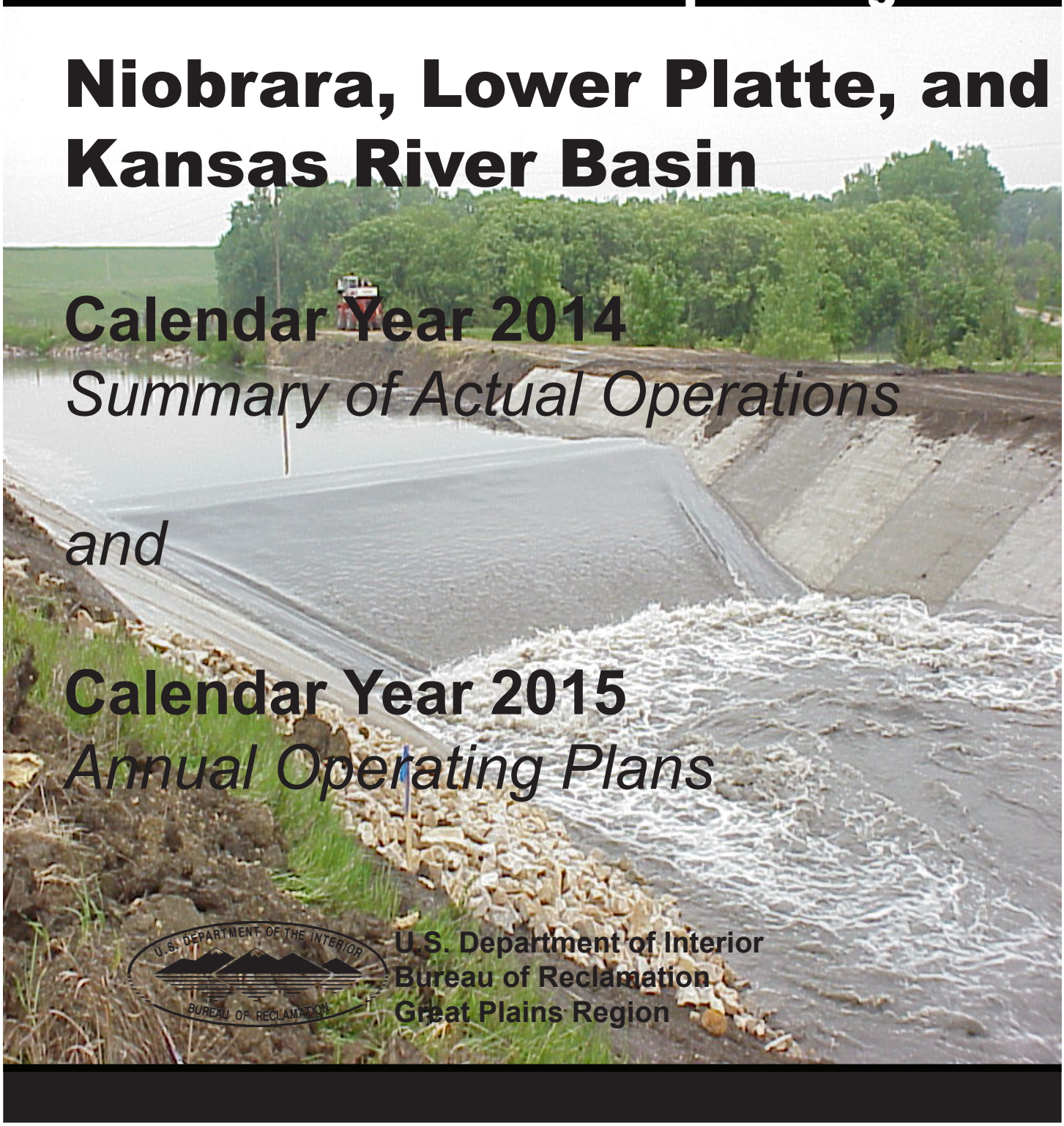
RECLAMATION

Managing Water in the West

Annual Operating Plans

Niobrara, Lower Platte, and Kansas River Basin



Calendar Year 2014

Summary of Actual Operations

and

Calendar Year 2015

Annual Operating Plans

U.S. Department of Interior
Bureau of Reclamation
Great Plains Region

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SYNOPSIS

General

This year is the 62nd consecutive year that an Annual Operating Plan (AOP) has been prepared for the federally-owned dams and reservoirs in the Niobrara, Lower Platte, and Kansas River Basins. The plan has been developed by the Water Operations Group in McCook, Nebraska for the 16 dams and reservoirs that are located in Colorado, Nebraska, and Kansas. These reservoirs, together with nine diversion dams, nine pumping plants, and 20 canal systems, serve approximately 269,745 acres of project lands in Nebraska and Kansas. In addition to irrigation and municipal water, these features serve flood control, recreation, and fish and wildlife purposes. A map at the end of this report shows the location of these features.

The reservoirs in the Niobrara and Lower Platte River Basins are operated by either irrigation or reclamation districts. The reservoirs in the Kansas River Basin are operated by either the Bureau of Reclamation or the Corps of Engineers. Kirwin Irrigation District provides operational and maintenance assistance for Kirwin Dam. The diversion dams, pumping plants, and canal systems are operated by either irrigation or reclamation districts.

A Supervisory Control and Data Acquisition System (SCADA) located at McCook, Nebraska is used to assist in operational management of all 11 dams under Reclamation's jurisdiction that are located in the Kansas River Basin. A Hydromet system collects and stores near real-time data at selected stations in the Nebraska-Kansas Projects. The data includes water levels in streams, canals, and reservoirs and also gate openings. This data is transmitted to a satellite and downloaded to a Reclamation receiver in Boise, Idaho. The data can then be accessed by anyone interested in monitoring water levels or water usage in an irrigation system. The Nebraska-Kansas projects currently have 65 Hydromet stations that can be accessed. The Nebraska-Kansas Area Office (NKAO) has installed and maintains 40 of these Hydromet stations. These stations can be found on the Internet by accessing Reclamation's home page at http://www.usbr.gov/gp. From the home page, select "Hydromet – Hydrological Data Center" under the Water Operations heading.

On page 6 "The Headlines 2014", which follows this synopsis is indicative of the awareness that the local residents have of the natural resource development and conservation in the Niobrara, Lower Platte, and Kansas River Basins.

2014 Summary

Climatic Conditions

Precipitation at the project dams during 2014 ranged from 79 percent of normal at Kirwin Dam to 137 percent of normal at Bonny Dam. Annual precipitation was above normal for 8 of the 16 project dams.

Temperatures in January were generally above normal, while temperatures in February were typically below normal throughout the projects area. Temperatures during March were near the normal average. Precipitation in January was well below the normal average for most of the projects. February precipitation ranged from 2 percent to 172 percent. March precipitation was below normal at all of the project dams.

Temperatures in April and May were slightly above normal. Precipitation during April ranged from 17 percent of normal to 182 percent of normal. May precipitation was well below normal at most of the project dams.

Temperatures were near the normal average during the summer. Total precipitation for June was well above normal for all of the projects. July precipitation was below normal, while August precipitation was above normal for most of the project dams.

Precipitation recorded in September ranged from 37 percent to 328 percent. October and November precipitation was well below normal, while December precipitation was well above normal for most of the projects. Temperatures in the fall and winter were generally above the normal average.

Storage Reservoirs

1. Conservation Operations: The 2014 inflow was below the dry-year forecast for Bonny and Kirwin Reservoirs. Inflows at Merritt, Swanson, and Cedar Bluff Reservoirs were between the normal-year and wet-year forecasts. The inflows for Harry Strunk Lake were well above the maximum inflow forecast. The remaining reservoirs had inflows between the dry-year and normal-year forecasts.

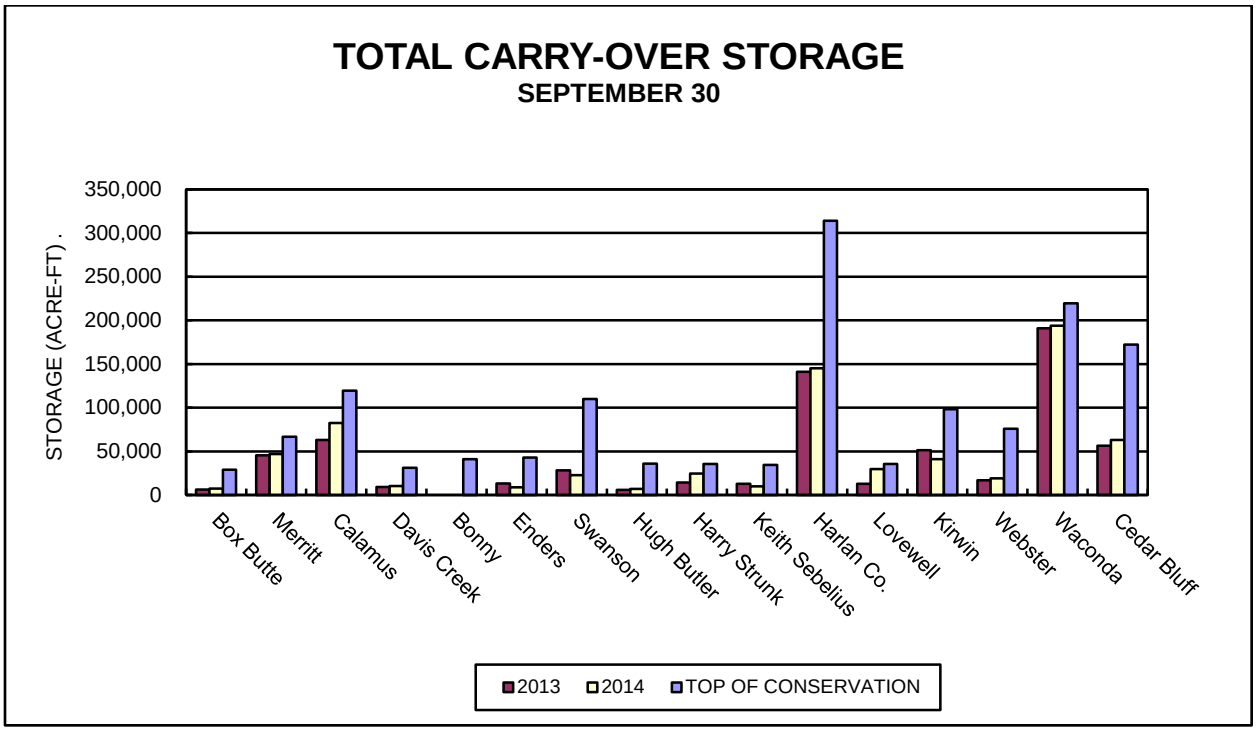
Thirteen of the sixteen reservoirs had below average carryover storage from the 2013 water year. Reservoir releases were made from Merritt and Virginia Smith Dams to maintain or reduce reservoir levels prior to the 2014 irrigation season. Box Butte, Enders and Webster Reservoirs, along with Swanson, Hugh Butler, Harry Strunk, Keith Sebelius, and Harlan County Lakes, did not have sufficient storage to provide water users with a full water supply. A small amount of flood storage was utilized in Lovewell Reservoir prior to the irrigation season. Irrigation demands greatly reduced the storage in these project reservoirs throughout the summer. Reservoir storage was below average at fourteen of the sixteen reservoirs at the end of 2014.

On September 20, 2011, the State of Colorado ordered that Bonny Reservoir be drained for Republican River Compact compliance. All of the water in Bonny Reservoir was evacuated by the end of May 2012 and no storage has been recorded since. The State of Colorado order remains in effect and inflows continue to be bypassed.

On January 1, 2014 the State of Nebraska, Department of Natural Resources (NDNR) determined a “Compact Call Year” (Compact Call) to be in effect on the Republican River Basin for the second consecutive year. The Compact Call resulted in the NDNR issuing closing notices on all natural flow and storage permits in the basin until such time that the NDNR determines that yearly administration is no longer needed to ensure Republican River Compact compliance.

All surface water appropriations in the Republican River Basin above Guide Rock Diversion Dam were closed on January 1, 2014. Approximately 32,600 AF of natural reservoir inflows were bypassed through Enders Reservoir, Swanson Lake, Hugh Butler Lake and Harry Strunk Lake as a result of the Compact Call. There was also about 11,300 AF bypassed through Harry Strunk Lake from the NCORPE Augmentation Project and about 7,300 AF bypassed through Swanson Lake from the Rock Creek Augmentation Project. An additional 53,838 AF of reservoir inflow was stored in Harlan County Lake under an Excess Capacity Contract (Warren Act) that was later released to Kansas Bostwick Irrigation District (KBID). The Compact Call remained in effect the entire year. On October 24, 2014, the NDNR notified Reclamation that storage in the reservoirs may resume. All water being stored under the Compact Call as of December 31, 2014 was transferred to project water and legally stored under the respective water rights.

The following graph shows a comparison of 2013 and 2014 carry-over storage conditions as compared to the top of conservation storage for all reservoirs in the Niobrara, Lower Platte, and Kansas River Basins as of September 30, 2014.



2. Flood Control Operations: There were no direct flood releases made in 2014. No flood prevention benefits were reported for Reclamation's Nebraska-Kansas Projects facilities in 2014. The accumulative total of flood control benefits for the years 1951 through 2014 by facilities in this report total $2,067,553,700 (see Table 5). Box Butte, Merritt, Calamus, and Davis Creek Reservoirs do not have a designated flood pool and have not accrued any flood benefits to date.

A summary of precipitation, reservoir storage and inflows at the facilities of the Nebraska-Kansas Projects during 2014 can be found in Table 7.

Water Service

There was 254,158 AF of water diverted to irrigate approximately 170,093 acres of project lands in the 12 irrigation districts (see tables 3 and 6). The project water supply was either inadequate or limited for 157,794 acres of the total project lands. This includes lands in Mirage Flats, Frenchman Valley, H&RW, Frenchman-Cambridge, Almena, Bostwick in Nebraska, Kansas Bostwick, and Webster Irrigation Districts. The project water supplies for the other units mentioned in this report were adequate in 2014.

The water requirements of three municipalities, one rural water district, and two fish hatchery facilities were met in 2014. Both storage releases and natural flows are utilized in meeting these demands.

Fish and Wildlife and Recreation Benefits

The National Recreational Fisheries Policy declares that the Government's vested stewardship responsibilities must work in concert with the state managing agency's recreational fisheries constituency and the general public to conserve, restore, and enhance recreational fisheries and their habitats. The NKAO is available for meetings if requested with Nebraska, Colorado, and Kansas state management agencies to discuss the AOP. Information is solicited from the agencies to enhance fisheries resources within the flexibility allowed while still meeting contractual obligations with the various irrigation districts.

Reservoir operations were favorable for recreation and fish and wildlife uses in 2014 at those project reservoirs with full or nearly full conservation pools prior to the irrigation season. The higher water levels experienced early in the year submerged existing shoreline vegetation. Normal irrigation demands and the lack of precipitation during the summer greatly reduced the pool levels at several reservoirs allowing for late summer shoreline revegetation. The draining of Bonny Reservoir and the State administration of storage rights in southwest Nebraska reservoirs diminished recreation benefits at these facilities.

2015 Outlook

Three forecast conditions have been developed for each of the reservoirs in the Niobrara, Lower Platte, and Kansas River Basins conforming to established operating criteria under various reservoir inflow conditions. These operation studies are included in Table 4, sheets 1 through 16. The municipal and rural water district water supply requirements will be met under all three inflow forecast conditions for all units.

Under reasonable minimum inflow forecast conditions, irrigation districts receiving storage water from the following lakes and reservoirs are expected to receive less than a full supply: Box Butte, Enders, Swanson, Hugh Butler, Harry Strunk, Keith Sebelius, Harlan County, Lovewell, Kirwin, and Webster. The irrigation districts affected are Mirage Flats, Frenchman

Valley, H&RW, Frenchman-Cambridge, Almena, Bostwick in Nebraska, Kansas Bostwick, Kirwin and Webster respectively. If 2015 is a dry year, 169,259 of the total 269,745 acres with service available to be irrigated (63 percent) will have an inadequate water supply.

Under most probable inflow conditions, it is expected that Mirage Flats, Frenchman Valley, H&RW, Frenchman-Cambridge, Almena, and Webster Irrigation Districts would experience some shortages to irrigation demands from Box Butte Reservoir, Enders Reservoir, Swanson Lake, Hugh Butler Lake, Harry Strunk Lake, Keith Sebelius Lake, and Webster Reservoir. Most irrigators in these districts plan to use water from private wells to supplement the project water supply.

Even under reasonable maximum inflow conditions, Frenchman Valley, and H&RW Irrigation Districts are expected to experience irrigation demand shortages from Enders Reservoir.

Under reasonable minimum inflow conditions, the conservation pools at Merritt, Calamus, Davis Creek, and Lovewell Reservoirs, and Harry Strunk Lake are expected to fill during 2015.

Even with low reservoir levels and inadequate water supplies for some project lands, the recommendations of various state agencies will be considered. As in the past, irrigation and reclamation districts will advise state agencies regarding aquatic weed control and canal operations. Reclamation will continue to operate the reservoirs and other facilities under its jurisdiction in the best interests of all project functions and for the optimum public benefit.

Water is not expected to be stored in Bonny Reservoir during 2015 as the State of Colorado's order to bypass all inflows remains in effect. Bonny Reservoir was drained in 2012 by order of the State of Colorado to assist in meeting Republican River Compact compliance.

On January 1, 2015 the NDNR determined a Compact Call to be in effect on the Republican River Basin for 2015. Storage rights were closed for Enders Reservoir, Swanson Lake, Hugh Butler Lake, Harry Strunk Lake, and Harlan County Lake. The Republican River Compact Administration signed a resolution on March 6, 2015, approving accounting adjustments and agreements related to the operation of Harlan County Lake in 2015. The resolution would ensure that Nebraska provide enough water to Harlan County Lake to offset their forecasted shortage. This water would be made available to Kansas for use by the Kansas Bostwick Irrigation District. An amendment to the agreement between Bostwick in Nebraska and Kansas Bostwick Irrigation Districts allowed for this water to be used by Kansas Bostwick Irrigation District. Any additional inflows to Harlan County Lake would be shared by the irrigation districts. As a result of the resolution and amendments, NDNR opened the natural flow and storage rights in the Republican River Basin on February 26, 2015.

2014 HEADLINES

Commission begins work on water issues

DNR Chief Brian Dunnigan resigns

Groundwater decline in Nebraska in 2013 'unprecedented'

Colorado augmentation project begins pumping

Agriculture has its best year ever

Testing underway on N-CORPE augmentation project

MRNRD purchases 4,000 acre feet of water in Enders for compliance purposes

Local irrigators file class-action lawsuit

Nebraska Farmers Seek Payment From State For Diverted Water

Colorado, Kansas and Nebraska sign Cooperative Water Agreement

Kansas approves 100 percent credit for 2014 augmentation pumping
Kansas, Nebraska already working on agreement for 2015

Supreme Court to hear Republican River arguments from Kansas, Nebraska

Contract awarded for repairs on first six of 18 Harlan County Dam gates

CHAPTER I – INTRODUCTION

Purpose of This Report

This AOP advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 2014 and serves as a guideline for the 2015 operations. This report also describes the responsibilities of Reclamation, Corps of Engineers, and the irrigation and reclamation districts in the Niobrara, Lower Platte, and Kansas River Basins.

Operational Responsibilities

Reclamation is responsible for irrigation operations at all federal reservoirs in the Nebraska-Kansas Projects. Reclamation is also responsible for the Operation and Maintenance (O&M), safety of the structure, and reservoir operations not specifically associated with regulation of the flood control storage at the reservoirs constructed by Reclamation. Regulation of the flood control storage is the responsibility of the Corps of Engineers. In addition to irrigation and flood control, these reservoirs provide recreation, fish and wildlife, and municipal water supply benefits.

By contractual arrangements with Reclamation, the irrigation or reclamation districts in the Niobrara, Lower Platte, and Kansas River Basins are responsible for the O&M of the canals and irrigation distribution facilities constructed or rehabilitated by Reclamation. In addition, the appropriate irrigation or reclamation districts are responsible for operating and maintaining Box Butte, Merritt, Virginia Smith and Davis Creek Dams. The Corps of Engineers operates and maintains Harlan County Dam and Lake. The State of Colorado provides operational guidelines for Bonny Reservoir. Operational guidelines for Cedar Bluff Reservoir are provided by the State of Kansas. Reclamation operates and maintains eleven dams and reservoirs in the Republican, Solomon, and Smoky Hill River Basins. Under a contract with Reclamation, Kirwin Irrigation District performs certain operational and maintenance functions at Kirwin Dam.

An updated Field Working Agreement was executed on July 17, 2001 between the Corps of Engineers and Reclamation regarding operation of Harlan County Dam and Lake. The agreement provides for a sharing of the decreasing water supply into Harlan County Lake. Storage capacity allocations were redefined based on the 2000 sediment survey and a procedure was established for sharing the reduced inflow and summer evaporation among the various lake uses.

The States of Nebraska, Colorado, and Kansas are responsible for the administration and enforcement of their state laws pertaining to the water rights and priorities of all parties concerned with the use of water. As provided by the lease agreement between Reclamation and the states, the states are responsible for administering the water surface activities and the federal lands around the reservoirs. The U.S. Fish and Wildlife Service administer the water surface activities and most of the federal lands at Kirwin Reservoir.

Reclamation cooperates with all state agencies and compact commissions to ensure that all operations are in compliance with state laws and compact requirements.

Tables and Exhibits

Records for the facilities reported in the AOP are included as tables and exhibits and are located following page 35.

Water Supply

For forecasting purposes, values of annual inflows that will be statistically equaled or exceeded 10, 50, and 90 percent of the time were selected from the probability data to be reasonable maximum (wet-year), most probable (normal-year), and reasonable minimum (dry-year) inflow conditions, respectively.

Inflow records from 1995 through 2014 were used for the analysis of reservoirs in the Niobrara, Lower Platte and Kansas River Basins.

Reservoir Operations

All operations are scheduled for optimum benefits of the authorized project functions. Monthly, or as often as runoff and weather conditions dictate, Reclamation evaluates the carry-over storage and estimated inflow at each reservoir to determine whether excess water is anticipated. If excess inflow is apparent, controlled releases will be made to maximize the downstream benefits.

Major Features

The Mirage Flats Project was constructed under the Water Conservation and Utilization Act and includes an irrigation storage reservoir, diversion dam, and canal system. The other features discussed in this report are all a part of the Pick-Sloan Missouri Basin Program and include single and multipurpose reservoirs, diversion dams, pump stations, and canal systems. The sixteen storage facilities now in operation are listed below.

Constructed by Reclamation

1. Operated by irrigation or reclamation districts--Box Butte and Merritt Dams in the Niobrara River Basin and Virginia Smith and Davis Creek Dams in the Lower Platte River Basin.

2. Operated by Reclamation--Bonny, Trenton, Enders, Red Willow, Medicine Creek, Norton, Lovewell, Kirwin, Webster, Glen Elder, and Cedar Bluff Dams in the Kansas River Basin. A contract provides for Kirwin Irrigation District to perform certain operational and maintenance functions at Kirwin Dam.

Constructed and Operated by the Corps of Engineers

1. Harlan County Dam in the Kansas River Basin.

Irrigation and Reclamation Districts

Twelve irrigation districts and one reclamation district in the Niobrara, Lower Platte, and Kansas River Basins have contracted with Reclamation for water supply and irrigation facilities. The Twin Loups Irrigation District has contracted their O&M responsibilities to the Twin Loups Reclamation District. Bostwick Irrigation District in Nebraska has contracted their O&M responsibilities for Superior-Courtland Diversion Dam and the Courtland Canal between the headgates and the Nebraska-Kansas state line to Kansas-Bostwick Irrigation District.

The contracted irrigation season for Mirage Flats Irrigation District is April through September. The contracted irrigation season for Frenchman-Cambridge Irrigation District is April 15 through October 15 and additional period from April 1 through April 15 of each year as may be agreed upon between the District and Reclamation. The contracted irrigation season for Frenchman Valley, and H&RW Irrigation Districts is from May 1 through October 15 or such additional period from April 1 through May 1 of each year as determined between the District and Reclamation. The contracted irrigation season for Twin Loups Reclamation District and Almena, Bostwick in Nebraska and Kansas-Bostwick Irrigation Districts is May 1 through September 30 or such additional period from April 1 through November 15 of each year as determined between the District and Reclamation. For Ainsworth, Kirwin, Webster and Glen Elder Irrigation Districts, the contracted irrigation season is from May 1 through September 30th.

Municipal Water

Three municipalities in Kansas (Norton, Russell, and Beloit) and one rural water district in Kansas (Mitchell County Rural Water District No. 2) have executed water service contracts or repayment contracts for full or supplemental water supplies.

Fish and Wildlife

The Calamus Fish Hatchery is located below Virginia Smith Dam and Calamus Reservoir. The hatchery is operated and maintained by the Nebraska Game and Parks Commission (Commission) and produces approximately 53 million fish per year. The water supply is provided by natural flows passed through Virginia Smith Dam and from Calamus Reservoir storage through an agreement dated July 28, 1988, between the Commission and the Twin Loups Reclamation District.

The State of Kansas is presently using the fish hatchery facility below Cedar Bluff Reservoir for waterfowl habitat.

State of Colorado Division of Wildlife

The State of Colorado provides operational guidelines for Bonny Reservoir. The entire conservation pool storage was purchased by the State of Colorado on June 24, 1982.

State of Kansas Department of Wildlife, Parks and Tourism (KDWPT)

The State of Kansas acquired the use and control of portions of the conservation capacity at Cedar Bluff Reservoir following the reformulation of the Cedar Bluff Unit in October of 1992. The City of Russell's existing water storage right and contract with the United States remained unchanged.

Power Interference Considerations

A Power Interference Agreement exists between Reclamation, the Twin Loups Reclamation District, and the Loup River Public Power District. Subordination Agreements also exist between Reclamation, the Ainsworth Irrigation District and the Nebraska Public Power District and between Reclamation, the Mirage Flats Irrigation District and the Nebraska Public Power District. Provisions of these agreements will be incorporated into the 2015 operations.

Environmental Considerations

A "Statement of Operational Objectives" for Harlan County Lake sets forth the general operational objectives and the specific reservoir uses that are desirable. The operational objectives indicate that fish and wildlife interests are best served by high reservoir levels with minimum fluctuations, and regulation of the outflow in excess of the minimum desired flows. Although the statement recognizes flood control and irrigation as primary purposes, it indicates that comprehensive operational plans should be developed for maximum integration of the secondary uses.

These operational objectives are also considered in the operation of all Reclamation reservoirs in the Kansas River Basin, Niobrara River Basin, and the Lower Platte River Basin. The regulated outflow can also benefit farmers, ranchers, cities, and other interests below the reservoirs.

Republican River Compact – Kansas v. Nebraska

On May 26, 1998, Kansas filed a petition with the U. S. Supreme Court complaining that Nebraska had violated the Republican River Compact (Compact) by using more than its share of the Republican River water supply. The three original parties to the Compact; Kansas, Nebraska and Colorado, became parties to the case. Because the major water development structures in the Republican River Basin were constructed by the Bureau of Reclamation and the Corps of Engineers, the United States was allowed to participate as *amicus curiae.* After seventeen months of negotiations, the Final Settlement Stipulation (Stipulation) was signed by each respective governor and attorney general and was filed with the Special Master on December 16, 2002. The United States Supreme Court approved the settlement and dismissed the case on May 19, 2003.

The settlement provides for a moratorium on new groundwater wells, special rules for administration of water during water-short years, protection of storage releases, minimized flood flow effects on the accounting, recognition by Nebraska of a 1948 priority date for the Kansas-Bostwick Irrigation District, inclusion of the impacts of groundwater pumping from tableland

wells in the accounting, and accounting for all reservoirs 15 AF and larger within the river basin.

The Stipulation also required that the States, in cooperation with the United States, form a Conservation Committee to develop a proposed study plan to determine the quantitative effects of non-federal reservoirs and land terracing practices on water supplies in the Republican River Basin above Hardy, Nebraska. The Study Plan supported by the three States, the Natural Resources Conservation Service, and Reclamation was completed and signed on April 28, 2004. Cooperative agreements for completing the five year study were developed between Reclamation, the University of Nebraska-Lincoln (UNL), and Kansas State University (KSU). Installation of data loggers on 35 reservoirs throughout the basin was completed in 2004. Advanced monitoring equipment for terraces and additional reservoirs was installed by UNL in 2006. Data collection and model development continued through 2009. The Conservation Committee presented a Summary Report of Preliminary Findings for the study at the 2011 Republican River Compact annual meeting held in Burlington, Colorado on August 31, 2011. The Republican River Compact Administration (RRCA) reviewed the report and determined a formal study report was needed. The final report was released in June of 2014.

"Water-Short Year Administration" will be in effect in those years in which the projected or actual irrigation supply is less than 119,000 AF of storage available for use from Harlan County Lake as determined by Reclamation. It was determined that "Water-Short Year Administration" would be in effect in 2014.

Republican River Basin Study

In November, 2012, the States of Colorado, Kansas and Nebraska entered into a Memorandum of Agreement to conduct a study of the Republican River Basin under Reclamation's WaterSMART (Sustain and Manage America's Resources for Tomorrow) Basin Study Program. The two-year study encompasses the entire Republican River Basin down to the Clay Center stream gage in Kansas. The study will project future water supply and demands, analyze how existing water operations and infrastructure will perform in the face of uncertain or variable water supply, identify and evaluate options to improve operations and infrastructure to address future water supply needs, and recommend options (operations and infrastructure) to supply adequate water in the future. Study costs have been estimated at $848,000, which includes a federal contribution of $413,000 (49 percent) and a non-federal cost share of $435,000 (51 percent).

Currently both Nebraska and Kansas are finishing up on the groundwater/surface water models for the study. Reclamation will provide climate data sets so that the models can complete an evaluation of climate variability. Both Nebraska and Kansas have developed a number of alternatives that will be evaluated through the study. The study is scheduled to be completed by November of 2015.

Niobrara River Basin Study

In 2010, the NDNR was selected for a Reclamation WaterSMART Basin Study for the Niobrara River Basin. Reclamation will provide $350,000 of federal funding and staff resources for the

estimated $850,000 Niobrara Basin Study. The Niobrara Basin Study will determine current and future water demands of the basin, assist in the development and implementation of Integrated Management Plans (IMPs) for the basin, identify opportunities for meeting water supply needs through structural and nonstructural means, and analyze the potential effects of climate variability on water supply. Reclamation and NDNR will work collaboratively in the development of a groundwater model and a surface water operations model to test the effects and potential viability of various management strategies under both current and potential future conditions. A Plan of Study was developed in early 2011 and a Memorandum of Agreement was signed in May 2011, outlining the scope of work for each agency. NDNR is proceeding with development of the groundwater and surface water operations model. Reclamation is developing an economic model that will work in conjunction with the groundwater/surface water operations model. Delays in completion of the modeling have resulted in an extension of the study completion date. The revised targeted completion date for the study is 2015.

Northeast Nebraska Rural Water Supply Feasibility Study

Through Reclamation's 2010 Rural Water Supply Program, the Lower Niobrara Natural Resource District (LNNRD) recently completed an "Appraisal Investigation for Regional Water Supply System Study in Northeast Nebraska, January, 2011". This investigation evaluated and pursued the formation of a new rural water system in northeastern Nebraska. The study area (which experiences both water quality and quantity concerns) included the towns of Center, Niobrara, and Creighton, along with the Santee Sioux Nation and areas served by the West Knox Rural Water System (RWS). Expansion of the West Knox RWS was identified as the most promising alternative.

Reclamation reviewed the LNNRD Appraisal Investigation and completed a report titled "Northeast Nebraska Water Supply System Appraisal Report, March, 2011". Reclamation concluded that the LNNRD Appraisal Investigation met all requirements of the Rural Water Supply Program and that the alternatives suggested were viable to move to the Feasibility Study phase.

The LNNRD used the results of the appraisal investigation and report to successfully compete for funding of a Feasibility Study through the 2011 Rural Water Supply Program. The Feasibility Study will attempt to identify a preferred alternative that will provide the area with a clean and reliable water supply, including determining affordable solutions to reduce the secondary contaminant levels in the Santee Sioux water supply, to improve water quality to the villages of Center and Niobrara, and to identify a water supply sufficient to meet the areas water demands projected for the year 2055. The study will determine potential costs, environmental issues, and provide an economic analysis of each of the alternatives identified. Through a cooperative agreement with the LNNRD, Reclamation is providing financial assistance for the Feasibility Study. The non-federal study partners are required to provide a minimum of 50 percent of the study costs.

The LNNRD completed a draft feasibility investigation and currently Reclamation is completing a technical review of the investigation.

South Sioux City, Nebraska – Rural Water Supply Appraisal Investigation

The City of South Sioux City, Nebraska submitted a successful appraisal investigation proposal through Reclamation's 2011 Rural Water Supply Program. The intent of the appraisal investigation is to examine the comprehensive water supply problems, needs, and opportunities throughout Dakota and Thurston Counties located in northeast Nebraska. These two counties are located adjacent to the Missouri River and include a mixture of large and small communities, two existing rural water systems, Indian tribes/tribal organization (Omaha and Winnebago), multiple Natural Resources Districts, and numerous rural customers. The study area is experiencing both limited water quantities and poor water quality.

Reclamation is providing financial assistance to South Sioux City through a cooperative agreement. South Sioux City submitted the first draft of the appraisal investigation and currently Reclamation is completing a technical review of the investigation.

Emergency Management

The NKAO continues to coordinate with local jurisdictions that could potentially be impacted by flooding from large operational releases and/or dam failure. Functional Exercises of the Emergency Action Plans (EAP) for Virginia Smith, Enders, and Cedar Bluff Dams were held in 2014. Tabletop exercises will be held for Box Butte, Merritt, and Lovewell Dams, and a Functional Exercise will be held for the Kirwin Dam EAP in 2015. Communications Directories for all of the EAPs are reviewed annually.

Emergency radios have been installed at all dams. These radios will be used as a backup means of communication when notifying the local emergency management officials in the event of an emergency at the dam. The NKAO has two satellite phones that can be used in an emergency. Management and dam operators have been trained on the use of these phones.

Public Safety Reviews

The Annual Safety Training for field personnel was held in McCook, Nebraska in March 2014. This training provided personnel the opportunity to update their training in Fall Protection, Hazardous Energy Control Program, Confined Space, Reclamation Safety and Health Standards, Occupational Safety and Health Administration, Security, and Respirator Training and Fit Testing.

The ongoing safety reviews of project facilities continue to identify potential safety hazards to the public and operating personnel. NKAO combines elements of the Annual Safety Inspections of the major facilities with the Dam Safety Facility Reviews when possible, and conducts follow up inspections when deficiencies are not on-the-spot correctible. This format provides for enhanced communication and coordination between both the Area Safety Specialist and Staff, and teams of Dam Safety Specialists.

NKAO continues to involve Great Plains Region Safety and Occupational Health in Billings,

Montana when maintenance and operational items, such as replacing AED batteries and pads, and reprogramming CPR protocol, is required.

Attention continues with regards to issues concerning contractor safety, defensive driving, National Fire Protection Association 70E Electrical Safety/Arc Flash, construction equipment safety, lock out/tag out, personal protective equipment (PPE), welding, cutting, coating safety procedures, confined space, pesticide and herbicide use (MSDS), fall protection/slips, trips, and falls, working alone, near-miss accident reporting, and completing job hazard analyses (JHAs), with emphasis from managers, supervisors, employees, and the NKAO Safety Committee. Guidance contained in the Reclamation Safety and Occupational Health Plan is incorporated. Employees were provided safety and health training and given information related to these and several other issues throughout the year.

CHAPTER II - NIOBRARA AND LOWER PLATTE RIVER BASINS

Mirage Flats Project in Nebraska

General

Flows in the Niobrara River along with Box Butte Reservoir storage provide a water supply for the 11,662 acre Mirage Flats Project. From 2005 to 2014, the project water supply averaged 9,285 AF, which is about 0.80 AF per irrigable acre. Many irrigators supplement their water supply with private wells.

The Mirage Flats Irrigation District cooperates with the Nebraska Game and Parks Commission (Commission) by operating the Box Butte Dam outlet works gate and the Dunlap Diversion Dam gates in a manner to avoid sudden large changes in the flows of the Niobrara River. A 30-year agreement was made in 1990 between the district and the Commission whereby the district would not draw the reservoir water level below elevation 3978.00 feet (2,026 AF). In return the district received an up-front payment which was used to improve the efficiency of the project's delivery system. On March 17, 2000, the district agreed to increase the minimum reservoir level by one additional foot to elevation 3979.00 feet (2,392 AF). In return the district received an additional payment from the Commission for the 20 years left on the original agreement.

A data collection platform (DCP) was installed in May of 1992 to monitor the reservoir elevation and outflow at Box Butte Dam. A telephone (primary communication system) and a radio (backup communication system) have been installed at the outlet works for contacting the Region 23 Emergency Management Agency.

2014 Summary

The flows of the Niobrara River plus the carry-over storage in Box Butte Reservoir were not adequate to provide a full water supply for the project lands. Precipitation in the Mirage Flats Irrigation District totaled 18.23 inches, which is 108 percent of normal. The 2014 total inflow of 15,006 AF was near the most probable forecast. February inflow was the lowest ever recorded for the month.

The reservoir level began the year at elevation 3990.14 feet (16.9 feet below the top of conservation). The pool level gradually increased during the late winter and early spring peaking at elevation 3997.90 feet on June 27, 2014. Diversions of 10,126 AF to the Mirage Flats Canal provided irrigation water for approximately 10,857 acres, 93 percent of the service available acreage. The farm deliveries from the project water supply totaled 3,822 AF (0.35 acre-foot per irrigated acre), which is a delivery efficiency of 38 percent. Total reservoir storage was 6,629 AF at the end of the irrigation season. Privately owned irrigation wells supplemented the project water supply. The reservoir level at the end of the year was 3992.51 feet (14.5 feet below the top of conservation).

Higher reservoir levels experienced in 2011 resulted in increased toe drain seepage and observed wet areas below the dam. Engineers with Reclamation's Technical Service Center (TSC) out of Denver, Colorado followed up with a special inspection that summer. Irrigation releases decreased the reservoir level throughout the summer, seepage returned to near normal levels, and observed wet areas dried up. Three SOD recommendations were completed in 2012 as a result of this event including performing an Issue Evaluation on changed seepage conditions at higher reservoir levels, stockpiling of filter sand and drain gravel at the dam, and daily monitoring of instrumentation when the reservoir level exceeds 4004.00 feet. A Corrective Action/Value Planning Study was initiated and Appraisal Level Design Alternatives and Costs were completed in 2013. An Internal Alert remains in effect at the dam.

The district continued to implement water conservation measures as outlined in their Water Management Plan and their Long Range Plan. Assistance to project irrigators provided by the district include delivery system improvements that provide on-farm efficiency improvements, such as relocation of turnouts, burying pipe for better access, and on-farm efficiency incentives. The district continues to modify and update their computer software to improve system operations, scheduling, and accounting and continued development of their web page that allows irrigators to place water orders, review water accounts, and keep updated on district operations. In 2013, the district received funding assistance through the Water Conservation Field Services Program (WCFSP) to install new gates and automation equipment on seven of the check structures on Sturgeon Lateral. The district began installation of this automation equipment in the spring of 2014.

2015 Outlook

The project water supply is expected to be inadequate in 2015 as it has been since the early 1960's. In the spring, the district will inform their water users of the amount of water that will be available from storage in Box Butte Reservoir. It is anticipated that district irrigators will continue to use their privately-owned irrigation wells as a supplemental supply.

The district's future water conservation plans include the automation of Dunlap Diversion Dam and the outlet works gate at Box Butte Dam. The district is also researching opportunities to provide groundwater recharge benefits in the project area. District delivery system improvements will be reviewed as a potential alternative in the on-going Niobrara River Basin Study.

A Constructability Review is scheduled for 2015, and a Final Design is scheduled for completion in 2016 to address reservoir seepage conditions.

The Standing Operating Procedures (SOP) for Box Butte Dam is scheduled for revision in 2015.

Ainsworth Unit, Sandhills Division in Nebraska

General

Within the Ainsworth Irrigation District, there are approximately 35,000 acres with available service. The project water supply is provided by Snake River flows and Merritt Reservoir storage. The reservoir is filled to elevation 2944.0 feet each fall after the irrigation season. This level is approximately two feet below the top of conservation capacity and within the repaired area of soil cement on the upstream face of the dam. The reservoir is regulated to maintain this level until the ice clears each spring. Maintaining the reservoir at this elevation during the winter will help avoid ice damage to the older existing soil cement at lower elevations. Upon ice-out the outlet pipe is drained, inspected, and repaired as necessary. The reservoir is then rapidly filled to elevation 2946.0 feet to reduce shoreline erosion around the reservoir and minimize sand accumulations on the face of the dam. This filling process generally takes place in April. The reservoir level is maintained until irrigation releases begin to draw on the pool around mid-May. Seepage, pickup and toe drain flow normally result in flows of up to 15 cubic feet per second (cfs) below Merritt Dam.

Reclamation has executed a Memorandum of Agreement (MOA) between Reclamation, the Commission and the Ainsworth Irrigation District for Snake River releases below Merritt Dam. The purpose of this MOA is to establish the protocol that will be used to make future releases of water from Merritt Dam to the lower Snake River. The development of the MOA was an environmental commitment outlined in the Ainsworth Irrigation District Final Environmental Assessment (FEA) for the conversion of a Long-Term Water Service Contract to a Repayment Contract (December 2006).

Release criteria will be based on the best available scientific data to determine when local conditions warrant releases to the Snake River. When it becomes necessary to release water from Merritt Reservoir, Reclamation will direct the Ainsworth Irrigation District to make the necessary releases to the river.

2014 Summary

Precipitation, as recorded near Merritt Dam, totaled 24.15 inches, which was 118 percent of normal. The inflow for the year totaled 190,509 AF. This inflow was between the normal-year and wet-year forecasts. The reservoir level at the beginning of the year was at elevation 2943.90 feet. The water supply was more than adequate to meet the project's irrigation requirement. There were 71,454 AF diverted from Merritt Reservoir into Ainsworth Canal, with 39,423 AF delivered to the farm headgates (delivery efficiency of 55 percent). There were 34,626 acres of land irrigated in 2014. The reservoir elevation at the end of 2014 was 2944.00 feet.

The district provided a total of 300 AF of irrigation water from holding ponds located within the district’s service area.

During the 2011 annual site inspection at Merritt Dam, a large seep located near the outlet works stilling basin wing wall was observed to be transporting a sand material. After discussions with personnel in the Regional Office and TSC, it was determined that the seep was an ongoing issue, and the seep is currently being monitored twice a week to ensure the situation remains stable. An Issue Evaluation was initiated in 2012, and a Risk Analysis was recently conducted.

Working with Reclamation's technical and financial assistance through a cooperative agreement, the district installed automation equipment on the lateral turnouts to the Sand Draw and Airport Laterals. Additionally, burial of lateral B-7.2, B-10.3, A-16.2, and B-13.1 were completed through the WCFSP.

2015 Outlook

During the winter months, the reservoir will be regulated to maintain elevation 2944.0 feet (2.0 feet below the top of conservation capacity). In order to alleviate erosive action to the lands around the reservoir and to maximize all benefits associated with the reservoir, releases from Merritt Reservoir will be regulated to fill the conservation capacity during the early spring. This filling generally takes place during April. If weather conditions or irrigation demands dictate, it may be necessary to begin filling the reservoir prior to this time. The reservoir level will be maintained from the end of April until irrigation releases begin. A 50 cfs release to the Snake River will typically begin when irrigation releases drop the reservoir pool below elevation 2946.0 feet. This release is generally made for approximately 20 days and then terminated until the end of the irrigation season. Once the reservoir begins to refill following the irrigation season, a release of 50 cfs to the Snake River will resume until the reservoir reaches the desired winter elevation. The water supply is expected to be adequate in 2015 for the irrigation of 35,000 acres.

The SOP for Merritt Dam is scheduled for revision in 2015.

Completion of an Issue Evaluation is scheduled for 2015 to address the transportation of sand observed in 2009 and also in 2011.

In accordance with the Ainsworth Irrigation District's water conservation plan, improved water measurement opportunities were identified as one of the main objectives of the district. The district is working with Reclamation to investigate the possibility of installing some new ramp flumes to improve delivery system operations. The district continues to evaluate measurement and automation opportunities on a number of laterals and turnouts. The district will be reviewing delivery system improvements as a potential alternative in the on-going Niobrara River Basin Study.

North Loup Division in Nebraska

General

The North Loup Division is located in the Loup River drainage basin. Water is diverted from both the Calamus and North Loup Rivers for the irrigation of approximately 55,100 acres of project lands. Operation of the division also provides a sustained groundwater supply for an additional 17,000 acres. Principal features of the division include Virginia Smith Dam and Calamus Reservoir, Calamus Fish Hatchery, Kent Diversion Dam, Davis Creek Dam and Reservoir, five principal canals, one major and one small pumping plant and numerous open ditch and buried pipe laterals.

Calamus Reservoir is normally regulated at three to four feet below the top of conservation capacity during the winter months. Maintaining the reservoir at this elevation during the winter helps avoid ice damage to the soil cement on the upstream face of the dam. After the ice clears in the spring, the reservoir is filled to conservation capacity. The North Loup Division project operation is restricted to no water diversions from the Calamus and North Loup Rivers during the months of July and August, and also during the month of September whenever sufficient water is available in the storage reservoirs to deliver full water demands. During this time, inflows to Calamus Reservoir are required to be bypassed under the Power Interference Agreement between Reclamation, the Twin Loups Reclamation District, and the Loup River Public Power District and as required in the authorizing legislation.

Davis Creek Reservoir level is maintained at an average elevation of 2048.0 feet from the end of the irrigation season through the winter months. Off season seepage and evaporation has historically resulted in a reservoir drawdown of 2.5 to 3.0 feet requiring an end of September reservoir level of 2050.0 feet or less. This carry-over elevation provides a minimal recreational pool while reducing increases in groundwater storage due to reservoir seepage. The reservoir is filled via Mirdan Canal, starting in April and reaching full content by the end of June. A 160 acre recreation area adjoining the reservoir continues to be managed by the Lower Loup Natural Resources District. The area includes a boat ramp, a handicapped accessible fishing pier, a day-use area, a primitive camping area, shelter and a hiking path. Public lands adjoining Kent Diversion Dam are managed by the Commission and are also open to day-use fishing with handicapped accessibility provided.

2014 Summary

Precipitation at Virginia Smith Dam was 21.02 inches which is 87 percent of normal for the year. The inflow totaled 249,858 AF which was between the dry-year and normal-year forecasts. The reservoir level at the first of the year was elevation 2239.99 feet (4.0 feet below the top of conservation). The conservation pool filled on April 8, 2014. The water supply was more than adequate for the district's needs. There were 96,828 AF of water released into Mirdan Canal and 7,044 AF diverted through Kent Canal from the North Loup River. A total of 38,152 AF was diverted for district use above Davis Creek Reservoir. The farm headgate delivery was 16,781 AF which is a delivery efficiency of 44 percent. Land irrigated in 2014 totaled 34,110 acres above Davis Creek Reservoir. The Calamus Fish Hatchery used bypassed natural

flows and storage from the reservoir totaling 3,836 AF. Calamus Reservoir inflows were bypassed during July through September as required. The elevation at the end of the year was 2239.41 feet.

The precipitation total of 27.72 inches near Davis Creek Dam was 112 percent of normal. Inflow to Davis Creek Reservoir totaled 51,779 AF during 2014. The reservoir elevation at the first of the year was 2048.94 feet. Beginning in mid-April, Davis Creek Reservoir was filled from an elevation of 2047.44 feet to a peak elevation of 2076.22 feet on July 8, 2014 using diversions from Calamus Reservoir and the North Loup River. A release of 41,418 AF was made from Davis Creek Dam into Fullerton Canal, with 13,256 AF delivered to the farm headgates which is a 32 percent delivery efficiency. There were 21,016 acres irrigated below Davis Creek Reservoir. The monthly precipitation total for August (6.67 inches) was the highest ever recorded at the site for that month. The reservoir elevation at the end of 2014 was 2049.43 feet, 26.6 feet below the top of conservation.

2015 Outlook

Filling of Calamus Reservoir will continue through late winter and early spring. The reservoir will be allowed to fill to an elevation of 2244.0 feet (top of conservation capacity) in late March or April. This reservoir level will be maintained in order to minimize shoreline erosion until demands begin to draw on the reservoir. Bypassing of inflows will be made during July through September under all inflow forecast conditions. In the fall the reservoir will be filled to an elevation of approximately 2240.0 feet, if possible.

Water will be available for all irrigable acres with service from the Mirdan, Geranium and Scotia Canals and Lateral Systems. It is estimated that approximately 34,000 acres will be irrigated from these canals. Water supplies will be sufficient to meet the full dry-year requirements.

The SOPs for Davis Creek Dam and Virginia Smith Dam are scheduled for review in 2015.

Filling of Davis Creek Reservoir will take place this spring with flows diverted from the North Loup River at Kent Division Dam and transported through Kent and Mirdan Canals. Storage water can also be transferred from Calamus Reservoir into Davis Creek Reservoir during the summer months via Mirdan Canal. Water will be sufficient to irrigate an estimated 21,000 acres from Elba and Fullerton Canals under all inflow forecast conditions. The reservoir level will be regulated to normal winter levels at the end of the season.

The fish hatchery demand for 2015 is expected to be similar to that of the last few years with approximately 5,000 AF required for the hatchery.

The district plans to expand their remote monitoring capabilities by installing equipment at additional wasteways and key canal measurement sites throughout their delivery system. In addition to further remote monitoring capabilities, the district will continue to expand the radio control network. Additionally, the district intends to further integrate an alarm and monitoring system into their existing infrastructure to reduce the risk of operational failure.

CHAPTER III - REPUBLICAN RIVER BASIN

Armel Unit, Upper Republican Division in Colorado

General

Normal reservoir operations for Bonny Reservoir have historically been for recreation and fish and wildlife support, although water has been available for water right administration and irrigation purposes.

Bonny Reservoir inflows from the South Fork of the Republican River and Landsman Creek are released into Hale Ditch as requested by the Colorado State Engineer. The state can utilize Bonny Reservoir storage water for Hale Ditch and other natural flow appropriators under short term water service contracts. Most of the 700 acres served by Hale Ditch are now owned and operated by the Division of Wildlife, Colorado Department of Natural Resources.

The historic operation pattern of Bonny Reservoir enhanced the spring fish spawn and provided excellent fishing opportunities during the summer and hunting conditions each fall. In September of 2011, the State of Colorado ordered all storage water evacuated from Bonny Reservoir for Republican River Compact compliance. As a result, the reservoir fishery was decimated and future operations are unlikely to provide fishing opportunities.

2014 Summary

The annual precipitation total of 23.51 inches at Bonny Dam was 137 percent of average. The annual computed inflow of 2,664 AF to Bonny Reservoir was below the dry-year forecast. Bonny Reservoir remains drained, and inflows continue to be bypassed for the purpose of compact compliance. Currently, the State of Colorado plans to operate Bonny Reservoir as a dry reservoir.

As directed by the Colorado State Water Commissioner, water was bypassed through Bonny Reservoir into Hale Ditch beginning in mid-April and continuing through early November. A total of 596 AF of water was diverted into Hale Ditch. During the remainder of the year water was bypassed through the reservoir into the South Fork Republican River as ordered by the Colorado State Engineer for compact compliance.

A void was detected beneath the left spillway approach at Bonny Dam. Forty Cubic yards of grout were placed to fill the void in 2014.

A Comprehensive Facility Review was held at Bonny Dam in 2014.

2015 Outlook

The State of Colorado's order to release all of the storage in Bonny Reservoir for Republican River Compact compliance remains in effect. If the order continues throughout 2015, water will not be available in the reservoir for irrigation or fishery purposes. Any water allowed to be

stored in Bonny Reservoir during 2015 would be available to Hale Ditch and other private irrigators under short-term water service contracts executed with the state.

The Colorado State Water Commissioner is expected to direct that water be bypassed into Hale Ditch again in 2015.

Frenchman Unit, Frenchman-Cambridge Division in Nebraska

General

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,292 acres in the Frenchman Valley Irrigation District and 11,915 acres in the H&RW Irrigation District. The water supply for these lands is furnished by flows from Frenchman and Stinking Water Creeks and off-season storage in Enders Reservoir located on Frenchman Creek, a tributary of the Republican River in southwest Nebraska. Irrigation releases are conveyed via Frenchman Creek from Enders Reservoir to Culbertson Diversion Dam. Reclamation maintains/clears this section of Frenchman Creek prior to irrigation releases each spring.

The normal operation of Enders Reservoir, with the gradual rise in water surface during the spring months, provides desirable fish spawning conditions. Irrigation releases normally deplete the conservation storage by late summer, thereby limiting the fishing and recreational usage. Due to extremely low storage levels, irrigation releases have not been made from Enders Reservoir since 2003.

Annual reservoir inflows have steadily declined from around 61,000 AF when Enders Dam was constructed to only 6,000 AF in recent years. Extensive groundwater pumping from upstream well development along with various conservation practices have resulted in the depletion of inflows. The conservation pool has not filled since 1968.

2014 Summary

The annual precipitation total of 18.46 inches at Enders Dam was slightly below normal (97 percent). The 2014 inflow into Enders Reservoir of 6,319 AF was between the dry-year and the normal-year forecasts. The reservoir level began the year at elevation 3088.55 feet (23.7 feet below top of conservation). The reservoir level increased slightly during the late winter to a peak elevation of 3088.98 feet on March 9, 2014. Prior to the irrigation season, the Middle Republican Natural Resource District purchased all of the water stored in the irrigation pool to be used for compact compliance. A total of 4,380 AF was released from Enders Reservoir in May as a result. Another 1,184 AF was bypassed through Enders Reservoir due to the Compact Call in 2014. These releases decreased the reservoir elevation to 3082.40 feet on May 29, 2014. Evaporation gradually decreased the reservoir level through mid-October reaching elevation 3082.21 feet on October 16, 2014. No water was released from Enders Reservoir for irrigation. The end of the year reservoir level was 29.6 feet (3082.72 feet) below the top of conservation. This was the lowest end of year level recorded since initial filling.

The Frenchman Valley Irrigation District did not divert natural flow from Frenchman Creek in 2014 for irrigation. The district cooperated with the NDNR by allowing natural flows to remain in the stream to assist with compact compliance. The H&RW Irrigation District did not divert water into Culbertson Extension Canal in 2014. This was the twelfth consecutive year that the district did not deliver water.

The SOP for Enders Dam was revised in 2014.

The spillway gate hoisting box seals were replaced on gate three in 2014. The NKAO also replaced gate cables on spillway gate number six.

2015 Outlook

The fall and early winter inflows into Enders Reservoir were below the normal-year forecast. If dry-year conditions prevail, the project water supply is expected to experience a shortage of about 77,900 AF. Normal-year conditions are expected to be inadequate by 59,600 AF and wet year conditions by 25,400 AF, to irrigate the 9,292 acres in the Frenchman Valley Irrigation District and 11,915 acres in the H&RW Irrigation District.

The Frenchman Valley Irrigation District has expressed an interest in replacement of additional open ditch laterals with buried pipe. Future piping projects are somewhat limited due to the water supply shortage. The district is also investigating remote monitoring opportunities to improve the delivery system operations. The district has identified two additional operational wasteway sites that would improve delivery systems with remote monitoring.

The Frenchman Valley Irrigation District and the H&RW Irrigation District are investigating possible alternatives for the most efficient use of the declining water supply in the basin. The districts have also participated in discussions with NDNR on the water supply issues as they relate to the Republican River Compact and the settlement.

Meeker-Driftwood, Red Willow, and Cambridge Units, Frenchman-Cambridge Division in Nebraska

General

Service is provided for Frenchman-Cambridge Irrigation District by Meeker-Driftwood Canal to 16,855 acres; Red Willow Canal to 4,797 acres; Bartley Canal to 6,353 acres; and Cambridge Canal to 17,664 acres. The water supply for these lands is provided by storage in Swanson, Hugh Butler, and Harry Strunk Lakes, and inflows of the Republican River and Red Willow and Medicine Creeks. The Frenchman-Cambridge Irrigation District has replaced all of the open ditch laterals which were economically feasible with buried pipe which has significantly increased both system and on-farm efficiencies.

2014 Summary

The annual precipitation total of 22.29 inches at Trenton Dam was 112 percent of normal. The inflow of 33,083 AF to Swanson Lake was between the normal-year and wet-year forecasts. The lake level began the year at elevation 2729.45 feet. This elevation was maintained during the first half of the year for compact compliance. The peak elevation on June 30, 2014 was 2730.40 feet (21.6 feet below the top of conservation). A total of 17,666 AF was released from the beginning of January through the end of June for compact compliance. The reservoir level decreased throughout the irrigation season and reached an elevation of 2726.94 feet on August 30, 2014. August precipitation (6.38 inches) was the greatest ever recorded at Trenton Dam for the month. The district diverted 8,035 AF from June 27, 2014 through August 29, 2014 and delivered 1,372 AF to the farms. At the end of the year, the reservoir level was 23.0 feet below the top of conservation at 2728.96 feet.

In late February 2013, the Upper Republican Natural Resources District (URNRD) began operating the Rock Creek Augmentation Project. The augmentation water flows from Rock Creek and enters the North Fork of the Republican River at Parks, NE. From there the water travels approximately 35 miles to Swanson Lake. The URNRD pumped approximately 18,000 AF into Rock Creek in 2014.

The canal outlet works penstock at Trenton Dam was unplugged prior to the 2014 irrigation season.

The annual precipitation total at Red Willow Dam was 19.42 inches (99 percent of normal). The annual inflow of 9,588 AF into Hugh Butler Lake was near the dry-year forecast. The reservoir level at the first of the year was 2555.06 feet, 26.7 feet below the top of conservation. The reservoir level was maintained near 2555.06 from the beginning of January through July for compact compliance. The total amount released from Red Willow dam for compact compliance in 2014 was 4,665 AF. No irrigation releases were made from Hugh Butler Lake in 2014. The end of year elevation at Hugh Butler Lake was 2556.88 feet, 24.9 feet below the top of conservation.

The annual precipitation total of 25.40 inches at Medicine Creek Dam was 123 percent of normal. The inflow of 65,044 AF was above the wet-year forecast. The reservoir level at the beginning of 2014 was 9.8 feet below the top of conservation at 2356.34 feet. The reservoir level was maintained near this level through early July as ordered by NDNR for the purpose of compact compliance. A total of 26,909 AF was released from the lake during this time frame. Irrigation releases began in early July and ran through September 4, 2014 reducing the reservoir level to 2356.28 feet. The district diverted 12,242 AF into Cambridge Canal and delivered 4,094 AF to 9,342 acres of district lands. Late fall and early winter inflows increased the level of Harry Strunk Lake to 1.8 feet above the top of conservation at the end of the year (2367.85 feet).

The Nebraska Cooperative Republican Platte Enhancement Project (N-CORPE) is an interlocal agency formed by the Upper Republican Natural Resource District (NRD), the Middle Republican NRD, the Lower Republican NRD, and the Twin Platte NRD. N-CORPE has

designed an augmentation project that will use groundwater pumped from Lincoln County. The delivery system consists of a 42 in. diameter pipe approximately six miles long. The capacity of the project is 83 cfs (60,000 AF annually). The water enters at the source of Medicine Creek and travels to Harry Strunk Lake. Approximately 37,000 AF was pumped in 2014.

Since initial filling of Harry Strunk Lake, seepage has been observed along the right slope of the outlet works excavation of Medicine Creek Dam. This seepage is collected in two toe drains installed during initial construction and an additional drain added in 2000. Sediment was observed within the drain pipes during a video inspection in 2003. A recommendation was created in 2006 to replace the outlet works toe drain with a new, engineered drain including a manhole and method to measure flow and sediment and to place an engineered weighted filter with a drain over the right slope of the outlet works excavation.

An Issue Evaluation was performed in 2013, and a portion of the drain was exposed for further investigation of the soils and drain condition. The inspection discovered cementation of the gravel placed around the drain pipe during construction which could impede water from entering the toe drains and is the likely cause of the seepage in this vicinity. Final design of the repair and construction began in the fall of 2014. Construction is scheduled to conclude in the spring of 2015.

The SOP for Medicine Creek Dam was revised in 2014.

The district was selected for a 2012 NKAO WCFSP grant for a project which will allow the district to automate the new Bartley Canal pumping plant on Cambridge Diversion Dam and to automate six check structures located downstream of the pumping plant outlet pipe. This project will provide delivery system improvement options and result in an estimated water savings of 1,622 AF/year. This project includes $95,902 of federal funding assistance with the District contributing $96,388 through funding and in-kind services. Due to the water supply shortage and other system improvements, the district plans on completing installation of the Bartley automation project in the Spring of 2015.

2015 Outlook

Forecasts show that carry-over storage, streamflow gains, plus reasonable minimum inflows for the three lakes supplying the Frenchman-Cambridge Irrigation District will be inadequate to meet the full dry-year irrigation requirement by 58,000 AF. The water supply will be inadequate by 20,900 AF under normal-year conditions. The water supply will be adequate under wet-year conditions.

Almena Unit, Kanaska Division in Kansas

General

Service is available to 5,764 acres in the Almena Irrigation District. The project water supply is provided by Prairie Dog Creek flows and Keith Sebelius Lake storage.

The water service contract for the City of Norton, Kansas, provides for a maximum annual use of 1,600 AF from Keith Sebelius Lake.

In July of 2007, the Kansas Department of Wildlife and Parks and the Almena Irrigation District entered into a Memorandum of Agreement (MOA) to maintain a minimum pool elevation in the reservoir for ten years. The MOA was approved by the irrigators within the district and provided that no water would be released for irrigation below elevation 2288.5 feet.

2014 Summary

The annual precipitation at Norton Dam totaled 20.92 inches, which is 85 percent of normal. The total inflow of 4,076 AF was below the dry-year forecast. The reservoir was 13.5 feet below the top of conservation pool at the first of the year (2290.78 feet). The reservoir level slowly increased to elevation 2291.38 feet on June 11, 2014. Irrigation releases were made during July reducing the lake level to 2289.02 feet. The reservoir level continued to gradually decrease the remainder of the year. Keith Sebelius Lake ended the year at elevation 2288.02 feet (16.3 feet below the top of conservation).

The Almena Irrigation District reports that 2,500 acres received 595 AF of water in 2014. There were 1,385 AF of water diverted into the Almena Canal. Farm delivery averaged about .24 foot per irrigated acre with a farm delivery efficiency of 43 percent in the district.

The city of Norton used 354 AF of municipal water during 2014.

The outlet works stilling basin was dewatered and cleaned in 2014. The NKAO also replaced deteriorated concrete on the spillway floor and installed a low water crossing at Norton Dam.

2015 Outlook

If 2015 is a dry year without significant runoff producing storms above Keith Sebelius Lake, it is anticipated that the water supply may be inadequate by as much as 16,600 AF. If normal inflow into the lake and normal rainfall over the irrigated area occur in 2015, a shortage of 10,400 AF may be experienced. Requirements for the city of Norton will be met in full in 2015.

The district continues to plan projects to replace open ditch laterals with buried pipe that will reduce seepage losses, lessen maintenance requirements, and provide improvements in on-farm efficiencies. However, due to uncertainty of the district's water supply in the past and the temporary agreements with the State to forgo irrigation releases, the district may delay some identified delivery system improvement projects.

Franklin, Superior-Courtland, and Courtland Units, Bostwick Division in Nebraska and Kansas

General

Harlan County Lake storage and Republican River flows provide a project water supply for 22,454 acres in the Bostwick Irrigation District in Nebraska, and 13,378 acres in the Kansas-Bostwick Irrigation District No. 2 above Lovewell Reservoir. This storage and natural flows, together with White Rock Creek flows and Lovewell Reservoir storage, furnish a water supply for 29,122 acres below Lovewell Reservoir in the Kansas-Bostwick Irrigation District.

The lands in the Franklin and Superior-Courtland Units are in the Bostwick Irrigation District in Nebraska. The lands in the Courtland Unit downstream of the Kansas state line are in the Kansas-Bostwick Irrigation District.

In accordance with the off-season flow alternative outlined in Reclamation's final environmental assessment dated December 16, 1983, and amended on November 21, 2002, Harlan County Lake releases will be 10 cfs during the months of December, January, and February, except when the reservoir is at low levels. During water-short years releases for these three months will be either zero or 5 cfs depending on reservoir levels.

Natural gain in streamflow, plus irrigation return flows, and operational bypass at Superior-Courtland Diversion Dam will provide some flow downstream.

The KDWPT have requested that the Kansas-Bostwick Irrigation District and Reclamation maintain, when possible, a flow of 20 cfs into Lovewell Reservoir when the Courtland Canal is in operation and the conservation pool is below capacity. This recommended inflow provides excellent fishing around the canal inlet to the reservoir. The seepage below Lovewell Dam into White Rock Creek maintains a small live stream throughout the year.

Harlan County Dam is currently operating under an Interim Operating Plan (IOP) initiated in 2003. The IOP resulted from a “Dam Safety Assurance Study” that evaluated the adequacy of the dam as required by Corps of Engineers dam safety regulations. There were three primary findings from this study: 1) Tainter gate bearings may experience significant bearing friction when operated under increasing water load; 2) concerns of spillway stability due to water pressure in the foundation of the dam; 3) spillway was found to be hydrologically deficient when modern hydrologic criteria were applied to the dam. The IOP has resulted in a decrease of flood protection capability.

The “Lovewell Reservoir Regulation Manual” was revised in 2010 to allow for a two foot raise in the conservation pool for water storage during drought years. Storing additional water during drought periods increases the project’s irrigation beneficial purpose, without adversely affecting the ability to protect for the project design storm. A calculation of available water supply will be made at the end of March to determine if additional water can be stored in Lovewell Reservoir.

Bostwick Division - Harlan County Lake Operations

2014 Summary

The annual precipitation at Harlan County Dam totaled 18.53 inches of rainfall, which is 81 percent of normal. The 2014 inflow of 92,209 AF was between the dry-year and normal-year forecasts. Harlan County Lake began 2014 approximately 17.9 feet below the top of conservation pool, at 1927.85 feet. The lake level gradually filled to a peak elevation of 1933.97 feet on July 2, 2014. Inflows included flows released from upstream reservoirs for compact compliance. Irrigation releases began on June 20, 2014 and continued through September 4, 2014. The lake level on September 4, 2014 was 1930.49 feet. Kansas-Bostwick Irrigation District entered into an Excess Capacity Contract (Warren Act Authority) with Reclamation for the use of compact compliance water stored in Harlan County Lake during 2014. A total of 16,487 AF was released under this contract during the irrigation season. Irrigation releases from Harlan County Lake totaled 35,502 AF in 2014. The level of Harlan County Lake on December 31, 2014 was at elevation 1930.81 feet (14.9 feet below the top of conservation).

There was 36,450 AF delivered to Lovewell Reservoir via Courtland Canal during 2014. This was approximately 75 percent of the total Lovewell Reservoir inflow.

Bostwick Division - Nebraska

2014 Summary

No irrigation diversions were made for the Bostwick Irrigation District in Nebraska in 2014.

In 2013, the Bostwick Irrigation District in Nebraska was awarded a WaterSMART WEEG for a project which will replace approximately 6.8 miles of open ditch laterals with buried pipe and install a new overshot gate on an existing check structure. Laterals to be placed in pipe include Franklin Laterals 6.8, 27.9, and 37.7, Courtland Laterals 4.3 and 6.3, and Naponee Laterals 2.2, 2.7, and 3.2. The project is expected to provide an estimated water savings of 1,520 AF/year. This project is to be completed with a federal contribution of $300,000 and a non-federal contribution of $319,507. These pipe projects provide delivery system improvements by eliminating seepage losses, eliminating operational wasteways, improving water measurement and accounting by utilizing water meters, and providing on-farm benefits by allowing land owners the opportunity to convert to sprinkler irrigation.

The district was also selected for a 2013 NKAO WCFSP grant for a project which will allow the District to convert 1.6 miles of open ditch lateral and canal to buried pipe. This project will replace Franklin Lateral 13.8 with buried pipe. The project will provide an estimated water savings of 740 AF/year. This project includes $100,000 of federal funding assistance with the district contributing $113,618 through funding and in-kind services.

Bostwick Division - Kansas

2014 Summary

The 2014 precipitation at Lovewell Dam totaled 29.34 inches, which was 107 percent of normal. The total annual inflow recorded at Lovewell Reservoir was 48,535 AF. Approximately 12,000 AF of the inflow was from White Rock Creek which was between the dry-year and the normal-year forecasts. The reservoir elevation at the beginning of 2014 was 1577.56 feet (5.0 feet below the top of conservation). Republican River diversions were made via the Courtland Canal into Lovewell Reservoir in January and resumed in mid-March. The pool level gradually increased to elevation 1582.89 feet (0.3 feet above top of conservation) on June 16, 2014.

Canal releases from Lovewell Reservoir began on June 9, 2014 and continued through September 5, 2014. June precipitation at Lovewell Dam totaled 10.00 inches and was the second highest ever recorded for the month. The reservoir elevation at the end of the irrigation season was at 1580.56 feet. Republican River diversions began again in mid-December. The pool level at the end of the year was 1580.46 feet (2.1 feet below top of conservation).

The Kansas-Bostwick Irrigation District diverted a total of 47,633 AF to serve 11,600 acres above Lovewell Dam and 27,500 acres below Lovewell Dam. District farm delivery totaled 25,899 AF for an efficiency of 54 percent.

A failed surface drain was replaced at Lovewell Dam in 2014.

The district was selected for a 2013 NKAO WCFSP grant for a project which will allow the district to convert 3.0 miles of open ditch lateral and canal to buried pipe. This project will replace Courtland Lateral 30.9 and White Rock Extension Lateral 8.5 with buried pipe. The project will provide an estimated water savings of 297 AF/year. This project includes $100,000 of federal funding assistance with the District contributing $133,794 through funding and in-kind services.

Bostwick Division

2015 Outlook

The storage in Harlan County Lake and Lovewell Reservoir and flows of the Republican River and White Rock Creek are expected to be inadequate in meeting the full dry-year irrigation requirement for the Bostwick lands.

On December 31, 2014, NDNR provided a storage notice to Reclamation that the first 14,100 AF of water available for irrigation from Harlan County Lake on the effective date of the order be retained in the lake for the sole purpose of delivering water to Kansas-Bostwick Irrigation District. Kansas-Bostwick Irrigation District has entered into an Excess Capacity Contract (Warren Act authority) with Reclamation for the 14,100 AF of compact water stored in Harlan

County Lake. Bostwick in Nebraska and Kansas Bostwick Irrigation Districts also amended their existing Memorandum of Agreement to allow the first 17,600 AF of project water in Harlan County Lake be allocated to the Kansas Bostwick Irrigation District. The remaining 2015 project water will be allocated in accordance to the original agreement.

Both districts will continue to investigate remote monitoring site installation that will provide system operations improvements. Bostwick Irrigation District in Nebraska has installed canal automation equipment on a number of check structures along Franklin Canal through a Water Conservation Field Services grant. The district continues to explore opportunities to increase this radio automated network. Kansas-Bostwick Irrigation District will continue to replace open ditch laterals with pipe.

CHAPTER IV - SMOKY HILL RIVER BASIN

Kirwin Unit, Solomon Division in Kansas

General

The water supply for the 11,465 acres of land in the Kirwin Irrigation District is furnished by Kirwin Reservoir storage and inflows from the North Fork Solomon River and Bow Creek.

The operation of Kirwin Dam and Reservoir affords many opportunities for recreation, fishing, hunting, fish spawning, and preservation of waterfowl species.

The U.S. Fish and Wildlife Service (Service) has completed the Kirwin National Wildlife Refuge Comprehensive Conservation Plan (CCP). The 1997 National Refuge System Improvement Act required the Service to develop a CCP for each of its refuges. The Kirwin Refuge CCP will guide the refuge management activities through 2025.

2014 Summary

The annual precipitation total of 18.68 inches at Kirwin Dam was 79 percent of normal. The inflow of 20,092 AF was between the dry-year and normal-year forecasts. The reservoir level was 11.5 feet below the top of conservation pool at the first of the year (elevation 1717.78 feet). The reservoir level slowly increased to elevation 1718.59 on June 17, 2014. Irrigation releases began on June 25, 2014 and continued through August 28, 2014 decreasing the reservoir level to 1712.74 feet. The reservoir level gradually increased throughout the fall and winter to an elevation of 1715.11 feet on December 31, 2014 (14.1 feet below the top of conservation).

A total of 16,812 AF was released into Kirwin Canal to irrigate 8,921 acres of project lands during 2014. Farm delivery efficiency was 56 percent with 9,399 AF delivered to farms.

2015 Outlook

Carry-over storage and the forecasted inflows in the North Fork of the Solomon River are expected to be inadequate by 1,100 AF under dry-year conditions. Normal-year and wet-year forecasted inflows would be adequate to irrigate all district lands.

The district continues to explore opportunities for replacing sections of open ditch lateral with buried pipe. The district is also assisting landowners with on-farm improvements such as the installation of sprinklers through assisting with burying lines to pivots and through the relocation of turnouts. Future conservation projects include the possibility of installing remote monitoring equipment at the wasteways and at the Kirwin North/South Canal split. Future conservation projects may be delayed due to the declining water supply and availability of cost-share funding.

During the Comprehensive Facility Review in 2002, a recommendation was made to patch the spalled and delaminated area of the spillway chute floor. The deterioration of the spillway chute floor concrete was examined further in 2012 during the scoping and design data collection phase of the project. Corings were performed at spillway locations to assist in determining the depths of the delaminations. A Value Engineering Study was conducted in the beginning of 2013 and a contract was awarded in September 2013. Work includes removing and replacing deteriorated concrete on the spillway floor, upstream apron, stilling basin and spillway chute blocks; and repairing the earthen dike located downstream of the stilling basin. Construction began in the Fall of 2014 and is scheduled to conclude in the Spring of 2015.

A Comprehensive Facility Review was held at Kirwin Dam in April 2014.

The SOP for Kirwin Dam was revised in 2014.

Webster Unit, Solomon Division in Kansas

General

The Webster Irrigation District has service available to 8,537 acres. The project water supply is provided by Webster Reservoir storage and flows of the South Fork Solomon River.

2014 Summary

In 2014, the precipitation at Webster Dam was 94 percent of normal (22.22 inches). The inflow of 8,421 AF was between the dry-year and the normal-year forecasts. The reservoir level was 22.9 feet below the top of conservation pool at the first of the year (elevation 1869.56 feet). Significant precipitation in June and August increased the reservoir level to a peak elevation of 1871.44 feet on September 2, 2014. No irrigation releases were made in 2014 due to the short water supply. The pool level slowly decreased in the fall and winter, and the elevation was 1870.85 feet on December 31, 2014 (21.6 feet below the top of conservation).

The SOP for Webster Dam was revised in 2014.

2015 Outlook

The carry-over storage and the flows in the South Fork Solomon River are expected to be inadequate to irrigate all district lands in 2015 under dry-year conditions by 26,400 AF and under normal conditions by 5,000 AF. The water supply will be adequate under wet-year inflow conditions.

The district continued to explore opportunities to cost share with Reclamation and district irrigators for the replacement of open ditch laterals with buried pipe. The district will continue to seek outside funding for water conservation improvement projects. Future conservation projects include the possibility of installing remote monitoring equipment at the wasteways and at the beginning of the second and third sections of Osborne Canal.

Glen Elder Unit, Solomon Division in Kansas

General

Releases from Waconda Lake are regulated as outlined in two memorandums of understanding between the State of Kansas and Reclamation. Releases are made for the city of Beloit, the Mitchell County Rural Water District, the long-term water service contract with Glen Elder Irrigation District, and for water right administration.

Renewal of the long term water service contract with the City of Beloit, Kansas was completed in 2008. The new repayment contract became effective on January 1, 2009. The repayment contract with Beloit, Kansas, provides for the annual use of up to 2,000 AF of Waconda Lake storage. Water is measured at the Glen Elder Dam river outlet works.

The water service contract with the Mitchell County Rural Water District No. 2 provides for 1,009 AF of storage water as available from Waconda Lake.

The water service contract with the Glen Elder Irrigation District provides for the use of up to 18,000 AF of storage water each year. Based on the current State of Kansas Certificate of Appropriation, water usage is not to exceed 15,170 AF per calendar year. Water is released and measured through the river outlet works.

When compatible with flood control operations, the operating criteria for Waconda Lake provide for a stable or rising pool level during the fish spawning period each spring.

When possible, Waconda Lake is allowed to fill during the late summer and early fall to flood exposed shoreline vegetation. This flooded aquatic vegetation is very beneficial to waterfowl management.

Waconda Lake is normally regulated at one to two feet below the top of conservation capacity during the winter months. Maintaining the lake at this level reduces shoreline erosion, provides a buffer for spring runoff and lessens ice damage to the upstream face of Glen Elder Dam. Releases from Waconda Lake are regulated each year to maintain a constant water surface level while the lake is ice-covered.

2014 Summary

The annual precipitation total of 21.78 inches at Glen Elder Dam was 85 percent of normal. The inflow of 65,510 AF was between the dry-year and normal-year forecasts. The lake level at the beginning of the year was 2.7 feet below the top of conservation at 1452.90 feet. The level of Waconda Lake slowly increased to elevation 1454.57 on July 1, 2014. Irrigation releases began on May 5, 2014 and continued through August 30, 2014 decreasing the lake level to 1453.58 feet. Waconda Lake ended the year 2.4 feet (elevation 1453.25 feet) below the top of conservation.

A total of 18,424 AF of water was released from Glen Elder Dam in 2014. Storage releases of 6,901 AF combined with natural flow releases of 4,251 AF for the irrigation of 6,149 acres in the Glen Elder Irrigation District. The district delivered 5,258 AF to the farms resulting in a delivery efficiency of 47 percent. Storage releases totaling 143 AF were made for the City of Beloit, with an additional 6,399 AF bypassed for water quality as directed by the State Water Commissioner. Releases to the Mitchell County Rural Water District No. 2 totaled 730 AF.

The toe drain pump for the Cawker City Dike was rebuilt in 2014.

2015 Outlook

The municipal requirement of Beloit and the requirements of the Mitchell County Rural Water District No. 2 will be met in full with releases as required from Waconda Lake. It is expected that the Kansas Water Commissioner will request that inflows be passed through the lake for water right administration. The storage in Waconda Lake and flows in the North and South Forks of the Solomon River will furnish a full water supply to the Glen Elder Irrigation District. The reservoir will be regulated to maintain a constant level during the winter months when the reservoir is ice-covered to minimize ice damage. Under normal-year conditions, the lake is expected to be maintained between one and two feet below the top of the conservation pool during the winter.

The Glen Elder Irrigation District continues to encourage their producers to advance water ordering times to improve on water releases, making more efficient use of the district's water supply. Some district pumping sites present problems due to river conditions at the sites. In order to minimize required reservoir releases, the district is investigating potential improvements to those water pumping sites.

Cedar Bluff Unit, Smoky Hill Division in Kansas

General

Cedar Bluff Reservoir storage furnishes a maximum of 2,000 AF each year for the City of Russell, Kansas when required. Prior to 1993, Cedar Bluff Reservoir storage and Smoky Hill River flows had provided a water supply for 6,800 acres in the Cedar Bluff Irrigation District. Reformulation of the Cedar Bluff Unit in October of 1992 resulted in the dissolution of the Cedar Bluff Irrigation District with the Kansas Water Office and Kansas Department of Wildlife and Parks acquiring the use and control of portions of the reservoir conservation capacity. A "designated operating pool" was established for Cedar Bluff Reservoir and includes the following sub allocation pools: The City of Russell's existing water storage right which remained unchanged (2,700 AF); an artificial recharge pool under control of the Kansas Water Office (5,110 AF); and a fish, wildlife and recreation pool under control of the KDWPT (21,061 AF). A "joint-use pool" has been established between the operating pool and the flood control pool for water supply, flood control, environmental and fish, wildlife and recreation purposes. Water rights for the "joint-use pool" are held jointly between the KDWPT and the Kansas Water Office. A Contract Administration Memorandum between the United States of America, represented by Reclamation, the State of Kansas and the City of Russell was signed in

November/December of 2003, establishing an accounting procedure for water storage in Cedar Bluff Reservoir. In January, 2006 a Memorandum of Understanding was signed by the State of Kansas agencies, Kansas Water Office, and Kansas Department of Wildlife and Parks. The KDWPT will be responsible for the joint pool releases and for the water rights.

2014 Summary

The annual precipitation total at Cedar Bluff Dam was 22.58 inches which is 108 percent of normal. The 2014 inflow of 20,137 AF was between the normal-year and wet-year forecasts. The reservoir level at the beginning of the year was 2118.83 feet (25.2 feet below top of conservation). Heavy rains in June contributed to significant runoff and raised the reservoir elevation to a maximum of 2122.70 feet on July 9, 2014. June precipitation at Cedar Bluff Dam totaled 10.38 inches and was the second highest ever recorded for the month. Water was not released from the reservoir for the City of Russell or the Kansas Water Office in 2014. Evaporation and seepage losses exceeded inflows throughout the remainder of the year and the reservoir level gradually decreased to elevation 2121.08 feet on December 31, 2014 (22.9 feet below the top of conservation).

The State of Kansas operates and maintains the fish hatchery facility located below Cedar Bluff Dam. There were no releases to the facility in 2014.

A Comprehensive Facility Review was held at Cedar Bluff Dam in April 2014.

The SOP for Cedar Bluff Dam was revised in 2014.

2015 Outlook

Storage in Cedar Bluff Reservoir on December 31, 2014 was within the joint use pool. The KDWPT is expected to use very little if any water in the operations of the fish hatchery facility. If conditions are dry, the City of Russell and the Kansas Water Office may request a release to the river for recharge in 2015.

TABLE 1

RESERVOIR DATA - NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

CAPACITY ALLOCATIONS 1/

LIVE CONSERVATION

RESERVOIR		DEAD	Inactive	Active	FLOOD CONTROL
Box Butte	- Elevation Ft.	3969.0	3979.0	4007.0	---
	Total Acre-feet	188	2,392	29,161	---
	Net Acre-feet	188	2,204	26,769	---
Merritt	- Elevation Ft.	2875.0	2896.0	2946.0	---
	Total Acre-feet	774	4,662	66,726	---
	Net Acre-feet	774	3,888	62,064	---
Calamus	- Elevation Ft.	2185.0	2213.3	2244.0	---
	Total Acre-feet	35	20,150	119,469	---
	Net Acre-feet	35	20,115	99,319	---
Davis Creek	- Elevation Ft.	1998.5	2003.0	2076.0	---
	Total Acre-feet	76	172	31,158	---
	Net Acre-feet	76	96	30,986	---
Bonny	- Elevation Ft.	3635.5	3638.0	3672.0	3710.0
	Total Acre-feet	0	0	36,508	165,328
	Net Acre-feet	0	0	36,508	128,820
Enders	- Elevation Ft.	3080.0	3082.4	3112.3	3127.0
	Total Acre-feet	7,516	8,948	42,910	72,958
	Net Acre-feet	7,516	1,432	33,962	30,048
Swanson	- Elevation Ft.	2710.0	2720.0	2752.0	2773.0
Lake	Total Acre-feet	1,027	10,329	110,175	244,362
	Net Acre-feet	1,027	9,302	99,846	134,187
Hugh Butler	- Elevation Ft.	2552.0	2558.0	2581.8	2604.9
Lake	Total Acre-feet	5,185	8,921	36,224	85,070
	Net Acre-feet	5,185	3,736	27,303	48,846
Harry Strunk	- Elevation Ft.	2335.0	2343.0	2366.1	2386.2
Lake	Total Acre-feet	3,408	7,897	34,647	87,361
	Net Acre-feet	3,408	4,489	26,750	52,714
Keith Sebelius	- Elevation Ft.	2275.0	2280.4	2304.3	2331.4
Lake	Total Acre-feet	1,636	3,993	34,510	133,740
	Net Acre-feet	1,636	2,357	30,517	99,230
Harlan County	- Elevation Ft.	1885.0	1927.0	1945.73	1973.5
Lake 3/	Total Acre-feet	0	118,099	314,111	814,111
	Net Acre-feet	0	118,099	196,012	500,000
Lovewell	- Elevation Ft.	1562.07	1571.7	1582.6	1595.3
	Total Acre-feet	1,659	11,644	35,666	86,131
	Net Acre-feet	1,659	9,985	24,022	50,465
Kirwin	- Elevation Ft.	1693.0	1697.0	1729.25	1757.3
	Total Acre-feet	4,969	8,515	98,154	313,290
	Net Acre-feet	4,969	3,546	89,639	215,136
Webster	- Elevation Ft.	1855.5	1860.0	1892.45	1923.7
	Total Acre-feet	1,256	4,231	76,157	259,510
	Net Acre-feet	1,256	2,975	71,926	183,353
Waconda	- Elevation Ft.	1407.8	1428.0	1455.6	1488.3
Lake	Total Acre-feet	248	26,237	219,420	942,408
	Net Acre-feet	248	25,989	193,183	722,988
Cedar Bluff	- Elevation Ft.	2090.0	2107.8	2144.0	2166.0
	Total Acre-feet	4,402	28,574	172,452	364,342
	Net Acre-feet	4,402	24,172	143,878	191,890
Total Storage (A.F.)		32,379	264,764	1,457,448	3,815,125 2/
Total Net Acre-feet		32,379	232,385	1,192,684	2,357,677

1/ Includes space for sediment storage.

2/ Includes total active storage for Box Butte, Merritt, Calamus, and Davis Creek Reservoirs.

3/ Bottom of irrigation pool for Harlan County Lake is 1932.5 feet, 164,111 AF.

TABLE 2
SUMMARY OF 2014 OPERATIONS

MIRAGE FLATS PROJECT

	BOX BUTTE RESERVOIR					MIRAGE FLATS CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	678	26	72	0.46	9,387	0	0
Feb.	783	30	94	0.23	10,046	0	0
Mar.	3,455	23	186	0.18	13,292	0	0
Apr.	1,834	30	340	3.05	14,756	0	0
May	1,875	33	430	2.91	16,168	0	0
June	944	32	558	3.27	16,522	0	0
July	573	4,223	509	1.74	12,363	3,940	1,090
Aug.	0	5,122	554	1.03	6,687	6,186	2,732
Sep.	1,201	29	209	3.34	7,650	0	0
Oct.	1,333	30	194	0.47	8,759	0	0
Nov.	1,118	28	115	0.73	9,734	0	0
Dec.	1,212	28	72	0.82	10,846	0	0
TOTAL	15,006	9,634	3,333	18.23		10,126	3,822

NOTE -- Acres irrigated 2014: Mirage Flats Canal 10,857 acres.

SANDHILLS DIVISION
AINSWORTH UNIT

	MERRITT RESERVOIR					AINSWORTH CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	14,448	13,944	235	0.23	61,100	0	0
Feb.	14,757	13,369	301	0.63	62,187	0	0
Mar.	15,406	15,531	421	0.42	61,641	0	0
Apr.	16,136	10,037	723	2.64	67,017	0	0
May	17,039	15,779	968	4.10	67,309	2,350	105
June	16,810	15,699	1,111	5.10	67,309	5,952	492
July	15,778	33,144	1,074	1.52	48,869	31,440	19,828
Aug.	17,934	24,100	707	4.52	41,996	23,026	14,845
Sep.	16,430	10,721	477	2.16	47,228	8,686	4,153
Oct.	15,780	6,129	651	1.11	56,228	0	0
Nov.	14,933	9,362	429	0.52	61,370	0	0
Dec.	15,058	15,015	313	1.20	61,100	0	0
TOTAL	190,509	182,830	7,410	24.15		71,454	39,423

NOTE -- Acres irrigated 2014: Ainsworth Canal 34,626 acres.

NORTH LOUP DIVISION

	CALAMUS RESERVOIR						ABOVE DAVIS CREEK MIRDAN CANAL		
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release to Calamus Fish Hatch. (AF)	Release to Canal (AF)	Canal Use (AF)	Delivered To Farms (AF)
Jan.	19,295	13,712	440	0.00	105,592	222	0	0	0
Feb.	17,827	12,290	569	0.01	110,560	203	0	0	0
Mar.	21,385	14,193	1,047	0.27	116,705	255	0	0	0
Apr.	21,155	17,657	1,745	0.43	118,458	598	9,070	0	0
May	20,573	21,608	1,959	0.36	115,464	113	19,906	5,038	1,773
June	28,071	20,059	2,172	7.37	121,304	366	13,864	2,280	178
July	24,371	40,973	2,427	2.90	102,275	621	26,136	13,990	7,211
Aug	21,759	37,534	1,864	5.78	84,636	565	23,304	13,581	6,211
Sep.	19,099	19,763	1,575	1.09	82,397	438	4,548	3,263	1,408
Oct.	19,162	16,997	1,129	0.93	83,433	111	0	0	0
Nov.	17,282	3,120	641	0.00	96,954	149	0	0	0
Dec.	19,879	18,540	387	1.88	97,906	195	0	0	0
TOTAL	249,858	236,446	15,955	21.02		3,836	96,828	38,152	16,781

NOTE -- Acres irrigated 2014: Mirdan Canal 34,110 acres.

NORTH LOUP DIVISION (Continued)

	DAVIS CREEK RESERVOIR					BELOW DAVIS CREEK FULLERTON CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Mo. Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	19	181	49	0.12	9,290	0	0
Feb.	22	155	60	0.32	9,097	0	0
Mar.	39	163	105	0.35	8,868	0	0
Apr.	6,190	309	201	2.50	14,548	0	0
May	13,646	3,362	309	0.74	24,523	2,485	72
June	13,109	6,588	486	10.07	30,558	3,792	48
July	9,383	13,613	495	2.52	25,833	12,208	7,725
Aug.	8,053	14,882	383	6.67	18,621	14,104	4,997
Sep.	902	8,990	183	2.23	10,350	8,829	414
Oct.	270	332	151	0.72	10,137	0	0
Nov.	24	205	81	0.12	9,875	0	0
Dec.	122	200	46	1.36	9,751	0	0
TOTAL	51,779	48,980	2,549	27.72		41,418	13,256

NOTE - Acres irrigated 2014: Fullerton Canal 21,016 acres.

TABLE 2
SUMMARY OF 2014 OPERATIONS (Continued)

UPPER REPUBLICAN DIVISION
ARMEL UNIT

BONNY RESERVOIR

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Outflow To Hale Ditch (AF)
Jan.	123	123	0	0.16	0	0
Feb.	161	161	0	0.67	0	0
Mar.	307	307	0	0.04	0	0
Apr.	353	353	0	0.67	0	123
May	339	339	0	1.08	0	216
June	313	313	0	6.03	0	194
July	186	186	0	4.78	0	63
Aug.	123	123	0	4.07	0	0
Sep.	135	135	0	4.40	0	0
Oct.	185	185	0	0.62	0	0
Nov.	179	179	0	0.00	0	0
Dec.	260	260	0	0.99	0	0
TOTAL	2,664	2,664	0	23.51	0	596

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT

	ENDERS RESERVOIR					CULBERTSON CANAL		CULBERTSON EXT.CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	410	311	59	0.00	13,360	0	0	0	0
Feb.	517	222	62	0.69	13,593	0	0	0	0
Mar.	409	546	112	0.16	13,344	0	0	0	0
Apr.	441	238	227	0.45	13,320	0	0	0	0
May	798	4,816	304	4.37	8,998	0	0	0	0
June	1,215	750	351	6.51	9,112	0	0	0	0
July	497	343	305	1.30	8,961	0	0	0	0
Aug.	502	185	361	2.73	8,917	0	0	0	0
Sep.	350	179	228	0.88	8,860	0	0	0	0
Oct.	360	185	181	0.56	8,854	0	0	0	0
Nov.	356	179	102	0.02	8,929	0	0	0	0
Dec.	464	185	58	0.79	9,150	0	0	0	0
TOTAL	6,319	8,139	2,350	18.46		0	0	0	0

NOTE: Acres irrigated 2014: Culbertson Canal - 0 acres; Culbertson Extension Canal - 0 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT

	SWANSON LAKE					MEEKER-DRIFTWOOD	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	2,719	1,819	184	0.27	29,593	0	0
Feb.	4,383	4,628	201	0.62	29,147	0	0
Mar.	5,474	5,296	350	0.20	28,975	0	0
Apr.	3,517	2,775	791	1.11	28,926	0	0
May	3,284	1,646	1,021	2.46	29,543	0	0
June	4,896	2,007	1,177	7.13	31,255	197	0
July	851	4,540	1,254	0.86	26,312	4,543	580
Aug.	1,292	3,453	1,128	6.38	23,023	3,295	792
Sep.	603	60	675	1.74	22,891	0	0
Oct.	388	61	502	0.43	22,716	0	0
Nov.	1,468	60	370	0.00	23,754	0	0
Dec.	4,208	61	213	1.09	27,688	0	0
TOTAL	33,083	26,406	7,866	22.29		8,035	1,372

NOTE: Acres irrigated 2014: Meeker-Driftwood Canal - 3,472 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

	HUGH BUTLER LAKE					RED WILLOW CANAL		BARTLEY CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	636	538	42	0.01	7,017	0	0	0	0
Feb.	783	768	46	0.20	6,986	0	0	0	0
Mar.	1,002	857	83	0.14	7,048	0	0	0	0
Apr.	886	686	231	1.43	7,017	0	0	0	0
May	1,025	766	284	2.72	6,992	0	0	0	0
June	1,918	1,371	270	6.45	7,269	0	0	0	0
July	578	520	366	1.15	6,961	0	0	0	0
Aug.	735	123	412	4.87	7,161	0	0	0	0
Sep.	399	119	235	1.19	7,206	0	0	0	0
Oct.	377	123	165	0.36	7,295	0	0	0	0
Nov.	551	119	104	0.00	7,623	0	0	0	0
Dec.	698	123	57	0.90	8,141	0	0	0	0
TOTAL	9,588	6,113	2,295	19.42		0	0	0	0

NOTE -- Acres irrigated 2014: Red Willow Canal - 0 acres; Bartley Canal 0 acres.

TABLE 2
SUMMARY OF 2014 OPERATIONS (Continued)

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

	HARRY STRUNK LAKE					CAMBRIDGE CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	2,343	2,043	83	0.25	20,599	0	0
Feb.	2,620	2,497	86	0.73	20,636	0	0
Mar.	3,543	3,424	156	0.71	20,599	0	0
Apr.	4,113	3,652	485	2.50	20,575	0	0
May	6,173	5,209	549	1.35	20,990	0	0
June	9,805	8,037	648	10.11	22,110	0	0
July	6,874	6,563	663	1.96	21,758	6,382	1,423
Aug.	6,310	7,212	702	3.66	20,154	5,140	2,327
Sep.	5,807	672	458	2.81	24,831	720	344
Oct.	5,662	62	474	0.35	29,957	0	0
Nov.	5,576	60	271	0.00	35,202	0	0
Dec.	6,218	3,279	157	0.97	37,984	0	0
TOTAL	65,044	42,710	4,732	25.40		12,242	4,094

NOTE -- Acres irrigated 2014: Cambridge Canal 9,342 acres.

KANASKA DIVISION
ALMENA UNIT

	KEITH SEBELIUS LAKE						ALMENA CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To City Of Norton (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	172	49	78	0.17	12,547	18	0	0
Feb.	305	44	91	0.41	12,717	16	0	0
Mar.	301	49	160	0.41	12,809	18	0	0
Apr.	634	52	513	2.76	12,878	22	0	0
May	434	68	504	1.42	12,740	37	0	0
June	1,012	66	750	7.36	12,936	36	0	0
July	194	1,977	679	1.38	10,474	53	1,385	595
Aug.	424	80	625	3.60	10,193	49	0	0
Sep.	186	64	407	1.76	9,908	35	0	0
Oct.	52	63	257	0.63	9,640	32	0	0
Nov.	71	49	149	0.00	9,513	20	0	0
Dec.	291	49	79	1.02	9,676	18	0	0
TOTAL	4,076	2,610	4,292	20.92		354	1,385	595

NOTE: Acres irrigated 2014: Almena Canal - 2,500 acres.

BOSTWICK DIVISION
FRANKLIN UNIT

	HARLAN COUNTY LAKE Data from Corps of Engineers					FRANKLIN CANAL		NAPONEE CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	129	0	431	0.07	124,220	0	0	0	0
Feb.	3,818	0	560	0.44	127,478	0	0	0	0
Mar.	11,133	0	812	0.09	137,799	0	0	0	0
Apr.	12,859	0	1,989	2.80	148,669	0	0	0	0
May	11,207	0	3,038	0.84	156,838	0	0	0	0
June	25,294	901	4,161	5.16	177,070	0	0	0	0
July	9,263	16,876	5,289	1.86	164,168	0	0	0	0
Aug.	4,919	17,368	5,464	4.60	146,255	0	0	0	0
Sep.	2,777	357	3,627	1.01	145,048	0	0	0	0
Oct.	2,192	0	3,313	1.03	143,927	0	0	0	0
Nov.	2,509	0	2,854	0.00	143,582	0	0	0	0
Dec.	6,109	0	849	0.63	148,842	0	0	0	0
TOTAL	92,209	35,502	32,387	18.53		0	0	0	0

NOTE: Acres irrigated 2014: Franklin Canal - 0 acres; Naponee Canal - 0 acres.

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

	FRANKLIN PUMP CANAL		SUPERIOR CANAL			COURTLAND CANAL - ABOVE LOVEWELL			
						NEBRASKA USE		KANSAS USE	
Month	Diverted To Canal (AF)	Delivered To Farms (AF)	Diverted To Canal (AF)	Delivered To Farms (AF)	Total Diversion (AF)	Total (AF)	Delivered To Farms (AF)	Diversion To Canal (AF)	Delivered To Farms (AF)
Jan.	0	0	0	0	1,573	0	0	0	0
Feb.	0	0	0	0	0	0	0	0	0
Mar.	0	0	0	0	2,648	0	0	0	0
Apr.	0	0	0	0	4,343	0	0	0	0
May	0	0	0	0	3,940	0	0	0	0
June	0	0	0	0	6,404	0	0	1,137	10
July	0	0	0	0	16,356	0	0	8,609	4,746
Aug.	0	0	0	0	21,003	0	0	5,448	2,671
Sep.	0	0	0	0	1,729	0	0	331	32
Oct.	0	0	0	0	0	0	0	0	0
Nov.	0	0	0	0	0	0	0	0	0
Dec.	0	0	0	0	1,658	0	0	0	0
TOTAL	0	0	0	0	59,654	0	0	15,525	7,459

NOTE: Acres irrigated 2014: Franklin Pump Canal - 0 acres; Superior Canal - 0 acres.
Courtland Canal-Nebraska use - 0 acres.
Courtland Canal-Kansas use - 11,600 acres.

TABLE 2
SUMMARY OF 2014 OPERATIONS (Continued)

BOSTWICK DIVISION (Continued)
COURTLAND UNIT

	LOVEWELL RESERVOIR							COURTLAND (Below)	
Month	Est. Flowfrom White Rock Creek (AF)	Inflow from Courtland 34.8 (AF)	Total Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	0	1,495	1,239	12	129	0.19	23,593	0	0
Feb.	125	0	125	11	161	0.96	23,546	0	0
Mar.	0	1,842	1,511	12	298	0.06	24,747	0	0
Apr.	246	3,551	3,797	12	894	1.95	27,638	0	0
May	334	3,041	3,375	12	1,195	1.84	29,806	0	0
June	5,441	3,989	9,430	2,967	1,404	10.00	34,865	2,933	120
July	1,470	6,376	7,846	16,652	1,432	2.49	24,627	16,642	11,406
Aug.	4,322	13,861	18,183	11,913	1,277	6.86	29,620	11,899	6,846
Sep.	310	1,401	1,711	645	800	2.06	29,886	634	68
Oct.	267	0	267	12	681	2.09	29,460	0	0
Nov.	0	0	0	12	673	0.03	28,775	0	0
Dec.	157	894	1,051	12	194	0.81	29,620	0	0
TOTAL	12,672	36,450	48,535	32,272	9,138	29.34		32,108	18,440

NOTE: Acres irrigated 2014: Courtland Canal below Lovewell 27,500 acres.

SOLOMON DIVISION
KIRWIN UNIT

	KIRWIN RESERVOIR					KIRWIN CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	219	0	219	0.18	50,011	0	0
Feb.	739	0	289	0.26	50,461	0	0
Mar.	939	0	487	0.17	50,913	0	0
Apr.	2,137	0	1,229	1.77	51,821	0	0
May	1,395	0	1,535	1.19	51,681	0	0
June	2,938	881	1,917	6.35	51,821	892	114
July	105	8,380	1,878	0.98	41,668	8,376	4,271
Aug.	7,209	7,541	1,714	5.89	39,622	7,544	5,014
Sep.	2,549	0	1,090	0.88	41,081	0	0
Oct.	598	0	936	0.56	40,743	0	0
Nov.	304	0	487	0.07	40,560	0	0
Dec.	960	0	254	0.38	41,266	0	0
TOTAL	20,092	16,802	12,035	18.68		16,812	9,399

NOTE: Acres irrigated 2014: Kirwin Canal - 8,921 acres.

SOLOMON DIVISION (Continued)
WEBSTER UNIT

	WEBSTER RESERVOIR					OSBORNE CANAL	
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	0	0	129	0.25	16,408	0	0
Feb.	179	0	131	0.69	16,456	0	0
Mar.	0	0	257	0.06	16,199	0	0
Apr.	383	0	574	3.01	16,008	0	0
May	286	0	699	1.11	15,595	0	0
June	3,264	0	872	6.95	17,987	0	0
July	190	0	955	1.34	17,222	0	0
Aug.	3,494	0	1,089	6.17	19,627	0	0
Sep.	391	0	633	1.27	19,385	0	0
Oct.	0	0	466	0.75	18,919	0	0
Nov	0	0	324	0.03	18,595	0	0
Dec.	234	0	149	0.59	18,680	0	0
TOTAL	8,421	0	6,278	22.22		0	0

NOTE: Acres irrigated 2014: Osborne Canal - 0 acres.

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT

						OUTFLOW TO RIVER				
	WACONDA LAKE					City of Beloit		Irrig.District	Other	Release To
Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	Storage Release (AF)	Quality Bypass (AF)	Storage Release (AF)	Controlled Releases (AF)	Mitchell Co. RWD No. 2 (AF)
Jan.	1,592	802	677	0.21	187,235	0	738	0	0	64
Feb.	2,912	725	831	0.46	188,591	0	667	0	0	58
Mar.	2,483	802	1,567	0.00	188,705	0	738	0	0	64
Apr.	6,044	769	4,367	2.71	189,613	0	704	0	0	65
May	5,227	2,109	5,496	1.15	187,235	0	123	163	1,755	68
June	26,926	1,496	6,123	7.20	206,542	0	433	101	908	54
July	1,808	5,313	7,553	1.89	195,484	0	0	3,650	1,588	75
Aug.	10,008	3,287	6,370	3.87	195,835	143	93	2,987	0	64
Sep.	3,141	767	4,465	1.62	193,744	0	714	0	0	53
Oct.	2,253	793	2,960	1.90	192,244	0	738	0	0	55
Nov.	168	768	1,803	0.02	189,841	0	714	0	0	54
Dec.	2,948	793	899	0.75	191,097	0	737	0	0	56
TOTAL	65,510	18,424	43,111	21.78		143	6,399	6,901	4,251	730

NOTE: Acres irrigated 2014: Glen Elder District 6,149 acres.

TABLE 2
SUMMARY OF 2014 OPERATIONS (Continued)

SMOKY HILL DIVISION

	CEDAR BLUFF RESERVOIR					Release to	Release	Release
			Gross		End of Month	City of	To Fish	to Kansas
	Inflow	Outflow	Evap.	Precip.	Content	Russell	Hatchery	Water Office
Month	(AF)	(AF)	(AF)	(Inches)	(AF)	(AF)	(AF)	(AF)
Jan.	0	0	374	0.08	53,968	0	0	0
Feb.	311	0	253	0.77	54,026	0	0	0
Mar.	0	0	543	0.06	53,483	0	0	0
Apr.	324	0	1,484	0.71	52,323	0	0	0
May	737	0	1,517	0.60	51,543	0	0	0
June	7,949	0	1,787	10.34	57,705	0	0	0
July	9,590	0	1,688	1.02	65,607	0	0	0
Aug.	727	0	2,063	3.36	64,271	0	0	0
Sep.	389	0	1,324	3.21	63,336	0	0	0
Oct.	26	0	983	1.81	62,379	0	0	0
Nov.	0	0	1,042	0.05	61,337	0	0	0
Dec.	84	0	304	0.57	61,117	0	0	0
TOTAL	20,137	0	13,362	22.58		0	0	0

TABLE 3

ACRES IRRIGATED IN 2014 AND ESTIMATES FOR 2015

Irrigation District and Canal	Acres With Service Available	Acres Irrigated in 2014	Estimated Acres to be Irrigated in 2015
Mirage Flats Irrigation District			
Mirage Flats Canal	11,662	10,857	11,000
Ainsworth Irrigation District			
Ainsworth Canal	35,000	34,626	34,500
Twin Loups Irrigation District			
Above Davis Creek	34,053	34,110	34,000
Below Davis Creek	21,063	21,016	21,000
Total Twin Loups Irrigation District	55,116	55,126	55,000
Frenchman Valley Irrigation District			
Culbertson Canal	9,292	0	1,000
H & RW Irrigation District			
Culbertson Extension Canal	11,915	0	0
Frenchman-Cambridge Irrigation District			
Meeker-Driftwood Canal	16,855	3,472	5,000
Red Willow Canal	4,797	0	0
Bartley Canal	6,353	0	2,000
Cambridge Canal	17,664	9,342	16,000
Total Frenchman-Cambridge Irrigation District	45,669	12,814	23,000
Almena Irrigation District			
Almena Canal	5,764	2,500	0
Bostwick Irrigation District in Nebraska			
Franklin Canal	11,031	0	10,500
Naponee Canal	1,607	0	1,000
Franklin Pump Canal	2,026	0	1,000
Superior Canal	6,056	0	5,500
Courtland Canal (Nebraska)	1,735	0	1,000
Total Bostwick Irrigation Dist. in Nebraska	22,455	0	19,000
Kansas-Bostwick Irrigation District			
Courtland Canal above Lovewell	13,378	11,600	11,500
Courtland Canal below Lovewell	29,122	27,500	27,500
Total Kansas-Bostwick Irrigation District	42,500	39,100	39,000
Kirwin Irrigation District			
Kirwin Canal	11,465	8,921	9,000
Webster Irrigation District			
Osborne Canal	8,537	0	0
Glen Elder Irrigation District	10,370	6,149	6,000
TOTAL PROJECT USES	269,745	170,093	197,500
Non-Project Uses			
Hale Ditch	700	200	200
TOTAL PROJECT AND NON-PROJECT	270,445	170,293	197,700

BOX BUTTE RESERVOIR OPERATION ESTIMATES - 2015

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	13	0.8	1.6	0.1	2	0.1	0.0	0.0	3993.1	11.4	0.6
FEB	16	0.9	1.9	0.1	2	0.1	0.0	0.0	3993.8	12.1	0.7
MAR	23	1.4	3.8	0.2	2	0.1	0.0	0.0	3994.9	13.2	1.1
APR	18	1.1	5.4	0.3	2	0.1	0.0	0.0	3995.6	13.9	0.7
MAY	15	0.9	6.6	0.4	2	0.1	0.0	0.0	3995.9	14.3	0.4
JUN	8	0.5	8.8	0.6	89	5.3	0.0	0.0	3990.3	8.9	-5.4
JUL	6	0.4	10.1	0.5	226	13.9	0.0	7.5	3979.0	2.4	-6.5
AUG	10	0.6	8.8	0.2	213	13.1	0.0	12.7	3979.0	2.4	0.0
SEP	10	0.6	6.6	0.1	40	2.4	0.0	1.9	3979.0	2.4	0.0
OCT	13	0.8	5.0	0.1	5	0.3	0.0	0.0	3979.9	2.8	0.4
NOV	17	1.0	2.5	0.1	2	0.1	0.0	0.0	3981.7	3.6	0.8
DEC	13	0.8	1.9	0.1	2	0.1	0.0	0.0	3982.9	4.2	0.6
TOTAL		9.8	63.0	2.8		35.7	0.0	22.1			-6.6
MOST PROBABLE INFLOW CONDITIONS											
JAN	19	1.2	1.5	0.1	2	0.1	0.0	0.0	3993.5	11.8	1.0
FEB	27	1.5	1.8	0.1	2	0.1	0.0	0.0	3994.8	13.1	1.3
MAR	34	2.1	3.5	0.2	2	0.1	0.0	0.0	3996.5	14.9	1.8
APR	30	1.8	5.0	0.3	2	0.1	0.0	0.0	3997.7	16.3	1.4
MAY	23	1.4	6.1	0.4	2	0.1	0.0	0.0	3998.5	17.2	0.9
JUN	13	0.8	8.1	0.6	68	4.2	0.0	0.0	3994.9	13.2	-4.0
JUL	10	0.6	9.3	0.6	209	12.9	0.0	2.1	3979.0	2.4	-10.8
AUG	16	1.0	8.2	0.2	164	10.1	0.0	9.3	3979.0	2.4	0.0
SEP	17	1.0	6.1	0.1	28	1.7	0.0	0.8	3979.0	2.4	0.0
OCT	19	1.2	4.7	0.1	5	0.3	0.0	0.0	3980.9	3.2	0.8
NOV	25	1.5	2.3	0.1	2	0.1	0.0	0.0	3983.5	4.5	1.3
DEC	21	1.3	1.8	0.1	2	0.1	0.0	0.0	3985.4	5.6	1.1
TOTAL		15.4	58.4	2.9		29.9	0.0	12.2			-5.2
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	24	1.5	1.3	0.1	2	0.1	0.0	0.0	3993.8	12.1	1.3
FEB	32	1.8	1.6	0.1	2	0.1	0.0	0.0	3995.4	13.7	1.6
MAR	42	2.6	3.2	0.2	2	0.1	0.0	0.0	3997.4	16.0	2.3
APR	37	2.2	4.6	0.3	2	0.1	0.0	0.0	3998.9	17.8	1.8
MAY	28	1.7	5.6	0.4	2	0.1	0.0	0.0	3999.9	19.0	1.2
JUN	17	1.0	7.5	0.6	47	2.8	0.0	0.0	3998.0	16.6	-2.4
JUL	11	0.7	8.6	0.6	135	8.3	0.0	0.0	3989.6	8.4	-8.2
AUG	19	1.2	7.6	0.3	104	6.4	0.0	0.0	3980.3	2.9	-5.5
SEP	22	1.3	5.6	0.1	18	1.1	0.0	0.0	3980.5	3.0	0.1
OCT	24	1.5	4.3	0.1	5	0.3	0.0	0.0	3982.8	4.1	1.1
NOV	32	1.9	2.1	0.1	2	0.1	0.0	0.0	3985.8	5.8	1.7
DEC	26	1.6	1.6	0.1	2	0.1	0.0	0.0	3988.0	7.2	1.4
TOTAL		19.0	53.6	3.0		19.6	0.0	0.0			-3.6

MERRITT RESERVOIR OPERATION ESTIMATES - 2015

					RELEASE REQUIRMENT				RESERVOIR	REQUIREMENT	END OF MONTH		RESERVOIR
	INFLOW		EVAPORATION	CANAL	RIVER	TOTAL		SPILL	SHORTAGE	ELEV	CONT	CHANGE	
	MEAN	1000		1000	1000	1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	AF	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS													
JAN	227	14.0	1.9	0.3	0.0	1.0	16	1.0	12.7	0.0	2944.0	61.1	0.0
FEB	248	13.8	2.6	0.4	0.0	1.0	18	1.0	12.4	0.0	2944.0	61.1	0.0
MAR	256	15.8	3.2	0.5	0.0	1.0	16	1.0	11.5	0.0	2945.0	63.9	2.8
APR	263	15.7	5.2	0.9	0.0	1.0	17	1.0	11.0	0.0	2946.0	66.7	2.8
MAY	253	15.6	6.6	1.1	3.4	1.0	71	4.4	10.1	0.0	2946.0	66.7	0.0
JUN	242	14.4	8.4	1.4	7.6	1.0	144	8.6	4.4	0.0	2946.0	66.7	0.0
JUL	242	14.9	9.7	1.6	33.4	3.0	591	36.4	0.0	0.0	2936.1	43.6	-23.1
AUG	247	15.2	8.4	0.9	31.0	1.0	519	32.0	0.0	0.0	2924.7	25.9	-17.7
SEP	243	14.5	7.1	0.5	8.5	1.0	159	9.5	0.0	0.0	2928.1	30.4	4.5
OCT	247	15.2	6.6	0.5	0.0	5.0	81	5.0	0.0	0.0	2934.2	40.1	9.7
NOV	242	14.4	3.2	0.3	0.0	1.0	17	1.0	0.0	0.0	2940.8	53.2	13.1
DEC	224	13.8	1.9	0.3	0.0	1.0	16	1.0	4.6	0.0	2944.0	61.1	7.9
TOTAL		177.3	64.8	8.7	83.9	18.0		101.9	66.7	0.0			0.0
MOST PROBABLE INFLOW CONDITIONS													
JAN	239	14.7	1.7	0.3	0.0	1.0	16	1.0	13.4	0.0	2944.0	61.1	0.0
FEB	261	14.5	2.3	0.4	0.0	1.0	16	1.0	13.1	0.0	2944.0	61.1	0.0
MAR	269	16.6	2.9	0.4	0.0	1.0	16	1.0	12.4	0.0	2945.0	63.9	2.8
APR	275	16.4	4.6	0.8	0.0	1.0	16	1.0	11.8	0.0	2946.0	66.7	2.8
MAY	266	16.4	5.7	1.0	2.9	1.0	63	3.9	11.5	0.0	2946.0	66.7	0.0
JUN	253	15.1	7.4	1.3	6.5	1.0	122	7.5	6.3	0.0	2946.0	66.7	0.0
JUL	253	15.6	8.6	1.5	28.5	3.0	511	31.5	0.0	0.0	2939.0	49.3	-17.4
AUG	258	15.9	7.4	0.9	26.6	1.0	448	27.6	0.0	0.0	2932.3	36.7	-12.6
SEP	257	15.3	6.3	0.6	7.3	1.0	135	8.3	0.0	0.0	2935.9	43.1	6.4
OCT	258	15.9	5.6	0.6	0.0	5.0	81	5.0	0.0	0.0	2940.9	53.4	10.3
NOV	253	15.1	2.9	0.4	0.0	1.0	16	1.0	6.0	0.0	2944.0	61.1	7.7
DEC	235	14.5	1.7	0.3	0.0	1.0	16	1.0	13.2	0.0	2944.0	61.1	0.0
TOTAL		186.0	57.1	8.5	71.8	18.0		89.8	87.7	0.0			0.0
REASONABLE MAXIMUM INFLOW CONDITIONS													
JAN	253	15.6	1.5	0.2	0.0	1.0	16	1.0	14.4	0.0	2944.0	61.1	0.0
FEB	277	15.4	2.0	0.3	0.0	1.0	18	1.0	14.1	0.0	2944.0	61.1	0.0
MAR	286	17.6	2.5	0.4	0.0	1.0	16	1.0	13.4	0.0	2945.0	63.9	2.8
APR	292	17.4	4.0	0.7	0.0	1.0	17	1.0	12.9	0.0	2946.0	66.7	2.8
MAY	282	17.4	5.1	0.9	2.4	1.0	55	3.4	13.1	0.0	2946.0	66.7	0.0
JUN	268	16.0	6.5	1.1	5.3	1.0	106	6.3	8.6	0.0	2946.0	66.7	0.0
JUL	269	16.6	7.5	1.3	23.3	3.0	427	26.3	0.0	0.0	2941.9	55.7	-11.0
AUG	274	16.9	6.5	0.9	21.8	1.0	370	22.8	0.0	0.0	2938.8	48.9	-6.8
SEP	272	16.2	5.6	0.7	5.9	1.0	116	6.9	0.0	0.0	2942.6	57.5	8.6
OCT	274	16.9	5.1	0.7	0.0	5.0	81	5.0	7.6	0.0	2944.0	61.1	3.6
NOV	268	16.0	2.5	0.4	0.0	1.0	17	1.0	14.6	0.0	2944.0	61.1	0.0
DEC	250	15.4	1.5	0.2	0.0	1.0	16	1.0	14.2	0.0	2944.0	61.1	0.0
TOTAL		197.4	50.3	7.8	58.7	18.0		76.7	112.9	0.0			0.0

CALAMUS RESERVOIR OPERATION ESTIMATES - 2015

					RELEASE REQUIRMENT				RESERVOIR	REQUIREMENT	END OF MONTH		RESERVOIR
	INFLOW		EVAPORATION	CANAL	RIVER	TOTAL		SPILL	SHORTAGE	ELEV	CONT	CHANGE	
	MEAN	1000		1000	1000	1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	AF	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS													
JAN	300	18.5	1.9	0.5	0.5	3.1	58	3.6	11.8	0.0	2240.0	100.5	2.6
FEB	320	17.8	2.3	0.6	0.5	2.8	59	3.3	13.9	0.0	2240.0	100.5	0.0
MAR	356	21.9	4.1	1.1	0.5	3.1	58	3.6	8.0	0.0	2242.0	109.7	9.2
APR	369	22.0	6.6	1.8	0.5	3.0	59	3.5	6.9	0.0	2244.0	119.5	9.8
MAY	409	25.2	6.9	2.0	2.7	3.1	94	5.8	17.4	0.0	2244.0	119.5	0.0
JUN	372	22.2	8.3	2.5	5.6	3.0	144	8.6	11.1	0.0	2244.0	119.5	0.0
JUL	349	21.5	9.5	2.8	33.8	21.4	896	55.2	0.0	0.0	2235.8	83.0	-36.5
AUG	328	20.2	9.6	2.2	30.4	20.2	821	50.6	0.0	0.0	2226.3	50.4	-32.6
SEP	310	18.5	7.3	1.3	8.2	18.5	448	26.7	0.0	0.0	2222.9	40.9	-9.5
OCT	308	19.0	5.6	0.9	0.5	3.1	58	3.6	0.0	0.0	2228.0	55.4	14.5
NOV	335	20.0	3.0	0.5	0.5	3.0	59	3.5	0.0	0.0	2232.8	71.4	16.0
DEC	325	20.0	1.7	0.4	0.5	3.1	58	3.6	0.0	0.0	2236.9	87.4	16.0
TOTAL		246.8	66.8	16.6	84.2	87.4		171.6	69.1	0.0			-10.5
MOST PROBABLE INFLOW CONDITIONS													
JAN	334	20.6	1.6	0.4	0.5	3.1	58	3.6	14.0	0.0	2240.0	100.5	2.6
FEB	356	19.8	2.0	0.5	0.5	2.8	54	3.3	16.0	0.0	2240.0	100.5	0.0
MAR	398	24.5	3.6	0.9	0.5	3.1	58	3.6	10.8	0.0	2242.0	109.7	9.2
APR	411	24.5	5.8	1.6	0.5	3.0	57	3.5	9.6	0.0	2244.0	119.5	9.8
MAY	456	28.1	6.1	1.8	2.3	3.1	88	5.4	20.9	0.0	2244.0	119.5	0.0
JUN	416	24.8	7.4	2.2	4.7	3.0	125	7.7	14.9	0.0	2244.0	119.5	0.0
JUL	388	23.9	8.4	2.5	25.8	23.9	807	49.7	0.0	0.0	2237.8	91.2	-28.3
AUG	367	22.6	8.4	2.0	23.0	22.6	740	45.6	0.0	0.0	2231.3	66.2	-25.0
SEP	346	20.6	6.5	1.3	5.2	20.6	419	25.8	0.0	0.0	2229.4	59.7	-6.5
OCT	344	21.2	4.9	0.9	0.5	3.1	58	3.6	0.0	0.0	2234.1	76.4	16.7
NOV	374	22.3	2.6	0.6	0.5	3.0	57	3.5	0.0	0.0	2238.6	94.6	18.2
DEC	362	22.3	1.5	0.4	0.5	3.1	58	3.6	12.4	0.0	2240.0	100.5	5.9
TOTAL		275.2	58.8	15.1	64.5	94.4		158.9	98.6	0.0			2.6
REASONABLE MAXIMUM INFLOW CONDITIONS													
JAN	385	23.7	1.5	0.4	0.5	3.1	58	3.6	17.1	0.0	2240.0	100.5	2.6
FEB	408	22.7	1.8	0.5	0.5	2.8	59	3.3	18.9	0.0	2240.0	100.5	0.0
MAR	455	28.0	3.3	0.8	0.5	3.1	58	3.6	14.4	0.0	2242.0	109.7	9.2
APR	471	28.1	5.2	1.4	0.5	3.0	59	3.5	13.4	0.0	2244.0	119.5	9.8
MAY	523	32.2	5.4	1.6	1.9	3.1	81	5.0	25.6	0.0	2244.0	119.5	0.0
JUN	476	28.4	6.6	1.9	3.8	3.0	114	6.8	19.7	0.0	2244.0	119.5	0.0
JUL	445	27.4	7.4	2.2	17.9	27.4	735	45.3	0.0	0.0	2239.8	99.4	-20.1
AUG	420	25.9	7.5	1.9	15.7	25.9	675	41.6	0.0	0.0	2235.5	81.8	-17.6
SEP	398	23.7	5.8	1.3	4.1	23.7	466	27.8	0.0	0.0	2234.1	76.4	-5.4
OCT	394	24.3	4.3	0.9	0.5	3.1	58	3.6	0.0	0.0	2239.0	96.2	19.8
NOV	428	25.5	2.4	0.6	0.5	3.0	59	3.5	17.1	0.0	2240.0	100.5	4.3
DEC	414	25.5	1.4	0.4	0.5	3.1	58	3.6	21.5	0.0	2240.0	100.5	0.0
TOTAL		315.4	52.6	13.9	46.9	104.3		151.2	147.7	0.0			2.6

DAVIS CREEK RESERVOIR OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIREMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	CONT	RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	0	0.0	1.9	0.1	3	0.2	0.0	0.0	2049.0	9.5	-0.3
FEB	0	0.0	2.3	0.1	4	0.2	0.0	0.0	2048.4	9.2	-0.3
MAR	0	0.0	4.2	0.1	3	0.2	0.0	0.0	2047.8	8.9	-0.3
APR	96	5.7	6.6	0.2	5	0.3	0.0	0.0	2056.9	14.1	5.2
MAY	239	14.7	7.0	0.3	57	3.5	0.0	0.0	2070.2	25.0	10.9
JUN	240	14.3	8.5	0.5	127	7.6	0.0	0.0	2076.0	31.2	6.2
JUL	179	11.0	9.1	0.6	297	18.3	0.0	0.0	2068.4	23.3	-7.9
AUG	161	9.9	7.1	0.4	273	16.8	0.0	0.0	2059.6	16.0	-7.3
SEP	35	2.1	6.2	0.3	133	7.9	0.0	0.0	2049.7	9.9	-6.1
OCT	0	0.0	5.5	0.2	3	0.2	0.0	0.0	2048.9	9.5	-0.4
NOV	0	0.0	2.9	0.1	3	0.2	0.0	0.0	2048.3	9.2	-0.3
DEC	0	0.0	1.7	0.0	3	0.2	0.0	0.0	2047.9	9.0	-0.2
TOTAL		57.7	63.0	2.9		55.6	0.0	0.0			-0.8
MOST PROBABLE INFLOW CONDITIONS											
JAN	0	0.0	1.7	0.1	3	0.2	0.0	0.0	2048.9	9.5	-0.3
FEB	0	0.0	2.2	0.1	4	0.2	0.0	0.0	2048.3	9.2	-0.3
MAR	0	0.0	3.8	0.1	3	0.2	0.0	0.0	2047.7	8.9	-0.3
APR	50	3.0	6.1	0.2	3	0.2	0.0	0.0	2052.6	11.5	2.6
MAY	239	14.7	6.5	0.2	42	2.6	0.0	0.0	2068.5	23.4	11.9
JUN	240	14.3	7.9	0.4	99	6.1	0.0	0.0	2076.0	31.2	7.8
JUL	112	6.9	8.4	0.6	231	14.2	0.0	0.0	2068.4	23.3	-7.9
AUG	99	6.1	6.6	0.4	211	13.0	0.0	0.0	2059.6	16.0	-7.3
SEP	3	0.2	5.7	0.2	99	6.1	0.0	0.0	2049.7	9.9	-6.1
OCT	0	0.0	5.1	0.2	3	0.2	0.0	0.0	2048.9	9.5	-0.4
NOV	0	0.0	2.7	0.1	3	0.2	0.0	0.0	2048.3	9.2	-0.3
DEC	0	0.0	1.6	0.0	3	0.2	0.0	0.0	2047.9	9.0	-0.2
TOTAL		45.2	58.3	2.6		43.4	0.0	0.0			-0.8
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	0	0.0	1.6	0.0	3	0.2	0.0	0.0	2049.1	9.6	-0.2
FEB	0	0.0	2.0	0.1	4	0.2	0.0	0.0	2048.5	9.3	-0.3
MAR	0	0.0	3.6	0.1	3	0.2	0.0	0.0	2047.9	9.0	-0.3
APR	13	0.8	5.8	0.2	3	0.2	0.0	0.0	2048.7	9.4	0.4
MAY	239	14.7	6.2	0.2	32	2.0	0.0	0.0	2066.9	21.9	12.5
JUN	240	14.3	7.4	0.4	77	4.6	0.0	0.0	2076.0	31.2	9.3
JUL	52	3.2	7.9	0.5	172	10.6	0.0	0.0	2068.4	23.3	-7.9
AUG	39	2.4	6.2	0.3	156	9.6	0.0	0.0	2059.4	15.8	-7.5
SEP	0	0.0	5.4	0.2	97	5.8	0.0	0.0	2049.5	9.8	-6.0
OCT	0	0.0	4.8	0.1	3	0.2	0.0	0.0	2048.9	9.5	-0.3
NOV	0	0.0	2.5	0.1	3	0.2	0.0	0.0	2048.3	9.2	-0.3
DEC	0	0.0	1.5	0.0	3	0.2	0.0	0.0	2047.9	9.0	-0.2
TOTAL		35.4	54.9	2.2		34.0	0.0	0.0			-0.8

BONNY RESERVOIR OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION	RELEASE REQUIRMENT				RESERVOIR	REQUIREMENT	END OF MONTH		RESERVOIR
				CANAL	RIVER	TOTAL		SPILL	SHORTAGE	ELEV	CONT	CHANGE
	MEAN	1000		1000	1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS												
JAN	5	0.3	2.3	0.0	0.0	0.1	2	0.1	0.2	0.0	3638.0	0.0	0.0
FEB	5	0.3	3.1	0.0	0.0	0.1	2	0.1	0.2	0.0	3638.0	0.0	0.0
MAR	6	0.4	3.9	0.0	0.0	0.1	2	0.1	0.3	0.0	3638.0	0.0	0.0
APR	7	0.4	6.2	0.0	0.1	0.1	3	0.2	0.2	0.0	3638.0	0.0	0.0
MAY	8	0.5	7.8	0.0	0.4	0.1	8	0.5	0.0	0.0	3638.0	0.0	0.0
JUN	7	0.4	10.1	0.0	0.3	0.1	7	0.4	0.0	0.0	3638.0	0.0	0.0
JUL	3	0.2	11.6	0.0	0.1	0.1	3	0.2	0.0	0.0	3638.0	0.0	0.0
AUG	3	0.2	10.1	0.0	0.1	0.1	3	0.2	0.0	0.0	3638.0	0.0	0.0
SEP	3	0.2	8.5	0.0	0.1	0.1	3	0.2	0.0	0.0	3638.0	0.0	0.0
OCT	3	0.2	7.8	0.0	0.1	0.1	3	0.2	0.0	0.0	3638.0	0.0	0.0
NOV	5	0.3	3.9	0.0	0.0	0.1	2	0.1	0.2	0.0	3638.0	0.0	0.0
DEC	5	0.3	2.3	0.0	0.0	0.1	2	0.1	0.2	0.0	3638.0	0.0	0.0
TOTAL		3.7	77.6	0.0	1.2	1.2		2.4	1.3	0.0			0.0
MOST PROBABLE INFLOW CONDITIONS												
JAN	15	0.9	2.1	0.0	0.0	0.1	2	0.1	0.8	0.0	3638.0	0.0	0.0
FEB	16	0.9	2.8	0.0	0.0	0.1	2	0.1	0.8	0.0	3638.0	0.0	0.0
MAR	15	0.9	3.5	0.0	0.0	0.1	2	0.1	0.8	0.0	3638.0	0.0	0.0
APR	18	1.1	5.5	0.0	0.1	0.1	3	0.2	0.9	0.0	3638.0	0.0	0.0
MAY	19	1.2	6.9	0.0	0.3	0.1	6	0.4	0.8	0.0	3638.0	0.0	0.0
JUN	18	1.1	8.9	0.0	0.3	0.1	6	0.4	0.7	0.0	3638.0	0.0	0.0
JUL	10	0.6	10.4	0.0	0.5	0.1	10	0.6	0.0	0.0	3638.0	0.0	0.0
AUG	6	0.4	9.0	0.0	0.3	0.1	6	0.4	0.0	0.0	3638.0	0.0	0.0
SEP	3	0.2	7.6	0.0	0.1	0.1	3	0.2	0.0	0.0	3638.0	0.0	0.0
OCT	6	0.4	6.9	0.0	0.3	0.1	6	0.4	0.0	0.0	3638.0	0.0	0.0
NOV	12	0.7	3.5	0.0	0.0	0.1	2	0.1	0.6	0.0	3638.0	0.0	0.0
DEC	13	0.8	2.1	0.0	0.0	0.1	2	0.1	0.7	0.0	3638.0	0.0	0.0
TOTAL		9.2	69.2	0.0	1.9	1.2		3.1	6.1	0.0			0.0
REASONABLE MAXIMUM INFLOW CONDITIONS												
JAN	24	1.5	1.8	0.0	0.0	0.1	2	0.1	1.4	0.0	3638.0	0.0	0.0
FEB	27	1.5	2.5	0.0	0.0	0.1	2	0.1	1.4	0.0	3638.0	0.0	0.0
MAR	28	1.7	3.1	0.0	0.0	0.1	2	0.1	1.6	0.0	3638.0	0.0	0.0
APR	34	2.0	4.9	0.0	0.0	0.1	2	0.1	1.9	0.0	3638.0	0.0	0.0
MAY	36	2.2	6.1	0.0	0.1	0.1	3	0.2	2.0	0.0	3638.0	0.0	0.0
JUN	34	2.0	8.0	0.0	0.1	0.1	3	0.2	1.8	0.0	3638.0	0.0	0.0
JUL	16	1.0	9.2	0.0	0.1	0.1	3	0.2	0.8	0.0	3638.0	0.0	0.0
AUG	11	0.7	8.0	0.0	0.1	0.1	3	0.2	0.5	0.0	3638.0	0.0	0.0
SEP	7	0.4	6.8	0.0	0.1	0.1	3	0.2	0.2	0.0	3638.0	0.0	0.0
OCT	13	0.8	6.1	0.0	0.0	0.1	2	0.1	0.7	0.0	3638.0	0.0	0.0
NOV	22	1.3	3.1	0.0	0.0	0.1	2	0.1	1.2	0.0	3638.0	0.0	0.0
DEC	23	1.4	1.8	0.0	0.0	0.1	2	0.1	1.3	0.0	3638.0	0.0	0.0
TOTAL		16.5	61.4	0.0	0.5	1.2		1.7	14.8	0.0			0.0

ENDERS RESERVOIR OPERATION ESTIMATES - 2015

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	6	0.4	1.4	0.1	3	0.2	0.0	0.0	3083.0	9.3	0.1
FEB	5	0.3	1.6	0.1	4	0.2	0.0	0.0	3083.0	9.3	0.0
MAR	6	0.4	2.7	0.1	3	0.2	0.0	0.0	3083.1	9.4	0.1
APR	7	0.4	5.8	0.2	3	0.2	0.0	0.0	3083.1	9.4	0.0
MAY	6	0.4	7.4	0.3	3	0.2	0.0	0.0	3083.0	9.3	-0.1
JUN	7	0.4	9.4	0.4	176	10.5	0.0	10.1	3082.4	8.9	-0.4
JUL	6	0.4	10.3	0.4	532	32.8	0.0	32.6	3082.0	8.7	-0.2
AUG	6	0.4	8.8	0.3	505	31.1	0.0	30.9	3081.8	8.6	-0.1
SEP	5	0.3	6.5	0.2	75	4.5	0.0	4.3	3081.7	8.5	-0.1
OCT	5	0.3	4.1	0.1	3	0.2	0.0	0.0	3081.7	8.5	0.0
NOV	5	0.3	3.0	0.1	3	0.2	0.0	0.0	3081.7	8.5	0.0
DEC	5	0.3	1.7	0.1	3	0.2	0.0	0.0	3081.7	8.5	0.0
TOTAL		4.3	62.7	2.4		80.5	0.0	77.9			-0.7
MOST PROBABLE INFLOW CONDITIONS											
JAN	11	0.7	1.3	0.0	3	0.2	0.0	0.0	3083.6	9.7	0.5
FEB	11	0.6	1.4	0.1	3	0.2	0.0	0.0	3084.0	10.0	0.3
MAR	11	0.7	2.5	0.1	3	0.2	0.0	0.0	3084.6	10.4	0.4
APR	12	0.7	5.4	0.2	3	0.2	0.0	0.0	3085.0	10.7	0.3
MAY	11	0.7	6.8	0.3	3	0.2	0.0	0.0	3085.3	10.9	0.2
JUN	12	0.7	8.7	0.4	114	7.0	0.0	4.7	3082.4	8.9	-2.0
JUL	11	0.7	9.5	0.3	487	30.0	0.0	29.6	3082.4	8.9	0.0
AUG	11	0.7	8.0	0.3	388	23.9	0.0	23.5	3082.4	8.9	0.0
SEP	10	0.6	5.9	0.2	36	2.2	0.0	1.8	3082.4	8.9	0.0
OCT	11	0.7	3.8	0.1	3	0.2	0.0	0.0	3083.0	9.3	0.4
NOV	12	0.7	2.8	0.1	3	0.2	0.0	0.0	3083.6	9.7	0.4
DEC	11	0.7	1.6	0.1	3	0.2	0.0	0.0	3084.2	10.1	0.4
TOTAL		8.2	57.7	2.2		64.7	0.0	59.6			0.9
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	24	1.5	1.2	0.0	3	0.2	0.0	0.0	3084.7	10.5	1.3
FEB	25	1.4	1.3	0.1	4	0.2	0.0	0.0	3086.2	11.6	1.1
MAR	23	1.4	2.3	0.1	3	0.2	0.0	0.0	3087.7	12.7	1.1
APR	23	1.4	4.9	0.2	3	0.2	0.0	0.0	3089.0	13.7	1.0
MAY	24	1.5	6.2	0.3	3	0.2	0.0	0.0	3090.2	14.7	1.0
JUN	25	1.5	7.9	0.4	40	2.4	0.0	0.0	3088.6	13.4	-1.3
JUL	28	1.7	8.6	0.4	297	18.3	0.0	12.5	3082.4	8.9	-4.5
AUG	24	1.5	7.4	0.3	229	14.1	0.0	12.9	3082.4	8.9	0.0
SEP	23	1.4	5.4	0.2	3	0.2	0.0	0.0	3083.8	9.9	1.0
OCT	23	1.4	3.5	0.1	3	0.2	0.0	0.0	3085.4	11.0	1.1
NOV	23	1.4	2.5	0.1	3	0.2	0.0	0.0	3087.0	12.1	1.1
DEC	23	1.4	1.4	0.1	3	0.2	0.0	0.0	3088.3	13.2	1.1
TOTAL		17.5	52.6	2.3		36.6	0.0	25.4			4.0

SWANSON LAKE OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION	RELEASE REQUIRMENT CANAL	RIVER	TOTAL		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	CONT	RESERVOIR CHANGE
	MEAN	1000		1000	1000	1000	MEAN	1000	1000	1000		1000
MONTH	CFS	AF	INCHES	AF	AF	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS													
JAN	19	1.2	1.5	0.2	0.0	0.1	2	0.1	0.0	0.0	2729.3	28.6	0.9
FEB	31	1.7	1.6	0.2	0.0	0.1	2	0.1	0.0	0.0	2729.9	30.0	1.4
MAR	34	2.1	2.9	0.4	0.0	0.1	2	0.1	0.0	0.0	2730.5	31.6	1.6
APR	37	2.2	6.4	1.0	0.0	0.1	2	0.1	0.0	0.0	2730.9	32.7	1.1
MAY	34	2.1	7.6	1.2	0.1	0.1	3	0.2	0.0	0.0	2731.2	33.4	0.8
JUN	27	1.6	9.7	1.5	4.4	0.9	89	5.3	0.0	0.0	2729.1	28.2	-5.2
JUL	15	0.9	9.8	1.4	16.3	6.9	377	23.2	0.0	14.5	2725.0	19.0	-9.2
AUG	8	0.5	9.8	1.1	13.6	6.3	323	19.9	0.0	19.8	2724.7	18.3	-0.7
SEP	3	0.2	7.6	0.9	2.0	2.1	69	4.1	0.0	4.0	2724.3	17.5	-0.8
OCT	5	0.3	4.7	0.5	0.0	0.1	2	0.1	0.0	0.0	2724.1	17.2	-0.3
NOV	13	0.8	3.2	0.4	0.0	0.1	2	0.1	0.0	0.0	2724.3	17.5	0.3
DEC	16	1.0	1.7	0.2	0.0	0.1	2	0.1	0.0	0.0	2724.6	18.2	0.7
TOTAL		14.6	66.5	9.0	36.4	17.0		53.4	0.0	38.3			-9.4
MOST PROBABLE INFLOW CONDITIONS													
JAN	37	2.3	1.3	0.2	0.0	0.1	2	0.1	0.0	0.0	2729.7	29.7	2.0
FEB	58	3.2	1.5	0.2	0.0	0.1	2	0.1	0.0	0.0	2730.9	32.6	2.9
MAR	63	3.9	2.7	0.4	0.0	0.1	2	0.1	0.0	0.0	2732.1	36.0	3.4
APR	69	4.1	5.8	0.9	0.0	0.1	2	0.1	0.0	0.0	2733.2	39.1	3.1
MAY	63	3.9	6.9	1.1	0.1	0.1	3	0.2	0.0	0.0	2734.2	41.7	2.7
JUN	50	3.0	8.9	1.5	3.8	0.1	63	3.9	0.0	0.0	2733.3	39.3	-2.4
JUL	28	1.7	8.9	1.5	14.2	4.2	299	18.4	0.0	0.0	2726.0	21.1	-18.2
AUG	15	0.9	9.0	1.1	11.7	4.1	256	15.8	0.0	13.9	2725.0	19.0	-2.1
SEP	7	0.4	7.0	0.8	1.7	0.1	29	1.8	0.0	1.7	2724.7	18.5	-0.5
OCT	11	0.7	4.3	0.5	0.0	0.1	2	0.1	0.0	0.0	2724.8	18.6	0.1
NOV	27	1.6	2.9	0.3	0.0	0.1	2	0.1	0.0	0.0	2725.4	19.8	1.2
DEC	29	1.8	1.6	0.2	0.0	0.1	2	0.1	0.0	0.0	2726.1	21.3	1.5
TOTAL		27.5	60.8	8.7	31.5	9.3		40.8	0.0	15.6			-6.3
REASONABLE MAXIMUM INFLOW CONDITIONS													
JAN	70	4.3	1.2	0.2	0.0	0.1	2	0.1	0.0	0.0	2730.5	31.7	4.0
FEB	108	6.0	1.3	0.2	0.0	0.1	2	0.1	0.0	0.0	2732.6	37.4	5.7
MAR	122	7.5	2.4	0.4	0.0	0.1	2	0.1	0.0	0.0	2735.1	44.4	7.0
APR	134	8.0	5.3	0.9	0.0	0.1	2	0.1	0.0	0.0	2737.3	51.4	7.0
MAY	120	7.4	6.3	1.2	0.1	0.1	3	0.2	0.0	0.0	2739.1	57.4	6.1
JUN	96	5.7	8.2	1.6	3.1	0.1	54	3.2	0.0	0.0	2739.4	58.3	0.9
JUL	52	3.2	8.2	1.6	11.6	1.2	208	12.8	0.0	0.0	2735.9	47.1	-11.2
AUG	28	1.7	8.3	1.5	9.6	1.7	183	11.3	0.0	0.0	2732.1	36.0	-11.1
SEP	13	0.8	6.3	1.0	1.4	0.1	25	1.5	0.0	0.0	2731.5	34.3	-1.7
OCT	21	1.3	3.9	0.6	0.0	0.1	2	0.1	0.0	0.0	2731.7	34.9	0.6
NOV	50	3.0	2.7	0.4	0.0	0.1	2	0.1	0.0	0.0	2732.6	37.4	2.5
DEC	57	3.5	1.4	0.2	0.0	0.1	2	0.1	0.0	0.0	2733.8	40.6	3.2
TOTAL		52.4	55.5	9.8	25.8	3.9		29.7	0.0	0.0			13.0

HUGH BUTLER LAKE OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIRMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	END OF MONTH CONT	RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	10	0.6	1.3	0.1	3	0.2	0.0	0.0	2557.4	8.6	0.4
FEB	13	0.7	1.4	0.1	4	0.2	0.0	0.0	2558.0	9.0	0.4
MAR	16	1.0	2.6	0.1	3	0.2	0.0	0.0	2558.9	9.7	0.7
APR	15	0.9	7.2	0.3	3	0.2	0.0	0.0	2559.5	10.1	0.4
MAY	16	1.0	8.5	0.4	3	0.2	0.0	0.0	2560.0	10.5	0.4
JUN	17	1.0	10.4	0.5	29	1.7	0.0	1.5	2560.4	10.8	0.3
JUL	13	0.8	11.5	0.5	73	4.5	0.0	4.3	2560.5	10.9	0.1
AUG	13	0.8	10.4	0.5	62	3.8	0.0	3.6	2560.6	11.0	0.1
SEP	8	0.5	7.9	0.4	15	0.9	0.0	0.7	2560.5	10.9	-0.1
OCT	10	0.6	5.0	0.2	3	0.2	0.0	0.0	2560.7	11.1	0.2
NOV	10	0.6	3.0	0.1	3	0.2	0.0	0.0	2561.1	11.4	0.3
DEC	10	0.6	1.6	0.1	3	0.2	0.0	0.0	2561.5	11.7	0.3
TOTAL		9.1	70.8	3.3		12.5	0.0	10.1			3.5
MOST PROBABLE INFLOW CONDITIONS											
JAN	15	0.9	1.1	0.0	3	0.2	0.0	0.0	2557.9	8.9	0.7
FEB	20	1.1	1.3	0.1	3	0.2	0.0	0.0	2559.0	9.7	0.8
MAR	23	1.4	2.3	0.1	3	0.2	0.0	0.0	2560.4	10.8	1.1
APR	22	1.3	6.4	0.3	3	0.2	0.0	0.0	2561.4	11.6	0.8
MAY	23	1.4	7.5	0.4	3	0.2	0.0	0.0	2562.4	12.4	0.8
JUN	23	1.4	9.2	0.5	23	1.4	0.0	0.0	2561.8	11.9	-0.5
JUL	18	1.1	10.3	0.5	62	3.8	0.0	2.5	2560.9	11.2	-0.7
AUG	19	1.2	9.2	0.4	52	3.2	0.0	2.4	2560.9	11.2	0.0
SEP	12	0.7	7.0	0.3	13	0.8	0.0	0.4	2560.9	11.2	0.0
OCT	13	0.8	4.5	0.2	3	0.2	0.0	0.0	2561.4	11.6	0.4
NOV	15	0.9	2.7	0.1	3	0.2	0.0	0.0	2562.1	12.2	0.6
DEC	15	0.9	1.4	0.1	3	0.2	0.0	0.0	2562.8	12.8	0.6
TOTAL		13.1	62.9	3.0		10.8	0.0	5.3			4.6
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	21	1.3	1.0	0.0	3	0.2	0.0	0.0	2558.5	9.3	1.1
FEB	27	1.5	1.1	0.0	4	0.2	0.0	0.0	2560.2	10.6	1.3
MAR	32	2.0	2.1	0.1	3	0.2	0.0	0.0	2562.3	12.3	1.7
APR	32	1.9	5.9	0.3	3	0.2	0.0	0.0	2563.8	13.7	1.4
MAY	32	2.0	6.9	0.4	3	0.2	0.0	0.0	2565.3	15.1	1.4
JUN	34	2.0	8.4	0.5	18	1.1	0.0	0.0	2565.8	15.5	0.4
JUL	26	1.6	9.4	0.5	45	2.8	0.0	0.0	2564.0	13.8	-1.7
AUG	28	1.7	8.3	0.4	39	2.4	0.0	0.0	2562.7	12.7	-1.1
SEP	18	1.1	6.4	0.3	8	0.5	0.0	0.0	2563.1	13.0	0.3
OCT	21	1.3	4.1	0.2	3	0.2	0.0	0.0	2564.1	13.9	0.9
NOV	22	1.3	2.5	0.1	3	0.2	0.0	0.0	2565.1	14.9	1.0
DEC	21	1.3	1.3	0.1	3	0.2	0.0	0.0	2566.2	15.9	1.0
TOTAL		19.0	57.4	2.9		8.4	0.0	0.0			7.7

HARRY STRUNK LAKE OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIRMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	CONT	RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	114	7.0	1.3	0.2	2	0.1	10.2	0.0	2366.1	34.6	-3.4
FEB	122	6.8	1.4	0.1	2	0.1	6.6	0.0	2366.1	34.6	0.0
MAR	125	7.7	2.6	0.3	2	0.1	7.3	0.0	2366.1	34.6	0.0
APR	102	6.1	7.1	0.8	2	0.1	5.2	0.0	2366.1	34.6	0.0
MAY	49	3.0	8.2	0.9	2	0.1	2.0	0.0	2366.1	34.6	0.0
JUN	50	3.0	10.2	1.1	89	5.3	0.0	0.0	2364.1	31.2	-3.4
JUL	47	2.9	11.2	1.1	318	19.6	0.0	0.0	2349.8	13.4	-17.8
AUG	37	2.3	9.9	0.5	268	16.5	0.0	9.2	2343.0	7.9	-5.5
SEP	25	1.5	7.8	0.3	27	1.6	0.0	0.4	2343.0	7.9	0.0
OCT	31	1.9	5.0	0.2	2	0.1	0.0	0.0	2345.2	9.5	1.6
NOV	34	2.0	3.0	0.1	2	0.1	0.0	0.0	2347.4	11.3	1.8
DEC	32	2.0	1.6	0.1	2	0.1	0.0	0.0	2349.5	13.1	1.8
TOTAL		46.2	69.3	5.7		43.8	31.3	9.6			-24.9
MOST PROBABLE INFLOW CONDITIONS											
JAN	125	7.7	1.2	0.1	2	0.1	10.9	0.0	2366.1	34.6	-3.4
FEB	137	7.6	1.3	0.1	2	0.1	7.4	0.0	2366.1	34.6	0.0
MAR	140	8.6	2.3	0.3	2	0.1	8.2	0.0	2366.1	34.6	0.0
APR	117	7.0	6.4	0.7	2	0.1	6.2	0.0	2366.1	34.6	0.0
MAY	65	4.0	7.4	0.8	2	0.1	3.1	0.0	2366.1	34.6	0.0
JUN	67	4.0	9.3	1.0	71	4.4	0.0	0.0	2365.2	33.2	-1.4
JUL	62	3.8	10.2	1.0	265	16.3	0.0	0.0	2355.7	19.7	-13.5
AUG	49	3.0	9.0	0.6	222	13.7	0.0	0.0	2343.7	8.4	-11.3
SEP	32	1.9	7.1	0.3	19	1.2	0.0	0.0	2344.2	8.8	0.4
OCT	41	2.5	4.6	0.2	2	0.1	0.0	0.0	2347.1	11.0	2.2
NOV	44	2.6	2.8	0.1	2	0.1	0.0	0.0	2349.8	13.4	2.4
DEC	42	2.6	1.4	0.1	2	0.1	0.0	0.0	2352.2	15.8	2.4
TOTAL		55.3	63.0	5.3		36.4	35.8	0.0			-22.2
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	148	9.1	1.1	0.1	2	0.1	12.3	0.0	2366.1	34.6	-3.4
FEB	165	9.2	1.1	0.1	2	0.1	9.0	0.0	2366.1	34.6	0.0
MAR	170	10.5	2.1	0.2	2	0.1	10.2	0.0	2366.1	34.6	0.0
APR	148	8.8	5.8	0.6	2	0.1	8.1	0.0	2366.1	34.6	0.0
MAY	97	6.0	6.7	0.7	2	0.1	5.2	0.0	2366.1	34.6	0.0
JUN	99	5.9	8.3	0.9	47	2.8	2.2	0.0	2366.1	34.6	0.0
JUL	93	5.7	9.2	1.0	182	11.2	0.0	0.0	2362.1	28.1	-6.5
AUG	73	4.5	8.2	0.7	154	9.5	0.0	0.0	2357.9	22.4	-5.7
SEP	49	2.9	6.3	0.5	2	0.1	0.0	0.0	2359.7	24.7	2.3
OCT	60	3.7	4.1	0.3	2	0.1	0.0	0.0	2362.0	28.0	3.3
NOV	67	4.0	2.5	0.2	2	0.1	0.0	0.0	2364.4	31.7	3.7
DEC	63	3.9	1.3	0.1	2	0.1	0.8	0.0	2366.1	34.6	2.9
TOTAL		74.2	56.7	5.4		24.4	47.8	0.0			-3.4

KEITH SEBELIUS LAKE OPERATION ESTIMATES - 2015

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	3	0.2	1.6	0.1	2	0.1	0.0	0.0	2288.0	9.7	0.0
FEB	4	0.2	1.9	0.1	2	0.1	0.0	0.0	2288.0	9.7	0.0
MAR	6	0.4	3.0	0.2	2	0.1	0.0	0.0	2288.1	9.8	0.1
APR	7	0.4	7.9	0.4	2	0.1	0.0	0.0	2288.0	9.7	-0.1
MAY	10	0.6	8.8	0.5	6	0.4	0.0	0.0	2287.7	9.4	-0.3
JUN	13	0.8	11.0	0.6	57	3.4	0.0	0.0	2283.7	6.2	-3.2
JUL	10	0.6	12.4	0.5	146	9.0	0.0	6.7	2280.4	4.0	-2.2
AUG	6	0.4	11.1	0.4	138	8.5	0.0	8.4	2280.2	3.9	-0.1
SEP	3	0.2	8.8	0.3	27	1.6	0.0	1.5	2279.8	3.7	-0.2
OCT	2	0.1	6.1	0.2	2	0.1	0.0	0.0	2279.5	3.5	-0.2
NOV	3	0.2	3.3	0.1	2	0.1	0.0	0.0	2279.5	3.5	0.0
DEC	2	0.1	1.7	0.1	2	0.1	0.0	0.0	2279.3	3.4	-0.1
TOTAL		4.2	77.6	3.5		23.6	0.0	16.6			-6.3
MOST PROBABLE INFLOW CONDITIONS											
JAN	5	0.3	1.4	0.1	2	0.1	0.0	0.0	2288.1	9.8	0.1
FEB	7	0.4	1.6	0.1	2	0.1	0.0	0.0	2288.3	10.0	0.2
MAR	11	0.7	2.6	0.1	2	0.1	0.0	0.0	2288.8	10.5	0.5
APR	12	0.7	6.9	0.4	2	0.1	0.0	0.0	2289.0	10.7	0.2
MAY	18	1.1	7.7	0.4	3	0.2	0.0	0.0	2289.5	11.2	0.5
JUN	23	1.4	9.7	0.6	45	2.8	0.0	0.0	2287.4	9.2	-2.0
JUL	16	1.0	10.9	0.6	138	8.5	0.0	2.9	2280.4	4.0	-5.2
AUG	15	0.9	9.7	0.3	112	6.9	0.0	6.3	2280.4	4.0	0.0
SEP	7	0.4	7.7	0.3	21	1.3	0.0	1.2	2280.4	4.0	0.0
OCT	3	0.2	5.3	0.2	2	0.1	0.0	0.0	2280.2	3.9	-0.1
NOV	5	0.3	2.9	0.1	2	0.1	0.0	0.0	2280.4	4.0	0.1
DEC	3	0.2	1.5	0.1	2	0.1	0.0	0.0	2280.4	4.0	0.0
TOTAL		7.6	67.9	3.3		20.4	0.0	10.4			-5.7
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	10	0.6	1.2	0.1	2	0.1	0.0	0.0	2288.4	10.1	0.4
FEB	14	0.8	1.5	0.1	2	0.1	0.0	0.0	2289.0	10.7	0.6
MAR	23	1.4	2.4	0.1	2	0.1	0.0	0.0	2290.2	11.9	1.2
APR	25	1.5	6.2	0.4	2	0.1	0.0	0.0	2291.1	12.9	1.0
MAY	37	2.3	6.8	0.5	3	0.2	0.0	0.0	2292.4	14.5	1.6
JUN	49	2.9	8.6	0.6	27	1.6	0.0	0.0	2293.0	15.2	0.7
JUL	34	2.1	9.7	0.7	71	4.4	0.0	0.0	2290.5	12.2	-3.0
AUG	29	1.8	8.7	0.6	68	4.2	0.0	0.0	2287.4	9.2	-3.0
SEP	15	0.9	6.8	0.4	15	0.9	0.0	0.0	2287.0	8.8	-0.4
OCT	6	0.4	4.7	0.2	2	0.1	0.0	0.0	2287.1	8.9	0.1
NOV	10	0.6	2.6	0.1	2	0.1	0.0	0.0	2287.6	9.3	0.4
DEC	8	0.5	1.3	0.1	2	0.1	0.0	0.0	2287.9	9.6	0.3
TOTAL		15.8	60.5	3.9		12.0	0.0	0.0			-0.1

HARLAN COUNTY LAKE OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIRMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	MONTH CONT	RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	39	2.4	1.0	0.7	0	0.0	0.0	0.0	1930.9	150.5	1.7
FEB	61	3.4	1.1	0.8	0	0.0	0.0	0.0	1931.2	153.1	2.6
MAR	83	5.1	2.0	1.4	0	0.0	0.0	0.0	1931.7	156.8	3.7
APR	72	4.3	4.6	3.5	0	0.0	0.0	0.0	1931.7	157.6	0.8
MAY	89	5.5	5.6	4.2	0	0.0	0.0	0.0	1931.9	158.9	1.3
JUN	75	4.5	6.7	5.1	357	11.8	0.0	0.0	1930.5	146.5	-12.4
JUL	76	4.7	7.6	5.4	799	42.7	0.0	15.0	1927.0	118.1	-28.4
AUG	62	3.8	6.7	4.1	554	34.1	0.0	34.1	1926.9	117.8	-0.3
SEP	30	1.8	5.3	3.2	54	3.2	0.0	3.2	1926.8	116.4	-1.4
OCT	28	1.7	3.6	2.2	0	0.0	0.0	0.0	1926.6	115.9	-0.5
NOV	39	2.3	2.2	1.4	0	0.0	0.0	0.0	1926.8	116.8	0.9
DEC	36	2.2	1.4	0.9	0	0.0	0.0	0.0	1927.0	118.1	1.3
TOTAL		41.7	47.8	32.9		91.8	0.0	52.3			-30.7
MOST PROBABLE INFLOW CONDITIONS											
JAN	110	6.8	0.9	0.6	0	0.0	0.0	0.0	1931.5	155.0	6.2
FEB	174	9.7	1.0	0.7	0	0.0	0.0	0.0	1932.4	164.0	9.0
MAR	234	14.4	1.7	1.3	0	0.0	0.0	0.0	1933.9	177.1	13.1
APR	201	12.0	4.0	3.2	0	0.0	0.0	0.0	1934.7	185.9	8.8
MAY	255	15.7	4.9	4.1	0	0.0	0.0	0.0	1935.9	197.5	11.6
JUN	211	12.6	5.8	5.0	73	4.5	0.0	0.0	1936.1	200.6	3.1
JUL	213	13.1	6.6	5.7	641	39.5	0.0	0.0	1932.9	168.5	-32.1
AUG	172	10.6	5.8	4.5	450	27.7	0.0	0.0	1930.5	146.9	-21.6
SEP	86	5.1	4.6	3.3	32	2.0	0.0	0.0	1930.5	146.7	-0.2
OCT	80	4.9	3.1	2.3	0	0.0	0.0	0.0	1930.8	149.3	2.6
NOV	107	6.4	2.0	1.4	0	0.0	0.0	0.0	1931.4	154.3	5.0
DEC	106	6.5	1.3	0.9	0	0.0	0.0	0.0	1932.0	159.9	5.6
TOTAL		117.8	41.7	33.0		73.7	0.0	0.0			11.1
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	256	15.8	0.8	0.6	0	0.0	0.0	0.0	1932.4	164.0	15.2
FEB	403	22.4	0.9	0.7	0	0.0	0.0	0.0	1934.7	185.7	21.7
MAR	541	33.3	1.5	1.2	0	0.0	0.0	0.0	1937.8	217.8	32.1
APR	468	27.9	3.5	3.2	0	0.0	0.0	0.0	1939.9	242.5	24.7
MAY	589	36.3	4.3	4.1	0	0.0	0.0	0.0	1942.6	274.7	32.2
JUN	491	29.3	5.1	5.3	37	2.2	0.0	0.0	1944.3	296.5	21.8
JUL	497	30.6	5.8	6.1	157	9.7	0.0	0.0	1945.5	311.3	14.8
AUG	399	24.6	5.1	5.6	157	9.7	6.5	0.0	1945.7	314.1	2.8
SEP	196	11.7	4.0	4.5	20	1.2	6.0	0.0	1945.7	314.1	0.0
OCT	187	11.5	2.7	3.0	0	0.0	8.5	0.0	1945.7	314.1	0.0
NOV	248	14.8	1.7	1.9	0	0.0	12.9	0.0	1945.7	314.1	0.0
DEC	243	15.0	1.1	1.2	0	0.0	13.8	0.0	1945.7	314.1	0.0
TOTAL		273.2	36.5	37.4		22.8	47.7	0.0			165.3

LOVEWELL RESERVOIR OPERATION ESTIMATES - 2015

MONTH	WHITE ROCK CREEK INFLOW 1000 AF	COURTLAND CANAL INFLOW 1000 AF	TOTAL INFLOW MEAN CFS	TOTAL INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS													
JAN	0.4	1.9	37	2.3	0.8	0.2	0	0.0	0.0	0.0	1581.2	31.7	2.1
FEB	0.6	1.3	34	1.9	1.0	0.2	0	0.0	0.0	0.0	1581.8	33.4	1.7
MAR	1.3	3.3	75	4.6	1.8	0.4	0	0.0	0.0	0.0	1583.2	37.6	4.2
APR	1.2	2.3	59	3.5	3.7	1.0	0	0.0	0.0	0.0	1584.0	40.1	2.5
MAY	1.5	2.5	65	4.0	4.8	1.3	15	0.9	0.0	0.0	1584.6	41.9	1.8
JUN	1.7	0.0	29	1.7	6.2	1.7	168	10.0	0.0	0.0	1581.3	31.9	-10.0
JUL	1.1	0.0	18	1.1	6.7	1.6	505	31.1	0.0	11.4	1571.7	11.7	-20.2
AUG	0.2	0.0	3	0.2	5.6	0.7	347	21.4	0.0	21.4	1571.4	11.2	-0.5
SEP	0.9	0.0	15	0.9	4.2	0.5	47	2.8	0.0	2.8	1571.7	11.6	0.4
OCT	0.6	1.9	41	2.5	2.8	0.4	0	0.0	0.0	0.0	1573.0	13.7	2.1
NOV	0.5	2.5	50	3.0	2.1	0.3	0	0.0	0.0	0.0	1574.5	16.4	2.7
DEC	0.3	2.6	47	2.9	1.0	0.2	0	0.0	0.0	0.0	1575.9	19.1	2.7
TOTAL	10.3	18.3		28.6	40.7	8.5		66.2	0.0	35.6			-10.5
MOST PROBABLE INFLOW CONDITIONS													
JAN	0.9	1.4	37	2.3	0.7	0.2	0	0.0	0.0	0.0	1581.2	31.7	2.1
FEB	1.3	0.4	31	1.7	0.9	0.2	0	0.0	0.0	0.0	1581.7	33.2	1.5
MAR	2.9	0.0	47	2.9	1.6	0.4	0	0.0	0.0	0.0	1582.6	35.7	2.5
APR	2.8	0.0	47	2.8	3.2	0.8	0	0.0	0.0	0.0	1583.2	37.7	2.0
MAY	3.4	2.6	97	6.0	4.1	1.0	13	0.8	0.0	0.0	1584.6	41.9	4.2
JUN	3.6	5.7	156	9.3	5.2	1.4	128	7.9	0.0	0.0	1584.6	41.9	0.0
JUL	2.5	8.0	170	10.5	5.8	1.6	404	24.9	0.0	0.0	1579.0	25.9	-16.0
AUG	0.2	3.7	63	3.9	4.7	1.0	278	17.1	0.0	0.0	1571.7	11.7	-14.2
SEP	1.9	0.7	44	2.6	3.6	0.4	36	2.2	0.0	0.0	1571.7	11.7	0.0
OCT	1.3	4.7	97	6.0	2.4	0.3	0	0.0	0.0	0.0	1575.1	17.4	5.7
NOV	1.1	4.1	87	5.2	1.8	0.3	0	0.0	0.0	0.0	1577.4	22.3	4.9
DEC	0.8	4.6	88	5.4	0.9	0.2	0	0.0	0.0	0.0	1579.6	27.5	5.2
TOTAL	22.7	35.9		58.6	34.9	7.8		52.9	0.0	0.0			-2.1
REASONABLE MAXIMUM INFLOW CONDITIONS													
JAN	2.1	0.0	34	2.1	0.6	0.1	0	0.0	0.0	0.0	1581.1	31.6	2.0
FEB	3.2	0.0	58	3.2	0.8	0.2	0	0.0	0.0	0.0	1582.2	34.6	3.0
MAR	7.3	0.0	119	7.3	1.4	0.3	0	0.0	5.9	0.0	1582.6	35.7	1.1
APR	6.7	0.0	112	6.7	2.8	0.7	0	0.0	6.0	0.0	1582.6	35.7	0.0
MAY	8.3	0.0	135	8.3	3.4	0.8	8	0.5	7.0	0.0	1582.6	35.7	0.0
JUN	9.0	1.2	171	10.2	4.5	1.1	87	5.2	3.9	0.0	1582.6	35.7	0.0
JUL	6.1	1.2	119	7.3	5.0	1.2	265	16.3	0.0	0.0	1578.8	25.5	-10.2
AUG	0.6	1.2	29	1.8	4.1	0.8	179	11.0	0.0	0.0	1574.0	15.5	-10.0
SEP	4.8	0.6	91	5.4	3.1	0.4	23	1.4	0.0	0.0	1575.9	19.1	3.6
OCT	3.3	3.8	115	7.1	2.1	0.4	0	0.0	0.0	0.0	1578.9	25.8	6.7
NOV	2.8	0.0	47	2.8	1.5	0.3	0	0.0	0.0	0.0	1580.0	28.3	2.5
DEC	1.9	0.0	31	1.9	0.8	0.2	0	0.0	0.0	0.0	1580.6	30.0	1.7
TOTAL	56.1	8.0		64.1	30.1	6.5		34.4	22.8	0.0			0.4

KIRWIN RESERVOIR OPERATION ESTIMATES - 2015

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	5	0.3	1.3	0.2	0	0.0	0.0	0.0	1715.2	41.4	0.1
FEB	7	0.4	1.6	0.3	0	0.0	0.0	0.0	1715.2	41.5	0.1
MAR	13	0.8	2.8	0.5	0	0.0	0.0	0.0	1715.3	41.8	0.3
APR	13	0.8	6.4	1.2	0	0.0	0.0	0.0	1715.2	41.4	-0.4
MAY	23	1.4	7.8	1.4	8	0.5	0.0	0.0	1715.0	40.9	-0.5
JUN	18	1.1	9.5	1.7	87	5.2	0.0	0.0	1713.0	35.1	-5.8
JUL	16	1.0	10.9	1.7	193	11.9	0.0	0.0	1707.3	22.5	-12.6
AUG	11	0.7	9.6	1.0	179	11.0	0.0	0.6	1700.0	11.8	-10.7
SEP	7	0.4	7.4	0.5	8	0.5	0.0	0.5	1699.9	11.7	-0.1
OCT	5	0.3	5.1	0.4	0	0.0	0.0	0.0	1699.8	11.6	-0.1
NOV	5	0.3	3.0	0.2	0	0.0	0.0	0.0	1699.9	11.7	0.1
DEC	5	0.3	1.6	0.1	0	0.0	0.0	0.0	1700.1	11.9	0.2
TOTAL		7.8	67.0	9.2		29.1	0.0	1.1			-29.4
MOST PROBABLE INFLOW CONDITIONS											
JAN	16	1.0	1.1	0.2	0	0.0	0.0	0.0	1715.4	42.1	0.8
FEB	27	1.5	1.4	0.3	0	0.0	0.0	0.0	1715.8	43.3	1.2
MAR	44	2.7	2.5	0.5	0	0.0	0.0	0.0	1716.4	45.5	2.2
APR	49	2.9	5.7	1.1	0	0.0	0.0	0.0	1717.0	47.3	1.8
MAY	78	4.8	7.0	1.4	6	0.4	0.0	0.0	1717.9	50.3	3.0
JUN	64	3.8	8.7	1.8	71	4.4	0.0	0.0	1717.2	47.9	-2.4
JUL	60	3.7	9.7	1.9	193	11.9	0.0	0.0	1714.0	37.8	-10.1
AUG	42	2.6	8.7	1.5	149	9.2	0.0	0.0	1710.9	29.7	-8.1
SEP	22	1.3	6.7	0.9	8	0.5	0.0	0.0	1710.8	29.6	-0.1
OCT	16	1.0	4.6	0.6	0	0.0	0.0	0.0	1711.0	30.0	0.4
NOV	20	1.2	2.7	0.4	0	0.0	0.0	0.0	1711.3	30.8	0.8
DEC	15	0.9	1.4	0.2	0	0.0	0.0	0.0	1711.6	31.5	0.7
TOTAL		27.4	60.2	10.8		26.4	0.0	0.0			-9.8
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	52	3.2	1.0	0.2	0	0.0	0.0	0.0	1716.1	44.3	3.0
FEB	84	4.7	1.3	0.2	0	0.0	0.0	0.0	1717.4	48.8	4.5
MAR	136	8.4	2.3	0.4	0	0.0	0.0	0.0	1719.7	56.8	8.0
APR	151	9.0	5.1	1.1	0	0.0	0.0	0.0	1721.8	64.7	7.9
MAY	239	14.7	6.3	1.4	5	0.3	0.0	0.0	1724.9	77.7	13.0
JUN	196	11.7	7.8	2.0	59	3.5	0.0	0.0	1726.3	83.9	6.2
JUL	187	11.5	8.7	2.3	167	10.3	0.0	0.0	1726.1	82.8	-1.1
AUG	130	8.0	7.8	2.1	119	7.3	0.0	0.0	1725.8	81.4	-1.4
SEP	69	4.1	5.9	1.6	7	0.4	0.0	0.0	1726.2	83.5	2.1
OCT	44	2.7	4.1	1.1	0	0.0	0.0	0.0	1726.6	85.1	1.6
NOV	59	3.5	2.4	0.7	0	0.0	0.0	0.0	1727.2	87.9	2.8
DEC	47	2.9	1.3	0.4	0	0.0	0.0	0.0	1727.7	90.4	2.5
TOTAL		84.4	54.0	13.5		21.8	0.0	0.0			49.1

WEBSTER RESERVOIR OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIRMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH		RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	3	0.2	1.3	0.1	0	0.0	0.0	0.0	1870.9	18.8	0.1
FEB	5	0.3	1.6	0.2	0	0.0	0.0	0.0	1871.0	18.9	0.1
MAR	8	0.5	2.9	0.3	0	0.0	0.0	0.0	1871.1	19.1	0.2
APR	10	0.6	6.5	0.7	0	0.0	0.0	0.0	1871.0	19.0	-0.1
MAY	16	1.0	8.2	0.8	16	1.0	0.0	0.0	1870.5	18.2	-0.8
JUN	12	0.7	10.4	1.0	107	6.4	0.0	0.0	1866.2	11.5	-6.7
JUL	10	0.6	11.5	0.9	253	15.6	0.0	11.8	1863.0	7.4	-4.1
AUG	5	0.3	10.6	0.7	227	14.0	0.0	14.0	1862.7	7.0	-0.4
SEP	3	0.2	7.8	0.5	10	0.6	0.0	0.6	1862.4	6.7	-0.3
OCT	2	0.1	5.2	0.3	0	0.0	0.0	0.0	1862.2	6.5	-0.2
NOV	3	0.2	3.2	0.2	0	0.0	0.0	0.0	1862.2	6.5	0.0
DEC	3	0.2	1.7	0.1	0	0.0	0.0	0.0	1862.3	6.6	0.1
TOTAL		4.9	70.9	5.8		37.6	0.0	26.4			-12.1
MOST PROBABLE INFLOW CONDITIONS											
JAN	13	0.8	1.1	0.1	0	0.0	0.0	0.0	1871.3	19.4	0.7
FEB	18	1.0	1.4	0.1	0	0.0	0.0	0.0	1871.8	20.3	0.9
MAR	29	1.8	2.6	0.3	0	0.0	0.0	0.0	1872.6	21.8	1.5
APR	42	2.5	5.8	0.6	0	0.0	0.0	0.0	1873.6	23.7	1.9
MAY	62	3.8	7.4	0.8	13	0.8	0.0	0.0	1874.8	25.9	2.2
JUN	45	2.7	9.4	1.1	71	4.4	0.0	0.0	1873.3	23.1	-2.8
JUL	41	2.5	10.3	1.1	208	12.8	0.0	0.0	1866.4	11.7	-11.4
AUG	23	1.4	9.6	0.8	161	9.9	0.0	5.0	1863.0	7.4	-4.3
SEP	15	0.9	7.0	0.5	5	0.3	0.0	0.0	1863.1	7.5	0.1
OCT	8	0.5	4.6	0.3	0	0.0	0.0	0.0	1863.3	7.7	0.2
NOV	12	0.7	2.9	0.2	0	0.0	0.0	0.0	1863.7	8.2	0.5
DEC	10	0.6	1.5	0.1	0	0.0	0.0	0.0	1864.1	8.7	0.5
TOTAL		19.2	63.6	6.0		28.2	0.0	5.0			-10.0
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	49	3.0	1.0	0.1	0	0.0	0.0	0.0	1872.5	21.6	2.9
FEB	74	4.1	1.3	0.1	0	0.0	0.0	0.0	1874.6	25.6	4.0
MAR	115	7.1	2.4	0.3	0	0.0	0.0	0.0	1877.8	32.4	6.8
APR	164	9.8	5.3	0.7	0	0.0	0.0	0.0	1881.6	41.5	9.1
MAY	247	15.2	6.6	1.0	6	0.4	0.0	0.0	1886.4	55.3	13.8
JUN	178	10.6	8.5	1.5	42	2.5	0.0	0.0	1888.4	61.9	6.6
JUL	167	10.3	9.3	1.8	125	7.7	0.0	0.0	1888.7	62.7	0.8
AUG	99	6.1	8.6	1.7	101	6.2	0.0	0.0	1888.1	60.9	-1.8
SEP	59	3.5	6.3	1.2	2	0.1	0.0	0.0	1888.8	63.1	2.2
OCT	32	2.0	4.2	0.8	0	0.0	0.0	0.0	1889.1	64.3	1.2
NOV	45	2.7	2.6	0.5	0	0.0	0.0	0.0	1889.8	66.5	2.2
DEC	41	2.5	1.4	0.3	0	0.0	0.0	0.0	1890.4	68.7	2.2
TOTAL		76.9	57.5	10.0		16.9	0.0	0.0			50.0

WACONDA RESERVOIR OPERATION ESTIMATES - 2015

MONTH	INFLOW MEAN CFS	INFLOW 1000 AF	EVAPORATION INCHES	EVAPORATION 1000 AF	RELEASE REQUIRMENT MEAN CFS	RELEASE REQUIRMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	29	1.8	1.2	0.8	19	1.2	0.0	0.0	1453.2	190.9	-0.2
FEB	43	2.4	1.4	1.0	20	1.1	0.0	0.0	1453.3	191.2	0.3
MAR	83	5.1	2.8	1.9	18	1.1	0.0	0.0	1453.4	193.3	2.1
APR	86	5.1	6.8	4.6	17	1.0	0.0	0.0	1453.4	192.8	-0.5
MAY	99	6.1	8.4	5.6	18	1.1	0.0	0.0	1453.3	192.2	-0.6
JUN	86	5.1	10.5	7.0	45	2.7	0.0	0.0	1452.9	187.6	-4.6
JUL	138	8.5	12.4	8.1	156	9.6	0.0	0.0	1452.1	178.4	-9.2
AUG	50	3.1	10.6	6.7	125	7.7	0.0	0.0	1451.0	167.1	-11.3
SEP	39	2.3	8.5	5.1	35	2.1	0.0	0.0	1450.6	162.2	-4.9
OCT	29	1.8	5.5	3.2	21	1.3	0.0	0.0	1450.3	159.5	-2.7
NOV	34	2.0	2.9	1.7	27	1.6	0.0	0.0	1450.2	158.2	-1.3
DEC	28	1.7	1.4	0.8	24	1.5	0.0	0.0	1450.1	157.6	-0.6
TOTAL		45.0	72.4	46.5		32.0	0.0	0.0			-33.5
MOST PROBABLE INFLOW CONDITIONS											
JAN	88	5.4	1.0	0.7	10	0.6	0.0	0.0	1453.6	195.2	4.1
FEB	133	7.4	1.3	0.9	10	0.6	0.0	0.0	1454.1	201.1	5.9
MAR	250	15.4	2.4	1.7	10	0.6	7.1	0.0	1454.6	207.1	6.0
APR	260	15.5	6.1	4.3	8	0.5	10.7	0.0	1454.6	207.1	0.0
MAY	300	18.5	7.5	5.3	10	0.6	0.3	0.0	1455.6	219.4	12.3
JUN	257	15.3	9.4	6.9	32	2.0	6.4	0.0	1455.6	219.4	0.0
JUL	416	25.6	11.1	8.1	112	6.9	10.6	0.0	1455.6	219.4	0.0
AUG	153	9.4	9.5	7.0	89	5.5	0.0	0.0	1455.4	216.3	-3.1
SEP	116	6.9	7.6	5.6	21	1.3	0.0	0.0	1455.4	216.3	0.0
OCT	91	5.6	4.9	3.6	10	0.6	0.0	0.0	1455.5	217.7	1.4
NOV	102	6.1	2.6	1.9	15	0.9	25.9	0.0	1453.6	195.1	-22.6
DEC	81	5.0	1.3	0.9	13	0.8	3.3	0.0	1453.6	195.1	0.0
TOTAL		136.1	64.7	46.9		20.9	64.3	0.0			4.0
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	282	17.4	0.9	0.6	3	0.2	0.6	0.0	1454.6	207.1	16.0
FEB	422	23.5	1.2	0.8	4	0.2	22.5	0.0	1454.6	207.1	0.0
MAR	797	49.1	2.1	1.5	5	0.3	47.3	0.0	1454.6	207.1	0.0
APR	829	49.4	5.5	3.9	5	0.3	45.2	0.0	1454.6	207.1	0.0
MAY	959	59.1	6.8	4.8	5	0.3	41.7	0.0	1455.6	219.4	12.3
JUN	817	48.7	8.5	6.3	22	1.3	41.1	0.0	1455.6	219.4	0.0
JUL	1325	81.6	10.1	7.4	70	4.3	69.9	0.0	1455.6	219.4	0.0
AUG	487	30.0	8.7	6.4	57	3.5	20.1	0.0	1455.6	219.4	0.0
SEP	372	22.2	7.0	5.1	12	0.7	16.4	0.0	1455.6	219.4	0.0
OCT	289	17.8	4.5	3.3	6	0.4	14.1	0.0	1455.6	219.4	0.0
NOV	329	19.6	2.4	1.7	5	0.3	41.9	0.0	1453.6	195.1	-24.3
DEC	261	16.1	1.2	0.8	5	0.3	15.0	0.0	1453.6	195.1	0.0
TOTAL		434.5	58.9	42.6		12.1	375.8	0.0			4.0

CEDAR BLUFF RESERVOIR OPERATION ESTIMATES - 2015

	INFLOW		EVAPORATION		RELEASE REQUIREMENT		RESERVOIR SPILL	REQUIREMENT SHORTAGE	END OF MONTH ELEV	MONTH CONT	RESERVOIR CHANGE
	MEAN	1000		1000	MEAN	1000	1000	1000		1000	1000
MONTH	CFS	AF	INCHES	AF	CFS	AF	AF	AF	FT	AF	AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	3	0.2	1.6	0.3	0	0.0	0.0	0.0	2121.0	61.0	-0.1
FEB	4	0.2	1.7	0.3	0	0.0	0.0	0.0	2121.0	60.9	-0.1
MAR	6	0.4	3.1	0.6	0	0.0	0.0	0.0	2121.0	60.7	-0.2
APR	10	0.6	7.8	1.4	0	0.0	0.0	0.0	2120.7	59.9	-0.8
MAY	16	1.0	9.3	1.7	5	0.3	0.0	0.0	2120.4	58.9	-1.0
JUN	18	1.1	11.4	2.0	5	0.3	0.0	0.0	2120.0	57.7	-1.2
JUL	21	1.3	13.8	2.4	13	0.8	0.0	0.0	2119.3	55.8	-1.9
AUG	15	0.9	11.8	2.0	11	0.7	0.0	0.0	2118.7	54.0	-1.8
SEP	7	0.4	10.1	1.7	3	0.2	0.0	0.0	2118.2	52.5	-1.5
OCT	2	0.1	7.1	1.2	0	0.0	0.0	0.0	2117.8	51.4	-1.1
NOV	3	0.2	3.3	0.5	0	0.0	0.0	0.0	2117.7	51.1	-0.3
DEC	2	0.1	1.9	0.3	0	0.0	0.0	0.0	2117.6	50.9	-0.2
TOTAL		6.5	82.9	14.4		2.3	0.0	0.0			-10.2
MOST PROBABLE INFLOW CONDITIONS											
JAN	6	0.4	1.4	0.3	0	0.0	0.0	0.0	2121.1	61.2	0.1
FEB	9	0.5	1.6	0.3	0	0.0	0.0	0.0	2121.2	61.4	0.2
MAR	16	1.0	2.8	0.5	0	0.0	0.0	0.0	2121.3	61.9	0.5
APR	29	1.7	7.0	1.3	0	0.0	0.0	0.0	2121.5	62.3	0.4
MAY	41	2.5	8.3	1.5	3	0.2	0.0	0.0	2121.7	63.1	0.8
JUN	45	2.7	10.3	1.9	3	0.2	0.0	0.0	2121.9	63.7	0.6
JUL	57	3.5	12.3	2.3	11	0.7	0.0	0.0	2122.1	64.2	0.5
AUG	39	2.4	10.6	2.0	6	0.4	0.0	0.0	2122.1	64.2	0.0
SEP	15	0.9	9.0	1.7	2	0.1	0.0	0.0	2121.8	63.3	-0.9
OCT	6	0.4	6.4	1.2	0	0.0	0.0	0.0	2121.5	62.5	-0.8
NOV	8	0.5	3.0	0.6	0	0.0	0.0	0.0	2121.5	62.4	-0.1
DEC	6	0.4	1.7	0.3	0	0.0	0.0	0.0	2121.5	62.5	0.1
TOTAL		16.9	74.4	13.9		1.6	0.0	0.0			1.4
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	21	1.3	1.3	0.2	0	0.0	0.0	0.0	2121.4	62.2	1.1
FEB	29	1.6	1.4	0.3	0	0.0	0.0	0.0	2121.8	63.5	1.3
MAR	52	3.2	2.4	0.5	0	0.0	0.0	0.0	2122.7	66.2	2.7
APR	84	5.0	6.2	1.2	0	0.0	0.0	0.0	2123.8	70.0	3.8
MAY	122	7.5	7.4	1.5	3	0.2	0.0	0.0	2125.4	75.8	5.8
JUN	131	7.8	9.1	1.9	3	0.2	0.0	0.0	2127.0	81.5	5.7
JUL	169	10.4	11.0	2.5	3	0.2	0.0	0.0	2128.9	89.2	7.7
AUG	117	7.2	9.5	2.3	0	0.0	0.0	0.0	2130.1	94.1	4.9
SEP	47	2.8	8.1	2.0	0	0.0	0.0	0.0	2130.3	94.9	0.8
OCT	19	1.2	5.7	1.4	0	0.0	0.0	0.0	2130.2	94.7	-0.2
NOV	27	1.6	2.6	0.7	0	0.0	0.0	0.0	2130.4	95.6	0.9
DEC	19	1.2	1.5	0.4	0	0.0	0.0	0.0	2130.6	96.4	0.8
TOTAL		50.8	66.2	14.9		0.6	0.0	0.0			35.3

TABLE 5

FLOOD DAMAGES PREVENTED BY NEBRASKA-KANSAS PROJECTS RESERVOIRS

RESERVOIR	DURING FY 2014	PRIOR TO 2014	ACCUMULATED TOTAL
BONNY	$0	$2,868,900	$2,868,900
ENDERS	$0	$3,574,000	$3,574,000
SWANSON	$0	$29,650,000	$29,650,000
HUGH BUTLER	$0	$6,389,500	$6,389,500
HARRY STRUNK	$0	$16,136,900	$16,136,900
KEITH SEBELIUS	$0	$4,067,200	$4,067,200
HARLAN COUNTY	$0	$228,609,300	$228,609,300
LOVEWELL	$0	$152,771,200	$152,771,200
KIRWIN	$0	$95,021,700	$95,021,700
WEBSTER	$0	$113,083,300	$113,083,300
WACONDA	$0	$1,279,430,500	$1,279,430,500
CEDAR BLUFF	$0	$135,951,200	$135,951,200
TOTAL	$0	$2,067,553,700	$2,067,553,700

Estimates of damages prevented are received from the Army Corps of Engineer's Kansas City District Office. The Accumulated Totals date from 1951 through 2014. Cumulative totals are revised by the Corps of Engineers in some cases to reflect data not previously included in the reporting and may not match previous cumulative totals.

Construction Cost of storage dams was $208,954,130.
The reservoirs upstream of Harlan County Lake did not receive benefits for damages prevented from 1972 to 1993.

TABLE 6
WATER DIVERTED IN 2014 AND THE
ESTIMATED DIVERSION FOR 2015
(Units - Acre-Feet)

Irrigation District and Canal	2014 Irrigation Operations From	To	10-Year Average Diversion (2004-2013)	2014 Diversion	Estimated Diversion in 2015
Mirage Flats Irrigation District					
Mirage Flats Canal	7/9	8/29	9,127	10,126	10,000
Ainsworth Irrigation District					
Ainsworth Canal	5/18	9/18	72,683	71,454	72,000
Twin Loups Irrigation District					
Above Davis Creek	4/14	9/15	46,550	38,152	45,000
Below Davis Creek	5/9	9/16	41,712	41,418	42,000
Total Twin Loups Irrigation District			88,262	79,570	87,000
Frenchman Valley Irrigation District					
Culbertson Canal	Did not run.		4,983	0	8,000
H & RW Irrigation District					
Culbertson Extension Canal	Did not run.		0	0	0
Frenchman-Cambridge Irrigation District					
Meeker-Driftwood Canal	6/27	8/29	10,645	8,035	15,000
Red Willow Canal	Did not run.		925	0	0
Bartley Canal	Did not run.		4,299	0	3,000
Cambridge Canal	7/2	9/5	19,806	12,242	23,000
Total Frenchman-Cambridge Irrigation District			35,675	20,277	41,000
Almena Irrigation District					
Almena Canal	7/13	7/23	1,592	1,385	0
Bostwick Irrigation District in Nebraska					
Franklin Canal	Did not run.		11,873	0	14,000
Naponee Canal	Did not run.		602	0	500
Franklin Pump Canal	Did not run.		582	0	1,000
Superior Canal	Did not run.		5,198	0	6,000
Courtland Canal (Nebraska)	Did not run.		310	0	500
Total Bostwick Irrigation District in Nebraska			18,565	0	22,000
Kansas-Bostwick Irrigation District					
Courtland Canal above Lovewell	6/16	9/9	14,920	15,525	15,000
Courtland Canal below Lovewell	6/9	9/5	34,909	32,108	35,000
Total Kansas-Bostwick Irrigation District			49,829	47,633	50,000
Kirwin Irrigation District					
Kirwin Canal	6/25	8/28	11,004	16,812	16,000
Webster Irrigation District					
Osborne Canal	Did not run.		6,228	0	0
Glen Elder Irrigation District	5/5	8/30	4,765	6,901	5,000
TOTAL			302,713	254,158	311,000

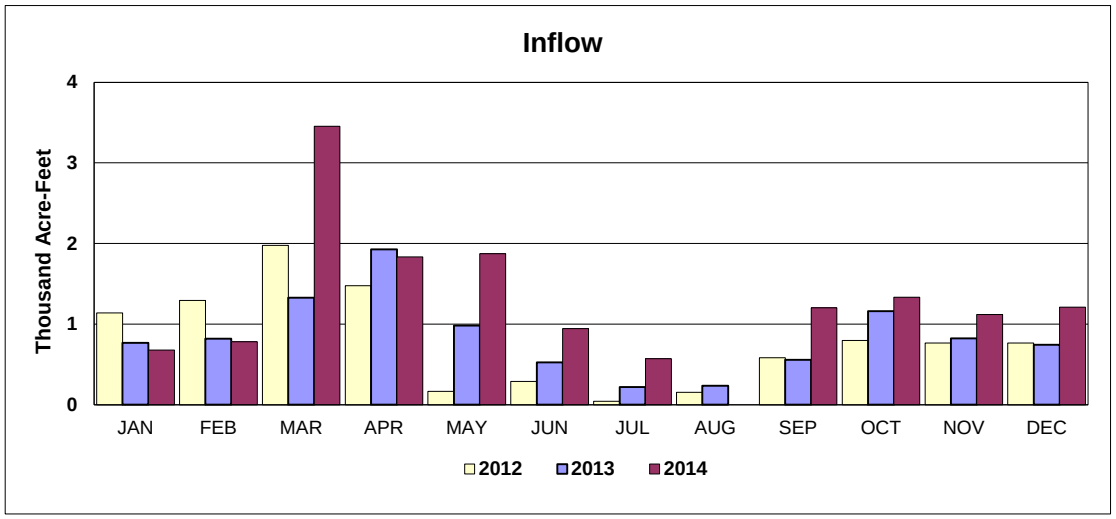
TABLE 7
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2014

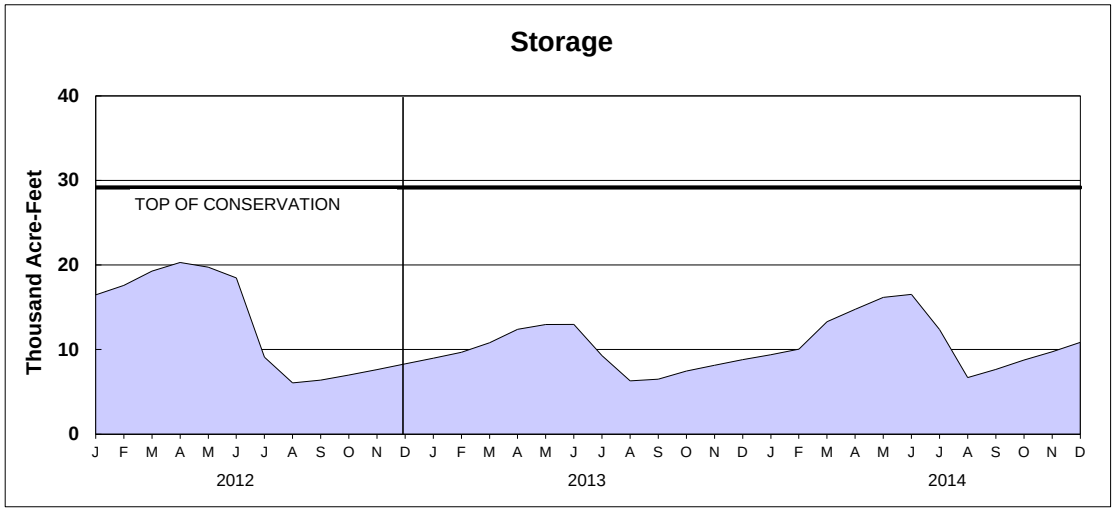
Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-13 AF	Storage 12-31-14 AF	Gain or Loss AF	Maximum Content AF	Storage Date	Minimum Content AF	Storage Date	Total Inflow AF	Percent Of Most Probable %
Box Butte	18.23	108	8,807	10,846	2,039	16,522	JUN 27	6,629	AUG 29	15,006	97
Merritt	24.15	118	60,831	61,100	269	68,191	JUN 9	40,537	AUG 22	190,509	103
Calamus	21.02	87	100,449	97,906	-2,543	121,304	JUN 30	79,960	OCT 16	249,858	91
Davis Creek	27.72	112	9,501	9,751	250	31,409	JUL 8	8,762	APR 15	51,779	113
Bonny	23.51	137	0	0	0	0	N/A	0	N/A	2,664	26
Enders	18.46	97	13,320	9,150	-4,170	13,666	MAR 9	8,829	OCT 16	6,319	72
Swanson	22.29	112	28,877	27,688	-1,189	31,255	JUN 30	22,673	OCT 15	33,083	116
Hugh Butler	19.42	99	6,961	8,141	1,180	8,141	DEC 31	6,892	JAN 7	9,588	71
Harry Strunk	25.40	123	20,382	37,984	17,602	38,004	DEC 30	19,690	AUG 24	65,044	175
Keith Sebelius	20.92	85	12,502	9,676	-2,826	13,191	JUN 11	9,504	DEC 1	4,076	50
Harlan County	18.53	81	124,522	148,842	24,320	178,030	JUL 2	124,221	JAN 27	92,209	74
Lovewell	29.34	107	22,495	29,620	7,125	36,539	JUN 16	21,126	AUG 9	48,535	73
Kirwin	18.68	79	50,011	41,266	-8,745	52,842	JUN 17	33,881	AUG 26	20,092	68
Webster	22.22	94	16,537	18,680	2,143	19,697	SEP 2	15,454	JUN 4	8,421	38
Waconda	21.78	85	187,122	191,097	3,975	206,663	JUL 1	186,897	JAN 6	65,510	43
Cedar Bluff	22.58	108	54,342	61,117	6,775	66,332	JUL 9	51,377	JUN 4	20,137	121

EXHIBIT 1A

BOX BUTTE RESERVOIR

ACTUAL OPERATION





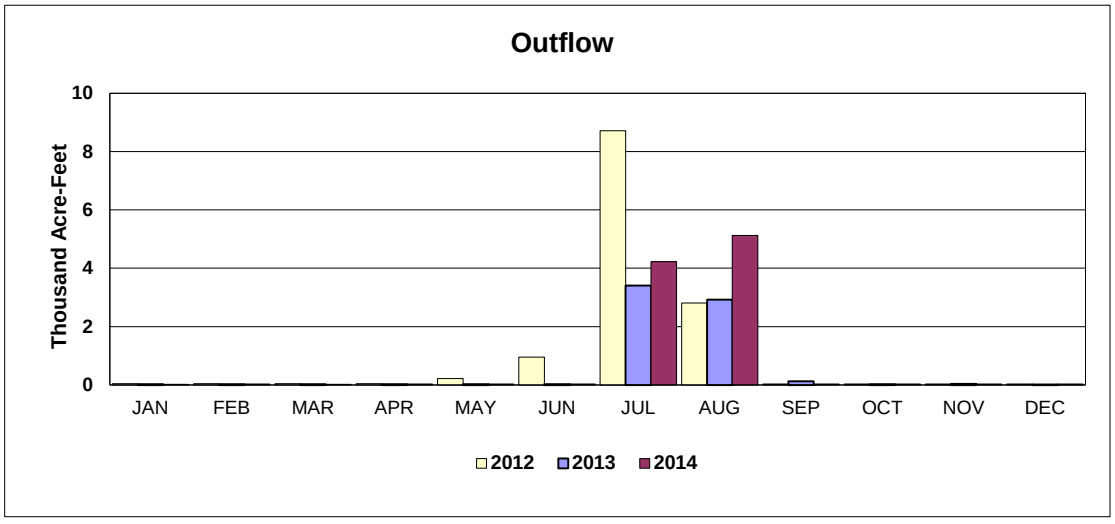
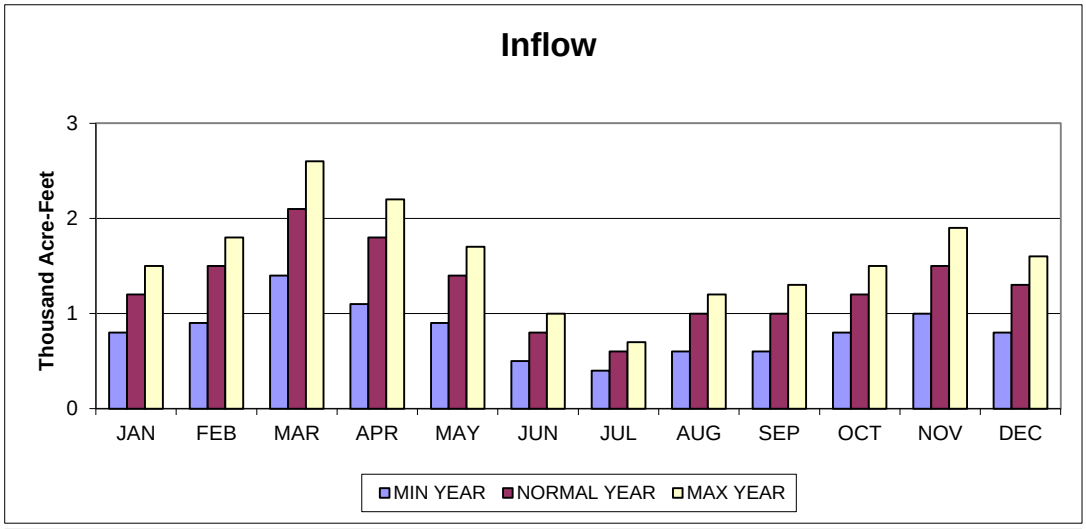
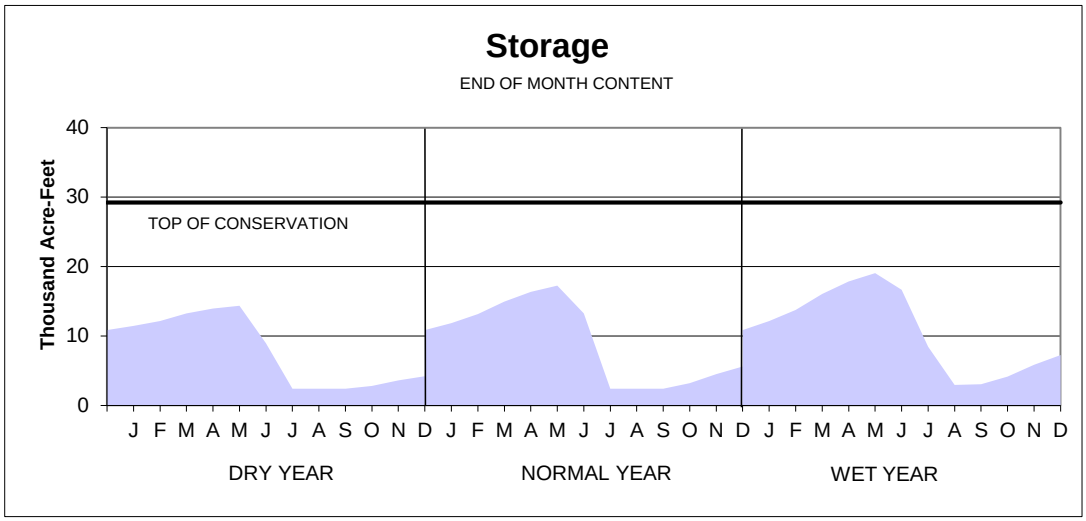


EXHIBIT 1B

BOX BUTTE RESERVOIR

2015 OPERATION PLAN





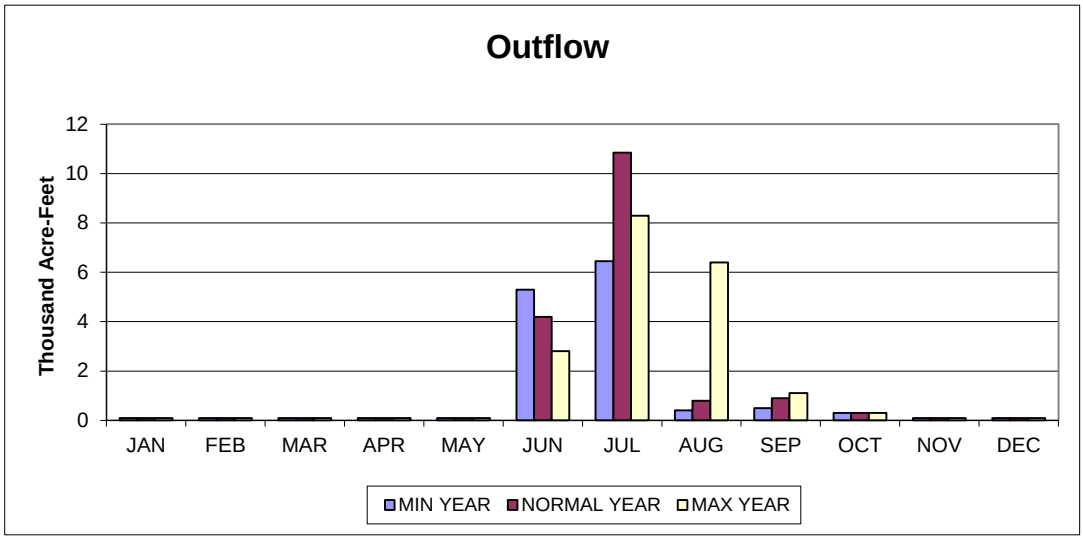
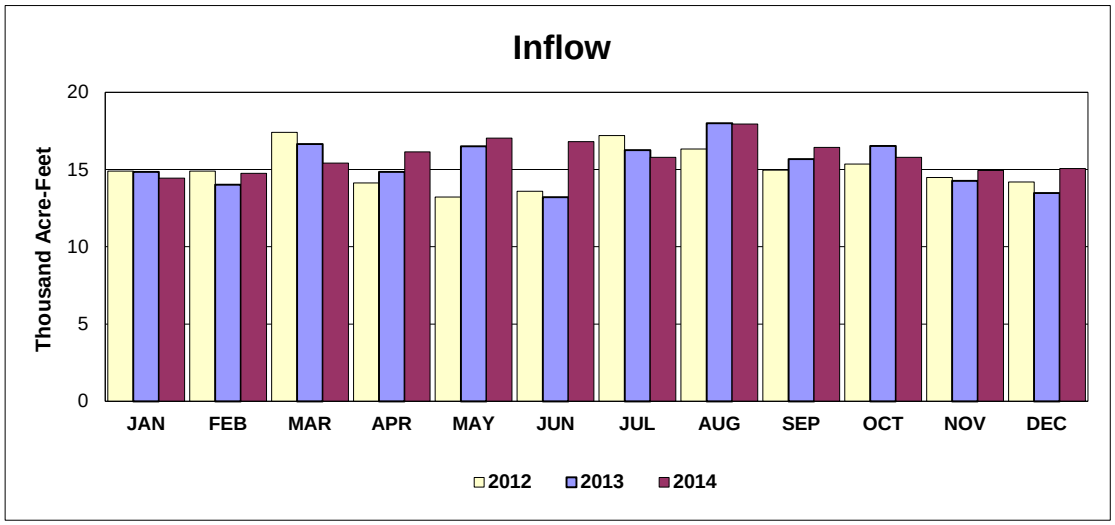
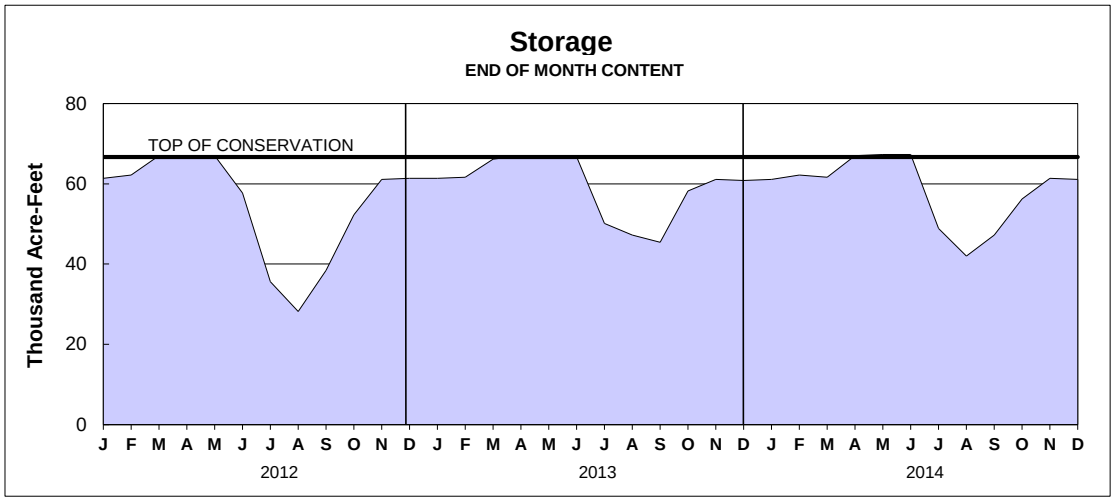


EXHIBIT 2A

MERRITT RESERVOIR

ACTUAL OPERATION





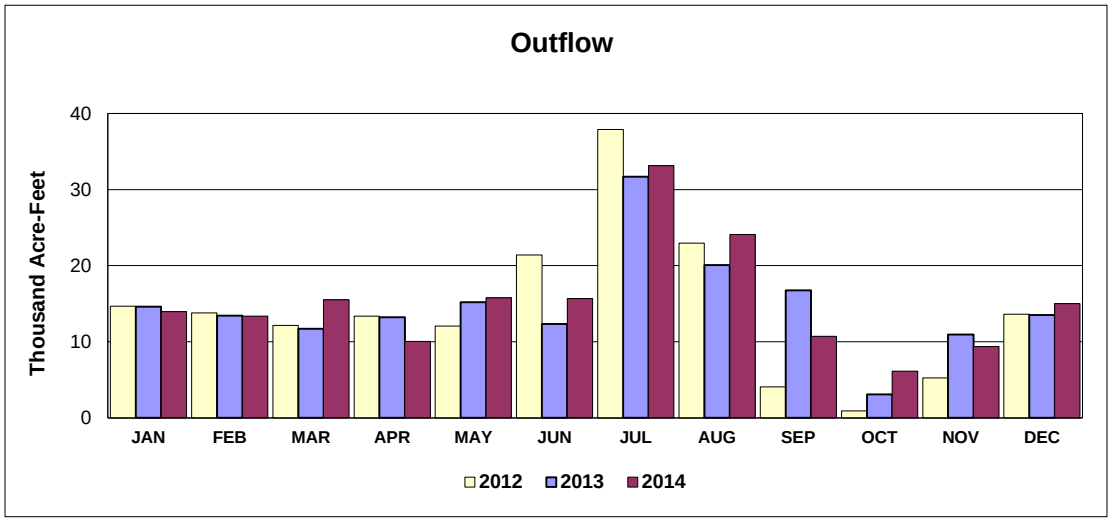
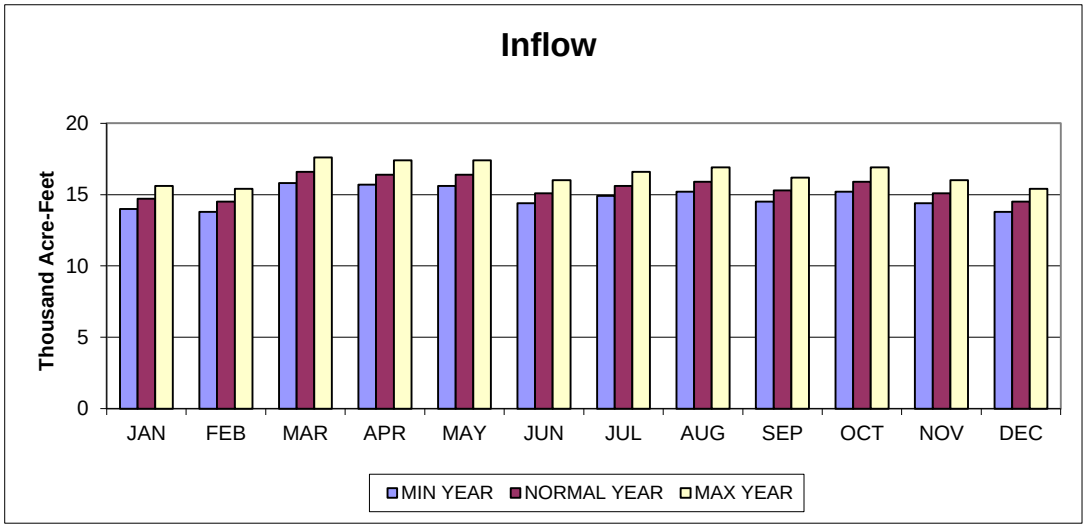
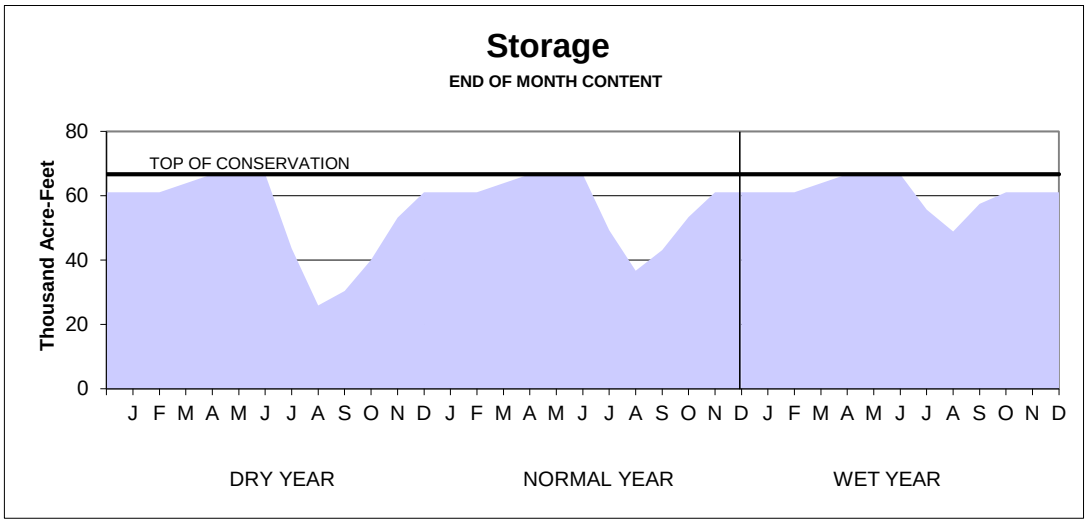


EXHIBIT 2B

MERRITT RESERVOIR

2015 OPERATION PLAN





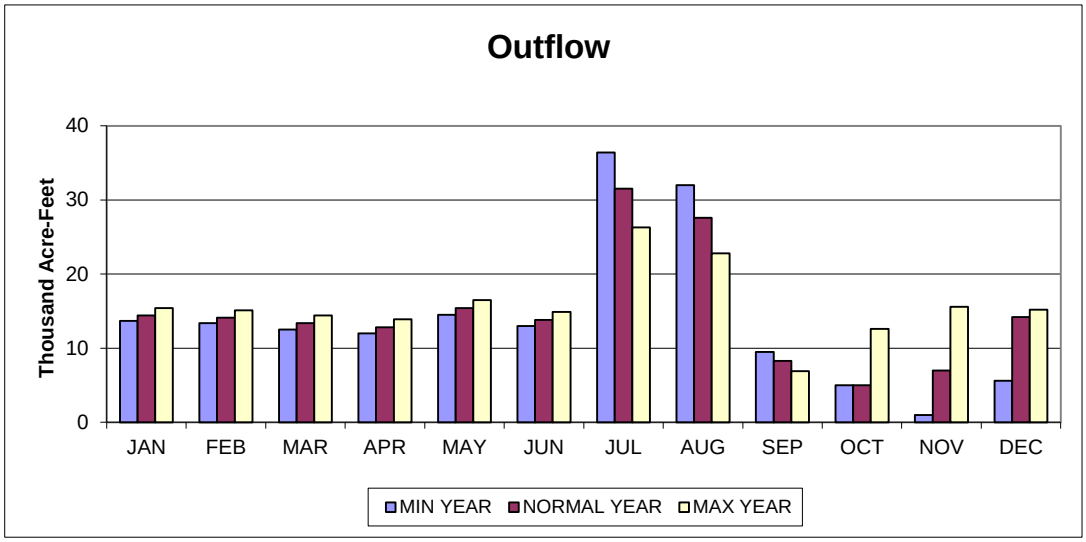
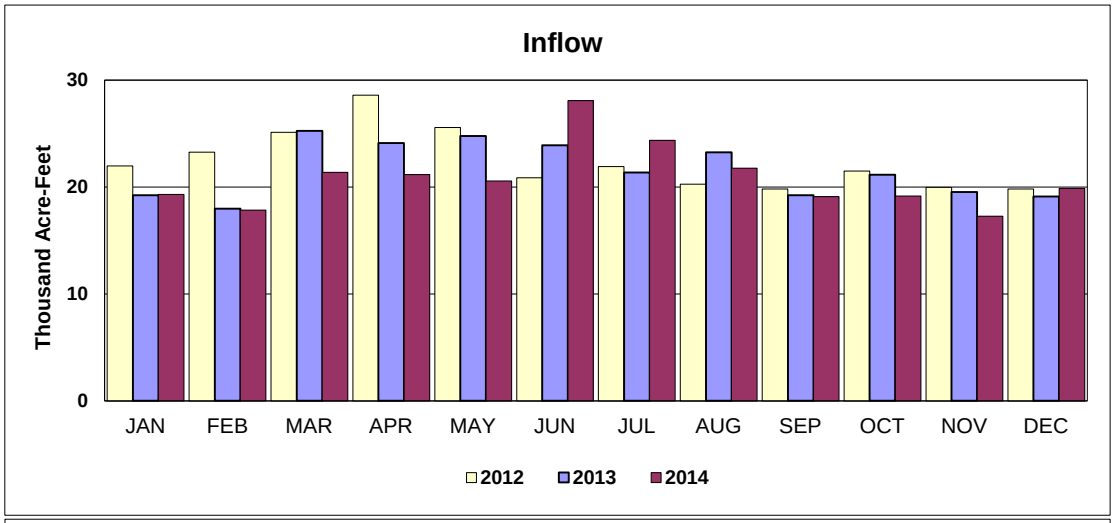
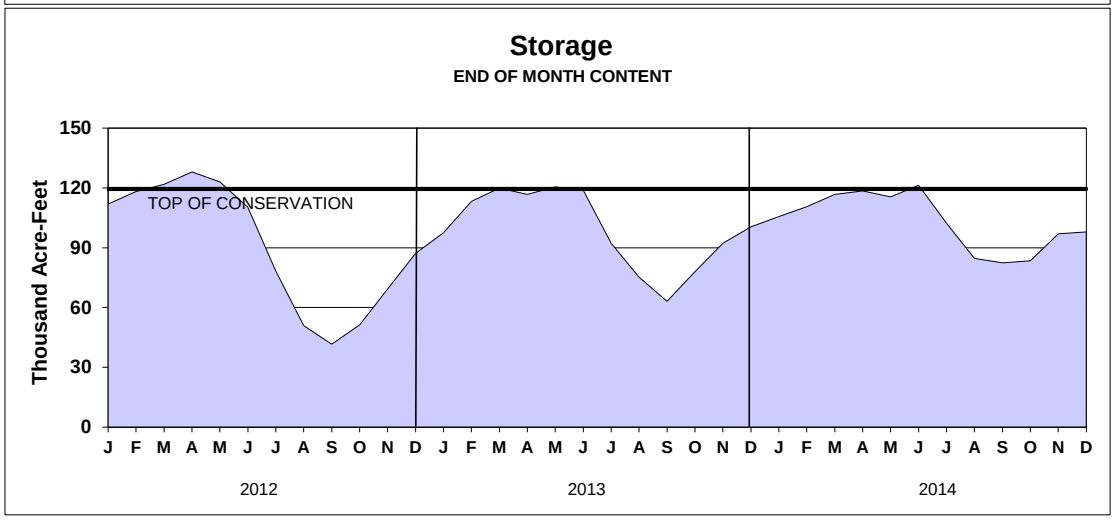


EXHIBIT 3A

CALAMUS RESERVOIR

ACTUAL OPERATION





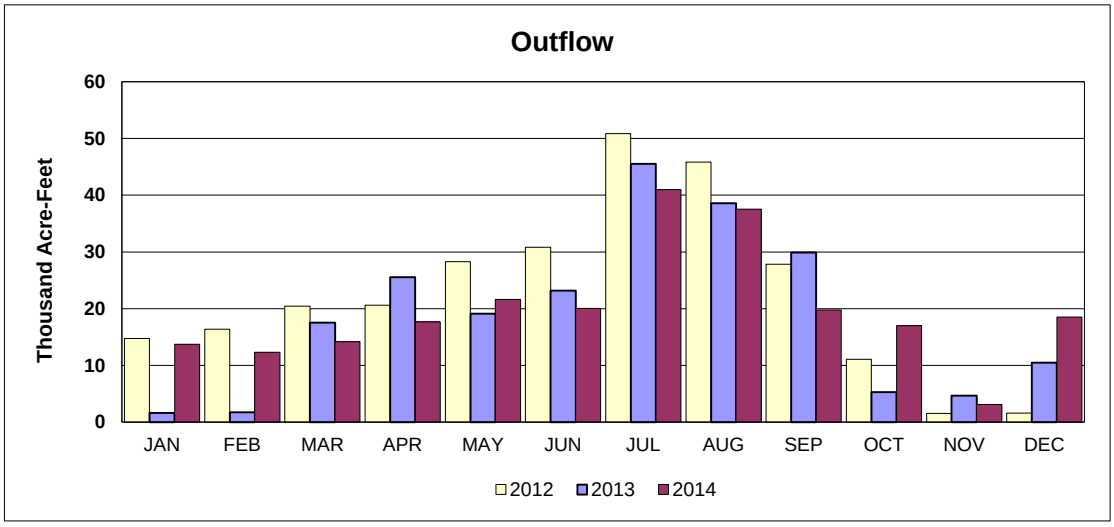
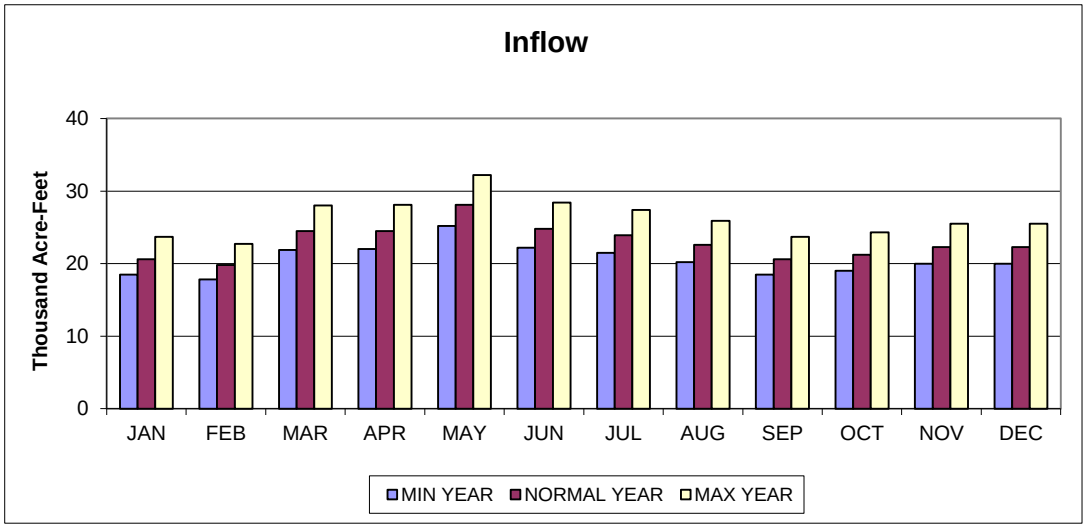
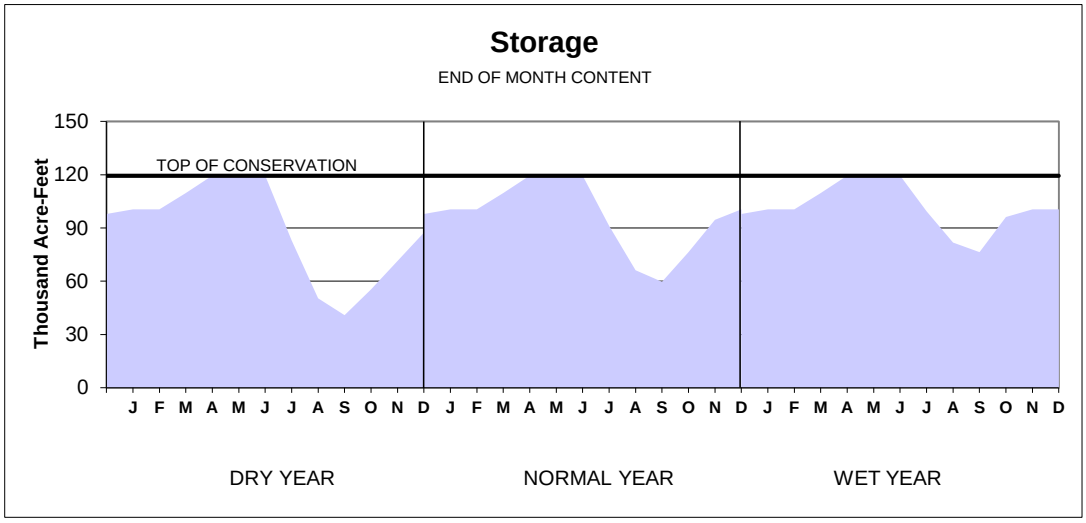


EXHIBIT 3B

CALAMUS RESERVOIR

2015 OPERATION PLAN





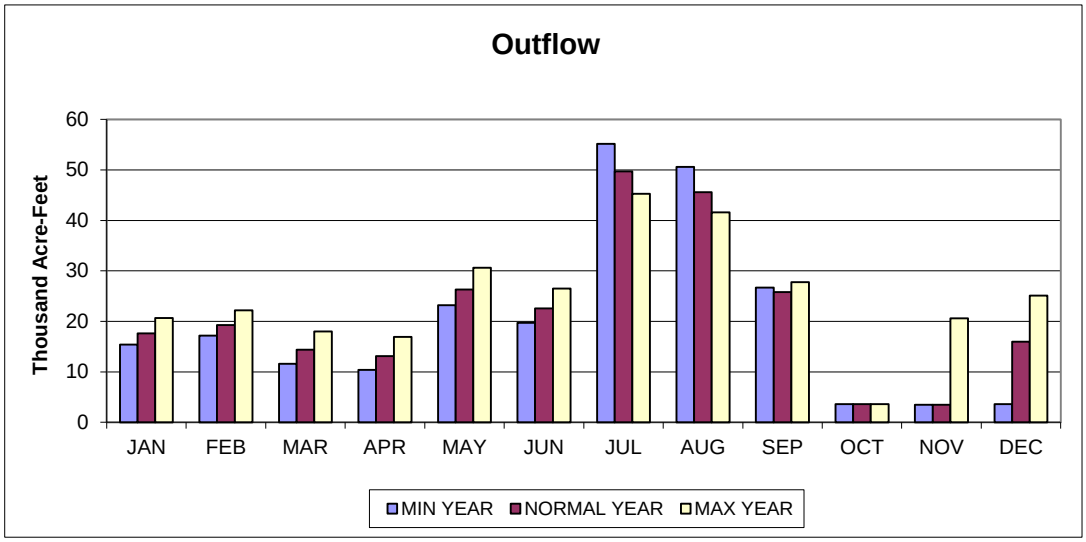
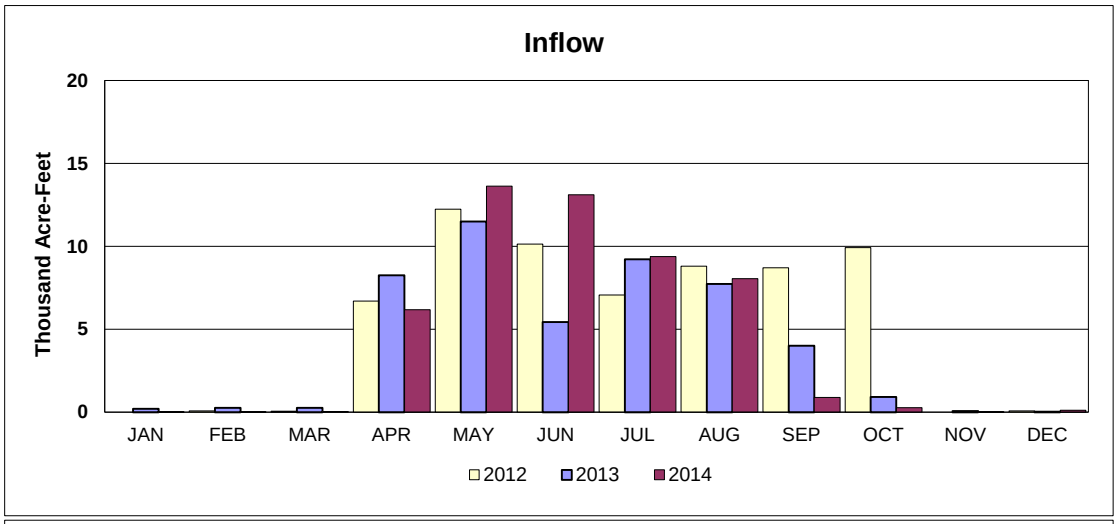
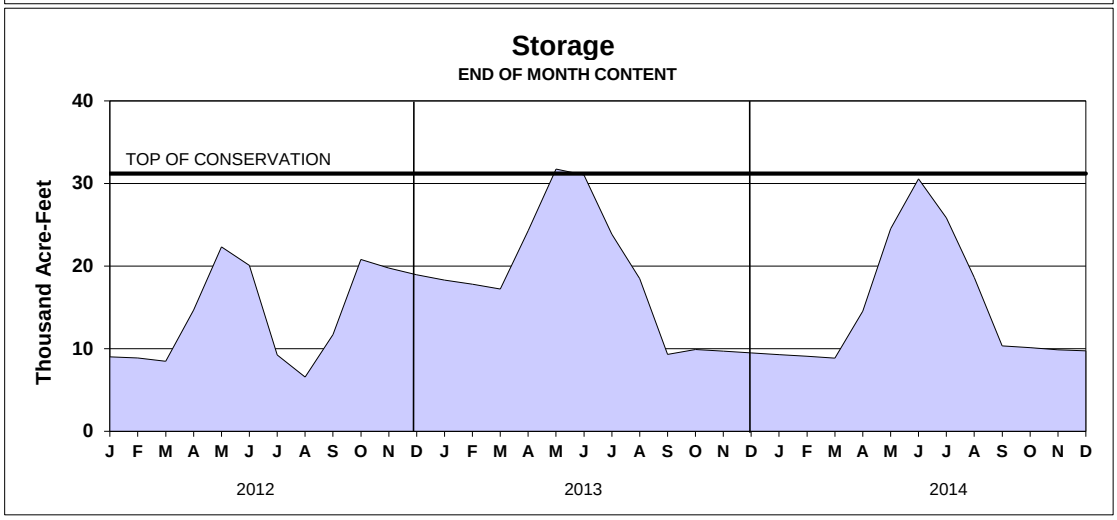


EXHIBIT 4A

DAVIS CREEK RESERVOIR

ACTUAL OPERATION





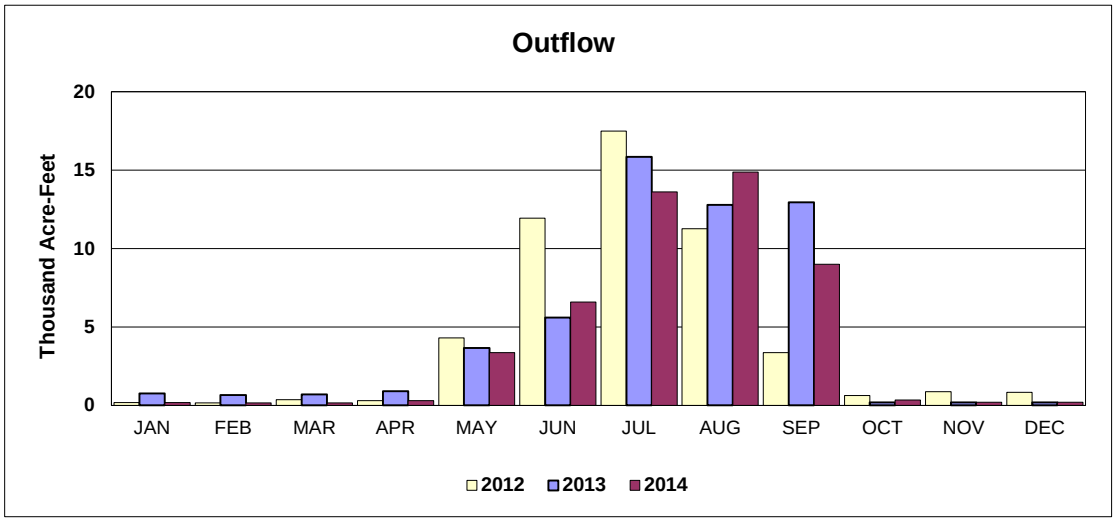
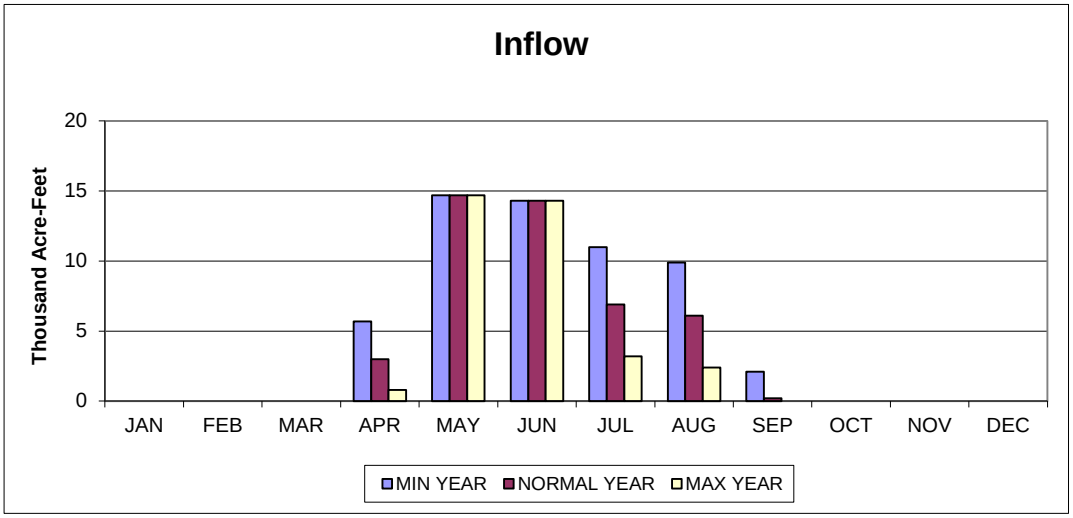
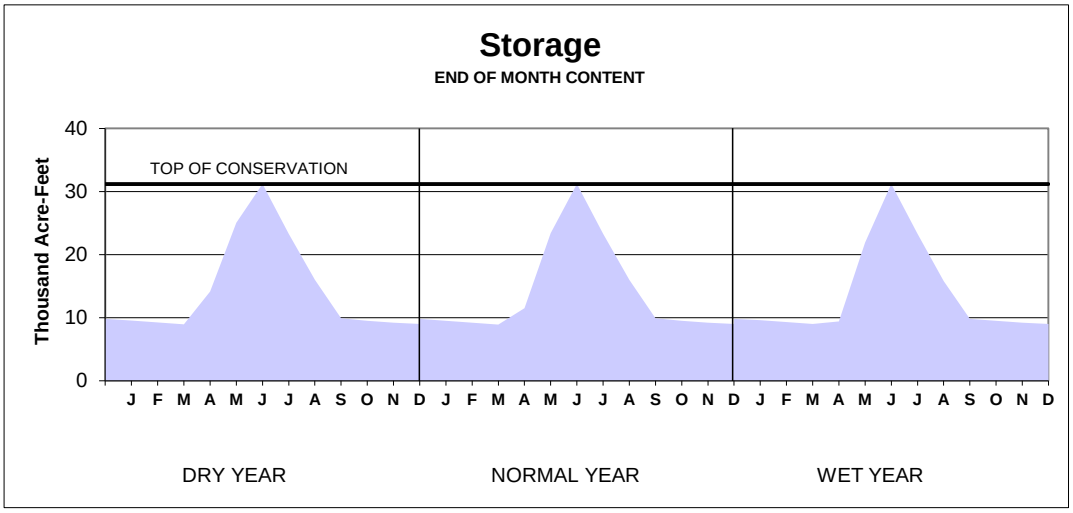


EXHIBIT 4B

DAVIS CREEK RESERVOIR

2015 OPERATION PLAN





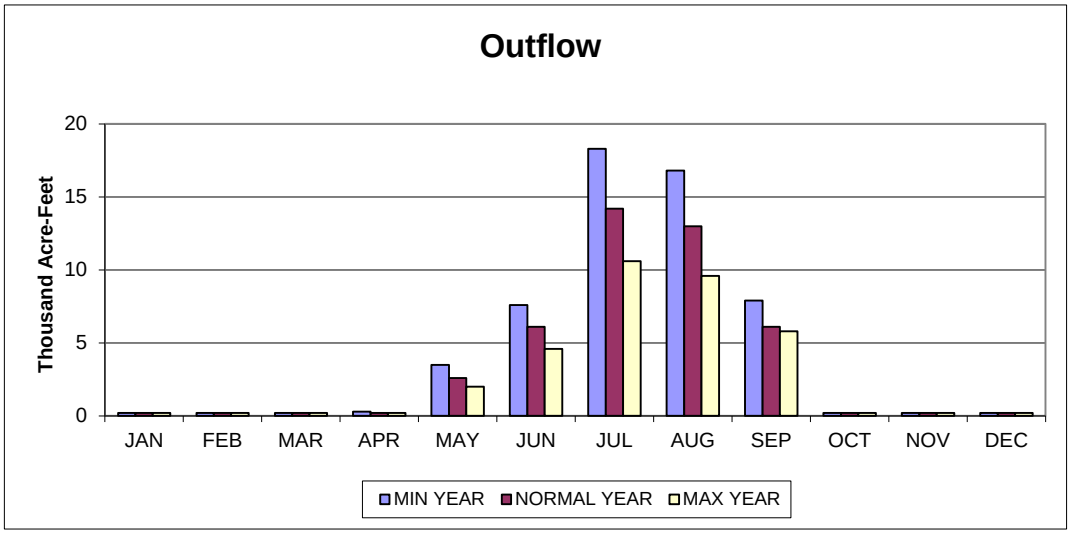
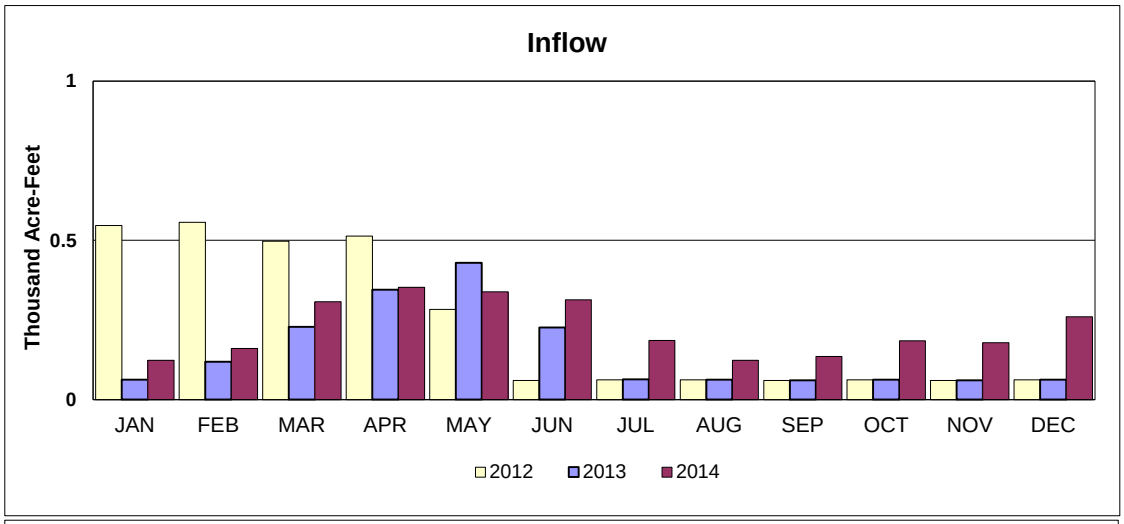
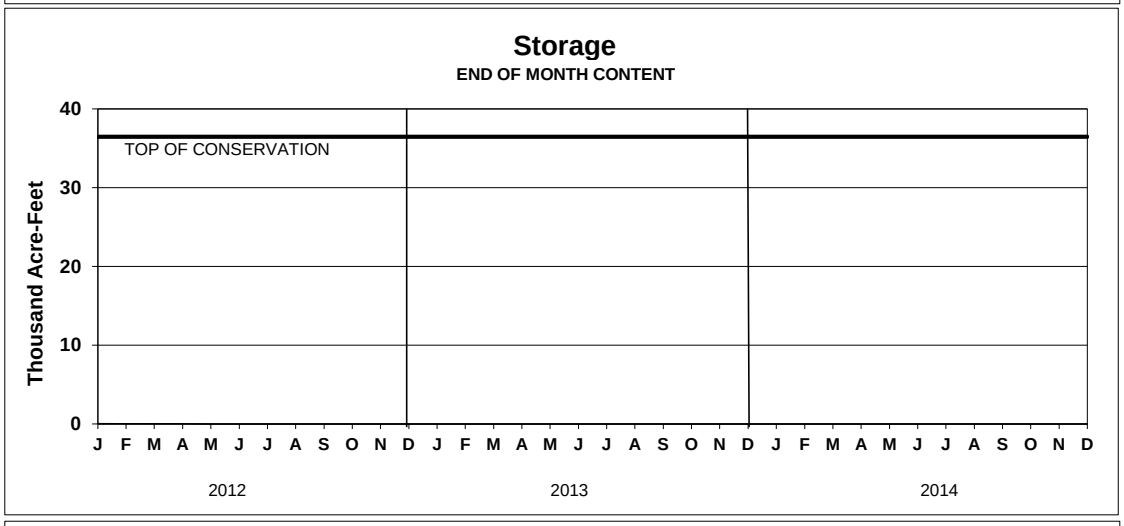


EXHIBIT 5A

BONNY RESERVOIR

ACTUAL OPERATION





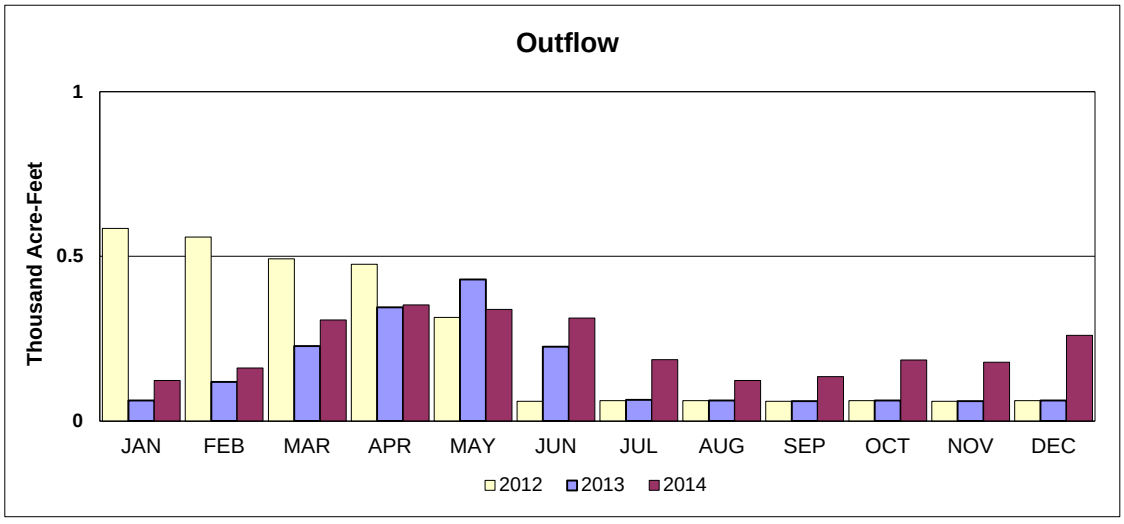
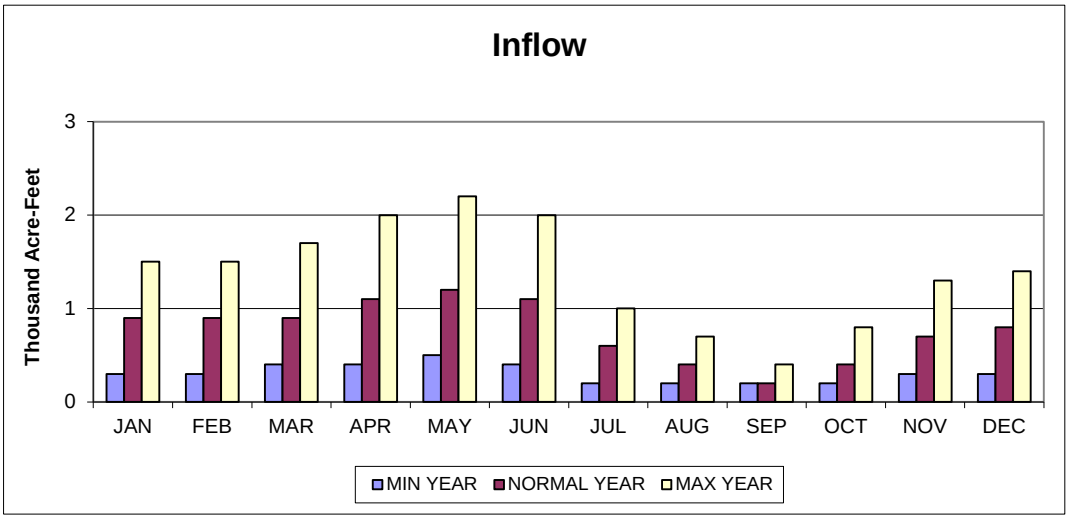
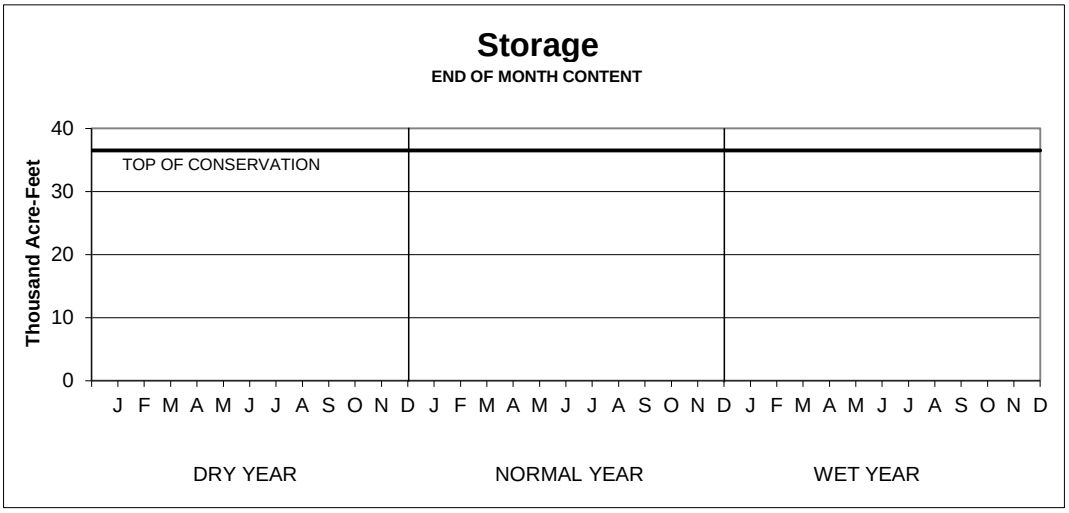


EXHIBIT 5B

BONNY RESERVOIR

2015 OPERATION PLAN





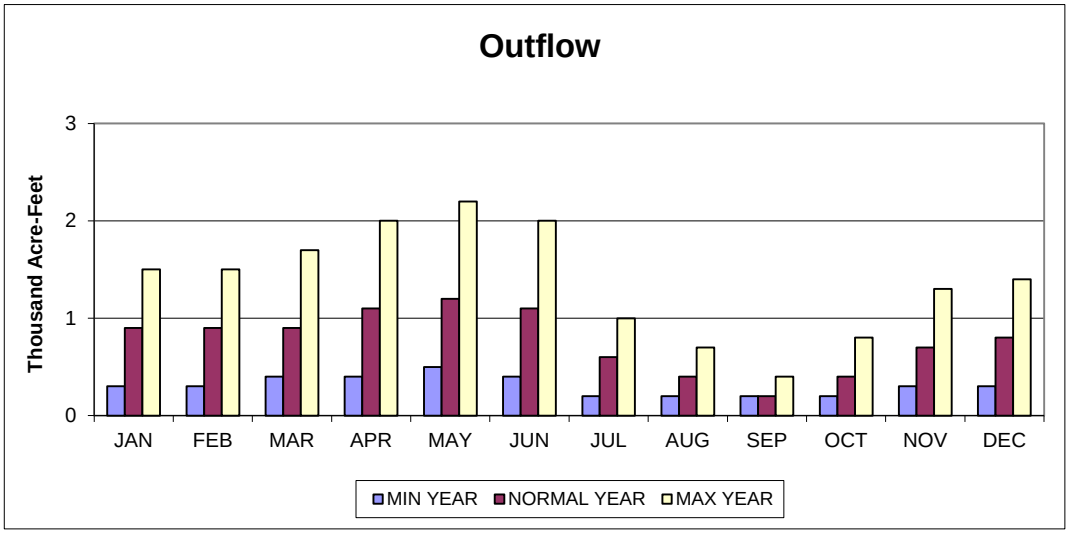
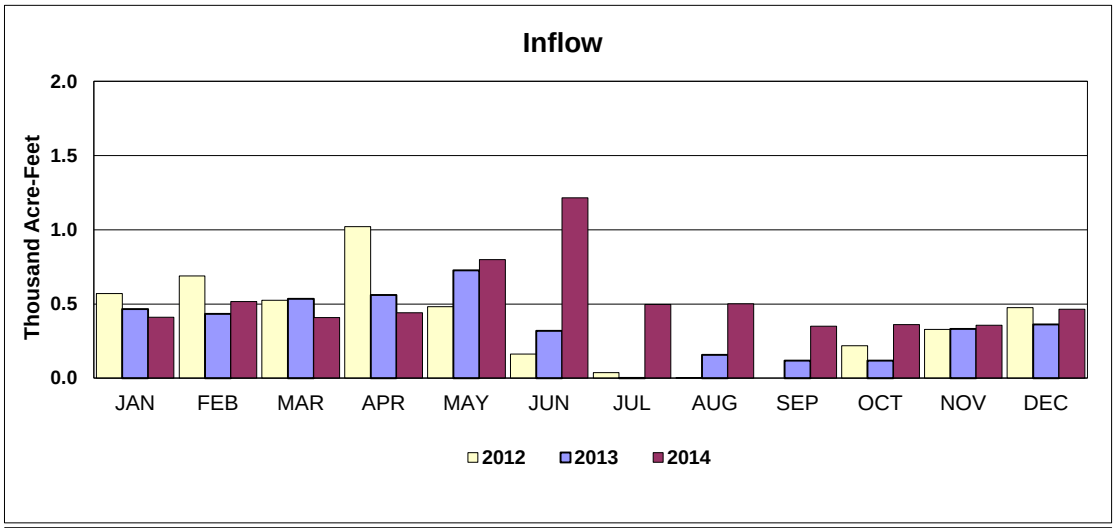
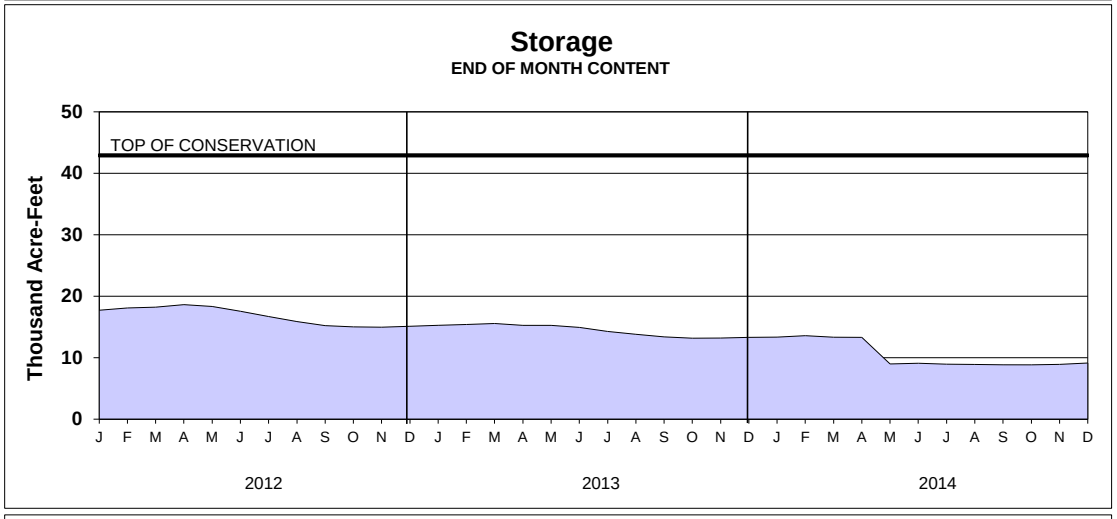


EXHIBIT 6A

ENDERS RESERVOIR

ACTUAL OPERATION





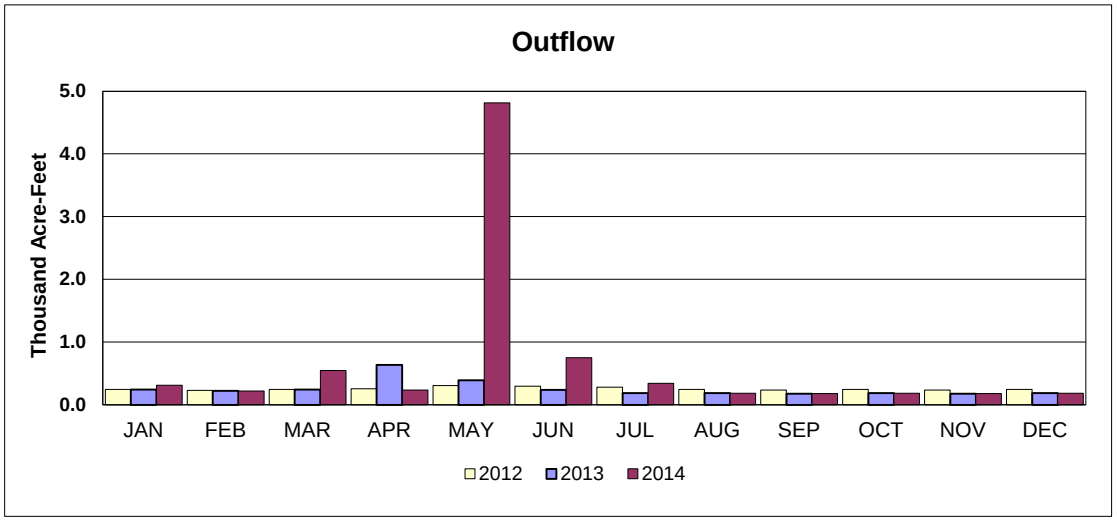
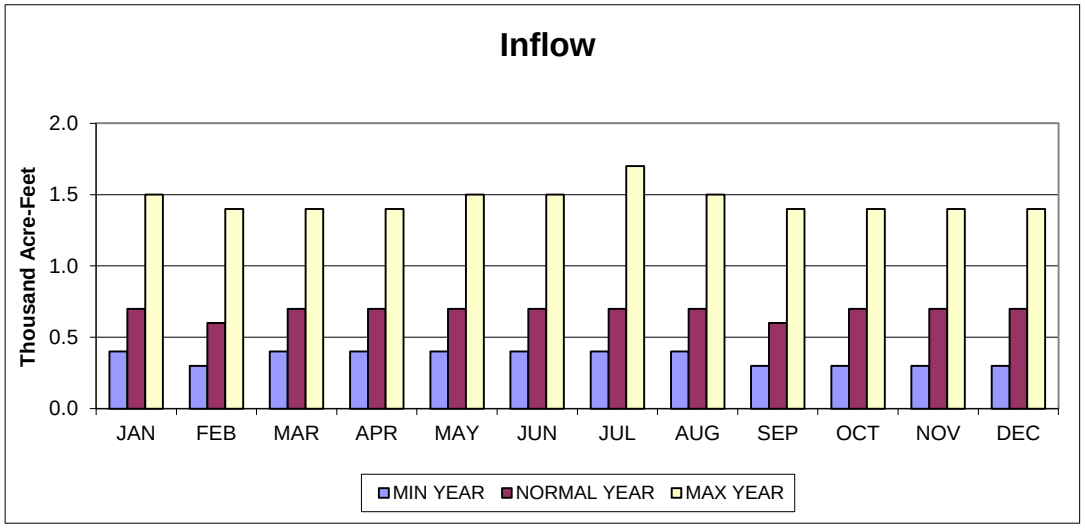
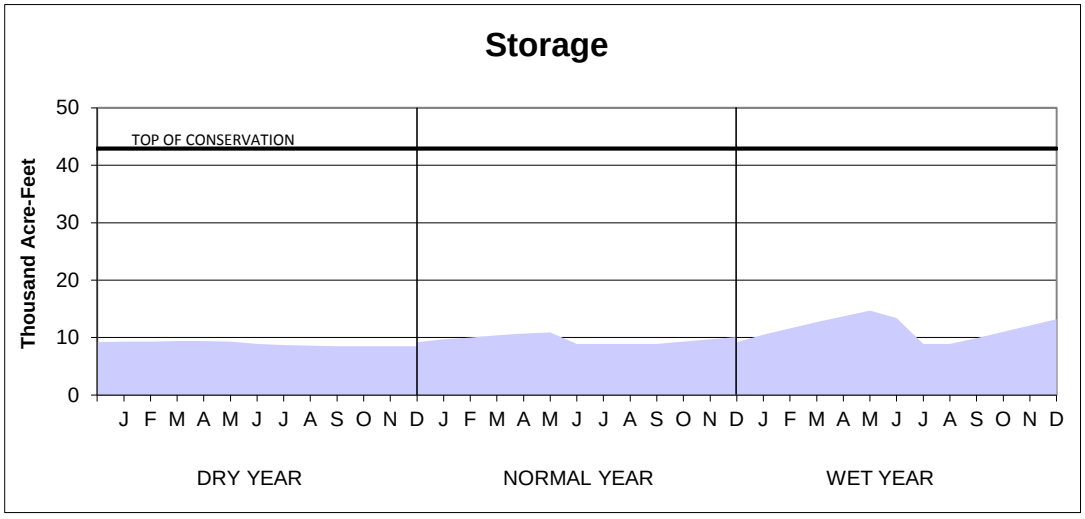


EXHIBIT 6B

ENDERS RESERVOIR

2015 OPERATION PLAN





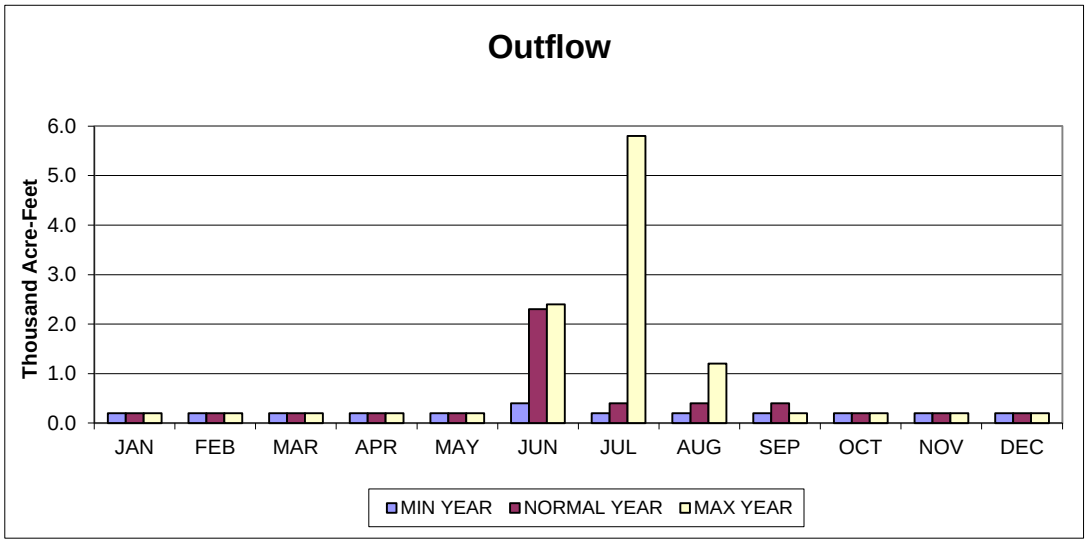
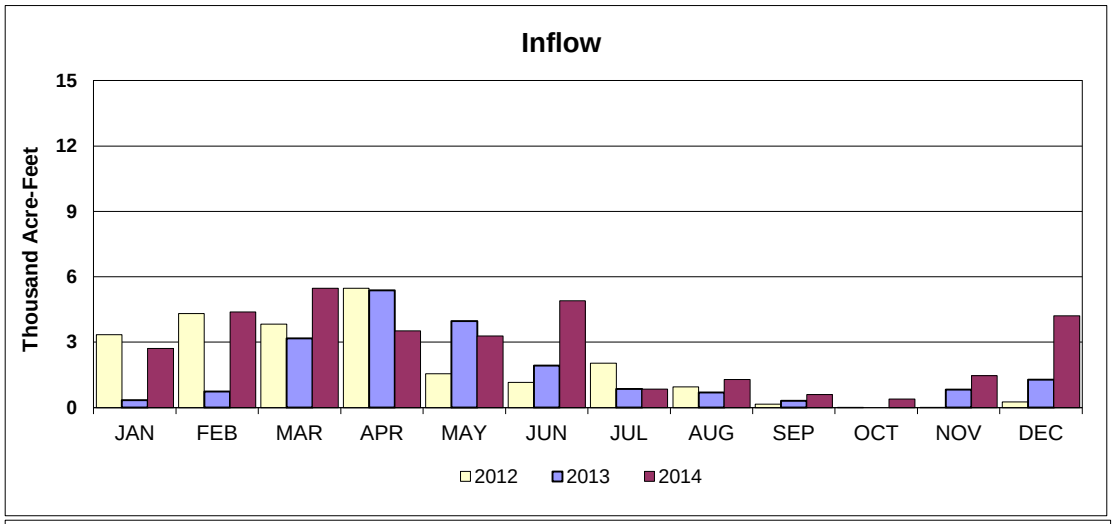
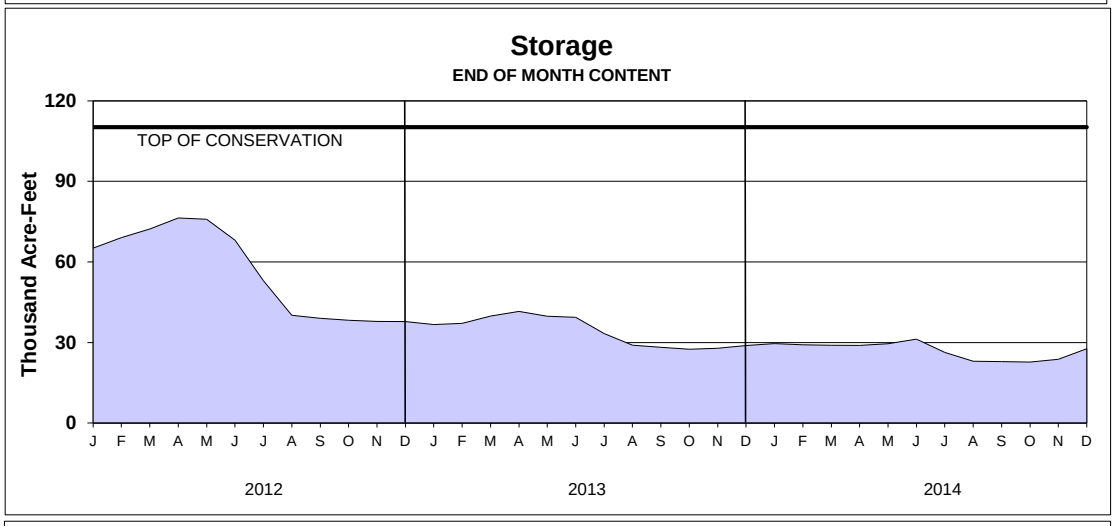


EXHIBIT 7A

SWANSON LAKE

ACTUAL OPERATION





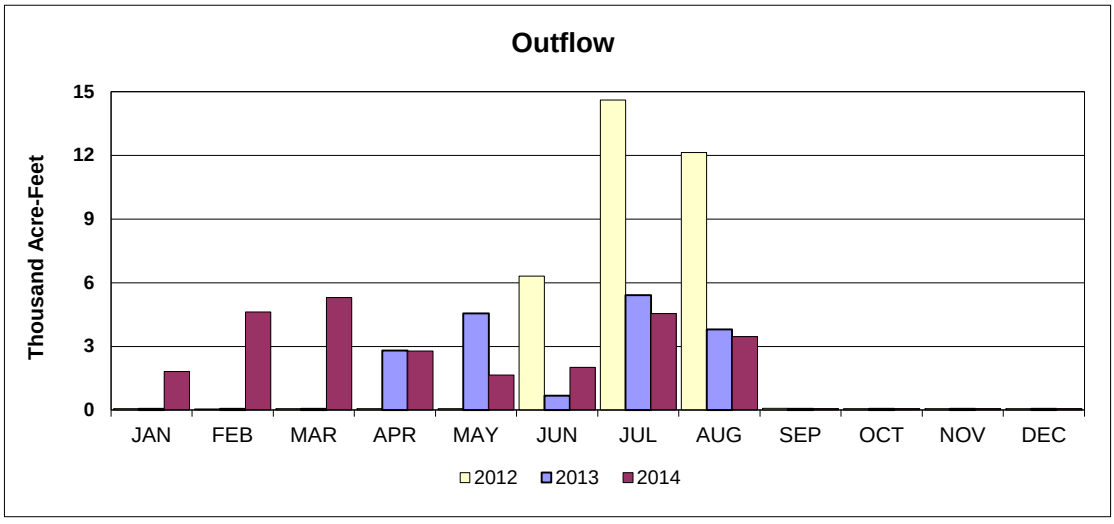
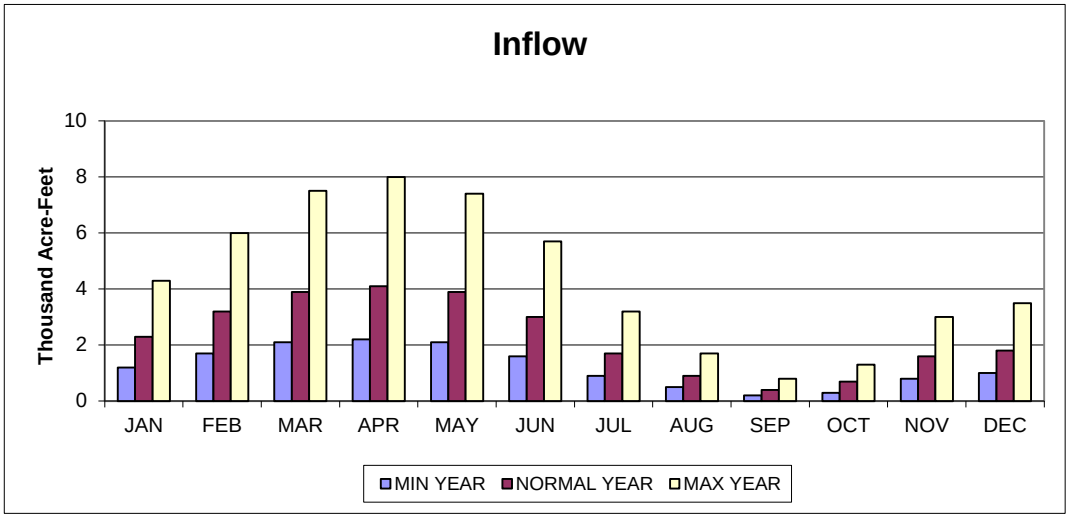
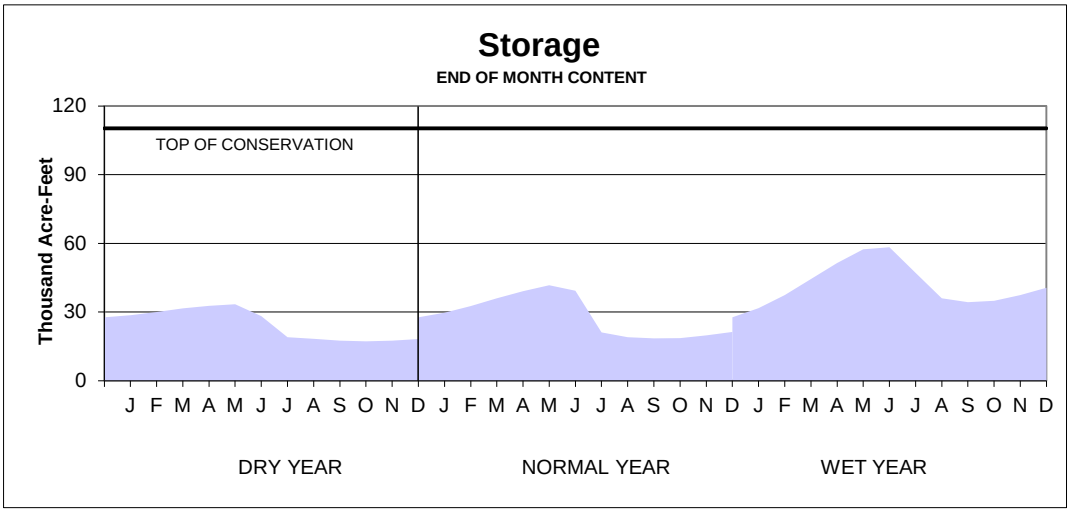


EXHIBIT 7B

SWANSON LAKE

2015 OPERATION PLAN





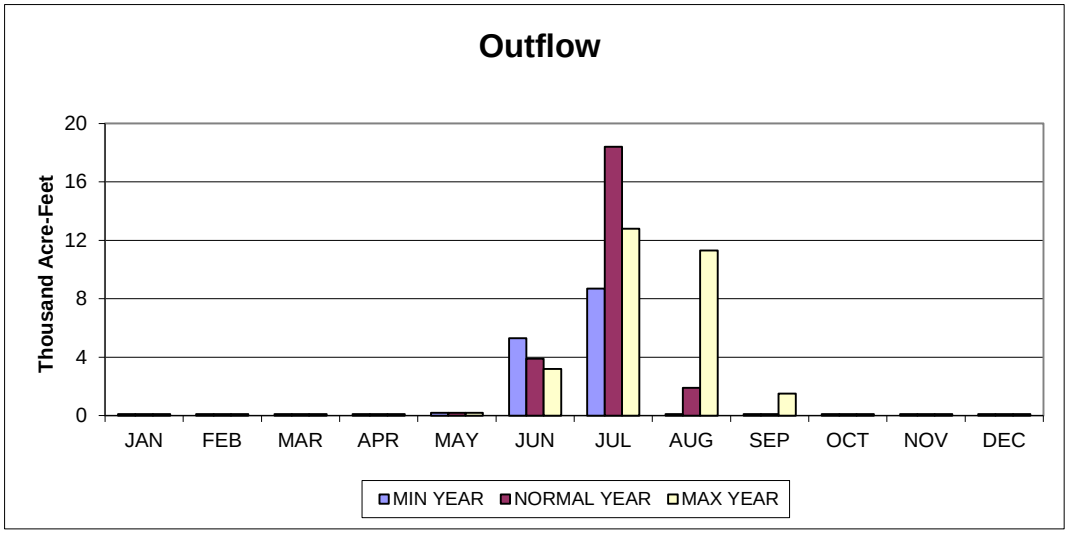
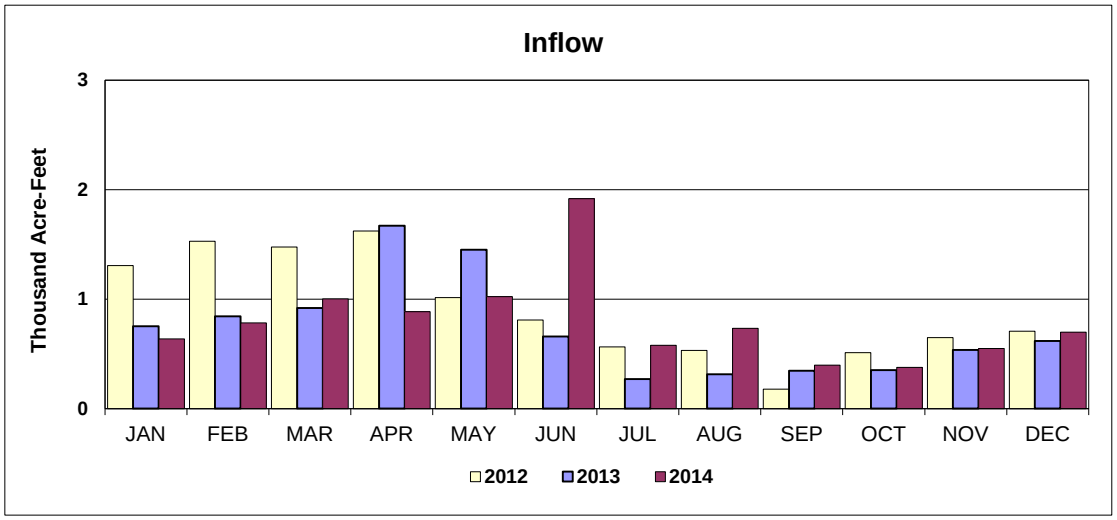
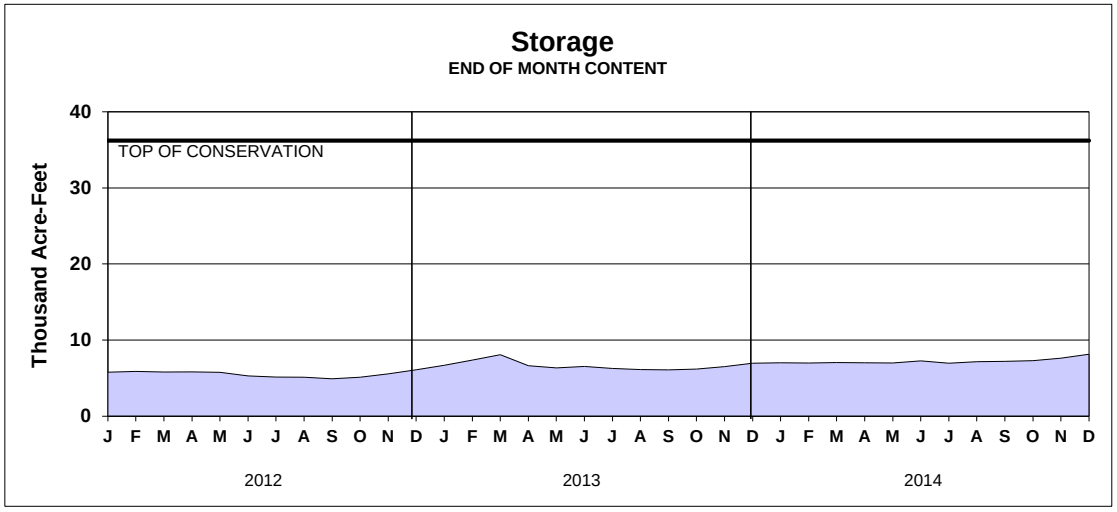


EXHIBIT 8A

HUGH BUTLER LAKE

ACTUAL OPERATION





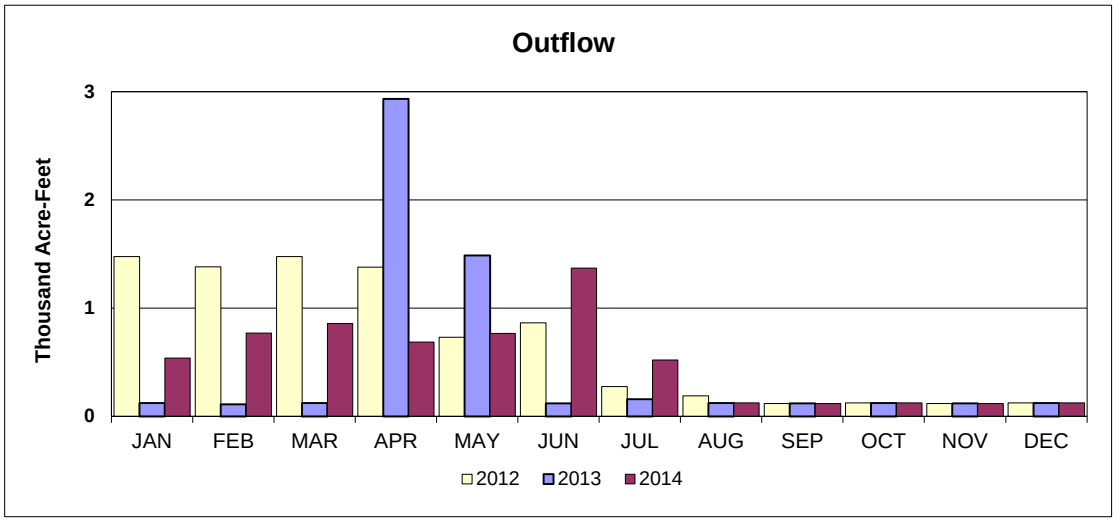
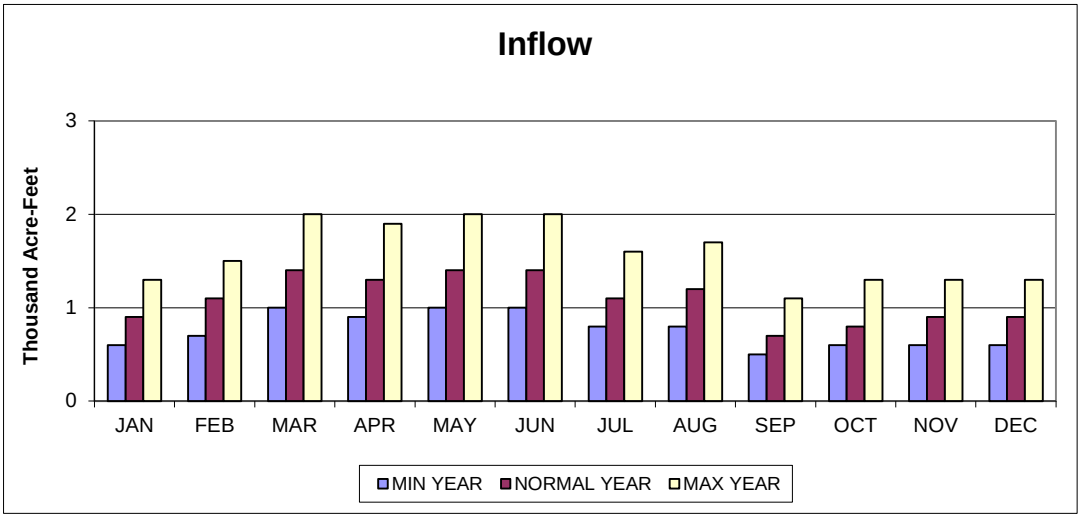
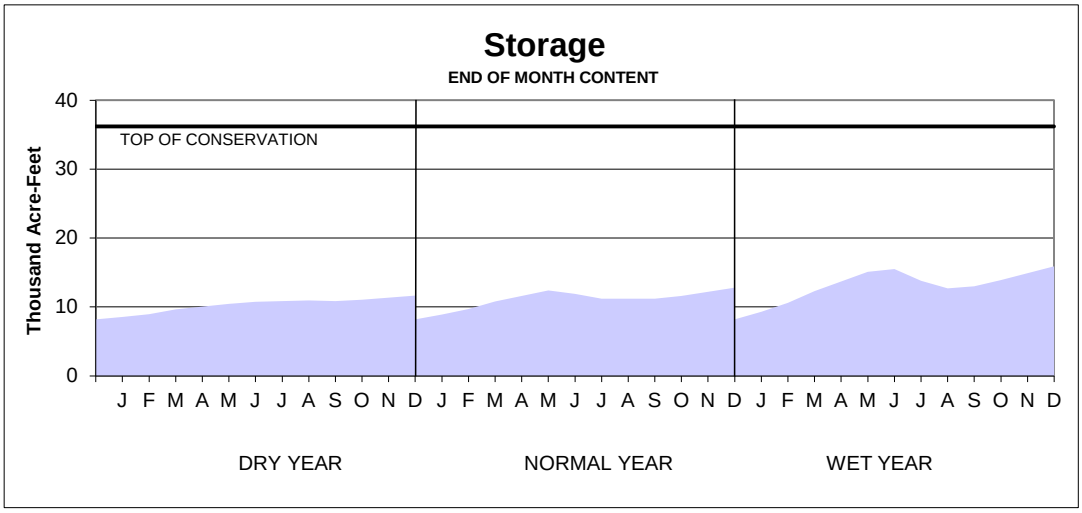


EXHIBIT 8B

HUGH BUTLER LAKE

2015 OPERATION PLAN





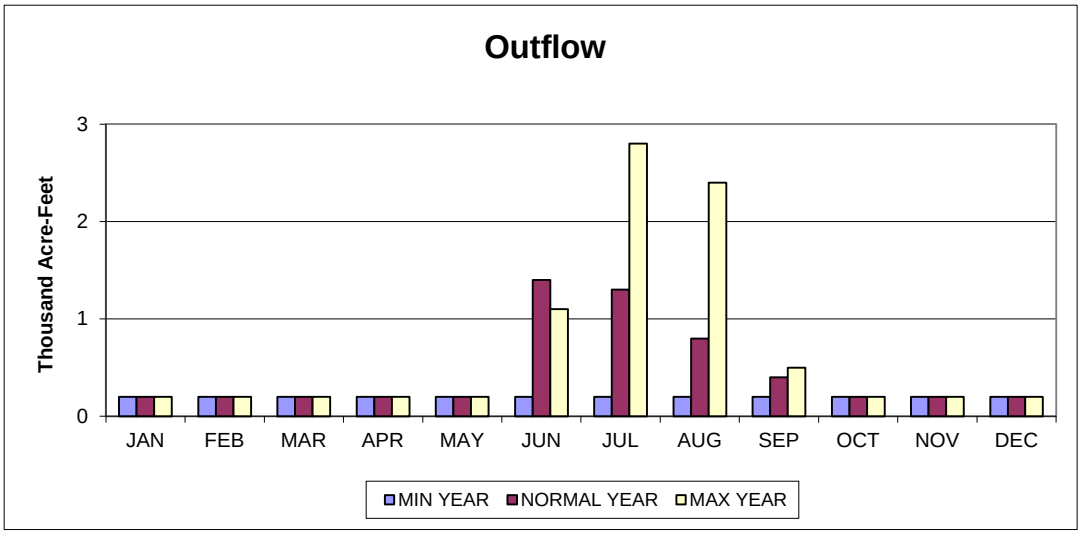
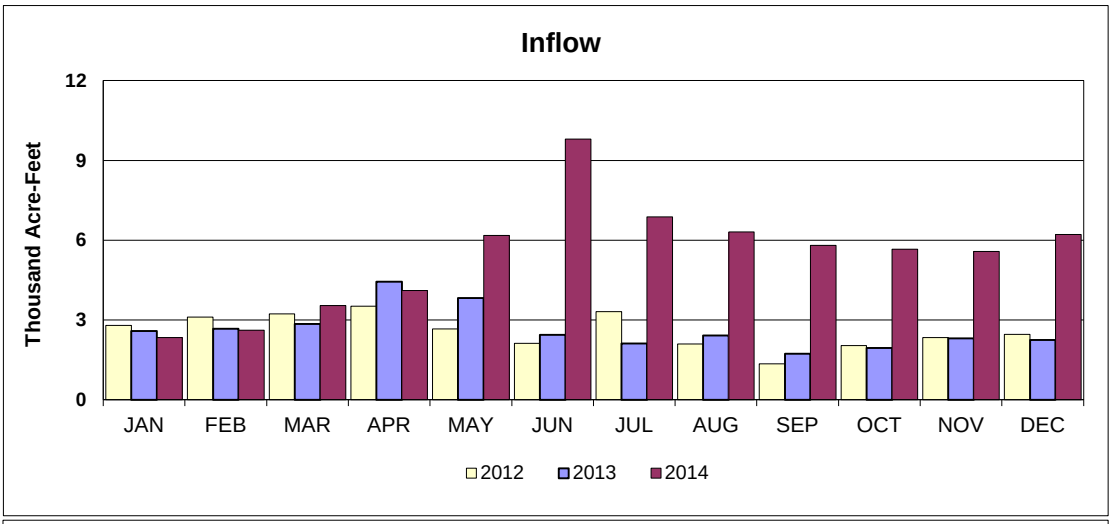
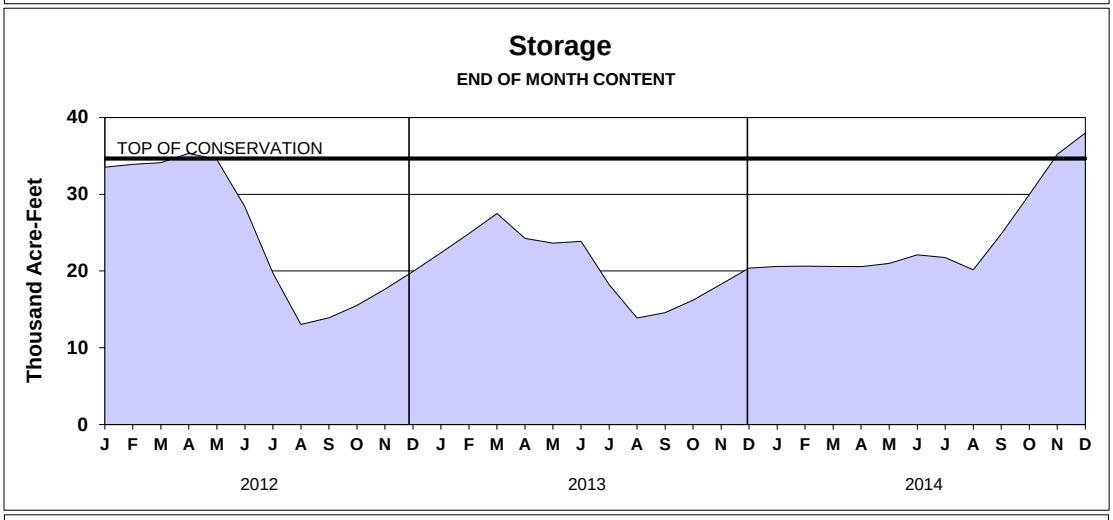


EXHIBIT 9A

HARRY STRUNK LAKE

ACTUAL OPERATION





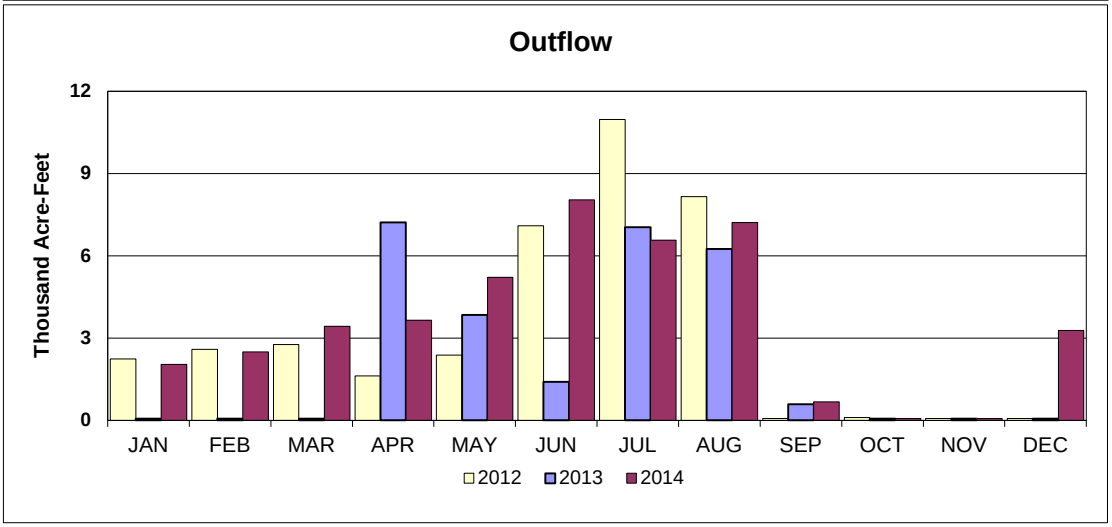
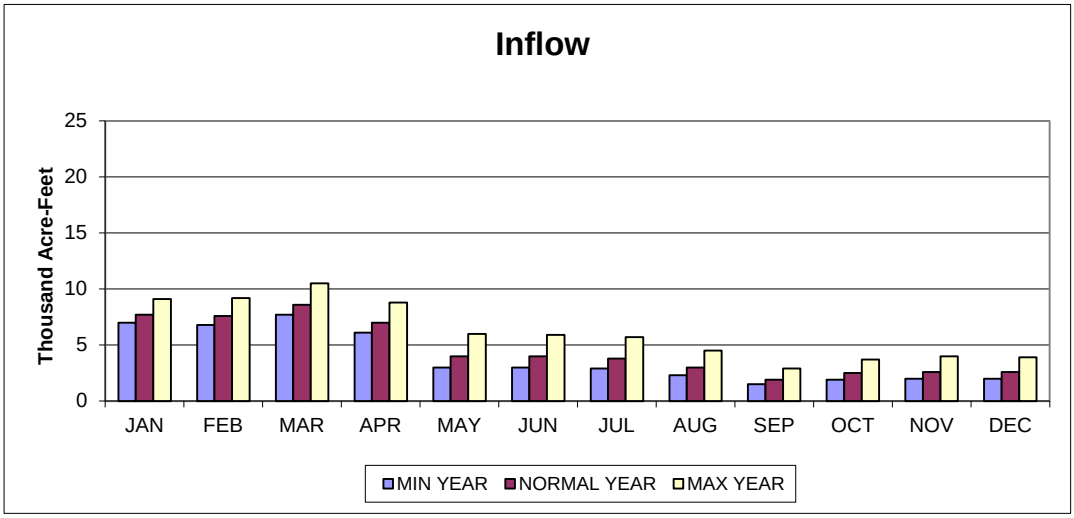
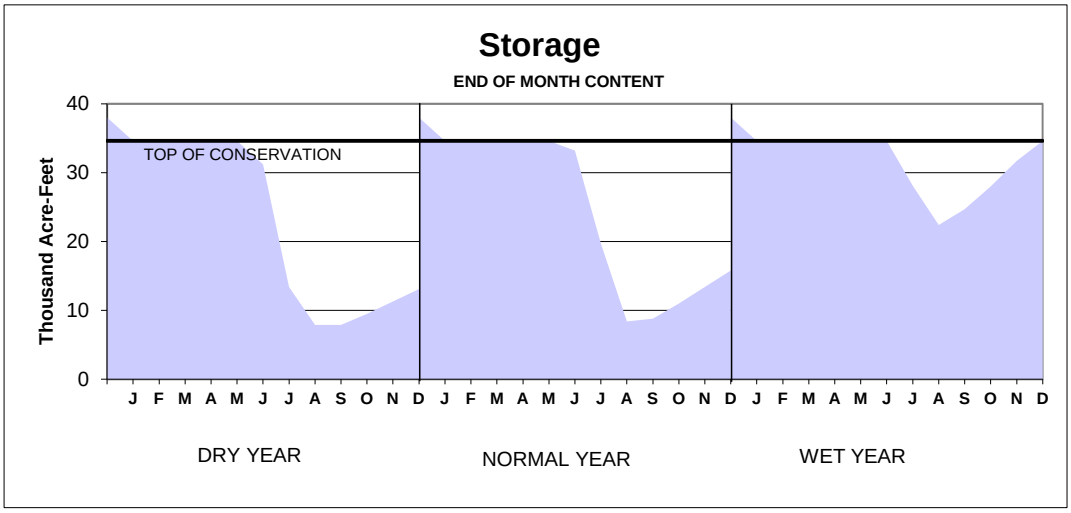


EXHIBIT 9B

HARRY STRUNK LAKE

2015 OPERATION PLAN





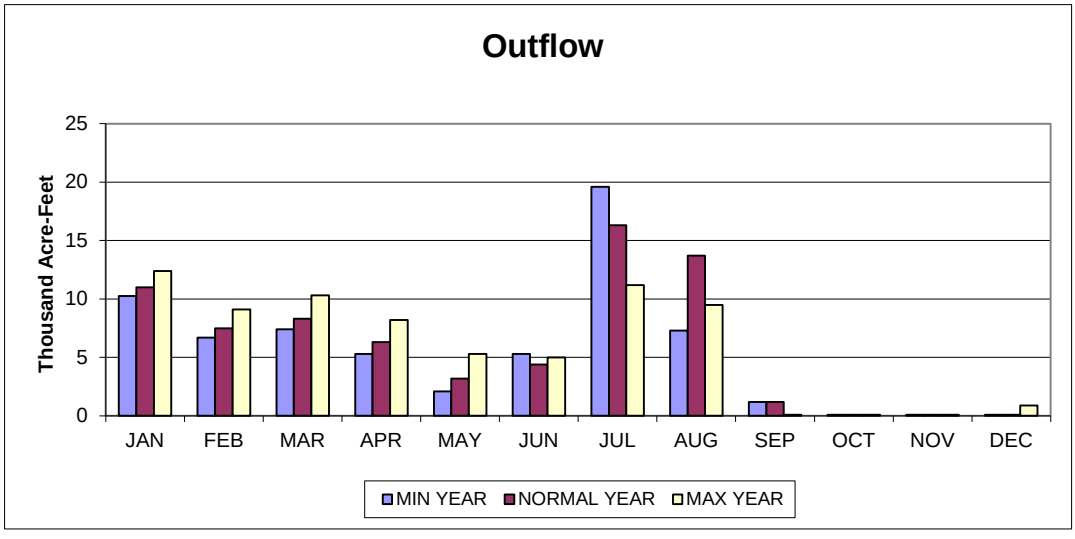
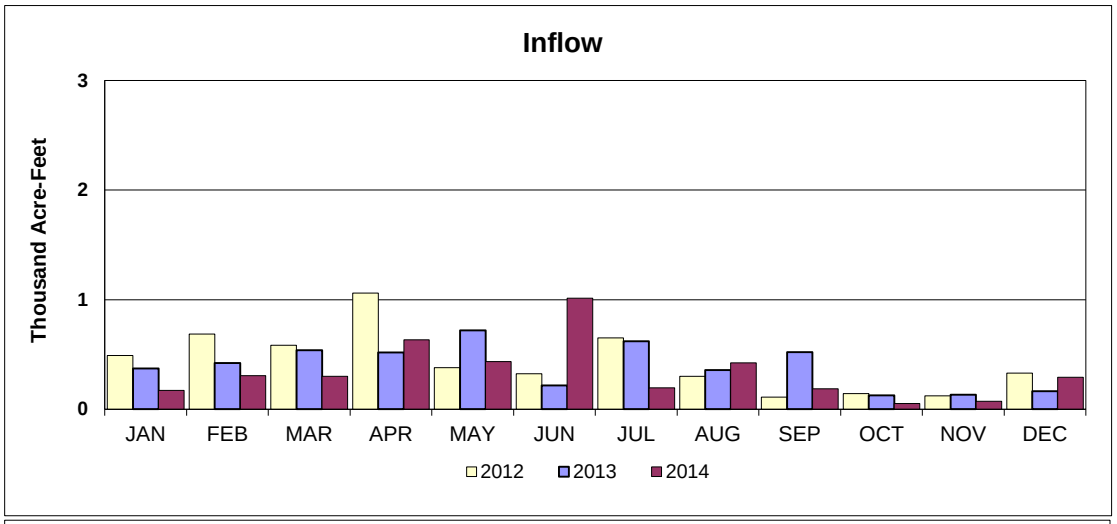
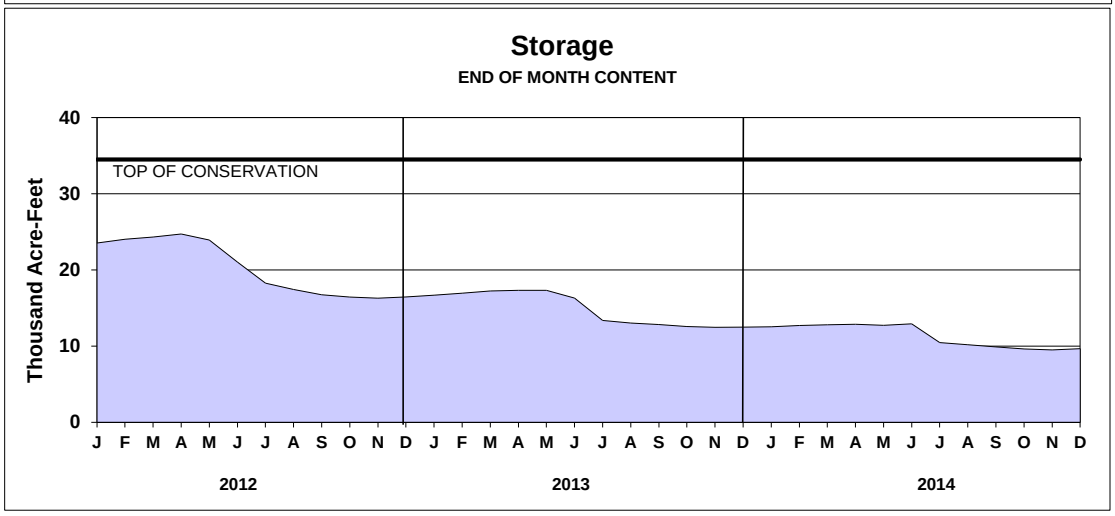


EXHIBIT 10A

KEITH SEBELIUS LAKE

ACTUAL OPERATION





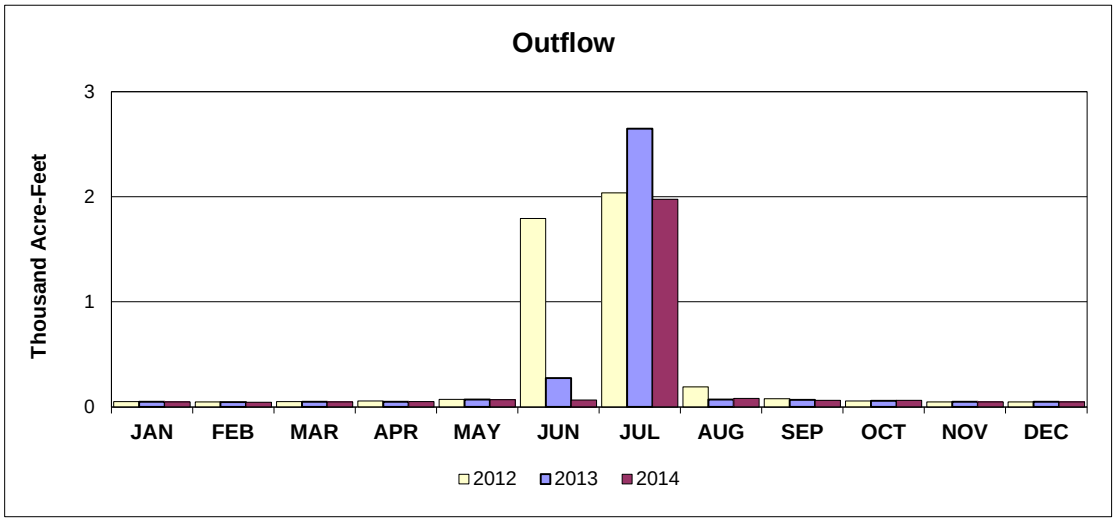
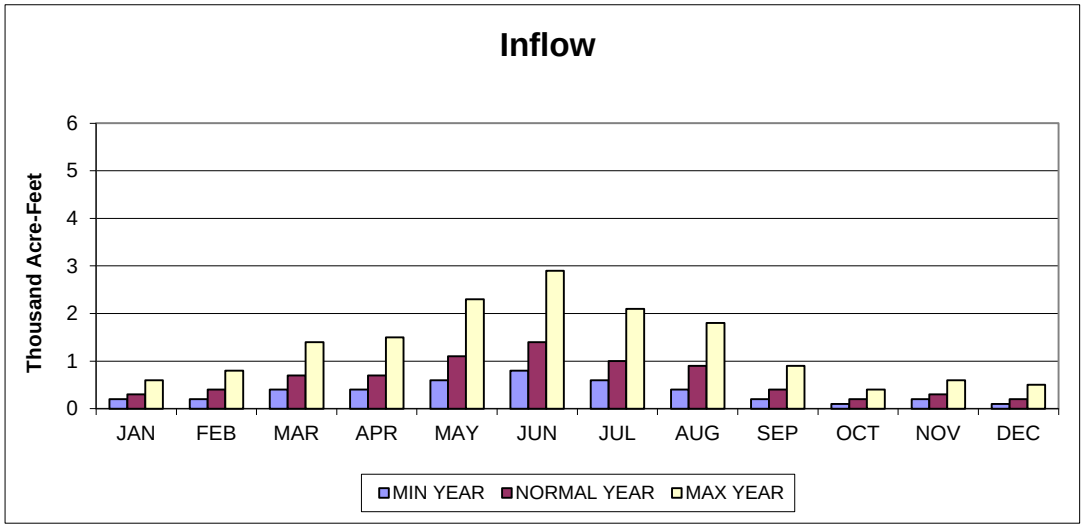
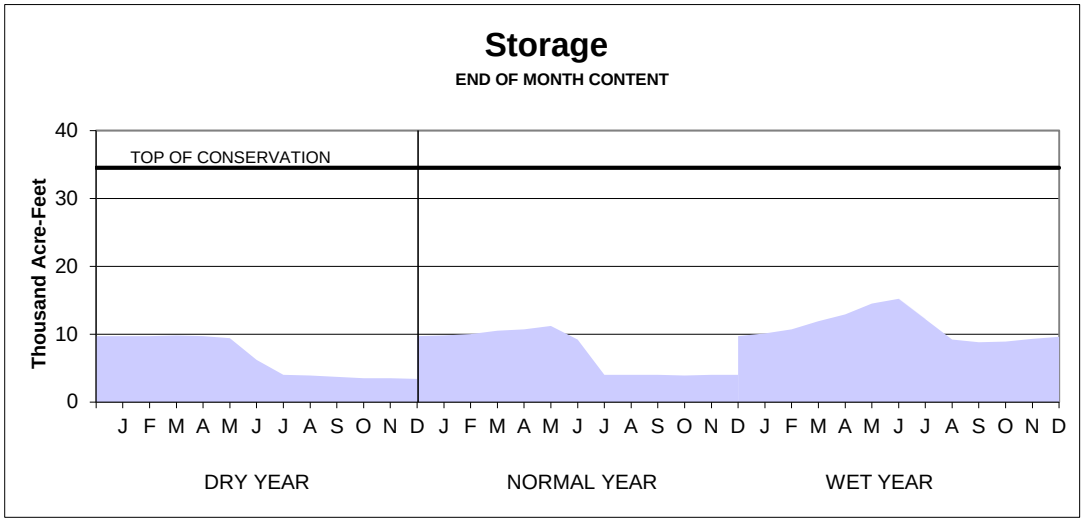


EXHIBIT 10B

KEITH SEBELIUS LAKE

2015 OPERATION PLAN





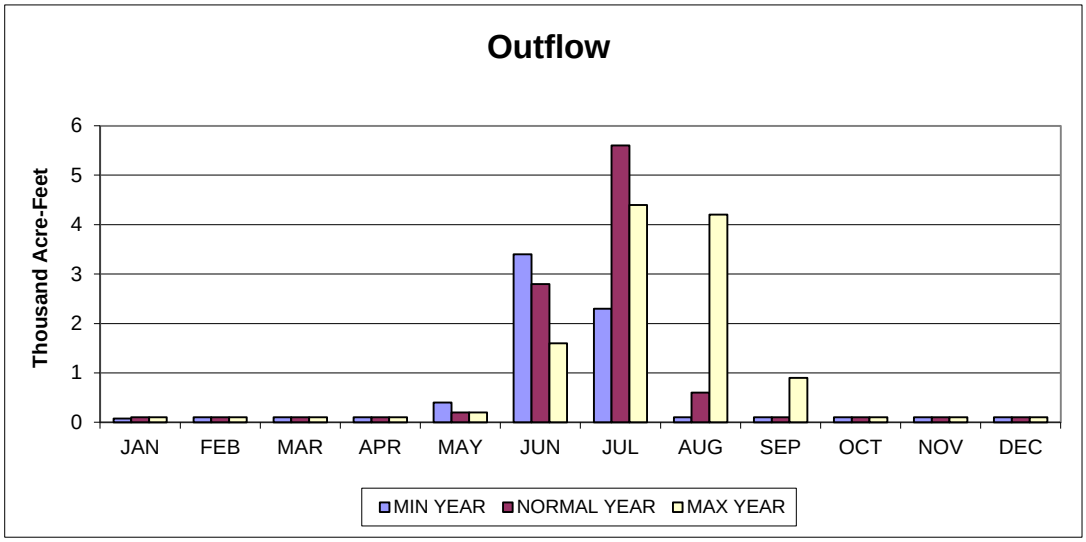
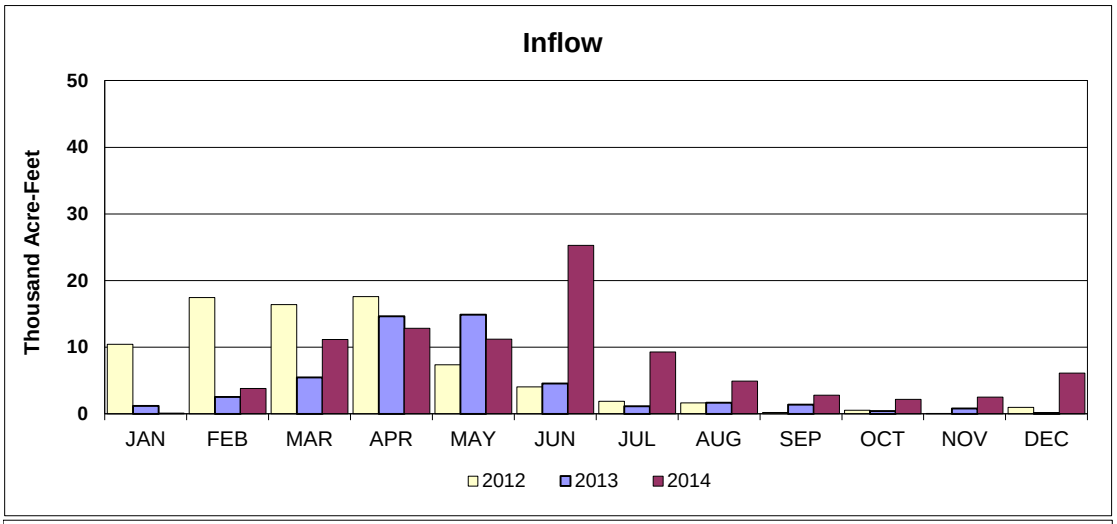
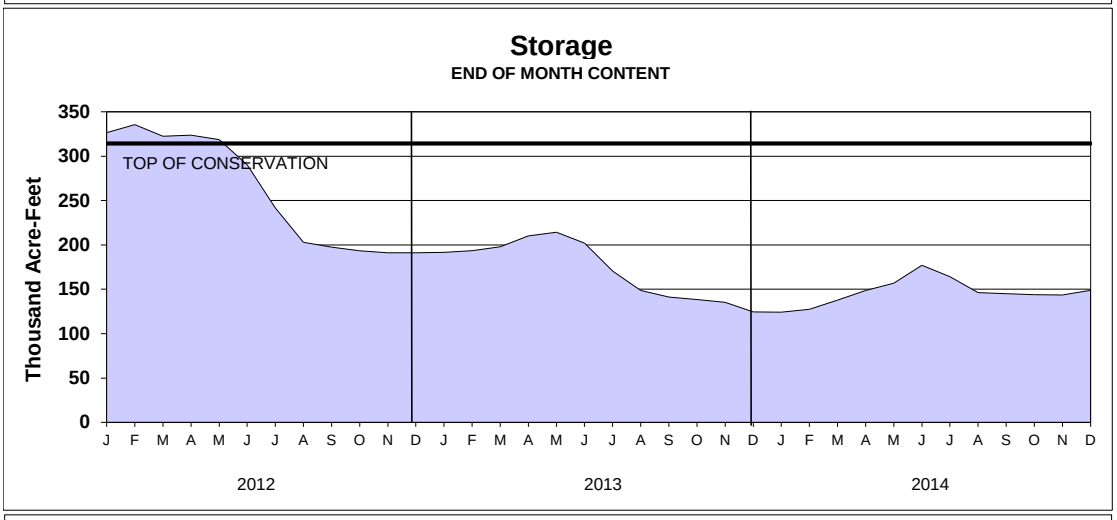


EXHIBIT 11A

HARLAN COUNTY LAKE

ACTUAL OPERATION





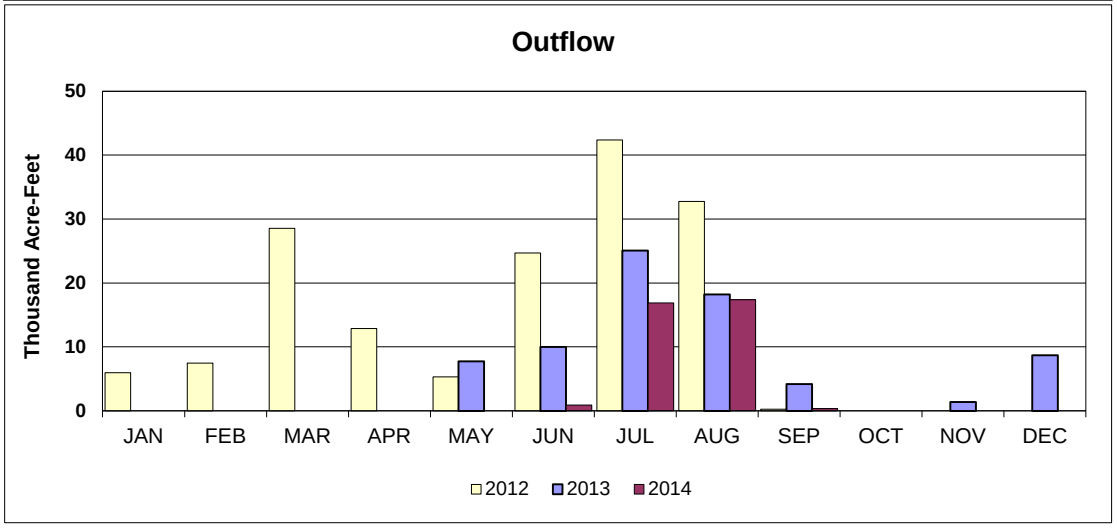
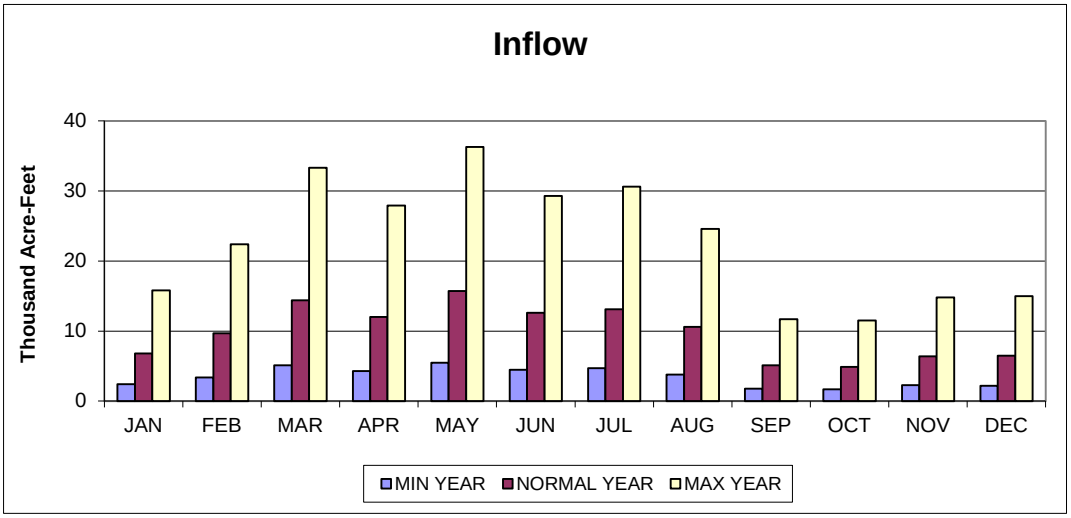
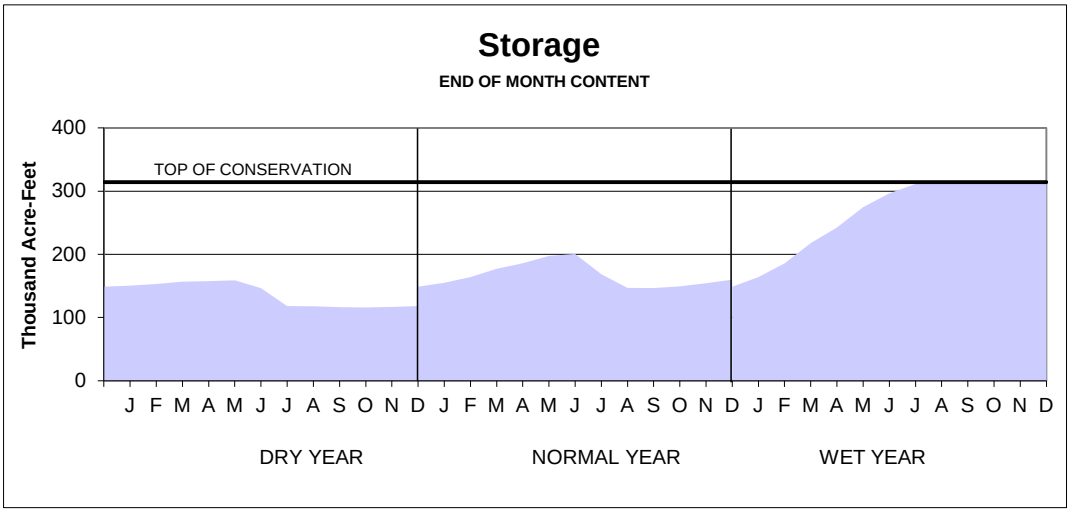


EXHIBIT 11B

HARLAN COUNTY LAKE

2015 OPERATION PLAN





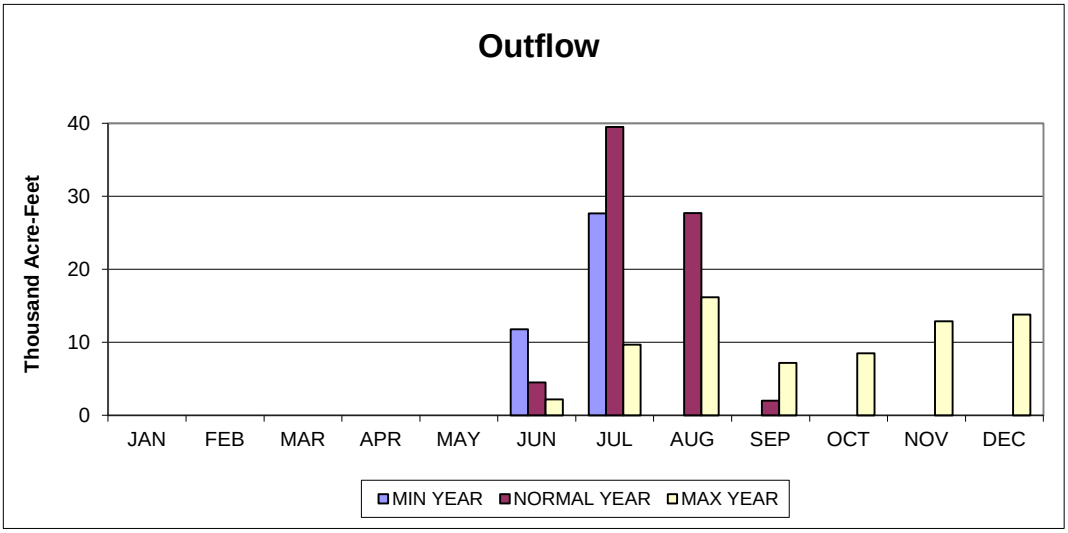
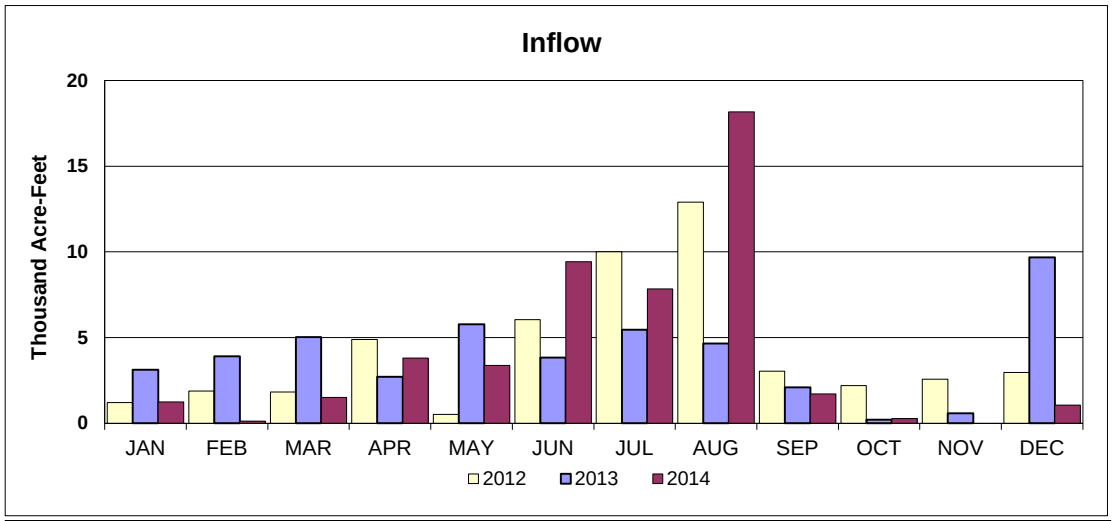
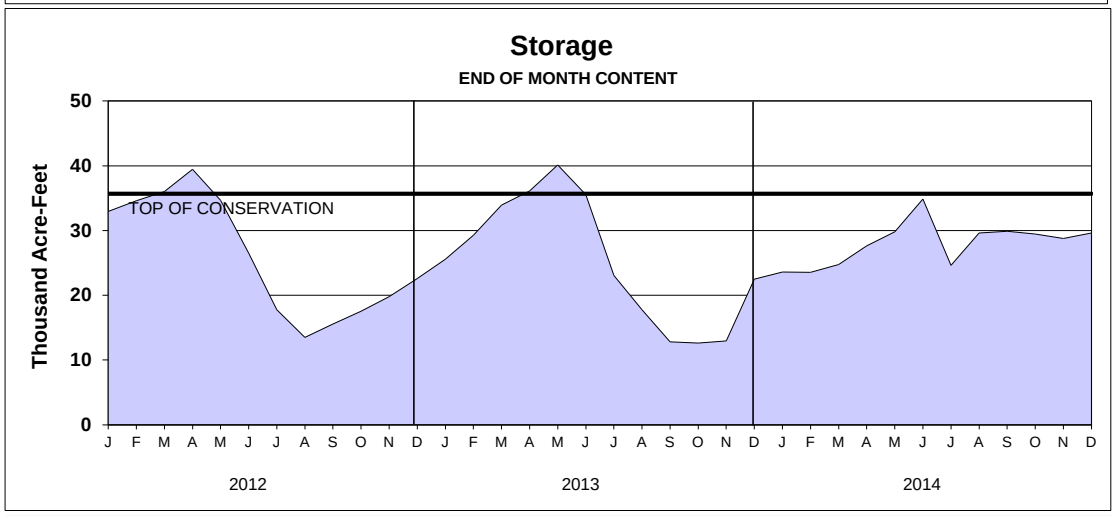


EXHIBIT 12A

LOVEWELL RESERVOIR

ACTUAL OPERATION





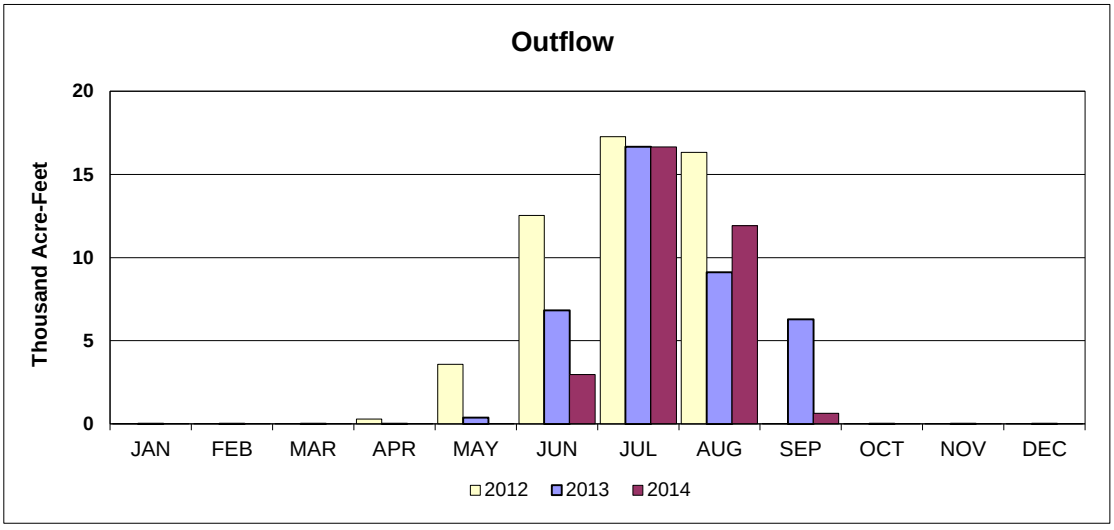
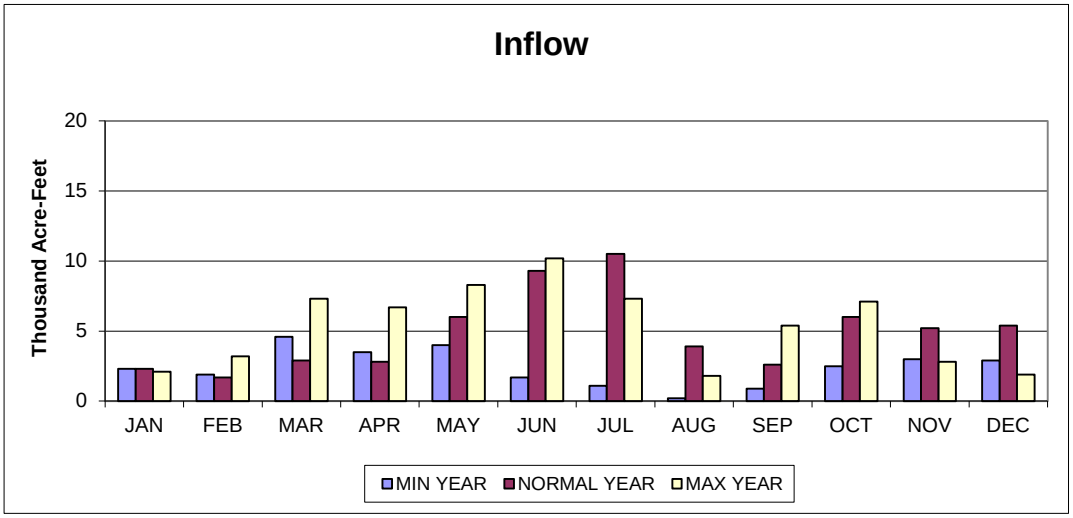
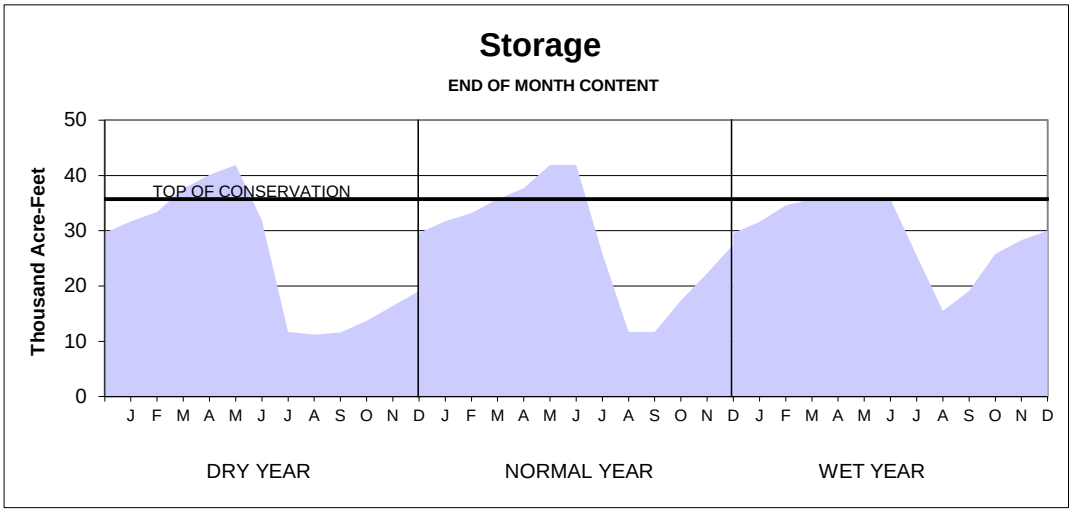


EXHIBIT 12B

LOVEWELL RESERVOIR

2015 OPERATION PLAN





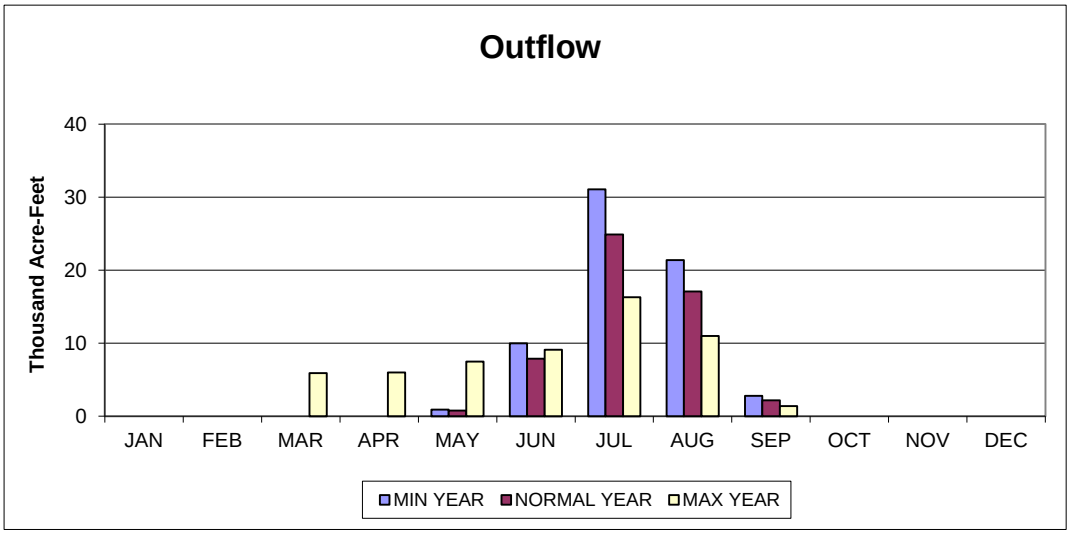
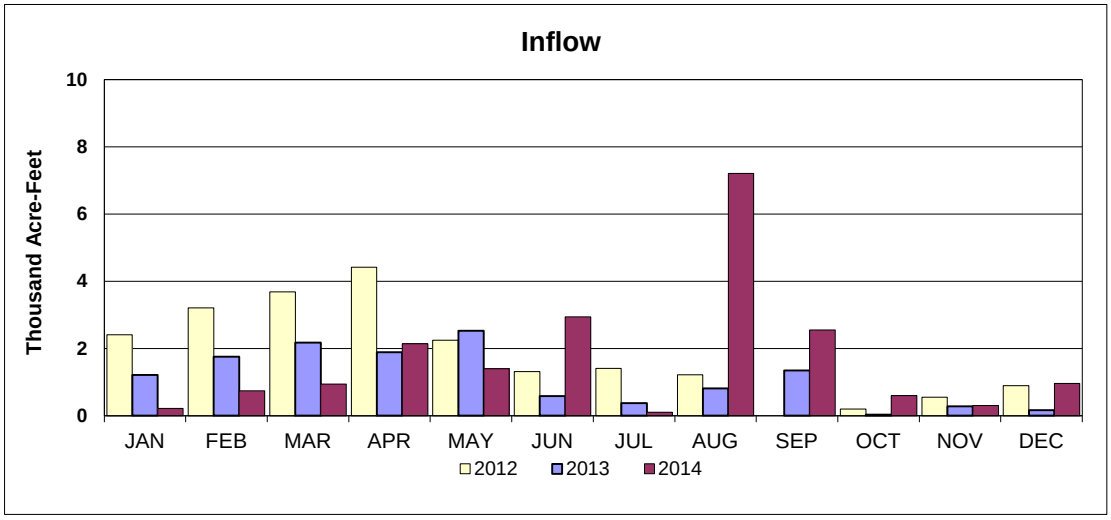
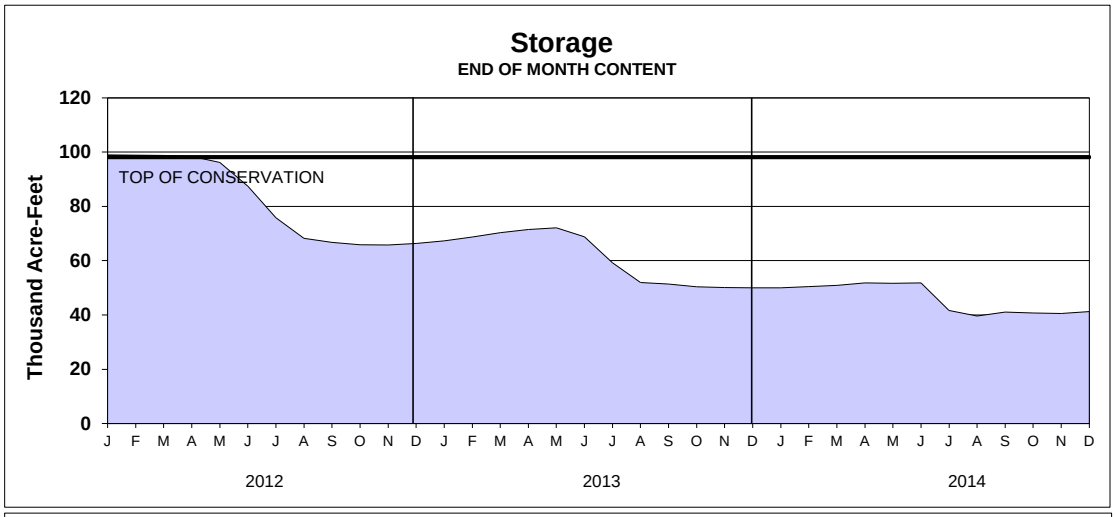


EXHIBIT 13A

KIRWIN RESERVOIR

ACTUAL OPERATION





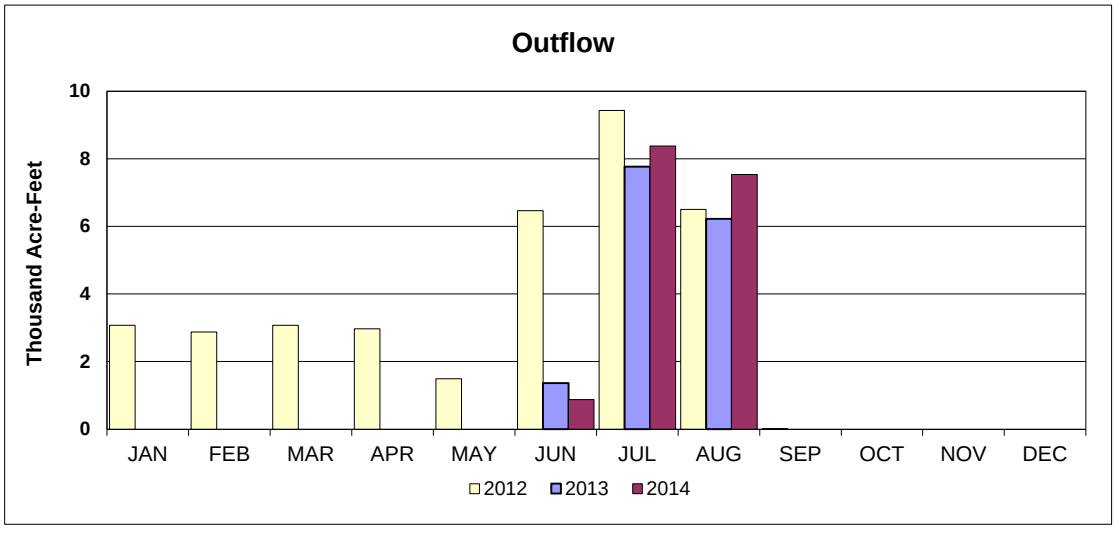
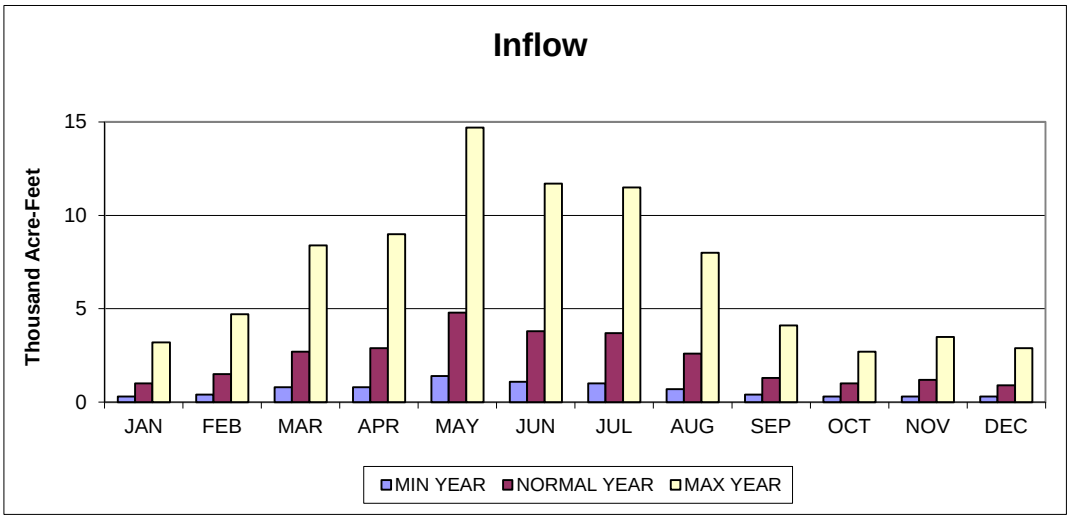
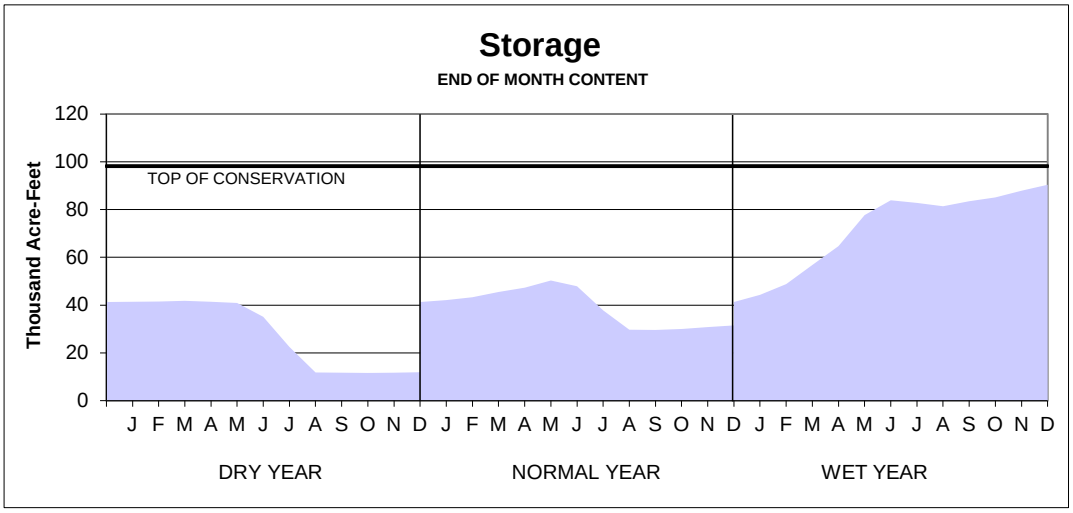


EXHIBIT 13B

KIRWIN RESERVOIR

2015 OPERATION PLAN





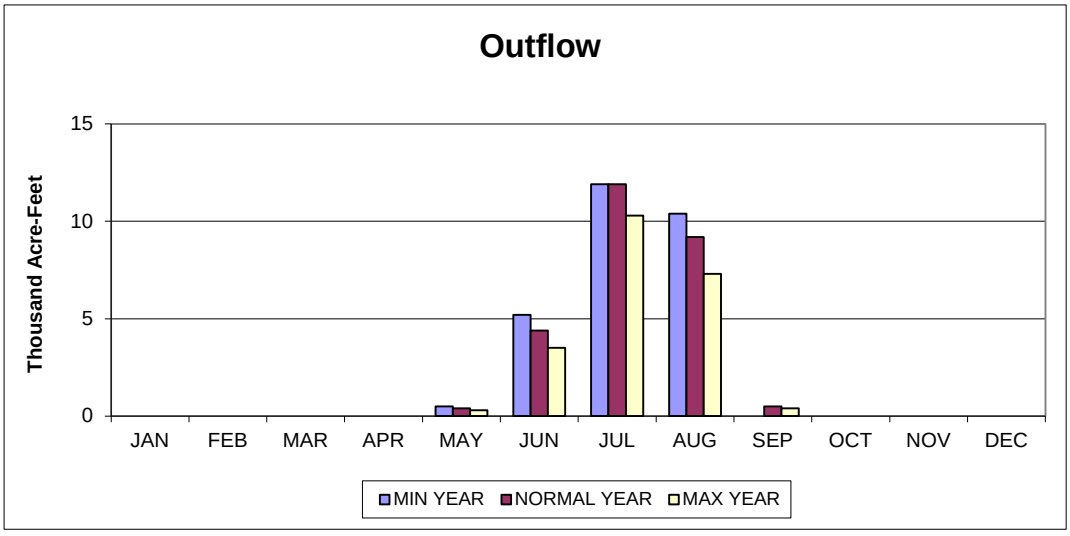
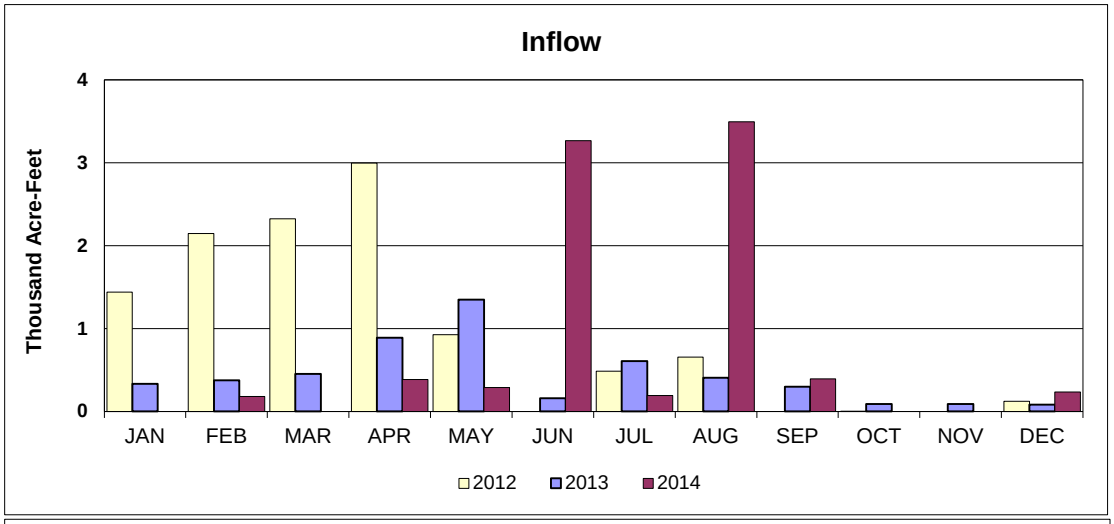
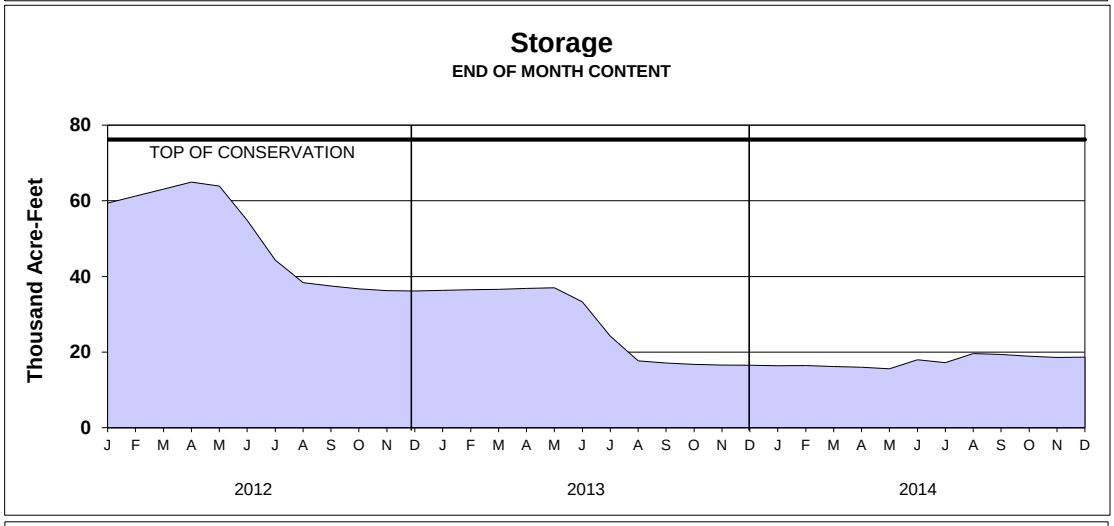


EXHIBIT 14A

WEBSTER RESERVOIR

ACTUAL OPERATION





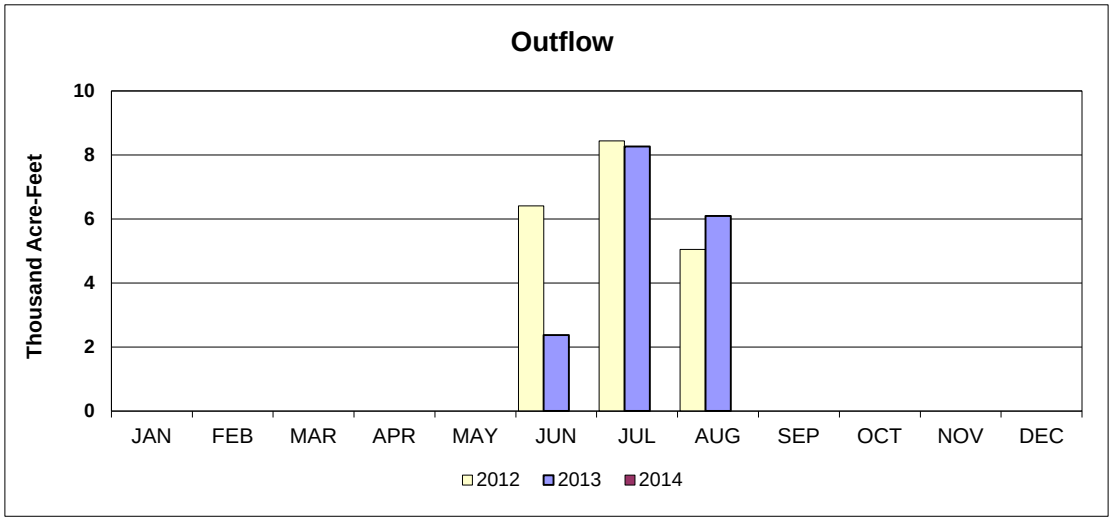
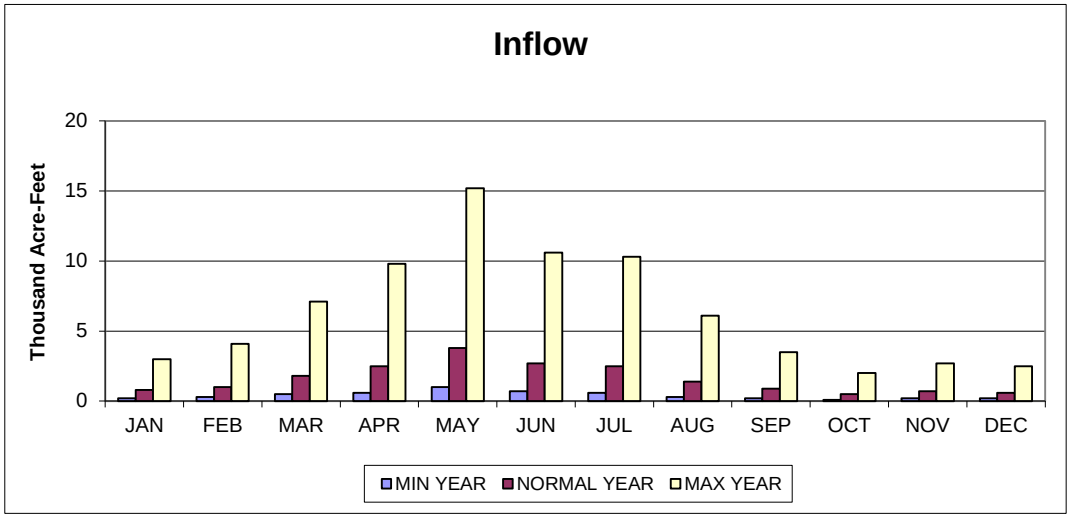
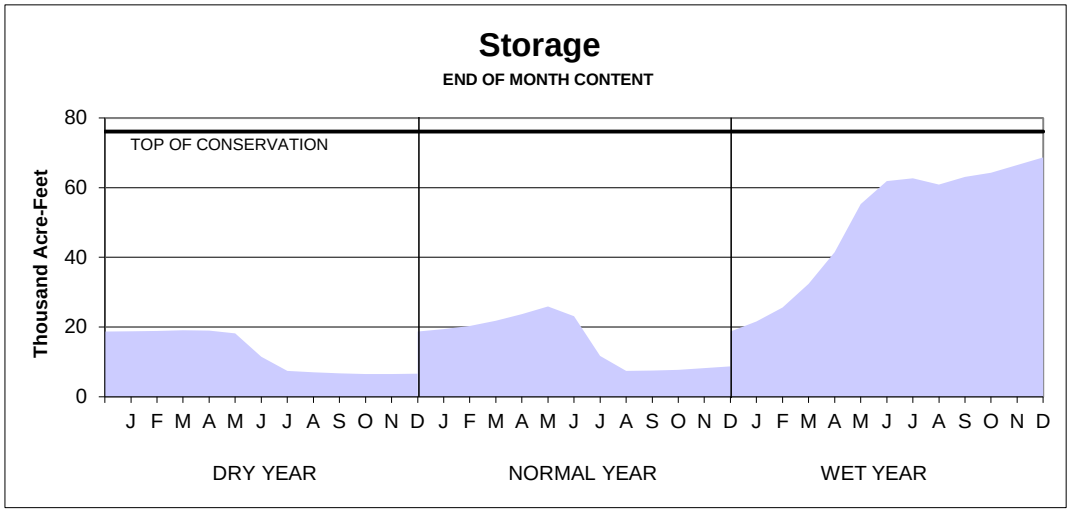


EXHIBIT 14B

WEBSTER RESERVOIR

2015 OPERATION PLAN





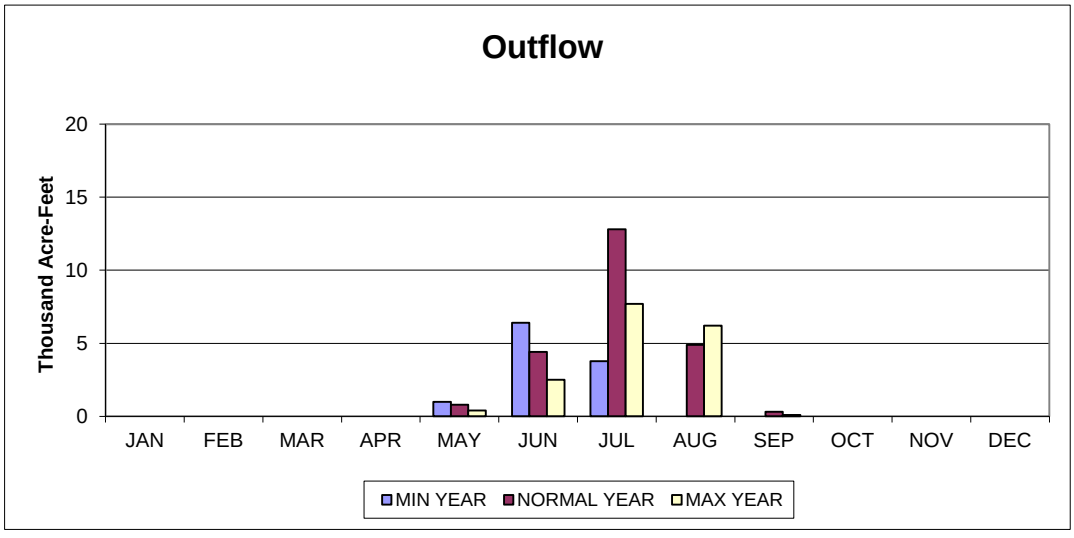
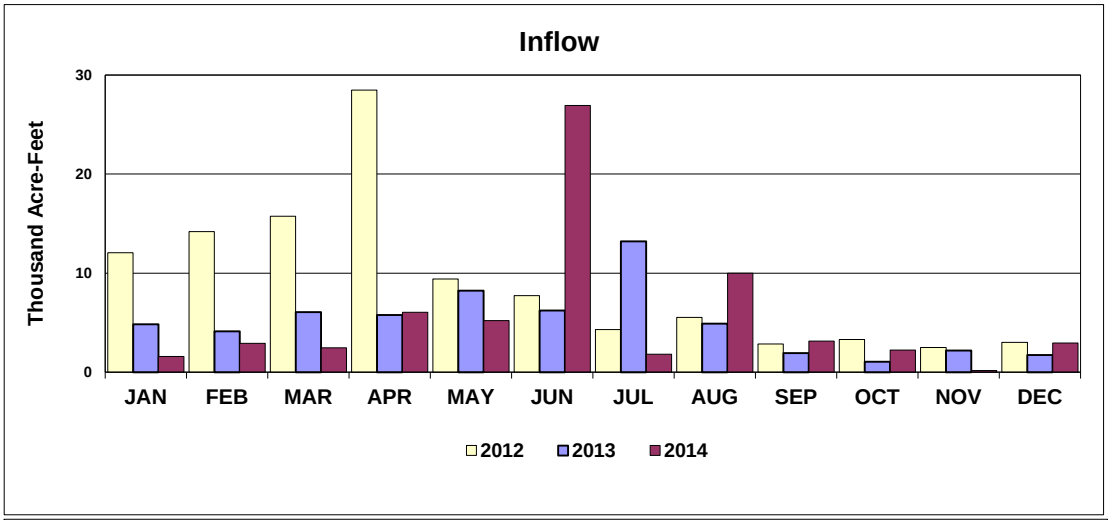
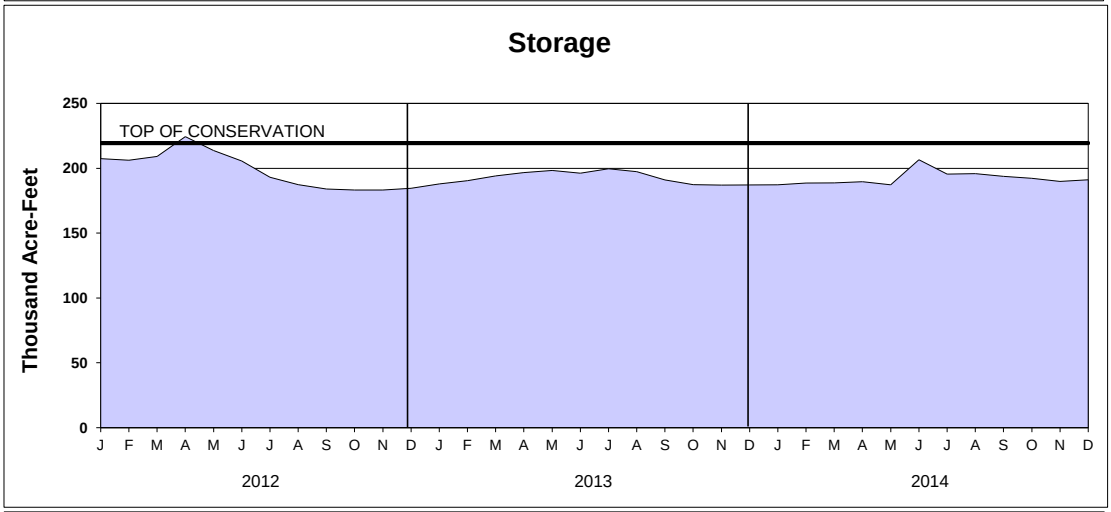


EXHIBIT 15A

WACONDA LAKE

ACTUAL OPERATION





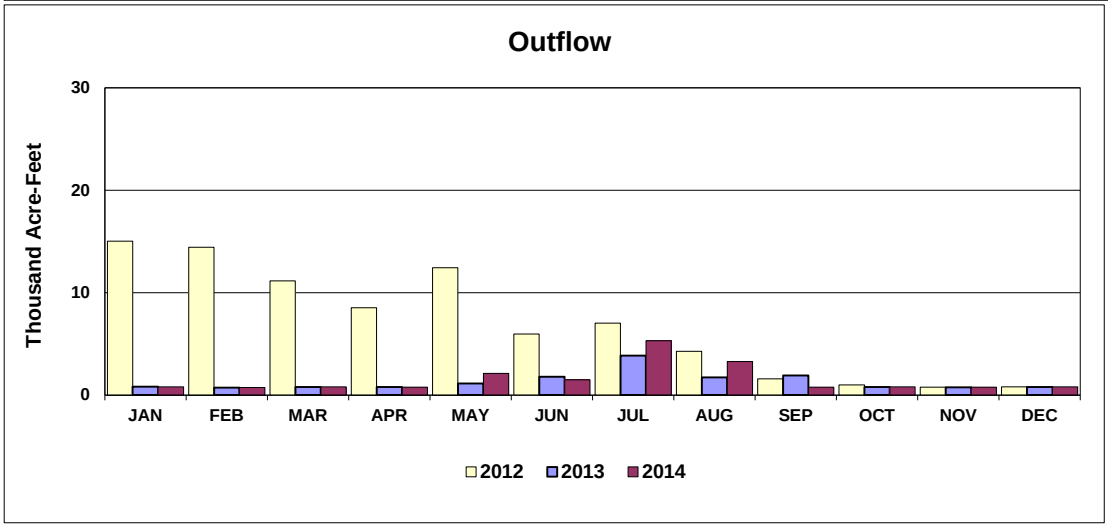
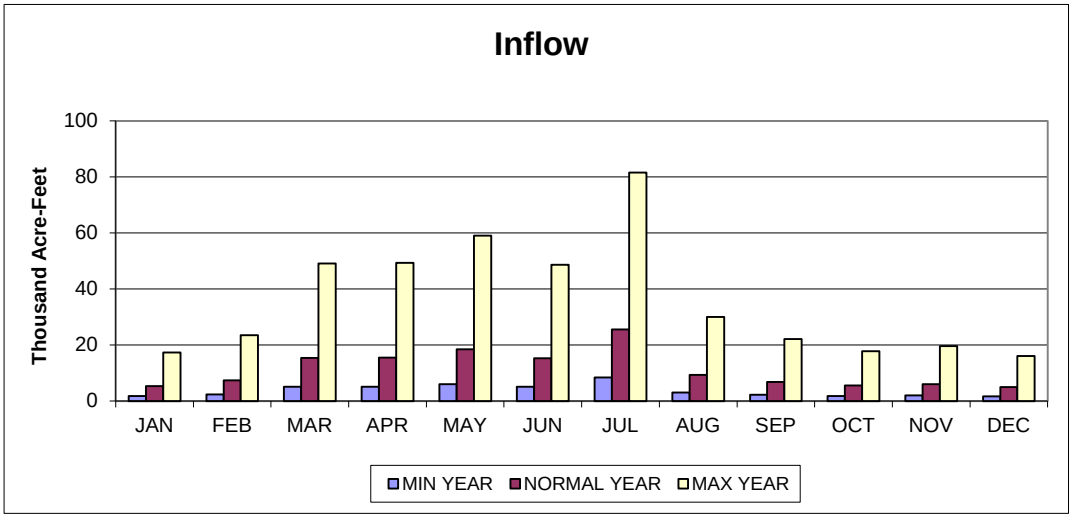
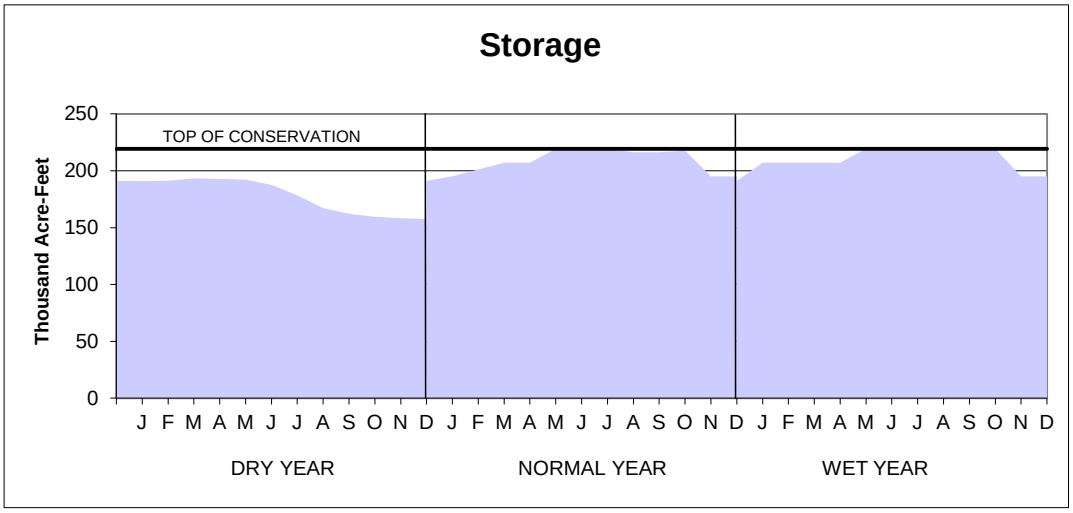


EXHIBIT 15B

WACONDA LAKE

2015 OPERATION PLAN





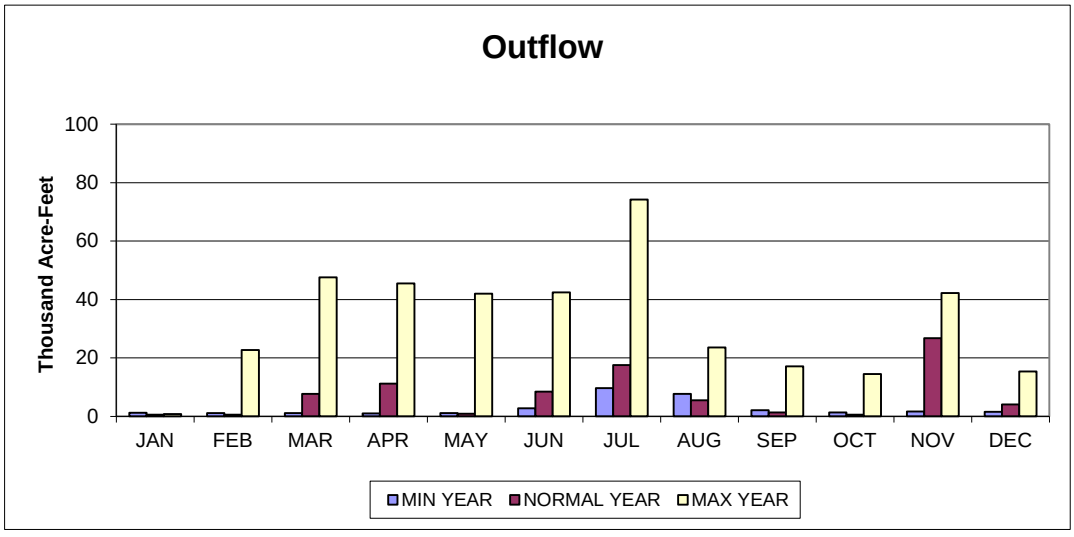
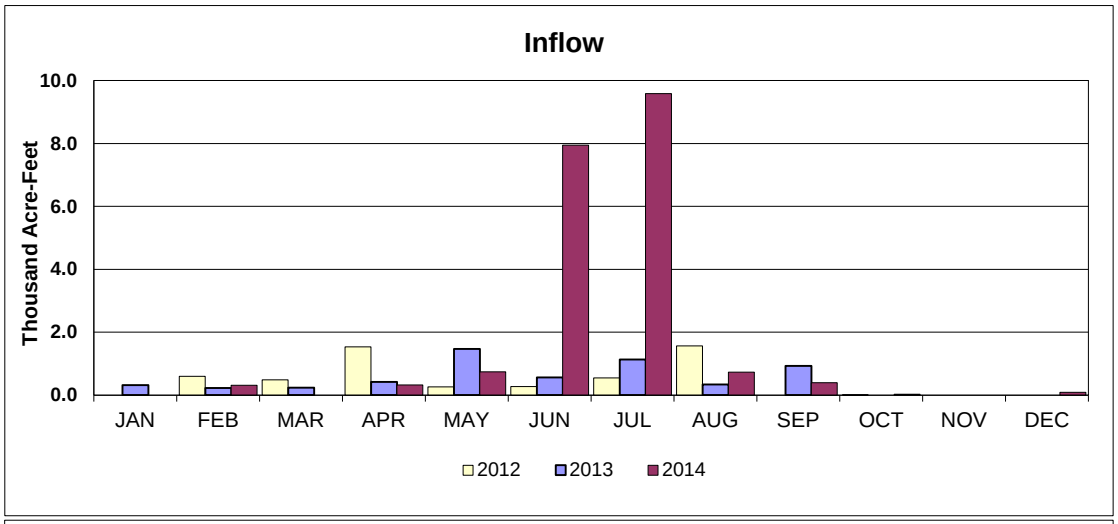
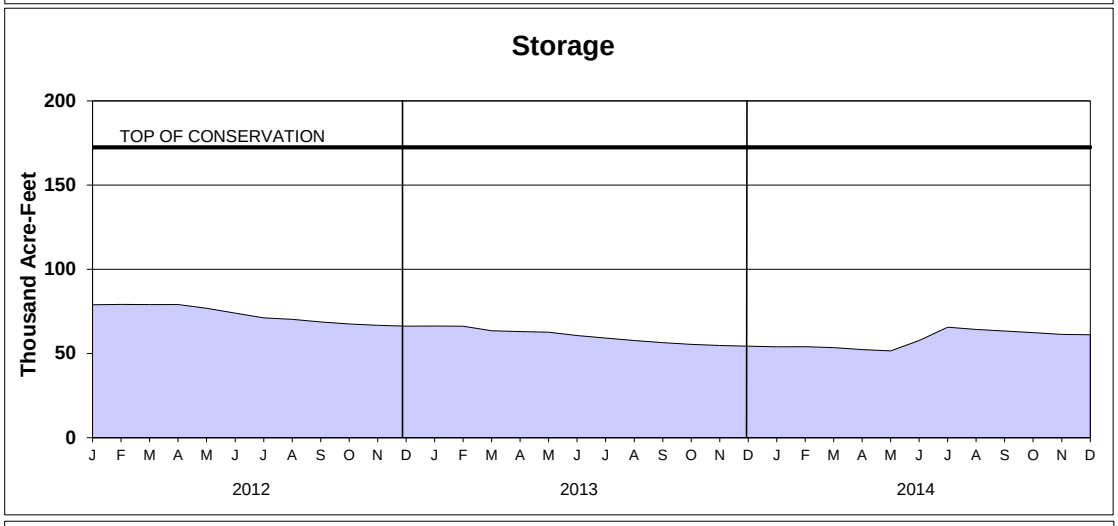


EXHIBIT 16A

CEDAR BLUFF RESERVOIR

ACTUAL OPERATION





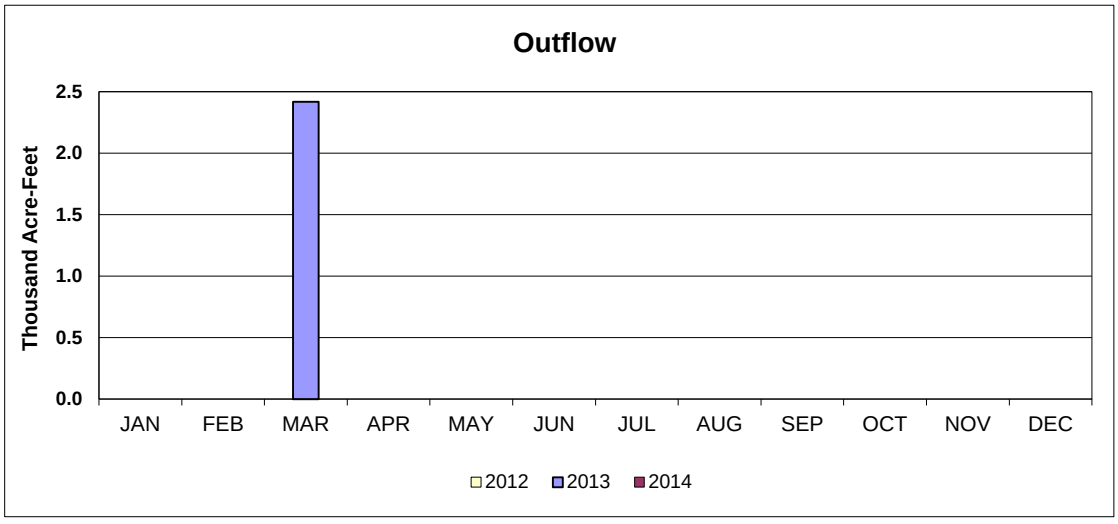
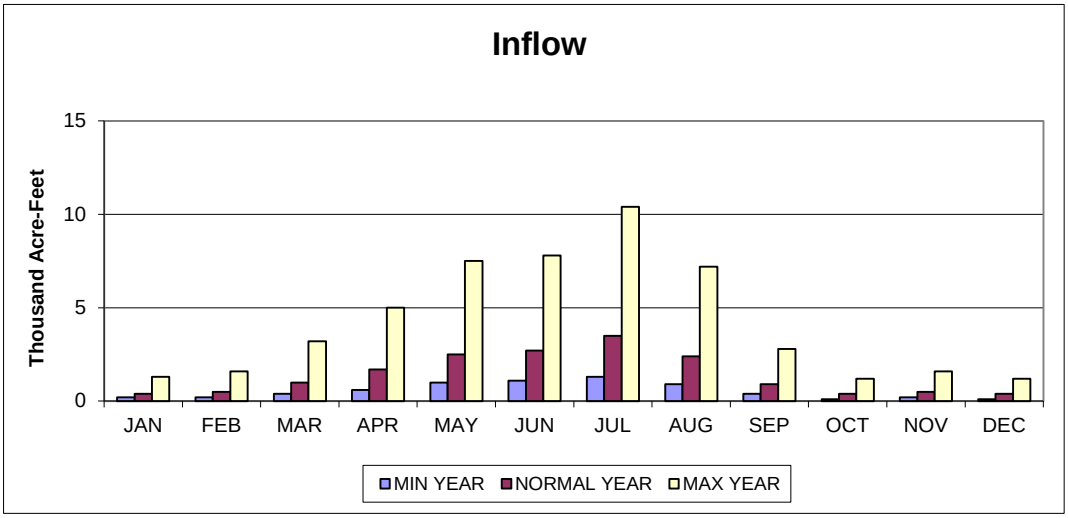
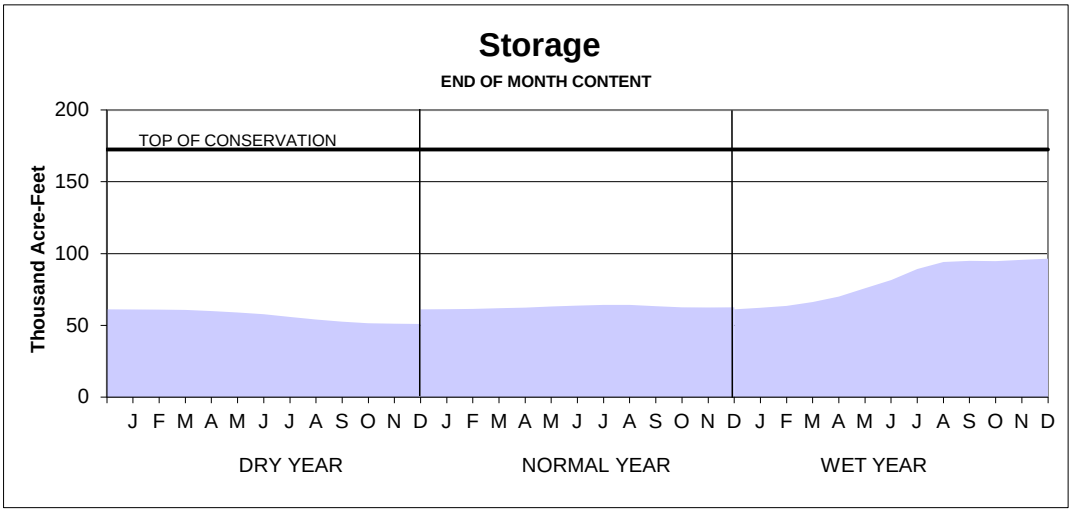


EXHIBIT 16B

CEDAR BLUFF RESERVOIR

2015 OPERATION PLAN





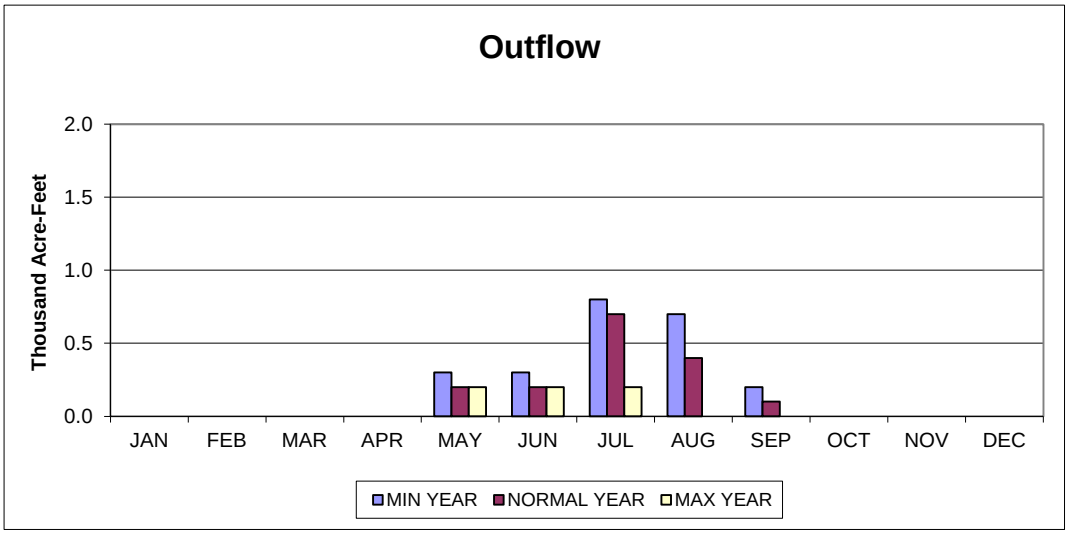
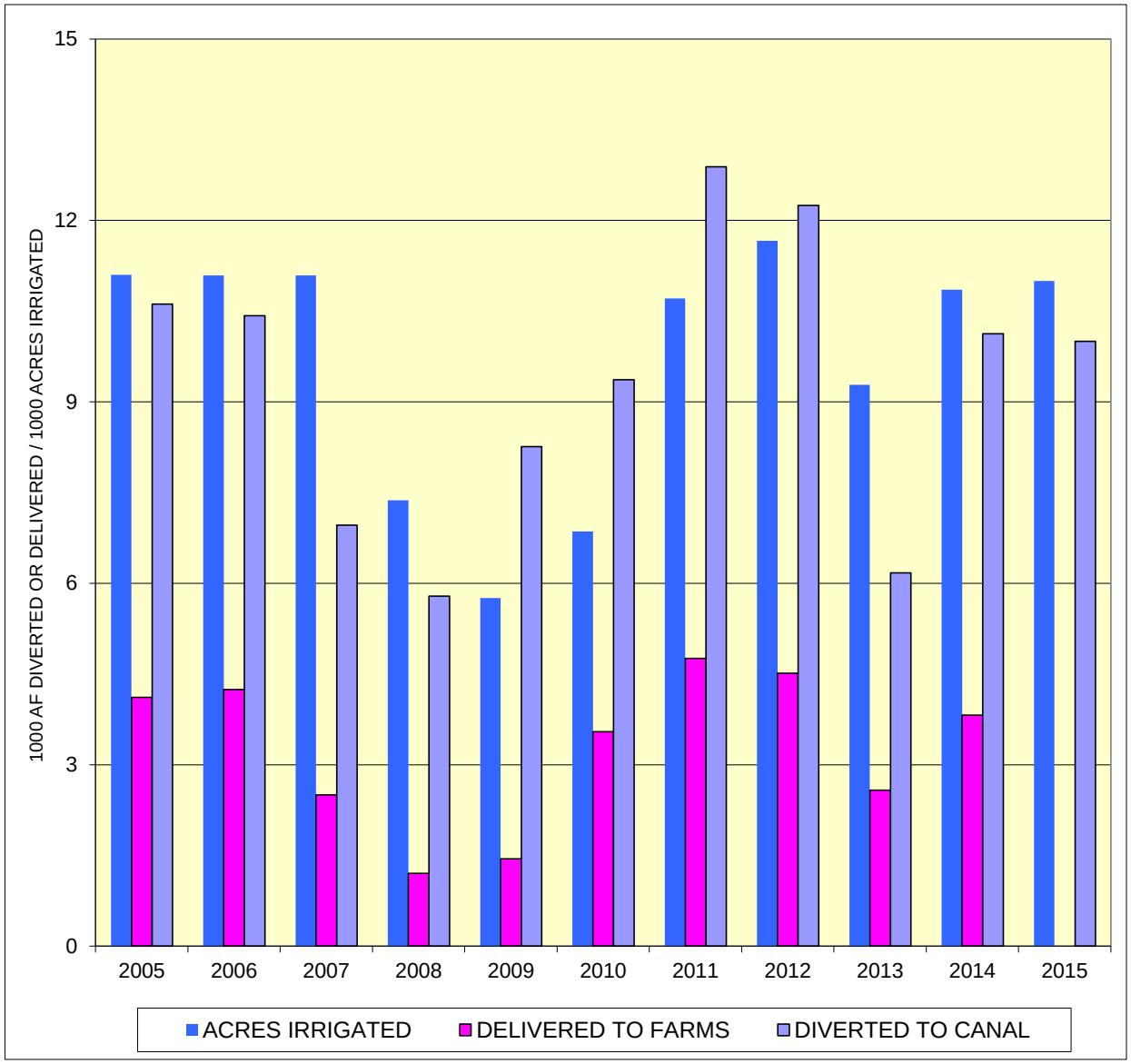


EXHIBIT 17

MIRAGE FLATS IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	0.96	0.94	0.63	0.78	1.44	1.37	1.20	1.05	0.66	0.93
DELIVERED af/acre	0.37	0.38	0.23	0.16	0.25	0.52	0.44	0.39	0.28	0.35
EFFICIENCY	39%	41%	36%	21%	18%	38%	37%	37%	42%	38%

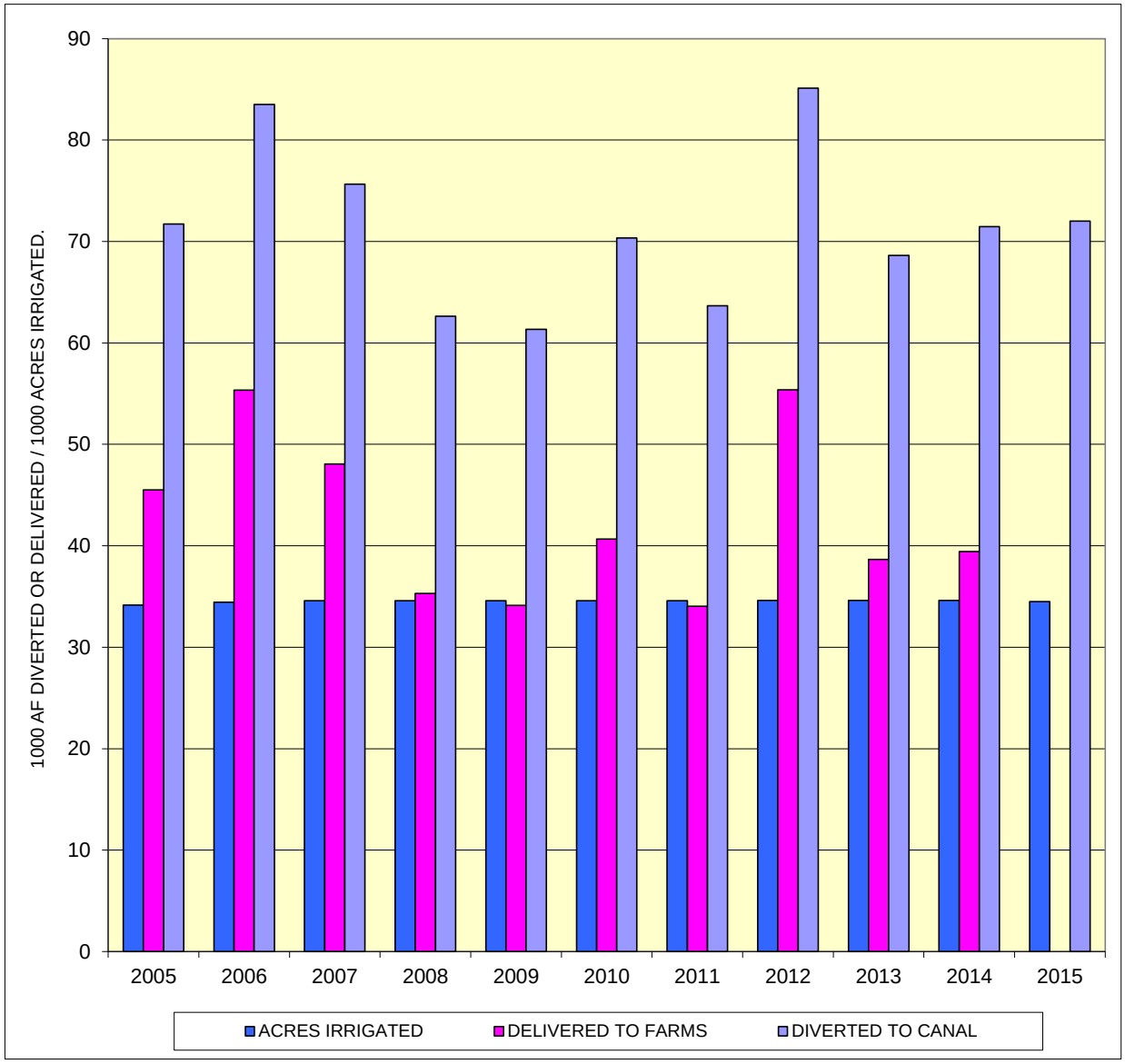
FORECASTED SHORTAGES (2015)

DRY YEAR	22,100 AF
NORMAL YEAR	12,200 AF
WET YEAR	0 AF

EXHIBIT 18

AINSWORTH IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	2.10	2.42	2.19	1.81	1.77	2.03	1.84	2.46	1.98	2.06
DELIVERED af/acre	1.33	1.61	1.39	1.02	0.99	1.18	0.98	1.60	1.12	1.14
EFFICIENCY	63%	66%	64%	56%	56%	58%	53%	65%	56%	55%

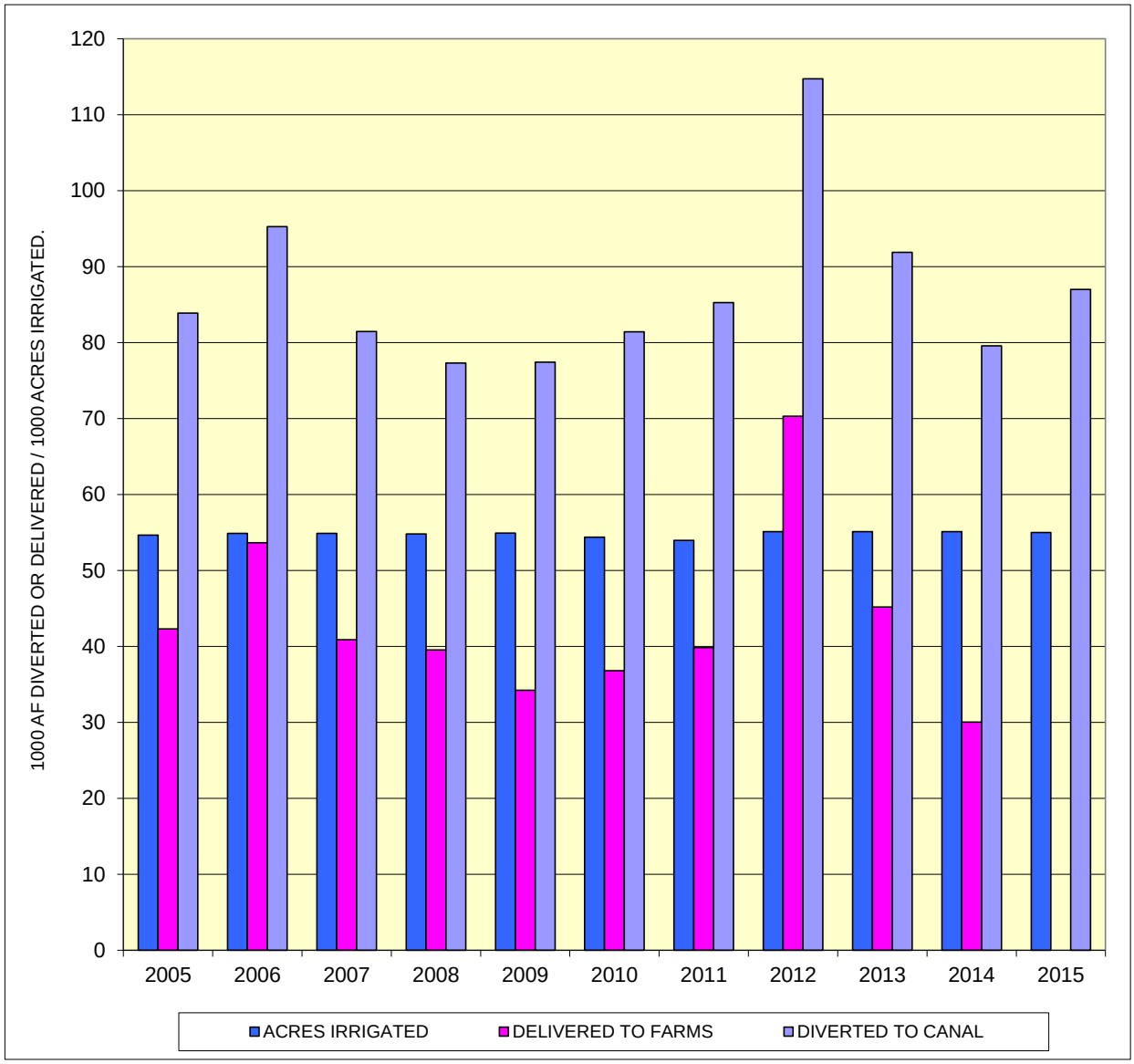
FORECASTED SHORTAGES (2015)

DRY YEAR	0 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

EXHIBIT 19

TWIN LOUPS IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	1.53	1.74	1.48	1.41	1.41	1.50	1.58	2.08	1.67	1.44
DELIVERED af/acre	0.77	0.98	0.74	0.72	0.62	0.68	0.74	1.28	0.82	0.54
EFFICIENCY	50%	56%	50%	51%	44%	45%	47%	61%	49%	38%

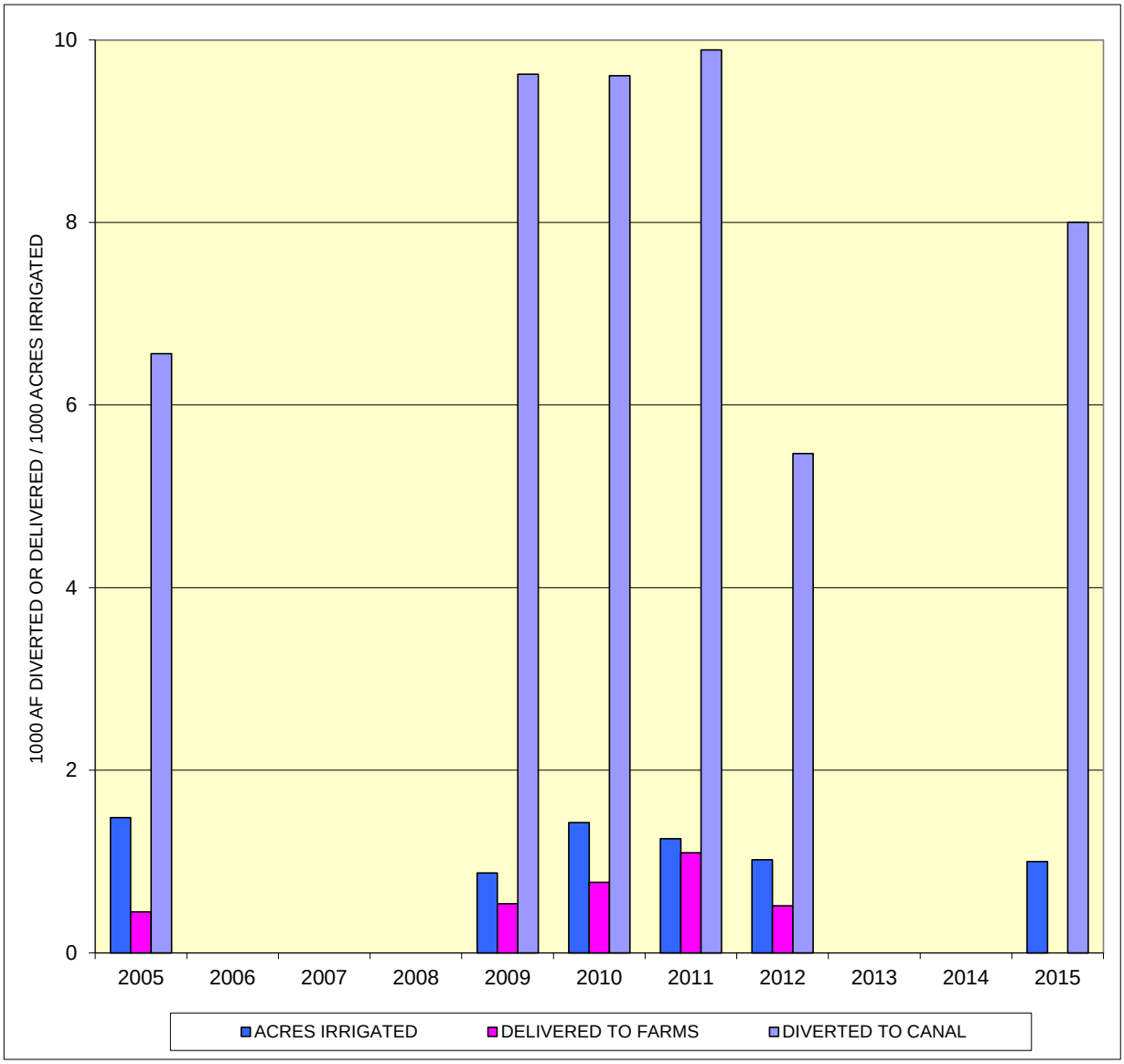
FORECASTED SHORTAGES (2015)

DRY YEAR	0 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

EXHIBIT 20

FRENCHMAN VALLEY IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	4.43	0.00	0.00	0.00	11.01	6.74	7.91	5.36	0.00	0.00
DELIVERED af/acre	0.30	0.00	0.00	0.00	0.61	0.54	0.88	0.50	0.00	0.00
EFFICIENCY	7%	0%	0%	0%	6%	8%	11%	9%	0%	0%

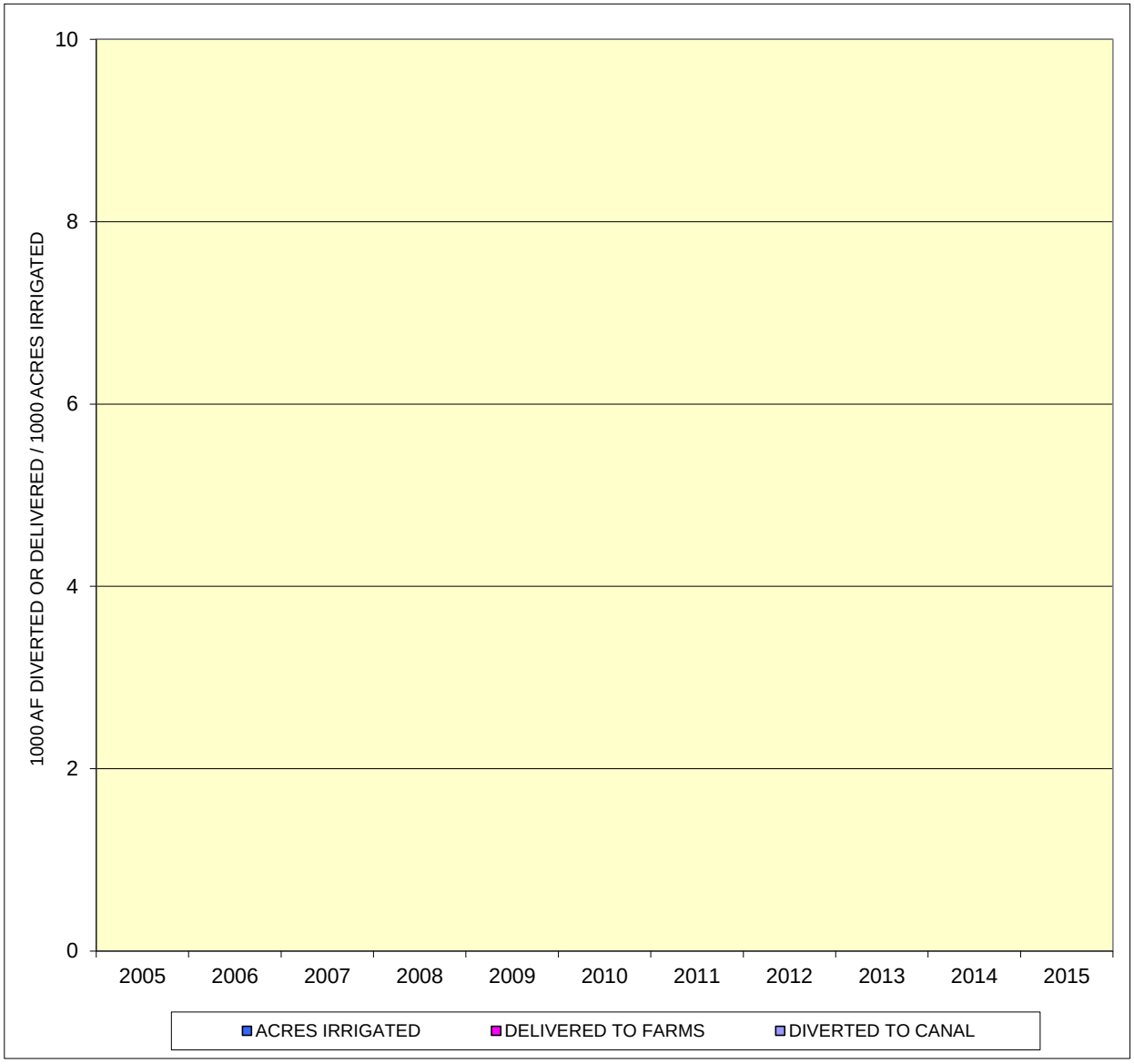
FORECASTED SHORTAGES (2015)

DRY YEAR	34,300 AF
NORMAL YEAR	26,200 AF
WET YEAR	11,200 AF

EXHIBIT 21

H AND RW IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DELIVERED af/acre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EFFICIENCY	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

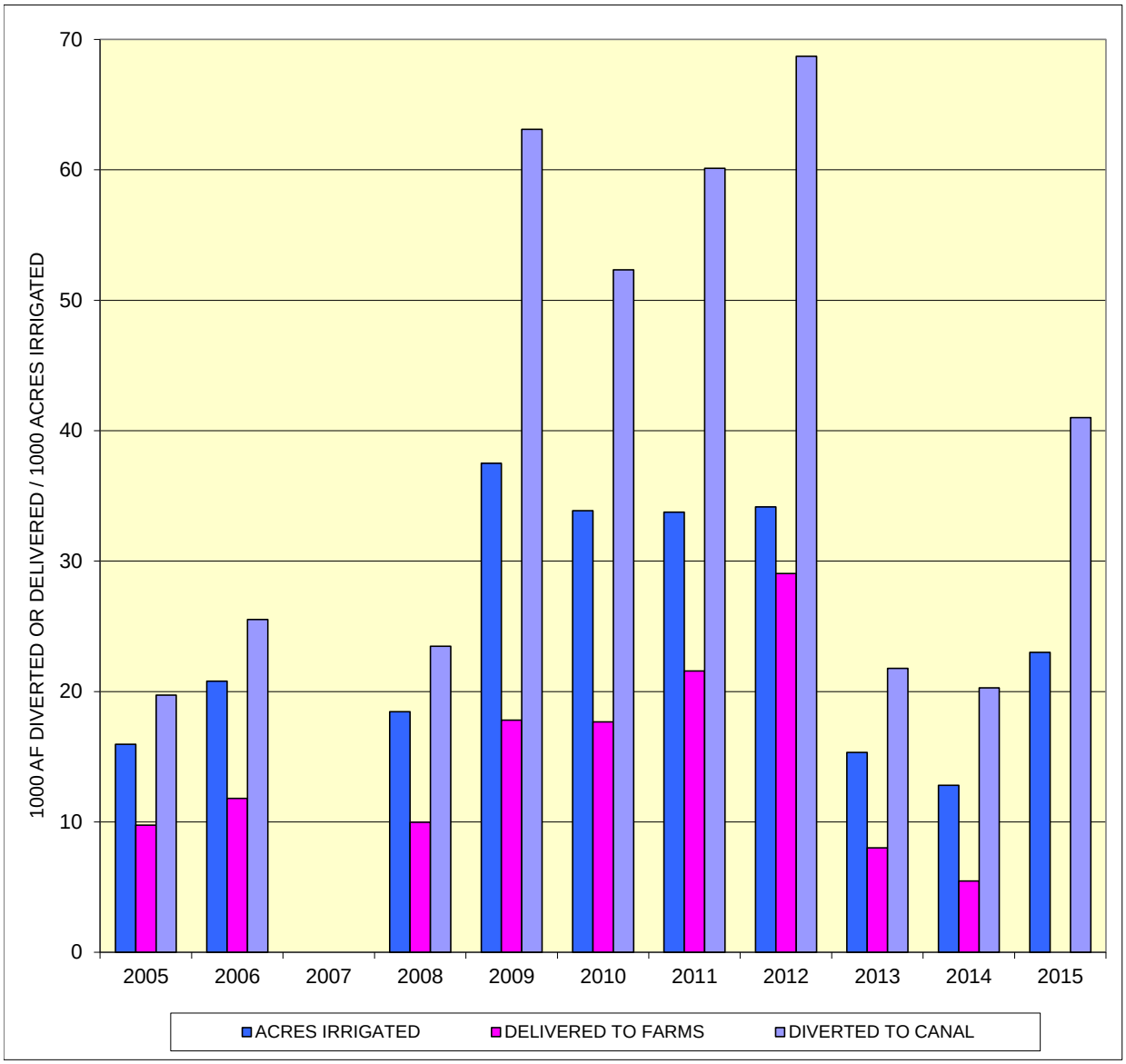
FORECASTED SHORTAGES (2015)

DRY YEAR	43,600 AF
NORMAL YEAR	33,400 AF
WET YEAR	14,200 AF

EXHIBIT 22

FRENCHMAN-CAMBRIDGE IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	1.24	1.23	0.00	1.27	1.68	1.55	1.78	2.01	1.42	1.58
DELIVERED af/acre	0.61	0.57	0.00	0.54	0.47	0.52	0.64	0.85	0.52	0.43
EFFICIENCY	50%	46%	0%	42%	28%	34%	36%	42%	37%	27%

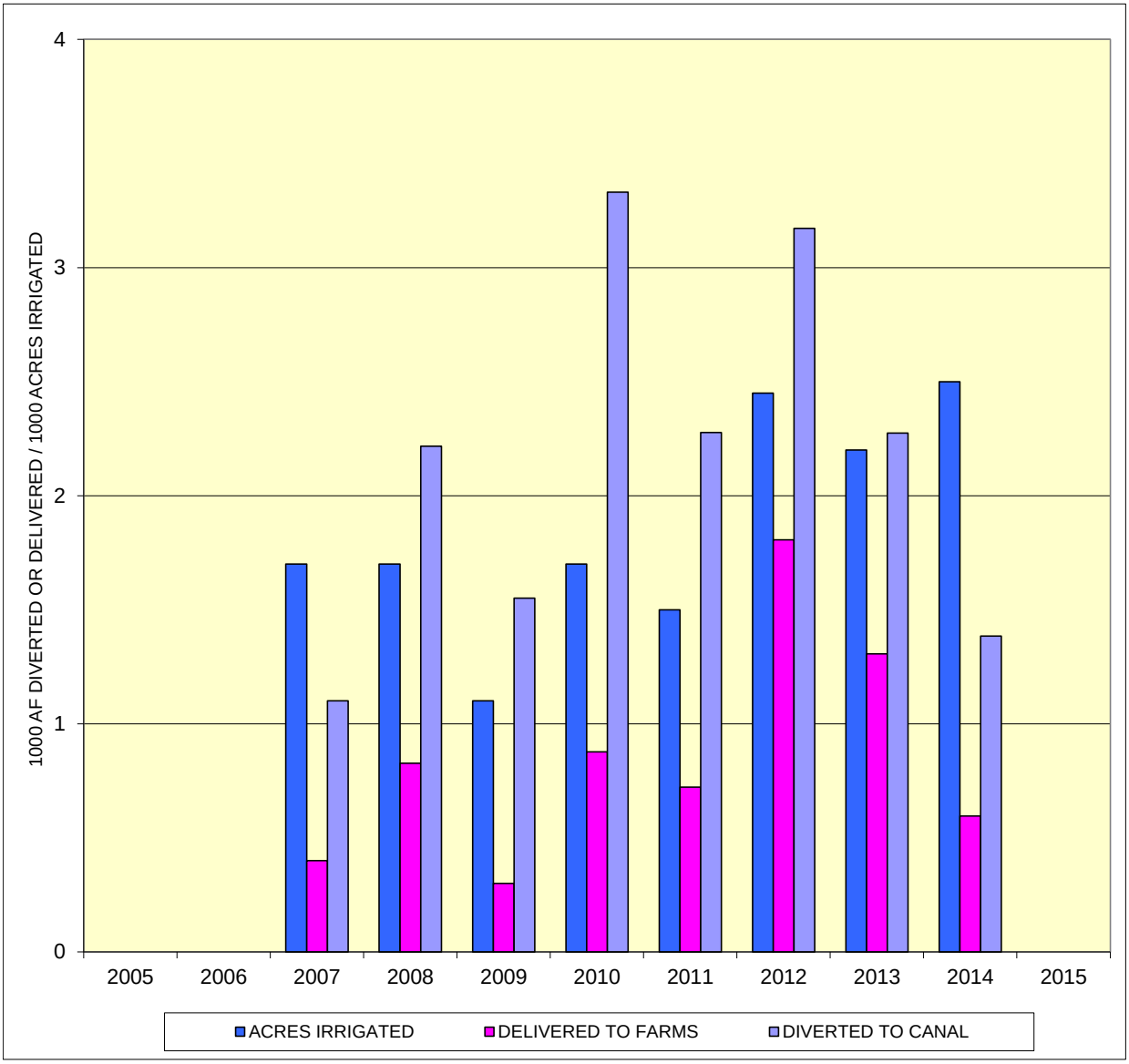
FORECASTED SHORTAGES (2015)

DRY YEAR	58,000 AF
NORMAL YEAR	20,900 AF
WET YEAR	0 AF

EXHIBIT 23

ALMENA IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	0.00	0.00	0.65	1.30	1.41	1.96	1.52	1.29	1.03	0.55
DELIVERED af/acre	0.00	0.00	0.24	0.49	0.27	0.52	0.48	0.74	0.59	0.24
EFFICIENCY	0%	0%	36%	37%	19%	26%	32%	57%	57%	43%

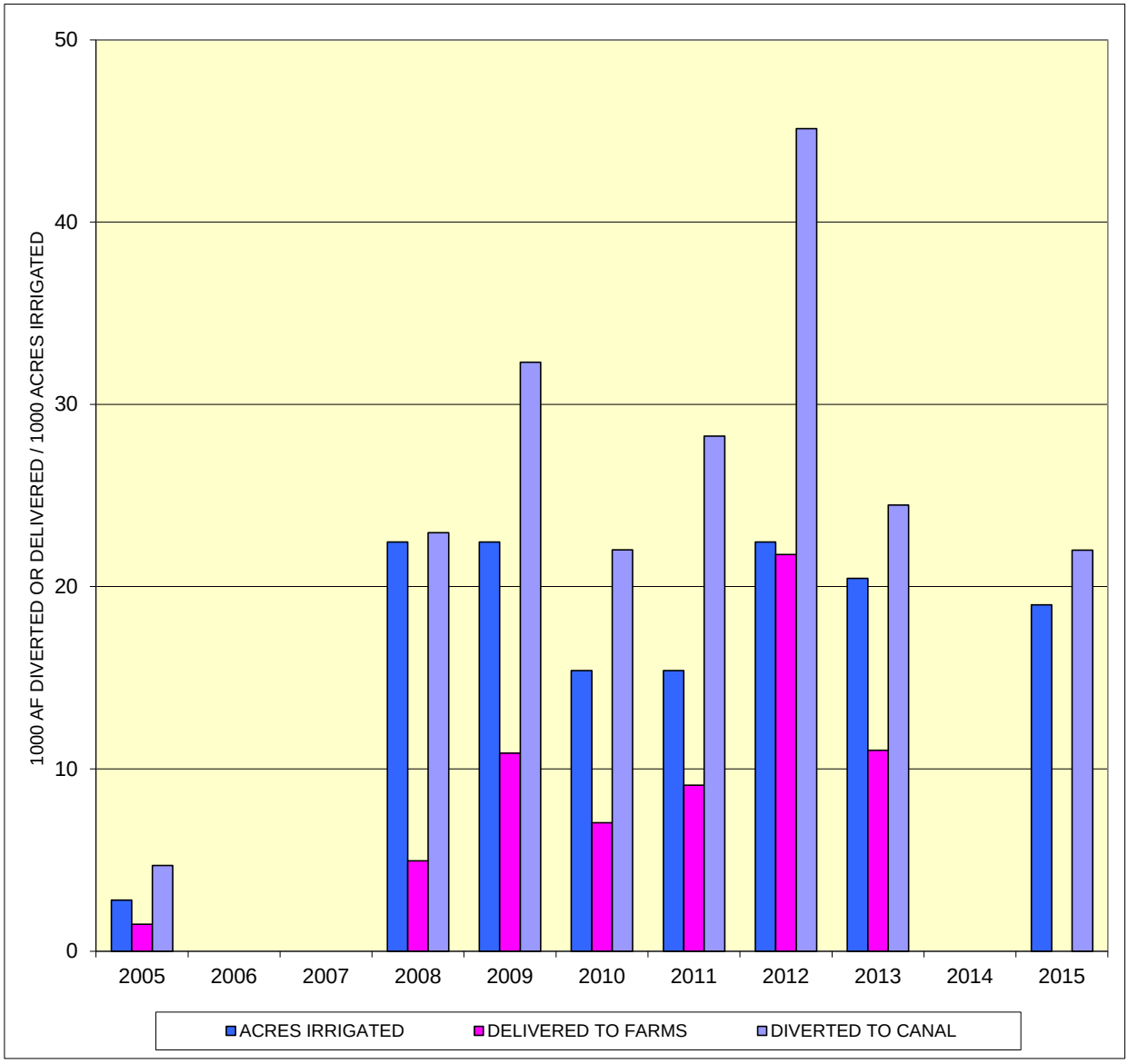
FORECASTED SHORTAGES (2015)

DRY YEAR	16,600 AF
NORMAL YEAR	10,400 AF
WET YEAR	0 AF

EXHIBIT 24

BOSTWICK IRRIGATION DISTRICT - NEBRASKA

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	1.68	0.00	0.00	1.02	1.44	1.43	1.84	2.01	1.20	0.00
DELIVERED af/acre	0.53	0.00	0.00	0.22	0.48	0.46	0.59	0.97	0.54	0.00
EFFICIENCY	32%	0%	0%	22%	34%	32%	32%	48%	45%	0%

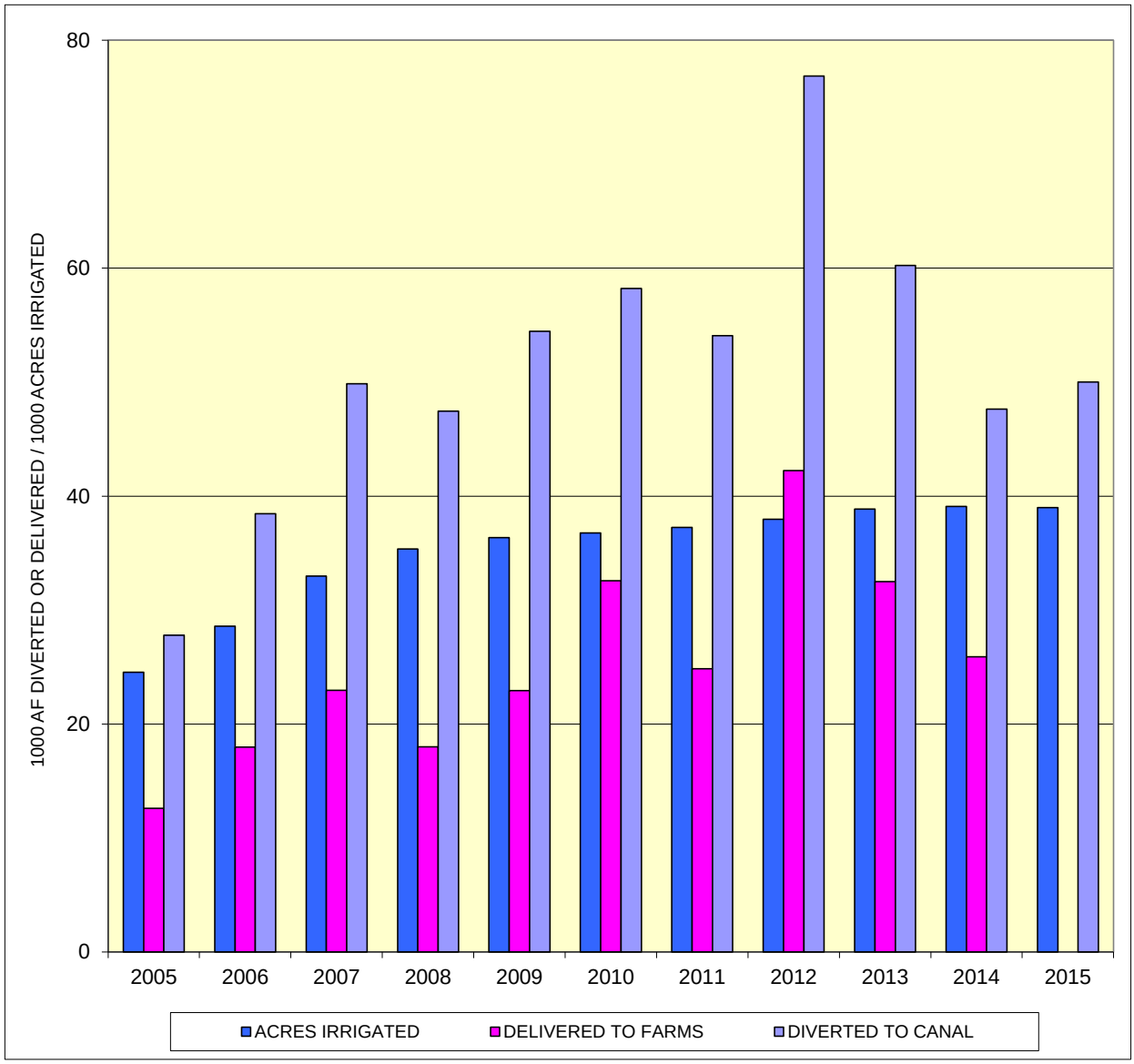
FORECASTED SHORTAGES (2015)

DRY YEAR	28,800 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

EXHIBIT 25

KANSAS-BOSTWICK IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	1.13	1.35	1.51	1.34	1.50	1.58	1.45	2.02	1.55	1.22
DELIVERED af/acre	0.51	0.63	0.70	0.51	0.63	0.89	0.67	1.11	0.84	0.66
EFFICIENCY	45%	47%	46%	38%	42%	56%	46%	55%	54%	54%

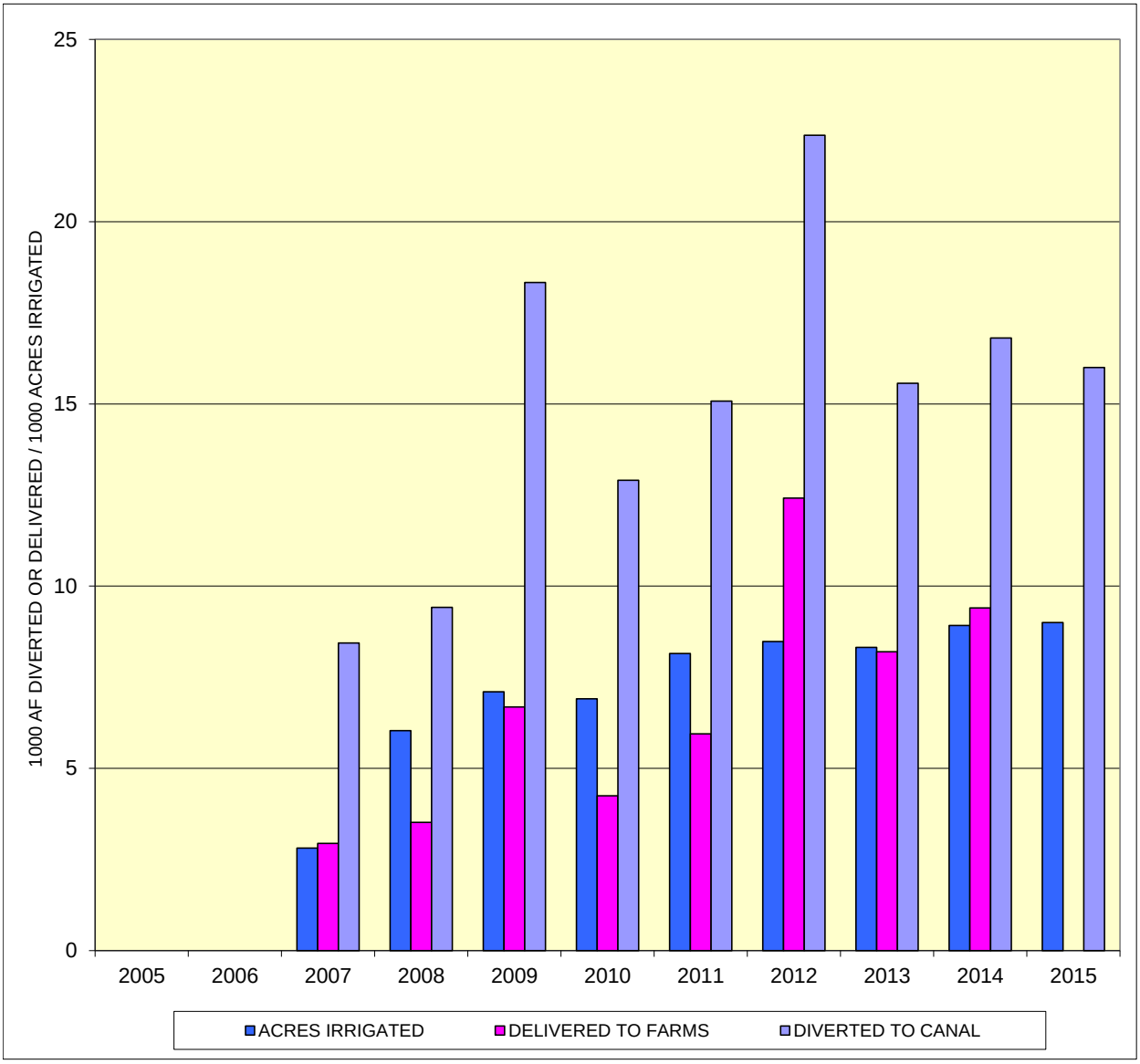
FORECASTED SHORTAGES (2015)

DRY YEAR	59,100 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

EXHIBIT 26

KIRWIN IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	0.00	0.00	3.00	1.56	2.58	1.87	1.85	2.64	1.87	1.88
DELIVERED af/acre	0.00	0.00	1.05	0.58	0.94	0.61	0.73	1.46	0.99	1.05
EFFICIENCY	0%	0%	35%	37%	36%	33%	39%	55%	53%	56%

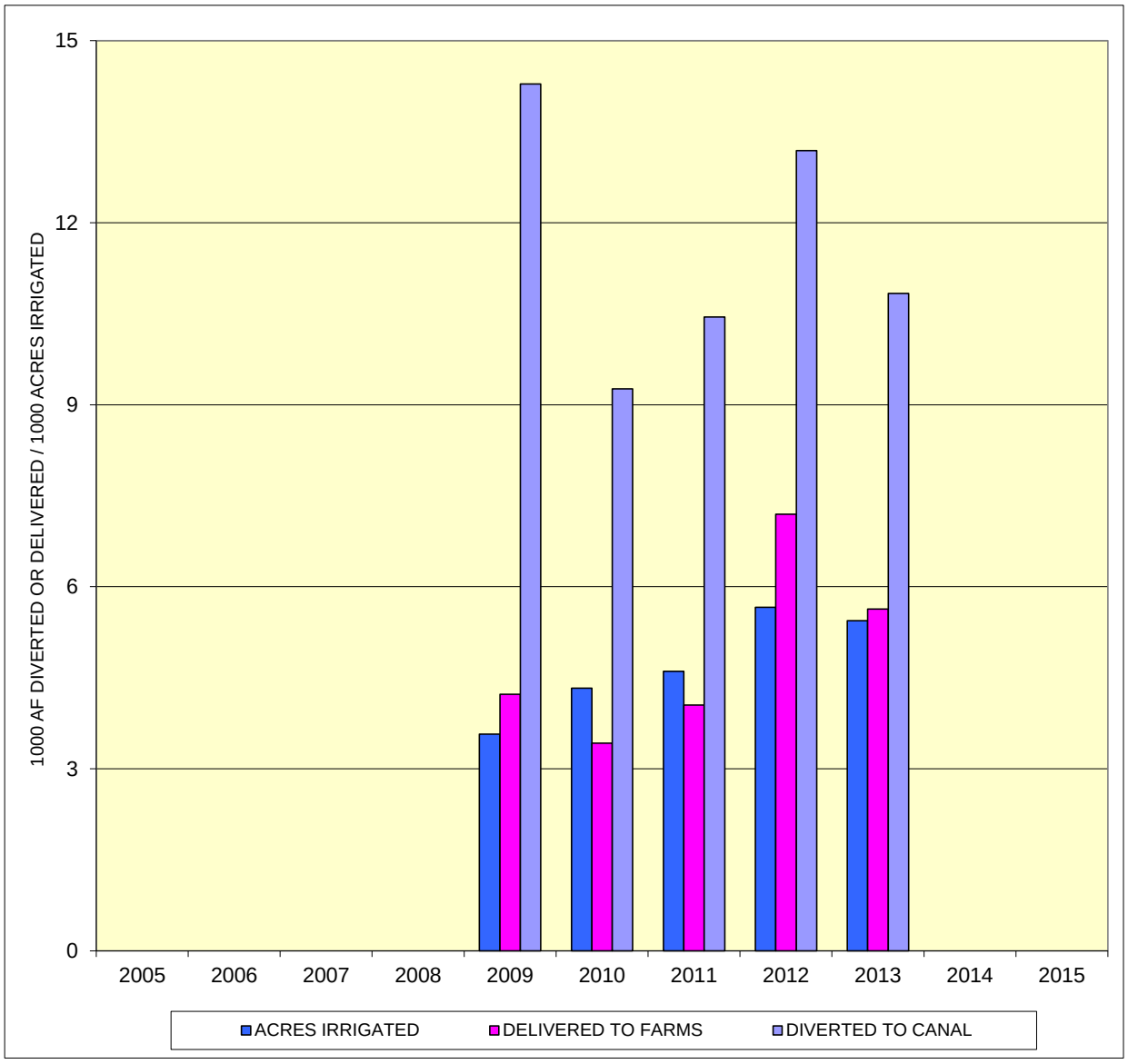
FORECASTED SHORTAGES (2015)

DRY YEAR	1,100 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

EXHIBIT 27

WEBSTER IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	0.00	0.00	0.00	0.00	4.00	2.14	2.27	2.33	1.99	0.00
DELIVERED af/acre	0.00	0.00	0.00	0.00	1.18	0.79	0.88	1.27	1.04	0.00
EFFICIENCY	0%	0%	0%	0%	30%	37%	39%	55%	52%	0%

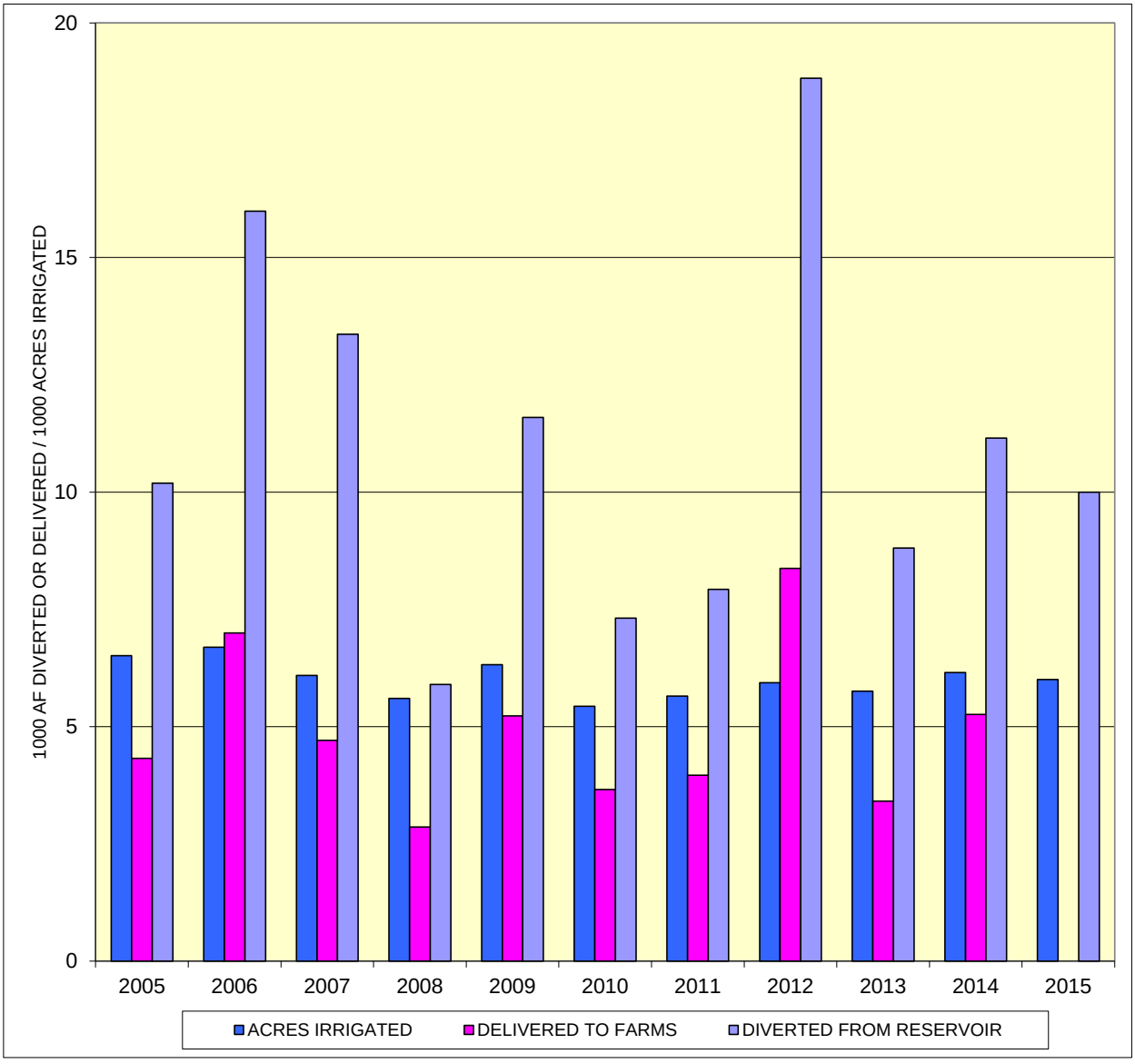
FORECASTED SHORTAGES (2015)

DRY YEAR	26,400 AF
NORMAL YEAR	5,000 AF
WET YEAR	0 AF

EXHIBIT 28

GLEN ELDER IRRIGATION DISTRICT

ACRES IRRIGATED, FARM DELIVERED, CANAL DIVERTED



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
DIVERTED af/acre	1.57	2.39	2.19	1.05	1.83	1.35	1.40	3.17	1.53	1.81
DELIVERED af/acre	0.66	1.04	0.77	0.51	0.83	0.67	0.70	1.41	0.59	0.86
EFFICIENCY	42%	44%	35%	48%	45%	50%	50%	44%	39%	47%

FORECASTED SHORTAGES (2015)

DRY YEAR	0 AF
NORMAL YEAR	0 AF
WET YEAR	0 AF

N

EXPLANATION

Reservoir

Diversion Dam

Pumping Plant

Canal

Irrigated Land

Chadron
Gordon
Valentine
Hay Springs
Niobrara River
Lewis & Clark Lake
Niobrara
Box Butte Dam
Mirage Flats Canal
Snake River
Merritt Dam
Ainsworth Canal
Ainsworth
SANDHILLS DIVISION
AINSWORTH UNIT
Merritt Reservoir Capacity Allocation
Conser. 65,952 a.f.
Dead 774 a.f.
Total 66,726 a.f.
Box Butte Reservoir Capacity Allocation
Conser. 30,420 a.f.
Dead 640 a.f.
Total 31,060 a.f.
Dunlap Diversion Dam
MIRAGE FLATS PROJECT
Alliance
Moon Lake
Calamus River
O'Neill
Elkhorn River
Missouri River
Norfork
Calamus Reservoir Capacity Allocation
Conser. 126,583 a.f.
Dead 817 a.f.
Total 127,400 a.f.
Scottsbluff
Middle Loup River
North Loup River
Kent Diversion Dam & Canal
Virginia Smith Dam
Burwell
Mirdan Canal
Geranium Canal Pumping Plant
Geranium Canal
Scotia Canal
NORTH LOUP DIVISION
Davis Creek Reservoir Capacity Allocation
Conser. 32,328 a.f.
Dead 131 a.f.
Total 32,459 a.f.
Ord
Davis Creek Dam
Fullerton Canal
Elba Canal
Fullerton
Loup River
Columbus
Platte River
Omaha
Thedford
Broken Bow
South Loup River
Sherman Dam
Turkey Cr.
Oak Cr.
Oshkosh
North Platte River
Lake McConaughy
Sidney
Ogallala
North Platte
Big Blue River
Lincoln
Grand Island
NEBRASKA
COLORADO
FRENCHMAN–CAMBRIDGE DIVISION
RED WILLOW UNIT
Lexington
Platte River
Kearney
Enders Reservoir Capacity Allocation
Flood 30,048 a.f.
Conser. 35,394 a.f.
Dead 7,516 a.f.
Total 72,958 a.f.
Hugh Butler Lake Capacity Allocation
Flood 48,846 a.f.
Conser. 31,039 a.f.
Dead 5,185 a.f.
Total 85,070 a.f.
Harry Strunk Lake Capacity Allocation
Flood 52,715 a.f.
Conser. 31,545 a.f.
Dead 4,160 a.f.
Total 88,420 a.f.
Harlan County Lake Capacity Allocation
Flood 500,00 a.f.
Conser. 314,111 a.f.
Dead
Total 814,111 a.f.
Stinking Water Cr.
Red Willow Creek
Medicine Creek
FRENCHMAN UNIT
CAMBRIDGE UNIT
Holyoke
Imperial
Frenchman River
Culbertson Diversion Dam
Culbertson Canal
Culbertson Extension Canal
Red Willow Dam
Red Willow Diversion Dam
Red Willow Canal
Cambridge
Cambridge Diversion Dam
Cambridge Canal
Medicine Creek Dam
Enders Dam
Swanson Lake Capacity Allocation
Flood 134,077 a.f.
Conser. 110,098 a.f.
Dead 2,118 a.f.
Total 246,291 a.f.
Trenton Dam
Upper Meeker Sub Canal
Trenton
McCook
Upper Meeker Canal
Driftwood Canal
Driftwood West Canal
Driftwood Sub Canal
Meeker Extension Canal
Bartley Diversion Dam
Bartley Canal
Republican River
Harlan County Dam (U.S.C.E.)
Alma
BOSTWICK DIVISION
FRANKLIN UNIT
SUPERIOR–COURTLAND UNIT
Franklin Canal
Franklin
Red Cloud
Superior–Courtland Diversion Dam
Superior Canal
Superior
Franklin Pump Canal
Naponee Canal
Courtland Canal
Pump No. 1 Canal
North Canal
Ridge Canal
White Rock Canal & Extension
Miller Canal
Pumps No. 3A & 3B
Courtland West Canal
Pump No. 4 Canal
COURTLAND UNIT
NEBRASKA
KANSAS
UPPER REPUBLICAN DIVISION
MEEKER–DRIFTWOOD UNIT
Wray
North Fork Republican River
Bonny Reservoir Capacity Allocation
Flood 128,820 a.f.
Conser. 39,922 a.f.
Dead 1,418 a.f.
Total 170,160 a.f.
ARMEL UNIT
KANASKA DIVISION
Sappa Creek
Almena Main Canal
Almena South Canal
Almena Diversion Dam
ALMENA UNIT
KIRWIN UNIT
Norton
Phillipsburg
Oberlin
Atwood
St. Francis
Keith Sebelius Lake Capacity Allocation
Flood 99,230 a.f.
Conser. 32,874 a.f.
Dead 1,636 a.f.
Total 133,740 a.f.
Norton Dam
Kirwin Reservoir Capacity Allocation
Flood 215,136 a.f.
Conser. 93,185 a.f.
Dead 4,869 a.f.
Total 313,290 a.f.
White Rock Creek
Lovewell Dam
Lovewell Reservoir Capacity Allocation
Flood 50,465 a.f.
Conser. 34,007 a.f.
Dead 1,659 a.f.
Total 86,131 a.f.
Kirwin Main Canal
Kirwin North Canal
Kirwin South Canal
Kirwin Dam
Glen Elder Dam
Arikaree River
Bonny Dam
Hale
Beaver Creek North Fork
Prairie Dog Creek North Fork
Solomon River South Fork
Webster Reservoir Capacity Allocation
Flood 183,353 a.f.
Conser. 74,271 a.f.
Dead 1,256 a.f.
Total 258,880 a.f.
Stockton
Osborne Canal
Glen Elder
Beloit
Osborne
Woodston Diversion Dam
Waconda Lake Capacity Allocation
Flood 722,988 a.f.
Conser. 219,172 a.f.
Dead 248 a.f.
Total 942,408 a.f.
Webster Dam
WEBSTER UNIT
GLEN ELDER UNIT
SOLOMON DIVISION
Burlington
Republican River
Tuttle Creek Dam (U.S.C.E.)
Manhattan
Kansas City
Topeka
Kansas River
Milford Dam (U.S.C.E.)
Junction City
Abilene
Beatrice
Saline River
Wilson Dam (U.S.C.E.)
Lincoln
Russell
Salina
Wakeeney
Cedar Bluff Reservoir Capacity Allocation
Flood 191,890 a.f.
Conser. 168,050 a.f.
Dead 4,402 a.f.
Total 364,342 a.f.
Big Creek
Hays
Smoky Hill River
Cedar Bluff Dam
SMOKY HILL DIVISION
CEDAR BLUFF UNIT
Kanopolis Dam (U.S.C.E.)
Lindsborg
Ness City
COLORADO
KANSAS

10 0 10 20 30
SCALE OF MILES

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

MIRAGE FLATS AND MISSOURI RIVER BASIN PROJECTS
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

IRRIGATION AND FLOOD CONTROL FACILITIES

GRAND ISLAND, NEBRASKA FEBRUARY 2005

DWG. NO. 60–705–1 Rev. 10