



**FOREST SERVICE MANUAL
SOUTHWESTERN REGION (REGION 3)
ALBUQUERQUE, NEW MEXICO**

FSM 2500 – WATERSHED AND AIR MANAGEMENT

CHAPTER 2540 – WATER USES AND DEVELOPMENT

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Digest:

This directive establishes new Southwestern Region direction in the Water Uses and Development Chapter.

2541.03 Clarifies policy statement - consumptive water uses on the National Forest include, but are not limited to, domestic water to support administrative sites, water for road building, and water for firefighting. For consumptive uses not covered by the reservation doctrine; such as water for wildlife, for recreation areas, and water for the use of permittees and concessionaires, quantify and pursue State water rights in accordance with applicable State law.

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Include high priority non-consumptive stream flows and standing waters when determining National Forest water needs. Where State law allows, quantify and pursue State water rights for flows and standing waters not covered by the reservation doctrine.

2541.04c Clarifies the responsibilities of the Forest Supervisors to document and manage the water uses of the Forest Service.

2541.35 Provides detailed guidance for the Special Use Authorization of water developments on National Forest System lands. Entities other than the Forest Service cannot construct wells and pipelines (water developments) on National Forest System (NFS) lands without Forest Service authorization. This Supplement addresses the Special Use Permit authorization of wells and pipelines. Water developments classified as range improvements under 36 CFR 222.1, 222.9, 222.10, and FSM 2240 are authorized and managed through the administration of Term Grazing Permits and are not subject to this Supplement. Permits for preexisting conveyances such as acequias that predate the reservation of National Forest system lands should acknowledge any underlying right of way.

In those cases where a State based water right or State approval is needed for a water development, the process for securing State approvals precedes or runs parallel with the Forest Service process (two levels of screening and NEPA compliance) for authorizing a water development. To the extent that the State process recognizes the following concerns, conducts analyses, and documents findings, documentation provided by the State may be sufficient for the project file and as partial basis for a NEPA decision (40 CFR § 1506.2, Elimination of duplication with State and local procedures). State law will be observed in all cases involving a state-based water right. A perfected water right is recognized as a property right. If emergency circumstances occur, the Forest Service shall consult with the Council on Environmental Quality regarding alternative arrangements to what is specified herein (40 CFR § 1506.11).

2541.4 Clarifies the process regarding disposition of water rights appurtenant to acquired lands.

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This directive establishes new Southwestern Region direction in this Chapter.

2541.03 – Policy

Consumptive water uses on the National Forest include, but are not limited to, domestic water to support administrative sites, water for road building, and water for firefighting. For consumptive uses not covered by the reservation doctrine; such as water for wildlife, for recreation areas, and water for the use of permittees and concessionaires, quantify and pursue State water rights in accordance with applicable State law.

Include high priority non-consumptive stream flows and standing waters when determining National Forest water needs. Where State law allows, quantify and pursue State water rights for flows and standing waters not covered by the reservation doctrine. Options other than pursuing a State instream flow water right include, but are not limited to:

1. Rely on senior and stable downstream appropriators to protect needed stream flows on the National Forest System.
2. Consider special use permit conditions as a means of maintaining stream flows or standing waters (16 U.S.C.A. §§ 497 and 551, 16 U.S.C. § 1761(a)(1), and 16 U.S.C. § 1765(a)(ii)).
3. Protect stream flows or standing water through land acquisition. When considering land acquisition to maintain stream flow or standing water, the decision should demonstrate through economic and social impact analysis that the purchase is in the interest of the affected public.
4. Negotiate agreements or adjudication settlement stipulations that protect stream flows or standing waters.
5. Lease water as appropriate and as provided for in State law.

2541.04c - Forest Supervisors

Maintain and update annually the Forest's water uses, requirements, and rights inventory. Assure that wells and pipelines proposed by the Forest Service are evaluated with the same criteria established below for entities other than the Forest Service. A state water permit is not needed for water use under the reservation doctrine. All other federal water uses, however, must be in compliance with applicable state law and pursuant to a state-based water right or permit. Whether a water right is based on state or federal law, water development by the Forest Service requires National Environmental Policy Act (NEPA) compliance.

2541.35 - Special Use Authorization for Water Developments

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Entities other than the Forest Service cannot construct wells and pipelines (water developments) on National Forest System (NFS) lands without Forest Service authorization.

This Supplement addresses the Special Use Permit authorization of wells and pipelines. Water developments classified as range improvements under 36 CFR 222.1, 222.9, 222.10, and FSM 2240 are authorized and managed through the administration of Term Grazing Permits and are not subject to this Supplement. Permits for preexisting conveyances such as acequias that predate the reservation of National Forest system lands should acknowledge any underlying right of way.

In those cases where a State based water right or State approval is needed for a water development, the process for securing State approvals precedes or runs parallel with the Forest Service process (two levels of screening and NEPA compliance) for authorizing a water development. To the extent that the State process recognizes the following concerns, conducts analyses, and documents findings, documentation provided by the State may be sufficient for the project file and as partial basis for a NEPA decision (40 CFR § 1506.2, Elimination of duplication with State and local procedures). State law will be observed in all cases involving a state-based water right. A perfected water right is recognized as a property right. If emergency circumstances occur, the Forest Service shall consult with the Council on Environmental Quality regarding alternative arrangements to what is specified herein (40 CFR § 1506.11).

Ground water beneath NFS lands in the Region is a valuable resource that requires thoughtful and prudent management. Understanding ground and surface water interactions facilitates the protection of surface water rights. Where surface and ground water are connected, ground water discharge sustains base flows in NFS streams and is the source of water for springs and seeps. This ground water discharge may be critical for sustaining aquatic and riparian ecosystems along with the numerous resources and activities dependent upon them. Data describing ground and surface water interactions is valuable information for State agencies to have as they fulfill their responsibilities for the administration of water rights.

When a project proponent proposes to drill a well on NFS lands and/or transport ground water across NFS lands through a pipeline, it is appropriate to analyze the potential impacts of water removal along with the impacts of well and/or pipeline construction (40 CFR § 1508.25 Scope, 40 CFR § 1508.7 Cumulative impact). The analysis should consider impacts upon neighboring landowners and water users. The extent to which each proposal to remove or transport ground water is analyzed depends on the scope and potential impact of the proposed action. The analysis shall be done in cooperation with State and local entities where appropriate.

Upon completion of the analysis, Special Use authorizations for water developments on NFS lands should be approved using the appropriate decision document only when the long-term protection of NFS streams, springs, seeps, and associated riparian and aquatic ecosystems can be assured. The following is guidance that specifically addresses the permitting of water developments on NFS lands. (See also FSM 2729).

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1. Initial Screening for Well and Pipeline Development. As provided for in Title 36 of the Code of Federal Regulations (CFR) § 251.54 (b), initial proposals for ground water developments may be presented to the Forest Service either verbally or in writing. When such presentation is made to the Forest Service, it should be explained to the project proponent that the permitting process for wells and pipelines is a discretionary activity, and that a permit for a well or pipeline may be denied if analysis indicates that NFS resource will not be adequately protected, if the State determines that the proposal shall not be permitted due to impairment of a neighboring water supply, or in the absence of a State analysis the Forest Service determines that the proposal does not adequately protect neighboring water supplies. It should also be explained that the CFR provides for two levels of screening prior to initiating environmental analysis documentation. To pass the initial screening requirements, proposals to construct wells on NFS lands, and/or pipelines across NFS lands, must meet the following conditions:

- a. The proposal to pump or transport water must be consistent with applicable laws, regulations, policies, rules, executive orders, treaties, decrees, and NFS land and resource management plans (FSM 2702 & 2703). Nothing in this Supplement alters the status of valid existing water rights or the role of the State in administering those rights. Proposals shall be evaluated as specified in 36 CFR § 251.54 (e) and as follows.
- b. The proposal to pump or transport water must not impair NFS resources (FSM 2702 & 2541.34).
- c. The proposal must be consistent with national policy not to encumber NFS lands just because it affords a proponent a lower cost when compared with alternatives located on non-NFS lands (FSM 2703.2).
- d. Proposals to pump ground water from NFS lands must meet the direction specified in FSM 2541.21h (efficient design and operation).
- e. When considering proposals to develop wells and pipelines, preference should be given to those requests that demonstrate through economic and social impact analysis that they are in the interest of the affected public.

Proposals that do not meet the minimal requirements of the initial screening process shall be returned to the proponent as insufficient. The authorizing officer shall reply in writing if the proposal was presented in writing, or reply verbally if the proposal was presented verbally (36 CFR § 251.54 (e) (2)).

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2. Second-level Screening. Additional information is required for proposals that pass initial screening. In second-level screening, the proposal is evaluated as described in 36 CFR § 251.54 (e) (5) and as follows.

a. The proponent must demonstrate that alternative water sources do not exist (FSM 2703.2). This would include documentation of the actions taken to secure water from other than NFS sources or the rationale explaining why it is not feasible to do so. This may include a record of wells drilled, attempts to purchase water, hydrologic and geologic studies, or other similar information.

b. The quantity of water the proponent is currently seeking to pump from below NFS lands and the purpose of use of such water must be identified. If the proponent anticipates increased water needs in the future, such needs shall also be quantified. Quantity, purpose, and point of use information must be consistent with the information the proponent is providing to the State for the processing of any required State authorizations for water rights and/or uses. The proponent may use copies of State forms and information available from the State to meet Forest Service information requirements.

c. Drilling activities themselves can negatively impact NFS resources. In instances where considerable disturbance may result from the drilling process itself, the proponent must demonstrate that there is a reasonable likelihood of successfully completing any water wells and adequately mitigating any resource damage. Information that might support a proponent's rationale could include an inventory of all existing wells in the vicinity along with any available information such as driller's logs, well depths, well yields, water quality information, geophysical logs, and well construction details. In addition, information regarding geologic conditions such as known water bearing formations (including location, aerial extent, lithology, and hydrologic characteristics) or structural features. The proponent may be required to provide information describing current resource conditions to facilitate estimates of potential damage and/or potentially effective mitigation.

d. All anticipated facilities such as roads, power lines, pipelines, water storage tanks, and pumps that could ultimately be needed to produce and convey water across NFS lands must be identified. Proposals that involve construction and/or use of roads shall conform to the requirements of the Federal Land Policy and Management Act (FLPMA) of 1976, specifically FLPMA Sections 502 and 505.

e. To assist in evaluating the potential for the proposal to affect NFS resources and neighboring water supplies, key resources and existing water supplies should be identified. The quantity, location, and/or timing of the proposed use of water will determine to what extent the following information needs are addressed. Additional information will be required of each proposal that contemplates the withdrawal of

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large quantities of water, building in or transiting environmentally sensitive locations, and/or withdrawal of water during peak periods of usage by others, sensitive periods of needs for fish and wildlife, or sensitive periods of needs for riparian and wetlands flora and fauna. The information provided for the evaluation of biological impacts shall be scientifically based and, where appropriate, subject to peer review.

Information that may be required to assess potential impacts to neighboring water users and/or to resources both on and adjacent to NFS lands includes:

- (1) The location and characteristics of all potentially affected surface and ground water resources including wells, streams, springs, seeps, and aquifers.
 - (2) Pertinent social information, including the identification of any potentially impacted individuals or groups and their water uses. Economic and social impacts, and environmental justice (as defined in Executive Order 12898, February 11, 1994) will be evaluated through the National Environmental Policy Act of 1969 process (NEPA) and through any applicable State process designed to protect the holders of water rights.
 - (3) The location and description of riparian vegetation.
 - (4) Any known state or federal Threatened or Endangered species, or Sensitive species identified on the Regional Foresters current list.
 - (5) Pertinent geologic information. This should include a map of the area identifying surface geology and any known subsurface formations and structural features. Hydrologic characteristics of the target aquifers such as transmissivity and storativity should also be included, if known.
 - (6) Pertinent hydrologic information. Provide any available information regarding water table or piezometric surface elevations including known seasonal fluctuations, direction and rate of ground water flow, recharge and discharge areas, surface water flow characteristics including volumes and peaks throughout the year, location of gaining and losing reaches of streams, and water quality. If the State has a State recognized hydrographic survey, it may be incorporated by reference.
- f. If the proposal does not pass second-level screening, it should be returned to the proponent with a written reason for rejection (36 CFR § 251.54 (g) (1)). NEPA analysis is not required to make this determination (36 CFR § 251.54 (e) (6)).

If the proposal passes second-level screening, the proponent shall be notified that the Forest Service is prepared to accept a written formal application for a special use authorization. Previously submitted information may be included in the application by reference. The proponent should be advised that any information provided is likely to become public

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information once the formal application is received and a NEPA process initiated. When the formal application is received, the proponent is referred to as the applicant.

3. Environmental Analysis. The Forest Service should begin the appropriate environmental analysis upon receipt of the formal application (36 CFR § 251.54 (g) (2) (ii)). Because of the relationship between federal, tribal, state, and local entities in the management of water resources, interagency notice shall be given early in the process (FSM 1909.15, Sec. 11 – Conduct Scoping and 1909.15, Sec. 11.31b – Cooperating With Other Agencies “...promptly request in writing the cooperation of potentially affected State and local government agencies.”). When screening indicates that the proposal includes high ground water production rates and/or potentially high impact well(s) or transmission facilities, substantial additional analysis may be necessary. An application may be approved in two phases, the first for exploration and the second for construction and/or production. Each phase requires NEPA documentation. When the application is to use existing wells, the evaluation procedures described in paragraphs (a) - (c) may still apply.

Project applicants should be advised that obtaining approval for exploratory drilling and/or evaluation does not guarantee that construction of production phase facilities will be authorized. They should also be advised that there may be substantial mitigation measures required by the terms of a production authorization and that the scope of those measures may not be identified until the conclusion of the appropriate environmental analysis.

a. Exploratory Drilling Procedures. When screening indicates a reasonable likelihood of producing ground water without negative impacts to NFS resources or neighboring water supplies, and all applicable State authorizations have been obtained, NEPA documentation appropriate to the scale of exploration shall be completed. At this phase, a Categorical Exclusion (FSH 1909.15, Sec. 31.1(b)(8) or 31.2(8)) may be sufficient. If the responsible official decides to allow exploration on NFS lands, a temporary permit may be issued for the exploration and impact evaluation phase of the proposal. This temporary permit shall contain any conditions necessary to minimize impacts to Forest resources.

b. Impact Evaluation Procedures. If water supplies in sufficient quantities to meet the applicant's needs are located in existing wells or found through exploration, a detailed plan to determine impacts should be required. This plan will be site specific and designed to identify potential impacts to Forest resources and neighboring water supplies, and must be approved by the Forest Service before testing for impacts.

In considering requests to use water from a known aquifer underlying NFS lands, modeling drawdown and resultant impacts may be sufficient provided that there is adequate information available regarding key aquifer parameters such as transmissivity, storativity, recharge rate, saturated thickness, etc.

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Modeling shall be conducted using a ground water flow model approved by the Forest Service in consultation with the appropriate State agencies.

In the absence of sufficient information to model impacts, an aquifer test such as long-term pumping of existing and/or exploratory well(s) may be required. The purpose of the test is to evaluate the potential impacts of removing water at production levels from the well(s) under consideration. As testing occurs, there should be simultaneous measurements of water levels and/or pressures in other wells within the vicinity and of flows in adjacent surface waters. Any aquifer test(s) should be conducted during periods of appropriate flows in adjacent surface waters so that impacts can be identified and used to support modeling of drawdown characteristics and/or impacts to surface water resources over time. Chemical characterization may be necessary to further evaluate the potential connection between ground and surface water sources.

If the proposal involves the transport of ground water pumped from nearby non-NFS lands across NFS lands, the above testing may still be required to evaluate impacts of the ground water withdrawal (40 CFR § 1508.25 Scope, 40 CFR § 1508.7 Cumulative impact). Note that in the analysis of impacts the State may play a pivotal role in the determination of impact based on State law and priority dates. For example, the State may find that a negative impact to a junior appropriator is acceptable to meet the needs of a senior water right holder. In the documentation and decision process, consider the statement in 40 CFR § 1508.14 Human environment: “economic or social effects are not intended by themselves to require preparation of an environmental impact statement”.

c. The results of testing, monitoring, and/or modeling shall be shared with the appropriate State and local entities and analyzed to determine potential impacts. A decision to allow well and/or pipeline construction shall be considered through the appropriate NEPA analysis and documentation. Refer to FSH 1909.15, chapters 30 and 40.

4. Construction and Production Permitting. The construction and production phase includes the construction of all infrastructures needed to pump, store, and convey water from its source to the place of use. Once a NEPA decision and all applicable State authorizations are in place, a special use authorization is needed to occupy and use NFS lands for the purposes of constructing and operating facilities designed to produce and convey ground water (36 CFR § 251.54 (g)(5)). Refer to FSM 2711 for guidance on the type of permit and/or easement to issue. Refer to 36 CFR § 251.56 for Terms and Conditions for issuance of the authorization. Construction may be permitted separately from production. Once an authorization is issued, the applicant is referred to as the holder. The ability of the Forest Service to amend an authorization depends on the form of authorization used and the specific provisions of the instrument. See FSM 2711.

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For existing long term authorizations, legal advice may be needed to determine when and how the instrument can be modified. For new authorizations, care should be taken to assure that the appropriate provisions are included to apply the regulations at 36 CFR 251.56(B)(v). Continued monitoring of water developments on NFS lands is necessary to verify that their operation remains in the interest of the affected public.

5. Monitoring and Mitigation. All monitoring or mitigation measures necessary to ensure protection of Forest resources during the construction of water pumping, storage, or transport facilities, and during the long-term removal of ground water, should be included in annual plans of operation attached to and made a part of the permit(s). Mitigation measures such as the cessation of pumping during critical times of the year or replacing water to streams and springs will be considered only if they have been granted all applicable State authorizations and if Forest resources can be protected over a long-term period.

a. The holder should be required to bear the costs of monitoring and mitigation either directly through permit language or indirectly through the use of a collection agreement that funds the Forest Service to accomplish the work.

b. If long term monitoring detects additional or unforeseen adverse impacts to Forest resources, or if mitigation measures do not adequately protect Forest resources, the permit shall be suspended or revoked as appropriate (36 CFR § 251.60 (a) (2) (D). To reverse or prevent a suspension, the holder shall undertake such efforts as are necessary to eliminate adverse impacts.

6. Other Considerations. Applicable laws and regulations governing wells and water rights shall be adhered to for all proposals. This includes State requirements for notifications, drilling permits, well abandonment procedures, and water rights, and federal (for example, Environmental Protection Agency) requirements and recommendations for monitoring wells, construction, sampling, and abandonment.

In the event that testing, modeling, or monitoring indicates a possibility that appropriable waters are or may be impacted, the Forest Service shall follow the procedures appropriate for the State(s) in which the development is located. If an appropriate State remedy is not available, the Forest Service may seek remedy in any court of jurisdiction. The Forest Service shall not issue a permit for construction or issue/reissue a permit for production unless the applicable State authorization has been granted for the proposed development. In the event that a State withholds authorization for a water development proposed by the Forest Service, the requesting Forest Service official is advised to consult with the Office of General Counsel. Permits issued by the Forest Service for exploration, evaluation, construction, and/or production do not convey a water right to the holder.

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2541.4 - Managing Water Rights

Decide if water rights appurtenant to acquired lands can and should continue to be used on the acquired lands. Make a decision within 1 year of acquisition on how and where acquired water rights would preferably be used, and apply to the State for any needed changes in points of diversion and/or purpose of use. If it is determined that all or part of an acquired water right is not needed by the acquiring Forest, the Regional Forester will identify alternatives to forfeiture of the water.