SAN JOAQUIN COUNTY
OFFICE OF EMERGENCY SERVICES

FLOOD CONTINGENCY MAP
RD 2064, 2075, 2094 & 2096
SJ RIVER EAST BANK

SJ COUNTY

No.	Description	Date	By
	Revisions		

Design: CHN
Drawn: BAS
Check: CHN
Original Drawing Scale: 0 1" ½"
Scale: 1" = 1500'
Project File No.: 1942-0040
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Sheet Number: 1 Of 1

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Flood History - Stanislaus River Impacts

1906 - Flood broke out of the river east of Ripon and flowed down Jack Tone Road toward Stockton and west around the City of Ripon.

1928 - Stanislaus River overtopped the levee on the Hard Ranch near South Austin Road on March 29th. Approximately 6,000 acres flooded generally along Stanislaus River and within RD2064. Water reached depths of eight to ten feet in areas.

1950 - Stanislaus River flows reached 68,000 cfs. Extensive rains on Thanksgiving Day caused last general flood of area. Flood peaked at 68,000 cfs. Flood waters broke out south of intersection of Mohler and Moncure Roads and extended north of Mohler and Moncure roads nearly to Hutchinson. Water movement north of those roads was caused by the existence of open irrigation ditches which served to back up water to north. Flood waters traveled west to cross levee along Manteca Road and then north along that levee to West Ripon Road and then into Walthal Slough. Levee broke on south side of river near Mapes Ranch which lowered water levels considerably. (Interview with Merlin Mohler and Ken Mohler)

1951 - Local Interest Private Levee (LIPL) extending from Ruess Road to East end of Caswell Park built through cooperative agreement among affected landowners. Height of levee was built to handle 1950 flood levels which they marked at the time with tin cans to trees. It was noted that river brush and topography caused deviations from a smooth elevational fall of water levels. Water levels at specific points will deviate from calculated water heights based on elevation alone. (Interview with Merlin Mohler)

1955 - Stanislaus River flows reached 55,000 cfs. Stanislaus River levee failed upstream from Manteca Road. Stanislaus River flows reached 55,000 cfs. Water levels came within inches of the top of the LIPL Levee. Landowners subsequently raised the LIPL levee by 30 inches in 1956. Landowners also subsequently removed all cross levees to facilitate flow and reduce flood depths. (Interview with Merlin Mohler)

1964 - Stanislaus River flows reached 36,000 cfs in Spring flood in June. Levees held although considerable patrolling and remedial work was necessary.

1983 - 31.5' at Vernalis Gauge; normal flows in the Stanislaus River. Spring flood was occuring on San Joaquin River due to El Nino weather pattern that prevailed for most of the winter. Flows on Stanislaus River were not significant since the new New Melones Reservoir was still in the process of initially filling.

1997 - 34' at Vernalis Gauge before levee failure; District officials feel that water level in district after break on Stanislaus River reached 35-36' above sea level. San Joaquin River flows estimated to reach 70,000 cfs. Stanislaus River flows held at 8,000 cfs. Over a 3-day period centered on January 1, 1997 warm moist winds from the southwest blowing over the Sierra Nevada poured more than 30 inches of rain into watersheds that were already saturated by one of the wettest Decembers on record. By January 2, 1998 Don Pedro Reservoir and Millerton Lake at Friant Dam releases were much above channel capacity. Don Pedro water, in particular, caused a dramatic surge in San Joaquin River stages by early morning of January 4, 1997. Stanislaus river flows were near channel capacity because of greatly increased releases from New Melones Reservoir. District officials feel that restricted capacity of channel at Airport Way bridge caused these high flows to back up further. Numerous boils were responded to during the next 36 hours. At approximately 2:00 p.m on Sunday January 5, San Joaquin levee failed one-fourth of a mile above Airport Way bridge near where floodlight work was in progress. At approximately 4:00 p.m the same day Stanislaus River project levee failed near Sturgeon Bend, one-quarter mile upstream from junction with San Joaquin River. Flows on Stanislaus River reached 8,000 cfs which caused levels that reached LIPL Levee and required raising of 1,000 feet of levee in anticipation of potential higher flows. No major problems were experienced on LIPL Levee at 8,000 cfs flows. (Baldwin and interviews with District Officials)

Floodfight History - Impacts vicinity of East Bank of San Joaquin near Stanislaus River Junction

1935 - Snowmelt flood caused a break on San Joaquin River a short distance above the Durham Ferry road bridge at 2:30 a.m. on Friday, May 31st. Approximately 3,000 acres were flooded. Break reached 400 feet but a relief cut was promptly made approximately 1 mile below the bridge. A renewed rise of the San Joaquin and Stanislaus Rivers on Tuesday, June 4th occured due to hot weather in the mountains rapidly melting the snow pack. This hindered attempts to close the break. (News article from Ken Mohler)

1983 - Spring flood was occuring on San Joaquin River due to El Nino weather pattern that prevailed for most of the winter. Flows on Stanislaus River were not significant since the new New Melones Reservoir was still in the process of initially filling. San Joaquin levee failed approximately one-fourth mile upstream from current Airport Way Bridge at approximately 7:45 a.m on March 6, 1983. Water level at Vernalis Gauge was 31.5 feet. Relief cut made at 3 p.m. On March 6 by District officials above Cardoza Village at location shown on plan map. Cut was delayed by objections from Corps of Engineers. District officials had to travel to Sacramento to obtain permission to make cut. By this time it was almost too late to save the Trahern Dryland Levee. Small initial cut with back hoe widened naturally to 200'. Second cut was unnecessary since this cut widened fast enough to prevent overtopping of Trahern Levee. RD2075 officials conducted floodfight on Trahern Dryland Levee to prevent movement of water northward. District officials, with materials and crews from Department of Water Resources, laid visquine wave wash protection and raised levee with sandbags. Once PL99 assistance was approved by COE, that agency did work all night to raise levee with earth fill and rock the water side. Dairy farmer just to south of Trahern levee floodfought private levee until its failure next day. (Baldwin and interviews with District Officials)

1997 - Over a 3 -day period centered on January 1, 1997 warm moist winds from the southwest blowing over the Sierra Nevada poured more than 30 inches of rain into watersheds that were already saturated by one of the wettest Decembers on record. By January 2, 1998 Don Pedro Reservoir and Millerton Lake at Friant Dam releases were much above channel capacity. Don Pedro water, in particular, caused a dramatic surge in San Joaquin River stages by early morning of Saturday, January 4, 1997. Stanislaus river flows were near channel capacity because of greatly increased releases from New Melones Reservoir. District officials feel that restricted capacity of channel at Airport Way bridge caused these high flows to back up further. Numerous boils were responded to during the next 36 hours. At approximately 2:00 p.m on Sunday January 5, San Joaquin levee failed one-fourth of a mile above Airport Way bridge near where floodlight work was in progress. At approximately 4:00 p.m the same day Stanislaus River project levee failed near Sturgeon Bend, one-quarter mile upstream from junction with San Joaquin River. Flows on Stanislaus River reached 8,000 cfs which caused levels that reached LIPL Levee and required raising of 1,000 feet of levee in anticipation of potential higher flows. No major problems were experienced on LIPL Levee at 8,000 cfs flows. (Baldwin and interviews with District Officials)

Floodfight History - Impacts on East Bank of San Joaquin River south of Mossdale

1950 - Failure of levee on Thanksgiving Day near junction with Hays Road near present location of district pumps. River broke back into main channel near Hildebrand Farm since primary levee was no higher than Almondwood Dryland Levee on north side of district. Primary levee is now much higher than Almondwood Dryland Levee and so this would not happen again. Instead water would overtop the dryland levee and continue to move north as it did in 1997. Stanislaus River flows reached 68,000 cfs.

1952 - Levee failed downstream of 1997 break in June probably as a result of poor maintenance and inadequate patrolling (Alex Hildebrand)

1955 - Rapid rise on San Joaquin River on Christmas Day caused failure of RD2075 levee in the area of the pocket. Stanislaus River reached 55,000 cfs which caused levee upstream from Manteca Road to fail. Stanislaus River water flow moved south of Moncure Road to River Junction/McMullin Dryland Levee where it was diverted north past Perrin Road and then west along West Ripon Road into Walthal Slough. Area around Brady Road next to River Junction/McMullin Dryland Levee flooded-deep but water did not back up that far east on Brady. Leal house in Brady/Melton Roads area had water up to the eaves. Break on south side of Stanislaus River on Mapes Ranch caused rapid drop in water levels. (Merlin Mohler)

1983 - RD2075 conducted floodfight on Trahern Levee to prevent northward movement of water after levee failure in RD2064. This floodfight was successful. RD2075 also dealt with a problem on primary levee near junction with Hays Road. Failure of the primary levee was prevented. (Baldwin)

1997 - Over a 3-day period centered on January 1 warm moist winds from the southwest blowing over the Sierra Nevada poured more than 30 inches of rain into watersheds that were already saturated by one of the wettest Decembers on record. By Thursday, January 2 Don Pedro Reservoir and Millerton Lake at Friant Dam releases were much above channel capacity. Don Pedro water, in particular, caused a dramatic surge in San Joaquin River stages by early morning of Saturday, January 4. Following levee failures in RD2064 on January 5, 1997 Department of Water Resources and RD2075 officials began a floodfight on the Trahern Dryland Levee to prevent water from flowing northward. District official Lloyd Hayward closed gates one-quarter mile west of Airport Way to prevent water from flanking the Trahern Levee. Corps of Engineers under PL99 was requested to floodfight Trahern Dryland Levee which was approved. Corps of Engineers contractors placed leach line rock on top of levee to prevent wave wash damage. Water levels reached top of levee where previously placed gravel prevented washout from slight overtopping flow. By afternoon of Monday January 6 trucks and heavy equipment could not access top of levee. Private drag line used to try to maintain access. COE contractor floodlight work on levee that afternoon. District officials feel that Trahern Levee would have failed if break further downstream had not occurred early next morning. During the time of the floodfight on the Trahern Dryland Levee, district officials noticed instability and bulging on their primary levee one-quarter mile downstream from junction with Hays Road. An additional problem area was being watched downstream. At 2:00 a.m on Tuesday, January 7 levee patrol found that levee at first location near Hays Road had pushed out. Levee road was still overhanging break upon discovery but quickly collapsed into break which spread to over 1,200 feet over the next several days. Water reached Almondwood Dryland Levee around 5:30 a.m. Water reached Weatherbee Lake by 7:00 a.m that morning. Levee breach opened to 1,200 feet over several days. District remained flooded until March 1997. (Baldwin with interviews of District Officials)

2006 - Spring flood occurred on San Joaquin River due to sustained rains in March that saturated ground culminating in a very heavy rainfall event on April 2nd-4th which forced reservoirs to make large releases. Initial predictions of a 32' stage at Vernalis, combined with a forecasted additional large precipitation event, initiated a large flood fight operation. Precipitation event failed to occur and subsequent peak flow crested at 35,000 cfs at Vernalis Gauge causing a peak stage of 29.3'. Erosion protection and seepage control work were necessary at nearly a dozen sites but no levees failed. Extensive seepage flooded numerous fields and some structures and seepage continued to hinder farm operations into the summer. (Baldwin after interview with Art Hinojosa)

California Data Exchange Center (CDEC) Website

http://cdec.water.ca.gov

Special Consideration - Drainage

Reclamation districts covered by this map have several pumping stations as shown for day-to-day drainage of reclaimed land. Cement culverts with gates are also in place as shown to allow gravity flow drainage back into the river if impounded water levels are high enough. In the event of flooding, districts would use culverts at low end of RD2064 and RD2096 (end of Walthall Slough) to drain area by gravity flow once river water elevations have subsided. District pumps would be used to drain remaining ponded water. District pumps are above 100-year flood elevations.

Special Flood Consideration - Jack Tone Golf Course

Local Interest Private Levee (LIPL) extending from end of RD2064 levee along Stanislaus River ends at Jack Tone Golf Course since bluffs rose at this point to above potential flood levels. Construction of Jack Tone Golf Course degraded bluff elevations thereby creating the possibility that river flows above 8,000 cfs will allow water to move north around existing LIPL levee. City of Ripon has addressed this potential with the Jack Tone Golf Flood Protection Plan.

Upper Stanislaus Flood Contingency Options

Highwater Event
The general strategy will be to flood fight LIPL Levee along river and prepare to implement emergency actions.

Actions

Establish levee patrols with affected property owners. Closely monitor levee reach at east end of Moncure Road where direct river flow impinges on levee.

Monitor water levels at Jack Tone Golf Course bluff.

Identify equipment to make Brocchini Farms Relief Cut in the event of a breach.

Property owners and City of Ripon designate representatives to South Delta Unified Flood Fight Command.

Threatened Movement of Water North of Jack Tone Golf Course Bluff
The general flood fight strategy will be to facilitate movement of water and water will be encouraged to move to minimize extension of water to north and make Brocchini Farms Relief Cut if conditions warrant.

Actions

Position equipment to make Brocchini Farm Relief Cut. Upon failure of LIPL levee, monitor elevation of impounded flood waters and complete cut when and if impounded waters reach elevation of river waters at relief cut site.

If breach is to east of Mohler and Moncure Roads intersection, cut road embankment at that point to facilitate westward flow of flood waters.

Reclamation Districts 2064, 2075, 2094, 2096 Flood Contingency Options

Highwater Event and Failure of Primary District Levees
The general strategy in a high water event is to establish effective levee patrol, coordinate response through South Delta Unified Flood Fight Command, and prepare to take additional emergency actions.

Actions

Establish levee patrols in accordance with district plans.

Involved districts and local, State, and Federal agencies provide representatives to South Delta Unified Flood Fight Command to coordinate response to levee problems.

Identify equipment to make pre-planned relief cuts if needed.

Determine advisability of providing pro-active wave wash protection on some or all dryland levees within districts as a precautionary measure.

Failure of RD 2064 Primary Levee
The general flood fight strategy will be to flood fight the Trahern Dryland Levee, make the Lower Cardoza Relief Cut, and protect interior levee slopes.

Actions

Coordinate with P.G.&E. to cut power to flooded sections.

Position equipment at Lower Cardoza Relief Cut if levee failure is probable. Upon failure of primary levee, make relief cut to just above water line of river. As impounded waters build up to the level of river water, complete cut.

Monitor outflow from first relief cut and elevation of impounded water to determine need for a second relief cut to stabilize water elevation. If appropriate, make Upper Cardoza Relief Cut to stabilize elevation of impounded waters and assist flood fight operations.

Flood fight Trahern Dryland Levee. Close gates through Trahern Dryland Levee at Walthal Slough and other culverts to prevent water from penetrating or flanking east end of levee.

Protect interior slopes of district levees.

Failure of Trahern Dryland Levee or RD 2075 Primary Levee
The general flood fight strategy will be to make Mizuno Farms Relief Cut and protect interior of district levees. Support activity by RD17 to flood fight Woodward Dryland Levee on north side of RD2094.

Actions

Position equipment to make Mizuno Farms Relief Cut. Upon failure of primary levee, make cut to just above water level of river. Monitor elevation of impounded flood waters and complete cut when elevation of impounded waters reach elevation of river waters.

Protect interior slopes of district levees.

Failure of RD 2094 or RD 2096 Primary Levee
The general flood fight strategy will be to flood fight Almondwood Dryland Levee to prevent flood waters from backing up into RD2075.

Actions

Coordinate with P.G.&E. to cut power to areas impacted by flood waters

Flood fight Almondwood Dryland Levee.

Protect interior slopes of district levees.

Support RD17 flood fight of Woodward Dryland Levee.

Failure of Stanislaus River Levees East of Manteca Road Dryland Levee.
The general flood fight strategy will be to flood fight Manteca Road Dryland Levee, make Brocchini Farm Relief Cut, and install emergency pumps at mouth of Walthal Slough to evacuate flood waters that may move north and west into Walthal Slough.

Coordinate with P.G.&E. to cut power to areas impacted by flood waters.

Flood fight Manteca Dryland Levee. Close Melton and Perrin Roads with temporary berms.

Extend Almondwood Dryland Levee if needed to control any flow towards Walthal Slough.

Position equipment at Brocchini Farms Relief Cut. If impounded floodwater elevations exceed elevation of river water complete relief cut.

Install emergency pumps at mouth of Walthal Slough to pump flood waters entering slough back into river.

LEGEND

- 100 - YEAR FLOOD ELEVATION FLOOD INSURANCE STUDY SAN JOAQUIN COUNTY F.E.M.A. - 1988 COMMUNITY # 060299
- LOGISTICS BASE
- SUPPLY DELIVERY POINT SERVING DISTRICT SHOWN
- SUPPLY STAGING AREA
- TEMPORARY LEVEE/ EMERGENCY BERM
- SEEPAGE AREA
- HISTORIC LEVEE BREACH
- RELIEF CUT
- EROSION AREA
- LEVEE ACCESS
- DRYLAND LEVEE/EMBANKMENT
- DRYLAND LEVEE/EMBANKMENT (LOW OR CRITICAL SECTION)
- LEVEE
- L.M.=1.0 R.M.=1.0 100+00 — LEVEE MILE RIVER MILE STATION
- L.C. EL=20.1' — LEVEE CROWN ELEVATION (LIDAR DATA - NAVD 88)
- GROUND EL=1.0' — SPOT ELEVATION (LIDAR DATA - NAVD 88)
- PS — MUNICIPAL SANITARY PUMP STATION
- PS — MUNICIPAL STORM PUMP STATION
- PS — RURAL DRAINAGE PUMP STATION
- PS — SITE FOR EMERGENCY PUMP STATION
- WATER WELL
- MUNICIPAL FACILITIES SANITARY SEWER LINES
- STORM DRAIN LINES
- WATER LINES
- UTILITY/REGIONAL ELECTRIC LINES
- OCCUPIED STRUCTURES (QUANTITY SHOWN)
- DISTRICT BOUNDARY
- 27.5 — APPROXIMATE 100-YR FLOOD CONTOUR WITH RELIEF CUT
- D — DAIRY

Survey Information

Basis of Coordinates and Elevations - Almondwood, McMullin, River Junction and Trahern Dry Land Levees

Bearings and Distances shown are based on the North American Datum of 1983 (NAD 83) converted to the California Coordinate System of 1983, Zone 3 (CCS83-III) as referenced by available NGS published control monuments. All distances are grid distances. 100-yr flood and dryland levee elevations shown are based on the National Geodetic Vertical Datum of 1929 (NGVD 29) and have been converted to approximate North American Vertical Datum of 1988 (NAVD 88) elevations by adding +2.5 feet to original NGVD 29 elevations. Levee crown and spot elevations are based on LIDAR data (NAVD 88). Units shown are based on the U.S. Survey Foot, Epoch date 1997.30.

Survey Data
Survey control points provided for Almondwood, Manteca Road, and Trahern Dryland Levees Profile were surveyed in August, 2005. Horizontal and vertical positions were recorded by GPS RTK, from established site control points. The detailed survey points are imbedded within this drawing on file with the San Joaquin County GIS Department and KSN, Inc.

Special Flood Consideration - RD 2064

District generally inaccessible to barges from downstream.

KSN, Inc surveyed the levee crown of the Almondwood Dry Land Levee and the detailed survey points are imbeded within this drawing on file with San Joaquin County GIS Department.

KSN, Inc surveyed the levee crown of the Trahern and Manteca Road Dryland Levee and the detailed survey points are imbeded within this drawing on file with San Joaquin County GIS Department.

Supply Delivery Points

RD2064	-	Intersection of Airport and Trahern Roads
RD2075	-	Intersection of Airport and Airport Court
RD2094	-	Intersection of Walthal Slough and Williamson Road at bridge
RD2096	-	Intersection of Walthal Slough and Williamson Road at bridge
Upper Stanislaus R.	-	M. Roveda shops at intersection of Hutchins and Austin Roads

District Levee Patrol Plans

Reclamation Districts 2075, 2094, 2096

District officials responsible for coordinating levee patrols:
RD2075 - Ed Cardoza
RD2094 - Brian Mirano
RD2096 - Darrol Elliott

Upon receipt of a DWR prediction that stages at Vernalis Gauge will exceed 24 feet, develop tentative schedules and assignments for 12 hour and hourly patrols Upon reaching 24 feet at Vernalis Gauge, RD2075 will initiate 12 hour patrols. Upon reaching 17 feet at Meadow Gauge, RD2094 and RD2096 will initiate 12 hour patrols. Upon reaching 29 feet at Vernalis Gauge, all districts initiate hourly patrols. District officials anticipate requesting mutual aid for levee patrols if hourly patrols continue without break for more than two weeks or if RD2064 levee fails.

Reclamation District 2064

Responsible District Officials: J.R. Wilson and Don Machado
Upon receipt of a DWR prediction that stages at Vernalis Gauge will exceed 24 feet, develop tentative schedules and assignments for 12 hour and hourly patrols Upon reaching 24' at Vernalis Gauge or 13' at Orange Blossom Gauge, initiate 12 hour patrols.
Upon reaching 29 feet at Vernalis Gauge or 16' at Orange Blossom Gauge, initiate hourly patrols. District officials anticipate requesting mutual aid for levee patrols if hourly patrols continue without break for more than two weeks.

Upper Stanislaus Property Owners (no district)

Responsible Persons: Minard Roorda and Bruce Cunningham
Upon reaching 13' at Orange Blossom Gauge, initiate twice a day patrols. Upon reaching 16' at Orange Blossom Gauge, initiate hourly patrols. Area landowners anticipate requesting assistance for levee patrols if hourly patrols continue without break for more than one week.