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Dept of Agr

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

WATER FACILITIES AREA PLAN

FOR THE

UPPER MISSISSIPPIAN BASIN

IN NEBRASKA, KANSAS AND COLORADO

WATER UTILIZATION SECTION
DIVISION OF LAND ECONOMICS

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now grown and because no great change in type is anticipated, it appears that any pumping plant in the western basin should, with all conditions permitting, be designed to furnish at least 700 gallons of water per minute. With this quantity available, and with properly planned rotation of irrigation applications, it should be possible to serve acreages, as shown in the 80-acre example, in a 15-day rotation.

In the eastern portion of the basin, where irrigation will be more supplemental in character, water requirements as well as the pumping plant capacities may be correspondingly reduced. In all probability, irrigated acreages will be smaller and pumping plants of less capacity may be utilized, although it is doubtful if plants of less than 450 gallons per minute yield would be practical for irrigation of general crops. Following examples similar to that given in discussing the western basin, it is estimated that over-all water requirements will gradually decrease from west to east until approximately 1 acre-foot per acre, or less, would be required in the extreme eastern part of the basin.

As previously stated, much depends upon the manner in which any individual irrigation enterprise is organized and when pumping plants are installed, the operations agencies, together with the agricultural experiment stations, should be in a position to furnish individual farm operators with more detailed data pertaining to the requirements of specific crops on any given combination of acreages planned for irrigation practice. In general, and over a period of years, however, it is believed that over-all water requirements will not vary greatly from those herein established as general criteria.

Legal Factors Relating to Water Use

General

Purpose and Character of Discussion

This discussion of legal factors relating to water use is incorporated in the area plan mainly for the purpose of emphasizing that the feasibility of further water development in the area must be considered from a legal as well as from a physical or an economic point of view. For example, the fact that water is available for pump irrigation in a particular area and the fact that the resulting increased productivity of the land would seem to justify the investment in pump irrigation works cannot be the controlling considerations if it appears that there are no legal means of controlling the rate of development so as to protect investors against the hazards of over-development. Or, with respect to a particular case, it may develop that the individual does not have or cannot obtain a valid water

Appendix
II

Appendix
IV



right covering the quantity of water necessary to fulfill the use requirement of the proposed facility.

The following material is intended to serve a two-fold purpose: first, to furnish an over-all legal picture of the area covered by the plan and to point to specific problems that should be examined closely with respect to each facility or project undertaken; and second, to supply general information on water rights to all groups concerned in the Water Facilities Program.

It will be noted that the discussion deals only with the law of water rights. Because it has not seemed necessary, no attempt is made to treat the legal problems involved in the financing of a facility, the acquisition of land or rights of way, the incorporation of districts or associations, or other questions of like nature. The character of the area plan as a general, over-all survey has necessarily limited the legal discussion to a statement of general principles. Since specific facilities are not recommended for installation at specific localities, detailed legal analysis of individual projects is not possible. A few of the water law problems that may be encountered in individual cases have been noted, together with a brief discussion of the applicable law of each state involved in the area plan.

Types of Water Involved

As indicated elsewhere in the plan, the recommendations contemplate the utilization of several types of water as they have been classified by statutes and judicial interpretation. For the most part, the proposals involve the pumping of ground water for irrigation. The source of the ground water differs greatly in physical characteristics in various parts of the area. In some places the water is actually part of the underflow of the surface watercourse; in other places, it is percolating water contributing to the surface watercourse; in still other places there is no evidence of any direct relation between the ground water and surface watercourse. Artesian waters are not involved in any recommendations. There is at least one instance where the plan recommends a direct surface flow diversion as being feasible.

A determination of the character of the water to be recovered for use is of first importance in a legal analysis, either on a general area basis or in cases of specific projects, since legal principles vary according to the type of water under consideration.

Nature of a Water Right

A "water right" is a legal right which is entitled to protection in court to the same extent as other forms of property. A water right is generally held to be real property.

In the case of a surface stream, a water right is the right to use the water and does not embrace ownership of the water so long as it is flowing in the stream. When such water has been diverted from its natural course and reduced to physical possession, however, the more general rule is that it becomes the personal property of the holder of the right.

In the case of ground water, the water under the common-law rule of absolute ownership is a part of the realty and is owned by the owner of the land in which it occurs; under the rule of reasonable use it is owned by the landowner subject to a right to make only a reasonable use; and under the appropriation doctrine, the water right is only a right of use as in case of the water of a surface stream.

Surface Watercourses

Controlling Doctrines of Law

1. Riparian. The common-law riparian doctrine recognizes that the owner of land contiguous to a surface stream has certain rights in the flow of the stream. This right is inherent in the ownership of the land; is a part and parcel of the estate; and is not lost by nonuse alone, but may be lost by adverse use for the statutory prescriptive period by others who divert the water upstream. An owner of riparian land may use as much of the water as he needs for domestic purposes and the watering of livestock necessary to the maintenance of his home and farm, and for such necessary purposes may exhaust the entire flow of the stream. A riparian owner may also use the water for irrigation, but his use for such purpose must be reasonable with reference to the requirements of all other owners of land contiguous to the same source of supply; that is, if all riparian owners need water at the same time and the supply is not sufficient for all, each one will be entitled to use only his reasonable proportion of the available supply. Generally (but with exceptions in some states) the use of water under the riparian doctrine may be made only on riparian land. In some states the riparian owner is entitled to use only the direct flow of the stream for irrigation, while in others he is permitted to store water for later use.

2. Appropriation. The doctrine of appropriation is a matter of statutory law. Under this doctrine, each user of water from a stream acquires by virtue of such use, a right to continue the use of such quantity of water as he has applied to beneficial purposes. Such purposes may include domestic, municipal, irrigation, stock watering, mining, manufacturing, development of power, and other beneficial uses. The place of use need not be on riparian land.

Each appropriative right contains a fixed priority date which determines the right to divert water when the supply is not adequate for all users. This priority date is the date upon which the first step was taken to acquire the right, provided the appropriator is diligent in performing all subsequent acts in completing construction of works and application of the water to beneficial use. The holder of the earliest priority on a stream has the first right to use whatever water is flowing in the stream and may use the entire flow if the quantity of water he has appropriated so requires. Each priority is senior to all those of later date and junior to all those of earlier date. The priority is not affected by location of diversion works. The headgates of junior appropriators upstream must be closed to allow the water to flow downstream to senior appropriators at times when the supply is not sufficient to satisfy the requirements of all. In other words, an appropriator is entitled to use water only when there is a surplus above the requirements of all senior appropriators.

Each appropriative right refers, in addition to the date of priority, to a specific quantity of water. It is an exclusive right to use that quantity, subject to the rights of prior appropriators. In many instances the right also refers to a period of use, such as the use of a specific flow throughout the irrigation season, or during designated months, or during certain weeks or days in named months. The appropriative right is perfected by applying water to beneficial use and depends upon continued application since the right may be lost by nonuse, as noted hereinafter in greater detail.

Elements of the appropriative right include the location of the point of diversion, the place of use and the character of the use of the water, all of which may usually be changed, but only if others are not injured thereby. Ordinarily, the change may be made only by following a definite statutory procedure.

The statutes specify who may appropriate water. The general rule is that one rightfully in possession of land may appropriate water for use on that land, even though he does not have complete title to the land.

3. Extent of application of the two doctrines. The doctrine of appropriation is the exclusive method of acquiring a water right in Colorado, Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882). The riparian doctrine is not recognized in the state. The two doctrines are recognized concurrently in Kansas and Nebraska.

(a) Kansas. The riparian doctrine is the paramount rule of water law in Kansas. Clark v. Allaman, 71 Kans. 206, 80 Pac. 571 (1905); Frizell v. Bindley, 144 Kans. 84, 58 Pac. (2d) 95 (1936). Without attempting an analysis of the cases here, it may be said

that these decisions have created some doubt as to the status of the appropriation doctrine with respect to lands granted after the appropriation statute of 1886 was enacted. Pending decisions clarifying the point, it is a reasonable conclusion that appropriative rights under the statute are superior only to riparian rights of owners whose riparian lands passed to private ownership after the statute was enacted. Riparian rights attached to land which had passed into private ownership prior to 1886 were not disturbed by the adoption of the appropriation doctrine in that year, and such rights may be exercised today for all purposes, including irrigation. In view of the fact that most of the land suitable for irrigation had already passed into private ownership by 1886, the statute providing for appropriation has a very limited application. In fact, for all practical purposes the statute is a nullity, and, in the absence of administrative regulations, the comparatively few appropriations are made under the old procedure of posting a notice at the place of diversion. The number of riparian rights and the amount of water necessary to satisfy them are facts almost impossible to determine since riparian rights, acquired by virtue of ownership of land rather than by operation of statute, are not required to be recorded in terms of specific quantities.

(b) Nebraska. The riparian doctrine is recognized, but not to the extent that it is in Kansas. Leading cases on the riparian doctrine in Nebraska are Crawford Co. v. Hathaway, 67 Nebr. 325, 93 N.W. 781 (1903) and Meng v. Coffee, 67 Nebr. 500, 93 N.W. 713 (1903). It was held that the riparian and appropriative doctrines existed concurrently in the state; that the irrigation act had the effect of preventing the acquisition of riparian rights in the future, which meant that lands which passed to private ownership thereafter had no riparian rights, but that the legislation could not abolish riparian rights already accrued, that is, in connection with lands which had already passed to private ownership. A riparian right in Nebraska, therefore, is coordinate with the riparian right of every other owner of land riparian to the same stream; is subordinate to appropriative rights previously acquired on public land; and is superior to appropriative rights subsequently acquired, provided that the riparian owner made an actual use of water prior to the acquisition of the appropriative right.

In Nebraska the riparian right applies only to the ordinary and natural flow of the stream, and does not apply as against an appropriator of flood waters. Crawford Co. v. Hathaway, supra. Riparian lands are only those within the watershed. Osterman v. Central Nebraska Public Power and Irrigation District, 131 Nebr. 356, 268 N.W. 334 (1936). They are further limited to the area acquired by a single entry or purchase from the Government, which depends upon the facts in each case. As is the case in Kansas, the water right record in Nebraska does not reflect the number of riparian rights or the amount of water used under such rights.

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Acquisition of Rights

Riparian rights are acquired only by acquiring title to riparian land; appropriative rights are acquired by following the procedure provided in state statutes.

1. Colorado. The unappropriated water of every natural stream is the property of the public, subject to appropriation, and the right to appropriate such waters to beneficial uses may not be denied. (Const. Art. XVI, secs. 5, 6)

There are statutory provisions concerning the appropriation of natural overflow, waste, seepage or spring waters, natural flowing springs, and water raised from mines. (Stats. Ann. 1935, ch. 90, secs. 19, 20, 21 and ch. 110, sec. 212.) Every person, association, or corporation, within 60 days after commencing construction of a water works is required to file a claim with the State Engineer. If in proper form, it is accepted for filing, and a copy is required to be filed with the county clerk and recorder within 90 days from the date stated as the date of commencement. Due diligence must be exercised in construction. (Stats. Ann. 1935, ch. 90, secs. 27 to 32.)

There is no further procedure that must be followed in acquiring the right. The holder of a water right may petition the court for an adjudication. (Stats. Ann. 1935, ch. 90, secs. 158 to 181.)

2. Kansas. The right to use of running water in a river or stream for purposes of irrigation may be acquired by appropriation. (Gen. Stats., 1935, secs. 42-101.)

Any person desiring to appropriate water must post a notice at the point of diversion and file a copy with the county register of deeds. (Gen. Stats., 1935, sec. 42-101.) This is the procedure usually followed; however, an appropriation may also be made upon application to the Division of Water Resources, State Board of Agriculture. (Gen. Stats., 1935, secs. 24-903 and 74-506b.)

3. Nebraska. The unappropriated water of every natural stream is the property of the public, subject to appropriation. (Const. Art. XV, sec. 5; Comp. Stats., 1929, sec. 46-502.) Water flowing in a river, stream, canyon, or ravine may be appropriated. (Comp. Stats., 1929, sec. 46-613.) Waters of natural lakes or reservoirs may be appropriated to supply deficiencies in times of scarcity under existing appropriations. (Comp. Stats., 1929, sec. 81-6328.)

The United States and every person, before commencing work on taking water from constructed works, is required to make application to the State Department of Roads and Irrigation for a permit to make

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the appropriation. The Department may refuse the application if there is no unappropriated water in the proposed source, or if the granting would be detrimental to the public welfare, or may approve the application for a less quantity of water or area of land than applied for. When the application has been perfected, the Department sends a certificate for record to the county clerk. (Comp. Stats., 1929, secs. 81-6316 to 81-6320.)

Preferential Uses of Water

1. Colorado. The constitution provides that priority of appropriation shall give the better right as between those using water for the same purpose; but that when the waters of a natural stream are not sufficient for all those desiring the use, those using the water for domestic purposes shall have the preference over claimants for any other purpose, and those using water for agricultural purposes shall have the preference over those using it for manufacturing purposes. (Const. art. XVI, sec. 6.) The Colorado Supreme Court has held that this section does not authorize the taking of water for domestic use from prior appropriators, without fully compensating the latter. Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 Pac. 339 (1908).

A statute provides for dividing water pro rata among consumers from a ditch or reservoir if it is not entitled to a full supply at a certain time. (Stats. Ann., 1935, ch. 90, sec. 18.) The Supreme Court has held that under the most favorable view of this statute, it may be resorted to in times of scarcity of water to compel pro-rating among consumers having priorities of the same or nearly the same date.

2. Kansas. In the portion of the state west of the 99th Meridian all natural waters are to be devoted, first, to irrigation in aid of agriculture, subject to ordinary domestic uses, and second, to other industrial purposes. No diversion may impair or divest a prior vested appropriative right for the same or a higher purpose without condemnation and compensation. (Gen. Stats. Ann., 1935, Secs. 42-301 and 42-305.) The necessity for making compensation for the impairment of an inferior right, although not stated in the statute, would probably follow.

Where appropriations made under the authority granted to the State Board of Agriculture conflict, they take precedence thus: (1) Domestic and transportation water supply, (2) Irrigation, (3) Industrial use, (4) Water power. (Gen. Stats. Ann., 1935, sec. 24-903.)

3. Nebraska. The constitution contains a provision similar to that of Colorado, with a proviso that no inferior right may be acquired by a superior right without just compensation. (Const. art. XV, sec. 6.) See Crawford Co. v. Hathaway, 67 Nebr. 325, 93 N.W. 781

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(1903). Vested rights of completed appropriations cannot be destroyed without compensation. Kearney Water and Electric Powers Company v. Alfalfa Irrigation District, 97 Nebr. 139, 149 N.W. 363 (1914).

Transfers

The transfers discussed here include not only the transfer of a water right itself, as a type of real property, from one owner to another, but also the possibilities of transfer with respect to the point of diversion, the place of use and the character of use of water. Where transfer of the water right itself is permitted, the same formalities required in case of the conveyance of real estate ordinarily apply.

1. Transfer of water rights. In Colorado there is no statute making water rights appurtenant to land, and the State Supreme Court has stated that water may or may not be appurtenant to land. Hastings & Hayden Realty Co. v. Gest, 70 Colo. 278, 201 Pac. 37 (1921). The court specifically authorized the sale of a water right in Hassler v. Fountain Mutual Irrigation Co., (93 Colo. 246, 26 Pac. (2d) 102) where it was said that ". . . a water right may be alienated apart from the land, or its use transferred from one place to another, or even the character of use changed, provided only that in each instance no injury results to vested rights of other appropriators."

A Kansas statute provides that water rights or shares in an irrigation company entitling holders thereof to the use of water for irrigation, shall be appurtenant to the land upon which they are established and shall pass with a conveyance of such land whether mentioned in the deed of conveyance or not. It is further provided, however, that such water rights or shares may be the subject of separate transfers by deed executed and recorded as conveyances of real estate. (Rev. Stats. Ann., 1923, sec. 42-201.)

In Nebraska the statute requiring that an application for a water right describe the land to be irrigated has been interpreted to mean that water rights are attached to the land upon which the water is to be used. Water rights appurtenant to land pass with a conveyance of title to the land.

2. Point of diversion. In each of the three states the right to change the point of diversion is authorized by statute. (Colo. Stats. Ann., 1935, ch. 90, secs. 104 to 109; Kans. Gen. Stats., 1935, sec. 42-102; Neb. Comp. Stat., 1929, sec. 46-606.) The right is subject to the restriction that no injury be thereby inflicted upon others. The Nebraska statute requires approval of the change by the state administrative officials. In the case of adjudicated water

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rights, the Colorado procedure requires a petition to the court from which the original decree issued, with proof of notice to all interested parties.

3. Place of Use. In Colorado the right to change the place of use of water is not governed by statute. However, as noted in the quotation from the Hassler case, supra, the State Supreme Court has sanctioned such changes. The Kansas statute authorizing a change in the point of diversion appears also to authorize a change in the place of use. It provides that a water right holder "may extend the canal, ditch, flume, or aqueduct by which the diversion is made to places beyond that to where the first use was made." (Rev. Stats. Ann., 1923, sec. 42-102.) The Nebraska Supreme Court has sanctioned a change in place of use. In Farmers' & Merchants' Irrigation Co. v. Gothenburg Water Power & Irrigation Co., 73 Nebr. 223, 102 N.W. 487 (1905) it was stated that "it has been the uniform rule to allow appropriators of water, after it has been actually taken and applied to some beneficial purpose, to change the place or character of its use."

4. Character of use. The sanction of the Colorado Supreme Court upon a change in the character of use has already been indicated in the quotation from the Hassler case, supra. In Kansas the court has indicated, without ruling on the precise point, that a change in character of use is permissible if no injury is done to others. Whitehair v. Brown, 80 Kan. 297, 102 Pac. 783 (1909). The approval of the Nebraska Supreme Court has been noted above in connection with the Farmers' and Merchants' Irrigation case, supra.

Maintenance and Loss of Rights

Appropriative rights are subject to loss through voluntary abandonment, statutory forfeiture, adverse use by another and estoppel. Riparian rights can be lost only through adverse use or estoppel.

1. Abandonment. Abandonment of an appropriative right may take place irrespective of statute. It is a voluntary loss of the water right. The intention to abandon is the essential element and must be established as a question of fact in each case by clear and unequivocal evidence; mere lapse of time (in the absence of statutory forfeiture), without intention, does not constitute an abandonment. The intention to abandon may be evidenced by a declaration of a party or fairly inferred from his actions. The intention to abandon must be accompanied by an actual relinquishment of the right. It is a well-settled rule that the burden of proof is on the person charging the abandonment.

2. Forfeiture. The statutes of a number of states provide that if an appropriator fails to use water during a stated number of

successful years, the water right shall be forfeited, and the water shall revert to the public. There is no statutory period in Colorado. The statute in Kansas does not specify a period of time, but any failure continuously to apply water beneficially, without sufficient cause shown, is deemed an abandonment. (Kans. Gen. Stats. Ann., 1935, sec. 42-308.) The period in Nebraska is three years. The declaration of forfeiture is made by the Department of Roads and Irrigation under special procedures embracing notice, hearing and appeal. (Nebr. Comp. Laws. 1929, sec. 81-6309.)

Although the terms "abandonment" and "forfeiture" are many times used interchangeably, there are fundamental distinctions between them. In abandonment there must necessarily be an intention to abandon; yet such an intention is not an essential element of forfeiture inasmuch as there can be a forfeiture against and contrary to the intention of the party alleged to have forfeited. Gila Water Co. v. Green, 29 Ariz., 304, 241 Pac. 307 (1925). Abandonment takes place instantly, whereas forfeiture does not take place until the expiration of the statutory period of non-use.

3. Adverse use. Water rights may be lost, in general, by adverse use on the part of another for the prescriptive period defined in the statute of limitation of actions to recover real property. The principles applicable to the establishment of prescriptive rights to other forms of property have been adopted by the courts in many cases to the conditions peculiar to the exercise of water rights. There are so many elements of adverse use, also known as "prescription", that limitations of space forbid a comprehensive discussion of them. For present purposes, it seems sufficient to point out that a water right may be lost if another person, contrary to the interests and without the permission of the holder of the water right but with his knowledge, uses the water without interruption under a claim of title for the prescribed number of years.

4. Estoppel. Water rights may likewise be lost by appropriators who, by their actions and declarations, have led others to make use of their water rights on the assumption that such use would be entirely legal. Such appropriators are subsequently estopped from asserting their own rights.

Ground Water

The courts have generally differentiated between waters flowing in defined subterranean channels and those not confined to defined channels, the latter being termed "percolating" waters, and have held them subject to different rules of law. Regardless of scientific objections to the legal classifications, the courts have made

the classifications and have built up a large body of law based thereupon.

Definite Underground Streams

The rules applicable to surface watercourses apply to watercourses beneath the surface. The underflow of a stream is a part of the stream, the same rules being applicable to the surface and subsurface portions.

1. Colorado. The doctrine of appropriation applies to the underflow as well as to the surface flow of a stream. Buckers Irrigation, Milling and Improvement Co. v. Farmers' Independent Ditch Co., 31 Colo. 62, 72 Pac. 49 (1903). Underground streams in well-defined and known channels are governed by the same rules of law as streams upon the surface. Medano Ditch Co. v. Adams, 29 Colo. 317, 68 Pac. 431 (1902).

2. Kansas. In the northwest portion of the state, by statute, all natural subterranean waters may be diverted for stated uses, provided, vested appropriative rights for the same or a higher purpose are not interfered with. (Gen. Stats. Ann., 1935, sec. 42-301.) In the southwest portion of the state, subterranean watercourses, sheets, and lakes are declared by statute to belong to and be appurtenant to overlying lands, appropriations theretofore made not to be interfered with. (Gen. Stats. Ann., 1935, sec. 42-305.)

Subsurface water flowing directly below a surface stream and in contact with it does not constitute a second and separate stream; the surface and subterranean flow together form one stream. Kansas v. Colorado, 206 U.W. 46 (1907).

3. Nebraska. No definite decisions have been found which relate to underground streams. Presumably, rights to their use are governed by the law of watercourses, that is, the riparian and appropriation doctrines.

Percolating Waters

There are three principal doctrines governing the right of use of percolating waters: (A) The English or common law rule of absolute ownership: Under this rule an owner of land may not only abstract ground water from his land for any legitimate enterprise, but in so doing may exhaust the common supply otherwise available for use by his neighbor without liability for any resulting injury to the neighbor's water supply, regardless of the length of time the neighbor may have been using the ground water beneficially. (B) The American rule of reasonable use: This rule recognizes some form of ownership of ground water by the owner of overlying land, but imposes

upon the landowner some measure of reasonable use. Where this rule has been most highly developed, it requires the use by the landowner to be reasonable in relation to the requirements of all other owners of land overlying the common supply, their rights being co-equal and correlative. (C) The doctrine of appropriation: The principle of prior appropriation developed in connection with surface watercourses is applied to percolating ground waters.

1. Colorado. Most of the cases relating to ground waters have involved return waters from irrigation, but the courts in reaching their conclusions have included percolating waters from natural sources in the same category.

(a) Percolating waters physically tributary to watercourses: The Colorado courts have adhered to the principle that percolating waters which constitute a source of supply of a surface stream and which, if not interfered with, would reach the stream are a part of that stream to the same extent as the waters of a surface tributary. Faden v. Hubbell, 93 Colo. 358, 28 Pac. (2D) 247 (1933) and cases cited.

(b) Percolating waters not physically tributary to a surface watercourse: Rights to the use of such waters have not been the subject of legislation and the courts have not passed specifically upon them. San Luis Valley Irrigation District v. Prairie Ditch Co. and Rio Grande Drainage District, 84 Colo. 99, 268 Pac. 533 (1928), involved waters resulting directly from precipitation and return flow waters which gathered into a drainage ditch and discharged into a river into which they would not have drained naturally. The waters were held not to be a part of that stream but to be subject to independent appropriation. Rights of landowners to use the ground waters were not involved. On the basis of this decision regarding non-tributary surface water there may yet be some question, therefore, as to the right of an owner of overlying land to use non-tributary percolating waters as against the claim of a prior appropriator.

2. Kansas. The few court decisions indicate acceptance or at least acknowledgment of the English rule of absolute ownership of percolating waters, but specifically note a tendency toward modification of the doctrine. Emporia v. Soden, 25 Kans. 588, 37 Am. Rep. 265 (1881); Gilmore v. Royal Salt Co., 84 Kans. 729, 115 Pac. 541 (1911). The statute authorizing "diversions" of ground water in the northwestern portion of the state does not use the term "appropriation," and the legislative history leaves doubt as to just what a right to "divert" such waters involves. In view of the early enactments and the relatively few and inconclusive court decisions, the principles governing rights to the use of ground waters in Kansas are not well defined. Considering the statutes and court decisions

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together, the apparent result is that percolating waters not conforming to the statutory definition in the southwestern part of the state, and all percolating waters in the eastern portion, are still subject to the English rule with the probability of future modification, and that in the northwest portion the rule has been modified by statute.

It seems probable that the rule of absolute ownership will be substantially modified by the courts should a controversy arise, even if not changed by statute. No western court which has been called on to decide controversies over uses of ground water has continued to adhere to the rule of absolute ownership. Further, the Kansas court indicated that the tendency was away from such rule. The reasonable assumption is that if the legislature does not speak, the courts will adopt the American rule of reasonable use, particularly if the rights of a number of users in a common area are involved; and that users of ground water will be protected in at least a right to make reasonable use of their reasonable proportion of the common available supply.

3. Nebraska. The courts have adopted the American rule of reasonable use. The landowner can extract ground waters for reasonable and beneficial use upon his land, but cannot make a use injurious to others who have substantial rights in the ground-water supply. If the supply is not sufficient for all owners, each is entitled to a reasonable proportion of the whole. Olson v. Wahoo, 124 Nebr. 802, 248 N.W. 304 (1933). In the case of Osterman v. Central Nebraska Public Power and Irrigation District, 131 Nebr. 356, 268 N.W. 334 (1936), the Supreme Court stated that it was committed to the doctrine of reasonable use as laid down in Olson v. Wahoo, supra.

Regulations

In all states the officials or boards charged with administration of the water code or responsible for the regulation of the state's water resources have issued administrative orders or regulations which have the force and effect of law. Obviously, they must be complied with in detail in the construction and operation of every facility. A tabular abstract of some pertinent regulations in Colorado, Kansas and Nebraska appears at the end of this section of the plan. It is emphasized that reference be had to full text of such rules and regulations, which are obtainable from the office of the State Engineer or State Water Board.

Interstate Compacts

Background

In the leading case of Hinderlider v. La Plata River & Cherry Creek Ditch Co., 304 U.S. 92 (1938), the United States Supreme Court upheld the validity of an apportionment of the waters of an interstate stream between the two states (Colorado and New Mexico) whose representative commissioners negotiated the interstate compact. This decision established the device of interstate compacts as a legal and effective method of settling disputes among states over waters of interstate streams. The court held that each state is entitled only to the equitable share of the waters of an interstate stream and that an adjudication decree in either state cannot confer rights in excess of such share. An apportionment of the equitable shares between the states, by compact agreement, is binding upon the citizens of each state and upon all water claimants, even where the apportionment between the states would interfere with water rights previously granted by the state. Such interference is not deemed an infringement of a claimant's right since such claimant can have no vested right greater than the equitable share to which the state is entitled.

Republican River Compact Agreement

A compact for the apportionment of the waters of the Republican River has been negotiated by compact commissioners representing the States of Colorado, Kansas and Nebraska, and has been submitted to Congress for necessary approval. The recommended water uses, as set forth in the plan, have been reviewed by the compact commissioners, who found that such uses of water were well within the apportionment to each State, as set forth in the compact agreement. In view of the far-reaching effect that an interstate compact may have on existing water rights and uses, as indicated by the decision in the Hinderlider case, it is highly important that any substantial deviations from the water use recommendations in the area plan be examined in light of the terms of the Republican River Compact Agreement.

Conclusion

General

As noted in the beginning of this section, the character of an area plan makes possible only a general treatment of the legal problems which may be confronted in connection with individual facilities. It is apparent that the legal aspects will vary with each project according to its type, location, the pattern of water rights in

the locality, use, and other following, the plated with r

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the locality, the class of water proposed for recovery for beneficial use, and other attendant characteristics. Determinations such as the following, therefore, can be made only when operations are contemplated with respect to particular facilities;

1. Determination, insofar as physically possible, of the class or classes of water (in terms of the legal classifications) to be utilized because legal principles applicable will vary depending upon the character of the water.
2. Determination that the individual or group for whom the facility is proposed has or can obtain a valid water right in conformity with state law.
3. Determination that such water right, evaluated with reference to possible riparian rights as well as appropriative rights, entitles the holder thereof to the full quantity of water necessary to fulfill the use requirements of the proposed installation.
4. Determination that the contemplated use of water is consistent with the terms of any applicable interstate compacts.
5. Determination that construction of a facility is progressing in strict accordance with all state regulations relating to the construction of works for utilization of water.

Since the major developments contemplated in the area plan involve use of ground water for pump irrigation, attention is necessarily directed to the status of ground water under the law and to the effect of that status upon the feasibility of further development. Thus, the following conclusions with respect to each state relate only to the legal protection, or lack of it, afforded ground-water users.

Colorado

The Colorado courts have ruled that ground water tributary to a stream is a part of the stream system and, hence, within the purview of the constitutional provision that the waters of all streams are subject to appropriation. The courts have not yet passed upon the precise point of whether ground waters not tributary to a stream are subject to the appropriation statute or whether they belong to the owner of the overlying land; hence, the status of users of such water is necessarily indefinite. If all ground waters were to be ruled subject to appropriation under the statute, it follows that ground-water users would be entitled to the same protection now afforded appropriators from surface streams. That is, the first appropriators would be entitled to the full amount of their appropriations even though the supply might be insufficient to satisfy all appropriations. Because of the constitutional provision that no application

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for an appropriation may be denied by the State Engineer, there is a real danger of over-development by the installation of more pump irrigation works than the ground-water supply warrants. Although the first appropriators would be protected in such event, the inability of later appropriators to operate their facilities, because of the depletion resulting from an excessive rate of development, would have an adverse influence upon the community economy to the extent that such investors would be unable to realize a return on their investments.

Question arises as to the extent to which administrative supervision would be exercised if all ground water were to be declared subject to appropriation. The appropriation doctrine applies at the present time to ground water tributary to a stream, but field surveys indicate that close administrative supervision of withdrawals of such water has not been attempted. Clarification of this situation would be desirable before extensive development is undertaken.

While there is reason to believe that the courts will eventually rule all underground water subject to appropriation, it remains as yet only an assumption, which is an uncertain basis upon which to predicate development. It might be decided that such waters belong to the owner of overlying land. In that case, even if owners were restricted to a reasonable use of the water, there would be nothing to prevent depletion of the supply to a point where economic withdrawals could no longer be made. Pending a determination by the court, therefore, it appears that development of ground waters not tributary to streams should be confined to those areas where natural factors, such as condition of the stream bed or isolation of irrigable land by non-irrigable land, tend to prevent excessive withdrawals.

Kansas

The ambiguity of the Kansas statute authorizing "diversions" of subterranean waters in the northwest portion of the state has been pointed out. Even if the court of that state were to rule that authority to "divert" underground water constitutes authority to "appropriate" such water, within the meaning of the appropriation statute, the situation would still be indefinite. It is well-settled law that a dedication of waters to the public for purposes of appropriating it to beneficial use cannot destroy vested rights to such waters already established under the common-law doctrine of absolute ownership. Hence, it appears that ground water underlying land that had passed into private ownership prior to passage of the appropriation statute would continue to be the property of the landowner in spite of the dedication. A field survey indicates that no attempt has been made to administer ground waters in Kansas under the appropriation statute, not only because of the indefiniteness of the

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statute, but also because practically all of the irrigable land, together with the underlying ground waters, was already in private ownership and, hence, not subject to appropriation, when the appropriation statute was passed in 1886. For the purpose of considering the feasibility of development, therefore, it seems advisable to assume that ground waters are owned by the landowner under whose lands they occur. It has already been noted that the existing rule in Kansas, as announced by the courts, is that the landowner has absolute control over ground water even to the extent that he may injure his neighbor by an unreasonable use of the water. The Kansas court has indicated its awareness of the tendency in other Western States to modify the doctrine of absolute ownership by restricting a landowner to a use of the water reasonable with respect to his neighbor; however, no decision has been found that actually makes the modified doctrine the prevailing rule.

It is readily apparent that it would be hazardous to invest public or private money in pump irrigation works where, under the doctrine of absolute ownership, there is nothing to prevent exhaustion of a common ground-water supply by abusive and unreasonable drafts. Greater, but not complete, protection would be afforded investors if the court were to adopt the so-called American rule of reasonable use. While that doctrine protects a ground-water user against unreasonable uses of water, it does not protect him if the common ground-water supply becomes so depleted by continued withdrawals as to be insufficient for the needs of all overlying land. He is entitled only to his reasonable portion of the total supply, a portion that may or may not enable him to recover the cost of his investment.

In view of the foregoing, facilities proposed for installation in the northwest portion of Kansas should be scrutinized with great care. In the absence of some legal means to control the rate and extent of development so as to protect both the individual investor and the community economy, it would seem that installation of facilities should be restricted to those areas where physical conditions render over-development unlikely.

Nebraska

The American rule of reasonable use has been adopted by the Nebraska courts as the prevailing doctrine of law regarding use of ground waters. As noted in the comment on Colorado and Kansas, above, this doctrine protects ground-water users against wasteful uses on the part of others. It does not, however, afford any means whereby a balance between withdrawals and recharges to the common supply may be maintained so as to assure all users a supply sufficient for the use requirements of their facilities. Accordingly, in Nebraska, as in Colorado and Kansas, the best interests of the individual investor and the community as a whole would seem to be served by confining development to those areas where natural conditions tend to control the rate and extent of development.

Table 62.- Construction regulations

COLORADO

Supervising Agency	Design and Construction Laws or Regulations (reference shown in parenthesis)	Supervising Agency	Operation Laws or Regulations (reference shown in parenthesis)
State Engineer	An application, together with plans and specifications must be filed with and approval secured from the State Engineer for the construction and repair of a dam or reservoir of a capacity of more than 1,000 acre-feet or having an embankment in excess of 10 feet in vertical height, or having a surface area at high water line in excess of 20 acres. (Secs. 3731, 3847, Courtright's Mills Annotated Statutes of Colorado, 1930.)	State Engineer and Water Commissioner	The water commissioner in the district where the reservoir is located is authorized to draw off the excess amount of water which is stored in the reservoir over the amount authorized by the State Engineer to be safe. (Sec. 3734, Courtright's Mills Annotated Statutes of Colorado, 1930.)
County Surveyor	Plans and specifications for dams to be built across a normally dry watercourse for domestic or irrigation purposes which are 10 feet or less in height, or which form a pool of 20 acres or less, must be submitted to and be approved by the county surveyor before construction is begun. (Ch. 185, Laws of 1937.)	State Engineer	The State Engineer annually determines the amount of water which it is safe to impound in all reservoirs of the State and the owners are prohibited from storing more water than determined by the State Engineer. (Sec. 3733, Courtright's Mills Annotated Statutes of Colorado, 1930.)
			Upon complaint of three or more persons that a reservoir is unsafe the State Engineer is authorized to make an inspection of such reservoir and if it is found unsafe, he is authorized to draw off a sufficient amount of water to make the reservoir safe. (Sec. 3735, Courtright's Mills Annotated Statutes of Colo.

Table 62.- Construction regulations (continued)

COLORADO

Design and Construction

Annotations

Colorado, 1930.)

Table 62.- Construction regulations (continued)

COLORADO

Supervising Agency	Design and Construction Laws or Regulations (reference shown in parenthesis)	Supervising Agency	Operation Laws or Regulations (reference shown in parenthesis)
State Engineer (continued)		State Engineer (continued)	An owner of an irrigation ditch, canal, flume or reservoir taking water from any stream must erect and maintain in good order at the point of intake a proper measuring flume, or weir, and headgate and a suitable wastegate. If the owner fails to construct a headgate or measuring device, the State Engineer can refuse to deliver water to such owner. (Sec. 3772, Courtright's Mills Annotated Statutes of Colorado, 1930.)
			An owner of a reservoir is required to maintain a gage rod marked in feet, tenths, and one-hundredths of a foot at the outlet of the reservoir; otherwise the State Engineer can refuse water to such reservoir. (Sec. 3775, Courtright's Mills Annotated Statutes of Colorado, 1930.)
Fish Commissioner		Fish Commissioner	Persons operating dams must build and keep in repair fishways for free passage of fish, except where entire flow of stream is diverted. (Secs. 3231, 3232, 3233, Courtright's Mills Annotated Statutes of Colorado, 1930.)

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Table 62.- Construction regulations (continued)

COLORADO

Supervising Agency	Design and Construction Laws or Regulations (reference shown in parenthesis)	Supervising Agency	Operation Laws or Regulations (reference shown in parenthesis)
		Fish Commissioner (continued)	Persons owning or controlling reservoirs or other bodies of water into which public waters flow and which furnish water to any stream containing fish must not divert or lessen the flow to an extent detrimental to fish. (Sec. 3188, Courtright's Mills Annotated Statutes of Colorado, 1930.)

KANSAS

Division of Water Resources, State Board of Agriculture
 County Engineer

An application, together with maps and specifications, must be filed for the construction, change, or addition to any dam or other water obstruction. These provisions do not apply to a dam on a purely private stream that is not more than 10 feet high and does not impound more than 15-acre-feet of water; these are under the jurisdiction of the county engineer when built across a dry watercourse and the landowner desires to secure a reduction in the assessed valuation of his land. (Ch. 203, Laws of 1929, secs. 1, 2; Chs. 330 and 332, sec. 1, Laws of 1955.)

Table 62.- Construction regulations (continued)

KANSAS

Supervising Agency	Design and Construction Laws or Regulations	Supervising Agency	Operation Laws or Regulations

to secure a reduction in the assessed valuation of his land. (Ch. 203, Laws of 1929, secs. 1, 2, Chs. 330 and 332, sec. 1, Laws of 1933.)

Table 62. Construction regulation (continued)

KANSAS

Supervising Agency	Design and Construction Laws or Regulations (reference shown in parenthesis)	Supervising Agency	Operations Laws or Regulations (reference shown in parenthesis)
Division of Water Resources, State Board of Agriculture (continued)	Screens, flashboards, or other obstructions are not to be placed in spillways. All dams which are exposed to more than about 5 acres of water surface should be protected against the action of waves by suitable revetment on the upstream slope. All sod, brush, trees, roots, and stumps are required to be removed from the area to be occupied by the dam. (Bulletin No. 213-b, Regulations and Information of the Division of Water Resources, quarter ending March 1935, pages 11, 14, 20.)		

NEBRASKA

Department of Roads and Irrigation	An application, together with plans and specifications, must be submitted for approval before construction of any dam for reservoir purposes or across the channel or any running stream. (Sec. 81-6327, Compiled Statutes of Nebraska 1929; p. 30, rules of 1935 of Department of Roads and Irrigation.)	Department of Roads and Irrigation	Owners of dams which have or will have an impounding capacity of 10 acre-feet or more, are required to keep the dam in a state of repair to be approved by the Department of Public Works. Inspections are to be made annually. If dam is found defective, the owner must make repairs within 3 months. (Sec. 81-6332, 1931 Supplement to Compiled Statutes of 1929; p. 31, rules of 1935 of Department of Roads and Irrigation.)
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