2018 Fish Passage Annual Legislative Report

(October 2019)

Report to the Legislature
2019

Caltrans

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Executive Summary

This report is required by Streets and Highways Code Section 156.1 and provides an annual update on the California Department of Transportation's (Caltrans) progress for January 1, 2018, to December 31, 2018, on locating, assessing and remediating fish passage barriers on the State Highway System.

2018 Fish Passage Program Accomplishments

In 2018, Caltrans completed remediations at five fish passage barrier locations, improving access to an estimated 31 miles of salmon and Steelhead habitat.

Caltrans is currently developing projects to remediate 27 active fish passage barriers, which are estimated to improve access to an estimated 166 miles of salmon and Steelhead habitat.

Fish Passage Advisory Committees have identified 68 salmon and Steelhead barrier locations for priority remediation, with an estimated 374 miles of high-quality salmon and Steelhead habitat, above the existing barrier.

In 2018, Caltrans completed 167 assessments at road/stream crossings for fish passage. Of those 167 assessments, 14 were identified as new barriers, 85 were determined to be non-barriers and 68 locations are potential barriers, which need additional surveys to determine barrier status.

Since the enactment of SB 857 (Kuehl, Chapter 589, Statutes of 2005), Caltrans has remediated 47 total barrier locations, which are currently functioning as designed. Those 47 locations account for an estimated 792 miles of improved access to salmon and Steelhead habitat. This includes 10 full (permanent) remediations, which allow access to an estimated 197 miles of habitat and 37 partial/hydraulic remediation locations, which have improved access to an estimated 595 miles of habitat. See Appendix A, Fish Passage Locations Completed, for additional information.

Caltrans continues to provide management oversight, meeting facilitation, mapping of barriers and data for the six Fish Passage Advisory Committees and the Interagency Engineering Working Group, to continue to develop and implement tools and efficiencies which are further outlined in the report.

Background

Streets and Highways Code, Section 156.1 (see Appendix B. Statutory Reporting Reference), requires Caltrans to prepare an annual report to the Legislature describing the status of progress in locating, assessing, funding and remediating barriers to fish passage. The bill also requires Caltrans to report:

- Completed assessments of potential barriers to anadromous fish prior to commencing any project using state or federal transportation funds;
- Submit assessments to the Passage Assessment Database; and
- Construct new projects that do not pose a barrier to fish passage.

2018 Fish Passage Barrier Remediation Progress

Improving fish passage on the State Highway System requires a comprehensive approach using **science and data, engineering, training, permitting, research, funding, multi-species benefits, and partnerships,** because of complex considerations associated with successful barrier remediation. During the past five years, Caltrans has improved coordination and partnering with the California Department of Fish and Wildlife, National Marine Fisheries Service, and other remediation partners to lead fish passage barrier remediation progress in California.

Science and Data

Caltrans and the Fish Passage Advisory Committees (www.cafishpac.org) continue to improve biological data and information in coordination with the state's Passage Assessment Database. Identifying information needs respective of benefits to salmon and Steelhead is a key priority. The existing protocol surveys, known as Reconnaissance (first pass) and Detailed (second pass) assessments, focus strictly on engineering analysis, versus whether road/stream crossings are within suitable habitat. The sole use of engineering-only analysis can result in delayed projects or locations proposed for fish passage remediation that are not within suitable habitat for salmon and Steelhead. The Advisory Committees determined that a more concise, efficient way of collecting and translating the necessary biological information, respective of the quality and quantity of habitat and potential beneficial use of the watershed (e.g., juvenile rearing, adult spawning, velocity/thermal refugia, etc.) was necessary. To address this gap in the barrier assessment protocol, Advisory Committees created a Pilot Fish Passage Barrier and Habitat Evaluation Form, which is intended to be a rapid assessment to inform professionals and provide site photos that demonstrate specific barrier elements and suitable habitat. This

Pilot form is not intended to replace stream surveys or other upstream investigations, rather it allows fish passage practitioners to focus on barrier locations with the greatest likely benefits for salmon and steelhead. The form is available on the science and data webpage of the Fish Passage Advisory Committee website (https://www.cafishpac.org/science-data).

In July of 2019, the Fish Passage Advisory Committees presented a certificate of Science and Data Excellence to the Pacific States Marine Fisheries Commission for partnerships with Caltrans Headquarters Biology and the Fish Passage Advisory Committees. The certificate recognizes Pacific States Marine Fisheries Commission for excellence in support of science and data throughout California to assist fish passage professionals in communicating data for barriers and assessment locations, quality assurance and quality control of the Passage Assessment Database, education at workshops, mapping for fish passage and connectivity, creation of story maps that advance understanding of barrier locations and multi-species benefits to barrier remediation, creation of watershed maps and modeling, and for support of road/stream and habitat surveys in Santa Barbara after fires and mudslides devasted watersheds. The certificate can be found on the California FishPAC Achievements webpage (https://www.cafishpac.org/successes).

One example of the innovative work that Pacific States Marine Fisheries has supported is for mapping to demonstrate the best available science for site specific locations based on topography. Appendix C. Mapping Innovation for Improved Science and Data (page 49) outlines the mapping tools used, based on guidance for jumping and swimming abilities of salmon and Steelhead.

On July 7, 2019 Caltrans and the California Conservation Corps entered into a three-year contract to conduct Reconnaissance (first pass) assessments at approximately 5,000 road/stream crossings, as identified in the Passage Assessment Database. This partnership among Caltrans, the California Conservation Corps, and the Pacific State Marine Fisheries Commission will greatly increase the rate at which assessments are conducted. Caltrans, the Fish Passage Advisory Committees, and all users of the Passage Assessment Database will benefit from this assessment work as it is completed.

Table 1 (page 5) is an outline of the Fish Passage Advisory Committee assessment priorities based on their collective determination of watershed importance and biological value. The Tiers provide an outline of the relative importance and prioritized timing of assessments.

Table 1. Reconnaissance assessment needs and priorities. [1]

District (Fish Passage Advisory Committee)	Estimated 1st Pass (Recon) Assessment Needs[2]	Tier 1 Estimated Assessment Needs by County (completed first)	Tier 2 Estimated Assessment Needs by County (completed second)	Tier 3 Estimated Assessment Needs by County (final survey)
District 1 – Eureka (North Coast)	856	**282** - Mendocino, Humboldt, Del Norte	**336** – Humboldt, Mendocino	**238** – Mendocino, Humboldt, Del Norte
District 2 – Redding (Klamath-Cascades)	978	**375** – Siskiyou, Tehama, Trinity	**334**- Shasta, Siskiyou, Tehama, Trinity	**269** - Shasta, Siskiyou, Tehama,
District 3 – Marysville (Central Valley)	486	**216** - Butte, El Dorado, Glenn, Nevada, Sutter, Yolo, Yuba, Sacramento	**113** - Butte, Glenn, Placer, Sacramento, Sutter, Yuba	**157** - Butte, Colusa, Glenn, Sacramento, Yolo
District 4 – Oakland (Bay Area)	554	**126** - San Mateo, Napa, Marin, Contra Costa, Sonoma, Santa Clara, Alameda	**175** -Alameda, Contra Costa, San, Mateo, Marin, Napa, Santa Clara, Solano, Sonoma	**253** - Alameda, Contra Costa, San Mateo, Santa Clara, Solano, Sonoma
District 5 - San Luis Obispo (Central Coast)	478	**164** - Monterey, San Luis Obispo, Santa Barbara, Santa Cruz	**92** - Monterey, San Luis Obispo, Santa Barbara	**222** - Monterey, San Benito, Santa Barbara, San Luis Obispo, Santa Cruz
District 6 – Fresno (Central Valley)	471	**137** - Fresno, Madera	**235** - Fresno, Kings, Madera, Tulare	**99** - Fresno, Kings, Madera, Tulare

[1] Priority Tiers were determined by biologists and other fish passage professionals in the Fish Passage Advisory Committees, based on the specific watersheds identified for the recovery of salmon and Steelhead in California.

[2] The Passage Assessment Database (PAD) tracks barriers and outstanding assessment needs. These locations require 1st Pass Assessments (Reconnaissance) surveys to determine if they have the potential to block salmon/steelhead habitat.

District (Fish Passage Advisory Committee)	Estimated 1st Pass (Recon) Assessment Needs[2]	Tier 1 Estimated Assessment Needs by County (completed first)	Tier 2 Estimated Assessment Needs by County (completed second)	Tier 3 Estimated Assessment Needs by County (final survey)
District 7 - Los Angeles (Southern Steelhead)	251	Recently Completed - Los Angeles, Ventura,	**132** – Los Angeles, Ventura	**119** – Los Angeles, Ventura
District 10 – Stockton (Central Valley)	724	**189** - Calaveras, Merced, San Joaquin, Stanislaus	**268** - Amador, Calaveras, San Joaquin, Merced, Mariposa, Stanislaus, Tuolumne	**267** - Mariposa, Merced, San Joaquin, Stanislaus,
District 11 - San Diego (Southern Steelhead)	166	Recently Completed – San Diego	**59** – San Diego	**107** – San Diego
District 12 – Orange (Southern Steelhead)	146	Recently Completed - Orange	**97** - Orange	**49** - Orange
~Totals	**5,110**	**1,489**	**1,841**	**1,780**

Engineering

The Interagency Fish Passage Engineering Group is comprised of partners from Caltrans, California Department of Fish and Wildlife, and the National Marine Fisheries Service. The Engineering Group convenes monthly to exchange information and collaborate on guidance, training, and project efforts. This group collaborates on training events, research, standardized monitoring, and other progress advancing fish passage and restoration efforts. Additional information on fish passage engineering can be found on the California FishPAC Engineering webpage (https://www.cafishpac.org/engineering).

In July of 2019, the Fish Passage Advisory Committee presented a certificate to Caltrans, Division of Engineering, Structures, for Engineering Excellence. The certificate recognizes excellence in engineering and supporting fish passage projects in the pre-design of small bridges, Accelerated Bridge Construction Projects, supporting and funding the parametric pile strike research for foundations to design below scour elevation, participating on the Interagency Engineering Working Group and Fish Passage Advisory Committees throughout

the state, education and outreach at the Bridge Design Academy, and for supporting the Humboldt State University fish passage engineering research. The certificate can be found on the California FishPAC Achievements webpage (https://www.cafishpac.org/successes).

Training

In July and August of 2019, six Fish Passage Engineering Workshops were hosted by the Fish Passage Advisory Committees throughout the state. Approximately 230 members and partners attended the workshops to learn more about barrier types, fluvial geomorphology and natural stream process, one- and two-dimensional watershed modeling, effectiveness of engineering solutions, monitoring, maintenance, and case studies.

Caltrans and the Fish Passage Advisory Committees continue to support webinar training events for fish passage and related restoration efforts. Webinars and training events are recorded and available to both members and non-members. Additional information about the available training opportunities and on-demand training can be found on the California FishPAC Training webpage (https://www.cafishpac.org/training).

Permitting

Caltrans continues to develop standard design solutions to advance analysis and methods for programmatic permitting. The National Marine Fisheries Service and the California Department of Fish and Wildlife have expressed interest in the prospect of streamlined permitting for fish passage projects that promote design solutions and construction activities which align with best management practices. Best management practices avoid and minimize temporary impacts while implementing projects that lead to long-term environmental enhancements to salmon and Steelhead habitat and multi-species benefits.

Partnerships

External partnering through the six statewide Fish Passage Advisory Committees and the Interagency Engineering Working Group continues to be an important part of the overall support for planning, scoping, developing, designing, permitting, and implementing successful fish passage projects. These partnering efforts are long-term efforts and remain a top priority. Caltrans Divisions and Districts continue to collaborate to advance communication, increase support, and create efficiencies to effectively address fish passage barriers.

Funding

Transportation improvements may be specific to one road/stream crossing with a project focus of fish passage remediation. There are also projects where fish passage improvements are part of a larger project, such as a roadway realignment or multiple culvert project. Therefore, some costs which are not broken out from the larger project effort have an estimated range based on the identified engineering solution. Currently 27 active (funded) fish passage locations are being developed, totaling approximately $220 - $240 million dollars from transportation funding sources. The scope for most projects currently being developed are small bridge structures (20 to 115 foot). Appendix D. Active (Funded) Fish Passage Remediation Locations (page 50), outlines funding information for the 27 current, funded fish passage remediation locations.

Species and Habitat Benefits

Remediating barriers to provide access to upstream habitat will help ensure that salmon and Steelhead populations can respond and adapt to climate change stressors, such as drought, wildfire, sea level rise, changes in stream flow, and water temperature. Fish passage design solutions that restore the natural channel processes often provide migration opportunities for other terrestrial species (e.g., bear, deer) and aquatic species, such as amphibians and invertebrates. Full-span design solutions also naturalize sediment transport and replenish spawning gravels in depleted downstream (incised) sections of stream and river channels. Caltrans has funded the purchase of approximately 80 trail cameras for a multi-species camera project to provide data related to terrestrial species use at fish passage locations and other connectivity opportunities on the State Highway System (Figure 1). The multi-species camera storymap (https://www.arcgis.com/apps/MapSeries/index.html?appid=2e345c26f68741129c346eb7a1f4ef5c) spatially displays locations and pictures of species.

Prior to 2014, Caltrans and other restoration practitioners in California were primarily focused on partial (short-term) solutions based on available funding and greater costs for full-span solutions. As demonstrated by the recent increase in funded and implemented full-span project locations, more resources are being invested into small bridge and geomorphic solutions that effectively provide the multi-species and other habitat quality benefits described above. These types of solutions provide the state with greater long-term return on investments and reduced maintenance needs.

Pre-project camera surveys A District 2 (Redding), active project at Harrison Gulch (Shasta 36) shows a black bear using the existing double-bay reinforced concrete box during low flow.	
Post-project camera surveys A District 1 (Eureka), completed remediation at Upp Creek (Mendocino 101) shows two mule deer bucks using the shade of the bridge and under-crossing.	

Figure 1. Multi-species benefits of remediating fish passage barriers.
These two photos also document the importance of monitoring sites post-construction to enhance understanding of the effects of barrier remediation on California's fish and wildlife species.

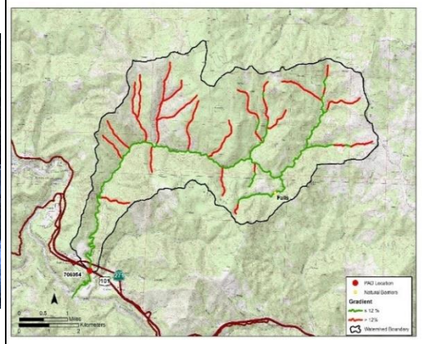
Research

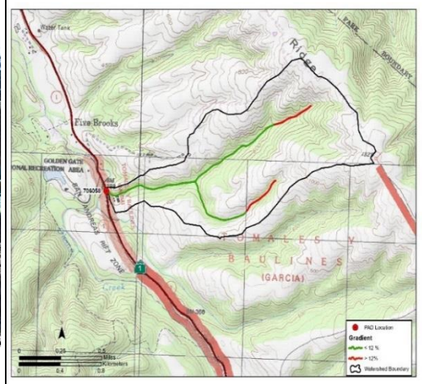
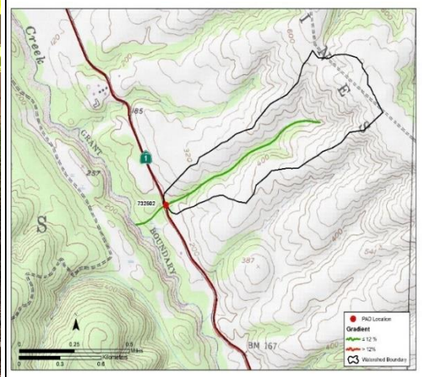
In partnership with the Interagency Engineering Working Group, Caltrans funded a 2-year fish passage engineering research project with engineering experts from Humboldt State University. This effort includes research panelists from Caltrans, the California Department of Fish and Wildlife, and National Marine Fisheries Service. The research is investigating the efficacy of previously remediated hydraulic design solutions (partial) and geomorphic designs that attempt to restore continuity of the natural channel processes at fish passage barriers on the California State Highway System. Goals of this research include a fully informed understanding of the most effective solutions as well as a draft guidance manual, supported by the Interagency Engineering Working Group, for Caltrans and partners to use as guidance that informs the most beneficial long-term solutions with the greatest value and return on investment.

2018 Completed Fish Passage Remediation Locations

Five fish passage barriers were remediated in 2018, improving access to an estimated **31 miles** of habitat for salmon and steelhead. Table 1 contains information on the locations. Figure 2 (page 14). is a map of the locations listed in Table 2. Refer to page 49 for citations related to watershed mapping.

Table 2. 2018 completed fish passage remediation locations.

Map #	CT District – County – Route – Post Mile	PAD ID # (Treatment Status)	Stream Name	Species	Habitat	Pre-Construction Fish Passage (Barrier) Photo	Post-Construction Fish Passage (Remediation) Photo	Watershed model – run/rise habitat estimate figure	Notes
1	1 – Mendocino – 101 – PM 89.24	706954 (Partial)	Cedar Creek	Northern CA Steelhead (Threatened), Southern OR/Northern CA Coast Coho (Threatened), and CA Coastal Chinook (Threatened), Pacific Lamprey	Improved access to an estimated **11.91 miles** of upstream habitat				• The remediation is a partial solution with downstream and internal facility weirs for improved access and water depth. • Post – construction surveys conducted by California Department of Fish and Wildlife. Chinook salmon observed spawning above remediated location. • Annual monitoring will need to occur for this partial remediation to remain passable for the life of the facility, • Partial/hydraulic remediations can become damaged, full of sediment or blocked with debris. When impaired passage is identified maintenance is required.

Map #	CT District – County – Route – Post Mile	PAD ID # (Treatment Status)	Stream Name	Species	Habitat	Pre-Construction Fish Passage (Barrier) Photo	Post-Construction Fish Passage (Remediation) Photo	Watershed model – run/rise habitat estimate figure	Notes
2	4 – Marin – 1 – PM 22.78	706058 (Full)	Giacomini Gulch	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered)	Improved access to an estimated **1.56 miles** of upstream habitat				• This barrier was near the confluence of Olema Creek, posing a total barrier to salmon and steelhead access in Giacomini Gulch. • The remediation solution was a bridge, which is a full remediation to salmon and steelhead. • This remediation allows habitat connectivity for other aquatic and terrestrial species within the watershed corridor. Multi – species benefits will be studied at this location. • The design solution was sized to significantly increase the capacity of the structure, naturalize the transport of sediments and restore depleted gravels downstream in Olema Creek.
3	4 – Marin – 1 – PM 24.77	732502 (Full)	Tributary to Olema Creek	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered)	Improved access to an estimated **0.79 miles** of upstream habitat				• This barrier was near the confluence of Olema Creek, posing a total barrier to salmon and steelhead access in Giacomini Gulch. • The remediation solution was a bridge, which is a full remediation to salmon and steelhead. • This remediation allows habitat connectivity for other aquatic and terrestrial species within the watershed corridor. Multi – species benefits will be studied at this location. • The design solution was sized to significantly increase the capacity of the structure, naturalize the transport of sediments and restore • depleted gravels downstream in Olema Creek.

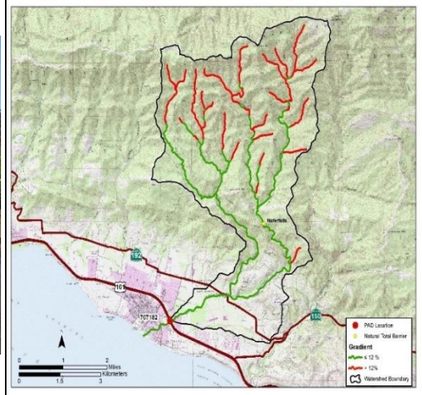
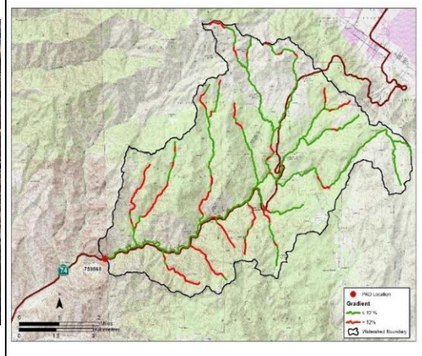
Map #	CT District – County – Route – Post Mile	PAD ID # (Treatment Status)	Stream Name	Species	Habitat	Pre-Construction Fish Passage (Barrier) Photo	Post-Construction Fish Passage (Remediation) Photo	Watershed model – run/rise habitat estimate figure	Notes
4	5 – Santa Barbara – 101 – PM 2.2	707182 (Full)	Carpinteria Creek	Southern California Coast Steelhead (Endangered)	Improved access to an estimated **12.22 miles** of upstream habitat				• This barrier was near the confluence of the Pacific Ocean, posing a partial barrier for the entire Carpinteria Creek watershed. • Piers, concrete weirs and a crossing were removed from the watershed. The remediation solution is a full – span bridge for all life stages of steelhead. • This remediation allows habitat connectivity for other aquatic and terrestrial species within the watershed corridor. Multi – species benefits will be studied at this location. • The design solution was sized to significantly increase the capacity of the structure, naturalize the transport of sediments and restore depleted sands and gravels along the coast.
5	12 – Orange – 74 – PM 13.3	759565 (Full)	San Juan Creek	Southern California Coast Steelhead (Endangered)	Improved access to an estimated **4.91 miles** of upstream habitat				• This fish passage remediation project was in partnership with the Caltrans District and US Forest Service. • Contractors for the US Forest Service used hand tools to remove the total rock and concrete check dam barrier. • The Contractor left the natural stream gravels in place to be washed downstream and replenish gravels that have been lost due to incision (degradation) in the lower watershed.

Figure 2. 2018 completed fish passage remediation locations.

2018 Completed Fish Passage Assessment Locations

In 2018, 167 fish passage assessments were completed in Districts 2 (Redding), 4 (Oakland), 7 (Los Angeles), 11 (San Diego) and 12 (Orange). Table 3 (page 15), lists **14** new identified barriers and **68** potential barriers that need detailed surveys. The remaining **85** assessed locations are not barriers to salmon or steelhead. Assessment information has been submitted to the California Department of Fish and Wildlife Passage Assessment Database. Figure 3 shows locations listed in Table 3.

Table 3. 2018 completed fish passage assessment locations.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Assessment Status
1	2	Trinity – 299 – PM 54.5	731450	Little Browns Creek	Weaver Creek	New Identified Barrier
2	4	Sonoma – 1 – PM 11.2	733197	Unnamed	Bodega Bay Harbor	New Identified Barrier
3	7	Los Angeles – 27 – PM 0.5	759740	Unnamed	Topanga Canyon	Potential Barrier
4	7	Los Angeles – 27 – PM 5.09	759746	Unnamed	Topanga Canyon	Potential Barrier
5	7	Los Angeles – 27 – PM 5.6	759747	Unnamed	Topanga Canyon	New Identified Barrier
6	7	Ventura – 33 – PM 4.2	759835	Canada Larga	Ventura River	New Identified Barrier
7	7	Ventura – 33 – PM 12.18	759838	Unnamed	Trib McDonald Canyon	Potential Barrier
8	7	Ventura – 33 – PM 24.17	713767	North Fork Matilija Creek	Ventura River	New Identified Barrier
9	7	Ventura – 33 – PM 29.19	759848	Unnamed	Sespe Creek	Potential Barrier
10	7	Ventura – 33 – PM 29.54	759849	Unnamed	Sespe Creek	Potential Barrier
11	7	Ventura – 33 – PM 38.81	759851	Unnamed	Adobe Creek	Potential Barrier
12	7	Ventura – 33 – PM 39.26	764936	Unnamed	Adobe Creek	Potential Barrier
13	7	Ventura – 33 – PM 39.49	759852	Unnamed	Adobe Creek	Potential Barrier

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Assessment Status
14	7	Ventura – 33 – PM 41.9	759856	Adobe Creek	Sespe Creek	New Identified Barrier
15	7	Ventura – 34 – PM 8.15	759858	Revolon Slough	Calleguas Creek	Potential Barrier
16	7	Ventura – 34 – PM 8.4	759859	Unnamed	Revolon Slough	Potential Barrier
17	7	Ventura – 34 – PM 9.4	759860	Unnamed	Revolon Slough	Potential Barrier
18	7	Ventura – 101 – PM 18.0	759872	Wood Creek	Trib Beardsley Wash	Potential Barrier
19	7	Ventura – 101 – PM 18.8	759873	Beardsley Wash	Revolon Slough	Potential Barrier
20	7	Ventura – 101 – PM 26.9	759877	Unnamed	Trib Arundell Barranca	Potential Barrier
21	7	Ventura – 150 – PM 0.5	759939	Unnamed	Casitas Creek	Potential Barrier
22	7	Ventura – 150 – PM 29.51	759945	Unnamed	Santa Paula Creek	Potential Barrier
23	11	San Diego – 5 – PM 3.8	759229	Unnamed	Otay River	Potential Barrier
24	11	San Diego – 5 – PM 9.1	759233	Unnamed	Pacific Ocean	Potential Barrier
25	11	San Diego – 5 – PM 10.0	759236	Paradise Creek	Sweetwater River	Potential Barrier
26	11	San Diego – 5 – PM 58.2	759250	Cockleburr Canyon Creek	Pacific Ocean	Potential Barrier
27	11	San Diego – 5 – PM 60.4	759254	Unnamed	Pacific Ocean	Potential Barrier
28	11	San Diego – 54 – PM 1.3	759333	Unnamed	Sweetwater River	Potential Barrier
29	11	San Diego – 75 – PM 9.4	759362	Unnamed	Otay River	Potential Barrier
30	11	San Diego – 76 – PM 6.7	759362	Unnamed	San Luis Rey River	Potential Barrier
31	11	San Diego – 76 – PM 9.46	759365	Unnamed	San Luis Rey River	Potential Barrier

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Assessment Status
32	11	San Diego – 76 – PM 10.1	759367	Unnamed	San Luis Rey River	Potential Barrier
33	11	San Diego – 76 – PM 12.07	759368	Bonsall Creek	San Luis Rey River	Potential Barrier
34	11	San Diego – 76 – PM 13.1	759370	Unnamed	San Luis Rey River	Potential Barrier
35	11	San Diego – 76 – PM 14.7	759371	Unnamed	Trib Live Oak Creek	New Identified Barrier
36	11	San Diego – 76 – PM 15.6	759373	Unnamed	San Luis Rey River	Potential Barrier
37	11	San Diego – 76 – PM 16.79	759374	Unnamed	San Luis Rey River	Potential Barrier
38	11	San Diego – 76 – PM 19.4	759376	Unnamed	San Luis Rey River	New Identified Barrier
39	11	San Diego – 76 – PM 19.5	759377	Unnamed	San Luis Rey River	Potential Barrier
40	11	San Diego – 76 – PM 23.77	759380	Trujillo Creek (Blix Creek)	San Luis Rey River	New Identified Barrier
41	11	San Diego – 76 – PM 24.31	759381	Magee Creek (Bompass Wash)	San Luis Rey River	New Identified Barrier
42	11	San Diego – 76 – PM 25.5	712682	Marion Creek	San Luis Rey River	Potential Barrier
43	11	San Diego – 76 – PM 27.37	759384	Frey Creek	San Luis Rey River	Potential Barrier
44	11	San Diego – 76 – PM 28.28	759385	West Rincon Creek	San Luis Rey River	Potential Barrier
45	11	San Diego – 76 – PM 28.9	759386	Unnamed	Unnamed Trib San Luis Rey River	Potential Barrier
46	11	San Diego – 76 – PM 29.23	759387	West Pauma Creek	San Luis Rey River	New Identified Barrier
47	11	San Diego – 76 – PM 31.0	759388	Unnamed	Unnamed Trib San Luis Rey River	Potential Barrier
48	11	San Diego – 76 – PM 31.3	759389	Unnamed	San Luis Rey River	Potential Barrier

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Assessment Status
49	11	San Diego – 76 – PM 32.5	759390	Unnamed	San Luis Rey River	Potential Barrier
50	11	San Diego – 76 – PM 32.8	759391	Yuima Creek	San Luis Rey River	Potential Barrier
51	11	San Diego – 76 – PM 35.4	759392	Unnamed	Potrero Creek	Potential Barrier
52	11	San Diego – 76 – PM 35.5	759393	Plaisted Creek	Potrero Creek	Potential Barrier
53	11	San Diego – 76 – PM 35.9	759394	Potrero Creek	San Luis Rey River	Potential Barrier
54	11	San Diego – 76 – PM 36.1	759395	Unnamed	Potrero Creek	Potential Barrier
55	11	San Diego – 76 – PM 38.0	759397	Unnamed	Unnamed Trib San Luis Rey River	Potential Barrier
56	11	San Diego – 76 – PM 38.6	759398	Unnamed	San Luis Rey River	Potential Barrier
57	11	San Diego – 76 – PM 39.86	759400	Unnamed	San Luis Rey River	Potential Barrier
58	11	San Diego – 76 – PM 40.3	759401	Unnamed	Unnamed Trib San Luis Rey River	Potential Barrier
59	11	San Diego – 76 – PM 41.63	759402	Cedar Creek	San Luis Rey River	Potential Barrier
60	11	San Diego – 76 – PM 42.9	759403	Unnamed	San Luis Rey River	Potential Barrier
61	11	San Diego – 76 – PM 44.7	759404	Unnamed	San Luis Rey River	Potential Barrier
62	11	San Diego – 76 – PM 47.8	759407	Unnamed	San Luis Rey River	Potential Barrier
63	11	San Diego – 76 – PM 48.2	759408	Unnamed	San Luis Rey River	Potential Barrier
64	11	San Diego – 125 – PM 5.5	759445	Unnamed	Unnamed Trib Sweetwater River	Potential Barrier
65	11	San Diego – 125 – PM 5.6	759446	Unnamed	Sweetwater River	Potential Barrier

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Assessment Status
66	11	San Diego – 125 – PM 8.0	759448	Unnamed	Sweetwater River	Potential Barrier
67	12	Orange – 5 – PM 9.9	759486	Horno Creek	San Juan Creek	Potential Barrier
68	12	Orange – 5 – PM 11.3	759488	Unnamed	Arroyo Trabuco	Potential Barrier
69	12	Orange – 5 – PM 16.4	759494	Unnamed	Oso Creek	Potential Barrier
70	12	Orange – 5 – PM 17.8	706857	Aliso Creek	Pacific Ocean	Potential Barrier
71	12	Orange – 5 – PM 20.97	759496	Serrano Creek	San Diego Creek	Potential Barrier
72	12	Orange – 74 – PM 5.0	759552	Unnamed	San Juan Creek	Potential Barrier
73	12	Orange – 74 – PM 5.2	759553	Unnamed	San Juan Creek	Potential Barrier
74	12	Orange – 74 – PM 6.1	759554	Unnamed	San Juan Creek	Potential Barrier
75	12	Orange – 74 – PM 7.5	759555	Unnamed	San Juan Creek	Potential Barrier
76	12	Orange – 74 – PM 8.8	759557	Unnamed	San Juan Creek	Potential Barrier
77	12	Orange – 74 – PM 9.2	759559	Lucas Canyon Creek	San Juan Creek	New Identified Barrier
78	12	Orange – 74 – PM 11.1	759561	Unnamed	San Juan Creek	Potential Barrier
79	12	Orange – 74 – PM 11.2	759562	Unnamed	San Juan Creek	New Identified Barrier
80	12	Orange – 74 – PM 12.34	759564	Unnamed	San Juan Creek	Potential Barrier
81	12	Orange – 405 – PM 1.5	759650	San Diego Creek	Pacific Ocean	New Identified Barrier
82	12	Orange – 405 – PM 6.41	759486	Unnamed	San Diego Creek	Potential Barrier

Figure 3. 2018 completed fish passage assessment locations.

Active Fish Passage Remediation Locations

Caltrans is currently developing projects to remediate 27 fish passage barriers. Two new locations have been funded on the State Highway System, indicated in **bold and underline**. The 27 active locations account for an estimated **166 miles** of currently blocked habitat for salmon and steelhead. Table 4 lists the locations that are either funded through construction, or partially funded for planning, design or permitting. Figure 4 (page 25) is a map of the locations listed in Table 4.

Table 4. Active fish passage remediation locations.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Project Name	Estimated Year of Completion	Species	Habitat
1	1	Del Norte – 101 – PM 39.78	707134	Dominie Creek	Dr. Fine Bridge Mitigation	2022/23	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **2.49 miles** of salmon and steelhead habitat above this barrier.
2	1	Del Norte – 199 – PM 2.56	707139	Clarks Creek	Clarks Creek	2022/23	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **3.69 miles** of salmon and steelhead habitat above this barrier.
3	1	Del Norte – 199 – PM 31.31	707137	Griffin Creek	Griffin Creek	2022/23	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **3.66 miles** of salmon and steelhead habitat above this barrier.
4	1	Humboldt – 96 – PM 8.83	707141	Campbell Creek	Campbell Creek	2019/20	Northern California Steelhead (Threatened), Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened).	There is an estimated **1.62 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Project Name	Estimated Year of Completion	Species	Habitat
5	1	Humboldt – 101 – PM 124.49	713025	Little Lost Man Creek	Little Lost Man Creek	2021/22	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Coast Steelhead (Threatened).	There is an estimated **1.21 miles** of salmon and steelhead habitat above this barrier.
6	1	Humboldt – 254 – PM 4.18	707157	Fish Creek	Fish Creek Fish Passage	2024/25	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened).	There is an estimated **4.0 miles** of salmon and steelhead habitat above this barrier.
7	1	Humboldt – 254 – PM 40.83	722439	Chadd Creek	Multiple Culverts	2027/28	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened).	There is an estimated **2.03 miles** of salmon and steelhead habitat above this barrier.
8	2	Shasta – 5 – PM R24.54	759970	Spring Branch Creek	Districtwide Scour Project	2022/23	California Central Valley Steelhead (Threatened), Central Valley Spring-run and Fall/Late Fall-run Chinook (Threatened), Sacramento Winter-run Chinook (Endangered).	There is an estimated **2.29 miles** of salmon and steelhead habitat above this barrier.
9	2	Shasta – 36 – PM 3.6	737281	Harrison Gulch	Harrison Gulch	2022/23	California Central Valley Steelhead (Threatened), Central Valley Spring-run and Fall/Late Fall-run Chinook (Threatened)	There is an estimated **5.02 miles** of salmon and steelhead habitat above this barrier.
10	2	Siskiyou – 5 – PM 27.2	720504	Parks Creek	Parks Creek	2020/21	Southern Oregon\Northern California Coasts Coho Salmon (Threatened).	There is an estimated **19.1 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Project Name	Estimated Year of Completion	Species	Habitat
11	2	Siskiyou – 96 – PM 43.5	720541	Cade Creek	Cade Creek	2027/28	Southern Oregon\Northern California Coasts Coho Salmon (Threatened).	There is an estimated **2.58 miles** of salmon and steelhead habitat above this barrier.
12	2	Siskiyou – 96 – PM 57.0	707169	Portuguese Creek	Portuguese Creek	2027/28	Southern Oregon\Northern California Coasts Coho Salmon (Threatened).	There is an estimated **2.78 miles** of salmon and steelhead habitat above this barrier.
13	4	Alameda – 84 – PM 12.1	713729	Stonybrook Creek	Niles Canyon Improvement Project	2023/24	Central California Coast Steelhead (Threatened).	There is an estimated **7.01 miles** of steelhead habitat above this barrier.
14	4	Napa – 121 – PM 0.75	714975	Huichica Creek	Huichica Creek Bridge	2024/25	Central California Coast Steelhead (Threatened).	There is an estimated **7.82 miles** of steelhead habitat above this barrier.
15	**4**	**San Mateo – 280 – PM 0.01**	**705760**	**Los Trancos Creek**	**Seismic Restoration at Six Bridges**	**2022/23**	**Central California Coast Steelhead (Threatened).**	**There is an estimated 11.82 miles of steelhead habitat above this barrier.**
16	**4**	**Santa Clara – 85 – PM 12.6**	**733945**	**San Tomas Aquinas Creek**	**SCL, VAR, Sub-Structure Rehab**	**2021/22**	**Central California Coast Steelhead (Threatened).**	**There is an estimated 4.9 miles of steelhead habitat above this barrier.**
17	4	Sonoma – 1 – PM 15.1	733223	Scotty Creek	Gleason Beach Highway Realignment	2023/24	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **3.87 miles** of salmon and steelhead habitat above this barrier.
18	5	Santa Barbara – 1 – PM 15.61	700085	Salsipuedes Creek	Salsipuedes Creek Bridge Replacement	2021/22	Southern California Coast Steelhead (Endangered).	There is an estimated **20.32 miles** of steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Project Name	Estimated Year of Completion	Species	Habitat
19	5	Santa Barbara – 101 – PM 5.6	734310	Arroyo Parida Creek	South Coast HOV	2025/26	Southern California Coast Steelhead (Endangered).	There is an estimated **2.37 miles** of steelhead habitat above this barrier.
20	5	Santa Barbara – 101 – PM 9.4	705161	Romero Creek	South Coast HOV	2025/26	Southern California Coast Steelhead (Endangered).	There is an estimated **5.84 miles** of steelhead habitat above this barrier.
21	5	Santa Barbara – 101 – PM 9.6	734342	San Ysidro Creek	South Coast HOV	2025/26	Southern California Coast Steelhead (Endangered).	There is an estimated **2.36 miles** of steelhead habitat above this barrier.
22	5	Santa Barbara – 154 – PM 21.3	735549	Bear Creek	Culvert Repair	2022/23	Southern California Coast Steelhead (Endangered).	There is an estimated **2.1 miles** of steelhead habitat above this barrier.
23	5	Santa Barbara – 192 – PM 15.5	706239	Arroyo Parida Creek	Arroyo Parida Emergency Bridge Replacement	2023/24	Southern California Coast Steelhead (Endangered).	There is an estimated **1.24 miles** of steelhead habitat above this barrier.
24	7	Los Angeles – 1 – PM 50.3	705781	Solstice Creek	Solstice Creek Bridge	2025/26	Southern California Coast Steelhead (Endangered).	There is an estimated **2.25 miles** of steelhead habitat above this barrier.
25	7	Ventura – 33 – PM 7.62	713867	San Antonio Creek	San Antonio Creek Bridge	2022/23	Southern California Coast Steelhead (Endangered).	There is an estimated **1.9 miles** of steelhead habitat above this barrier.
26	11	San Diego – 76 – PM 29.5	712680	Pauma Creek	SR-76 Culvert Replacement /Fish Passage	2029/30	Southern California Coast Steelhead (Endangered).	There is an estimated **5.74 miles** of steelhead habitat above this barrier.
27	12	Orange – 5 – PM 11.30	706807	Trabuco Creek	I-5/Trabuco	2020	Southern California Coast Steelhead (Endangered).	There is an estimated **36.16 miles** of steelhead habitat above this barrier.

Figure 4. Active fish passage remediation locations.

Priority Fish Passage Locations for Funding

Table 5 lists the 68 Priority locations that were identified in coordination with the six statewide Fish Passage Advisory Committees. The 4 **bold and underlined** locations are new to the Priority List. The 68 Priority locations account for an estimated **374 miles** of blocked habitat for salmon and steelhead. Figure 5 (page 36) is a map of the locations listed in Table 5.

Table 5. Priority fish passage locations for funding.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
1	1	Del Norte – 101 – PM 37.46	712951	Unnamed Trib to Morrison Creek	Morrison Creek	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **0.46 miles** of salmon and steelhead habitat above this barrier.
2	1	Del Norte – 199 – PM 34.04	712954	Broken Kettle Creek	Elk Creek	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **2.86 miles** of salmon and steelhead habitat above this barrier.
3	1	Humboldt – 36 – PM 5.18	712972	Wilson Creek	Yager Creek (Lower Eel)	Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **3.47 miles** of salmon and steelhead habitat above this barrier.
4	1	Humboldt – 36 – PM 9.17	707129	Fox Creek	Van Duzen River	Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **2.31 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
5	1	Humboldt – 101 – PM 1.61	707159	Durphy Creek	South Fork Eel River	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened).	There is an estimated **2.44 miles** of salmon and steelhead habitat above this barrier.
6	**1**	**Humboldt – 101 – PM 59.94**	**715460**	**Strongs Creek[3]**	**Eel River**	**Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened).**	**There is an estimated 16.9 miles of salmon and steelhead habitat above this barrier.**
7	1	Humboldt – 101 – PM 126.2	718442	May Creek	Prairie Creek	Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **3.16 miles** of salmon and steelhead habitat above this barrier.
8	1	Humboldt – 299 – PM 2.97	713051	Essex Gulch	Mad River	Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **3.51 miles** of salmon and steelhead habitat above this barrier.
9	1	Mendocino – 1 – PM 4.64	713068	Fish Rock Gulch	Fish Rock Gulch	California Coastal Chinook (Threatened), Northern CA Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.99 miles** of salmon and steelhead habitat above this barrier.
10	1	Mendocino – 1 – PM 25.48	706971	Mallo Pass Creek	Pacific Ocean (Navarro-Garcia)	Northern California steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **4.65 miles** of salmon and steelhead habitat above this barrier.

[3] Strongs Creek was a previous Priority in the 2016 Report to Legislature. This location was reported as Active (funded), however it is currently a candidate for programming in the next cycle.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
11	1	Mendocino – 1 – PM 54.62	707070	Doyle Creek	Pacific Ocean	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **2.36 miles** of salmon and steelhead habitat above this barrier.
12	1	Mendocino – 1 – PM 57.81	707071	Mitchell Creek	Pacific Ocean	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **5.22 miles** of salmon and steelhead habitat above this barrier.
13	1	Mendocino – 1 – PM 58.78	707072	Digger Creek	Digger Creek	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **2.39 miles** of salmon and steelhead habitat above this barrier.
14	1	Mendocino – 1 – PM 88.71	713078	Powderhouse Gulch	Cottaneva Creek	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **0.87 miles** of salmon and steelhead habitat above this barrier.
15	1	Mendocino – 20 – PM 30.87	713093	Unnamed Trib to Broaddus Creek	Broaddus Creek	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **1.81 miles** of salmon and steelhead habitat above this barrier.
16	1	Mendocino – 101 – PM 61.09	707091	Long Valley Creek	Outlet Creek (Upper Eel)	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **3.4 miles** of salmon and steelhead habitat above this barrier.
17	1	Mendocino – 101 – PM 63.47	707094	Long Valley Creek	Outlet Creek (Upper Eel)	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **14.3 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
18	1	Mendocino – 101 – PM 73.56	706969	Lewis Creek	Tenmile Creek (South Fork Eel)	Southern Oregon/Northern California Coast Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **1.79 miles** of salmon and steelhead habitat above this barrier.
19	1	Mendocino – 128 – PM 4.30	707185	Barton Gulch	Navarro River	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **2.39 miles** of salmon and steelhead habitat above this barrier.
20	1	Mendocino – 128 – PM 7.27	707187	Mustard Gulch	Navarro River	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **1.55 miles** of salmon and steelhead habitat above this barrier.
21	1	Mendocino – 128 – PM 18.69	706968	Lazy Creek	Navarro River	Northern California Steelhead (Threatened), Central California Coast Coho (Endangered), California Coastal Chinook (Threatened).	There is an estimated **3.89 miles** of salmon and steelhead habitat above this barrier.
22	**2**	**Shasta – 5 – PM 17.14**	**737799**	**Boulder Creek[4]**	**Churn Creek (Clear Creek – Sacramento River)**	**California Central Valley Steelhead (Threatened), Central Valley Spring-run and Fall/Late Fall-run Chinook (Threatened), Sacramento Winter-run Chinook (Endangered).**	**There is an estimated 6.67 miles of salmon and steelhead habitat above this barrier.**

[4] Locations 22 (Boulder Creek) and 23 (Millseat Creek) are the highest priority remediation locations based on the 2017 FishPAC prioritization. These locations replaced Conn Creek and Tom Martin Creek, once the new run/rise model indicated that there was far less potentially accessible upstream habitat available than what was previously understood.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
23	**2**	**Shasta – 44 – PM 33.78**	**737802**	**Millseat Creek**	**North Fork Battle Creek**	**California Central Valley Steelhead (Threatened), Central Valley Spring-run and Fall/Late Fall-run Chinook (Threatened), Sacramento Winter-run Chinook (Endangered).**	**There is an estimated 2.84 miles of salmon and steelhead habitat above this barrier.**
24	2	Shasta – 273 – PM 18.0	707132	Sulphur Creek	Sacramento River	Sacramento River Winter-run Chinook (Endangered), California Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened).	There is an estimated **9.33 miles** of salmon and steelhead habitat above this barrier.
25	2	Siskiyou – 3 – PM 6.5	707148	Big Mill Creek	Scott River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **2.03 miles** of salmon and steelhead habitat above this barrier.
26	2	Siskiyou – 96 - 12.02	732222	Ti Creek	Klamath River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **0.25 miles** of salmon and steelhead habitat above this barrier.
27	2	Trinity – 3 – PM 10.9	707231	Barker Creek	Trinity River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **14.48 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
28	2	Trinity – 3 – PM 32.6	707178	East Weaver Creek	Trinity River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **7.42 miles** of salmon and steelhead habitat above this barrier.
29	2	Trinity – 299 – PM 49.6	720522	West Weaver Creek	Trinity River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **4.64 miles** of salmon and steelhead habitat above this barrier.
30	2	Trinity – 299 – PM 51.2	737674	Sydney Gulch	Trinity River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **5.54 miles** of salmon and steelhead habitat above this barrier.
31	2	Trinity – 299 – PM 51.4	735941	Garden Gulch	Trinity River	Southern Oregon/Northern California Coho (Threatened), California Coastal Chinook (Threatened), Northern California Steelhead (Threatened).	There is an estimated **4.52 miles** of salmon and steelhead habitat above this barrier.
32	3	Butte – 99 – PM 23.6	759031	Unnamed	Durham Mutual Ditch	California Central Valley Steelhead (Threatened) , Central Valley Fall & Late Fall-run Chinook Salmon (Threatened), Central Valley Spring-run Chinook Salmon (Endangered).	There is an estimated **2.84 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
33	3	Butte – 99 – PM 27.38	759032	Crouch Ravine	Durham Mutual Ditch	California Central Valley Steelhead (Threatened) , Central Valley Fall & Late Fall-run Chinook Salmon (Threatened), Central Valley Spring-run Chinook Salmon (Endangered).	There is an estimated **3.61 miles** of salmon and steelhead habitat above this barrier.
34	3	Sacramento – 99 – PM 16.36	759042	Strawberry Creek	Beacon Creek	California Central Valley Steelhead (Threatened), Central Valley Fall & Late Fall-run Chinook Salmon (Threatened), Central Valley Spring-run Chinook Salmon (Endangered), Sacramento River Winter-run Chinook Salmon (Endangered).	There is an estimated **6.67 miles** of salmon and steelhead habitat above this barrier.
35	4	Marin -1 – PM 18.69	706078	McCurdy Creek	Pine Gulch Creek (Bolinas Lagoon)	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.75 miles** of salmon and steelhead habitat above this barrier.
36	4	Marin – 1 – PM 18.69	706079	North Fork McCurdy Creek	McCurdy Creek/ Pine Gulch Creek	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.75 miles** of salmon and steelhead habitat above this barrier.
37	4	Marin – 1 – PM 22.67	706059	John West Fork	Olema Creek	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **2.85 miles** of salmon and steelhead habitat above this barrier.
38	4	Marin – 1 – PM 25.67	759028	Quarry Gulch	Olema Creek	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.86 miles** of salmon and steelhead habitat above this barrier.
39	4	Napa – 29 – PM 33.17	705459	Ritchie Creek	Napa River	Central California Coast Steelhead (Threatened).	There is an estimated **2.36 miles** of steelhead habitat above this barrier.
40	4	San Mateo – 1 – PM 4.32	705302	Whitehouse Creek	Pacific Ocean	Central California Coast Steelhead (Threatened).	There is an estimated **4.04 miles** of steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
41	4	San Mateo – 1 – PM 22.75	716835	Lobitos Creek	Pacific Ocean	Central California Coast Steelhead (Threatened).	There is an estimated **5.55 miles** of steelhead habitat above this barrier.
42	4	San Mateo – 84 – PM 4.6	706675	Bogess Creek	San Gregorio Creek	Central California Coast Steelhead (Threatened).	There is an estimated **6.1 miles** of steelhead habitat above this barrier.
43	4	San Mateo – 84 – PM 19.25	705766	Bear Creek	San Francisquito	Central California Coast Steelhead (Threatened).	There is an estimated **0.75 miles** of steelhead habitat above this barrier.
44	4	San Mateo – 84 – PM 19.98	705768	West Union Creek	Bear Creek/San Francisquito Creek	Central California Coast Steelhead (Threatened).	There is an estimated **4.83 miles** of steelhead habitat above this barrier.
45	5	San Luis Obispo – 101 – PM 36.59	707246	Santa Margarita Creek	Salinas River	Southern Central California Coast Steelhead (Threatened).	There is an estimated **2.64 miles** of steelhead habitat above this barrier.
46	**5**	**Santa Barbara – 101 – PM 0.0**	**707368**	**Rincon Creek[5]**	**Pacific Ocean**	**Southern California Coast Steelhead (Endangered).**	**There is an estimated 10.56 miles of steelhead habitat above this barrier.**
47	5	Santa Barbara – 101 – PM 46.92	706655	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **25.64 miles** of steelhead habitat above the 5-small check-dam barriers. Numbers 46-50 represent the 5 locations to be grouped into one project.
48	5	Santa Barbara – 101 – PM 46.95	706656	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **25.64 miles** of steelhead habitat above the 5-small check-dam barriers. Numbers 46-50 represent the 5 locations to be grouped into one project.

[5] In previous years, Rincon Creek was reported as funded, as mitigation for the Santa Barbara HOV project. Recently the District reported this location as no longer funded as part of that project mitigation. The Department is currently looking for other opportunities to fund this very important barrier remediation for Southern Steelhead.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
49	5	Santa Barbara – 101 – PM 47.12	706657	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **25.64 miles** of steelhead habitat above the 5-small check-dam barriers. Numbers 46-50 represent the 5 locations to be grouped into one project.
50	5	Santa Barbara – 101 – PM 47.15	706658	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **25.64 miles** of steelhead habitat above the 5-small check-dam barriers. Numbers 46-50 represent the 5 locations to be grouped into one project.
51	5	Santa Barbara – 101 – PM 47.19	706659	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **25.64 miles** of steelhead habitat above the 5-small check-dam barriers. Numbers 46-50 represent the 5 locations to be grouped into one project.
52	5	Santa Barbara – 101 – PM 49.6	706388	Gaviota Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **2.73 miles** of steelhead habitat above this barrier.
53	5	Santa Barbara – 192 – PM 3.39	706538	Mission Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **4.26 miles** of steelhead habitat above this barrier.
54	5	Santa Cruz – 1 – PM 9.97	706703	Valencia Creek	Aptos Creek	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **16.36 miles** of salmon and steelhead habitat above this barrier.
55	5	Santa Cruz – 1 – PM 10.05	706704	Valencia Creek	Aptos Creek	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **16.33 miles** of salmon and steelhead habitat above this barrier.
56	5	Santa Cruz – 1 – PM 28.59	706003	San Vicenta Creek	Pacific Ocean	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **4.4 miles** of salmon and steelhead habitat above this barrier.
57	5	Santa Cruz – 1 – PM 31.25	705994	Molino Creek	Pacific Ocean	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **2.31 miles** of salmon and steelhead habitat above this barrier.

Map #	Caltrans District	County – Route – Post Mile	PAD ID #	Stream Name	Tributary to	Species	Habitat
58	7	Los Angeles – 1 – PM 40.99	716891	Topanga Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **3.76 miles** of steelhead habitat above this barrier.
59	7	Los Angeles – 1 – PM 44.15	759020	Los Flores Canyon	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **1.14 miles** of steelhead habitat above this barrier.
60	7	Los Angeles – 1 – PM 54.97	716906	Zuma Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **3.99 miles** of steelhead habitat above this barrier.
61	7	Ventura – 1 – PM – 1.23	723563	Little Sycamore Creek	Pacific Ocean	Southern California Coast Steelhead (Endangered).	There is an estimated **2.19 miles** of steelhead habitat above this barrier.
62	7	Ventura – 33 – PM 34.5	723804	Burro Creek	Sespe Creek	Southern California Coast Steelhead (Endangered).	There is an estimated **2.1 miles** of steelhead habitat above this barrier.
63	7	Ventura – 126 – PM 18.6	723760	Boulder Creek	Santa Clara River	Southern California Coast Steelhead (Endangered).	There is an estimated **4.59 miles** of steelhead habitat above this barrier.
64	7	Ventura – 126 – PM 26.48	713878	Hopper Canyon Creek	Santa Clara Creek	Southern California Coast Steelhead (Endangered).	There is an estimated **10.38 miles** of steelhead habitat above this barrier.
65	**7**	**Ventura – 150 – PM 18.75**	**713873**	**San Antonio Creek[6]**	**Ventura River**	**Southern California Coast Steelhead (Endangered).**	**There is an estimated 10.35 miles of steelhead habitat above this barrier.**
66	7	Ventura – 150 – PM 22.8	700083	Lion Creek	Sespe Creek	Southern California Coast Steelhead (Endangered).	There is an estimated **11.13 miles** of steelhead habitat above this barrier.
67	7	Ventura – 150 – PM 28.48	761522	Sissar Creek	Santa Paula Creek	Southern California Coast Steelhead (Endangered).	There is an estimated **10.26 miles** of steelhead habitat above this barrier.
68	10	Stanislaus – 120 – PM 15.04	761519	11Wildcat Creek	Stanislaus River	Southern California Coast Steelhead (Endangered).	There is an estimated **48.61 miles** of steelhead habitat above this barrier.

[6] The San Antonio Creek barrier has replaced the North Fork Matilija barrier (PAD ID 713767) as a Priority. After performing a run/rise analysis, it was determined that the potential accessible habitat at North Fork Matilija was only **0.12 miles**, versus the estimated **10.35 miles** of potential habitat at San Antonio Creek.

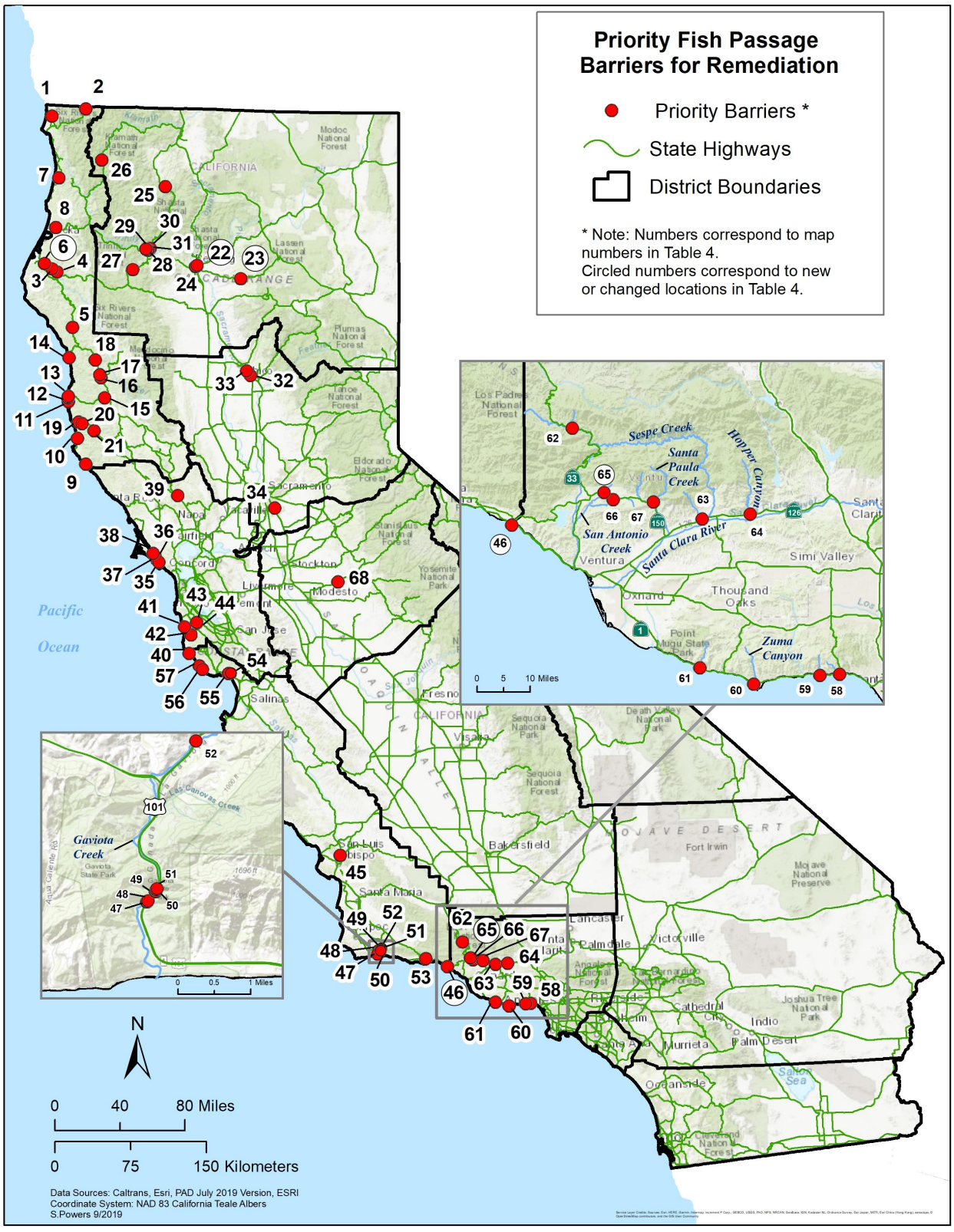


Figure 5. Priority fish passage locations for remediation.

Appendix A. Fish Passage Locations Completed

Senate Bill 857 (Kuehl, Chapter 589, Statues of 2005) was enacted into law effective January 1, 2006. Appendix A lists fish passage locations that have been either fully or partially remediated on the State Highway System since 2006. Table 6 lists remediated barriers from January 1, 2006 to December 31, 2018. **Bold and underlined** locations are new to this report and were constructed in 2018. The 47 locations listed in Appendix A account for an estimated **792 miles** of improved access to salmon and steelhead habitat. Figure 6 (page 47) is a map of the locations listed in Appendix A.

Table 6. Fish passage locations completed.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
1	1	Del Norte - 101 - PM 43.7	715563	Lopez Creek	Smith River Widening	2009	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **0.5 miles** of salmon and steelhead habitat above this barrier.
2	1	Del Norte- 197 - PM 2.12	720982	Peacock Creek	Peacock Creek Emergency	2013	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **1.68 miles** of salmon and steelhead habitat above this barrier.
3	1	Del Norte – 197 – PM 5.0	707143	Sultan Creek	Sultan Creek Bridge	2015	Full[7]	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **1.33 miles** of salmon and steelhead habitat above this barrier.
4	1	Del Norte – 197 – PM 6.15	707142	Little Mill Creek	Emergency Bridge Project	2016	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **1.0 miles** of salmon and steelhead habitat above this barrier.

[7] **Full Treatment** – locations where the natural channel width is fully spanned. Post-project monitoring needs to occur to ensure that sediment or debris in the channel do not impact passage for fish after the first several winter seasons as sediments equilibrate.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
5	1	Humboldt - 101 - PM 40.12	722460	Chadd Creek	Chadd Creek Fish Passage	2006	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **1.81 miles** of salmon and steelhead habitat above this barrier.
6	1	Humboldt – 169 - PM 22.37	706198	Cappell Creek	Four Bridges Project	2011	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **0.5 miles** of salmon and steelhead habitat above this barrier.
7	1	Humboldt-299-PM 4.2	716742	Hall Creek	Mitigation Mad River Bridge	2013	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **3.5 miles** of salmon and steelhead habitat above this barrier.
8	1	Mendocino-1-PM 92.8	706958	Dunn Creek Bridge	10 Mile Bridge Mitigation	2013	Full	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **2.13 miles** of salmon and steelhead habitat above this barrier.
9	1	Mendocino – 101 – PM 48.14	705136	Upp Creek	Willits Mitigation	2017	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **2.98 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
10	1	Mendocino – 101 – PM 52.25	707085	South Fork Ryan Creek	Willits Mitigation	2017	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **2.52 miles** of salmon and steelhead habitat above this barrier.
11	1	Mendocino – 101 – PM 52.36	707086	North Fork Ryan Creek	Willits Mitigation	2017	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **1.46 miles** of salmon and steelhead habitat above this barrier.
12	1	Mendocino – 101 – PM 66.5	707096	Ten Mile Creek	Willits Mitigation	2017	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **4.7 miles** of salmon and steelhead habitat above this barrier.
13	1	Mendocino- 101 – PM 81.4	706986	Rattlesnake Creek	Rattlesnake Creek	2009	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **13.6 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
14	1	Mendocino - 101 – PM 83.99	706987	Rattlesnake Creek	Fish Passage	2013	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **24.9 miles** of salmon and steelhead habitat above this barrier.
15	**1**	**Mendocino – 101 – PM 89.24**	**706954**	**Cedar Creek**	**Cedar Creek Fish Passage Retrofit**	**2018**	**Partial**	**Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).**	**There is an estimated 11.91 miles of salmon and steelhead habitat above this barrier.**
16	1	Mendocino - 101 – PM 99.0	707115	Red Mountain Creek	Confusion Hill Mitigation	2010	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **10.58 miles** of salmon and steelhead habitat above this barrier.
17	1	Mendocino – 128 – PM 21.8	707199	Clow Creek	Culvert Upgrade	2015	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **1.36 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
18	1	Mendocino – 128 – PM 27.54	707205	Graveyard Creek	Culvert Upgrade	2015	Partial	Southern Oregon/Northern California Coast Coho (Threatened), Northern California Steelhead (Threatened), California Coastal Chinook (Threatened).	There is an estimated **1.22 miles** of salmon and steelhead habitat above this barrier.
19	1	Mendocino – 128 – PM 36.63	707208	Lost Creek	Culvert Upgrade	2015	Partial	Northern California Steelhead (Threatened), California Coastal Chinook (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.26 miles** of salmon and steelhead habitat above this barrier.
20	1	Mendocino – 128 – PM 39.88	707212	Beebe Creek	Culvert Upgrade	2015	Partial	Northern California Steelhead (Threatened), California Coastal Chinook (Threatened), Central California Coast Coho (Endangered).	There is an estimated **1.55 miles** of salmon and steelhead habitat above this barrier.
21	1	Mendocino - 128 – PM 39.95	713145	John Hatt Creek	Beebe Storm Damage	2011	Partial	Northern California Steelhead (Threatened), California Coastal Chinook (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.89 miles** of salmon and steelhead habitat above this barrier.
22	1	Mendocino - 128 – PM 49.66	707219	Edwards Creek	Edwards Creek Fish Passage	2011	Partial	Northern California Steelhead (Threatened), California Coastal Chinook (Threatened), Central California Coast Coho (Endangered).	There is an estimated **0.62 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
23	2	Shasta - 299 – PM 20.7	737289	Salt Creek	Salt Creek Fish Passage Project	2006	Partial	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened), Sacramento River Winter-run Chinook (Endangered).	There is an estimated **7.1 miles** of salmon and steelhead habitat above this barrier.
24	2	Shasta – 299 – PM 32.2	737295	Yank /Lemm Creek Bridge	Yank Creek/Lemm Creek Bridge	2014	Full	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened).	There is an estimated **14.66 miles** of salmon and steelhead habitat above this barrier.
25	2	Siskiyou - 96 – PM 56.0	707168	Fort Goff Creek	Fort Goff Creek Fish Passage	2014	Full	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **3.98 miles** of salmon and steelhead habitat above this barrier.
26	2	Siskiyou - 96 – PM 65.4	707147	O'Neil Creek	O'Neil Creek Fish Passage	2008	Full	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **0.89 miles** of salmon and steelhead habitat above this barrier.
27	2	Tehama - 5 – PM 16.9	737006	Elder Creek	Elder Creek Scour Mitigation	2008	Partial	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened), Sacramento River Winter-run Chinook (Endangered), Sacramento River Winter-run Chinook (Endangered)	There is an estimated **245.54 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
28	2	Tehama - 5 – PM 28.1	737007	Dibble Creek	Dibble Creek Scour Mitigation	2008	Partial	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened), Sacramento River Winter-run Chinook (Endangered), Sacramento River Winter-run Chinook (Endangered)	There is an estimated **94.3 miles** of salmon and steelhead habitat above this barrier.
29	2	Tehama - 99 – PM 15.6	737013	Sunset Canal	Sunset Canal Bridge	2010	Partial	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened), Sacramento River Winter-run Chinook (Endangered), Sacramento River Winter-run Chinook (Endangered).	There is an estimated 6.12 miles of salmon and steelhead habitat above this barrier.
30	2	Tehama - 99 – PM 21.1	737012	Craig Creek	Craig Creek	2011	Full	Central Valley Steelhead (Threatened), Central Valley Spring-run Chinook (Threatened), Sacramento River Winter-run Chinook (Endangered), Sacramento River Winter-run Chinook (Endangered).	There is an estimated **165.44 miles** of salmon and steelhead habitat above this barrier.
31	2	Trinity – 299 – PM 68.06	720511	Little Grass Valley Creek	Little Grass Valley Creek Fish Passage	2015	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **12.46 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
32	2	Trinity – 299 – PM 68.2	735688	Little Grass Valley Creek	Little Grass Valley Creek Fish Passage	2015	Partial	Southern Oregon/Northern California Coast Coho (Threatened).	There is an estimated **12.2 miles** of salmon and steelhead habitat above this barrier.
33	4	Contra Costa – 80 – PM 8.4	723716	Pinole Creek	Pinole Creek Bridge Retrofit	2016	Partial	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **28.23 miles** of salmon and steelhead habitat above this barrier.
34	**4**	**Marin – 1 – PM 22.78**	**706058**	**Giacomini Gulch**	**Giacomini Gulch Bridge**	**2018**	**Full**	**Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).**	**There is an estimated 1.56 miles of salmon and steelhead habitat above this barrier.**
35	**4**	**Marin – 1 – PM 24.77**	**732502**	**Tributary to Olema Creek**	**Trib to Olema Creek Bridge**	**2018**	**Full**	**Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).**	**There is an estimated 0.79 miles of salmon and steelhead habitat above this barrier.**
36	4	Marin – 1 – PM 33.4	732518	Millerton Gulch	Millerton Gulch Emergency	2017	Partial	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **0.76 miles** of salmon and steelhead habitat above this barrier.
37	4	Napa - 121 – PM 1	733333	Huichica Creek	Duhig Road Project	2010	Full	Central California Coast Coho (Endangered), Central California Coast Steelhead (Threatened).	There is an estimated **1.33 miles** of salmon and steelhead habitat above this barrier.
38	4	Napa – 121 – PM 9.3	758605	Sarco Creek	Sarco Creek Bridge	2017	Partial	Central California Coast Steelhead (Threatened).	There is an estimated **8.7 miles** of steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
39	**5**	**Santa Barbara – 101 – PM 2.2**	**707182**	**Carpinteria Creek**	**Carpinteria Creek Retrofit**	**2018**	**Partial**	**Southern California Steelhead (Endangered).**	**There is an estimated 12.22 miles of steelhead habitat above this barrier.**
40	5	Santa Barbara - 101 – PM 33.9	707398	El Capitan Creek	El Capitan Creek	2007	Partial	Southern California Steelhead (Endangered).	There is an estimated **6.34 miles** of steelhead habitat above this barrier.
41	5	Santa Barbara – 101 – PM 38.3	707403	Tajiguas Creek	Tajiguas Creek	2014	Partial	Southern California Steelhead (Endangered).	There is an estimated **8.2 miles** of steelhead habitat above this barrier.
42	5	Santa Barbara - 101 – PM 41.0	707405	Arroyo Hondo Creek	Arroyo Hondo	2008	Partial	Southern California Steelhead (Endangered).	There is an estimated **2.0 miles** of steelhead habitat above this barrier.
43	5	Santa Barbara - 101 – PM 47.2	706669	Gaviota Creek	Gaviota Creek	2008	Partial	Southern California Steelhead (Endangered).	There is an estimated **25.6 miles** of steelhead habitat above this barrier.
44	5	Santa Cruz - 1 – PM 17.4	735367	Branciforte Creek	Hwy 1 Remediation	2007	Partial	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **18.0 miles** of salmon and steelhead habitat above this barrier.
45	5	Santa Cruz - 1 – PM 17.42	735366	Carbonera Creek	Hwy 1 Remediation	2008	Partial	Central California Coast Steelhead (Threatened), Central California Coast Coho (Endangered).	There is an estimated **3.23 miles** of salmon and steelhead habitat above this barrier.

Map #	District	County- Route- Post mile	PAD ID #	Stream Name	Project Name	Year Completed	Treatment Status	Species	Habitat
46	7	Ventura - 150 – PM 28.7	723744	Santa Paula Creek	Santa Paula Creek	2012	Partial	Southern California Steelhead (Endangered).	There is an estimated **17.4 miles** of steelhead habitat above this barrier.
47	**12**	**Orange – 74 – PM 13.30**	**759565**	**San Juan Creek**	**San Juan Creek Fish Passage**	**2018**	**Full**	**Southern California Steelhead (Endangered).**	**There is an estimated 4.91 miles of steelhead habitat above this barrier.**

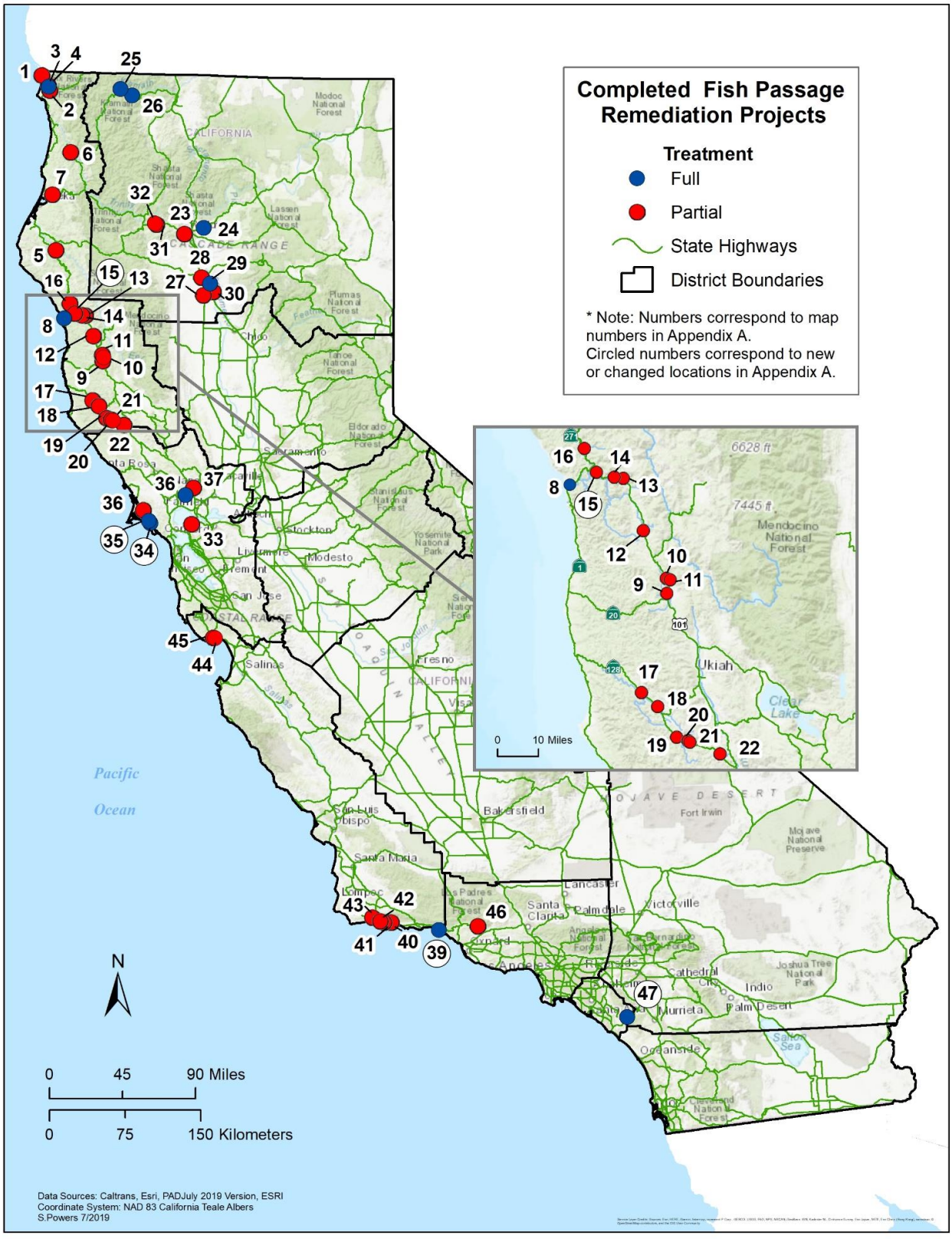


Figure 6. Fish passage locations completed.

Appendix B. Statutory Reporting Reference

Streets and Highways Code Section 156.1 became effective January 1, 2006, per SB 857 (Kuehl, Chapter 589, Statutes of 2005) and was amended by AB 95 (Committee on Budget, Chapter 12, Statutes of 2015).

156.1. (a) The Director of Transportation shall prepare an annual report describing the status of the department's progress in locating, assessing, and remediating barriers to fish passage. This report shall be given to the Legislature by October 31 of each year through the year 2025.

(b) Each report issued after October 31, 2016, shall include a status report on the remediation of barriers to fish passage on projects that have been identified pursuant to Section 156.5. The status report shall include, but is not limited to, all of the following information regarding a project identified pursuant to Section 156.5:

(1) Any updated information received by the department from the Department of Fish and Wildlife regarding the barriers to fish passage on the project.

(2) Whether funding has been committed to the project.

(3) The source of any funding for the project.

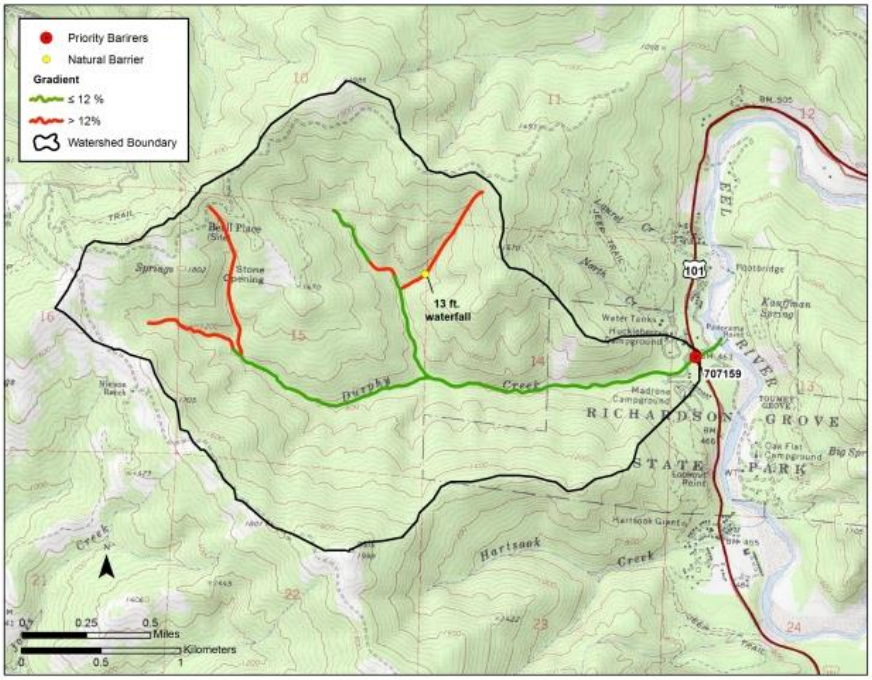
(4) The budget summary of the project.

(5) The status of inspections of culverts to ensure they are functioning properly and any other actions by the department to assess or remediate barriers to fish passage on the project.

(6) The applicable program initiation document work plan review.

(7) The estimated completion date for the project.

Appendix C. Mapping Innovation for Improved Science and Data

Green lines: indicate habitat which is likely accessible to fish, post-barrier removal. **Red lines:** indicate sections of the watershed that are estimated to be naturally too steep for salmon and Steelhead habitat. **Miles of Habitat are estimated using this tool.**	

As demonstrated above, innovative techniques have been created to estimate likely accessible habitat for salmon and steelhead. This method uses the California streams layer, the Passage Assessment Database and the best available guidance for the range of salmon and Steelhead species. This allows for an estimate of the potentially accessible habitat, using the geometry tool in Arc Geographical Information Systems.

Watershed Area: Watershed areas derived in Geographical Information Systems using 10-meter National Elevation Datasets downloaded from the GeoSpatial Data Gateway and priority barriers for the inputs into a watershed model (hydrology toolset in spatial analysis).

Calculated Gradient layers: 10-meter National Elevation Datasets were used to calculate gradient for 200-meter stream lengths (rise/run *100).

Estimated potential habitat length:
Using the calculated gradient, the estimated potential habitat lengths were calculated up to where mean gradient was greater than or equal to 12%[8] over 200 meters or greater.

[8] "Technical Memorandum: SWRCB Instream Flow Policy: GIS-Analysis Criteria for Upstream Distribution Limit of Steelhead". R2 Resource Consultants, Inc., July 9, 2007, http://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/docs/draft_policy_2007/3_gis_criteria.pdf. Per the memo, "a stream gradient of about 12% or greater would likely limit upstream passage".

Appendix D. Active Fish Passage Remediation Locations Funding

This table represents current funding information available for the 27 active locations that are being developed, consistent with Table 4 (page 21). As these locations are further developed through the design, permitting and construction process, costs and other information will be updated.

No.	District	County – Route – Post Mile	EA	Project ID	Project Name	Programming Document[9]	PAD ID #	Stream Name	Estimated Year of Construction	Estimated Year Construction Completed	Total Programmed Fish Passage Project Funding[10]	Contributions by Others
1	1	Del Norte – 101 – PM 39.78	0F310	0115000108	Dr. Fine Bridge Mitigation	SHOPP	707134	Dominie Creek	2019/20	22/23	$10,009,000	0
2	1	Del Norte – 199 – PM 2.56	48801	0119000016	Clarks Creek	SHOPP	707139	Clarks Creek	2020/2021	22/23	$2,546,000	0
3	1	Del Norte – 199 – PM 31.31	48801	0119000016	Griffin Creek	SHOPP	707137	Griffin Creek	2020/21	22/23	$2,546,000	0
4	1	Humboldt – 96 – PM 8.83	0G160	0116000131	Campbell Creek	SHOPP	707141	Campbell Creek	2019/20	19/20	$529,914	0
5	1	Humboldt – 101 – PM 124.49	0F960	01160000109	Little Lost Man Creek	SHOPP	713025	Little Lost Man Creek	2019/20	21/22	$10,178,000	0
6	1	Humboldt – 254 – PM 4.20	0E790	0115000021	Fish Creek	SHOPP	707157	Fish Creek	2022/23	24/25	$4,685,000	0
7	1	Humboldt – 254 – PM 40.83	0H240	0117000140	Multiple Culverts	SHOPP	722439	Chadd Creek	2025/26	27/28	**$6,000,000**	0
8	2	Shasta – 5 – PM R24.54	4G530	0214000023	Districtwide Scour Project	SHOPP	759970	Spring Branch Creek	2020/21	22/23	$5,067,000	0
9	2	Shasta – 36 – PM 3.6	2H620	0216000154	Harrison Gulch	SHOPP	737281	Harrison Gulch	2020/21	22/23	$524,698	0
10	2	Siskiyou – 5 – PM 27.2	2H060	0216000081	Parks Creek	SHOPP	720504	Parks Creek	2018/19	20/21	$354,828	0
11	2	Siskiyou – 96 – PM 43.5	1H590	0216000025	Cade Creek	SHOPP	720541	Cade Creek	2023/24	27/28	$7,134,000	$50,000[11]
12	2	Siskiyou – 96 – PM 57.0	1H590	0216000025	Portuguese Creek	SHOPP	707169	Portuguese Creek	2023/24	27/28	$7,134,000	$50,000
13	4	Alameda – 84 – PM 121.1	16030	0400000429	Niles Canyon Improvement Project	SHOPP	713729	Stonybrook Creek	2020/21	23/24	**$4,500,000**	0
14	4	Napa – 121 – PM 0.75	4G210	0412000310	Huichica Creek Bridge	SHOPP	714975	Huichica Creek	2020/21	24/25	$20,469,000	0
15	4	San Mateo – 280 – PM 0.01	4J850	0416000028	Seismic Restoration	SHOPP	705760	Los Trancos Creek	2021/22	22/23	$10,432,000	0

[9] Abbreviations for Program Document: SHOPP = State Highway Operation and Protection Program, and STIP = State Transportation Improvement Program.
[10] This column lists the programmed transportation funding for fish passage remediation locations. The **bold and underlined** costs are ranges of costs for the identified fish passage solution type, since the true programmed amount includes funding for greater project efforts which are not related to fish passage.
[11] The US Fish and Wildlife Service provided a $100k grant for Cade and Portuguese Creek locations. The grant is from a US Department of the Interior program, 15.680 Fish and Wildlife Assistance.

No.	District	County – Route – Post Mile	EA	Project ID	Project Name	Programming Document[9]	PAD ID #	Stream Name	Estimated Year of Construction	Estimated Year Construction Completed	Total Programmed Fish Passage Project Funding[10]	Contributions by Others
16	4	Santa Clara – 85 – PM 12.6	2J780	0415000017	Structure Rehab	SHOPP	733945	San Tomas Aquinas Creek	2020/21	21/22	$5,739,000	0
17	4	Sonoma – 1 – PM 15.1	0A020	0400000129	Gleason Beach Highway Realignment	SHOPP	733223	Scotty Creek	2020/21	23/24	**$22,500,000**	0
18	5	Santa Barbara – 1 – PM 15.61	0A050	0500000007	Salsipuedes Creek Bridge Replacement	SHOPP	700085	Salsipuedes Creek	2018/19	21/22	$14,098,000	0
19	5	Santa Barbara – 101 – PM 5.6	0N700	0518000113	South Coast HOV	STIP	734310	Arroyo Parida Creek	2020/21	25/26	**$6,500,000**	0
20	5	Santa Barbara – 101 – PM 9.4	0N700	0500000131	South Coast HOV	STIP	705161	Romero Creek	2020/21	25/26	**$4,500,000**	0
21	5	Santa Barbara – 101 – PM	0N700	0500000131	South Coast HOV	STIP	734342	San Ysidro Creek	2020/21	25/26	**$4,500,000**	0
22	5	Santa Barbara – 154 – PM 21.3	1H630	0516000113	Culvert Repair	SHOPP	735549	Bear Creek	2020/21	22/23	$2,942,950	0
23	5	Santa Barbara – 192 – PM 15.5	39610	0500000514	Emergency Bridge Replacement	SHOPP	706239	Arroyo Parida Creek	2020/21	23/24	$8,129,954	0
24	7	Los Angeles – 1 – PM 50.3	31350	0715000090	Solstice Creek Bridge	SHOPP	705781	Solstice Creek	2021/22	25/26	$36,248,131	0
25	7	Ventura – 33 – PM 7.62	29130	0712000083	San Antonio Creek Bridge	SHOPP	713867	San Antonio Creek	2019/20	22/23	$10,798,892	0
26	11	San Diego – 76 – PM 29.5	42220	1115000179	Culvert Replacement	SHOPP	712680	Pauma Creek	2026/27	29/30	$21,963,490	0
27	12	Orange – 5 – PM 11.30	PEER	PEER	I-5/Trabuco	Local Agency	706807	Trabuco Creek	N/A	2020	0	$1,100,000[12]

Fish Passage Funding Investment	Total Programmed Fish Passage Project Funding	Contributions by Others
Total Estimated	**$220,000,000 - $240,000,000[13]**	**$1,200,000**

[12] Project managed by CalTrout with contributions; $173,873 – California Department of Fish and Wildlife, $383,890 – National Fish and Wildlife Foundation, and $534,000 – California Wildlife Conservation Board.
[13] The final total is an estimated range which has been rounded.