

# City of Santa Fe, New Mexico

# memo

**DATE:** April 22, 2015

**TO:** Public Utilities Committee

**VIA:** Nick Schiavo, PE, Public Utilities Department and Water Division Director  
Isaac J. Pino, PE, Public Works Department Director  
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**FROM:** Melissa McDonald, RLA, River and Watershed Coordinator

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**ITEM / ISSUE: Information Item**

**Annual Report, Santa Fe River Target Flows:** Report for "target year" activity from April 15, 2014 through April 14, 2015; and anticipated activity for the target flow year of April 15, 2015 through April 14, 2016.

Pursuant to the Target Flow Ordinance (Ordinance #2012-10) and the Target Flow Administrative Procedures (City Resolution #2012-28), staff is directed to provide the governing body with an annual report that describes target flow operations and flow volumes for the preceding year, plus the planned target flow hydrograph for the coming year.

**REPORT FOR THE TARGET YEAR ENDING APRIL 14, 2015 (LAST YEAR):**

Santa Fe River target flows begin in mid-April and continue throughout the year until the following April (the "target year"). For example, the 2014 Santa Fe River target flow allocation began on April 15, 2014 and concluded on April 14, 2015.

The river flows are administered under the terms of the city's Target Flow Ordinance in support of the Living River Initiative (Ordinance #2012-10). The ordinance provides that 1,000 acre-feet of water will be made available to deliver river water through the city and beyond. In years when the forecast for the runoff from mountain snows falls below 75% of the annual average, river flows are scaled downward. This past target year, the runoff from mountain snows was forecast to be at about 32% of average. Consistent with the Target Flow guidelines, river flows were scaled downward to match the forecast and the river water commitment was capped at 300 acre-feet for the year.

It is important to note that the other determinant of river flows administered through the target flow program is the concept of the bypass constraint. The administrative procedures for the program define the bypass constraint as follows:

**“bypass constraint”:** an operating principle that requires the rate at which water is passed through the outlet works of Nichols Reservoir dam is always equal or less than the stream inflow at the ‘above McClure’ gage.

In other words, at any given time, the volume of Nichols Reservoir outflow administered for the target flows is not allowed to exceed the volume of inflow at the city's upper reservoir (McClure Reservoir).

The purposes of the target flows are to help support the river's green corridor of trees, grasses, and other plants; to support healthy wildlife habitat; and to add to the beauty of free-flowing water to the parklands along the river.

Other benefits of maintaining a vegetated, green river corridor include shading and cooling of the urban environment; supporting plants that convert carbon dioxide into oxygen; helping to clean stormwater runoff; controlling erosion; and protecting infrastructure.

During the past year, staff engaged in a range of activities such as establishing the annual hydrograph for target flows; monitoring flows delivered to the river channel; and recordkeeping of target flow volumes. The target flow hydrograph has also been administered to provide flows that "support community events scheduled along the Santa Fe River" as provided for in the ordinance.

### **2014 – 2015 Summary and Highlights:**

- 1) The 2014-2015 year-end total of river flow provided via the target flow program was 300 acre-feet. But due to the need to make water releases to accommodate reservoir construction approximately 1,600 acre-feet was released. This was fortunate since river projects with restoration planting directly benefited from these releases, making plant establishment more successful. We were able to time these releases to pulse in coordination with the spring & summer flows. The Children's Fishing Derby/River Festival is scheduled in coordination with the spring pulse flows. At the same time, we were able to sustain target flow levels and irrigation deliveries were met throughout the year.
- 2) A number of considerations determined the nature of the hydrograph (for both the timing and volume of the flows) that made up this year's living river target flows. However, one significant consideration was the infrastructure project underway to make repairs to Nichols reservoir. Staff worked around the timing of the project in the channel and implemented target flow releases as opportunities for in-stream flows present themselves. A graph of released flows is attached (2014 Actual Hydrograph).

### **REPORT FOR THE TARGET YEAR APRIL 15, 2015 THROUGH APRIL 14, 2016 (THE YEAR AHEAD):**

The Natural Resources Conservation Service (NRCS) forecasts that this year's streamflow runoff for the Santa Fe River watershed will be 60% of the thirty-year average streamflow yield for the river. Given the forecast, the Santa Fe Living River flows will be 600 acre-feet for the coming year.

A number of considerations will determine the nature of the hydrograph (for both the timing and volume of the flows) that will be developed for this year's flows. There is one infrastructure project underway at McClure Reservoir and one river repair project planned within the river channel. The first project is for the construction of the new intake tower at McClure Reservoir. The project commenced on March 9<sup>th</sup>. The second project is for the stabilization of the Nopal drainage structure on the Santa Fe River downstream, along Alameda, south of St. Francis. It is staff's intent to work around these installations.

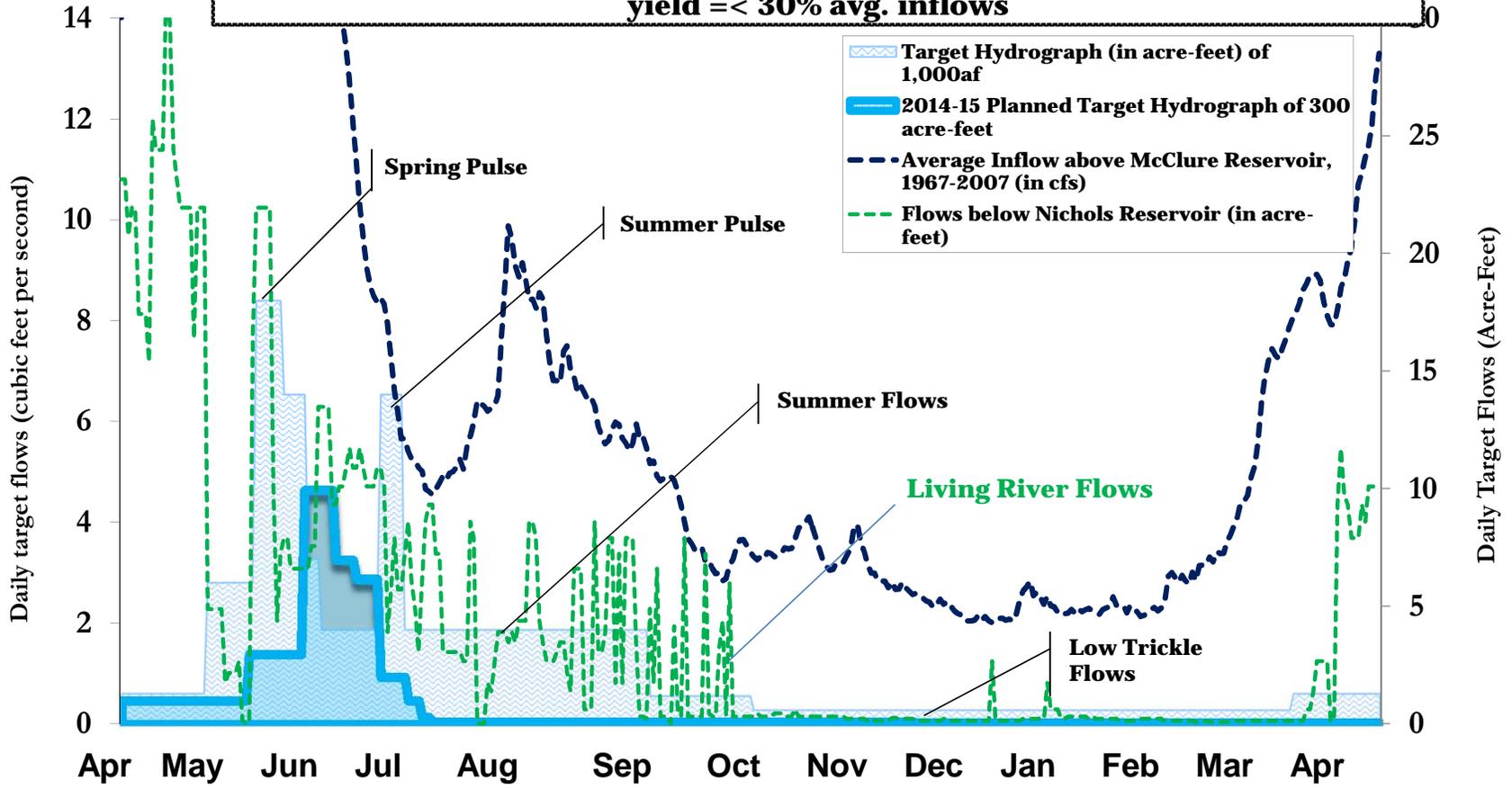
Due to warm temperatures and early snowpack runoff, the spring pulse flows for the living river were released a few weeks early. Staff hopes to coordinate the living river flows with the Fishing Derby/River Festival scheduled for Saturday, May 16<sup>th</sup>. Specifically, in this target year 2015, the living river target flows will be 1.55 cfs or 1 MG/day from April 15<sup>th</sup> until the beginning of May. In the week before the derby, on May 11, target flows will increase to 6 cfs or approximately 4 MG/day for a week, if streamflow above McClure Reservoir is available, to accommodate the derby and then decrease the following 4 weeks to 4 cfs, then 3 cfs, then 2 cfs and then 1 cfs, respectively, by June 8<sup>th</sup>.

A proposed schedule is attached (2015 Planned Hydrograph). Actual flows will be adapted and will take place as circumstances allow.

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Attachments:     2014 Actual Hydrograph  
                      2015 Planned Hydrograph

**2014 ACTUAL HYDROGRAPH: 300 af Target Allocation, anticipated watershed yield = < 30% avg. inflows**



**2015 PLANNED HYDROGRAPH: 600 af Target Allocation, anticipated watershed yield = < 60% of avg. inflows**

