MEETING OF THE FLOOD CONTROL ADVISORY BOARD

Pursuant to A.R.S. 38-431.02, notice is hereby given to the general public that the Flood Control Advisory Board (FCAB) will hold a meeting open to the public on Wednesday, March 23, 2022 at 2:00 p.m., via GoToMeeting (details on page 2). Matters on the agenda may be discussed in executive session for the purpose of obtaining advice thereon.

The agenda is as follows:

1) Call to Order

2) Approval of the Minutes: December 1, 2021 FCAB Meeting

3) Action Item – Fiscal Year 2023 Operating (Fund 991) and Grant Budget (Fund 989) and Fiscal Year 2023 – Fiscal Year 2027 Capital Improvement and Major Maintenance Program Budget (Fund 990). Staff recommends the following action: That the Flood Control Advisory Board endorse and recommend the District’s requested Fiscal Year 2023 Operating Budget and Fiscal Year 2023 – Fiscal Year 2027 Capital and Major Maintenance Program Requested Budget, including Fund 989 (Flood Control Grand Fund), Fund 990 (Flood Control Capital Fund) and Fund 991 (Flood Control District Fund), subject to adjustments made to reflect Board of Directors policy determinations. Presented by: Karen Scott, Finance and Procurement Division Manager and District Staff.

4) Information and discussion item only. Gila Bend Update. No formal action is required. Presented by: Michael Fulton, Director

5) Information and discussion item only. Comments from the Director. No formal action is required. Presented by: Michael Fulton, Director.

6) Information and discussion item only. Summary of Recent Actions by the Board of Directors. No formal action is required. Presented by: Michael A. Fulton, Director.

7) Information and discussion item only. Other Business and Comments from the Public. No formal action is required. Email discussion items and questions by Tuesday, March 22, 2022 to fdesk@maricopa.gov with subject “FCAB” by 2:00 pm. Information received will be read to the Board by the meeting moderator.

NOTE: A sign language interpreter will be made available upon request with 72-hours notice. Alternative format materials or FM or Infrared Listening Devices are also available upon request with 72-hours notice. Additional reasonable accommodations will be made available to the extent possible within the time frame of the request.
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Agenda

• Call to Order
• Approval of the December 1, 2021, FCAB Meeting Minutes
• Fiscal Year 2023 Operating and Grant Budget and Fiscal Year 2023 – Fiscal Year 2027 Capital Improvement and Major Maintenance Program Budget
• Gila Bend Update
• Comments from the Director
• Summary of Recent Actions by the Board of Directors
• Other Business and Comments from the Public
Approval of Minutes
December 1, 2021

Hemant Patel
Chairman

Action Item

Agenda Item #2
FY 2023- FY2027 Operating and Capital Projects Budget Submittal

Karen Scott
Finance and Contracts Division Manager

Action Item

Agenda Item #3
Action Item

Staff requests that the Flood Control Advisory Board endorse and recommend the District’s requested Fiscal Year 2023 Operating Budget and Fiscal Year 2023 – Fiscal Year 2027 Capital and Major Maintenance Program Requested Budget, including Fund 989 (Flood Control Grand Fund), Fund 990 (Flood Control Capital Fund) and Fund 991 (Flood Control District Fund).

Note: Requested budget may be altered prior to adoption to address County management and budget requirements.
## Requested Revenue Fiscal Year 2023

<table>
<thead>
<tr>
<th>Source (All Funds)</th>
<th>FY2022 Revised Revenue</th>
<th>FY2023 Requested Revenue</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Tax</td>
<td>79,939,103</td>
<td>74,808,597</td>
<td>(5,130,506)</td>
</tr>
<tr>
<td>Intergovernmental</td>
<td>12,383,000</td>
<td>5,995,000</td>
<td>(6,388,000)</td>
</tr>
<tr>
<td>Interest Income</td>
<td>1,500,000</td>
<td>900,000</td>
<td>(600,000)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>448,839</td>
<td>241,191</td>
<td>(207,648)</td>
</tr>
<tr>
<td>Licenses &amp; Permits</td>
<td>405,000</td>
<td>375,000</td>
<td>(30,000)</td>
</tr>
<tr>
<td>Grants</td>
<td>100,000</td>
<td>70,000</td>
<td>(30,000)</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td><strong>94,775,942</strong></td>
<td><strong>82,389,788</strong></td>
<td><strong>(12,386,154)</strong></td>
</tr>
</tbody>
</table>
Requested Revenue Fiscal Year 2023

FY2023 Requested Revenue $82,389,788
# Requested Expenditures Fiscal Year 2023

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>FY2022 Revised Expenditures</th>
<th>FY2023 Requested Expenditures</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund 989 - Grants</td>
<td>100,000</td>
<td>55,000</td>
<td>(45,000)</td>
</tr>
<tr>
<td>Fund 991 - Operating</td>
<td>35,627,120</td>
<td>35,836,487</td>
<td>209,367</td>
</tr>
<tr>
<td>Fund 991 - Non-Recurring</td>
<td>5,500,000</td>
<td>7,111,166</td>
<td>1,611,166</td>
</tr>
<tr>
<td>Fund 991 - Vehicle Replacement</td>
<td>1,732,000</td>
<td>1,440,000</td>
<td>(292,000)</td>
</tr>
<tr>
<td>Fund 991 - Major Maintenance Facilities</td>
<td>2,265,000</td>
<td>2,557,000</td>
<td>292,000</td>
</tr>
<tr>
<td>Fund 990 - Capital Improvement Projects</td>
<td>83,162,596</td>
<td>58,701,668</td>
<td>(24,460,928)</td>
</tr>
<tr>
<td>Fund 990 - Major Maintenance - Capital</td>
<td>6,000,000</td>
<td>3,797,304</td>
<td>(2,202,696)</td>
</tr>
<tr>
<td>Fund 990 - West Yard Building</td>
<td>3,300,000</td>
<td>7,500,000</td>
<td>4,200,000</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>137,686,716</strong></td>
<td><strong>116,998,625</strong></td>
<td><strong>(20,688,091)</strong></td>
</tr>
</tbody>
</table>
Requested Expenditures Fiscal Year 2023

FY2023 Requested Expenditures $116,998,625
Requested Fund 990 Expenditures for Fiscal Year 2023

<table>
<thead>
<tr>
<th>Appropriation</th>
<th>FY2022 Revised Expenditures</th>
<th>FY2023 Requested Expenditures</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Improvement Projects</td>
<td>77,568,347</td>
<td>51,798,750</td>
<td>(25,769,597)</td>
</tr>
<tr>
<td>Small Project Assistance</td>
<td>3,594,249</td>
<td>4,202,918</td>
<td>608,669</td>
</tr>
<tr>
<td>FloodProne Property</td>
<td>2,000,000</td>
<td>2,700,000</td>
<td>700,000</td>
</tr>
<tr>
<td>Major Maintenance</td>
<td>6,000,000</td>
<td>3,797,304</td>
<td>(2,202,696)</td>
</tr>
<tr>
<td>Facilities Capital - West Yard</td>
<td>3,300,000</td>
<td>7,500,000</td>
<td>4,200,000</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>92,462,596</strong></td>
<td><strong>69,998,972</strong></td>
<td><strong>(22,463,624)</strong></td>
</tr>
</tbody>
</table>
Requested Expenditures For Fund 990
Fiscal Year 2023

Capital Improvement Projects 74%

Small Project Assistance Program 6%
Floodprone Property Acquisition 4%
Major Maintenance 5%
West Yard 11%

FY2023 Capital Expenditure by Appropriation $69,998,972
# Requested Fund 990 Expenditures By Phase for Fiscal Year 2023

<table>
<thead>
<tr>
<th>Phase</th>
<th>FY2022 Revised Expenditures</th>
<th>FY2023 Requested Expenditures</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>7,440,000</td>
<td>5,142,000</td>
<td>(2,298,000)</td>
</tr>
<tr>
<td>Land</td>
<td>4,957,000</td>
<td>5,137,000</td>
<td>180,000</td>
</tr>
<tr>
<td>Construction</td>
<td>78,274,249</td>
<td>58,027,668</td>
<td>(20,246,581)</td>
</tr>
<tr>
<td>Labor</td>
<td>1,791,347</td>
<td>1,692,304</td>
<td>(99,043)</td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>92,462,596</strong></td>
<td><strong>69,998,972</strong></td>
<td><strong>(22,463,624)</strong></td>
</tr>
</tbody>
</table>
QUESTIONS?
Planning
Ongoing and Fiscal Year 2023 Studies
Area Drainage Master Study/Plans (ADMS/P)

**Ongoing ADMS/P**
- North Mesa ADMS
- Desert Mountain ADMS
- East Shea Corridor ADMS
- Sun Valley ADMP
- Metro ADMP Update
- San Tan ADMS/P Update
- Wittmann ADMS/P Update
- Adobe Dam/Desert Hills/Apache Wash ADMS/P
- North Peoria ADMS/P Update
- Queen Creek/East Mesa ADMS/P Update
- ACDC West ADMS/P Update
- Gilbert Chandler ADMS
- Fountain Hills ADMP Update

**New starts**
**Fiscal Year 2023 ADMS/P**
- Durango ADMP Update
- Rio Verde ADMP Update
- Glendale Maryvale ADMS Update
Planning
Fountain Hills ADMS/P Update

- Study will continue in Fiscal Year 2023.
- Study watershed is approximately 31 square miles.
- Coordination with Town of Fountain Hills is ongoing.
- LiDAR Mapping and Surface Feature Characterization (SFC) are complete.
- Consultant contract approved by the BOD on September 1, 2021.
- Work Assignment #1 is currently under negotiation.
- Target Notice to Proceed is May 2022.
• Study will continue in Fiscal Year 2023.

• Study watershed is 70 sq. mi.

• Coordination with City of Phoenix is ongoing.

• New LiDAR mapping is complete, Surface Feature Characterization (SFC) review underway.

• Consultant contract approved by BOD on October 20, 2021.

• Work Assignment #1 is currently under negotiations.

• Target Notice to Proceed April 2022.
Study will commence during 2\textsuperscript{nd} quarter of Fiscal Year 2023.

Watershed is 46 square miles.

Coordination with the Cities of Avondale, Phoenix and Tolleson.

New LiDAR mapping will be completed during the 4\textsuperscript{th} quarter Fiscal Year 2022.

Consultant selection process will start during the 1\textsuperscript{st} quarter of Fiscal Year 2023.
Planning
Glendale Maryvale ADMS Update

- Study will commence during 2\textsuperscript{nd} quarter of Fiscal Year 2023.
- Study watershed is approximately 98 square miles.
- Coordination with the Cities of Avondale, Glendale, Peoria and Phoenix.
- LiDAR Mapping will be completed during the 4\textsuperscript{th} quarter of Fiscal Year 2022.
- Consultant selection process will start during 1\textsuperscript{st} quarter of Fiscal Year 2023.
QUESTIONS?
Planning and Project Management Division
Fiscal Year 2023 Program Highlights

Harry Cooper, PLA, ASLA
Landscape Architecture and Water Conservation Branch Manager
Planning and Project Management Division
Landscape Architecture and Water Conservation Branch

Three (3) main program areas:

- Landscape Architecture
- Water Conservation (Water Resources Management)
- Native Plant Nursery
Durango Campus Water Conservation Retrofit

- **Master plan, completed in FY17**
- **Three demonstration areas, constructed in FY18/19**
- **Feasibility and costing assessment, completed in FY20**

- Final design plans/construction documents to be completed, March 2022
- Construction to begin early in Fiscal Year 2023
- Monitoring and performance assessment, ongoing
Land and Water Resources Management

Arizona Canal Diversion Channel Landscape and Irrigation Assessment

- Guidance document for facility updates to address:
  - Landscape replacements, irrigation system upgrades
  - Stormwater management (capture/reuse, erosion, water quality, debris)
  - Potable water use reductions
  - Land stewardship and community outreach
- Retrofit ‘problem areas’, in conjunction with O&M

Upper East Fork of Cave Creek Renovation

- Irrigation removal/update
- Revegetation with native plants

Development of Landscape Standards and Guidelines

- Address revegetation, GI/LID applications, multiple use, site stabilization, structure aesthetics in a single reference document for District use
QUESTIONS?
McMicken Dam Rehabilitation Phase 1 and 2

- Provides 100-year flood protection
- Operated and maintained by District
- Phase 1 Construction continues through Fiscal Year 2023
- Phase 2A Final Design completed in Fiscal Year 2023
- Phase 2A Construction is estimated to start June/July 2023
- Phase 2B Final Design completed in early Fiscal Year 2024
- Phase 2B Construction Notice to Proceed in Fiscal Year 2024
- Phase 1 cost is $23 Million
Oak Street Basin and Storm Drain

- A drainage element for the Spook Hill Area Drainage Master Plan (ADMP)
- Involves construction of a basin and storm drains
- Project will provide 100-year protection to residents in Unincorporated Maricopa County and City of Mesa
- Project Plans and Specs are complete
- Construction start in Fiscal Year 2023
- Construction completion in Fiscal Year 2024
- This is a unilateral Flood Control District (FCD) project with 100% FCD funded
Rawhide Wash Drainage Improvements

- Identified in the Pinnacle Peak West Area Drainage Master Study (PPW-ADMS)
- The project will remove 1,873 acres of land from the floodplain and 870 homes and other structures (in Phoenix and Scottsdale)
- New floodwalls, improve the existing floodwalls to meet FEMA standards, access for people and wildlife will be maintained
- Total estimated project cost is $18.0M
- Project Cost share: FCD 50%, Phoenix 40%, Scottsdale 10%
- CMAR will be used for construction
- Construction start in early Fiscal Year 2023
QUESTIONS?
Engineering – Unmanned Aircraft Systems (UAS) at the District

Joe Wagner
Mapping, Surveying and CAD Branch Manager
Engineering Division

- Modeling and Software Development and Training
- River Mechanics Analysis
- Levee Safety Program
- Right-of-Way Use Permitting
- In-House Design and Review
- Emergency Action Plans for Dams/Levees
- Flood Warning Program
- Mapping, Survey and CAD
- Drone Services
Drone use at the District

- Drones have been in use at the District for approximately four years
- Other County departments such as MCDOT and MCSO also have drone programs
- All District drone use is done following the County drone policy -A2605.
- Drones increase efficiency and improve safety.

**Drones are used for:**
- Storm event inspection and documentation
- Aerial Photography of existing structures
- Surveying and mapping for engineering and design
- Construction Management project monitoring
- Inspections: District Dams and Levees
Drone types

- Multi-Rotor

- Fixed Wing
Storm Event Monitoring/Documentation

Drones are used to evaluate and document storm events. Videos and pictures can be taken immediately after an event to document the level and location of flooding.

Many times, the access to gauges are cut off to O&M personnel and drones are used to read high water marks and staff gauges to determine water levels behind dam structures.
Storm Event

New River
Storm Event

Gila Bend – Sand Tank Wash

Gila Bend – Sand Tank Wash at Canal
Siphon Draw Earth Fissures Flight
Siphon Draw Earth Fissures Flight

Fissure Drone photo
Aerial Photography

Drones are used to photograph existing structures and buildings. This imagery has been used for project reports and stakeholder publications.
Aerial Photography

Casandro Wash Dam - Wickenburg
Aerial Photography

Cave Buttes Dam Burn Scar
Aerial Photography

Adobe Dam Regional Park Maricopa Live Steamers
Aerial Photography

Adobe Dam Regional Park – Adobe Mountain Speedway
Surveying and Mapping

Drones are used by the District to produce design scale contour mapping and orthophotography on in-house design projects.

Cave Creek Dam
Surveying and Mapping

Mapping flights using drones is an automated process using flight software.
Surveying and Mapping

Cave Creek Dam - 1 Foot Contour Interval
Surveying and Mapping

Cave Creek Dam - LiDAR Point Cloud
Construction Management Project Monitoring

Drones are used to document District projects as the construction phase is in progress.

Cave Buttes Tunnel
Construction Management Project Monitoring

23rd and Olney Ave – Basin Construction

23rd and Olney Ave – Completed Basins
Construction Management Project Monitoring

McMicken Dam Outfall Channel
Operations and Maintenance

Drones are commonly used on District O&M projects to document the work being done by both District staff and consultants.

District projects are flown and photographed for use as training material for future projects.
Operations and Maintenance

Harquahala FRS
Rock Slinger
Operations and Maintenance

Powerline Floodway Repair
Operations and Maintenance

El Rio Pilot Site Vegetation Tree Planting
Drones are used as a *supplement* to dam/levee inspections. Drone footage can be obtained days before FCD staff perform their dam/levee inspections. Staff can view the video and spot problem areas beforehand. Using drone footage provides a perspective not currently available to inspectors and provides a measure of safety when walking along the face of a dam or levee.
Sunny Cove Dam Inspection – looking for bird nests
QUESTIONS?
Floodplain Permitting Division
Fiscal Year 2023 Highlights

Floodplain Permits Branch

- Reviews and issues Floodplain Use Permits for 14 communities: Towns of Carefree, Cave Creek, Gila Bend, Guadalupe, Queen Creek, Wickenburg, Youngtown; and Cities of Buckeye, Surprise, Chandler, Mesa, El Mirage, Litchfield Park, and Tolleson.
- Reviews and issues Sand and Gravel Floodplain Use Permits for Unincorporated Maricopa County and the 14 communities.
- Received 575 applications in 2021, compared to 381 in 2020.
- Granted 381 floodplain use permits in 2021 compared to 294 in 2020.
- Since start of 2022, received 93 applications and granted 47 floodplain use permits.
Floodplain Permitting Division
Fiscal Year 2023 Highlights

**Code Compliance Branch**
- Conducts code compliance for Unincorporated Maricopa County and the 14 communities
- Responded to 93 citizen complaints on code compliance matters in 2021
- Performed 696 site inspections in 2021 - (599 inquiries/complaint, 79 Sand and Gravel Permits, 18 Floodplain Permits)

**Hydrology-Hydraulics Branch**
- Provides Hydrologic and Hydraulics Modeling and review for all District Studies/Projects
- Continued with technical reviews of all on-going planning and design studies
Floodplain Permitting Division
Fiscal Year 2023 Highlights

**Floodplain Delineation Branch**
- Conduct floodplain delineation analysis based on approved budget
- Assisted more than 2,600 customers with floodplain, permit, and general questions
- On-going delineation studies:
  - Sunland Avenue floodplain re-delineation study
  - North Gilbert delineation study update
  - Floodplain delineation study in Mesa to Remove Zone D
  - Myrtle Avenue Wash
  - Vekol Wash
  - City of Phoenix floodplain evaluations
- Completed re-delineation of Hassayampa floodplain from Gila River to Jackrabbit Wash, to be submitted to FEMA.
Floodplain Permitting Division
Fiscal Year 2023 Highlights

Four floodplain delineation studies are budgeted to start in Fiscal Year 2023:

• Buchanan and CAP Wash and CAP Wash East Update
• Central Mesa
• West Valley Zone A delineations
• Wickenburg 500-year floodplain delineations
Buchanan and CAP Wash and CAP Wash East Update
West Valley Zone A Delineations
Wickenburg 500-year Floodplain Delineations
Floodplain Permitting Division Highlights for Fiscal Year 2023

Floodplain Permits Branch
• Enhancements to the County’s on-line permit submittal portal

Code Compliance Branch
• Continue to provide code compliance for 14 communities as well as Unincorporated Maricopa County

Hydrology-Hydraulics Branch
• Continue to provide Hydrologic and Hydraulics Modeling and review for all District studies/projects

Floodplain Delineation Branch
• Conduct Floodplain Delineation Analysis based on community needs/requests
• Assist customers with questions on floodplains and general questions
QUESTIONS?
Operations and Maintenance Division
Fiscal Year 2023 Program Highlights

Matthew Oller
Operations Branch Manager
Operations and Maintenance
Major Maintenance Projects Fiscal Year 2023

48th Street Drain
• Repair, upgrade, and improvements of FCD maintenance area

Guadalupe FRS Principal Outlet
• Temporary Intake Structure for the Principal Outlet to ensure operation until rehab design
Operations and Maintenance
Major Maintenance Projects Fiscal Year 2023

ACDC Water Conservation Landscaping Rehab Projects
- District-owned parcels as part of the Arizona Canal Diversion Channel is in decline reaching the landscaping life cycle along the structure.
- Areas identified to reduce maintenance and promote native desert landscaping utilizing FCD water conservation efforts.

Agua Fria River Safety Railing and Crest repair
- Left levee Reach 3 north of Van Buren

Salt River Levee Toe Road Thinning/
New River Wash Northern - Olive
- Vegetation thinning along levee toe
- Maintenance/emergency access to river bottom
- Levee Certification
QUESTIONS?
STAFF RECOMMENDS THE FOLLOWING ACTION: It is moved that the Flood Control Advisory Board endorses and recommends the District’s proposed Fiscal Year 2023 and Fiscal Year 2024 – Fiscal Year 2027 Capital and Major Maintenance Program including Fund 989 (Flood Control Grant Fund), Fund 990 (Flood Control Capital Fund) and Fund 991 (Flood Control District Fund), subject to adjustments made to reflect Board of Directors policy determinations.
Gila Bend Update

Michael Fulton
Director

Information Item

Agenda Item #4
Scott Avenue Wash Repairs

- Restore pre-flood capacity to Scott Avenue Wash culvert north of SR85
- Anticipate NRCS award of ~$500K through their Emergency Watershed Protection program (IGA pending)
- Contracting for design and construction complete
- Property acquisition underway
- Current schedule: repairs completed by the end of 2022/early 2023
- Current estimate ~$1M
Floodprone Property Assistance Program

- Eight property owners within floodways of Scott Avenue and Sand Tank washes are interested.
- Appraisals complete, offers made.
- Acquired homes will be demolished, the land transferred to the Town of Gila Bend for maintenance as open space.
- Current estimate ~$2M
Capital Improvement Project

• Nearing contract approval for design of the levee system adjacent to the south side neighborhood and improvements to Sand Tank/Bender Wash crossings.
• Project will take several years to complete depending upon project complexity and the level of cooperation realized by adjacent property owners.
• Gila Bend Design contract is in the negotiation phase for potential award
• Current *guesstimate* ~$20M+
Gila Bend Flood Response Plan

- Development of this plan was in the works before the August 2021 flood.
- In collaboration with the Town of Gila Bend, Maricopa County EM, MCSO and others, its purpose is to:
  - identify flood threats and needs for flood detection;
  - make clear how flood emergency and warning information will be disseminated to the public;
  - agree to emergency response procedures and participants;
  - develop joint training exercise plans.
- We anticipate this plan being completed by June.
QUESTIONS?
Comments from the Director

Michael Fulton
Director

Agenda Item #5
Summary of Recent Actions by the Board of Directors

Jack Sellers
District 1

Thomas Galvin
District 2

Bill Gates
District 3
Chairman

Clint Hickman
District 4
Vice Chairman

Steve Gallardo
District 5
Other Business and Comments from the Public

Agenda Item #7
Thank you
Flood Control Advisory Board