CANAL EMERGENCY

GUIDELINES

February
2025

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Canal Emergency Guidelines

CANAL EMERGENCY GUIDELINES

East Columbia Basin Irrigation District

I. General

A. Scope and Intent: This outline of likely decisions and actions is for situations involving a potential, reported or actual breach of the East Low Canal or a major lateral, such as the EL29 or EL68. This list is intended to be a memory prompter and decision making aid during a stressful event. It is not intended to be a complete list or to define step-by-step procedures. Depending on the circumstances, other decisions may be required or different actions may be appropriate. Portions of this list may also be useful for similar emergencies involving smaller canals and for some non-water emergencies.

B. Time Frame and Sequence: This guide assumes a time frame beginning with the onset of the emergency and the following few hours, up to possibly a day following the event. The likely decisions and actions covered in these Guidelines are described in a likely sequential precede evacuation of the canal. Other than that, it may be appropriate for other decisions and actions to overlap, take place simultaneously or follow a different sequence.

C. Authority: (Refer to Attachment #2, Organizational Chart, page 12) The District's Organizational Chart describes the chain of command and is structured to provide managerial/supervisory depth and some redundancy to cover critical situations. For after hour situations, several managerial/supervisory employees and other employees are designated to standby simultaneously to provide similar depth and redundancy.

These organizational arrangements enable collaborative decision-making during emergencies. Such collaborative decision making is encouraged because stressful situations increase the possibility of individual error. Bureau of Reclamation dispatchers/operators should be included. Collaboration opportunities may be limited by time. Consensus is not required. The ranking district employee present is authorized, expected and responsible to make the decisions and implement the actions necessary to manage the emergency.

D. Board of Directors: It is most likely and normal that in a canal emergency the situation will advance to the verification and water evacuation decision stages, or beyond, before the Board of Directors is informed or otherwise becomes aware of the emergency. These Guidelines anticipate that emergency decision making will be carried out by management/supervisory staff in accordance with the staff organization diagram and staff chain of command.

Note: Attachment #3, Canal Break Verification and Evacuation Flowchart, page 13, summarizes many decisions and actions described in the guide.

II. Potential Emergency Causes and Progression of Decisions

A. Within Prism: The most likely type of canal emergency is caused within or adjacent to the canal prism or appurtenant structures. Causes can be from such events as erosive or structural embankment failure, structural failure of checks, transitions or siphons, overtopping due to miss regulation or debris jams or other similar events. In these circumstances decision makers should ***move immediately toward verification and evacuation*** (page 15) decisions.

B. Earthquakes: If the Bureau of Reclamation reports an earthquake with a proximity and magnitude sufficient for USBR to mobilize damage inspections of Dry Falls, Pinto or O'Sullivan Dams patrols should be mobilized to inspect all major East District canal facilities. Special attention should be paid to fill embankments, siphons, check structures and concrete transitions.

C. Floods: Flash flooding, especially during the irrigation season, can cause canal failures if flood flows cause the canal's capacity to be exceeded or if flood debris entering the canal causes jams and overtopping. If flooding is expected, observed or reported patrols should be mobilized to inspect canal facilities in the area of the flooding and downstream facilities.

III. Verify the Emergency

A. Single SCADA Report: SCADA information from a single SCADA station needs to be field verified or electronically verified that the information is reporting an actual emergency and not an electronic malfunction prior to concluding a canal emergency event has occurred.

B. Multiple SCADA Reports: SCADA information from more than a single SCADA station where multiple data indicates a loss of water can be relied on to conclude an emergency even has occurred and initiate a decision to evacuate water from the canal. Such data may not be able to indicate the magnitude of the emergency. Decision makers should collaborate with each other about this data before initiating the evacuation. Field verify the data as quickly as possible.

C. District Reports: Reports of canal emergencies from ditchriders and other District employees can be accepted as accurate and relied upon to initiate canal evacuation unless there are physical or personnel circumstances indicating a field verification is an appropriate action. Decision makers should collaborate.

D. Other Reports: Reports of canal failures from waterusers and others should be field verified and/or verified by SCADA information before deciding to evacuate the canal. Question the person making the report to verify they are really observing a canal break. Evaluate the likely credibility of the person making the report. Remember that the flooding associated with a broken headgate or a broken lateral near its head can look like a canal break but may not actually endanger the canal.

E. After Verification: Ensure USBR Dispatchers/Operators have been notified of the emergency.

IV. Evacuate the Water

A. Objectives: Once a canal emergency is verified and a decision to evacuate the water from the canal is reached, operational decisions and actions must include the following objective:

a) Protect human lives – Protecting human life is the most important objective of canal emergency management. This includes our employee safety. The flooding from a canal break or other flooding caused by evacuating the canal can be dangerous to people and secondary accidents related to the flooding can also be dangerous to people.

b) Prevent or minimize damage to the property of others – When alternative actions are possible, select the course of action likely to lessen or avoid damage to the property of others.

c) Prevent or minimize damage to other District facilities - The flooding from a canal evacuation operation can also risk or sacrifice other District facilities. Emergency decisions should evaluate the combined damage consequences to all District facilities.

d) Protect East Low Canal siphons and checks – Damage or destruction of these structures will cause prolonged loss of irrigation service and costly repairs or reconstruction. When alternative courses of action are possible, select the course of action most likely to protect these structures. Sacrificing other District facilities to protect these structures may be appropriate.

B. Evacuation Through Wasteways: Wasteway Specifications and Procedures (See Section IX., pages 8-9)

1. **Rocky Coulee Wasteway (mile 23)**
    a. Headworks are SCADA equipped.
    b. Constructed channel capacity to the confluence with Crab Creek is 4500 cfs.
    c. Normal natural channel capacity within Crab Creek to Moses Lake is 2500 cfs. Flows up to 4500 cfs are authorized but damage to streamside property is possible.
    d. Consider the presence of operational waste or feed water. It may limit the space available for emergency evacuation water.
    e. Check the lower chute, the unlined channel from the lower chute to Crab Creek and the Crab Creek channel to Moses Lake for recreationists and other people before initiating sudden large flows.
    f. If the discharge will exceed 2500 cfs, consider advising the residents of the lower lying areas like Millerville of possible flooding and the potential need to evacuate.
2. **Weber Wasteway (mile 38)**
    a. Headworks are SCADA equipped.
    b. This facility has been abandoned as an operational wasteway but is maintained for limited emergency use.
    c. Flows of approximately 200 cfs or less will cause little or no channel damage for short durations.
    d. If flows exceeding 200 cfs are necessary, a field observer should patrol the reach between Road 1 SE and the first railroad crossing (abandoned) to monitor flow conditions and report any developing damage. Particular

attention to Road "1" SE bridge abutments should be taken. Report damage of bridge abutment structural stability to Grant County Public Works.

e. Flows of up to approximately 600 cfs are feasible but moderate channel damage should be expected.
f. Destruction of the wasteway is likely at flows above 600 cfs and such flows should only be attempted in extreme emergencies. Such higher flows should be considered if Weber Branch Siphon or Weber Siphon are in danger of destruction.

3. **Lind Coulee Wasteway**
   a. Headworks are SCADA equipped.
   b. Headworks are designed to discharge 3,000 cfs. This discharge will flood parts of some adjoining fields down to the vicinity of Road "8" SE. No flooding is likely at flows below approximately 700 cfs.
   c. If the discharge will exceed 700 cfs, notify the owners of adjoining properties down to Road "8" SE to expect some flooding.
4. **Scootney Wasteway**
   a. Headworks are SCADA equipped.
   b. Designed to discharge 550 cfs.
   c. Consider the presence of operational waste. It may limit the space available for additional emergency evacuation water.
   d. The space available in Scootney Reservoir and flows in Potholes Canal may limit the time Scootney Wasteway will be able to carry emergency evacuation water.

C. Other Possible Evacuation Actions
   1. Surcharge the canal downstream of the point of failure. Since canal bottom slopes and hydraulic gradients are quite flat, water will flow toward the breach from both upstream and downstream directions creating a peak breach discharge exceeding the normal flow of the canal. This peak can be reduced by creating a surge flow away from the break in the canal downstream to the breach. The volume of water that can be moved away from the breach will vary depending on canal space available downstream. Refer to Attachment 2 for capacity data of various canal reaches. This surcharge operation needs to be coordinated with USBR dispatchers, monitored closely by SCADA and patrolled by observers. Decision makers should collaborate.
   2. Route water through laterals to the extent capacity is available.
   3. Place dikes in the canal to reduce and control the amount of water reaching the breached area.

D. Have USBR Dispatchers/Operators move evacuation water upstream and out of the East District system as soon as possible.

E. Regulate the canal to enable and maximize safe continued water delivery using the nearest regulation point upstream of the failure. This step is a lesser priority than the expeditious and safe evacuation of water from the failed portion of canal. The regulation point utilized must be reliable enough to prevent the inadvertent release of water into the failed area. Consider disabling upstream SCADA and littleman devices to prevent unintended gate operations.

F. Once evacuation is initiated make decisions about the out-of-service portion of the East District (and South District if applicable).
   1. Shut down all lateral headgates and farm unit turnouts and conserve storage behind checks, or;
   2. Continue lateral diversions and farm unit deliveries as long as flows allow, and;
   3. Try to operate all areas uniformly, to the extent possible.

V. Notify Others and Get Help

(Refer to Attachment #1 Water Emergency, Fire and Accident Phone List, pages 10-11)

A. Ensure USBR Dispatchers/Operators have been notified of the emergency.

B. If after hours, mobilize clerical personnel as required to help with communications.

C. Contact, as appropriate, State Patrol, County Sheriff and/or Fire Districts to help with traffic control and any other public safety concerns.

D. Contact, as appropriate, State Department of Transportation and/or county public works or road department and/or city public works or street department to close public roads affected by or likely to be affected by flooding.

E. Contact, as appropriate, other utility and transportation entities whose services or facilities could be affected by the canal emergency, i.e. power companies, natural gas companies, petroleum pipeline companies, railroads and telephone companies.

F. If the public will be endangered or inconvenienced beyond the effects to public roads or utilities, contact the appropriate County Emergency Management Department or advise 911 Dispatch.

G. Be sure all District management/supervisory staff are contacted and advised of the emergency.

H. Manager or ranking District employee shall contact all five District directors and advise them of the emergency.

VI. Mobilize for Repairs

A. Limit the initial mobilization of crews and equipment to what is needed to protect lives, limit canal damage, protect other District facilities, protect other property from flood damage and otherwise manage the emergency.

B. Past experience has shown that it is not usually efficient or economical to begin mobilizing for canal repair until a repair plan is developed.

C. Notify all District employees who may be involved with repairs. Prepare them for the likelihood of extended shifts, round-the-clock shifts and weekend shifts.

D. Assemble key personnel for the repair effort and begin to plan, coordinate and implement the repair effort.

VII. Document Damages and Preserve Information

(Refer to Attachment #5, Documentation Flowchart, page 16)

A. Once the scope of the emergency is known, notify the District's Attorney and advise them of the situation.

B. Once the scope of the emergency is known, notify the District's insurance broker and advise them of the situation. The broker will relay the information to the District's various insurance carriers. This task may be delegated to the District's Attorney if the Attorney is available to make the necessary contacts. The broker or the insurance carrier or the District's Attorney may dispatch adjusters, investigators or consultants to the site of the emergency.

C. Photograph and/or video all damage to the extent possible. Consider hiring charter aircraft, drones and/or professional photographers to help with this work. If charter aircraft, drones or professional photographers are used, they should be accompanied by District personnel knowledgeable in the types of damage to look for.

D. As soon as possible, and if appropriate, use District engineering staff or other knowledgeable personnel to field inspect, photograph and map the extent of all flooding or any other damage.

E. Request USBR irrigation operations staff to save and back up all computer data from the SCADA system pertinent to the canal emergency.

F. To the extent possible, District management/supervisory staff managing the emergency should keep dated notes of their activities and observations.

VIII. Informing Water Users and the Public

A. Every effort should be made to ensure that any emergency related information released by the District is as forthright and as accurate as possible.

B. The Secretary-Manager is the designated spokesman for the District to report emergency related information to the water users and the news media. In the absence of the Secretary-Manager the ranking district employee responsible to manage the emergency is the designated spokesman. To the extent possible, all public information should come from the spokesman and other employees should refer requests for information from water users and the news media accordingly. Do not speculate about the possible cause of the emergency.

C. It is important that water users facing a loss of irrigation service be informed of the situation as soon as possible after adequate information is available. Water users will make farming and business decisions based on the information provided by the District so every effort should be made to avoid unduly optimistic or unduly pessimistic statements. If you are uncertain, state so and offer to update when reliable information is available.

D. If public transportation or public utility facilities are affected by the canal emergency, the public should be informed of the situation as soon as possible after adequate information is available. Area radio, TV stations, and newspapers will accept news releases even if they have not involved their reporters. Most have fax numbers which enable rapid and uniform distribution of emergency related information.

E. The Board of Directors and individual Directors have a duty to represent their constituents on emergency related matters and as elected public officials have a public role to play regarding the District's relationship with water users, the public, news media and with public agencies. District management/supervisory staff should, to the extent possible, support the Directors in carrying out these duties.

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IX. Wasteway and Canal Reference Data

Rocky Coulee Wasteway	Design maximum flow	4,500 cfs
	Normal maximum flow	2,500 cfs
	Operations in the 2,500 to 4,500 cfs range are authorized but some flooding will occur in the Crab Creek natural channel reach. Equipped with auto start back-up generator.	
Weber Wasteway	Design maximum flow	2,000 cfs
	Emergency maximum flow	600 cfs
	Normal maximum flow	200 cfs
	Channel is permanently damaged downstream of Road "1" SE. Operations above 600 cfs will cause substantial additional damage or destruction.	
Lind Coulee Wasteway	Design maximum flow	3,000 cfs
	Normal maximum flow	650-750 cfs
	Operations up to 1,500 cfs are authorized but some flooding will occur to fields alongside channel down to about Road "8" SE. Equipped with auto start back-up generator.	
Scootney Wasteway	Design maximum flow	550 cfs
	Equipped with auto start back-up generator.	
Headworks to Rocky Coulee Check (23 mile)	Design maximum flow	4,500 cfs
	Normal maximum operating depth 18.9 ft. Boards must be out at 10 and 20 mile checks to pass this flow.	
Rocky Coulee Check (23 mile) to Weber Check (37 mile)	Design maximum flow tapers from 4,500 cfs to 3,800 cfs	
	Normal maximum operating depth at Weber Check 14.90 ft. Top of core bank is 16.10 ft. Actual flow is constrained by combined capacities of canal below Weber Check and Weber Wasteway.	
Weber Check (37 mile) to Lind Coulee Check (54.9 mile)	Normal maximum flow tapers from 2,160 cfs to 1,750 cfs Max Q flow tapers from 4,200 cfs to 3,650 cfs	
	Weber downstream gage 10.24 ft. Top of core bank is 15.8 ft.	

Lind Coulee Check (54.9 mile) to Warden Pumping Plant (63.8 mile)

Normal maximum flow tapes from 1,750 cfs to 1,490 cfs
Max Q flow tapers from 3,650 cfs to 1,490 cfs

Normal maximum operating depth at EL55 PP gage (between Lind Coulee No. 1 and No. 2 siphons) is 9.9 ft. Gate limit switch at Lind Coulee Check is 714 veeders, 9.8 ft.

Warden Pumping Plant (63.8 mile) to EL68

Design maximum flow tapers from 1,490 cfs to 1,215 cfs

EL68 to EL74.8

Design maximum flow tapers from 1,215 cfs to 860 cfs

EL74.8 to Scootney Wasteway (85 mile)

Design maximum flow tapers from 860 cfs to 550 cfs

Major Laterals

EL29 @ Head	Design maximum flow	335 cfs
EL29 @ Interstate 90	Design maximum flow	272 cfs
EL29 @ EL29N	Design maximum flow	207 cfs
EL29 @ EL29WW No. 1	Design maximum flow	153 cfs
EL29 @ EL29ZE	Design maximum flow	53 cfs
EL29 WW No. 1	Design maximum flow	20 cfs
EL29 WW No. 2	Design maximum flow	37 cfs
EL68 @ Head	Design maximum flow	424 cfs
EL68 @ Highway 17	Design maximum flow	299 cfs
EL68 @ Foley Rd	Design maximum flow	263 cfs
EL68 @ Cunningham Rd	Design maximum flow	231 cfs
EL68 @ Highway 26	Design maximum flow	216 cfs
EL68 Wasteway	Design maximum flow	40+ cfs

WATER EMERGENCY, FIRE AND ACCIDENT PHONE LIST

Attachment #1

Fire	
Emergencies	911
Adams County Fire District No. 5	509-488-2951
Grant County Fire District No. 4	509-349-2471
Grant County Fire District No. 5	509-765-3175
Moses Lake Fire Department	509-765-2204
Othello Fire Department	509-488-2951
	509-488-2622
Warden Fire Department	509-349-2471
Ambulance	
All Areas	911
Police	
Emergencies	911
WA State Patrol - Grant County	509-765-6171
Adams County Sheriff	509-659-1122
Grant County Sheriff and MACC	509-762-1160
	509-754-2011
Franklin County Sheriff	509-545-3501
Moses Lake Police	509-764-3887
Warden Police	509-793-1300
WA State Patrol - Adams Co-Dist No. 6	509-422-3800
WA State Patrol - Adams Co-Dist No. 4	509-227-6566
Emergency Services	
Grant County	888-431-9911
After Hours	509-762-1462
Alert Siren for Wheeler Area	509-762-1160
Adams County	509-488-3704
Franklin County	509-545-3546
Highways, Roads & Streets	
WA State DOT	509-754-6145
	509-765-6145
	509-488-2581
Adams County Road Dept	509-488-2721
Adams County Public Works	509-659-3276
Grant County Road District #2	509-765-4172
Grant County Public Works	509-754-6082
Franklin County Public Works	509-545-3514
Connell	509-234-2301
Moses Lake Municipal Services	509-764-3783
Othello Public Works	509-488-6997
After Hours	509-488-3314
Warden City Shop	509-349-2693
Railroads	
Washington Central Railroad	509-349-8503
Burlington Northern Railroad	509-677-3532
	509-754-3475

WATER EMERGENCY, FIRE AND ACCIDENT PHONE LIST - Continued

Attachment #1

Electricity

Grant PUD		509-754-0500
Report Outages		800-216-5226
		509-766-2505
Big Bend Electric Cooperative		509-659-1700
Report Outages		866-844-2363
After Hours	Same	866-844-2363
Avista Utilites		509-488-5215
Report Outages		800-227-9187

Telephone

NO LONGER IN SERVICE	800-573-1311
CenturyLink	800-954-1211
AT&T	800-222-3000
T-Mobile Consumer Sales	800-877-4646

COLUMBIA BASIN RAILROAD

TIM MARSHALL
GENERAL MANAGER
COLUMBIA BASIN RAILROAD
111 University Parkway, Ste 200
Yakima, WA 98901
BETH MORTENSEN
CUSTOMER SERVICE/MARKETING
COLUMBIA BASIN RAILROAD
PHONE: (509) 453-9166
FAX: (509) 453-9349

Underground Utilities

All Utilities	800-424-5555

Insurance & Legal

Insurance Broker - Ron Snyder	509-662-5157
PayneWest Insurance	
Attorney - Anna Franz	509-754-2493

Natural Gas

Cascade Natural Gas		888-522-1130
After Hours	Same	888-522-1130
Williams gas Pipeline-West		800-972-7733
(NW Pipeline Corp)		
Pasco Supervisor Eric Smull 509-290-0379		
Spokane District Manager Roman Boychuk 509-398-7090		
Senior Operator Mike Fitchner 509-429-8072		509-544-9216
Avista (Warden Area)		800-277-9187
FRANKLIN CO EMERGENCY MANAGEMENT		509-545-3546

Petroleum

Phillips 66 Pipeline operated by Yellowstone	800-231-2551
Yellowstone Pipeline Co	509-765-7051

County & City Government

Adams County Courthouse	509-659-3257
Grant County Courthouse	509-754-2011
Franklin County Courthouse	509-545-3525

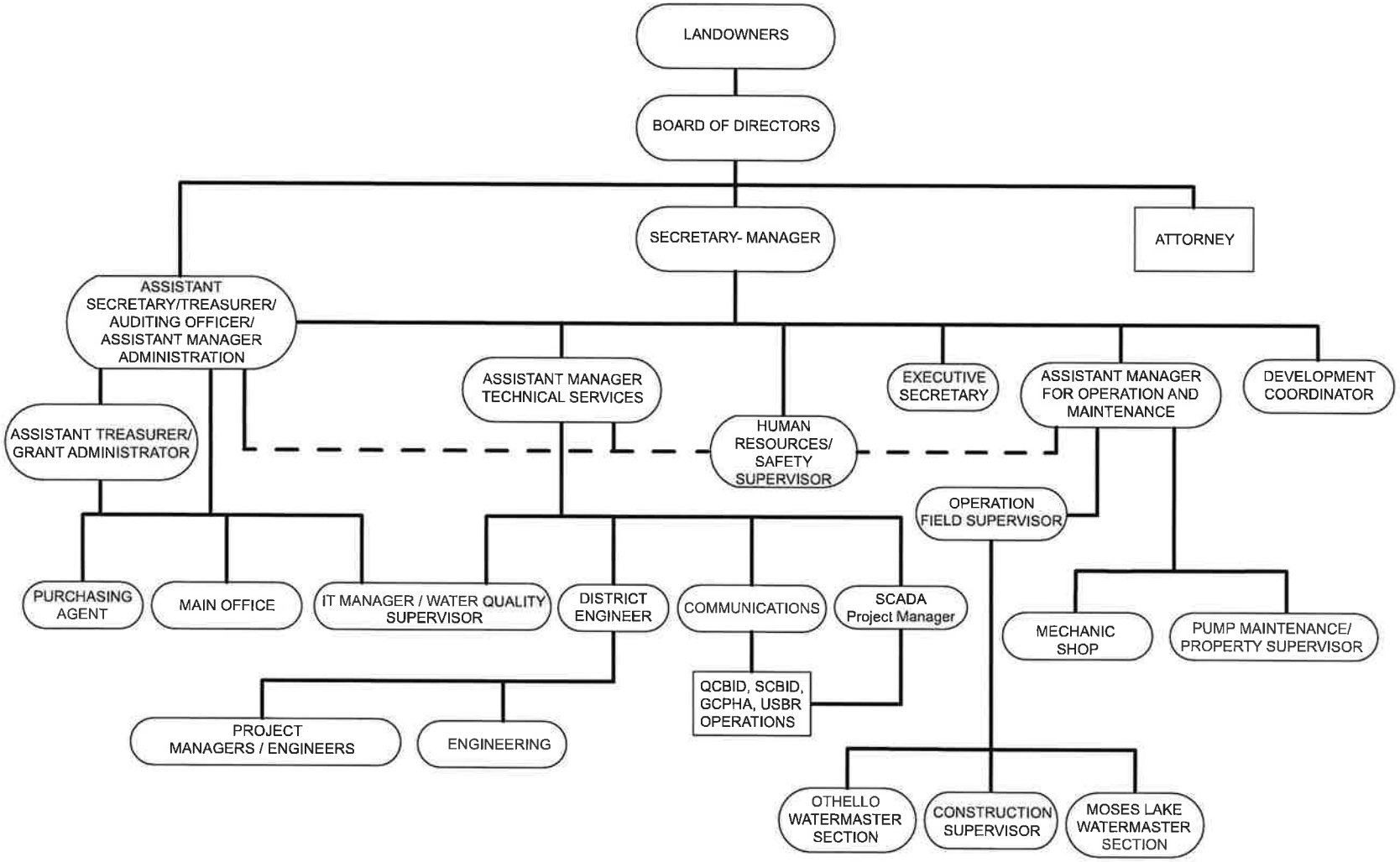
City of Moses Lake	509-764-3701
City of Othello	509-488-5686
City of Warden	509-349-2326
GRANT COUNTY EMERGENCY MANAGEMENT	509-237-2598

USBR & Other Irrigation Districts

USBR Irrigation Operations	509-754-0240
Columbia Basin Hydropower	509-754-2227
Main Canal (Dry Falls) Powerplant	509-632-5647
Summer Falls Powerplant	509-345-2543
CBH Smith Powerplant	509-488-3737
Moses Lake Irrigation & Rehab District	509-765-8716
Quincy Columbia Basin Irrigation District	509-787-3591
Adco WM Office	509-246-1411
South Columbia Basin Irrigation District	509-547-1735
Wahluke WM Office	509-488-2051
Mesa WM Office	509-265-4214

EAST COLUMBIA BASIN IRRIGATION DISTRICT
ORGANIZATIONAL CHART

ATTACHMENT #2

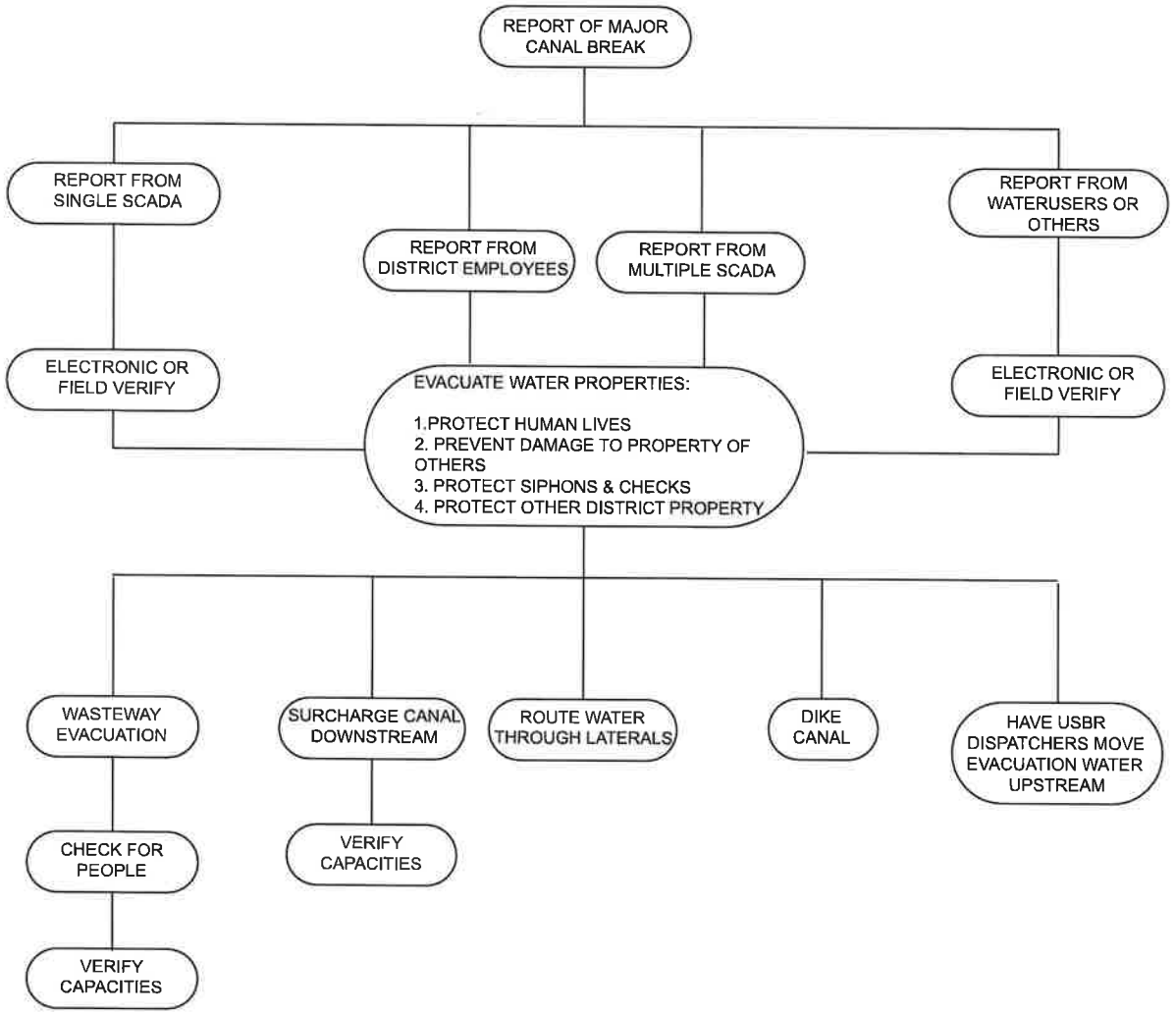


COMPUTER/ENGINEERING (Q)/DATA2/ECBID/Organizational Chart for PPP Manual.dwg

APPROVED: OCTOBER 5, 1994; RESOLUTION 94-14
EFFECTIVE: DECEMBER 4, 1994
REVISED: JANUARY 5, 2000 BY RESOLUTION 2000-04 TO REFLECT MARCH 28, 1999 AND OCTOBER 6, 1999 REORGANIZATIONS
REVISED: MARCH 7, 2007 BY RESOLUTION 2007-15
REVISED: SEPTEMBER 6, 2017 BY RESOLUTION 2017-13
REVISED: MAY 3, 2023 BY RESOLUTION 2023-07
REVISED:

EAST COLUMBIA BASIN IRRIGATION DISTRICT
CANAL BREAK AND VERIFICATION AND EVACUATION FLOWCHART

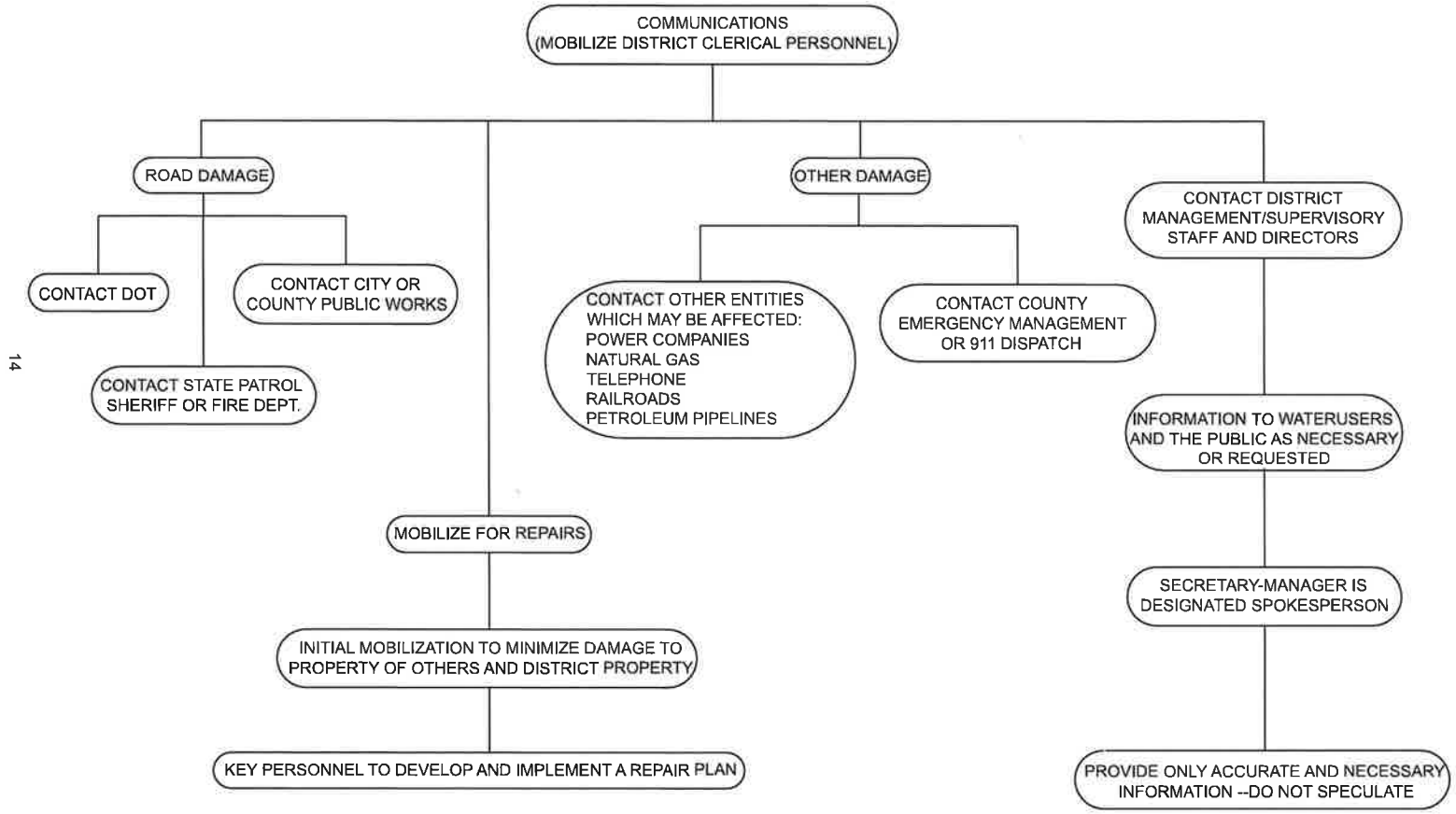
ATTACHMENT #3



COMPUTER/ENGINEERING (Q)/DATA2/ECBID/Organizational Chart for Canal Break Flowchart.dwg

EAST COLUMBIA BASIN IRRIGATION DISTRICT
NOTIFICATION FLOWCHART

ATTACHMENT #4



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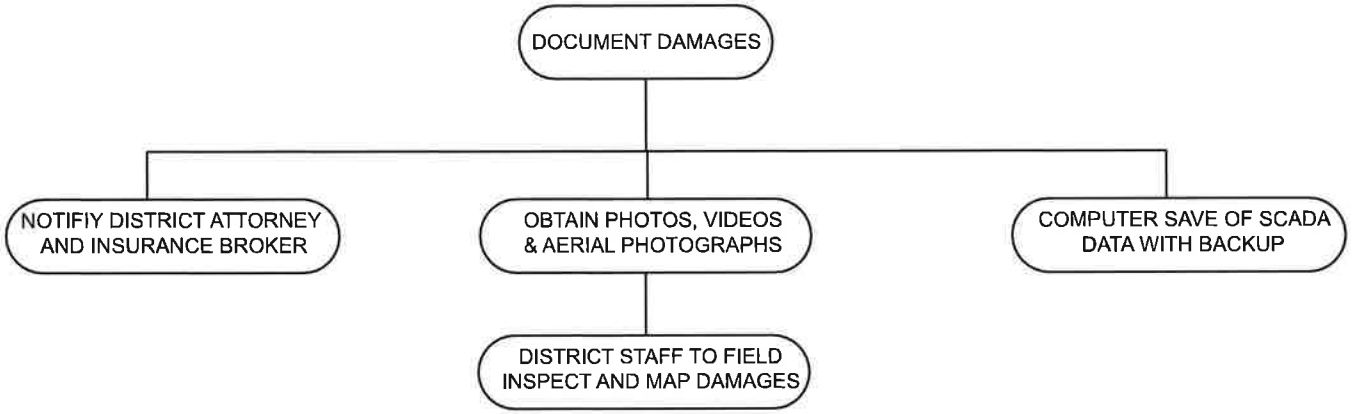
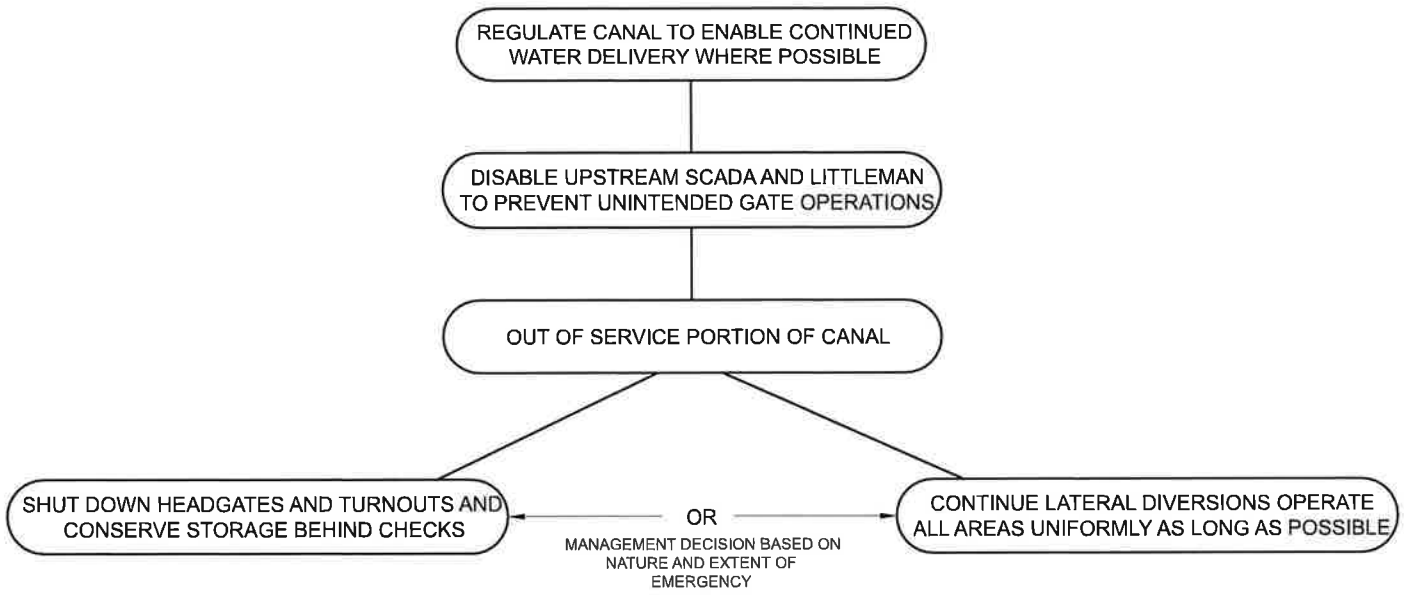
EAST COLUMBIA BASIN IRRIGATION DISTRICT
DOCUMENTATION FLOWCHART

ATTACHMENT #5



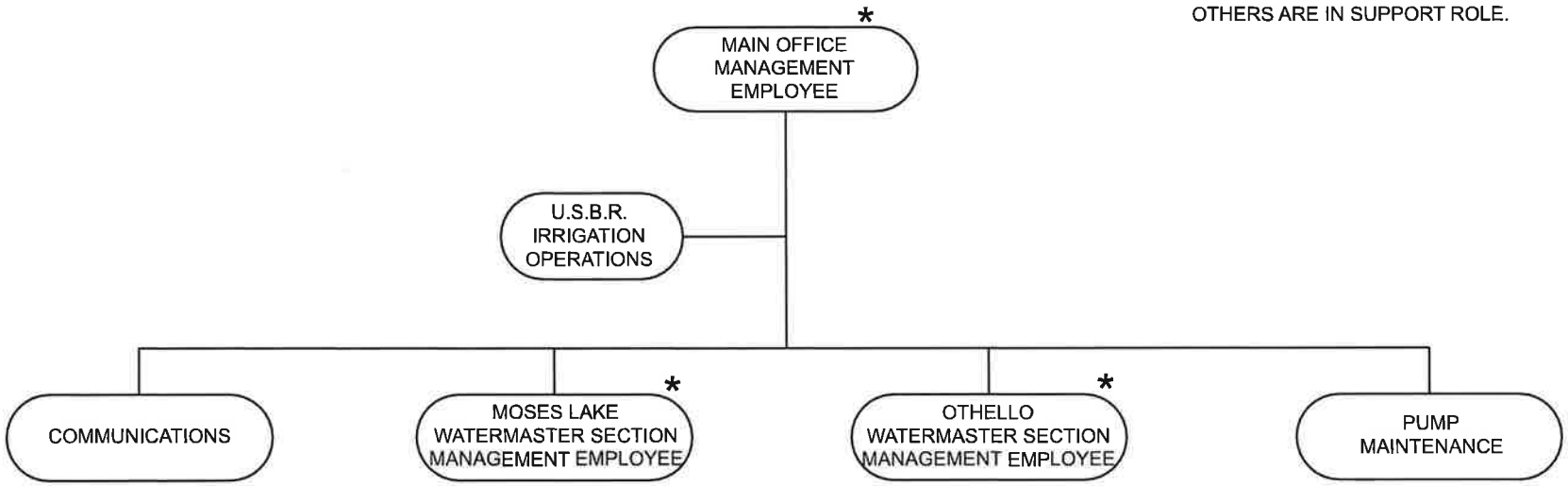
CANAL POST-EVACUATION FLOWCHART



EAST COLUMBIA BASIN IRRIGATION DISTRICT
STANDBY SCHEDULE ORGANIZATIONAL CHART

ATTACHMENT #6

* CHAIN OF COMMAND FOR AFTER HOURS CANAL EMERGENCY DECISION MAKING. OTHERS ARE IN SUPPORT ROLE.



COMPUTER/ENGINEERING (Q)/DATA2/ECBID/Organizational Chart for Standby.dwg

EAST COLUMBIA BASIN IRRIGATION DISTRICT
RESOLUTION 2025 – 05

Canal Emergency Guidelines

WHEREAS, the Board of Directors has determined that it is necessary and in the best interests of the District to update and formalize the procedures and policies directing the District's response to and management of canal breaks and other canal emergencies

NOW, THEREFORE, BE IT HEREBY RESOLVED by the Board of Directors of the East Columbia Basin Irrigation that the attached document entitled "CANAL EMERGENCY GUIDELINES, March, 2019" for the East Columbia Basin Irrigation District is adopted as the District policy regarding canal breaks and other canal emergencies; and

BE IT FURTHER RESOLVED that the employees designated by this policy as authorized and responsible to make decisions and implement the actions necessary to manage canal breaks and other canal emergencies are hereby authorized, and shall follow the Guidelines set forth herein, to the extent these Guidelines are applicable to a particular emergency situation, without limitation on alternate or additional decisions and actions applicable and appropriate to the emergency which such employees are also hereby authorized to make and implement; and

BE IT FURTHER RESOLVED that all District management/supervisory employees and all other employees whose duties include canal operation tasks are directed to familiarize themselves with the contents of these Guidelines; and

BE IT FURTHER RESOLVED that the Secretary-Manager is directed to implement periodic training to assure that all management/supervisory employees and all other employees whose duties include canal operation tasks are knowledgeable of the contents of these Guidelines; and

BE IT FURTHER RESOLVED that these Guidelines be printed and distributed in a format suitable for field use in emergency situations.

BE IT FURTHER RESOLVED that Resolution 2019-07 is superseded by this Resolution.

DULY ADOPTED in Open Meeting this 10th day of February, 2025.

BOARD OF DIRECTORS:

(SEAL)

ATTEST:

Secretary