

USACE Inspection Results

Ryan Larson, PE

Flood Protection and Navigation Section

Sacramento District

August 28, 2015

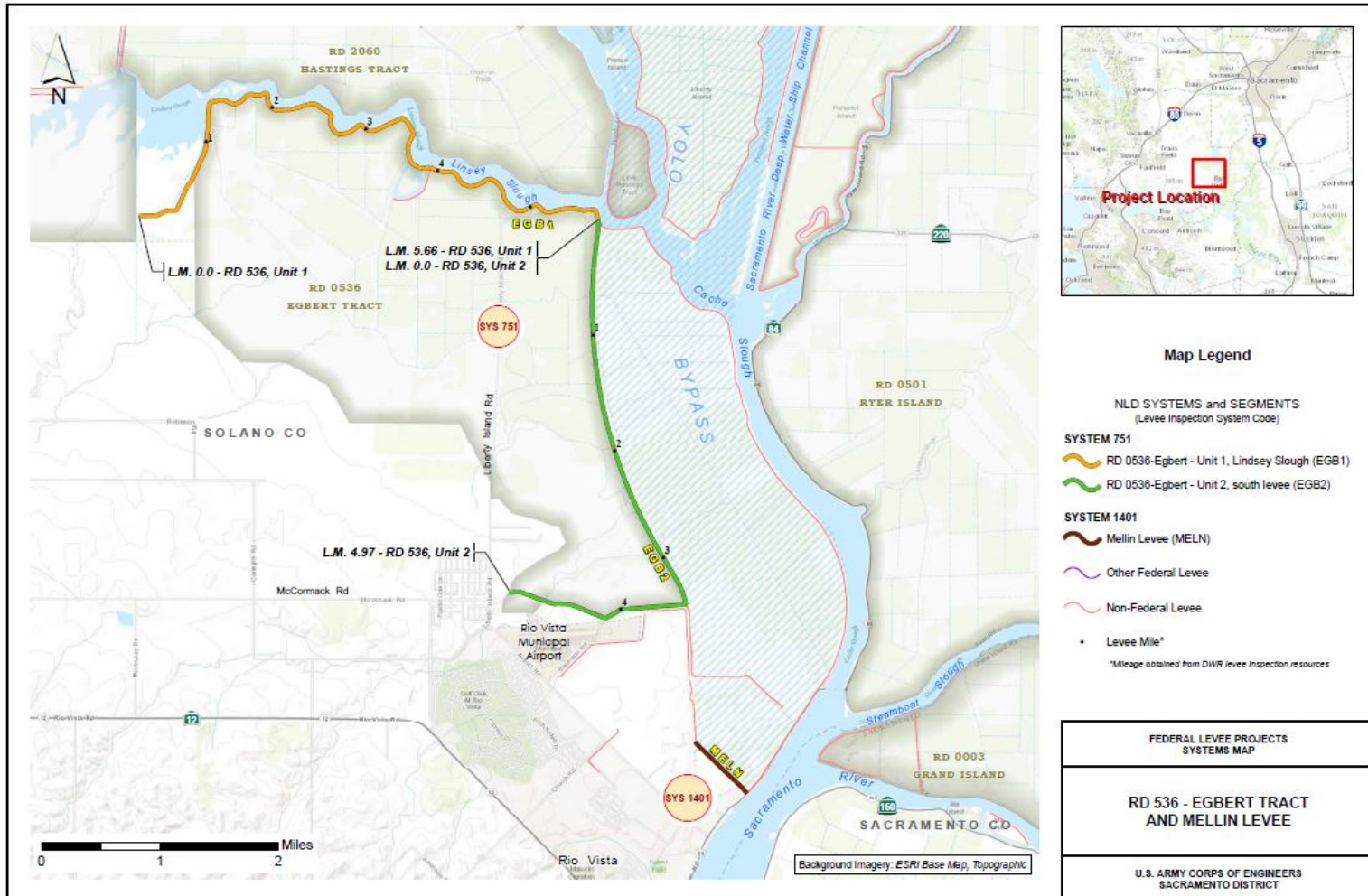


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US Army Corps of Engineers
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RD 0536 – Egbert Tract



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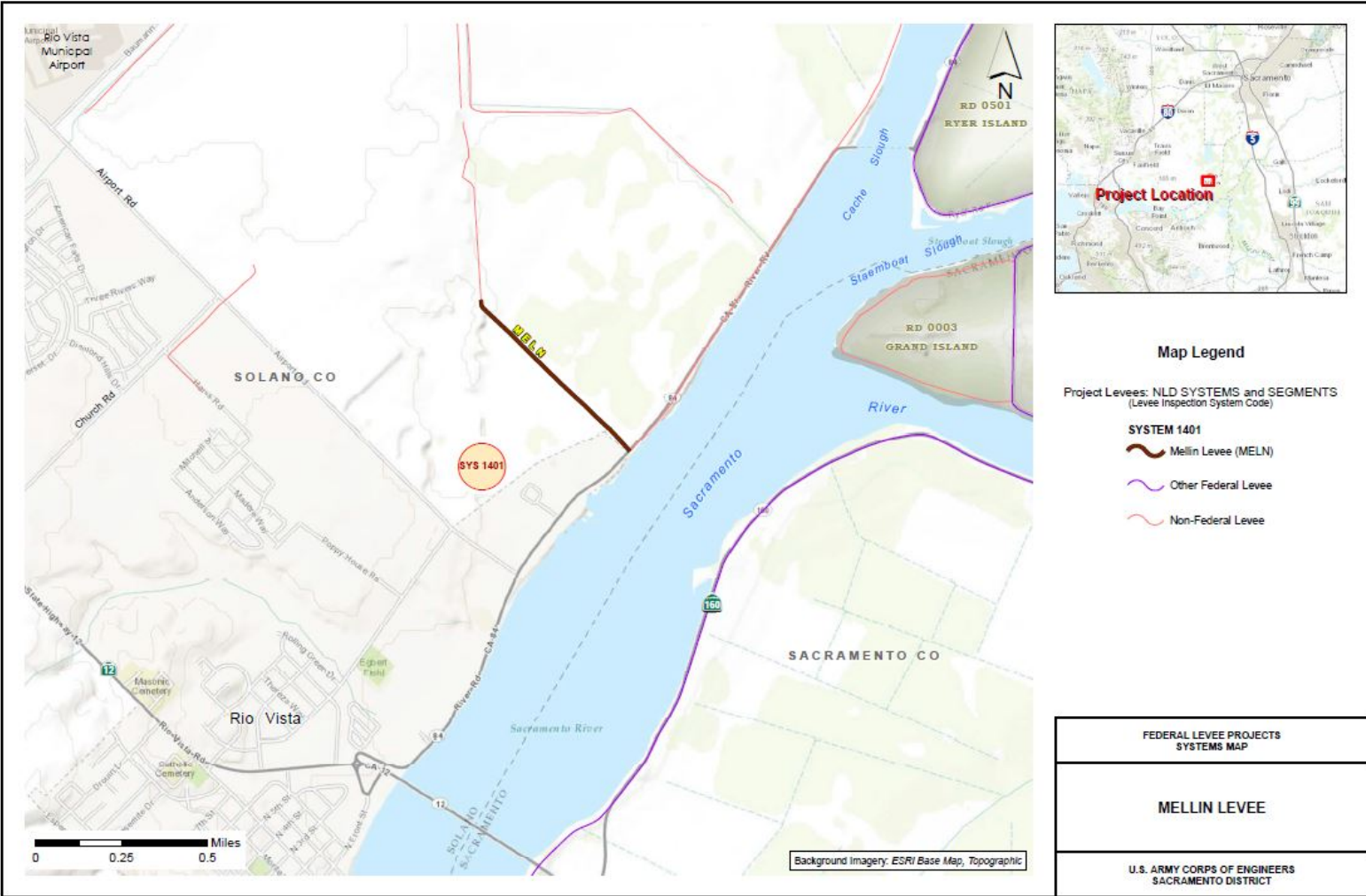
	System: RD 0536 - Egbert tract System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 0536 - Egbert - Unit 1, Lindsey Slough (EGB1)	RD 0536 - Egbert - Unit 2, south levee (EGB2)						
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	U	A						
	Erosion/Bank Caving	U	A						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	M	M						
	Sod Cover	M	A						
	Settlement	M	M						
	Depressions/Rutting	M	M						
	Cracking	M	M						
	Riprap Revetments & Bank Protection	M	A						
	Revetments other than Riprap	NA	NA						
	Seepage	M	M						
	Legend A Acceptable M Minimally Acceptable U Unacceptable N/A Not Applicable RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status) <div> <div>M</div> Includes Unacceptable observations not likely to prevent performance in next flood event <div>U</div> Serious deficiency noted in past inspection report has not been corrected within the established timeframe <div>U</div> Likely prevents performance in next flood event </div>								



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Mellin Levee - Rio Vista



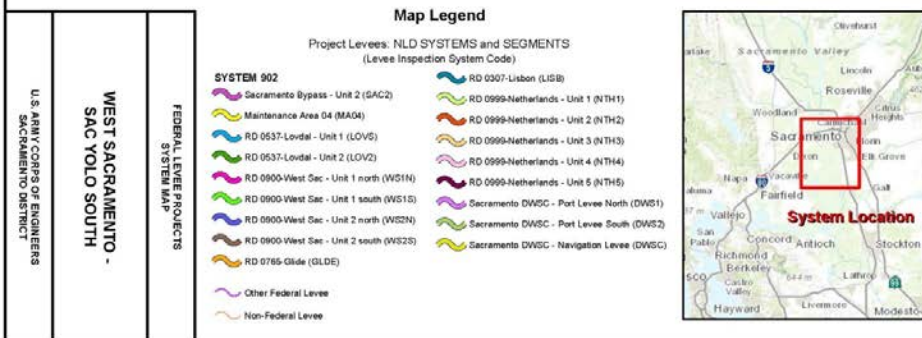
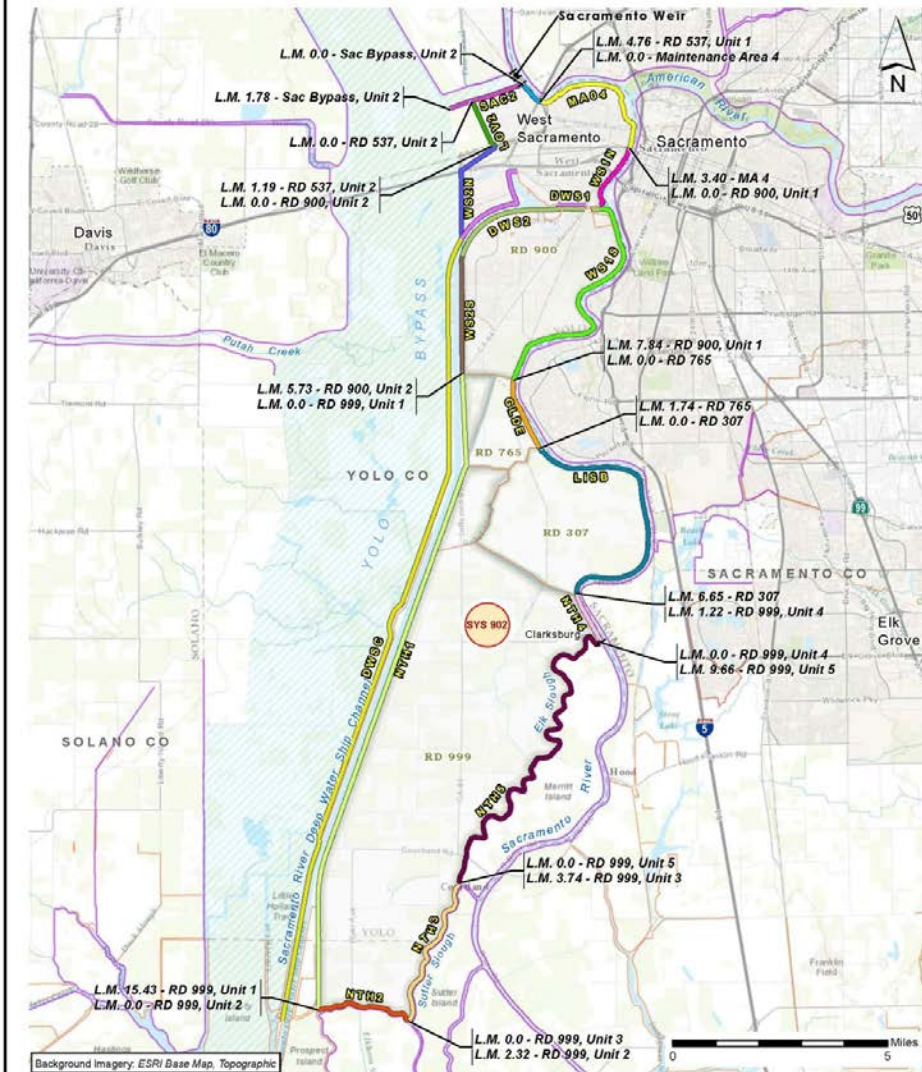
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	System: Mellin Levee - Rio Vista System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	Mellin Levee (MELN)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	A							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	M							
	Sod Cover	A							
	Settlement	M							
	Depressions/Rutting	A							
	Cracking	A							
	Riprap Revetments & Bank Protection	NA							
	Revetments other than Riprap	NA							
	Seepage	A							
	Legend	M	Includes Unacceptable observations not likely to prevent performance in next flood event						
	A Acceptable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe						
	M Minimally Acceptable	U	Likely prevents performance in next flood event						
	U Unacceptable								
	N/A Not Applicable								
	RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)								

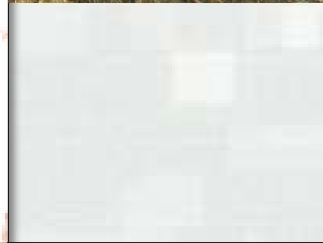


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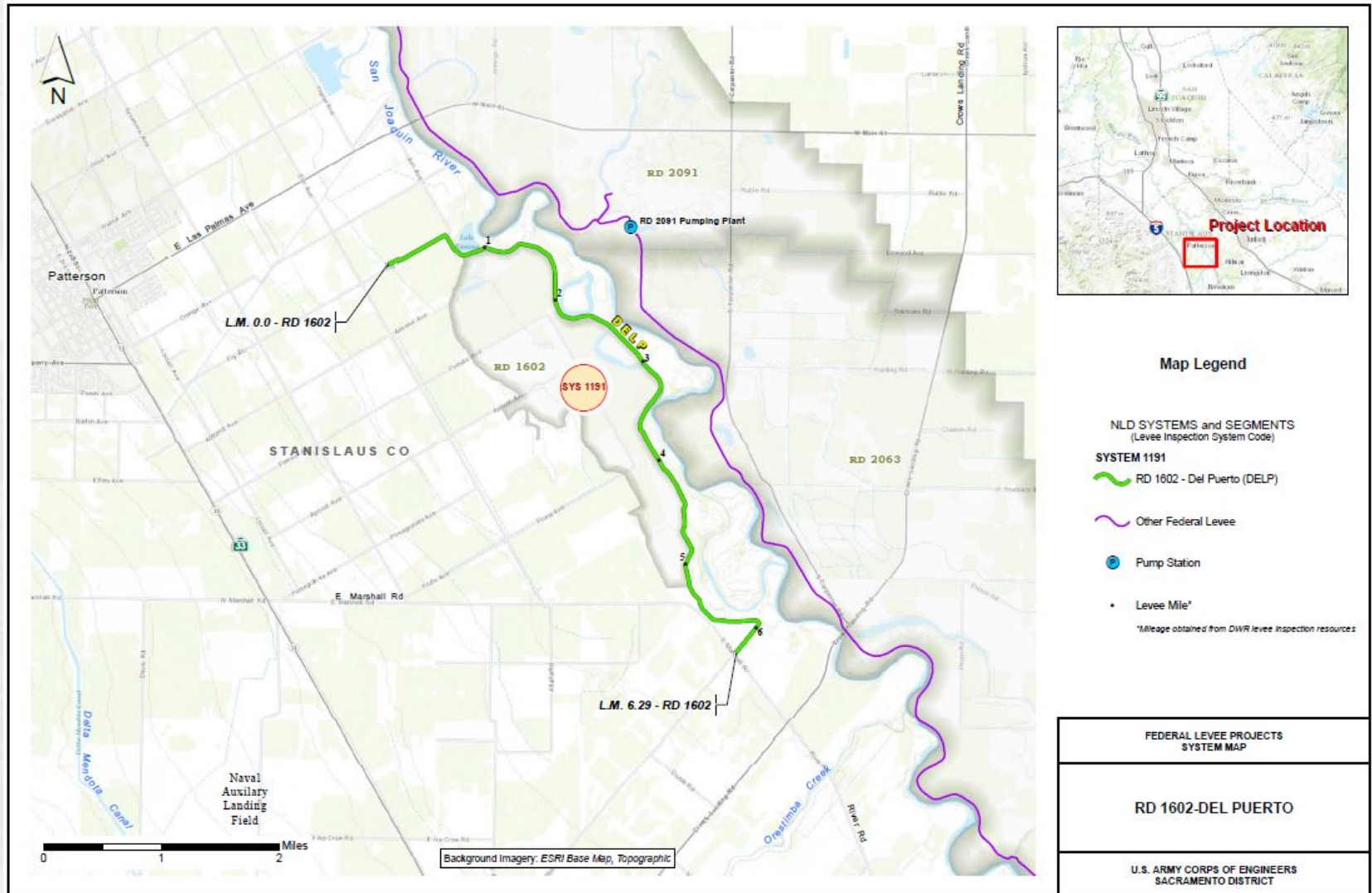


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RD 1602 – Del Puerto



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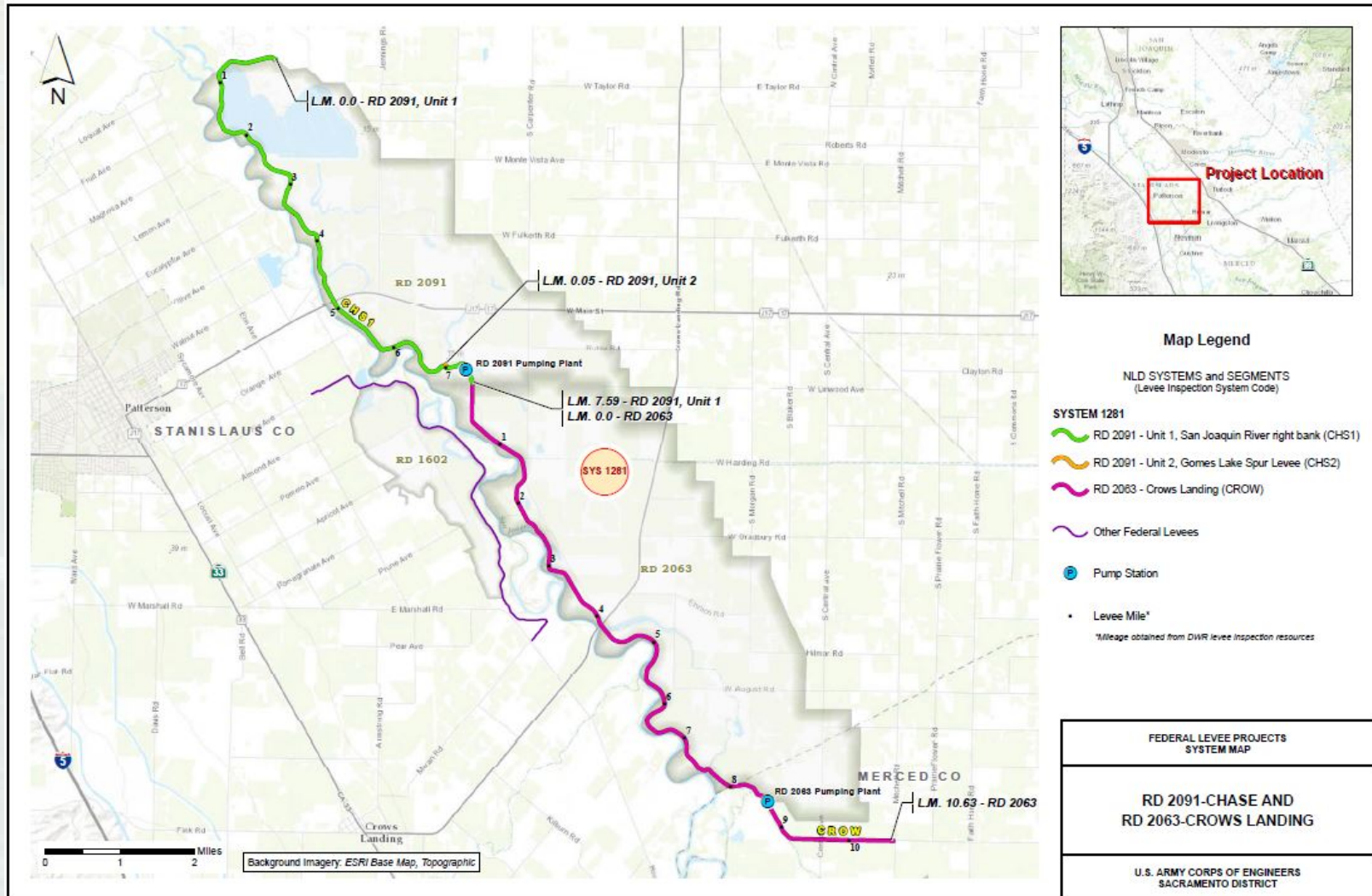
	System: RD 1602 - Del Puerto System Rating: Unacceptable Approved SWIF/LOI: No PI 84-99 RP Eligibility: Inactive	RD 1602 - Del Puerto (DELP)						
General	Operations and Maintenance Manuals	A						
	Emergency Supplies and Equipment	M						
	Flood Preparedness and Training	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U						
	Closure Structures	NA						
	Slope Stability	M						
	Erosion/Bank Caving	U						
	Animal Control	U						
	Culverts/Discharge Pipes	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA						
Levee Embankments - Other Items	Vegetation Growth	U						
	Sod Cover	M						
	Settlement	A						
	Depressions/Rutting	M						
	Cracking	A						
	Riprap Revetments & Bank Protection	NA						
	Revetments other than Riprap	NA						
	Seepage	A						
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 U U	Includes Unacceptable observations not likely to prevent performance in next flood event Serious deficiency noted in past inspection report has not been corrected within the established timeframe Likely prevents performance in next flood event					



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RD 2091 and RD 2063 – Chase and Crows Landing



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	System: RD 2091 and RD 2063 - Chase and Crows Landing System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2091 - Chase - Unit 1, San Joaquin River right bank (CH51)	RD 2091 - Chase - Unit 2, spur levee (CH52)	RD 2063 - Crows Landing (CROW)					
General	Operations and Maintenance Manuals	M	M	M					
	Emergency Supplies and Equipment	M	M	M					
	Flood Preparedness and Training	M	M	M					
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	M	U					
	Closure Structures	NA	NA	NA					
	Slope Stability	M	A	M					
	Erosion/Bank Caving	U	A	A					
	Animal Control	U	M	U					
	Culverts/Discharge Pipes	U	NA	U					
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA	NA					
Levee Embankments - Other Items	Vegetation Growth	U	M	U					
	Sod Cover	M	M	M					
	Settlement	M	A	M					
	Depressions/Rutting	M	A	M					
	Cracking	A	A	M					
	Riprap Revetments & Bank Protection	M	NA	M					
	Revetments other than Riprap	NA	NA	NA					
	Seepage	M	A	M					
	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 U U	Includes Unacceptable observations not likely to prevent performance in next flood event Serious deficiency noted in past inspection report has not been corrected within the established timeframe Likely prevents performance in next flood event						



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	System: RD 2091 and RD 2063 - Chase and Crows Landing System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	RD 2091 - Chase - Unit 1, San Joaquin River right bank (CHS1)	RD 2091 - Chase - Unit 2, spur levee (CHS2)	RD 2063 - Crows Landing (CROW)					
Interior Drainage	Vegetation and Obstructions			M					
	Encroachments			M					
	Ponding Areas			NA					
	Fencing and Gates			M					
	Concrete Surfaces (Such as gate wells, outfalls, intakes, Tilting, Sliding or Settlement of Concrete and Sheet Pile			A					
	Foundation of Concrete Structures (Such as culverts, Monolith Joints			A					
	Culverts/ Discharge Pipes			M					
	Sluice/ Slide Gates			M					
	Flap Gates/ Flap Valves/ Pinch Valves			U					
	Trash Racks (non-mechanical)			NA					
	Other Metallic Items			NA					
	Riprap Revetments of Inlet/ Discharge Areas			NA					
	Revetments other than Riprap			NA					
	Legend								
	A Acceptable	M	Includes Unacceptable observations not likely to prevent performance in next flood event						
	M Minimally Acceptable	U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe						
	U Unacceptable	U	Likely prevents performance in next flood event						
	N/A Not Applicable								
	RP Rehabilitation Program (Note: flood fight assistance available regardless of eligibility status)								

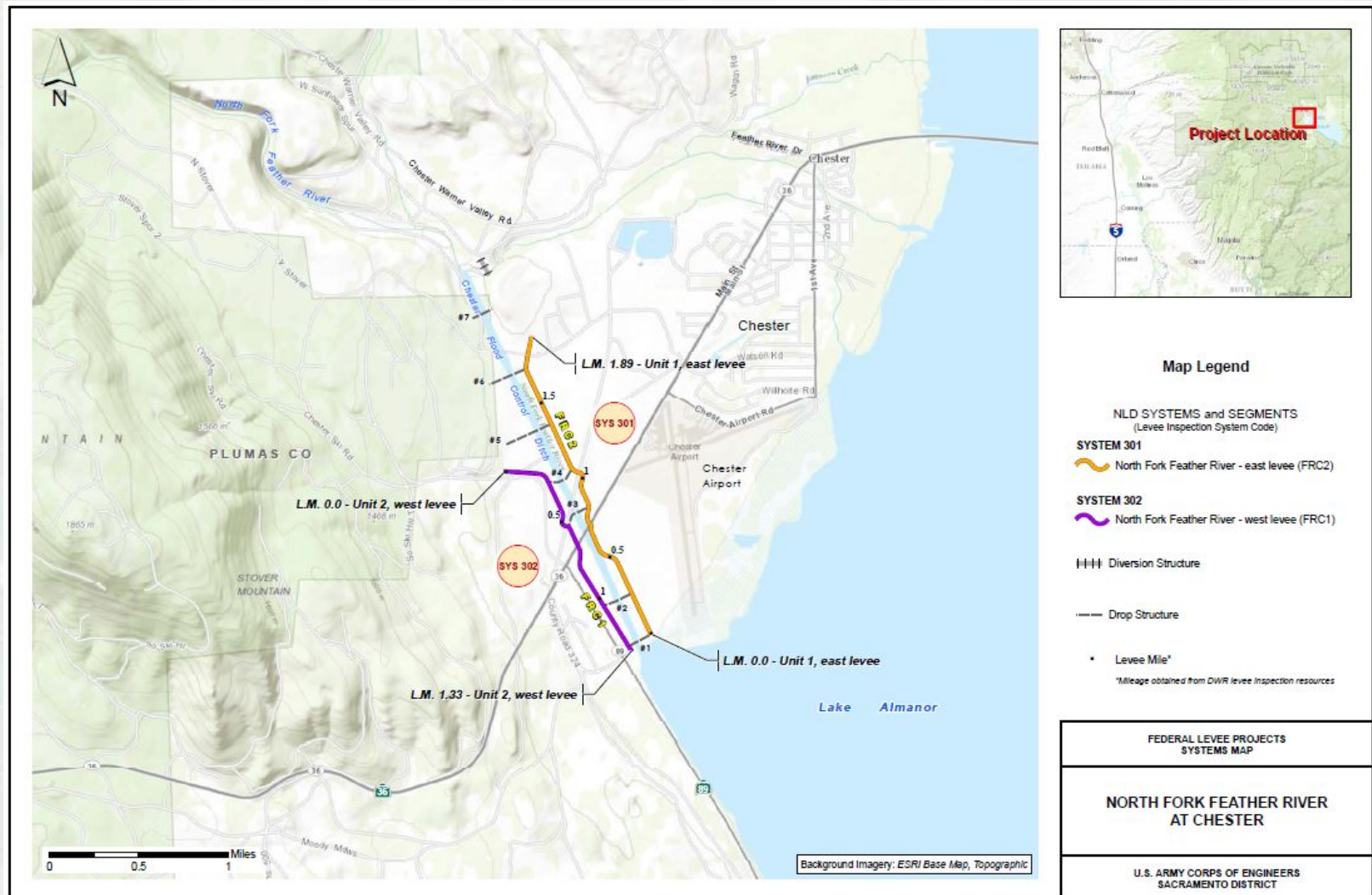


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North Fork Feather River at Chester



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	System: North Fork Feather River at Chester - east levee System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	North Fork Feather River at Chester - east levee (FRC2)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	A							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	U							
	Erosion/Bank Caving	A							
	Animal Control	A							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	M							
	Settlement	A							
	Depressions/Rutting	M							
	Cracking	A							
	Riprap Revetments & Bank Protection	A							
	Revetments other than Riprap	NA							
	Seepage	M							
Flood Damage Reduction Channels	Vegetation and Obstructions	A							
	Shoaling	A							
	Encroachments	A							
	Erosion	A							
	Concrete Surfaces	A							
	Tilting, Sliding, or Settlement of Concrete	NA							
	Foundation of Concrete Structures	NA							
	Slab and Monolith Joints	NA							
	Flap Gates/Flap Valves/Pinch Valves	NA							
	Riprap Revetments & Banks	NA							
	Revetments other than Riprap	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							





	System: North Fork Feather River at Chester - west levee System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Active	North Fork Feather River at Chester - west levee (FRC1)						
General	Operations and Maintenance Manuals	A						
	Emergency Supplies and Equipment	A						
	Flood Preparedness and Training	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	M						
	Closure Structures	NA						
	Slope Stability	A						
	Erosion/Bank Caving	A						
	Animal Control	A						
	Culverts/Discharge Pipes	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA						
Levee Embankments - Other Items	Vegetation Growth	U						
	Sod Cover	A						
	Settlement	A						
	Depressions/Rutting	M						
	Cracking	A						
	Riprap Revetments & Bank Protection	NA						
	Revetments other than Riprap	NA						
	Seepage	A						
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					

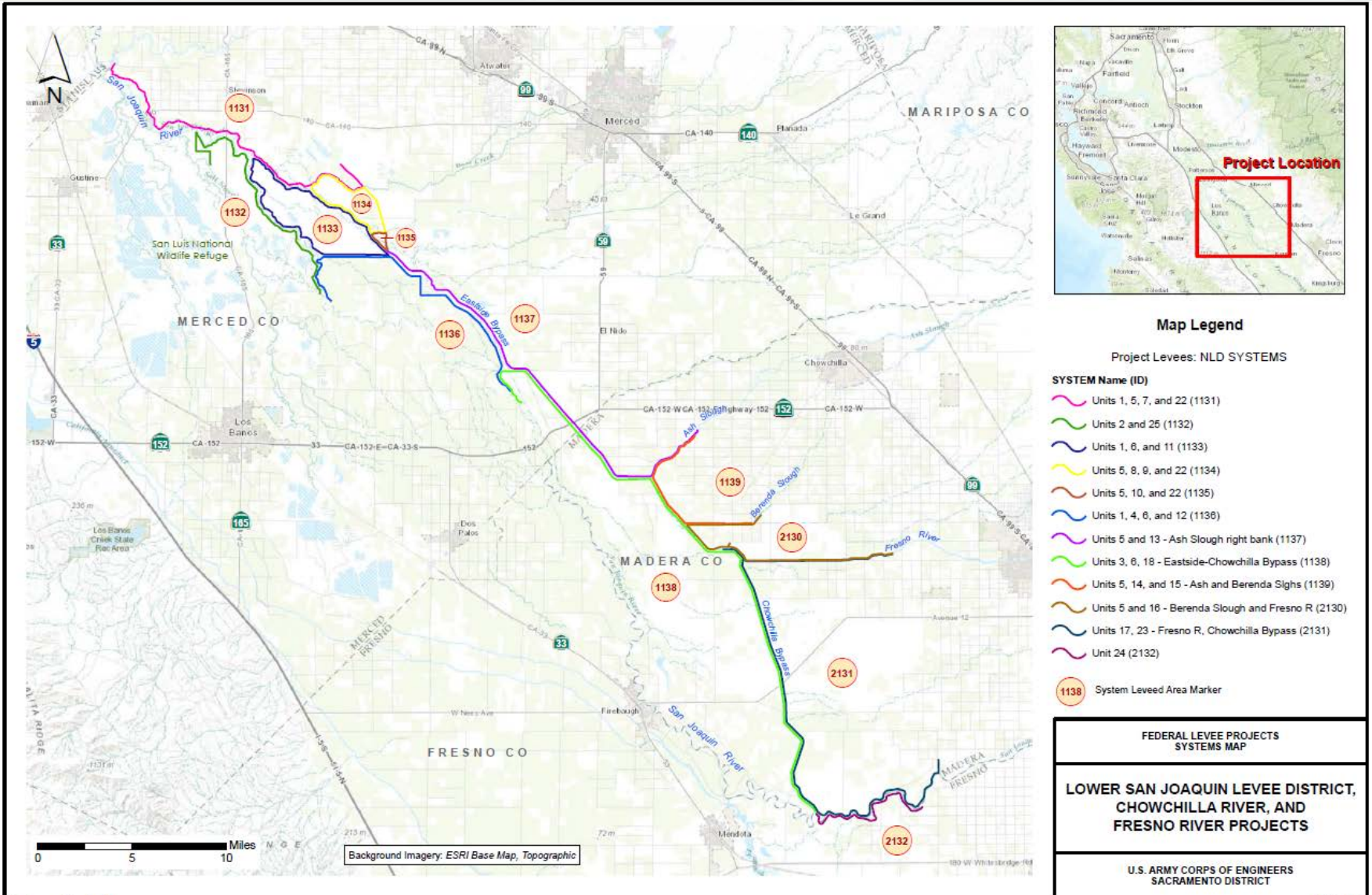


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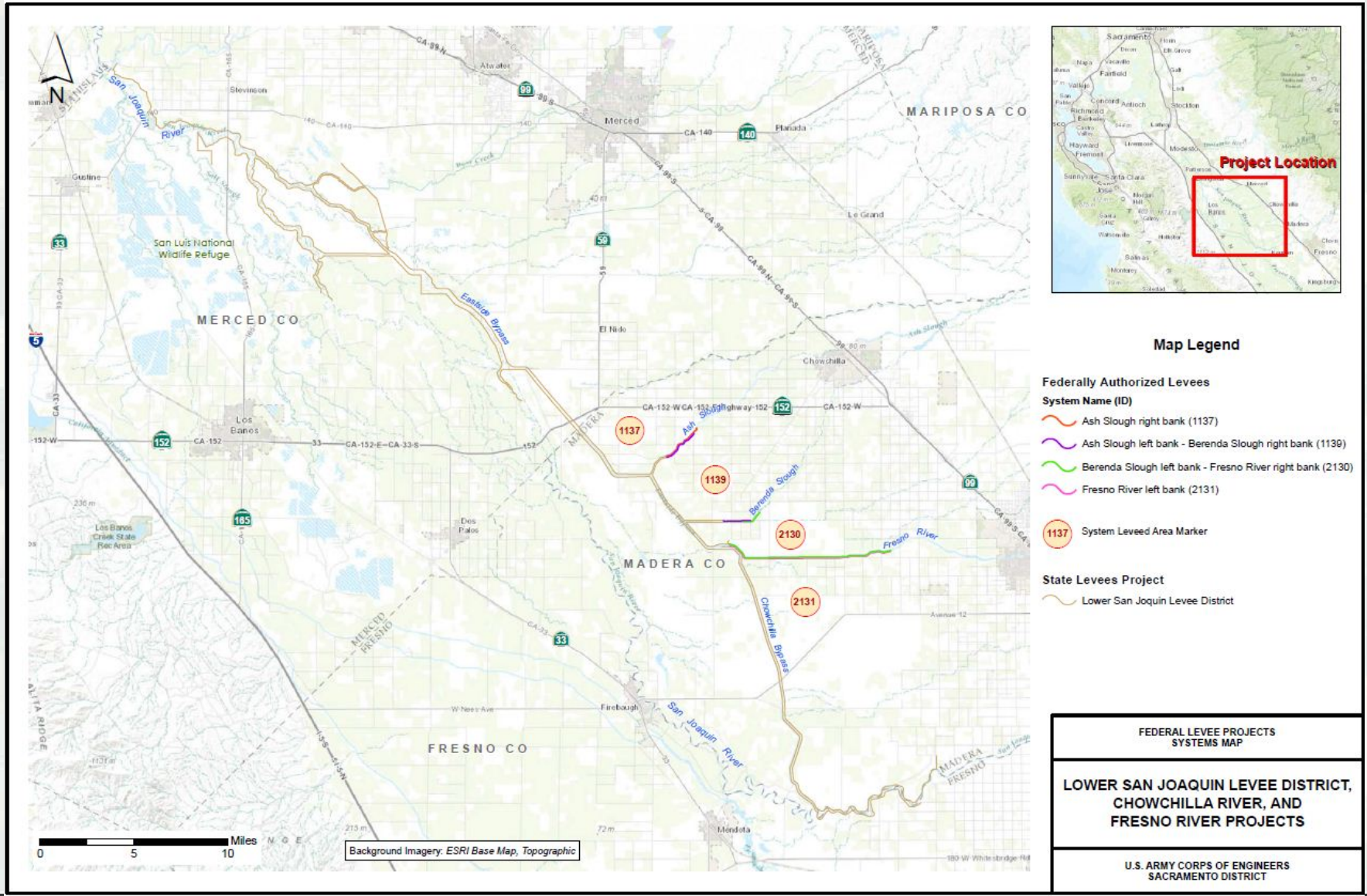


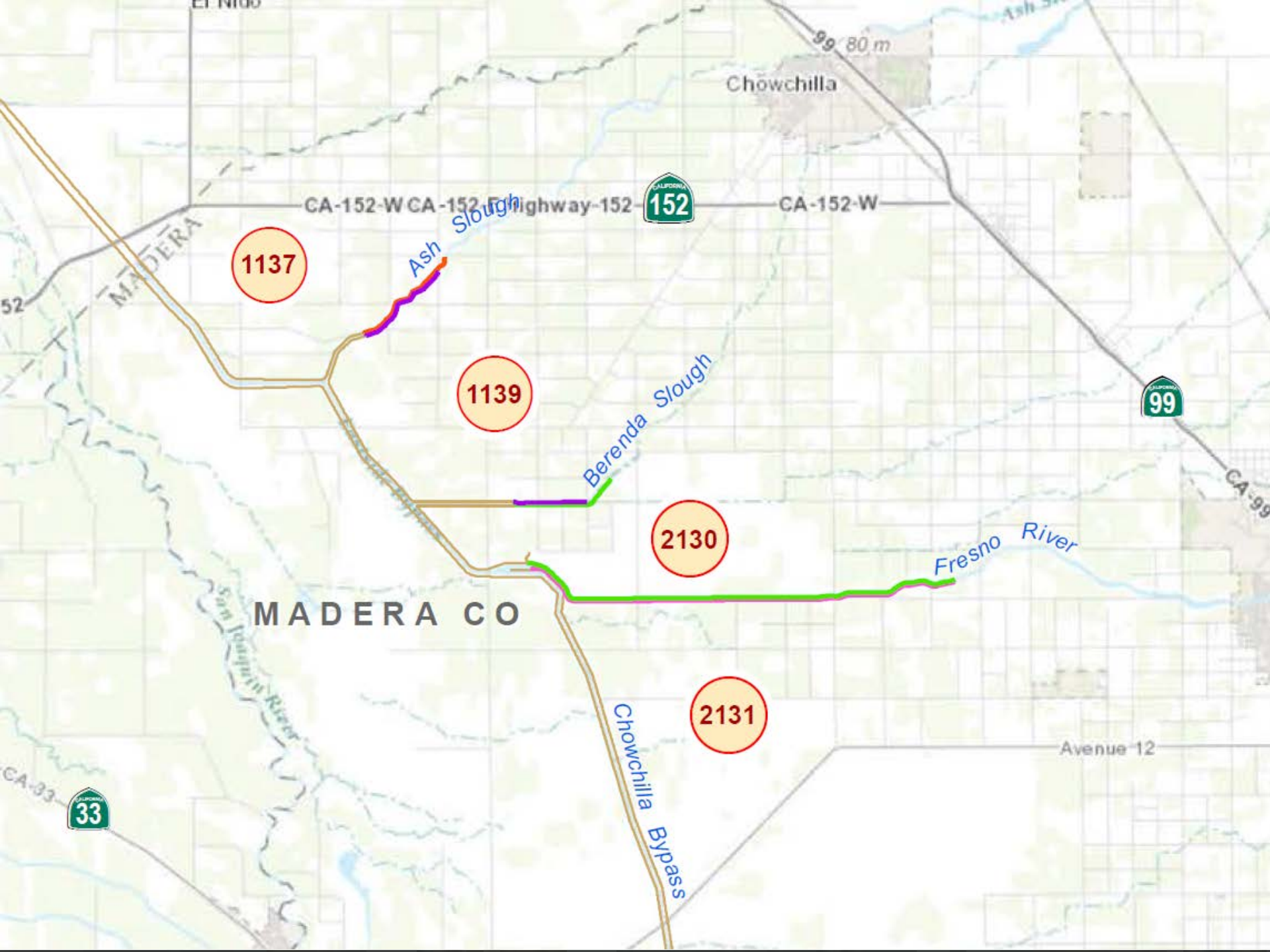
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Understanding at Beginning of PI Effort



Understanding at Completion of PI Effort





Flood Control Act of 1944

- “The plan of improvement for flood control and other purposes on the Lower San Joaquin River and tributaries, including Tuolumne and Stanislaus Rivers, **in accordance with the recommendations of the Chief of Engineers** in Flood Control Committee Document Numbered 2, 78th Congress, 2nd Session is approved, and is hereby authorized \$8,000,000 for initiation and partial accomplishment of the plan.”



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Changed Conditions Post-1944

- Construction of San Joaquin River Flood Control Project was delayed during WWII
- State was to purchase flowage easements upstream of the Merced River at State's expense
- Cost of real estate increased to the point the state believed it would be more economical to construct levees and channels in lieu of purchasing easements



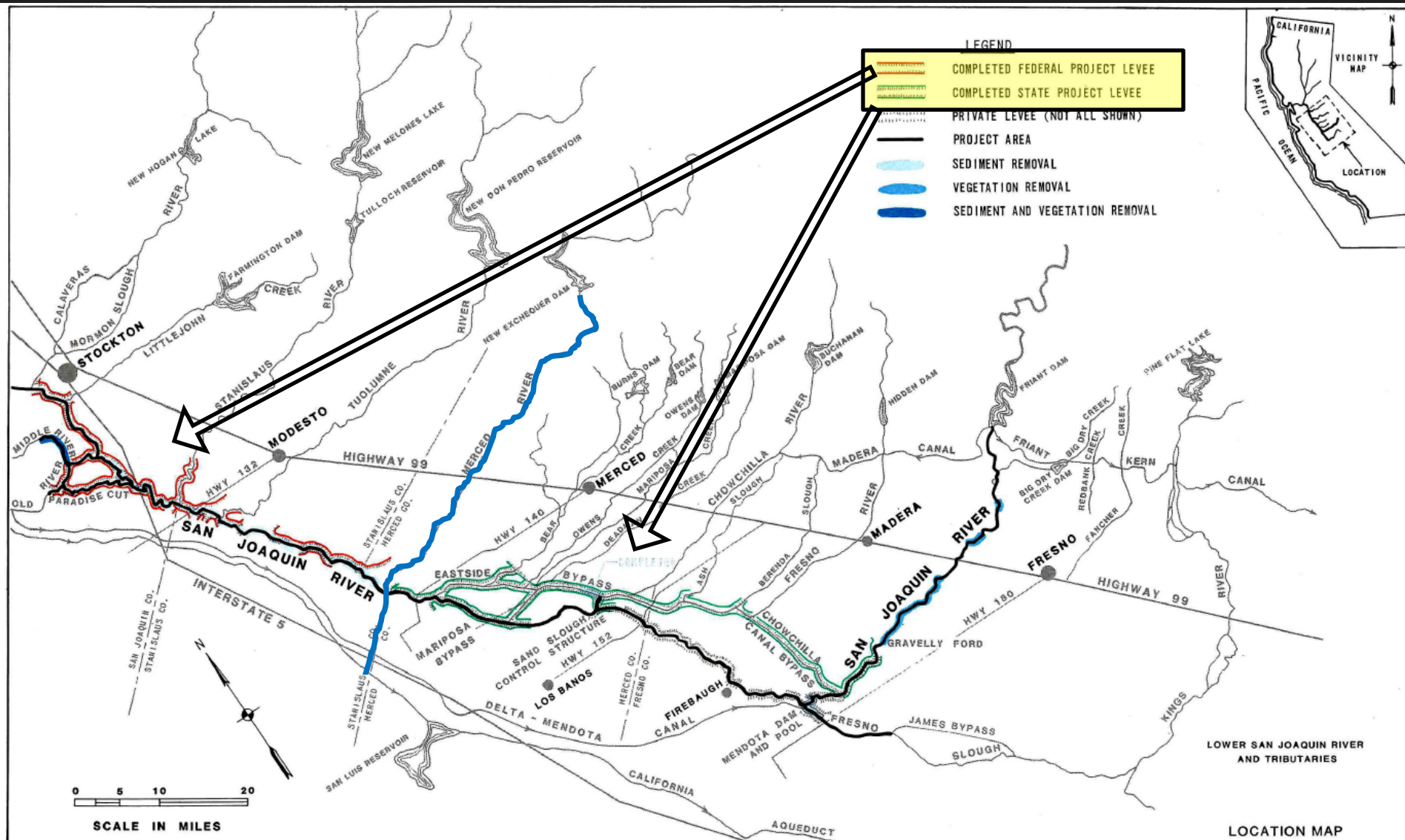
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Flood Control Act of 1955

- *“Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, **That the project for construction of channel improvement works and levee construction and reconstruction on the San Joaquin River and tributary channels, authorized by the Flood Control Act approved December 22, 1944, is hereby modified to provide that in lieu of furnishing flowage easements along the San Joaquin River upstream of the mouth of the Merced River as set forth in the report of the Chief of Engineers, published as Flood Control Committee Document Numbered 2, Seventy-eighth Congress, **responsible local interests may construct levees and channel improvements**, as required, to protect such lands against floods, subject to approval by the Chief of Engineers, United States Army: **Provided, That the flood hazard to downstream areas is not materially increased thereby**, and that due consideration be given to the timing and sequence of construction of the parts of the project to be accomplished by local interests in proper relation to the development of flood control storage on the tributaries of the San Joaquin River: And provided further, **That construction and maintenance of such levees and channel improvements be undertaken at no cost to the United States.**”***



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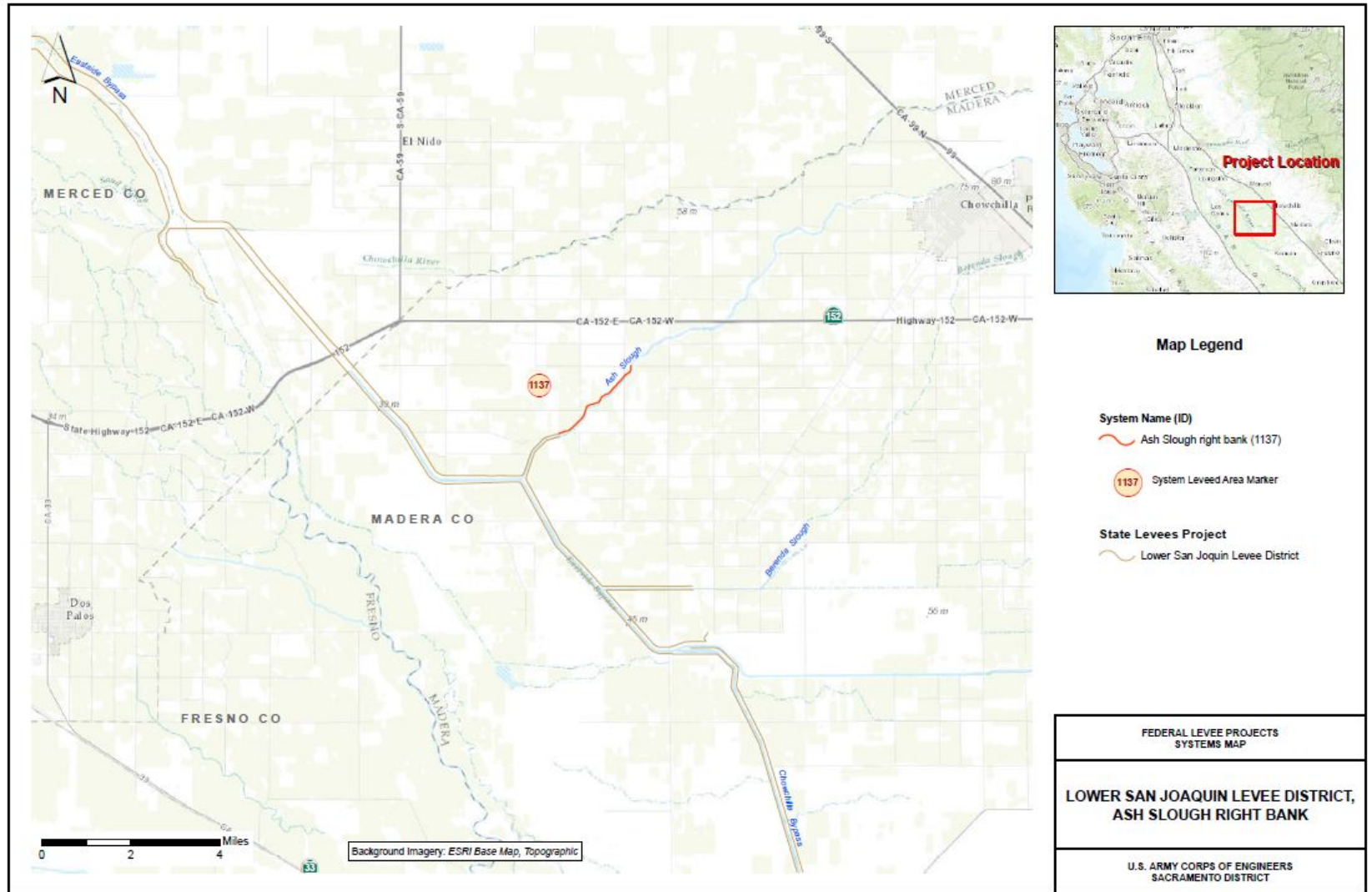
Federally Authorized Levees

- Chowchilla River, Ash and Berenda Sloughs Channel Improvement and Levee Construction Project
- Fresno River Channel Improvement and Levee Construction Project
- Both Authorized by the Flood Control Act of 1962



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Ash Slough Right Bank



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	System: Ash Slough right bank System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	Chowchilla River - Ash Slough right bank (CHW1)							
General	Operations and Maintenance Manuals	A							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	M							
	Erosion/Bank Caving	U							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankment - Other Items	Vegetation Growth	U							
	Sod Cover	M							
	Settlement	M							
	Depressions/Rutting	U							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	A							
Legend A Acceptable M Minimally Acceptable U Unacceptable N/A Not Applicable		M U U	Not likely to prevent performance in next flood event / Active Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive Likely prevents performance in next flood event / Inactive						

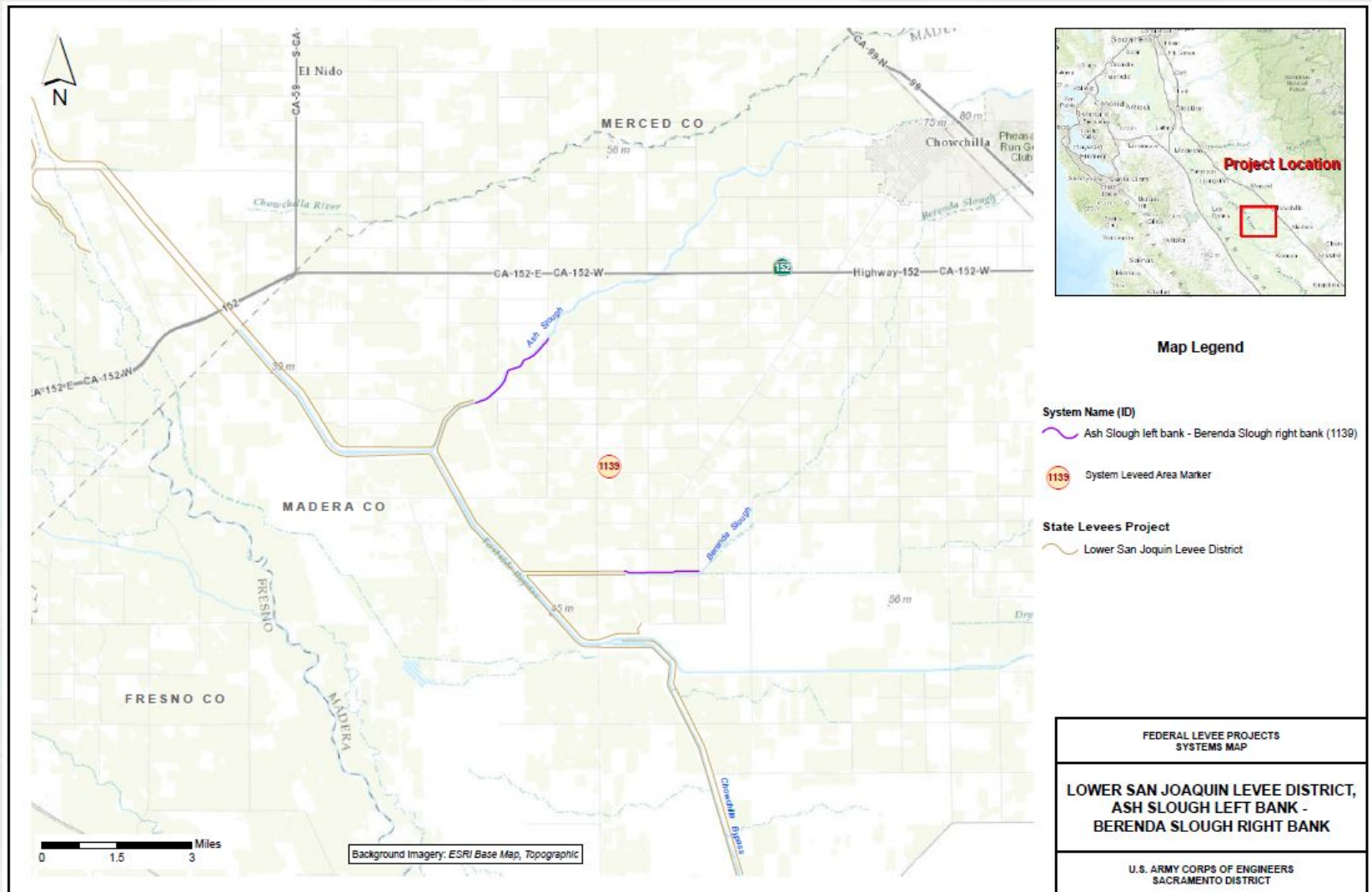


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Ash Slough Left Bank – Berenda Slough Right Bank



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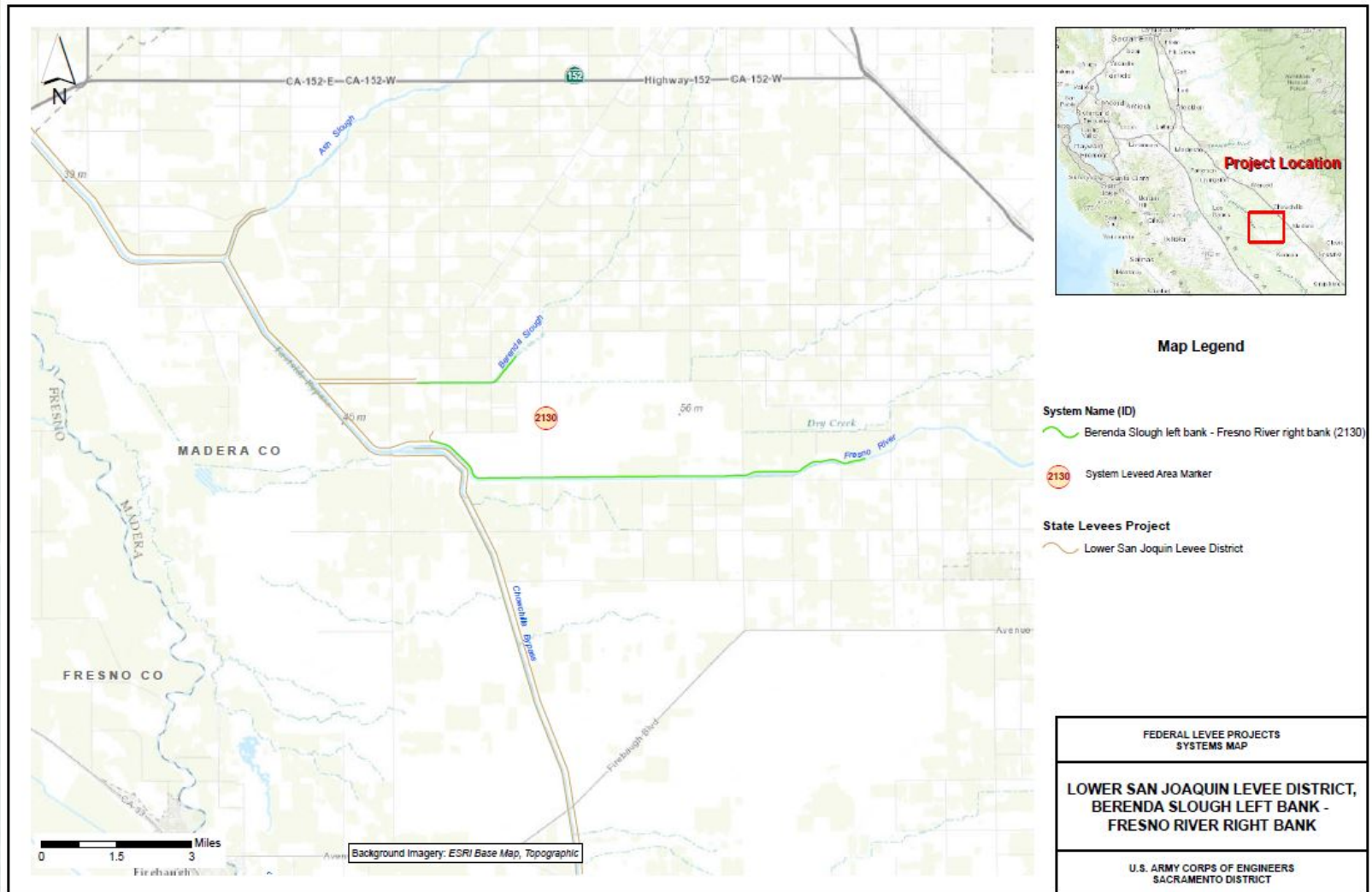
System: Ash Slough left bank - Berenda Slough right bank System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive		<div>Chowchilla River - Ash Slough left bank (CHW2)</div> <div>Chowchilla River - Berenda Slough right bank (CHW3)</div> <div></div> <div></div> <div></div> <div></div> <div></div> <div></div>							
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	A	A						
	Erosion/Bank Caving	U	U						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankments - Other Items	Vegetation Growth	U	U						
	Sod Cover	U	U						
	Settlement	U	U						
	Depressions/Rutting	U	U						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	M	M						
	Revetments other than Riprap	M	NA						
	Seepage	A	A						
Legend A Acceptable M Minimally Acceptable U Unacceptable N/A Not Applicable		U	Not likely to prevent performance in next flood event / Active						
		U	Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive						
		U	Likely prevents performance in next flood event / Inactive						



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Berenda Slough Left Bank – Fresno River Right Bank



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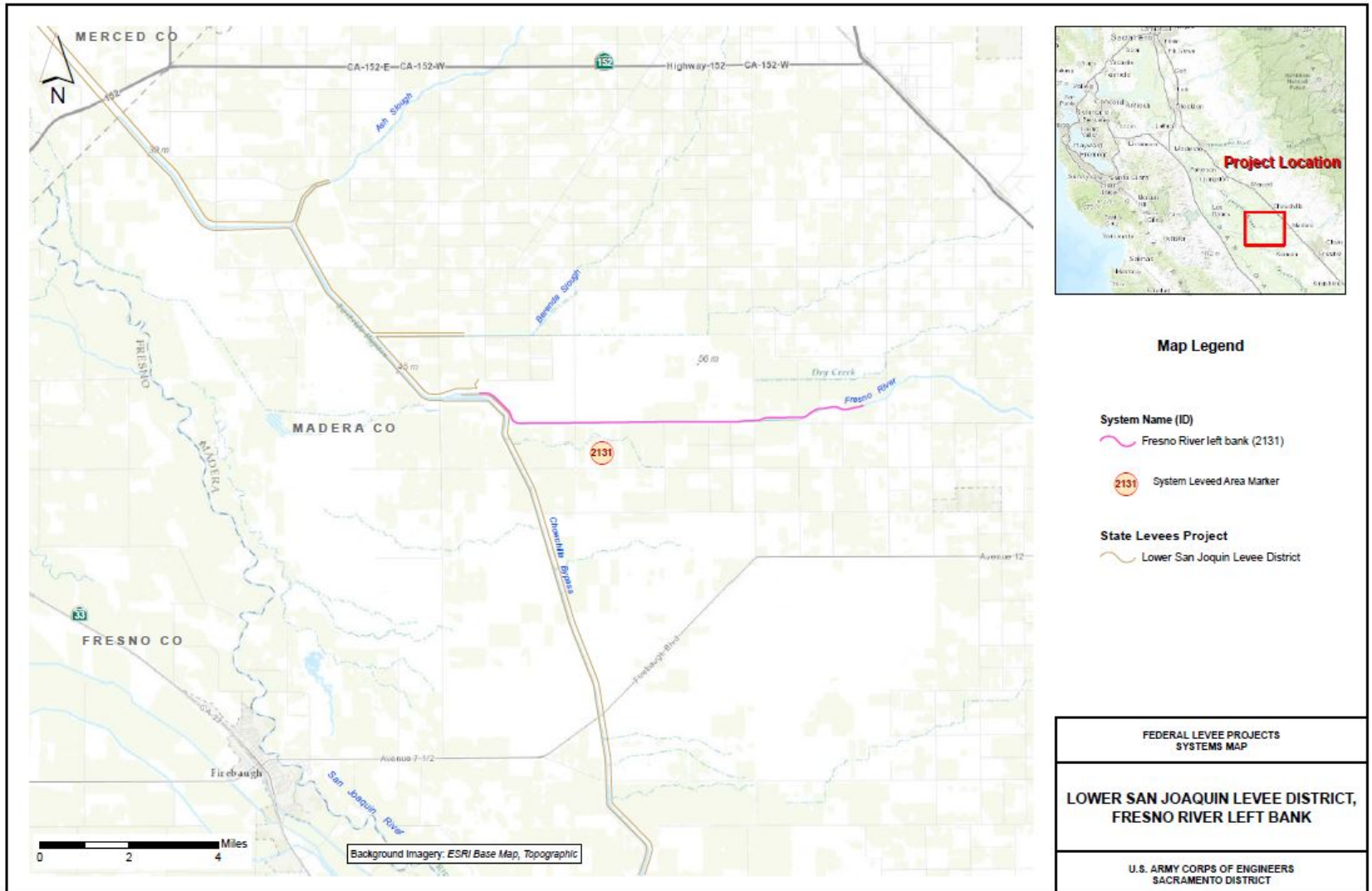
	System: Berenda Slough left bank - Fresno River right bank System Rating: Unacceptable Approved SWIF/LOI: No PL 84-99 RP Eligibility: Inactive	<div>Chowchilla River - Berenda Slough left bank (CHW4)</div> <div>Fresno River - right bank (FRN1)</div>							
General	Operations and Maintenance Manuals	M	M						
	Emergency Supplies and Equipment	M	M						
	Flood Preparedness and Training	M	M						
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U	U						
	Closure Structures	NA	NA						
	Slope Stability	M	M						
	Erosion/Bank Caving	U	U						
	Animal Control	U	U						
	Culverts/Discharge Pipes	NA	NA						
	Underseepage Relief Wells/Toe Drainage Systems	NA	NA						
Levee Embankment - Other Items	Vegetation Growth	U	U						
	Sod Cover	M	M						
	Settlement	M	M						
	Depressions/Rutting	U	M						
	Cracking	A	A						
	Riprap Revetments & Bank Protection	NA	M						
	Revetments other than Riprap	NA	M						
	Seepage	M	A						
	Legend A Acceptable M Minimally Acceptable U Unacceptable N/A Not Applicable	M U U	Not likely to prevent performance in next flood event / Active Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive Likely prevents performance in next flood event / Inactive						



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Fresno River Left Bank



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	<p>System: Fresno River left bank</p> <p>System Rating: Unacceptable</p> <p>Approved SWIF/LOI: No</p> <p>PL 84-99 RP Eligibility: Inactive</p>	Fresno River left bank (FRN2)							
General	Operations and Maintenance Manuals	M							
	Emergency Supplies and Equipment	M							
	Flood Preparedness and Training	M							
Levee - Items Affecting PL 84-99 RP Eligibility	Encroachments	U							
	Closure Structures	NA							
	Slope Stability	U							
	Erosion/Bank Caving	U							
	Animal Control	U							
	Culverts/Discharge Pipes	NA							
	Underseepage Relief Wells/Toe Drainage Systems	NA							
Levee Embankments - Other Items	Vegetation Growth	U							
	Sod Cover	U							
	Settlement	M							
	Depressions/Rutting	U							
	Cracking	A							
	Riprap Revetments & Bank Protection	M							
	Revetments other than Riprap	NA							
	Seepage	U							
	<p><u>Legend</u></p> <p>A Acceptable</p> <p>M Minimally Acceptable</p> <p>U Unacceptable</p> <p>N/A Not Applicable</p>	<p>U Not likely to prevent performance in next flood event / Active</p> <p>U Serious deficiency noted in past inspection report has not been corrected within the established timeframe / Inactive</p> <p>U Likely prevents performance in next flood event / Inactive</p>							



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