THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
ACTION AGENDA SUMMARY

DEPT: ENVIRONMENTAL RESOURCES KMW

BOARD AGENDA # B-10

Urgent ____ Routine X

AGENDA DATE November 6, 2001

CEO Concurs with Recommendation YES N/A NO ____
(Information Attached)

4/5 Vote Required YES ____ NO ✓

SUBJECT: ACCEPTANCE OF THE STANISLAUS COUNTY GROUNDWATER COORDINATION ADVISORY COMMITTEE REPORT AND RECOMMENDATIONS

STAFF RECOMMENDATIONS:

1. ACCEPT THE REPORT AND ADOPT THE FOLLOWING RECOMMENDATIONS OF THE STANISLAUS COUNTY GROUNDWATER COORDINATION ADVISORY COMMITTEE FOR IMPROVING GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY:
   - A. ADOPT THE RESOLUTIONS RECOMMENDED BY THE STANISLAUS COUNTY GROUNDWATER COORDINATION AVISORY COMMITTEE.
   - B. DIRECT THE ENVIRONMENTAL RESOURCES DEPARTMENT TO DEVELOP AND SUBMIT A SCHEDULE FOR PREPARATION AND COMPLETION OF A FEASIBILITY REPORT, FOR CONSIDERATION BY THE BOARD.
   - C. DIRECT ENVIRONMENTAL RESOURCES DEPARTMENT TO PREPARE A REPORT, ON THE STATUS OF GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY, EVERY THREE YEARS, FOR CONSIDERATION BY THE BOARD.

(continued on next page)

FISCAL IMPACT: There is no fiscal impact.

BOARD ACTION

No. 2001-868

On motion of Supervisor Simon **, Seconded by Supervisor** Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

1) ____ **Approved as recommended**
2) ____ **Denied**
3) X **Approved as amended**
MOTION: ADOPTED THE RECOMMENDATIONS ON THE **FOLLOWING PAGE (1-A)** FOR IMPROVING GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY

Christine Ferraro

ATTEST: CHRISTINE FERRARO TALLMAN, Clerk **By: Deputy** **File No.**

ACCEPTANCE OF THE STANISLAUS COUNTY GROUNDWATER COORDINATION ADVISORY COMMITTEE REPORT AND RECOMMENDATIONS

PAGE 1-A

A) ADOPTED THE RESOLUTIONS RECOMMENDED BY THE STANISLAUS COUNTY GROUNDWATER COORDINATION ADVISORY COMMITTEE;

B) DIRECTED DER TO DEVELOP AND SUBMIT A SCHEDULE FOR PREPARATION AND COMPLETION OF A FEASIBILITY REPORT FOR CONSIDERATION BY THE BOARD, AND AMENDED IT TO INCLUDE THE DISCUSSION OF SURFACE WATER STORAGE;

C) DIRECTED DER TO PREPARE A REPORT ON THE STATUS OF GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY, EVERY THREE YEARS, FOR CONSIDERATION BY THE BOARD

STAFF
RECOMMENDATIONS
Continued:

2. DIRECT ENVIRONMENTAL RESOURCES DEPARTMENT TO REPRESENT STANISLAUS COUNTY IN COOPERATIVE GROUNDWATER MANAGEMENT AND PLANNING EFFORTS OF BASIN-WIDE GROUNDWATER ASSOCIATIONS/AUTHORITIES/COMMITTEES.

DISCUSSION:

Groundwater resources are essential to the economic viability and prosperity of Stanislaus County. They play an important role in the economy by meeting the needs of agricultural, industrial, environmental, municipal, domestic and recreational water users.

In an era of increasing competition for the area's finite water resources it is important to understand, manage, and plan for the current and future utilization of the County's water resources. This is necessary to preserve the local economy and is vital to the County's well being.

Assembly Bill 3030 (AB 3030) was adopted January 1, 1993. It is contained in California Water Code Section 10750 et seq. It provides a means for ground water management and planning, through local agency adoption of groundwater management plans (Plans).

On August 24, 1999, the Board of Supervisors created the Stanislaus County Groundwater Coordination Advisory Committee (Advisory Committee). The Advisory Committee was charged with evaluating the level to which current groundwater management practices in Stanislaus County protect groundwater. The Board directed them to organize a workshop for this purpose. The Advisory Committee was directed to return to the Board with a report outlining recommended actions for protecting groundwater in the County.

The Advisory Committee organized and held a workshop, made findings, and has prepared a report entitled *Recommendations for Improving Groundwater Management and Protection in Stanislaus County* (Attachment A).

Advisory Committee findings, upon which the recommendations are based, are as follows:

First, they found that agencies, which have adopted Plans, protect and manage groundwater in their service area. The Advisory Committee felt the Board should adopt a resolution recognizing and commending these Agencies for their efforts.

Next the Advisory Committee noted most agencies with Plans coordinate groundwater management on a basin-wide level through associations, authorities or committees. This enables the agencies to share information and resources to more effectively meet the needs of their constituents. The Advisory Committee felt these associations, authorities or committees should be recognized, encouraged and commended, by Board resolution.

Third, lack of proper groundwater management and planning has the potential to result in significant negative impacts to lands not covered by Plans, and to groundwater basins. For this reason, the Advisory Committee felt that agencies/areas which have not adopted Plans should be encouraged to adopt Plans that are compatible with existing basin-wide Plans. They felt that the agencies/areas should be encouraged to coordinate groundwater management and planning with basin-wide groundwater associations/committees in management of groundwater within their basins.

The Board can accomplish the above by adopting the attached resolutions.

Fourth, they noted there is a significant amount of land in the incorporated and unincorporated areas that are not covered by a Plan. The Advisory Committee felt that some of these lands could potentially benefit from having a Plan. The Advisory Committee felt that the Department of Environmental Resources (DER) should prepare a feasibility report for consideration by the Board. The report would include proposals for Stanislaus County providing groundwater management and planning activities for lands without Plans. They realized this task might involve a considerable amount of time and staff services to accomplish. Therefore, they recommended that the Board direct DER to develop and submit a schedule and target date for preparation and completion of the feasibility report. DER proposes to use existing senior staff for this purpose.

DER anticipates returning to the Board with a schedule for preparation of the feasibility report, and a target date for completion, in May 2002.

Activities, which DER would undertake prior to returning to the Board, are as follows:

- Meet with basin-wide associations, authorities or committees for purposes of identifying lands not covered by a Plan that could obviously or readily benefit by having a Plan. In these meetings, the following will be addressed:
  - Inform the associations, authorities or committees of the Advisory Committee findings, recommendations and the Board Supervisors actions. This should occur at their regularly scheduled meetings.
  - Identify screening criteria for determining which lands not covered by Plans could benefit from having a Plan.
  - Identify contacts and area representatives for lands without a Plan.
  - Identify the most appropriate level and methods of public outreach for informing area residents of the benefits of Plan adoption.
- Meet with agencies and representatives of lands that have not adopted Plans, for purposes of identifying their concerns and reasons for not having adopted a Plan. In these meetings, the following will be addressed:
  - Receive initial feedback on their preferences regarding groundwater management and planning for their service area or lands.
  - Identify the anticipated level of Stanislaus County involvement in their groundwater management and planning.
  - Identify the most appropriate level and methods of public outreach for informing area residents of the benefits of Plan adoption.
- Survey other Counties in California for countywide groundwater management plan procedures, for the purpose of considering alternatives.
- Develop a priority list of the lands where Stanislaus County should consider developing groundwater management and a Plan.
  - Using the priority list, identify one or two areas that could immediately benefit from having services provided.
  - Determine if a pilot program might be beneficial to determine the best mechanism for providing services.
    - Develop an outline of a pilot program, and budget for providing the services.
    - Meet with area or agency representatives; receive feedback on the pilot program outline.
  - If a pilot program is not applicable or desirable, organize the options for providing services and identify the preferred alternatives.
- Organize and present recommendations to the Board of Supervisors.

The Advisory Committee recognized that a coordinated approach between agencies for groundwater management and planning, on a basin-wide level is very beneficial. To promote this approach, they felt that the County should become more actively involved and become a proactive participant in basin-wide groundwater management and planning efforts of associations, authorities and committees in Stanislaus County. The Advisory Committee felt the County should pass a resolution to this effect. Should the Board approve staff recommendation number two, this need will be satisfied.

The Advisory Committee did not make findings or adopt a recommendation as to which County Department should be responsible for the above tasks. DER staff does recall, however, that the Advisory Committee felt that this would be a logical activity for DER. Implementing the recommendation will involve the following activities:

- Represent Stanislaus County at meetings of basin-wide groundwater management and planning efforts of associations, authorities and committees.
- Review and comment on memorandums of understanding, contracts, and proposals for implementing Plan activities.
- Review and comment on the work products of studies that may affect groundwater resources.
- Collect and provide data on groundwater resources, such as water well construction.
- Develop and maintain cooperative relationships with applicable agencies.
- Prepare routine updates for consideration by the Board.
- Review and comment on land use projects that may have a potential for impacting Stanislaus County groundwater resources.

DER estimates that 500 hours of senior staff time, per year, would be necessary for this task. Initially, existing senior staff will be used. Senior staff's level of participation will be dependent upon their workload demands. DER will perform a more thorough analysis of staff services required for this task and may need to readdress the issue of staffing when returning to the Board regarding the feasibility study, in May 2002.

Finally, the Advisory Committee noted that groundwater conditions are dynamic and are subject to change. They recommended that DER conduct a review and prepare a report on the status of groundwater conditions, management and protection in Stanislaus County. They felt the results of this review should be provided to the Board of Supervisors every three

years. The report should contain recommendations for improving groundwater management and protection on an as-needed basis.

The Advisory Committee briefly discussed the depth and amount of detail the report should contain at their last meeting June 7, 2000. They felt that the review and report could be accomplished through contacting local agencies that manage groundwater and requesting written updates on the status of their groundwater conditions. The request could include recommendations for improving groundwater conditions, management and protection, if needed. The Advisory Committee also felt that DER could gather this information from basin-wide associations, authorities, and committees, while attending their meetings. A summary report would then be prepared by DER. Using this approach, DER estimates that 100 hours of senior staff time, per year, would be necessary for this task. DER may need to readdress the issue of staffing, upon returning to the Board regarding the above feasibility study, in May 2002.

Alternatives to be considered by the Board of Supervisors:

1. Accept and implement the recommendations of the Advisory Committee. This alternative has at least seven distinct benefits:
   - The Board would officially recognize the importance of understanding and protecting groundwater resources in Stanislaus County.
   - The Board would recognize agencies that have worked cooperatively in implementing and adopting Plans in Stanislaus County.
   - The Board would encourage agencies that have not adopted Plans to do so, and participate in basin-wide groundwater management and planning with other agencies.
   - It would cause a schedule and completion date for a feasibility report to be prepared and provided to the Board. The report would identify proposals that could be undertaken by Stanislaus County to provide groundwater management and planning for County lands not covered by groundwater management plans.
   - The Board would promote, recognize, and encourage agencies in Stanislaus County that participate in basin-wide cooperative groundwater management and planning efforts.
   - Stanislaus County would become more actively involved and become a proactive participant in basin-wide groundwater

management and planning efforts of associations, authorities, and committees.

- Reports on groundwater would be presented to the Board, every three years. The reports would identify the status of groundwater conditions, management and protection in Stanislaus County, with recommendations for improvement (on an as-needed basis).

2. Accept the recommendations; do not implement the recommendations of the Advisory Committee. This alternative may result in the following:
   - Recognition that the Advisory Committee had fulfilled its charge of generating the report requested by the Board.
   - This could result in independent and non-coordinated actions by some water providers and users with potential adverse impacts to groundwater supplies within their groundwater basins.
   - This could result in negative agricultural, industrial, environmental, municipal, domestic, and recreational impacts in Stanislaus County, through depletion or degradation of groundwater.

The Advisory Committee approved the attached report and recommendations, June 7, 2000. DER recommends acceptance of the attached report and implementation of the recommendations, as modified.

POLICY ISSUE:

The recommendations are consistent with the Board's guiding priorities of ensuring a safe and healthy community, and facilitating economic development. Protecting and managing groundwater resources would help ensure current and future water needs of agricultural, industrial, environmental, municipal, domestic, and recreational users are met.

The Board's priority of achieving multi-jurisdictional cooperation would be realized through participation in basin-wide groundwater management and planning activities.

STAFFING IMPACT:

The above recommendations will be implemented using existing senior staff. Timelines associated with the implementation of the recommendations are dependent upon the existing mandated workloads.

Implementation of activities, which will be identified in the feasibility report (schedule for preparation to be provided in May 2002), may require additional staff.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS the Keyes Community Services District, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS the Keyes Community Services District shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the Keyes Community Services District to more efficiently meet the needs of constituents within their service areas.

WHEREAS the Stanislaus County Groundwater Coordination Advisory Committee felt the Keyes Community Services District, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Keyes Community Services District for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom,
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION ENCOURAGING ELIGIBLE AGENCIES IN STANISLAUS COUNTY TO ADOPT GROUNDWATER MANAGEMENT PLANS

WHEREAS, areas within Stanislaus County have worked cooperatively with Associations/Authorities/Committees to develop groundwater management plans.

WHEREAS, groundwater management plans serve to protect and manage groundwater resources.

WHEREAS, there are agencies/lands within Stanislaus County that lack groundwater management plans.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that agencies/lands that have not adopted groundwater management plans, should be encouraged to develop and adopt such plans.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that agencies/lands that have not adopted groundwater management plans should be encouraged to coordinate groundwater management with other agencies within their groundwater basin.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously encourage eligible agencies in Stanislaus County to adopt groundwater management plans that are compatible with existing basin-wide groundwater management plans.

NOW, THEREFORE, BE IT FURTHER RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously encourage eligible agencies in Stanislaus County to participate with basin-wide groundwater Associations/Authorities/Committees in management of groundwater within their groundwater basins.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the San Joaquin River Exchange Contractors Water Authority (Delta Mendota Basin) membership includes the Central California Irrigation District.

WHEREAS, the Central California Irrigation District, participating in the San Joaquin River Exchange Contractors Water Authority coordinates their groundwater management on a basin wide level.

WHEREAS, the Central California Irrigation District shares information and resources within the San Joaquin River Exchange Contractors Water Authority, which enables the Central California Irrigation District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Central California Irrigation District, working cooperatively within the San Joaquin River Exchange Contractors Water Authority should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Central California Irrigation District for their cooperative participation in San Joaquin River Exchange Contractors Water Authority.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the City of Turlock has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the City of Turlock, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the City of Turlock, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the City of Turlock for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the City of Hughson has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the City of Hughson, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the City of Hughson, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the City of Hughson for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS, the City of Turlock, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Turlock shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the City of Turlock to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Turlock, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Turlock for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS, the City of Hughson, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Hughson shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the City of Hughson to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Hughson, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Hughson for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUND WATER MANAGEMENT

WHEREAS, the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS, the City of Ceres, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Ceres shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the City of Ceres to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Ceres, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Ceres for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin) membership includes the City of Modesto, City of Oakdale, City of Riverbank, Modesto Irrigation District, Oakdale Irrigation District, and Stanislaus County.

WHEREAS, the Oakdale Irrigation District, participating in the Stanislaus and Tuolumne Rivers Groundwater Basin Association coordinates their groundwater management on a basin wide level.

WHEREAS, the Oakdale Irrigation District shares information and resources within the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which enables the Oakdale Irrigation District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Oakdale Irrigation District, working cooperatively within the Stanislaus and Tuolumne Rivers Groundwater Basin Association should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Oakdale Irrigation District for their cooperative participation in the Stanislaus and Tuolumne Rivers Groundwater Basin Association.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin) membership includes the City of Modesto, City of Oakdale, City of Riverbank, Modesto Irrigation District, Oakdale Irrigation District, and Stanislaus County.

WHEREAS, the Modesto Irrigation District, participating in the Stanislaus and Tuolumne Rivers Groundwater Basin Association coordinates their groundwater management on a basin wide level.

WHEREAS, the Modesto Irrigation District shares information and resources within the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which enables the Modesto Irrigation District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Modesto Irrigation District, working cooperatively within the Stanislaus and Tuolumne Rivers Groundwater Basin Association should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Modesto Irrigation District for their cooperative participation in the Stanislaus and Tuolumne Rivers Groundwater Basin Association.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin) membership includes the City of Modesto, City of Oakdale, City of Riverbank, Modesto Irrigation District, Oakdale Irrigation District, and Stanislaus County.

WHEREAS, the City of Riverbank, participating in the Stanislaus and Tuolumne Rivers Groundwater Basin Association coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Riverbank shares information and resources within the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which enables the City of Riverbank to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Riverbank, working cooperatively within the Stanislaus and Tuolumne Rivers Groundwater Basin Association should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Riverbank for their cooperative participation in the Stanislaus and Tuolumne Rivers Groundwater Basin Association.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin) membership includes the City of Modesto, City of Oakdale, City of Riverbank, Modesto Irrigation District, Oakdale Irrigation District, and Stanislaus County.

WHEREAS, the City of Oakdale, participating in the Stanislaus and Tuolumne Rivers Groundwater Basin Association coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Oakdale shares information and resources within the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which enables the City of Oakdale to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Oakdale, working cooperatively within the Stanislaus and Tuolumne Rivers Groundwater Basin Association should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Oakdale for their cooperative participation in the Stanislaus and Tuolumne Rivers Groundwater Basin Association.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin) membership includes the City of Modesto, City of Oakdale, City of Riverbank, Modesto Irrigation District, Oakdale Irrigation District, and Stanislaus County.

WHEREAS, the City of Modesto, participating in the Stanislaus and Tuolumne Rivers Groundwater Basin Association coordinates their groundwater management on a basin wide level.

WHEREAS, the City of Modesto shares information and resources within the Stanislaus and Tuolumne Rivers Groundwater Basin Association, which enables the City of Modesto to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the City of Modesto, working cooperatively within the Stanislaus and Tuolumne Rivers Groundwater Basin Association should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the City of Modesto for their cooperative participation in the Stanislaus and Tuolumne Rivers Groundwater Basin Association.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the West Stanislaus Irrigation District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the West Stanislaus Irrigation District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the West Stanislaus Irrigation District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the West Stanislaus Irrigation District for their cooperative participation in managing groundwater within their groundwater basin.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Turlock Irrigation District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Turlock Irrigation District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Turlock Irrigation District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Turlock Irrigation District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Patterson Water District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Patterson Water District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Patterson Water District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Patterson Water District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro

By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Oakdale Irrigation District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Oakdale Irrigation District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Oakdale Irrigation District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Oakdale Irrigation District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the City of Ceres has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the City of Ceres, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the City of Ceres, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the City of Ceres for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS the Eastside Water District, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS the Eastside Water District shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the Eastside Water District to more efficiently meet the needs of constituents within their service areas.

WHEREAS the Stanislaus County Groundwater Coordination Advisory Committee felt the Eastside Water District, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Eastside Water District for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Del Puerto Water District has worked cooperatively with other agencies to develop groundwater management plans.

WHEREAS, groundwater plans have been put into place, the Del Puerto Water District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Del Puerto Water District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Del Puerto Water District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Modesto Irrigation District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Modesto Irrigation District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Modesto Irrigation District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Modesto Irrigation District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS, the Denair Community Services District, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS, the Denair Community Services District shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the Denair Community Services District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Denair Community Services District, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Denair Community Services District for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Denair Community Water Services District has worked cooperatively with other agencies to develop groundwater management plans.

WHEREAS, groundwater plans have been put into place, the Denair Community Water Services District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Denair Community Water Services District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Denair Community Water Services District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Eastside Water District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Eastside Water District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Eastside Water District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Eastside Water District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Central California Irrigation District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Central California Irrigation District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS the Stanislaus County Groundwater Coordination Advisory Committee felt that the Central California Irrigation District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Central California Irrigation District for their cooperative participation in managing groundwater within their groundwater basin.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin) membership includes the City of Ceres, City of Hughson, City of Turlock, Denair community Services District, Eastside Water District, Keyes Community Services District, Turlock Irrigation District, and Stanislaus County.

WHEREAS, the Turlock Irrigation District, participating in the Turlock Groundwater Basin Groundwater Management Coordinating Committee coordinates their groundwater management on a basin wide level.

WHEREAS, the Turlock Irrigation District shares information and resources within the Turlock Groundwater Basin Groundwater Management Coordinating Committee, which enables the Turlock Irrigation District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Turlock Irrigation District, working cooperatively within the Turlock Groundwater Basin Groundwater Management Coordinating Committee should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Turlock Irrigation District for their cooperative participation in the Turlock Groundwater Basin Groundwater Management Coordinating Committee.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Merced Area Groundwater Pool Interests (Delta Mendota Basin) membership includes the Stevinson Water District.

WHEREAS, the Stevinson Water District, participating in the Merced Area Groundwater Pool Interests coordinates their groundwater management on a basin wide level.

WHEREAS, the Stevinson Water District shares information and resources within the Merced Area Groundwater Pool Interests, which enables the Stevinson Water District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Stevinson Water District, working cooperatively within the Merced Area Groundwater Pool Interests should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Stevinson Water District for their cooperative participation in the Merced area Groundwater Pool Interests.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Northern San Luis and Delta Mendota Water Authority (Delta Mendota Basin) membership includes the Del Puerto Water District, Patterson Water District, and West Stanislaus Irrigation District.

WHEREAS, the Del Puerto Water District, participating in the Northern San Luis and Delta Mendota Water Authority coordinates their groundwater management on a basin wide level.

WHEREAS, Del Puerto Water District shares information and resources within the Northern San Luis and Delta Mendota Water Authority, which enables the Del Puerto Water District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Del Puerto Water District, working cooperatively within Northern San Luis and Delta Mendota Water Authority should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Del Puerto Water District for their cooperative participation in the Northern San Luis and Delta Mendota Water Authority.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Northern San Luis and Delta Mendota Water Authority (Delta Mendota Basin) membership includes the Del Puerto Water District, Patterson Water District, and West Stanislaus Irrigation District.

WHEREAS, the Patterson Water District, participating in the Northern San Luis and Delta Mendota Water Authority coordinates their groundwater management on a basin wide level.

WHEREAS, the Patterson Water District shares information and resources within the Northern San Luis and Delta Mendota Water Authority, which enables the Patterson Water District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the Patterson Water District, working cooperatively within the Northern San Luis and Delta Mendota Water Authority should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the Patterson Water District for their cooperative participation in the Northern San Luis and Delta Mendota Water Authority.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR PARTICIPATION IN GROUNDWATER MANAGEMENT

WHEREAS, the Northern San Luis and Delta Mendota Water Authority (Delta Mendota Basin) membership includes the Del Puerto Water District, Patterson Water District, and West Stanislaus Irrigation District.

WHEREAS, the West Stanislaus Irrigation District, participating in the Northern San Luis and Delta Mendota Water Authority coordinates their groundwater management on a basin wide level.

WHEREAS, the West Stanislaus Irrigation District shares information and resources within the Northern San Luis and Delta Mendota Water Authority, which enables the West Stanislaus Irrigation District to more efficiently meet the needs of constituents within their service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt the West Stanislaus Irrigation District, working cooperatively within the Northern San Luis and Delta Mendota Water Authority should be recognized, encouraged and commended.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize, encourage and commend the West Stanislaus Irrigation District for their cooperative participation in the Northern San Luis and Delta Mendota Water Authority.

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
STATE OF CALIFORNIA

Date: November 6, 2001 No. 2001-868

On motion of Supervisor Simon, Seconded by Supervisor Blom
and approved by the following vote,
Ayes: Supervisors: Mayfield, Blom, Simon, Caruso, and Chair Paul
Noes: Supervisors: None
Excused or Absent: Supervisors: None
Abstaining: Supervisor: None

B-10

THE FOLLOWING RESOLUTION WAS ADOPTED:

RESOLUTION OF COMMENDATION FOR ADOPTING GROUNDWATER MANAGEMENT PLANS

WHEREAS, the Stevinson Water District has worked cooperatively with other agencies to develop groundwater management plans; and

WHEREAS, groundwater plans have been put into place, the Stevinson Water District, along with other agencies, currently protect and manage groundwater within your service areas.

WHEREAS, the Stanislaus County Groundwater Coordination Advisory Committee felt that the Stevinson Water District, having a ground water management plan, should be recognized and commended for your efforts.

NOW, THEREFORE, BE IT RESOLVED, that Stanislaus County Board of Supervisors does hereby unanimously recognize and commend the Stevinson Water District for their cooperative participation in managing groundwater within their groundwater basin

ATTEST: CHRISTINE FERRARO TALLMAN, CLERK
Stanislaus County Board of Supervisors,
State of California,
Christine Ferraro
By: Deputy

File No.

RECOMMENDATIONS FOR IMPROVING GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY

STANISLAUS COUNTY
GROUNDWATER
COORDINATION ADVISORY
COMMITTEE
JUNE 2000

Contents

RECOMMENDATIONS FOR IMPROVING GROUNDWATER MANAGEMENT AND PROTECTION IN STANISLAUS COUNTY

Background Discussion

Assembly Bill 3030 (AB 3030, the Groundwater Management Act) was passed by the State Legislature in 1992. AB 3030 is codified in the California Water Code Section 10750 et seq.

AB 3030 was adopted with the intent of encouraging local agencies to work together and manage groundwater within their jurisdictions. AB 3030 allows for management of groundwater by eligible agencies through the adoption of a Groundwater Management Plan (Plan). Lands eligible for plan adoption are associated with State defined groundwater basins not subject to legislative or judicial regulation, due to depleted groundwater resources.

On August 24, 1999, the Stanislaus County Board of Supervisors was given a Status Report on the level of Plan adoption in Stanislaus County. The report recognized that several eligible agencies in Stanislaus County had adopted Plans. Further, it was noted that many of the agencies had worked cooperatively to prepare model Plans for their groundwater basins.

The Status Report noted that on July 3, 1999, the Farm Bureau Board of Directors resolved to ask the Board of Supervisors to form a committee for purposes of studying groundwater issues in Stanislaus County. The resolution indicated that all interests in Stanislaus County groundwater should be involved. The Farm Bureau's stated goal in making the request was to "protect and preserve groundwater resources for agricultural and urban uses, and to protect the rights of overlying users (of groundwater)."

Discussion was provided in the Status Report on the differing opinions of the Farm Bureau and representatives of water/irrigation districts regarding the status of groundwater protection in Stanislaus County. It was noted that a consensus had been reached in support of a workshop and the formation of a groundwater coordination advisory committee. The purpose of the workshop was to inform and educate interested parties about the ongoing management, planning, and implementation efforts of agencies, which had adopted Plans. The Department of Environmental Resources (DER), in order to identify all groundwater users in Stanislaus County, and to assist in identification of topics/issues to be covered in the workshop, recommended formation of an advisory committee.

Advisory Committee Formation

On August 24, 1999, the Board of Supervisors established the Stanislaus County Groundwater Coordination Advisory Committee (Advisory Committee). The Board resolved to appoint individuals representing all major interests of groundwater use within Stanislaus County. The Advisory Committee was established to evaluate the level to which current groundwater management

practices in Stanislaus County protect groundwater. The Advisory Committee was charged with organizing and coordinating a workshop for the purpose of identifying the status of groundwater management and protection in Stanislaus County. The Advisory Committee was further directed to return to the Board with a report outlining recommended actions for protecting groundwater in Stanislaus County.

On January 26, 2000, the Advisory Committee met and identified what information the group needed before attempting to arrive at conclusions and making recommendations regarding the current level of groundwater protection in Stanislaus County. The Advisory Committee decided that an educational workshop would be the best forum by which to inform its members.

Advisory Committee Workshop

On February 14, 2000, the Advisory Committee held the educational workshop. Summary presentations were given by the Modesto Irrigation District (MID), Oakdale Irrigation District (OID), Turlock Irrigation District (TID), Eastside Water District, Del Puerto Water District, and Central California Irrigation District (CCID) on their respective AB 3030 Plans.

Plan Summaries

In addition to discussing the activities of their individual agencies, representatives of the MID, TID and Del Puerto Water District gave an overview of collective actions by agencies within the Modesto, Turlock and Delta Mendota Groundwater Basins. Agencies within these basins have formed associations and collectively developed model Plans for adoption. Work is currently underway by most of these agencies/associations in the monitoring of both groundwater levels and quality.

Plans include elements that address groundwater contamination, and promote groundwater recharge and/or storage and conservation of groundwater. Elements may also include development of cooperative working relationships with governmental agencies, and review and participation in land use-planning activities that have a potential to adversely impact groundwater. Many agencies with Plans believe that coordinated groundwater management efforts, with other agencies in their ground water basins, best meet the needs of constituents within their service areas. The Advisory Committee supports the underlying principals for formation of associations, and their cooperative efforts in groundwater management and planning.

During the workshop, the Advisory Committee members were given an opportunity to ask questions and express concerns related to groundwater and groundwater management within Stanislaus County. Following the District's presentations, the Advisory Committee requested that the presenters prepare summaries of their Plan activities, including geographic descriptions and boundaries of lands covered, problems or areas of concern, and an overview of plan activities. The appendix contains the

various agencies.

Advisory Committee Findings

1) The Advisory Committee found that based upon information and tools available at the time and recognizing the need for continuous improvement, programs put in place by the agencies with Plans currently protect and manage groundwater within their service areas (Please see shaded lands on maps, Appendix # 3). The Advisory Committee felt that these agencies should be recognized and commended for their efforts. Agencies which have adopted Plans were:

Central California Irrigation District
City of Ceres
City of Hughson
City of Turlock
Del Puerto Water District
Denair Community Services District
East Side Water District
Modesto Irrigation District
Oakdale Irrigation District
Patterson Water District
Stevinson Water District
Turlock Irrigation District
West Stanislaus Irrigation District

2) The Advisory Committee also noted most of the above agencies are coordinating their groundwater management on a basin wide level through basin associations/authorities/ committees. This enables the agencies to share information and resources and more efficiently meet the needs of constituents within their service areas. The Advisory Committee felt associations/authorities/committees, which work cooperatively toward these ends should be recognized, encouraged and commended. The associations/ authorities/committees are identified below:

Stanislaus and Tuolumne Rivers Groundwater Basin Association (Modesto Groundwater Basin).

City of Modesto
City of Oakdale
City of Riverbank
Modesto Irrigation District
Oakdale Irrigation District
Stanislaus County

Turlock Groundwater Basin Groundwater Management Coordinating Committee (Turlock Groundwater Basin)

City of Ceres
City of Hughson
City of Turlock
Stanislaus County
Denair Community Services District
Eastside Water District
Keyes Community Services District
Turlock Irrigation District

Merced Area Groundwater Pool Interests (Delta Mendota Basin)

Stevinson Water District

Northern San Luis and Delta Mendota Water Authority (Delta Mendota Basin)

Del Puerto Water District
Patterson Water District
West Stanislaus Irrigation District

San Joaquin River Exchange Contractors Water Authority (Delta Mendota Basin)

Central California Irrigation District

3) The Advisory Committee noted how a lack of proper groundwater management and planning has the potential to result in significant negative impacts to existing groundwater resources for the lands not covered by a Plan, and may potentially have negative impacts for other lands within the same basin. For instance, if lands within a groundwater basin become subject to overdraft, continual or increased pumping without recharge may have a potential for impacting the overall groundwater resources of the basin. Continued pumping could exacerbate the problem to a point where the groundwater resources are unrecoverable. For these reasons, the Advisory Committee felt that agencies/lands, which have not adopted Plans, should be encouraged to do so, and also be encouraged to coordinate groundwater management with other agencies within their groundwater basins.

It was noted that an invaluable element found in each of the agency's AB 3030 Plan is one that allows the agency to monitor groundwater levels and water quality. Most agencies, which have adopted Plans, are currently monitoring groundwater levels and quality in the spring and in the fall. Using this information, agencies can determine if their groundwater is subject to an overdraft, and/or if groundwater quality is declining. By sharing this information on a basin-wide level, agencies can individually or cooperatively develop strategies to address the situation.

Case Study

Activities undertaken by the Eastside Water District serves as an example where cooperative groundwater management and planning has the potential to improve local groundwater conditions. Monitoring has found that groundwater in the East Side Water District is subject

to an overdraft. The Eastside Water District is in the Turlock Groundwater Basin, and this overdraft is thought to have a potential for impacting groundwater in the Turlock Groundwater Basin. The District has been investigating measures to reduce either groundwater pumping and/or recharge water into the Basin. The District constructed a pilot recharge basin to evaluate its potential for recharge. The Turlock Irrigation District has assisted Eastside Water District by making water available for the pilot recharge program and provided some data collection. The pilot recharge basin has initially proven effective, and the East Side Water District is now in the process of applying for Federal and State funding to expand this activity.

4) Maps of lands that are not covered by a Plan were reviewed at the workshop. (Please see non-shaded lands on maps, Appendix # 3.) Upon review of the maps, it became apparent that there is a significant amount of lands, in the incorporated and unincorporated lands of Stanislaus County that is not covered by a Plan. These lands typically do not lie in an irrigation or water district. Included are lands within and outside of political subdivisions. Examples are lands that lie around Modesto Reservoir, Turlock Reservoir, and Woodward Reservoir, in the northeastern corner of Stanislaus County, and in the foothills west of Interstate-5. In questioning why the unincorporated lands had not developed a Plan, it was theorized that perhaps some of the lands had no groundwater available, had poor soils or terrain not conducive to farming and/or development. It was felt that other lands may not have the organizational structure needed to develop a Plan. Lands within political subdivisions typically include Cities, Community Services districts, Water/Irrigation Districts. Generally, the Advisory Committee felt that some of these lands could potentially benefit from having a Plan. To this end, the Advisory Committee felt that DER should prepare a feasibility report for consideration by the Board of Supervisors. It was envisioned that the report would feature proposals for ground water management and planning activities for lands without a Plan, which could be undertaken by Stanislaus County.

5) As discussed in #3 above, a coordinated approach between agencies for groundwater management and planning on a basin-wide level was noted as being extremely beneficial. Increased knowledge of localized problems and conditions may stimulate and afford the opportunity to plan and share resources for problem solving between water agencies and Stanislaus County. To this end, the Advisory Committee felt that Stanislaus County should become more actively involved, and become a proactive participant in the cooperative groundwater management and planning efforts of basin-wide associations/ authorities/committees present in Stanislaus County.

Other Identified Issues

On the following concerns, voiced at the March 9, 2000 Advisory Committee meeting, there was not a consensus opinion on which to base a recommendation.

First, the issue of potential for exports of groundwater out of the County. In general, the membership felt the issue of water exports is currently not a problem in Stanislaus County. Discussion noted that such exports are subject to CEQA (California Environmental Quality Act). Under CEQA, local agencies, including DER, are allowed to review and comment on projects for potential impacts. If potential significant impacts are found to exist, mitigation measures may be imposed. If mitigation measures do not adequately reduce levels of significant impacts, or if a statement of overriding considerations is not adopted, the project typically is not allowed to proceed.

Next, the topic of safe yields for groundwater basins was discussed. The Advisory Committee felt this was not a well-defined topic and is a technically, complex and somewhat variable topic for which it did not have time or resources to research. Discussion noted that water/irrigation districts and associations/agencies typically have engaged in researching and defining the safe yield of the basins.

Finally, one individual questioned the impact of sewage disposal systems and dry wells (storm water disposal rock wells) on groundwater. Discussion noted that these facilities are typically permitted by local agencies, prior to installation, and are also under the jurisdiction of the California Regional Water Quality Control Board.

During subsequent meetings, the need for a groundwater ordinance was discussed. At least two individuals felt there was a need for Stanislaus County to be pro active and adopt a groundwater ordinance. The individuals indicated that although an ordinance may not be necessary at this time, it would be beneficial to have an ordinance in place should future issues relating to groundwater arise. The Advisory Committee was not convinced a need for an ordinance existed, or that an ordinance should be adopted, at this time. There was a consensus, however, that groundwater conditions, protection, and management should be monitored and that routine reports should be provided to the Board of Supervisors on at least a tri annual basis. The Advisory committee felt that the reports should include recommendations for improving groundwater management and protection on an as need basis.

Committee Recommendations

The Advisory Committee met on March 9, 2000 for purposes of drafting recommendations for consideration by the Board of Supervisors. The Advisory Committee reached a consensus on several draft recommendations, and these recommendations were given to a volunteer subcommittee, for further refinement. The volunteer subcommittee included representatives from irrigation and water districts, a representative of the Farm Bureau, and a representative from the environmental community-at-large. On June 7, 2000, the Advisory Committee finalized the recommendations for submission to the Board of Supervisors. The recommendations of the Advisory Committee are as follows:

1) Adopt a resolution recognizing and commending agencies in Stanislaus County, which have

adopted AB 3030 groundwater management plans and works cooperatively in managing their groundwater. Agencies that have adopted AB 3030 are identified, by shading, on the map in the Appendix 3, Attachment #3A.

2) Adopt a resolution strongly encouraging eligible agencies in Stanislaus County to adopt AB 3030 Plans that are compatible with existing basin-wide ground water management plans, and strongly encouraging the eligible agencies to participate with basin-wide groundwater associations/committees in management of groundwater within their groundwater basins.

3) Direct the Environmental Resources Department (DER) to develop and submit a schedule and target date for preparation and completion of a feasibility report, for consideration by the Board of Supervisors. The report would feature proposals for groundwater management and planning activities for lands without a Plan, which could be undertaken by Stanislaus County.

4) Adopt a resolution allowing for the participation of Stanislaus County in the cooperative ground water management and planning efforts by basin-wide groundwater associations/ authorities/committees.

5) Direct the Environmental Resources Department to prepare a tri annual report, on the status of groundwater conditions, management and protection in Stanislaus County, for consideration by the Board of Supervisors. Recommendations to be included in the report, for improving groundwater management and protection on an as need basis.

Summary

In summary, the Advisory Committee feels where AB 3030 Groundwater Management Plans have been adopted; an adequate level of ground water protection, management, and planning is currently being provided. The Board should recognize the existence and efforts of agencies, which have adopted AB3030 groundwater management plans. Further, the Board should recognize, encourage, and participate in basin-wide management and planning efforts. However, AB 3030 plans have not been adopted by some jurisdictions, and some lands in the unincorporated area are not covered by plans. In these areas, an adequate level of groundwater management and planning may be lacking. The Advisory Committee recommends the Board explore the feasibility of and potential need for providing AB 3030 groundwater management and planning activities for non-covered lands.

DER Staff recommends that the Board accept the recommendations and report of the Advisory Committee.

APPENDIX

Appendix

#1: Groundwater Management Plan Summaries

1.A. Central California Irrigation District
1.B. Del PuertoWater District/Northern Delta-Mendota Canal
1.C. East Side Water District
1.D. Modesto Irrigation District
1.E. Oakdale Irrigation District
1.F. Turlock Irrigation District

#2A: Water/Irrigation Districts In Stanislaus County - A.B. 3030 Groundwater Management Plan Element Matrix:

Central California Irrigation District
Del Puerto Water District
East Side Water District
Modesto Irrigation District

#2B: Water/Irrigation Districts In Stanislaus County - A.B. 3030 Groundwater Management Plan Element Matrix:

Oakdale Irrigation District
Turlock Irrigation District

#3: Maps - Groundwater Management Plans Stanislaus County

3.A. Stanislaus County Map
3.B. Modesto Groundwater Basin Map
3.C. Eastern San Joaquin Groundwater Sub Basin Map
3.D. Turlock Groundwater Basin Map
3.E. Delta Mendaota Groundwater Basin Map

APPENDIX #1

GROUND WATER MANAGEMENT PLAN SUMMARIES

CENTRAL CALIFORNIA IRRIGATION DISTRICT

Groundwater Management Plan Summary for Stanislaus County

May 1, 2000

1. AB3030 General Concerns

The formulation and adoption of AB3030 Groundwater Management Plan within the Exchange Contractors service area was primarily in response to existing demands on the aquifer system together with impending or possible future demands. In 1995, within Central California Irrigation District, a major transfer was proposed by a medium size grower west of Los Banos to Metropolitan Water District. The transfer proposal was for surface water; however, the farm operation plan indicated that groundwater would be substituted for surface water during transfer years. District staff knew that such a proposal could significantly impact the aquifer system especially if other lands within the same area accomplished similar transfers which substituted groundwater. The District initiated an overall study effort and began developing the AB3030 Groundwater Management Plan. Phase I of the Groundwater Management Plan development identified the concerns and demands of the basin which included:

- surface water transfers
- groundwater pumping into the Delta-Mendota Canal
- groundwater pumping into the Mendota Pool
- migration of poor quality groundwater
- urban groundwater extraction
- groundwater level variation.

In addition, the District conducted a regional groundwater study in order to develop in depth analysis of:

- water levels
- aquifer characteristics
- pumpage
- subsidence
- groundwater quality

The regional study is the basis for understanding and monitoring the overall basin and provides background for site-specific evaluations for each groundwater program proposal.

The AB3030 plan

2. Description of the Basin

A. Geographic Description of the Basin

The Central California Irrigation District is participating with members of the San Joaquin River Exchange Contractors Water Authority in the adoption and implementation of a regional AB3030 Plan. The boundaries of the Plan are shown on the attached Figure No. 1. The 240,000 acres is bounded on the south by the city of Mendota and extends northerly to 2 miles north of the community of Crows Landing in Stanislaus County. The area is situated west of the San Joaquin River accept for the portion within Columbia Canal Company near Mendota which is east of the river. The boundaries are within portions of Madera, Fresno, Merced and Stanislaus counties. It surrounds Grassland Water District and the State and Federal Wildlife Refuges near Los Banos. The wildlife areas are within the same groundwater basin; however, there are very few groundwater wells within these areas due to groundwater quality. The area also contains the cities of Mendota, Firebaugh, Dos Palos, Los Banos, Gustine, Newman and Crows Landing, all of these cities with the exception of Dos Palos rely upon groundwater as their potable water supply.

B. Geologic Description of the Basin

The most prominent geological feature in terms of groundwater on the westside is the nature and extent of the major confining bed known as the corcoran clay. The largest percentage of groundwater wells within CCID and the other Exchange Contractors are completed to a depth above the corcoran clay in the semi-confined zone. A few wells tap the confined zone beneath the corcoran clay in the District.

The opposite trend holds for areas west and southwest of the basin. Most groundwater development from these areas occurs from beneath the corcoran clay within the confined zone. The pumping from beneath the corcoran clay together with pumping from beneath other important confining beds such a the A-clay near the trough of the valley is the cause of land surface subsidence which is a major concern within the District.

C. Management Plan Implementation

Various work tasks are performed in response to the concerns identified in the AB3030 and its implementation plan.

i. Surface Water Transfers.

As described above, the Exchange Contractors have completed an overall groundwater study to identify subareas of like concerns relative to pumping. This document is utilized as the basis for specific groundwater proposals. A proposed transferee would then perform a more focused analysis relating to the specific pumping request. To date there have been no further requests for water substitution-type transfers. Probably or at least partially due to the expense of the groundwater study component.

ii. Urban Groundwater Extraction.
CCID has performed joint groundwater studies with each of the cities within its boundaries. These studies were first performed in 1990-91 and are updated about every five years in accordance with the AB3030 plan.

iii. Pumping into the Delta-Mendota Canal.
This pumping occurs outside the District boundaries. The project has significant potential impacts to our surface water quality and to regional subsidence. Specific studies are required before further DMC pumping occurs. These studies are targeted at better understanding of aquifer characteristics and water quality in the various zones and subsidence monitoring.

iv. Pumping into the Mendota Pool.
Even though Mendota Pool pumping generally occurs outside of the District's boundaries, the major concerns are inducing migration of poor quality groundwater, water quality degradation to the District's surface water supply, and well interference. In response to the 1999 proposed program, the CCID and the Exchange Contractors entered into a jointly funded pilot project to study the effects of the 1999 program and to develop a future program which mitigates impacts.

v. General Monitoring in Accordance with the AB3030 Plan.
Regional monitoring of groundwater levels, quality and flow paths are accomplished on an annual basis. Also, pumpage is estimated on an annual basis based on either metering or PG&E readings from all wells within or near the basin.

vi. Regional Subsidence Measured on a Yearly Basis.
CCID annually through a joint GPS survey with the San Luis & Delta-Mendota Water Authority conducts a subsidence survey along the Delta-Mendota Canal and the CCID Outside Canal. The District has rehabilitated an extensometer in the Mendota area to measure compaction. In addition, the San Luis & Delta-Mendota Water Authority maintains an extensometer measuring compaction at Russell Avenue and Delta-Mendota Canal.

NORTHERN DELTA-MENDODA CANAL
GROUNDWATER MANAGEMENT PLAN SUMMARY

I. INTRODUCTION

The Groundwater Management Act, Assembly Bill 3030 (AB 3030), signed into law in 1992, establishes provision to allow local water agencies to develop and implement groundwater management plans (GMP). The act applies to the groundwater basins identified in the Department of Water Resources' Bulletin 118-80. The water conservation guidelines prepared by the U.S. Bureau of Reclamation to meet the requirements of the Central Valley Project Improvement Act (CVPIA) mandates that the federal water contractors prepare GMP's in accordance with AB 3030 or similar authority.

Agencies of the San Luis & Delta-Mendota Water Authority (SLDMWA) located in the northern Delta-Mendota Canal (DMC) service area entered into an agreement under the SLDMWA umbrella to jointly fund the preparation of a coordinated regional plan. While the individual agencies have independently adopted the plan, a regional plan has been prepared to facilitate coordinated regional management of groundwater resources.

The water needed for agricultural production and municipal and industrial uses in the study area is obtained from three sources:

1) Imported surface water diverted from the DMC under Central Valley Project contracts;
2) Local surface water supplies diverted from the San Joaquin River under appropriated rights; and
3) Local groundwater, which is used primarily for municipal and industrial purposes, for rural domestic needs, and for agricultural production where the surface water supplies are either not available or are insufficient to meet the crop demand.

II. DESCTRIPTION OF THE GROUNDWATER BASIN

A) Geographical Description of the Groundwater Basin

The area included in this GMP is part of the Tracy and Delta-Mendota Basins of the San Joaquin HAS and covers portions of Merced, Stanislaus and San Joaquin Counties. The northern boundary of the groundwater management area is the north boundary of the DMC service area in San Joaquin County, the southern boundary is the southern boundary of the Del Puerto Water District in Merced County. The Groundwater Management Area (GMA) is bounded by the Coast Ranges on the west and by the San Joaquin River on the east. The portion of this area included within Stanislaus County lies wholly within the Delta-Mendota Basin.

B) Geographical Description of the Groundwater Basin

The aquifers of the GMA consist of unconsolidated sediments derived from the Diablo Range and the Sierra Nevada Mountains. The area is underlain by the Pleistocene Corcoran Clay Member of the Tulare Formation, which is a deposit that divides the aquifer system vertically into an upper semi confined zone and a lower confined zone. The unconsolidated sediments taper towards the Diablo Range and the Corcoran Clay crops out sporadically on the west margin of the valley.

The semi confined zone is made up of sediments derived from the Diablo Range on the west that interfinger eastward with sediments derived from the Sierra Nevada. The Diablo Range and Sierra Nevada sediments differ in their hydrogeologic characteristic. The Diablo Range sediments consist of beds, lenses and tongues of clay, sand, and gravel, and form most of the sedimentary material deposited west of the San Joaquin River. Although there are no distinct continuous aquifers or aquitards within the Diablo Range alluvium, the

term "semi confined" is used to emphasize the cumulative effect of the vertically distributed fine-grained materials. The Sierran sediment that interfingers with the Diablo Range alluvium is well sorted, medium to coarse-grained micaceous sand derived from the Sierra Nevada. The uppermost expression of the interface between the Diablo range and Sierran deposits is close to the eastern boundary of the GMA.

The confined zone underlies the confining Corcoran Clay stratum and is similar to the semi confined zone in texture and composition. It extends downward from the base of the Corcoran Clay to the base of fresh water. Sierran sand and Diablo Range alluvium interfingers in a similar fashion as those of the semi confined zone, except that Sierra Nevada sediments extend farther to the west.

The horizontal groundwater flow direction in the semi confined zone is toward the San Joaquin River, typically causing subsurface outflow laterally along the eastern boundary of the study area. The hydraulic gradients west of the San Joaquin River are generally steeper than those east of the river. The water table west of the river can be thought of as a subdued replica of the topography, sloping gently toward the river from the Coast Ranges.

C) Agencies Within the Groundwater Basin

The Groundwater Management Area includes the following agricultural water supply districts:

San Joaquin County
- Banta Carbona Irrigation District
- Del Puerto Water District (portion)
- Plain View Water District
- Westside Irrigation District
- West Stanislaus Irrigation District (portion)

Stanislaus County
- Del Puerto Water District (portion)
- Patterson Water District
- West Stanislaus Irrigation District (portion)

Merced County
- Del Puerto Water District (portion)

Non-district lands within San Joaquin County are included in the plan and are represented by the San Joaquin Flood Control and Water Conservation District. A portion of land within Stanislaus County and outside the GMA boundary was included in the development of the water resource balance, but is not part of the groundwater management area. The GMA encompasses +173,000 acres. The City of Tracy is the only city participating at this time.

III. GROUNDWATER BASINS CONDITIONS

A. Water Demand/Usage

1. Agricultural

Representative crop water demands for the entire GMA have been calculated at between 380,000and 400,000 acre feet per year.

Crop Water Demand AF/Yr.	
1986-1989	400,000
1990-1992	400,000
1993	380,000
1994	380,000

2. Municipal and Industrial

The study area land use is primarily agricultural with small urban regions; therefore the municipal and industrial water demand is relatively small. The annual urban water use has been obtained from various cities through a questionnaire sent to all the cities in the study area. These questionnaires indicate a trend that has grown from +10,000 acre feet in the 1986-89 period to +15,000 acre feet in 1994.

Urban Water Demand AF/Yr.	
1986-1989	10,000
1990-1992	12,500
1993	14,000
1994	15,000

3. Subsurface outflow

Subsurface outflow occurs laterally along the eastern boundary of the study area. The lateral subsurface outflow is proportional to the horizontal hydraulic gradient, permeability of the porous media and the cross-sectional area of the flow path. The quantity of subsurface outflow thus varies depending on the relative elevation of the groundwater and the stage of the San Joaquin River to the east.

Subsurface outflow to and across the San Joaquin River is the least accurate term in the water balance calculation. The USGS has estimated subsurface outflow along the River to be on the order of 150,000 acre feet per year.

4. Return Flow

Return flow is surface flow from the basin consisting of farm tail water, district operational spills, and small amount of pumped drainage water. In the study area, the areas that contribute significant return flow to the San Joaquin River are Banta Carbona, Patterson and El Solyo water districts. West Stanislaus and Westside irrigation districts, and the out-of-district lands adjacent to the river. Del Puerto and Plain View water district release a small quantity of tail water, some of which is captured by the downslope districts.

The volumes of return flow were either provided by districts or were calculated based on 10% of the surface supply for the districts adjoining the river. The return flows given in following are the best estimates of trends over the study period.

Return Flow Trends AF/Yr.	
1986-1989	40,000
1990-1992	38,000
1993	36,000
1994	38,000

B. Sources of Groundwater Recharge

1. Surface Water Supply

The primary sources of ground water recharge are the two sources of surface water supply available in the area:

1) CVP supply delivered via the Delta-Mendota Canal, and
2) local surface water supply from the San Joaquin River and local creeks.

Four districts in the study area take water directly from the San Joaquin River. These include Banta Carbona Irrigation District, Patterson Water District, West Side Irrigation District and West Stanislaus Irrigation District. The San Joaquin River was the sole source of supply for these districts until the CVP was constructed. Development of the CVP resulted in diminished water quality in the lower San Joaquin River. This was the primary incentive for these districts to contract for supplemental surface water from the DMC.

District water supplies are augmented from time to time by transfer of project and non-project water into the district. The supplies may be diminished at other times by transfers of water from the district. Since the water supplies vary and demand changes depending on local climatic conditions, cropping patterns, etc., these transfers are necessary to balance water supplies with water demands among various districts from year to year.

Surface water supply trends were determined as follows:

Surface Water Supply AF/Yr.			
Interval	**CVP Water Supply**	**Other Surface Sources**	**Total Surface Supply**
1986-1989	260,000	275,000	535,000
1990-1992	90,000	350,000	440,000
1993	120,000	290,000	410,000
1994	112,000	330,000	442,000

2. Effective precipitation, seepage losses from creeks and canals and subsurface inflow are other sources of groundwater recharge.

C. Groundwater Levels

Water surface contour maps and volume calculations have been made using a computer program that produces grid-based contouring, volume computations and graphical output. Water levels vary from 150 feet on the west to less than 10 feet on the west and have remained fairly stable over the study period.

Average water level changes and changes in groundwater storage in the study area for the study period are given in the following table:

Change in Groundwater Storage Using Specific Yield Method				
Drought Periods	Average Change In Water Level (feet)	Change In Storage (ac-feet)	Average Storage Change/Yr.	Cumulative Change In Storage (ac-feet)
1986-1989	-2.7	-53,000	-18,000	-53,000
1989-1993	-5	-102,000	-25,000	-155,000
1993-1994	+2.5	+50,000	+50,000	-105,000

The average annual change in storage over the 8-year study period is 13,000 acre feet. Recognizing that rainfall over the study period was significantly less than normal, the study area can be said to be in a hydrologically balanced condition.

D. Water Quality

Groundwater in the GMA occurs in two zones: the upper semi confined zone and the lower confined zone separated by the Corcoran Clay. Chemical analysis of groundwater from the upper zone shows considerable variation in water type and concentration of dissolved solids.

USGS studies indicate a relatively better quality of water in the confined zone than in the semi confined zone. One conclusion is that the areal and vertical distribution of groundwater quality has been affected by different agricultural and natural sources of recharge.

Results of the USGS sampling study show that in the semi confined zone the total dissolved solids (TDS) concentration ranges from 1,000 to 1,500 mg/L. Areal distribution of the data shows a high TDS concentration (>1,500 mg/L) in groundwater in the semi confined zone measured near Patterson and west of Newman, and low concentration (<1,000 mg/L) is reported near the community of Westly. The TDS concentrations in water in the confined zone generally ranged between 500-1,000 mg/L. High TDS concentrations (>1,000 mg/L) in water in the confined zone have been reported southwest of Patterson and low TDS concentrations (<500 mg/L) have been measured west of Vernalis. The distribution of TDS in groundwater in the two zones has shown little similarity.

Sulfate type groundwater occurs in areas located west of Patterson and Crows Landing. Near Patterson, groundwater is sodium magnesium sulfate type to the west and sodium calcium sulfate type to the east. The highest sulfate concentration in groundwater (<500 mg/L) is measured in an area centered near Crows Landing and Patterson. Studies suggest that this is associated with Coast Range streams that recharge this area.

Concentrations of boron in groundwater range from .51 to 2.2 mg/L in the semi confined zone and from .41 to 3.0 mg/L in the confined zone. Areal distribution of boron in the semi confined zone show high concentrations (>.75 mg/L) near Tracy and northeast of Crows Landing near Patterson. Areal distribution of boron in the confined zone show high concentrations (>.75 mg/L) near Tracy, Vernalis and west of Patterson. The EPA suggested criterion for boron concentration in water used for long-term irrigation of sensitive crops is .75 mg/L. This limit is exceeded in several samples taken from both the confined and semi confined zones.

Selenium concentrations in groundwater range from a less than detectable limit of 1 ug/L to 13 ug/L. The maximum contaminant level (MCL) of selenium was transported to the area under natural conditions by runoff from the Diablo Range.

The MCL for nitrate in drinking water is 45mg/L. The USGS study indicates that no well in the GMA

exceeds the MCL for nitrate; however, there are reports of nitrate MCL accedence's in shallow domestic wells. In general, higher nitrate concentrations in groundwater exist along the west side of the GMA and in the Westley area.

Shallow groundwater near the top of the semi confined zone and less than 30 feet below the land surface generally has higher trace element concentrations than the deeper zones. These concentrations probably result from leaching of soil salts and evaporative concentration of shallow groundwater near the land surface.

Because of the high variability of groundwater quality in the GMA, focused groundwater supply investigations are necessary to determine if groundwater is suitable for the intended use.

E. Areas of Concern

Recent and ongoing regulatory restraints on imported surface water supplies force many water users to depend more heavily on groundwater resources. Various arrangements for transfers of water supplies have evolved to match the limited water supply to water demand. Some of these transfers involve pumping of groundwater into the Delta-Mendota Canal for banking and limited conveyance purposes. While the program requires that the water be redelivered to overlying or closely located lands, the increased pumping may result in lowering of groundwater levels and deterioration of water quality. Utilization of the groundwater basin conjunctively with surface water represents an important source of water supply, but extraction rates and amounts must be limited to preclude exceeding the safe aquifer yield.

Communities within the GMA rely on groundwater for their supplies. Several communities have seen quality deteriorate over time an deregulations governing domestic supply are becoming stricter.

Export of local groundwater resources to support development at Diablo Grande or similar projects is an area of concern. Adverse impacts associated with moving limited groundwater resources outside of the aquifer could include both localized overdraft and degradation of groundwater quality.

Anticipated municipal encroachment on agricultural lands in the area will result in reduced recharge and increased groundwater pumping.

Implementation of the Groundwater Management Plan will provide the means for collection of the necessary groundwater monitoring data to assess the impacts of these and other activities that affect the groundwater basin such that sustained use of groundwater can be optimized without adverse impacts to the water quality and yield. This is the basic goal of groundwater management.

IV. GROUNDWATER MANAGEMENT PROGRAMS/IMPLEMENTATION MEASURES

The GMP includes provisions for a variety of programs to monitor and improve groundwater conditions within the Basin. It is recognized that groundwater needs will change with changes in conditions. As such, the plan is designed to adjust according to the needs of the basin. The plan specifically incorporates all of the elements of the AB3030 planning measures including:

1) Control of Saline Water Intrusion
2) Identification and Management of Wellhead Protections Areas and Recharge Areas
3) Regulating Contaminant Migration in Groundwater
4) Administration of Well Abandonment and Well Destruction Program
5) Mitigation of Groundwater Overdraft
6) Replenishment of Groundwater extracted by Water Producers

7) Monitoring of Groundwater Levels and Storage
8) Facilitating Conjunctive Use Operations
9) Well Construction
10) Construction and Operation of Groundwater Management Facilities
11) Relationships with State and Federal Regulating Agencies
12) Review of Land Use Plans to Assess risk of Groundwater Contamination

The agencies within the Northern Sub-basin meet periodically to discuss groundwater management related issues. These meeting ensure coordination of existing activities provide an opportunity to address areas of concern and develop new, coordinated management related programs.

The agencies within the Basin have developed water level and quality monitoring programs. The water level monitoring program consists of semi-annual monitoring utilizing a grid of agency and privately owned wells throughout the area. The data collected is incorporated into a database and will be utilized to analyze changing groundwater levels and trends.

The water quality monitoring program is in its initial stage. In addition to data provided by municipal agencies, a series of local agricultural wells are being tested. Initial monitoring focuses on electrical conductivity, nitrates, total dissolved solids, selenium and boron. Like the water level monitoring program, this program is designed to analyze trends and identify problem areas.

Lastly, the agencies are participating in a study, in cooperation with the Natural Heritage Institute and the Department of Water Resources, to identify and evaluate any areas that may be suitable for groundwater storage/recharge opportunities.

SUMMARY OF EASTSIDE WATER DISTRICT GROUNDWATER MANAGEMENT
WITHIN THE TURLOCK GROUNDWATER BASIN

I. DESCRIPTION OF THE BASIN

A. GEOGRAPHICAL DESCRIPTION OF THE BASIN: The Turlock Groundwater Basin lies on the eastern side of the San Joaquin Valley, and encompasses portions of both Stanislaus and Merced counties. The groundwater system is bounded by the Tuolumne River on the north, the Merced River on the south, and the San Joaquin River on the west, as shown in Figure 1. The eastern boundary of the system is the western extent of the outcropping of low-permeability Valley Springs formation rocks in the foothills of the Sierra Nevada.

B. GEOLOGICAL DESCRIPTION OF THE BASIN: Groundwater within the Basin occurs under unconfined and confined conditions. A portion of the Basin is underlain by the Corcoran clay, which separates the groundwater into two zones; an upper, unconfined aquifer and a lower, confined aquifer. There is also a deeply buried confined aquifer containing saline brine extending into the unconsolidated sediments. The presumed origin of the saline brine is the connate water sourced from the marine sandstones and shales underlying the valley.

The general direction of regional groundwater flow is westward and southward towards the valley trough. However, due to the cone of depression forming on the eastern side of the Basin, there is some movement of water eastward into the cone of depression. Additionally, the direction of groundwater flow in the upper, confined aquifer is influenced by the elevations of the rivers. Groundwater levels are maintained by exchanges of water between the rivers and the groundwater system. Lastly, the deep saline groundwater flows, from the valley's sides towards its trough. Upwelling occurs at the trough where the flows from the opposite sides of the valley meet.

C. LOCAL AGENCIES WITHIN THE GROUNDWATER BASIN: The Basin includes the following local agencies eligible to participate in an AB 3030 groundwater management plan: the *Turlock and Merced irrigation districts*; the cities of *Ceres*, *Turlock* and *Hughson*; the *Hilmar and Delhi county water districts*; the Keyes, *Denair* and Ballico community services districts; the *Eastside and Ballico-Cortez water districts*; the City of Modesto; as well as Stanislaus and *Merced* counties. (Note: italics indicate the agencies, which have adopted the Basin-wide Groundwater Management Plan.)

II. GROUNDWATER BASIN CONDITIONS

A. WATER DEMAND/USAGE:

AGRICULTURAL: Agricultural land lying within the districts use an average of 881,000 AF/yr. On the average the total crop-water requirement is comprised of approximately forty-seven percent (47%), or 411,000 acre-feet of groundwater, and approximately fifty-three percent (53%), or 470,000 AF of surface water.

The Turlock Irrigation District uses its supply of Tuolumne River water and groundwater conjunctively. On average the TID supplies approximately 541,000 AF (including deep percolation and system losses) per year to irrigation customers with surface water comprising an average of 80% of the total deliveries.

The Merced Irrigation District does not pump any groundwater from wells located within the Basin. As a result, the Merced ID's average annual deliveries of 22,000 AF to lands located within the Turlock Basin is comprised entirely of surface water diverted from the Merced River.

With the exception of minor amounts of surface water made available from Turlock and Merced irrigation districts in

wet years, irrigators within the Eastside and Ballico-Cortez water districts rely on groundwater for their supply. The Eastside Water District's irrigation requirement is estimated to be 155,000 AF/year, while the Ballico-Cortez Water District's irrigation requirement is approximately 27,000 AF/year.

In addition, there are individual growers located within or outside of local agency boundaries that choose to pump groundwater or utilize municipal wastewater effluent to either partially or fully meet their crop water requirements. The extent to which this is occurring is estimated, but now well known at this time.

MUNICIPAL/INDUSTRIAL: Municipal and industrial consumers within the Basin rely solely on groundwater as the source of supply. The total water produced by the Basin's major water utilities in 1995 was 36,200 AF (32.5 MGD), with 91% of the water production being concentrated along the Highway 99 corridor (e.g. South Modesto, Ceres, Keyes, Turlock & Delhi). An additional estimated 10,900 AF/year (9.7 MGD) is produced by small private residential water systems, commercial businesses and industrial plants not served by the major utilities.

The use of water will also change. It is estimated that water use by the municipal utilities will increase from 36,200 AF/YR (32.5 MGD) in 1995 to over 108,800 AF/YR (97.1 MGD) by 2030, while agricultural use is projected to decrease as irrigated agricultural land is converted to municipal As municipal/industrial development encroaches on agricultural lands within the Basin, it is anticipated that use.

In anticipation of the projected increased demand for municipal water supplies and as a means of addressing water quality issues of groundwater, the Turlock Irrigation District and the municipal suppliers are investigating the feasibility of constructing a water treatment plant (or plants) to treat surface water, supplied by TID, to be used for municipal purposes. However, because the decrease in agricultural demand will be almost wholly matched by the increase in municipal demand, the proposed drinking water supply program would not resolve the existing groundwater basin overdraft anticipated to be approximately 70,000 to 85,000 AF/YR.

B. **SOURCES OF GROUNDWATER RECHARGE:** The majority of the groundwater recharge within the Basin results from the Turlock Irrigation District's importation of Tuolumne River water used for irrigation purposes. A portion of the water applied for irrigation percolates past the root zone, providing recharge. To a much lesser extent, the same occurs with surface water supplies imported from the Merced River by Merced ID. Other sources of recharge include precipitation, inflows from the surrounding rivers, as well as pumped groundwater. Local rainfall averages approximately 11.08 inches/year, a portion of which percolates into the groundwater system. In addition, a portion of the pumped groundwater finds its way back into the system through various forms of recharge, including percolation ponds, landscape irrigation, etc.

C. **GROUNDWATER LEVELS:** Groundwater conditions vary within the Basin. Levels in the eastern areas are in a significant state of decline. Localized groundwater pumping in excess of local recharge has created a cone of depression on the eastern side of the basin, resulting in water levels between 1971 and 1991 dropping as much as 90 feet. Conversely, levels in the western areas of the Basin are high to the point of requiring pumping and other drainage measures in certain areas to keep the groundwater from encroaching into the root zone of agricultural crops.

The general accretions to and depletions of the groundwater Basin result in a local annual overdraft ranging from 70,000 to 85,000 acre-feet. The localized overdraft is occurring mainly in the eastern areas of the Basin which lack a surface water supply component.

D. **WATER QUALITY:** There are numerous constituents found in the Basin's groundwater supply. Some constituents are naturally occurring, while others have been introduced into the groundwater from man-made sources. Presently, municipal, industrial and individual domestic water users rely solely on groundwater as their source of supply. While the supply has been adequate, the groundwater quality has deteriorated in some areas to the point where treatment is required to make it suitable for these uses.

E. AREAS OF CONCERN: The goal of the groundwater management plan is to implement sound groundwater management practices, in order to maintain the available groundwater resources to meet the beneficial uses and needs of the Turlock Groundwater Basin. In order to accomplish this task, some of the concerns will need to be addressed, such as: the cone of depression forming on the eastern side of the Basin due to localized groundwater pumping, including the additional agricultural development occurring in the area which will tend to exacerbate the issue; changing municipal water quality standards and the costs/impacts to urban agencies if treatment becomes necessary to meet the ever increasingly stringent standards; and municipal encroachment on agricultural lands which could result in reduced recharge and increased groundwater pumping.

III. GROUNDWATER MANAGEMENT PROGRAMS/IMPLEMENTATION MEASURES

The Groundwater Management Plan includes provisions for a variety of programs to monitor and improve groundwater conditions within the Basin. It is recognized that groundwater needs are expected to change as Basin conditions change. As such, the plan is designed to adjust according to the needs of the Basin. The plan specifically incorporates, but is not limited to, a variety of management measures including: control of saline intrusion; identification and management of wellhead protection and recharge areas; regulating contaminant migration in groundwater; administration of well abandonment and well destruction program; mitigation of groundwater overdraft; replenishment of groundwater extracted by producers; monitoring and controlling groundwater levels, quality and storage; facilitating conjunctive use operations; well construction; construction and operation of recharge, storage, conservation, water recycling and extraction projects; development of relationships with local, state and federal agencies; and review of land use plans and coordination with land use planning agencies.

Agencies within the Turlock Groundwater Basin meet on a monthly basis to discuss groundwater management related issues. These meetings help cultivate relationships between local agencies, ensure coordination of existing groundwater management activities, provide an avenue for discussing and addressing current issues of concern, as well as developing new groundwater management related programs.

When first embarking on implementation, the agencies reviewed existing groundwater management practices and programs. Existing land use planning, water conservation and wellhead protection programs, well construction standards and abandonment procedures, and water education programs were reviewed. The agencies felt that the existing programs provided the necessary protections. If in the future, changes are needed to provide increased levels of protection, the programs would be re-evaluated and adjustments made, as necessary. In addition, it was determined that the water agencies would continue to rely upon the local, state and federal agencies responsible for enforcing the water quality regulations with respect to the control of contaminant migration in groundwater.

The agencies within the Basin have developed water level and quality monitoring programs. The water level monitoring program consists of semi-annual monitoring done utilizing a series of agency and privately owned wells monitored by the local agencies, as well as the Department of Water Resources. Data collected is incorporated into a database, and will be utilized to analyze changing groundwater levels, identify trends, and determining impacts of future projects.

The water quality-monitoring program will be implemented this fall. It will utilize the quality monitoring performed by municipal agencies as required, and supplemented by a series of local agricultural wells. Initial monitoring will focus on electrical conductivity, nitrates, total dissolved solids, and pH. Similar to the water level monitoring program, it is designed to analyze changing trends, identifying potential problem areas, and assisting in identifying acceptable sites for future wells.

The agencies are considering embarking on a hydrologic study of the groundwater basin to further develop their understanding of the groundwater conditions. Such a study could include: additional analysis of the inflows and outflows

of the basin, as well as existing and projected future groundwater demands; studying the changing land use patterns on the Eastern side of the basin and the related groundwater usage; further characterizing the interactions between the groundwater and river systems; and determining more up-to-date projections of the basin's overdraft and safe yield.

In addition to actions undertaken with other agencies in the Groundwater Basin, the Eastside Water District (EWD) is:

1. Encouraging water users near Turlock and Merced Irrigation District canals to use surface water in lieu of pumping groundwater. The EWD has established a Pilot Conservation Program whereby it subsidizes the purchase of surface water. This in-lieu water is available only in good water years and is subject to interruption when canals are at peak capacity.
2. Conducting a Pilot Groundwater Recharge Project to determine the feasibility of recharging the groundwater with surface water. During an abbreviated recharge period in 1998 approximately 260 vertical feet of water was recharged. During a longer recharge period and with improved recharge techniques in 1999 approximately 520 vertical feet of water was recharged.

The AB3030 plan indicates the EWD irrigation demand to be 155,000 acre-feet per year. That number was generated in the late 1980's. A district wide shift to more efficient irrigation methods has reduced the demand dramatically. Consistent anecdotal information indicates the reduction to be 1/3 or more.

GROUNDWATER MANAGEMENT PLAN SUMMARY FOR THE MODESTO IRRIGATION DISTRICT

I. Description of the Basin

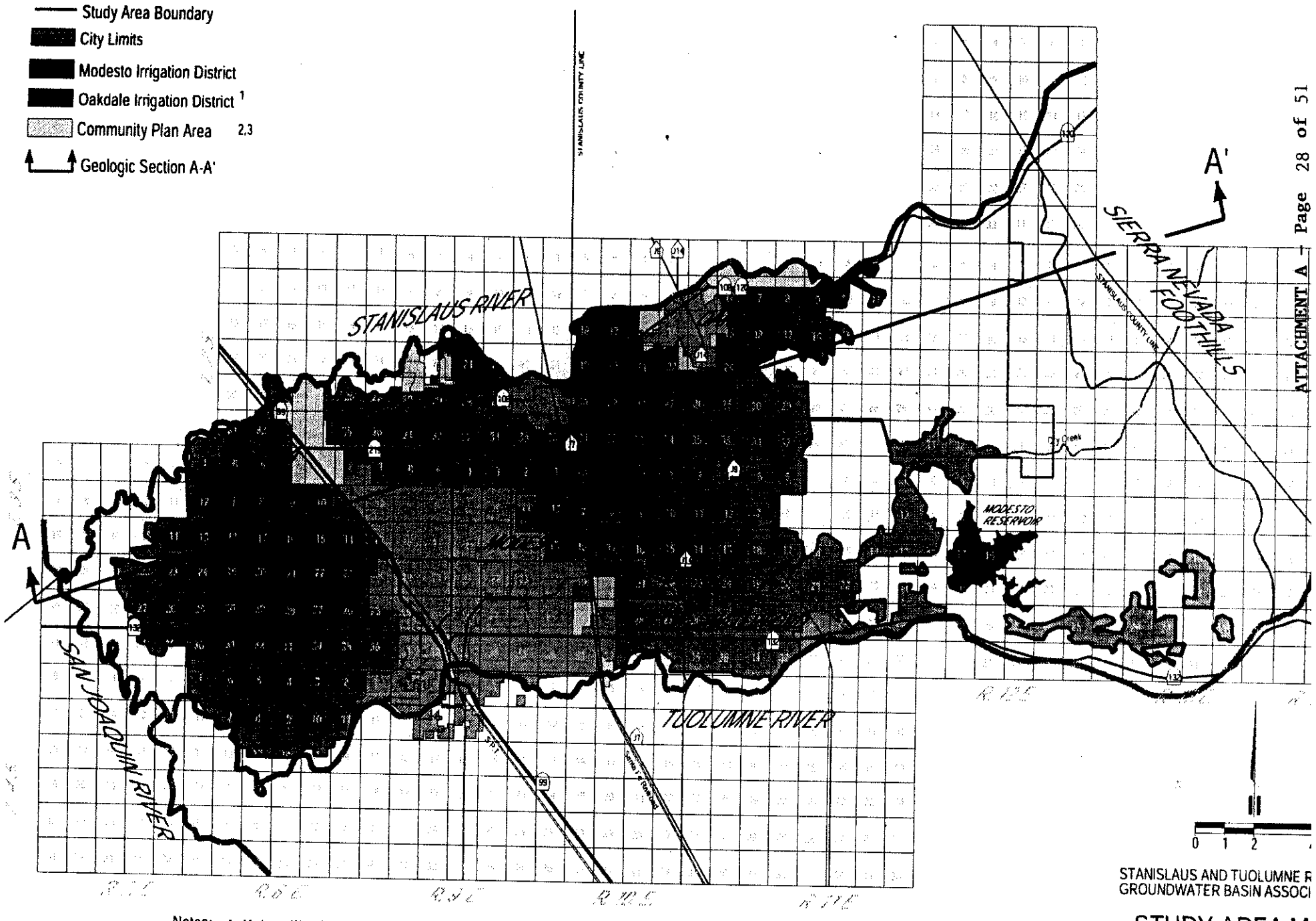
A. Geographic Description of the Basin: The Modesto Irrigation District service area lies completely within the Modesto Groundwater Basin. The hydrologic area is defined regionally as the area bounded by the Stanislaus, the Tuolumne, and the San Joaquin Rivers in the north, south, and west, respectively, and the Sierra-Nevada foothills in the east (See attached Study Area Map).

B. Geologic Description of the Basin: Geologic formations in the Modesto area can be broadly grouped into two general categories with respect to their water-bearing characteristics. The first zone forms the useable aquifer in most of the area, which was deposited during recent geologic time in a fresh water delta and lake environment. The second older and deeper zone is characterized by a formation deposited in a marine environment.

The first zone is made up of an upper, unconfined layer that consists mainly of sediments that have formed broad alluvial plains of the Stanislaus and Tuolumne Rivers. Within this unconfined layer, numerous confining beds of clay, silty clay, or sandy clay exist in interbedded alluvial deposits within the basin. The most widespread and thickest of these is the Corcoran Clay, which exists along the trough of the San Joaquin Valley and extends eastward north of the City of Modesto creating a confining layer that impedes the vertical movement of water in the western portion of the basin. The ability of this regional clay layer to act as an aquitard is uncertain in some areas due to the large number of wells screened across the clay and facies changes which occur along the eastern and northern depositional limits. As the confining layer pinches out east of the City of Modesto the two principal aquifers merge into one single, unconfined layer. Groundwater within these zones generally flows in a gentle, southwesterly direction, except in areas of high pumping and where there is a hydraulic connection between the rivers and groundwater levels.

The older and deeper deposits beneath the alluvium comprise a basement complex (igneous and metamorphic rocks) of granitic origin. Connate saline water, gradient.

C. Agencies Within the Groundwater Basin: The Cities of Oakdale, exists in a deep, buried confining layer that is thought to flow from the rim of the valley toward the valley trough where sufficient hydraulic head exists to create an upward Riverbank, and Modesto, the Oakdale and Modesto Irrigation Districts, and Stanislaus County represent the Stanislaus & Tuolumne Rivers Groundwater Basin importance of surface water and Association activities within the basin. This MOU ac(Memorandum of Understanding, May 1, 1994) to coordinate groundwater management knowledge the (Referred groundwater resources within the Modesto Basin to as the Stanislaus & Tuolumne Rivers Groundwater Basin in the MOU) and the need to develop a coordinated groundwater management plan for groundwater resources within the basin. Since the inception of these planning studies, the Modesto and Oakdale Irrigation Districts and the City of Oakdale



STANISLAUS AND TUOLUMNE R
GROUNDWATER BASIN ASSOCI

STUDY AREA M

Notes:
1. Modesto, Waterford, Empire, Salida, and parts of Del Rio are within MID, and have not been detached.
2. The portion of OID which lies north of the Stanislaus River, and outside of the study area is not shown in this map.
3. Oakdale and Riverbank are within OID. Much of Riverbank has been detached from OID. Oakdale has not been detached from OID.

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have adopted formal groundwater management plans. Association members throughout the basin continue to meet regularly to coordinate groundwater management activities.

II. Groundwater Basin Conditions

A. Water Demand/Usage:

AGRICULTURAL. Agricultural lands lying within the basin use approximately 525,000 acre-feet per year (AF/yr) of groundwater and surface water. Approximately twenty-five percent (25%) of the total crop-water requirement is met by the use of groundwater or 115,000 AF/yr. The other seventy-five percent (75%) of crop demand (400,000 AF/yr) is met by surface water. The table below provides a breakdown of the basin's agricultural water use.

Agricultural Water Use in Thousand Acre-Feet Per Year				
	Modest I.D.	Oakdale I.D.	East Side	Mapes/Faith
Total Supply[a]	300	170	35	20
Surface Water[a]	190	150	0	20
Groundwater[b]	60	20	35	0

[a] Includes Water Delivery System Losses in district gravity flow conveyance facilities.

[b] Includes district as well as private groundwater pumping within district boundaries.

The Modesto and Oakdale Irrigation Districts primarily deliver surface water to its agricultural water customers. During normal and dry years groundwater is used to supplement water delivery shortages and to maximize delivery system efficiencies. This dual surface water/groundwater system provides the districts a conjunctive use operation that helps to ensure crop damage is minimized during prolonged drought cycles.

MUNICIPAL/INDUSTRIAL. Prior to 1995, municipal and industrial water users (or urban water users) within the basin relied exclusively on groundwater as their water supply source. In January 1995, MID began delivering treated surface water diverted from the Tuolumne River to the City of Modesto. MID currently delivers approximately 34,000 AF/yr of treated surface water to the City of Modesto, which is about fifty-percent (50%) of the approximately 65,000 AF/yr total basin urban water use. The table below provides a breakdown of surface water versus groundwater for urban use.

Urban Water Use in Thousand Acre-Feet Per Year				
	Modesto	Riverbank	Oakdale	Waterford
Total Supply[a]	56	4	3	2
Surface Water	34	0	0	0
Groundwater	22	4	3	2

[a] Modesto delivers a mixture of treated surface water and groundwater to Salida and Empire, and therefore, is treated as a single entity. The Community of Del Rio is not shown because groundwater pumping is less than 1,000 AF/yr.

The urban encroachment of agricultural lands is expected to continue within the MID. As the change in water use from agriculture to urban occurs it is expected that the surface water treatment plant will double its capacity some time in the future to meet this new demand.

B. Sources of Groundwater Recharge: Surface water delivered by the Modesto and Oakdale Irrigation Districts account for the primary source of groundwater recharge within the basin. The source of this recharge is surface water diverted by MID from the Tuolumne River and surface water diverted by OID from the Stanislaus River. Other sources of recharge include recharge from the rivers, rainfall, and storm water drainage within the City of Modesto (over 10,000 rock groundwater recharge from surface water deliveries to the city as well as to the series of wet years since 1995, groundwater levels have risen wells) during normal and wet years, especially during a series of wet years where river releases are high.

C. Groundwater Levels: Water levels vary from a hundred feet on the east to less than five feet on the west. Over the years Modesto urban development resulted in a "cone of depression" underlying the City of Modesto. In response to in-lieu an average of 23 feet in the urban area with smaller increases documented in outlying rural areas.

D. Water Quality: The chemical character and quality of groundwater in the basin has been discussed in detail in previous reports. Although groundwater quality in the area is generally acceptable for most uses, problem levels of some constituents, including total dissolved solids (TDS), nitrates, radionuclides, arsenic, DBCP and other trace organics have been found in groundwater. Depending on the water use, various levels of water quality treatment or securing an alternative water source may be needed.

E. Areas of Concern: MID has obtained irrigation water from the Tuolumne River for more than a century. During dry and critical years, which total approximately 30 percent of the water years since the early 1900's, groundwater is relied on to meet a substantial portion of the area's crop water requirements. Recent estimates of groundwater production show that agricultural and urban demand for groundwater is increasing. While the Modesto area depends largely on agriculture for its economic base, urban development is steadily displacing farmland. In the agricultural areas, local farmers are adopting new irrigation technologies in lieu of historical flood irrigation practices. In some areas, a transition from surface water to groundwater as the primary source of water supply is also occurring. Urbanization of farmland and agriculture's adoption of new irrigation practices impact local groundwater basins in two ways: (1) Reduced groundwater recharge; and (2) increased groundwater use. These trends can have a significant affect on the balance between the use of surface water and groundwater supplies in the basin.

III. Groundwater Management Programs/Implementation Measures

MID's initial step toward improved groundwater management was to implement the functional goals and objectives outlined by the Stanislaus & Tuolumne Rivers Groundwater Basin Association described in MID's groundwater management plan. The result of this effort:

- Established a coordinated regional groundwater monitoring program using data that consist of collecting and storing both local agency groundwater levels and groundwater quality data in a centralized database;

- Continues to develop data consistency and fill in data gaps where necessary;

- Continues to improve contour maps and well hydrographs with increased data quality and data points.

The maps and data on groundwater levels and quality will provide a graphical depiction of the local groundwater basins and will allow the MID staff to determine when further groundwater management activities will be needed to protect and augment groundwater supplies within the Modesto basin.

Summary of Oakdale Irrigation District Groundwater Management Plan

Description of the Basin

A. Portion of the District in Stanislaus County is in the Modesto Groundwater Basin. The Modesto Basin is bounded by the Tuolumne River on the south, the Stanislaus River on the north, and the San Joaquin River on the west and the foothills on the east.

B. Soils within the District south of the Stanislaus River are Madera and San Joaquin sandy loams. Bottomlands along the river east of Oakdale are Handford loams and the river bluffs above the Stanislaus River are Oakdale sandy loams. Pockets of other types of soils are scattered throughout the District.

C. Agencies within the Modesto Groundwater Basin include OID, MID, cities of Oakdale, Riverbank and Modesto.

Groundwater Basin Conditions

A. Groundwater usage within the Oakdale Irrigation District includes agricultural and domestic water uses. Current maximum agricultural production possible from deep wells is approximately 30,000 acre feet per year but actual usage can vary from year to year. Domestic water usage is less at approximately 1,008 acre-feet per year.

B. The major source for groundwater recharge within the District is the irrigation of lands from surface water diverted from the Stanislaus River.

C. Groundwater levels within the basin have increased over the past two years.

D. Water quality overall within the District is good. Domestic wells are tested as required by state and federal regulations and are within state and federal requirements for drinking water. Some domestic water wells within the District have had an increase in nitrates recently. Agricultural wells are not tested for water quality.

E. The District is concerned about the influx of large, concentrated animal feeding operations within the District and the possible impact to surface and groundwater.

III. Groundwater Management Programs/Implementation Measures

The District adopted a Groundwater Management Plan in November of 1995. The functional goals of the Groundwater Management Plan are:

1. Uniform data gathering
2. Development of guidelines for systematic analysis
3. Identify problem areas
4. Prioritize problems

The District meets some of these goals through its active participation in the Stanislaus and Tuolumne Rivers' Groundwater Basin Association. The group was formed to work cooperatively with other agencies to keep management authority over the Modesto Groundwater Basin at a local level.

The first accomplishment of the Basin Association was to fund a generic groundwater management plan prepared by Provost and Pritchard. Each individual agency could then prepare its own groundwater management plan, which the District did to address its specific concerns and issues.

How the District implements the Groundwater Management Plan

1. Administration of Well Abandonment and Destruction Program

   As outlined in the groundwater management plan, the District adheres to ordinances adopted by the cities and counties.

2. Management of Wellhead Protection and Recharge Areas

   The District supports efforts to develop a program to manage wellhead protection and recharge efforts in the basin.

3. Monitoring of Groundwater Levels, Storage and Flows

   The District has monitored groundwater levels since the District has had deep wells for irrigation. The District has worked with the basin association in standardizing monitoring methodology.

4. Identification of Well Construction Policies

   The District adheres to the ordinance adopted by the cities and counties.

5. Identification and Mitigation of Contaminants

The District does not test water quality on irrigation deep wells but does on domestic water wells as required by State and Federal regulations.

6. Development of Relationships with State and Federal Regulatory Agencies

The District shares information as requested.

7. Review of Land Use to Avoid Groundwater Contamination

This is an area that the District is expanding its concerns. As part of CEQA, the California Environmental Quality Act, the District is able to comment on parcel splits, subdivisions, use permits and zoning changes. The District typically addresses issues such as its facilities, private facilities, irrigation and drainage. Now the District is beginning to also address its concerns regarding possible contamination of surface waters through its facilities by concentrated animal feeding operations.

The District has not commented on possible contamination of groundwater but would like to see other agencies begin addressing these concerns.

8. Programs to facilitate Conjunctive Use

The District has always had a conjunctive use program, however the terminology is new.

9. Mitigation of Overdraft

The Modesto Basin is not in overdraft.

10. Replenishment of extracted Groundwater

The District replenishes extracted groundwater through the irrigation of lands throughout the District and through percolation of water through unlined canals.

11. Monitor and Control of High Salinity Water

Has not been identified as a problem within the Oakdale Irrigation District.

The District continues to implement aspects of the groundwater management plan as identified and through its active participation in the Association. The Association members continue to meet to discuss current and future goals, to improve the quality of the data collected, standardize reporting methods and produce a groundwater map.

SUMMARY OF TURLOCK GROUNDWATER MANAGEMENT WITHIN THE TURLOCK BASIN

I. DESCRIPTION OF THE BASIN

A. GEOGRAPHICAL DESCRIPTION OF THE BASIN: The Turlock Groundwater Basin lies on the eastern side of the San Joaquin Valley, and encompasses portions of both Stanislaus and Merced counties. The groundwater system is bounded by the Tuolumne River on the north, the Merced River on the south, and the San Joaquin River on the west, as shown in Figure 1. The eastern boundary of the system is the western extent of the outcropping of low-permeability Valley Springs formation rocks in the foothills of the Sierra Nevada.

B. GEOLOGICAL DESCRIPTION OF THE BASIN: Groundwater within the Basin occurs under unconfined and confined conditions. A portion of the Basin is underlain by the Corcoran clay which separates the groundwater into two zones; an upper, unconfined aquifer and a lower, confined aquifer. There is also a deeply buried confined aquifer containing saline brine extending into the unconsolidated sediments. The presumed origin of the saline brine is the connate water sourced from the marine sandstones and shales underlying the valley.

The general direction of regional groundwater flow is westward and southward towards the valley trough. However, due to the cone of depression forming on the eastern side of the Basin, there is some movement of water eastward into the cone of depression. Additionally, the direction of groundwater flow in the upper, confined aquifer is influenced by the elevations of the rivers. Groundwater levels are maintained by exchanges of water between the rivers and the groundwater system. Lastly, the deep saline groundwater flows, from the valley's sides towards its trough. Upwelling occurs at the trough where the flows from the opposite sides of the valley meet.

C. LOCAL AGENCIES WITHIN THE GROUNDWATER BASIN: The Basin includes the following local agencies eligible to participate in an AB 3030 groundwater management plan: the *Turlock and Merced irrigation districts*; the cities of *Ceres*, *Turlock* and *Hughson*; the *Hilmar and Delhi county water districts*; the Keyes, *Denair* and Ballico community services districts; the *Eastside and Ballico-Cortez water districts*; the City of Modesto; as well as Stanislaus and *Merced* counties. (Note: italics indicate the agencies which have adopted the Basin-wide Groundwater Management Plan.)

II. GROUNDWATER BASIN CONDITIONS

A. WATER DEMAND/USAGE:

AGRICULTURAL: Agricultural land lying within the districts uses an average of 881,000 acre-feet/year. On the average the total crop-water requirement is comprised of approximately forty-

seven percent (47%), or 411,000 AF of groundwater, and approximately fifty-three percent (53%), or 470,000 AF of surface water.

The Turlock Irrigation District uses its supply of Tuolumne River water and groundwater conjunctively. On average the TID supplies approximately 541,000 AF (including deep percolation and system losses) per year to irrigation customers with surface water comprising an average of 80% of the total deliveries.

The Merced Irrigation District does not pump any groundwater from wells located within the Basin. As a result, the Merced ID's average annual deliveries of 22,000 AF to lands located within the Turlock Basin is comprised entirely of surface water diverted from the Merced River.

With the exception of minor amounts of surface water made available from Turlock and Merced irrigation districts in wet years, irrigators within the Eastside and Ballico-Cortez water districts rely on groundwater for their supply. The Eastside Water District's irrigation requirement is estimated to be 155,000 AF/year, while the Ballico-Cortez Water District's irrigation requirement is approximately 27,000 AF/year.

In addition, there are individual growers that choose to pump groundwater or utilize municipal wastewater effluent to either partially or fully meet their crop water requirements. Some of these parcels are located within a local water agency's boundaries, while others are not. An example of these "non-agency" areas is the agricultural development occurring east of the Eastside and Ballico-Cortez water districts.

Municipal/Industrial: ***MUNICIPAL AND INDUSTRIAL CONSUMERS WITHIN THE BASIN RELY SOLELY ON GROUNDWATER AS THE SOURCE OF SUPPLY. THE TOTAL WATER PRODUCED BY THE BASIN'S MAJOR WATER UTILITIES IN 1995 WAS 36,200 AF (32.5 MGD), WITH 91% OF THE WATER PRODUCTION BEING CONCENTRATED ALONG THE HIGHWAY 99 CORRIDOR (E.G. SOUTH MODESTO, CERES, KEYES, TURLOCK & DELHI). IT IS ESTIMATED THAT AN ADDITIONAL 10,900 AF/YEAR (9.7 MGD) IS PRODUCED BY SMALL PRIVATE RESIDENTIAL WATER SYSTEMS, COMMERCIAL BUSINESSES AND INDUSTRIAL PLANTS NOT SERVED BY THE MAJOR UTILITIES.***

As municipal/industrial development encroaches on agricultural lands within the Basin, it is anticipated that the use of water will also change. It is estimated that water use by the municipal utilities will increase from 36,200 AF/year (32.5 MGD) in 1995 to over 108,800 AF/year (97.1 MGD) by 2030, while agricultural use is projected to decrease as irrigated agricultural land is converted to municipal use.

In anticipation of the projected increased demand for municipal water supplies and as a means of addressing water quality issues of groundwater, the Turlock Irrigation District and the municipal suppliers are investigating the feasibility of constructing a water treatment plant (or plants) to treat surface water, supplied by TID, to be used for municipal purposes. However, because the decrease in

agricultural demand will be almost wholly matched by the increase in municipal demand, the proposed drinking water supply program would not resolve the existing groundwater basin overdraft anticipated to be approximately 70,000 to 85,000 AF/year

B. SOURCES OF GROUNDWATER RECHARGE: The majority of the groundwater recharge within the Basin results from the Turlock Irrigation District's importation of Tuolumne River water utilized for irrigation purposes. A portion of the water applied for irrigation percolates past the root zone, providing recharge. To a much lesser extent, the same occurs with surface water supplies imported from the Merced River by Merced ID. Other sources of recharge include precipitation, inflows from the surrounding rivers, as well as pumped groundwater. Local rainfall averages approximately 11.08 inches/year, a portion of which percolates into the groundwater system. In addition, a portion of the pumped groundwater finds its way back into the system through various forms of recharge, including percolation ponds, landscape irrigation, etc.

C. GROUNDWATER LEVELS: Groundwater conditions vary within the Basin. Levels in the eastern areas are in a significant state of decline. Localized groundwater pumping in excess of local recharge has created a cone of depression on the eastern side of the basin, resulting in water levels between 1971 and 1991 dropping as much as 90 feet. Conversely, levels in the western areas of the Basin are high to the point of requiring pumping and other drainage measures in certain areas to keep the groundwater from encroaching into the root zone of agricultural crops.

The general accretions to and depletions from the groundwater Basin result in a local annual overdraft ranging from 70,000 to 85,000 acre-feet. The localized overdraft is occurring mainly in the eastern areas of the Basin which lack a surface water supply component.

D. WATER QUALITY: There are numerous constituents found in the Basin's groundwater supply. Some constituents are naturally occurring, while others have been introduced into the groundwater from man-made sources. Presently, municipal, industrial and individual domestic water users rely solely on groundwater as their source of supply. While the supply has been adequate, the groundwater quality has deteriorated in some areas to the point where treatment is required to make it suitable for these uses.

E. AREAS OF CONCERN: The goal of the groundwater management plan is to implement sound groundwater management practices, in order to maintain the available groundwater resources to meet the beneficial uses and needs of the Turlock Groundwater Basin. In order to accomplish this task, some of the concerns will need to be addressed, such as: the cone of depression forming on the eastern side of the Basin due to localized groundwater pumping, including the additional agricultural development occurring on the east which will tend to exacerbate the issue; changing municipal water quality standards and the impacts to urban agencies if treatment becomes necessary to meet the ever increasingly stringent standards; and municipal encroachment on agricultural lands which could result in reduced recharge and increased groundwater pumping.

III. GROUNDWATER MANAGEMENT PROGRAMS/IMPLEMENTATION MEASURES

The Groundwater Management Plan includes provisions for a variety of programs to monitor and improve groundwater conditions within the Basin. It is recognized that groundwater needs are expected to change as Basin conditions change. As such, the plan is designed to adjust according to the needs of the Basin. The plan specifically incorporates, but is not limited to, a variety of management measures including: (1) control of saline intrusion; (2) identification and management of wellhead protection and recharge areas; (3) regulating contaminant migration in groundwater; (4) administration of well abandonment and well destruction program; (5) mitigation of groundwater overdraft; (6) replenishment of groundwater extracted by producers; (7) monitoring and controlling groundwater levels, quality and storage; (8) facilitating conjunctive use operations; (9) well construction; (10) construction and operation of recharge, storage, conservation, water recycling and extraction projects; (11) development of relationships with local, state and federal agencies; and (12) review of land use plans and coordination with land use planning agencies.

The agencies within the Turlock Groundwater Basin meet on a monthly basis to discuss groundwater management related issues. These meetings help cultivate relationships between local agencies, ensure coordination of existing groundwater management activities, provide an avenue for discussing and addressing current issues of concern, as well as developing new groundwater management related programs.

When first embarking on plan implementation, the agencies reviewed existing groundwater management practices and programs including: land use planning, water conservation and wellhead protection programs, well construction standards and abandonment procedures, and water education programs. The agencies felt that the existing programs provided the necessary protections. If in the future, changes are needed to provide increased levels of protection, the programs will be re-evaluated and adjustments made, as necessary. In addition, the agencies determined that concluded that they will continue to rely upon the local, state and federal agencies responsible for enforcing the water quality regulations with respect to the control of contaminant migration in groundwater.

The agencies within the Basin have developed water level and quality monitoring programs. The water level monitoring program consists of semi-annual monitoring done utilizing a series of agency and privately owned wells throughout the basin. Data collected is incorporated into a database, and will be utilized to analyze changing groundwater levels, identify trends, and determining impacts of future projects.

The water quality monitoring program is in the final stages of development and will be implemented this fall. It will utilize the existing water quality monitoring performed by municipal agencies, supplemented by testing of a series of local agricultural wells. Initial monitoring will focus on

electrical conductivity, nitrates, total dissolved solids, and pH. Similar to the water level monitoring program, it is designed to analyze changing trends, identifying potential problem areas, and assisting in identifying acceptable sites for future wells. Lastly, the agencies are considering embarking on a hydrologic study of the groundwater basin to further develop their understanding of the groundwater conditions. Such a study could include: additional analysis of the inflows and outflows of the basin, as well as existing and projected future groundwater demands; studying the changing land use patterns on the eastern side of the basin and the related groundwater usage; further characterizing the interactions between the groundwater and river systems; and determining more up-to-date projections of the basin's overdraft and safe yield.

APPENDIX #2A

WATER/IRRIGATION DISTRICTS
IN
STANISLAUS COUNTY

AB3030 GROUND WATER
MANAGEMENT PLAN ELEMENTS

APPENDIX # 2.a.
WATER/IRRIGATION DISTRICTS IN STANISLAUS COUNTY
A.B. 3030 GROUNDWATER MANAGEMENT PLAN ELEMENTS

A.B. 3030 PLAN ELEMENTS		WATER AGENCY/IRRIGATION DISTRICT (ID) IN STANISLAUS COUNTY			
		CENTRAL CALIFORNIA IRRIGATION DISTRICT	DEL PUERTO WATER DISTRICT	EAST SIDE WATER DISTRICT	MODESTO IRRIGATION DISTRICT
	CONTROL SALINE WATER INTRUSION	YES	YES	NA	NA
	IDENTIFY & MANAGE WELL HEAD PROTECTION AND RECHARGE AREAS	NO	YES	YES	YES
	REGULATE MIGRATION CONTAMINATED GROUNDWATER	NO	YES**	NO**	NO**
	ADMINISTER WELL ABANDONMENT & DESTRUCTION PROGRAMS	NO**	NO**	NO**	NO**
	MITIGATE CONDITIONS OF OVERDRAFT	NO	YES	YES	YES
	REPLENISH GROUND WATER	YES	YES	YES	YES
	MONITOR GROUND WATER LEVELS & STORAGE	YES	YES	YES	YES
	FACILITATE CONJUNCTIVE USE	YES	YES	YES	YES

IDENTIFY WELL CONSTRUCTION POLICIES	NO**	NO**	NO**	NO**
CONSTRUCTION AND OPERATION OF PROJECTS*	NA	YES	YES	YES
DEVELOP STATE & FEDERAL RELATIONSHIPS	YES	YES	YES	YES
REVIEW LAND USE PLANS & WORK WITH PLANNING AGENCIES	YES	YES	YES	YES

NA = Not Applicable

*The construction and operation of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.

**Plan recognizes primary regulatory, permitting and/or responsible agency(ies) while addressing these elements.

APPENDIX #2B

WATER/IRRIGATION DISTRICTS
IN
STANISLAUS COUNTY

AB3030 GROUNDWATER MANAGEMENT
PLAN ELEMENTS

APPENDIX #2.b.
WATER/IRRIGATION DISTRICTS IN STANISLAUS COUNTY
A.B. 3030 GROUNDWATER MANAGEMENT PLAN ELEMENTS

A. B. 3030 PLAN ELEMENTS	WATER/IRRIGATION DISTRICT (ID) IN STANISLAUS COUNTY			
	OAKDALE IRRIGATION DISTRICT	TURLOCK IRRIGATION DISTRICT		
CONTROL SALINE WATER INTRUSION	YES	YES		
IDENTIFY & MANAGE WELL HEAD PROTECTION AND RECHARGE AREAS	YES	YES		
REGULATE MIGRATION CONTAMINATED GROUNDWATER	YES**	YES**		
ADMINISTER WELL ABANDONMENT & DESTRUCTION PROGRAMS	YES**	YES**		
MITIGATE CONDITIONS OF OVERDRAFT	YES	YES		
REPLENISH GROUND WATER	YES	YES		

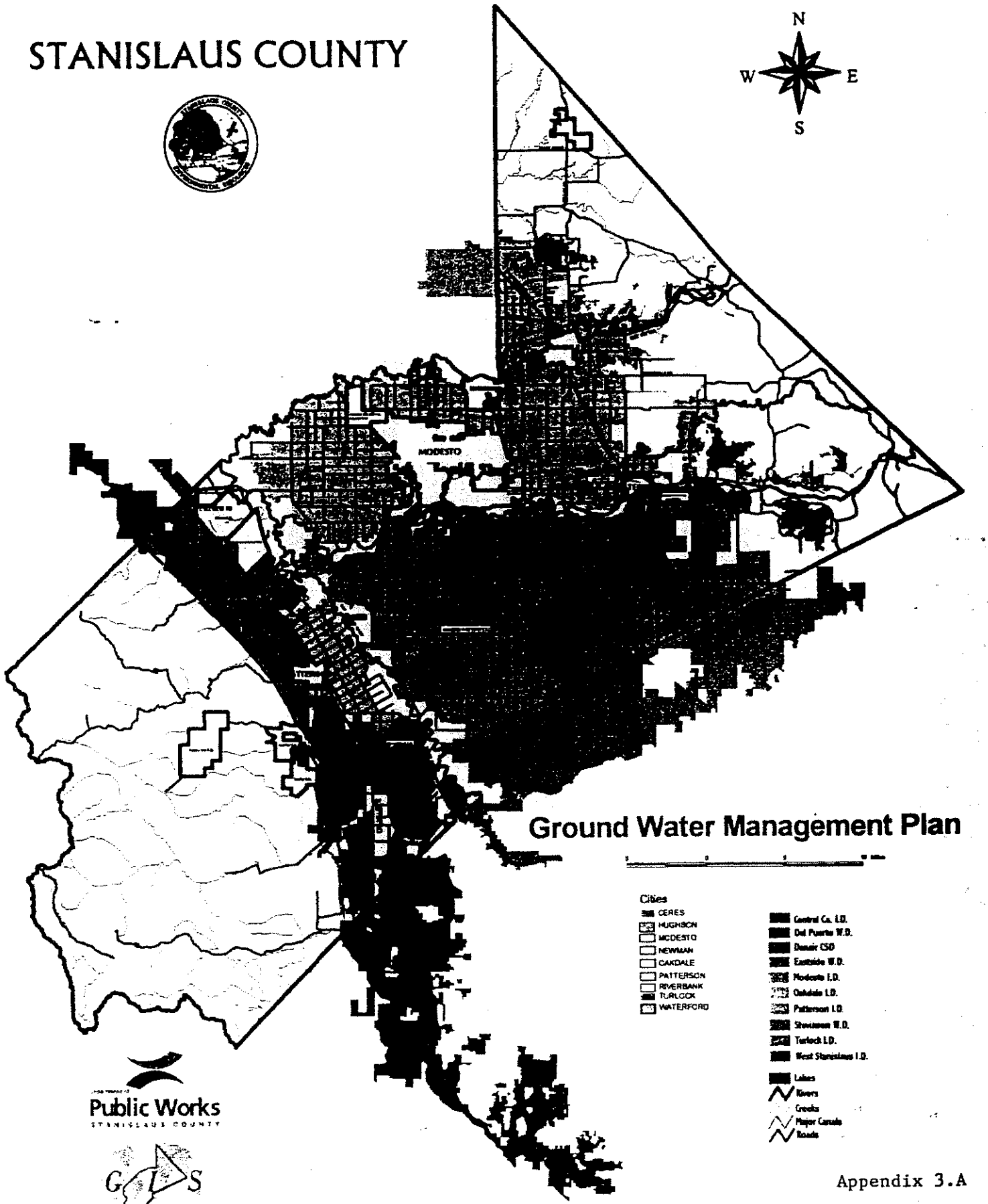
MONITOR GROUND WATER LEVELS & STORAGE	YES	YES		
FACILITATE CONJUNCTIVE USE	YES	YES		
IDENTIFY WELL CONSTRUCTION POLICIES	YES**	YES**		
CONSTRUCTION AND OPERATION OF PROJECTS*	YES	YES		
DEVELOP STATE & FEDERAL RELATIONSHIPS	YES	YES		
REVIEW LAND USE PLANS & WORK WITH PLANNING AGENCIES	YES	YES		

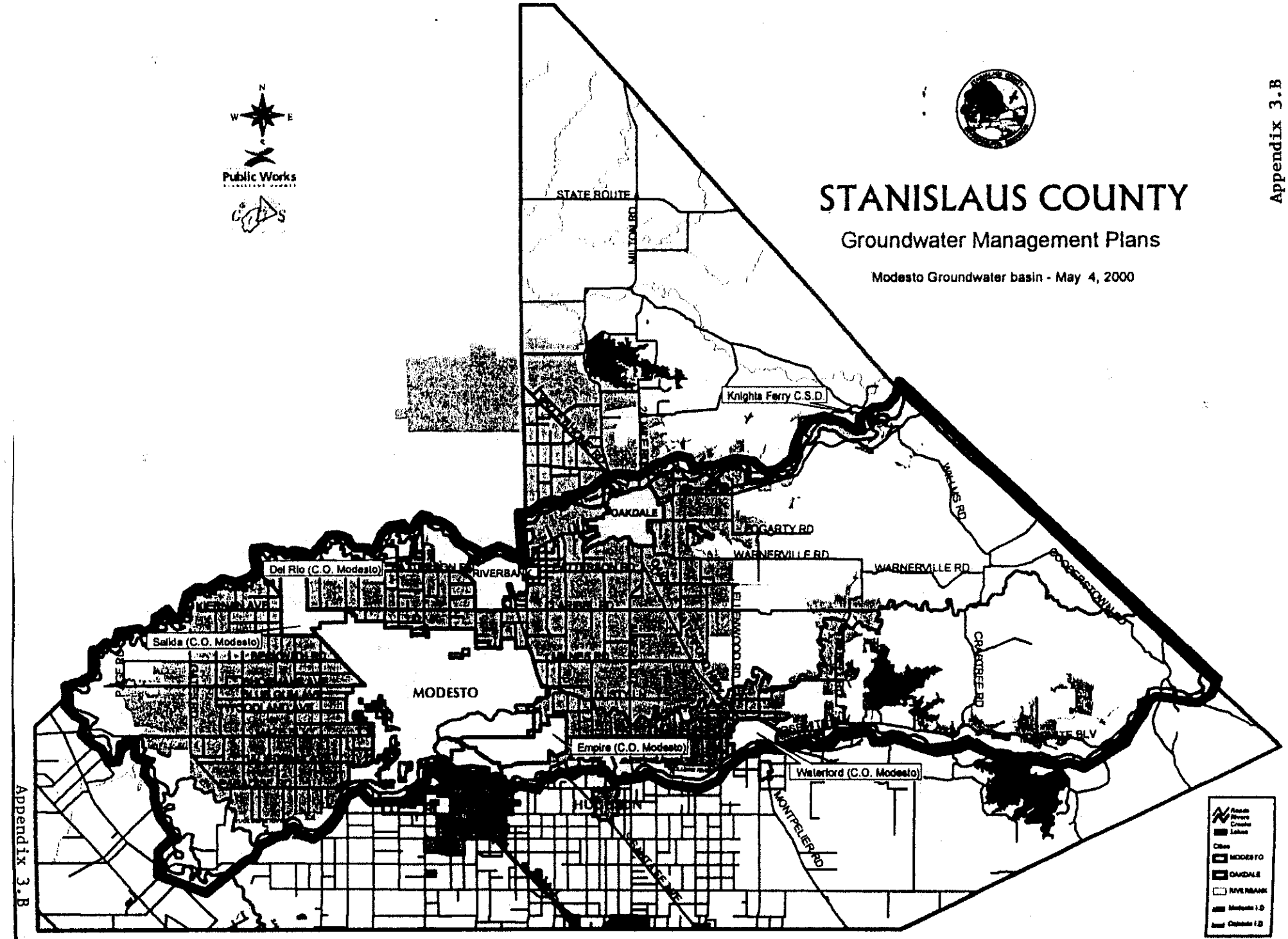
*The construction and operation of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.

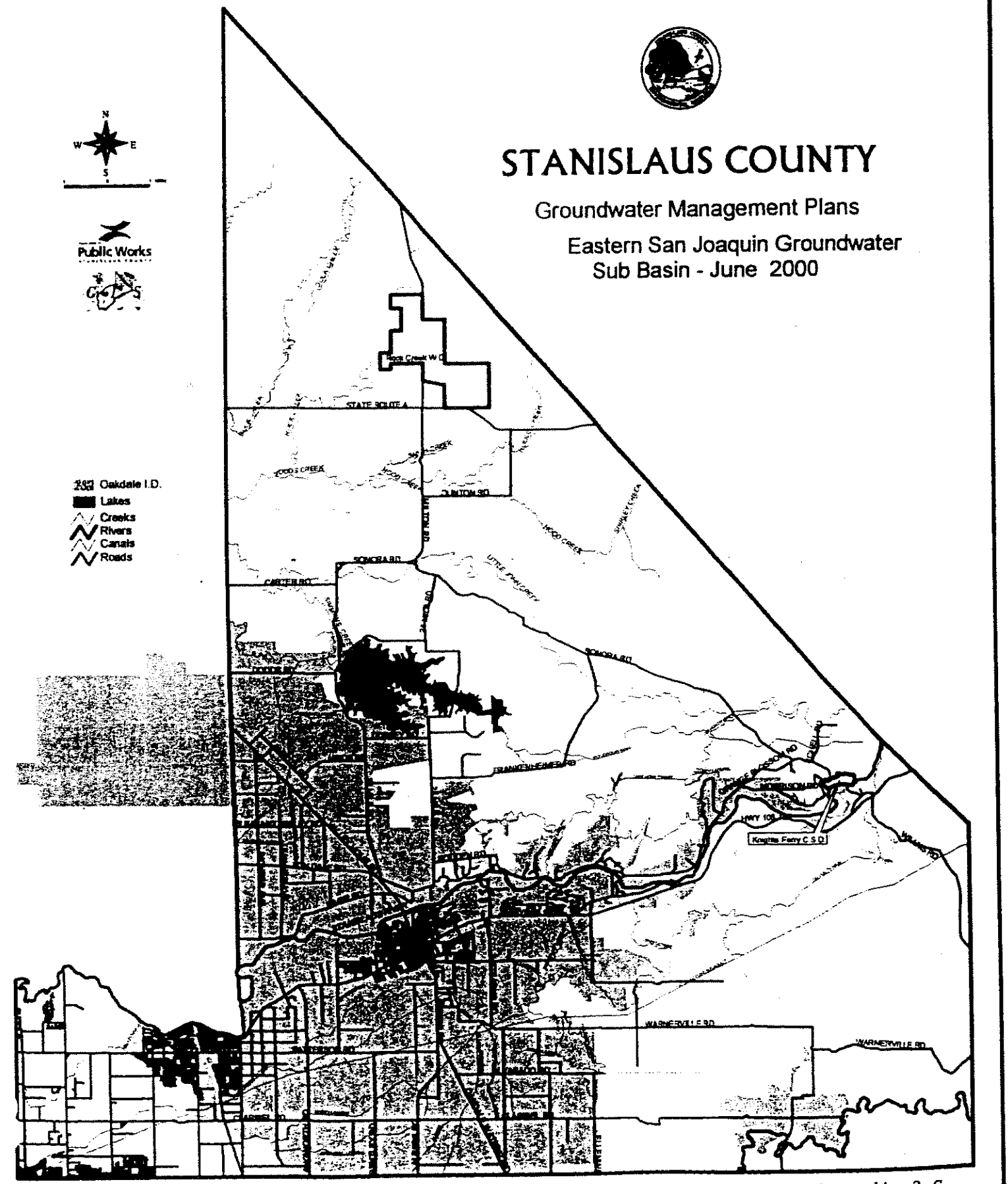
**Plan recognizes primary regulatory, permitting and/or responsible agency(ies) while addressing these elements.

APPENDIX #3

MAPS
GROUNDWATER MANAGEMENT PLANS
STANISLAUS COUNTY


STANISLAUS COUNTY
N
W
E
S
MODESTO
Ground Water Management Plan
Cities
CERES
HUGHSON
MODESTO
NEWMAN
OAKDALE
PATTERSON
RIVERBANK
TURLOCK
WATERFORD
Central Co. I.D.
Del Puerto W.D.
Denair CSD
Eastside W.D.
Modesto I.D.
Oakdale I.D.
Patterson I.D.
Stevinson W.D.
Turlock I.D.
West Stanislaus I.D.
Lakes
Rivers
Creeks
Major Canals
Roads
Public Works
STANISLAUS COUNTY
G I S


Public Works
STANISLAUS COUNTY
Groundwater Management Plans
Modesto Groundwater basin - May 4, 2000
STATE ROUTE
MILTON RD
Knights Ferry C.S.D.
OAKDALE
WILLMS RD
ROGERS RD
WARNERVILLE RD
Del Rio (C.O. Modesto)
RIVERBANK
Salida (C.O. Modesto)
MODESTO
CRABTREE RD
Empire (C.O. Modesto)
Waterford (C.O. Modesto)
MONTPELIER RD
MODESTO
OAKDALE
RIVERBANK


STANISLAUS COUNTY
Groundwater Management Plans
Eastern San Joaquin Groundwater
Sub Basin - June 2000
N
W
E
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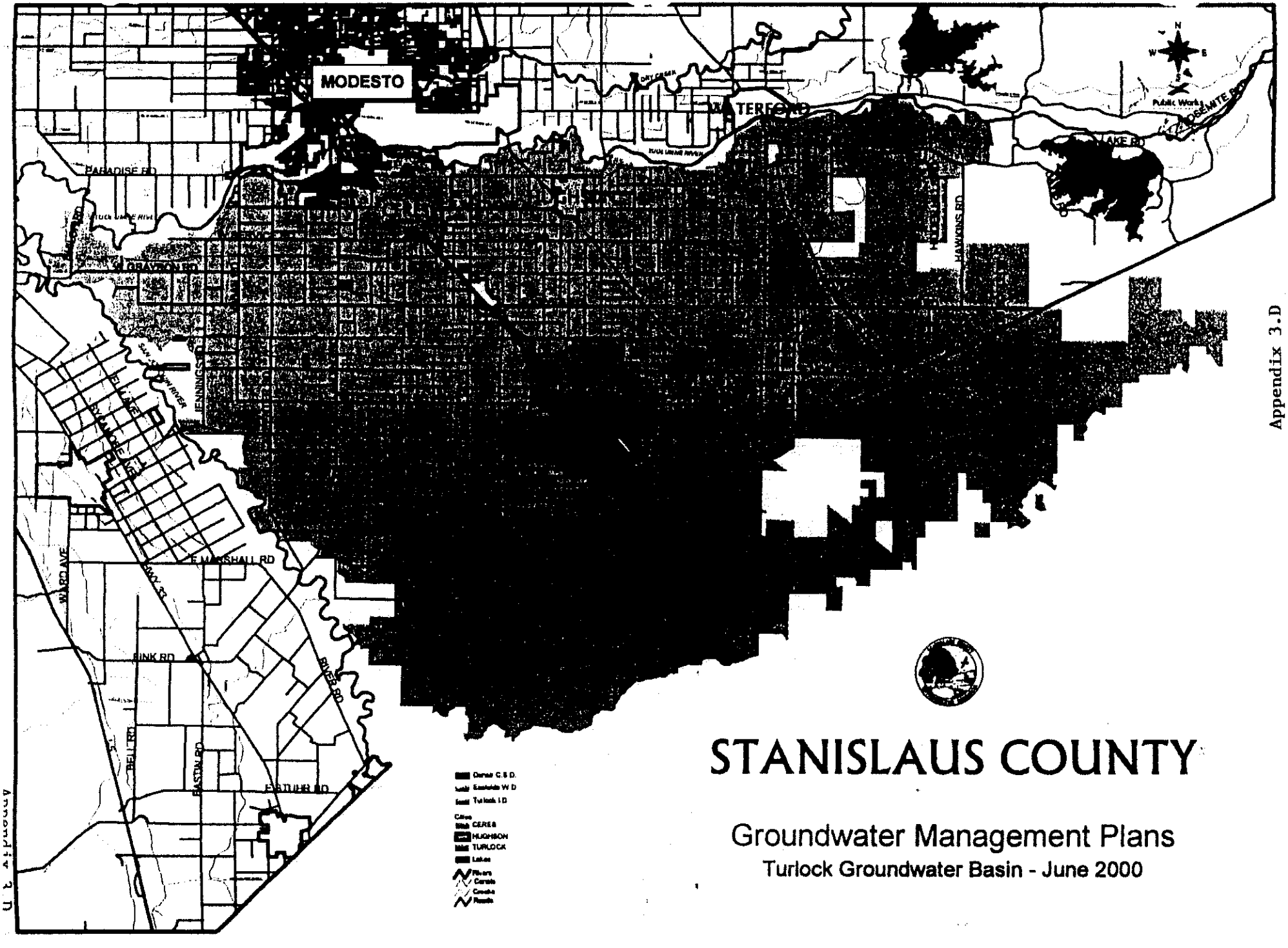
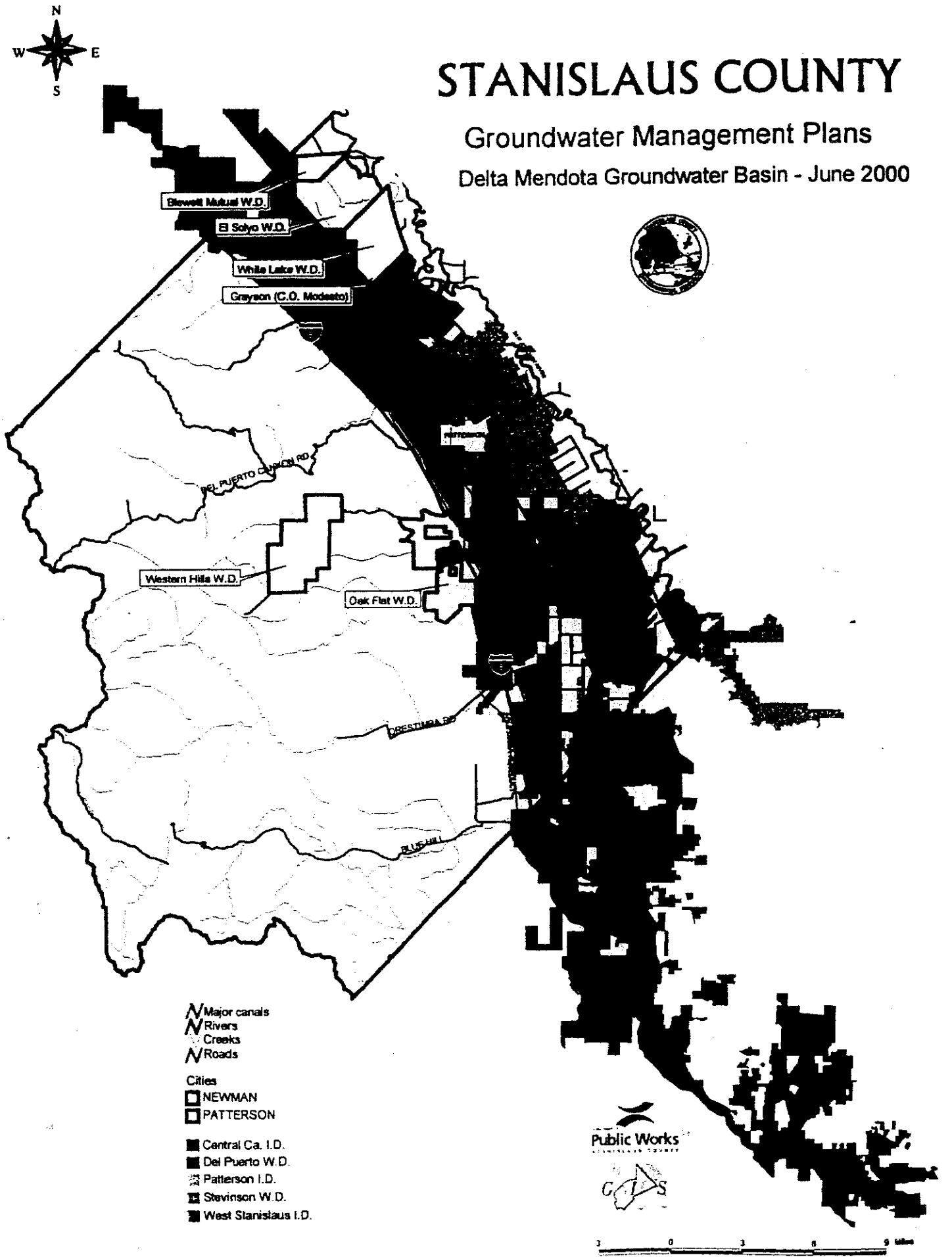
Public Works
Oakdale I.D.
Lakes
Creeks
Rivers
Canals
Roads
STATE SCUTE A
WOOD'S CREEK
DUSTON RD
SONORA RD
CARTER RD
FRANKENHEIMER RD
HWY 108
Knights Ferry C S D
WARNERVILLE RD


MODESTO
WATERFORD
PARADISE RD
GRAYSON RD
E MARSHALL RD
PINK RD
BELL RD
BASTIAN RD
FAITHUR RD
RIVER RD
HAWKINS RD
LAKE RD
YOSEMITE BLVD
Public Works
Denair C.S.D.
Keyes Earlimart W.D.
Turlock I.D.
Cities
CERES
HUGHSON
TURLOCK
Lakes
Rivers
Canals
Creeks
Roads
STANISLAUS COUNTY
Groundwater Management Plans
Turlock Groundwater Basin - June 2000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W
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STANISLAUS COUNTY
Groundwater Management Plans
Delta Mendota Groundwater Basin - June 2000
Blewett Mutual W.D.
El Solyo W.D.
White Lake W.D.
Grayson (C.O. Modesto)
DEL PUERTO CANYON RD
Western Hills W.D.
Oak Flat W.D.
ORESTIMBA RD
BLUE HILL
Major canals
Rivers
Creeks
Roads
Cities
NEWMAN
PATTERSON
Central Ca. I.D.
Del Puerto W.D.
Patterson I.D.
Stevinson W.D.
West Stanislaus I.D.
Public Works
GIS
3 0 3 6 9 Miles