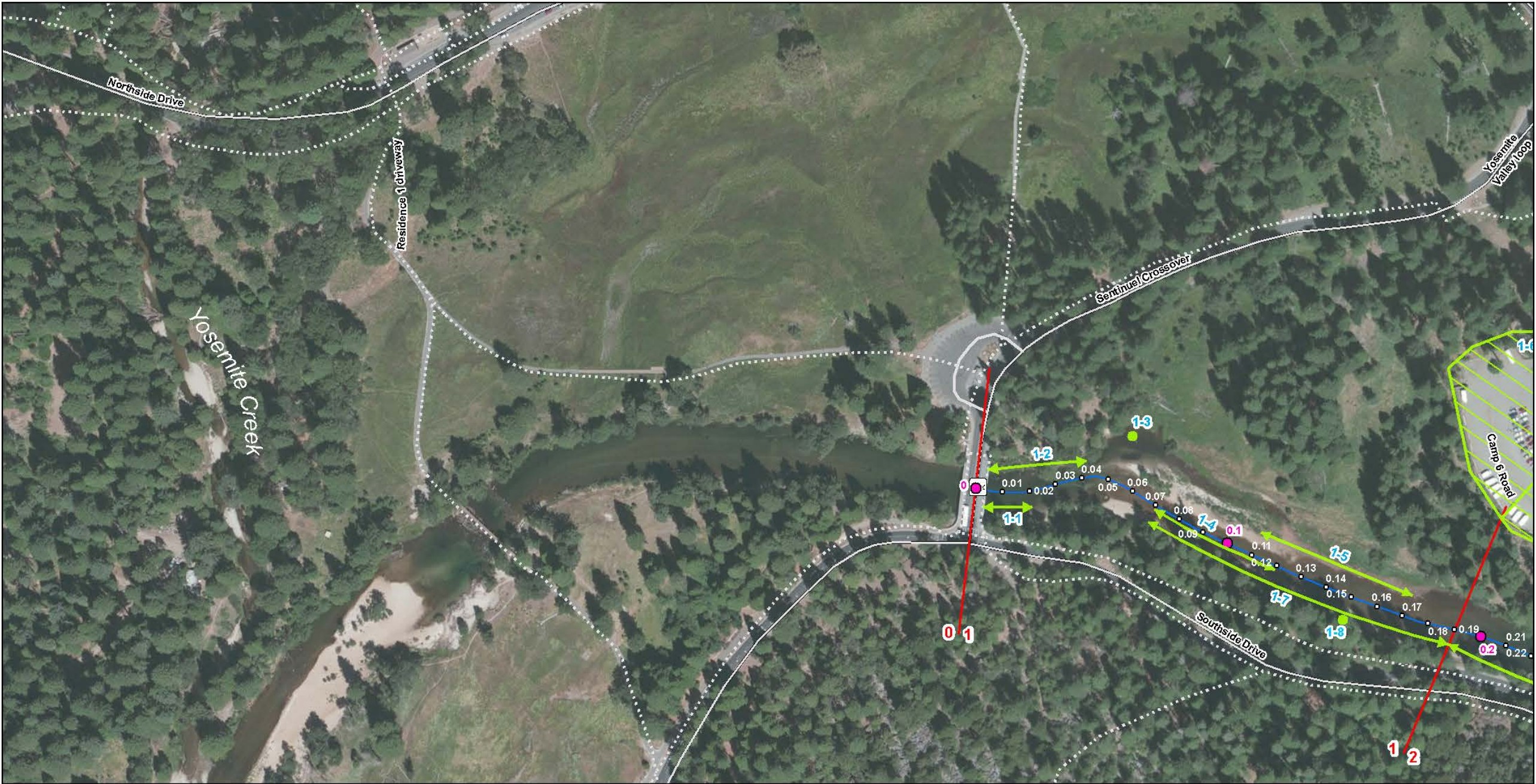


REACH 1

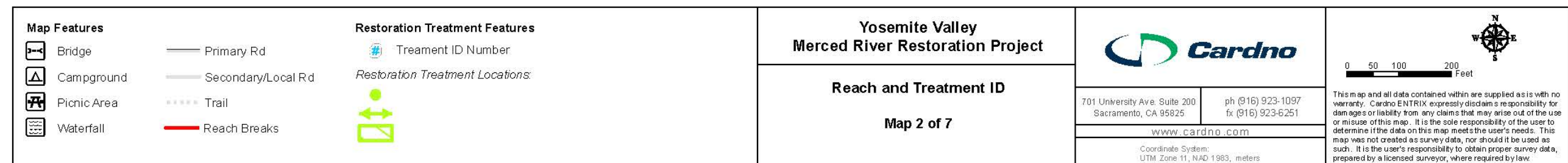
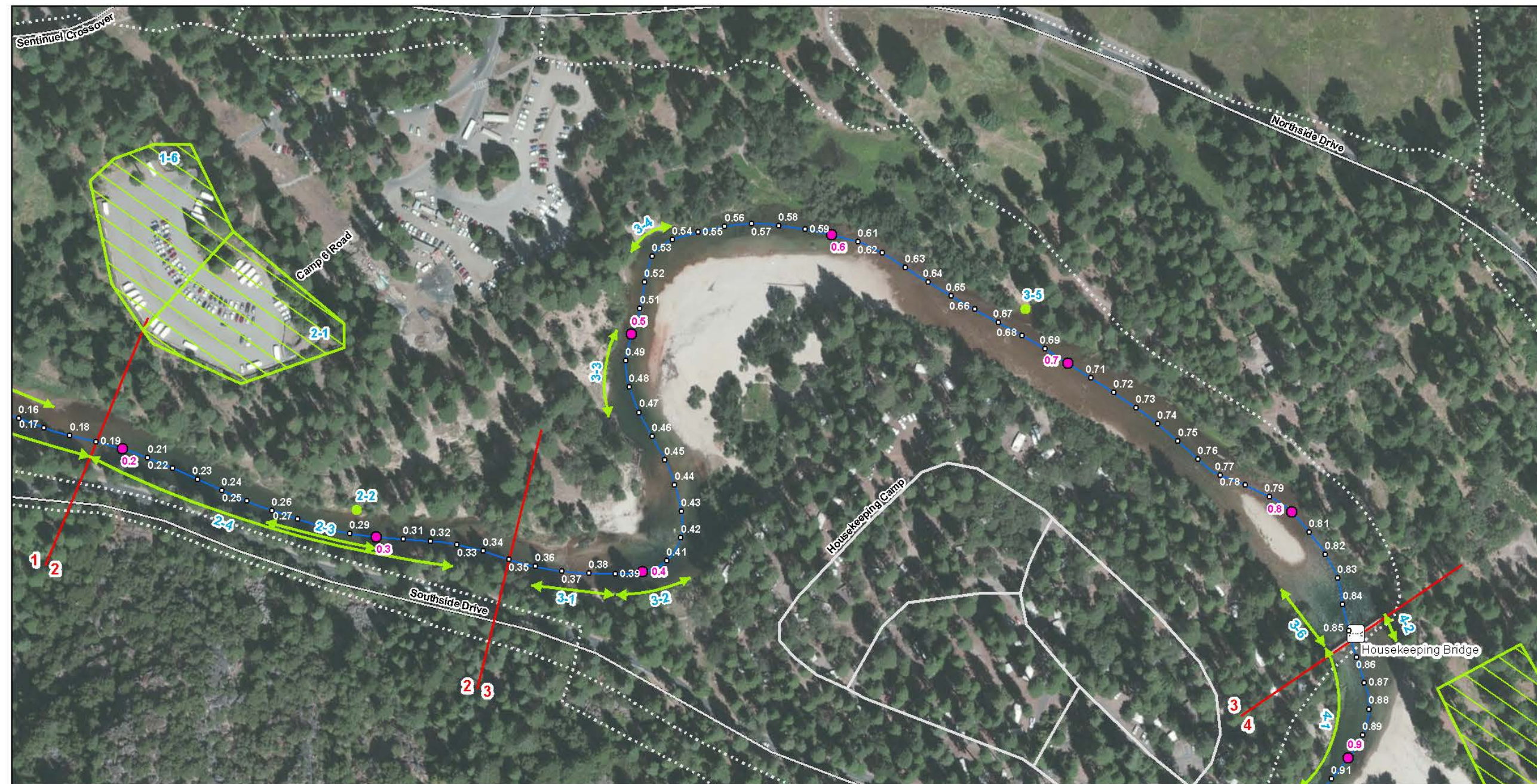


Map Features Bridge Campground Picnic Area Waterfall	Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Features Treatment ID Number Restoration Treatment Locations: 	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 1 of 7	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 1	RM 0-0.19						
1-1	0-0.02 (LB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (toe)Eroding Bank (face)Denuded and/or Compacted SoilsLateral Confinement	Stabilize streambank and enhance riparian corridor. Provide hardened access point for recreation to reduce area and magnitude of impacts to riparian corridor and bank.	<ul style="list-style-type: none">Hardened River AccessRetain Artificial Bank Protection	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Materials List / Quantities	<ul style="list-style-type: none">Staking
1-2	0-0.04 (RB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (toe)	Enhance riparian corridor. Retain riprap where vegetation is already established.	<ul style="list-style-type: none">Retain Artificial Bank Protection	-	-	-
1-3	0.05 (RB)	<ul style="list-style-type: none">Artificial Bank ProtectionDisconnected Floodplain / Overwide Channel	Stabilize streambank. Remove riprap that is able to be “plucked” from bank.	<ul style="list-style-type: none">Selective Riprap Removal (Typical Graphic C-2)	-	<ul style="list-style-type: none">Materials List / Quantities	<ul style="list-style-type: none">Construction Training
1-4	0.07-0.12 (mid-channel)	<ul style="list-style-type: none">Disconnected Floodplain / Overwide ChannelSimplified Channel Morphology	Promote mid-channel bar formation to narrow channel and reactivate floodplain.	<ul style="list-style-type: none">Mid Bar-forming ELF (Typical Graphic C-6) In combination with Treatments 1-4 and 1-5.	<ul style="list-style-type: none">Ballasting CalculationsHydraulic Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List / QuantitiesCost Estimate	<ul style="list-style-type: none">Construction DirectionInspection
1-5	0.11-0.17 (RB)	<ul style="list-style-type: none">Disconnected Floodplain / Overwide Channel	Reconnect floodplain.	<ul style="list-style-type: none">Bank Lowering with Floodplain Reconnection (Typical Graphic C-8) In combination with Treatments 1-4 and 1-5.	<ul style="list-style-type: none">Hydraulic ModelingBank Stability Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List / QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
1-6	0.16-0.19 (RB)	<ul style="list-style-type: none">Compacted/Dewatered SoilsFloodplain Fill	Restore native vegetation. Remove non-native fill material, re-contour the topography, and reintroduce native vegetation to restored areas.	<ul style="list-style-type: none">Floodplain Fill RemovalFloodplain Grading and Soil Modification	<ul style="list-style-type: none">Visual SurveySoils Analysis	<ul style="list-style-type: none">Materials List / Quantities-	<ul style="list-style-type: none">Staking
1-7	0.07-0.19 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Lateral ConfinementSimplified Vegetation StructureMinimal Vegetation Recruitment	Stabilize streambank and enhance riparian corridor.	<ul style="list-style-type: none">Reconstructed Bank (Typical Graphic C-1)	<ul style="list-style-type: none">Topographic and Visual SurveyBank Stability ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction TrainingInspection
1-8	0.15 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Lateral ConfinementDenuded and/or Compacted SoilsSimplified Vegetation StructureMinimal Vegetation Recruitment	Stabilize streambank and enhance riparian corridor. Exclude / redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking


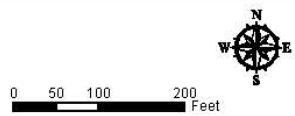
REACH 2



Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 2	RM 0.19-0.35						
2-1	0.19-0.25 (RB)	<ul style="list-style-type: none">• Compacted/Dewatered Soils• Floodplain Fill	Restore native vegetation. Remove non-native fill material, re-contour the topography, and reintroduce native vegetation to restored areas.	<ul style="list-style-type: none">• Floodplain Fill Removal• Floodplain Grading and Soil Modification	<ul style="list-style-type: none">• Visual Survey• Soils Analysis	<ul style="list-style-type: none">• Materials List / Quantities	<ul style="list-style-type: none">• Staking
2-2	0.29 (RB)	<ul style="list-style-type: none">• Disconnected Floodplain / Entrenched Channel	Reactivate overflow channel and protect return flows.	<ul style="list-style-type: none">• Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8) Required with Treatment 3-3.	<ul style="list-style-type: none">• Hydraulic Modeling• Bank Stability Modeling	<ul style="list-style-type: none">• Details• Specifications• Materials List/Quantities• Cost Estimate	<ul style="list-style-type: none">• Staking• Construction Direction• Inspection
2-3	0.26-0.3 (LB)	<ul style="list-style-type: none">• Stormwater Drainage Infrastructure	Reduce erosion and improve water quality. Direct/control runoff paths and slowing runoff flows from the road before they enter the river.	<ul style="list-style-type: none">• Stormwater Pre-treatment	<ul style="list-style-type: none">• Visual Survey to identify runoff flow paths• Hydrologic Calculations for Culvert Design/ Detention Volume	<ul style="list-style-type: none">• Details• Specifications• Materials List/Quantities• Cost Estimate	<ul style="list-style-type: none">• Construction Direction• Inspection
2-4	0.19-0.33 (LB)	<ul style="list-style-type: none">• Artificial Bank Protection• Lateral Confinement• Minimal Vegetation Recruitment• Simplified Vegetation Structure• Low Species Diversity• Denuded and/or Compacted Soils	Stabilize streambank and protect road. Retain existing riprap to protect road.	<ul style="list-style-type: none">• Retain Artificial Bank Protection	-	-	-

REACH 3



Map Features <ul style="list-style-type: none">BridgeCampgroundPicnic AreaWaterfall	Restoration Treatment Features <ul style="list-style-type: none">Primary RdSecondary/Local RdTrailReach Breaks	Restoration Treatment Locations: <ul style="list-style-type: none">Treatment ID Number	Yosemite Valley Merced River Restoration Project	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
Reach and Treatment ID Map 2 of 7					

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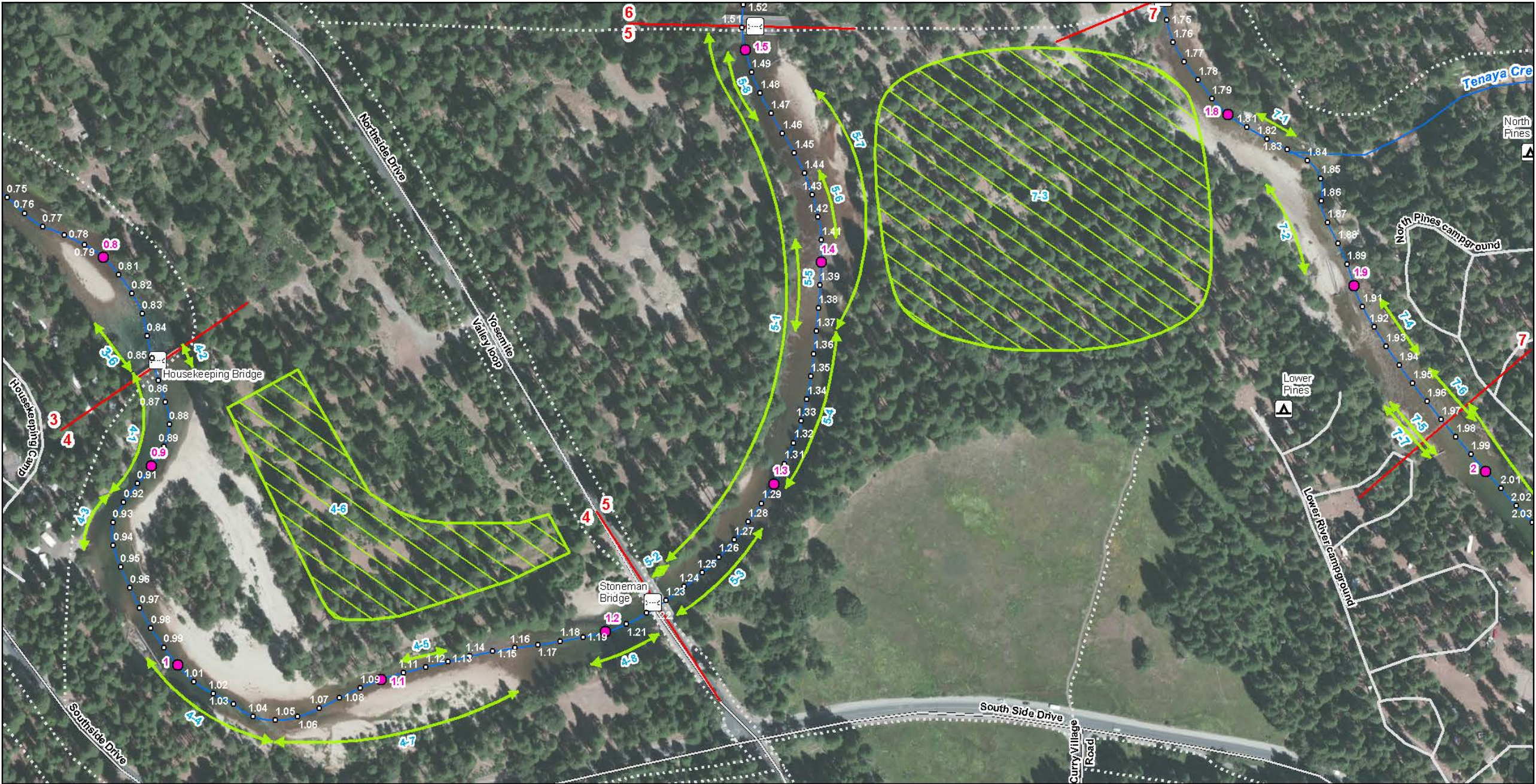
Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 3	RM 0.35-0.85						
3-1	0.36-0.39 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Simplified Vegetation StructureLow Plant Species DiversityMinimal Vegetation Recruitment	Stabilize streambank and enhance riparian corridor (incorporate existing large wood).	<ul style="list-style-type: none">Reconstructed Bank (Typical Graphic C-1)	<ul style="list-style-type: none">Topographic and/or Quantity SurveyHydraulic ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
3-2	0.39-0.41 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Denuded and/or Compacted Soils	Stabilize streambank and enhance riparian corridor (incorporate existing rock).	<ul style="list-style-type: none">Reconstructed Bank (Typical Graphic C-1)	<ul style="list-style-type: none">Topographic and/or Quantity SurveyHydraulic ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
3-3	0.47-0.50 (RB)	<ul style="list-style-type: none">Disconnected Floodplain / Entrenched Channel	Reactivate floodplain and enhance riparian corridor. Direct high flows into historic swale and onto the floodplain and return flows to the main channel.	<ul style="list-style-type: none">Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8) Required with Treatment 2-2	<ul style="list-style-type: none">Topographic and/or Quantity SurveyHydraulic Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
3-4	0.53-0.54 (RB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Denuded and/or Compacted Soils	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking
3-5	0.67 (RB)	<ul style="list-style-type: none">Disconnected Floodplain / Entrenched Channel	Reactivate overflow channels and enhance riparian corridor. Direct high flows into historic swale and onto the floodplain and return flows to the main channel.	<ul style="list-style-type: none">Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8)	<ul style="list-style-type: none">Topographic and Visual Survey	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
3-6	0.83-0.85 (LB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (toe)Eroding Banks (face)Localized Channel ScourLateral Confinement	Stabilize streambank and enhance riparian corridor. Maintain/repair existing riprap wall and plant vegetation to enhance streambank corridor.	<ul style="list-style-type: none">Retain Artificial Bank ProtectionReconstructed Bank (Typical Graphic C-1)	<ul style="list-style-type: none">Topographic and/or Quantity SurveyBank Stability ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection

REACH 4

Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 4	RM 0.85-1.22						
4-1	0.85-0.92 (LB)	<ul style="list-style-type: none">• Bridge Alignment (?)• Artificial Bank Protection• Eroding Banks (toe)• Eroding Banks (face)• Denuded and/or Compacted Soils• Minimal Vegetation Recruitment• Low Species Diversity• Simplified Vegetation Structure	Stabilize streambank and enhance riparian corridor. Retain rock at the toe, plant native vegetation on the upper bank, and exclude recreation access.	<ul style="list-style-type: none">• Selective Riprap Removal (Typical Graphic C-2)• Riparian Buffer Enhancement• Bank Grading and Soil Modification	<ul style="list-style-type: none">• Hydraulic Modeling• Bank Stability Modeling	<ul style="list-style-type: none">• Details• Materials List/Quantities	<ul style="list-style-type: none">• Staking• Inspection
4-2	0.85-0.86 (RB)	<ul style="list-style-type: none">• Bridge Alignment (?) Artificial Bank Protection• Denuded and/or Compacted Soils	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">• Retain Artificial Bank Protection• Riparian Buffer Enhancement• Hardened River Access	<ul style="list-style-type: none">• Visual Survey	-	<ul style="list-style-type: none">• Staking
4-3	0.92-0.94 (LB)	<ul style="list-style-type: none">• Disconnected Floodplain / Overwide Channel• Artificial Bank Protection• Simplified Channel Morphology• Denuded and/or Compacted Soils• Minimal Vegetation Recruitment• Simplified Vegetation Structure• Low Species Diversity	Stabilize streambank and enhance riparian corridor.	<ul style="list-style-type: none">• Reconstructed Bank (Typical Graphic C-1)• Selective Riprap Removal (Typical Graphic C-2)• Riparian Buffer Enhancement• Bank Grading and Soil Modification	<ul style="list-style-type: none">• Topographic and/or Quantity Survey• Hydraulic Modeling• Ballasting Calculations	<ul style="list-style-type: none">• Details• Specifications• Materials List/Quantities• Cost Estimate	<ul style="list-style-type: none">• Staking• Construction Direction• Inspection
4-4	0.99-1.05 (LB)	<ul style="list-style-type: none">• Eroding Banks (face)• Denuded and/or Compacted Soils• Minimal Vegetation Recruitment• Simplified Vegetation Structure• Low Species Diversity• Unstable Tributary Confluence	Stabilize streambank and enhance riparian corridor.	<ul style="list-style-type: none">• Reconstructed Bank (Typical Graphic C-1)• Brush Layering• Floodplain-building Logs (Typical Graphic C-5)	<ul style="list-style-type: none">• Topographic and/or Quantity Survey• Hydraulic Calculations• Ballasting Calculations	<ul style="list-style-type: none">• Details• Specifications• Materials List/Quantities• Cost Estimate	<ul style="list-style-type: none">• Staking• Construction Direction• Inspection
4-5	1.11-1.13 (RB)	<ul style="list-style-type: none">• Artificial Bank Protection• Eroding Banks (toe)• Eroding Banks (face)• Denuded and/or Compacted Soils• Simplified Vegetation Structure• Low Species Diversity	Stabilize streambank and enhance riparian corridor.	<ul style="list-style-type: none">• Selective Riprap Removal (Typical Graphic C-2)	<ul style="list-style-type: none">• Visual Survey	-	<ul style="list-style-type: none">• Staking
4-6	0.88-1.21 (RB)	<ul style="list-style-type: none">• Compacted / Dewatered Soils• Disconnected Floodplain / Entrenched Channel• Simplified Vegetation Structure• Low Species Diversity	Enhance riparian corridor. Remove dense pines; decompact soils, create microtopographic variation, and plant with various native floodplain species.	<ul style="list-style-type: none">• Floodplain Grading and Soil Modification	<ul style="list-style-type: none">• Visual Survey	<ul style="list-style-type: none">• Specifications• Materials List/Quantities	<ul style="list-style-type: none">• Staking
Reach 4	RM 0.85-1.22						

Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
4-7	1.05 to 1.16 (LB)	<ul style="list-style-type: none">Disconnected Floodplain / Overwide Channel	Promote bar formation and narrow channel. Place additional wood along the streambank to promote continued deposition of bar-forming materials.	<ul style="list-style-type: none">Lateral Bar-forming ELF (Typical Graphic C-7)	<ul style="list-style-type: none">Hydraulic ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
4-8	1.19-1.22 (LB)	<ul style="list-style-type: none">Localized Channel ScourEroding Banks (toe)Eroding Banks (face)Denuded and/or Compacted SoilsMinimal Vegetation RecruitmentSimplified Vegetation StructureLow Plant Species Diversity	Stabilize streambank and enhance riparian corridor.	<ul style="list-style-type: none">Crib Structure (Typical Graphic C-3)	<ul style="list-style-type: none">Topographic and/or Quantity SurveyBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection

REACH 5

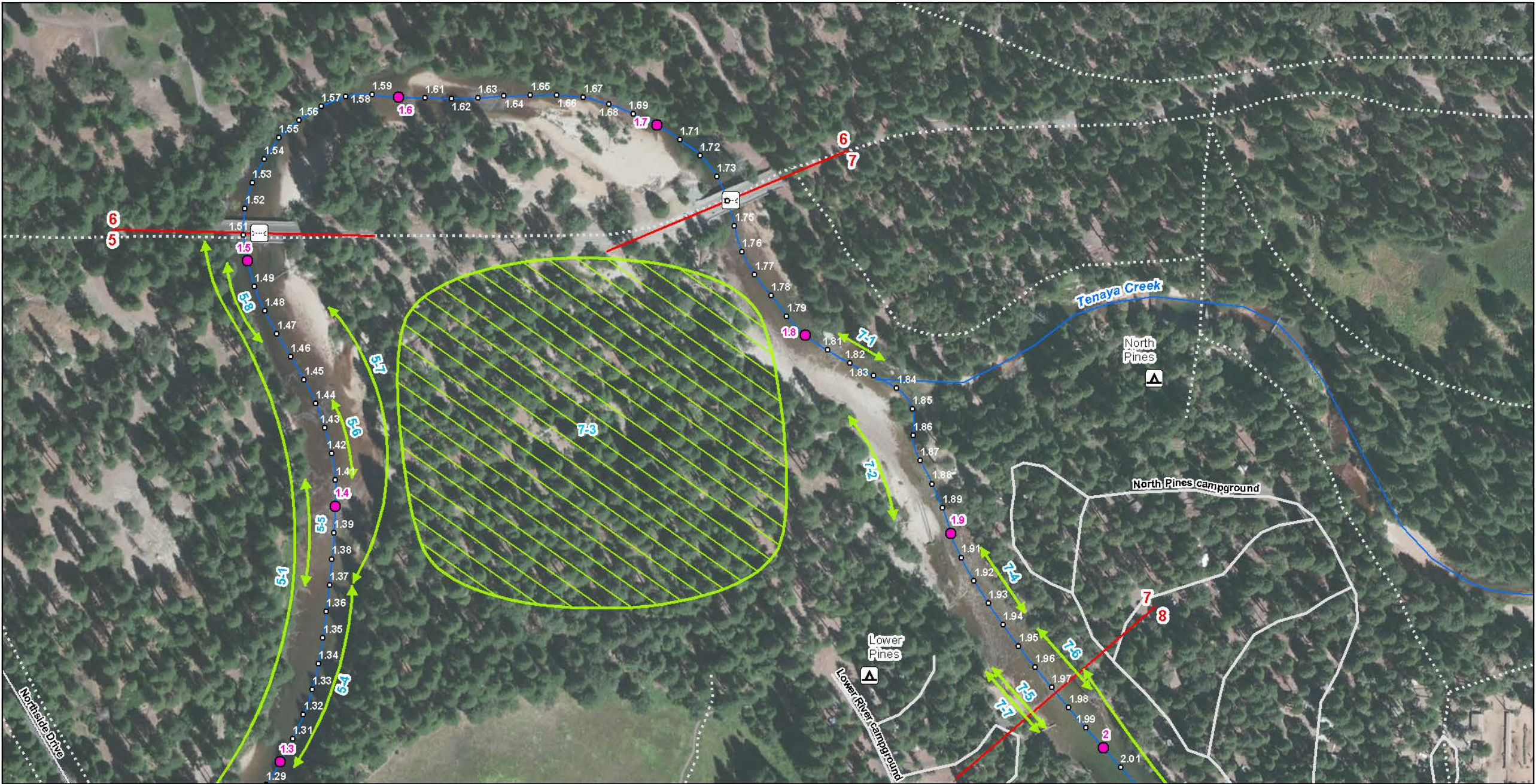


Map Features <ul style="list-style-type: none">BridgeCampgroundPicnic AreaWaterfall	Restoration Treatment Features <ul style="list-style-type: none">Treatment ID NumberRestoration Treatment Locations	Yosemite Valley Merced River Restoration Project	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com Coordinate System: UTM Zone 11, NAD 1983, meters	 This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.
Restoration Treatment Features <ul style="list-style-type: none">Primary RdSecondary/Local RdTrailReach Breaks	Reach and Treatment ID			
	Map 3 of 7			

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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 5	RM 1.22-1.51						
5-1	1.24-1.51 (RB)	<ul style="list-style-type: none">Floodplain FillDenuded and/or Compacted SoilsMinimal Vegetation RecruitmentLow Species DiversitySimplified Vegetation Structure	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking
5-2	1.22-1.24 (RB)	<ul style="list-style-type: none">Denuded and/or Compacted Soils	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Hardened River Access	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Materials List/Quantities	<ul style="list-style-type: none">Staking
5-3	1.23 to 1.28 (LB)	<ul style="list-style-type: none">Artificial Bank ProtectionSimplified Vegetation StructureBridge Alignment (?)	Stabilize streambank and enhance riparian corridor. Retain riprap to maintain stability and construct flow deflecting ELF to deflect flows away from the bank.	<ul style="list-style-type: none">Flow-deflecting ELF (Typical Graphic C-4)Selective Riprap Removal (Typical Graphic C-2)Bank Grading and Soil Modification	<ul style="list-style-type: none">Topographic and/or Quantity SurveyHydraulic ModelingBank Stability ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
5-4	1.3 to 1.37 (LB)	<ul style="list-style-type: none">Disconnected Floodplain/ Overwide ChannelSimplified Channel MorphologyMinimal Vegetation RecruitmentSimplified Vegetation Structure	Promote channel narrowing and enhance riparian corridor. Bury logs near channel toe so that flows overtop logs and sediment settles behind logs, enlarge incipient floodplain surfaces and plant.	<ul style="list-style-type: none">Floodplain-building Logs (Typical Graphic C-5) Combine with Treatments 5-5 and 5-6	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction TrainingInspection
5-5	1.37 to 1.41 (RB)	<ul style="list-style-type: none">Disconnected Floodplain/ Overwide ChannelSimplified Channel MorphologyMinimal Vegetation RecruitmentSimplified Vegetation Structure	Promote channel narrowing and enhance riparian corridor. Bury logs near channel toe so that flows overtop logs and sediment settles behind logs, enlarge incipient floodplain surfaces and plant.	<ul style="list-style-type: none">Floodplain-building Logs (Typical Graphic C-5) Combine with Treatments 5-4 and 5-6	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction TrainingInspection
5-6	1.41-1.44 (LB)	<ul style="list-style-type: none">Disconnected Floodplain/ Overwide ChannelSimplified Channel Morphology	Diversify channel morphology. Prompt mid-channel bar-formation, raising the bed profile.	<ul style="list-style-type: none">Mid Bar-forming ELF (Typical Graphic C-6) Combine with Treatments 5-4 and 5-5	<ul style="list-style-type: none">Visual SurveyBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
5-7	1.37-1.47 (LB)	<ul style="list-style-type: none">Disconnected Floodplain / Entrenched ChannelMinimal Vegetation RecruitmentSimplified Vegetation Structure	Stabilize streambank and enhance riparian corridor. Reactivate overflow channel and protect return flows (from Treatment 7-2).	<ul style="list-style-type: none">Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8)Reconstructed Bank (Typical Graphic C-1) Required with Treatment 7-2	<ul style="list-style-type: none">Topographic and/or Quantity SurveyHydraulic ModelingBank Stability ModelingBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
5-8	1.47-1.50 (RB)	<ul style="list-style-type: none">Artificial Bank Protection	Stabilize streambank while protecting existing vegetation.	<ul style="list-style-type: none">Retain Artificial Bank Protection	-	-	-

REACH 6

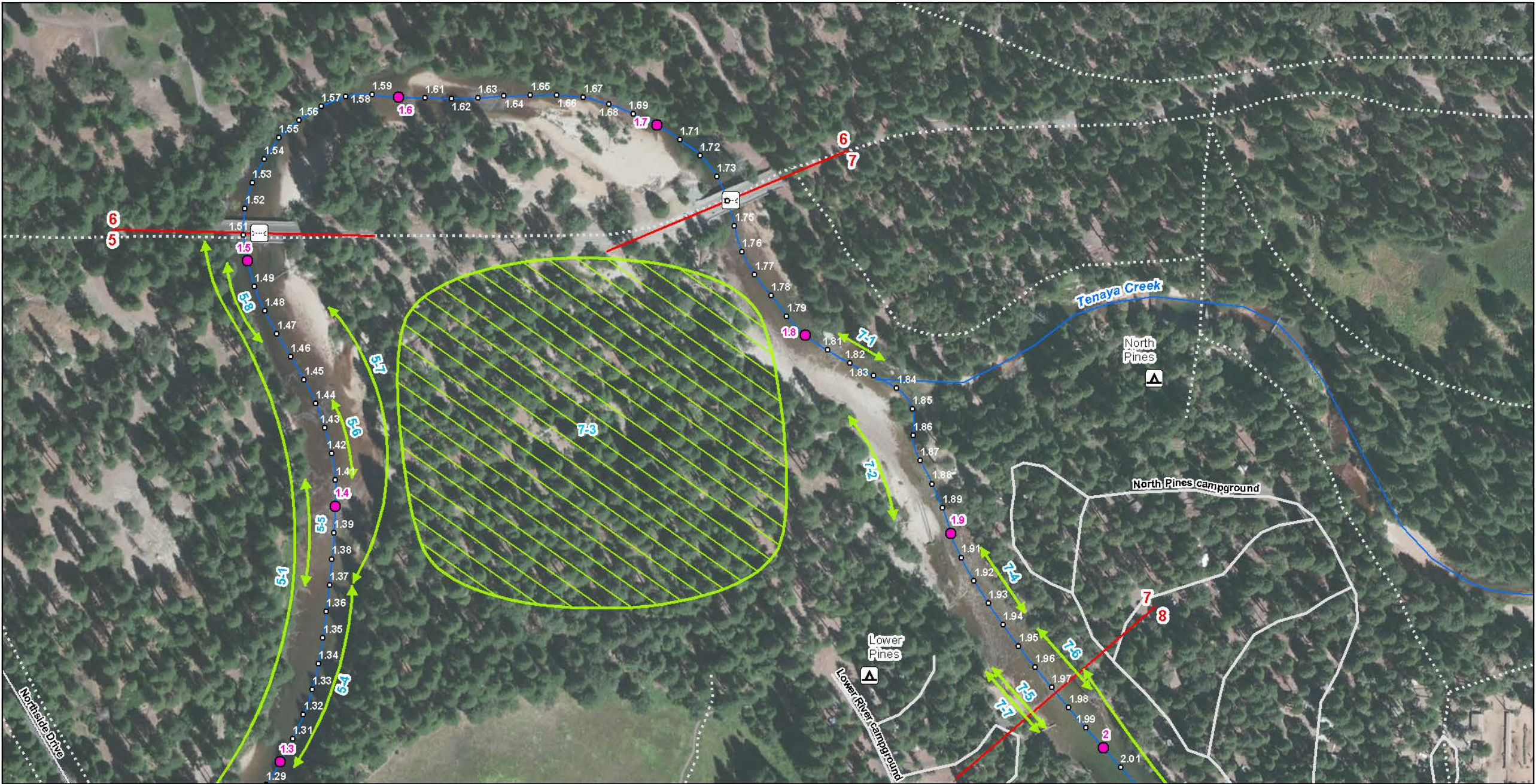


Map Features Bridge Campground Picnic Area Waterfall	Restoration Treatment Features Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Locations: Treatment ID Number Treatment ID Number	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 4 of 7	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 0 50 100 200 Feet <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 6	RM 1.51-1.74						
Pending Investigation of the Reach-Specific Study							

REACH 7



Map Features Bridge Campground Picnic Area Waterfall	Restoration Treatment Features Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Locations: Treatment ID Number Treatment ID Number	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 4 of 7	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 0 50 100 200 Feet <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 7	RM 1.74-1.97						
7-1	1.81-1.83 (RB)	<ul style="list-style-type: none">Eroding Banks (face)	Stabilize streambank erosion and enhance riparian corridor. Construct Crib Structure (Typical Graphic C-3) with plantings to protect bank from continued bank erosion.	<ul style="list-style-type: none">Crib Structure (Typical Graphic C-3) Benefits Treatment 7-2 and 7-3	<ul style="list-style-type: none">Hydraulic Modeling Topographic and/or Quantity SurveyBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
7-2	1.84-1.89 (LB)	<ul style="list-style-type: none">Disconnected Floodplain / Entrenched ChannelBridge Alignment (?)	Reconnect floodplain and enhance riparian corridor. Reconnect historic swale to release flow onto floodplain during high flows.	<ul style="list-style-type: none">Bank Lowering with Floodplain Reconnection (Typical Graphic C-8)LWD Relocation Required with Treatment5-7	<ul style="list-style-type: none">Hydraulic ModelingBank Stability Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
7-3	1.84-1.89 (LB)	<ul style="list-style-type: none">Compacted / Dewatered SoilsFloodplain FillSimplified Vegetation StructureLow Species Diversity	Enhance riparian corridor. Remove dense pines; decompact soils and create microtopographic variation; plant with diversity of native floodplain species.	<ul style="list-style-type: none">Floodplain Grading and Soil ModificationLWD Relocation Benefits Treatments 5-7, 7-1, 7-2	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">SpecificationsLWD Maintenance Protocol	<ul style="list-style-type: none">StakingConstruction Training
7-4	1.91-1.94 (RB)	<ul style="list-style-type: none">Disconnected Floodplain / Overwide ChannelSimplified Vegetation StructureLow Species DiversityMinimal Vegetation Recruitment	Promote channel narrowing and enhance riparian corridor. Construct Lateral Bar-forming ELF (Typical Graphic C-7) to promote continued deposition. Exclude recreation access to protect riparian corridor and streambanks.	<ul style="list-style-type: none">Lateral Bar-forming ELF (Typical Graphic C-7)Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual and Quantity SurveyBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
7-5	1.95-1.98 (LB)	<ul style="list-style-type: none">Disconnected Floodplain / Overwide Channel	Stabilize streambank and enhance riparian corridor. Incorporate standing and down large woody material.	<ul style="list-style-type: none">Reconstructed Bank (Typical Graphic C-1)Brush Layering	<ul style="list-style-type: none">Visual and Quantity SurveyBallasting Calculations	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
7-6	1.95-1.98 (RB)	<ul style="list-style-type: none">Denuded and/or Compacted SoilsSimplified Vegetation StructureLow Species DiversityMinimal Vegetation Recruitment	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking
7-7	1.95-1.98 (LB)	<ul style="list-style-type: none">Denuded and/or Compacted SoilsSimplified Vegetation StructureLow Species DiversityMinimal Vegetation Recruitment	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking

REACH 8

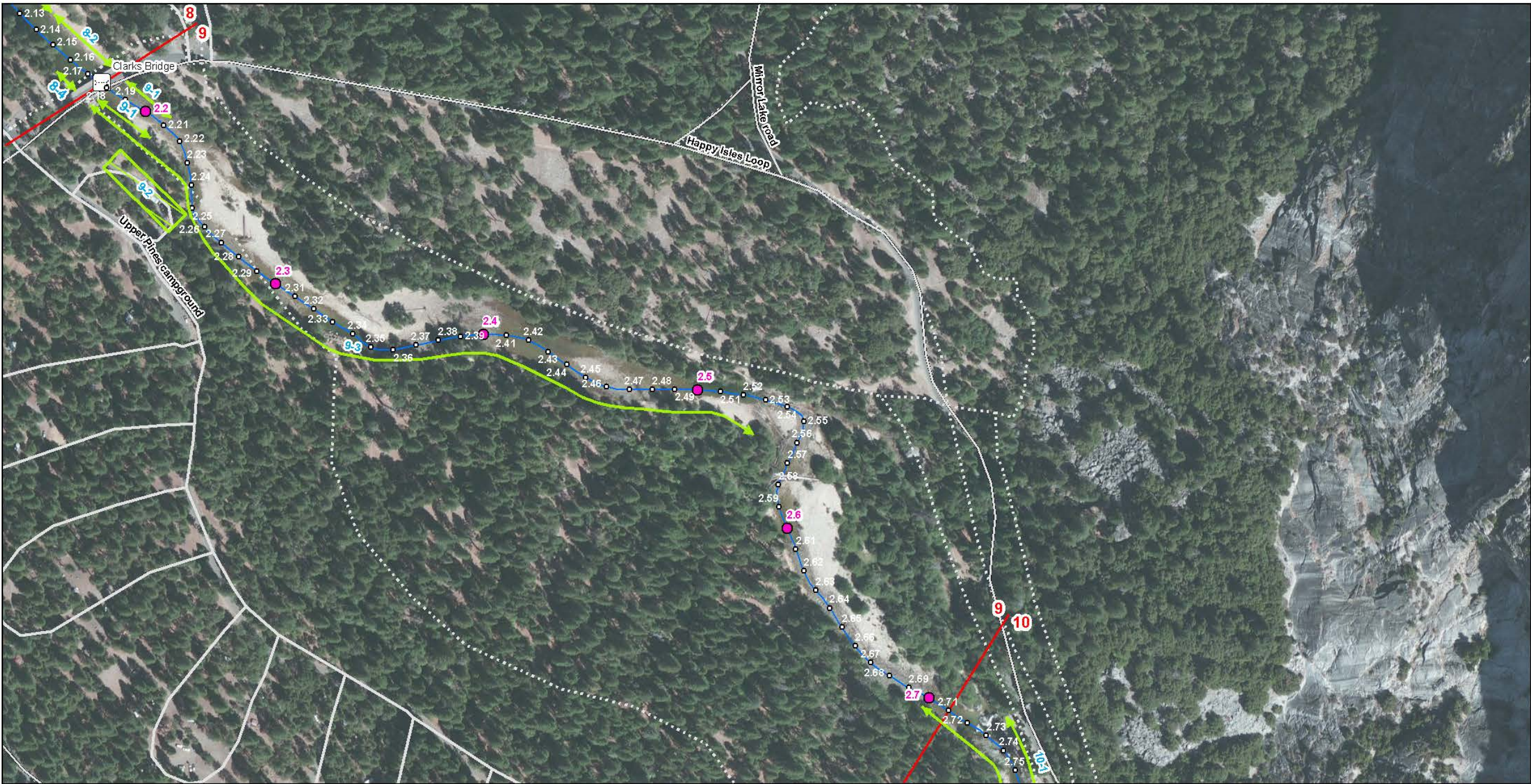


Map Features Bridge Campground Picnic Area Waterfall Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Features Treatment ID Number Restoration Treatment Locations: 	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 5 of 7	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 8	RM 1.97-2.18						
8-1	1.97-2.14 (RB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Floodplain FillLateral ConfinementDenuded and/or Compacted SoilsSimplified Vegetation StructureMinimal Vegetation RecruitmentSimplified Channel Morphology	Stabilize streambanks and enhance riparian corridor. Plant native vegetation and exclude/redirect recreation access.	<ul style="list-style-type: none">Brush LayeringRiparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Specifications	<ul style="list-style-type: none">Staking
8-2	2.14-2.18 (RB)	<ul style="list-style-type: none">Floodplain Encroachment /FillLateral ConfinementDenuded and/or Compacted SoilsSimplified Vegetation StructureLow Species DiversityMinimal Vegetation Recruitment	Enhance riparian corridor. Exclude/ redirect recreation access.	<ul style="list-style-type: none">Hardened River Access	<ul style="list-style-type: none">Visual Survey and Quantity Survey	<ul style="list-style-type: none">SpecificationsMaterials List/Quantities	<ul style="list-style-type: none">Staking
8-3	2.04-2.11 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Denuded and/or Compacted SoilsSimplified Vegetation StructureMinimal Vegetation Recruitment	Stabilize streambank and enhance riparian corridor. Regrade soils after road removal for planting, plant native vegetation, and exclude/redirect recreation access.	<ul style="list-style-type: none">Riparian Buffer EnhancementBank Grading and Soil ModificationFloodplain Grading and Soil Modification	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">SpecificationsMaterials List/Quantities	<ul style="list-style-type: none">Staking
8-4	2.16-2.18 (LB)	<ul style="list-style-type: none">Artificial Bank ProtectionDenuded and/or Compacted Soils	Stabilize streambanks. Maintain existing riprap.	<ul style="list-style-type: none">Retain Artificial Bank Protection	-	-	-

REACH 9



Map Features Bridge Campground Picnic Area Waterfall Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Features Treatment ID Number Restoration Treatment Locations: 	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 6 of 7	 701 University Ave. Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 0 50 100 200 Feet <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 9	RM 2.18-2.71						
9-1	2.18-2.21 (LB and RB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (face)Denuded and/or Compacted SoilsSimplified Vegetation StructureMinimal Vegetation RecruitmentLateral Confinement	Stabilize streambanks. Maintain existing riprap.	<ul style="list-style-type: none">Retain Artificial Bank ProtectionBank Grading and Soil Modification	<ul style="list-style-type: none">Visual Survey	-	<ul style="list-style-type: none">Staking
9-2	2.21-2.24 (LB)	<ul style="list-style-type: none">Stormwater Drainage Infrastructure	Enhance riparian corridor. Restore functions to campground removal area	<ul style="list-style-type: none">Stormwater PretreatmentFloodplain Grading and Soil Modification	<ul style="list-style-type: none">Visual Survey to identify runoff flow pathsHydrologic Analysis	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">Construction DirectionInspection
9-3	2.18-2.53 (LB)	<ul style="list-style-type: none">Eroding Banks (toe)Eroding Banks (face)Denuded and/or Compacted SoilsUnstable Tributary Confluence	Enhance riparian corridor. Regrade trail removal area for planting; plant; and exclude recreation access.	<ul style="list-style-type: none">Floodplain Grading and Soil ModificationRiparian Buffer Enhancement	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Specifications	<ul style="list-style-type: none">Staking

REACH 10



Map Features Bridge Campground Picnic Area Waterfall Primary Rd Secondary/Local Rd Trail Reach Breaks	Restoration Treatment Features Treatment ID Number Restoration Treatment Locations: 	Yosemite Valley Merced River Restoration Project Reach and Treatment ID Map 7 of 7	 701 University Ave, Suite 200 Sacramento, CA 95825 ph (916) 923-1097 fx (916) 923-6251 www.cardno.com <small>Coordinate System: UTM Zone 11, NAD 1983, meters</small>	 <small>This map and all data contained within are supplied as is with no warranty. Cardno ENTRIX expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.</small>
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Reach and Treatment ID # (Map ID)	Location (River Miles) (LB or RB)	Existing Condition and Recommendations			Implementation Needs		
		Problems and Issues	Treatment Objective	Treatment Type	Analyses	Design	Field Oversight
Reach 10	RM 2.71-2.95						
10-1	2.73-2.77 (RB)	<ul style="list-style-type: none">Artificial Bank ProtectionDenuded and/or Compacted SoilsSimplified Vegetation StructureMinimal Vegetation Recruitment	Stabilize streambanks and enhance riparian corridor. Remove existing riprap and plant native vegetation.	<ul style="list-style-type: none">Selective Riprap Removal (Typical Graphic C-2)	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Specifications	<ul style="list-style-type: none">Construction Training
10-2	2.77-2.93 (RB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (face)Simplified Vegetation StructureMinimal Vegetation RecruitmentDisconnected Floodplain / Entrenched Channel	Stabilize streambanks and enhance riparian corridor. Remove existing riprap and plant native vegetation.	<ul style="list-style-type: none">Selective Riprap Removal (Typical Graphic C-2)Floodplain Grading and Soil Modification Coordinate with Treatment 10-3 to determine boundary between riprap removal and retention	<ul style="list-style-type: none">Visual Survey	<ul style="list-style-type: none">Specifications	<ul style="list-style-type: none">StakingConstruction Training
10-3	2.93-2.95 (RB)	<ul style="list-style-type: none">Artificial Bank ProtectionEroding Banks (face)Simplified Vegetation StructureMinimal Vegetation RecruitmentDisconnected Floodplain / Entrenched ChannelLocalized Channel Scour	Stabilize streambanks. Maintain existing riprap.	<ul style="list-style-type: none">Retain Artificial Bank Protection Coordinate with Treatment 10-2 to determine boundary between riprap removal and retention	<ul style="list-style-type: none">Hydraulic ModelingBank Stability Modeling	-	-
10-4	2.97-3.09 (LB)	<ul style="list-style-type: none">Lateral ConfinementDisconnected Floodplain / Entrenched ChannelLocalized Channel Scour	Reactivate overflow channels. Reconnect high flow channels that connect to culverts adjacent to bridge to improve bridge conveyance.	<ul style="list-style-type: none">Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8) Required with Treatment 10-5	<ul style="list-style-type: none">Topographic and Quantity SurveyHydraulic Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection
10-5	2.7-2.9? (LB)	<ul style="list-style-type: none">Disconnected Floodplain / Entrenched Channel	Accommodate reactivated overflow channel return flows.	<ul style="list-style-type: none">Bank Lowering with Overflow Channel Reactivation (Typical Graphic C-8) Required with Treatment 10-4	<ul style="list-style-type: none">Hydraulic ModelingBank Stability Modeling	<ul style="list-style-type: none">DetailsSpecificationsMaterials List/QuantitiesCost Estimate	<ul style="list-style-type: none">StakingConstruction DirectionInspection