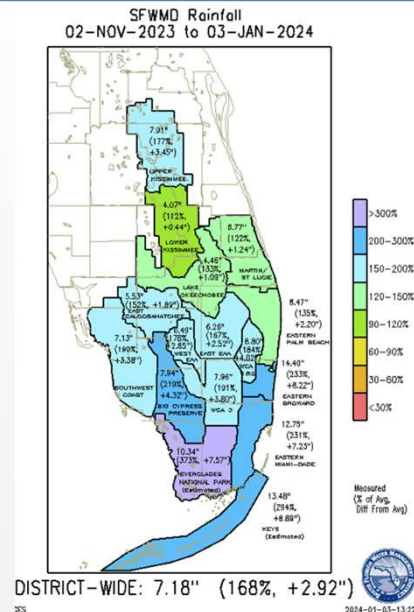




## 2023 Annual Rainfall

**LWDD**  
LAKE WORTH DRAINAGE DISTRICT

- However, 2023 Fall / Winter experienced significant above average rainfall
- Likely cause is the 2023/2024 El Nino event

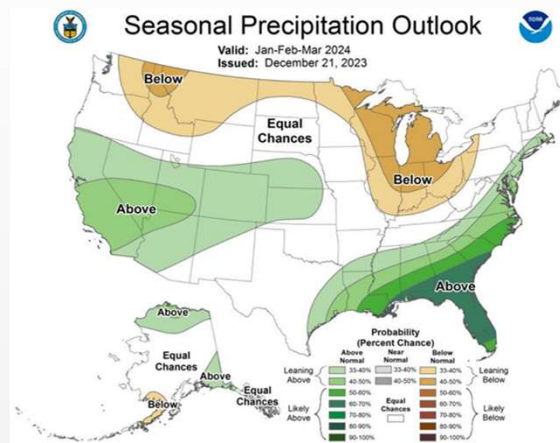


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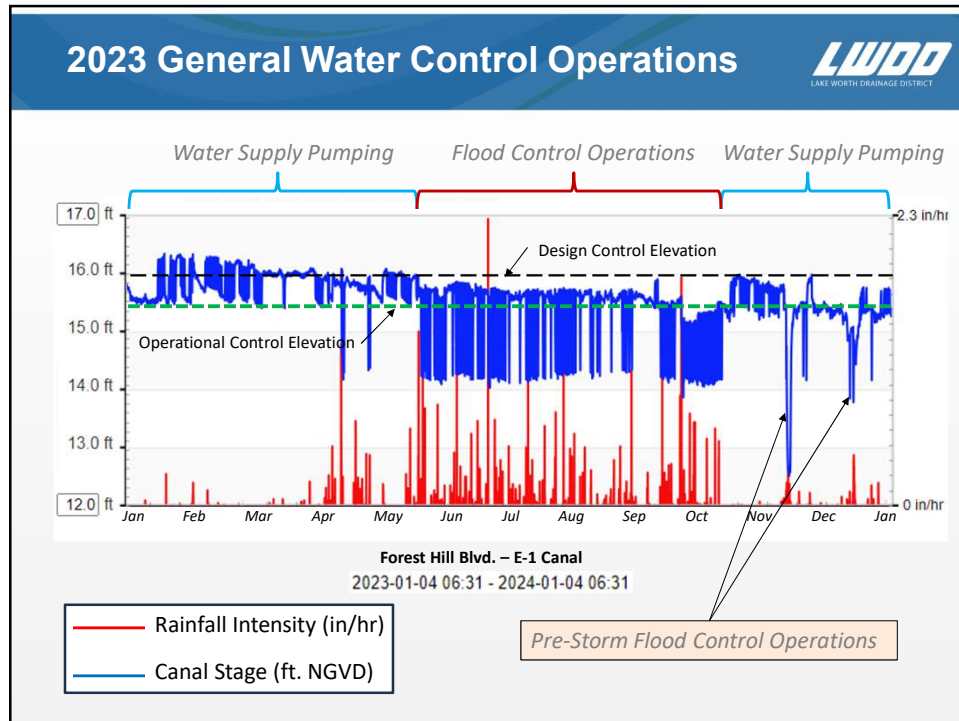
## 2023 / 2024 El Nino

**LWDD**  
LAKE WORTH DRAINAGE DISTRICT

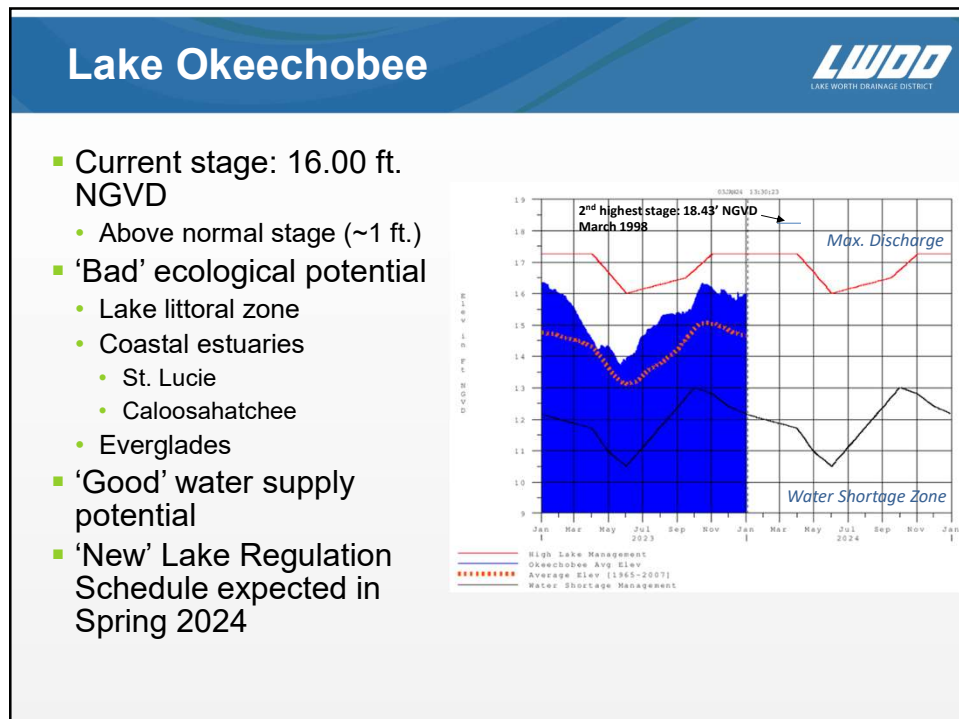
- Above average rainfall expected to continue into Spring 2024



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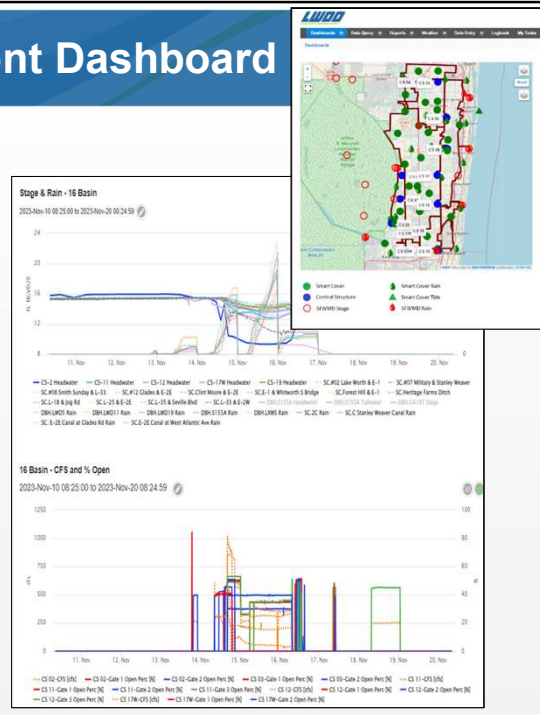
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## Water Management Dashboard

- LWDD has invested significant effort in automating **real-time water control data** across a number of telemetry platforms
  - SCADA
  - 'Smartcover' stage monitors
  - Real-time rain gauges
  - SFWMD data
- Contracted with eRIS to develop a dashboard with a common display for all platforms



7

## C-51 Phase I Reservoir Operational



- C-51 Reservoir received the SFWMD permit to commence Phase I operations in December 2023
- Utilities in Broward and Miami-Dade counties are participating
- LWDD received \$380,000 to cover prior years planning expenses
- LWDD will be reimbursed for future annual operating costs



8

## Control Structure 9 Refurbishment



- Construction completed in 2023:
  - Demolished existing pump houses
  - Installed pumps and control systems (including SCADA)
  - Installed variable frequency drives for pumps and needle racks which significantly improve operation and performance
- Radial Gates to be replaced in January 2024

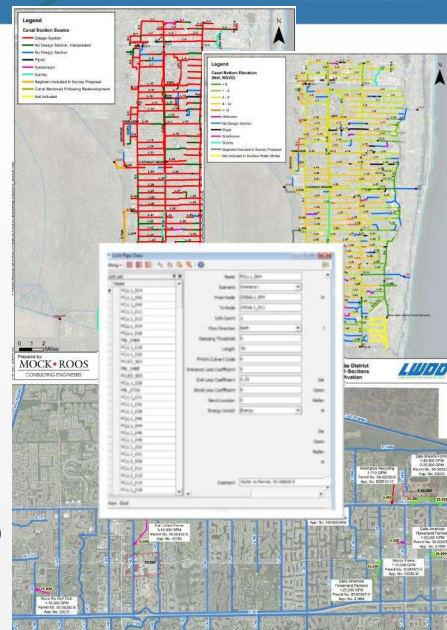


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## Comprehensive Modeling Effort

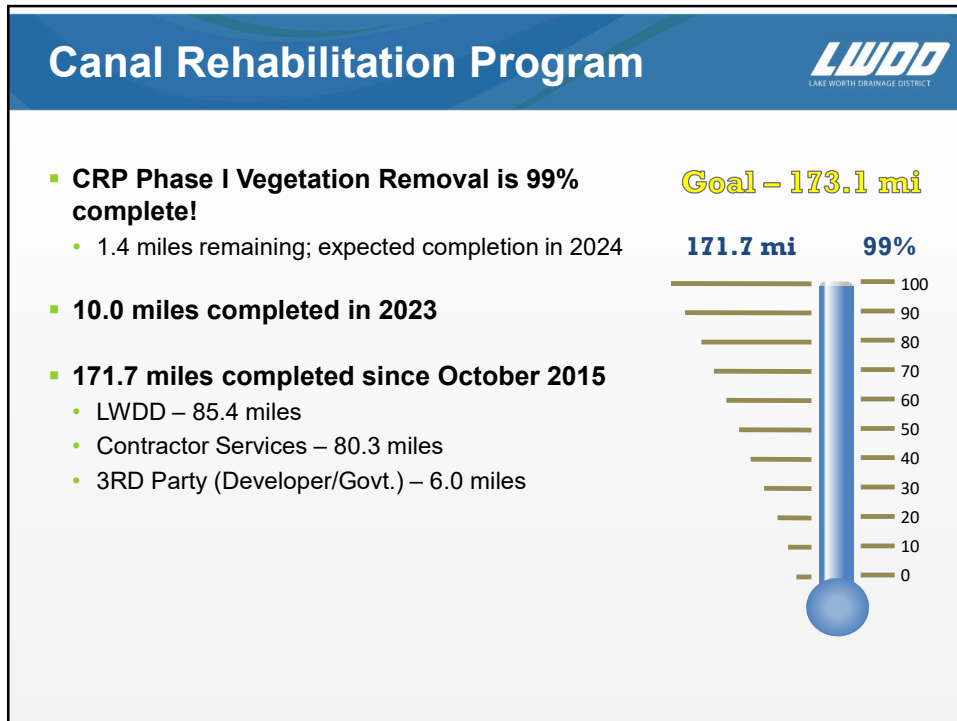


- ✓ Phase 1 completed - **HYDROLOGY**
  - Sub-basin delineation and runoff
- ✓ Phase 2 completed - **HYDRAULICS**
  - Canal geometry and culverts
- ✓ Phase 3a completed - **COMPILING**
  - Combining hydrologic & hydraulic components and develop functional model.
- Phase 3b 2024 - **CALIBRATION**
  - Testing & calibration of the model vs. historic rainfall events
- Phase 4 Spring 2025 - **FINAL REPORT**
  - Establishes new base flow and canal stages (superseding prior "Interbasin Study 1996 rev")



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## Canal Rehabilitation Program



- Coordination of canal rehabilitation projects is a District-wide effort requiring participation by all staff
  - Completed mapping right-of-way ownership for entire District
  - Researched and mapped project specific cross sections of canals for Phase 2: Restoration of Maintenance Banks
  - Captured GoPro 360-degree video segments of all project areas for advance inspection of canals
  - Field staked ~11 miles of right-of-way
  - Prepared and distributed almost 350 notification letters via hand and mail delivery
  - Fielded ~75 project-specific public inquiries
  - Hosted 3 project-specific public outreach meetings with residents and neighborhood associations
  - Continually updated information and project status on District website, social media and newsletters



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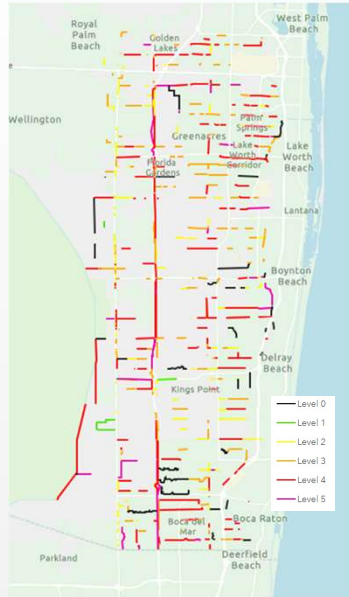



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**CRP Phase II: Maintenance Restoration Program (MRP)** **LWDD**  
LAKE WORTH DRAINAGE DISTRICT


- **Goal: Reconstruct, realign and rehabilitate canals for future sustainable maintenance**
  - Reconstruct canal sections to recover canal banks and achieve final configuration for future maintenance
  - Reduce dependence of herbicide treatment of banks in favor of mechanical treatment
- **Completed inventory in 2023**
  - 500 projects identified; over 250 miles
  - Projected completion over ~20 years

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## CRP Phase II: Maintenance Restoration Program (MRP)




LAKE WORTH DRAINAGE DISTRICT

### Projects identified and evaluated based on type and complexity


- Level 0** – 66 projects / 40 miles
  - Involves review of permits, agreements and ROW interests
- Level 1** – 7 projects / 6 miles
  - Reconstruction by 3<sup>rd</sup> party
- Level 2** – 129 projects / 37 miles
  - Minor repairs and improvements
- Level 3** – 164 projects / 64 mile
  - Significant projects that may require encroachment removal, tree clearing and earthwork
- Level 4** – 135 projects / 106 miles
  - Dominated by heavy earthwork and repairs and in some cases, realignment or structural improvements
- Level 5** – 15 projects / 9 miles
  - Most challenging projects and will require additional review and innovative solutions.




Ex: Level 1




Ex: Level 2



Ex: Level 3




Ex: Level 4






Ex: Level 4



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## Maintenance Restoration Program (MRP) EXAMPLE



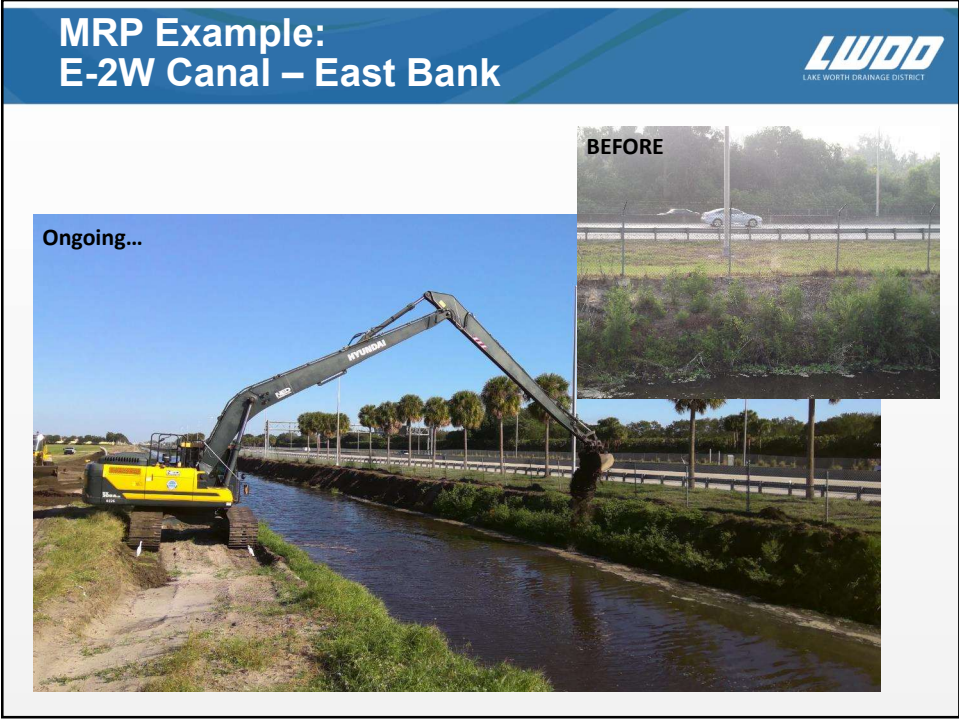
LAKE WORTH DRAINAGE DISTRICT



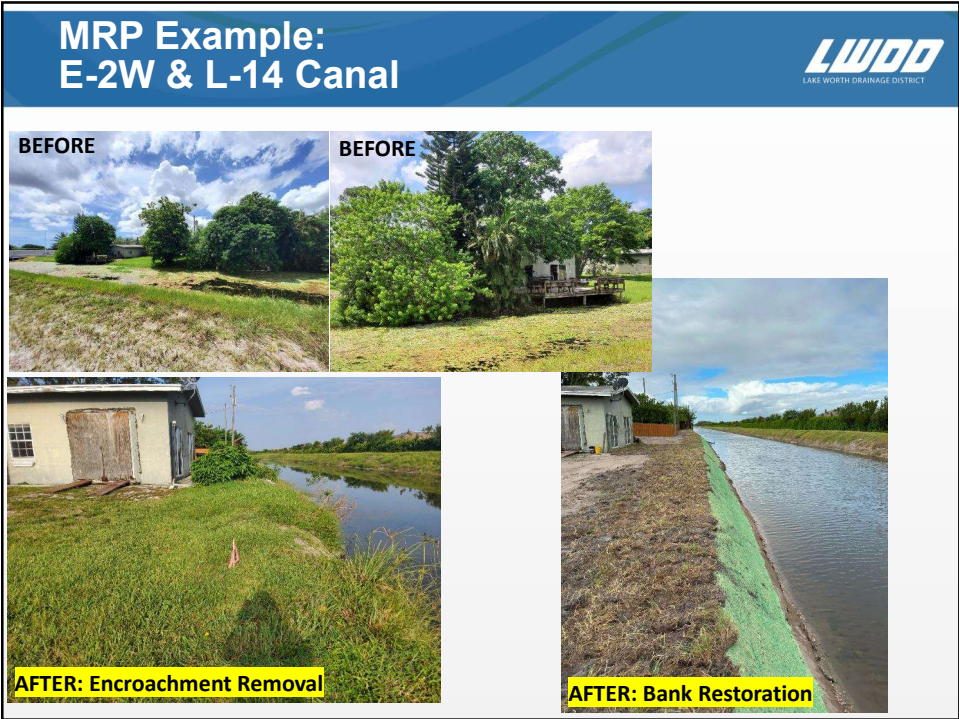


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## Canal Maintenance Low Maintenance Bank Mowing



- Low Maintenance Team established in 2022
- Hired 2 new employees in 2023 with plans to hire 2 more to support a routine maintenance schedule (2x per year)
- Currently maintaining ~35 miles of low maintenance bank; additional ~30 miles to be added over the next year



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## Canal Maintenance Low Maintenance Bank Mowing





BEFORE



AFTER



BEFORE



AFTER

28



## Canal Maintenance High Maintenance Bank Mowing



- ~1,524 miles of Flat Mowing
  - ~381 miles, 4 times per year
- ~1,482 miles of Slope Mowing
  - ~494 miles, 3 times per year
- Annual Contract for Mowing Services; \$277,000
  - Flat: ~125 miles, 4 times/year
  - Slope: ~140 miles, 4 times/year



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## Canal Maintenance Vegetation Management



- Treated ~6,142 acres of aquatic vegetation
  - ~983 acres of Floating Vegetation
  - ~1,330 acres of Submerged Vegetation
  - ~754 acres of Littoral Vegetation
  - ~3,076 acres of Littoral/Floating combined
- Treated ~694 acres of terrestrial treatments on low maintenance banks
- Annual Contracted Services: \$93,000
  - North of C-51 Canal
  - Boca Basin



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## Canal Maintenance Vegetation Management

- Currently maintaining 183 boom sites throughout District canals
- Replaced 18 booms due to wear and/or boat traffic
- Continued mechanical removal of aquatic vegetation to supplement chemical treatment
- Removed debris from channel to maintain continuous flow



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## Canal Maintenance

- Routine dredging ~24.5 mi
- Vertical side-trimming ~22.5 mi
- Fill hauling ~34,485 CY
- Vegetation/Mulch hauling – 8,100 CY
- 20 new access gates installed



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## Structure Maintenance



- Regularly service and maintain 14 major water control structures
- Continual monitoring of system components to ensure efficient operation of structures and flood control gates
  - Completed 140 routine Preventative Maintenance tasks
  - Performed unscheduled maintenance as needed



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## Campus Improvements

- New Roof Installed Main Office - West Wing



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## Fleet Maintenance



- District staff maintains a fleet of:
  - 61 light/heavy vehicles
  - 37 machines / heavy equipment
  - 11 tractor mowers
  - 8 boats
- Routine services completed
  - 104 light vehicles
  - 122 machines / heavy equipment
  - 51 tractor mowers

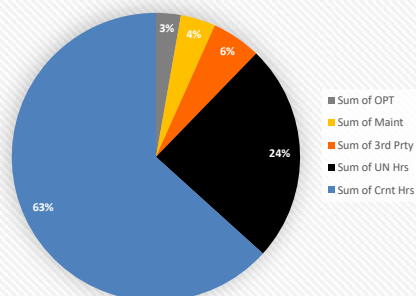


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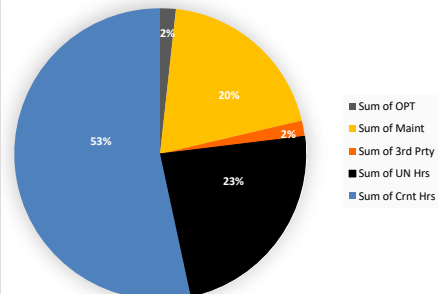
## Equipment Utilization Heavy Equipment



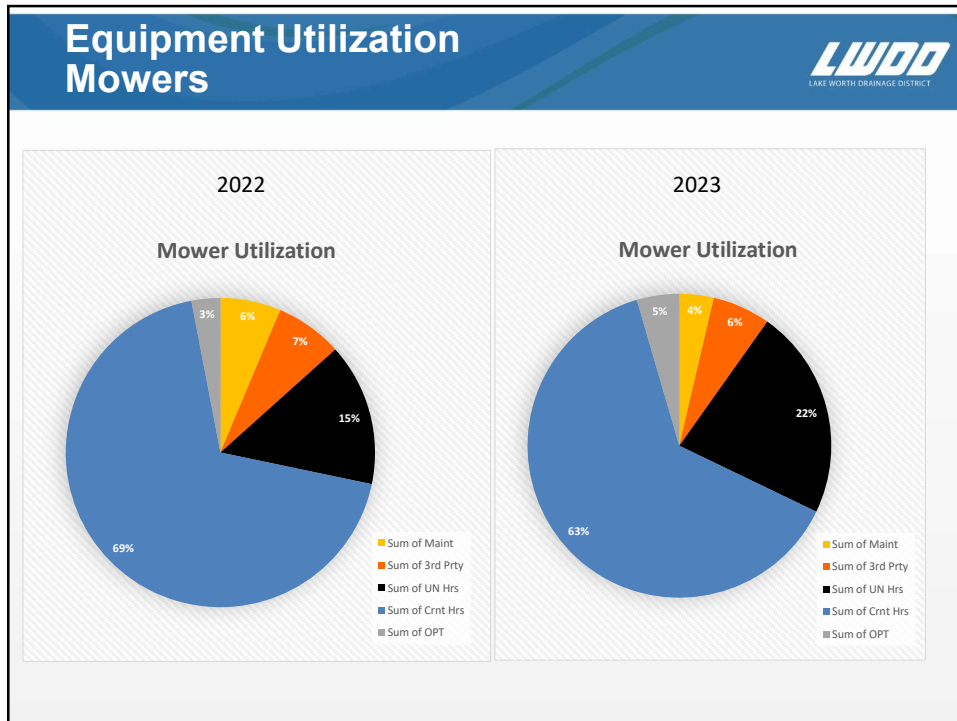
2022  
Heavy Equipment



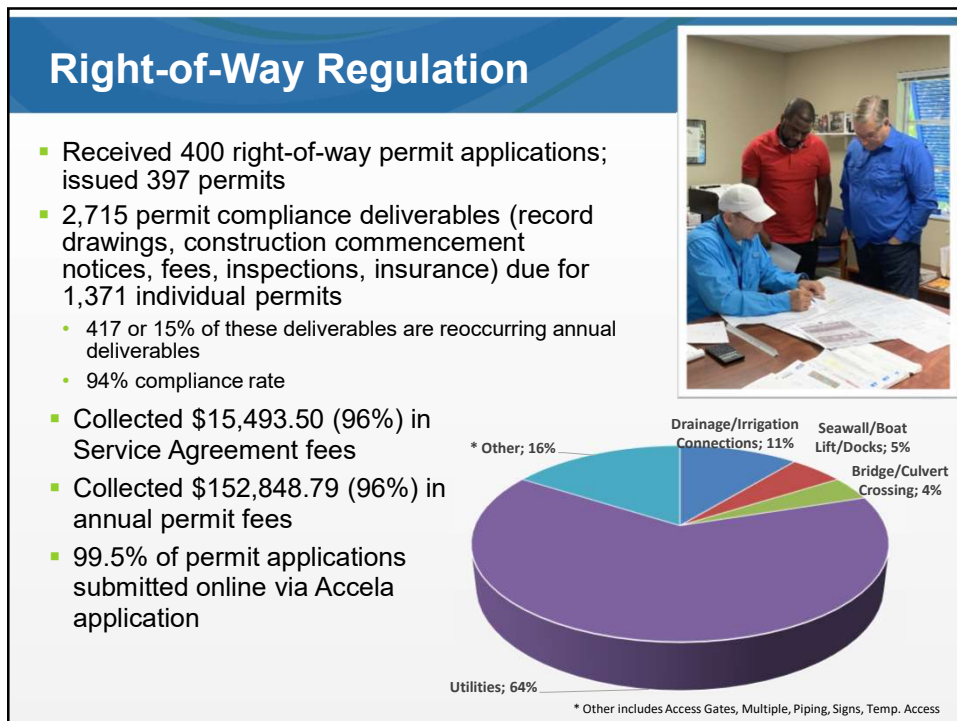
2023  
Heavy Equipment



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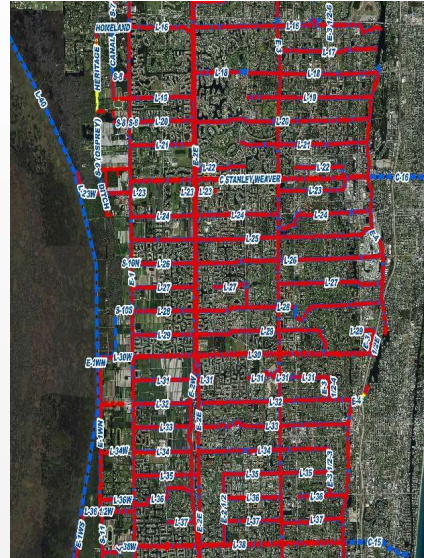


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## Right-of-Way Regulation



- Completed mapping of remaining 16 miles of LWDD canal right-of-way ownership
  - 492.6 miles or 100% completed in FY23
- Researched and responded to 1882 Chancery Case 407 review requests
- Completed 652 plat and development reviews for county and municipality projects
- Completed 7 topographic surveys with cross sections to support canal rehabilitation projects
- Compliance Cases:
  - Opened 231 new cases
  - Resolved/closed 223 cases

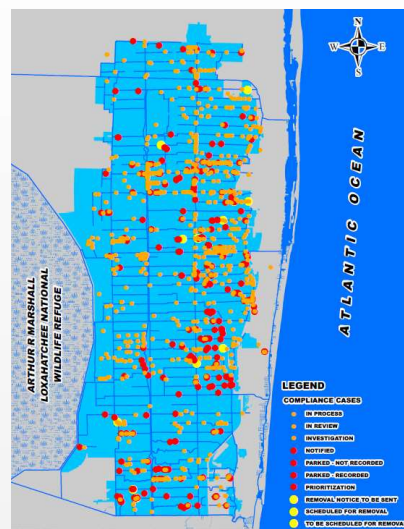


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## Legacy Compliance Issues



- Approximately 1,500 legacy compliance issues
  - Fences, patios
  - Yard drains
  - Unpermitted outfalls
- If not resolved through current compliance processes, Notice of Encroachment is recorded in public record to notify current/future owners
- Removal by LWDD to be prioritized based on canal bank restoration schedules



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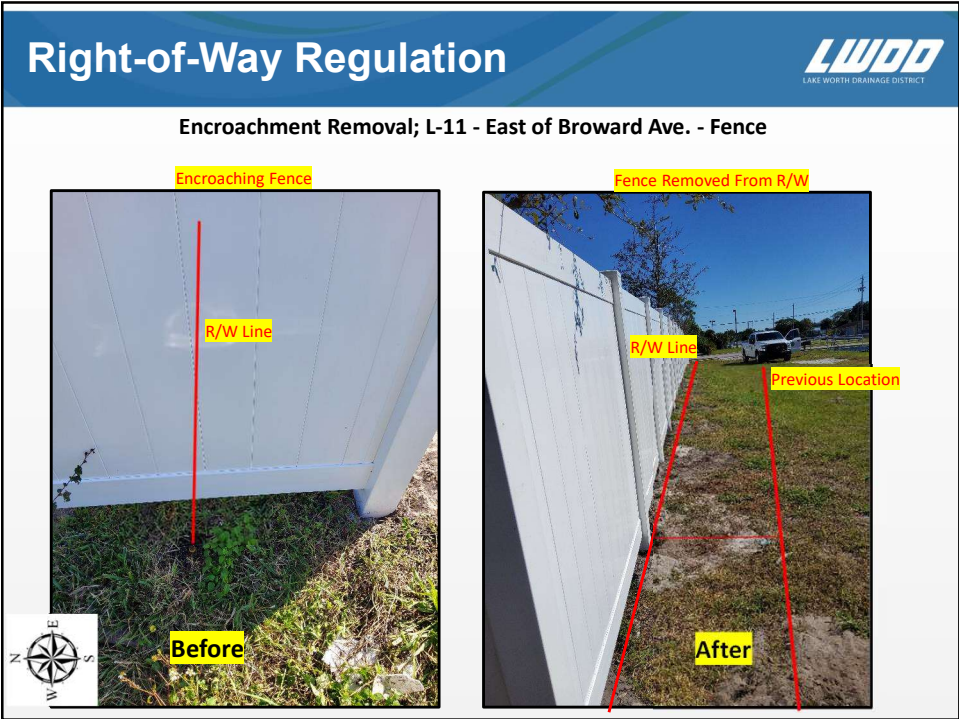
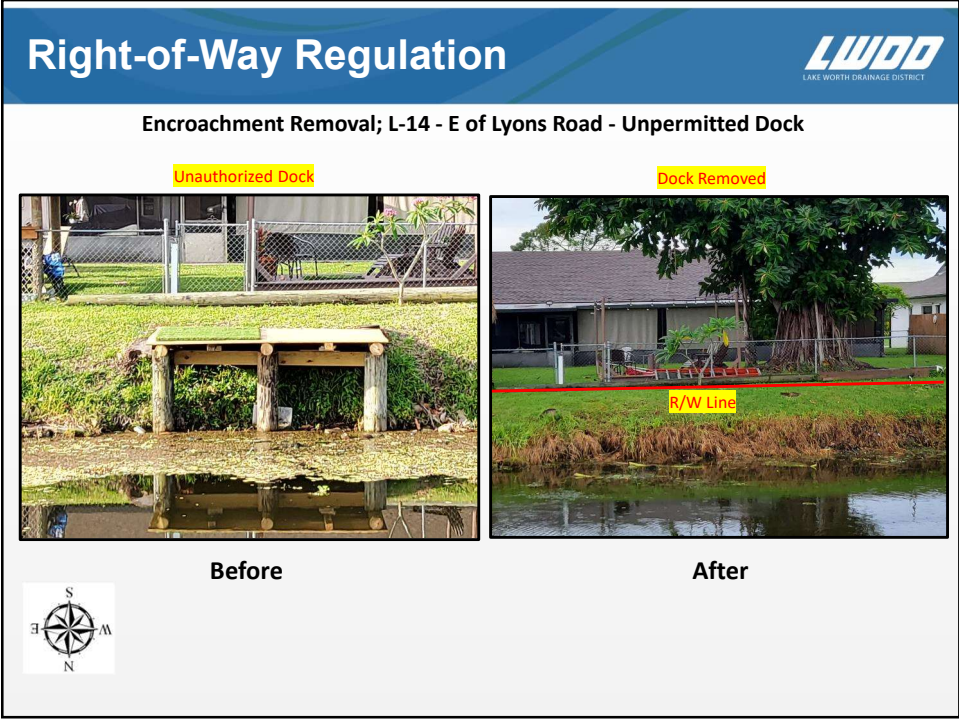




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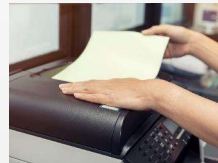
## Public Records & Information



- New Public Information Specialist position
- Held the 8<sup>th</sup> Annual Flood Control Workshop for HOAs & Property Managers
- Satisfied 600+ inquiries from the public
- Processed the disposed of 12 cubic feet of paper records
- Scanned 10,800 documents in-house
- Expanded education and outreach through various social media and digital outlets



 **Nextdoor**  
**Monthly**  
**Newsletter**  
**Website**



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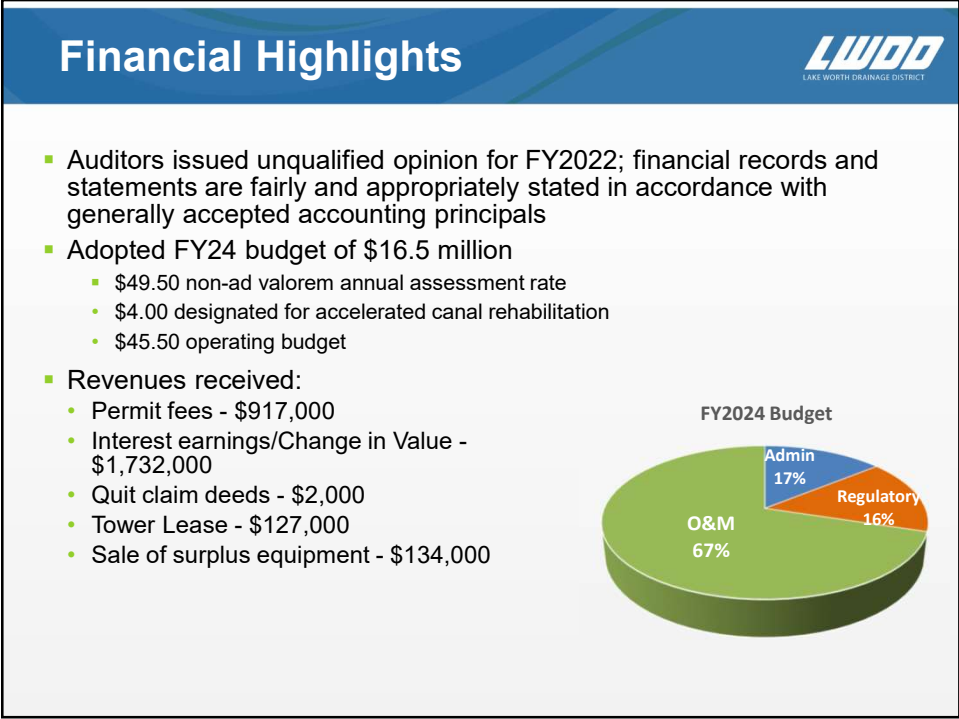
## Staffing

- Total number of staff has not increased in more than 14 years; 90 budgeted positions (4 current vacancies)
  - Average 10.5 years of service for current employees
  - 13 employees hired in 2023
  - 4 employees retired in 2023 (25 in past 5 years; 1/3 of workforce)
  - 10 current employees enrolled in DROP and will be retiring within next 8 years
- Maintaining operational costs through organizational planning
  - All vacancies reviewed for business need
  - Resources redirected as business needs change to ensure appropriate staffing for priority programs

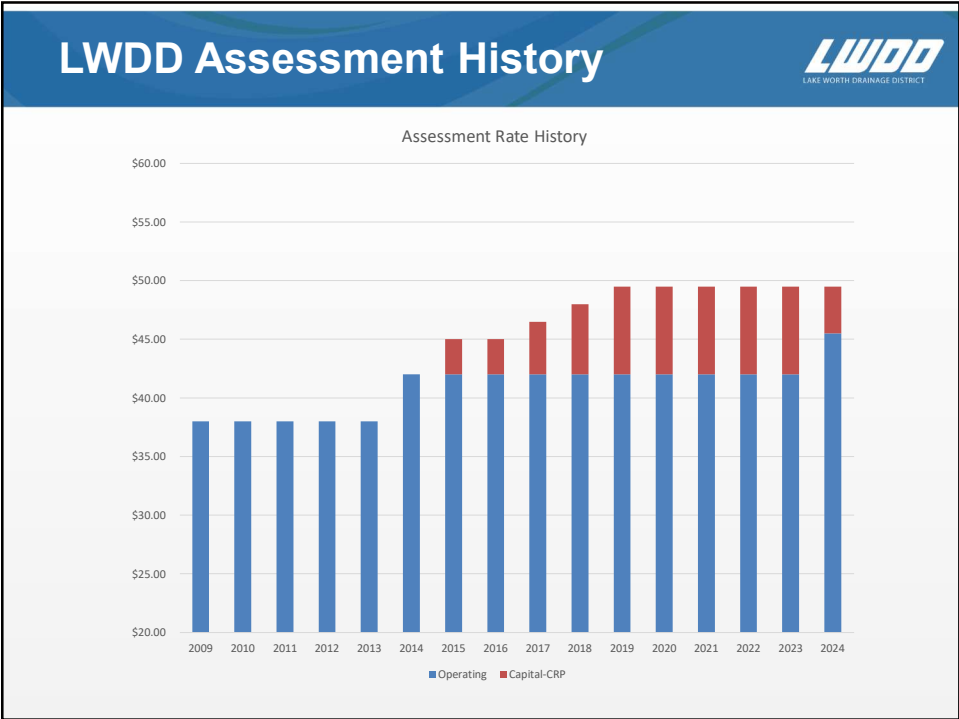


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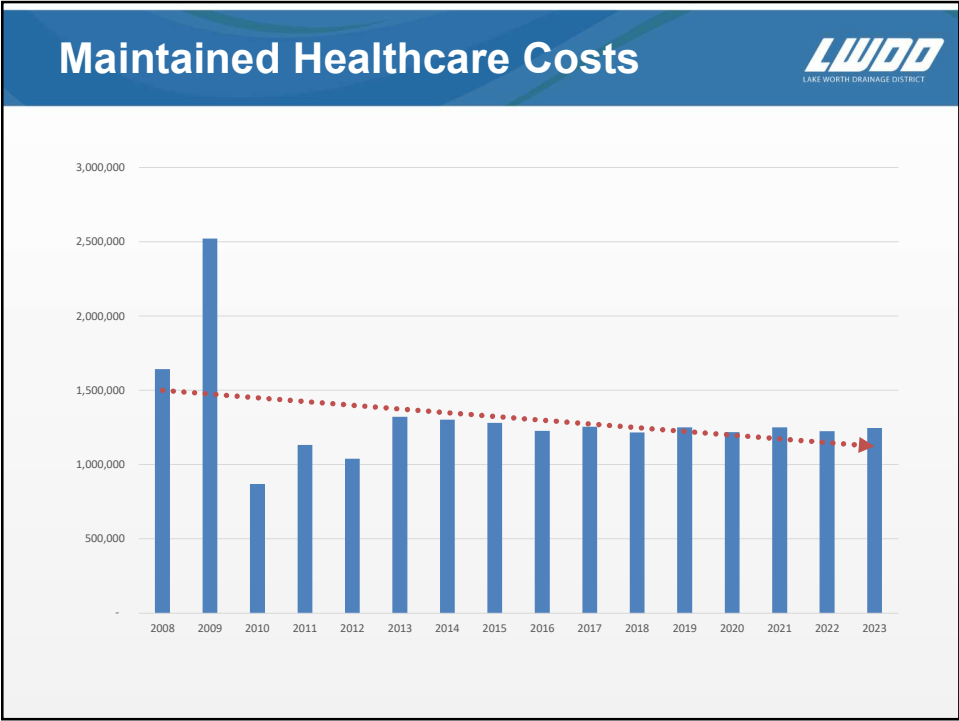




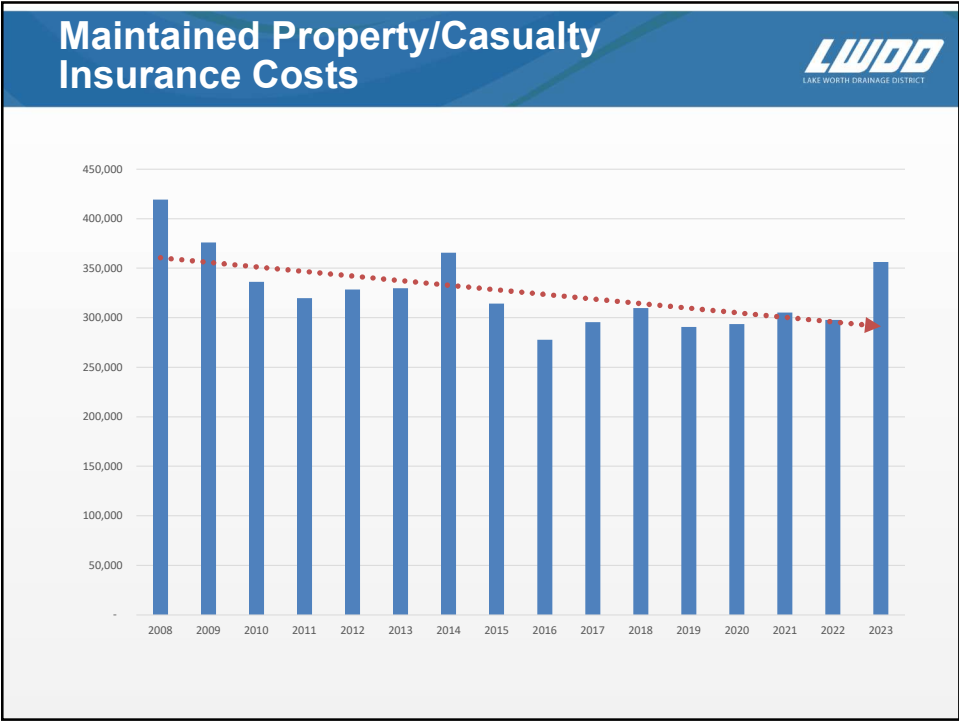
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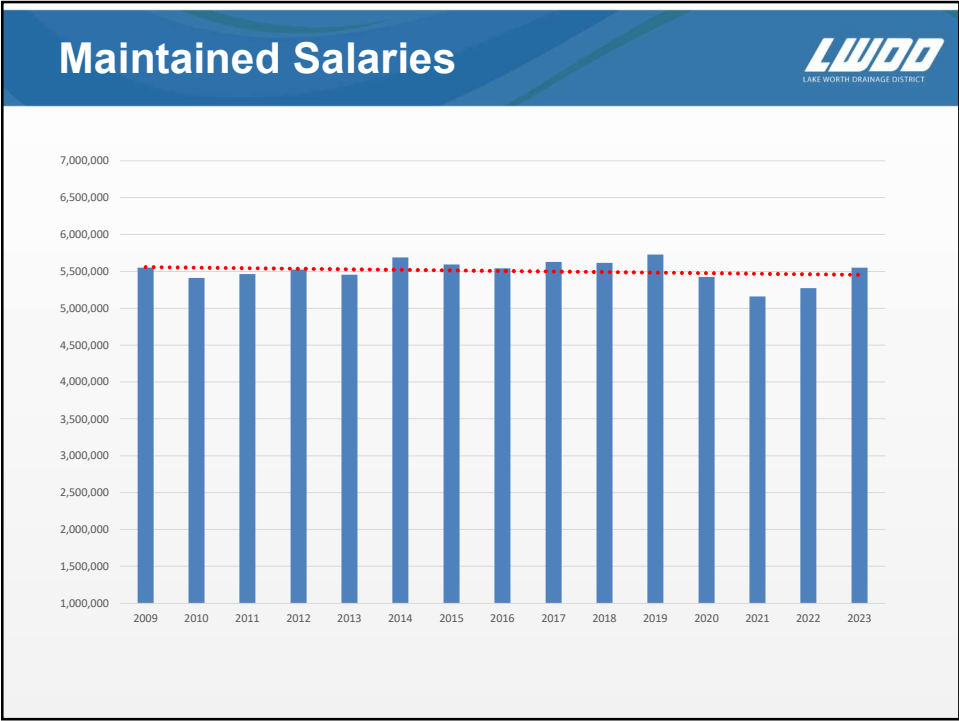
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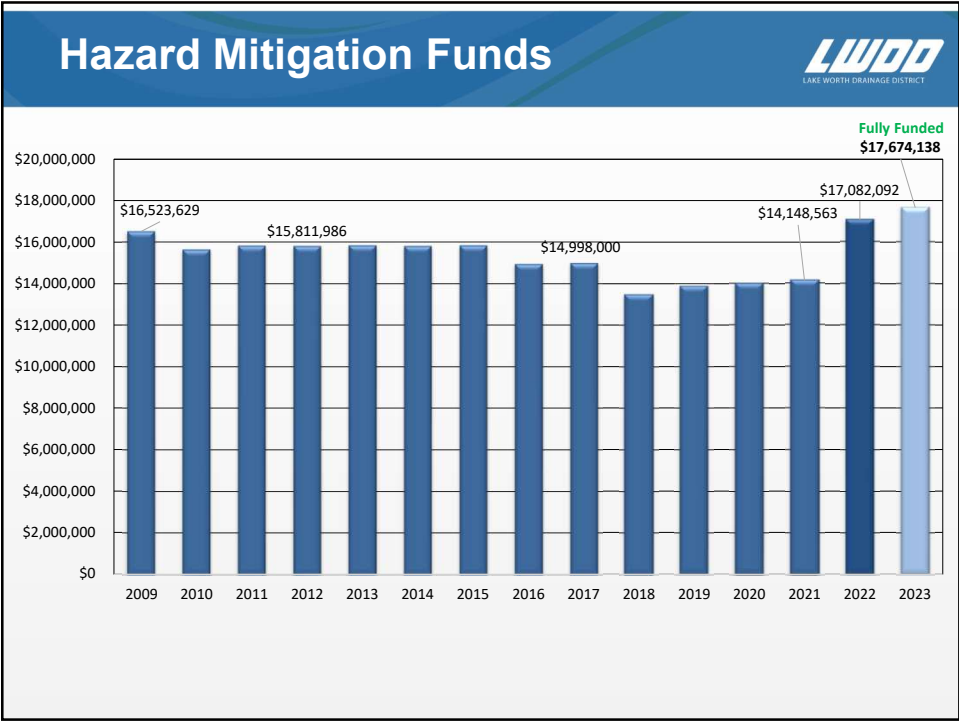
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## Other Fund Balances



- Capital Projects Fund: \$27.3 million
  - \$18.4 million in revenue from sale of development units in Ag Reserve
- Self Insurance Fund: \$2.1 million
- Canal Revetment Fund: \$1 million

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## Looking Ahead



- CRP Phase II – Maintenance Restoration Program (MRP)
  - Restoration of low maintenance canal banks
  - Management of existing structural encroachments on rights-of-way remaining after canal rehabilitation
- Ongoing capital projects for refurbishment of water control infrastructure
  - Secondary Control Structure remediation and enhancements
  - Hydrologic model; last comprehensive model completed in 1992, nearly 30 years ago
- Regional water supply issues
  - Lake Okeechobee Operating Schedule (LOSOM)
  - Lower East Coast Water Supply Plan
- Turnpike widening project coordination

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## Recommendation



- The Annual Report to Landowners provides an overview of the District's annual activities, including District activities undertaken in furtherance of the adopted water control plan
- Recommend acceptance of report pursuant to Florida Statutes Ch. 298.26