

Instream Flow Advisory Group Support

Prepared for

Oklahoma Water Resources Board



U.S. Army Corps of Engineers, Tulsa District



February 2013

CH2MHILL®

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1. Introduction

1.1 Project Background

As part of the *2012 Update of the Oklahoma Comprehensive Water Plan (2012 OCWP Update)*, the Oklahoma Water Resources Board (OWRB) convened an Instream Flow Advisory Group to discuss benefits and issues regarding a potential future Oklahoma instream flow program. That effort culminated in a report titled *Instream Flow Issues and Recommendations* (2011).¹ The report outlines the issues associated with an instream flow (ISF) program and recommends the following steps:

1. Address the legal and policy questions.
2. Study other mechanisms for protecting instream flows.
3. Develop a draft methodology for instream flow studies in Oklahoma.
4. Conduct a study on the economics of instream flows in Oklahoma.
5. Conduct an instream flow pilot study in a scenic river.
6. Preserve the Instream Flow Advisory Group.

Furthermore, the *2012 OCWP Executive Report* identified eight priority recommendations including the following recommendation regarding Instream/Environmental Flows:

The process developed by the OCWP Instream Flow Workgroup should be implemented and followed to ascertain the suitability and structure of an instream flow program for Oklahoma, with such process commencing in 2012 and concluding by 2015, as outlined by the Workgroup.

Consistent with these recommendations, the Instream Flow Advisory Group is being reconvened to further define whether and how an instream flow program might be implemented in Oklahoma. Determining the suitability and structure of such a program for Oklahoma requires a thorough understanding of the potential benefits and effects of various ISF program structures, including considerations related to existing water rights and future appropriations for consumptive uses.

1.2 About this Report

Consistent with the 2011 OCWP *Instream Flow Issues and Recommendations* report, this background report briefly summarizes relevant Oklahoma water law, as well as existing programs and state and federal laws that may provide some level of ISFs and/or affect development of an ISF program in Oklahoma.

This background report has been prepared as an overview document on the ISF legal and policy framework, other states' ISF programs, and mechanisms for protecting instream flows to support the initial discussions with the Instream Flow Advisory Group. The report is not intended to be a complete or comprehensive review of existing literature on ISF programs, their rationale, or potential benefits and/or detriments. The information provided here has been prepared to support discussion on potential ISF policies for Oklahoma. The output of the pending Instream Flow Advisory Group meetings and workshops will be used to develop any future recommendations on a path forward to the OWRB.

¹ Available at http://www.owrb.ok.gov/supply/ocwp/pdf_ocwp/WaterPlanUpdate/draftreports/OCWP_InstreamFlow_IssuesRecs.pdf.

2. Legal and Policy Framework for Instream Flows

Today Oklahoma water law does not specifically identify “Instream Flows” and thus the topic is often a point of confusion and conflict. The absence of this term is the focus of various opinions and points of contention with multiple parties in Oklahoma. Throughout Oklahoma water law the concept of “flow” or its relation with either natural life or quality of human life is not specifically addressed. Only in those sections of law relating to designated Scenic Rivers does the word “flow” appear in any form. The absence of the written word is perceived by some as being non-existent and un-supported by Oklahoma law while others believe that its existence is implied.

Being absent from written word does not mean that ISF should be without consideration. Some believe that legislative authority afforded to the OWRB allows the discussion, action, and planning for ISF programs. Although without specific authority, the concept of ISF is clouded and contentious. It is realized by many that legislation can change the interpretation of ISF concepts. In addition, the progress of the ISF Advisory Group may have an impact on future ISF programs, if any.

The progress of the ISF Advisory Group allows the consideration of items not specifically called out in Oklahoma law and weighs true the potential impact of items of personal concern. Prior ISF related activities were divisive at times possibly relating to the general nature of the discussion. The reassembly of the ISF Advisory Group will focus on what would define a successful ISF program within a particular stream or watershed. Knowledge gained from discussions will help define the critical aspects of a possible future program. It is not given that a future program is to occur, but instead the results of the ISF Advisory Group effort will frame the critical aspects for inclusion. The balance between nature and humans can be considered, and this balance can be weighted and integrated in the final report.

2.1 Oklahoma Water Ownership, Appropriation, and Permitting

An understanding of Oklahoma water laws, as they relate to ownership, appropriation, and permitting, is critical in assessing existing constraints on the potential development of an ISF program in Oklahoma. This section summarizes applicable state water use laws and policies, as well as other state and federal laws that could have an impact on development of an ISF program in Oklahoma.

2.1.1 Water Types and Ownership

Title 82 of Oklahoma’s statutory laws (Waters and Water Rights) recognizes three types of water—(1) diffused surface water (commonly known as “runoff”), (2) water in definite streams, and (3) groundwater—and outlines the system of laws governing the use of each. Runoff and groundwater are owned water types and considered private property rights, whereas stream water is public water subject to appropriation.

2.1.1.1 Runoff

Runoff is water standing on or flowing over the land surface but not forming a definite stream. According to Title 60 of the Oklahoma Statutes (O.S.), the owner of the land owns its runoff. Runoff is the only type of water that is not regulated by the OWRB. Runoff can be captured and used by the landowner in any way.

2.1.1.2 Definite Streams

A stream is defined as a watercourse in a definite, natural channel, with defined beds and banks, originating from a definite source or sources of supply. Streams include rivers, streams, and creeks, and their associated ponds and lakes. They may flow intermittently or at irregular intervals if that is characteristic of the sources of supply in the area (82 O.S. §105.1). Water in definite streams is viewed as a public resource, owned by the people of Oklahoma. According to state law, landowners have the right to use stream water that adjoins or crosses their property for domestic purposes without obtaining a permit. However, water in definite streams can also be used by others, including those who own land away from the stream and those who don’t own land at all. The use of surface

water in a definite stream is regulated by the Oklahoma Stream Use Law (82 O.S. §105.1 et seq.). The OWRB issues stream water permits to applicants who intend to place the water to beneficial use.

2.1.1.3 Groundwater

Groundwater is water flowing under the land's surface but not forming a "definite stream." According to 60 O.S. §60, the owner of land owns the underlying groundwater. However, the use of groundwater is subject to reasonable regulations set out in the Oklahoma Groundwater Law, 82 O.S. §1020.1, et seq. Landowners have the right to use groundwater for domestic purposes without obtaining a permit from the state. However, if groundwater is to be used for any other purpose, the landowner or lessee must first obtain a groundwater permit.

2.1.2 Appropriation and Permitting

2.1.2.1 Surface Water Appropriation

Appropriation is the process by which an individual or entity can acquire the right from the state to use public stream water (Oklahoma Administrative Code (OAC) § 785:20-1-2). Surface water appropriation rights in Oklahoma are based on a "first in time, first in right" principle. The first person to apply for the water right establishes a right superior to later appropriators (junior permits). Priority is based upon the date the permit application is filed. There is not priority among beneficial uses in Oklahoma. The issuance of a stream water permit from the state to an applicant creates an "appropriative right to use stream water" in favor of the permittee.

Water appropriations are granted through a permitting process administered by the OWRB. To obtain a water use permit, the applicant must demonstrate the following (82 O.S. §105.12):

- Unappropriated water is available in the amount applied for.
- There is a present or future need for the water.
- The proposed use is beneficial.
- The proposed use will not interfere with domestic or existing appropriative uses.
- If the application is for the transportation of water for use outside the stream system of origin, the proposed use must not interfere with existing or proposed beneficial uses within the stream system of origin.
- If the application is for use of water out of the state, an evaluation must be made whether the water subject of the application could feasibly be transported to alleviate water shortages in Oklahoma.
- After a permit is granted, construction of works to place the water to beneficial use must begin within 2 years, otherwise the permit expires. Stream water permitted for use is forfeited and returned to the public pool if it is not put to a beneficial use within 7 years.-If however, evidence described in 82 O.S. §105.16 is presented to the OWRB, the total amount of water authorized by the permit may be placed to beneficial use in accordance with a schedule of use that extends beyond 7 years, based on the life of a proposed project.

2.1.2.2 Protection for Domestic Use

According to 82 O.S. 105.12, the approval of an application to appropriate water requires that there is unappropriated water available in the amount applied for. The OWRB Rule (OAC § 785:20-5-5) describes factors to be considered in determining whether there is unappropriated water in the amount available:

(a) Determination of water available for appropriation from a stream.

(1) For direct diversions from a stream, the determination of water available for appropriation shall take into consideration the mean annual precipitation run-off in the watershed above the point(s) of diversion, the mean annual flow, stream gauge measurements, domestic uses and all existing appropriations and other designated purposes in the stream system. The Board may consider other evidence or laws relating to stream flow or elevation, including but not limited to apportionment provisions of interstate stream compacts to which the State of Oklahoma is a party and the Oklahoma Scenic Rivers Act.

(2) Absent the presentation of more accurate evidence to the contrary, the Board shall estimate the amount of water required to satisfy domestic use to be six (6) acre-feet per household per year or three (3) acre-feet per non-household domestic use.

Although not intended to provide ISF protection, the OWRB's practice of reserving water for assumed domestic use when considering water appropriations inadvertently results in some measure of ISF protection, since the amount allocated for domestic use is considered an overestimate of the actual amounts of water required to satisfy domestic uses in Oklahoma (OWRB, 2011). Conveyance of the domestic use set-aside through the stream channel to its actual points of use can provide some level of ISF protection. In addition, flows returned to the stream after human use, treatment, and discharge to receiving streams can provide some level of ISF and could help to satisfy the requirements for protection of (downstream) domestic uses.

The OCWP thirteen regional planning reports, including 82 basin/watershed reports, included projected water uses for each planning region and its associated basins from 2010 to 2060 in ten-year increments for seven distinct consumptive water demand sectors. The OCWP demands were not projected for non-consumptive or instream water uses, such as hydroelectric power generation, fish and wildlife, recreation, and instream flow maintenance.

2.1.2.3 Protection of Scenic Rivers and Outstanding Resource Waters

The Oklahoma Scenic Rivers Act (82 O.S., §§ 1451-1471) was enacted to protect the quality and unique characteristics of certain streams and rivers in Oklahoma, which are viewed as outstanding water resources since they provide numerous exceptional ecological, recreational, and other important benefits to the state.

"The Oklahoma Legislature finds that some of the free-flowing streams and rivers of Oklahoma possess such unique natural scenic beauty, water conservation, fish, wildlife and outdoor recreational values of present and future benefit to the people of the state that it is the policy of the Legislature to preserve these areas for the benefit of the people of Oklahoma. For this purpose there are hereby designated certain 'scenic river areas' to be preserved as a part of Oklahoma's diminishing resource of free-flowing rivers and streams" (82 O.S. 1452).

There are six designated streams identified as "Scenic River Areas" in Oklahoma: Flint Creek, Illinois River, Barren Fork Creek, Upper Mountain Fork River and Lee and Little Lee Creeks. The Oklahoma Scenic Rivers Commission is the state agency that implements the Oklahoma Scenic Rivers Act. The Commission's purpose is to preserve and protect the aesthetic, scenic, historic, archaeological and scientific features of streams and rivers that are covered by the Scenic Rivers Act.

If an application is filed to divert water from a definite stream that has been designated a "scenic river area" under the Scenic Rivers Act (82 O.S. §1451 et seq.), or a stream designated an Outstanding Resource Waters under (785:45-3-2), the OWRB will consider the following factors provided that sufficient information is readily available to assure that appropriate ISFs are protected:

- Quantity of water requested in comparison to the amount of water available for appropriation based on mean annual precipitation runoff produced within the watershed drainage area above the proposed point of diversion.
- Quantity of flow needed in cubic feet per second for recreational purposes, including sustaining existing fish species in the stream, spawning periods for such species, etc., provided that for sustaining existing fish species in the Barren Fork Creek, and unless information to the contrary is shown, a flow restriction of 50 cubic feet per second (cfs) will be considered as needed.
- Existing water quality in the stream and the potential of the diversion to alter the water quality or physical characteristics of the stream.
- Other information as deemed relevant by the Board.

2.2 Other Relevant Laws and Regulations

In addition to Oklahoma water laws, the following state and federal laws and regulations may contribute to or affect ISFs in Oklahoma.

2.2.1 Interstate Stream Compacts

The State of Oklahoma participates in four interstate stream compacts:

- Canadian River Compact (82 O.S. 1991, §526.1): New Mexico, Texas, and Oklahoma
- Arkansas River Basin Compact (82 O.S. 1991, §1401): Kansas and Oklahoma
- Arkansas River Basin Compact (82 O.S. 1991, §1421): Arkansas and Oklahoma
- Red River Compact (82 O.S. 1991, §1431): Arkansas, Louisiana, Oklahoma, and Texas

These written agreements among states, approved by the U.S. Congress, apportion water among the states that participate in the compacts. Part of the compact agreements is to establish commissions to administer the provisions of the Compact. In doing so, commissions can establish, maintain, and operate gaging stations in stream and reservoirs; collect, analyze, and report on data such as streamflow, water quality, and annual yield; and research and develop methods for determining total basin yields, among other functions. The OWRB administers the water rights and the interstate compact agreements throughout the state. To administer these, OWRB maintains a network of U.S. Geological Survey's (USGS) stream gages. Because the interstate stream compacts require flows at specific points of measurement, in rivers that flow both into and out of Oklahoma, there is the potential for compact compliance actions to provide for some level of ISFs in Oklahoma.

Compact agreements might affect the potential development of ISFs, since efforts to develop and implement ISFs and an ISF program in the basins that are part of the Compacts must include measures to ensure the Compact provisions are met and that water management in Oklahoma will not adversely affect water in the other states that are party to each compact. Virtually every watershed in Oklahoma is subject to one of the four Compacts to which Oklahoma is a party.

Items potentially affecting flows between states are legally defined by their respective interstate compacts previously established and ratified by the U.S. Congress. If a point of conflict or a concern develops, the states potentially affected have means and methods in place to address flow conflicts. If a situation develops wherein an action complies with established interstate compacts but results in an unacceptable succession of flow and/or associated water quality reduction, corrective action can be enforced based on the protection of flow requirements specified in the compact and established water quality standards.

2.2.2 Endangered Species Act

The Endangered Species Act (ESA) protects threatened and endangered species and their habitats from extinction as a "consequence of economic growth and development untempered by adequate concern and conservation." It makes it unlawful for anyone to harm listed species. The term "harm" has a broad meaning in the regulations and includes any act that can kill or injure wildlife. Significant habitat modification or degradation that results in the killing or injury of wildlife by means of impairing essential behavioral patterns like feeding, breeding or sheltering may be considered harmful acts.

In Oklahoma, the agency responsible for managing fish and wildlife is the Department of Wildlife Conservation (ODWC). Title 800 of the OAC contains the provisions the ODWC follows. Title 800 prohibits the harvest and selling of all state and federal threatened and endangered species.

U.S. Fish and Wildlife Service (FWS) administers and implements the ESA as it relates to threatened and endangered terrestrial and freshwater organisms. The FWS develops projects and programs to protect fish and wildlife and operates national wildlife refuges. Oklahoma is part of Region 2 of the FWS. The Division of Water Resources of the FWS protects and restores water resources associated with national wildlife refuges. It also uses and diverts water within Region 2 and collects hydrologic information about each refuge's water resources to

provide necessary protection. The FWS may intervene in the management of water resources within a basin as needed in order to protect federally listed species.

2.2.3 Section 10 of the Rivers and Harbor Act

The goal of Section 10 of the Rivers and Harbors Act of 1899 is to protect the navigable capacity of the nation's waterways for the movement of interstate commerce. Section 10 prohibits the unauthorized obstruction or alteration of any navigable water of the U.S. It requires a permit to construct any structure in or over any navigable water and to excavate, dredge, or deposit materials in these waters. Navigable waters in Oklahoma subject to Section 10 of the Rivers and Harbors Act of 1899 include Arkansas River, Bird Creek, Canadian River, Grand (Neosho) River, Illinois River, North Canadian River, Poteau River, Red River, Sans Bois Creek, Verdigris River, and Washita River. Uses that may reduce streams flows or depths enough to impact existing navigation may be susceptible to further review during the Section 10 permitting process.

2.2.4 Section 404 of the Clean Water Act

The intent of Section 404 of the Clean Water Act of 1977 is to protect navigable waters from the indiscriminate discharge of dredged or fill material capable of causing pollution at specified disposal sites through a permitting process. Activities that require a permit under Section 404 include water resources projects such as dams and levees, fill for development, mining projects and infrastructure development such as highways and airports.

The U.S. Army Corp of Engineers (Corps) is the federal agency in charge of permitting construction activities that occur in "waters of the United States," such as rivers, lakes, streams, creeks, natural ponds, and wetlands adjacent to such waters (defined in 33 CFR 328). It issues permits for work in the nation's navigable waters including construction and dredging. The Corps' regulatory program tries to avoid, minimize, or mitigate detrimental environmental impacts on aquatic resources that provide many services for the general public, such as water quality improvement, flood damage reduction, water-related recreation, storm flow conveyance and storage, maintenance of base flow, movement of commerce, spawning and nursery areas for aquatic organisms, and habitat for fish and wildlife.

2.3 Mechanisms for Protection of Instream Flows in Oklahoma

One of the key recommendations (#2) in the Instream Flow Issues and Recommendations Report was for OWRB to study potential mechanisms for protecting instream flows (OWRB, 2011). The state should evaluate the degree of streamflow protection offered by the domestic use set-aside. The purpose of the forthcoming ISF Advisory Group workshops is to further explore the potential mechanisms, and to provide an informed and well thought-out basis for decisions regarding the potential future of an ISF program in Oklahoma. The 2012 OCWP Instream Flow Issues and Recommendations report identified many of the potential opportunities and obstacles. Based on the evaluation of existing permitting requirements and laws in Oklahoma included in this background report, there are a few existing mechanisms that may provide at least some contributions of ISF:

- **Domestic Use Set Asides** – The minimum flow requirements for protection of downstream domestic uses provides the OWRB with the flexibility to consider stream flow or other evidence including provisions of the interstate compacts and the Oklahoma Scenic Rivers Act. The OWRB rule seeks to protect domestic uses through a set-aside of 6 acre-feet of water/year per 160 acres of land. In addition, Title 82 O.S. 2001 §105.2(A) allows a riparian landowner without an OWRB appropriation to store a maximum of a two-year domestic-use supply of water, and Title 60 O.S. §60 requires a riparian landowner collecting the water for domestic use to provide for the continued natural flow of the stream.
- **Projection of Scenic Rivers and Outstanding Resource Waters** – Potentially provides broad protection of stream flows and water quality to protect recreational purposes and sustaining flows for existing fish species. OWRB has established a 50 cubic feet per second (cfs) minimum flow requirement in a portion of Barren Fork Creek, for example.

- **Interstate River Compacts** – These compacts are binding interstate agreements that apportion water in specific rivers and their tributaries in Oklahoma (see above) and require maintenance of stream flows and annual yield. Meeting the flow requirements in these compacts may contribute some amount of flow to ISFs.

In combination these mechanisms likely provide some level of protection for ISF for human use, fish and wildlife needs, and downstream interstate uses. These existing laws provide a basis for initial discussion with the Instream Flow Advisory Group.

3. Instream Flow Programs in Other States

The instream flow program case studies described here include the states assessed in the OCWP (2012). OWRB also conducted an evaluation of ISF programs in western states as part of initial OCWP update activities (2009). Additional information for the selected states was obtained from The Nature Conservancy's report *Practical Guide to Environmental Flows for Policy and Planning with Nine Case Studies in the United States* (Kendy et al., 2012). The intent of describing instream flow programs in other states is to convey some of the main steps and processes undertaken, and to provide references for readers to pursue more detailed accounts of scientific methods and models. Each case study briefly explains the program's hydrologic foundation and the application. Of the featured state programs, Michigan, Colorado and Texas have instream flows fully incorporated into statewide management programs.

Outside the state-specific ISF programs are different river basin ecosystem flow recommendation projects. These are typically performed in collaboration with the U.S. Army Corps of Engineers and other entities within the river basin. Example case studies include the Susquehanna River basin project with the U.S. Army Corps of Engineers (Corps) - Baltimore District, the Susquehanna River Basin Commission (SRBC) and The Nature Conservancy (TNC), the Connecticut River Basin Ecosystem Flow Restoration with the Corps - New England District and the TNC, and Middle Potomac River Basin Environmentally Sustainable Flows with the Corps- Baltimore District, National Park Service, the Interstate Commission on the Potomac River Basin (ICPRB), and other basin jurisdiction agencies. The river basin projects resulted in basin-specific flow recommendations.

Michigan's hydrologic foundation is a database of the median daily flow for the month of lowest summer flow (typically August) for each stream segment. This can be thought of as the typical low flow during the relatively dry summer months. This "Index Flow" was chosen because it represents the most ecologically stressful period of the year. Prospective water users employ the online Water Withdrawal Assessment Tool, "WWAT" (Michigan Department of Environmental Quality 2009), to determine the level of risk associated with their proposed withdrawals. The WWAT uses hydrologic foundation and groundwater models to calculate the flow depletion of the nearest stream segment during summer low flow due to the proposed withdrawal, added to the cumulative withdrawals from upstream segments. The model estimates the risk level (high or low). The assessment tool is available online, as is a tool for permittees to determine the volume of water available based on existing permits and on instream flow needs.

Connecticut has proposed state-wide streamflow regulations to protect instream flows. The regulations contain three primary components: (1) a set of narrative streamflow standards that apply to all streams; (2) a goal classification process through which every stream segment in the state will be associated with one of four environmental flow standards it needs to meet; and (3) a detailed set of flow release requirements for reservoirs and impoundments, with different requirements for small and large reservoirs. The regulations also include the typical requirements related to rights of appeal, public participation, and due process.

Arkansas has required minimum streamflows since 1985. The emphasis of the "Arkansas Method" is in ISF needs for fisheries (Filipek, et.al., 1987). The method of computing the ISF needs combines 1) the use of hydrologic records for Arkansas streams; 2) understanding of fisheries biology and 3) seasonal processes of Arkansas' different physiographic regions. The hydrologic foundation for the "Arkansas Method" ISF flow determination is based on the premise that the average flow of a stream is a composite of size of the drainage basin, geomorphology of the stream channel, climate, vegetation type and abundance, and related land uses. This flow reflects the average, natural hydrograph of the stream, and the component aquatic fauna and flora which have evolved to "fit" the specific characteristics of that stream. Instream flow requirements are based on the physical processes that occur in the streams and the critical life-cycle stages of aquatic biota at three separate times of year. The "Arkansas Method" sets seasonal minimum flows as: 60% mean monthly flow (MMF) November-March; 70% MMF April-July; and 50% MMF or median monthly flow July-October. Some of the state agencies would like to strengthen the instream flow criteria currently used for permitting water withdrawals, particularly for high

conservation priority streams and rivers. Therefore additional studies have been proposed to develop the scientific basis for new criteria (Arkansas SIFN Update, Fall 2011).

Colorado's instream flow program was developed in 1973. In 2005, the Colorado Legislature passed the Colorado Water for the 21st Century Act, launching a statewide water planning effort. The Act mandated that representatives of cities, farms, and other water users join conservation and recreation interests at "basin roundtables" to assess future water supply needs for their watersheds. These assessments are framing discussions about future water allocations and must address both consumptive and non-consumptive (recreation and instream flow) water needs. As of 2005, flow requirements had been established for 486 natural lakes and 8,500 miles of stream. The Colorado Water Conservation Board obtains instream flow rights for individual water bodies, through new appropriations (under the same methods as private appropriations) or through acquiring existing water rights. Instream flow requirements for water bodies are based on water availability, statistical analyses of streamflow records, and biological assessments and typically vary by season.

In 1984, **Kansas** developed Minimum Desired Streamflows for 23 streams. The streamflows were established based on statistical analyses of streamflow records, and flow requirements from interstate water compacts. They were [were? Are they not still?] managed as a water right. In 2006, the Kansas Department of Agriculture developed a GIS-based methodology for assessing streamflow based on statistical analyses of streamflow records and water right data to evaluate water availability.

The ISF program in **Texas** is managed jointly by the Texas Water Development Board, the Texas Parks and Wildlife Department, and the Texas Commission on Environmental Quality. Instream flow studies are conducted to develop water body-specific instream flows and include evaluations of hydrology, hydraulics, physical processes, water quality, and biology. The method requires field data collection and analysis, and computer modeling. It is intended to ensure a sound ecological environment. The process of establishing instream flows is collaborative, among state agencies, river authorities, water management entities, and watershed stakeholders. Instream flow requirements typically are seasonally variable, established to mimic naturally occurring hydrography, before any water use appropriations.

4. Summary

This document was prepared to provide an introduction to ISF programs and to assist the ISF Advisory Group in providing feedback to the OWRB on potential mechanisms for protection of ISFs in Oklahoma. A review of other state programs and existing Oklahoma laws suggest the following:

- Existing ISF programs or requirements in other states vary widely but are generally focused on meeting a combination of downstream flow needs including existing uses and agreements (existing permitted withdrawals, water rights, and/or compacts), recreation, navigation, and maintenance of aquatic resources and wildlife. In most cases, these ISF requirements are implemented through regulatory mechanisms and permitting programs.
- Oklahoma law does not specifically mention ISF requirements, but elements of the water appropriations law (O.S. §82-105.12) provide protection of existing downstream domestic uses. In addition, the Scenic Rivers Act (O.S. §82-1451-1471) requires OWRB to consider flows for the protection of recreation and natural resources when reviewing potential withdrawals from designated streams.
- Potential mechanisms, based on current laws and requirements in Oklahoma that may provide a framework for implementation of ISF include the domestic use set asides, the Scenic Rivers Act, and interstate water compacts.

To facilitate feedback and further discussion, the ISF Advisory Group will be asked to consider these initial findings and potential mechanisms for ISF protection.

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