

Pioneer Project Groundwater Recharge Plan March 2008 Revision

1. GENERAL

In 1992, 2,253 acres in the Kern River Fan area west of Bakersfield was purchased by the Kern County Water Agency (AGENCY). In 2001, 20 acres were purchased for the Basin 9 flowage easement, bringing the total Pioneer Property to 2,273 acres. In 2006, a land exchange was made between the AGENCY, Castle & Cooke, Bolthouse Properties and the City of Bakersfield. As a result, 236 acres were added to the George W. Nickel Kern River Spreading Works (North Pioneer); 202 acres on the Central Pioneer and 74 acres on the South Pioneer were released in the exchange. The total acreage on the Pioneer Property is now 2,233 acres, as shown in Table 1. This document describes a plan for recharging water from the Cross Valley Canal (CVC) and/or from the Kern River onto the Pioneer Property which consists of three parcels designated as North Pioneer, Central Pioneer and South Pioneer. The Recharge Plan includes a description of facilities, capital costs and financing, priorities for use, and operation and maintenance activities. In cooperation with the Recovery Participants, this plan may be amended at any time by the Recharge Participants.

2. FACILITIES

Prior to March 2008, recharge occurred on the Pioneer Property, thus there are two types of recharge facilities -- the facilities constructed and used prior to 2008 and those facilities that may be constructed in the future, both of which are generally shown on Attachment 1.

A. Existing Facilities

The facilities constructed in 1995, 1996, 1997, 1998 and 2006 consist of a number of levees constructed to create recharge basins. Portions of the James and Pioneer Canals were used for recharge and to convey water to recharge areas. Various control structures e.g., turnouts and gates were also installed to convey water out of canals and from basin-to-basin (interbasin control structures). Recharge capacity on the Project is shown on Table 1 to total about 418 cfs. A brief description of facilities in the North Pioneer, Central Pioneer and South Pioneer areas is as follows:

Table 1
Current Approximate Acreage and Estimated Recharge Capacity

Recharge Area Name	Property Area (ac.)	Max. Wetted Area (ac.)	Estimated Recharge Rate (af/ac/day)	cfs ²	af/mo
North Pioneer	1,073	670 ³	0.61	210	12,000
Central Pioneer	212	180	0.56	50	3,000
South Pioneer	948	500	0.68	170	10,200
James Canal ¹	N/A	7	2.27	8	500
TOTAL	2,233	1,357	0.63	438	27,700

¹ 3 miles of the James Canal system, approximately 20 feet wide, runs through the South Pioneer.

² Recharge rates are based on the first two months of 2005 short-term recharge deliveries.

³ Includes 100 foot setback from the south side of the CVC

(1) North Pioneer

The North Pioneer area is located north of the Kern River and south of the CVC adjacent to the 2800 Acres and consists of approximately 1,073 acres. Water for recharge is delivered to North Pioneer in three different ways as listed below and shown on Table 2:

- a. From the CVC via two 30-inch (80 cfs) and two 36-inch (160 cfs) siphons west of Nord Road;
- b. From Basin 10 of the 2800 Acres through the levee via a 100 cfs headgate; and
- c. From Basin 9 of the 2800 Acres through a 600 cfs headgate.

Approximately 25,600 feet of levees, averaging four feet high with 4:1 side slopes and 12-foot crowns were constructed by the Recharge Participants in 1995 and beyond. These levees create two recharge basins with a combined wetted area of approximately 490 acres. Water is regulated by an inter-basin control structure which has a capacity of approximately 250 cfs. A maximum flow rate of 940 cfs can be conveyed onto the property. The existing diversion capacity of 940 cfs exceeds the present estimated recharge capacity of 210 cfs on the 670 acres of wetted area. The additional diversion capacity to North Pioneer is used to convey water to the Kern Water Bank recharge ponds.

Table 2
Current Diversion Capacities to North Pioneer

Turnout	Capacity (cfs)
Basin 9	600
Basin 10	100
Nord Siphons	80
Pumping Plant 3 Siphons*	160
TOTAL	940

*Access to the Pumping Plant 3 Siphons is 2nd priority access after KWBA.

(2) Central Pioneer

Central Pioneer area is located between the Kern River and the Kern River Canal, south of the 2800 Acres and consists of approximately 212 acres. Water for recharge is conveyed from Berrenda Mesa Basin 5 through a single 48-inch gated CMP barrel turnout with a capacity of 40 cfs. Water is also conveyed out of the 2800 Acres Basin 1 through a single 84-inch gated High-Density Polyethylene (HDPE) pipeline turnout with a capacity of 200 cfs.

A total of 14,850 feet of levees averaging four feet high with 4:1 side slopes and 12-foot crowns were constructed to create four recharge basins with a combined maximum wetted area of 320 acres (see Table 1). Water is regulated by use of interbasin control structures which convey water from basin to basin. A maximum flow rate of 240 cfs can be conveyed onto the Central Pioneer. The existing diversion capacity of 240 cfs exceeds the present estimated recharge capacity of 50 cfs on the 180 acres of wetted area. The additional diversion capacity to Central Pioneer is used to convey water to the South Pioneer recharge ponds.

(3) South Pioneer and James Canal

South Pioneer area is located south of the Kern River Canal and consists of approximately 948 acres. Water for recharge on the South Pioneer area is conveyed by the Kern River Canal crossing. In 2003, the Recharge Participants constructed an 84-inch HDPE pipeline beneath the Kern River Canal to convey water to South Pioneer. The pipeline capacity is approximately 200 cfs to the James Canal System. The James Canal System consists of 4 turnouts (two 24-inch, one 37-inch and one 48-inch), which divert water out of the James Canal onto the south and west portions of the South Pioneer. A turntable pump is used to convey water to the eastern half of the South Pioneer. Approximately 45,000 feet of levees averaging four feet high with 4:1 side slopes and 12-foot crowns were constructed to create nine recharge basins with a combined wetted area of 500 acres. A maximum flow rate of 200 cfs can be conveyed onto the South Pioneer. The existing diversion capacity of 200 cfs exceeds the present estimated recharge capacity of 170 cfs on the 500 acres of wetted area. The additional diversion capacity to South Pioneer is used to convey water to the Kern Water Bank recharge ponds through McAllister Ranch.

(4) CVC River Turnout No. 1

CVC River Turnout No. 1 (RTO #1) was constructed by the AGENCY in 1977 to deliver water to the 2800 Acres. Since 1977, RTO #1 has facilitated deliveries to the Pioneer Property, as well the Kern Water Bank. In 2003, the original RTO #1 48-inch corrugated metal pipe was replaced, by the Participants, with 60-inch diameter reinforced concrete pipe, with an estimated capacity of 400 cfs. RTO #1 is used to deliver water to Basins 1, 4, 9 and 10 of the 2800 Acres from which deliveries are made to the Pioneer Property and the Kern Water Bank. In recognition of the AGENCY's original construction in 1977, it retained 25% capacity rights to RTO #1. The remaining 75% of capacity rights was allocated among the Participants as described in the 2003 CVC RTO #1 Agreement entitled Funding and Joint Use Agreement for CVC River Turnout #1.

B. Future Facilities

Facilities proposed to supplement the existing recharge capacity are described in this section.

(1) North Pioneer

Levees will be constructed on the Bolthouse Property in Section 4 (T30S/R26E) to enable recharge on the North Pioneer. Approximately 10,000 feet of levees would add about 190 acres of recharge basins providing about 60 cfs in additional recharge capacity. Deliveries to the new ponds would be pumped from the 2800 Acres Basin 8 or the existing easterly North Pioneer Pond.

(2) Central Pioneer

A levee will be constructed parallel to the West Beltway alignment on the Central Pioneer in Section 10 (T30S/R26E). The levee will be approximately 3,000 feet in length, averaging four feet high with 4:1 side slopes and 12-foot crowns. Deliveries to the pond would continue to be made from the existing Basin 1 turnout from the 2800 Acres.

(3) South Pioneer

In addition to service from the James Canal, temporary weirs and/or siphon/turntable pumps could be constructed to divert water out of the Kern River Canal. Some water from the Central Pioneer can be delivered through an existing siphon under the Kern River Canal to South Pioneer. To facilitate larger flows, additional siphons may be constructed to convey water from Central Pioneer to South Pioneer. A new 300 cfs turnout from the 2800 Acres McClung Pool may be built in the northwest quarter

of Section 10. In addition, an intermediate weir on the James Canal may be constructed to facilitate deliveries to the southeast corner of Section 15 (T30S/R26E).

(4) CVC River Turnout 1B

An additional turnout from the CVC with an estimated capacity of 400 cfs is planned for construction. Allocation of capacity in CVC River Turnout #1B shall be consistent with the 2003 Funding and Joint Use Agreement for CVC River Turnout #1.

C. Other Facilities

The foregoing recharge facilities must be constructed and operated in conformance with obligations to the Kern Water Bank Authority (KWBA) included in Exhibit 10 to the Kern Water Bank Transfer and Exchange Agreement dated October 25, 1996. That exhibit provides, among other things, that the AGENCY and the KWBA shall negotiate agreements and related documents which address the following:

1. KWBA construction of facilities to divert and convey water from the Kern River and Cross Valley Canal to the Project and the Kern Water Bank;
2. Sharing of operation and maintenance costs for those facilities;
3. Accounting for transportation losses occurring on Pioneer Property;
4. A mutually acceptable recordable easement for conveyance of KWB water across Pioneer Property; and
5. Impacts on Tenant Farming Program.

3. COSTS AND FINANCING

The costs for completion of the above-noted facilities are estimated as follows:

A.	<u>North Pioneer</u>	
	• Section 4 Ponds, Pump Lift Stations and Turnout -	\$1,590,000
B.	<u>Central Pioneer</u>	
	• Section 10 Levee -	\$150,000
C.	<u>CVC River Turnout 1B</u>	
	• Turnout -	\$660,000
D.	<u>South Pioneer</u>	
	• Turnout, Pump and Weir –	\$730,000

Approximately \$2.4 million for the projects in Sections 3.A. and 3.B. of this plan will be paid with Proposition 13 grant funds; if those projects cost less than \$2.4 million, the remainder will be allocated to the project in Section 3.C. If the projects in Sections 3.A. and 3.B. cost more than \$2.4 million, the Recharge Participants will not be required to pay the deficiency of funds for completion of those projects. If the projects in Sections 3.A through 3.C. cost less than \$2.4 million, the remainder will be allocated at the discretion of the AGENCY. Approximately \$100,000 from Proposition 13 grant funds have been allocated to construct ponds in Section 15. No Proposition 13 grant funds have been allocated to the projects in Section 3.D.

4. PRIORITIES FOR USE

A. Priorities

Recharge Participants have equal priority allocations of available recharge capacity, it being recognized that recharge for overdraft correction has priority over recharge to establish bank accounts. Unused recharge capacity by any Recharge Participant is reallocated to other Recharge Participants. Priorities for use of Pioneer recharge capacity are as follows:

1. Recharge Participants for overdraft correction and AGENCY reserved capacity for overdraft correction of up to 25%.
2. Recharge Participants and Recovery Participants shall equally share recharge capacity subject to AGENCY reserved capacity of up to 25% for banking purposes.
3. Member Units; non-Participants
4. City of Bakersfield
5. Other in-County entities
6. Out-of-County entities

B. Land Management

The AGENCY shall have exclusive control over land management of the Pioneer Property and may use the Pioneer Property for any purpose, including agricultural purposes not inconsistent with the Pioneer Project Participation Agreement. In exercising this control, the AGENCY will consider Participants' interest in maintenance of the Project recharge and recovery capabilities, will consider overall Project and AGENCY costs and benefits, and will consult with the Participants prior to making decisions affecting such capabilities, costs and benefits. Recovery capacity employed by such use shall be considered part of the AGENCY Reserved Rights. The AGENCY shall require encroachment permits for all Participants engaged in activities on the Pioneer Property, which may include appropriate indemnification requirements. All revenues associated with land management or other non-Project uses, less costs attributed to such uses, shall accrue to the AGENCY.

5. OPERATION AND MAINTENANCE ACTIVITIES

The project operator will provide the services shown as outlined below:

OUTLINE

**ANNUAL PROJECT ADMINISTRATION, OPERATION,
MAINTENANCE AND REPLACEMENT ACTIVITIES/COSTS**

A. Project Administration: (Paid by all Participants in all years as minimum fixed costs)

1. Administer leases, easements, and other land use requests with non tenants, net of payments.
2. Prepare annual report describing operations on Pioneer Project, BMWWD Project, 2800 Acres and Kern Water Bank.
3. Prepare annual budget, collect fees, attend meetings.
4. Measure water levels in non recharge and non recovery years, twice per year.
5. Maintain security (as required).
6. Contingencies of 25%.

B. Recharge Administration, Operation, Maintenance Activities and Replacement Costs:

Fixed: Minimum fixed costs are paid by all Participants in all years including providing standard road, levee and canal maintenance (including weed control - if not provided by the tenant) in no action and recovery years.

Variable:

1. Schedule and coordinate recharge operations (see attached Standard Scheduling and Payment Provisions for Banking and Recharge Projects).
2. Operate, measure, prepare and maintain records for ponds and monitor wells; collect and analyze water quality.
3. Maintain levees/roads/canals related to recharge areas in recharge years (includes related weed control).
4. Replacement cost of control structures (only collected in recharge years).
5. Contingencies of 25% of 1-3 above.
6. Repayment of fixed recharge O&M by Participant.

C. Recovery Administration, Operation, and Maintenance Activities; Power, and Replacement Costs:

Fixed: Minimum fixed costs are paid by Recovery Participants in all years including providing maintenance for wells, well pads and fences twice per year.

Variable:

1. Schedule and coordinate operations; prepare and maintain records; pay bills.
2. Operate wells, measure discharge, measure, collect and analyze water levels and quality.
3. Maintain wells, well pads and fences related to recovery wells in recovery years (includes related weed control).
4. Outside services (well equipment).
5. Replacement costs.
6. Power costs (including standby for the following year).
7. Contingencies of 25% of 1 - 4 above.
8. Repayment of fixed recovery O&M by Participant.

D. Project Development Costs: (As required).

6. OPERATION AND MAINTENANCE COSTS

A. Annual Administration

Activities to be conducted under project administration are shown in the Section 5 of this plan. The costs to conduct these activities will be established in each year's budget on a calendar year basis. For the Project, these fixed costs will be allocated in proportion to the following shares: 4/12 to Recharge Participants; 7/12 to Recovery Participants; and 1/12 to the AGENCY. The Recharge Participants share will be allocated equally among Recharge Participants. The Recovery Participants' share will be allocated based on percentage shares shown in Section 4 of the Recovery Plan.

The total estimated Project administration costs will be collected from Participants by billing sixty percent of said costs in January of each year and forty percent in July of each year. Payments will be due 30 days after billing. The Project administration costs may include an allowance, in addition to the costs shown on the annual budget, to defray continuing AGENCY Project development costs.

At the end of each year, actual administration costs will be compared with revenues received from Participants. In the event of a shortfall of revenues, Participants will be assessed an amount to make up the shortfall, such assessments to be based on the following shares: 4/12 from Recharge Participants; 7/12 from Recovery Participants; and 1/12 from the AGENCY. In the event of an excess of revenues, Participants, including the AGENCY, will be credited in proportion to their contribution of such revenues. Such assessments or credits will be applied to the July billing for the subsequent year.

B. Recharge Activities

Administration, operation, maintenance and replacement recharge activities are shown in Section 5 of this plan. The costs to conduct these activities will be established in each year's budget on a calendar year basis. Such costs will be divided between minimum fixed costs and variable costs. The minimum fixed recharge costs will be allocated in proportion to the following shares: 4/12 to Recharge Participants; 7/12 to Recovery Participants; and 1/12 to the AGENCY. The Recharge Participants' share will be allocated equally among Recharge Participants. The Recovery Participants' share will be allocated among Recovery Participants based on the percentage shares shown in Section 4 of the Recovery Plan. The fixed recharge costs will be collected from Participants by billing sixty percent of said costs in January of each year and forty percent of the cost in July of each year. Payments will be due 30 days after billing. The variable costs will be repaid by Participants who recharge with a unit charge that is sufficient to provide for variable administration, operation, maintenance and replacement costs that occur during recharge years. In general, water will be recharged in the least costly locations, considering the source of the water and associated transportation costs. When it is necessary to use more expensive recharge opportunities, recharge and transportation costs will be melded so that all Participants (except CVC or River Canal Participants since they do not pay for transportation) will pay equal unit operation and maintenance costs.

At the end of each year, actual variable administration, operation, maintenance and replacement costs for recharge activities will be compared with revenues received from unit charges. In the event of a shortfall of revenues, Participants will be assessed an amount to make up the shortfall, such assessments will be in proportion to the quantities recharged during the prior year by each Participant. In the event of an excess of revenues, Participants will be credited an amount of the excess, such credits to be in proportion to quantities recharged during the prior year by each Participant. Such assessments or credits will be applied to the July billing for the subsequent year.

The unit charge for variable recharge activities will include a component for repayment of the fixed recharge costs. The unit component will be based on the assumption that the fixed recharge cost can be completely repaid if 30,000 acre-feet of water is recharged during the year. The funds collected during the year with the repayment component will be used first to repay the entities which paid the fixed costs in proportion to their fixed cost payments. Any excess over the fixed costs will be applied to the fixed costs in succeeding years.

C. Recovery Activities

Administration, operation, maintenance, power and replacement activities for recovery are shown in Section 5 of this plan. The costs to conduct these activities will be established in each year's budget on a calendar year basis. Such costs will be divided between fixed costs and variable costs. The fixed recovery costs will be allocated to the Recovery Participants based on the percentage share shown in Section 4 of the Recovery Plan. In the event the AGENCY exercises its option for up to 25% of recovery

capacity, the portion of the fixed costs allocated to Recovery Participants will be that portion not claimed by the AGENCY and the AGENCY shall be allocated a portion of the fixed costs equal to the portion of the recovery capacity claimed by the AGENCY.

The total estimated fixed recovery costs will be collected from Recovery Participants by billing sixty percent of said costs in January of each year and forty percent in July of each year. Payment will be due 30 days after billing. The variable costs will be repaid by Participants who recharge with a unit charge sufficient to provide for variable administration, operation, maintenance and replacement costs that occur in recovery years. In general, the least costly wells will be operated first. When it is necessary to operate more expensive wells, recovery and transportation costs will be melded so that all Recovery Participants (except CVC participants since they do not pay transportation) will pay equal unit operation and maintenance costs.

At the end of each year, actual variable administration, operation, maintenance, power and replacement costs for recovery activities will be compared with revenues received from unit charges. In the event of a shortfall of revenues, Participants will be assessed an amount to make up the shortfall, such assessments will be in proportion to the quantities recovered during the prior year by each Participant. In the event of an excess of revenues, Participants will be credited an amount of the excess, such credits to be in proportion to quantities recovered during the prior year by each Participant. Such assessments or credits will be applied to the July billing for the subsequent year.

The unit charge for the variable recovery activities will include a component for repayment of fixed recovery costs. The unit component will be based on the assumption that the fixed recovery cost can be completely repaid if 10,000 acre-feet is recovered during the year. The funds collected during the year with the repayment component will be used first to repay the Recovery Participants which paid the fixed costs in proportion to their fixed cost payments. Any excess over the fixed costs will be applied to the fixed costs in succeeding years.

D. Standard Schedule and Payment Provisions

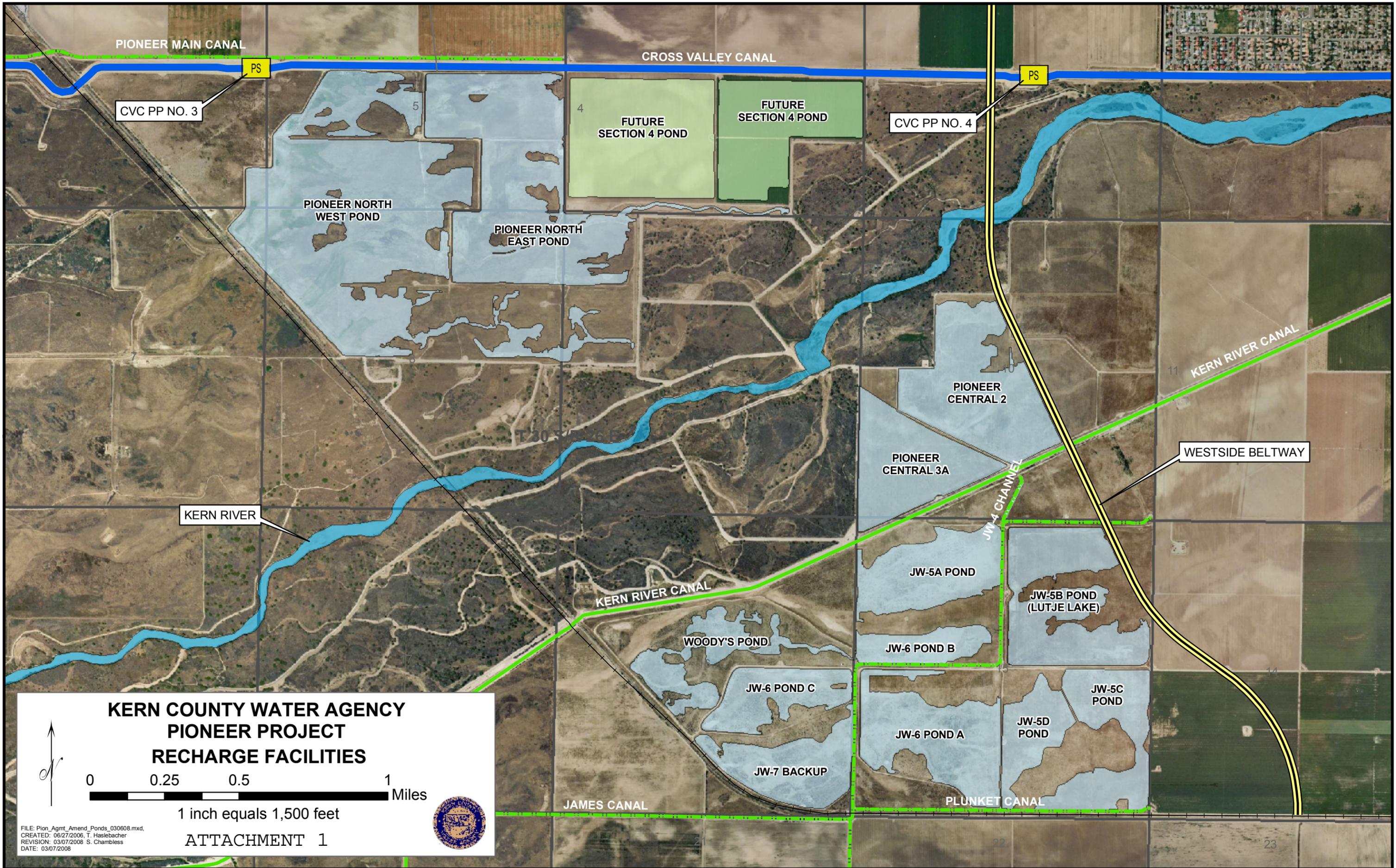
Repayment of administration, operation, maintenance and replacement costs will be in accordance with the attached Standard Schedule and Payment Provisions for Banking and Recharge Projects (Attachment 2) unless otherwise indicated in this plan.

E. Lease Tenant Administration Cost

AGENCY costs directly related to administration of leases with tenants will be repaid from lease income.

F. Access to CVC

The Agreement for the Assignment of Certain Rights and Obligations of the Kern County Water Agency in the Construction and Operation of the Cross Valley Canal Expansion Program has been developed in conjunction with the CVC Expansion Project to provide the Participants with reliable access to the CVC.



**KERN COUNTY WATER AGENCY
PIONEER PROJECT
RECHARGE FACILITIES**



0 0.25 0.5 1 Miles

1 inch equals 1,500 feet

ATTACHMENT 1



FILE: Pion_Agmt_Amend_Ponds_030608.mxd,
 CREATED: 06/27/2006, T. Haslebacher
 REVISION: 03/07/2008 S. Chambliss
 DATE: 03/07/2008

KERN COUNTY WATER AGENCY
Standard Scheduling and Payment Provisions for
Banking and Recharge Projects
April 27, 1998

Applicability

These provisions apply to recharge and banking projects on the Kern River Fan area operated by the Kern County Water Agency. At present, these projects consist of the Kern Water Bank, the Pioneer Project and the Berrenda Mesa Project. These provisions may be supplemented by special provisions, applicable to specific projects as required.

Scheduling

On or before April 1 of each year, project participants shall file with the Agency a schedule showing the quantities of water to be recharged or extracted on behalf of the participant for the eight month period May 1 through December 31. For waters to be recharged, the source of the water should be shown as well as the project where the water is to be recharged. Water to be recharged on the 2800-Acres should also be included in the schedule. The Agency will review the schedules and notify the participants on or before April 15 of any conflicts.

On or before December 1, a similar schedule will be filed showing requested activities for the four month period between January 1 and April 30. The foregoing schedules may be amended at any time within project capabilities. The Agency will notify participants of unregulated or flood flow waters and will revise the schedule in accordance with participant instructions within project capabilities.

Payment

Each month, the Agency will invoice each participant for the cost to comply with the order for the previous month. The invoice will be related to the quantities ordered and scheduled by the Agency and will include the following: variable operation, maintenance and replacement costs, conveyance costs, power costs and other fees, including applicable unit rate capital repayment charges (user fees/spreading fees). Participants will have 30 days from the date of receipt to pay the invoice. Each quarter the actual deliveries for the prior quarter will be reconciled with the quantities ordered and scheduled, and any credits or assessments will be included in the following invoice. The variable operation and maintenance charges contained in the invoices may include a unit administration charge established by the Agency each year for each project as part of its annual budget process.

If applicable, the cost for fixed annual administration, insurance, operation and maintenance and replacement for each project will also be established by the Agency each year as part of its budgeting process. The fixed costs will be collected from participants by billing sixty percent of said costs in January of each year and forty percent of the costs in July of each year. Payments will be due 30 days after billing. Each year the Agency will compare the actual variable and fixed administration, operation and maintenance costs, conveyance costs, power costs and fees incurred with the estimated costs. Assessments or credits will be applied to the July invoice of the succeeding year. Cost items not finalized in time for the foregoing annual adjustment invoices will be included with the next invoice after the item becomes final.