

COLORADO *v.* NEW MEXICO ET AL.

ON EXCEPTIONS TO REPORT OF SPECIAL MASTER

No. 80, Orig. Argued October 4, 1982—Decided December 13, 1982

The Vermejo River—which originates in southern Colorado but is located primarily in New Mexico—is at present fully appropriated by users in New Mexico. Colorado seeks an equitable apportionment of the river's water in order to divert water for proposed uses. The Special Master, after a trial, recommended in his report that Colorado be permitted a diversion of 4,000 acre-feet per year. The Special Master recognized that strict application of the rule of prior appropriation would not permit any diversion. In applying the principle of equitable apportionment, however, he did not focus exclusively on the rule of priority, but apparently rested his recommendation on the alternative grounds that New Mexico could compensate for some or all of the Colorado diversion through reasonable water conservation measures, and that the injury, if any, to New Mexico would be outweighed by the benefit to Colorado from the diversion. New Mexico filed exceptions to the Special Master's report.

Held:

1. The flexible principle of equitable apportionment applies to a State's claim to divert water for future uses, and the criteria relied upon by the Special Master comport with this Court's prior cases. Pp. 183–188.

(a) When, as in this case, both States recognize the doctrine of prior appropriation, priority becomes the guiding principle, but not the sole criterion, in determining an equitable apportionment. Pp. 183–184.

(b) While the equities supporting the protection of established, senior uses are substantial, it is also appropriate to consider additional factors relevant to a just apportionment, such as the conservation measures available to both States here and the balance of harms and benefits to the States that might result from the diversion sought by Colorado. Pp. 184–187.

(c) A State seeking a diversion for future uses must demonstrate by clear and convincing evidence that the benefits of the diversion substantially outweigh the harm that might result. Pp. 187–188.

2. However, the Special Master's report does not contain sufficient factual findings to enable this Court to assess the correctness of his application of the principle of equitable apportionment to the facts of this

case. Accordingly, this Court remands for additional findings, including specific findings relating to the Special Master's reliance on the factors of the availability of conservation measures and the weighing of the harms and benefits that would result from the diversion. Pp. 189-190.

Remanded for further findings.

MARSHALL, J., delivered the opinion of the Court, in which BURGER, C. J., and BRENNAN, WHITE, BLACKMUN, REHNQUIST, and STEVENS, JJ., joined. BURGER, C. J., filed a concurring opinion, in which STEVENS, J., joined, *post*, p. 190. O'CONNOR, J., filed an opinion concurring in the judgment, in which POWELL, J., joined, *post*, p. 191.

Richard A. Simms, Special Assistant Attorney General of New Mexico, argued the cause for defendants. With him on the briefs were *Jeff Bingaman*, Attorney General, and *Jay F. Stein*, Special Assistant Attorney General.

Robert F. Welborn, Special Assistant Attorney General of Colorado, argued the cause for plaintiff. With him on the briefs were *J. D. MacFarlane*, Attorney General, *Richard F. Hennessey*, Deputy Attorney General, *Mary J. Mullarkey*, Solicitor General, and *William A. Paddock* and *Dennis M. Montgomery*, Assistant Attorneys General.*

JUSTICE MARSHALL delivered the opinion of the Court.

This case concerns the proper apportionment between New Mexico and Colorado of the water of an interstate river. The water of the Vermejo River is at present fully appropriated by users in New Mexico. Colorado seeks to divert water for future uses. Invoking this Court's original jurisdiction under Art. III, §2, of the Constitution, Colorado brought this action for an equitable apportionment of the water of the Vermejo River. A Special Master appointed by the Court recommended that Colorado be permitted a diversion of 4,000 acre-feet per year. The case is before us on New Mexico's exceptions to the Special Master's report.

**Burton M. Apker* filed a brief for Kaiser Steel Corp. et al. as *amici curiae*.

I

The Vermejo River is a small, nonnavigable river that originates in the snow belt of the Rocky Mountains in southern Colorado and flows southeasterly into New Mexico for a distance of roughly 55 miles before it joins the Canadian River. The major portion of the river is located in New Mexico. The Colorado portion consists of three main tributaries that combine to form the Vermejo River proper approximately one mile below the Colorado-New Mexico border. At present there are no uses of the water of the Vermejo River in Colorado, and no use or diversion has ever been made in Colorado. In New Mexico, by contrast, farmers and industrial users have diverted water from the Vermejo for many years. In 1941 a New Mexico state court issued a decree apportioning the water of the Vermejo River among the various New Mexico users.¹

In 1975, a Colorado corporation, Colorado Fuel and Iron Steel Corp. (C. F. & I.), obtained in Colorado state court a conditional right to divert 75 cubic feet per second from the headwaters of the Vermejo River.² C. F. & I. proposed a transmountain diversion of the water to a tributary of the Purgatoire River in Colorado to be used for industrial development and other purposes. Upon learning of this decree, the four principal New Mexico users—Phelps Dodge Corp. (Phelps Dodge), Kaiser Steel Corp. (Kaiser Steel), Vermejo Park Corp. (Vermejo Park), and the Vermejo Conservancy District (Conservancy District)—filed suit in the United States District Court for the District of New Mexico, seeking to enjoin any diversion by C. F. & I. that would violate their senior rights. On January 16, 1978, the District Court enjoined C. F. & I. from diverting any water from the Vermejo River in derogation of the senior water rights of New Mexico

¹ *Phelps Dodge Corp. v. W. S. Land and Cattle Co.*, No. 7201 (Dist. Ct. Colfax Cty., Nov. 13, 1941).

² *In re Application for Water Rights of C. F. & I. Corp.*, No. W-3961 (Dist. Ct., W. Div. No. 2, June 20, 1975).

users.³ The court found that under the doctrine of prior appropriation, which both New Mexico and Colorado recognize,⁴ the New Mexico users were entitled to have their needs fully satisfied because their appropriation was prior in time. C. F. & I. filed a notice of appeal, and the Court of Appeals for the Tenth Circuit has stayed its proceedings during the pendency of this case before us.

In June 1978 Colorado moved for leave to file an original complaint in this Court. New Mexico opposed the motion. On April 16, 1979, we granted Colorado's motion and ap-

³ *Kaiser Steel Corp. v. C. F. & I. Steel Corp.*, Civ. No. 76-244 (NM 1978). The injunction was not based on a determination of the right of the two States under the law of equitable apportionment, since neither Colorado nor New Mexico was a party to the action.

⁴ N. M. Const., Art. XVI, § 2; Colo. Const., Art. XVI, §§ 5, 6. The administration of water rights in each State is governed by statute. Colo. Rev. Stat. § 37-92-101 *et seq.* (1973 and Supp. 1982); N. M. Stat. Ann. § 72-1-1 *et seq.* (1978 and Supp. 1982).

The prior appropriation doctrine and the riparian doctrine are the two basic doctrines governing the rights to the use of water. Under the prior appropriation doctrine, recognized in most of the Western States, water rights are acquired by diverting water and applying it for a beneficial purpose. A distinctive feature of the prior appropriation doctrine is the *rule of priority*, under which the relative rights of water users are ranked in the order of their seniority. Under the riparian doctrine, recognized primarily in the Eastern, Midwestern and Southern States, the owner of land contiguous to a watercourse is entitled to have the stream flow by or through his land undiminished in quantity and unpolluted in quality, except that any riparian proprietor may make whatever use of the water that is reasonable with respect to the needs of other appropriators.

Appropriative rights do not depend on land ownership and are acquired and maintained by actual use. Riparian rights, by contrast, originate from land ownership and remain vested even if unexercised. Appropriative rights are fixed in quantity; riparian rights are variable depending on streamflow and subject to the reasonable uses of others. See generally 1 R. Clark, *Waters and Water Rights* (1967); W. Hutchins, *Selected Problems in the Law of Water Rights in the West* (U. S. Dept. of Agriculture, Misc. Pub. No. 418, 1942); 1 W. Hutchins, *Water Rights Laws in the Nineteen Western States* (U. S. Dept. of Agriculture, Misc. Pub. No. 1206, 1971).

pointed the Honorable Ewing T. Kerr, Senior Judge of the United States District Court for the District of Wyoming, as Special Master in this case. 441 U. S. 902. After a lengthy trial involving an extensive presentation of evidence, the Special Master submitted a report to the Court on January 9, 1982. The report was accepted for filing on February 22, 1982. 455 U. S. 932.

The Special Master found that most of the water of the Vermejo River is consumed by the New Mexico users and that very little, if any, reaches the confluence with the Canadian River. He thus recognized that strict application of the rule of priority would not permit Colorado any diversion since the entire available supply is needed to satisfy the demands of appropriators in New Mexico with senior rights. Nevertheless, applying the principle of equitable apportionment established in our prior cases, he recommended permitting Colorado a transmountain diversion of 4,000 acre-feet⁵ of water per year from the headwaters of the Vermejo River. He stated:

"It is the opinion of the Master that a transmountain diversion would not materially affect the appropriations granted by New Mexico for users downstream. A thorough examination of the existing economies in New Mexico convinces the Master that the injury to New Mexico, if any, will be more than offset by the benefit to Colorado." Report of Special Master 23.

Explaining his conclusion, the Special Master noted that any injury to New Mexico would be restricted to the Conservancy District, the user in New Mexico furthest downstream, since there was sufficient water in the Vermejo River for the three other principal New Mexico water users, Vermejo

⁵ An acre-foot is a volumetric measurement which means the amount of water required to cover one acre of ground one foot deep. One acre-foot equals 43,560 cubic feet or 325,900 gallons of water.

Park, Kaiser Steel, and Phelps Dodge.⁶ He further found that the "Vermejo Conservancy District has never been an economically feasible operation." *Ibid.*

The Special Master's recommendation appears to rest on two alternative grounds: first, that New Mexico could compensate for some or all the Colorado diversion through reasonable water conservation measures;⁷ and second, that the injury, if any, to New Mexico would be outweighed by the benefit to Colorado from the diversion.⁸ In its various exceptions to his report, New Mexico challenges the Special Master's interpretation of the law of equitable apportionment. New Mexico maintains that the rule of priority should be strictly applied in this case to preclude Colorado

⁶The Conservancy District is the largest user of water from the Vermejo River in New Mexico. It consists of over 60 farms irrigated by an extensive system of canals and reservoirs. The United States Maxwell Wildlife Refuge is also located within the District. In the early 1950's the District was part of a large reclamation project funded by the Federal Government.

Vermejo Park diverts water primarily to irrigate land used to grow hay for its cattle operation. Kaiser Steel uses water primarily for its coal facilities. Phelps Dodge leases its rights to Kaiser Steel and to the C. S. Springer Cattle Co.

⁷This is a fair reading of the Special Master's conclusion that New Mexico users would not be "materially affected" by the recommended diversion. While the report does not expressly state that Colorado's diversion might be offset by reasonable conservation efforts, it does refer specifically to the waste and inefficiency of the Conservancy District's system of water canals. Report of Special Master 8, 23. In addition, in its second exception to the report New Mexico acknowledges that the Special Master based his conclusion that New Mexico users would not be materially affected on certain findings concerning waste and inefficiency within the Conservancy District.

⁸New Mexico contends that the Special Master relied on a third ground, namely, that the mere fact that the Vermejo River originates in Colorado automatically entitles Colorado to a share of the water of the Vermejo River. See *id.*, at 8. To the extent that the Special Master applied such a *per se* rule of apportionment, we reject it as inconsistent with our emphasis on flexibility in equitable apportionment.

from diverting any water from the Vermejo River. New Mexico also challenges the factual bases of the Special Master's conclusions that the recommended diversion would not materially affect New Mexico users and that any harm to New Mexico would be offset by the benefits to Colorado.⁹

We conclude that the criteria relied upon by the Special Master comport with the doctrine of equitable apportionment as it has evolved in our prior cases. We thus reject New

⁹ New Mexico also contends that Colorado is improperly suing directly and solely for the benefit of a private individual—C. F. & I.—in violation of the Eleventh Amendment, and that Colorado's suit is barred by laches. We find no merit to these claims.

Because the State of Colorado has a substantial interest in the outcome of this suit, New Mexico may not invoke its Eleventh Amendment immunity from federal actions by citizens of another State. The portion of the Vermejo River in Colorado is owned by the State in trust for its citizens. Colo. Const., Art. XVI, § 5. While C. F. & I. will most likely be the primary user of any water diverted from the Vermejo River, other Colorado citizens may jointly use the water or purchase water rights in the future. In any event, Colorado surely has a sovereign interest in the beneficial effects of a diversion on the general prosperity of the State. Faced with a similar set of circumstances in *Kansas v. Colorado*, 206 U. S. 46, 99 (1907), we concluded that "[t]he controversy rises . . . above a mere question of local private right and involves a matter of state interest and must be considered from that standpoint."

We also conclude that Colorado is not barred by laches from seeking an equitable apportionment. For the reasons that we elaborate *infra*, at 186–188, we hold that under some circumstances the countervailing equities supporting a diversion of water for a future use in one State may justify the detriment suffered by existing users in another State. Therefore the mere fact that Colorado has no existing uses of the waters of the Vermejo River and that current users in New Mexico may suffer some detriment from a diversion does not bar Colorado's suit for an equitable apportionment for future uses. These circumstances, however, do bear on the burden of proof that Colorado must satisfy to justify the possible disruption of existing uses. See *infra*, at 187–188, and n. 13. A contrary conclusion is not dictated by *Washington v. Oregon*, 297 U. S. 517, 528 (1936), or *Colorado v. Kansas*, 320 U. S. 383, 394 (1943) (dictum), which merely require established users or holders of water rights to exercise diligence in protecting their rights and putting them to beneficial uses. See *infra*, at 184.

Mexico's contention that the Special Master was required to focus exclusively on the rule of priority. However, the report of the Special Master does not contain sufficient factual findings to enable us to assess the correctness of the Special Master's application of the principle of equitable apportionment to the facts of this case. We therefore remand with instructions to the Special Master to make further findings of fact.

II

Equitable apportionment is the doctrine of federal common law that governs disputes between States concerning their rights to use the water of an interstate stream. *Kansas v. Colorado*, 206 U. S. 46, 98 (1907); *Connecticut v. Massachusetts*, 282 U. S. 660, 670-671 (1931). It is a flexible doctrine which calls for "the exercise of an informed judgment on a consideration of many factors" to secure a "just and equitable" allocation. *Nebraska v. Wyoming*, 325 U. S. 589, 618 (1945). We have stressed that in arriving at "the delicate adjustment of interests which must be made," *ibid.*, we must consider all relevant factors, including:

"physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, [and] the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former." *Ibid.*

Our aim is always to secure a just and equitable apportionment "without quibbling over formulas." *New Jersey v. New York*, 283 U. S. 336, 343 (1931).

The laws of the contending States concerning intrastate water disputes are an important consideration governing equitable apportionment. When, as in this case, both States recognize the doctrine of prior appropriation, priority be-

comes the "guiding principle" in an allocation between competing States. *Nebraska v. Wyoming, supra*, at 618. But state law is not controlling. Rather, the just apportionment of interstate waters is a question of federal law that depends "upon a consideration of the pertinent laws of the contending States and *all other relevant facts.*" *Connecticut v. Massachusetts, supra*, at 670-671 (emphasis added).

In reaching his recommendation the Special Master did not focus exclusively on the rule of priority, but considered other factors such as the efficiency of current uses in New Mexico and the balance of benefits to Colorado and harm to New Mexico. New Mexico contends that it is improper to consider these other factors. It maintains that this Court has strictly applied the rule of priority when apportioning water between States adhering to the prior appropriation doctrine, and has departed from that rule only to protect an existing economy built upon junior appropriations. Since there is no existing economy in Colorado dependent upon the use of water from the Vermejo River, New Mexico contends that the rule of priority is controlling. We disagree with this inflexible interpretation of the doctrine of equitable apportionment.

Our prior cases clearly establish that equitable apportionment will protect only those rights to water that are "reasonably required and applied." *Wyoming v. Colorado*, 259 U. S. 419, 484 (1922). Especially in those Western States where water is scarce, "[t]here must be no waste . . . of the 'treasure' of a river. . . . Only diligence and good faith will keep the privilege alive." *Washington v. Oregon*, 297 U. S. 517, 527 (1936). Thus, wasteful or inefficient uses will not be protected. See *ibid.*; *Nebraska v. Wyoming, supra*, at 618. Similarly, concededly senior water rights will be deemed forfeited or substantially diminished where the rights have not been exercised or asserted with reasonable diligence. *Washington v. Oregon, supra*, at 527-528; *Colorado v. Kansas*, 320 U. S. 383, 394 (1943).

We have invoked equitable apportionment not only to require the reasonably efficient use of water, but also to impose on States an affirmative duty to take reasonable steps to conserve and augment the water supply of an interstate stream. In *Wyoming v. Colorado*, Wyoming brought suit to prevent a *proposed* diversion by Colorado from the Laramie River. This Court calculated the dependable supply available to both States, subtracted the senior Wyoming uses, and permitted Colorado to divert an amount not exceeding the balance.¹⁰ In calculating the dependable supply we placed on each State the duty to employ "financially and physically feasible" measures "adapted to *conserving and equalizing* the natural flow." 259 U. S., at 484 (emphasis added). Adopting a position similar to New Mexico's in this case, Wyoming objected to a requirement that it employ conservation measures to facilitate Colorado's proposed uses. The answer we gave is especially relevant to this case:

"The question here is not what one State should do for the other, but how each should exercise her relative rights in the waters of this interstate stream. . . . Both States recognize that conservation within practicable limits is essential in order that needless waste may be prevented and the largest feasible use may be secured. This comports with the all-pervading spirit of the doc-

¹⁰ This description is only roughly accurate, since we did not rigidly follow this procedure in apportioning the Laramie River, but instead departed from a strict application of the rule of priority in numerous respects. For instance, our decree in *Wyoming v. Colorado* granted Colorado an unqualified right to divert 22,500 acre-feet, even though there were Wyoming appropriations senior to the Colorado appropriations underlying the 22,500 acre-feet grant. 259 U. S., at 489-490. In addition, we granted to Colorado priority to divert a total of 37,750 acre-feet, even though some of the underlying appropriations were junior to a number of Wyoming appropriations. *Id.*, at 495-496. The effect was to guarantee water to junior appropriators in Colorado to the potential detriment of senior appropriators downstream in Wyoming. See 2 R. Clark, *Waters and Water Rights* § 132.4 (1967).

trine of appropriation and takes appropriate heed of the natural necessities out of which it arose. We think that doctrine lays on each of these States a duty to exercise her right reasonably and in a manner calculated to conserve the common supply." *Ibid.*¹¹

We conclude that it is entirely appropriate to consider the extent to which reasonable conservation measures by New Mexico might offset the proposed Colorado diversion and thereby minimize any injury to New Mexico users. Similarly, it is appropriate to consider whether Colorado has undertaken reasonable steps to minimize the amount of diversion that will be required.

In addition, we have held that in an equitable apportionment of interstate waters it is proper to weigh the harms and benefits to competing States. In *Kansas v. Colorado*, where we first announced the doctrine of equitable apportionment, we found that users in Kansas were injured by Colorado's upstream diversions from the Arkansas River. 206 U. S., at 113-114, 117. Yet we declined to grant any relief to Kansas on the ground that the great benefit to Colorado outweighed the detriment to Kansas. *Id.*, at 100-101, 113-114, 117. Similarly, in *Nebraska v. Wyoming*, we held that water rights in Wyoming and Nebraska, which under state law were senior, had to yield to the "countervailing equities" of an established economy in Colorado even though it was based on junior appropriations. 325 U. S., at 622. We noted that the rule of priority should not be strictly applied where it "would work more hardship" on the junior user "than it would bestow benefits" on the senior user. *Id.*, at 619. See also *Washington v. Oregon*, *supra*, at 522. The same principle is applicable in balancing the benefits of a diversion for *proposed* uses against the possible harms to exist-

¹¹ We thus required Wyoming to enhance and equalize the water supply through "practicable storage and conservation" measures, such as the use of storage facilities similar to those already in use in Wyoming. 259 U. S., at 485.

ing uses. See, e. g., *Wyoming v. Colorado*, *supra* (placing upon Wyoming, the State with senior water rights, a duty to conserve water in order to facilitate a diversion for a proposed use in Colorado); *Connecticut v. Massachusetts*, 282 U. S. 660 (1931); *New Jersey v. New York*, 283 U. S. 336 (1931).¹²

We recognize that the equities supporting the protection of existing economies will usually be compelling. The harm that may result from disrupting established uses is typically certain and immediate, whereas the potential benefits from a proposed diversion may be speculative and remote. Under some circumstances, however, the countervailing equities supporting a diversion for future use in one State may justify the detriment to existing users in another State. This may be the case, for example, where the State seeking a diversion demonstrates by clear and convincing evidence that the benefits of the diversion substantially outweigh the harm that might result.¹³ In the determination of whether the State

¹² In *Connecticut v. Massachusetts* we declined to enjoin Massachusetts' proposed diversion for future uses. We took into account the impending "serious water shortage" in the Boston area and the absence of "real or substantial injury or damage" to Connecticut. 282 U. S., at 664, 672. Although *Connecticut v. Massachusetts*, as well as *New Jersey v. New York*, involved States that follow the riparian rather than the prior appropriation doctrine, see n. 4, *supra*, our allocation of water for future uses rested on the federal common law of equitable apportionment, which, as we made clear, "is not governed by the same rules of [state] law that are applied . . . for the solution of similar questions of private right." *Connecticut v. Massachusetts*, 282 U. S., at 670; see also *New Jersey v. New York*, 283 U. S., at 342-343. Nothing in those two cases suggested that the apportionment of water for future uses in any way depended on the adherence of both States to the riparian doctrine.

¹³ Our cases establish that a State seeking to prevent or enjoin a diversion by another State bears the burden of proving that the diversion will cause it "real or substantial injury or damage." *Connecticut v. Massachusetts*, *supra*, at 672. See also *New Jersey v. New York*, *supra*, at 344-345; *Kansas v. Colorado*, 206 U. S., at 117; *Colorado v. Kansas*, 320 U. S., at 393-394. This rule applies even if the State seeking to prevent or enjoin a diversion is the nominal defendant in a lawsuit. In *Colorado v. Kansas*,

proposing the diversion has carried this burden, an important consideration is whether the existing users could offset the diversion by reasonable conservation measures to prevent waste. This approach comports with our emphasis on flexibility in equitable apportionment and also accords sufficient protection to existing uses.

We conclude, therefore, that in the determination of an equitable apportionment of the water of the Vermejo River the rule of priority is not the sole criterion. While the equities supporting the protection of established, senior uses are substantial, it is also appropriate to consider additional factors relevant to a just apportionment, such as the conservation measures available to both States and the balance of harm and benefit that might result from the diversion sought by Colorado.

for instance, Colorado sued Kansas seeking to enjoin further lawsuits by Kansas water users against Colorado users. Although Kansas was the defendant, we granted Colorado an injunction based on Kansas' failure to sustain the burden of showing that the Colorado diversions had "worked a serious detriment to the substantial interests of Kansas." *Id.*, at 400; see also *id.*, at 389-390.

New Mexico must therefore bear the initial burden of showing that a diversion by Colorado will cause substantial injury to the interests of New Mexico. In this case New Mexico has met its burden since *any* diversion by Colorado, unless offset by New Mexico at its own expense, will necessarily reduce the amount of water available to New Mexico users.

The burden has therefore shifted to Colorado to establish that a diversion should nevertheless be permitted under the principle of equitable apportionment. Thus, with respect to whether reasonable conservation measures by New Mexico will offset the loss of water due to Colorado's diversion, or whether the benefit to Colorado from the diversion will substantially outweigh the possible harm to New Mexico, Colorado will bear the burden of proof. It must show, in effect, that without such a diversion New Mexico would be using "more than its equitable share of the benefits of a stream." *Id.*, at 394. Moreover, Colorado must establish not only that its claim is of a "serious magnitude," but also that its position is supported by "clear and convincing evidence." *Connecticut v. Massachusetts*, *supra*, at 669. See also *Colorado v. Kansas*, *supra*, at 393; *Washington v. Oregon*, 297 U. S., at 522.

III

Applying the doctrine of equitable apportionment, the Special Master recommended that Colorado be permitted to divert 4,000 acre-feet of water per year from the headwaters of the Vermejo River. Because all of the water of the Vermejo River is currently consumed by New Mexico appropriators, the recommended diversion would necessarily reduce the amount of water available to New Mexico.

In explaining the basis for his recommendation, the Special Master stated that the diversion would not "materially affect" existing New Mexico appropriations. This conclusion appears to reflect certain assumptions about the ability of New Mexico users to implement water conservation measures. See *supra*, at 181, and n. 7. The Special Master also concluded that any injury to New Mexico would be "more than offset" by the benefits to Colorado. Report of Special Master 23. Both the availability of conservation measures and a weighing of the harm and benefits that would result from the diversion are factors relevant to the determination of a just and equitable apportionment. However, the Special Master did not clearly state the factual findings supporting his reliance on these factors. Accordingly, we remand for additional factual findings. In particular, we request specific findings concerning the following areas:

- (1) the existing uses of water from the Vermejo River, and the extent to which present levels of use reflect current or historical water shortages or the failure of existing users to develop their uses diligently;

- (2) the available supply of water from the Vermejo River, accounting for factors such as variations in streamflow, the needs of current users for a continuous supply, the possibilities of equalizing and enhancing the water supply through water storage and conservation, and the availability of substitute sources of water to relieve the demand for water from the Vermejo River;

(3) the extent to which reasonable conservation measures in both States might eliminate waste and inefficiency in the use of water from the Vermejo River;

(4) the precise nature of the proposed interim and ultimate use in Colorado of water from the Vermejo River, and the benefits that would result from a diversion to Colorado;

(5) the injury, if any, that New Mexico would likely suffer as a result of any such diversion, taking into account the extent to which reasonable conservation measures could offset the diversion.¹⁴

IV

The flexible doctrine of equitable apportionment clearly extends to a State's claim to divert water for future uses. Whether such a diversion should be permitted will turn on an examination of all factors relevant to a just apportionment. It is proper, therefore, to consider factors such as the extent to which reasonable conservation measures by existing users can offset the reduction in supply due to diversion, and whether the benefits to the State seeking the diversion substantially outweigh the harm to existing uses in another State. We remand for specific factual findings relevant to determining a just and equitable apportionment of the water of the Vermejo River between Colorado and New Mexico.

It is so ordered.

CHIEF JUSTICE BURGER, with whom JUSTICE STEVENS joins, concurring.

This case arises from an understandably intense competition between two States over rights to a small, nonnavigable, interstate river. Because on the record before it this

¹⁴The Special Master may make any other factual findings that he considers relevant. Additional hearings may be held, although they may be unnecessary in light of the extensive evidence already presented at trial. Upon remand, the Special Master is free to reaffirm his original recommendation or make a different recommendation on the basis of the evidence and applicable principles of equitable apportionment.

Court cannot make an appropriate apportionment of the water, the Court remands the case to the Special Master for further factual findings.

I emphasize that under our prior holdings these two States come to the Court on equal footing. See *Kansas v. Colorado*, 206 U. S. 46 (1907). Neither is entitled to any special priority over the other with respect to use of the water. Colorado cannot divert all of the water it may need or can use simply because the river's headwaters lie within its borders, *Wyoming v. Colorado*, 259 U. S. 419, 466 (1922). Nor is New Mexico entitled to any particular priority of allocation or undiminished flow simply because of first use. See, *e. g.*, *Colorado v. Kansas*, 320 U. S. 383, 393 (1943). Each state through which rivers pass has a right to the benefit of the water but it is for the Court, as a matter of discretion, to measure their relative rights and obligations and to apportion the available water equitably. As the Court's opinion states, in the process of apportioning the water, prior dependence and inefficient uses may be considered in balancing the equities. But no state has any priority over any other state. It is on this understanding of the Court's holding that I join the opinion and the judgment.

JUSTICE O'CONNOR, with whom JUSTICE POWELL joins, concurring in the judgment.

The doctrine of prior appropriation includes the requirement that the appropriator's use of water be beneficial and reasonable. What is reasonable, of course, does not admit of ready definition, being dependent upon the particular facts and circumstances of each case. In this case, the Special Master has cast an accusatory finger at the Vermejo Conservancy District, concluding that "[t]he system of canals used to transport the water to the fields is inefficient." Report of Special Master 8.

Undoubtedly, there is evidence in the record indicating that large losses of water occur through seepage and evaporation in transporting waters of the Vermejo through open

ditches for irrigation and stock watering. Tr. 1315. It is a leap, however, from observing that large losses occur to concluding, as Colorado would have the Court do, that the practices of the Conservancy District are wasteful or unreasonable. As the Court observes, *ante*, at 185, the extent of the duty to conserve that may be placed upon the user is limited to measures that are "financially and physically feasible," *Wyoming v. Colorado*, 259 U. S. 419, 484 (1922), and "within practicable limits." *Ibid.*¹ Nevertheless, in concluding that the Conservancy District's distribution system is "inefficient," the Special Master made no factual finding that improved economy in that system is within the practicable means available to the District.²

Colorado would have the Court assess the Conservancy District's "waste" and "inefficiency" by a new yardstick—*i. e.*, not by comparing the economic gains to the District with the costs of achieving greater efficiency, but by comparing the "inefficiency" of New Mexico's uses with the relative benefits to Colorado of a new use. The Special Master has succumbed to this suggestion. His recommendation that

¹ It is significant to note that in *Wyoming v. Colorado*, upon which the Court relies for the proposition that an affirmative duty to conserve may be imposed on the States, *ante*, at 185, the Wyoming appropriators *already* had storage facilities in place for equalizing the river's natural flow. In answering Wyoming's objection that it should not be burdened with conservation measures in order to permit a diversion by Colorado, the Court observed:

"We think [the] doctrine [of appropriation] lays on each of these States a duty to exercise her right reasonably and in a manner calculated to conserve the common supply. Notwithstanding her present contention, Wyoming has in fact proceeded on this line, for, as the proof shows, her appropriators, with her sanction, *have provided and have in service* reservoir facilities which are adapted for the purpose and reasonably sufficient to meet its requirements." 259 U. S., at 484-485 (emphasis added).

² Evidence in the record indicates that the Conservancy District has employed an engineering firm to investigate the feasibility of constructing an enclosed system to deliver stock water to the District's landowners. Tr. 1318.

Colorado be permitted a diversion embodies the judgment that, because Colorado can, in some *unidentified* sense, make "better" use of the waters of the Vermejo, New Mexico may be forced to change its present uses.

Today the Court has also gone dangerously far toward accepting that suggestion. The Court holds, *ante*, at 186, that it is appropriate in equitable apportionment litigation to weigh the harms and benefits to the competing States. It does so notwithstanding its recognition, *ante*, at 187, that the potential benefits from a *proposed* diversion are likely to be speculative and remote, and therefore difficult to balance against any threatened harms, and its concession, *ibid.*, that the equities supporting protection of an existing economy will usually be compelling.

In equitable apportionment litigation between two prior appropriation States concerning the waters of a fully appropriated river, this Court has never undertaken that balancing task outside the concrete context of either two established economies in the competing States dependent upon the waters to be apportioned³ or of a proposed diversion in one State to satisfy a demonstrable need for a potable supply of drinking water.⁴ In the former context, the Court may assess the relative benefit and detriment by reference to the

³See *Nebraska v. Wyoming*, 325 U. S. 589 (1945); *Washington v. Oregon*, 297 U. S. 517 (1936); *Kansas v. Colorado*, 206 U. S. 46 (1907).

⁴See *New Jersey v. New York*, 283 U. S. 336 (1931); *Connecticut v. Massachusetts*, 282 U. S. 660 (1931). It is also significant to note that these disputes occurred between two riparian States.

Wyoming v. Colorado, *supra*, does not represent an exception to the pattern stated in the text. The Court did not engage in any wholesale balancing of the relative harms and benefits to the two States from the proposed diversion. Rather, the Court imposed a very limited duty on Wyoming to make use of the storage facilities its appropriators already had in place, see n. 1, *supra*, for the purpose of calculating the dependable supply of water available to Wyoming. 259 U. S., at 484. The Court was thereby able to determine that the waters of the Laramie River were not fully appropriated and that a share of the waters was available for Colorado's proposed use.

actual fruits of use of the waters in the respective States.⁵ In the latter context, the compelling nature of the proposed use reduces the speculation that might otherwise attend assessment of the benefits of a proposed diversion. Where, as here, however, no existing economy in Colorado depends on

⁵ For example, in *Kansas v. Colorado*, *supra*, Kansas sought to restrain Colorado from diverting waters of the Arkansas River for the irrigation of lands in Colorado. Colorado had diverted waters from the river since the 1880's. As a result of irrigation, the population of the irrigated areas, the number of acres cultivated, and the value of farm products produced in these areas escalated dramatically. 206 U. S., at 108-109. The Court compared this demonstrated salutary effect of the irrigation on the economy of Colorado with the corresponding population changes and changes in acreage and production of corn and wheat in the affected Kansas counties for the same period. *Id.*, at 110-113. Using these concrete data, the Court was able to discern some minimal injury to Kansas as a result of the diminution of the flow of the Arkansas River. *Id.*, at 113-114. Viewing the overall impact of the available water on the two economies, however, the Court concluded:

"[W]hen we compare the amount of this detriment [to Kansas] with the great benefit which has obviously resulted to the counties in Colorado, it would seem that equality of right and equity between the two States forbids any interference with the present withdrawal of water in Colorado for purposes of irrigation." *Ibid.*

Quite clearly, the Court was not forced to speculate about the benefit and detriment of the diversion to the competing States.

Similarly, in *Washington v. Oregon*, *supra*, the Court was equipped to assess the balance of harm and benefit to the economies from the diversion at issue. Washington sought an injunction against Oregon's diversion of waters of the Walla Walla River for irrigation in Oregon. On the one hand, Oregon had an existing agricultural economy dependent upon irrigation from the Walla Walla. On the other hand, the evidence revealed that there would be absolutely no benefit to Washington in prohibiting Oregon's diversion during periods of water shortage; the nature of the river channel was such that even if the water was not diverted by Oregon users, it would be absorbed by the gravel beneath the channel and never reach Washington users. 297 U. S., at 522-523. The Court therefore concluded that "[t]o limit the long established use in Oregon would materially injure Oregon users without a compensating benefit to Washington users." *Id.*, at 523.

the waters of the Vermejo and the actual uses in New Mexico rank in equal importance with the proposed uses in Colorado,⁶ the difficulty of arriving at the proper balance is especially great.

This case therefore highlights the restraint with which the Court should proceed in apportioning interstate waters between a State seeking a *future* use and a State with an existing economy dependent upon the waters to be apportioned. The Court can only invite litigation within its original jurisdiction if it permits one State to obtain a diversion for a new use upon that State's allegation that the second State is engaging in "wasteful" practices or that it can make "better" use of the waters, even if the second State's uses are entirely reasonable.

I do not suggest, of course, that the Court must blind itself to *compelling* evidence of waste by one State. Protection of existing economies does not require that users be permitted to continue in unreasonably wasteful or inefficient practices. But the Court should be moved to exercise its original jurisdiction to alter the status quo between States only where there is *clear and convincing evidence, ante*, at 188, n. 13, that one State's use is unreasonably wasteful. To allow Colorado a diversion upon a lesser showing comports neither with the equality of rights of the litigants before us, see *Connecticut v. Massachusetts*, 282 U. S. 660, 670 (1931), nor with the sparing use that should be made of the Court's equitable powers, see *id.*, at 669. Further, such action would seriously undermine the Court's affirmation, *ante*, at 184, that priority of appropriation is the "guiding principle" in allocating waters between two prior appropriation States.

The Court's remand reflects its judgment that the paucity of the factual findings before us furnishes an inadequate basis

⁶ According to Colorado, the diverted water would be used "in industrial operations at coal mines, agriculture, timbering, power generation, domestic needs and other industrial operations . . ." Reply Brief for Colorado 8.

O'CONNOR, J., concurring in judgment

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upon which to make "the delicate adjustment of interests" at stake, *Nebraska v. Wyoming*, 325 U. S. 589, 618 (1945). I concur in that disposition insofar as the Special Master's findings and conclusions do not provide a basis for determining whether Colorado has demonstrated by clear and convincing evidence that the Conservancy District has engaged in unreasonably wasteful practices.