwater "mining." Rather, its regulatory scheme focuses exclusively on groundwater "export." Nevada County requires a permit to export groundwater, as defined above, or to "install any groundwater transport facility to convey water from a state-identified groundwater aquifer."[397]

The Nevada County ordinance departs from its Sacramento Valley counterparts in several ways. It draws its principal inspiration from the Inyo ordinance.[398] The Nevada ordinance does vary from the Inyo model in several ways. First, it expressly makes the California Environmental Quality Act applicable.[399] Second, it partially clarifies

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set allocations for water withdrawn from the groundwater basin *which will be actually used or consumed within the groundwater basin*." Nevada County, Cal., Land Use And Development Code § L-X 6.7 (1988) (emphasis added).

By itself, this provision does not resolve the applicability of the export definition to overlying, but non-immediate users. If such an overlying but non-immediate user is not an "exporter," then section L-X 6.7 serves one of two functions. First, it simply reiterates the general inapplicability of the ordinance to any overlying users. Second, to the extent that a single extractor is pumping for both an overlying and a non-overlying use, the section clarifies that the Planning Director can only condition the portion of the extraction used for export.

Alternatively, if an overlying but non-immediate user *is* an "exporter," then such an exporter has to follow the permit process, even if ultimately the Planning Commission has no authority to condition the non-immediate but overlying uses. On the one hand, such an application appears to be an empty and expensive requirement. In such a light, it would counsel rejection of the export definition to an overlying but not immediate user. On the other hand, if such an extraction had environmental or economic consequences different from "pure" overlying uses, then the application process would at least force the pumper to identify and confront these consequences. The required reports might give the County helpful information, even if ultimately the Planning Commission could not impose conditions upon the pumping.

Another possible interpretation of "immediate groundwater basin" might involve the cone of depression. This possible limitation echoes the discussion above of the Imperial and Butte ordinances. *See supra* notes 241-45, 275-81 and accompanying text. Use of "cone of depression" or the equivalent to distinguish between "immediate" and "non-immediate" groundwater basin would undoubtedly trigger permit requirements of some otherwise overlying users. As noted immediately above, the Nevada County ordinance somewhat ambiguously tries to avoid its application to overlying users.

397. Nevada County, Cal., Land Use And Development Code § L-X 6.3 (1988).

398. *Compare, e.g.*, Nevada County, Cal., Land Use And Development Code § L-X 6.4 (1988) *with* Inyo County, Cal., Code § 7.01.041 (1988) (former having eight information categories required from permit applicant and the latter having seven of eight identical to Nevada County requirements); *compare also* Inyo County, Cal., Code § 7.01.030(b)-(i) (1988) and *supra* note 366 *with* Nevada County, Cal., Land Use And Development Code § L-X 6.7(B)-(I) (identical findings required).

399. Nevada County, Cal., Land Use And Development Code § L-X 6.5 (1988).

the overdraft analysis by requiring a determination that "*the quantity of water sought to be exported* will not result in overdraft"[400] and specifying the "safe yield per year *for export water*" that will protect the groundwater supply.[401] Finally, since the Nevada ordinance was directed solely at exporters, it had no need for the Inyo exemptions for small, in basin users. Rather, the Nevada ordinance exempted exporters who were continuously exporting water during any six month period of the year preceding the ordinance's enactment.[402]

E. Tehama County: The 1986-92 Drought Prompts Another Export Control Ordinance

1. Findings and Definitions

The Tehama County "aquifer protection" ordinance substantially resembles in both structure and content the Butte and Glenn ordinances.[403] Like its two older cousins, the Tehama County ordinance contains findings, definitions, mining prohibitions, and permit requirements. Nevertheless, Tehama County's ordinance substantially restricts pumping for export by changing the mining definition, adding a "radius of influence" restriction, and greatly expanding the permit requirement.

A major difference in tone between the Tehama County ordinance and its cousins readily appears in the ordinance's initial findings. As noted above, both Butte and Glenn counties began their ordinances with a section containing a single short paragraph extolling the importance of groundwater to the health, welfare, safety, and economy of their respective counties.[404] In contrast, Tehama County prefaced its "aquifer protection" provisions with 15 paragraphs of findings and declarations.[405] Like their Butte and Glenn counterparts, these provisions attempt to link aquifer management with concerns over the county's economy and environment. Unlike Butte and Glenn counties, however, Tehama elaborates the linkages in great detail.[406]

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400. Nevada County, Cal., Land Use And Development Code § L-X 6.7 (1988) (emphasis added). With the exception of Sacramento County, the Sacramento Valley counties' ordinances all inelegantly caution their boards to prevent the "permit" from "result[ing] in overdraft." *See, e.g., supra* note 320.

401. Nevada County, Cal., Land Use And Development Code § L-X 6.7 (1988) (emphasis added).

402. Nevada County, Cal., Land Use And Development Code § L-X 6.10 (1988).

403. Tehama County, Cal., Code Ch. 9.40 (1992) ("Aquifer Protection").

404. *See supra* note 323 and accompanying text.

405. Tehama County, Cal., Ordinance No. 1552 (1992). These findings, however, will not be within the codified version of the ordinance.

406. *See id.* paras. 3, 9. The Tehama ordinance foresees fuller development of the county's

Most of the definitions set forth in the Tehama County ordinance are identical to the comparable Butte and Glenn provisions.[407] In three critical ways, however, the definition lists differ. First, the Tehama County ordinance adds a definition of "domestic water well."[408] This provision sets up several exceptions to the ordinance's pumping limitations.[409] Second, the Tehama County code adds a definition of "radius of influence."[410] This provision sets up a major new pumping limitation.[411] Finally, the Tehama County ordinance's "mining" definition differs substantially from its Butte and Glenn cousins.[412]

Tehama County defines "mining" as:

> Extraction of groundwater by any means, including pumping and the use of artesian wells, from any aquifer within the county of Tehama which in contemplation of pre-existing extractions of ground water [sic] used beneficially upon lands overlying the aquifer within the County and the reasonably foreseeable beneficial uses to which the groundwater from the aquifer could be made to lands overlying the aquifer within the County which [sic] exceeds the reasonably foreseeable replenishment potential of the watersheds' native water together with such imported water as may be available to be applied to the recharge the [sic] aquifer.[413]

By defining the relevant "groundwater bodies" as "any aquifer within the county of Tehama," this definition solves the initial problem created by

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agricultural economy "for a host of reasons, including the presence of an aquifer or aquifers that have not yet been damaged by imprudent water production practices." *Id.* para. 3. The ordinance also identifys numerous harms that mining or overdrafting from new wells might cause, even when the water will be used "upon overlying and immediately adjacent lands within the County." *Id.* para. 9.

407. *Compare* Tehama County, Cal., Code §§ 9.40.010(11), (18) (1992) *with* Butte County, Cal., Code §§ 33-2.13, -2.19 (Supp. 1978) *and* Glenn County, Cal., Code §§ 20.04.150, .210 (1977) (identical overdraft and safe yield provisions in all three codes).

408. Tehama County, Cal., Code § 9.40.010(3) (1992) (well used for residential and yard uses "within the curtilage of a dwelling" on the well site parcel or a contiguous parcel).

409. Tehama County, Cal., Code §§ 9.40.030, .040 (1992); *see infra* note 427.

410. "The radial distance from the center of a well bore to the point where there is no lowering of the water table or potentiometric surface (the edge of the well's cone of depression)." Tehama County, Cal., Code § 9.40.010(16) (1992).

411. Tehama County, Cal., Code § 9.40.040 (1992) (radius of influence restrictions); *see infra* notes 426-29 and accompanying text.

412. *Compare* Tehama County, Cal., Code § 9.40.010 (10) (1992) *with* Butte County, Cal., Code § 33-2.12 (Supp. 1978) *and* Glenn County, Cal., Code § 20.04.140 (1991) (differing mining definitions); *see also supra* notes 268, 274-97, 325 and accompanying text.

413. Tehama County, Cal., Code § 9.40.010(10) (1992).

Butte and Glenn counties' undefined reference to "groundwater bodies."[414] Nevertheless, while solving this problem, the Tehama County provision proceeds to pose several interpretive challenges of its own.

The first problem requires reconstruction of the 93 word sentence to clarify the relationship between the multiple clauses and phrases. Much of the confusion comes from the lack of punctuation and the inclusion of an apparently superfluous "which" preceding "exceeds" in the definition's latter portion.[415] If the second "which" is ignored, and clarifying changes added, the definition appears to read:

> Extraction of groundwater . . . from any aquifer within the county of Tehama which[,] in contemplation of [both:]
>
> [1] pre-existing extractions of [groundwater] used beneficially upon lands overlying the aquifer within the county[,] and
> [2] the reasonably foreseeable beneficial uses to which groundwater from the aquifer could be made to lands overlying the aquifer within the County[,]
> . . . exceeds the reasonably foreseeable replenishment potential of the watersheds' native water together with such imported water as may be available to be applied to the recharge [of] the aquifer.

This reconstruction, however, raises its own problems.

As noted above, both the Butte and the Tehama County ordinances define "mining" by setting up a simple equation: *"mining"="pumping" > "replenishment."*[416] Similarly, the initial and final portions of the Tehama County ordinance appear to set up a similar equation: *"mining"="extraction" > ((native water replenishment) + (water imported for recharge).)* This equation, however, leaves out the definition's two phrases that qualify "extraction": "pre-existing extractions for overlying use within the county" and "reasonably foreseeable future in county overlying uses." The question remains: how does "contemplation" of "present" and "future" in-county uses affect the definition of "mining" itself?

None of the other definitions addresses either the meaning of these two phrases, or their role in the "mining" equation. Several possible interpretations exist. First, the phrases might carve out from the "mining"

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414. *See, e.g., supra* notes 282-87 and accompanying text.

415. The problem stems from the "which" that precedes "in contemplation of" in the ordinance's initial portion. The second "which" simply makes no sense.

416. *See supra* notes 268, 325. Both these ordinances require pumping to be "greatly in excess of replenishment." *Id.*

The preceding discussion noted a problem with these simple "mining" definitions that applies to the Tehama County ordinance, too. All three definitions fail to identify a time frame for comparing the rates of extraction and replenishment. *See supra* notes 282-83 and accompanying text.

definition an exemption for in-county uses. Under this interpretation, pumping that exceeded replenishment would not be "mining" if the water were "used beneficially" in-county on lands overlying the aquifer. Such an interpretation, however, does not follow easily from the vague text of the mining definition. Moreover, it adds little to the overall groundwater control ordinance. It simply follows the mining restriction itself. The Tehama county ordinance only bans "mining" if the extracted water "is transported . . . from the [county.]"[417] Under this interpretation, an in-county pumper faces no potential liability for "mining." The "mining" equation would read: *"mining"="extraction (for out-of-county uses)">((native water replenishment)+(water imported for recharge).)*

Second, the "present" and "future" in-county use phrases might simply purport to reserve water for any future in-county uses. Under such a reading, "mining" occurs when a proposed export project will take water away from future in county uses, *even if* the combined rates of then-present pumping for in-county uses and export pumping is otherwise less than the combined rate of natural and artificial replenishment. Under this reading, the "mining" equation would read: *"mining"=((present pumping for in-county uses) + (export pumping))>((native water replenishment) + (water imported for recharge).)*

Finally, at the opposite extreme from the first interpretation, the "present" and "future" in-county use phrases might simply reinforce the basic equation that *"mining"="extraction (for any purpose)">((native water replenishment) + (water imported for recharge).)* Little textual support exists within the definition itself for this interpretation.[418] Nevertheless, the ordinance's broad legislative findings demonstrate the board's concern over the effects of increased pumping even for in-county, overlying uses.[419]

Although the board thus expressed its concern over potential mining for overlying uses, it ultimately limited the mining ban to out-of-county extractions.[420] Thus, even if the mining definition itself arguably might have limited *in-county* extractions for in county uses, such a definition would have little impact on a potential exporter's ability to pump for uses outside of the county.[421]

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417. Tehama County, Cal., Code § 9.40.020 (1992).

418. Indeed, such a reading would reduce the overall equation to *"mining" = "pumping" > "replenishment."* This would make the lengthy Tehama County provision into a virtual twin of its far shorter Butte and Glenn county cousins.

419. *See* Tehama County, Cal., Ordinance No. 1552, paras. 9, 12 (1992). Specific concerns noted are drought induced increased well drilling for intracounty uses which alarms county supervisors and a fear of intracounty exports. *Id.*

420. *See* Tehama County, Cal., Code § 9.40.040 (1992).

421. The only impact on an exporter readily imaginable from such a broad definition would be the county wide level at which mining occurred. If "mining" can occur when *((present + future) in-county pumping) > ((native water replenishment) + (water imported for recharge))*, then there will be no water available for export pumping.

2. *Substantive Provisions*

In addition to these definition changes, the Tehama County ordinance makes three major substantive changes from its Butte and Glenn county counterparts. First, like the current Glenn County ordinance, the Tehama County ordinance's punctuation leaves no doubt that the mining ban applies only to water that is "transported . . . from the County of Tehama."[422]

Second, the Tehama County ordinance greatly broadens the permit requirement. Unlike the vague Butte County provision,[423] and the generally narrower Glenn County provision,[424] the Tehama County provision requires a permit from any one who pumps for use (or sale for use) "on other than the parcel of land upon which the extraction occurs, or contiguous parcels of land under the same ownership as the parcel from which the extraction occurs."[425] This provision requires a permit from any exporter who wished to take water out of the county for use on any parcel other than one immediately across the Tehama County line from the Tehama County parcel upon which the pumping occurred.

Third, the Tehama County ordinance adds an entirely new pumping restriction. Section 9.40.040 makes it unlawful to operate (or allow another to operate) a well "in such a manner that the radius of influence of such well extends beyond the boundaries of the parcel of land upon which the well is located, or alternatively, beyond the boundaries of contiguous parcels of land under the same ownership as that parcel upon which the well is located."[426] As originally enacted, this provision applied with almost equal force to both in-county users and exporters.[427] Almost immediately, the county amended the ordinance by exempting wells "actually in operation in calendar year 1991 or any prior year."[428]

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422. Tehama County, Cal., Code § 9.40.020 (1992); *see also supra* notes 274-97, 333 and accompanying text.

423. *See supra* note 270.

424. *See supra* note 326. In one instance, Glenn County's permit requirement is broader than the Tehama County provision. Glenn County requires all out of county pumpers to obtain a permit. Glenn County, Cal. Code § 20.04.410 (1991). In contrast, if a Tehama County pumper owned a contiguous parcel of land across the Tehama County line, pumping from the Tehama County parcel for use on the adjoining, non-Tehama County parcel, would not appear to require a permit. Tehama County, Cal., Code § 9.40.030 (1992).

425. Tehama County, Cal., Code § 9.40.030 (1992) (also exempting defined drinking water purveryors serving Tehama County residents).

426. *Id.* § 9.40.040. For the definition of "radius of influence," see *supra* note 410.

427. The provision exempts both defined "domestic wells" and the same suppliers of Tehama County public water system exempted from the permit requirement. Tehama County, Cal., Code § 9.40.040 (1992); *see generally supra* note 408.

428. Tehama County, Cal., Ordinance No. 1553 (Feb. 18, 1992).

This pumping restriction places an additional substantive limitation upon some potential exporters. For those exporters who draw or purchase water from a well grandfathered in under the amendment, the radius of influence restriction will have little impact.[429] If the grandfather clause does not apply to water from a particular well, then the radius of influence restriction may greatly reduce the availability of sites for potential export pumping--even if there is no demonstrated "mining," "overdraft," or other long term negative impacts associated with a particular well. Export pumpers will have to buy larger parcels, or parcels more remote from neighboring wells.[430]

V. EXPORT REGULATION BY STATE CREATED GROUNDWATER AUTHORITIES

The major legislative alternative to locally enacted groundwater export controls is state creation of a groundwater management agency. In 1953, the legislature added sweeping groundwater management powers to the Orange County Water District (OCWD).[431] The 1953 amendments to its charter authorized the OCWD to limit overall district groundwater pumping and equalize the relative costs of surface and groundwater supplies through a "basin equity assessment."[432] The OCWD Act, does not, however, directly address groundwater export issues in its statutory scheme.[433]

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429. Arguably, enlargement or deepening of a well under some circumstances might trigger the radius of influence restrictions. *See* Tehama County, Cal., Code § 9.40.040 (1992).

430. In addition to Tehama County's 1992 enactment of a groundwater export ordinance, 1992 also saw Sutter County draft a groundwater export ordinance. Sutter County, Cal., Proposed Ordinance, An Ordinance of the County of Sutter Amending the Sutter County Ordinance Code by Adding Chapter 1540 Relating to the Mining of Water (1992). *See* Letter from James Scanlon, Deputy County Counsel, Sutter County, to Sutter County Water Districts (Aug. 27, 1992) (containing draft of "Proposed Sutter County Ordinance Regarding Groundwater Management"). At the time of this writing, the County has not proceeded on this proposal.

431. 1953 Calif. Stats. 2035, 2060-67; *see generally* Schneider, *supra* note 59, at 43-49.

432. *See* Calif. Water Code-App. § 40-31.5 (West Supp. 1993); *see generally* Schneider, *supra* note 59, at 47-49.

433. Although the current version of the OCWD Act does not detail export restrictions, it does, however, expressly authorize the district to initiate "actions and proceedings . . . to prevent *unlawful* exportation of water from the district." Cal. Water Code-App. § 40-2(9) (West Supp. 1993) (emphasis added). It does not, however, otherwise directly address the legality of exports. The Water Code Appendix is peppered with similar language in special district legislation. *See, e.g., supra* note 380 (Nevada County Water Agency has such undefined powers). The reference to "actions and proceedings" in these acts appears to limit the special districts' powers to that of being able to sue, or to appear as a party before an agency, to establish an unlawful export. Without more, it does not appear to authorize the special district to legislate on these matters. *Cf.* Cal. Water Code § 275 (West 1971) (granting

A. *Sierra Valley Groundwater Basin Act*

The first special district legislation to address groundwater export directly was the Sierra Valley Groundwater Basin Act (Sierra Valley Act, or Act).[434] Added in 1980, the legislation authorized Plumas and Sierra counties to create a joint powers agency[435] known as the "Sierra Valley Groundwater Management District."[436] The Department of Water Resources had identified "special problems" with that basin.[437] The reduction of artesian head resulting from increased well drilling threatened winter valley cattle watering.[438]

1. *Findings and Definitions*

Unlike many of the more recent special acts, the Sierra Valley Act contains no express legislative findings. It does extensively define relevant terms.[439] Six definitions help avoid much of the confusion inherent in many of the ordinances considered above.

First, the Act defines "groundwater basin" as: "the groundwater basin within the boundaries of the district and any sub-basins located therein."[440] As a special act directed towards solving a particular basin's problems, the legislation by nature eliminates much of the confusion plaguing the county ordinances considered above. The "groundwater basin" definition removes any residual confusion by including "sub-basins" within the overall basin definition.

State Water Resources Control Board the power to take "all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent . . . [waste] of water").

The following section of the article focuses on those special districts expressly empowered to limit groundwater exportation pursuant to groundwater management authority.

434. Cal. Water Code-App. § 119-101 (West Supp. 1993).

435. A "joint powers agency" is an agreement by two or more public agencies to exercise jointly any of the powers they could each exercise separately. *See* Cal. Gov't Code §§ 6500-6599 (West 1980 & Supp. 1993).

436. Cal. Water Code-App. § 119-102 (West Supp. 1993). An additional section of the 1980 legislation also authorized Lassen and Sierra Counties to enter into a management agreement with Nevada, or Washoe County, Nevada, governing the bi-county, interstate Long Valley groundwater basin. Cal. Water Code-App. § 119-1301 (West Supp. 1993). It also allows the two California counties to manage jointly the California portion of the Long Valley basin with the same powers otherwise granted to the Sierra Valley Groundwater Management District. *Id.*

437. Bulletin 118-80, *supra* note 12, at 35, 38.

438. *Id.* at 38.

439. Cal. Water Code-App. §§ 119-301 to 119-322 (West Supp. 1993).

440. *Id.* § 119-311.

Second and third, the Act distinguishes two classes of extractors who have appropriative rights. It defines "export" as those extractions that will be used outside of the district boundaries.[441] Thus, nonoverlying users who appropriate groundwater for use outside of district are "exporters." In contrast, the Act creates a new class of appropriators: "district off-basin users."[442] These appropriators extract "groundwater for use on land within the district which does not overlie the groundwater basin."[443] The distinction becomes critical to the substantive rights created by the Act.[444]

Fourth, the Act provides a basic definition of "overdraft." It defines "overdraft" as: "the condition of the groundwater basin where the average annual amount of water extracted exceeds the average annual supply of water to the basin, plus any temporary surplus."[445] While not as specific as the Imperial ordinance, it does specify "average annual amount" as the relevant measures of time and quantity for comparing extractions and replenishment.

Fifth, the Act adds a definition not found in any of the ordinances. It defines "available supply" in part as:

> the quantity of groundwater which can be withdrawn annually from the groundwater basin without resulting in or aggravating conditions of overdraft, subsidence, or groundwater quality degradation. Available supply of the groundwater basin includes the average annual natural water supply, imported water or other water which has been spread to the basin or otherwise added to the basin, and return flows to the basin attributable to these sources reaching the groundwater basin in the course of use.[446]

Finally, the Act defines "well interference" as: "a substantial water level decline in a short time period in a localized area caused by pumping from extraction facilities."[447] Of course, this provision is no

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441. *Id.* § 119-307.

442. *Id.* § 119-306.

443. *Id.*

444. Cal. Water Code-App. § 119-709.7 (West Supp. 1993); *see infra* notes 453-56 and accompanying text.

445. *Id.* § 119-314. Unlike the ordinances considered above, the Act expressly defines "temporary surplus" as: "the amount of water that can be extracted from the groundwater basin, without adversely affecting the available supply of the groundwater basin, to provide storage space for natural recharge that would be lost during wet years if it could not be stored in the groundwater basin." *Id.* § 119-319. This definition follows directly from *Los Angeles v. San Fernando. Supra* note 130; *see also supra* note 87.

446. Cal. Water Code-App. § 119-302 (West Supp. 1993).

447. *Id.* § 119-321.

model of precision. For example, it does not limit "localized area" as specifically as the Tehama ordinance's definition of "radius of influence."[448] Nevertheless, it does at least provide three relative concepts: 1) "substantial" versus "insubstantial" water level decline; 2) "short" versus "long" time period; and 3) "localized" versus "regional" or "widespread" area.

2. *Substantive Provisions*

The Sierra Valley Act authorizes, but does not require, extensive groundwater management provisions. For example, it allows the District to require well registration and extraction statements.[449] In addition, it may regulate well spacing or operation to minimize well interference.[450] This power includes the right to adjudicate whether well interference from an extraction infringes another extractor's legal rights.[451] In general, if the District "determines that groundwater management activities may be necessary," the District may exercise any of several identified powers.[452]

The Act extensively details the district's export regulation authority. Central to the export regulation scheme is a legislative prioritization of appropriative groundwater rights. Section 119-709.7 grants a priority to both overlying groundwater users and to "district off-basin groundwater users" over exporters.[453] In some circumstances, this provision can reprioritize existing uses; the in-district use priority applies "irrespective of the time such export uses are commenced."[454] In addition, the Act authorizes the district to grant some off-basin district users a priority over overlying users, based on a need for "equitable distribution of the groundwater resource."[455]

The Sierra Valley Act thus provides a rare and limited state legislated scheme for acquiring private rights to groundwater. In place of

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448. *See supra* notes 410, 426-29, and accompanying text.

449. Cal. Water Code-App. §§ 119-601 to 119-607 (West Supp. 1993).

450. *Id.* §§ 119-703 to 119-704.

451. *Id.* § 119-705. This contrasts with the powers of local public agencies under A.B. 3030. As noted above, that bill expressly precludes a local public agency from determining extractor's legal rights. *See supra* note 207.

452. Cal. Water Code-App. § 119-702 (West Supp. 1993) (authorizing, *inter alia*, water purchase, storage, conservation, and exchange); *see also id.* §§ 119-801 to 119-1206 (groundwater extraction and management charges, water development projects, judicial enforcement). These powers are fairly typical of powers granted to those state created local water agencies authorized to manage groundwater. *See, e.g., supra* note 180 (water replenishment districts).

453. Cal. Water Code-App. § 119-709.7(a) (West Supp. 1993).

454. *Id.*

455. *Id.* § 119-709.7(b).

the traditional, two tier scheme of water rights rules governing groundwater extraction, the legislature has created a three tier scheme. Even more significantly, the legislature granted the district the power to adjust the automatic priority otherwise granted to overlying users by common law, in favor of local (i.e., in-district) appropriative uses.[456]

These legislative changes to water rights law strongly support the district's export management authority. The Act requires an exporter to obtain a permit specifying the amount of water it can export.[457] Permit applicants must demonstrate "an available supply . . . in excess of the amount currently required for reasonable and beneficial uses within the district."[458] The applicant must also demonstrate that the export, "if permitted, would not adversely affect the rights of groundwater users within the district."[459] If the district later determines that overdraft exists, it can suspend previously authorized exports.[460]

B. *Other Districts Follow the Sierra Valley Model*

In 1989, the legislature extended export control powers to two other specially created local public agencies in Eastern California.[461] The legislation that created the Mono County Tri-Valley Groundwater Management District contains critical definitions, groundwater management provisions, and export restrictions virtually identical to the

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456. The constitutionality, under the state and federal "takings" clauses, of such a reprioritization of an existing right is beyond the scope of this article.

In the event that any pumper petitions a court to adjudicate a groundwater basin, the legislature has directed the court how to apportion the groundwater. In general, the court must allocate groundwater similarly to the district's allocation of basin waters in times of overdraft. *Compare* Cal. Water Code-App. § 119-712 (West Supp. 1993) *with id.* § 119-709.5; *see also infra* note 460.

457. Cal. Water Code-App. § 119-706(a) (West Supp. 1993).

458. *Id.* § 119-706(b).

459. *Id.*

460. *Id.* § 119-707. If export restrictions alone will not "eliminate existing or threatened conditions of overdraft, the district may limit or suspend extractions by district users." *Id.* § 119-709. Under such circumstances, the district primarily allocates water "on the basis of the number of acres overlying the basin or subbasin that a user owns or leases in proportion to the total number of acres overlying the basin or subbasin." *Id.* § 119-709.5. The district can, however, adjust "any figure . . . up or down for any of the following factors: (1) [t]he number of acres actually irrigated compared to the number of acres owned or leased; (2) [c]rop type; (3) [w]asteful of inefficient use; (4) [r]easonable use; (5) [a]ny other factors that the district reasonably feels it should consider in order to reach an equitable distribution within the entire district." *Id.*

461. Cal. Water Code-App. §§ 128-1 to 128-906 (West Supp. 1993) (Mono County Tri-Valley Groundwater Management District Act); *id.* §§ 129-1 to 129-1301 (Honey Lake Valley Groundwater Management District).

Sierra Valley Act.[462] The legislation that created the Honey Lake Valley Groundwater Management District, in Lassen County, mirrors the Sierra Valley Act for the most part.[463] The Honey Lake Valley Act, however, does not contain the Sierra Valley Act's legislative distinctions between in-district and out-of-district appropriators.

In 1991, the Legislature again modeled special district legislation upon the Sierra Valley Act. The Ojai Basin Groundwater Management Agency Act creates an agency in Ventura County with power to regulate groundwater and restrict its export.[464] Like the Honey Lake Valley Act, however, the Ojai Basin Act does not expressly prioritize water among different types of appropriators.[465]

The Sierra Valley Act and its progeny continue to serve as models for special district legislation.[466] Indeed, in 1992, two counties that had enacted groundwater export ordinances moved forward with proposals for state legislation to created special county-wide groundwater management districts with groundwater management and export control authority. In 1992, Glenn County unsuccessfully sought legislation that

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462. *Compare* Cal. Water Code-App. §§ 119-302 to 119-322 (West Supp. 1993) *with id.* §§ 128-302.5 to 128-322.

463. *Compare* Cal. Water Code-App. §§ 119-302 to 119-322 (West Supp. 1993) *with id.* §§ 129-302 to 129-322.

464. Cal. Water Code-App. §§ 131-101 to 131-1201 (West Supp. 1993). Again, many of the Ojai Basin Act's principal definitions and substantive provisions are substantially similar to the Sierra Valley Act's provisions. *Compare id.* §§ 131-302 to 131-327 *with id.* §§ 119-302 to 119-322.

The Sierra Valley Act, the Mono County Act, and the Honey Lake Valley Act all prohibit exports unless the applicant demonstrates that "there is an *available supply* . . . in excess of the amount currently required for reasonable and beneficial uses within the district." Cal. Water Code-App. § 119-706 (West Supp. 1993) (Sierra Valley Act); *id.* § 128-706 (Mono County Act); *id.* § 129-706 (West Supp. 1993) (Honey Lake Valley Act) (emphasis added). The Ojai Basin Act, however, prohibits exports "unless the applicant has established that the *temporary surplus* is in excess of the amount currently required for reasonable and beneficial uses within the agency." Cal. Water Code-App. § 131-708(b) (West Supp. 1993) (emphasis added). The Sierra Valley Act, the Mono County Act, and the Honey Lake Valley Act define "temporary surplus" as: "the amount of water that can be extracted from the groundwater basin, without adversely affecting the available supply of the groundwater basin, *to provide storage space for natural recharge that would be lost during wet years if it could not be stored in the groundwater basin.*" Cal. Water Code-App. § 119-319 (West Supp. 1993) (Sierra Valley Act); *id.* § 128-319 (Mono County Act); *id.* § 129-319 (Honey Lake Valley Act) (emphasis added). In contrast, the Ojai Basin Act expands the definition: "the amount of water that can be extracted from the basin without permanently adversely affecting the available supply *or* the ability of the basin to provide storage space for natural or artificial recharge that would be lost during wet years if it could not be stored in the basin." Cal. Water Code-App. § 131-325 (West Supp. 1993) (emphasis added).

465. Cal. Water Code-App. § 131-403 (West Supp. 1993).

466. *Cf.* Calif. Water Code-App. §§ 121-102 to 121-1105 (West Supp. 1993) (Fox Canyon Groundwater Management Act).

would have created a Glenn County Groundwater Management District.[467] Twice passed by the legislature, it was twice vetoed by Governor Wilson.[468] While the proposed Glenn County Act varied substantially from the Sierra Valley Act, nevertheless, the Sierra Valley Act's influence remains apparent.[469] Similarly, in 1992 and 1993, Imperial County was continuing to draft special district legislation modeled after the Sierra Valley Act and its progeny.[470]

VII. CONCLUSIONS

The extended tour through the maze of ordinances and special district legislation[471] leads to two sets of conclusions about local control of groundwater transfers. First, authorized counties or other local public agencies who undertake groundwater transfer control need to pay much greater attention to the details of their local legislative schemes. Second, the balkanization of groundwater basin management, particularly in multi-county basins such as the Sacramento Valley groundwater basin, argues strongly for greater state legislative guidance over important water allocation decisions with statewide import. At the very least, state legislation could add some greater uniformity to provisions adopted by those localities who are both authorized and who choose to regulate groundwater extractions. More importantly, state law could ensure that groundwater export controls that do not involve true basin management do not benefit local economies at the expense of the state economy as a whole.

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467. *See supra* note 201.

468. *See supra* note 201.

469. For example, the proposed Glenn County Act contains many of the same definitions and substantive provisions as the Sierra Valley Act. *Compare* S.B. 207 §§ 202, 209, 212, 501, 502 (1992) (unenacted) *with* Cal. Water Code-App. §§ 119-302, -311, -314, -701, -702 (West Supp. 1993) (same definitions of terms and substantive provisions). The vetoed Glenn County Act, however, departed from the Sierra Valley Act in quite a few ways. Some of the differences relevant to export regulation include both different definitions and different permit requirements. *Compare* S.B. 207 §§ 205(a), 507(b) (1992) (unenacted) *with* Cal. Water Code-App. §§ 119-307, -706 (West Supp. 1993) (note differences in definition of "export" and permit restrictions on water exports).

470. Letter of Joanne Yeager, Deputy County Counsel, Imperial County, to Gregory Weber (Feb. 20, 1992). The County received a "final draft" bill from its special counsel on February 26, 1993.

471. *Supra* notes 215-470 and accompanying text.

A. Greater Care Needed in Drafting Locally Initiated Groundwater Transfer Regulations

Regardless of the ultimate outcome of the debate over the degree of state control over groundwater transfer matters, the crafters of groundwater transfer regulations need to pay much greater attention to the details of their legislative schemes. Over the past 20 years, a "common law" of local legislative efforts to control groundwater exports has arisen. The law is "common" not in the legal sense of a judicially created body of law; rather, it is common in the sense that the various counties have borrowed substantial portions of previous local legislative efforts in developing their own particular solutions to the transfer problems. At the same time, they have departed from their models at times. This ability to borrow from the best current solutions and innovate where the best is not appropriate is one of the strong points in favor of local control over groundwater issues. Unfortunately, the borrowing patterns have not always reflected a coherent and precise tailoring of legislative expression to local circumstances.

The reasons for the pattern of borrowing and innovation are likely as much a result of accident as conscious design. Lacking a central depository for the local ordinances, it is difficult to assemble a complete set of these ordinances. Sudden concerns over groundwater transfers, particularly in times of drought, may lead to hasty, imprecise drafting. In addition, complicated or poorly understood local hydrology does not lend itself easily to simple legislative solutions.[472]

While progress in eliminating unnecessary legislative confusion has not been uniform, there have been major steps forward over the past decade. For those counties that have been able to convince the legislature to enact special district legislation, the Sierra Valley Act has become a true model.[473] That Act and its progeny generally define precisely the affected area, the meaning of export, and the requirement for an export permit. Moreover, the export control schemes are accompanied by general

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472. Of course, as noted earlier, see *supra* notes 182-91 and accompanying text, local public agencies have no monopoly on poor drafting. As also noted, however, at least with a poorly drafted state statute, the provisions will be uniform, once the courts figure out what they mean. In contrast, with 58 counties, and over 900 other local public agencies that may have some authority to regulate groundwater under A.B. 3030, the need for drafting precision is even greater, since the chances for incoherency in resource planning are multiplied a thousand fold. An optimist would conclude that, with maybe 1,000 entities potentially at work on their groundwater management ordinances, some of them will "get it right" and come up with a well crafted scheme. A pessimist, however, might conclude that 995 of the entities may well "get it wrong," and the resulting resource management scheme would be an incoherent shambles.

473. *Supra* notes 434-60 and accompanying text.

basin management powers. Finally, in both the Sierra Valley and Mono County Acts, the legislature has expressly sanctioned the apparent goal of many export control provisions: an express priority to those appropriators who will use the water on lands within the local public agency, at the expense of those who will export the water beyond the basin boundaries. Such an express, *state* approved groundwater appropriative rights scheme reduces the opportunity for pure parochialism in water allocation decisions.

Still, even the Sierra Valley Act progeny have room for some improvement. The definitions of "overdraft" lack precise time units for comparing extraction and replenishment rates. Most recently, the Ojai Basin Act has eliminated the helpful "available supply" term as the linchpin of the export permit scheme.[474] In its place, it substituted a new definition of "temporary surplus" that unhelpfully extends that concept beyond the accepted meaning derived from *Los Angeles v. San Fernando*.[475] The vetoed Glenn County Act went even further, and eliminated express requirements for proof of either "available" or "temporary" surplus.[476] In all the special district acts, the export permit requirements apply even though the districts undertake no other management activities that would spread more evenly the burden of increased groundwater use efficiency and reduced local environmental harms. Finally, only the Mono County Act has followed the Sierra Valley Act's state prioritization of appropriative groundwater rights.[477] The legislature's failure to prioritize classes of appropriative groundwater rights in the other special acts raises the possibility that local districts will attempt to achieve such a de facto prioritization in the name of purely parochial economic concerns.

In contrast to the state created legislative districts, less coherence emerges from a consideration of the county ordinances. Three broad groups of ordinances appear: 1) the Imperial ordinance; 2) the current Sacramento Valley ordinances; and 3) the Inyo and Nevada ordinances.[478]

The Imperial ordinance appears largely to have been ignored as later counties approached groundwater export issues. This ignorance has had mixed blessings. On the one hand, Imperial's vague and confusing

474. *See supra* note 464 and accompanying text.

475. See *supra* notes 130, 141-150 and accompanying text.

476. *See supra* note 469.

477. *See supra* note 462.

478. Arguably, the proposed but not adopted Sutter County ordinance, which drew from both the Nevada and the Sacramento Valley models, represented a fourth, hybrid group. *See supra* note 430.

"area of influence" provision[479] has not been directly copied by any subsequent counties, although equally obtuse terms have surfaced in its place in some of the Sacramento Valley counties.[480] On the other hand, in terms of units of time and quantity for comparing extraction and replenishment rates, the Imperial ordinance still offers the most precise definition of "overdraft" of all the ordinances and special statutes surveyed.

The Sacramento Valley ordinances present the greatest range of drafting caused problems. The Sacramento ordinance is unparalleled in its simplicity.[481] Through this simplicity, it avoids creating any of the interpretive problems plaguing the more technically articulated ordinances. At the same time, it invites interpretive guidance in the most fundamental sense: what is an "adverse effect"? Of the four other Sacramento Valley ordinances, the Modoc ordinance is the least ambitious and creates the least confusion.[482] The Butte ordinance would benefit greatly from a complete overhaul.[483] Its failure adequately to define "groundwater basin," "mining," and "overdraft," and its unclear "mining" ban create unnecessary confusion over the ordinance's scope. The Glenn ordinance shares much of the same drafting caused problems as its Butte cousin.[484] The Tehama ordinance avoids a couple of the Butte and Glenn problems and adds workable "radius of influence" concepts, but its "mining" provisions are hopelessly confusing.[485]

Still, even in Butte and Glenn counties there has been some progress in eliminating unnecessary confusion. In the last two years, Glenn County has amended its ordinance to eliminate the permit requirements vague reference to "immediate area of its natural groundwater basin." In addition, it has proposed to scrap the entire ordinance in favor of detailed special legislation.[486] While the Butte County ordinance remains unchanged since its 1978 introduction, the county has made some progress in overall groundwater management efforts with its recent memorandum of understanding with the Butte Basin Water Users Association.[487]

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479. *See supra* notes 241-45 and accompanying text.

480. *See, e.g.*, notes 269, 275-81 and accompanying text.

481. *See supra* notes 346-352 and accompanying text.

482. *See supra* notes 336-345 and accompanying text.

483. *See supra* notes 265-323 and accompanying text.

484. *See supra* notes 324-335 and accompanying text.

485. *See supra* notes 403-429 and accompanying text.

486. *See supra* note 469.

487. *See* "Memorandum of Understanding Providing for the Formation and Operation of the Butte Basin Water Users Association" (1992) (on file with the Butte Basin Water Users Ass'n in Chico, Cal.). Among other things, this group aims to "ensure that water transfers in or outside the Basin do not adversely impact Butte Basin water users and otherwise

The Inyo and Nevada ordinances represent the best crafted ordinances.[488] They solve several of the definition problems plaguing the other ordinances. Most particularly, the ordinances specify exactly the regulated groundwater bodies and eliminate entirely the unnecessary confusion created by the "mining" provisions from Butte, Glenn and Tehama. The permit conditions give a potential exporter broad and specific notice of the factors relevant to the permit decision. The reporting and monitoring requirements help build important data bases. Of all the ordinances, only the Inyo ordinance approximates true groundwater basin management.

Still, even these ordinances could stand some improvement. In particular, the Nevada "export" definition adds unnecessary confusion, and the "overdraft" definition is unduly simple. Beyond the two definition changes, the Nevada and Inyo ordinances suffer from parochialism in the groundwater basin management responsibilities. Although on its face applicable to all groundwater extractors in the Inyo County portion of the Owens Valley groundwater basin, the Inyo ordinance has a broad "de minimis" exemption that, as a practical matter, exempts substantial numbers of local users from the permit requirements. Absent the permit requirements, local users, even of small quantities, have much less incentive to manage their own water uses appropriately. The Inyo exemptions can be overridden if exempt pumpers cause, individually or collectively, a "significant negative effect on the environment."[489] But the burden of establishing such effect apparently lies with the county. For its part, the Nevada ordinance expressly applies only to exporters. Thus, neither the Inyo nor the Nevada ordinance substantially encourages local users to extract and use groundwater efficiently and wisely. They both put the practical burden of environmental regulation solely on the most politically weak constituency: appropriators for export beyond their political boundaries.

With the passage of A.B. 3030,[490] the legislature has created the potential for an unprecedented expansion of the patchwork quilt of locally initiated groundwater transfer legislation. Most likely, as the hundreds of local public agencies consider their groundwater management options, they will seek guidance from the existing ordinances and special district legislation. In choosing from the available models, such agencies should take care to avoid the drafting pitfalls identified in this article.

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comply with county of origin rules set forth in Water Code Sections 11128, 11460 and 10505." *Id.* at 1.

488. *See supra* notes 353-79, 380-402 and accompanying text.

489. Inyo County, Cal., Code § 7.01.071 (1980).

490. *See supra* note 197.

In particular, local public agencies should address five matters that can create absolutely unnecessary interpretive problems. First, define precisely the groundwater basins, or portions thereof, subject to regulation. This is most important when there are basins that extend beyond the political boundaries of the local public agency drafting the groundwater management ordinance. Additional clarification may be needed to the extent that multiple aquifers may exist in different layers underlying the same surface parcel.

Second, avoid entirely provisions defining or banning "mining." The term has no precise hydrological meaning. None of the efforts so far has created a workable legal definition. In particular, the relationship between "mining" and "overdrafting" has yet to be clarified adequately. Ultimately, prevention of "overdraft" should adequately prevent "mining" without unnecessarily complicating the analysis.

Third, when defining "overdraft," provide time and quantity units for comparing extraction and replenishment rates. For greatest accuracy, include the "temporary surplus" definition from *Los Angeles v. San Fernando*. But add time and quantity units to more precisely define the vague "safe yield" definition commonly used as a gloss on the *Los Angeles v. San Fernando* "overdraft" definition. Moreover, ultimately, the ordinance will have to recognize the hydrological interconnectedness of surface and groundwater supplies, as ultimately, basin pumping involves either withdrawals from storage or interception of surface flows.

Fourth, when regulating overdraft in a basin whose hydrological boundaries extend beyond the local public agency's legal boundaries, clarify the components of the extraction and replenishment equation. In particular, define whether the equation includes pumping and replenishment that occurs in the portions of the hydrologically defined basin that extend beyond the local public agency's legal boundaries.

Fifth, when regulating exports, include the Sierra Valley Act "available supply"[491] definition as the exporter's principal burden. Distinguish the legal consequences, if any, that attach to off-basin but in-district appropriations, from those that attach to off-basin, out-of-district appropriations.

B. Continued Need for State Legislative Guidance on Groundwater Transfers

Prior to the enactment of AB 3030, those well intentioned county efforts to regulate groundwater aimed to fill a major regulatory gap in the state water resources scheme. The state's failure to prevent massive,

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491. *See supra* note 446.

overpumping induced lowering of groundwater tables to sub-optimal levels and triggered substantial concern in some communities.

In AB 3030, the legislature has taken a step forward toward filling this gap. That act bases its scheme on local groundwater control. Local control of groundwater management offers the opportunity to tailor regulation to local conditions as determined by knowledgeable local officials.[492] At the same time, the substantial variations that have resulted among the local ordinances present unnecessary confusion that often bears no reasonable relationship to any legitimate local need. A crazy quilt of local regulations now covers California groundwater resources. The legal wrinkles of this quilt inhibit appropriate state wide development of a critical resource. Such inhibition, of course, is no accident. Rather, the local controls on groundwater export aim precisely at preserving local use of what is perceived to be a local resource.[493] In so doing, they beg the question: to what extent *are* these groundwater resources "local"?

Nowhere is the potential state wide impact of the crazy quilt local regulatory scheme more pronounced than in the northern Sacramento Valley groundwater basin. This basin is relatively groundwater rich. Moreover, extractions can be moved relatively easily through existing water conveyance facilities. As noted above, the 1991 Drought Water Bank purchased over a quarter million acre-feet of "groundwater" from this area.[494] The groundwater was purchased to meet critical water uses in other parts of the state. In negotiating the water transfers, the Drought Water Bank was confronted potentially with addressing the various export control ordinances.[495] At the time, Modoc, Butte and Glenn counties had their ordinances on the books. Since then, Tehama has added its provision, while other counties may not be far behind. If the drought were to continue, or other water shortages develop, the Drought

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492. *See supra* note 19.

493. Even when purportedly aimed at ameliorating local environmental problems, the local ordinances' almost uniform failure to regulate local pumping for local uses demonstrates a preoccupation with preservation of local uses at the expense of uses in other parts of the state.

494. As noted above, almost all of the water purchased came from surface water rights held by those farmers or water agencies that also had access to groundwater. *See supra* note 29.

495. Of course, as noted earlier, Water Code section 1220(b), the only express legislative authorization for Sacramento Valley groundwater export restrictions, does not apply to the DWR. *See supra* note. Moreover, pre-AB 3030 purported local restrictions of DWR activities face preemption challenges under the state constitution. To the extent, however, that AB 3030 now allows local export controls, such controls may now tie the Water Bank's hands. In any event, whether pre-AB 3030 or post-AB 3030, and whether ultimately valid or not, the local restrictions add an additional layer of uncertainty to the state's ability to respond quickly in a state wide water emergency.

Water Bank (or an equivalent public agency) may well have to negotiate its way through a complex maze of ordinances, each with potentially different definitions and substantive provisions. Each separate ordinance is potentially as unintelligible as some of the existing versions. The passage of A.B. 3030 has only increased the likelihood that such a crazy quilt will arise to inhibit unnecessarily groundwater transfers.

At the very least, the legislature should bring some coherency to these local legislative efforts by providing some uniform provisions applicable to any local efforts to legislate groundwater transfer provisions. Local groundwater regulation authority does not excuse incoherence. Yet, absent some legislatively sanctioned set of core definitions and substantive provisions, incoherence and inconsistency will likely result. The best evidence for that is the current set of ordinances. Many of the provisions are so vague as to be incomprehensible. Many of the variations between the ordinances seem accidental, and not the result of careful tailoring of law to local conditions or knowledge. If the legislature wishes to continue to let local agencies manage this resource, let the local agencies choose to tailor the details of the regulatory scheme, as appropriate, to local conditions. The core concepts, definitions, and procedures, and substantive restrictions should be uniform throughout the state.

By enacting such a series of standard definitions and substantive provisions, the legislature could still defer to local wisdom in deciding *if* to regulate at all. If local authorities decide that regulation is needed, they would still have great flexibility in choosing from among the set of standard provisions the particular regulatory mix that will meet the local needs. Such state created model legislation could avoid the incoherent crazy quilt without sacrificing the supposed virtues of local expertise and flexibility.

Ultimately, the current patchwork quilt of local groundwater transfer regulation raises questions more profound than those caused by the mere incoherence of definitions and substantive provisions. Rather, the current crop of export control ordinances demonstrates a marked bias in favor of groundwater uses in the areas of extraction. It is probably no accident that the locally crafted groundwater management efforts have generally not gone beyond export controls.[496] State common law has allowed appropriations whenever there was groundwater surplus to the needs of overlying users. The export controls, often inelegantly, have attempted to create two classes of appropriators: those exporting beyond the regulating county's borders, and those using the water off-basin but

496. The recent Tehama "radius of influence" well-interference restriction is a notable exception to the general pattern that local pumpers bear no burden of wise groundwater use. *See supra* notes 410, 426-29 and accompanying text.

in-county. The environmental consequences appear substantially identical with both types of appropriations. By focusing on out-of-county exporters, the counties can serve their parochial economic interests without any political downside, as the restricted exporters may well not be resident voters.[497] Even if the exporters are residents, the ultimate end users will not be.

In various circumstances, local conditions might justify some local priority for in-district groundwater appropriations. For example, the terms of sale of proposed water transfers may not adequately compensate for third party economic effects. But the history of local groundwater transfer regulation demonstrates no such fine tuning of market based resource allocation decisions. Rather, the pattern demonstrated in the local ordinances so far has been unilateral local retention of a resource critical to the state's economy. Moreover, local regulation has largely exempted all local users. Other than local economic and political parochialism, nothing justifies requiring wise resource management only of out of county appropriators.

Given the political differences between in-district and out-of-district appropriators, it is likely that the current patterns favoring local uses will continue in the crop of groundwater management ordinances that can be expected under A.B. 3030. Given the widespread opposition to centralized, state groundwater appropriation legislation, the legally sanctioned balkanization of the state's groundwater resources likely will continue at a greater pace under A.B. 3030. Ultimately, it will likely take prolonged statewide water shortages, aggravated by drought, increasing population, and restricted water markets, to change the political dynamic. But, eventually, the people will have to determine the extent to which groundwater surplus to the present needs of overlying users is a resource available to *all* "the people of the state."[498]

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497. The best example of this is the Tehama ordinance's restrictions on the Myers' Seed Company's attempts to pump water out of the county for use on the company's Colusa County farm. *See supra* note 30 and accompanying text. Indeed, this is economic parochialism taken one step further, since the Myers transfer will ultimately use the groundwater on lands that overlie the same groundwater basin, albeit in a different county. Nevertheless, it, and the Haleakala Farms transfer, demonstrate the arbitrariness of using "county" lines to create artificial barriers to water use.

498. *See* Cal. Water Code § 104 (West 1971) (state's people have paramount interest in all the state's water).