



Database and Program Process Enhancements

Presentation to the Central Valley Flood Protection Board

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August 22, 2014



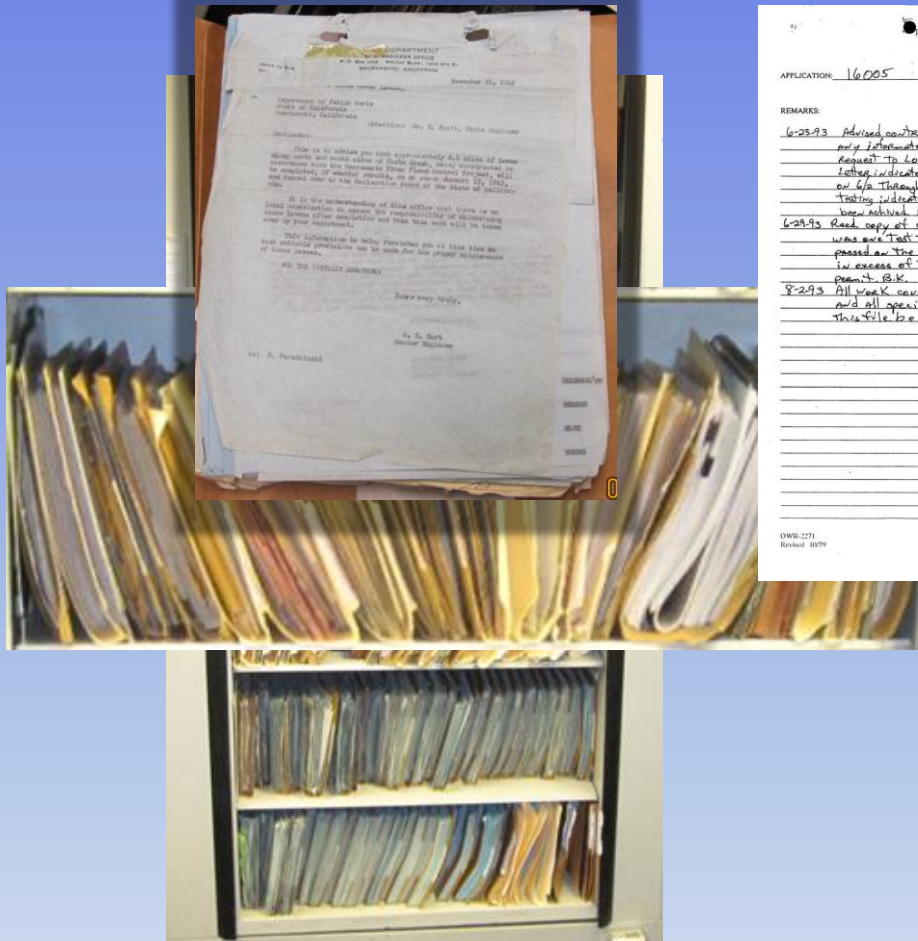
Agenda



- Past Documentation and Procedures
- Present
 - Workflow
 - Procedures
 - Databases
 - Tools
- Future



Past



STATE OF CALIFORNIA
The Resources Agency
DEPARTMENT OF WATER RESOURCES
RECLAMATION BOARD
APPLICATION INSPECTION SHEET

APPLICATION: 16005 APPLICANT: River Bank Holding Co
PHONE NO: (916) 926-0720

REMARKS:
6-29-93 Advised contractor Tony Holman, that I did not receive
any information then call him. Tony made another phone
request to lower. Information was faxed at 1:30 p.m.
6/29/93 indicated that all backfill was placed at subject site
on 6/29 through 6/30/93 was tested by Lowry and results of
Testing indicate that in excess of 90% relative compaction has
been achieved. A second letter will be forthcoming. B.K.
6-29-93 Recd copy of compaction test results for this project. There
was one test that failed, this area was reworked and
passed on the retest. The retest and all other tests showed
in excess of the 90% relative compaction required by this
permit. B.K.
8-29-93 All work covered under this permit has been completed
and all special conditions have been met. I recommend
this file be closed. B.K.

DWR 2271
Revised 10/79

Approved by: _____

State of California Department of Water Resources
Flood Control Project Maintenance
Levee Inspection

The Resources Agency

Inspection Sheet 1, Earthen Levees

Date of Inspection: 6/20/96

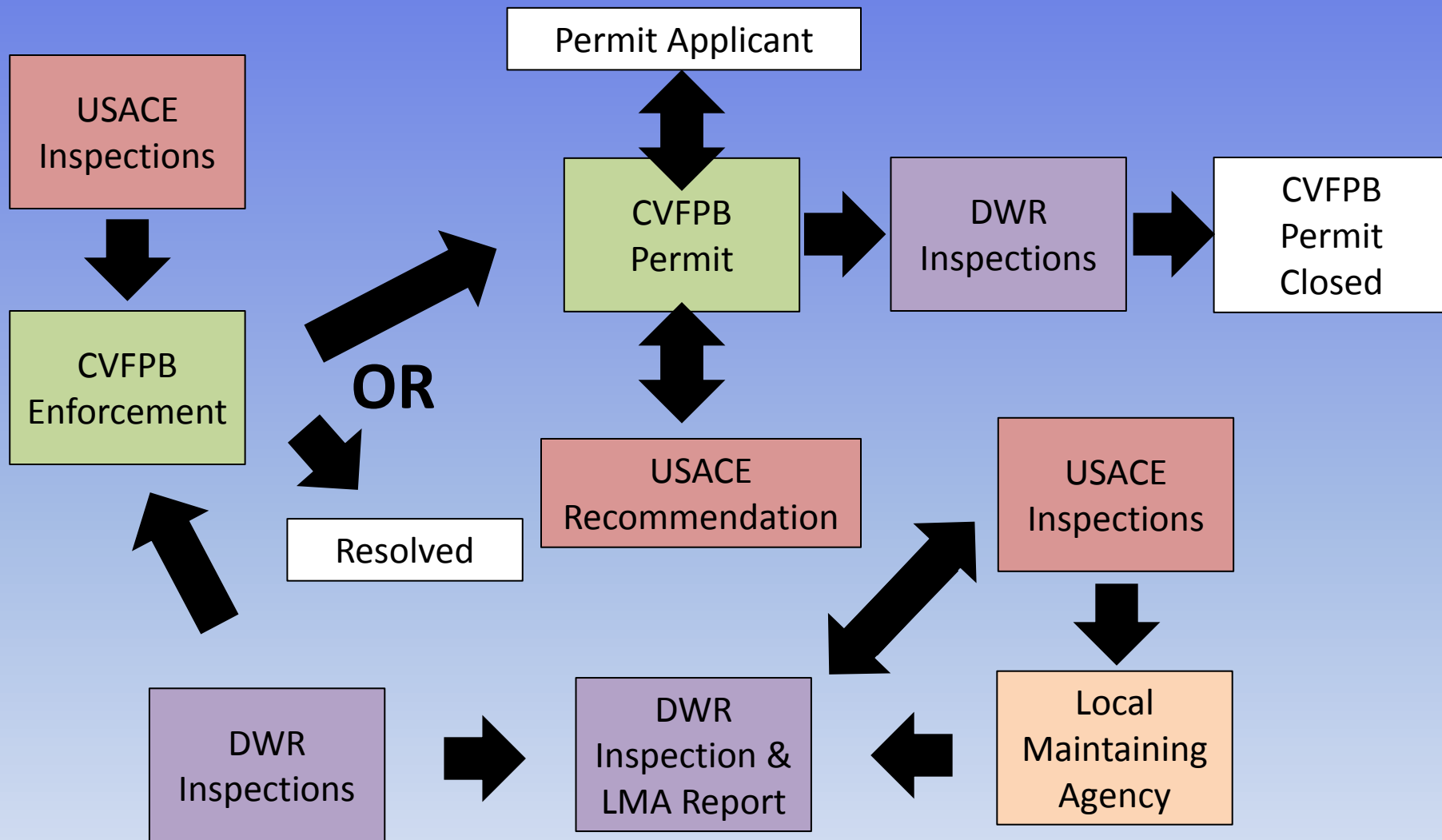
WD No. and No.	Section	Length	6.0 to 1.0		1.0 to 0.5		0.5 to 0.25		0.25 to 0.1		Page	1 of	Overall Rating
			Start	End	Start	End	Start	End	Start	End			
Encroachments	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Encroachments (Cont.)	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Rip Rap Revetments	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Clean Surface / Depositions / Rilling	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Closure Structures	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Underpassage / Relief Works	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											
Seepage / Sandbags	December-February	LS											
	March-May	LS											
	June-August	LS											
	September-November	LS											

Comments:

Plan on the wild growth from the levee slopes other than native grasses.
Mow or burn the levee slopes during the summer months.
Stake the crown roadway.

Inspector Signature: _____ Tony Maja Date: 6/20/96
Received By: _____ Date: _____

Workflow



Application Number			
Description			
Category		▼	Covenant Needed
Pre-Acceptance Letter Needed		Board Approval Needed	
Assigned Inspector			▼
Project Type		Priority Class	

USGS QUAD					
Section		Township		Range	
County		▼	Stream		▼
Description					
District					
Mile Post		Unit			

Coordinate ID		EP_ID	
		Start	End
GPS START	Latitude		
GPS END	Logititude		
	Levee Mile		
GPS Point	River Mile		

Save Coordinates

Upload to
server

Status/Activities	Comments	Documents	Contacts

800 total characters.



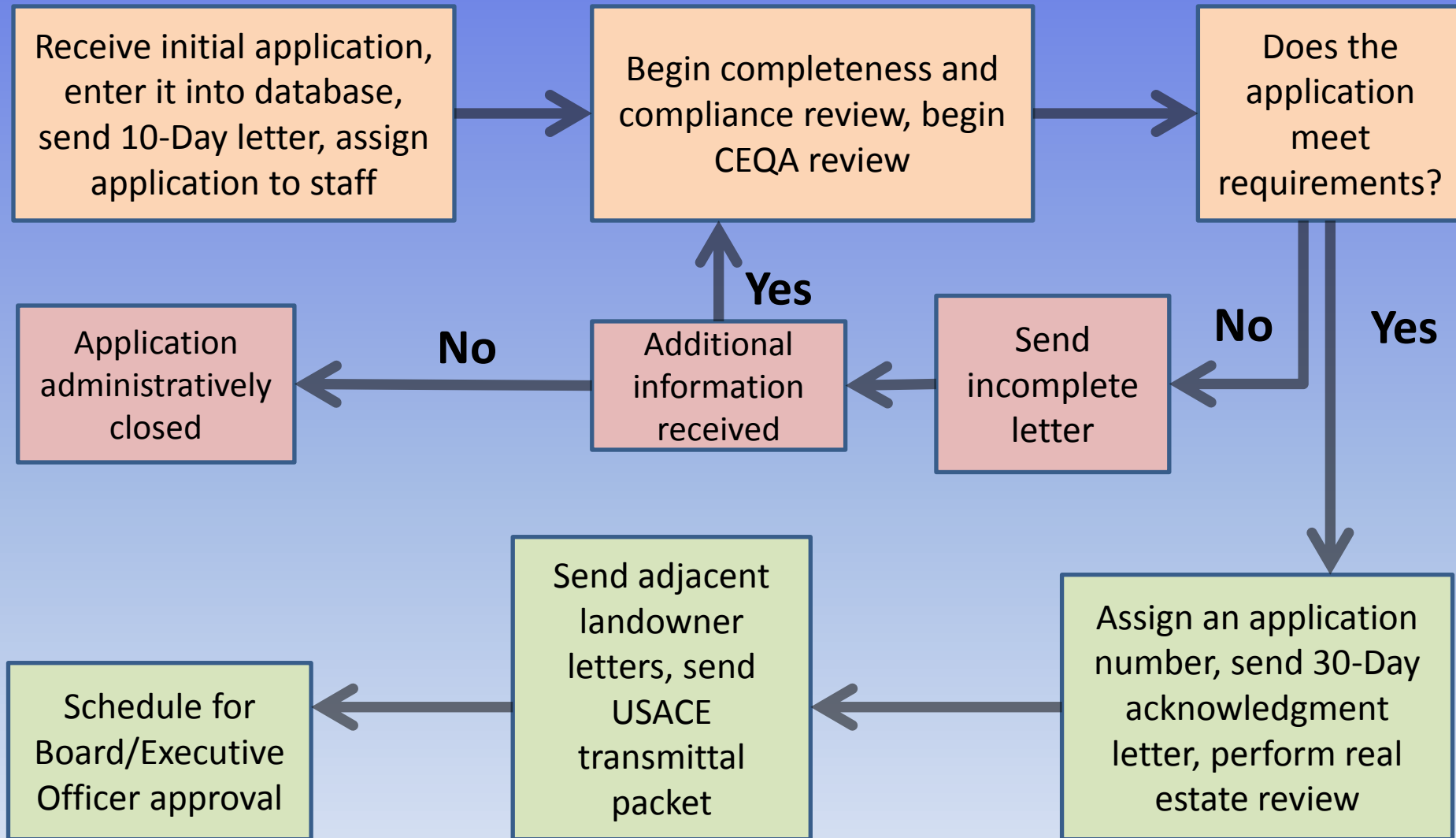
DWR Inspections Timeframes



- Spring Levee Inspections
- Summer Structure and Channel Inspections
- Fall Levee Inspections
- Year Round Permit Inspections
- Investigations As Needed
- Emergency Response



Permit Application Process



Encroachment Permit Data Entry - [Edit Existing Application]

File Edit Tools Reports Window Help

Select Application Description Applicant Location Contacts Status Comments Docs/Photos Incomplete Items CEQA Finding

App No T2014012

Save Changes Insert Item Delete Item

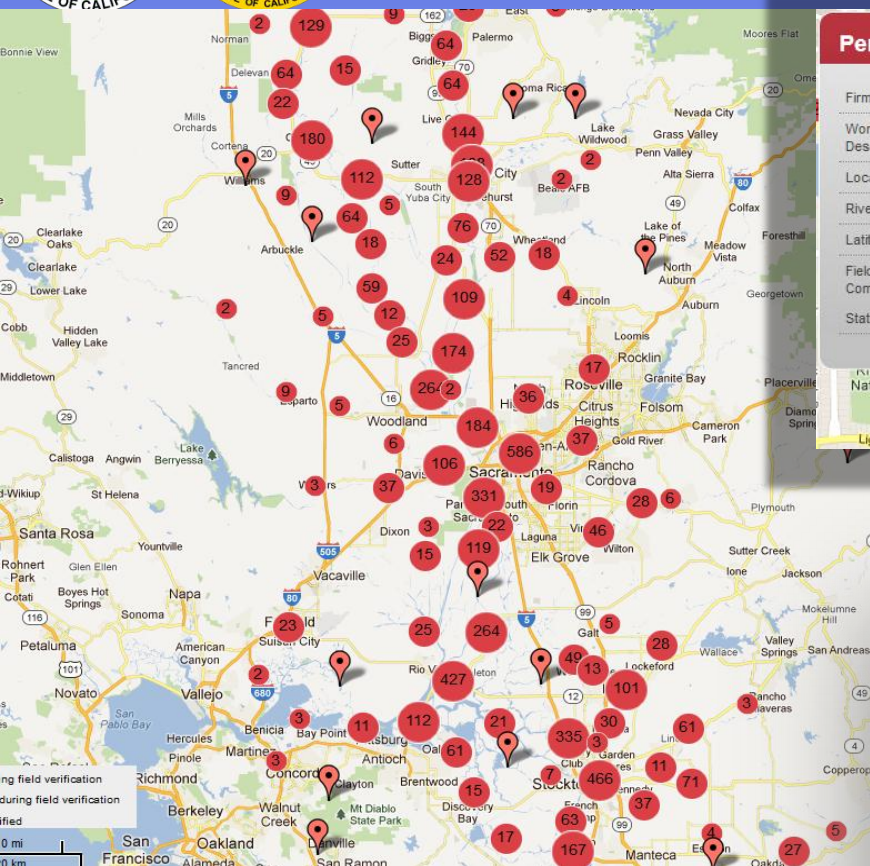
Resolved	Date	Item	Comment	DB User
☒	03/26/2014 11:11	Hydraulic Information / Analysis.	Hydraulic report is missing. A hydraulic model including a digital HEC-RAS model is required. The hydraulic model should include scour analysis and its mitigation.	dbiswas
☐	03/26/2014 11:13	Geotechnical Information / Analysis.	Geotechnical report is missing. A geotechnical report relevant to the support design is required.	dbiswas
☐	03/26/2014 11:14	Other	The design documents with at least 60% level of design is required to start our review.	dbiswas
☐	03/26/2014 11:19	Other	Need an electronic copy of the entire application.	dbiswas

Ready



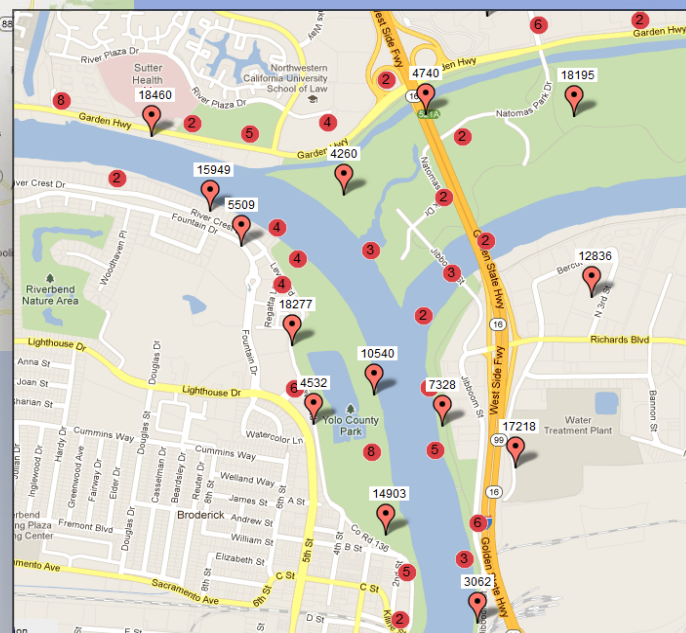


Permit Data Viewer



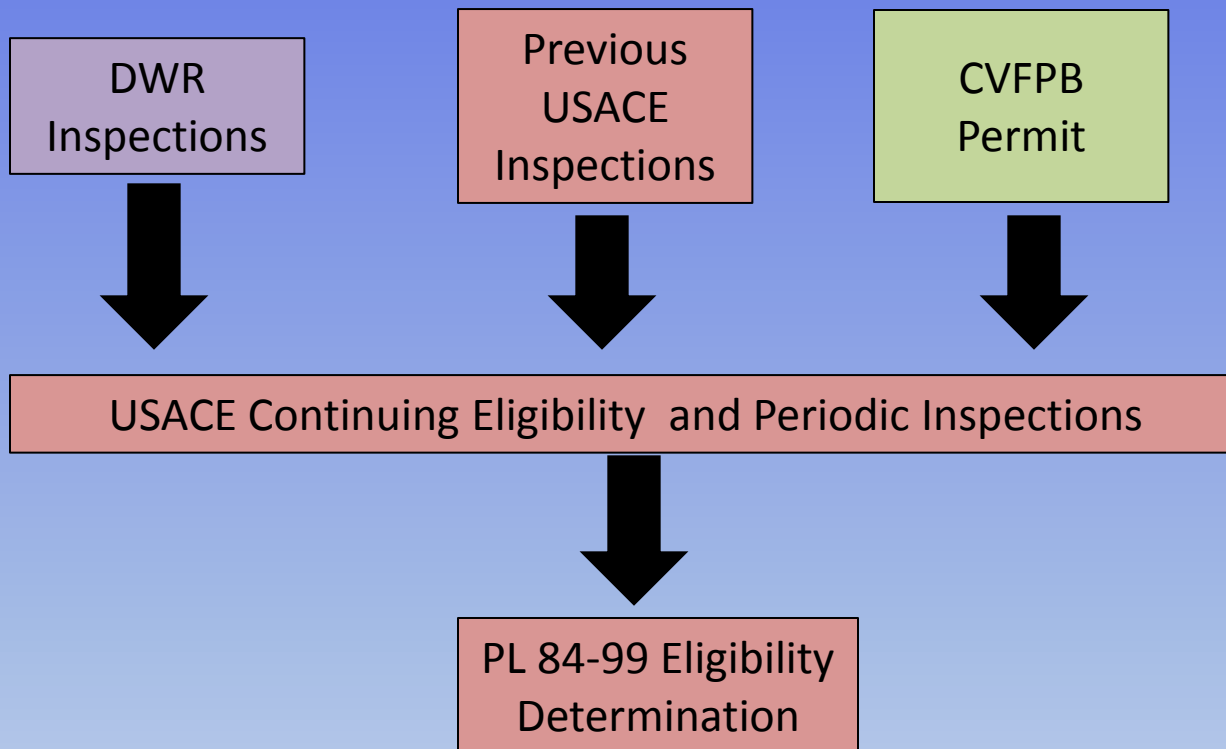
Permit Number 18277 Scanned Corps Letters Rec Board Permits More Detail

Firm Name	Regatta @ The Rivers, LLC		
Encroachment Type	To plant approximately 1,600 linear feet of ground cover and shrubs and install irrigation pipe with sprinklers along the landside slope and toe of the right (west) bank levee of the Sacramento River.		
Location	The project is located in West Sacramento, north of Lighthouse Drive.		
River	Sacramento River	County	Yolo
Latitude	38.597	Longitude	-121.5132
Field Comments			
Status	Not field verified		





USACE Inspection Workflow





Efforts to Streamline USACE Inspections



- A tool was developed to better track and organize CVFPB Permits
- A tool was developed to improve editing of data to help track reoccurring issues

SPK LIS Supplement

Issue Editor | Reports | Settings | Help

Filter Criteria

Levee Segment: Cross Creek - Corcoran - Cross Creek left b... Levee Code: CRS1 Year: [] Reset

Rated Item: (All) Rating: [] Cycle: [] Help

Remarks: [] Record Count: 29

Separate keywords using the a semicolon e.g. vegetation;tree

[LIS Inspection Database](#)

+ The list of data will change automatically whenever the search parameters change

Show/Hide Table Column

- ☒ Photos
- ☒ Inspect_ID
- ☒ Rating
- ☒ Category
- ☒ R_RatedItem_ID
- ☒ Remarks
- ☒ Feature

	Photos	Inspect_ID	Rating	Category	R_RatedItem_ID	Remarks
▶		CRS1_2012_a_0067	Unacceptable (Red)	General Items	Operations and Maintenance ...	Monolith joints (test point for sample data)
		CRS1_2012_a_0069	Acceptable	Pump Stations	Motors, Engines, Fans, Gear ...	test point for sample dataset
		CRS1_2012_a_0070	Acceptable	General Items	Flood Preparedness and Train...	Sponsor has written flood response plan.



Efforts to Streamline USACE Inspections – Report Card



	System: RD 0501 - Ryer Island System Rating: Unacceptable Approved SWIF / LOI: No PL 84-99 RP Eligibility: Inactive	RD 0501 - Ryer Island - Unit 1, Steamboat Slough (RYR1)	RD 0501 - Ryer Island - Unit 2, Cache Slough (RYR2)	RD 0501 - Ryer Island - Unit 3, Miner Slough (RYR3)	RD 0501 - Ryer Island - Unit 4, Sutter Slough (RYR4)				
General	Operations and Maintenance Manuals	A	A	A	A				
	Emergency Supplies and Equipment	A	A	A	A				
	Flood Preparedness and Training	A	A	A	A				
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U	U	U				
	Closure Structures	NA	NA	NA	NA				
	Slope Stability	A	A	A	A				
	Erosion/Bank Caving	M	A	A	A				
	Animal Control	M	A	A	M				
	Culverts/Discharge Pipes	NA	NA	NA	NA				
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA	NA				
Levee Embankments - Other Items	Vegetation Growth	M	M	M	M				
	Sod Cover	NA	NA	NA	NA				
	Settlement	M	A	A	A				
	Depressions/Rutting	A	A	M	A				
	Cracking	A	A	A	A				
	Riprap Revetments & Bank Protection	NA	NA	NA	NA				
	Revetments other than Riprap	NA	NA	NA	NA				
Flood Damage Reduction Channels	Seepage	A	A	A	A				
	Vegetation and Obstructions	M	A	A	A				
	Shoaling	A	A	A	A				
	Encroachments	M	A	M	A				
	Erosion	A	A	A	A				
	Concrete Surfaces	NA	NA	NA	NA				
	Tilting, Sliding, or Settlement of Concrete	NA	NA	NA	NA				
	Foundation of Concrete Structures	NA	NA	NA	NA				
	Slab and Monolith Joints	NA	NA	NA	NA				
	Flap Gates/Flap Valves/Pinch Valves	NA	NA	NA	NA				
	Riprap Revetments & Banks	NA	NA	NA	NA				
Revetments other than Riprap	NA	NA	NA	NA					
Legend A Acceptable M Minimally Acceptable U Unacceptable N/A Not Applicable RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)		M	Includes Unacceptable observations not likely to prevent performance in next flood event						
		U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe						
		U	Likely prevents performance in next flood event						

The worst rating is used to determine the overall segment and system ratings. *denotes item used to determine PL 84-99 eligibility



Efforts to Streamline USACE Inspections – Photo Report



US Army Corps of Engineers (USACE) - Sacramento District
PL 84-99 Rehabilitation and Inspection Program

Continuing Eligibility Inspection (Routine) of RD 0501 - Ryer Island Levee System

Levee Inspection Report Photos - 2013

Project sponsor: Central Valley Flood Protection Board

Segment	Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
RD 0501 - Ryer Island - Unit 1, Steamboat Slough(RYR1)		6.707	USACE	5/28/2013	Tim Crummett

LIS Issue Number ¹	0001
Start Levee Mile	
End Levee Mile	
Location ²	Levee Slope and Crown
Category	Levee Embankments
Item	Vegetation Growth
Remark: Heavy vegetation on both sides of the levee.	

USACE_CESPK_RYR1_2013_a_0001_1.jpg



GPS Latitude/Longitude	
Start	End
38.25410999°	-121.60194137°
Rating ³ : U	
Group:	
Permits:	
Action: Control vegetation.	

LIS Issue Number ¹	0001
Start Levee Mile	
End Levee Mile	
Location ²	Levee Slope and Crown
Category	Levee Embankments
Item	Vegetation Growth
Remark: Heavy vegetation on both sides of the levee.	

USACE_CESPK_RYR1_2013_a_0001_2.jpg



GPS Latitude/Longitude	
Start	End
38.25410999°	-121.60194137°
Rating ³ : U	
Group:	
Permits:	
Action: Control vegetation.	



Efforts to Streamline USACE Inspections – Issue Line Report



US Army Corps of Engineers (USACE) - Sacramento District - Construction Operations Division
Operations Readiness Branch - Flood Protection and Navigation Section

PL 84-99 Rehabilitation and Inspection Program
Continuing Eligibility Inspection (Routine)

Levee Inspection Report of All Items - 2013

Project sponsor: Central Valley Flood Protection Board

Segment						Bank	Segment Length (Miles)	Source	Start Date End Date	USACE POC
RD 0501 - Ryer Island - Unit 1, Steamboat Slough (RYR1)							6.71	USACE	05/28/2013	Tim Crummett
Index ¹	Levee Miles		Category	Item	Location ²	Rating ³	Remarks : Recommended Action	GPS Latitude/Longitude		Issue No. ⁴
	Start	End						Start	End	Photo ⁵
1			Levee Embankments	Vegetation Growth	SC	U	Heavy vegetation on both sides of the levee. : Control vegetation.	38.254110° -121.601941°		0001 Y
2			Levee Embankments	Encroachments	SC	U	Pipe thru the levee and a metal pump house on the landside slope. No positive shut off noted. : Verify permit. Video inspect pipe.	38.249257° -121.603081°		0002 Y
3			Levee Embankments	Erosion/ Bank Caving	LS	M	Erosion on the landside levee hinge. : Repair.	38.249257° -121.603115°		0003 Y
4			Levee Embankments	Encroachments	OT	U	Buried gas pipeline. : Verify permit. Video inspect or pressure test pipe.	38.248590° -121.603010°		0004 Y
5			Levee Embankments	Encroachments	LS	U	Shed at levee toe. : Verify permit.	38.244615° -121.602940°		0005 Y
6			Levee Embankments	Animal Control	LS	M	Rodent holes on the landside levee slope. : Backfill holes and control rodents.	38.244602° -121.602937°		0006 Y
7			Levee Embankments	Animal Control	WS	M	Rodent holes on the waterside levee slope. : Backfill holes and control rodents.	38.244467° -121.602937°		0007 Y
8			Levee Embankments	Encroachments	LS	U	Power pole on the landside slope and overhead power lines cross the levee. : Verify permit.	38.240518° -121.603797°		0008 Y
9			Channels	Encroachments	WS	U	House on waterside of levee. : Verify permit.	38.239702° -121.604113°		0009 Y
10			Levee Embankments	Encroachments	LS	U	Power pole on the landside slope and overhead power lines cross the levee. : Verify permit.	38.237053° -121.604387°		0010 Y

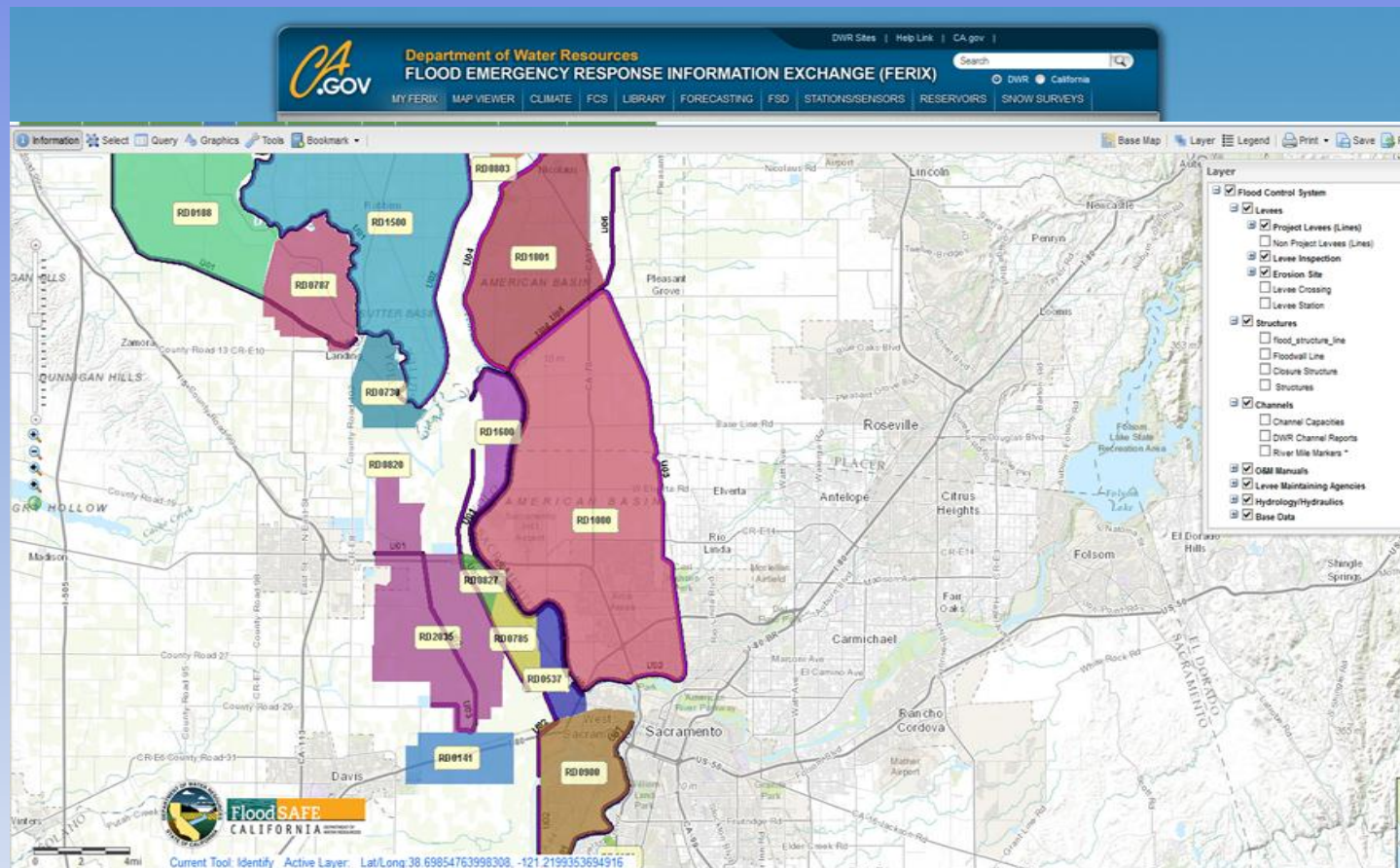


CDEC Data Management



- Custom Applications
 - LMA Reporting
 - Utility Crossing Inventory
 - Encroachment Reporting
 - USACE Periodic Inspections
- Database
- Coordination

- Map viewer for geo-referenced data in CDEC





FERIX – CDEC Stations



File Edit View History Bookmarks Tools Help

CDEC - Data Applications x CDEC - Data Application x Flood Control System x +

cdec4gov.water.ca.gov/stamap.html

Google

CA.GOV Department of Water Resources CALIFORNIA DATA EXCHANGE CENTER

HOME | QUERY TOOLS | PRECIPITATION | RIVER FORECAST | RIVER STAGES | RESERVOIRS | SNOW | STATIONS | WEATHER

CDEC Station Locator Map

Search by Station ID or Station Name

Number of Stations: 62

Station ID	Station Name	Sensors
AMC	ARCADE CREEK AT WINDING WAY	
ARW	ARDEN WAY	
BBN	MOKELUMNE R NR THORNTON (BENSON'S FERRY)	
BRY	SACRAMENTO RIVER AT BRYTE	
CHG	CHICAGO	
CRT	CORRECTIONAL CTR	
CSN	COSUMNES R AT MICHIGAN BAR	
CRP	CRESTA PARK	
DCG	DRY CREEK NEAR GALT	
EGN	COSUMNES RIVER AT EAGLES NEST ROAD	
ELG	ELK GROVE FISH HATCHERY	
FPT	SACRAMENTO RIVER AT FREEPORT	
GGS	GEORGIANA SLOUGH	
HST	AMERICAN RIVER AT H STREET BRIDGE	
HUR	HURLEY	
IST	SACRAMENTO RIVER AT I STREET BRIDGE	
NAT	LAKE NATOMA (NIMBUS DAM)	
LIR	LIBERTY ISLAND - RD2008	
LIY	LIBERTY ISLAND - YOLO BYPASS	
LIS	YOLO BYPASS AT LISBON	
MCC	COSUMNES RIVER NEAR MCCONNELL	
MCI	MCINTIRE ROAD	
MHB	COSUMNES RIVER AT MICHIGAN BAR	
MFR	MORRISON CREEK AT FLORIN ROAD	

12:53 PM 8/20/2014



Challenges



- Integration of USACE's new 408 process
- Integration of data from various sources



Future



- Levee Log Updates
- Designated Floodways
- Additional Inspections/Resources
- Permit Data Sharing (USACE-CVFPB/DWR)



Questions?