



**Water Marketing Program
2010
Capital Development
&
Storage Maintenance Plan**

**Approved by the
Kansas Water Authority
May 14, 2010**

EXECUTIVE SUMMARY

The purpose of this *Capital Development and Storage Maintenance Plan* is to provide for long-term planning of future program needs related to acquisition of all the water supply storage under federal contracts, potential new storage development and protection and restoration of the storage owned by the State.

The 2010 *Water Marketing Program Capital Development and Storage Maintenance Plan* continues the basic schedule of calling future use storage into service in Clinton and Hillsdale reservoirs approved by the Kansas Water Authority in June 2006 as follows:

- Clinton Reservoir in one increment of 8,900 AF in 2020 and one of 26,780 AF in 2027.
- Hillsdale Reservoir in one increment of 3,533 AF in 2014, one of 3,533 AF in 2020, one of 3,534 AF in 2025, and a final increment of 29,150 AF in 2030.

This Plan incorporates the issuance of revenue bonds to finance the final payments for Clinton and Hillsdale reservoirs, in 2027 and 2030 respectively. This new aspect of the Plan provides for a more stable rate for our variable contract customers near the time the bonds are issued than in previous versions of the Plan.

This Plan does not make recommendations for addressing an unfunded liability that has been identified in the program or for funding of restoration of state storage.

INTRODUCTION

The Water Marketing Program provides water supply to industrial and municipal customers through long-term contracts. These contracts are for water delivered from storage space owned by the state in the federal reservoirs developed by the Corps of Engineers. Kansas has contracts with the U.S. Army Corps of Engineers for purchase of water supply storage in thirteen (13) reservoirs; ten of those have storage currently committed to, and being paid for by, the customers of the Water Marketing Program.

The *Capital Development and Storage Maintenance Plan* was established as a way to determine the appropriate level of the Depreciation Reserve component of the variable rate under the Water Marketing Program. This rate component was redefined in 2005. This change was made to ensure the program would have an adequate cash flow in the face of increased expenses and the expectation of the need to call additional storage into service, particularly at Clinton and Hillsdale reservoirs.

The purpose of the rate as established in 1983, and continuing today, is to insure that the revenue into the program is adequate to meet the expected expenses of the program. Those expenses include annual payments for principal and interest on storage under federal contract, operation and maintenance cost for that storage, and the state's administration and enforcement cost associated with operating the program.

This component also provides for 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* considers all expenses and revenues and then establishes a depreciation reserve component that will allow the program to meet all expenses.

WATER MARKETING PROGRAM EXPENSES

Projected Water Marketing Program Expenses (Table 1)

Table 1 summarizes the expenses of the Water Marketing Program. These expenses include principal and interest payments and operation and maintenance costs which are paid to the Corps of Engineers annually. The administration and enforcement costs to the Program are those incurred by the Kansas Water Office (KWO) and the Division of Water Resources, Department of Agriculture.

Principal and Interest

The Water Marketing Program is operated to fully pay the capital costs of the water supply storage assigned to the Program. The contracts with the federal government typically give the state 50 years to pay the cost associated with the purchase of all of the contracted storage. In five reservoirs, the state had an opportunity to delay payment until storage space is needed. When storage is needed, it is called into service, and the state begins payment on principal and interest and operation and maintenance.

Table 1 includes actual principal and interest payments from 2010 to 2013; 2014 on are estimates.

Payments on a portion of storage in Clinton Reservoir have been delayed. All of the water supply storage in Clinton Reservoir will be needed to meet the Program's contract obligations as the entire

water supply storage yield has been fully committed to customers. The current demand is being met with the storage that is in service at this time.

Payments on a portion of storage in Hillsdale Reservoir have also been delayed. Anticipated growth in the Miami, Johnson, and Douglas county area indicates all the storage will be needed to meet demands. At this time, the current demand is being met with the storage that is in service.

This *Water Marketing Program Capital Development and Storage Maintenance Plan* contains the schedule to call additional storage into service in Hillsdale and Clinton reservoirs. This schedule is based on the projected needs as well as cost considerations. Table 2 illustrates the schedule to call storage into service. This basic schedule was adopted by the Kansas Water Authority in 2006.

Table 2. Calls into Service Based on Historic Water Use as of 2006 for Existing Customers

Calendar Year	CLINTON RESERVOIR			HILLSDALE RESERVOIR		
	AF Increment	Total AF in Service	% in Service	AF Increment	Total AF in Service	% in Service
2010		53,520	60.00		13,250	25.00
2014				3,533	16,783	31.67
2020	8,900	62,420	70.00	3,533	20,316	38.33
2025				3,534	23,850	45.00
2027	26,780	89,200	100.00			
2030				29,150	53,000	100.00

Increases appear in Table 1 in 2014, 2020, and 2025 due to calling increments of storage space into service in Clinton and Hillsdale reservoirs.

Operation and Maintenance

In the contracts with the federal government, the state pays 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 reservoir to reservoir. The rate is set on the bill from the Corps that will be received in the calendar year for which the rate is set, based on work the Corps completed in the prior year. The Corps provides the estimate prior to the rate determination; actual billings have been very close to the estimates.

Known operation and maintenance costs are shown for 2010 and 2011 in the second row of Table 1. The 2011 actual costs for operation and maintenance include projects funded with money from the American Recovery and Reinvestment Act (ARRA) that the Kansas City District of the U.S. Army Corps of Engineers completed during Federal Fiscal Year 2009. The table includes an estimate of the remaining ARRA projects anticipated to be completed during 2010, 2011, and 2012 and are reflected in the projected rate for 2012, 2013, and 2014. Table 1 also includes an estimated increase in the operation and maintenance costs for the proposed quantities of storage to be called into service in Clinton and Hillsdale reservoirs.

Administration and Enforcement

The Water Marketing Program pays for administration and enforcement costs which are the actual costs to the state to operate and administer the Program. Table 1 shows the actual (2009) and estimated (2010-2052) annual administration and enforcement costs. Administration and enforcement costs increased in 2009 due to salaries and wages for three additional employees being shifted from the State General Fund to the Water Marketing Fund. The Fund continues to support three other

employees dedicated to the program, and since 2009, now supports fifteen percent of the KWO operating expenses as overhead.

WATER MARKETING PROGRAM REVENUE

Revenue for the Program comes from water sales, reimbursement for administration expenses from the water assurance program, and occasional use of funds from specific use accounts.

Projected Annual Water Use (Table 3)

Projected annual revenue is dependent upon the quantity of water projected to be billed to water marketing customers into the future. The estimated billable quantities for 2011 through 2052 are based on water paid for historically by each customer projected into the future using a linear equation. The increase in the variable rate quantities and the decrease in capped rate quantities in 2018 are based on the assumption that when the term of the capped rate contracts end, the contracts will be renewed as variable rate contracts with the same quantity as the capped contracts.

Revenue from Capped Contract Water Sales (Table 4)

Initial Water Marketing Program legislation (1974) established a maximum rate for a contract at \$0.10 per 1,000 gallons. All contracts prior to March 17, 1983 are capped at the \$0.10 per 1000 gallon rate. Projected (2010 - 2023) annual revenue from the capped contracts is shown in Table 4.

Revenue from Administration and Enforcement (Table 4)

The Water Marketing Program directly pays the expenses associated with salary and operation of the Marketing and Assurance programs. The Water Marketing Program is reimbursed for administration and enforcement costs by the Water Assurance Program, which is included as "Assurance A&E Reimbursement" in Table 4.

DEFICIT IN PROGRAM FUNDING NEEDS: MODIFICATIONS OF BASIC EXPENSES AND REVENUE

The difference between the projected program expenses and the capped revenue is the unmet revenue need of the program to meet basic expenses. Modifications of that deficit are discussed and shown in Table 5 and 6.

Specific Use Accounts (Table 5)

State Conservation Storage Water Supply Fund

The State Conservation Storage Water Supply Fund was established as a savings fund for acquisition, development, or maintenance of public water supply storage.

Expenses

Based on the basic call-in schedule as shown in Table 2, it has been determined that \$58,685 will need to be collected from 2010 through 2013 to be put into the State Conservation Storage Water Supply Fund for the next increment of storage that will be called into service in 2014 in Hillsdale Reservoir. In addition, \$26,524 needs to be collected from 2010 through 2019 for the next increment of storage that will be called into service in 2020 in Clinton Reservoir, and \$99,182 needs to be

collected from 2015 through 2019 for the third increment of storage that will be called into service in 2020 in Hillsdale Reservoir. This additional revenue requirement of the program is shown in Table 5 as “Conservation Development Fund Deposits”.

Revenue

Annual payments for principal and interest increased in 2010 due to a call into service at Hillsdale in 2009. Since the cost of Hillsdale storage is disproportionately high, the impact on the program expenses is significant. It is recommended that \$150,000 of the State Conservation Storage Water Supply Fund be used to pay a portion of the costs associated with the 2009 increment service call for Hillsdale in 2011. The effect of this will be to spread the rate increase associated with the in-service call over multiple years. Table 5 shows this as expenditure from the fund.

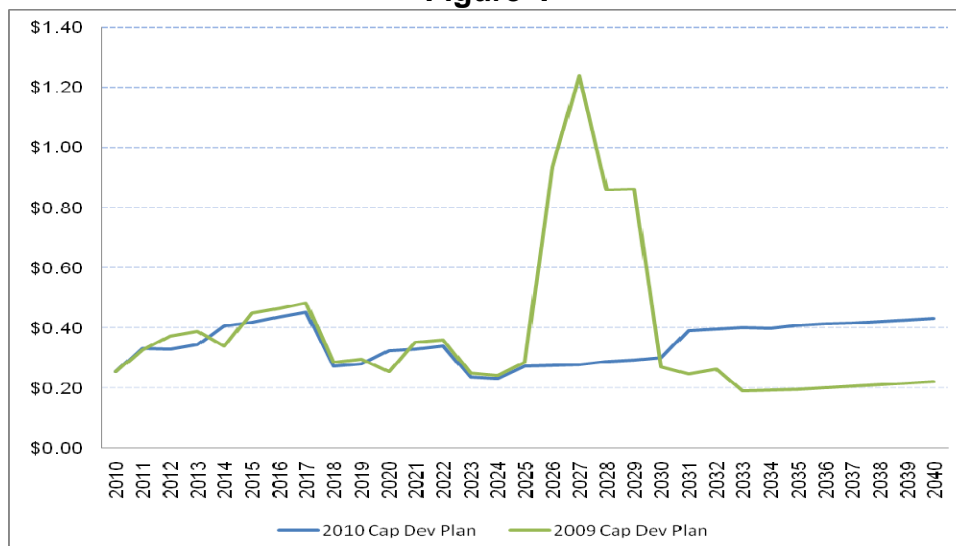
Operation and Maintenance Set-Aside Account

In 1991, an Operation and Maintenance (O & M) Set-Aside Account within the Water Marketing Fund was established. It enables the Program to pay for any unusually high O & M expenses without causing abnormally high spikes in the rate. Up to 1 cent per 1,000 gallons of revenue from purchasers may be credited to this account if there is any remaining revenue after expenses are met. Revenue from the O & M Set-Aside Account will be used in 2010, as shown in Table 5, to offset significant expenses for the tainter gate repair at John Redmond Reservoir and road repair across the dam at Clinton Reservoir.

Revenue Bonds (Table 6)

This Plan establishes a schedule of calls into service at Clinton and Hillsdale reservoirs. The principal and interest payments associated with those calls are included in Table 1. The schedule of calls into service as shown in Table 2 leaves significant increments, hence significant ending payments, for the final increments of \$7,679,985.91 for Clinton Reservoir and \$51,037,921.44 for Hillsdale Reservoir. Previous versions of this Plan included the collection of revenue for these payments beginning in 2021 for Clinton and 2026 for Hillsdale. This was to take advantage of the assumption that the capped rate contracts that expire in 2018 would be renewed as variable rate contracts. As can be seen in Figure 1, this approach causes a significant temporary spike in the rate.

Figure 1



K.S.A. 82a-1361 authorizes the KWO to issue and sell revenue bonds to finance the cost of acquiring a reservoir site or sites, constructing, reconstructing, improving and expanding large reservoir projects, or to purchase water supply storage in existing reservoirs. The bonds can be term or serial bonds or any combination of the two maturing not later than 40 years from the date of issuance.

The 2010 Capital Development Plan incorporates the issuance of 20 year revenue bonds in 2027 and 2030 for Clinton and Hillsdale reservoirs, respectively, to lessen the impact of those final increment calls and provide a more stable rate for variable rate contract customers. (See Figure 1 and Table 6.)

Variable Rate (Table 7)

The table includes the actual rate for calendar year 2010, the proposed rate for 2011, and the estimated rates for 2012 – 2052.

FUTURE PROGRAM ISSUES

Alternate Schedules for Calling Storage into Service

The *Water Marketing Program Capital Development & Storage Maintenance Plan* approved by the KWA in 2006 established the basic schedule for calling the remaining storage in Clinton and Hillsdale reservoirs into service that is carried through in this 2010 version. There are other ways to call this storage into service with different financial implications on the water marketing customers. An analysis of a revised call in schedule will be considered in conjunction with the 2011 Plan.

Alternative Bonding Schedules

As discussed above, the 2010 Plan incorporates the issuance of 20 year revenue bonds to ameliorate the impact of the final increment costs at Clinton and Hillsdale reservoirs. Different time periods for bond issuance and bond terms will be examined to determine the most financially responsible approach.

Unfunded Liability

The state made a policy decision in 1986 to defer payments on storage not called into service (future use storage) in Big Hill, Clinton, Hillsdale, Milford and Perry reservoirs, as authorized under agreements with the Federal government. As discussed above, the 2010 Plan includes a schedule to call all of the remaining future use storage in Clinton and Hillsdale reservoirs into service by the end of the contract term.

This Plan makes no recommendation related to the future use storage in Big Hill, Milford and Perry reservoirs, since no anticipated marketing customers have been identified. The Reservoir Sustainability Initiative adopted by the Kansas Water Authority (KWA) recommends that the state secure all available storage for the use of the citizens of the state.

Alternatives to secure this storage should be evaluated in the future. One impact that could reduce the unfunded liability is potential purchase of storage by the Kansas River Water Assurance District No. 1. The District has identified an interest in 60,400 acre-feet or 30.45% of Milford Reservoir and 15,000 acre-feet or 12% of Perry Reservoir. These amounts are referred to as set-aside storage and the state has agreed to not make any other commitments until 2020. At that time, the District will purchase the needed quantities in each reservoir and assume the operation and maintenance costs.

Interest will continue to accrue on the unfunded balance remaining after the purchase. Evaluating bonding alternatives to secure all remaining future use storage should also be evaluated in the future.

Kanopolis Reservoir

In 2002, the state of Kansas purchased 46 percent of the conservation pool in Kanopolis Reservoir for water supply purposes. The associated cost of this storage is currently contained in Table 1. The reallocation report that authorized that purchase indicated that the permanent pool could feasibly be raised by two feet, allowing another 7,500 acre-feet of storage to be made available to the state for water supply. No action on this additional pool raise was taken at that time.

The KWO currently has on file applications for water supply through the Water Marketing Program which are significantly in excess of the yield of the storage currently controlled by the state of Kansas. In addition, downstream stakeholders have shown interest in potential formation of an assurance district or special district operated in a similar manner.

The KWA will be asked to approve moving forward with an effort to determine the remaining steps needed to reallocate 7,500 acre-feet of storage space from the flood pool to water supply to meet this expected demand. If approved, future versions of this Plan would need to include the expected costs associated with this potential purchase.

Wilson Reservoir

Wilson Reservoir is not currently part of the state inventory of water supply storage, nor is it authorized for water supply purposes. The cities of Hays and Russell have both passed resolutions indicating an interest in Wilson Reservoir as a potential future water supply source. In addition, Ellsworth County RWD #1 (Post Rock) has indicated potential interest should Wilson Reservoir become a water supply source.

The Corps of Engineers has initiated, at the request of the KWO, a reallocation study of Wilson Reservoir. Reallocation of both the conservation pool and flood pool are being evaluated. While no decision on reallocation has been made by either the Corps of Engineers or the KWA, future versions of this Plan will need to take this possibility into account.

Reservoir Restoration and Protection

The concept of the *Water Marketing Program Capital Development and Storage Maintenance Plan* is that in addition to developing capital or storage to meet needs, existing storage be protected from sediment or restored to needed capacity. Ultimately, sediment deposition may severely reduce the water supply yield from a reservoir. Efforts are underway to better understand the sources, transport and deposition of sediment in reservoirs through monitoring, research and assessment activities and consideration of enhanced management strategies. Activities are also underway to better operate the reservoirs to meet anticipated water supply needs. These efforts are part of a Reservoir Sustainability Initiative adopted by the KWA. A Reservoir Roadmap to implement securing, restoring and protecting reservoir storage was presented to the 2010 Legislature. The report identifies a projected financial need of almost \$4 billion over the next 40 years.

While this Plan makes no recommendations, additional funding needs will be identified in the coming years to help finance these efforts.

	2010	2011	2012	2013	2014	2020	2025	2027	2030	2031	2050
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Table 1. Projected Water Marketing Program Expenses

Principal and Interest to Corps	\$1,421,875	\$1,421,875	\$1,421,875	\$1,421,875	\$1,715,300	\$2,502,975	\$3,130,934	\$10,751,416	\$53,529,440	\$ 234,392	
Operation & Maintenance to Corps	\$ 785,440	\$ 962,514	\$1,044,370	\$1,149,932	\$1,295,227	\$1,676,519	\$2,140,263	\$ 2,329,624	\$ 2,746,394	\$2,833,581	\$4,904,840
Administration & Enforcement	\$ 398,836	\$ 413,027	\$ 428,324	\$ 443,621	\$ 458,918	\$ 550,702	\$ 627,189	\$ 657,783	\$ 703,675	\$ 718,972	\$1,009,618
Total Projected Expenses	\$2,606,151	\$2,797,415	\$2,894,568	\$3,015,428	\$3,469,445	\$4,730,196	\$5,898,386	\$13,738,823	\$56,979,509	\$3,786,945	\$5,914,458

Table 2. Calls into Service Based on Historic Water Use as of 2006 for Existing Customers

This table is shown and explained in the narrative.

Table 3. Projected Annual Water Marketing Program Water Use

Capped Contracts Billable Quantity (1000 GPY)	15,728,929	15,351,194	16,636,923	16,638,388	16,639,854	9,800,363	-	-	-	-	-
Variable Contracts Billable Quantity (1000 GPY)	3,422,330	3,396,384	3,497,976	3,599,568	3,977,743	11,201,378	21,195,281	21,280,438	21,351,925	21,383,253	21,698,547
Total Billable Quantity (1000 GPY)	19,151,259	18,747,578	20,134,899	20,237,957	20,617,597	21,001,741	21,195,281	21,280,438	21,351,925	21,383,253	21,698,547

Table 4. Revenue

Capped Contract Revenue	\$1,572,893	\$1,535,119	\$1,663,692	\$1,663,839	\$1,663,985	\$ 980,036	\$ -	\$ -	\$ -	\$ -	
Assurance A&E Reimbursement	\$ 72,194	\$ 75,082	\$ 78,085	\$ 81,209	\$ 84,457	\$ 106,865	\$ 130,018	\$ 140,627	\$ 158,186	\$164,514	\$ 346,606
Sub-Total Revenue	\$1,645,087	\$1,610,201	\$1,741,778	\$1,745,048	\$1,748,442	\$1,086,901	\$ 130,018	\$ 140,627	\$ 158,186	\$164,514	\$346,606
Deficit in Program Funding Needs	\$ 961,064	\$1,187,214	\$1,152,791	\$1,270,381	\$1,721,003	\$3,643,295	\$5,768,368	\$13,598,196	\$56,821,323	\$3,622,431	\$5,567,852

Table 5. Specific Use Accounts

Conservation Development Fund Deposits	\$ 87,564	\$ 85,209	\$ 85,209	\$ 85,209	\$ 26,524	\$ -	\$ 959,998	\$ -	\$ -	\$ -	\$ -
Conservation Development Fund Expenditures		\$150,000									
Conservation Development Fund Balance	\$451,502	\$386,711	\$471,920	\$557,129	\$583,653	\$1,212,183	\$6,788,161	\$20,507,640	\$46,026,600	\$46,026,600	\$46,026,600
O&M Set-Aside Account Deposits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Set-Aside Account Expenditures	\$175,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
O&M Set-Aside Account Balance	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030	\$ 73,030

Table 6. Revenue Bonds

Bond Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,679,986	\$51,037,921	\$ -	\$ -
Bond Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 616,262	\$ 4,711,677	\$4,095,415

Table 7. Variable Rate

Net Unfunded Program Expenses	\$ 873,628	\$1,122,423	\$1,238,000	\$1,355,590	\$1,747,527	\$3,643,295	\$6,728,366	\$5,918,210	\$6,399,663	\$8,334,108	\$9,663,267
Variable Rate	\$ 0.25527	\$ 0.33048	\$ 0.3539	\$ 0.3766	\$ 0.4393	\$ 0.3253	\$ 0.3174	\$ 0.2781	\$ 0.2997	\$ 0.3897	\$ 0.4453