

Approved June 23, 2008



## SAN JUAN RIVER RECOVERY IMPLEMENTATION PROGRAM

Coordination Committee Meeting  
Farmington Civic Center, Farmington, NM

Friday, February 22, 2008  
8:00 am – 3:00 pm

### Meeting Summary

#### Coordination Committee Members:

Jim Brooks, Acting Committee Chair  
Steve Lynch  
Randy Seaholm  
Noelle Graney for Susan Jordan  
Catherine Condon  
Brent Uilenberg  
Al Pfister  
Tom Pitts  
John Whipple  
Kim Davis for Stanley Pollack  
Dan Israel  
Adrian Ogelsby  
Joel Farrell

#### Hydrology & Biology Committee Members:

Rege Leach, HC Chair  
Paul Holden, BC Chair  
Ron Bliesner, HC and BC Member  
Mark McKinstry, BC Member  
Steve Harris, HC Member

#### Program Management:

David Campbell, Program Coordinator  
Sharon Whitmore, Asst. Program Coordinator

#### Interested Parties:

Bruce Whitehead  
Rich Valdez  
Andrea LeFevre  
Warren Vigil  
Pat Page  
Michael Howe

#### Representing:

U.S. Fish and Wildlife Service, Region 2  
U.S. Bureau of Indian Affairs  
Colorado Water Conservation Board  
Jicarilla Apache Nation  
Southern Ute Indian Tribe  
U.S. Bureau of Reclamation  
U.S. Fish and Wildlife Service, Region 6  
Water Development Interests  
State of New Mexico  
Navajo Nation  
Ute Mountain Ute Tribe  
Conservation Interests  
Bureau of Land Management

U.S. Bureau of Reclamation  
Jicarilla Apache Nation  
Bureau of Indian Affairs  
Bureau of Reclamation  
Southwestern Water Conservation District

U.S. Fish and Wildlife Service, Region 2  
U.S. Fish and Wildlife Service, Region 2

#### Representing:

Southwestern Water Conservation District  
SWCA  
Jicarilla Apache Nation  
Jicarilla Apache Nation  
U.S. Bureau of Reclamation  
BIA-NIIP

October 29, 2007 Meeting Summary was approved.

**SJB Hydrology Model Issues Workgroup Update/Review List of Model Issues** – Whitmore reported that the Hydrology Model Issues Workgroup met twice via conference call Dec. 3, 2007, and Jan. 28, 2008. Policy and Technical Issues were identified and discussed. The Workgroup focused primarily on the identified Policy Issues and assigned most of the Technical Issues to the Technical Committees. Whitmore said she attempted to summarize resolutions and actions for each Policy issues from the previous two meetings. She projected the summary on the screen for the group to review and discuss. The CC's discussion is included within the text of that summary (attached). The following two additional action items were identified: 1) NM will continue to work with Reclamation to match baseline depletions with anticipated future depletions from the Hydrologic Determination and, 2) the Service will develop and provide a purpose statement two weeks prior to the next meeting.

**BC Report** - Holden reported on the BC's meeting of the previous two days. He provided tentative dates for the Annual Meeting in May. After discussion, it was decided that the Annual Meeting will be held on May 8, 8 a.m. – 5 p.m., in Durango, if an appropriate meeting venue was available. If not, Farmington will be the alternate location.

Holden said the BC discussed process and methodology for conducting the flow recommendation revision. He explained they will be revisiting a process for revising the flow recommendations developed by Bliesner. After BC review and comment, it will be redrafted and presented to the CC. Pitts asked if Navajo Reservoir operations can be changed through adaptive management as specified in the ALP BO, if revised flow recommendations indicate a change is necessary. Service representatives answered in the affirmative but said that if revised flow recommendations dictate a need for changes to Navajo Reservoir operating rules, the Service will need to closely review that process.

Holden said the majority of the BC meeting was devoted to preliminary presentations of 2007 data results by the principal investigators followed by discussion/review periods with the peer reviewers. He reported monitoring crews caught larval Colorado pikeminnow and more juveniles. He indicated the increase may be, in part, due to some fish being stocked immediately upstream prior to monitoring. In the future, YOY fish will not be stocked immediately before monitoring. Non-native removal crews caught large numbers of razorback suckers and Colorado pikeminnow. They caught a 709 mm, 11-year old Colorado pikeminnow which is one of the older fish ever recaptured. Because few fish over 4 years are caught, the BC is considering targeting adults for capture. Holden said it appears complex habitats are important so the BC may want to target those areas. He said an overview of the Program and summary of rare fish data will be provided at the May 8 meeting.

**HC Report** - Leach presented the HC report. He provided a table that compares Gen2 and Gen3 depletions (attached). The net increase in depletions, 63,194 af, between the two model versions is shown on the SanJuanAtFourCorners line. He said the HC passed a motion that Gen2 is not a viable long-term tool for the SJRRIP but is usable until an agreed-to Gen3 is developed. He was asked if Gen3 will be available for use in the flow recommendation revision. Leach said he is hopeful the HC can move forward with Gen3 by resolving the differences between Gen2 and Gen3 depletions. They will look into why there is the ~63,000 af increase in depletions between model versions of which Ute Water Settlement accounts for about 18,000 to 20,000 af. He was asked if Gen2 could just be discarded and move forward from there. Leach responded that is not an option. The differences between the two need to be understood. He said that Reclamation, BIA, CO, and NM are meeting to work on these issues as is the HC. He said they will continue to use StateMod in the SJRB Hydrology Model with caveats. The HC will also explore developing StateMod model inputs in RiverWare.

Leach reported that Reclamation will be asking for more money to make up for costs associated with tech transfer from retiring modelers to new employees. He explained that Reclamation currently has four people

on-board but will have only two by 2009. The increase will be included in their 2009 SOW. It was mentioned that draft SOWs for 2009 are due March/April and will be discussed at the May meeting.

**Colorado's response to baseline depletions in the SJRB Hydrology Model** - Randy Seaholm reported that the San Juan-Chama issues were resolved. He said he has had discussions with Whipple and Estevan Lopez regarding StateMod. He said NM disagrees with two StateMod criteria related to irrigated acreages and assumed available water supply. He believes CO's StateMod criteria are correct. He explained that when they operate StateMod, they look at what demand is placed on the crops/acres in the basin, what kind of water rights support them, priority, available water, and how much is delivered. The biggest difference is that CO has tempered their uses based on long-term depletions. CO has not considered a full water supply and the modeling that gets done with respect to NM uses the assumption that there is a full water supply. This is the single biggest hurdle to overcome now that San Juan-Chama has been resolved. Seaholm said that as long as future depletions have to be projected by each State, there will always be disagreements between NM and CO. He described potential ways to get around these hurdles including: 1) do not push depletions out to 60 years or more; go with something more manageable, 2) look at future depletions and add another 50K or 60K depletions, something that makes some sense, or 3) do away with model. He recognizes that the third option is not a viable option but emphasized that a model process is needed that is constructive and helpful to the Program and the Service. The identified issues are not going away so middle ground to resolve the issues needs to be found. Whipple said he wants to understand StateMod and that the HC is currently working through these issues. He said everyone needs to let that process run its course.

A question was asked about resolution of San Juan-Chama. Seaholm explained that the HC resolution involved three inputs: 1) modeling for the 1929-1935 period to achieve an average annual depletion/diversion of 105,200 af, 2) hardwiring NM's numbers for natural flows and diversions for the period 1936 to 2005, and 3) inputting actual diversions beginning 2006. The results are within 6,000 af from what was modeled which is 5% less yield to San Juan-Chama than what was in the report authorizing the project.

**Navajo Reservoir Operations and Hydrologic Conditions Update** - Pat Page reported. Hydrological conditions are well above average (snowpack is 160% of average). As of mid-February, the inflow forecast is 1.3 maf which is 168% of average. Current content is 1.4 maf which is 100% of average. They increased releases on Feb. 11 to 3,000 cfs and expect to continue with this release until mid-May. Because it is a slight deviation from the flow recommendations, they coordinated with the Service on an acceptable release scenario. They will increase releases to 5,000 cfs mid-May to mid-July for 30 days, if there are no structural issues. To do this, they have to release 3,400 cfs out of the main gates and 1,600 cfs from the 4x4 auxiliary gates. When releasing this volume of water for longer durations, they are required to do inspections of the 4x4 gates every 14 days and every 30 days for the main gates, primarily for cavitation. He does not consider these limitations a long-term problem but will assess facility capabilities to do high, longer duration releases and, if necessary, take measures.

**Uvalde Small Mouth Bass Virus Update** - Campbell reported. He showed a power point presentation prepared by Grant Webber. Largemouth bass virus (LMBV) was first detected in July 2007 in YOY Guadalupe bass spawned there. All other species on station including razorback sucker stocked into SJR tested negative but Uvalde lost its Class "A" status. They are not quarantined but Utah has stated they do not want any fish from the hatchery stocked into the SJR until it is a Class "A" facility again. Uvalde is taking all precautions to insure the virus is off the station and will remain that way. All Guadalupe bass were taken off-station on February 8. The current plans are for no stocking of any razorback sucker from Uvalde in 2008, holdover/grow 2007 and 2008 year-classes (~24,000 fish), obtain "Suspect" status in the Summer 2008, and obtain Class "A" status in the summer of 2009. In October 2009, they will stock 12,000 300-450mm 2007 year-class and 12,000 300mm 2008 year-class razorback sucker. Campbell said the BC

voiced concerns about stocking 24,000 razorback sucker into the river at once. They will oversee how those fish are stocked.

Campbell said 3,500 razorback sucker will be reared and stocked from each of two or three NAPI Ponds in 2008. He explained one of the three ponds needed retrofitting but there was a hold-up in funding because Colorado had not provided their contribution to the NFWF fund. Seaholm said the pre-payment issue that was holding things up was resolved. Their contribution should be in the NFWF account soon. With Uvalde not stocking razorback sucker in 2008, production out of NAPI is critical so getting the third pond up and running is needed. Campbell asked if it was okay to use funds that NM paid to NFWF for invoices of previously completed projects in lieu of getting Colorado's contribution. Whipple and the group agreed. Bliesner said getting the pond ready for stocking this year will also depend on favorable weather.

**Cyprinid Key** – Campbell said the Program Office and CC received a memo from Bob Muth requesting \$50,000 from the SJRRIP to help complete the Guide to Cyprinid Larvae Project. He said the CC and BC approved expenditure of funds in the 2007 budget contingent on them getting necessary cost share which they did not get. The BC did not prioritize it for funding in the 2008 budget. Although the SJRRIP is not dependent upon this guide, the SJRRIP could use it, and it would be good outreach to cooperate with the Upper Basin Program, if funding was available. Pitts said he supports the project. Whipple said he is not in support of spending SJRRIP funds on non-listed species. Campbell asked for permission to use any surplus funds from 2008 or 2009 budgets, if available, for this purpose. Whipple asked the BC members present if they would prioritize the cyprinid key over funding for additional equipment requested for non-native fish removal. They said if surplus funds were available, they would support using it on the cyprinid key. CC approved use of leftover in '08 or '09 funds, if available.

**Long Range Plan (LRP) Update** - Campbell reported on the LRP revision/contract. He said the Program Office put a stop-order on the SWCA contract because no progress was being made and the project lead had left the firm. Shortly thereafter, Rich Valdez, SWCA, contacted Reclamation and the Service and said that SWCA, with him in the lead, wanted to complete the project under the existing contract provisions, i.e. same costs. The decision was made to rescind the stop-order and allow SWCA to complete the contract.

Valdez said he was taking over as project lead and would be doing it under the existing contract. He provided a summary of how he intends to complete the work. He said that after reviewing Program documents and the draft LRP, he will suggest some substantive changes. The current LRP does not track with the recovery elements in the 1994 Program Document. It was pointed out that some activities were removed in the 2006 version because they had been completed. Valdez explained that completed elements should also be included because they provide overall Program structure. He said the LRP should be an accountable document for tracking sufficient progress toward recovery. He said he added LRP elements for Information & Education and Program Planning and Support and changed the categories from Element-Sub-Element-Task to Element-Goal-Action-Task (project-level). He displayed a draft flow chart (conceptual model) depicting the Program's organizational structure. He said he will also include a Gantt-type chart for 1992-2023 which tracks with the recovery goals criteria and will step-down to the Annual Work Plan (AWP). He said the timeline will include an annual review and update of the LRP that is in-line with the AWP development process.

Valdez showed the group his anticipated schedule which would involve a meeting April 3 in Logan with several long-term BC members so he can gain institutional knowledge and to start refining LRP Elements, Goals, Actions, and Tasks. It was suggested that an HC member be present and that Bliesner, who will be in attendance, serves on both committees. He said a draft would be available for Coordinator, BC, and CC review on April 18 allowing a month for review. The group said to add the HC to the reviewer list. Valdez said he should be able to have a final product by the middle to end of May.

**Congressional Activities** - Pitts reported on the upcoming Washington DC briefing trip. He mentioned John Shields is chairman of the Management Committee and does a tremendous amount of work preparing for this trip. A request was sent out for letters of support and he thanked everyone for providing them and emphasized that they do make a difference. He would like any additional letters prior to going to DC. He said the trip schedule is in good shape and that they will be visiting the delegations, appropriation committees, and NGOs. He said funding for the two Programs is also in good shape because it is in the President's budget. He is still working on the briefing paper for the Upper Basin Program and SJRRIP reauthorization and was hopeful they could reintroduce the idea during the meetings in DC.

**Dept. of Interior Cooperative Conservation Award** – Campbell reported that the Program office had been notified the Upper Basin Program and the SJRRIP was being honored with a Dept. of Interior Cooperative Conservation Award. He said it was one of 21 programs being honored and that each CC member was listed as an award recipient. He said the awards ceremony will be held on April 21 in DC with a cooperative conservation workshop following.

**Hogback Fish Screen** – Uilenberg said there will be a review of the weir wall design on March 4 in Farmington at Reclamation's office and he would like a Service rep. to attend. Brooks said Jason Davis in his office would be attending the meeting. Uilenberg said \$2.9 million is in the budget request for FY09. He said their ability to start on the project this year will depend on their ability to negotiate an acceptable O&M budget.

**Next Meeting Dates:**

- May 8 – SJRRIP Annual Meeting, Durango
- May 9 – CC Meeting - 8 a.m. - 12 p.m., Durango

**Potential Agenda Items:**

- Outstanding hydrology model issues
- Priorities for the 2009 AWP

## Preliminary Summary of Hydrology Model Policy Issues Resolutions/Actions For Discussion at 2-22-08 CC Meeting

The following Policy Issues resolutions and actions were summarized by Whitmore from discussions during the Dec. 3, 2007, and January 28, 2008, CC workgroup conference calls. The purpose of this summary is to allow the CC to further discuss and refinement the issues.

### **Policy Issue #1 - Inconsistency between DOI Hydrologic Determination and the SJR Hydrology Model**

*Resolved – The issue of how baseline depletions are included in Gen3 is still not resolved. The following two actions were identified to work toward addressing that issue (possibly Policy Issue #6, SJRRIP Implementation and Use of SJR Hydrology Model Gen3).*

*Action – The process for resolving the methodology for computing irrigation depletions using either the original Blaney-Criddle method with high altitude crop coefficients or the modified Blaney-Criddle method with standard crop coefficients for native pasture above 6,500 feet elevation in Colorado is to have Reclamation and Colorado get together and determine which approach gives the most reliable determination of these high elevation pasture irrigation depletions.*

*Action - There has not been any process determined or established for resolving issues relating to the use in StateMod of different methods or operational assumptions for computing baseline irrigation depletions in Colorado versus historic irrigation depletions in Colorado. Seaholm will provide a timeframe/schedule to Brooks as to when Colorado will respond to Whipple's memo.*

**2-22-08 CC Discussion** – There was not agreement that this issue has been resolved. Whipple said that DOI for consistency should be using the same methodologies for determining depletions in the Hydrologic Determination and the SJR Model and he will not consider this resolved until baseline depletions reflect the anticipated future depletions in the Hydrologic Determination. Reclamation agrees that the same sets of information should be used for both processes. Pitts asked what Whipple's proposal is for resolving this issue. Whipple's response was to calculate depletions in NM using the same methods that were used to calculate depletions in the Hydrologic Determination (i.e., modified Blaney-Criddle) and for CO and Reclamation to get together to resolve the issue about the high altitude coefficient methodology. Seaholm said that was being done but that making the methodologies consistent is not the biggest problem. He said it is with how depletions are predicted for the out-years. The two states still have differences on baseline depletions and water availability.

Leach said the Hydrologic Determination is Reclamation's responsibility. It is used to determine if there is likely adequate water in Navajo Reservoir to meet contracts. It is specific to Navajo Reservoir. The most recent hydrologic determination was requested by NM to determine if there was enough water for the Navajo-Gallup project. He said they use depletions information from all the States in the basin including water availability data, water going in and out of the reservoir, NM's upper basin compact allocation, and other information to determine how much water is likely to be available, from recent to 2060, in this case. They look at it on a yearly basis which is different than the recovery program. He said the hydrology data that goes into both the Hydrologic Determination and the SJRB Hydrology Model is the same, as it should be, but providing that information is a State responsibility and Reclamation will continue to get that information from the States.

There was agreement that historic depletions should be the same and that this is not the problem. The focus should be on the baseline depletions in the SJR model and not on the Hydrologic Determination. Seaholm said depletions estimates should look at the volume you have available today for the fish rather than estimating what will happen in the future. Colorado will provide projections if asked but it will be a guess.

The purpose of the model for use in developing flow recommendations was discussed. Bliesner said a definition of how the model is being used and what should go into it is needed. He explained that Gen2 includes cumulative environmental baseline depletions which constitute all depletions that have been consulted on and some State projects in place that have not been consulted on. This basically includes all depletions the Service believes should be in there. Gen 3 was intended to duplicate the same thing but the numbers are different and they have been trying to figure out why they are different. Once this is done, the Service will need to determine if they agree with the depletions in the model for the purposes of doing flow recommendations and consultations. He said agreement is needed on what baseline set of data will be used for both purposes. The model can be used with current depletions or future, anticipated depletions. Seaholm said it is being pushed to maximum development in NM and CO is being asked to say what the SJRB will look like at maximum development. The State will provide a projection but it will not be very realistic as maximum development may never occur.

The Service has to consider what is reasonably foreseeable. Bliesner said Gen2, includes what CO and NM considered to be reasonably foreseeable with the exception of the Ute settlement water. Those numbers have changed between Gen2 and Gen3. The States need to decide on a realistic estimate of what they consider to be reasonably foreseeable future depletions for Gen3 so the Service can decide if they agree or not. .

The discrepancy between in Gen2 and Gen3 is a net increase in depletions of 63,000 af. If that amount of depletions was added to Gen2, the flow recommendations would not be met. When Ute settlement water is accounted for (about 20,000 af) there is only about 40,000 af that is unexplainable. Bliesner thinks that the estimated reasonably, foreseeable depletions are what have changed. Dave King is looking back through both models to see what CO acreages per basin are to see if this is where the differences are. Pitts asked that if the discrepancies are corrected and flow recommendations still cannot be met, then what? Brooks asked if the flow recommendations could be developed for various levels of depletions, today and future increments. Bliesner said this has been considered and the model could be run based on today's conditions and then at various stages of potential future depletions. Campbell said that the purpose of consultations is to insure adequate ecosystem functions for species, considering climate change. He said if those functions cannot be met with high flows alone to insure survival and recovery of the species, then other means, in combination with flows, will need to be explored during the flow recommendation revision process.

Harris said the model is broken (e.g., 2 maf total flow; 600 kaf depletions; 1.4 maf at stateline but actually 1.8 maf) and it is extremely overestimating depletions. He thinks the Service should look at other options for determining flow recommendations and accounting for future depletions for section 7 purposes. Campbell said the Service needs the model to project future conditions for the species so if error bars would help, they should be developed. Holden said that the shortage sharing exercise basically put error bars on things so that could be used. No one was in support of developing error bars. Whitmore pointed out that the CC had made a decision not to develop error bands. Brooks said the Service will stay with the established flow model process for now but will continue to participate in the ongoing discussions. Pitts said that trying to decide if flows can be met 200 years into the future is unrealistic.

The role/purpose of the SJR flow model, as a planning tool versus regulatory tool, was discussed. Brooks said the group was placing too much significance on model use for section 7 consultations. Campbell said the SJRRIP is the regulatory tool. The model is only one tool and that, if necessary, the Service will

consider other actions in combination with flows to recover the species. Israel suggested that if a caveat is included with model results that it could be off by 28% and that limits are put on how much money can be spent on the model, the Program should be covered. Leach said we need to simplify. He said the purpose of the model is to provide a tool that projects future hydrologic conditions. The information that is needed that the model provides is: 1) yield of the basin, 2) current depletions, 3) reasonable projections of future depletions (which is a State policy decision), and 4) what do the species need. Campbell said the Service needs this information to determine impacts of projects on species/habitat and to track progress toward recovery. The Service also needs to know what assumptions went into projections. Brooks said the Service does not consider the Program static and fully expects objectives will change based on new information. He asked if a purpose statement from the Service would help move Gen3 forward. There was generally agreement. The purpose statement should address issues such as flow recommendations, Navajo Dam operations, and use in consultations. Future depletions should be described in a stepwise manner, e.g., 5 years, 10 years, etc.

Added Action Item – NM continue to work with Reclamation to match baseline depletions with anticipated future depletions from the Hydrologic Determination.

Added Action Item - Service will develop and provide purpose statement two weeks prior to next meeting.

### **Policy Issue #2 - Roles and responsibilities of parties regarding various aspects of the SJR Hydrology Model**

Resolved – Based on the November 13 Reclamation/Service memo and HC procedures described in Program documents, this specific issue is resolved. The following CC action was identified to work toward resolving possibly Policy Issue #6, *SJRRIP Implementation and Use of SJR Hydrology Model Gen3*, or an identified model methodology issue.

Action – Does the HC, as a committee, agree that StateMod should be used in the model?

### **Policy Issue #3 - Continued support, improvement, and operation of SJR Hydrology Model by Federal Agencies**

Resolved – Reclamation and the Service reaffirms their commitment to support the model as established in the Biological Opinion for Animas-La Plata Project consultation. A November 13, 2007, memo from Reclamation to the Service described the two agency’s roles and responsibilities for maintaining the SJR hydrology model. A third party analysis of model uncertainty/error will not be conducted at this time.

### **Policy Issue #4. Continued use of SJR Hydrology Model by Federal Agencies for determining project impacts for sec. 7 consultations/ESA compliance**

Resolved - Service reaffirms its commitment to follow SJRRIP’s section 7 principles and will provide written clarification/descriptions of intent and use of model in sec. 7 consultations. Part of this will include a review and clarification of which depletions they consider to be in the baseline. Also, Reclamation and the Service will use Gen2 until Gen3 is completed and flow recommendations are revised.

2-22-08 Discussion – Will have to group two weeks prior to May meeting

### **Policy Issue #5. Continued Use of SJR Hydrology Model by SJRRIP including for developing flow recommendations**

Action – Service, Region 2 and 6, and Reclamation will meet to discuss the relationship between the model, flow recommendations, re-operation of Navajo Dam, and recovery of the species.

Action – CC will request input from BC on model use by the Program for developing flow recommendations and evaluating projects impacts.

Action – Does the HC, as a committee, agree that StateMod should be used in the model?

**2-22-08 Discussion** – Table until after the flow recommendation revision is completed.

**Policy Issue #6. SJRRIP Implementation and Use of SJR Hydrology Model Gen3**

Resolution – Gen2 will be used until Gen3 is completed and flow recommendations are revised. The HC will continue updating Gen3 independent of the flow recommendation revision process and will support planned adjustments to the model by Reclamation and the HC.

Action - CC wants an estimated timeline from the HC for completion of Gen3.

Action – CC directs BC to start flow recommendation review. Review and revision will be completed during FY09 and will serve as the Integration Report. Schedule is for BC to plan review/revision in FY08, do revision in FY09; and complete by FY10. CC wants to review BC’s flow recommendation methodology.

**2-22-08 Discussion** – Table until after #5 is completed.

**Rege Leach's Handout @ Feb. 22, 2008, CC Meeting**

From: "Brian Westfall" <bw@kelbli.com>  
 To: "Hydology Committee" <sjrp-hydrology@fws.gov>  
 Date: 02/06/2008  
 Subject: Generation 2 and Generation 3 net depletion comparison

We have pulled some data from a spreadsheet that Dave King put together to show the net change in depletion by basin between the Generation 2 and Generation 3 models.

In general, the G3 model shows both greater baseline depletion and greater natural flow. The question was raised at the last HC meeting as to how much of the increase in depletion was offset by an increase in natural flow. The far right column in the image below shows the amount of depletion that is not offset by natural flow (net increase in depletion). For example, at Four Corners we show an increase in natural flow between G2 and G3 or 59,784 af/year on average. We also show 122,979 ac-ft/year more baseline depletion in G3. The increase in natural flow offsets part of this, so the net increase in depletion between the two models at Four Corners is 63,194 ac-ft/year. If you have any questions please contact Dave King or me.

Thanks  
 Brian Westfall

Gage	Second Generation Natural Flow	Third Generation Natural Flow	G3 - G2 Natural flow	G3 - G2 Baseline Depletions	Increase in Net Depletion from G2
SanJuanAtPagosaSprings	287,474	288,751	1,277	3890	2,614
RioBlancoBelowSJCDiversion	68,843	72,817	3,973	3797	(176)
NavajoBelowOsoDiversion	89,071	92,997	3,926	-4742	(8,668)
LittleNavajoBelowOsoDiversion	9,230	8,800	(430)	-183	247
SanJuanNearCarracas	519,123	546,499	27,376	16882	(10,494)
PiedraNearArboles	291,064	299,838	8,774	17274	8,500
LosPinosNearBayfield	266,181	269,416	3,235	1264	(1,971)
LosPinosAtLaBoca	285,616	323,376	37,760	67966	30,206
SpringCreekAtLaBoca	6,678	13,697	7,019	15942	8,923
SanJuanAtArchuleta	1,121,792	1,194,470	72,678	106465	33,787
AnimasAtDurango	582,974	586,411	3,437	15015	11,578
LemonReservoir	70,985	71,121	136	-623	(759)
AnimasNearCedarHill	697,345	712,892	15,547	25541	9,994
AnimasAtFarmington	694,076	703,450	9,374	27710	18,336
SanJuanAtFarmington	1,793,859	1,901,592	107,733	153198	45,465
LaPlataAtHesperus	34,728	34,120	(608)	1183	1,791
LaPlataAtStateline	44,355	41,097	(3,258)	9104	12,362
LaPlataAtFarmington	48,040	47,250	(790)	5769	6,558
SanJuanAtShiprock	1,866,709	1,968,355	101,646	140025	38,378
MancosNearTowaoc	51,392	53,220	1,828	14326	12,497
SanJuanAtFourCorners	1,990,662	2,050,446	59,784	122979	63,194
McElmoCreekStateline	10,975	32,317	21,342	-16062	(37,404)
SanJuanAtBluff	2,030,461	2,053,329	22,868	37593	14,725