CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Direction on Participation in Mokelumne River Water and Power Authority

MEETING DATE: May 15, 2002

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council provide policy direction on participation in the Mokelumne River Water and Power Authority. Staff recommends that the City participate up to a one-third share of the project if suitable changes are made to the joint powers agreement (JPA).

BACKGROUND INFORMATION: Late last year, City staff reported to the Council on a number of water supply issues, including possible participation in the Mokelumne River Water and Power Authority. This agency, which for all practical purposes is governed by the San Joaquin County Board of Supervisors, has filed for water rights and power generation approvals on the Mokelumne River. The applications are nearing the point where significant expenditures and project development are needed if the filings are to be kept alive. More detail on the project and the Authority is attached.

The Council has previously expressed interest in participation, but there have been no formal meetings to pursue this until just recently. Council members Nakanishi and Hitchcock were designated as the City's primary representatives. At the first policy meeting, held on May 1, County staff updated those present on recent activities and their attempts to obtain Federal funding. However it was clear that, a) we shouldn't expect Federal money in time to keep the applications alive; and, b) the County is not prepared to do this alone. County staff suggested that a partnership, consisting of the County, the cities of Stockton and Lodi, and perhaps Stockton East Water District would be viable. The next policy meeting is scheduled for May 22, at 10:30 a.m., at the County Public Works office on Hazelton Avenue. While staff can attend and convey the Council's direction, we feel it would be appropriate for one or two Council members to attend.

The County, including Lodi, is in need of a supplemental water supply as groundwater has been pumped at non-sustainable rates for nearly a century. Staff is supportive of efforts to obtain surface water and the Mokelumne River is a logical source for the City of Lodi. However, pursuing such endeavors will mean a significant commitment of funds over the next few years. (The total will likely be in the $4 to 5 million range according to the attached letter.) These applications are already in progress and, at this time, we feel it would be better to work with and through this process rather than to start fresh on our own.

The JPA does provide for new members, however, as presently written, a new member would only have one position (thereby one vote) on the 5-member board of directors. Staff feels that this arrangement should be changed to more closely reflect financial participation.

FUNDING: Water Fund, none at this time.

Richard C. Prima, Jr.
Public Works Director

Attachment

cc: Fran Forkas, Water/Wastewater Superintendent
Tom Flinn, Director, San Joaquin County Public Works Dept.

APPROVED: _____
H. Dixon Flynn -- City Manager

MOKELUMNE RIVER
WATER AND POWER AUTHORITY
P. O. Box 1810 - 1810 E. Hazelton Ave.
Stockton, California 95201
209/468-3000

December 24, 2001

Mr. Phillip Pennino
City of Lodi
Post Office Box 300
Lodi, California 95241-1910

SUBJECT: PARTNERSHIP AND SUPPORT FOR THE MOKELUMNE RIVER WATER AND POWER AUTHORITY

Dear Mr. Pennino:

The Mokelumne River Water and Power Authority (Authority) has determined that the Mokelumne River has the potential to present San Joaquin County a good opportunity to develop a technically and economically viable source of supplemental water and renewable power supplies. The Authority has identified the steps necessary to complete the Federal Energy Regulatory Commission Permit Application and the State Water Resources Control Board Water Rights Application. Work to be completed on both applications entails a project alternatives evaluation with the selection of the preferred alternative, the completion of all necessary environmental documentation compliant with all State and Federal regulations, and the securing of all necessary funding requirements for the pending Applications and the project itself. The cost of performing this work is preliminarily estimated to be in the range of $4 - 5 million. The further development of a Mokelumne River Water and Power project is dependent upon the Authority's ability to achieve local and regional support for this undertaking.

The Board of Directors of the Authority is considering expanding the membership of the Authority's Joint Powers Agreement. At this time, the Mokelumne River Water and Power Authority is soliciting local and regional interests for its partnership through financial, political, or general support of the project.

A meeting will be scheduled in mid-January to discuss the details of expanding the Mokelumne River Water and Power Authority Joint Powers Agreement. There will be a discussion of the Draft Technical Memorandum prepared by Camp Dresser & McKee Inc., a copy of which is attached for your use. Information developed at this meeting will be incorporated into finalizing CDM's Final Technical Memorandum and developing a strategy for completing both the Federal Energy Regulatory Commission Permit and the State Water Resources Control Board Water Rights Application for a project on the Mokelumne River.

✓CC	HR
✓CM	IS
✓CA	LIB
CD	✓PR
✓EUD	PD
FIN	✓PW
FD	COM

We look forward to your response. Please direct your response, questions you may have, or a request for a copy of the Joint Powers Agreement, to Tom Gau, Deputy Director/Development of Public Works, at (209) 468-3531.

Sincerely,

Dario L. Marenco

DARIO L. MARENCO
Chairman of the Mokelumne River
Water and Power Authority

DLM:THM:ll
WR-1L034-E1.FRM

Attachment

c: Board of Supervisors
Manuel Lopez, County Administrator
Gary Darling, East Bay Municipal Utility District
Tim Parker, Department of Water Resources
Joe Peterson, San Joaquin Farm Bureau Federation
Paul Risso, California Water Service Company
Mike McGrew, Assistant County Counsel
Tom Flinn, Interim Director of Public Works
Tom Gau, Deputy Director/Development

DRAFT

Mokelumne River Development Project

Technical Memorandum

Recommendation to Proceed with FERC and Water Rights Permits

This memorandum summarizes recommendations for proceeding with the development of Mokelumne River floodwaters in accordance with San Joaquin County's Federal Energy Regulatory Commission (FERC) and State Water Resource Control Board (SWRCB) filings. CDM has assisted the County with the FERC application process for the past 9 years. We made a presentation to the Mokelumne River Water and Power Authority (Authority) on pending deadlines for these permits and recommended that the Board proceed with the applications. The Board asked CDM to address the following questions before the work would proceed:

- Can a project be built to capture flood flows on the Mokelumne River for use within San Joaquin County and potentially other areas?
- If this concept is feasible, how can the County pay for the next steps?

CDM's conclusion is that there is a range of feasible project concepts. There are also many variations on the general project concepts that could suit different partners, or improve chances for State or Federal funding.

Very few sources of new surface water exist within the state, and all sources are highly contested. The alternatives described in this memorandum involve diverting flood flows from the Mokelumne River, for which the County has filed both a water rights application with the SWRCB and a FERC preliminary permit. By taking these steps, the County secured priority for the next development of Mokelumne River water – a tremendous potential resource. Because the period of validity for the permit ends next year, the County must decide now if it should move forward with the permit process. If the county does not develop this water, it is fairly certain that other parties will do so without delay.

In addition to the water benefits associated with developing water on the Mokelumne River, the County could secure hydropower supplies. The revenue from the hydropower could help to offset the costs associated with construction and operation of the facilities.

It is recommended that San Joaquin County should consider pursuing these permit applications, based upon the existence of several feasible project alternatives and the potential for funding through State or Federal sources. The following pages provide: background information on the permit application processes; descriptions of several potential water source development alternatives; and recommendations for the County's next steps.

Applications and Permits - Details

FERC Preliminary Permit

On October 4, 1999, FERC issued a preliminary permit to the Authority to study the proposed 31-megawatt Middle Bar Project (No. 11619). The Permit was issued for up to 36 months to allow the Authority priority to prepare an application for a license while studies and arrangements for the application are undertaken. The main benefit of the preliminary permit is to give the Authority priority of application before the FERC. The Authority, or any applicant, could file a license application using Mokelumne River water resources without a permit. The permit, however, puts the Authority in a priority position as long as the permit is effective; i.e., the existing permit protects the Authority from another filing on the same water.

The Authority's permit expires in November 2002, and it has made some progress toward preparing a license application, including some of the initial consultations with resource agencies and the public. A general analysis of the alternatives and regional impacts has also been performed. A site visit for concerned agencies was conducted in March 2000 and letters from some agencies to identify study methodologies were received. To this date, none of the studies recommended by the agencies have been initiated. The main purpose of these studies is to prepare the "Exhibit E" part of the application for license, which contains the environmental documentation and is the largest and most difficult component of the application to complete.

A FERC Application for *License for a Major Unconstructed Project* could be completed and filed with the FERC before the preliminary permit expires. Many of the environmental studies have already been performed by EBMUD and PG&E as part of their operations on the river. The work necessary to complete this effort would also satisfy the current information required by the State Board (see below). To finish by the November 2002 deadline, this work would need to start almost immediately. Once the application for license is filed, the Authority could then respond to the appropriate agencies, as required by FERC and the Water Board for the successful completion of the power license and water permit. A three to ten year process will likely be required to acquire the rights to Mokelumne water and power, and FERC licenses are typically valid for 35 to 50 years.

At a minimum, pursuing the application will make the Authority and San Joaquin County vested partners in the further development of Mokelumne River.

SWRCB Application

The Authority also has an application to appropriate water from the Mokelumne River. As long as this application is valid, the Authority is an active, legal participant that must be dealt with by any party utilizing water or producing power on the River. This water rights application has the same status as the FERC permit, in that the

County has a valid application, but little work has been accomplished to secure the permit.

The SWRCB filing for water rights is also reaching a critical time. While there is no statutory time limit for the application, the SWRCB does expect progress towards project development

SWRCB wants to see progress on the project by SJC, and has asked for information to illustrate that the County is intending to pursue these rights. To demonstrate its conviction, SJC provide the following information:

- Information illustrating that there is water available in the system;
- A timeline to complete the CEQA document;
- Documentation that the County is "diligently" pursing the FERC permit; and
- The source of funding for SJC to complete the needed studies to secure both permits.

The State Board has extended the deadline for this information from November 2001 to January 2002.

Project Alternatives

CDM analyzed three alternatives for obtaining a new water source on the Mokelumne River. The attached location map illustrates these alternatives. The purpose of all three alternatives is to secure flood flows from the Mokelumne River and use the water in lieu of groundwater within the County. In-lieu recharge prevents further groundwater overdraft, and allows natural recharge to start filling the groundwater basin. Table 1 describes the three alternatives, which include: new on-stream storage; expanded on-stream storage; or off-stream storage.

The three alternatives were chosen as representative of the potential for capturing Mokelumne floodwater. This preliminary alternatives analysis was conducted to determine whether a feasible project existed. Additional alternatives, such as a 100,000 or 400,000 acre-foot Middle Bar reservoir, could be added or combined when the time comes to choose a final project.

All alternatives must be operated in a way to provide regional and environmental benefits. Partnerships between different regions and interest groups are critical to the success of a project. Regional benefits could include, for example, storing water in the groundwater basin and releasing water during times of impaired water quality in the Delta. The attached figure illustrates a conceptual model of how the project could operate to provide regional and environmental benefits.

Middle Bar Reservoir

This alternative features on-stream storage, using a dam on the Mokelumne River upstream of Pardee Reservoir to create a 40,000 acre-foot storage reservoir. As the Board is aware, on-stream storage reservoirs typically present numerous implementation challenges. The environmental impacts associated with this alternative would be significant and potentially difficult to mitigate, as the project would flood wetlands and valuable habitat and alter flow patterns on the river. The project would also inundate a popular stretch of whitewater and would flood a section of Highway 49. Furthermore, the dam would be located in the upstream portion of Pardee Reservoir, which could impact EBMUD's water and power operations - a political issue. While this alternative would be the most difficult of the three to implement, on-stream storage reservoirs can be a highly effective means for capturing flood flows. Flood flows usually come all at once, and only a portion of these flows could be captured if the water needed to be conveyed to an off-stream site. The small Middle Bar discussed in this memorandum would be much easier to implement than the larger reservoirs often discussed for this site because the inundated area would be smaller, with fewer impacts.

Expanded Pardee Reservoir

This alternative would be an expansion of existing facilities, and would reconstruct Pardee Dam approximately 1 mile downstream of its current location. Expanding an existing facility has fewer impacts than building a new one because most of the reservoir area is already flooded, and many associated facilities (power transmission lines, water diversion systems, etc.) already exist. The negative impacts from this alternative would be less significant than an on-stream alternative because of the smaller area that is newly inundated. This project would not be possible to implement without the full cooperation of EBMUD as the owner of the existing dam and reservoir. EBMUD has identified this project as one that it will consider if it needs additional future supplies, but it has chosen to pursue the Freeport Diversion project at the present time.

Duck Creek Reservoir

Duck Creek Reservoir is an example of an off-stream storage project, in which a tunnel and pipeline from Pardee would divert water to the new Duck Creek Reservoir. By moving the storage to an off-stream location, the environmental impacts associated with flooding high-value riparian habitat and wetlands are lessened. The site chosen for this reservoir, however, has a California Department of Fish and Game conservation easement, so there will still be potentially significant environmental impacts for this example. The site also contains farmlands that would be flooded as a part of the project, which would be politically unpopular in the County.

Duck Creek Reservoir has a high surface area to volume ratio, which could result in increased evaporation. Using local pan evaporation data, up to 31,500 acre-feet of water could evaporate annually from a 200,000 acre-foot reservoir. Evaporation in

Duck Creek would be 60 to 160 percent greater than other area reservoirs. Evaporation in Duck Creek will be less of a concern, however, because it will be operated simply as a regulating reservoir to hold the water until it can be recharged into the ground. It will require less time in storage, so less water should evaporate than if it was operated as a traditional surface storage reservoir.

Water Availability

The information and analysis performed to determine Mokelumne River water availability and project yields (in Table 1) are based on the East Bay Municipal Utility District (EBMUD) operational model results of the Pardee-Camanche System. The simulations were conducted in 1996. The information and analysis has the following limitations and assumptions:

- EBMUD Operational Model run using historical hydrology from 1921 to 1995.
- EBMUD year 2040 levels of demand at 325 million gallons per day.

Upstream Withdrawals

- Amador Canal: 20,000 acre-feet per year.
- Calaveras County Water District: 27,000 acre-feet per year.
- Calaveras Public Utilities District, Amador County Water District and Jackson Valley Irrigation District: 0 acre-feet per year.

Downstream Withdrawals

- Woodbridge Irrigation District, base withdrawal of 60,000 and 39,000 acre-feet per year, in normal and dry conditions respectively.
- Fish releases of 141,365 acre-feet per year under normal conditions and 21,780 acre-feet per year under dry conditions.
- Riparian and other appropriations 20,618 per year.
- Other releases of 23,600 acre-feet per year in normal years and 3,600 acre-feet per year in dry years.

The Mokelumne River is generally understood be fully appropriated. The only water available is the non-firm flood releases made from Camanche-Pardee. These flood releases are not required to meet downstream fishery flow requirements or downstream water users with water rights to Mokelumne River that are senior to EBMUD's water rights. The releases are made for flood control during the flood season or later during the year in anticipation of the following wet season.

Available Floodflows for San Joaquin County

Based on the assumptions listed above, the EMBUD model results show that on average approximately 120,000 acre-feet per year of flood releases are available. The flood flows are highly variable, ranging from 0 acre-feet per year to 1,000,000 acre-feet per year, as shown in the attached flood release figure. The alternatives are not capable of capturing the very high-end flows due to storage and conveyance capacity limitations, so the average annual yield from each project is substantially less than the water available. The three example alternatives result in yields ranging from 42,000 acre-feet (Middle Bar Reservoir) to 69,000 (Duck Creek Reservoir).

Recommended Next Steps

The next steps for the project include completing the FERC application, the water rights application and the CEQA/NEPA documents. This work will cost $2-4 million.

Short Term Funding: The $2-4 million required to complete the next project steps would be a large burden for the County alone. SJC will need to pursue local partners (such as Lodi or Stockton) or external partners (such as EBMUD or other exporters). While EBMUD is focusing its resources on implementing the Freeport Diversion Project currently, and is not interested in partnering (financially) with SJC, local partners have expressed interest. The immediate next step is to pursue these partners, and add them to the Mokelumne River Water and Power Authority.

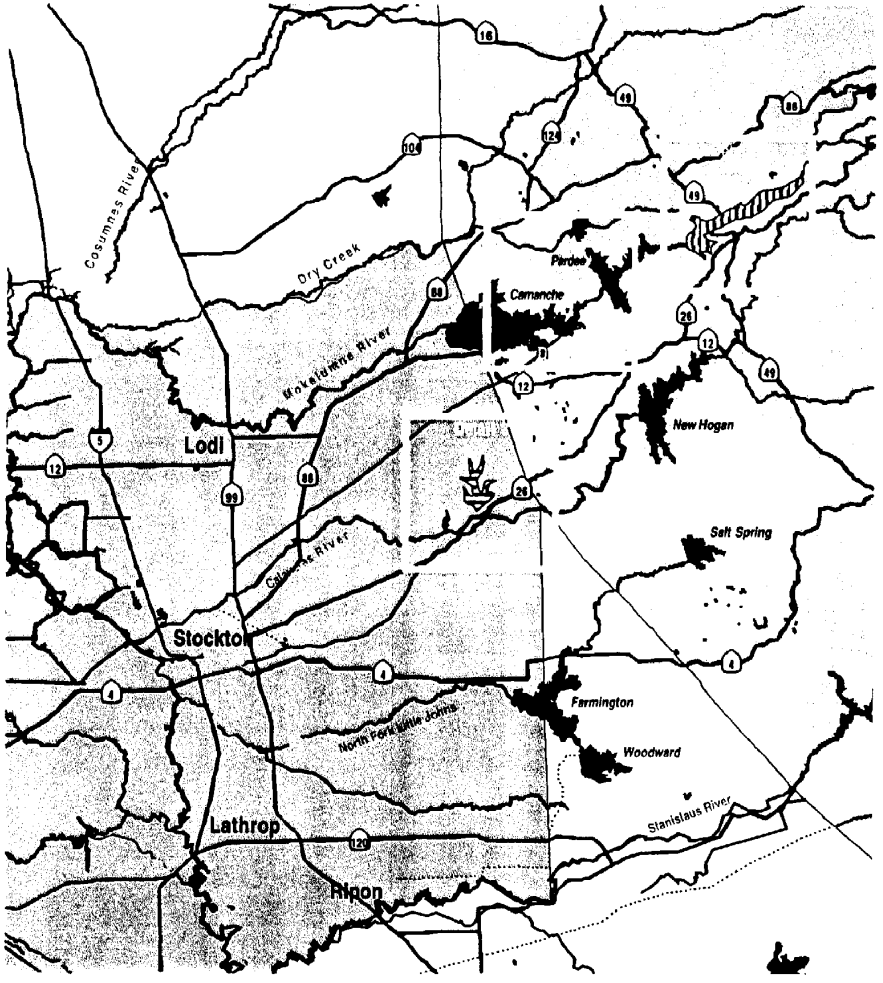
Permits: The new Authority should immediately begin work on the applications, which could then be completed before the November 2002 deadline. The SWRCB permit process requires many of the same studies and documents that the FERC application does, and the two applications should be prepared concurrently.

Long Term Funding: The state and federal government are not likely to be interested in funding the first steps taken to study and permit the project. These funding sources, however, will be critical for implementing the project. To receive state or federal funding, the County *must* be able to describe the regional or environmental benefits associated with the project. Additional storage would meet CALFED objectives; however, CALFED would expect benefits to the Bay-Delta in order to provide funding.

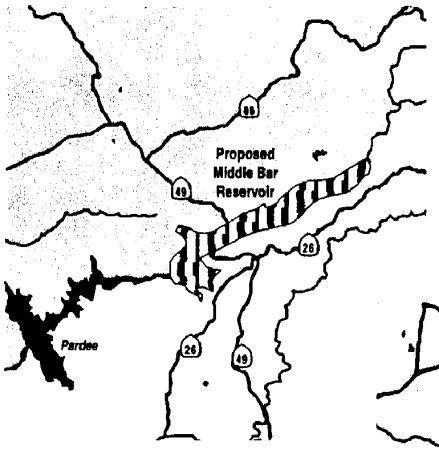
Table 1 – Summary of Alternatives

Alternative	Middle Bar	Expanded Pardee	Duck Creek Reservoir
Location	On the Mokelumne River in the upper reaches of Pardee Reservoir	New Pardee Dam would be located approximately 1 mile downstream of current dam on Mokelumne River	On Duck Creek, a little over a mile north of State Highway 26
Dam size	190-foot high, 800 feet long Dam crest elevation: 684 feet	New dam on Mokelumne: 400-foot high, 1950 feet long Dam crest elevation: 614-624 feet	157-foot high Dam crest elevation: 312 feet
Necessary infrastructure	Transmission facilities to convey water to SJC service areas, raise or replace Highway 49 bridge	Saddle dam between the reservoir and Jackson Valley, new intake tower, raise or replace Highway 49 bridge, transmission facilities	From Pardee, a 10,300-foot long tunnel to a 57,400-foot long pipeline to discharge to Duck Creek Reservoir Several saddle dams
Storage amount	40,000 acre-feet	Additional 173,000 acre-feet	200,000 acre-feet
Estimated average annual yield	42,100	66,200	69,800
Cost/acre-foot	$409	$544	$379
Power generation - facility size	31 MW	20 MW	5.13 MW
Power generation - average annual power generated	80 GWh/year	85 GWh/year	15.27 GWh/year
Annual average revenue from power generation [1]	$4,000,000	$4,250,000	$763,500
Environmental impacts	On-stream storage impacts riparian areas and wetlands	Some impacts to special status plant communities upstream of dam, 1 to 10 bald eagles have been found yearly in the project area	CDFG has a conservation easement on property
Recreational resources	Would inundate a portion of the Electra whitewater run	Some impacts may occur to the Electra whitewater run, but they are mitigable on-site	No whitewater impacts
Public opinion	On-stream storage reservoirs are politically unpopular		Landowner is not in favor of dam CDFG has a conservation easement on property
Potential partners	Lodi, Stockton, EBMUD, Calaveras and Amador Counties	Calaveras and Amador Counties Must partner with EBMUD	Lodi, Stockton, EBMUD

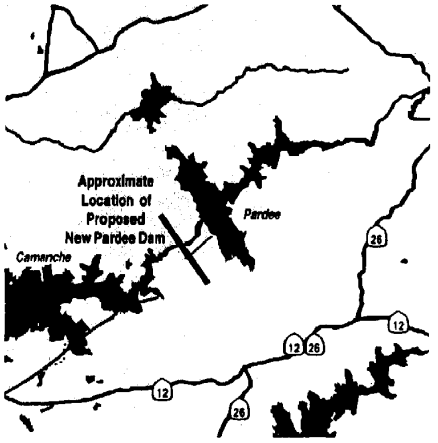
Note 1: Revenue is calculated assuming a power cost of $0.05



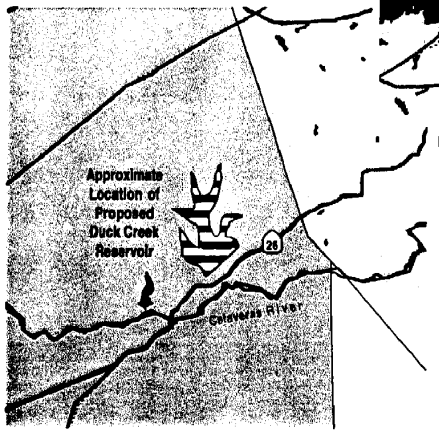
Regional Location Map



Detail 1: Middle Bar Reservoir Alternative

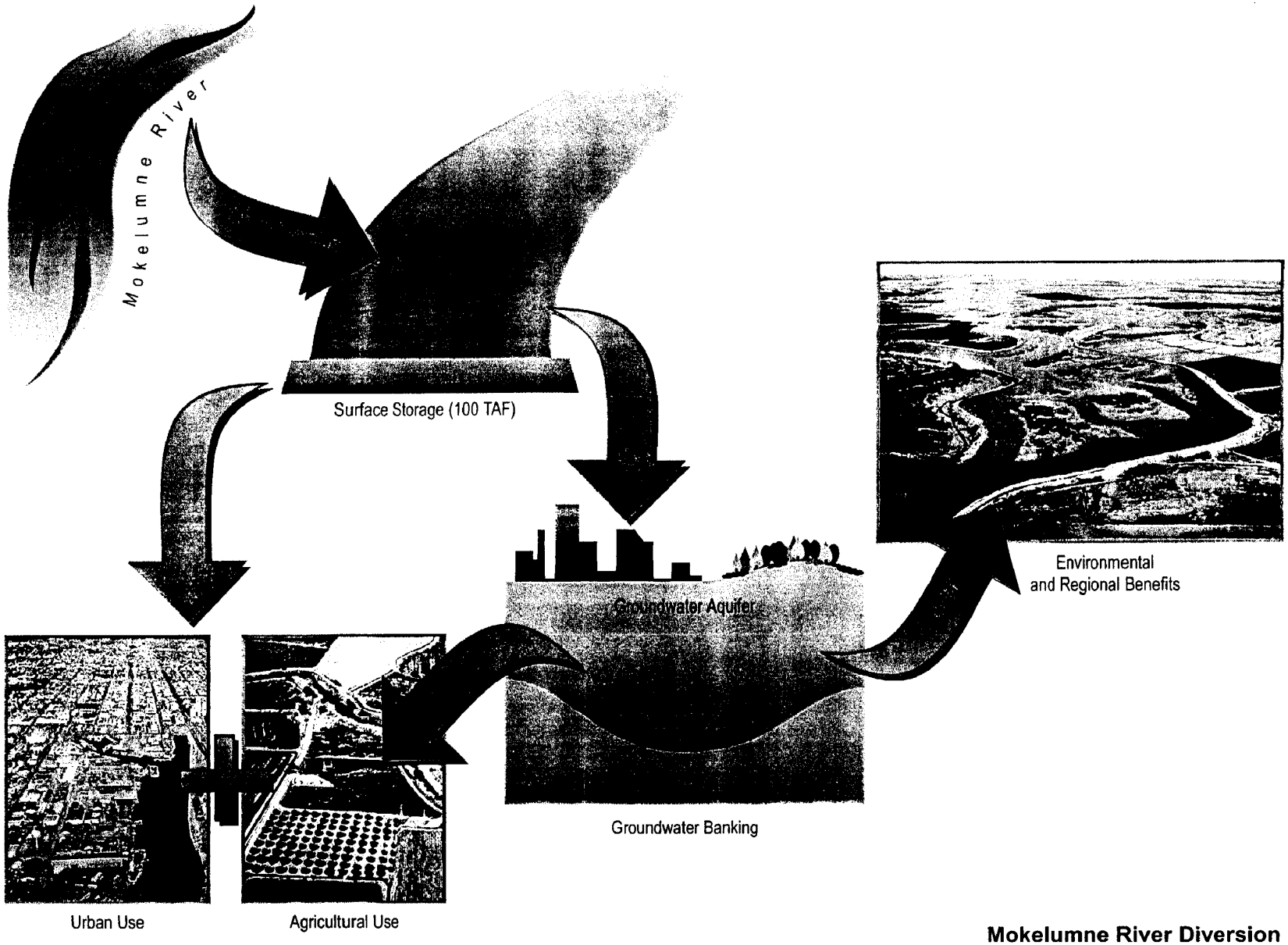


Detail 2: New Pardee Dam/Enlarged Pardee Alternative



Detail 3: Duck Creek Reservoir Alternative

Mokelumne River/Middle Bar Project Alternative Map



Mokelumne River Diversion
Conceptual Water Usage

Estimated Annual Flood Releases from Camanche/Pardee