

APPENDIX

A.
Erosion Hazard Data Sheets
for
Methodology 1: 16 Physical Factors and One Economic
Factor

B.
Erosion Hazard Data Sheets
for
Methodology 2: 10 Physical Factors and no Economic
Factor

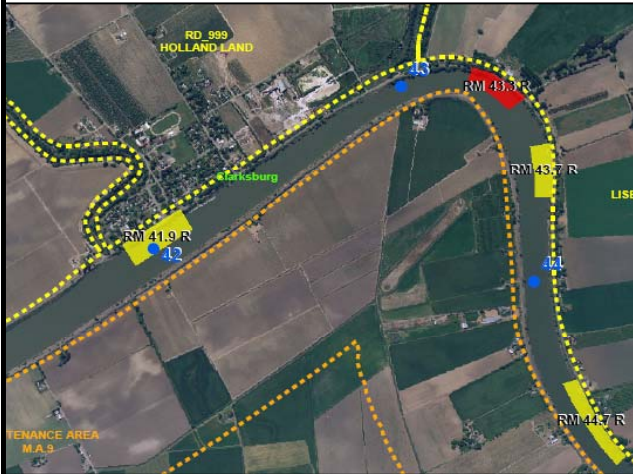
C.
Erosion Hazard Data Sheets
for
Methodology 3: 5 Physical Factors and Revised
Economic Factor

D.
Erosion Hazard Data Sheets
for
Methodology 4: 5 Physical Factors and no Economic
Factor

APPENDIX A

Erosion Hazard Data Sheets for Methodology 1: 16 Physical Factors and one Economic Factor

Sacramento River, RM 43.3R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Pre-Rock	Post-Rock	Notes
Bank Slope (*2)	4	4	1:1 or less
Berm Width (*2) - Estimated	5	5	no berm
Length of erosion	4	4	1060 ft
Location of erosion	5	5	toe and underwater, bank (still eroding underwater and at the toe with the rock)
Bank Stability	4	2	vertical sections, greater than half height (still some vertical sections with rock, but not as tall)
Radius of Curvature (R_c/w)	3	3	$R/w = 2.4$ (Ayres calculation)
Site Relative to Bend	5	5	outside of a less than 90 degree bend
Geomorph	0	0	no migration expected
Vegetation Cover	2	4	40 to 60 % (with rock, less vegetation, removed what was there and didn't replant, less than 20%)
Tree Hazard	5	5	large leaning trees, visible roots (tree hazards are still present even with the rock)
Soil Type (*2)	3	3	sand
Velocity (*2)	4	4	5.4 ft/s (UNET model)
Wave Action (Wind/Boat)	4	4	heavy waves
Economic Factor (*2)	2	2	farms and small town (Clarksburg)
Human Usage	5	5	daily
Seepage Potential	0	0	no known seepage history
Tidal Fluctuation	3	3	about 3 ft of tidal flux
Erosion Hazard	76	76	Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 26.9L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	near vertical to vertical
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	280 ft
Location of erosion	4	all bank and toe
Bank Stability	4	vertical sections (entire slope), no caves
Radius of Curvature (R_c/w)	0	$R/w = 5.7$ (Ayres calculation)
Site Relative to Bend	2	just downstream of a bend
Geomorph	0	no migration expected
Vegetation Cover	4	less than 20% cover
Tree Hazard	5	trees, roots exposed, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.9 ft/s (UNET model)
Wave Action (Wind/Boat)	4	heavy wave action
Economic Factor (*2)	2	adjacent to Walnut Grove, population 669 (2000 US Census)
Human Usage	5	Daily
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	4 ft of tidal flux

Erosion Hazard

70

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 78L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	3	0 - 15 ft of berm (varies)
Length of erosion	4	1100 ft
Location of erosion	5	toe and underwater
Bank Stability	5	animal burrows, vertical sections
Radius of Curvature (R_c/w)	0	$R/w = 7$ (Ayres calculation)
Site Relative to Bend	2	just downstream of a bend
Geomorph	0	no migration expected
Vegetation Cover	1	75-80 %
Tree Hazard	5	exposed roots and leaning trees
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET calculation)
Wave Action (Wind/Boat)	3	moderate
Economic Factor (*2)	5	adjacent to Sacramento, population 407,018 (2000 US census)
Human Usage	4	weekly
Seepage Potential	5	yes, known history
Tidal Fluctuation	1	about 1 ft or less of tidal flux

Erosion Hazard

69

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, Rm 56.7L (unrepaired state)



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	5	1675 ft
Location of erosion	4	toe and lower slope
Bank Stability	5	large beaver holes, multiple vertical sections
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration
Vegetation Cover	1	about 60 - 70 %
Tree Hazard	5	exposed roots, large trees, some overturned, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.5 ft/s (UNET)
Wave Action (Wind/Boat)	5	heavy boat use
Economic Factor (*2)	5	Sacramento
Human Usage	0	rare, against freeway and railroad.
Seepage Potential	0	no know seepage history
Tidal Fluctuation	2	about 2 ft of tidal flux

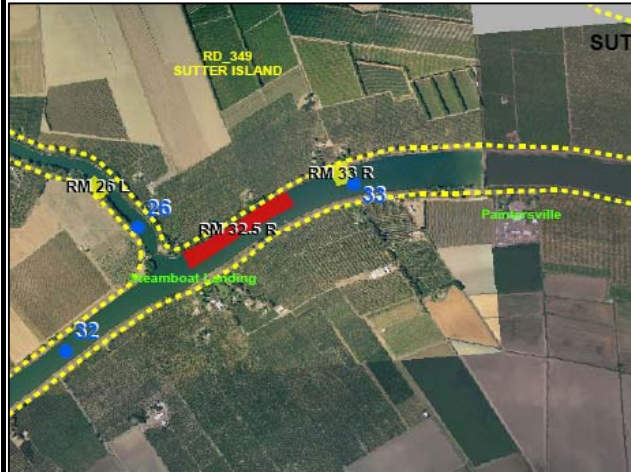
Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 32.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	5	1850 ft
Location of erosion	5	bank, toe, and underwater
Bank Stability	5	vertical sections, not more than half bank height, some caves, erosion is threatening the road
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	1	about 70 - 80 % cover
Tree Hazard	5	large trees, lots of roots showing, leaning
Soil Type (*2)	3	sand
Velocity (*2)	4	5.6 ft/s (UNET model)
Wave Action (Wind/Boat)	4	heavy waves
Economic Factor (*2)	1	Farms
Human Usage	4	weekly
Seepage Potential	0	no known seepage history
Tidal Fluctuation	3	about 3 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 55.8R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	close to 1:1
Berm Width (*2) - Estimated	5	no berm
Length of erosion	3	850 ft
Location of erosion	2	into the lower bank
Bank Stability	4	vertical slope sections, more than half bank height
Radius of Curvature (R_c/w)	2	$R/w = 3.3$ (Ayres calculation)
Site Relative to Bend	0	inside of a bend
Geomorph	0	no migration expected
Vegetation Cover	2	about 40 to 60% cover
Tree Hazard	3	Large trees
Soil Type (*2)	3	sand
Velocity (*2)	3	4.5 ft/s (UNET model)
Wave Action (Wind/Boat)	5	heavy boats
Economic Factor (*2)	4	adjacent to West Sacramento, population 31, 615 (2000 US Census)
Human Usage	4	weekly
Seepage Potential	0	no known seepage history
Tidal Fluctuation	2	about 2 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 26.5L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	460 ft
Location of erosion	2	lower bank
Bank Stability	4	vertical sections, more than half the height
Radius of Curvature (R_c/w)	1	$R/w = 4.4$ (Ayres calculation)
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	3	about 40% cover
Tree Hazard	5	trees with exposed roots and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.9 ft/s (UNET model)
Wave Action (Wind/Boat)	4	Heavy waves
Economic Factor (*2)	2	Walnut Grove, population 669 (2000 US Census)
Human Usage	5	Daily
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	4 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 26.0L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Vertical slope
Berm Width (*2) - Estimated	3	0 - 20 ft
Length of erosion	4	1400 ft
Location of erosion	5	Bank, toe nad underwater
Bank Stability	5	lots of cave, and vertical sections
Radius of Curvature (R_c/w)	0	$R/w = 5.1$ (Ayres calculation)
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	3	most veg is growing on the tree roots, not in the ground, about 30 %
Tree Hazard	5	Large trees, exposed roots, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	4	5.0 (UNET model)
Wave Action (Wind/Boat)	3	Moderate waves
Economic Factor (*2)	1	Farms
Human Usage	0	rare, no access
Seepage Potential	0	no known history
Tidal Fluctuation	4	4 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 85.6R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	4	1 to 4 ft of berm (0 ft in some spots)
Length of erosion	2	430 ft
Location of erosion	4	lower bank and toe
Bank Stability	5	small animal burrows, caves from fallen trees, vertical sections
Radius of Curvature (R_c/w)	4	$R/w = 1.6$ (Ayres calculation)
Site Relative to Bend	4	outside of a 90 degree bend
Geomorph	0	no migration expected
Vegetation Cover	1	60-80% cover
Tree Hazard	5	Huge trees, all roots exposed, many leaning
Soil Type (*2)	2	silts and clay
Velocity (*2)	3	4.5 ft/s (UNET model)
Wave Action (Wind/Boat)	1	occasional boats
Economic Factor (*2)	2	near Knight's Landing
Human Usage	1	occasional usage, road nearby, so accessible, but no signs
Seepage Potential	5	yes, history of seepage
Tidal Fluctuation	0	not tidal

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 10.8L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	5	1600 ft
Location of erosion	2	All bank
Bank Stability	4	vertical sections more than half bank height
Radius of Curvature (R_c/w)	1	$R/w = 4.4$ (Ayres calculation)
Site Relative to Bend	1	just about straight
Geomorph	0	no migration expected
Vegetation Cover	2	about 50 - 60 % cover
Tree Hazard	0	no trees
Soil Type (*2)	1	clays and rock at toe
Velocity (*2)	5	6.8 ft/s (UNET model)
Wave Action (Wind/Boat)	5	Heavy winds, large ships
Economic Factor (*2)	1	Farms
Human Usage	5	Daily, trash, and shelter set up
Seepage Potential	0	no known history
Tidal Fluctuation	5	5 ft of flux

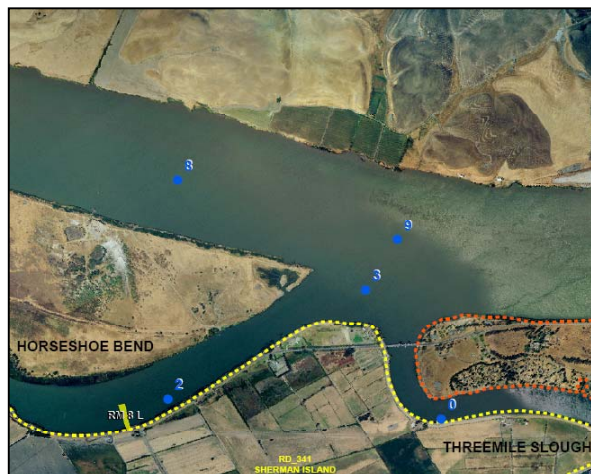
Erosion Hazard

62

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 8L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Vertical Bank
Berm Width (*2) - Estimated	3	8-10 ft (about at levee height)
Length of erosion	1	98 ft
Location of erosion	2	All Bank
Bank Stability	4	Vertical sections, greater than half the slope height
Radius of Curvature (R_c/w)	2	$R/w = 3$ (Ayres calculation)
Site Relative to Bend	3	outside of gentle bend
Geomorph	0	no migration expected
Vegetation Cover	3	about 20 - 30 % cover
Tree Hazard	0	No trees
Soil Type (*2)	1	Clays
Velocity (*2)	3	4.9 ft/s (UNET model)
Wave Action (Wind/Boat)	5	Heavy Wind, large ships pass by
Economic Factor (*2)	1	Farms
Human Usage	4	weekly, path down, but steep
Seepage Potential	0	no know seepage problems
Tidal Fluctuation	5	about 5 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Inspection Date: 9/8/2005

Flow on Inspection Day:

Georgiana Slough, RM 10.3L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	2	10 - 20 ft of berm
Length of erosion	2	250 ft
Location of erosion	5	toe and underwater
Bank Stability	5	vertical sections and caves
Radius of Curvature (R_c/w)	5	$R/w = 0.7$ (Ayres calculation)
Site Relative to Bend	0	inside of a bend
Geomorph	0	no migration expected
Vegetation Cover	1	70 - 80 %
Tree Hazard	5	exposed roots, trees appear to be growing sideways in some places
Soil Type (*2)	3	sand
Velocity (*2)	1	2 - 4 ft/s
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	2	adjacent to Walnut Grove, population 669 (2000 US Census)
Human Usage	4	weekly, houses, old rock, rope swing
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	about 4 ft of tidal flux

Erosion Hazard

55

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 34.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	430 ft
Location of erosion	2	lower bank
Bank Stability	2	vertical section less than half height, no caves, more rock was placed to fill in large holes from previous year. (photo from 2004)
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	4	less than 20%
Tree Hazard	0	no trees
Soil Type (*2)	3	sands
Velocity (*2)	4	5.6 ft/s (UNET model)
Wave Action (Wind/Boat)	3	Moderate waves
Economic Factor (*2)	1	Farms
Human Usage	3	Monthly
Seepage Potential	0	no know seepage history
Tidal Fluctuation	3	3 ft of tidal flux

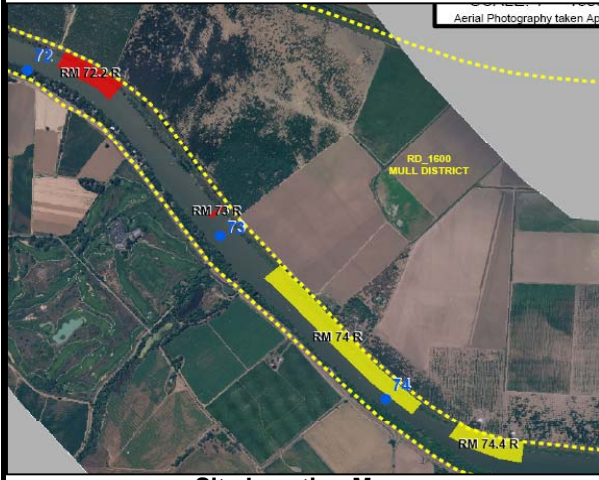
Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 72.2R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	near vertical, won't support vegetation
Berm Width (*2) - Estimated	2	12 - 15 ft
Length of erosion	4	1360 ft
Location of erosion	5	toe and underwater
Bank Stability	5	large holes, multiple vertical sections
Radius of Curvature (R_c/w)	0	$R/w = 6.3$
Site Relative to Bend	3	outside of a slight bend
Geomorph	0	no migration expected
Vegetation Cover	1	60 - 70 %
Tree Hazard	5	large trees, exposed roots, leaning
Soil Type (*2)	2	silty clay
Velocity (*2)	3	4.7 ft/s (UNET model)
Wave Action (Wind/Boat)	3	moderate
Economic Factor (*2)	1	none
Human Usage	0	Farms
Seepage Potential	0	no known seepage history
Tidal Fluctuation	1	about 1 ft of tidal flux

Erosion Hazard

53

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sutter Slough, RM 25.1R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	3	600 ft
Location of erosion	5	toe and underwater
Bank Stability	5	vertical sections, greater than half bank height, holes from fallen trees
Radius of Curvature (R_c/w)	1	$R/w = 4$ (Ayres calculation)
Site Relative to Bend	3	outside of a gentle bend
Geomorph	0	no migration expected
Vegetation Cover	1	70 - 80 %
Tree Hazard	5	exposed roots, leaning and fallen trees
Soil Type (*2)	1	clays
Velocity (*2)	0	backwater, less than 2 ft/s
Wave Action (Wind/Boat)	4	heavy
Economic Factor (*2)	1	Farms
Human Usage	1	occassional
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	about 4 ft of tidal flux

Erosion Hazard

52

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 22.7L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	210 ft
Location of erosion	3	Toe
Bank Stability	2	vertical sections, less than half slope height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	2	about 60 %
Tree Hazard	5	big tree recently fell, trees leaning away from river, likely to slide in
Soil Type (*2)	3	Sand
Velocity (*2)	2	4.4 ft/s (UNET model)
Wave Action (Wind/Boat)	4	Heavy wind and boat
Economic Factor (*2)	1	Farms
Human Usage	1	Occassional
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	4 ft of tidal flux

Erosion Hazard

52

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 26.1R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	310 ft
Location of erosion	1	middle bank
Bank Stability	0	no vertical sections or caves
Radius of Curvature (R_c/w)	0	$R/w = 5.1$ (Ayres calculation)
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	2	about 50%
Tree Hazard	0	small trees
Soil Type (*2)	3	sand
Velocity (*2)	4	5.0 ft/s (UNET model)
Wave Action (Wind/Boat)	3	Moderate wave action
Economic Factor (*2)	2	adjacent to part of Walnut Grove, population 669 (2000 US Census)
Human Usage	4	weekly
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	4 ft of tidal flux

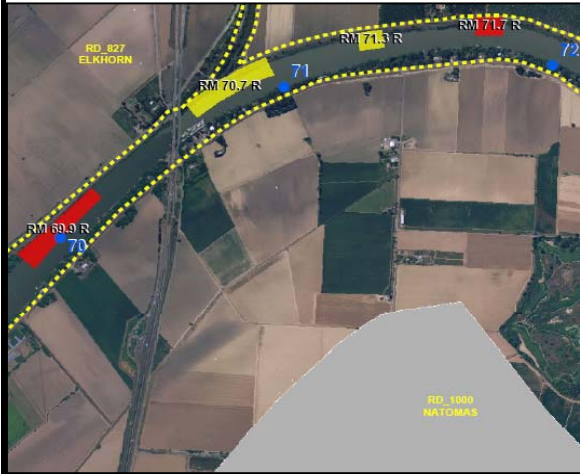
Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 69.9R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	4	little berm
Length of erosion	5	2000 ft
Location of erosion	5	toe and underwater
Bank Stability	2	vertical slopes, less than half bank height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	0	80-90% cover
Tree Hazard	5	large trees, leaning, visible roots
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET model)
Wave Action (Wind/Boat)	3	Moderate
Economic Factor (*2)	1	Farms
Human Usage	0	none
Seepage Potential	0	no known seepage history
Tidal Fluctuation	1	about 1 ft of tidal flux

Erosion Hazard

50

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 130.8R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	2	10 - 19 ft
Length of erosion	2	200 ft
Location of erosion	5	bank, toe, and underwater
Bank Stability	2	small vertical section
Radius of Curvature (R_c/w)	4	$R/w = 1.1$ (Ayres calculation)
Site Relative to Bend	3	outside of a less than 90 degree bend
Geomorph	0	opposite bank will likely pass this site
Vegetation Cover	2	40 - 50%
Tree Hazard	5	large trees, roots visible, leaning
Soil Type (*2)	1	clay
Velocity (*2)	3	4.5 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	2	Upstream if the small town fo Grimes
Human Usage	1	occassional, private property adjacent, but a pump that needs checking
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

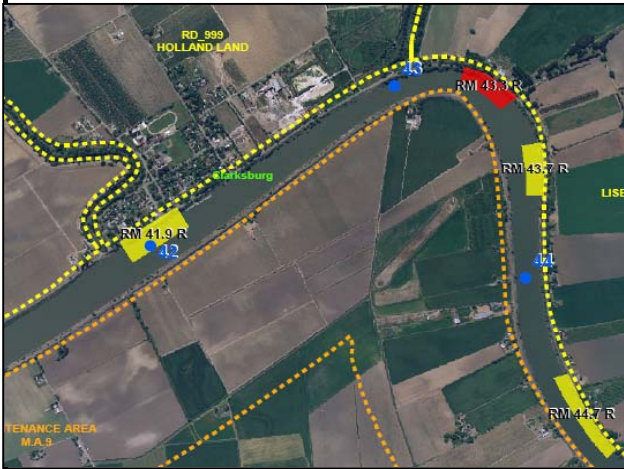
Erosion Hazard

50

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 42.8R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1
Berm Width (*2) - Estimated	5	no berm
Length of erosion	1	about 100 ft
Location of erosion	0	upper bank
Bank Stability	0	no vertical sections or caves
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	2	just downstream of a bend
Geomorph	0	no migration expected
Vegetation Cover	1	60 -65 %
Tree Hazard	1	young trees
Soil Type (*2)	3	sand
Velocity (*2)	4	5.4 ft/s (UNET model)
Wave Action (Wind/Boat)	3	moderate wave action
Economic Factor (*2)	2	small town (Clarksburg)
Human Usage	5	Daily
Seepage Potential	0	no know seepage history
Tidal Fluctuation	3	about 3 ft of tidal flux

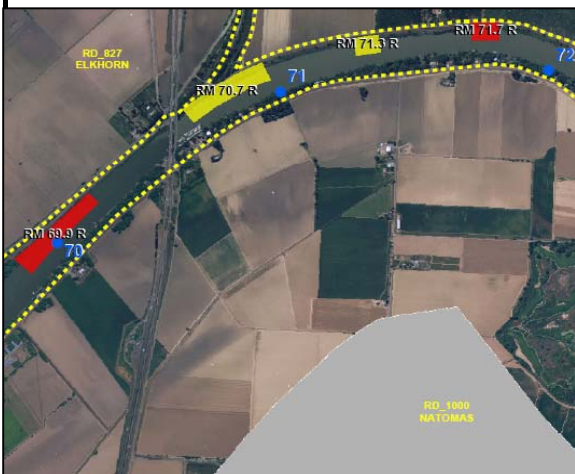
Erosion Hazard

50

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 71-7R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	1	20+ ft
Length of erosion	3	560 ft
Location of erosion	5	toe and underwater
Bank Stability	5	lots of serious holes, many vertical sections
Radius of Curvature (R_c/w)	0	$R/w = 5.7$
Site Relative to Bend	3	outside of a mild bend
Geomorph	0	no migration expected
Vegetation Cover	2	40 - 60%
Tree Hazard	5	large trees, visible roots, leaning
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET model)
Wave Action (Wind/Boat)	3	moderate
Economic Factor (*2)	1	Farms
Human Usage	0	none, private land adjacent
Seepage Potential	0	no known seepage history
Tidal Fluctuation	1	about 1 ft of tidal flux

Erosion Hazard

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[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 141.4R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	2	10 - 12 ft, appears the levee has been re-built
Length of erosion	5	2000 ft
Location of erosion	5	Bank and toe, underwater
Bank Stability	2	some vertical sections
Radius of Curvature (R_c/w)	1	$R/w = 4.5$ (Ayres calculation)
Site Relative to Bend	3	outside of a less than 90 degree bend
Geomorph	0	not expected
Vegetation Cover	3	40%
Tree Hazard	5	large trees with exposed roots and leaning
Soil Type (*2)	1	clays
Velocity (*2)	2	4.4 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	3	Next to Colusa, population 5,402 (2000 US Census)
Human Usage	1	occasional
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

Erosion Hazard

49

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 99.5R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	4	1020 ft
Location of erosion	5	toe and underwater
Bank Stability	2	vertical section
Radius of Curvature (R_c/w)	4	$R/w = 1.0$ (Ayres calculation)
Site Relative to Bend	4	outside of a 90 degree bend
Geomorph	0	no migration expected
Vegetation Cover	2	50-60 %
Tree Hazard	0	small trees
Soil Type (*2)	2	clays and silts
Velocity (*2)	2	4.2 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	1	Farms
Human Usage	0	not easily accessible, rare
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

Erosion Hazard

49

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 154.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Near Vertical
Berm Width (*2) - Estimated	1	20 - 30 ft
Length of erosion	2	210 ft
Location of erosion	3	bank and toe
Bank Stability	4	vertical sections, more than half height
Radius of Curvature (R_c/w)	2	$R/w = 3.9$ (ayres calculation)
Site Relative to Bend	3	outside of a greater than 90 degree bend
Geomorph	2	has room to migrate on the left bank
Vegetation Cover	3	20 - 30 %
Tree Hazard	0	no trees
Soil Type (*2)	1	clays and rock
Velocity (*2)	2	4.2 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	3	upstream of Colusa, population 5,402 (2000 US Census)
Human Usage	3	monthly, adjacent to road, easy access, but steep
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

Erosion Hazard

48

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 130L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5 : 1 slope
Berm Width (*2) - Estimated	2	10 - 20 ft
Length of erosion	3	560 ft
Location of erosion	1	upper and middle bank
Bank Stability	2	small vertical section
Radius of Curvature (R_c/w)	4	$R/w = 1.3$ (Ayres calculation)
Site Relative to Bend	4	outside of 90 degree bend
Geomorph	0	no immediate effect
Vegetation Cover	3	burnt vegetation, 30 %
Tree Hazard	4	exposed roots
Soil Type (*2)	1	clays
Velocity (*2)	3	4.5 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	2	small town of Meridian
Human Usage	1	occassional, no evidence of people however near the highway
Seepage Potential	0	no known history
Tidal Fluctuation	0	not tidal

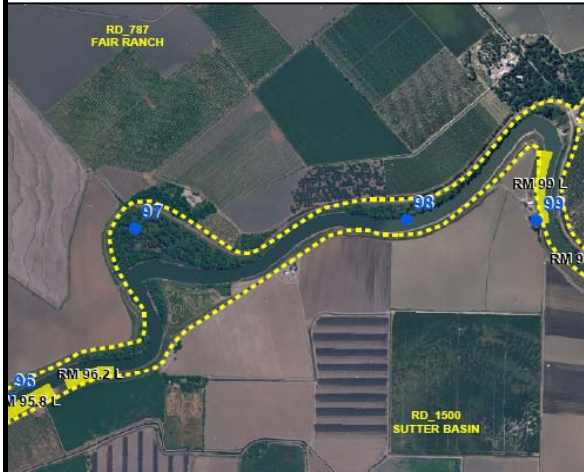
Erosion Hazard

46

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 96.2L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	1	about 25 ft
Length of erosion	3	900 ft
Location of erosion	4	bank and toe, sand has deposited on the downstream end
Bank Stability	5	small vertical sections, multiple small animal holes
Radius of Curvature (R_c/w)	4	$R/w = 1.2$ (Ayres calculation)
Site Relative to Bend	2	just downstream of a bend
Geomorph	0	no migration expected
Vegetation Cover	3	about 30%
Tree Hazard	0	no trees
Soil Type (*2)	2	clays and silts, sand has deposited on the downstream end
Velocity (*2)	2	4.2 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low waves
Economic Factor (*2)	1	Farms
Human Usage	2	seasonal usage
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

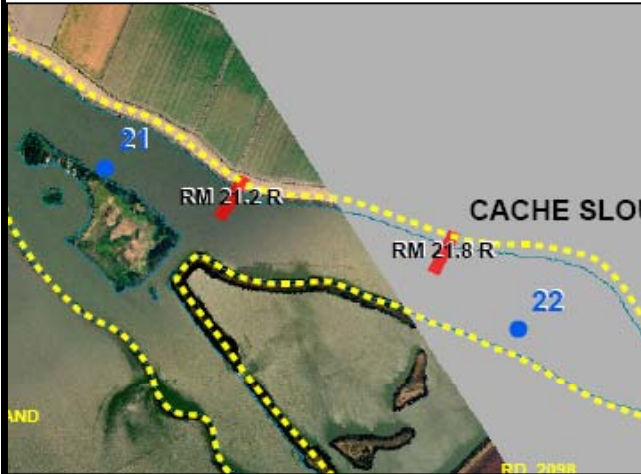
Erosion Hazard

45

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Cache Slough, RM 21.8R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	2	2:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	5	1590 ft
Location of erosion	4	lower bank and toe
Bank Stability	4	vertical sections, greater than half the bank height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no, backwater slough
Vegetation Cover	4	burned, less than 20 %
Tree Hazard	0	one tree, not a problem
Soil Type (*2)	1	clays
Velocity (*2)	0	backwater, less than 2 ft/s
Wave Action (Wind/Boat)	4	Heavy wind
Economic Factor (*2)	1	Farms
Human Usage	0	none, private land
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	about 4 ft of tidal flux

Erosion Hazard

44

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 164R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	2	15 ft
Length of erosion	2	490 ft
Location of erosion	4	Bank and toe
Bank Stability	2	vertical sections, less than half slope, there appears to be fresh rock on bank
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	2	room to migrate on left bank
Vegetation Cover	2	40 - 50%
Tree Hazard	0	no trees
Soil Type (*2)	2	clays and silts
Velocity (*2)	2	4.2 ft/s (UNET model)
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	2	adjacent to small town of Princeton
Human Usage	4	weekly, road adjacent, paths down to water
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

Erosion Hazard

43

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Elk Slough, RM 0.7



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Length of erosion	2	300 ft
Location of erosion	4	toe and bank
Bank Stability	2	vertical sections, less than half bank height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	0	80-90%
Tree Hazard	4	large trees with exposed roots
Soil Type (*2)	1	slays
Velocity (*2)	0	backwater, less than 2 ft/s
Wave Action (Wind/Boat)	2	low (only boatable durign high water)
Economic Factor (*2)	1	Farms
Human Usage	2	Seasonal usage
Seepage Potential	0	no known seepage history
Tidal Fluctuation	3	about 3 ft of tidal flux

Erosion Hazard

42

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 99.3R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	3	5 - 9 ft
Length of erosion	1	98 ft
Location of erosion	5	bank, toe, and below water
Bank Stability	2	vertical sections
Radius of Curvature (R_c/w)	4	$R/w = 1.1$
Site Relative to Bend	0	inside of a bend
Geomorph	0	no migration expected
Vegetation Cover	2	about 50 - 60 %
Tree Hazard	0	no trees
Soil Type (*2)	2	silty clay
Velocity (*2)	3	4.2 ft/s and eddy currents
Wave Action (Wind/Boat)	1	occasional
Economic Factor (*2)	1	Farms
Human Usage	0	none, too steep, not near public land
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	Not tidal

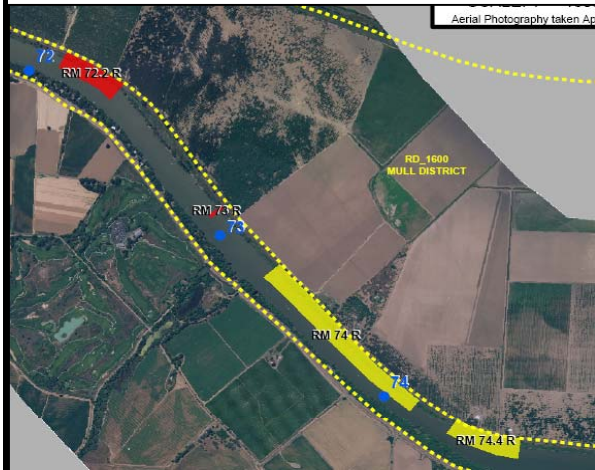
Erosion Hazard

41

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 73R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1
Berm Width (*2) - Estimated	3	5 - 10 ft of berm
Length of erosion	1	50 ft, rock protection on the upstream and downstream sides.
Location of erosion	4	toe and bank
Bank Stability	0	no visible vertical sections or caves
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	1	75-80 %
Tree Hazard	1	one tree, young
Soil Type (*2)	2	silts and clays
Velocity (*2)	5	4.7 ft/s (UNET model) and eddy currents
Wave Action (Wind/Boat)	3	moderate
Economic Factor (*2)	1	Farms
Human Usage	0	not likely, private land
Seepage Potential	0	no known seepage history
Tidal Fluctuation	1	about 1 ft of tidal flux

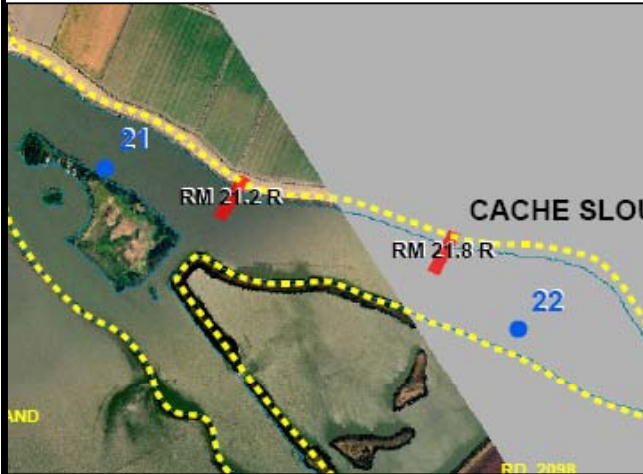
Erosion Hazard

40

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Cache Slough, RM 21.2R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	1	2.5:1 slopw
Berm Width (*2) - Estimated	5	no berm
Length of erosion	1	49 ft
Location of erosion	4	bank and toe
Bank Stability	2	vertical section, less than half bank height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	3	30%
Tree Hazard	1	young trees
Soil Type (*2)	1	clay
Velocity (*2)	0	backwater, less than 2 ft/s
Wave Action (Wind/Boat)	4	Heavy
Economic Factor (*2)	1	Farms
Human Usage	4	weekly, little campsite setup
Seepage Potential	0	no known seepage history
Tidal Fluctuation	4	about 4 ft of tidal flux

Erosion Hazard

40

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 123.5L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	3	5 - 9 ft
Length of erosion	2	330 ft
Location of erosion	5	bank, toe, and underwater
Bank Stability	2	vertical section, less than half bank height
Radius of Curvature (R_c/w)	0	straight
Site Relative to Bend	1	straight
Geomorph	0	no migration expected
Vegetation Cover	2	about 60%
Tree Hazard	0	no trees
Soil Type (*2)	1	clay
Velocity (*2)	3	4.6 ft/s
Wave Action (Wind/Boat)	2	low
Economic Factor (*2)	1	Farms
Human Usage	0	none
Seepage Potential	0	no known seepage history
Tidal Fluctuation	0	not tidal

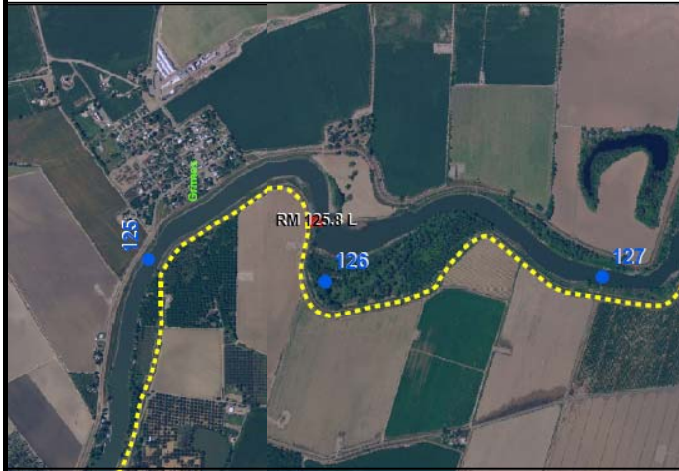
Erosion Hazard

38

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 125.8L



New rock on this site, it does not appear to be an erosion site anymore. The rock appears to be falling into place and healing itself.

Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 112 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)		
Berm Width (*2) - Estimated		
Length of erosion		
Location of erosion		
Bank Stability		
Radius of Curvature (R_c/w)		
Site Relative to Bend		
Geomorph		
Vegetation Cover		
Tree Hazard		
Soil Type (*2)		
Velocity (*2)		
Wave Action (Wind/Boat)		
Economic Factor (*2)		
Human Usage		
Seepage Potential		
Tidal Fluctuation		

Erosion Hazard

0

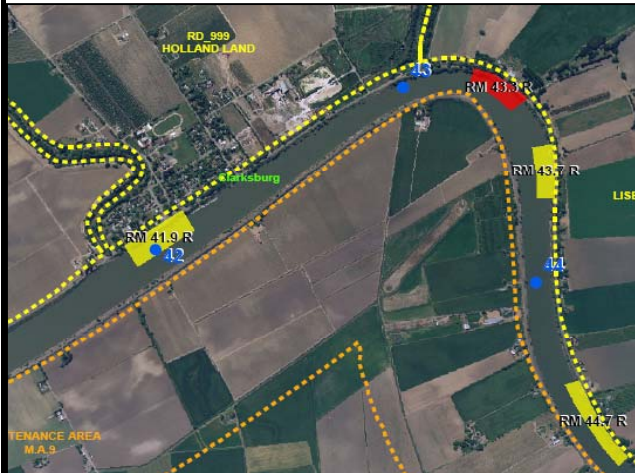
[Calculate Erosion Hazard](#)

Flow on Inspection Day:

APPENDIX B

Erosion Hazard Data Sheets for Methodology 2: 10 Physical Factors and no Economic Factor

Sacramento River, RM 43.3R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Pre-Rock	Post-Rock	Notes
Bank Slope (*2)	4	4	1:1 or less
Berm Width (*2) - Estimated	5	5	no berm
Location of erosion	5	5	toe and underwater, bank (still eroding underwater and at the toe with the rock)
Bank Stability	4	2	vertical sections, greater than half height (still some vertical sections with rock, but not as tall)
Site Relative to Bend	5	5	outside of a less than 90 degree bend
Vegetation Cover	2	4	40 to 60 % (with rock, less vegetation, removed what was there and didn't replant, less than 20%)
Tree Hazard	5	5	large leaning trees, visible roots (tree hazards are still present even with the rock)
Soil Type (*2)	3	3	sand
Velocity (*2)	4	4	5.4 ft/s (UNET model)
Human Usage	5	5	daily
Erosion Hazard	58	58	<input type="button" value="Calculate Erosion Hazard"/>
Flow on Inspection Day:			

Sacramento River, RM 26.9L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	near vertical to vertical
Berm Width (*2) - Estimated	5	no berm
Location of erosion	4	all bank and toe
Bank Stability	4	vertical sections (entire slope), no caves
Site Relative to Bend	2	just downstream of a bend
Vegetation Cover	4	less than 20% cover
Tree Hazard	5	trees, roots exposed, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.9 ft/s (UNET model)
Human Usage	5	Daily

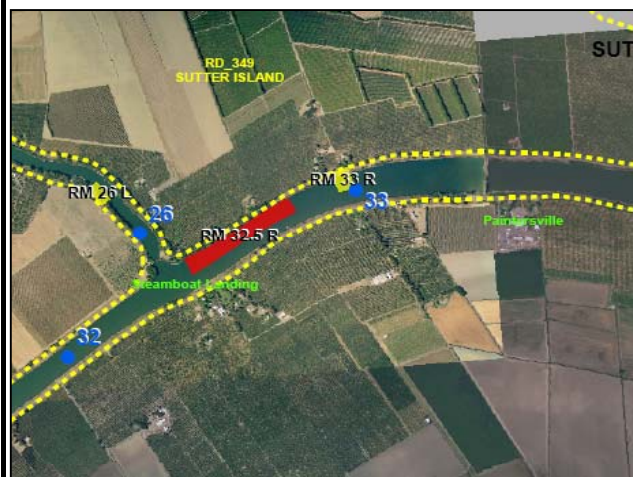
Erosion Hazard

56

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 32.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	5	bank, toe, and underwater
Bank Stability	5	vertical sections, not more than half bank height, some caves, erosion is threatening the road
Site Relative to Bend	1	straight
Vegetation Cover	1	about 70 - 80 % cover
Tree Hazard	5	large trees, lots of roots showing, leaning
Soil Type (*2)	3	sand
Velocity (*2)	4	5.6 ft/s (UNET model)
Human Usage	4	weekly

Erosion Hazard

53

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 26.0L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Vertical slope
Berm Width (*2) - Estimated	3	0 - 20 ft
Location of erosion	5	Bank, toe nad underwater
Bank Stability	5	lots of cave, and vertical sections
Site Relative to Bend	1	straight
Vegetation Cover	3	most veg is growing on the tree roots, not in the ground, about 30 %
Tree Hazard	5	Large trees, exposed roots, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	4	5.0 (UNET model)
Human Usage	0	rare, no access

Erosion Hazard

49

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 26.5L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	2	lower bank
Bank Stability	4	vertical sections, more than half the height
Site Relative to Bend	1	straight
Vegetation Cover	3	about 40% cover
Tree Hazard	5	trees with exposed roots and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.9 ft/s (UNET model)
Human Usage	5	Daily

Erosion Hazard

48

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 78L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	3	0 - 15 ft of berm (varies)
Location of erosion	5	toe and underwater
Bank Stability	5	animal burrows, vertical sections
Site Relative to Bend	2	just downstream of a bend
Vegetation Cover	1	75-80 %
Tree Hazard	5	exposed roots and leaning trees
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET calculation)
Human Usage	4	wekly

Erosion Hazard

46

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, Rm 56.7L (unrepaired state)



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	4	toe and lower slope
Bank Stability	5	large beaver holes, multiple vertical sections
Site Relative to Bend	1	straight
Vegetation Cover	1	about 60 - 70 %
Tree Hazard	5	exposed roots, large trees, some overturned, and leaning
Soil Type (*2)	3	sand
Velocity (*2)	3	4.5 ft/s (UNET)
Human Usage	0	rare, against freeway and railroad.

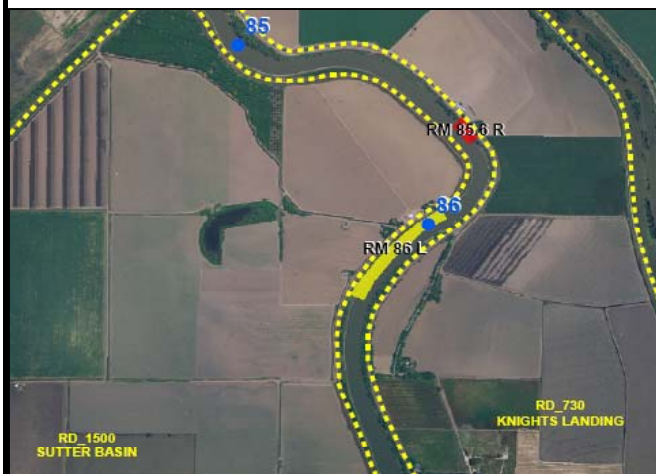
Erosion Hazard

46

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 85.6R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	4	1 to 4 ft of berm (0 ft in some spots)
Location of erosion	4	lower bank and toe
Bank Stability	5	small animal burrows, caves from fallen trees, vertical sections
Site Relative to Bend	4	outside of a 90 degree bend
Vegetation Cover	1	60-80% cover
Tree Hazard	5	Huge trees, all roots exposed, many leaning
Soil Type (*2)	2	silts and clay
Velocity (*2)	3	4.5 ft/s (UNET model)
Human Usage	1	occasional usage, road nearby, so accessible, but no signs

Erosion Hazard

46

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 55.8R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	close to 1:1
Berm Width (*2) - Estimated	5	no berm
Location of erosion	2	into the lower bank
Bank Stability	4	vertical slope sections, more than half bank height
Site Relative to Bend	0	inside of a bend
Vegetation Cover	2	about 40 to 60% cover
Tree Hazard	3	Large trees
Soil Type (*2)	3	sand
Velocity (*2)	3	4.5 ft/s (UNET model)
Human Usage	4	weekly

Erosion Hazard

45

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 10.8L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	2	All bank
Bank Stability	4	vertical sections more than half bank height
Site Relative to Bend	1	just about straight
Vegetation Cover	2	about 50 - 60 % cover
Tree Hazard	0	no trees
Soil Type (*2)	1	clays and rock at toe
Velocity (*2)	5	6.8 ft/s (UNET model)
Human Usage	5	Daily, trash, and shelter set up

Erosion Hazard

44

Calculate Erosion Hazard

Inspection Date: 9/8/2005

Flow on Inspection Day:

Sacramento River, RM 34.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	2	lower bank
Bank Stability	2	vertical section less than half height, no caves, more rock was placed to fill in large holes from previous year. (photo from 2004)
Site Relative to Bend	1	straight
Vegetation Cover	4	less than 20%
Tree Hazard	0	no trees
Soil Type (*2)	3	sands
Velocity (*2)	4	5.6 ft/s (UNET model)
Human Usage	3	Monthly

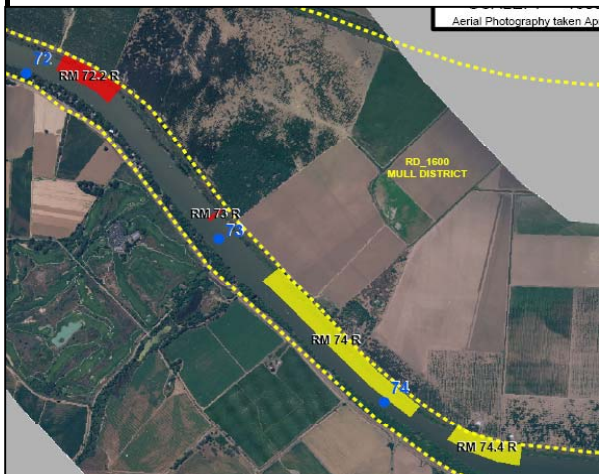
Erosion Hazard

44

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 72.2R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	near vertical, won't support vegetation
Berm Width (*2) - Estimated	2	12 - 15 ft
Location of erosion	5	toe and underwater
Bank Stability	5	large holes, multiple vertical sections
Site Relative to Bend	3	outside of a slight bend
Vegetation Cover	1	60 - 70 %
Tree Hazard	5	large trees, exposed roots, leaning
Soil Type (*2)	2	silty clay
Velocity (*2)	3	4.7 ft/s (UNET model)
Human Usage	0	Farms

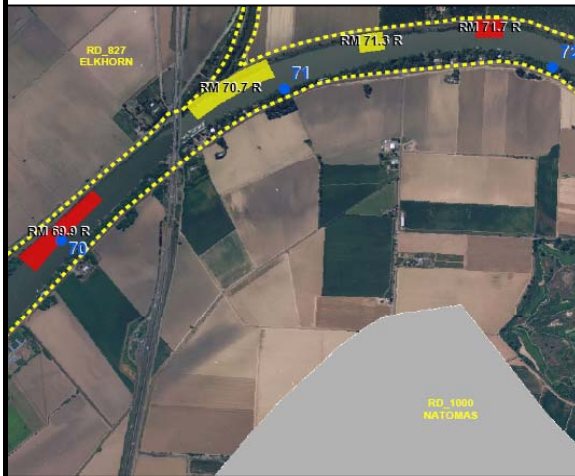
Erosion Hazard

43

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 71-7R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	1	20+ ft
Location of erosion	5	toe and underwater
Bank Stability	5	lots of serious holes, many vertical sections
Site Relative to Bend	3	outside of a mild bend
Vegetation Cover	2	40 - 60%
Tree Hazard	5	large trees, visible roots, leaning
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET model)
Human Usage	1	Farms

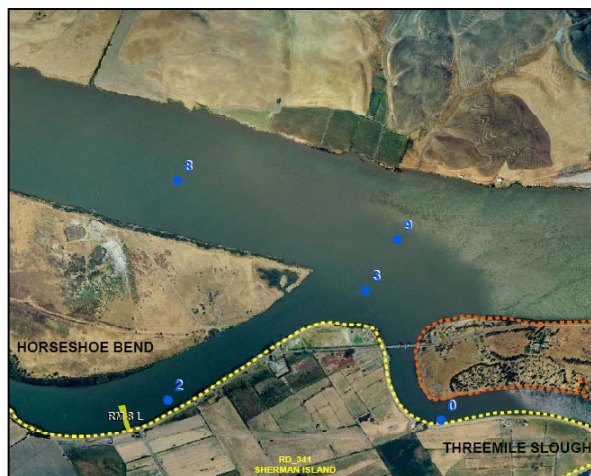
Erosion Hazard

41

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 8L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Vertical Bank
Berm Width (*2) - Estimated	3	8-10 ft (about at levee height)
Location of erosion	2	All Bank
Bank Stability	4	Vertical sections, greater than half the slope height
Site Relative to Bend	3	outside of gentle bend
Vegetation Cover	3	about 20 - 30 % cover
Tree Hazard	0	No trees
Soil Type (*2)	1	Clays
Velocity (*2)	3	4.9 ft/s (UNET model)
Human Usage	4	weekly, path down, but steep

Erosion Hazard

40

Calculate Erosion Hazard

Inspection Date: 9/8/2005

Flow on Inspection Day:

Sacramento River, RM 22.7L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	3	Toe
Bank Stability	2	vertical sections, less than half slope height
Site Relative to Bend	1	straight
Vegetation Cover	2	about 60 %
Tree Hazard	5	big tree recently fell, trees leaning away from river, likely to slide in
Soil Type (*2)	3	Sand
Velocity (*2)	2	4.4 ft/s (UNET model)
Human Usage	1	Occassional

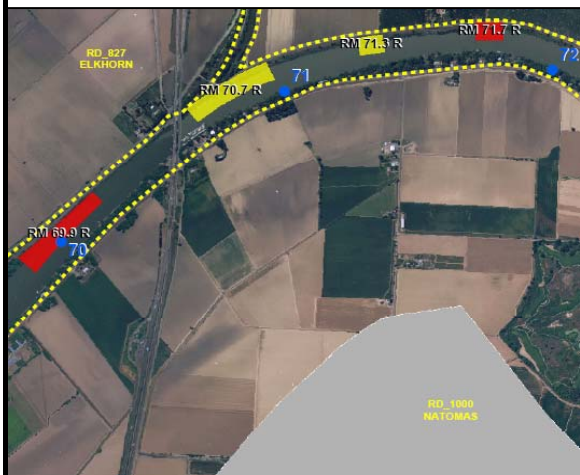
Erosion Hazard

40

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 69.9R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	4	little berm
Location of erosion	5	toe and underwater
Bank Stability	2	vertical slopes, less than half bank height
Site Relative to Bend	1	straight
Vegetation Cover	0	80-90% cover
Tree Hazard	5	large trees, leaning, visible roots
Soil Type (*2)	2	silts and clays
Velocity (*2)	3	4.7 ft/s (UNET model)
Human Usage	0	none

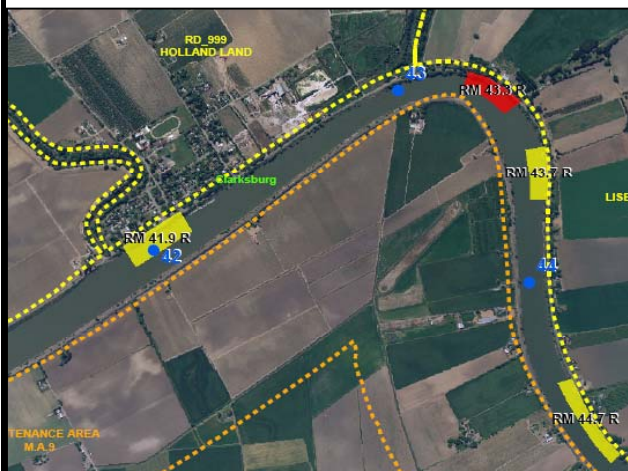
Erosion Hazard

39

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 42.8R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1
Berm Width (*2) - Estimated	5	no berm
Location of erosion	0	upper bank
Bank Stability	0	no vertical sections or caves
Site Relative to Bend	2	just downstream of a bend
Vegetation Cover	1	60 -65 %
Tree Hazard	1	young trees
Soil Type (*2)	3	sand
Velocity (*2)	4	5.4 ft/s (UNET model)
Human Usage	5	Daily

Erosion Hazard

39

Calculate Erosion Hazard

Flow on Inspection Day:

Georgiana Slough, RM 10.3L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	2	10 - 20 ft of berm
Location of erosion	5	toe and underwater
Bank Stability	5	vertical sections and caves
Site Relative to Bend	0	inside of a bend
Vegetation Cover	1	70 - 80 %
Tree Hazard	5	exposed roots, trees appear to be growing sideways in some places
Soil Type (*2)	3	sand
Velocity (*2)	1	2 - 4 ft/s
Human Usage	4	weekly, houses, old rock, rope swing

Erosion Hazard

38

Calculate Erosion Hazard

Flow on Inspection Day:

Sutter Slough, RM 25.1R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	5	toe and underwater
Bank Stability	5	vertical sections, greater than half bank height, holes from fallen trees
Site Relative to Bend	3	outside of a gentle bend
Vegetation Cover	1	70 - 80 %
Tree Hazard	5	exposed roots, leaning and fallen trees
Soil Type (*2)	1	clays
Velocity (*2)	0	backwater, less than 2 ft/s
Human Usage	1	occasional

Erosion Hazard

38

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 26.1R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	1	middle bank
Bank Stability	0	no vertical sections or caves
Site Relative to Bend	1	straight
Vegetation Cover	2	about 50%
Tree Hazard	0	small trees
Soil Type (*2)	3	sand
Velocity (*2)	4	5.0 ft/s (UNET model)
Human Usage	4	weekly

Erosion Hazard

38

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 130.8R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	2	10 - 19 ft
Location of erosion	5	bank, toe, and underwater
Bank Stability	2	small vertical section
Site Relative to Bend	3	outside of a less than 90 degree bend
Vegetation Cover	2	40 - 50%
Tree Hazard	5	large trees, roots visible, leaning
Soil Type (*2)	1	clay
Velocity (*2)	3	4.5 ft/s (UNET model)
Human Usage	1	occasional, private property adjacent, but a pump that needs checking

Erosion Hazard

38

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 99.5R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	5	toe and underwater
Bank Stability	2	vertical section
Site Relative to Bend	4	outside of a 90 degree bend
Vegetation Cover	2	50-60 %
Tree Hazard	0	small trees
Soil Type (*2)	2	clays and silts
Velocity (*2)	2	4.2 ft/s
Human Usage	0	not easily accessible, rare

Erosion Hazard

37

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 141.4R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1 slope
Berm Width (*2) - Estimated	2	10 - 12 ft, appears the levee has been re-built
Location of erosion	5	Bank and toe, underwater
Bank Stability	2	some vertical sections
Site Relative to Bend	3	outside of a less than 90 degree bend
Vegetation Cover	3	40%
Tree Hazard	5	large trees with exposed roots and leaning
Soil Type (*2)	1	clays
Velocity (*2)	2	4.4 ft/s (UNET model)
Human Usage	1	occasional

Erosion Hazard

35

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 154.5R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	5	Near Vertical
Berm Width (*2) - Estimated	1	20 - 30 ft
Location of erosion	3	bank and toe
Bank Stability	4	vartical sections, more than half height
Site Relative to Bend	3	outside of a greater than 90 degree bend
Vegetation Cover	3	20 - 30 %
Tree Hazard	0	no trees
Soil Type (*2)	1	clays and rock
Velocity (*2)	2	4.2 ft/s (UNET model)
Human Usage	3	monthly, adjacent to road, easy access, but steep

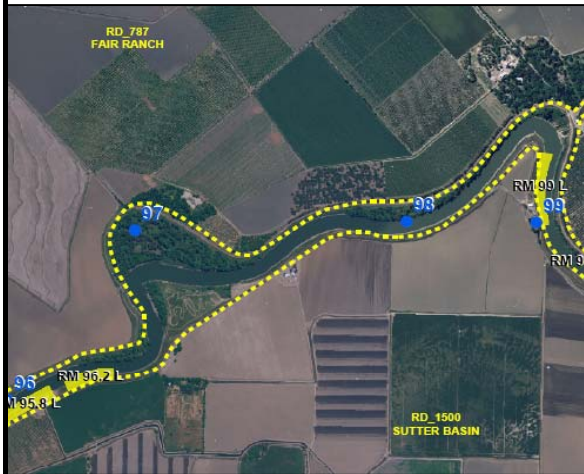
Erosion Hazard

34

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 96.2L



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	1	about 25 ft
Location of erosion	4	bank and toe, sand has deposited on the downstream end
Bank Stability	5	small vertical sections, multiple small animal holes
Site Relative to Bend	2	just downstream of a bend
Vegetation Cover	3	about 30%
Tree Hazard	0	no trees
Soil Type (*2)	2	clays and silts, sand has deposited on the downstream end
Velocity (*2)	2	4.2 ft/s (UNET model)
Human Usage	2	seasonal usage

Erosion Hazard

34

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 130L



2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5 : 1 slope
Berm Width (*2) - Estimated	2	10 - 20 ft
Location of erosion	1	upper and middle bank
Bank Stability	2	small vertical section
Site Relative to Bend	4	outside of 90 degree bend
Vegetation Cover	3	burnt vegetation, 30 %
Tree Hazard	4	exposed roots
Soil Type (*2)	1	clays
Velocity (*2)	3	4.5 ft/s (UNET model)
Human Usage	1	occasional, no evidence of people however near the highway
Erosion Hazard	33	Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 164R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	2	15 ft
Location of erosion	4	Bank and toe
Bank Stability	2	vertical sections, less than half slope, there appears to be fresh rock on bank
Site Relative to Bend	1	straight
Vegetation Cover	2	40 - 50%
Tree Hazard	0	no trees
Soil Type (*2)	2	clays and silts
Velocity (*2)	2	4.2 ft/s (UNET model)
Human Usage	4	weekly, road adjacent, paths down to water

Erosion Hazard

33

Calculate Erosion Hazard

Flow on Inspection Day:

Elk Slough, RM 0.7



Site Location Map



Site Photograph

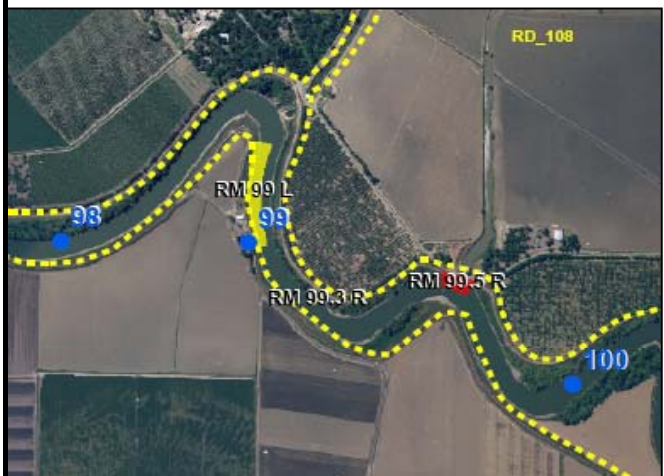
2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	4	toe and bank
Bank Stability	2	vertical sections, less than half bank height
Site Relative to Bend	1	straight
Vegetation Cover	0	80-90%
Tree Hazard	4	large trees with exposed roots
Soil Type (*2)	1	slays
Velocity (*2)	0	backwater, less than 2 ft/s
Human Usage	2	Seasonal usage

Erosion Hazard	33	<input style="border: 1px solid gray; padding: 2px 10px;" type="button" value="Calculate Erosion Hazard"/>	Flow on Inspection Day:
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Sacramento River, RM 99.3R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less
Berm Width (*2) - Estimated	3	5 - 9 ft
Location of erosion	5	bank, toe, and below water
Bank Stability	2	vertical sections
Site Relative to Bend	0	inside of a bend
Vegetation Cover	2	about 50 - 60 %
Tree Hazard	0	no trees
Soil Type (*2)	2	silty clay
Velocity (*2)	3	4.2 ft/s and eddy currents
Human Usage	0	none, too steep, not near public land

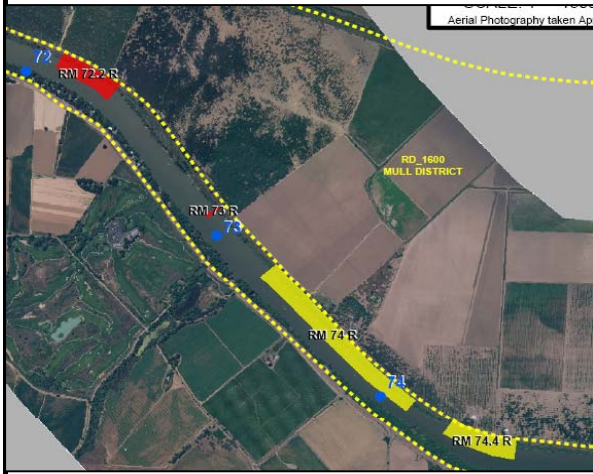
Erosion Hazard

33

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 73R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	3	1.5:1
Berm Width (*2) - Estimated	3	5 - 10 ft of berm
Location of erosion	4	toe and bank
Bank Stability	0	no visible vertical sections or caves
Site Relative to Bend	1	straight
Vegetation Cover	1	75-80 %
Tree Hazard	1	one tree, young
Soil Type (*2)	2	silts and clays
Velocity (*2)	5	4.7 ft/s (UNET model) and eddy currents
Human Usage	0	not likely, private land

Erosion Hazard

33

Calculate Erosion Hazard

Flow on Inspection Day:

Sacramento River, RM 123.5L



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	4	1:1 or less slope
Berm Width (*2) - Estimated	3	5 - 9 ft
Location of erosion	5	bank, toe, and underwater
Bank Stability	2	vertical section, less than half bank height
Site Relative to Bend	1	straight
Vegetation Cover	2	about 60%
Tree Hazard	0	no trees
Soil Type (*2)	1	clay
Velocity (*2)	3	4.6 ft/s
Human Usage	0	none

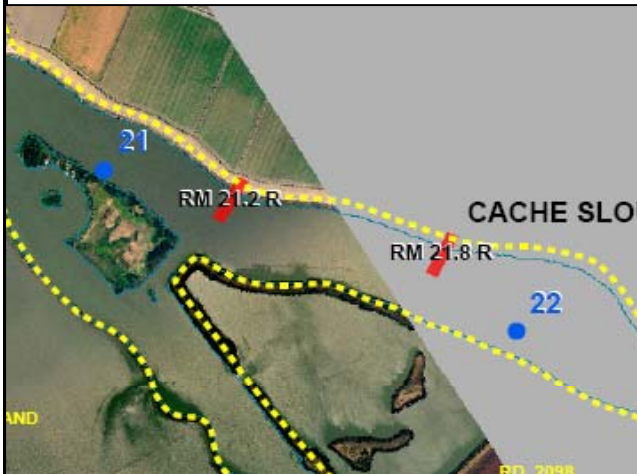
Erosion Hazard

32

Calculate Erosion Hazard

Flow on Inspection Day:

Cache Slough, RM 21.8R



Site Location Map

Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	2	2:1 slope
Berm Width (*2) - Estimated	5	no berm
Location of erosion	4	lower bank and toe
Bank Stability	4	vertical sections, greater than half the bank height
Site Relative to Bend	1	straight
Vegetation Cover	4	burned, less than 20 %
Tree Hazard	0	one tree, not a problem
Soil Type (*2)	1	clays
Velocity (*2)	0	backwater, less than 2 ft/s
Human Usage	0	none, private land

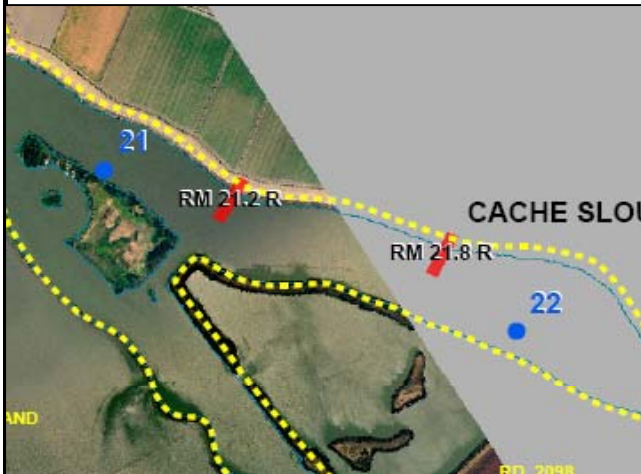
Erosion Hazard

29

Calculate Erosion Hazard

Flow on Inspection Day:

Cache Slough, RM 21.2R



Site Location Map



Site Photograph

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)	1	2.5:1 slopw
Berm Width (*2) - Estimated	5	no berm
Location of erosion	4	bank and toe
Bank Stability	2	vertical section, less than half bank height
Site Relative to Bend	1	straight
Vegetation Cover	3	30%
Tree Hazard	1	young trees
Soil Type (*2)	1	clay
Velocity (*2)	0	backwater, less than 2 ft/s
Human Usage	4	weekly, little campsite setup

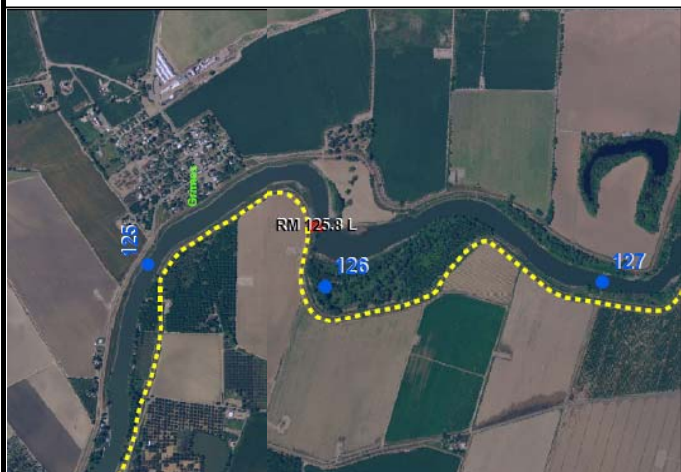
Erosion Hazard

29

[Calculate Erosion Hazard](#)

Flow on Inspection Day:

Sacramento River, RM 125.8L



Site Location Map



Site Photograph

New rock on this site, it does not appear to be an erosion site anymore. The rock appears to be falling into place and healing itself.

2004 Cross Section

Score of 0 indicates no erosion hazard, score of 72 maximum erosion hazard score

Criteria	Score	Notes
Bank Slope (*2)		
Berm Width (*2) - Estimated		
Location of erosion		
Bank Stability		
Site Relative to Bend		
Vegetation Cover		
Tree Hazard		
Soil Type (*2)		
Velocity (*2)		
Human Usage		

Erosion Hazard

0

Calculate Erosion Hazard

Flow on Inspection Day:

APPENDIX C

Erosion Hazard Data Sheets for Methodology 3: 5 Physical Factors and Revised Economic Factor

Sacramento River, Rm 56.7L (unrepaired state)



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.5 ft/s (UNET model)
Economic Factor	20	Sacramento
Bank Stability	7	caves, treehazards, and slumping
Erosion Hazard	42	Flow on Inspection Day:

Sacramento River, RM 78L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less slope
Berm Width - Estimated	3	0 to 15 ft
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Economic Factor	18	Natomas
Bank Stability	7	beaver holes, tree hazards, seepage

Erosion Hazard 37

Flow on Inspection Day:

Sacramento River, RM 99.5R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s (UNET model)
Economic Factor	19	Colusa Basin
Bank Stability	4	slumping
Erosion Hazard	35	Flow on Inspection Day:

Sacramento River, RM 99.3R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less
Berm Width - Estimated	3	5 to 9 ft
Soil Type	2	silty clay
Velocity	3	4.2 ft/s (UNET model) plus eddy currents
Economic Factor	19	Colusa Basin
Bank Stability	4	slumping
Erosion Hazard	35	Flow on Inspection Day:

Sacramento River, RM 55.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	3	4.5 ft/s (UNET model)
Economic Factor	11	South West Sacramento
Bank Stability	7	slumping, caves, and tree hazards
Erosion Hazard	33	Flow on Inspection Day:

Sacramento River, RM 141.4R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 to 12 ft
Soil Type	1	clays
Velocity	2	4.4 ft/s (UNET model)
Economic Factor	19	Colusa Basin
Bank Stability	6	tree hazards, slumping
Erosion Hazard	33	Flow on Inspection Day:

Sacramento River, RM 164R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	2	15 ft
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s
Economic Factor	19	Colusa Basin
Bank Stability	4	slumping
Erosion Hazard	33	Flow on Inspection Day:

Sacramento River, RM 154.5R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	near vertical
Berm Width - Estimated	1	20 to 30 ft
Soil Type	1	clays
Velocity	2	4.2 ft/s (UNET calculation)
Economic Factor	19	Colusa Basin
Bank Stability	4	slumping
Erosion Hazard	32	Flow on Inspection Day:

Sacramento River, RM 130.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less
Berm Width - Estimated	2	10 to 19 ft of berm
Soil Type	1	clays
Velocity	3	4.5 ft/s (UNET model)
Economic Factor	19	Colusa Basin
Bank Stability	1	tree hazards

Erosion Hazard	30	Flow on Inspection Day:
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Sacramento River, RM 26.0L



Site Location Map



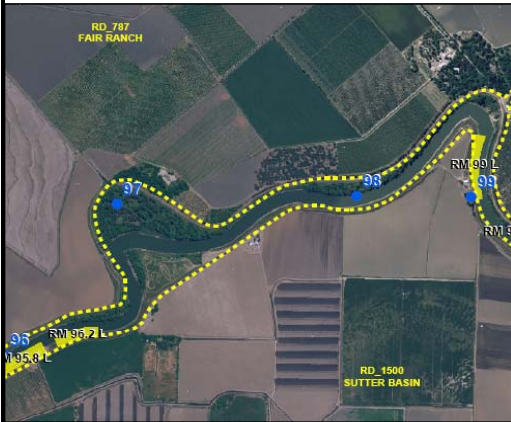
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	3	0 - 20 ft
Soil Type	3	sand
Velocity	4	5.0 ft/s
Economic Factor	7	Iselton
Bank Stability	7	treehazards, caves, and slumping
Erosion Hazard	29	Flow on Inspection Day:

Sacramento River, RM 96.2L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	1	25 ft
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s (UNET model)
Economic Factor	14	Sutter Basin
Bank Stability	6	animal holes and slumping
Erosion Hazard	29	Flow on Inspection Day:

Sacramento River, RM 26.9L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.9 ft/s (UNET model)
Economic Factor	5	Tyler Island
Bank Stability	7	tree hazards, slumping, tension cracks on road
Erosion Hazard	28	Flow on Inspection Day:

Sutter Slough, RM 25.1R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays
Velocity	0	backwater, less than 2 ft/s
Economic Factor	12	Clarksburg
Bank Stability	7	tree hazards, holes, and slumping
Erosion Hazard	28	Flow on Inspection Day:

Elk Slough, RM 0.7



Site Location Map



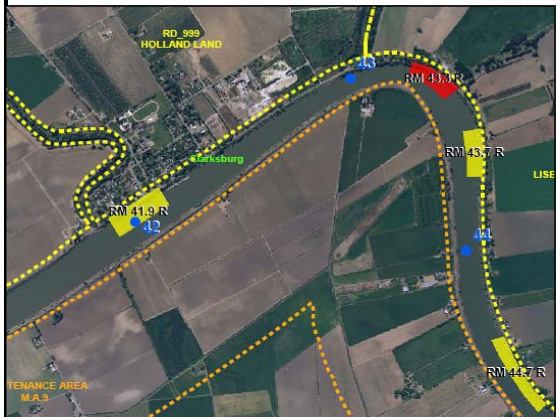
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays
Velocity	0	backwater, less than 2 ft/s
Economic Factor	12	Clarksburg
Bank Stability	6	tree hazards, slumping
Erosion Hazard	28	Flow on Inspection Day:

Sacramento River, RM 42.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.4 ft/s (UNET model)
Economic Factor	12	Clarksburg
Bank Stability	0	no stability issues

Erosion Hazard 27

Flow on Inspection Day:

Sacramento River, RM 22.7L



Site Location Map



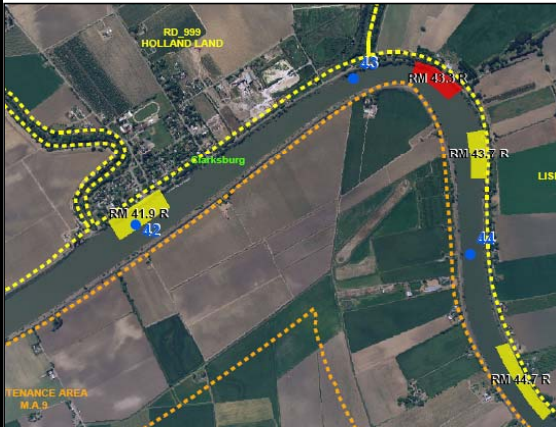
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	2	4.4 ft/s (UNET model)
Economic Factor	7	Isleton
Bank Stability	6	trees, slumping
Erosion Hazard	26	Flow on Inspection Day:

Sacramento River, RM 43.3R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Pre-Rock	Post-Rock	Notes
Bank Slope	4	4	1:1 slope (even with added rock)
Berm Width - Estimated	5	5	no berm
Soil Type	3	3	sand
Velocity	4	4	5.4 ft/s (UNET model)
Economic Factor	3	3	Clarksburg Airport
Bank Stability	7	6	tree hazards (still exist even with added rock), caves (filled in with rock), and slumping
Erosion Hazard	26	25	Flow on Inspection Day:

Sacramento River, RM 26.5L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.9 ft/s (UNET model)
Economic Factor	5	Tyler Island
Bank Stability	6	tree hazards, slumping
Erosion Hazard	25	Flow on Inspection Day:

Sacramento River, RM 10.8L



Site Location Map



Site Photograph

2004 Cross Section

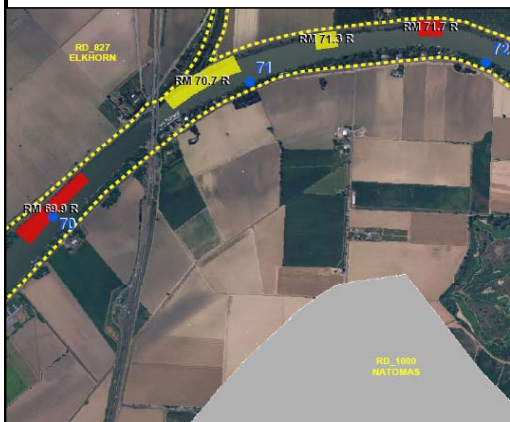
(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays and toe rock
Velocity	5	6.8 ft/s (UNET model)
Economic Factor	7	Isleton
Bank Stability	3	tension cracks

Erosion Hazard 25

Flow on Inspection Day:

Sacramento River, RM 69.9R



Site Location Map



Site Photograph

2004 Cross Section

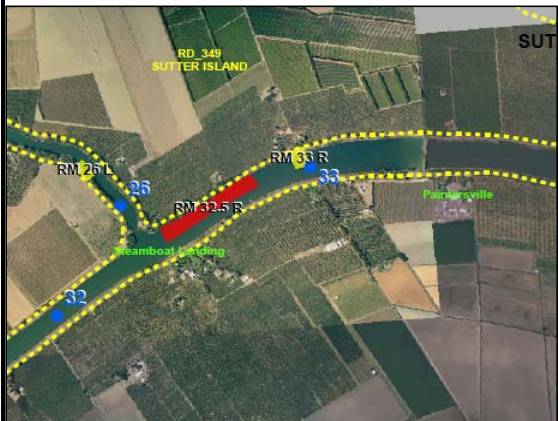
(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	4	little berm
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Economic Factor	6	Elkhorn
Bank Stability	6	slumping and tree hazards

Erosion Hazard 25

Flow on Inspection Day:

Sacramento River, RM 32.5R



Site Location Map



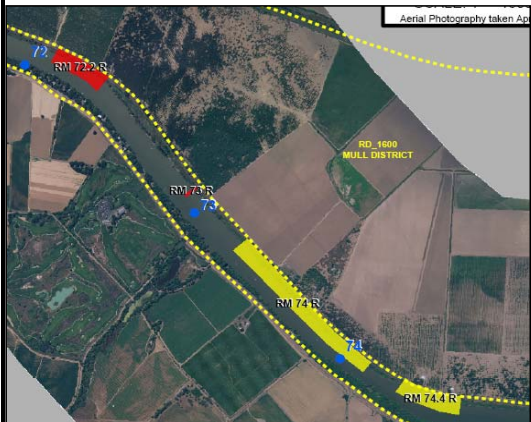
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	4	5.6 ft/s (UNET model)
Economic Factor	1	Sutter Island
Bank Stability	7	tree hazards, caves, slumping
Erosion Hazard	24	Flow on Inspection Day:

Sacramento River, RM 72.2R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	near vertical
Berm Width - Estimated	2	12 - 15 ft
Soil Type	2	silty clay
Velocity	3	4.7 ft/s (UNET model)
Economic Factor	6	Elkhorn
Bank Stability	6	tree hazards and slumping
Erosion Hazard	24	Flow on Inspection Day:

Sacramento River, RM 130L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 to 20 ft
Soil Type	1	clay
Velocity	3	4.5 ft/s (UNET model)
Economic Factor	9	Tisdale
Bank Stability	6	tree hazards, slumping
Erosion Hazard	24	Flow on Inspection Day:

Sacramento River, RM 123.5L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less slope
Berm Width - Estimated	3	5 to 9 ft of berm
Soil Type	1	clay
Velocity	3	4.6 ft/s (UNET model)
Economic Factor	9	Tisdale
Bank Stability	4	slumping

Erosion Hazard	24	Flow on Inspection Day:
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Sacramento River, RM 26.1R



Site Location Map



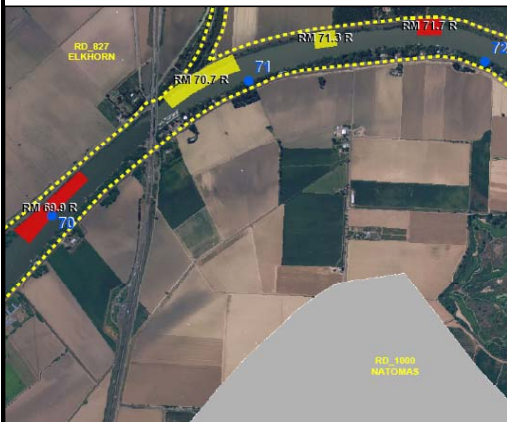
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.0 ft/s (UNET model)
Economic Factor	8	Grand Island
Bank Stability	0	no stability issues
Erosion Hazard	23	Flow on Inspection Day:

Sacramento River, RM 71-7R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	1	20 + feet
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Economic Factor	6	Elkhorn
Bank Stability	7	tree hazards, minor slumping, caves
Erosion Hazard	23	Flow on Inspection Day:

Sacramento River, RM 85.6R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	4	1 to 4 ft of berm
Soil Type	2	silts and clays
Velocity	3	4.5 ft/s (UNET model)
Economic Factor	2	Knight's Landing
Bank Stability	7	tree hazards, slumping, seepage, animal burrows
Erosion Hazard	22	Flow on Inspection Day:

Georgiana Slough, RM 10.3L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 - 20 ft of berm
Soil Type	3	sand
Velocity	1	2 - 4 ft/s
Economic Factor	5	Tyler Island
Bank Stability	7	tree hazards, slumping, caves
Erosion Hazard	21	Flow on Inspection Day:

Sacramento River, RM 34.5R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.6 ft/s (UNET calculation)
Economic Factor	1	Merritt Island
Bank Stability	4	slumping
Erosion Hazard	21	Flow on Inspection Day:

Sacramento River, RM 8L



Site Location Map



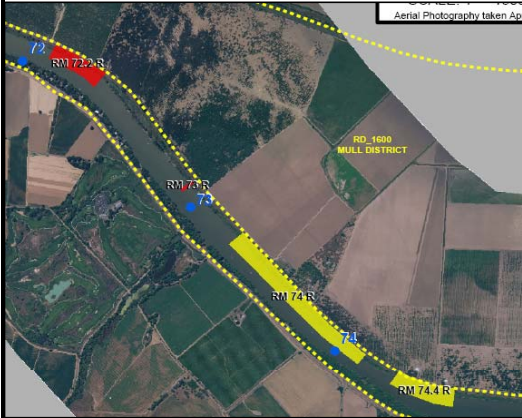
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	3	8 - 10 ft (just below levee height)
Soil Type	1	vclay
Velocity	3	4.9 ft/s (UNET model)
Economic Factor	4	Sherman Island
Bank Stability	4	slumping
Erosion Hazard	20	Flow on Inspection Day:

Sacramento River, RM 73R



Site Location Map



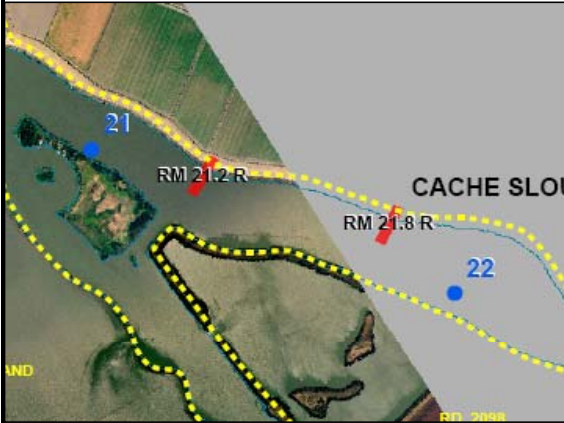
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	3	5 to 10 ft
Soil Type	2	silts and clays
Velocity	5	4.7 ft/s (UNET model) plus eddy currents
Economic Factor	6	Elkhorn
Bank Stability	0	no stability issues
Erosion Hazard	19	Flow on Inspection Day:

Cache Slough, RM 21.8R



Site Location Map



Site Photograph

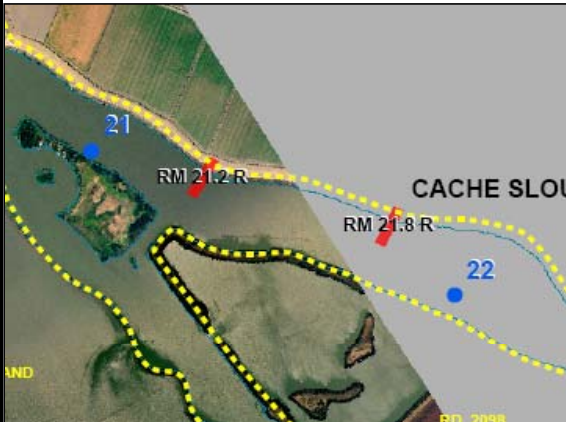
2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	2	2:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clay
Velocity	0	backwater, less than 2 ft/s
Economic Factor	1	Hastings Tract
Bank Stability	4	slumping
Erosion Hazard	13	

Flow on Inspection Day:

Cache Slough, RM 21.2R



Site Location Map



Site Photograph

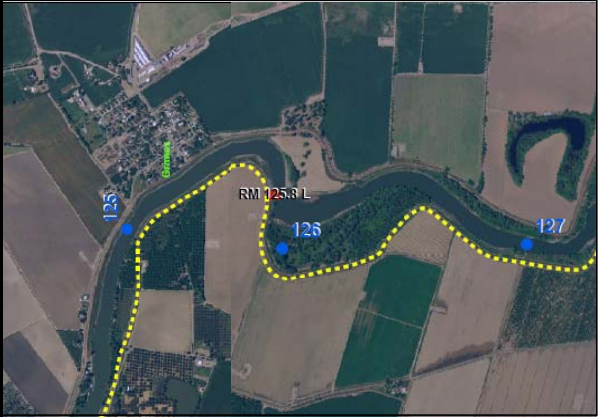
2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	1	2.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clay
Velocity	0	backwater, less than 2 ft/s
Economic Factor	1	Hastings Tract
Bank Stability	4	slumping
Erosion Hazard	12	

Flow on Inspection Day:

Sacramento River, RM 125.8L



Site Location Map



Site Photograph

New rock on this site, it does not appear to be an erosion site anymore. The rock appears to be falling into place and healing itself.

2004 Cross Section

(Score of 0 indicates no hazard, score of 48 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope		
Berm Width - Estimated		
Soil Type		
Velocity		
Economic Factor		
Bank Stability		
Erosion Hazard	0	Flow on Inspection Day:

APPENDIX D

Erosion Hazard Data Sheets for Methodology 4: 5 Physical Factors and no Economic Factor

Sacramento River, RM 26.9L



Site Location Map



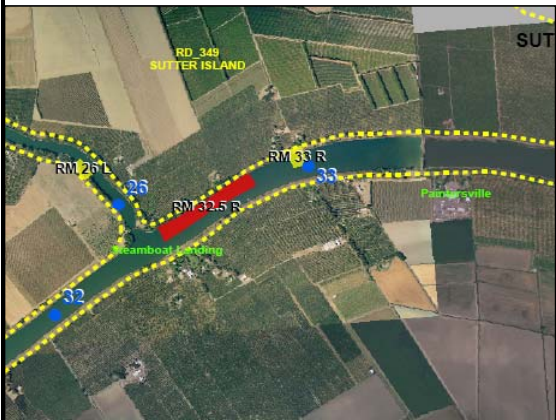
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.9 ft/s (UNET model)
Bank Stability	7	tree hazards, slumping, tension cracks on road
Erosion Hazard	23	Flow on Inspection Day:

Sacramento River, RM 32.5R



Site Location Map



Site Photograph

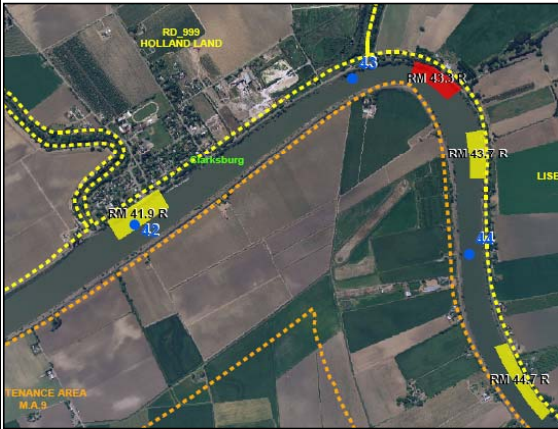
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	4	5.6 ft/s (UNET model)
Bank Stability	7	tree hazards, caves, slumping
Erosion Hazard	23	

Flow on Inspection Day:

Sacramento River, RM 43.3R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Pre-Rock	Post-Rock	Notes
Bank Slope	4	4	1:1 slope (even with added rock)
Berm Width - Estimated	5	5	no berm
Soil Type	3	3	sand
Velocity	4	4	5.4 ft/s (UNET model)
Bank Stability	7	6	tree hazards (still exist even with added rock), caves (filled in with rock), and slumping
Erosion Hazard	23	22	Flow on Inspection Day:

Sacramento River, Rm 56.7L (unrepaired state)



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.5 ft/s (UNET model)
Bank Stability	7	caves, treehazards, and slumping
Erosion Hazard	22	Flow on Inspection Day:

Sacramento River, RM 55.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	3	4.5 ft/s (UNET model)
Bank Stability	7	slumping, caves, and tree hazards
Erosion Hazard	22	Flow on Inspection Day:

Sacramento River, RM 26.0L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	3	0 - 20 ft
Soil Type	3	sand
Velocity	4	5.0 ft/s
Bank Stability	7	treehazards, caves, and slumping
Erosion Hazard	22	Flow on Inspection Day:

Sacramento River, RM 26.5L



Site Location Map



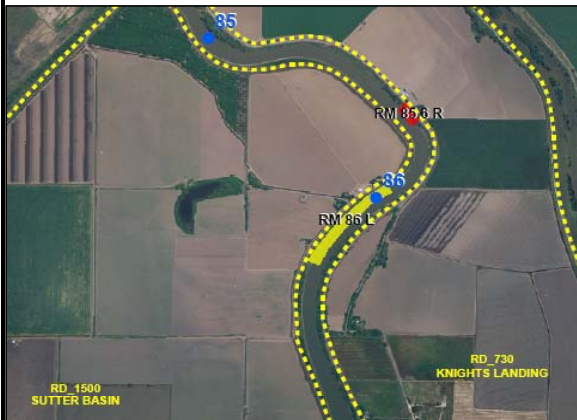
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sands
Velocity	3	4.9 ft/s (UNET model)
Bank Stability	6	tree hazards, slumping
Erosion Hazard	20	Flow on Inspection Day:

Sacramento River, RM 85.6R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	4	1 to 4 ft of berm
Soil Type	2	silts and clays
Velocity	3	4.5 ft/s (UNET model)
Bank Stability	7	tree hazards, slumping, seepage, animal burrows
Erosion Hazard	20	Flow on Inspection Day:

Sacramento River, RM 34.5R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.6 ft/s (UNET calculation)
Bank Stability	4	slumping
Erosion Hazard	20	Flow on Inspection Day:

Sacramento River, RM 78L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less slope
Berm Width - Estimated	3	0 to 15 ft
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Bank Stability	7	beaver holes, tree hazards, seepage
Erosion Hazard	19	

Flow on Inspection Day:

Sacramento River, RM 22.7L



Site Location Map



Site Photograph

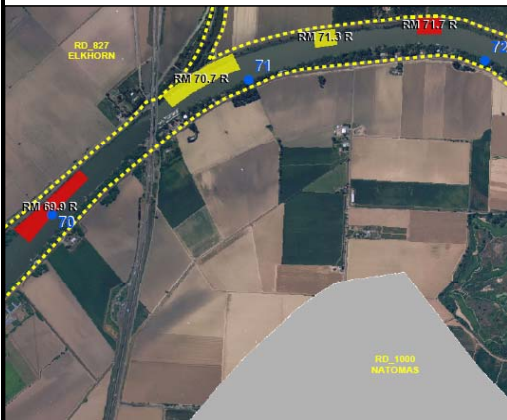
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	2	4.4 ft/s (UNET model)
Bank Stability	6	trees, slumping
Erosion Hazard	19	

Flow on Inspection Day:

Sacramento River, RM 69.9R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	4	little berm
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Bank Stability	6	slumping and tree hazards
Erosion Hazard	19	Flow on Inspection Day:

Sacramento River, RM 10.8L



Site Location Map



Site Photograph

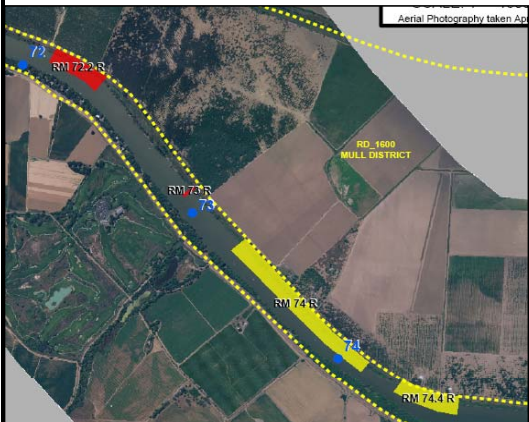
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays and toe rock
Velocity	5	6.8 ft/s (UNET model)
Bank Stability	3	tension cracks

Erosion Hazard	18	Flow on Inspection Day:
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Sacramento River, RM 72.2R



Site Location Map



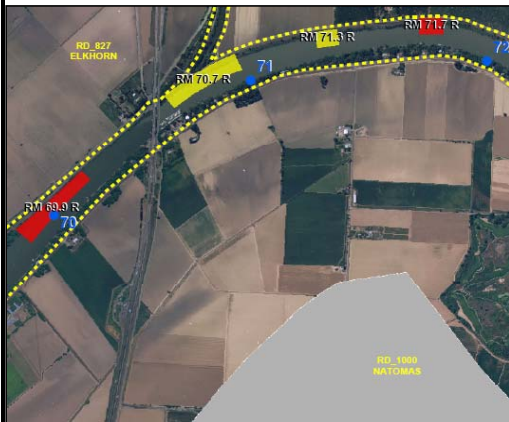
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	near vertical
Berm Width - Estimated	2	12 - 15 ft
Soil Type	2	silty clay
Velocity	3	4.7 ft/s (UNET model)
Bank Stability	6	tree hazards and slumping
Erosion Hazard	18	Flow on Inspection Day:

Sacramento River, RM 71-7R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	1	20 + feet
Soil Type	2	silts and clays
Velocity	3	4.7 ft/s (UNET model)
Bank Stability	7	tree hazards, minor slumping, caves
Erosion Hazard	17	Flow on Inspection Day:

Sacramento River, RM 8L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	vertical
Berm Width - Estimated	3	8 - 10 ft (just below levee height)
Soil Type	1	vclay
Velocity	3	4.9 ft/s (UNET model)
Bank Stability	4	slumping
Erosion Hazard	16	Flow on Inspection Day:

Georgiana Slough, RM 10.3L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 - 20 ft of berm
Soil Type	3	sand
Velocity	1	2 - 4 ft/s
Bank Stability	7	tree hazards, slumping, caves
Erosion Hazard	16	Flow on Inspection Day:

Sutter Slough, RM 25.1R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays
Velocity	0	backwater, less than 2 ft/s
Bank Stability	7	tree hazards, holes, and slumping
Erosion Hazard	16	Flow on Inspection Day:

Sacramento River, RM 99.5R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s (UNET model)
Bank Stability	4	slumping
Erosion Hazard	16	Flow on Inspection Day:

Elk Slough, RM 0.7



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clays
Velocity	0	backwater, less than 2 ft/s
Bank Stability	6	tree hazards, slumping
Erosion Hazard	16	

Flow on Inspection Day:

Sacramento River, RM 99.3R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less
Berm Width - Estimated	3	5 to 9 ft
Soil Type	2	silty clay
Velocity	3	4.2 ft/s (UNET model) plus eddy currents
Bank Stability	4	slumping
Erosion Hazard	16	Flow on Inspection Day:

Sacramento River, RM 26.1R



Site Location Map



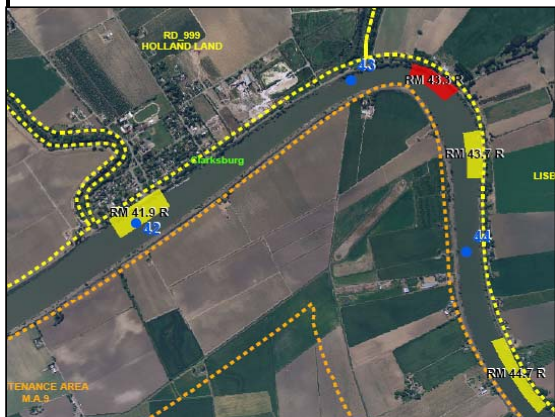
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.0 ft/s (UNET model)
Bank Stability	0	no stability issues
Erosion Hazard	15	Flow on Inspection Day:

Sacramento River, RM 42.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	3	sand
Velocity	4	5.4 ft/s (UNET model)
Bank Stability	0	no stability issues
Erosion Hazard	15	Flow on Inspection Day:

Sacramento River, RM 130L



Site Location Map



Site Photograph

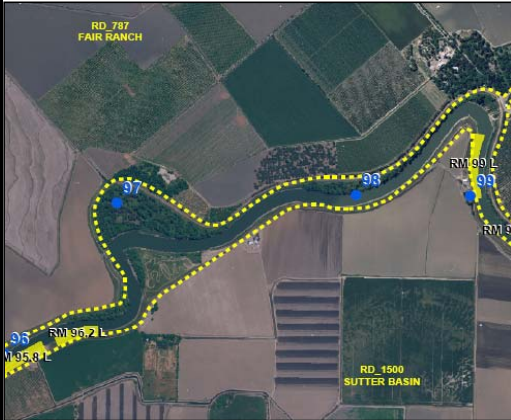
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 to 20 ft
Soil Type	1	clay
Velocity	3	4.5 ft/s (UNET model)
Bank Stability	6	tree hazards, slumping
Erosion Hazard	15	

Flow on Inspection Day:

Sacramento River, RM 96.2L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	1	25 ft
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s (UNET model)
Bank Stability	6	animal holes and slumping
Erosion Hazard	15	Flow on Inspection Day:

Sacramento River, RM 123.5L



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less slope
Berm Width - Estimated	3	5 to 9 ft of berm
Soil Type	1	clay
Velocity	3	4.6 ft/s (UNET model)
Bank Stability	4	slumping

Erosion Hazard	15	Flow on Inspection Day:
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Sacramento River, RM 141.4R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	2	10 to 12 ft
Soil Type	1	clays
Velocity	2	4.4 ft/s (UNET model)
Bank Stability	6	tree hazards, slumping
Erosion Hazard	14	Flow on Inspection Day:

Sacramento River, RM 164R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 slope
Berm Width - Estimated	2	15 ft
Soil Type	2	clays and silts
Velocity	2	4.2 ft/s
Bank Stability	4	slumping
Erosion Hazard	14	Flow on Inspection Day:

Sacramento River, RM 154.5R



Site Location Map



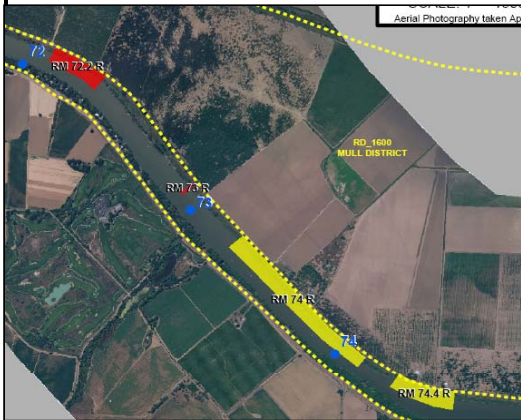
Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	5	near vertical
Berm Width - Estimated	1	20 to 30 ft
Soil Type	1	clays
Velocity	2	4.2 ft/s (UNET calculation)
Bank Stability	4	slumping
Erosion Hazard	13	Flow on Inspection Day:

Sacramento River, RM 73R



Site Location Map



Site Photograph

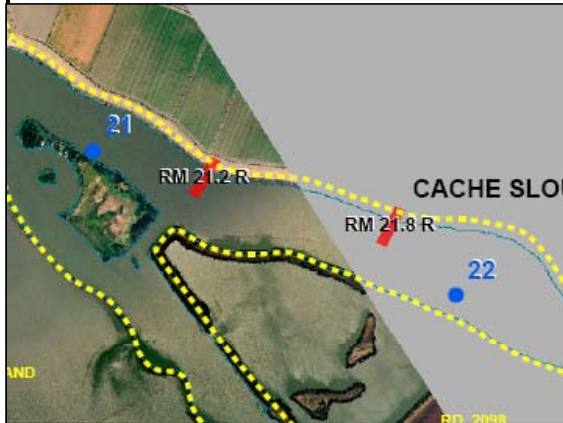
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	3	1.5:1 slope
Berm Width - Estimated	3	5 to 10 ft
Soil Type	2	silts and clays
Velocity	5	4.7 ft/s (UNET model) plus eddy currents
Bank Stability	0	no stability issues

Erosion Hazard	13	Flow on Inspection Day:
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Cache Slough, RM 21.8R



Site Location Map



Site Photograph

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	2	2:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clay
Velocity	0	backwater, less than 2 ft/s
Bank Stability	4	slumping
Erosion Hazard	12	

Flow on Inspection Day:

Sacramento River, RM 130.8R



Site Location Map



Site Photograph

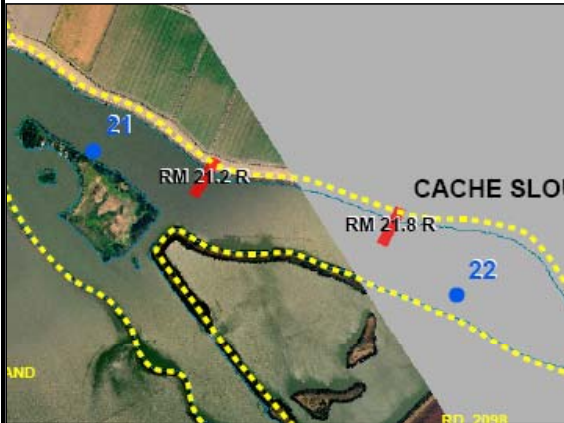
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	4	1:1 or less
Berm Width - Estimated	2	10 to 19 ft of berm
Soil Type	1	clays
Velocity	3	4.5 ft/s (UNET model)
Bank Stability	1	tree hazards
Erosion Hazard	11	

Flow on Inspection Day:

Cache Slough, RM 21.2R



Site Location Map



Site Photograph

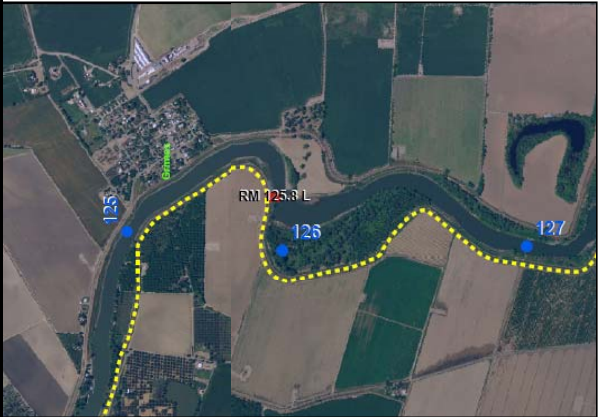
2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	1	2.5:1 slope
Berm Width - Estimated	5	no berm
Soil Type	1	clay
Velocity	0	backwater, less than 2 ft/s
Bank Stability	4	slumping
Erosion Hazard	11	

Flow on Inspection Day:

Sacramento River, RM 125.8L



Site Location Map



Site Photograph

New rock on this site, it does not appear to be an erosion site anymore. The rock appears to be falling into place and healing itself.

2004 Cross Section

(Score of 0 indicates no hazard, score of 28 maximum potential for levee failure)

Criteria	Score	Notes
Bank Slope	0	
Berm Width - Estimated	0	
Soil Type	0	
Velocity	0	
Bank Stability	0	

Erosion Hazard	0	Flow on Inspection Day:
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