Surface water – groundwater interactions start in the upper reaches of the watershed.
Santa Fe River watershed map and study area
Santa Fe River Above McClure

daily average flow (cfs)

2017
2018
2019

baseline flows
Snow Melt
Monsoon
Two Mile Monitoring Locations

Old Stone Dam

Audubon MW

TNC diversion

Bypass Channel

Restoration Channel

Restoration Channel Return below Two Mile Pond

Acequia del Llano

Acequia Cerro Gordo

Acequia Cerro Gordo bypass

African del Llano return

Nichols Reservoir

Santa Fe River

Explanation

streamflow, diversion, return measurement station
Audubon Well Hydrograph

Graph of depth to water and temperature at Audubon Center Observation Well along the Santa Fe River, Santa Fe, New Mexico.
Two-Mile Conceptual Cross Section

- Parshall flume below two mile
- Two Mile pond
- Beaver Ponds
- Old Stone Dam
- Santa Fe River Infiltration
- Audubon Monitoring Well
- Riser pipe and drain
below Two Mile Hydrograph

average flow = 0.5 cfs
Two Mile and Acequia Monitoring Locations
Diversions

The Nature Conservancy (TNC)
Santa Fe River (SFR)
Acequias

- monitoring station
- diversion point

Acequia La Muralla
Cerro Gordo
Cerro Gordo return

Camino Pequeno
Santa Fe River Below Two Mile

Acequia Del Llano
Cerro Gordo Diversion

Nichols Dam
Nichols Reservoir

Acequia Madre

“Below Nichols”
Diversion Measurements

Cerro Gordo

Cerro Gordo bypass

TNC Diversion staff gage

Acequia Madre

Acequia La Muralla
Seepage Monitoring

- **Western Side**: Coarse
- **Mid-town**: Medium
- **Up-town**: Fine

**Streams and Locations**:
- **Santa Fe River**
- **Nichols Reservoir**
- **St. Francis Drive**
- **Frenchy's Field**

**Streamflow Rates**:
- **0.52 cfs/mi** near Frenchy's Field
- **0.56 cfs/mi**
- **0.07 cfs/mi** at St. Francis Drive

**Graphical Notes**:
- **Triangle** indicates streamflow monitoring location
- **Color Coding**:
  - Blue: Up-town reach
  - Light Blue: Mid-town reach
  - Green: West Side reach

**Legend**:
- WWTP: Wastewater Treatment Plant
### SEEPAGE STUDIES SUMMARY

<table>
<thead>
<tr>
<th>Reach</th>
<th>Length (mi)</th>
<th>Average seepage rate (cfs)</th>
<th>Seepage for reach (cfs)</th>
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<td>0.07</td>
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4.6 cfs infiltration capacity from Below Nichols to PRWRF
Estimated Historical Seepage

* Estimate does not include recharge from storm-water runoff
Geologic Map of Up-town Reach
SFRMW-2 alluvial system
Up-town Reach – SFRMW-2 hydrograph

Graph of depth to water and temperature at SFRMW-02 along the Santa Fe River, Santa Fe, New Mexico.
Groundwater Monitoring Locations

- DBS-1D
- MW-1
- Alto MW-5
- Ferguson Well
- Alto St. Well
- Alto MW-3
- Torreon Well
- Agua Fria Well
- Santa Fe Well
- SFRMW-02
- Hickox Well
- Osage Well
- near Frenchy's Field
Mid-town Reach – MW-1 hydrograph

Graph of depth to water and temperature at NewMexigas MW-1 along the Santa Fe River, Santa Fe, New Mexico.

JOHN SHOMAKER & ASSOCIATES, INC.
Mid-town Reach - Alto MWs hydrograph

Hydrograph for Alto Street MW-3, MW-5, and MW-9, Santa Fe, New Mexico.
Localized Perched Aquifer Systems in Mid-town and Up-town Reaches

Perched aquifer systems recharged by Santa Fe River infiltration will recharge regional aquifer
West-side Reach
USGS Frenchy’s and Osage Hydrograph

Next to Santa Fe River near Osage Well

perched aquifer

- T17NR9E28
- T17N R9E 28b
- Osage

water-level elevation (ft amsl)

1/1/1950 1/1/60 1/1/70 1/1/80 1/1/90 1/1/2000 1/1/2010 1/1/2020
West-side Reach Frenchy’s Field

Graph of depth to water and temperature at USGS Observation Well at Frenchy’s Field along the Santa Fe River

JOHN SHOMAKER & ASSOCIATES, INC.
Soil Moisture Monitoring in Santa Fe River Channel at Alto Park will be added this spring
Summary

1. The Santa Fe River surface water and groundwater monitoring system helps track target flows from Living River Initiative

2. Restoration channel and Two-mile pond receive continuous flows from infiltrated stream flow above Old Stone Dam

3. Most of the Living River Target Flows infiltrate and recharge the aquifer

4. Some streamflow travels past PRWRF during spring pulse and above normal spring flows

5. City Well Field Optimization study concluded that recharge from SFR flows are needed to sustain City Well Field groundwater supply
THANK YOU, AND QUESTIONS

Alan G. Hook  aghook@santafenm.gov
Steven Finch Jr.  sfinch@shomaker.com