

# Emergency Response and Floods



# In-Depth Flood Defense

“An expanded approach to flood protection that supplements the current well-defined fixation on primary flood control structures with equally **well-defined, national, and specific criteria** for flood contingency planning and mitigation actions that will minimize loss of critical infrastructure and property and threats to public health in the event of the failure of the primary flood control structure.”

**The  
California  
Emergency  
Response  
System**



**The  
Delta**

**Inland  
Region**

**Coastal  
Region**

**Southern  
Region**



# **Regional Response**

**Integrated regional  
planning and response  
based on Delta topographic  
and infrastructure realities**

An aerial photograph of a river delta system. The central feature is a large, irregularly shaped reservoir or lake, colored in a light blue hue. From this central body, several channels branch out, creating a complex network of waterways. The surrounding land is a mix of brown and tan colors, suggesting a semi-arid or agricultural landscape. The overall scene is captured from a high angle, providing a clear view of the delta's structure.

# **Maintaining Response Systems**

## **Delta Regional Authority?**

A yellow CAT excavator is positioned on the left side of the image, with its arm extended and bucket lowered. To its right, a yellow bulldozer is moving a large pile of dark, wet earth. The background shows a body of water and a distant structure. The text is overlaid on the image in a large, bold, serif font.

# Essential Tools

Equipment and Supplies

Emergency Funding Protocol



RINDGE TRACT RECLAMATION DISTRICT NO. 2037

**Special Flood Consideration - RD 524**  
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.

**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 12.5 feet to original NGVD29 elevations.

**Supply Delivery Point(s)**  
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, Dresler 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 Larkin Farm and property on west side of Roberts Road between Carlin and Lindale Roads.

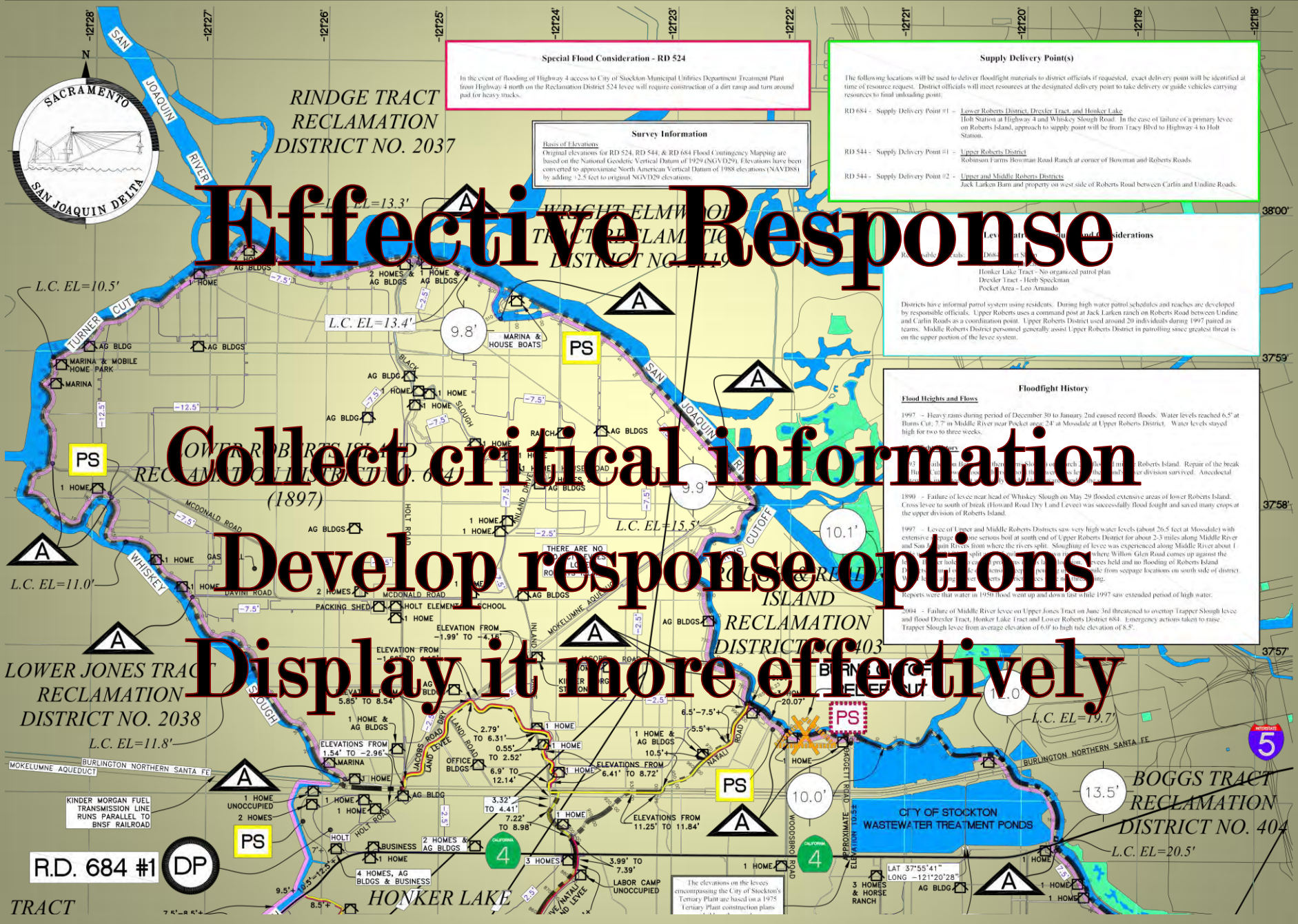
# Effective Response

## Collect critical information

## Develop response options

## Display it more effectively

**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, 2.4' at Mossdale in Upper Roberts District. Water levels stayed high for two to three weeks.  
1997 - Failure of levee near head of Whiskey Slough on May 29 flooded extensive areas of lower Roberts Island. Cross levee to south of break (Hosford Road Dry 1 and 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 damage. 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 Mossdale. The area of sloughing was about 1 mile long and 1/2 mile wide. The area of sloughing was where Willow Glen Road comes up against the levee. Field and no flooding of Roberts Island crops from seepage locations on south side of district.  
Reports were that water in 1959 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 Dresler 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'.



R.D. 684 #1



PS (Supply Point) symbol

PS (Supply Point) symbol

PS (Supply Point) symbol

PS (Supply Point) symbol

PS (Supply Point) symbol



TRACT

The elevations on the levees encompassing the City of Stockton's Tertiary Plant are based on a 1975 Tertiary Plant construction plans

# Mapping, & Flood Response

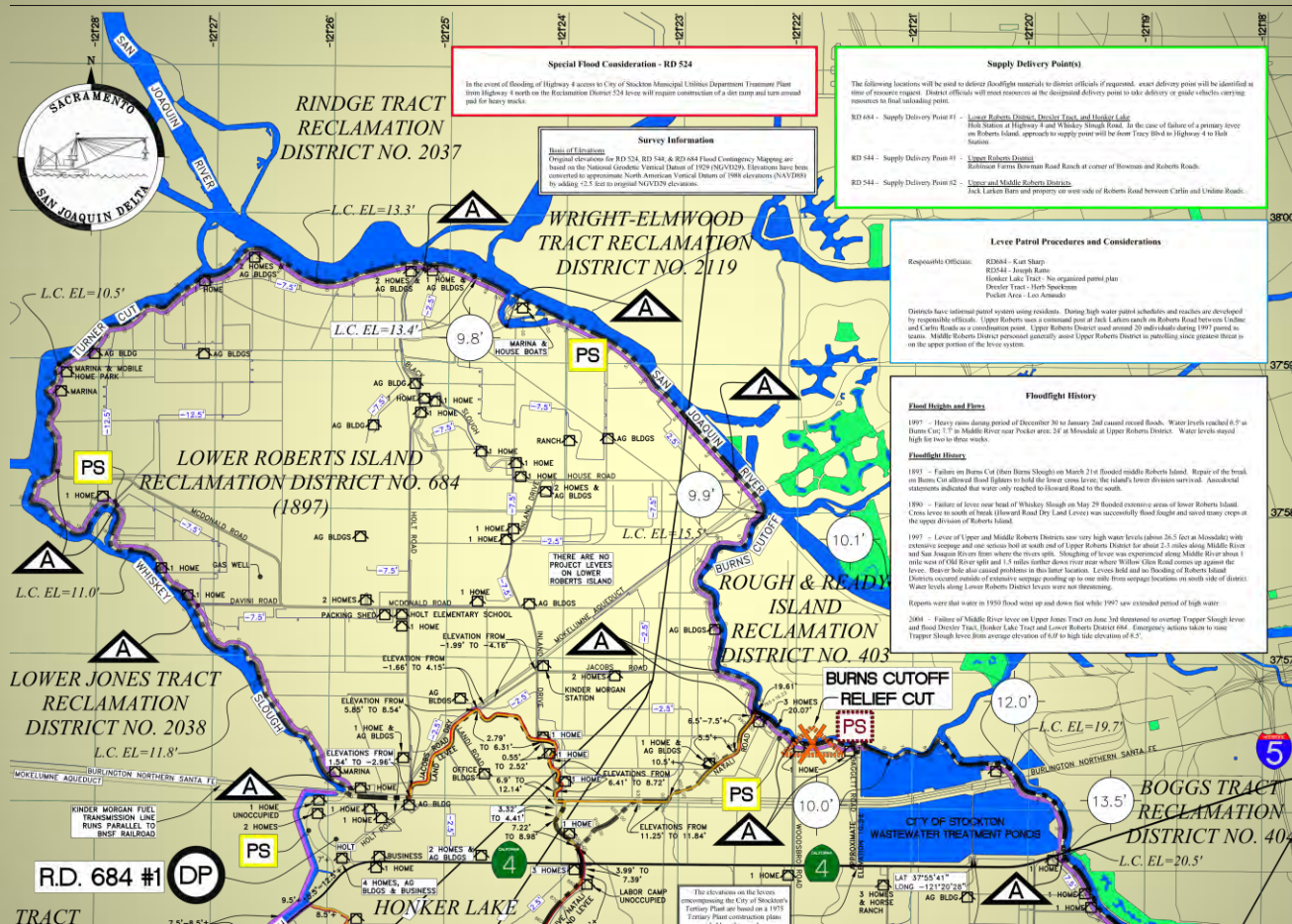
- **Integrates plans /information with geography**
- **Cartographic cognitive tools**
- **Easier to assimilate information than traditional binder plans**
- **Easier to share , revise, transmit, and manipulate data**
- **Better integration of graphics, pictures, text**



# **The Initial Mapping Concept**

## **1998 - 2011**

- **Emphasis on a hard copy map developed prior to the event – “The Standard Reference Map”**
- **Standardization of Visual Map Elements**
  - Symbols**
  - Content**
  - Presentation (Visual Hierarchy, etc)**

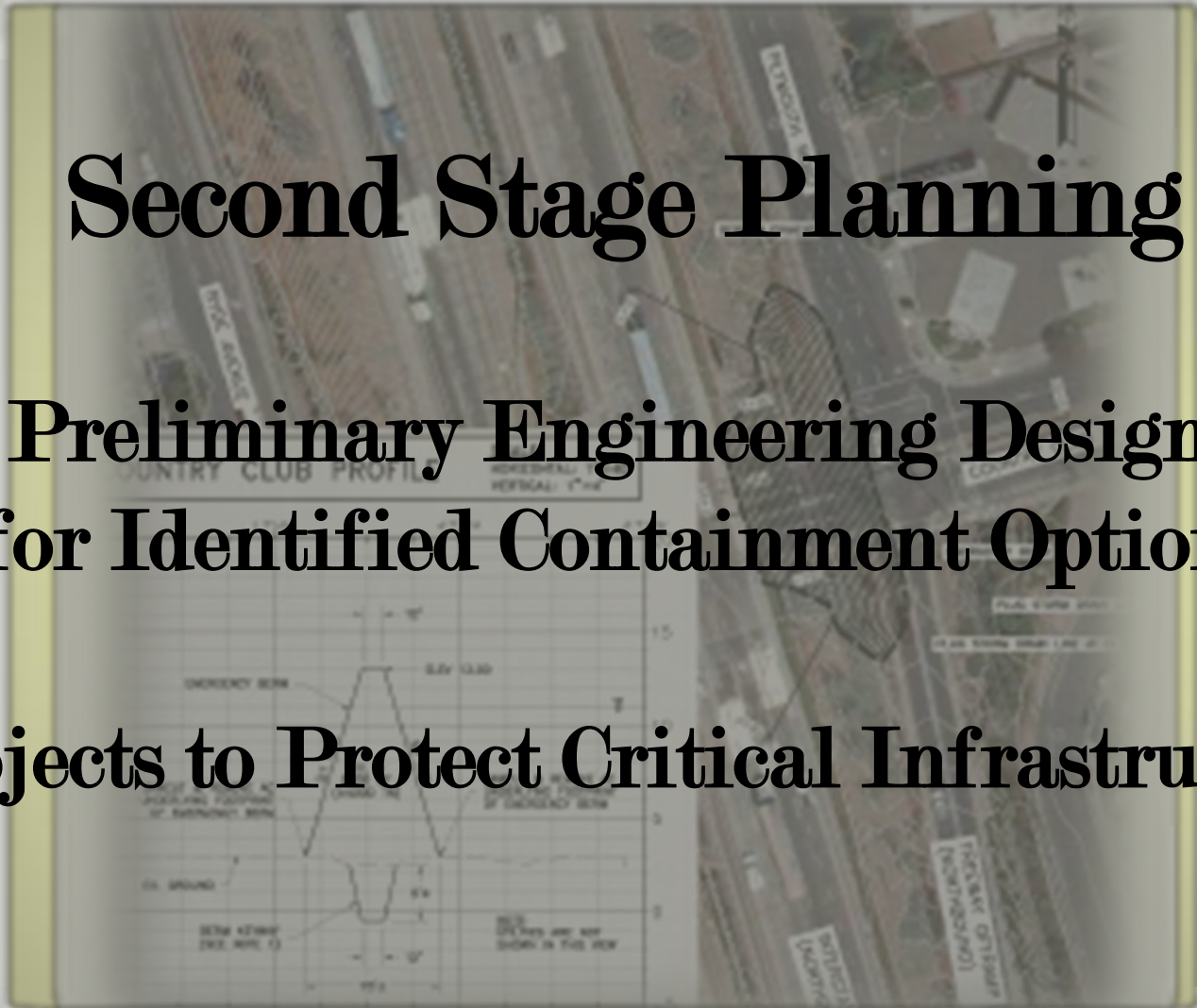


Roberts Island Flood Contingency Map, San Joaquin County (Excerpt)

# Second Stage Planning

Preliminary Engineering Designs  
for Identified Containment Options

Projects to Protect Critical Infrastructure





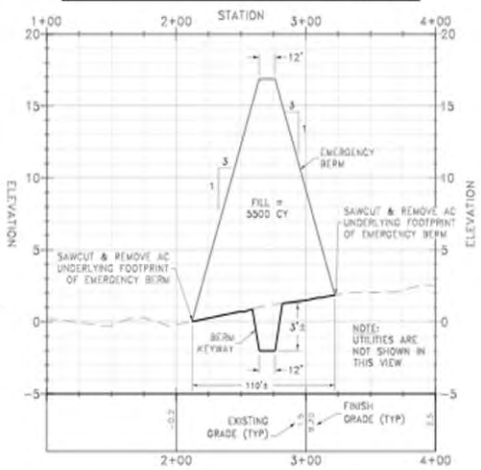
**SAN JOAQUIN COUNTY**  
OFFICE OF EMERGENCY SERVICES

**K KJELSDEN**  
**S SINNOCK**  
**N NEUDECK**  
Civil Engineers  
and Land Surveyors

700 Office Bldg 844  
111 W. Parkside Avenue  
Stockton, CA 95207-0844  
Office: (209) 948-0768  
Fax: (209) 948-0766  
E-mail: ksn@kprinc.com

**BASIS OF ELEVATIONS**  
ELEVATIONS SHOWN ARE BASED ON  
THE NATIONAL GEODETIC VERTICAL  
DATUM OF 1929 (NGVD 29).

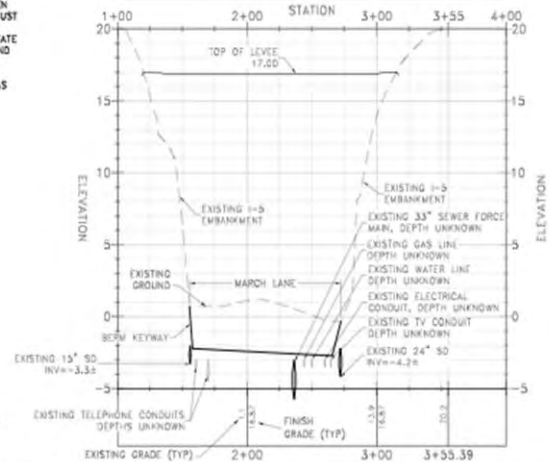
**MARCH LANE PROFILE** SCALE  
HORIZONTAL: 1"=40'  
VERTICAL: 1"=4'



- LEGEND**
- AC ASPHALT CONCRETE
  - CA CABLE
  - CCTV CLOSED CIRCUIT TELEVISION
  - CMPA CORRUGATED METAL PIPE ARCH
  - DI DROP INLET
  - FM FORCE MAIN
  - G GAS
  - KV KILOVOLT
  - OH OVERHEAD
  - RCP REINFORCED CONCRETE PIPE
  - S SANITARY SEWER
  - SD STORM DRAIN
  - STL STEEL
  - TOC TOP DEAD CENTER
  - W WATER

- NOTES:**
1. CARE SHALL BE TAKEN WHEN EXCAVATING BERM KEY. ADJUST DEPTH OF BERM KEY AS NECESSARY AS TO NOT CREATE CONFLICT WITH UNDERGROUND UTILITIES.
  2. PLUG STORM DRAIN LINES AS NOTED.

**BERM ALIGNMENT PROFILE** SCALE  
HORIZONTAL: 1"=40'  
VERTICAL: 1"=4'



**CITY OF STOCKTON**  
**SAN JOAQUIN COUNTY**  
CENTRAL STOCKTON EMERGENCY BERM PLAN

Revisions				Design	Scale	Date	By	Check	Date
No.	Description								
				AS SHOWN					NOVEMBER 2009
									Sheet Number
									1 Of 1
									Project File No. 1942-0020

# Protect Critical Infrastructure



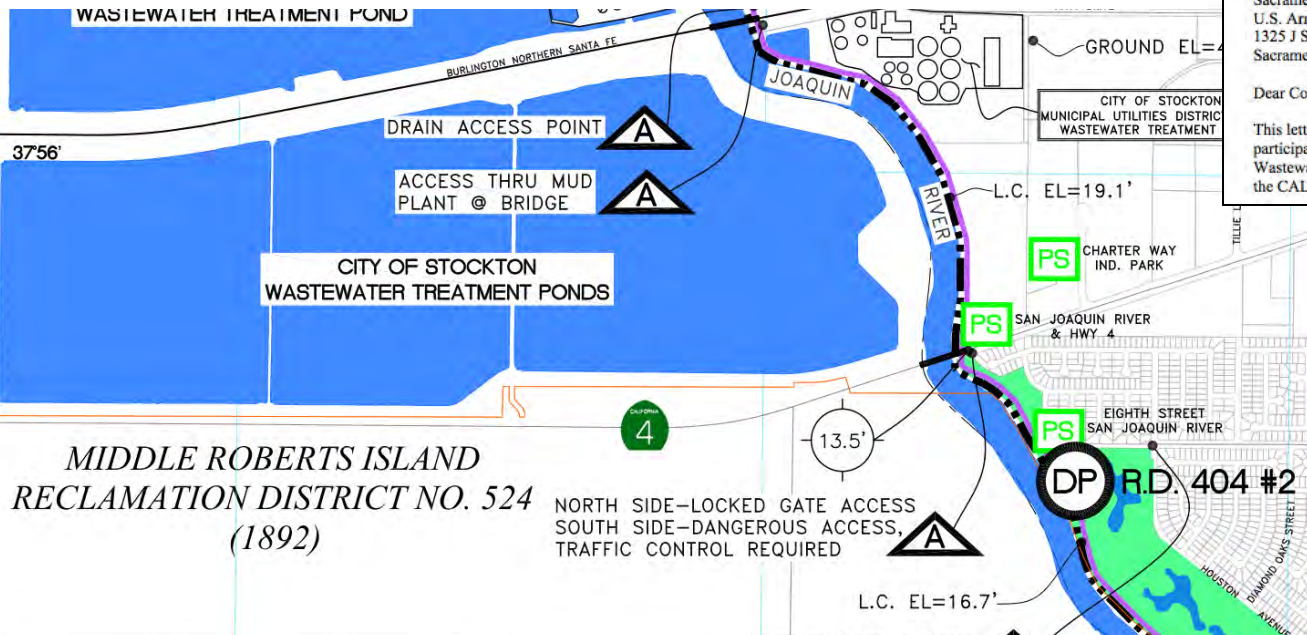
**COUNTY OF SAN JOAQUIN**  
 OFFICE OF EMERGENCY SERVICES  
 ROOM 610, COURTHOUSE  
 222 EAST WEBER AVENUE  
 STOCKTON, CA 95202  
 TELEPHONE: (209) 468-3962  
 HAZARDOUS MATERIALS DIVISION (209) 468-5969

January 30, 2006

Colonel Ronald N. Light, District Engineer  
 Sacramento District  
 U.S. Army Corps of Engineers  
 1325 J Street  
 Sacramento, CA 95814

Dear Colonel Light:

This letter conveys the intent of the City of Stockton and the County of San Joaquin to participate in feasibility studies and/or other actions in the development of the Stockton Regional Wastewater Control Facility Flood Protection Project as non-Federal sponsors consistent with the CALFED Bay-Delta Authorization Act (PL108-361).



*MIDDLE ROBERTS ISLAND  
 RECLAMATION DISTRICT NO. 524  
 (1892)*

NORTH SIDE—LOCKED GATE ACCESS  
 SOUTH SIDE—DANGEROUS ACCESS,  
 TRAFFIC CONTROL REQUIRED

**Survey Information**  
 Basis of Elevations  
 Elevations shown are based on the North American Vertical Datum of 1988 (NAVD 88). Units shown are based on the U.S. Survey Foot.

**Boggs Tract Preliminary Engineering Designs (P.E.D.)**  
 Preliminary engineering designs for the following response options have been completed. Designs can be downloaded from Flood Contingency Map Website at [www.sjmap.org/oes/can](http://www.sjmap.org/oes/can) or obtained from indicated engineering firm.

**Boggs Tract Emergency Berms**  
 Emergency berms to block Interstate 5 underpasses to stop flood water flow either into district or out of district. Actual berms needed can be determined at time of flood. P.E.D. completed by KSN Engineers, Stockton.

**Navy Drive and Fresno Avenue Emergency Berms**  
 Emergency berms at railroad embankment underpasses to prevent movement of floodwaters south to protect regional wastewater treatment plant. P.E.D. completed by KSN Engineers, Stockton.

**Port of Stockton Relief Cut**  
 Relief cut to reduce flood depth in district from failure of primary levee or flooding from the East. P.E.D. completed by KSN Engineers, Stockton.

**Boggs Tract Cross Culverts**  
 Plug all storm drain culverts crossing under Interstate 5 in conjunction with Boggs Tract Emergency Berms to prevent flood water flow either west or east. P.E.D. completed by KSN Engineers, Stockton.

**Special Considerations**

**Stockton Municipal Utilities District Waste Water Treatment Plant**  
 Utility District staff cannot currently prevent internal flooding of treatment plant by floodwaters entering effluent lines terminating at plant. Staff will attempt to save plant by purging effluent as quickly as possible into Tertiary Ponds across river. Flood flow in lines will probably exceed that pumping capacity.

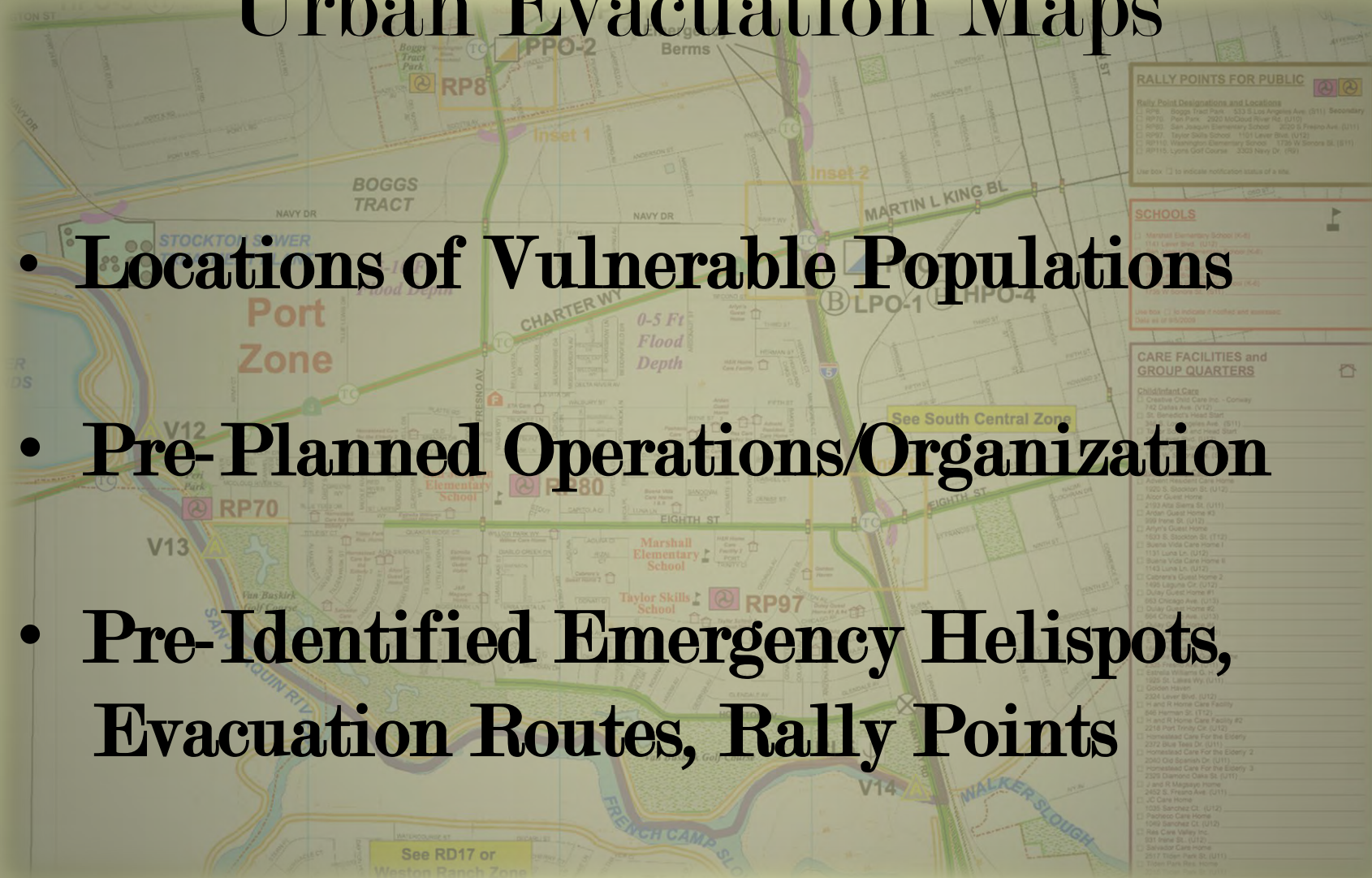
Failure of Reclamation District 404 levees, or failure of levees east of District at Mormon Slough, could flood primary plant to significant depths with loss of service to over 300,000 customers.

**Priority infrastructure protection actions** to install flood wall at primary plant and system to bypass flood flows in effluent lines away from plant needed. Local governments will pursue funding opportunities to achieve this added protection.



# Urban Evacuation Maps

- Locations of Vulnerable Populations
- Pre-Planned Operations/Organization
- Pre-Identified Emergency Helispots, Evacuation Routes, Rally Points
- Procedural Cues & Summaries





- SJ Map Home
- Interactive Maps
- Static Maps
- Data & Services
- Disclaimer
- Contact Us
- Links

### San Joaquin County Evacuation Maps

NEWS:  
 2010-02-17: Added beta testing link.  
 2009-01-15: Added links to Field Guides.  
 2007-11-05: Public Agency Evacuation Maps Test Page created!

## EVACUATION AND HELISPOT AERIAL MAPS

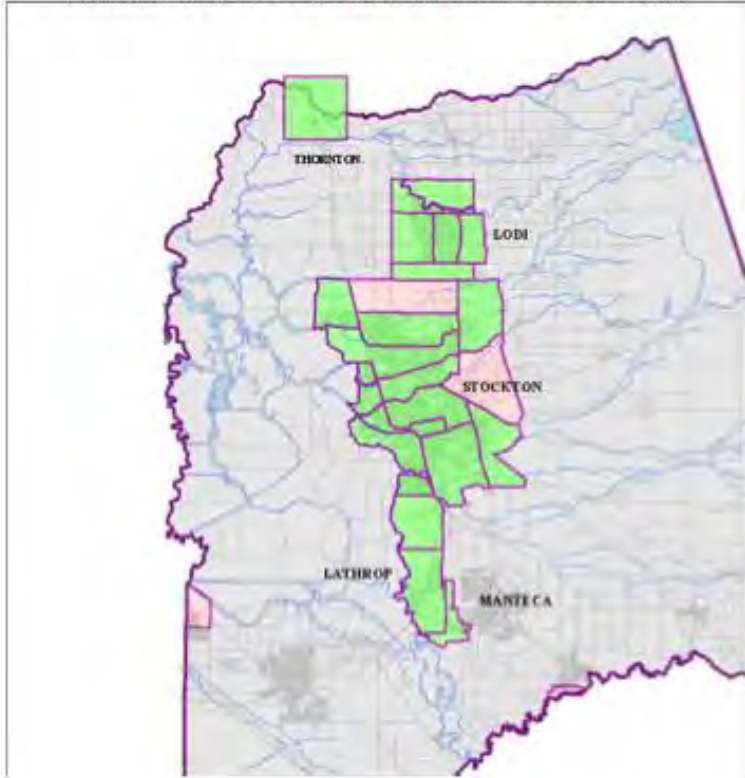
### EVACUATION FIELD GUIDE LINKS

- [Readme file](#)
- [Guide Cover](#)
- [Organizational Charts, Summaries and Forms](#)
- [Checklists for County-specific ICS positions](#)

### INDEX MAPS

- [Stockton Area Zone Map](#)
- [San Joaquin County Zone Map](#)

## VISUAL INDEX OF AVAILABLE HELISPOT AERIAL MAPS



(Green areas are completed maps, click to view helispot aerial map)  
 (Red areas are scheduled for mapping, but are not yet completed)

# Map Accessibility and Enhancements

**Port Evacuation Zone**  
HSC-7 Helispot

<b>HELISPOT HSC-7</b>	
Size:	150 yd x 150 yd
Surface:	Grass
Hazards:	15' linear dirt mound east side of LZ Fencing and 20' trees surround LZ (baseball field)
Air-Ground:	156,075
Latitude:	37 56 07 N
Longitude:	121 17 30 W

Helispot Location  
Vic Berg Ball Park - 1644 S Lincoln St (view looking West)



**STOCKTON PORT ZONE**  
HELISPOTS & RALLY POINTS LOCATIONS

Click on a specific location to see the aerial view of that area  
or use the table to below to click on a specific location to see the aerial view.



# Mapping Version 2

## “Dynamic Maps”

- Software Neutral Map Data System
- Simple, Open & Published File Formats
- Standard Layers for Rapid Modification
- Real-time Data Collection Functionality
- Data Manipulation Model for responders



# The Stars are Aligned...

**A Joint Strategy**

- **SB27 Report**

**The Means**

- **DWR Bond Programs**

**Grants to Locals**

**The Nexus**

- **Delta Catastrophic  
Flood Plan Project**

