MODEL MAP #2
GUIDE TO FLOOD CONTINGENCY MAPPING

LEGEND

- XX.X' — 100 - YEAR FLOOD ELEVATION FLOOD INSURANCE STUDY SAN JOAQUIN COUNTY F.E.M.A. - 1988 COMMUNITY # 060299
- B — LOGISTICS BASE
- DP — SUPPLY DELIVERY POINT SERVING DISTRICT SHOWN
- S — SUPPLY STAGING AREA
- TEMPORARY LEVEE/ EMERGENCY BERM
- SEEPAGE AREA
- HISTORIC LEVEE BREACH
- RELIEF CUT
- EROSION AREA
- A — 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 (FIELD SURVEYED - 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 (NOT AT 100-YR FLOOD PROTECTION)
- PS — SITE FOR EMERGENCY PUMP STATION
- WATER WELL
- MUNICIPAL FACILITIES SANITARY SEWER LINES
- STORM DRAIN LINES
- WATER LINES
- OVERHEAD TRANSMISSION LINE
- UNDERGROUND PIPELINE
- STRUCTURES
- COMMAND POST
- DISTRICT BOUNDARY
- 10.0' — 100-YR FLOOD CONTOUR WITH RELIEF CUT

Survey Information

Basis of Elevations

Original elevations for RD 524, RD 544, & RD 684 Flood Contingency Mapping are based on the National Geodetic Vertical Datum of 1929 (NGVD29). Elevations have been converted to approximate North American Vertical Datum of 1988 elevations (NAVD88) by adding +2.5 feet to original NGVD29 elevations.

Levee Patrol Procedures and Considerations

Responsible Officials: RD684 - Kurt Sharp
RD544 - Joseph Ratto
Honker Lake Tract - No organized patrol plan
Drexler Tract - Herb Speckman
Pocket Area - Rick Marcucci

Districts have informal patrol system using residents. During high water patrol schedules and reaches are developed by responsible officials. Upper Roberts uses a command post at Jack Larken ranch on Roberts Road between Undine and Carlin Roads as a coordination point. Upper Roberts District used around 20 individuals during 1997 paired as teams. Middle Roberts District personnel generally assist Upper Roberts District in patrolling since greatest threat is on the upper portion of the levee system.

Floodfight History

Flood Heights and Flows

1997 - Heavy rains during period of December 30 to January 2nd caused record floods. Water levels reached 6.5' at Burns Cut; 7.7' in Middle River near Pocket area; 24' at Mossdale at Upper Roberts District. Water levels stayed high for two to three weeks.

Floodfight History

1893 - Failure on Burns Cut (then Burns Slough) on March 21st flooded middle Roberts Island. Repair of the break on Burns Cut allowed flood fighters to hold the lower cross levee; the island's lower division survived. Anecdoctal statements indicated that water only reached to Howard Road to the south.

1890 - Failure of levee near head of Whiskey Slough on May 29 flooded extensive areas of lower Roberts Island. Cross levee to south of break (Howard Road Dry Land Levee) was successfully flood fought and saved many crops at the upper division of Roberts Island.

1997 - Levee of Upper and Middle Roberts Districts saw very high water levels (about 26.5 feet at Mossdale) with extensive seepage and one serious boil at south end of Upper Roberts District for about 2-3 miles along Middle River and San Joaquin Rivers from where the rivers split. Sloughing of levee was experienced along Middle River about 1 mile west of Old River split and 1.5 miles further down river near where Willow Glen Road comes up against the levee. Beaver hole also caused problems in this latter location. Levees held and no flooding of Roberts Island Districts occured outside of extensive seepage ponding up to one mile from seepage locations on south side of district. Water levels along Lower Roberts District levees were not threatening.

Reports were that water in 1950 flood went up and down fast while 1997 saw extended period of high water.

2004 - Failure of Middle River levee on Upper Jones Tract on June 3rd threatened to overtop Trapper Slough levee and flood Drexler Tract, Honker Lake Tract and Lower Roberts District 684. Emergency actions taken to raise Trapper Slough levee from average elevation of 6.0' to high tide elevation of 8.5'.

Roberts Island Communications Plan

Communications Equipment
None of the three reclamation districts within Roberts Island own communications equipment.

Internal Communications
Means of internal communications among RD 544, RD 524, RD 684 district staff and levee patrols will be personal cellular telephones. Telephone numbers will be assigned for response functions at the time of activation.

Communications with outside Jurisdictions
Primary means of communications with outside jurisdictions for all three districts will be personal cellular telephones. Secondary means of communications will be 1) daily meetings of Central Delta Unified Flood Fight Command, 2) public safety unified command post, and 3) San Joaquin Operational Area EOC.

Roberts Island Evacuation Plan

Responsible Agencies
San Joaquin County Sheriff's Department is responsible for alert, warning and evacuation within RD 544, RD 524, RD 684, Drexler Tract and Honker Tract. City of Stockton is responsible for evacuation of Stockton wastewater treatment ponds and tertiary plant if necessary. CHP and CalTrans will close State Highway 4.

Public Safety Agencies Evacuation Plan
Roberts Island is a sparsely populated rural area. Structures, marinas, commercial facilities, and locations of hazardous materials are shown on Roberts Island Flood Contingency Map along with road system. San Joaquin County Sheriff will establish command post with CHP, CalTrans, and owners of critical infrastructure within island. Digital copy of flood contingency map is available to San Joaquin County Sheriff's Department which will add evacuation sectors and other control information to map appropriate to the situation. Modified Roberts Island Flood Contingency Map will be downloaded to patrol vehicle computers to provide instructions and information officers need to conduct evacuation.

Special Flood Consideration - RD 524

San Joaquin River originally went through Burn's Cut levee. Creation of ship channel lowered 100-year flood flows through Burn's Cut to much below levee height. Potential for need for a relief cut at Burn's Cut would recommend the lowering of Reclamation District 524 at this location by 4 feet to facilitate implementation of relief cut.

Potential need for a relief cut on south side of Burn's Cut presents a scour threat to the Rough and Ready levee on the north side. Appropriate armoring of that levee across from planned relief cut is recommended or at least plans for doing so in a crisis.

In the event of flooding of Highway 4 access to City of Stockton Municipal Utilities Department Treatment Plant from Highway 4 north on the Reclamation District 524 levee will require construction of a dirt ramp and turn around pad for heavy trucks.

Reclamation District 524, 544 & 684 (Roberts Island) Flood Contingency Options

Highwater Event
The general floodfight strategy will be to floodfight primary levees and ensure that options to limit flooding from levee failure can be initiated promptly if appropriate.

Responsible Agency	Action
Lower Roberts District	Review requirements to raise Inland Drive/Natali Road Dryland Levee 8 feet and identify resources
	Review requirements for floodfighting railroad embankment west of Inland Drive and/or Jacob Road Dry Land Levee
	Review requirements and identify resources for Burns Cut Relief Cut (See Special Considerations)
	Review Plan for floodfighting Honker Lake Dry Land Levee if needed
Middle Roberts District	Review Plan to floodfight Inland Drive south of Honker Lake Dry Land Levee
	Obtain Lower Roberts District plan for raising of Inland Drive/Natali Road Dryland Levee
Upper Roberts District	Review plan for cutting Upper Roberts Dry Land Levee

Failure of Trapper Slough Levee from flood on Reclamation District 2038 (Lower Jones Tract) or Reclamation District 2039 (Upper Jones Tract) or Drexler Tract/Pocket Primary Levees
This scenario will lead to flooding of Drexler Tract and Pocket. The general floodfight strategy will be to prevent eastward and southward movement of floodwaters.

Responsible Agency	Action
Lower Roberts District	Floodfight Honker Lake Dry Land Levee; in event of failure, floodfight Burlington Northern Santa Fe Railroad Embankment from Inland Drive to Whiskey Slough as well as Inland Drive. In event of railroad embankment failure or railroad refusal of use, floodfight Jacobs Road Dry Land Levee to Inland Drive.
Middle Roberts District	Floodfight Inland Drive south of Honker Lake Dry Land Levee to Middle River

Failure of Primary Levee in Upper Roberts District (RD544)
This scenario will lead to flooding of Upper and Middle Roberts Districts with floodwaters moving through middle of districts and then ponding toward higher ground along easterly and westerly levees. Water will pond behind Upper Roberts Dry Land Levee before overtopping and continuing to flow north. First contact of water with Inland Drive/Natali Road Dryland Levee will probably be in the Pocket Area. The general floodfight strategy will be to prevent movement of floodwaters to higher ground in Upper and Middle Roberts Districts and north into Drexler Tract and Lower Roberts District.

Responsible Agency	Action
Lower Roberts District	Make Burns Cut Relief Cut one-quarter mile east of Natali Road; lower levee to near water level of Burns Cut one-quarter mile East of Natali Road; finish cut when floodwaters inside district equalize with Burns Cut waters; extend cut until rise of floodwaters ceases.
	Raise most northerly portion of Inland Drive/Natali Road Dryland Levee to level of Santa Fe Railroad Embankment (10.5 feet)
	Floodfight Inland Drive/Natali Road Dryland Levee from Burns Cut to a point equidistant from the Santa Fe Railroad Embankment and Highway 4
Honker Lake Tract Landowners	Floodfight Inland Drive/Natali Road Dryland Levee from a point equidistant between the Santa Fe Rail Embankment & Highway 4 to Kingston School
Drexler/Pocket Area	Floodfight Inland Drive/Natali Road Dryland Levee from Kingston School to Landowners Middle River
Upper Roberts District	Make cut in Upper Robert Dry Land Levee to facilitate flow of water through middle of Upper and Middle Roberts Districts to prevent ponding toward higher ground
City of Stockton	Floodfight Waste Treatment Facility Levees

Failure of Primary Levee in Middle Roberts District (RD524)
This scenario will lead to flooding of Middle Roberts Island with floodwaters moving through middle of district and then ponding toward higher ground along easterly and westerly levees and south toward Upper Roberts District. The general floodfight strategy will be to prevent movement of floodwaters north and west into Drexler Tract and Lower Roberts District and south into Upper Roberts District.

Responsible Agency	Action
Lower Roberts District	Make Burns Cut Relief Cut; lower levee to near water level of Bums Cut one-quarter mile East of Natali Road; finish cut when floodwaters inside district equalize with Burns Cut waters; extend cut until rise of floodwaters ceases.
	Raise most northerly portion of Inland Drive/Natali Road Dryland Levee to level of Santa Fe Railroad Embankment (10.5 feet)
	Floodfight Inland Drive/Natali Road Dryland Levee from Burns Cut to a point equidistant from the Santa Fe Railroad Embankment and Highway 4
Honker Lake Tract Landowners	Floodfight Inland Drive/Natali Road Dryland Levee from a point equidistant between the Santa Fe Railroad Embankment and Highway 4 to Kingston School
Drexler/Pocket Area	Floodfight Inland Drive/Natali Road Dryland Levee from Kingston School to Landowners Middle River
Upper Roberts District	Floodfight Upper Roberts Dry Land Levee
City of Stockton	Floodfight Waste Treatment Facility Levees

Failure of Primary Levee in Lower Roberts District (RD684)
This scenario will lead to flooding of Lower Roberts Island with floodwaters moving to south and west. The general floodfight strategy will be to prevent movement of floodwaters south and west into Honker Lake and Middle Roberts District.

Responsible Agency	Action
Middle Roberts District	Raise most northerly portion of Inland Drive/Natali Road Dryland Levee to level of Santa Fe Railroad Embankment (10.5 feet)
	Floodfight Inland Drive/Natali Road Dryland Levee from Burns Cut to Highway 4
Upper Roberts District	Prepare to floodfight Upper Roberts Dry Land Levee in event of flooding of Middle Roberts
City of Stockton	Prepare to floodfight Waste Treatment Facility

Tactical Plans (Preliminary Engineering Designs)

Preliminary engineering designs for the following response options have been completed. P.E.D.'s can be downloaded from Flood Contingency Map Website at www.sjmap.org/oesfcm or obtained from indicated engineering firm.

Burns Cutoff Relief Cut
Relief cut to lower elevations of impounded waters in RD 524 from upstream breaches. P.E.D. completed by KSN Engineers, Stockton.

Upper Roberts Relief Cut
Relief cut to lower elevations of impounded waters in RD 544 from upstream breaches. P.E.D. completed by KSN Engineers, Stockton.

Supply Delivery Points

The following locations will be used to deliver floodfight materials to district officials if requested, exact delivery point will be identified at time of resource request. District officials will meet resources at the designated delivery point to take delivery or guide vehicles carrying resources to final unloading point.

RD 684 - Supply Delivery Point #1 - Lower Roberts District, Drexler Tract, and Honker Lake
Holt Station at Highway 4 and Whiskey Slough Road. In the case of failure of a primary levee on Roberts Island, approach to supply point will be from Tracy Blvd to Highway 4 to Holt Station.

RD 544 - Supply Delivery Point #1 - Upper Roberts District
Robinson Farms Bowman Road Ranch at corner of Bowman and Roberts Roads.

RD 544 - Supply Delivery Point #2 - Upper and Middle Roberts Districts
Jack Larken Barn and property on west side of Roberts Road between Carlin and Undine Roads.

Drexler Tract & Honker Lake Flood Contingency Options

Highwater Event
The general floodfight strategy will be to floodfight primary levees and ensure that options to limit flooding from levee failure can be initiated promptly if appropriate.

Responsible Agency	Action
Drexler Tract Landowners and Honker Lake Landowners	Contact Jones Tracts to plan for floodfighting Trapper Slough Levee if necessary
Drexler Tract/Pocket Landowners	Plan for floodfighting Inland Drive south of Honker Lake Dry Land Levee
Honker Lake Landowners	Ask assistance of Lower Roberts District to plan for floodfighting Honker Lake Dry Land Levee

Failure of Primary Levee on Reclamation District 2038 (Lower Jones Tract) or Reclamation District 2039 (Upper Jones Tract)
This scenario will lead to flooding of Upper and Lower Jones Tracts with the risk of overtopping of Trapper Slough Levee and movement of water into areas south of the Jones Tracts. The general floodfight strategy will be to prevent southward movement of floodwaters.

Responsible Agency	Action
Drexler Tract Landowners and Upper and Lower Jones Tracts	Floodfight Trapper Slough Levee and raise if necessary

Failure of Primary Levee in Reclamation District 544 (Upper Roberts) or Reclamation District 524 (Middle Roberts Island)
This scenario will lead to flooding of Upper Roberts and Middle Roberts Island with floodwaters moving through middle of districts and then ponding toward higher ground along easterly and westerly levees. First contact of water with Inland Drive/Natali Road Dryland Levee will probably be in the Pocket Area. The general floodfight strategy will be to prevent movement of floodwaters north and northwestward into Drexler and Honker Lake Tracts and the Pocket Area.

Responsible Agency	Action
Drexler Tract/Pocket Landowners	Floodfight Inland Drive south of Honker Lake Dry Land Levee; Raise Inland Drive to 10.5'
Honker Lake Landowners	Floodfight Inland Drive north of Honker Lake Dry Land Levee; Raise Inland Drive to 10.5'
	If Inland Drive fails south of Honker Lake Dry Land Levee, floodfight Honker Lake Dry Land Levee; request assistance from Lower Roberts District

Failure of Primary Levee in the "Pocket" Area or Drexler Tract
This scenario will lead to flooding of Drexler Tract, Pocket Area, Upper and Lower Jones Tracts (RD2038 and RD2039). The general floodfight strategy will be to hold the Honker Lake Dryland Levee to prevent flooding of Honker Lake Tract and Lower Roberts Island (RD684).

Responsible Agency	Action
Honker Lake Tract Landowners	Floodfight Westerly Honker Lake Dryland Levee
RD684	Provide assistance to Honker Lake Tract landowners

Roberts Island Flood Water Removal Plan (Dewatering Plan)

Situation:
Roberts Island has a gradient drop of approximately 15'-18' from south to north. Flood waters entering Upper Roberts (RD 544) will flow naturally to the north. Inland Drive/Natali Road Dryland Levee might hold flood waters moving north from entering Lower Roberts (RD 684) if Burns Cutoff Relief Cut is made. Burns Cutoff Relief Cut allows flood waters entering Upper Roberts (RD 544) or Middle Roberts (RD 524) to return to river. Lower Roberts (RD 684) has no gradient so flood waters entering from Middle Roberts or breach in RD 684 levee will be pumped out.

Flood Water Removal Plans:
Upper Roberts (RD 544)
Flood waters drain to Middle Roberts (RD 524) naturally. Repair levee breach and use local pumps to dewater any areas of standing water that are remaining after river returns to normal levels.

Middle Roberts (RD 524)
Make Burns Cutoff Relief Cut to stabilize flood water at lowest possible elevation. Allow flood waters to drain through relief cut to extent possible. Repair relief cut and use Woods Irrigation District Pumping Station to dewater remaining ponded flood waters when river returns to normal elevations.

Lower Roberts (RD 684)
Allow flood waters to stabilize and repair breach if district levee failed. Install additional pumping capacity at Whiskey Slough Pump Station and El Dorado Pump Station and use those facilities to dewater district once levels return to normal elevations.

The elevations on the levees encompassing the City of Stockton's Tertiary Plant are based on a 1975 Tertiary Plant construction plans provided by others and range approximately 9.5' to 11.5'±

KSN, Inc surveyed areas of Reclamation Districts No. 524 & 684 and Dexler Tract in the Summer 2004, for more detailed data please see KSN's "Elevation Investigations" 57 sheets, File No. 0544-0110, dated 06-25-2004

KSN, Inc surveyed two sample cross sections on each side of the Tertiary entrance road from Highway 4, KSN centerline elevations were lower than the 1975 Tertiary Plant construction plans by approximately 0.5-1.0±

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

KSN INC. KJELDSEN SINNOCK NEUDECK Consulting Engineers and Land Surveyors
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SAN JOAQUIN COUNTY
OFFICE OF EMERGENCY SERVICES

SJ COUNTY FLOOD CONTINGENCY MAP
RD NO. 524, 544, 684
ROBERTS ISLAND

Revisions				
No.	Description	Date	By	Aprvd. By

Design CHN | Drawn JRT | Check CHN
Scale 1" = 2000' | Original Drawing Scale 0 ½" 1"
Date AUG. 2012 | Sheet Number 1 Of 1 | Project File No. 1942-0100