Section 5 Management Goals and Impediments

During the period of September 2010 through November 2010, the SJBA TAC met four times to develop the scope of the SJBGFMP. These meetings were held at the SMWD on September 21st, October 5th, November 2nd, and November 16th. As part of this SJBGFMP scoping process, issues, needs, and interests were solicited from SJBA member agencies. These "issues, needs, and interests" are summarized in a tabular form in Tables 5-1 through 5-7. Each table refers to a class of issues, needs, and interests, including:

- safe yield
- native and imported water recharge
- quality and quantity
- reclaimed water
- conjunctive-use storage
- costs
- human resources and administration

Attribution for the source of each issue, need, and interest is listed in these tables. In some cases, a specific issue (need and interest) may show up in more than one class. These issues, needs, and interests were used to focus problem identification, SJBGFMP goals, and the resulting SJBGFMP update.

The goal setting process involved the proposal of an initial set of goals, followed by group and individual discussions and group editing of the goals at those meetings. The TAC member's also articulated impediments to achieving the goals and the action items required to remove impediments. At the November 16, 2010 meeting, the TAC member's achieved consensus on goals, impediments to those goals, and the action items required to remove the impediments. The goals of the SJBGFMP are listed below.

- Goal No. 1 – Enhance Basin Water Supplies. In addition to local groundwater, this goal applies to all sources of water available for the enhancement of the San Juan Basin (Basin). The intent is to maximize the use of all available water in the Basin. This goal will be accomplished by increasing the recharge of all available waters, including storm water discharge, dry-weather discharge, and recycled water.

- Goal No. 2 – Protect and Enhance Water Quality. The intent of this goal is to improve surface and groundwater quality to ensure the maximum use and reuse of available supplies and to minimize the cost of groundwater treatment. This goal will be accomplished by implementing activities that capture and treat contaminated groundwater for direct high-priority beneficial uses, implementing the recharge of storm water discharge, and encouraging better management of waste discharges that impact groundwater.

- Goal No. 3 – Maximize the Use of Unused Storage Space. The intent of this goal is to maximize the use of the Basin's storage capacity to improve water supply availability. This goal will be accomplished by determining the temporal and spatial availability of unused storage space in the Basin and subsequently determining how best to use that space to increase operational flexibility and water supply reliability.

- Goal No. 4 – Satisfy State Requirements for a Groundwater Management Program. The intent of this goal is to integrate the SJBGFMP into the South Orange County regional water management plan and to improve the opportunity of obtaining outside funding for SJBGFMP implementation. This goal will be accomplished by ensuring that the SJBGFMP contains the minimum elements required for a groundwater management plan and by inclusion of the SJBGFMP in the County's Integrated Regional Water Management Plan.

- Goal No. 5 – Establish Equitable Share of the Funding, Benefits, and Costs of the SJBGFMP. The intent of this goal is to align the benefits of the SJBGFMP with individual SJBA member agencies and SJBGFMP implementation costs. This goal will be accomplished by clearly articulating the benefits of the SJBGFMP to each SJBA member agency and subsequently allocating the funding and costs in an equitable manner.

Table 5-8 lists these goals, impediments to the goals, and the action items required to remove the impediments. Some of the impediments listed in Table 5-8 were developed after the TAC completed its lists goals and impediments; these additional items were identified during the technical work documented in Sections 3 and 4.

The next section of this report expands on the action items listed in Table 5-8 specifically in the context of *Section 2 Planning Area and its Resources, Section 3 Existing Water Resources, and Section 4 Historical and Projected Water Demands*, and describes management strategies that can be employed to remove impediments to the SJBGFMP goals.

Table 5-1
Safe Yield Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Ability to continue to divert foreign developed water for irrigation purposes			●					
Increase the District's reliability	●	●	●	●				
Identify project(s) to obtain water from SJBA			●					
Future level of participation in SJBA			●					
Maximize interconnections between agencies			●					
Identify the safe yield of the basin			●					
Identify and propose mitigation for impacts from proposed ocean desalination			●					
Confirm the modeling efforts are developing safe yields			●					
Review and recommend any proposed changes to the monitoring efforts			●					
Develop a uniform reporting methodology for monitoring			●					
Coordinate water harvesting with private entities			●					
Identify short and long term goals for the basin			●					
Flexible supply/Transfer/Over-Production Methodology	●							
Increase Safe Yield Based on Past Engineering Studies	●							
Dedicate Increases in Safe Yield to Agencies for Specific Basin Management Projects	●							
Need to continue to rely on stable safe yield	●							
Monitor fluctuations in basin and changes in production patterns to ID basin issues	●							
explore impacts to safe yield from basin development	●							
allow parties to use basin in their best interest and mitigate impacts	●							
Determine and assess storage losses in the basin	●							
Increase safe yield by installing wells	●							
coordinate/reduce/relocate production to reduce subsidence	●							
Evaluate impacts of desalter operations on safe yield	●							
Support sole and/or cooperative efforts to develop a	●							
Vet the GSSI groundwater model		●						
Verify impacts of Desalination project and develop mitigation measures		●						
Confirm basin safe yield		●						
Define management objectives to maintain basin safe yield		●						
Identify project(s) to optimize water from SJBA				●				
That the Basin Plan provides safe yields for current and future needs				●				
Identify the safe yield of the basin without projects versus with projects				●				

Table 5-2
Native and Imported Water Recharge Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Support sole and/or cooperative efforts to develop additional economically feasible recharge facilities for both native and imported water	•		•					
Develop program to increase recharge of native runoff and create a mechanism to pledge the value of the increase in safe yield from these "new water" sources to help pay for the construction of these facilities	•		•					
Recharge high quality runoff and reclaimed water as hydrologically high as possible in the basin	•		•					
Determine availability of imported water for recharge		•						
Ability to utilize recycled water for recharge			•	•				
Ability to utilize stormwater for recharge			•	•				
Identify potential projects for economical recharge			•	•				

Table 5-3
Quality and Quantity Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Develop sellable and/or exportable water insurance rights to replenish overproduction during drought and/or encourage basin clean-up	•							
Identify and regulate sources of contamination	•							
Develop "credit type" program to encourage development and implementation of water quality improving and conservation programs	•							
Assess the impacts of groundwater production and recharge on water quality of down gradient producers	•							
Incorporate existing remediation projects in basin water quality management program	•							
Increase conservation and develop new sources of water	•							
Manage basin to maintain/improve water quality of water supply sources to meet discharge standards	•							
Re-examine basin water quality objectives and establish naturally-occurring limits	•							
Produce maps showing problem areas and projected problem areas	•							
Identify projects to develop locate water supply source		•						
Increase the District's reliability through ground water supply				•				
Identify and propose mitigation for impacts from proposed ocean desalination				•				
Identify sources of contaminants				•				
Comprehensive groundwater quality monitoring plan				•				
Identify components required to develop and implement a Salt and Nutrient Plan				•				
Determine impacts of naturally occurring minerals on Salt and Nutrient Plan				•				
Determine impacts of naturally occurring minerals on Salt and Nutrient Plan			•					
Identify sources of contaminants			•					
Identify components required to develop and implement a Salt and Nutrient Plan			•					
Modify Basin Plan as appropriate			•	•				
Support economical programs that mitigate water quality issues	•							

Table 5-4
Recycled Water Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Develop reuse and recharge projects to maximize use	•							
Establish agreement with RWQCB on mitigation credits for pumping in bottom and recharge in top	•							
Modify basin water quality objectives to increase levels of water recycling	•							
Coordinate basin water quality plans to permit increased levels of recycling	•							
Use reclaimed water to flush lower basin								
Confirm availability of recycled water for recharge		•						
Determine if recycled water is best used for recharge		•						
Identify recycled water recharge opportunities		•						
Coordinated review and impact of the Salt and Nutrient Plans		•						
Coordinate recycled water recharge with regulatory agencies		•						
Determine water quality impacts from MS4 permits and City enforcement		•						
Identify regional availability of recycled water				•				
Ability to utilize recycled water for recharge				•				
Ability to continue to utilize recycled water			•					
Identify regional availability of recycled water			•					
Maximize the use of reclaimed water	•							
Recharge high quality runoff and reclaimed water as hydrologically high as possible in the basin	•							

Table 5-5
Conjunctive Use Storage Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Develop ability to market basin losses	•							
Provide transfer mechanisms between pools to ensure beneficial use of water	•							
Determine and assess storage losses	•							
Develop programs to construct facilities and deliver water between agencies	•			•				
Develop pumping regimes to optimize basin production				•				
Analyze benefit of water harvesting with private entities, agencies or the SJBA				•				
Coordinate facilities with the Orange County Southern Sub region Habitat Conservation Plan				•				
Characterize unused storage space within the basin		•						

Table 5-6
Cost Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Seek financial aid to meet management goals, including grants and loans	•	•	•	•				
Develop five year capital improvement program, identify projects out 20 years			•	•				
Identify realistic and economically feasible long-term goals	•							
Develop incentives to encourage basin management objectives	•							
Develop equity and the perception of equity in the operation of the basin	•							
Estimate costs and benefits for water supply and recharge projects (recycled, storm and imported)		•						

Table 5-7
Human Resources and Administration Issues, Needs and Wants

	San Juan Basin Authority				Other Interested Parties			
	SJC	MNWD	SMWD	SCWD	MWDOC	TCWD	RMV	SJHGC
Develop and maintain centralized database for the San Juan Basin	•	•	•	•				
Develop comprehensive groundwater and surface water monitoring program for basin management	•			•				
Prepare regular "State of the Basin" reports with recommendations for monitoring plan modifications	•			•				
Develop rules intended to prevent agency impacts and avoid litigious situations	•							
Coordinate efforts with other appropriate entities (SOCWA, MWDOC)		•						
Staffing requirements for alternatives of governance				•				
Accounting for cyclic and local losses				•				
Clearly define water rights				•				
Verify to what extent previous hydraulic models are still valid				•				
Utilization of “Paper Swaps”				•				
Identify short and long term goals for the basin				•				
Authority proactive in legislation and regulations				•				
Coordinate facilities with the Orange County Southern Sub region Habitat Conservation Plan			•					

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
Goal 1 -- Enhance Basin Water Supplies		
1 Regulatory concerns regarding the diversion and use of storm water discharge and dry-weather discharge.		
1a Water quality	Characterize by water type the magnitude, temporal occurrence and ranges of diversion at locations of interest. Determine locations for diversion, storage and use. Describe conceptual diversion locations, storage, use types, use areas, new recharge to the basin, and changes in discharge after diversion. Characterize water quality and the issues from naturally occurring contamination anthropogenic impacts. Determine the changes in water quality that occur in groundwater through soil aquifer treatment and surface water after diversion.	Collectively these actions will define the resource, storage and use schemes for conceptual projects, and characterize the expected quantity and quality impacts to surface and groundwater.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
1b Regulatory uncertainty as to how the diversions of dry-weather discharge and recycled water reuse will be regulated. This leads to confusion as to how compliance with the MS4 permit can be achieved and the facilities and strategies to obtain and comply with permits	Develop a regulatory compliance strategy for the use of all waters available to the SJBA members.	This action will create certainty in how to comply with the Basin Plan and DPH requirements
1c Impacts on habitat and species	Define and characterize the existing riparian habitat, the species dependent on the habitat and the relationship of groundwater and surface water discharge to the habitat. Characterize by water type the magnitude, temporal occurrence and ranges of diversion at locations of interest. Determine locations for diversion, storage and use. Describe conceptual diversion locations, storage, use types use areas, new recharge to the basin, changes in discharge after diversion consistent with minimum requirements for habitat maintenance.	Collectively these actions will define the resource, storage and use schemes for conceptual projects, and characterize the expected impacts to riparian habitat and dependent species. (These action items are almost identical to the action items for impediment 1a.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
1d There is uncertainty as to the right to divert native runoff, and to use or claim credit for the new diverted water.	Characterize by water type the magnitude, temporal occurrence and ranges of diversion at locations of interest. Determine locations for diversion, storage and use. Describe conceptual diversion locations, diversions for beneficial use for each party, and changes in downstream discharge and recharge.	These actions will create certainty regarding the impacts of diversions of native runoff, the impacts of these diversions on downstream water users and allow the SJBA members to develop agreements related to the equitable beneficial use of these diversions.
2 High cost of developing and operating facilities to divert, store, recharge and use storm water and dry-weather discharge.	Develop facility plan concepts and cost to show the cost of developing new reliable yield.	This action will provide information to the SJBA member agencies that can be used to make decisions regarding the feasibility of creating new yield
3 The safe yield of the groundwater basin is uncertain and varies based on recharge and production schemes.	Develop a definition for safe yield consistent with the basin recharge hydrology, storage capabilities and range of production plans. Develop safe yield estimates for various recharge, storage management and groundwater production alternatives.	These actions will result in estimates of safe yield for various expected groundwater management plans that can be used to identify unused safe yield for exploitation, groundwater storage opportunities for improving water supply reliability, and the associated facilities and operational requirements.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
4 High cost of developing and operating groundwater well fields and conveyance facilities for some SJBA members.	Develop facility plan concepts and cost to show the cost of developing new reliable yield.	This action will provide information to the SJBA member agencies that can be used to make decisions regarding the feasibility of creating new yield
5 Constraints on recycled water reuse		
5a Uncertainty in the results of the forthcoming salt and nutrient management programs. 5b Regulatory perception/constraint that the use of recycled water in the SJB will degrade surface and groundwater.	Develop maximum benefit water quality objectives based on EO 68-16, WC 13241 and other criteria that will maximize the use of all available waters in the SJB and protect the beneficial use of waters in the SJB.	This action will maximize the use of recycled water in the SJB and will include a series of commitments by SJBA and the SJBA member agencies to guarantee maximum benefit to the State.
5c There is uncertainty as to the optimum use of recycled water in the SJBA service area -- what is the best combination of reuse among direct use and groundwater recharge?	Review the existing recycled water reuse strategies and water management strategies and determine the potential projects and need for indirect potable reuse of recycled water and the tradeoffs of direct use versus indirect potable reuse.	This action will produce a list of indirect potable reuse projects and their potential benefits and costs for comparison with planned direct reuse projects.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
6 Existing production patterns are not balanced with recharge and result in reduced safe yield.	Develop and implement a comprehensive groundwater level and quality monitoring program. Store data in a relational database for real-time use by all SJBA members. Develop and calibrate a groundwater flow model to evaluate how the groundwater system works and how to maximize the yield and the use of unused storage space for supplemental water storage.	These actions will provide information that can be used to calibrate groundwater models and subsequently study the balance of recharge and discharge and maximize safe yield.
7 There is a possibility that groundwater production by overliers could reduce the amount of groundwater available for the SJBA members.	Estimate production by existing overliers and future groundwater production by existing and other overliers, Develop plans to identify and serve alternative water supplies to existing and future overliers or to retire their demands.	These actions will provide certainty to the SJBA members as to their access to the safe yield of the SJB.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
Goal 2 -- Protect and Enhance Water Quality		
1 Existing water quality problems		
1a The sources and extent of water quality degradation are not well characterized in the SJB.	Develop and implement a groundwater quality assessment program consisting of: an assessment of historical groundwater quality data, comprehensive monitoring of all wells in the basin, analysis of new and historical water quality data and the implementation of a long-term focused water quality monitoring program. Monitoring will based on existing monitoring programs supplemented by the new monitoring required to characterize important water quality issues.	These actions will result in the most complete understanding of the existing water quality conditions in the basin and provide the monitoring for continuing assessment of water quality conditions. The actions are designed to leverage existing data sources and to limit new monitoring to fill in important gaps and to characterize all constituents of concern. This water quality characterization will also be required to some extent to meet the requirements of maximum benefit based water quality objectives.
1b There are natural occurring sources of mineral degradation.	Characterize the contribution of naturally occurring minerals as to location and hydrologic conditions that exacerbate this degradation and develop tools to reduce the loading of naturally occurring minerals and to maximize the beneficial use of these degraded waters.	

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
2 There is lack of coordinated response to water quality threats. The RWQCB does not have adequate resources to address water quality issues in the SJB in a timely manner.	Coordinate with regulatory agencies to share monitoring and other information to detect and define water quality problems. Take coordinated action regarding SJB priorities of mutual interest.	This action will result in more efficient use of SJBA, SJBA member agencies, and regulatory resources.
4 Poor ambient groundwater quality limits the direct use of groundwater and can lead to loss of basin yield.	Expand groundwater treatment capacity to recover all groundwater in the basin for beneficial use; no losses to the ocean.	This action will contribute to maximizing the basin safe yield.
5 The lack of storm water recharge facilities limits the amount of high quality storm water recharge in the SJB	Develop and implement a comprehensive storm water recharge plan.	This action will result in a list of recharge projects that when implemented will maintain/increase basin yield, and improve surface water and groundwater quality.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
Goal 3 -- Maximize the use of unused storage space		
1 The unused storage available for storage of new storm water recharge and supplemental water is undefined. The unused storage available for these waters is a function of groundwater management and there is no formal groundwater management program that maximizes yield and the storage of supplemental water.	Conduct an investigation of unused storage to determine the range of operating storage for supplemental water based on long-term historical hydrology, groundwater production and supplemental recharge strategies.	This action will result in a series of groundwater production and supplemental water storage alternatives that will maximize safe yield and improve the reliability of supplemental water supplies
2 Existing production patterns are not balanced with recharge and result in reduced safe yield.	Develop and implement a comprehensive groundwater level and quality monitoring program. Store data in a relational database for real-time use by all SJBA Develop and calibrate a groundwater flow model to evaluate how the groundwater system works and how to maximize the yield and the use of unused storage space for supplemental water storage.	These actions will provide information that can be used to calibrate groundwater models and subsequently study the balance of recharge and discharge, maximize safe yield and optimize the use of unused storage.

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
3 Equitably sharing the unused storage capacity	Develop an equitable formula for sharing in the benefits of storage of native and supplemental waters.	This action will allocate storage to participating SJBA members and provide certainty and predictability to these members allowing them to develop storage and recovery projects
Goal 4 -- Satisfy the State requirements for a groundwater management program		
1 Obtaining appropriate and acceptable input from non SJBA entities involved in the County IRWMP for inclusion into the SJBGMP. The intent here is to ensure that the SJBGMP is included in the County IRWMP.	Demonstrate the value of the SJBGMP to the region. Consider County staff input in the development of the SJBGMP update and coordinate with County to ensure that the SJBGMP is included in its IRWMP.	SJBGMP is included in the County IRWMP

Table 5-8

Summary Matrix of SJBGFMP Goals, Impediments and Action Items

Impediments to the Goal	Action Items to Implement Goal	Implications
Goal 5 -- Establish equitable share of the funding, benefits and costs of the SJBGMP		
1 Not all SJBA member agency service areas overlie the exploitable parts of the SJB and the development of projects to exploit the SJB for some member agencies is not economically attractive given their location and/or the current way of allocating benefits of the SJBGMP.	Develop new ways to allocate the benefits of the existing and future SJBGMP projects to all SJBA members in an equitable way.	The yield of all SJBA projects will be allocated to all members of the SJBA in an equitable manner although the physical delivery of the water produced by the projects will be distributed in such a way as to minimize the cost and impacts to the environment.