

Water Marketing Program

2007

Capital Development

&

Storage Maintenance Plan

**Adopted by the Kansas Water Authority
June 15, 2007**

EXECUTIVE SUMMARY

The purpose of this *Capital Development and Storage Maintenance Plan* is to provide long-term planning of future program needs related to acquisition of all the storage under federal contracts, potential new storage development, and protection and restoration of the storage owned by the State. This Plan discusses the need to begin bringing additional storage into service. This Plan does not make recommendations for funding of restoration of state storage or for addressing an unfunded liability that has been identified in the program.

This *Plan* considers all expenses and revenues and then establishes a depreciation reserve component that will allow the program to meet all expenses. Additionally the Plan identifies the need to acquire the funds to call the future use storage in Clinton and Hillsdale Lakes into service. As a result, the information in this plan is dependent on the water marketing rate components, and this Plan essentially sets the variable rate for 2008.

The *2007 Water Marketing Program Capital Development and Storage Maintenance Plan* proposes calling future use storage into service in Clinton and Hillsdale Lakes based on historic usage projected linearly into the future as follows:

- Clinton Lake in one increment of 8,898 AF in 2020 and one of 26,760 AF in 2028.
- Hillsdale Lake in one increment of 5,750 AF in 2008, 4 increments of 2,650 AF between the years of 2013 and 2026, with a final increment of 29,150 AF in 2030.

Additionally, it is recommended that an outside, independent review of this plan and associated issues be pursued to obtain guidance on various financial and operational decisions of the water marketing program.

It is also recommended that the depreciation reserve rate component include an amount that would allow for revenues in excess of expenses to be used to the fullest extent possible to begin to rebuild a balance in the Operation and Maintenance Set-Aside Account that is proposed to be used during 2007.

This 2007 Plan recommends a depreciation reserve rate component for calendar year 2008 of \$0.05750 per 1000 gallons. This results in a total variable rate of \$0.18516 per 1000 gallons.

INTRODUCTION

Kansas has contracts with the U.S. Army Corps of Engineers for purchase of water supply storage in thirteen (13) reservoirs of which approximately half of the contracted storage has been called into service. When storage is called into service, the state begins payment on principal and interest and operation and maintenance. The contracts give the state 50 years from when the first quantity of water was called into service to purchase all the contracted storage or renegotiate for the storage.

The Water Marketing Program provides water supply to industrial and municipal customers through long-term contracts. The program was set up so the expenses of all the water marketing lakes are pooled together and all customers would be charged the same rate for each 1,000 gallons of water diverted. Beginning in 2007, it is projected that expenses will exceed revenue.

One factor contributing to the financial status of the Marketing Program is capped rate contracts. Initial Water Marketing Program legislation established a maximum rate for a contract at \$0.10 per 1,000 gallons. As additional storage was obtained by the program, it became apparent that this maximum rate would be insufficient. In the mid-1980's the maximum rate was removed and a rate determined annually based on 5 components was established. An Attorney General's opinion stated those contracts which included a maximum rate (or cap) of \$0.10 per 1,000 gallons, could not be charged more regardless of the rate established under K.S.A. 82a-1308a.

ACQUISITION OF STORAGE UNDER CONTRACT

The Water Marketing and Water Assurance Programs are being operated to fully pay the capital costs of the storage which has been called into service (in service storage) by the end of the federal contract. Big Hill, Clinton, Hillsdale, Milford and Perry Lakes have storage that is under federal contract but not yet called into service (future use storage).

Under agreements with the Federal government, the state made a policy decision in 1986 to defer payments on future use storage in Big Hill, Clinton, Hillsdale, Milford, and Perry Lakes. The marketing storage currently in service at Big Hill and Milford Lakes is sufficient to meet existing contract obligations. There are no marketing contracts associated with Perry Lake. However, future use storage in Clinton is needed to meet the program's contract obligations as the entire water supply storage has been fully committed to customers, though current demand is being met with the storage that is in service at this time. At Hillsdale Lake, part of the future use storage is needed to meet current contract obligations and expected growth in the area indicates all the future use storage will likely be committed in the long term.

Clinton and Hillsdale Lakes

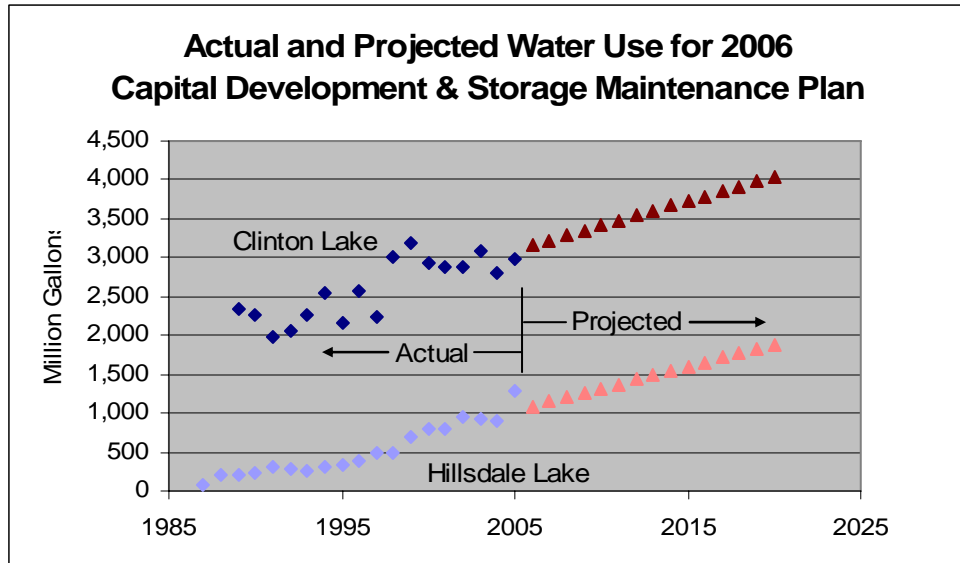
The Water Marketing Program *Capital Development and Storage Maintenance Plan* adopted by the Kansas Water Authority on April 7, 2006 and amended on June 2, 2006 established a schedule to call into service the future use storage in Hillsdale Lake and Clinton Lake. The following table illustrates the amount of storage to be called into service based on the amended plan.

Table 1. Calls into Service based on Historic Water Use of Existing Customers

CLINTON LAKE			HILLSDALE LAKE			
Based on Historic Usage (June 2, 2006 Amended Plan)			Based on Historic Usage (June 2, 2006 Amended Plan)			
% in Service	Total AF in Service	AF Increment	Year	AF Increment	Total AF in Service	% in Service
60.02	53,542		2005		7,500	14.15
			2006			
			2007			
			2008	5,750	13,250	25.00
			2009			
			2010			
			2011			
			2012			
			2013	2,650	15,900	30.00
			2014			
			2015			
			2016			
			2017			
			2018	2,650	18,550	35.00
			2019			
70.00	62,440	8,898	2020			
			2021			
			2022	2,650	21,200	40.00
			2023			
			2024			
			2025			
			2026	2,650	23,850	45.00
			2027			
100.00	89,200	26,760	2028			
			2029			
			2030	29,150	53,000	100.00

Blue denotes years when capped rate contracts expire and could be renewed as variable rate contracts.

The schedule in the amended report projected the future water use based on a linear fit of the historic water use. The following chart shows the historic water use and the projected water use for Clinton Lake and Hillsdale Lakes.



The 2006 projected use for Clinton Lake was 3,164 million gallons, which represents a long term increase of about 3%. The actual 2006 water use from Clinton Lake by water marketing customers was 3,037 million gallons. Therefore the existing projections for Clinton Lake are still reasonable for years beyond 2006.

The 2006 projected use for Hillsdale Lake was 1,091 million gallons, which represents a long term increase of about 5%. The actual 2006 water use from Hillsdale Lake by water marketing customers was 1,405 million gallons. Therefore, the existing projections for Hillsdale Lake appear to be underestimating future use. However, the City of Gardner has been using more water under their existing Hillsdale contract because they are undertaking an upgrade at their second water treatment plant associated with their city lake source of supply. The City expects the work at the city lake plant to be completed in 2009 and their distribution of use between the two sources will go back to a more normal distribution. With this information, the increased usage from Hillsdale Lake observed in 2006 is not anticipated to be indicative of long term usage under current contracts. Therefore, the existing projections for Hillsdale Lake are considered to be acceptable for planning purposes.

Big Hill, Milford and Perry Lakes – The Unfunded Liability

The future use storage in Big Hill, Milford and Perry Lakes has not been called into service because no anticipated marketing customer has been identified. The Water Marketing Program is not paying the Corps of Engineers capital cost or operation and maintenance costs nor is the storage committed to a user of the Water Marketing Program. However, that state has committed under contract

with the Corps of Engineers to purchase this storage within 50 years of the first use of the reservoir, or to renegotiate contracts. This storage was identified in an independent program review as an unfunded liability to the Water Marketing Program. Interest continues to accrue against the capital cost prior to calling it into service.

Options to address this unfunded liability have been discussed. It was proposed to establish an interest earning escrow account to pay the capital cost of the storage at a future time. The amount necessary to set aside in the interest-bearing account annually for each reservoir is shown in Table 2a. The amount per 1,000 gallons that would need to be collected to generate that amount annually is shown in Table 2b. In 2005, the Kansas Water Office recommended any remaining balance in the State Water Plan Fund be allowed to be transferred to an escrow account for this unfunded liability. The legislature did not approve of this recommendation.

This Capital Development Plan does not contain a rate adjustment to collect revenue in 2008 for the unfunded liability.

WATER MARKETING PROGRAM EXPENSES

K.S.A. 82a-1308a sets forth the procedure for the annual establishment of the rate to be charged for water under the Water Marketing Program. The law requires the Director of the Kansas Water Office to fix the annual rate based upon computation of five components described in the law, and they are as follows:

1. An amount necessary to repay the amortized capital costs associated with the state's conservation water supply capacity. (capital cost component)
2. An amount as interest on money advanced from the State General Fund for the Water Marketing Program to initially acquire storage space. (interest component)
3. Administration and enforcement expenses. (A&E component)
4. Operation, maintenance, and repair costs. (O&M component)
5. An amount necessary to meet the needs of the program as shown in the *Water Marketing Program Capital Development and Storage Maintenance Plan* approved by the Kansas Water Authority. (depreciation reserve component)

K.S.A. 82a-1315b(b) provides for the Kansas Water Authority to approve the rate by July 15th of each year. The rate established becomes effective January 1 of the following year.

The formulas of the first four rate components, as provided in Kansas Administrative Regulations (K.A.R.) 98-5-5, assumes all customers pay the same rate. Only contracts signed after July 1, 1983 are true variable rate contracts. The contracts signed before then are now capped at \$0.10 per 1,000 gallons. As a result, the amount of revenue generated by the capital costs, A&E, and O&M rate components (1, 3 and 4 above) are insufficient to cover those costs. The deficit is being covered by the revenue generated by the interest and depreciation reserve rate components (2 and 5 above). The depreciation reserve rate component was intended to generate funds to be placed in the conservation storage development fund to be used for future acquisition of storage.

Because of this situation, this *Water Marketing Program Capital Development and Storage Maintenance Plan* was developed to look at all expenses and all revenues to establish a depreciation reserve component that will allow the program to meet all expenses and acquire the funds to call the future use storage in Clinton and Hillsdale Lakes into service. As a result, the information in this plan is dependent on the water marketing rate components, and this plan essentially sets the variable rate for 2008.

Principal and Interest

Actual (2006) and estimated (2007 – 2040) annual principal and interest payments being paid by the Water Marketing Program to the Corps of Engineers are shown in Table 3. At the end of the contract term, the loans will be retired, and the state will have a permanent right to the use of the contracted water supply storage space in each reservoir.

This *Capitol Development and Storage Maintenance Plan* includes a proposal to call the future use storage in Clinton and Hillsdale reservoirs into service to meet usage demands of customers of the Water Marketing Program. As shown in Table 1 above, the proposed plan is to call the remaining storage in Clinton Lake in one increment of 8,898 AF in 2020 and one of 26,760 AF in 2028. The proposed plan for Hillsdale Lake is one increment of 5,750 AF in 2008, 4 increments of 2,650 AF between the years of 2013 and 2026, with a final increment of 29,150 AF in 2030. The ending payments for the final increments are \$8,685,946 for Clinton Lake and \$58,288,430 for Hillsdale Lake. The resulting changes in annual payments as each increment is called into service are reflected in Table 3.

Operation and Maintenance

In the contracts with the federal government, the state has agreed to pay the annual operation, maintenance, and repair costs incurred by the Corps of Engineers for that portion of the storage space which the state has called into service. These costs vary from year to year and from lake to lake. As the lakes age and federal dam safety regulations become more stringent, these costs can be expected to rise.

In 1987, a major increase in operation and maintenance costs for John Redmond Lake caused a marked increase in the rate charged to customers. In response to concerns that this type of problem might recur, the Kansas Water Authority took action to create an Operation and Maintenance Set-Aside Account. Up to 1 cent per 1,000 gallons of revenue from purchasers may be set aside in this account to offset unusual operation and maintenance charges if there is any remaining revenue after expenses are met.

Actual (2006) and estimated (2007 – 2040) annual operation and maintenance payments made by the Water Marketing Program are shown in Table 4. The significant increase in 2007 was due to expenses for riprap repair at Council Grove, John Redmond and Marion reservoirs. Money from the Operation and Maintenance Set-Aside Account is anticipated to be used in 2007 to cover part of the operation and maintenance cost.

Administration and Enforcement

The Water Marketing Program also pays for administration and enforcement costs which are the actual costs to the state to operate and administer the programs. Table 4 shows the actual (2006) and estimated (2007 -2040) annual administration and enforcement costs.

In 2005, legislation was signed into law that now allows the Water Marketing Program to directly make payments for administration and enforcement costs. Prior to the July 2006 effective date, the Water Marketing Program repaid the State General Fund for these costs. The administration and enforcement costs in Table 4 include about one half (July – December) of the salary costs of the Water Marketing Program in 2006. For following years, all of the administration and enforcement costs are projected.

WATER MARKETING RATE

The capital cost, interest, operation and maintenance, and administration and enforcement rate components are calculated based on formulas established in statute (K.S.A. 82a-1308a) and regulation (K.A.R. 98-5-5). The June 14, 2007 memo from Tracy Streeter to the Kansas Water Authority provides a detailed discussion of how the 2008 water marketing rate components were calculated.

K.S.A. 82a-1308a(5) indicates the depreciation reserve component will be an “amount necessary to meet the needs of the *Water Marketing Program Capital Development and Storage Maintenance Plan* as approved by the Kansas Water Authority.” The depreciation reserve component for 2008 is the amount recommended in this plan.

Table 5 shows the actual annual rate components in 2006 and 2007, the recommended components for 2008, and the estimated components for 2009 – 2040.

REVENUE AND BILLABLE WATER QUANTITY

Water marketing revenue is based on billable quantities, which may not be equal to the water actually used each calendar year. All contracts require payment for half of the contracted quantity at the beginning of the year. If the amount of water used in a year exceeds half of the contracted quantity, revenue is collected for the actual water used. Additionally, some contracts require payment for water diverted under a water right, if the contract holder's water right was obtained after the Kansas Water Office's water reservation right associated with the water marketing lake. Thus, the quantity of water that generates revenue for the Water Marketing Program is not the same as the water used through the Water Marketing Program.

Actual (2006) and projected (2007 - 2040) annual revenue from both the capped and variable contracts are also shown in Table 6. The Water Marketing Program is reimbursed for some capital costs and administration and enforcement costs by the Water Assurance Program, which is included as "Revenue from other Sources" in Table 6. The 2006 *Water Marketing Program Capital Development and Storage Maintenance Plan* did not include this revenue source.

Table 7 shows the actual annual water marketing program revenue for 2000 – 2006. The total revenue fluctuates from year to year based on the amount of water billed each year. The 2006 *Water Marketing Program Capital Development and Storage Maintenance Plan* projected revenue of \$2,026,919. The actual revenue for 2006 was \$2,111,157. (The actual revenue includes \$61,712 from the assurance districts for payment of administration and enforcement costs that was not included in the projected revenue in the 2006 Report. The difference between projected and actual revenue, including the administration and enforcement costs from the water assurance districts is \$22,526.)

COMPARISON OF REVENUE AND EXPENSES

Table 8 compares the total projected revenue of the Water Marketing Program to the total projected expenses. Actual revenue and expenses are provided for 2006; 2007 - 2040 are projected revenue and expenses.

To offset the high operation and maintenance costs for 2007, \$380,000 is expected to be used from the Operation and Maintenance Set-Aside Fund. As of April 2007, the Operations and Maintenance Set-Aside Fund had a balance of \$384,029.83.

In 2008, \$313,178 is expected to be used from the Conservation Storage Development Fund to pay the first year's cost of the next increment of storage called into service in Hillsdale Lake. As of April 2007, the Conservation Storage Development Fund had a balance of \$471,976.02. In addition, it is anticipated

that \$38,334 will need to be collected in 2008 through 2012 to put in the Conservation Storage Development Fund for the next increment of storage that will be called into service in 2013 in Hillsdale Lake.

Table 8 shows the needed depreciation reserve rate component in 2008 is \$0.05750 per 1000 gallons, which is the amount needed to meet program expenses, and includes \$0.017035 to rebuild the Operation and Maintenance Set-Aside Account.

RESERVOIR RESTORATION AND PROTECTION

The concept of the *Capital Development and Storage Maintenance Plan* is that in addition to developing capital or storage to meet needs, that existing storage be protected from sediment or restored to needed capacity. All lakes, natural or artificial, experience a life cycle in which the nutrient level of their water increases and sediment accumulates on the lake bed. This leads to an increased frequency of algal blooms which, in turn can cause taste and odor problems in drinking water and also limits recreational use of the reservoir. Ultimately, sediment deposition may severely reduce the water supply yield from a reservoir.

The State of Kansas is actively involved promoting efforts which protect the watershed of reservoirs with public water supply storage. In recognition that protection cannot stop sedimentation of reservoirs, the state has been participating in a study at El Dorado Lake which will investigate costs and effectiveness of dredging and material disposal at a federal reservoir scale. Construction of sediment traps above the reservoir is also being investigated. Research at Oologah Lake in Oklahoma is looking at better integration of watershed and in-reservoir models to improve reservoir management for water quality and other factors. Most of the Oologah Lake watershed (Verdigris River) lies in Kansas.

A small lake restoration demonstration project will begin in 2008 to take place at the City of Horton lake. The purpose of this pilot study will be to investigate the cost, benefits, logistics, and other factors involved in dredging or otherwise renovating one or more small public lakes that provide local public water supply, recreational benefits, and intrinsic economic development value. The pilot study will also include a contaminant analysis and the potential effects of disposal of dredged material.

It is anticipated that results from the Oologah and El Dorado lake studies will be useful in the development of a reservoir restoration plan at a federal reservoir in Kansas that is part of the Water Marketing Program. Upon completion of the background studies and identification of an appropriate marketing reservoir, additional funds may need to be identified in the *Capital Development and Storage Maintenance Plan* to finance the restoration effort.

FUTURE ACTION RECOMMENDATIONS

The variable rate projected in Table 8 exceeds \$0.20 per 1000 gallons (double the capped rate) beginning in 2009. By 2014 when the next increment of storage in Hillsdale is called into service, the variable rate exceeds \$0.30 per 1000 gallons. This increase is undesirable, although without other alternatives those rates may be necessary. The following actions are anticipated in an effort to address the significant increases in the variable rate.

Sell More Water

Table 9 provides the same information as Table 8 with the addition of three billion billable gallons of water in 2008 and 2010. If this occurs the variable rate would have dropped below \$0.15 per 1000 gallons in 2008 and would not exceed \$0.20 per 1000 gallons until 2014.

Currently, the program has applications on file that have been approved for negotiations for more than 10.4 billion gallons of water. While it is highly unlikely that all of that quantity will be approved, it demonstrates that demand on the program remains high. It is anticipated that within a year a contract for additional water from Hillsdale Lake will be executed. In the next three to five years, it is likely additional contracts will result in a total of six billion gallons more being part of the water marketing program.

Additional Revenue from Assurance Districts

In 2006, the Kansas Water Office has been in discussions with the Marais des Cygnes River Water Assurance District regarding the purchase of additional storage from Melvern and Pomona Lakes. Discussions will continue in 2007 and the District anticipates purchasing storage in 2008.

The Water Assurance District Act requires an assurance district to repay the state the cost of acquiring storage that the district purchases from the state. The cost of the storage being purchased by the Marais des Cygnes River Water Assurance District may be as much as \$1,000,000.

It is planned to direct payments for future assurance district purchases to the Conservation Storage Development Fund to be used for acquisition of storage already under contract.

Update Regulations

Existing regulations that set formulas for the variable rate components assumed all marketing customers would pay the same variable rate. The equations for capital costs utilize the cumulative cost of in service storage and assumed all of the storage under contract would be called into service before the end of the payback period in the federal contracts. As this plan projects, the future use storage may not be needed by a customer prior to the end of those federal contracts.

In 2005, legislation was signed into law that made three changes in the statutes regarding the manner by which the Water Marketing Program rate is calculated. To be consistent with the 2005 statute changes, modifications to the Water Marketing Program regulations are needed. In addition, operation of the program has changed significantly over the years while the regulations have remained constant for more than a decade.

The regulations need to be modified to reflect the existing circumstances. If the program is allowed to collect funds sufficient to meet the expenses of each rate component, then this *Capital Development and Storage Maintenance Plan* could establish a depreciation reserve component that represents the need for acquisition of storage and maintenance of the storage controlled by the State.

Alternate Schedules for Calling Storage into Service

The *Water Marketing Program Capital Development & Storage Maintenance Plan* dated April 7, 2006 proposed a schedule for calling the remaining storage in Clinton and Hillsdale Lakes into service. The June 2, 2006 amendment to that plan proposed a different schedule. There are numerous ways to call this storage into service with different financial implications on the water marketing customers. To date, decisions have been made in an effort to maintain the variable rate as close as possible to the capped rate, while still meeting the storage needs of the customers. A closer look at the long-term financial burden of the proposed schedule may be beneficial.

Independent Review of Plan

Because the Kansas Water Office has limited financial planning expertise, an outside, independent review of the issues which are part of the *Capital Development and Storage Maintenance Plan* may provide important guidance on future updates to this plan and operational changes needed in the water marketing program. Such a review could recommend rate component formulas, suggest how to most effectively use any money received from an assurance district, advise on ways to address the unfunded liability, and perhaps set goals for the amount of additional water needed to be contracted to maintain the water marketing variable rate below a set amount.