



Photo by Rich Schrader

**BYPASS FLOWS IN THE SANTA FE RIVER
PUBLIC FACILITATION & COMMUNITY OUTREACH**
Reports, Notes and Related Documents
2.23.11

Submitted by:
Toby Herzlich of Toby Herzlich & Co
Erin English, PE LEED AP, of Natural Systems International

NATURAL SYSTEMS INTERNATIONAL
3600 Cerrillos Road, Suite 1102
Santa Fe, NM 87507
(505)-988-7453
www.naturalsystemsinternational.com

TOBY HERZLICH & COMPANY
119 La Joya Rd
Santa Fe, NM 87501
(505) 984-1284

NSI

February 23, 2011

Brian Drypolcher
River and Watershed Coordinator
City of Santa Fe
PO Box 909
Santa Fe, NM 87504

Dear Brian,

Toby Herzlich & Co and Natural Systems International have compiled the following documents from the Public Facilitation & Community Outreach Process for the "Bypass Flows for the Santa Fe River – 1000 AFY" project. We feel that the community and key stakeholders were successfully engaged through this public process and we hope that these results prove useful to the City as you move to approve an ordinance and administrative procedures.

We have also provided a digital draft of administrative procedures that are based upon the recommendations in this document, copies of the flow hydrograph/calculations and digital versions of this report.

We have enjoyed working with the City through this process and wish you the best of luck in moving forward from here.

Regards,

A handwritten signature in cursive script that reads "Erin English".

Toby Herzlich & Erin English

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THE QUESTIONS – AND HOW THE PROPOSED FLOW HYDROGRAPH ADDRESSES THEM

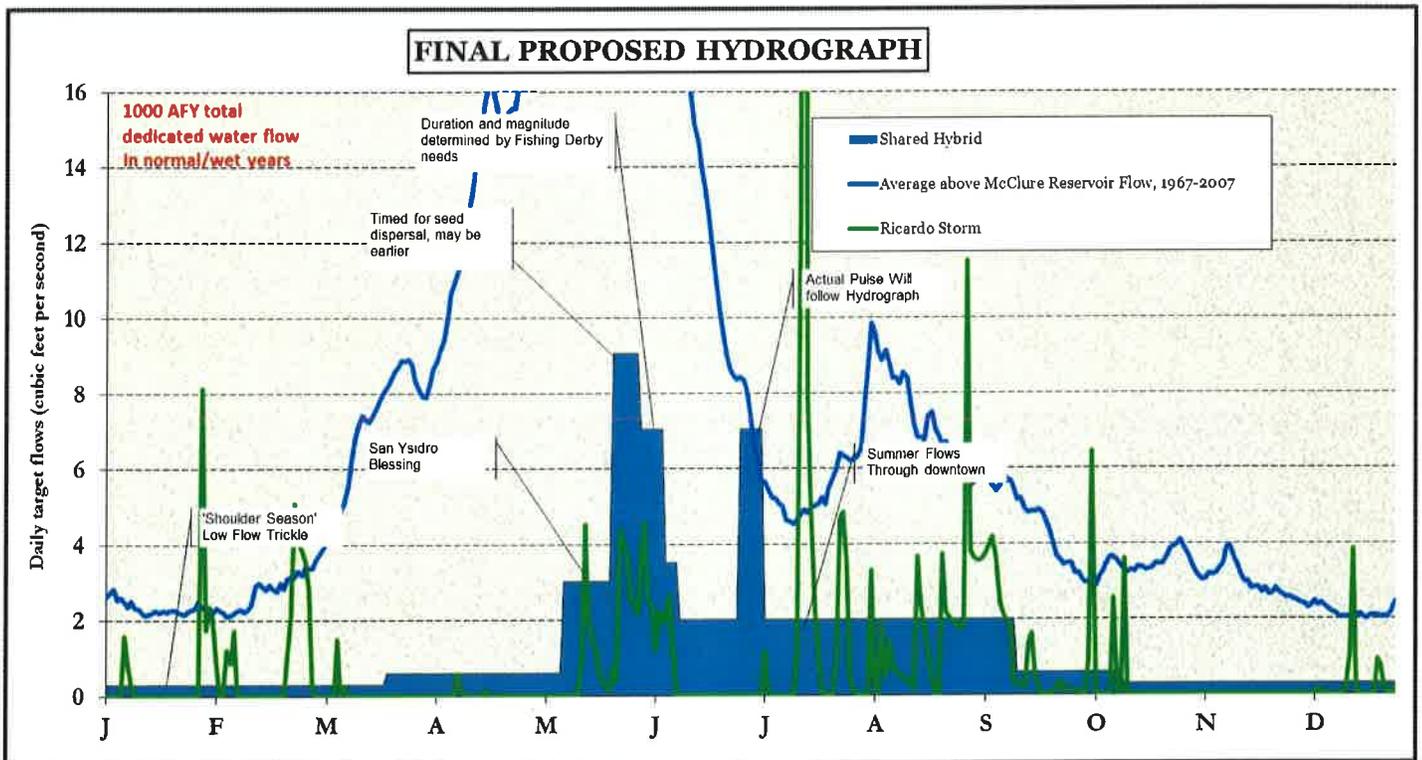
1. *Community Objectives for 1000 AFY Flows?*
 - a. Create an Ecologically Healthy Vegetative Corridor
 - b. Benefit the Entire Community with Flows
 - c. Nurture a Beautiful, Natural Urban Greenspace w/ water in arid environment
 - d. Provide an Educational Resource for Schools & Community Stewardship
2. *Target Flow Season? Start/End Dates?*
 - a. Year-Round Trickle during 'Shoulder Seasons' (Jan-Mar & Oct-Dec)
 - b. Spring Pulse to San Ysidro/Rt. 599 (Mid May-Mid June)
 - c. Summer Flows through Downtown (Mid June-Mid Sept)
 - d. Summer Pulse to San Ysidro/Rt. 599 (Early July)
3. *Preferred Flow Regime? Desired Flow Season Hydrograph?*
 - a. See Target Flow Season/Start-End Dates above.
 - b. The proposed hydrograph represents an average; operators need the flexibility to shift pulses, dates and minimum flows based upon seasonal triggers such as seed dispersion, community cultural events, snowpack levels and monsoonal storm activity.
4. *Adjustments during dry years?*
 - a. The proposed general philosophy is to support flow in the River even during dry years/drought.
 - b. 1,000 acre-feet annual dedication will be maintained in conditions equal or greater to 75% of average watershed yield.
 - c. When watershed yield drops to levels 75% or lower of average snowpack on April 15th, the 1000AFY will be proportionately reduced according the percentage of average watershed yield. For example, in a year with a 55%-below-average-yield, the water dedicated to the River will be: $1000 \text{ AFY} \times 55\% = 550 \text{ acre feet}$.
 - d. In extremely dry years, defined as watershed yield <30%, flows will be kept at a minimum amount needed for two 100 acre-foot pulses, plus year round flows of 0.15 CFS, for a total of approximately 300 AFY.
5. *What constitutes an 'emergency' to suspend that flow?*
 - a. Flows may be adjusted or curtailed by the City Water Division in response to an emergency situation: to prevent an interruption in water service and to protect public health and safety.
6. *Adjustments during wet years?*
 - a. Flows will not be increased above 1000 AFY, but 'spills' may provide additional flows in the River. Any water 'spilled' may count toward the dedicated flow for that day or period, but will not substitute for dedicated flows scheduled before or after the 'Spill' period.
 - b. The reason that a portion of some spills are counted toward the 1000 AFY is to balance benefits between wet and dry years, allowing the 'resting' of groundwater wells during the wet years and dedication of water to the River in drought years.
7. *Other Considerations*
 - a. Working toward water management agreements with local Acequia associations.
 - b. Infrastructure improvements for controlling and measuring water releases from Nichols Reservoir more efficiently.

NORMAL & WET YEAR FLOW HYDROGRAPH

Note: 1 cubic-foot-per-second (cfs) = 448 gpm and 1 acre-foot (AF) = 325,851 gallons

1. **Low Trickle Flows during "Shoulder" Seasons** (0.3 CFS from Jan 1-Mar. 20 & Oct. 15-Dec. 31) to support upper watershed section as an ecological refuge. Increase flows to 0.60 CFS from Mar. 21-May 9 & Sept. 15-Oct. 14.
2. **Spring Pulse** (3 CFS May 10-23, 9 CFS from May 24-31 and 7 CFS from June 1-7) to push flows downstream to San Ysidro Crossing/Rt. 599 and create substantial flows through downtown. Spring Pulse helps distribute tree/plant seeds, moisten the river channel, keeps downstream trees alive and also coincides with the Fishing Derby/River Festival and the San Isidro River Blessing.
3. **Summertime Low Flows** (average of 2 CFS June 14-Sept. 14) through downtown to enhance the public's greenspace.
4. **Early Summer Pulse** (7CFS from July 1-7) to push flows once again downstream to San Ysidro Crossing/Rt. 599 during one of the hottest and driest periods in advance of monsoon season rains. The Early Summer Pulse is crucial to sustain vegetation and provide moisture for new/germinating seedlings and enhanced public greenspace.

The legal constraint on the City's allocation of water to the River is limited by the rate of inflow to the reservoir. The rate at which the City bypasses water to the River (in CFS) cannot exceed that flowing into McClure Reservoir.



DRY YEAR FLOW REDUCTIONS

During Dry Years (defined as <75% of average snowpack on April 15th), the City will proportionately reduce flows to the River according to the graph and table below. If average snowpack levels are very low (<30% of average), dedicated flows will be reduced to approximately 300 AFY, which will be released in 2 pulses of 100 AFY each and an annual sustained trickle at 0.15 CFS.

75% of average snowpack = 750 AFY

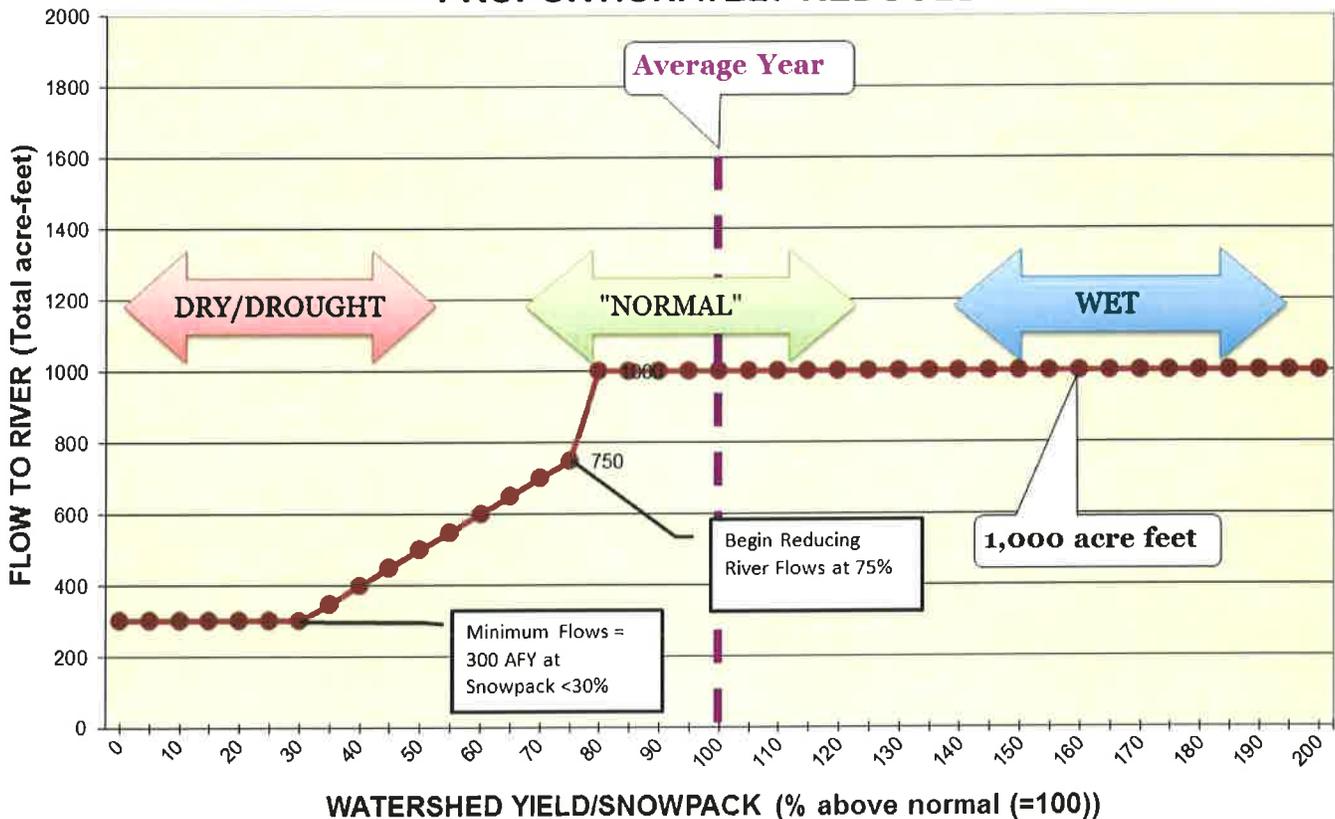
65% of average snowpack = 650 AFY

55% of average snowpack = 550 AFY

45% of average snowpack = 450 AFY

30% or less of average snowpack = 300 AFY (2 pulses and a 0.15 CFS year-round trickle)

DRY YEARS: WATER FLOWS DEDICATED TO RIVER PROPORTIONATELY REDUCED

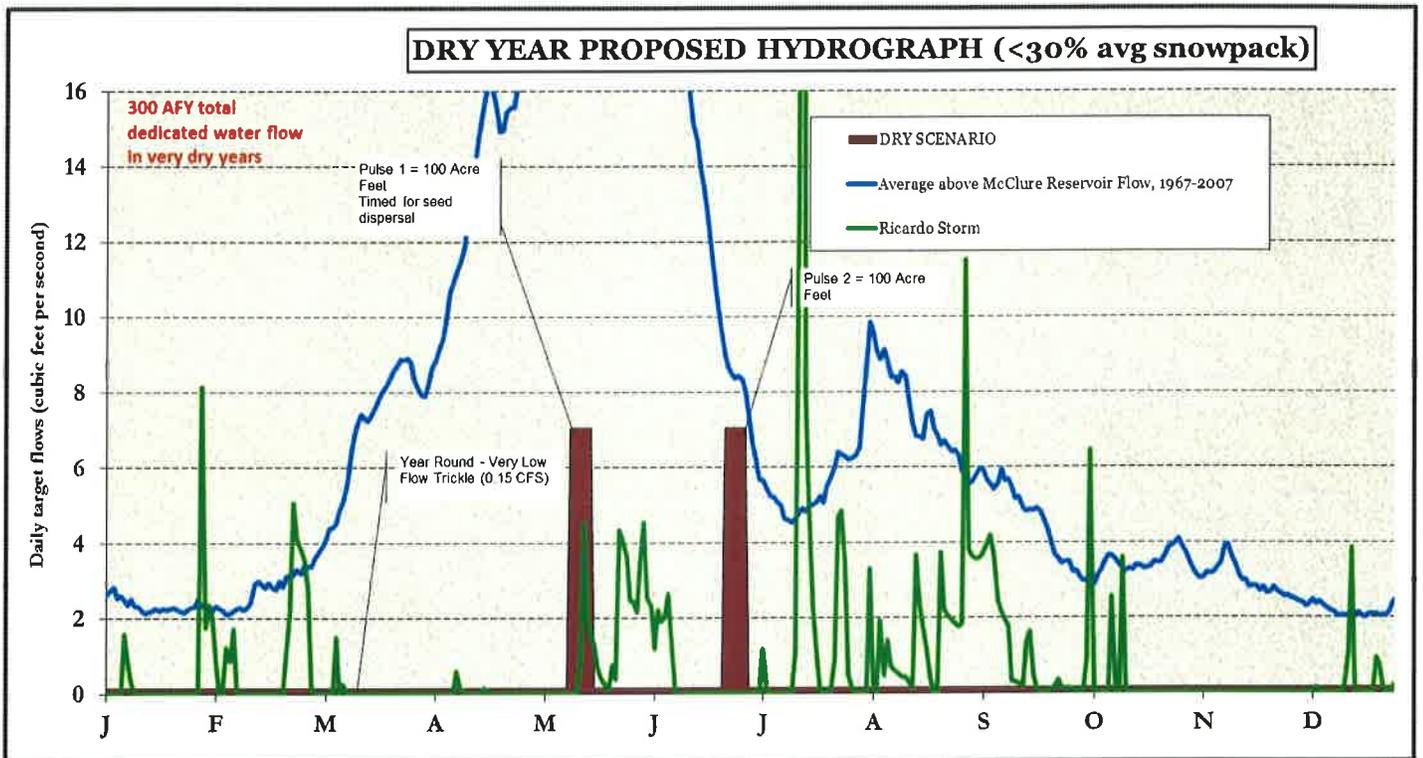


Changes to reduced flows will happen through:

1. Reduction in average summer flows
2. Scaling down of spring pulse
3. Reduction in shoulder season flows from 0.30 cfs to 0.15 cfs

CRITICAL DRY YEAR FLOW HYDROGRAPH

The following 'Critical Dry Year' hydrograph has been developed to guide flows of dedicated water in years where the watershed yield/snowpack is 30% or less than average. The Critical Dry Year hydrograph includes two 100 acre-foot pulses and a year-round trickle of 0.15 cfs. This Critical Dry Year hydrograph attempts to maintain a constantly wet corridor in the upper reach of the River below the dams to maintain ecological function while providing two downstream pulses for community enjoyment and support of riparian vegetation.



Introduction

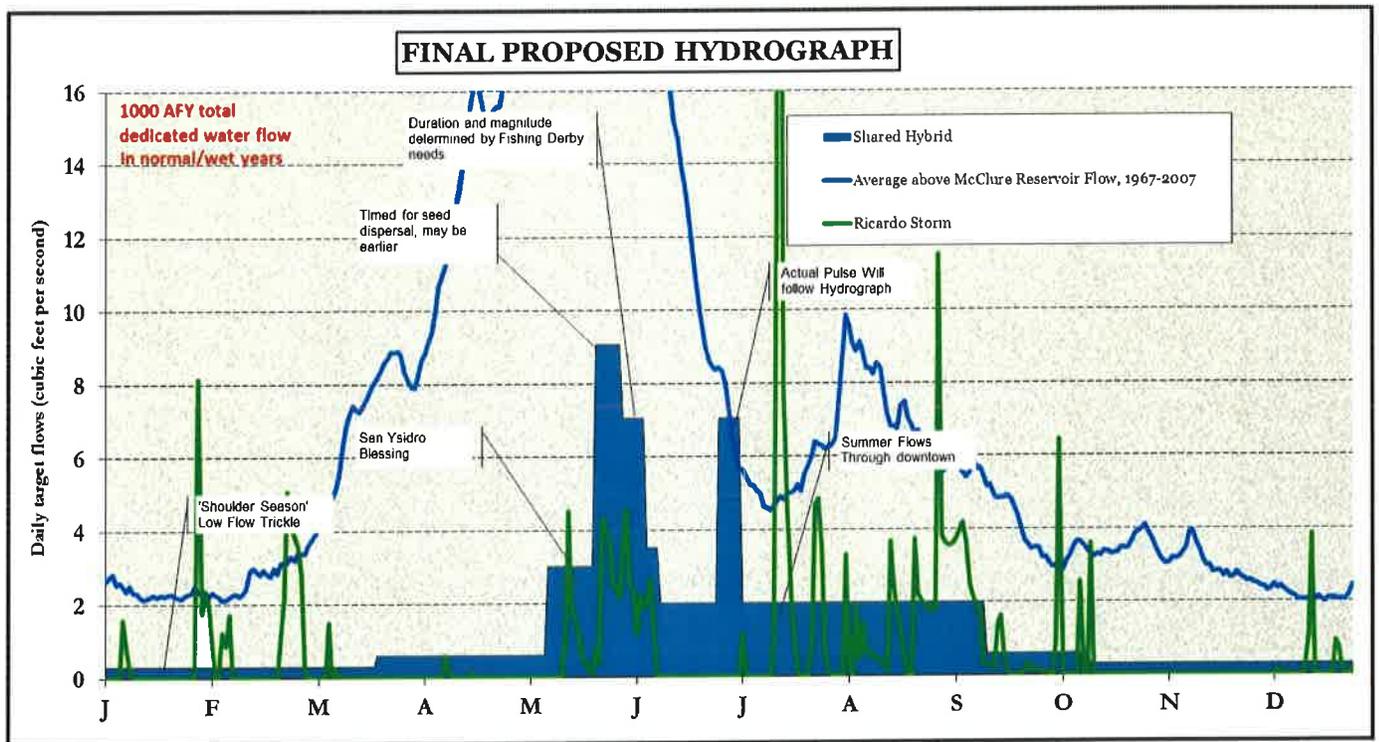
The City of Santa Fe is in the process of formalizing its commitment to dedicate 1000 acre-feet of water per year (AFY) to the Santa Fe River and is gathering public input to craft the ordinance and administrative procedures that will guide these 'dedicated flows'. The primary objectives for the City are to create a set of recommendations, which include a flow hydrograph and contingency plans in the event of wet or dry years, or an emergency. The City posed the following questions to the community; a summary of responses that evolved from the public outreach process are summarized below:

1. *Community Objectives for 1000 AFY Flows?*
 - a. Create an Ecologically Healthy Vegetative Corridor
 - b. Benefit the Entire Community with Flows
 - c. Nurture a Beautiful, Natural Urban Greenspace w/ water in arid environment
 - d. Provide an Educational Resource for Schools & Community Stewardship
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3. *Preferred Flow Regime? Desired Flow Season Hydrograph?*
 - a. See Target Flow Season/Start-End Dates above.
 - b. The proposed hydrograph represents an average; operators need the flexibility to shift pulses, dates and minimum flows based upon seasonal triggers such as seed dispersion, community cultural events, snowpack levels and monsoonal storm activity.
4. *Adjustments during dry years?*
 - a. The proposed general philosophy is to support flow in the River even during dry years/drought.
 - b. 1,000 acre-feet annual dedication will be maintained in conditions equal or greater to 75% of average watershed yield.
 - c. When watershed yield drops to levels 75% or lower of average snowpack on April 15th the 1000AFY will be proportionately reduced according the percentage of average watershed yield. For example, in a year with a 55%-below-average-yield, the water dedicated to the River will be: $1000 \text{ AFY} \times 55\% = 550 \text{ acre feet}$.
 - d. In extremely dry years, defined as watershed yield <30%, flows will be kept at a minimum amount needed for two 100 acre-foot pulses, plus year round flows of 0.15 CFS, for a total of approximately 300 AFY.
5. *What constitutes an 'emergency' to suspend that flow?*
 - a. Flows may be adjusted or curtailed by the City Water Division in response to an emergency situation: to prevent an interruption in water service and to protect public health and safety.
6. *Adjustments during wet years?*
 - a. Flows will not be increased above 1000 AFY, but 'spills' may provide additional flows in the River. Any water 'spilled' may count toward the dedicated flow for that day or

Proposed Hydrograph/Flow Pattern – Highlights

1. **Low Trickle Flows during “Shoulder” Seasons** (0.3 cfs from Jan 1-Mar. 20 & Oct. 15-Dec. 31) to support upper watershed section as an ecological refuge. Increase flows to 0.60 CFS from Mar. 21-May 9 & Sept. 15-Oct. 14.
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4. **Early Summer Pulse** (7cfs from July 1-7) to push flows once again downstream to San Ysidro Crossing/Rt. 599 during one of the hottest and driest periods in advance of monsoon season rains. The Early Summer Pulse is crucial to sustain vegetation and provide moisture for new/germinating seedlings and enhanced public greenspace.

The legal constraint on the City’s allocation of water to the River is limited by the rate of inflow to the reservoir. The rate at which the City bypasses water to the River (in cfs) cannot exceed that flowing into McClure Reservoir. This legal constraint – referred to as the ‘bypass concept’ – means that the City is not permitted to bypass water to the River that it has ‘stored’.



Community Objectives – Basis of Creation of Hydrograph/Flow Pattern

The following four objectives arose out of the question – “what is important to you about the River?” – posed to over 30+ stakeholders and the 90+ participants in the first community meeting. Responses were counted, tallied and used to define these top four priorities for managing water in the River.

1. Create an Ecologically Healthy Vegetative Corridor
 - a. With the limited amount of water available, strive to support the maximum amount of riparian plantings and wildlife habitat along the river.
 - b. Create a constantly-wet section of river in the upper watershed by providing a year-round trickle of flows. This section will serve as a river refuge to seed downstream reaches with river life.
2. Benefit the Entire Community with Flows
 - a. Use the water equitably to benefit as much of the Santa Fe community as possible – not just downtown residents and visitors.
 - b. Provide flow ‘pulses’ that run for 1 week or more and that reach at least to San Ysidro Crossing (Village of Agua Fria) and Rt. 599/Camino Real River Park.
 - c. Provide flows for Community Events such as the Fishing Derby/River Festival and the Village of Agua Fria River Blessing, all important cultural events associated with the River.
3. Nurture a Beautiful, Natural Urban Greenspace w/ water in arid environment
 - a. Create access to nature and open space within the urban environment.
 - b. Support native riparian vegetation and plantings along the River from the upper watershed to at least Rt. 599/Camino Real River Park through flow pulses targeted to provide crucial moisture to new and established plantings.
 - c. Time the ‘spring pulse’ to coincide with the release of tree seeds to aid in their dispersal and germination.
4. Provide an Educational Resource for Schools & Community Stewardship
 - a. Provide spring pulse flows to facilitate school river-planting and celebration activities.
 - b. Create flowing river opportunities for children and families to access during the summertime.

Although various other objectives – aquifer recharge, acequia use, tourism, erosion control – were discussed and valued by the community – they did not score as highly as the four above. Thus these four objectives represented the primary guiding principles as the Core Working Group and City Staff created the proposed hydrograph/flow pattern and dry/wet/emergency scenarios.

As noted before, the limit on the City's releases of water is the *rate of inflow into the reservoirs*. This limit prevents the City from storing water in one season and using it for River releases in a later season. However, matching releases with inflows reflects the amount of water flowing into the reservoirs at a given time and therefore follows the natural hydrograph.

Dry Years

During Dry Years (defined as <75% of average snowpack on April 15th), the City will proportionately reduce flows to the River according to the graph and table below. If average snowpack levels are very low (<30% of average), dedicated flows will be reduced to approximately 300 AFY, which will be released in 2 pulses of 100 AFY each and an annual sustained trickle at 0.15 cfs.

75% of average snowpack = 750 AFY

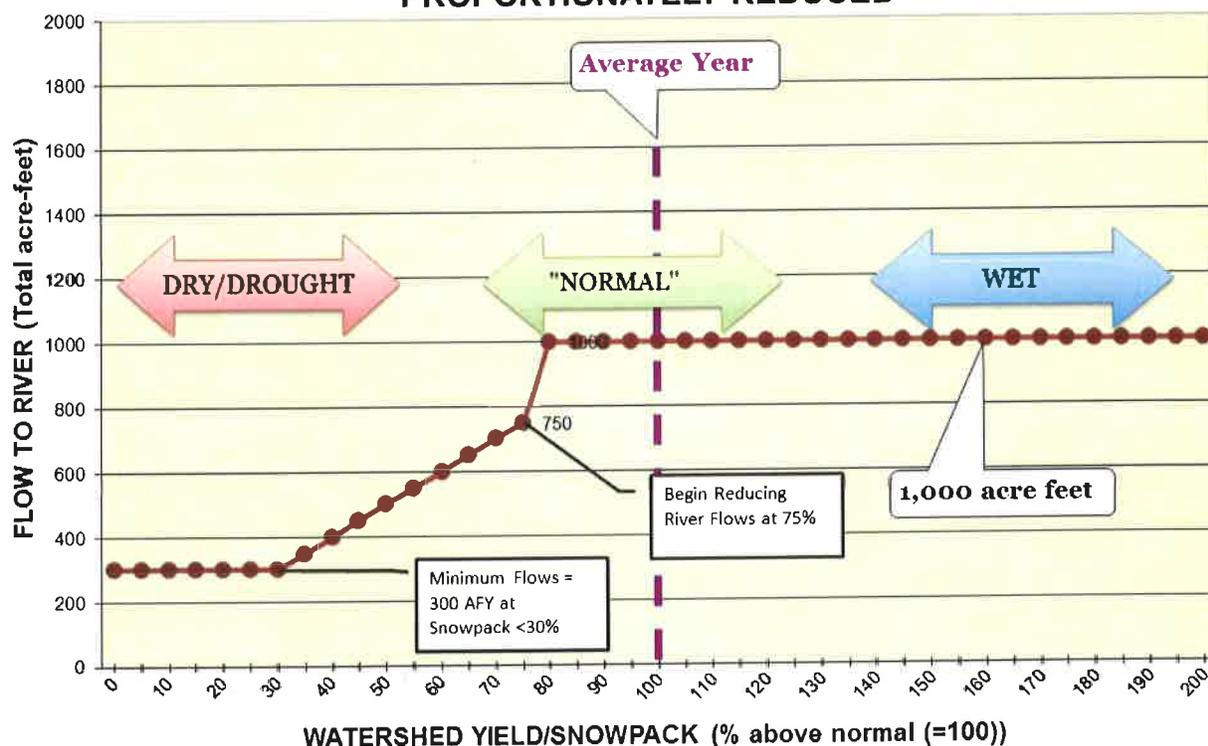
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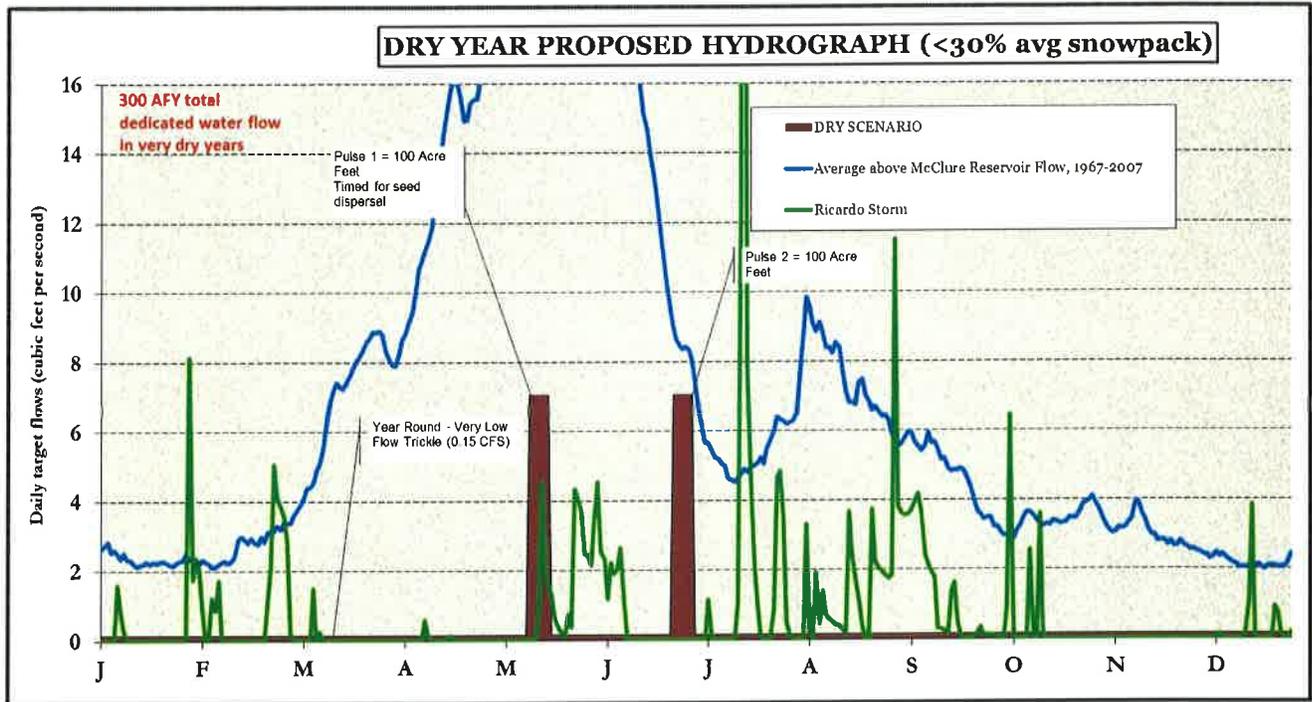
30% or less of average snowpack = 300 AFY (2 pulses and a 0.15 cfs year-round trickle)

DRY YEARS: WATER FLOWS DEDICATED TO RIVER PROPORTIONATELY REDUCED



Changes to reduced flows will happen through (1) reduction in average summer flows, (2) scaling-down of the spring pulse and (3) reduction in shoulder season flows from 0.30 cfs to 0.15 cfs.

The following 'Critical Dry Year' hydrograph has been developed to guide flows of dedicated water in years where the watershed yield/snowpack is 30% or less than average. The Critical Dry Year hydrograph includes two 100 acre-foot pulses and a year-round trickle of 0.15 cfs. This Critical Dry Year hydrograph attempts to maintain a constantly wet corridor in the upper watershed to maintain ecological function while providing two downstream pulses for community enjoyment and support of riparian vegetation.



The 'flow year' is defined as April 15th through April 14th of the following year for the purposes of flow management based upon snowpack level readings on April 15th.

Emergencies

During an emergency, water dedicated to the River may be suspended until the situation is rectified. The Core Working Group and Community Meeting participants did not directly address the question of what constitutes an emergency. General discussion, however, indicated that it would be appropriate for the City/Water Division to adjust or curtail flows in response to an emergency situation in order to prevent an interruption in water service and to protect public health and safety.

Associated Recommendations/Challenges

- Acequia agreements: Can the City work with the Acequia groups to minimize the impact of their withdrawals on 'bypass water'? For example, measure and report diversions regularly, time diversions with abundant flows, use irrigation conservation measures (like watering at night), etc?
- Infrastructure upgrades at the gages and outlet structures to make the physical release and measurement of water more efficient, adaptable and accurate.

Recommendations that were not fully discussed and agreed-upon at the CWG retreat but that did receive some discussion:

Dedicated Flows to the Santa Fe River may be altered if the City experiences a water supply emergency. Although no definitive definition of 'emergency' was decided upon by the group, several scenarios were mentioned as possibilities. The overarching goal is to permit the Water Division to avoid interruptions in water service and to protect public health and safety.

Examples of emergencies could include:

- Events that could cause an interruption in service or threaten public health and safety.
- A fire in the watershed that threatens water quality and/or quantity flowing into the Reservoirs.
- A failure of the water infrastructure that permits control and monitoring of flows into the River, including valves, gauges, gates, piping, etc.
- A failure of the Buckman Direct Diversion project (BDD), the Canyon Road Water Treatment Plant, transmission lines or other water infrastructure.

Definitions

- Acre Feet (AF) or Acre Feet per Year (AFY):** term to describe the *quantity* of water. An acre-foot is the amount of water required to fill an area of 1 acre with 12" (i.e. 1 foot) of water. One acre-foot is equal to 325,851 gallons.
- Average Watershed Yield:** defined as yield of water expected from the upper watershed annually as of April 15th as compared to the historical record average. The anticipated watershed yield is measured as a % of average snowpack. The watershed's approximate average yield is ~5,000 AF.
- Buckman Direct Diversion Project (BDD):** Water supply project that will utilize surface waters from the Rio Grande. Expected to be fully operational in late Spring 2011.
- Cubic Feet per Second (cfs):** term to describe the flow *rate* of water.
- Dedicated Flows:** The amount of water the City has dedicated to the River – during Normal/Wet years it is equal to 1000 acre-feet per year (AFY); during Dry Years it is equal to 300 acre-feet per year (AFY).
- Emergency:** defined as a situation that would cause an interruption in the Water Division's ability to provide water service or that threatens public health and safety.
- Natural Hydrograph:** The natural hydrograph (in cfs) can be shown either for water naturally entering the upper-most reservoir (McClure) or for water passing through a gauge further downstream (Ricardo Gauge, for example). In either case, the hydrograph 'line' created represents water that enters either the reservoir or River naturally based upon snowfall, stormflows, etc.

**Additional Considerations
BYPASS FLOWS IN THE SANTAFE RIVER**

**Additional Recommendations gathered during the Public Engagement
and Community Outreach Process**

The following recommendations emerged from the Community Outreach Process and are considered to be supplemental to the Administrative Procedures:

1. The City should explore establishing **flow reporting agreements with Acequias** to create records of the surface water withdrawals by the Acequia Associations that have rights to the water. The City may also want to consider working with the Associations to help improve the water efficiency of their operations (watering at night, install more flow monitoring, etc).
2. Based upon existing infrastructure challenges, **improvements in infrastructure should be implemented** to allow for more nimble adjustments so that flows can be more quickly and/or frequently adjusted. Upgrades may also include improved flow monitoring during winter periods when the stream may be frozen.
3. A more comprehensive **Monitoring Plan** is needed to adequately assess the impact of Dedicated Flows and to ensure that the City releases water in accordance with the Community Objectives. The Monitoring Plan can be used as a tool for Adaptive Management. Several related topics arose during Community Process:
 - a. **The community – through coordinated efforts of community groups, schools and/or the Watershed Association – may be interested in assisting** with ongoing monitoring of water flow and ecological health indicators. The City should consider building a website (with possible social network integration) that updates the community on flow events and provides a vehicle for gathering feedback or river reports. The City may want to consider pursuing outside funding (or assisting the Watershed Association in doing so) for these initiatives.
 - b. **Additional Monitoring** – Several ideas about additional monitoring capabilities that the City should consider emerged from the Core Working Group workshop. These included the use of soil moisture meters and potentially shallow groundwater monitoring wells that would help the City understand the needs of riparian vegetation and movement of subsurface water.
4. The City should **maintain flexibility in scheduling flows** and may need to fine-tune flow releases around the Fishing Derby dates. If the City finds a conflict with the hydrograph (in terms of meeting bypass flow constraints or other scenario), a shift in dates for the Fishing Derby should be considered.
5. The City should **remain sensitive to the equity issues** surrounding the use of Dedicated Flows and when possible, aim to provide as much water to points further downstream as possible (i.e. Village of Agua Fria and/or the intersection with Rt. 599).

**Santa Fe River 1000afy Flows
Stakeholder Interviews Summary
January 4, 2011**

The purpose of the Santa Fe River Flows public engagement process is to determine community values about the management of 1000afy of flows in the Santa Fe River, and to make a set of recommendations to the City about how to direct and administer such flows. During the initial stages of this initiative, the consultant interviewed 37 community stakeholders, including City and County officials, representatives of community groups, environmental restoration groups, businesses, tourism industry leaders, acequias, and neighbors living along all stretches of the river (please see appendix for a list of people interviewed). About a dozen of those people volunteered to serve on a Core Working Group (CWG) to synthesize community input from interviews and community meetings and develop concise recommendations for the City.

This paper summarizes the findings of the stakeholder interviews, particularly peoples' views about what is important to them about having water in the river, the objectives that this water should meet, and suggested strategies for how to manage the flows to serve these priorities. In addition, several key questions were raised for consideration in the process. The aim of this paper is to provide guidance to the CWG and other interested parties within the City as context for more detailed deliberations, and to lay a foundation for the design of two broader community meetings.

Values / Priorities – *What is important about a living river to you and your constituents and for what purposes would you want to see the river flow?*

Stakeholder comments included the following set of objectives for flows in the Santa Fe River. Asterisks indicate the number of respondents who specifically mentioned the corresponding objective:

Significant spring pulse (or snowmelt runoff), followed by much smaller flows into July (2 cfs?). Hopefully the monsoon rains will then kick in. The high runoff will create a sponge effect for riparian systems, which will then retain water in the river channel even as the flows become a trickle. Native vegetation can take root again in downtown and will slowly migrate through the system.	*****
Try to mimic flow patterns as much as possible	*****
Periodic summer pulses at higher flow rates (every three weeks?) to saturate downstream plantings, at least for a few years until willows and cottonwoods get established at San Ysidro. Plant requirements as bottom line.	*****
Release in mid-spring until mid-fall. Time summer pulses to correspond to when people can enjoy the water – weekends, holidays	*****
Larger, less frequent releases lead to more beneficial results – watering downstream trees, community engagement, higher flows for kayaking	
Create dams or small retaining ponds every quarter mile or so to keep water in the river longer	***
During wet years, start releases later in the season, or time for before and after spillovers	
Counting the spring spillover toward the 1000afy will create early season imbalances	
Spread the water through the full year, even though it won't go past St. Francis	
Experiment for the first three years with different regimes and monitor the results	**
Consider building in a review process into the ordinance, with annual reporting requirements. Include groundwater monitoring to check aquifer recharge.	**
Improve the regulation system so that flow rates can be adjusted more nimbly. Turn off during monsoon rains. (consider setting priorities now that can be implemented later when infrastructure improves)	**
Consider shutting off flows at night	***
Work with County to use some of their excess capacity from SJC diversion	
Release “1000afy in addition to the legal obligations to the acequias”	

People interviewed (as of Jan 4, 2011)

City Officials

Mayor, David Coss
Councilor Rebecca Wurtzburger
Councilor Patti Bushee
Councilor Carmichael Dominguez
Marcos Martinez - City Attorney

Santa Fe County Officials

County Commissioner Virginia Vigil

City Staff and Contractors

Brian Drypolcher – River Coordinator
Marcos Martinez – Assistant City Attorney
Claudia Borchert – Water Division
Amy Lewis - Hydrologist

Santa Fe River Commission

Jerri Jacobi-Chairman
Melinda Romero Pike
Richard Ellenberg
Jim Cutropia
Dale M. Doremus
Samuel Gerberding

Community Groups

Old Santa Fe Foundation-Tim Maxwell
RiverSource - Rich Schrader
Santa Fe Art Institute - Diane Karp
The Camino Real River Connection - Nichoe Lichen
Santa Fe Watershed Association - Felicity Broenner
BDD member at large - Conci Bokum
League of Women Voters - Neva Van Peski
Historic Design Review Board - Cecilia Rios
Saint Francis Cathedral – Jim Cutropia

Neighborhood Groups / Acequias

Canyon Road HOA, Richard Ellenberg
Acequia Muralla - BC Rimbeaux
Acequia Madre - Phil and Eleanor Bove
Riverside landowner – David Baca
Agua Fria Villiage – Melinda Romero Pike, William Mee

Environmental Groups

Wild Earth Guardians - Jim Madison
Nature Conservancy - Bob Findling
Earth's Birthday project - Cliff Ross
Audobon Center – Steve Cary
WaterCulture.org - David Groenfeldt

Water in the Santa Fe River – 1000 AFY

Community Meeting #1 REPORT

January 13, 2011

Meeting Participants

Public Attendees: Approximately 85 people participated in the meeting, with a wide range of ages and interest areas, including participation from all over town (a complete list of participants and neighborhood distribution will follow as an attachment)

Public Officials: Mayor David Coss and Councilor Carmichael A. Dominguez were present, as were City staff members Brian Drypolcher, Claudia Borchert, Marcos Martinez and City Attorney Geno Zamora.

Introduction by Mayor Coss

Mayor Coss provided the introduction to the public at the meeting and gave an overview to frame this meeting and the overall public process. The Living River Initiative is a unique and significant effort for Santa Fe and within the greater Southwest; it is history-making and precedent-setting to dedicate a significant portion of a municipality's potential water supply to the ecological health of the river and to the community benefits that come with it. The Mayor welcomed everyone to the meeting, thanking the Attorneys, City Staff and participants at the meeting.

Overview by Toby Herzlich

Toby introduced the crowd to the public process and the specifics of this first public meeting. She asked the crowd several questions and implored them to raise their hand or to stand up:

Toby asked participants to stand up or raise their hands for the following:

- If you were in this room 3 years ago for an earlier meeting about the River – 1/3 of the room.
- If you have been part of dreaming this into being in some way – most of the group.
- Lifelong member of the community – 20 people
- New to the community, less than a few years – 10 people
- Student or Teacher or educational involvement – 10 people
- Work in Business – 10 people
- Work in the Arts – 15 people
- Work in environmental field – 50-60
- Play involved in natural environment – 50-65

The purpose of the process we are undertaking is to advise the City about how to manage the 1000 acre feet per year (AFY) of flows for the River. The reason why the City is undertaking this process is that although it's a very big deal to create a law governing flows of 1000 AFY, it's not enough water to create an entirely 'living river' for the whole stretch all year long.

“Creating an aesthetic urban green space” with water access in an arid landscape ranked highly as a priority objective, as did *“Education / School engagement / Building ecological stewardship values.”*

“WHAT IS MOST IMPORTANT TO YOU ABOUT FLOWS IN THE RIVER?” COMMUNITY OBJECTIVES FOR 1000 AFY FLOWS	TOTAL	PERCENT %	Stakeholder Interviews
Improve ecological conditions and resiliency	45	18.4	13
Thriving cottonwood and willow plantings (care for investment)	21	8.6	9
Habitat for birds, animals	20	8.2	4
Fish downtown	3	1.2	1
Aquatic insects in some part of the reach	1	.4	1
Connect us as a community across culture and geography	23	9.4	3
Equity of benefitting entire community (flow downstream)	25	10.2	3
River events (river festival, blessing on San Ysidro day)	3	1.2	7
Aesthetic urban greenspace (place to be in nature, near water, in arid lands)	26	10.7	7
Continuous flow downtown	5	2.0	2
Education / School engagement / Build ecological stewardship values	20	8.2	2
Recharge aquifer, private wells, and city well fields	16	6.6	4
Acequias and agricultural use	15	6.1	1
Recreation – general	3	1.2	2
Playing in water with kids and families	5	2	3
Fishing Derby	0	0	N/A
Prevent erosion damage from flood events	6	2.5	3
Including issues re. property values	1	.4	1
Tourism Draw	6	2.5	3
Retain water for Municipal uses only (i.e. ‘not in the River’)	0	0	N/A

Some potential revisions were suggested to enhance Scenario #3:

- Building in some flexibility into the operational plan to adapt the pulses based upon the levels of annual spring snowmelt runoff.
- Reducing the Sept-Oct pulses to more closely match the river's natural hydrograph
- Shifting flows somewhat to provide a small amount of year-round baseflow (i.e. 'trickle') along with the pulses, so that the river doesn't entirely dry out in between pulse periods – some of this baseflow water may possibly be obtained by reducing the late fall pulses to more closely match the hydrograph.
- More clearly describing and outlining the goals and objectives associated with this scenario.
- Don't call this "the irrigator" strategy

Final Summary Comments

At the conclusion of the meeting Toby asked for additional input, comments, or questions from the participants:

- Can there be flexibility built into the flow management so the pulse scenario (#3) can be adjusted seasonally based upon snow pack?
- A suggestion was made to develop small pools or impoundments within the river corridor to create wet zones that would retain water for a longer period of time after flow pulses or storm events
- Some of the youth attendees felt strongly that 'water is not for tourists' and should be used to benefit the entire community, particularly those living on the Southside who would also appreciate the experience of a flowing river.
- A drought scenario is needed to ensure that water still flows to the River even in dry times. The City has developed policies to ensure that public park landscaping does not dry out and die during drought years and this concept could/should be applied to the river, too.

- River/ Acequias as life blood of community
- Continue what's been working for years up near Casa Solana
- Any river is better than no river.
- It would be nice to see pockets of small green oases
- Community pride around the river is highly important. Also, parts of the river are the historic Camino Real
- Community pride around the river and the habitats are key points (high school students)
- Hearing the river outback of my house at The Commons is amazing and I don't want to lose that

Follow up thoughts:

- Community education about the river, its historic role and its environmental role are key
- Signs near bridges that cross the river that read "Do you miss the River" with accompanying before and after pictures could be beneficial
- Maybe have a fish Mascot a la Smokey the Bear to go to local schools to reintroduce the river to kids who have grown up without it
- Ecological justice is important
- Controlling erosion is important – stop the incising

Points regarding different options of 1000 AF use:

- Focus on ecology first. Once that returns and things green a bit, the community pride, education etc. will follow
- The overflow should NOT be counted as part of the 1000 AF. That's a bonus from mother nature
- Pulses should be fluctuated to account for stormwater
- Small ponds could be constructed or water could be retained close to downtown for short periods. Legally you can detain water for 72 hrs.?
- As the city grows, use decentralized wastewater treatment and let treated effluent flow into the river
- If the pulses are weekly, maybe there could be a community focus on it. "Take me to the River days"
- Look into conveying the water from the dam closer to downtown before allowing it to infiltrate. That way more people can benefit from it.

Comments from the wall

The long sheet of paper posted on the wall at the back of the room was used as a space for people to contribute comments during the meeting. Comments were linked to questions (identified in ***bold italics***):

How can we provide optimal benefit to and from our river?

- Understand the importance of a living river
- Commit to having a living river
- Make the necessary sacrifices as humans to keep nature alive
- Don't throw trash and don't take the water from the river because it won't work

Agua para toda la comunidad!

Is there a realistic benefit in timing minimal releases of this 1000 AF to coincide or 'bookend' periods of higher relative humidity? In other words, restricting release during extremely dry periods / during the

Additional (Raw) Table Notes from Group Work

Project: Santa Fe River – 1000 AFY Initiative

Date: 1-13-11

Location: Chavez Community Center

Table Guests:

Rick Martinez, Deanna I., William M. (Agua Fria Village), Louis M. (Agua Fria Village), May Montoya (Agua Fria Village), Jennifer Hacket (San Isidro Crossing), Dwight Hacket (Agua Fria Village)

Initial Thoughts Upon Introductions:

- Ecological
- Fish
- Don't trust city
- Growth mgmt plan
- Natural area
- Birds (don't tease)
- Beauty
- Children
- Tradition of flowing
- Beauty
- Want to see County more involved
- Ecological reasons
- Well water
- Enough flow to reach through Agua Fria
- Riparian environment living
- River/ Acequias as life blood of community

Scenarios:

- We should benefit from what 'mother nature' gives us. Excess should not count towards 1000 A.F.
- "Don't take from us again"
- Spread pulsing out if high precipitation year
- Sustaining remnant pools along the river

Initial Thoughts Upon Introductions:

Thoughts:

- enjoy the river
- use 'old ways' of irrigating
- build 4 holding tanks below Canyon and Lopez for storage. Install pumps to recirculate water in dry times so that 1000 AF goes further and lasts longer.
- designate times for higher/lower flows so different groups can meet their needs
- in favor of constant flow to feed a 'living river' (1.5 CFS throughout the year)
- 7000 AF flow into Nichols per year. Only 5000 goes to the city. Shouldn't that leave 2000 for the river?
- interested mainly in downtown, for tourism.
- ecological concerns
- flow at higher levels less frequently to feed more of the river and so more people down river can enjoy it.

Initial Thoughts Upon Introductions:

- more willows
- vegetation
- ecological justice
- acequias, diverting through smaller channels
- ecology
- water is life
- community draw unites
- return environment to natural state
- dragonflies, life

Initial Thoughts Upon Introductions:

- city language be careful SF Water
- Hybrid- trickle + 3 +follow hydrograph
- short term choice might be different than long term choice
- long term benefit should be as natural environment as possible
- focus upstream with managed storm flow in the short term
- river that stays consistently wet and moves downstream
- guidance on what I'm getting w/ different choices
- equity: whole community benefits
- tapered surges: high season/ low season
- impoundments, pulses with ponds/pools (way to sustain)
- adamant that 1000 AF guaranteed, but each year looks different depending on conditions

Table Guests:

Live on river (Upper Canyon), lived in SF most of life, Canyon Neighbors Association, South Side, have walked river for years, live on river on W. Alameda, Agua Fria Village,

Bill Armstrong, fire specialist USFS; Felicity, Watershed Association & Santa Fe native; Melinda Park; Betty Booth; Diane Karp, resident of 9yrs, Santa Fe Art Institute; Tricia Watts, moved here from California 2 weeks ago; Francesca Lemids, Agua Fria; Milee Griego Rotunno, Santa Fe native

Initial Thoughts Upon Introductions:

- interest in connecting people to natural environment
- disconnects between food, fuel, water, etc.
- improving ecological resiliency
- importance to kids and families
- need to know where water comes from
- cannot live without it
- morally & spiritually the river is supposed to be a river from headwaters to its end at the Pacific
- connectivity w/ animal life, children, flora, survival, food production
- ancestors experienced the severity of dry river from the dams
- if the plaza is the heart, the river has been the blood. watch people and animals play is like watching the blood flow. Connectivity is major
- use the arts to build stronger communities and explore issues through arts
- cultural freedom and environmental justice
- stunned that river is not at top of everyone's list
- river has not functioned as meeting & joining but has become a case of 'ownership' of land and water.
- returning health to community
- shocking to see river dry
- love running water
- lack of water takes away some of life
- recharging is important
- interested in getting water back
- art that addresses environmental issues
- 'water is life'
- property values along river are of interest to owners
- flash floods take away property
- excited about river trail
- memories of river- taught to value and treasure it
- family history of love for water and who we are

Scenarios:

- We should benefit from what 'mother' nature gives us

Table Guests

Sergio:

Scenario#3 – The San Isidro area is a healthy place for the river. Guadalupe area has many areas with concrete and erosion problems. Water from the river also must benefit southern communities of the city. We do not need water in the river just for tourists.

Rosa:

Scenarion #3 – water from the river close to the plaza won't help nature because the concrete on the edges of the channel. The river must be used for the ecosystem helping nature.

Alan:

Scenario #3 – The river must be a place of life where people and communities can get together in order to create a better place for all Santa Fe. Soil, plants and animals further down the stream along the city also will benefit from this scenario.

PHOTOGRAPHS









Community/Public Meeting #2 Notes

February 3, 2011

5:30-7:30 pm

Attendees:

Despite the cold weather, approximately 50 people attended the meeting (this includes 6-8 core working group members). Approximately 1/3 of the people in the room were not at the first community meeting.

Overview

Toby presented the agenda for the evening and outlined the work that the Core Working Group has been doing after the 1st Community Meeting.

She showed a slide show to go over several concepts

- Living River Initiative
- Definitions of Acre Feet and Cubic Feet per Second
- The 'Task' at hand
 - o *Community Objectives for 1000 AFY Flows?*
 - o *Target Flow Season? Start/End Dates?*
 - o *Preferred Flow Regime? Desired Flow Season Hydrograph?*
 - o *Adjustments during dry years?*
 - o *What constitutes an 'emergency' to suspend that flow?*
 - o *Adjustments during wet years?*
 - o *Other Considerations*
 - o Goal = creation of administrative procedures to support an ordinance that will go to City Council and the Mayor
- Where are we now?
 - o Completed 30+ Stakeholder Interviews
 - o Community members, including some already involved with the river
 - Watershed groups
 - Business Community
 - Acequia members
 - Community-oriented non-profits
 - Biologists, ecologists, restoration specialists
 - Mayor, City Council
 - o Completed 1st Community Meeting
 - o Completed 2-day Working Group Retreat
 - o Drafted Preliminary Recommendations
 - o Final community review -- reflection, comments, support
- Community Objectives from 1st Meeting
 - o Create an Ecologically Healthy Vegetative Corridor
 - o Benefit the Entire Community with Flows

Core Working Group Meeting #1 Notes

January 4, 2011

5-7 pm

Introduction and thanks by Mayor

Introductions of Core Working Group Members

Jerry Jacoby – River Commission Chair. Aquatic biologist by training with a passion for rivers. Wants to see a living river with life in it. Coming at from a biological sense. Legacy – giving the aquatic community a chance to create its own form of a system.

Jim Cutropia – Cathedral. They own 7.2 acres adjacent to the river on Alameda. Seems that the river bed is not healthy; its eroded, silted, etc. Interested in a plan to remedy this. Will also be partially in charge of development of the Church's property over the next several years. Legacy – a healthy river.

Felicity Broennan – Director of SF Watershed Association. She grew up in SF and spent much time in her youth along the river. Interested in a health river, trees, community access. Legacy – an overall healthy river.

Richard Ellenberg – Canyon Road HOA, Acequia de Llano, on the River Commission, Chair of Santa Fe County. healthy river system is important to him. Would like to see more trees and water and birds and animals through town.

William Mee – President of Agua Fria Village association, well and acequia association. Concerned with erosion at Rt 62, various sewer lines, etc. Interested in vegetation, water recharge of wells.

Nichoe Lichen – Camino Real River Connection group. To her a river is a commons, a source of cultural pride for the community, place for kids to play. Why? Water is Life.

Phyllis Bustamante – NMED Groundwater Quality Borough. Interested in returning the river to its natural state.

Neva – League of Women Voters. No particular goal or aim for the river; enjoys it when water in it.

Brian Drypolcher – City's River and Watershed Coordinator. Been working for the City for a few years, and before that TPL as project manager for Railyard Park & Plaza. He is interested in being involved in his community and helping to shape the experience of the built environment. Legacy – river to be a great place so that when people arrive, they think 'what a great place' to experience, making it more accessible, function better, etc.

Jim Matison – Restoration Director w Wild Earth Guardians. Has been involved for years with restoration projects along the river. Has a passion for riparian areas from growing up in Tuscon. Legacy – restore the ecological function of its river to its maximum potential so it can become self-sustaining ecologically.

The Mayor has requested an ordinance to strengthen the City's commitment to itself to put more water in the river. The Ordinance in simple terms says "the City will allow 1000 acre feet per year in the river". That's fine, but the how, when, in what and to accomplish what goals gets down to administrative procedures.

The work of this group is to help the City with the ordinance, but more importantly, to create the administrative procedures for how the ordinance is regulated. There will also be a new resolution to direct staff to comply with the ordinance and procedures.

This is very much a citizen led initiative and value for water in the river. The Mayor also sees himself as a champion of the River. Although the resolutions in the past have passed relatively easily, this ordinance may face more scrutiny. Examples include questions on cost, dedicate of highest-quality, least expensive water, etc.

There are a host of surrounding issues that should be considered as we draft these procedures.

Richard suggested language that frames this as a 'supplement' to what is happening naturally; part of the building block idea as the 1000 afy builds upon what is already there.

How does this relate to our water supply?

Claudia Borchet – The City feels that it can have a sustainable water supply and allow some of the water in the river in normal and wet years. In drier and dry year scenarios, there are still some challenges. The primary reason the 1000 acre feet is on the table is from conservation. The community has done an amazing job in conserving – the lack of need to supply a bunch of extra water has allowed the City to consider giving some to the river.

The 1000 acre feet makes up about 1/5 to 1/6 of the watershed's yield. There are some legal constraints; the way they have been operating currently is the 'Bypass Concept'. The Bypass Concept is defined by not allowing more water to flow out of the bottom of the reservoir than flows in.

Key Question – how do we balance the fact that we want to use our water resources for many things. We want low rates, clean water, water in our taps, etc. We are trying to figure out a way to find the triple bottom line or win-win.

The Administrative Procedure Questions

Toby frames this as ultimately a values question - what do we want this water to do?

Toby has been interviewing around 40 community stakeholder members and she will circulate the summary of these meetings to the group.

Community Meeting

There is a community meeting coming up Jan. 13th at the Chavez Center
We will be meeting the 21st and 22nd at the Audubon Center facilities.

**Santa Fe River – 1000 afy flows
Core Working Group Workshop
Jan 21-22, 2001
AGENDA**

Day 1 – Friday, Jan 21

- 9:00 **Welcome and overview**
Clarifying our assignment
Presentation from City Staff
Summary of Community Objectives – stakeholder interviews and community meeting
- Discussion – recommendation for key objectives for 1000 afy
- 12:00 *Lunch*
- Tour of Nichols Reservoir release infrastructure – *Limitations to the system -- How responsive/flexible can our management practices be?*
- 1:30 **Flow Season and Practice under normal years**
- Need to determine and recommend:
 - Start dates
 - End dates
 - Timing of releases
 - Desired hydrograph
- 1000 afy in relation to spring spillover**
- Claudia presents information about tradeoffs
 - Come to decision and recommendation
- Preview tomorrow's work**
- 5:00 *close*

Day 2 – Saturday, Jan 22

- 9:00 **Reflection and overview**
Adjustments to target flows: what to do in wetter conditions?
- Come to decision and recommendation
- Adjustments to target flows: what to do in drought conditions?**
- What would constitute an “emergency?”**
- 12:00 *Working lunch*
- What else needs to be considered?**
- Review additional questions
 - Go through draft ordinance
- Summary and next steps**
- 3:00 *Close*

Core Working Group Retreat

Meeting Notes

January 21-22, 2011

The Audubon Center, Santa Fe, NM

Day 1 – Friday, January 21, 2011

Attendees:

- Rich Schrader: RiverSource (& The Commons) – interests and passions of families in the area.
- Phyllis Bustamante: Citizen & background in water and water quality.
- William Mee: Agua Fria Village. Passion from traditional community that was tied to the River and acequias.
- Felicity Broennan: Santa Fe Watershed Association. Passionate constituents
- Jerry Jacoby: Chairman of the River Commission. Aquatic biologist. Member of American Fishers Society.
- Fidel Guitierrez: LANB, Chair of Chamber of Commerce & Children Museum.
- Steve Cary: Audubon staff & Citizen. Brings a sense of natural function of rivers.
- Richard Ellenberg: Lives nearby. Canyon Neighborhood Association & Chair of the Democratic Party. Bringing a non-expert passion and experience with the various viewpoints.
- Niva Van Peski: Has collected statistics on water and river for a number of years, also a member of League of Women’s Voters
- John Utton: Board of Santa Fe Watershed Association, lives along River near Alto. Water lawyer, represents a few acequia groups and Santa Fe County.
- Jim Matison: Wild Earth Guardians. Has worked on re-vegetation over the past 10 years.
- Nichoe Lichen: Camino Real River Connection. Wants to help heal the River to honor historic and prehistoric ties along the River, and to restore dignity.
- Jim Cutropia: Works for the Cathedral whose property is adjacent to the River and are in the process of developing that property. Interested in a healthy River and its importance for tourism.

City Staff Present:

- Claudia Borchert: Water Division. Job is to assure sustainable and viable water supply for the City.
- Brian Drypolcher: City’s River & Watershed Coordinator. Brings various perspectives & a keen desire for this process to be successful; a viable solution that feels good for all parties.
- Marcos Martinez: Attorney for the City. Can provide legal background but will also be listening

Clarify our Assignment

1. Community Objectives for 1000 AFY Flows
2. Target Flow Season? Start/End Dates?
3. Preferred Flow Regime? Desired Flow Season Hydrograph?
4. Adjustments during dry years? What constitutes 'emergency' to suspend that flow?
5. Adjustments during wet years?
6. What else?

Presentation from City Staff – Brian, Claudia, Marcos

Brian provided an overview:

- Living River Initiative
- A New Ordinance and Administrative Procedures
 - o Ordinance is a law to enforce upon itself
 - o Ordinance is supported by a set of administrative procedures
- Public Engagement Process
 - o Stakeholder Interviews
 - o Community Meetings (2)
 - o Working Group that drafts recommendations for Council approval
 - o City Council approval process (4 council meetings)
- Living River Initiative
 - o Ecology- habitat, plant life, stormwater management
 - o Aesthetics – flowing water, greenery, parklands
 - o Social Life – places for people to gather, connectivity, recreation, walkable-bikeable city
 - o Economics – water supply, property values, supporting local businesses & tourism
- Why The Living River Initiative
 - o Because the community said so
 - River Corridor Master Plan 1995
 - Long Range Water Supply
 - o Because the City leadership said so, Mayor and City Council
 - City funds river work on a consistent basis
- How?
 - o Conservation
 - o City's Long Range Water Supply Plan and Supporting research by the Water Division
 - o Buckman Direct Diversion
 - o Thoughtful approach to managing our water supply
- Building Blocks of the Living River
 - o Stormwater, restoration, wastewater, conservation, spring runoff

- Analysis for the Long-Range Water Supply Plan was a little different
 - o 1000 AFY to SF River in average and wet years
 - o 5 cfs constant flow for 100 days
 - o No water released in dry years (when emergency drought management would be triggered)
 - o Assumed BDD is fully operational
 - o Water MAPS (Management and Planning Simulation) modeled annual water supply = 4,481 afy vs 4,900 afy
 - o RWater MAPS assumed City's ability to manage sources flexibly included SF River water from all hydrologic sources: flood flow, reservoir storage, late season flow
 - o Identified that legal
 - o
- Supply Probability of the Santa Fe River as a Source
 - o Overlooked the probability graphs and projected modeling of impacts of allowing 1000 AFY in the River.
 - o Serves as a tool to understand the risk and the results show that there is a risk – not huge – of releasing water into the River.
- Illustration of Spring Releases and Abundant Precipitation
 - o Risks to water supply (in terms of cost and wet water) associated with how we release water during dry years, average years and wet years.
 - o Do you take 1000 AFY in addition to the 'spill' that occurs only in wet years, what is the risk to the water supply?
 - o The typical year would not create a 'spill' over the resov.
 - o Starting in mid-June, we are using more water than is in-flowing – i.e. starting to rely on storage.
 - o If we take all the 1000 AFY during the 'accumulation' time, this can impact the water supply.
 - o What if we reserved some 'bank' from excessive years to help reserve water for the river in the event that a drought year occurred the next year.
 - o Question – was there any effort to link a 'percentage' to the River based upon the Watershed yield as opposed to "1000 AFY". Would a scalable number make more sense than a 'fixed' number.
 - o Can the 'calendar' year be shifted to June or some other month instead of January. The time we know the most is around April 1-15. Still have no information about thunderstorms at that time.
 - o Discussion on rate – is there a public process about water rates.
 - o Variability is a natural pattern and hydrologic function of rivers, particularly in the West and we should be careful to not totally disrupt this pattern.
- Summary – the decision is not yet clear – this is part of the Flow Regime question. We cannot decide the flow regime, until we've made a clear examination of the community recommendations.

Small Group Exercise – review the top objectives generated from the Community Meeting and Stakeholder Interviews. Does this fit with our objectives for the flow?

OBJECTIVES

1. Ecologically Healthy Vegetative Corridor (Resiliency)
2. Benefit Entire Community with Flows (Equity)
3. Beautiful Natural Urban Greenspace w/ water in arid environment
4. Educational Resource for Schools & Community Stewardship

Group 1

- Improve ecological conditions and resiliency – everything else is related to this and tied together. Green space, tourism, etc all tied to the ecological portion. Healthy environment reflects a healthy community. Everything flows from the ecological resiliency piece.

Group 2

- Thought the line was drawn in the right place – no need to rank them, but hold them all.
- Some community objectives may not have an impact on the release regimes?

Group 3

- Building block is #1 (Ecological health) and all other things come from it.
- Recharging groundwater & well fields can also fall under #1.

Discussion on developing consensus:

- Question on how much info is submitted about these top objectives...will we list sub-categories and also those that did not make the cut?
- Better summarize the totals from each main of the 4 categories.
- Can we feed the subsets into the main 4 categories and figure out where they belong above?

Basis of consensus:

1. Site these 4 as the primary objectives, with subcategories included beneath it
2. Show in weighted order
3. Plug in other values under these 4 categories

Result: Complete consensus

Field Visit to the base of Nichols Reservoir and to the gauge below Nichols.

Take-aways from visit:

- Systems more antiquated than the kind of management we want to do with it
- Can't measure winter flows the way we want to because of frozen water surfaces

supplement to Monsoon. Like the idea of the piezometers so that can be ready with pulse if Monsoons don't come. Didn't feel that the shoulder season (Jan-March) and (Nov-Dec) was as crucial and possibly not getting all the 'bang for the buck' during this season. Would rather see more water flowing mid-April through mid-Sept. Was hoping for continued leak to help support the upper river area. Did discuss whether there was some minimum (or maximum?) amount in drought times.

Group #2 –

Jim M., Richard, Jerry, Claudia, Phyllis

Wanted to maximize pulses to San Ysidro – 5 total pulses of approximately 1 week each with a small trickle year-round. (The first pulse is 2 weeks). Shoulder season trickle accounts for nearly ¼ of the annual flows.

Extended the 8 CFS initial event out a week so it was further along into June. This would help to facilitate seeding (which may roll into June). End of June/beginning of July is the warmest part of the season and it is when there is no monsoon – they wanted to add a pulse during this time to help with watering and minimize impact of a bad monsoon season on the plantings. Adding another pulse in August in hopes that they have a normal monsoon season; just in case there is not, there is another designated flow to adapt to it. They recognize the importance of natural patterns of water in the system for a year round period of time as is dictated in the natural hydrograph. They suggest 0.60 during the early part of the year and 0.80 CFS during the shoulder seasons. August and Sept. pulses could be variable – in a good Monsoon, these could be shifted downward to help bank some of this water for the next year. This scenario reaches most of the community with flowing water. Shoulder season water may help keep upper reaches alive.

Do semi-saturated conditions, when a storm comes does this condition help attenuate flashy runoff patterns?

Rough rule-of-thumb: Look at CFS flow – and double it – to estimate how far (in miles) that water will flow. i.e. a 6 CFS pulse will maybe make it 12 miles.

Group #3 -

Steve, Felicity, William, Rich, Jim C

Recognized a few things – early part of the hydrograph (snowmelt) is easiest for us to measure, predict and mirror. Winter is dormant time, there is already some leakage, snows and melts with little demand, and so eliminated the Nov-March water and re-allocate it. Water was added to bulk up spring pulse. Stair-Steps could be based upon % of water going into McClure. For the Summer, suggest fewer, higher peaks (to be more typical of a monsoon), but if this could be flexible, could allocate more in a dry year and in a wet year allocate less. Three main pulses outside of the spring pulse. Want piezometers to help measure wet/dryness in areas with plantings to get feedback.

Common Threads for all 3

- Strong Spring 'Flush' Pulses that gets through San Ysidro.
- All had 2-3 or 4-5 San Ysidro Pulses

- There is additional property from Rt. 599 to Cottonwood Mobile Home Park – Camino Real River Park (1 mile long) that is a joint City/County project and will open sometime this year. Nichoe recommended that we try to get water to this park? Can we pump effluent to that park.
- Erosion control is important (William Mee) as the downstream reaches of the River are being impacted. There are threats (in 5 places) to the City's sanitary sewer line. Small portion of Agua Fria Villager's property in some cases has fallen into the River.
- Hybrid 5/Scenario 3 – Works well but may need to be paired down slightly to stay within 1000 AFY.
- Jerry – providing shoulder flow, some life can be maintained. Turning it off completely will let much of the river life to die, and when it is turned back on again, everything must start again. John's concern is that if we provide shoulder water that we may have to reduce the flows during the summer between the peaks.
- Jim pointed out that we have heard about 3 different places to get water to – need to decide how far we want to get those pulses before we finalize our pulse volumes.
- Steve thinks that adding shoulder flows would support some more robust life in the upper reaches and this may be worthy even though not everyone lives along this reach.
- Jim said that yesterday that we were looking for a spring pulse to distribute seeds to the WWTP, with a few more monthly to San Ysidro.
- Nichoe mentioned that there are thousands of kids near the Camino Real Park (which is about to become City property) that would benefit from flows to San Ysidro and beyond.
- Richard mentioned that getting shoulder flows through Santa Fe Canyon Preserve (property below this is all private to Patrick Smith Park). He also suggested a spring pulse to 599, a summer pulse and 2 CFS summer flows through DeVargas Park.
- Jerry said that maintaining 2 CFS gets flow through downtown with a slight spill over St. Francis.
- William suggested 180 days @ 2 CFS and XX days @ X CFS.
- Phyllis said that most of the community input was that they wanted to river to go down further into the community where more people access it.
- Rich recommended that we at least keep 1/3 CFS in the shoulder season – even if the leak is fixed – to maintain what we have in place right now.
- Jim C. recommended taking an average year's storm flow to augment the 1000 AFY and examine this impact. Redistribute the 1000 AFY based upon flow projections from rainfall.
- Steve said that the downstream reaches have different weather/river patterns than the reservoirs and can receive water from rainfall/runoff. The uppermost reaches are not going to benefit from this runoff and are thus very dependent upon releases from the dam/reservoirs.
- Phyllis added that stormwater runoff coming from downtown has quality issues and we should try to send good quality water downstream too.
- Claudia: 4 things we do:
 - o SF Canyon Preserve – 200 AFY
 - Very low flow during non-growing season (0.15 CFS?)
 - Double during growing season
 - o Spring Pulse – 450 AFY (to 599?)
 - Fishing Derby/River Festival

Table 2 - Results (Phyllis, Brian, Niva, Jim M)

- This river water is the cheaper water for the City to supply; if we are in a severe drought conditions, we still want to release 1000 AFY and use other supply sources, it becomes more expensive for the City to produce the water.
- Want to be sure to establish plantings that can adjust to dry periods.
- Have 'trigger' points:
 - o Snowpack (scale back when snowpack drops)
 - o Reservoir Level (%)
 - o Cut-off entirely based upon reservoirs
 - o OR use all watershed water for the river as an investment
- Allow the 1000 AFY until the reservoir hits 20% and then cut it off.

Table 3 – Results (Nichoe, Jim C, Erin, Steve)

- Concerned with public perception with trying to maintain 1000 AFY in a time of water restrictions or other such measures. We may have to cut back – perhaps follow 20% of the inflow hydrograph.
- Trigger points for 'decision-making' – April 15/Snowpack, Monsoon Pattern
- Use these decision points to shift the release hydrograph further down-season
 - o Snowpack – adjust up or down the spring pulse or interstitial flows
 - o Monsoon – adjust up or down the late summer flows, pulses or Oct. pulse

Overview

- Need to think about drought, but expand our thinking beyond just 'proportional' burden. In severe drought reduce flows somewhat, in a non-severe drought keep river running. Essentially 'bank' water in the wells.
- Rate impacts may be possible depending upon long term operations of this process.
- How to define stages of drought? Use % snowpack or some other terminology?

Goals for the Ordinance & Administrative Procedures

We need to provide a solid foundation on which the adaptive management can take place. Ordinance needs to have a trigger of 'successful operation of BDD'.

Overview of Shared Hybrid Flow Regime

- Shift August/Monsoon Pulse from August to Late June/Early July, to supplement plantings in June. Although this depends/bets upon Monsoons to provide pulses in July/Aug, it is still better to water the plantings in June than it is in August.
- Trigger/Decision point at Late June/Early July period to examine forecasts for monsoon.
- What is the 'trigger point' for seed germination late May into June?

throughout the year as a minimum maintenance flow for keeping vegetation alive. We think its somewhere between 300 and 500 acre feet?

- Claudia modifies to two pulses and a low-low flow year-round (<0.30-0.50 CFS) at the top of the watershed.
- Could be either-or: Either 3 pulses OR 2 pulses and a low base flow of 0.30 CFS.

Finishing Up & Wrap Up

- Feb. 3rd meeting – feed back to the community their objectives, here are the ways we have come up with addressing these objectives, celebrations about work that has done. Key questions -- did we miss anything or big gaps? We heard you and we feel really good about it even through all of the constraints.
- Synthesize, bring to community meeting, then after meeting work it into the form of an ordinance and administrative procedures.
- Jerry would be interested, William, Felicity, Nichoe, Richard, John, Fidel.
- Who is interested in keeping to weigh-in: John, Richard, Felicity, Jerry, Jim C.
- Next meeting? How about 3:30 Tuesday Feb. 1st
- Dry Hydrograph Scenario for 'spending' water
 - 60-70 AF for 5 days @ 7-8 CFS – provide 3 pulses to keep the River alive and vegetation alive.

Bike Rack

- Way water is taken out of the River – can we take it from the 'bottom' to help clean out sediments from the bottom, thus increasing the storage capacity.
- Acequia agreements – can they water at night? Can they add additional flow monitoring? Is this a separate process of discussion with them?
- Infrastructure upgrades at the gauges and outlet structures...need for design/engineering and upgrades.

Core Working Group Retreat

Flip Chart Notes

1-21/22-2011

Welcome + Overview

- Clarify Assignment
- Why? What? What's Possible?
- City Staff Presentation
- Summary of Community Objectives
- Recommendation: Key goals for 1000 afy flows
- Lunch-Tour of Nichols Release
- Flow Season + Management in "normal" years
- Recommendation: Target Flows
- Spring Spillover + 1000 afy -> relationship?
- Preview tomorrow

Our Purpose:

Advise the City about 1000 afy flows for the Santa Fe River.

Ideas:

Dams along the way to hold water.

Outcomes:

- Recommendations on five questions – then other issues.
- Consultative process – consensus?
- Material for Toby & Erin to use in drafting.

Objectives

- Ecologically healthy vegetative corridor (esp. trees, habitat for birds and animals)
- Benefit Entire Community with Flows (Equity downstream)
- Beautiful natural urban greenspace with water in air environment.
- Educational resource for schools + community stewardship.

Bike Rack

- Does City have a right to measure amount of water acequias are taking?
- Acequia agreements? – can they water at night?
- Resources/staff to engineer infrastructure improvements?
- Can we modify legal constraints?
- Need to study/monitor how far saturated soils go in flow CFS flows

- Subject to op. constraints; 500 afy min to river

GROUP 2 – Start with Scenario 2

- Base on natural hydrograph; maximize pulses to San Ysidro.
- #1 8 cfs pulse at peak of natural hydrograph – 2weeks.
- #2 Pulse at end of June-hottest time of summer-6 cfs in case monsoon is late.
- #3 Pulse in August as “insurance”

CFS year round; won't release if no water coming in.

- Trigger Points –
 - If inflow below average, but no senese, retain 1000 afy
 - Scale back totally related to res. Levels – 20%
 - or consider retaining flows to protect vegetation

GROUP 3 – Start with Scenario 2

- Dormant in Winter; Startup with Scenario 2-Nov-March
- Flexible pulses – related to monsoon events?
- Piezometer feedback for later in the season?

Triggers connected to Phases:

1. Snowpack at certain date:

 ↙ ↘
 Dry Wet

 Dry: Match hydrograph river hit proportionately
 Wet: Begin spills earlier; duration or volume of spring

2. Monson Progress:
 Weak: Retain pulse
 Strong: Extend fall shoulder; bigger October Pulse

Emergencies: Five; well contamination; system failure

Banking?

- Release 1000 afy on average over several years.
- or release in early shoulder season

Consistent

- Strong spring flush pulse

Check-In

- People in community connecting with & embracing Santa Fe River
- Great Place, connection opportunity
- Stormwater as way to connect river to its watershed
- River belongs to us
- Butterflies on river
- Help river help itself

What is important to us?

- Aquatic community biologically
- Healthy river
- Trees further downstream

- Protect from erosion
- Cultural pride – access for everyone
- Return to more natural state
- Habitat
- River to be “Great Place”: beauty, access ability, functional
- Restore ecological function

City of Santa Fe Santa Fe River - 1000 afy

CORE WORKING GROUP			
<i>Participant List</i>			
Name	Organization	Phone #	E-mail
Felicity Broennan	Santa Fe Watershed Association Director	820-1696	felicity@santafewatershed.org
Phyllis Bustamante	State Environment Dept, groundwater quality	988-1443; 827-2434	phyllis.bustamante@state.nm.us
Steve Cary	Audobon Center, scientist, Water Qual Bureau	983-7587, 983-4609 x27	sjcary@earthlink.net; scary@audubon.org
Jim Cutropia	River Commission, St Francis Cathedral	955-8864	jim.cutropia@cbsfa.org
Richard Ellenberg	River Commission, Canyon Rd Homeowners Assoc	982-1395; 505 699 9158	rde@cybermesa.com
Fidel Guitierrez	LANB; Chamber of Commerce Chair	954-5400	fidel@lanb.com
Jerry Jacobi	River Commission Chair, biologist	988-2982	drjacobi@cybermesa.com
Nichoe Lichen	CRRC	660-6523	nichoe@earthlink.net
Jim Matison	Wild Earth Guardians	988-9126 x1154	jmatison@wildearthguardians.org
Karen Menetry	RERI river restoration, neighbor	827-0194	karen.menetry@state.nm.us
Rich Schrader	Riversource, Commons co-housing resident	660-7928	rich@riversource.net
John Utton	Water attorney	699-1445	utton@newmexico.com
Neva Van Peski	League of Women Voters, water statistician		Nvanpeski@aol.com
William Mee			williamhenrymee@aol.com
Facilitator:			
Toby Herzlich	Toby Herzlich & Co.	690-7376	toby@nets.com
Erin English	Natural Systems International	988-7453	erin@natsys-inc.com
Brian Drypolcher	River and Watershed Coordinator, City of Santa Fe	955-6840	bkdrypolcher@ci.santa-fe.nm.us
Claudia Borchert	Water Resources Coordinator, City of Santa Fe	955-4203	ciborchert@ci.santa-fe.nm.us
Marcos Martinez	Assistant City Attorney, City of Santa Fe	955-6514	mdmartinez@santafenm.gov

MEETING SIGN-IN SHEET

Project: Santa Fe River – 1000 AFY	Meeting Date: 1/13/2011
Facilitator: Toby Herzlich, Erin English	Place/Room: Genoveva Chavez Comm. Center

Name	Neighborhood or Street	How did you hear about meeting?	E-Mail
Castagna	Kiva		
Bill Loeb	Camino Encantado	Paper	
Carolyn Stephenson	Community Farm		
Hannah Varani	Turquoise Trail	Friend	havarani@gmail.com
Dave Kays	S. Capital	Friend	dkays@sfa1.org
Art Vollmet	Calle Delfino	Paper	fish4rct@gmail.com
Matt Eogda	Eldorado	Online	matteogdacomoyoung@gmail.com
Jen Jacob	Sol y Lomas	wom	drsjacobi@cybermesa.com
Milee Rodinno	Cliff Palace	wom	mike.rodinno@state.nm.us
Bob Martin	W. Alameda	paper	
Dale Doremus	W. Alameda	SFRC	dale.doremus@state.nm.us
Bette Booth	Agua Fria, Frenchy's Field	email	ebooth13@comcast.net
Melinda Like	Agua Fria Village	River Commission	
Tim & Linda Michael	Tierra Contenta	email	timmichael@comcast.net
Mae Montoya	Agua Fria		
Frank Moran	Hondo Hills	email	helenandfrank@aol.com
Virginie Pointeau	Lopez St. (Agua Fria)	Email	
Dora Williams	E. Alameda		

MEETING SIGN-IN SHEET

Project: Santa Fe River – 1000 AFY	Meeting Date: 1/13/2011
Facilitator: Toby Herzlich, Erin English	Place/Room: Genoveva Chavez Comm. Center

Name	Neighborhood or Street	How did you hear about meeting?	E-Mail
Marlo Sipowicz	W. Alameda	FB	kalihome@earthlink.net
Phyllis Bustamante	Lovatoland	committee	
Rachel Ellis	Vista Bonita	Earth Care	servicelearning@earthcare.org
David Sussberg	Osage	Earth Care	intern@earthcare.org
Rosa Moreno	Calle Inez	Earth Care	Yay_3world@hotmail.com
Shawnelle Chavez	Paseo Feliz	Earth Care	shawnelle.chavez@gmail.com
Bria Ortiz	Siringo	Earth care	
Craig Roepke	S. Capital		
Alan G. Hook	Acequia Madre	work	aghook@santafenm.gov
Eden Radfurr	Acequia Madre	work	youthallies@earthcare.org
Karen Torres	SF County	email	ktorres@co.santafe.nm.us
John Utton	Alto	mtg	utton@newmexico.com
Maud Lyonart	Commons		maudmadre@me.com
Nate Downey	Don Gaspar	email	
Carmichael Dominguez	CoSF		
Michelle Gutierrez	County	email	mpgutierrez@santafenm.gov
John Eddy	CNA	Email/newspaper	
Mark Doles	US Army Corp	email	mark.w.doles@usace.army.mil

MEETING SIGN-IN SHEET

Project: Santa Fe River – 1000 AFY

Meeting Date: 2/3/2011

Facilitator: Toby Herzlich, Erin English

Place/Room: Convention Center

Name	Neighborhood or Street	How did you hear about meeting?	E-Mail
Felicia Broennan			
Jenny Jaeabi			
Nichoe Lichen			
Tim Michael			
Robert M Findling			
Tom Catga Jeus			
Craig Roepke			Craig.roepke@state.nm.us
John Utton			
Tom Nobel			
Ted Williams			
Cullon Hallmark			ch@garbhall.com
William Schvolich		SFWA	highmesa@gmail.com
Zach Taylor	Agua Fria		
Jerry Richardson	Guadalupe		jerryrich@gmail.com
John Eddy	Canyon Road		
Michael Cantor			
William H. Mee	Agua Fria	CWG	williamhenrymee@aol.com
Deanna Einspak	La Joya	Email	
Rick Martinez	La Joya		