

## ATTACHMENT 3 – WORK PLAN

### Att3\_PG1\_SJCGBA\_WorkPlan\_2of2

#### Work Plan Content

The GBA proposes the following Work Plan for the Eastern San Joaquin IRWMP Update. The Activities, Tasks, and Subtasks correspond to those in Attachment 4 - Budget and Attachment 5 - Schedule.

The Work Plan reflects five desired outcomes for the GBA IRWMP Update. The Work Plan tasks have been developed to meet each of the desired outcomes and are listed below:

**Outcome #1** – Effectively manage and properly administer the Work Plan in accordance with Proposition 84 IRWM Program Guidelines.

#### *Task 1 – Grant Administration Project Management*

**Outcome #2** – Update the 2007 GBA IRWMP with new and relevant information which contribute to the value of the GBA IRWMP.

#### *Task 2 – Update IRWMP*

**Outcome #3** – Broaden and extend the 2007 GBA IRWMP to a level which meets or exceeds the new Proposition 84 IRWM Program Guidelines.

#### *Task 3 – Address New IRWM Program Guidelines*

#### *Task 4 – Develop Advanced Planning*

**Outcome #4** – Further Inter-Regional Planning Efforts with the M/A/C Regional Water Management Group.

#### *Task 5 – Develop Inter-Regional Joint Project*

**Outcome # 5** – Adopt the IRWMP Update. EASTERN SAN JOAQUIN REGION IRWMP UPDATE

#### *Task 6 – Compile & Adopt IRWMP Update*

#### *Task 1 – Grant Administration Project Management*

This Task encompasses contract and grant management, procurement of consultants and management of consultant contracts, internal coordination of work efforts, and external communication and coordination with stakeholders.



### Task 1A – Contract Administration

This subtask includes administration of the DWR Grant Agreement, including providing all required fiscal and environmental compliance statements, preparation, processing, and execution of Proposition 84 Planning Grant Agreement.

### Task 1B – Project Management

This subtask includes consultant procurement and contracting, monitoring of progress in Work Plan execution, review of consultant invoices, and reviewing progress against the project budget and schedule. This subtask also included communication, coordination, and data gathering with GBA agencies and stakeholders, and bi-weekly project management conference calls.

### Task 1C – Project Reporting

This subtask includes preparation of monthly reports describing project progress, expenditures, and identifying upcoming Tasks and any deviations from the project schedule or budget with a recommended plan for correction. This subtask also includes quarterly progress reports and the final progress report including all required documentation to DWR grant administrators in a mutually-acceptable format leading to the reimbursement of grant funds to the GBA.

### Task 1D – Public Outreach

The Public Outreach strategy of the GBA IRWMP Update is a multi-pronged approach similar to the activities utilized in the development of the 2007 GBA IRWMP. The GBA Board and GBA Coordinating Committee met twice monthly on the 2<sup>nd</sup> and 4<sup>th</sup> Wednesdays of the month during the development of the 2007 Plan with the 4<sup>th</sup> Wednesday being dedicated to IRWMP issues. Meetings are typically scheduled from 9:30 a.m. to 12:00 p.m. A similar meeting schedule will be adopted over the 2012 IRWMP Update. All meetings will be facilitated by the California Center for Collaborative Policy<sup>1</sup>. For this subtask, it is assumed that an interactive presentation of progress and decisions to be made would be made an average of once per month over the period IRWMP Update at the 4<sup>th</sup> Wednesday Coordinating Committee Meeting. Only facilitation cost will be counted as GBA in-kind contributions for the 4<sup>th</sup> Wednesday meetings.

In-lieu of hosting general outreach meetings which have often been sparsely attended, the GBA proposes to give up to six focus group presentations made to local organizations. The 2007 GBA IRWMP Action Plan states that the GBA will maintain a Speakers Bureau. This program has been a major success and includes presentations made over the past few years to groups such as the Lodi Lions, North San Joaquin Water Conservation District Town Hall Meetings, Business Industry Association of the Delta, Greater Stockton Chamber of Commerce, Stockton Sunrise Rotary Club, Community Water for Life & Earth Day Events, DWR Conjunctive Water Branch MOU Workshops, Engineer’s Club of Stockton, Lodi City Council Town Hall Meeting, Lodi Grape Commission, Mokelumne River Association, Mokelumne River Forum, San Joaquin County Agricultural Advisory Council, San Joaquin County Council of Governments, San

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<sup>1</sup> An Agreement between the GBA and Sacramento State University – Center for Collaborative Policy was executed on July 14, 2010. The GBA’s share through June 30, 2011 is \$11,460.75.



Joaquin County Water Summit, San Joaquin Farm Bureau Annual Agriculture in the Classroom Program, San Joaquin Farm Bureau Water Committee, Stanislaus County Water Summit, University of the Pacific Eberhardt School of Business, University of the Pacific School of Engineering Delta.

The GBA intends to have its web page, [www.GBAWater.org](http://www.GBAWater.org), be the repository for presentations, draft documents, and agendas and minutes related to the 2012 IRWMP Update. The schedule for the IRWMP Update assumes 24-hours to set up the new GBA IRWMP Update Page and 4-hours per month of GBA staff time to update the GBA website.

### Task 1 Deliverables

Review, input, and execution of Proposition 84 Planning Grant Agreement; Procurement of engineering, environmental, modeling, and specialty consultant contractors; Review and processing of consultant invoices, preparation of progress reports including quarterly progress reports to DWR; Bi-weekly project management conference calls, including summary notes and action item lists; Coordination with data gathering from member agencies and stakeholders; Facilitation of GBA IRWMP Coordinating Committee Meetings, preparation of meeting notes and minutes, Focus Group Presentations, and document preparation and processing. DAC outreach is addressed in Task 2E.

### ***Task 2 - Update IRWMP***

Task 2 consists of updating the informational and data aspects of the 2007 IRWMP.

#### Task 2A - Update Current and Future Water Demands

Components of this task will be based upon population, land, and water use data available from 2010 Urban Water Management Plan Updates due July 1, 2011. Additionally, the GBA awaits the data from the 2010 Census and will also look into available documentation including areal photos, satellite imagery, evapotranspiration imagery, and/or physical land use surveys. The method utilized to estimate agricultural water demands is explained in Chapter 4 of the 2007 IRWMP where applied water demands are tallied spatially based on crop type and irrigation efficiency. Geographical Information System (GIS) technology is available to the GBA and will be heavily relied upon to process the data. Data to be used in updating of the water budget will include:

- Documentation of historical, present, and projected land uses within the region
- Documentation of historical, present, and projected water uses within the region including urban, agricultural, and environmental water uses
- Identification of additional water needed to support future demands and of infrastructure required to support this additional supply



The collected data is intended to be used to update the spatially distributed current (2010) water demand as well as the future demand at a specified level of development (currently proposed as 2040). The use of existing models<sup>2</sup> to quantify the projected impacts of global climate change on the projects included in the Integrated Conjunctive Use Program as presented in the 2007 IRWMP is included in Task 3.

#### Task 2B – Update Region Description and Other Outstanding IRWMP Information

The GBA will undertake a review and update of the informational and factual aspects of the 2007 IRWMP. Specific areas of the 2007 IRWMP needing update include Chapter 2: Region Description and Chapter 3: Water Resource Planning Efforts. In addition the status of projects included in the Eastern San Joaquin Integrated Conjunctive Use Program developed in the 2007 IRWMP will be updated.

#### Task 2C – Reconsideration of Resource Management Strategies & Local Projects

The purpose of the 2007 IRWMP is to define and integrate key water management strategies to establish the protocols and course of action for implementation of the Eastern San Joaquin Integrated Conjunctive Use Program (ICU Program). The ICU Program will implement a comprehensive, prioritized set of projects and actions that when implemented will meet adopted Basin Management Objectives and provide regional benefits to area stakeholders. The Eastern San Joaquin ICU Program, developed in the 2007 IRWMP, has gone through the Public review Draft EIR portion of the CEQA process. The GBA is currently preparing the Final EIR and is expected to certify the Final EIR in December 2010 or January 2011.

The focal point of the Eastern San Joaquin ICU Program is to manage the underlying groundwater basin in sustainable manner consistent with adopted Basin Management Objectives and the Basin Operations Criteria Framework.

One key change that occurred between Proposition 50 IRWM Plan Guidelines and the Proposition 84 IRWM Plan Guidelines (DWR, 2010) was that the strategies to be considered in the IRWM Plan were both renamed (to Resource Management Strategies) and expanded to include improved flood management, resources stewardship practice, and improved operational efficiency transfers. As part of the IRWM Plan update, all projects included in the IRWM Plan will have to be reevaluated as to how they meet both updated regional objectives and the new resource management strategies. If needed, the regional objectives and goals will be revised as part of the Plan update to maximize the appropriate incorporation of resource management strategies.

When reconsidering additional resource management strategies, GBA member agencies and other Community participants will be encouraged to identify local projects that are not included

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<sup>2</sup> The GBA has utilized the Eastern San Joaquin DYNFLOW Integrated Surface Water Model (IGSM) and the Mokelumne and Calaveras Simulation Model to determine the surface water available for diversion and the resulting impact to the underlying groundwater basin. The DYNFLOW IGSM is a land us- based finite element model.



in the Eastern San Joaquin ICU Program yet are projects that are critical to the future of the greater regional community. Examples include wastewater treatment plant upgrades, habitat or ecosystem improvements or restoration, stormwater quality capital improvement projects, water treatment plant upgrades, wellhead treatment, leak detection, conveyance replacement, etc. For each identified project, the GBA will develop or describe:

- Project status;
- Estimated cost;
- Implementation and/or funding strategy;
- Assessment of project feasibility based on cost, environmental, or other factors;
- Description of environmental, societal or other benefits; and Determination of Priority based on several weighted factors including readiness to proceed, feasibility, need, fundability, etc.

All projects to be included in the IRWM Plan Update (both existing and new projects) will be evaluated as to the additional potential for integration and synergistic development of benefits. Then, the existing project prioritization process will be examined to ensure that it is (1) still applicable to the region and (2) reflective of these changed standards. The revised prioritization process resulting from this examination will be used by GBA to evaluate all projects to be included in the IRWM Plan Update. The projects will be prioritized to meet regional water management objectives and to follow the water management strategies adopted in the Plan. An implementation schedule that extends beyond the adoption of the Plan will be developed.

The GBA recognizes that, despite its defining objective as an agency that strives for sustainable water supplies through the management of the underlying groundwater basin, the development of a supplemental IRWMP project list increases the ability of the GBA membership to broaden and explore areas of integration and natural resources management opportunities in the community.

#### Task 2D – Update of Management Action Plan

The 53 **Management Actions** listed in Chapter 9 of the IRWMP constitute the Groundwater Banking Authority's plan to implement the adopted 2007 IRWMP. These 53 Management Actions are summarized above in the Background and Plan Context Section of the Work Plan. The Management Actions have been grouped into the following categories:

- Monitoring
- Improved Basin Characterization
- Continued Long-Term Planning
- Groundwater Protection
- Construction and Implementation
- Governance
- Financing, and
- Public Participation/Community Outreach



The GBA proposes to undertake an evaluation of the 53 Management Actions and revise, as necessary, existing actions as well as develop new Management Actions.

#### Task 2E – Update DAC Outreach Plan

The feedback provided by DWR as a result of the critique of the GBA 2007 IRWMP and the RAP clearly pointed out that the GBA lacked focused disadvantaged community outreach. In general, the major water-related problems faced by the Eastern San Joaquin community were viewed as regional in nature, and best addressed by regional solutions. Relying on Census data to determine census tracts meeting the 80% Median Household Income criteria is useful, but inadequate for identifying DACs and DAC representatives and advocates. In this Task, the GBA will redouble its efforts to identify and contact disadvantaged communities and their representatives and examine the water-related problems and proposed solutions for inclusion in the IRWMP Update.

Government Code<sup>3</sup> requires local governments to consult with California Native American Tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. The GBA has contacted NAHC and have received a list of tribal representatives for the region. There are no tribal reservations or facilities within the Eastern San Joaquin Region.

The goals for addressing the DAC requirements are to promote the Eastern San Joaquin Integrated Regional Water Management Plan (IRWMP) Update, and to improve opportunities for Disadvantaged Communities (DACs) to participate in the IRMWP planning process. Our objectives will be to conduct DAC outreach, engage and encourage DAC members to participate in the IRWMP Update planning process, and build relationships with DAC members for continued dialogue on issues regarding implementation of projects in the IRWMP.

The comprehensive outreach program will incorporate outreach strategies and awareness education as part of the process of reaching community members. The strategic plan for outreach includes short-term, intermediate-term, and long-term strategies that target working with DAC governmental organizations, DAC non-governmental organizations, and DAC representatives and advocates. While all three strategies are overlapping and inter-related, each of these strategies focuses on engaging DACs.

The GBA strategy for the short-term is to identify DAC governmental and non-governmental organizations and DAC representatives. Governmental organizations will include community centers located in San Joaquin County, which historically are located in and provide services to DACs. Non-governmental organizations will include non-profit agencies serving specific cultural DACs, which will allow for translation assistance if needed and will ensure a diverse range of participants. As these governmental and non-governmental organizations typically have

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<sup>3</sup> PRC §75102



a community advisory board or board of directors comprised of DAC representatives, the GBA will gauge the potential DAC representatives' aptitude of involvement through group and/or individual discussions. The GBA will work with DAC representatives who are available and interested in providing feedback on water issues in their respective communities. A preliminary list of list of potential organizations is presented below.

### **Governmental Organizations**

#### **San Joaquin County Community Centers**

- Boggs Tract - 533 S. Los Angeles Ave., (209) 468-3978
- Garden Acres - 607 S. Bird Ave., (209) 468-3984
- Kennedy - 2800 South D St., (209) 468-3986
- Larch Clover - 11157 W. Larch Road, Tracy, (209) 831-5920
- Lodi – 415 S. Sacramento St., Lodi, (209) 331-7516
- Northeast – 2885 E. Harding Way, (209) 468-3918
- Taft – 389 W. Downing Ave., (209) 468-4168
- Thornton – (209) 794-2144

#### **City of Stockton Community Centers**

- Arnold Rue – 5758 Lorraine Ave., (209) 937-7350
- Seifert – 128 W. Ben Holt Dr., (209) 937-7380
- Stribley – 1760 E. Sonora Ave., (209) 937-7351
- Van Buskirk – 734 Houston Ave., (209) 937-7358

#### **City of Lathrop Community Centers**

- Lathrop Senior Center – 15707 5<sup>th</sup> Street, (209) 941-7380
- Lathrop Community Center – 15557 5<sup>th</sup> Street, (209) 941-7370

#### **City of Lodi Community Center**

- Hutchins Street Square – 125 S. Hutchins St., (209) 333-6782

#### **City of Manteca Community Center**

- Manteca Senior Center – 295 Cherry Lane, (209) 456-8650

### **Non-Governmental Organizations**

- California Tribal TANF Partnership – 5405 N. Pershing Ave., (209) 474-6890
- Council for the Spanish Speaking – 308 N. California St., (209) 547-2855
- Jene Wah, Inc. – 238 E. Church St., (209) 463-7654
- Lao Family Community of Stockton, Inc. – 1808 W. Country Club Blvd., (209) 466-0721
- The Diocese of Stockton Social Justice Ministry Team – 1106 N. El Dorado St., (209) 948-1501



The GBA strategy for the intermediate-term is to work directly with DAC representatives. The first component will be to provide water awareness education, specifically in the local and regional arenas. This will also provide the opportunity to engage DAC representatives to share community needs and concerns. The second component will be to promote the IRWMP, specifically building awareness and exploring ways to encourage participation in conservation programs such as rebate incentives. The GBA hopes to foster working relationships with DAC representatives, promote the implementation of current GBA IRWMP Program efforts, and build a foundation for future outreach efforts.

The GBA strategy for the long-term is to continue a working group of DAC representatives. As implementation of the IRWMP progresses, outreach efforts through a working group comprised of DAC representatives will continue. This working group will continue to share community needs and concerns and begin to create programs, such as rebate incentives, that can be implemented to serve DAC members through their participation in such programs. This will be accomplished through the identification of the most effective outreach methods, which may include but not be limited to: providing brochures, flyers, and literature; providing informational meetings, conducting roundtable discussions, and focus group presentations.

Activities include: technical presentations; planning, coordination, and outreach material preparation; translation, coordination, and administrative support, facilitation services and informational materials. Materials may include brochures, flyers, and literature describing the IRWMP process and Update.

Deliverables include a comprehensive inventory of DAC governmental and non-governmental organizations, a directory of DAC representatives and advocates, technical memoranda documenting the abilities for DAC involvement, and community water-related needs and concerns including potential strategies to meet these needs and address concerns, and documentation of DAC outreach and participation including program implementation.

#### Task 2F – Update Data Management

The GBA and other local stakeholders have compiled a robust arsenal of data management and analysis tools. These tools include an extensive Geographic Information System (GIS) and high quality data sets of local and statewide infrastructure, geology, surface water flows and quality, groundwater levels and quality, habitat and species distribution, land use, etc.<sup>4</sup>

In addition, the San Joaquin County Flood Control and Water Conservation District collects semi-annual groundwater level data and annual groundwater salinity data. Groundwater hydrographs and contours can be viewed and printed through a similar web accessible GIS based application called the San Joaquin County Groundwater Data Center located at [www.sjwater.org](http://www.sjwater.org).

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<sup>4</sup> San Joaquin County GIS Division maintains the [www.sjmap.org](http://www.sjmap.org) website which includes a web accessible GIS based interactive GIS viewer. Groundwater hydrographs and contours can be viewed and printed through a similar web accessible GIS based application called the San Joaquin County Groundwater Datacenter located at [www.sjwater.org](http://www.sjwater.org).



Senate Bill x7 6, passed in November 2009 as part of the Delta legislative package, requires that groundwater levels be monitored Statewide. The GBA is closely monitoring the DWR's development of the California Statewide Groundwater Elevation Monitoring Program (CASGEM Program) pursuant to SBx7 6. The GBA is expected to fully comply with SBx7 6. The GBA proposes, as part of the IRWMP Update and as an enhancement to the data management tools critical to the success of continued groundwater management, to update the Groundwater Data Center web page and web-accessible GIS application. The GBA proposes to utilize GIS and data management specialists for the Data Center update. In addition, the GBA will document in the IRWMP Update the advancements of the technical tools utilized by the GBA and GBA member agencies.

### Task 2G – Update Financing Plan

The GBA proposes to update the 2007 IRWMP Financing Plan<sup>5</sup> based on the updated costs, cost of money, and political factors. Recommended financing options will be explained and presented in the final report. A finance plan will be developed to identify potential sources of funding for the projects and continued implementation of the Plan. The finance plan will be designed to have an appropriate weighting and scheduling of local and external funding.

### Task 2 Deliverables

Deliverables for Task 2 include a broad reassessment and update of the 2007 IRWMP, updated water supply and demand estimates, and an update of objectives. For the supplemental IRWMP Update Project list, updates will be prepared for project status, current cost estimates, feasibility, and environmental effects, and review of affordability and funding mechanisms. The contribution of proposed projects to meeting Plan objectives, and the feasibility of these projects will be reassessed. A data gaps analysis will be prepared to target necessary data collection efforts, and the stakeholder involvement plan will be updated.

### ***Task 3 – Address New IRWM Program Guidelines***

The purpose of this task is to refine and enhance the underlying Plan analysis to include new Integrated Regional Water Management planning requirements included in the 2006 Regional Water Management Act<sup>6</sup> (Proposition 84). These new requirements include analysis of climate change effects, flood water and stormwater integration, and increased outreach and assistance to disadvantaged communities (DACs).

Aspects specifically noted in updated legislation regarding the state's IRWMP process the IRWMP will give special attention to addressing are:

- Water/energy and greenhouse gasses;
- Climate change adaptability;

<sup>5</sup> GBA 2007 IRWMP Chapter 9.4.

<sup>6</sup> Provisions of the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Public Resource Code (PRC) Section 75001 et seq.



- Integration of storm and floodwater management;
- Integration of land use planning;
- Water-related needs of DACs; and
- Governance.

The project team will provide guidance to the GBA by leading a number of working sessions to bring about a common understanding of these issues and water management strategies and to formulate a framework for addressing and incorporating them in the IRWMP Update. The sessions will include all GBA members and interested stakeholders and be moderated by the Project Manager. The Project Manager will also provide guidance on enhancing and using various tools to evaluate and enhance water management strategies.

### Task 3A – Water, Energy, and Greenhouse Gases

Greenhouse gasses (GHGs) have been identified as direct contributors to global climate change, a condition that appears to be increasing in severity worldwide<sup>7</sup>. Greenhouse gasses include carbon dioxide as well as several other gasses that are commonly emitted by the combustion of fossil fuels. The GHGs assessed within the scope of the Plan Update, including their relative contribution to global climate change on a per-mass basis as compared to carbon dioxide (e.g., CO<sub>2</sub> equivalents), are shown in Table 1.

Energy use data calculated for each Alternative and the current GHG emission profile derived from PG&E<sup>8</sup> will be used to assess relative and absolute GHG emissions. GHG offsets will be computed for projects that generate renewable (e.g. hydropower) energy, or for management strategies that reduce existing energy use.

**Table 1 - CO<sub>2</sub> Equivalents**

<b>Greenhouse Gases</b>	<b>CO<sub>2</sub> Equivalents</b>
Carbon Dioxide (CO <sub>2</sub> )	1
Nitrous Oxide (N <sub>2</sub> O)	296
Methane (CH <sub>4</sub> )	23

The alternatives would be located in San Joaquin and rural Sacramento counties. Electricity within these areas is currently supplied by the Pacific Gas and Electric Company (PG&E). The overall GHG emissions profile for electricity supplied by PG&E indicates an emission rate of 524 pounds per megawatt-hour<sup>8</sup> (lb/MWh). The electricity supplied by PG&E is comprised of a combination of natural gas fired power plants, hydropower, a nuclear plant, biomass fired power plants, wind turbines, geothermal sources, and solar energy.<sup>8</sup>

<sup>7</sup> IPCC, 2007

<sup>8</sup> PG&E, 2009



Deliverables include methods for evaluating project GHG impacts/benefits; Inventory of current GHG emissions; Description of methods for evaluation of proposed regional projects GHG impacts and benefits.

### Task 3B – Adaptability to Climate Change

A review of the climate change vulnerability of the region and associated mitigation strategies will be undertaken for each project. It is also our understanding that DWR has a consultant who is developing guidance documents for this analysis. It is our understanding this guidance document will be available in Fall 2010, and will integrate the range of probable climate change scenarios from an array of leading global climate models. This range can then be applied to the watershed of interest to test the vulnerability or robustness of the water supply and flood management system.

The GBA will employ a climate change specialist as needed to recompile the hydrologies for the most likely range of scenarios. The GBA will use the MOCASIM model to assess the vulnerability to climate change for each Alternative and suggest ways to mitigate for this potential impact. As the DWR has not yet published its recommended approach, this Task must be flexible for potential changes.

MOCASIM model study tasks include preparation, compilation, calibration, execution, cross-checking and documentation. It is herein assumed that three climate change scenarios will be studied for each Alternative. There are four composite Alternatives plus a No Action Alternative. One additional Alternative is assumed to be developed as part of the IRWMP update process. There are thus (3x6=) 18 model studies budgeted in this estimate.

This review process will include input from members of the GBA, stakeholders, and the public. This review will provide a summary of the analyses as well as possible strategies to mitigate the effects of environmental change over time. The summary will also highlight the robustness of the water supply and ways to strengthen and protect it in the event of extreme environmental change.

The GBA proposes to evaluate impacts to water supply and management, public health and safety, and risks to infrastructure. Table 2 is excerpted from a list of general climate change vulnerabilities for the state. It has been condensed to reflect categories characteristic of the Region. This general qualitative look at climate change typical effects will give a start to the analysis as DWR is expected to refine the IRWMP climate change analysis standards shortly. The IRWMP will also have to build in flexibility and adaptive management elements to allow for unforeseen or yet-to-be quantified effects of climate change on the water management needs of the region.



**Table 2 - Potential Climate Change Vulnerabilities for the Eastern San Joaquin Region**

	Higher Temperatures	Earlier Snowmelt	Decreased Snowfall	More Rain/ Less Snow	More Extreme Flood Events	Longer, More Frequent Drought	Decrease in Freeze Events	Sea Level Rise	Increased Erosion	More Frequent and Intense Wildfires
Water Management	Less supply	Less supply	Decreased streamflows and imported supply; Poorer water quality	More floodplain inundation; Levee stress	Levee stress/failure; Inundation of lowlands	Less supply; More demand	Higher agricultural demands	Levee stress/failure; Saltwater intrusion	Levee stress/failure; Poor quality water	Less supply; Higher demands
Public Health and Safety	Increased mortality rates	Less supply	Less supply; Poorer water quality	Increase allergens	Increased prevalence and spread of disease; Increased mortality	Increased prevalence and spread of disease; Increased mortality	Increased pesticide use; Increased allergens	Population and agricultural displacement; Poor quality water	Population and agricultural displacement; Poor quality water	Less supply; Poor quality water; Displacement
Infrastructure	Increased energy demands	Reduced power supply	Reduced power supply	Increased structural damage	Increased structural damage	Increased energy demands	Increased energy demands	Structural damage; Larger levees required	Structural damage	Structural damage; Larger levees required

The GBA will document impacts quantitatively and define uncertainties where possible; adjust hydrologies to reflect most likely dry and wet scenarios based on expected DWR guidance document; describe vulnerability in terms of demand, supply groundwater, ecosystems, and other areas and assess potential impacts and consequences to region; relate objectives to vulnerabilities, evaluate if vulnerabilities and impacts provide basis for prioritizing objectives; evaluate Regional adaptation strategies; discuss and identify relative costs, impacts and benefits; develop Climate Change criteria for purposes of the project evaluations and ranking criteria; develop climate change strategy for IRWMP; develop approach to tracking and monitoring and factor into plan update process and adaptive management strategy.

Task 3C – Integration of Stormwater Management and Flood Management

Stormwater Management Programs have been traditionally set up to address water quality issues as required by Municipal Separate Storm Sewer System Permits (MS4) issued by Regional Water Quality Control Boards. The City of Stockton and portions of San Joaquin County are regulated as Phase I areas and the Cities of Lodi, Manteca, Lathrop, Ripon, Escalon, Tracy, and outlying portion of San Joaquin County are regulated as Phase II areas. In addition, the San Joaquin and Delta Water Quality Coalition, represented by the agricultural water districts of the GBA and the greater San Joaquin County, continue to monitor agricultural drains as part of the Central Valley Regional Water Quality Control Board Long-term Irrigated Lands Program. The Central Valley Regional Control Board, during the RAP, commented that the 2007 Eastern San Joaquin Region IRWMP lacked attention to surface water quality issues as it pertained to stormwater and agricultural runoff.

The GBA proposes to explore the nexus of stormwater management, the mitigation of hydromodification impacts to natural hydrologic processes, and groundwater management through Low Impact Development (LID) concepts. Historically, stormwater management has consisted of a network of impervious surfaces (rooftops, driveways, roads, etc.) connected to a storm drain system that was designed to quickly convey stormwater off the site. In a natural setting, the majority of rainfall is either infiltrated into the soil or is lost to evapotranspiration;



however, with urbanization, pervious surfaces (typically agricultural lands and open space) are converted into impervious cover and rainfall is converted into stormwater runoff. This leads to an increase in the volume and flow of runoff to water bodies. This increased stormwater runoff, if not managed correctly, may adversely impact local water bodies. To mitigate these impacts, conventional best management practices (BMPs) such as detention basins were implemented to temporarily detain stormwater runoff by releasing the flow over a period of time. However, detention basins have limited pollutant removal and groundwater recharge benefits.

LID is defined as, “... a stormwater management strategy concerned with maintaining or restoring natural hydrologic functions of a site to achieve natural resource protection objectives and fulfill environmental regulatory requirements. LID strategies employ a variety of natural and constructed features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground.” LID is a decentralized approach to stormwater management that works to mimic the natural hydrology of the site by retaining rainfall onsite. The idea is to reduce the peak volume and duration of flow through the use of site design and volume reduction measures. The benefits of reduced stormwater volume include reduced pollutant loading and increased groundwater recharge and evapotranspiration rates.

To improve pollutant removal and groundwater recharge benefits, the City of Stockton and San Joaquin County as Co-Permittees for the Phase I regulated portion of San Joaquin County, have recently adopted development standards that promote LID strategies.<sup>9</sup> The GBA proposes to explore the nexus of LID concepts throughout the Basin Management Area. In addition, the GBA proposes to work through the San Joaquin County Stormwater Quality Partnership<sup>10</sup> to promote LID concepts.

In addition, the flood management aspects of IRWM remain a hot button issue for local agencies. The three areas of concern for San Joaquin County as it relates to flood management are:

- 1) How does the community keep flood insurance affordable for San Joaquin County residents protected by levees?
- 2) How will the San Joaquin Community get to a 200-year level flood protection as required by Senate Bill 5 enacted in 2007?
- 3) What is the most effective way of integrating flood risk reduction and flood management with water supply reliability?

The GBA only minimally considered stormwater and flood water management in the 2007 IRWMP, but the analysis yielded only a few single-purpose (i.e. flood control only) projects that did not address the GBA’s Fundamental Objectives and were not well integrated into the flood

<sup>9</sup> The 2009 Stormwater Quality Control Criteria Plan can be downloaded at the San Joaquin County LID web page at <http://www.co.san-joaquin.ca.us/pubworks/STORM%20WATER/LID.htm>.

<sup>10</sup> The cities of Stockton, Lathrop, Ripon, Escalon, Tracy, Lodi, and Manteca, Stanislaus and San Joaquin Counties, and the Port of Stockton meet monthly as the San Joaquin Stormwater Quality Partnership to discuss Regional Pollution Prevention Program partnership opportunities and issues.



management system. This finding will be re-examined in light of work being performed by the San Joaquin County Flood Control and Water Conservation District, the San Joaquin Area Flood Control Agency<sup>11</sup> (SJAFCA), local reclamation districts, and other State and Federal Agencies.

Candidate projects for re-examination include:

- Gill Creek flood management project
- Central San Joaquin Water Conservation District intermodal flood detention ponds recharge project, and
- Farmington Groundwater Recharge Program

SJAFCA, DWR, and the U.S. Army Corps of Engineers are partnering on the federally authorized Lower San Joaquin River Feasibility Study. The objective of the study is to determine how approximately 400,000 residents in the urbanized areas of the San Joaquin County community along the lower San Joaquin River and its tributaries will achieve a 200-year level of flood protection. The Feasibility Study is estimated to cost \$10.7 million with a minimum local match of 50 percent.

In preliminary discussions, several ideas have come to light on how to best achieve the goal of 200-year flood protection with minimal impact to area surface water supplies, recreation, and fisheries and the need to build taller and wider levees in densely populated urban areas. These ideas include groundwater recharge of local area flood releases made in anticipation of wet season flood operations (Forecast Coordinated Operation) or similarly, evacuating additional flood space in New Hogan Reservoir by diverting to the proposed Duck Creek Reservoir component of the MORE WATER Project. The GBA proposes to utilize the Mokelumne and Calaveras Simulation Model (MOCASIM) and the Eastern San Joaquin DYNFLOW Integrated Groundwater/Surface Water Model (IGSM) to determine the operational feasibility and flexibility of these scenarios.

The GBA will also examine interregional flood management options. The most severe flooding events in the Region occur during high flow originating in the watersheds far upstream tributary to the San Joaquin River. The GBA will examine both structural (e.g. levee) and non-structural (e.g. early warning systems) to mitigate flood damages in the context of the IRWM Plan Update and the on-going flood studies.

The GBA proposes to conduct a focus group IRWMP Update presentation at a monthly meeting of the San Joaquin County Stormwater Quality Partnership and at a bi-weekly meeting of the San Joaquin County Flood Control and Water Conservation District Advisory Water Commission Flood Technical Advisory Committee (Flood TAC). The GBA will conduct a joint Flood/Stormwater Integration workshop to determine how flood/stormwater projects and programs

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<sup>11</sup> SJAFCA is a Joint Powers Authority comprised of the City of Stockton, San Joaquin County, and the San Joaquin County Flood Control and Water Conservation District.



share a nexus with projects in the GBA IRWMP. Projects identified that share that nexus may be added to the IRWMP Update project list. Additional technical memoranda and presentations to GBA Board and CC summarizing the findings are also planned.

### Task 3D – Integration of Land Use Planning

Since the adoption of the 2007 IRWMP, the GBA has also engaged in the development of the San Joaquin County General Plan Update<sup>12</sup> (County GP Update). The County GP Update began in 2008 and is expected to be complete in 2011. To date, GBA staff has engaged the County GP process as members on the Agriculture, Land Use/Housing/Economic Development, Services/Utilities/Safety, and Natural Resources/Delta Focus Groups. Through the Focus Groups, GBA staff has been able to elevate the following issues and opportunities:

- Identification and protection of critical groundwater recharge areas
- Identification and protection of Prime Farmland
- Water supply reliability and availability
- Major regional water projects and programs (2007 IRWMP Projects list)
- Low Impact Development (LID) concepts for new developments

In addition, GBA staff presented the 2007 IRWMP as the basis for the water supply and groundwater chapter of the San Joaquin County General Plan Background Report. On June 10, 2009, GBA staff presented to the GBA Board of Directors an update of the progress in interfacing with the County GP Update process and team. The GBA proposes that staff continue to provide input on the County General Plan Process by promoting the above issues and opportunities through continued involvement of staff in the Focus Groups, that GBA membership through the GBA Board and CC engage the County on issues and opportunities that are viewed as critical to the success of the development and implementation of the GBA IRWMP Update, and provide comment on the public release draft of the County General Plan Update Environmental Impact Report which is expected to be released in 2011.

The deliverables for this subtask include Technical Memoranda and presentations to GBA Board and Coordination Committee summarizing the participation of staff in the County GP Update, documentation of issues and opportunities to be forwarded to the County for consideration in the GP, preparation of correspondence for the submittal of comments on the County GP Public Review Draft EIR.

### Task 3E – Water-Related Needs of Disadvantaged Communities

The DAC outreach strategy outlined in Task 2E above describes how DAC outreach will be performed and the desired outcome of the DAC specific outreach effort. Task 3E differs in scope from Task 1E in that this subtask specifically targets the identification of projects directly impacting or benefiting DACs. In discussions at the GBA Coordinating Committee meetings, the following potential projects were identified:

<sup>12</sup> Documents developed as part of the County GP Update are located at [www.sjcgpu.com](http://www.sjcgpu.com).



- Focused outreach to DAC and disadvantaged households to increase participation in urban conservation programs.
- Gill Creek detention basins to prevent flooding of the Gill Creek area including a mobile home park near Acampo Road and Highway 99 and Houston School, also nearby, where wellhead protection issues have come up in previous local floods.
- The Town of Farmington has anecdotal evidence of leaking pipes in community distribution system.

Additional projects or needs that come out the DAC outreach process described in Task 2E will be added to the above potential project list. The GBA proposes to perform a reconnaissance of these identified projects, provide a discussion of potential costs, fatal flaws, project details, and/or implementation strategies for inclusion in the IRWMP Update; and communicate and coordinate with DAC representatives on the developments.

### Task 3F – Governance

The current GBA governance structure is a mutual interest-based Joint Powers Authority empowered to oversee planning activities. The GBA has been successful in developing a regional Groundwater Management Plan in 2004 and the IRWMP in 2007. The GBA has been primarily used as a consensus-based forum for the development of locally supported conjunctive use projects. As the GBA undertakes the IRWMP Update, there are several questions which will confront the GBA concerning the future of the GBA as the recognized Regional Water Management Group. As the GBA integrates additional water management strategies in to the IRWM Planning process:

- Is there a fair and balanced spread of stakeholders represented on the GBA Board of Directors?
- Does the GBA, as it exists, have the governance structure in place to fully benefit from increased levels of integration as urged by the IRWM Program?
- What revisions are necessary to the GBA Joint Exercise of Powers Agreement to address these governance issues?

GBA proposes to revisit the governance options that will allow the GBA to continue in its efforts into the future. The GBA proposes that an organizational consultant be retained to help develop and facilitate the development progression of the governance issue.

### Task 3 Deliverables

Deliverables for Task 3 include technical memoranda documenting the studies undertaken relating to greenhouse gas emissions climate change, LID integration, flood integration, summaries of the participation of staff in the County GP Update, documentation of issues and opportunities to be forwarded to the County for consideration in the GP, preparation of



correspondence for the submittal of comments on the County GP Public Review Draft EIR; reconnaissance of DAC water related needs, and governance options.

## Task 4 – Develop Advanced Planning

Several critical projects have been identified that have been unable to move forward due to insufficient funding for the development of feasibility level planning and environmental documentation. In this Task, the GBA proposes to bring three priority projects identified in the 2007 GBA IRWMP up to a feasibility level of design to provide a more accurate cost estimate and a preliminary level of environmental impact screening short of a complete design or environmental documentation effort.

### Task 4A – Advanced Planning on Priority ICU Program Projects

In this subtask, three projects of critical importance will be upgraded to a feasibility level of design. These projects are:

- North San Joaquin Water Conservation District (NSJWCD) distribution system upgrade
  - The NSJWCD distribution system is over 60 years old and in a state of disrepair such that most water deliveries can no longer be made through the system. The NSJWCD has supplied an average of only 3,000 acre-feet per year out of its 20,000 acre-foot entitlement, and is at risk of having the SWRCB rescind its water right if it cannot put this water to beneficial use.
- Regional multi-purpose recharge ponds
  - These centrally-located facilities would allow recharge of the regional aquifer system in one of the few remaining undeveloped contiguous areas most conducive to surface recharge. This facility, first identified through the 2007 IRWM planning process, was also studied as part of San Joaquin County-sponsored Freeport Element of the American River Use Strategy<sup>13</sup> and could be supplied from multiple water sources.
- Stockton East Water District (SEWD) water distribution projects
  - SEWD has been planning a large-scale distribution and recharge facility network to distribute and recharge wet-year supplies from the Calaveras River, Stanislaus River and Littlejohns Creek.

Task 4A1 – Describe land use suitability. The purpose of this Sub-task is to describe the existing baseline conditions and environmental setting, identify environmental constraints, prepare environmental constraints maps, and identify preliminary environmental impacts of project components and facilities. Special status species, wildlife habitat and wetlands will be identified and mapped to define constraints. The maps will allow for overlay of proposed facilities and alignments to determine preferred routes and areas to avoid or where mitigation

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<sup>13</sup> Currently in draft form with an expected acceptance date from the San Joaquin County Board of Supervisors in early 2011.



may be necessary. The information will subsequently be used to develop screening criteria and evaluate the project alternatives. The intent is to develop the description of existing conditions such that it can be easily applied and used during development of the any future environmental document and for scoping further analysis and studies needed to support environmental review. Existing resource management plans and policies will be identified and summarized and potential mitigation opportunities may be identified.

*Task 4A2 – Describe recharge suitability.* The purpose of this analysis is to define recharge areas by evaluating physical characteristics (e.g., soil type, depth to water, hydrogeology) and anthropogenic (human-influenced) conditions that effect where in-lieu operation may be conducted, or direct recharge or extraction facilities are to be located. Site condition and access to appropriate lands are key factors in the success of recharge operations through in lieu, recharge ponds or surface spreading. Understanding of recharge areas and mechanisms will be conducted to identify where recharge is occurring currently, where it has occurred in the past, and where project components may be located in the future.

A large body of data and studies are available from prior evaluations of conjunctive use opportunities. The results of all the prior feasibility studies will be reviewed. The GBA proposes to pre-qualify lands suitable for recharge at a regional scale, based on the land use and the physical properties of soil and subsurface conditions. It is also expected that the analysis provided by this task result in a map to be used to meet the requirements of AB 2304 which is currently enrolled and before the Governor for Signature. In addition, the map may also be shared with the San Joaquin County General Plan Update Team for inclusion in the County General Plan Update Preferred Alternative.

*Task 4A3 – Develop facility descriptions and concept-level facilities layout and mapping.* For each of the projects, the GBA proposes to prepare a concept level design of diversion, conveyance, and recharge facilities. The concept level design will include adequate detail to prepare a reliable estimate of costs and environmental impacts. This will include mapping of turnouts and conveyance routes, selection of pipeline materials and diameters, pumping and head breaking requirements, metering, enumeration of crossings of transportation, watercourse, and major utility lines, land requirement, and promising locations of in-lieu and direct recharge sites.

*Task 4A4 – Describe facility operation and maintenance.* For this Sub-task, the GBA proposes to describe the year type and flow thresholds used to determine water availability, how availability of reservoir and recharge facility capacity would be determined, and how responsibilities and coordination for operation of the various facilities would be determined. Descriptions of potential groundwater banking operations will be included, if such operations are included in the project descriptions.

*Task 4A5 – Provide concept level estimates of capital, operating, maintenance and power costs.* Based on the facility layout, water availability, and operations descriptions developed in



the above Tasks, the GBA proposes to produce estimates of all identifiable cost factors, including capital, operating, maintenance, power, and environmental mitigation costs. Potential revenues from groundwater banking operations will be included, if such operations are included in the project descriptions.

*Task 4A6 – Develop qualitative comparisons of information addressing staging of facilities construction and implementation requirements including permits, land purchase, rights-of-way, etc.* For this subtask, the GBA proposes to group common elements and their associated implementation requirements, and perform a critical path analysis to determine the likely on-line data, to determine whether early implementation of any elements are possible, and to guide development and acquisition of the water right permit.

*Task 4A7 – Evaluate the potential to integrate proposed Project facilities with other ongoing projects and diversions.* For this subtask, the GBA proposes to evaluate the compatibility, conflicts, and synergies of Project facilities and other existing, planned, or contemplated water supply facilities. This will include an assessment of the:

- Water supply needs of existing and planned water treatment facilities of Stockton, Lodi, and Stockton East Water District
- Expected water supplies from the MORE Water Project, Stockton Delta Water Supply Project, the Freeport Element, and other sources
- Irrigation system capacities, in-lieu storage projects, and north County recharge pond capacities
- Additional diversion to the Proposed Duck Creek Reservoir from the Calaveras River, and
- Potential for an inter-regional water banking arrangement with the Mokelumne/ Amador/ Calaveras Region (see Task 4 and the Inter-Regional Planning Grant proposal being submitted jointly by the Upper Mokelumne River Watershed Authority and the GBA).

This analysis will be performed using available information on the timing, quantities, and implementation dates. Water supply opportunities will be assessed on a monthly or seasonal basis, as data warrants.

#### Task 4B – Preliminary Environmental Analysis.

The 2007 IRMWP was the subject of a full Program Environmental Impact Report (Program EIR). The Program EIR is scheduled for adoption in Winter 2010. This Program EIR will not be revised in the current effort, but its finding and proposed mitigations will be reviewed and mitigations adopted into the Alternatives description as appropriate. Additional environmental analysis will be conducted at a project level before implementing any significant construction activity.



*Task 4B1 – Surrogate Environmental Analysis.* The evaluation of projects conducted under Subtask 4A will synthesize the results of the engineering studies, constraints analysis and preliminary surveys available. The requirements of NEPA, CEQA, Clean Water Act 404, National Historic Preservation Act Section 106, and state and federal endangered species acts can be anticipated and will be factored into the development of screening criteria and the design of the process. This will reduce the cost and allow for production of the information in formats that support the specific permits or environmental documentation requirements.

The initial environmental screening will include database-level assessment of specific land uses, and biological and cultural resources coupled with general field reconnaissance of potential facility sites. The GBA will develop environmental constraints and opportunities information early in the process, prior to alternatives design to minimize the time and effort spent on alternatives that may not be considered appropriate if sensitive species, wetlands, known archaeological sites or other highly regulated resources are present and cannot be mitigated in a cost-effective way. These initial analyses will then be utilized as a basis for the full environmental analysis during the implementation phase.

*Task 4B2 - Environmental Justice Review.* This subtask will include completion of an environmental justice project review. Multiple projects will affect stakeholders throughout the region and an environmental justice review will seek to identify and prevent disproportionate impacts to underrepresented or disadvantaged communities.

#### Task 4 Deliverables

Technical memoranda contain concept-level layout of alternatives in sufficient detail to produce a reliable cost estimate and environmental assessment; Planning-level cost estimates for each project; Planning-level surrogate environmental analysis.

### ***Task 5 – Develop Inter-Regional Joint Project***

The M/A/C Region and the GBA are preparing a joint Inter-regional Planning Grant Application to further the process of developing an Inter-Regional Conjunctive Use Project. The effort (listed as Task 5 as a place holder in the GBA’s proposed Work Plan will culminate into a joint chapter shared in both the proposed M/A/C IRWMP Update and the proposed GBA IRWMP Update.

### ***Task 6 – Compile & Adopt IRWMP Update***

#### Task 6A – Administrative Draft IRWMP Update

The Administrative Draft IRWMP Update is an opportunity for GBA member agencies and staff to review, comment, and edit the IRWMP Update prior to the Public Review Draft release. This task consists of the preparation, printing and distribution of the Administrative Draft IRWMP Update. An extensive block of time is afforded in this task to pull all of the contributing



Technical Memoranda, documentation, data, graphics, tables, and figures compiled over the course of the IRWMP Update.

#### Task 6B – Public Review Draft

The GBA proposes to offer the public a 30-day review period of the Draft IRWMP Update. Two public meetings will be held to solicit public comments and promote the IRWMP Update. GBA staff will compile public comments and incorporate them into an appendix to the IRWMP prior to the public hearing to adopt the IRWMP Update by the GBA Board of Directors. This task consists of IRWMP Update edits, preparation, printing and distribution of the Public Review Draft IRWMP Update, two public meetings, and the compilation of public comments.

#### Task 6C – Adoption of IRWMP Update

The GBA will hold a Public Hearing on whether to adopt a Resolution of Intent to Prepare an Integrated Regional Water Management Plan pursuant to Water Code §10530, et seq. and formally notice the anticipated adoption of the Final GBA IRWMP Update in accordance with the publication requirements of California Government Code 6066. This task consists of the preparation, printing and distribution of the Final GBA IRWMP Update, and development of GBA notices and resolutions, and preparation for the public hearing.

#### Task 6 Deliverables

Task 6 deliverables include the Administrative and Public Review Draft GBA IRWMP Update documents, notices and resolutions, and an adopted Final GBA IRWMP Update.

### **IRWM Program Preferences**

The proposed GBA IRWMP Update Work Plan culminates into a functional IRWMP Update that not only will keep the GBA eligible for grants, but also adds value to the GBA's on-going efforts to maintain a reliable and sustainable water supply for the social, environmental, and economic viability of the community. The proposed IRWMP Update also addresses several key IRWM Program Priorities and Statewide priorities. The following section describes how the 2007 GBA IRWMP and the proposed GBA IRWMP Update address these preferences and priorities.

#### ***Include regional projects or programs.***

- The Eastern San Joaquin Integrated Conjunctive Use Program is described in Chapter 7 of the 2007 IRWMP. The ICU Program includes 4 Program Alternatives which combine and integrate a menu of inter-regional and intra-regional projects that as a whole meet the purpose and need of the ICU Program. A map of the ICU Program is found in the 2007 IRWMP as Figure 7-2.
- Regional projects will be added or further defined in the proposed IRWMP Update through Tasks 2B, 2C, and 4A.



- The joint efforts of the GBA and the Mokelumne/Amador/Calaveras Regional Water Management Groups to further project details of the Inter-regional Conjunctive Use Concept are described in Chapter 8: Inter-regional Integration.
- The M/A/C Region and the GBA are preparing a joint Inter-regional Planning Grant Application to further the process of developing an Inter-Regional Conjunctive Use Project. The effort (listed as Task 5 as a place holder in the GBA's proposed Work Plan will culminate into a joint chapter shared in both the proposed M/A/C IRWMP Update and the proposed GBA IRWMP Update.

***Effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board (RWQCB) region or subdivision; or other region or sub-region specifically identified by DWR.***

- The GBA presented in the 2007 IRWMP a framework for describing the intra-regional and inter-regional aspects of integrating water management programs and projects. The Eastern San Joaquin and Consumnes Groundwater Sub-basins are examples of how geographical boundaries have little relation to political or jurisdictional boundaries, yet the GBA was able to develop an acceptable method for defining the Eastern San Joaquin Region. A map of the GBA Regional Management Area and area groundwater basins are found in the 2007 IRWMP as Figures 2-5 and 2-3 respectively.
- Task 3C of the proposed GBA IRWMP Update Work Plan addresses the lack of water integration that was suggested by the Central Valley Regional Water Quality Control Board during the RAP process. Mitigating stormwater runoff impacts with the implementation of Low Impact Development standards is a major portion of Task 3C.

***Effectively resolve significant water-related conflicts within or between regions.***

- A description of the GBA's consensus based efforts is described in Chapter 1.2 of the 2007 IRWMP.
- The joint efforts of the GBA and the Mokelumne/Amador/Calaveras Regional Water Management Groups to further project details of the Inter-regional Conjunctive Use Concept are described in Chapter 8: Inter-regional Integration.
- The M/A/C Region and the GBA are preparing a joint Inter-regional Planning Grant Application to further the process of developing an Inter-Regional Conjunctive Use Project. The effort (listed as Task 5 as a place holder in the GBA's proposed Work Plan will culminate into a joint chapter shared in both the proposed M/A/C IRWMP Update and the proposed GBA IRWMP Update.



***Contribute to attainment of one or more of the objectives of the CALFED Bay-Delta Program (Water Quality, Levees, Water Supply, and Ecosystem Restoration).***

- The GBA produced a quantitative cumulative impacts analysis of the ICU Program on water quality (X2 position) and Delta Outflow in the Eastern San Joaquin ICU Program Draft EIR released to the public in September 2009.
- Task 3C of the proposed GBA IRWMP Update Work Plan addresses the lack of water integration that was suggested by the Central Valley Regional Water Quality Control Board during the RAP process. Mitigating stormwater runoff impacts with the implementation of Low Impact Development standards is a major portion of Task 3C.
- Task 3C is also an opportunity to further the integration of Flood Control and Water Resources Management.
- The fundamental objective of the GBA is to provide a reliable sustainable water supply for Eastern San Joaquin County.

***Address critical water supply or water quality needs of disadvantaged communities within the region.***

- The proposed DAC Outreach Plan is described in Task 2E.
- The proposed task of identifying, developing, and documenting of specific water related needs of DACs is described in Task 3E.

***Effectively integrate water management with land use planning.***

- The proposed task of further integrating land use planning into the proposed IRWMP Update is described in Task 3D.

***For eligible SWFM funding, projects which: a) are not receiving State funding for flood control or flood prevention projects pursuant to PRC §5096.824 or §75034 or b) provide multiple benefits, including, but not limited to, water quality improvements, ecosystem benefits, reduction of instream erosion and sedimentation, and groundwater recharge.***

- The Gill Creek and Woodbridge Road Flood Control Improvement Project (description located on page 7-32 of the 2007 IRWMP) is an excellent example of a project that has the potential to reduce flood damage by diverting peak flows to detention basins and provide a groundwater recharge benefit. In addition, the Gill Creek detention basins would help prevent flooding of the Gill Creek area near a mobile home park and Houston Elementary School, where wellhead protection issues have come up in previous local floods. The mobile home park and school are located in a defined DAC census tract. An additional level of integration is the ability for the North San Joaquin Water Conservation



District to extend its North System Irrigation System from its diversion on the Lower Mokelumne River to the Gill Creek Detention Basins for additional recharge.

- The GBA proposes to further the study of Gill Creek Detention Basins in the proposed IRWMP Update Work Plan Tasks 3C, 3E, 4A, and 4B.

*Address Statewide priorities (Table 1 establishes the specific Statewide Priorities for the IRWM Grant Program).*

#### Drought Preparedness

- Chapter 6: Basin Operations Criteria and Management Framework of the 2007 GBA IRWMP describes how quantitative groundwater level Basin Management Objectives were developed. The GBA found consensus on measured Fall 1992 groundwater levels as the lowest acceptable groundwater level and the 1987 Spring level as a target level to ensure that groundwater levels would be sufficient for the severest drought on record for the Eastern San Joaquin Region, 1988-1992. The 4 ICU Program Alternatives were developed to meet the objective of operating basin groundwater levels between the Fall 1992 and Spring 1987 slot.

#### Use and Reuse Water More Efficiently

- The Eastern San Joaquin Integrated Conjunctive Use Program is described in Chapter 7 of the 2007 IRWMP. The ICU Program includes four Program Alternatives which combine and integrate a menu of inter-regional and intra-regional projects that as a whole meet the purpose and need of the ICU Program. Recycling and Conservation Projects are described on pages 7-13 through 7-15 in the 2007 IRWMP.

#### Climate Change Response Actions (refer to Appendix C, for further guidance)

- The proposed tasks of quantifying how Climate Change scenarios may affect the Eastern San Joaquin Region are described in Tasks 3A and 3B.

#### Expand Environmental Stewardship

- Chapter 3.4 of the 2007 IRMWP describes the San Joaquin Multi-species Habitat Conservation and Open Space Plan, the Calaveras River Habitat Conservation Plan, and the Lower Mokelumne River Stewardship Plan. The GBA will continue to promote integration with these plans.

#### Practice Integrated Flood Management

- Task 3C is proposed as an opportunity to further the integration of Flood Control and Water Resources Management in the IRWM Update. The major goal of Task 3C is to quantify the impacts and benefits of integration opportunities explored in the IRWMP Update.



- The Gill Creek and Woodbridge Road Flood Control Improvement Project (description located on page 7-32 of the 2007 IRWMP) is an excellent example of a project that has the potential to reduce flood damage by diverting peak flows to detention basins and provide a groundwater recharge benefit. In addition, the Gill Creek detention basins would help prevent flooding of the Gill Creek area near a mobile home park and Houston Elementary School, where wellhead protection issues have come up in previous local floods. The mobile home park and school are located in a defined DAC census tract. An additional level of integration is the ability for the North San Joaquin Water Conservation District to extend its North System Irrigation System from its diversion on the Lower Mokelumne River to the Gill Creek Detention Basins for additional recharge.
- The proposed tasks of quantifying how Climate Change scenarios may affect the Eastern San Joaquin Region and increase the prospect of flooding are described in Tasks 3A and 3B.

#### Protect Surface Water and Groundwater Quality

- As a result of continued groundwater overdraft of the Eastern San Joaquin Sub-basin, saline groundwater, unusable for municipal or agricultural uses, is migrating east generally along the Interstate 5 corridor in the Stockton and Lathrop area. The USGS, DWR, and the GBA have completed a 5-year, \$2.7 million study, of the areal and vertical distribution of highly saline waters. The findings of the study are described in Chapter 4.5.6 of the 2007 IRMWP.
- The four ICU Program Alternatives analyzed in the 2007 IRWMP and the ICU Program Draft EIR were developed to meet the objective of protecting the underlying basin from saline groundwater intrusion.
- Task 3C of the proposed GBA IRWMP Update Work Plan addresses the lack of water integration that was suggested by the Central Valley Regional Water Quality Control Board during the RAP process. Mitigating stormwater runoff impacts with the implementation of Low Impact Development standards is a major portion of Task 3C.
- The GBA produced a quantitative cumulative impacts analysis of the ICU Program on water quality (X2 position) and Delta Outflow in the Eastern San Joaquin ICU Program Draft EIR released to the public in September 2009.

#### Improve Tribal Water and Natural Resources

- Government Code<sup>14</sup> requires local governments to consult with California Native American Tribes identified by the Native American Heritage Commission (NAHC) for the purpose of protecting, and/or mitigating impacts to cultural places. The GBA has

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<sup>14</sup> PRC §75102



contacted NAHC and have received a list of tribal representatives for the region. There are no tribal reservations or facilities within the Eastern San Joaquin Region.

#### Ensure Equitable Distribution of Benefits

- The Objectives of the GBA are grounded in the Community Values that were listed in the development of the 2004 Groundwater Management Plan and carried forward to the 2007 IRWMP. Equitable distribution of costs and benefits is a major value for the GBA which is also to be carried forward into the IRWMP Update. The GBA objectives and values are framed and described in Chapter 5 of the 2007 IRWMP.

