MINUTES
FLOOD CONTROL DISTRICT ADVISORY COMMITTEE/PUBLIC REVIEW
October 21, 2020

Committee Members Present: Chris Langham, Herman Lopez, Mark Murphy, Gus Myers, Kieran Sikdar, John Spiker, John Wallace, Ann Youberg

Flood Control District Staff Present: Eric Shepp, Deputy Director; Tammy Jorde, Special Staff Assistant; Brian Jones, Division Manager; Evan Canfield, Division Manager; Joseph Cuffari, Program Coordinator; Deirdre Brosnihan, Civil Engineering Manager; Greg Saxe, Environmental Planning Manager

Others Present: None

The meeting was held via Microsoft Teams.

APPROVAL OF MINUTES
The committee approved the September 16, 2020 minutes.

QUERY TO THE AUDIENCE
N/A

NEW BUSINESS

El Rio Preserve
Deirdre Brosnihan played a video illustrating the accomplishments and work performed at the El Rio Preserve. The video can be viewed at:
https://www.youtube.com/watch?v=_iPo8d2KCQ&feature=youtu.be

Living River Report
Evan Canfield reviewed the Living River 2019 Water Year: Charting the Santa Cruz River Conditions Northwest Tucson to Marana with the committee (attached).

CONTINUING BUSINESS

Regulatory Updates – State and Federal
Eric Shepp stated that the District is working with ADEQ on the MS4 Permit. ADEQ has begun working in our direction; however, the WOTUS definition is still ambiguous. He also stated that the US Army Corps of Engineers expended money on the Rillito River; the District wants to send a formal letter to the Corps asking, what is WOTUS?

Suzanne Shields will be giving a presentation at the PAG Watershed Forum on November 2, 2020.

Report from Committee Members
N/A

REPORT FROM FLOOD CONTROL DISTRICT STAFF

BOS Action Summary
October 20, 2020
KB Home Tucson, Inc., Pima County Regional Flood Control District and Pima County, to provide a donation agreement for real property consisting of approximately 113 acres, Tax Parcel Nos. 218-10-005C, 208-41-0380 and a portion of 208-41-0390, General Fund, contract amount $6,000.00 (CT-PW-21-204). Approved

Green Valley Council, Inc., d.b.a. Green Valley Council, to provide for Green Valley Council services, Health (27.1%), DOT (25.7%), RWRD (17.1%), DSD (8.6%), RFCD Tax Levy (8.6%) and DEQ (12.9%) Funds, contract amount $87,500.00 (CT-PW-21-202). Approved

Staff requests approval of the amendment to La Puerta del Norte Declaration of Restrictions (CCRs) and to authorize the Manager of Real Property Services to sign on behalf of the Pima County Flood Control District. (District 3). Approved

Regional Flood Control District Projects and Programs Update
Eric Shepp stated that the District mailed 35,329 Community Rating System Floodplain Management Watershed brochures to constituents (see attached memorandum).

Eric Shepp stated that the District has been performing mitigation work post Big Horn Fire, pursuing grants and upgrading cross drainage infrastructure. In addition, Mr. Shepp stated that there was a breakout flow in the Pima Wash at Ina Road; the District received authorization to repair. The office of Emergency Management received a post-fire grant and the District is pursuing a grant for post-fire improvements on the Cañada del Oro Wash.

Ann Youberg stated that her group is looking at the Big Horn Fire data and burn history and will present post-fire findings at the next meeting.

CALL TO THE AUDIENCE
No business.

AGENDA ITEMS – October 21, 2020 MEETING
1. Cancellation of the December 16, 2020 Meeting
2. Canoa Ranch Update
3. Post Fire Update – Ann Youberg

The meeting adjourned at 9:26 a.m.
a living river
CHARTING SANTA CRUZ RIVER CONDITIONS
NORTHWEST TUCSON TO MARANA—2019 WATER YEAR
WHERE COMMUNITY AND NATURE MEET

Evan Canfield
Flood Control District Advisory Committee
10/21/20

PIMA COUNTY
FLOOD CONTROL
Outline

- The Living River Annual Report – 2019
- The Supplemental Report
- Public Engagement Along the Effluent-Dependent Reach
- Santa Cruz River Improvements Survey
Living River – Water Year 2019

Purpose – to document wetland health of the Santa Cruz River from Agua Nueva outfall to Trico Rd.

Format – Eight easily-accessible pages

Partnerships – Other Pima County Departments (OSC, RWRD, NRPR) and Sonoran Institute

Duration – Seven years (2013 Water Year [pre-upgrade] to 2019 Water Year)

Distribution – Printed 8200 copies, mailed 6700 to residents along the Santa Cruz, distributed another 1100 through ‘Nature to Go’ packets at Pima County Libraries

Uses –

• Document Wetland Health
• Make Residents aware of Pima County and District efforts along the Santa Cruz (e.g. Santa Cruz River Management Plan, El Rio, Corazon etc.)
• Solicit Input
TREND OF IMPROVED RIVER HEALTH CONTINUES IN 2019

RIVER’S WATER QUALITY IMPROVED SINCE 2018

Many metrics demonstrate the river’s improved water quality since the wastewater treatment upgrades. Most significant is the reduction in ammonia, a form of nitrogen present in effluent and toxic to fish at high concentrations. Measured at four locations, average ammonia concentrations declined from a baseline of 13 mg/L in 2013 to 1 mg/L in 2014–2017. For unknown reasons, in 2018, average ammonia levels increased to 2 mg/L, mostly in samples taken between the Agua Nueva and Tres Ríos facilities. Notably, average ammonia levels returned to 1 mg/L in 2019.

Removing ammonia is a complex process. The Agua Nueva and Tres Ríos Water Reclamation Facilities both use a five-stage process that features alternating anaerobic and oxygen-rich zones. Pinellas County has optimized processes to better maintain the delicate balance of oxygen needed for maximum ammonia removal. They aim to remove additional ammonia during treatment of biosolids at the Tres Ríos Facility when new technology is installed in 2020 and 2021.

CUMULATIVE NUMBER OF SPECIES (AQUATIC INVERTEBRATES)

AQUATIC INVERTEBRATES THRIVE IN CLEANER WATER

Aquatic invertebrates are sampled at fourteen river locations, and the data reflect an average of all sites combined. Diversity has increased—the average number of species found doubled from 5 in 2013 to 10 in 2019. The cumulative number of unique species has also increased—2019 had 23 species, and the 2019 average of 7 species increased. Diving diversity trends may be stabilizing, as no new species were found in 2019.

CLEANER WATER REDUCES THE RIVER’S FLOW EXTENT

Since the wastewater treatment upgrades, river flow extent is shorter and more variable. Excessively in June, the driest time of year when miles of flow are lowest. In June 2013, the river flowed uninterrupted for over 28 miles. In June 2019, flow decreased to 21 miles and was dry for a 1.3-mile stretch between the Agua Nueva and Tres Ríos facilities. Now occurring every June since 2014, this dry stretch has ranged from 0.1 to nearly 9 miles in length. Variability in flow extent is complex and impacted by many factors. Cleaner water influences the riverbed more easily to replenish the aquifer, which also increases after seasonal floods and the wetter. Indeed, the longest dry stretches were in years with larger and more recent peak floods.

Average ammonia concentrations by water year

2013: 13 mg/L
2014–2017: 1 mg/L
2018: 2 mg/L
2019: 1 mg/L

Review all data in supplementary report at www.livingriver.com/lir19

10/21/2020
LIVING RIVER - 2019 WATER YEAR
Outline

1. Santa Cruz River Improvements Survey
2. Reach
3. Public Engagement Along the Effluent-Dependent
4. The Supplemental Report
5. The Living River Annual Report - 2019
### Supplemental Report Data

#### Assessing Conditions

The Living River report evaluates conditions of the Santa Cruz River from northwest Tucson to Marana using indicators (see table below) organized into six categories that represent a breadth of biological, chemical, physical, and social properties of the river. The indicators relate to conditions in the river channel and in the riparian areas, the areas next to and affected by the river. The purpose of the Living River series is to monitor and report on wetland and riparian conditions at various intervals downstream of the effluent discharge points. As effluent flows downstream, it impacts and is impacted by the natural environment.

<table>
<thead>
<tr>
<th>Category</th>
<th>Purpose</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| Flow Extent      | Water flowing in and out of the system determines available aquatic habitat. | • Miles of flow in June  
                   |                                                                         | • Number of "dry days" at Trico Road |
| Water Clarity    | Solid particles in the water and on the sediments can impact habitat and conditions for aquatic life. | • Total suspended solids  
                   |                                                                         | • Turbidity  
                   |                                                                         | • Percent fines on sediments |
| Water Quality    | Specific chemical conditions are necessary to sustain the river's natural and plant communities. | • Total dissolved solids  
                   |                                                                         | • Ammonia  
                   |                                                                         | • Dissolved oxygen  
                   |                                                                         | • Black chemical oxygen demand  
                   |                                                                         | • Metals  
| Aquatic Wildlife | Wildlife in the river integrates and reflects conditions of many factors of the surrounding environment. | • Fishes  
                   |                                                                         | • Aquatic invertebrates |
| Riparian vegetation* | Plant communities reflect changes in water quantity and quality. | • Wetland indicator status  
                   |                                                                         | • Nitrogen efflux values  
                   |                                                                         | • Riparian tree cover  
                   |                                                                         | • Other at reclamation facilities |
| Social Impacts   | Aquatic factors directly impact people living or recreating along the river. |                                                                 |

*Riparian vegetation only monitored from 2013–2016

Data are collected and summarized by water year (October 1–September 30) and compared to the baseline conditions observed in the 2013 water year. This supplemental report shares data from all the water years to enable an easy viewing of trends and long-term patterns.

#### Streamflow, Rainfall, and Water Budget

Streamflow, or the amount of water flowing in a river, provides an important context for the results of the indicators. Reclamation facilities continuously release water into the river, which accounts for the majority of daily streamflow. However, streamflow also includes stormwater, which is influenced by rainfall and the amount of impervious area (e.g., roadways) in the watershed. The Santa Cruz River Watershed includes all of the land where stormwater flows toward the river. Seasonal floods are important for recharging aquifers, dispersing seeds, reducing sediments, and cleaning natural systems.

![Graphs showing streamflow, rainfall, and water budget data]
Supplemental Report Data
Dry Days

Flow at Trico Road

Number of days since last peak flow, measured in June

Water Year
Supplemental Report Data
Ammonia

Direction of Flow

Agua Nueva ➔ Tres Ríos

Three Rivers Reach
Cortaro Narrows Reach
Marana Flats Reach

Ammonia concentration, mg/L

Water Year


Upgrade to reclamation facilities complete (Dec 2013)

Note - Ammonia standards vary with temperature and pH and can't be graphed as a single line.
Supplemental Report Data
Macroinvertebrates

Direction of Flow
- Agua Nueva
- Tres Rios

Three Rivers Reach
Coraro Narrows Reach
Marana Flats Reach

Cumulative unique taxa

Number of taxa

Water Year

- Upgrades to reclamation facilities complete (Dec 2013)
- Cumulative unique taxa for all four monitoring sites combined
Supplemental Report Data
Fish

Direction of Flow

<table>
<thead>
<tr>
<th>Agua Nueva</th>
<th>Tres Rios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three Rivers Reach</td>
<td>Cortaro Narrows Reach</td>
</tr>
</tbody>
</table>

Species of fish

<table>
<thead>
<tr>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
</table>

Water Year

- Gila topminnow
- Poeciliopsis occidentalis
- Western mosquitofish
- Gambusia affinis
- common carp
- Cyprinus carpio
- black bullhead
- Amelurus melas
- green sunfish
- Lepomis cyanellus
- bluegill sunfish
- Lepomis macrochirus

* species observed but not caught

¶ unknown sunfish species

¶ regular & mirror scale patterns seen

Upgrades to reclamation facilities complete (Dec 2013)
Outline

- The Living River Annual Report – 2019
- The Supplemental Report
- Public Engagement Along the Effluent-Dependent Reach
- Santa Cruz River Improvements Survey
Santa Cruz River programming

Dragonfly Day on the SANTA CRUZ
Saturday October 3, 2020 • 9:00–11:30a.m.
Join us on Zoom! Pick-up your Dragonfly Kit!
sonoraninstitute.org/events/dragonfly20

Come help clean up our SANTA CRUZ RIVER!
Sunday April 19, 2020 • 8:00–11:00am
Santa Cruz River at El Camino Del Cerro
sonoraninstitute.org/events/cleanup20

a living river
CHARTING SANTA CRUZ RIVER CONDITIONS
NORTHWEST TUCSON TO MARANA—2019 WATER YEAR
WHERE COMMUNITY AND NATURE MEET

10/21/2020
Outline

- The Living River Annual Report – 2019
- The Supplemental Report
- Public Engagement Along the Effluent-Dependent Reach
- Santa Cruz River Improvements Survey
Accessing the survey (Chrome or Firefox)

In your browser type:
www.tiny.cc/scrprojects
Public survey for the Santa Cruz River Management Plan—Grant Road to Pinal County

START HERE

INSTRUCTIONS
Note: this survey is intended for use on computers and tablets; phones will not display correctly.

1. On the top right, use the project pull-down to pick a project or plan.
2. In the survey to the right:
   - enter your zip code (you’ll only need to do this once)
   - select the project you wish to comment on
   - fill out the survey questions
   - add a comment or question
   - press [Submit]
   - Under the green check mark, press ‘here’ to survey more projects/plans
3. Reset the project pull-down to ‘All’ to display all projects and plans.
4. Repeat step 2 for any other projects you want to comment on.

PURPOSE
The purpose of this survey is for you to give us your thoughts on projects to improve the Santa Cruz River to better reflect the needs, desires, and values of the community.

BACKGROUND
Pima County is considering some future improvement projects in the Santa Cruz River and its floodplain over the next 10-20 years between Grant Road and the Pima-Final Counties line.

The projects incorporate preferences and priorities for the Santa Cruz River identified by the public in a previous survey, and reflect Pima County's goals for floodplain management in the recently adopted Floodplain Management Plan.

10/21/2020

LIVING RIVER - 2019 WATER YEAR
Thank you from the team!
DATE: October 13, 2020

TO: C. H. Huckelberry
County Administrator

FROM: Suzanne Shields, P.E.
Director

SUBJECT: Community Rating System – Floodplain Management Plan Watershed Brochure

Attached is a copy of the Program for Public Information and Floodplain Management Plan watershed brochure showing all of the areas within Pima County impacted by a FEMA Special Flood Hazard Area, FEMA Other Flood Hazard Area, detailed locally mapped floodplain, or approximate sheet flow floodplain area. This brochure doubles as the Regional Flood Control District’s (District) annual outreach brochure to floodplain residents for which we receive credit under the Community Rating System. The District will mail brochures with a detailed watershed specific map to property residents impacted by these floodplains in each Board of Supervisors’ district. The brochures for each watershed can be viewed at: https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Flood%20Control/Public%20Outreach/brochure-annual-watershed-mailer.pdf

This year’s update includes specific watershed management activities and action items the District may undertake as a result of the Floodplain Management Plan process initiated by Board Resolution 2018-FC6. The brochure continues to be a part of the District’s effort to keep owners and residents of flood prone property informed about flood risks, the availability of assistance and flood insurance, as well as development requirements. While flood insurance may not be required in locally mapped floodplains, informing these residents will promote flood hazard awareness. In addition, topics including the benefits of preserving riparian habitats, how to prepare for a flood, the negative consequences of dumping in washes, and the risk of crossing flooded roads are covered.

The number of brochures distributed this year are as follows:

<table>
<thead>
<tr>
<th>District 1</th>
<th>District 2</th>
<th>District 3</th>
<th>District 4</th>
<th>District 5</th>
<th>Total Mailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,105</td>
<td>1,215</td>
<td>14,499</td>
<td>7,014</td>
<td>2,496</td>
<td>35,329</td>
</tr>
</tbody>
</table>

The District will send each Board of Supervisor a memorandum.

Please direct any calls or comments you may receive to our office.

SS/JC/tj

c: Carmine DeBonis, Deputy County Administrator – Public Works  
   Eric Shepp, P.E., Deputy Director – Regional Flood Control District  
   Andy Dinauer, P.E., Deputy Director – Regional Flood Control District  
   Greg Saxe, Environmental Planning Manager/CRS Coordinator – Regional Flood Control District  
   Annabelle Valenzuela, Program Manager – Department of Transportation