

A RIVER RECLAIMING: APPLICATION OF INVERSE CONDEMNATION TO THE SAN JOAQUIN RIVER RESTORATION

I. INTRODUCTION

It went from a roar to a whimper. The mighty San Joaquin that once flowed free from the Sierra to the Sacramento-San Joaquin Delta was reduced to a mere trickle by the building of the Friant Dam.¹ The farmers and land owners along the now dry riverbed protested, but the benefits of newly permitted agriculture and a promise of water from other sources quelled the conflict.² For over fifty years the land remained dry and the soil beneath and around the river bed now hosts productive row and tree crops.³ But an effort to reintroduce the locally extinct salmon into the historic waterway brings back the threat of renewed flows.⁴ For those that had once demanded the water's return, the San Joaquin River Restoration Program ("SJRRP") offers a gift they would prefer to live without.⁵

Jim Nickel is one such farmer.⁶ His property, adjacent to the river, was inundated and the water table rose just as restoration water releases had begun.⁷ Mr. Nickel lost an entire tomato crop, valued at \$300,000, due to the sudden rising of the water table on his land that pushed salts into

¹ *Historical Conditions in the San Joaquin River Watershed*, SIERRAFOOTHILL.ORG, 3 http://www.sierrafoothill.org/watershed/historic_conditions.htm (last visited July 4, 2011).

² See generally *Rank v. Krug*, 142 F.Supp. 1, 37 (S.D. Cal. 1956) (summarizing litigation over San Joaquin river flows).

³ See E-mail from Mari Locke Martin., Chair of the San Joaquin River Resource Management Coalition, to author (July 28, 2011, 11:15 PST) (on file with author).

⁴ See *San Joaquin River Restoration Program: Background Information*, RESTORESJR.NET, <http://www.restoresjr.net/background.html> (last visited Sep. 9, 2011).

⁵ See *Swollen river raises Valley farmers' restoration fears*, FRESNO BEE, May 22, 2011, <http://www.fresnobee.com/2011/05/22/2398419/swollen-river-raises-valley-farmers.html#>.

⁶ Mark Grossi, *Farmer faces costly fix in river seepage*, LOS BANOS ENTERPRISE, Jan. 5, 2011, <http://www.losbanosenterprise.com/2011/01/05/108745/farmer-faces-costly-fix-in-river.html> [hereinafter Grossi I].

⁷ *Id.*

the root zone of his plants.⁸ Believing the SJRRP to be the cause of the problem, Mr. Nickel tried to work with the Bureau of Reclamation (“BOR”) to find a solution.⁹ The installation of a drain pipe would alleviate much of the damage and prevent re-occurrences of the inundation.¹⁰ The government expressed a willingness to pay for the losses and install the drain pipe.¹¹ But this would only happen after months of tests could be performed in accordance with environmental regulations, to determine the exact causes of the water table surge, and the extent of the remedy.¹² Mr. Nickel, fearing the loss of yet another crop, chose to do the project himself, costing him almost \$250,000 and forcing the replacement of his irrigation system.¹³ Mr. Nickel's situation is typical of many farmers along the San Joaquin River.¹⁴ Farmers are left with the option of trying to mitigate the damages caused by the water releases themselves and hope they will be reimbursed by the government, or risk the repeated loss of their crops while the full extent of impacts caused by the SJRRP are determined.¹⁵

The SJRRP is a historic endeavor involving the cooperation of farmers, government agencies, and environmental groups to restore the San Joaquin River and reintroduce salmon into its waters.¹⁶ The SJRRP is the result of decades of litigation that ultimately ended in a settlement and the passing of supporting legislation to assist in the project's implementation.¹⁷ Though not part of the litigation itself, a group of water users and landowners along the San Joaquin River, designated as the third parties, pledged their support to the project on the express condition that no adverse impacts would result to their land.¹⁸ When the project began and

⁸ Mark Grossi, *Farmer seeks payment over San Joaquin River seepage*, FRESNO BEE, Oct. 22, 2010, <http://www.revivethesanjoaquin.org/content/farmer-seeks-payment-over-san-joaquin-river-seepage> [hereinafter Grossi II].

⁹ Grossi II, *supra* note 8.

¹⁰ *See id.*

¹¹ *Id.*

¹² Grossi I, *supra* note 6.

¹³ Grossi II, *supra* note 8.

¹⁴ *See* Grossi I, *supra* note 6; *See also* E-mail from Mari Locke Martin to author, *supra* note 3 (explaining that many landowners face potential impacts).

¹⁵ *See* Grossi I, *supra* note 6.

¹⁶ *See San Joaquin River Restoration Program: Background Information*, *supra* note 4.

¹⁷ *See id.*

¹⁸ *Irrigation contractors agree to support River Restoration Act*, WESTERN FARM PRESS, Nov. 18, 2008, <http://westernfarmpress.com/government/irrigation-contractors-agree-support-river-restoration-act>.

the first water was released, however, impacts were seen.¹⁹ The water table of surrounding farms was impacted, lifting water and salts into the rooting zone of crops, and causing their damage and failure.²⁰ Levees and river banks that had only seen water during periodic flood years run the risk of increased erosion due to the continual flows.²¹ Privately owned land subject to easements for occasional flood flows are now set to receive a constant flow of water.²² These farmers have not seen the mitigation of damages the SJRRP promised.²³ With a pending deadline of late 2012 for reintroduction of salmon and full restoration flows scheduled for no later than January 1, 2014, the threat of continuous heavy water flows is very immediate.²⁴ Farmers are left with no sure path to protect their property interests.²⁵

This Comment will show that by implementing the water releases set forth in the SJRRP with inadequate mitigation, the government will be liable to landowners along the San Joaquin River under a theory of inverse condemnation. Section II will address the historical background of Friant Dam, the restoration of the San Joaquin River, and the impacts from the SJRRP thus far. Section III and IV will apply the theory of inverse condemnation to the water flows mandated in the project. Section V will show that the theory of Navigational Servitude will likely not protect the government from liability for the project. Section VI will discuss the value of land potentially impacted by the project and the overall cost that will be added to the project if litigation is successful. Section VII will advocate changes in the method used to identify impacts to landowners and will promote additional legislation to facilitate compensation for impacted lands.

¹⁹ Chris White, *San Joaquin River restoration must not harm adjacent farms*, LOS BANOS ENTERPRISE, Oct. 25, 2010, <http://www.losbanosenterprise.com/2010/10/25/94886/san-joaquin-river-restoration.html>.

²⁰ See Grossi II, *supra* note 8.

²¹ See E-mail from Mari Locke Martin to author, *supra* note 3.

²² Complaint at 18, *Wolfsen Land and Cattle Co. v. U.S.* (Fed. Cl., filed Aug. 26, 2010), available at <http://www.kysq.org/docs/Wolfsen.pdf> [hereinafter *Wolfsen*].

²³ White, *supra* note 19.

²⁴ *San Joaquin River Restoration Program: Interim Flow*, RESTORESJR.NET, <http://www.restoresjr.net/activities/if/index.html> (last visited Sep. 9, 2011); *San Joaquin River Restoration Program: Fisheries Reintroduction*, RESTORESJR.NET, http://www.restoresjr.net/fisheries_reintro/index.html (last visited Oct. 6, 2011).

²⁵ See E-mail from Mari Locke Martin to author, *supra* note 3 (listing varied potential solutions with no certain path currently chosen).

II. THE SAN JOAQUIN RIVER, ITS UTILIZATION AND RESTORATION

The San Joaquin River is the second largest river in California.²⁶ It originates in the mountains near Yosemite National Park and snakes through the Central Valley before converging with the Sacramento River to form the Sacramento-San Joaquin Delta.²⁷ The San Joaquin River was historically a highly fluctuating river with varied depths and widths depending on the season.²⁸ Flooding was a common occurrence along large parts of the valley through which the river flowed, creating seasonal and permanent wetlands on either side of the river.²⁹ The early San Joaquin River was home to large number of fish species, both freshwater and anadromous,³⁰ including a fall and spring run of Chinook salmon.³¹ The salmon were particularly reliant on access to shallow gravel beds along the edges of the river for purposes of spawning.³²

As early as 1880, water was diverted from the San Joaquin River to irrigate surrounding farmland.³³ Other structures followed, including Sack Dam, a temporary barrier that was built and demolished every season.³⁴ Conflicts over diversion of significant flows of the river water led to intense litigation often involving large acreage landholders, such as Miller and Lux Company.³⁵ The fate of the salmon population was unclear at this time, with drastic declines in catch numbers associated with the loss of spawning habitat and overfishing.³⁶ However, it is generally agreed that the salmon runs continued in all accessible regions of the river until the building of Friant Dam.³⁷

²⁶ See *Natural Resources Defense Council v. Patterson*, 333 F.Supp.2d 906, 908 (E.D. Cal. 2004).

²⁷ *Id.*

²⁸ *Gustine Land and Cattle Co. v. United States*, 174 Ct. Cl. 556, 562 (1966).

²⁹ See *Historical Conditions in the San Joaquin River Watershed*, *supra* note 1, at 4.

³⁰ An anadromous species is one that is born in fresh water, spends most of its life in the ocean and returns to fresh water to spawn. *NEFSC Fish FAQ*, NEFSC.NOAA.GOV, <http://www.nefsc.noaa.gov/faq/fishfaq1a.html> (last visited Sep. 5, 2011).

³¹ At least two distinct populations of salmon ran down the San Joaquin River, a heavy spring run and a smaller fall run. These salmon populations were specially adapted to the warmer waters of the San Joaquin River. *Historical Conditions in the San Joaquin River Watershed*, *supra* note 1, at 16.

³² *Id.* at 17.

³³ *Id.* at 7.

³⁴ *Id.*

³⁵ See Dwight Barnes, *Greening of Paradise Valley*, MID.ORG, 26-27 http://www.mid.org/about/100-years/grnng_of_pvy.pdf (last visited Sep. 9, 2011).

³⁶ See *Historical Conditions in the San Joaquin River Watershed*, *supra* note 1, at 17.

³⁷ See *id.* at 19.

A. Construction of the Friant Dam

In the early twentieth century, strong demand for agricultural and municipal water had led to heavy pumping from the aquifers throughout the Central Valley.³⁸ The Friant Dam was proposed in the hopes of storing flow from the San Joaquin River and redirecting it to needed areas.³⁹ Initially, the dam was to be part of the California Central Valley Project Act, but after insufficient funds were raised locally California turned to the federal government who took over funding and control of the entire Central Valley Project.⁴⁰ Ultimately, the dam was approved and was classified as a reclamation project under the control of the BOR.⁴¹

The proposal for the dam faced fierce opposition from downstream users of San Joaquin River water who would suffer severe reduction or complete elimination of their water rights with the project's completion.⁴² These riparian landowners sought compensation for their lost water rights.⁴³ Ultimately this was granted, with considerable compensation given to larger rights holders, such as Miller and Lux Company, and replacement water provided to other users from alternative sources, such as the Sacramento-San Joaquin Delta.⁴⁴ Not all landowners were satisfied, and litigation continued even after the dam was completed with mixed results.⁴⁵

Friant Dam was completed in 1942, and, coupled with the construction of the Madera and Friant-Kern canals, irrigated millions of acres of cropland throughout the San Joaquin Valley, including Kern, Fresno, Madera, and Tulare Counties.⁴⁶ However, as the dam approached full operation, it ultimately diverted all but rare flood-year flows away from the San Joaquin River below the dam.⁴⁷ This led to a situation in which almost

³⁸ See *Friant Division Project, General Description*, USBR.GOV, http://www.usbr.gov/projects/Project.jsp?proj_Name=Friant%20Division%20Project (Updated Apr. 21, 2011) (highlighting the abandonment of 40,000 acres of land in Fresno County due to depleted aquifers).

³⁹ See *id.*

⁴⁰ After insufficient state bonds were raised to fund the project locally, the federal government integrated the Friant Dam project into the overall Central Valley Project. *Id.*

⁴¹ See *id.*

⁴² See, e.g., *Rank v. Krug*, 142 F.Supp. 1, 36 (S.D. Cal. 1956) (summarizing the water rights concerns of a group of riparian landowners downstream from Friant Dam).

⁴³ See *Gustine Land and Cattle Co. v. United States*, 174 Ct. Cl. 556, 579-580 (1966).

⁴⁴ See *id.* at 581.

⁴⁵ See e.g., *id.* at 556 (involving a claim for loss of water rights that occurred after the major landowners along the river had settled).

⁴⁶ See *Friant Division Project, General Description*, *supra* note 38.

⁴⁷ *Natural Resources Defense Council v. Patterson*, 333 F.Supp.2d 906, 910 (E.D. Cal. 2004).

sixty miles of the former river remained continuously dry and other portions of the river were much more shallow and saline than they had been previously.⁴⁸

B. *The River Restoration*

The issue reappeared when a coalition of environmental groups brought suit against the BOR in 1988, challenging the renewal of long-term water contracts for Friant water.⁴⁹ The suit alleged failure of the Bureau to comply with the federal Endangered Species Act of 1973 (“ESA”) and the California Fish and Game Code.⁵⁰ The latter required a dam operator to “allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam.”⁵¹ After continual litigation and a series of summary judgments in favor of the environmentalists, the court held that the operation of the dam was in violation of Fish and Game Code, and that the environmental assessment under the ESA was flawed.⁵² Rather than face extended and costly litigation, the parties decided to settle and in 2006, the San Joaquin River Restoration Settlement (“Settlement”) was created.⁵³ The Settlement allotted for the restoration of the San Joaquin River and reintroduction of salmon to its waters while attempting to maintain flows of irrigation water to dependant water users.⁵⁴

The Settlement still required legislative approval, which was obtained with the passing of the San Joaquin River Restoration Settlement Act.⁵⁵ In order to obtain the support of a number of third party water users,⁵⁶ the

⁴⁸ *See id.*

⁴⁹ Nathan Mathews, *Rewatering the San Joaquin River: A Summary of the Friant Dam Litigation*, 34 *ECOLOGY L.Q.* 1109, 1115 (2007).

⁵⁰ Endangered Species Act of 1973, 16 U.S.C.A. §§ 1531-1544 (2011); CAL. FISH & GAME CODE § 5937 (West, Westlaw through 2011 Sess.); *See Patterson*, 333 F.Supp.2d at 925; *Natural Resources Def. Council v. Rodgers*, 381 F.Supp.2d 1212, 1216 (E.D. Cal. 2005).

⁵¹ FISH & GAME § 5937.

⁵² *See Patterson*, 333 F.Supp.2d at 925; *Rodgers*, 381 F.Supp.2d at 1240.

⁵³ BETSY A. CODY ET AL., CRS REPORTS FOR CONGRESS: SAN JOAQUIN RIVER RESTORATION SETTLEMENT (Congressional Research Service 2007), available at <http://www.policyarchive.org/handle/10207/19222>.

⁵⁴ *See id.*

⁵⁵ San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, §§ 10001-10203, 123 Stat. 992 (2009).

⁵⁶ These third parties include: San Luis and Delta Mendota Water Authority, Merced Irrigation District, the San Joaquin River Exchange Contractors Authority, the Merced, Turlock, Modesto, Oakdale and South San Joaquin Irrigation Districts, and Westlands Water District. *Irrigation contractors agree to support River Restoration Act*, *supra* note 18.

Act was amended to include monitoring and mitigation of potential impacts of seepage and related issues surrounding the reintroduction of waters into the San Joaquin River.⁵⁷ The terms of the Settlement and the enforcing legislation were implemented with the formation of the San Joaquin River Restoration Project.⁵⁸

C. SJRRP Implementation and Impacts

The SJRRP called for a series of interim flows of water to be released starting on October 1, 2009, and are scheduled to continue until full restoration flows are implemented in 2012.⁵⁹ The full flow rate under the project is to be adjusted depending on the amount of snow pack and total runoff feeding the reservoir in any given year.⁶⁰ Before the full flows are to be implemented, the project requires the substantial completion of a number of infrastructure and channel improvements to facilitate the flow of the greater volume of water.⁶¹ While these projects have yet to be completed, there has been no official change to the hard deadline of full water releases and fish reintroduction.⁶² A study that was commissioned during the litigation determined that the actual land needed for structures, direct flow of water, and easements in association with the river restoration would be close to five thousand acres.⁶³ This study took into ac-

⁵⁷ San Joaquin River Restoration Settlement Act §10004 (h).

⁵⁸ *San Joaquin River Restoration Program: Funding and Legislation*, RESTORESJR.NET, http://www.restoresjr.net/fisheries_reintro/index.html (last visited Sep. 9, 2011).

⁵⁹ These early flows were made at a rate of up to 700 cubic feet per second (“CFS”). The full Restoration flows, to be established before the reintroduction of fish in 2012, will hit a level of 4500 CFS at some points. See Notice of Lodgment of Stipulation of Settlement at Exhibit B, Natural Resources Def. Council v. Rodgers, 381 F.Supp.2d 1212 (E.D. Cal. 2005) (No. 2:88-cv-01658-LKK-GGH), available at http://www.restoresjr.net/program_library/06-Settlement_Related/Settlement_Stip_Final_As_Lodged_091306.pdf [hereinafter Settlement].

⁶⁰ See *id.* (outlining varied water releases depending on the total water inputs for a given year).

⁶¹ The Settlement requires the substantial completion of Phase 1 channel improvements before full restoration flows can begin but, in the event of unexpected delays, gives discretion to release flows at a rate as close to the restoration flows as possible without exceeding channel capacity. The process of finding the proper flow rate to not exceed the capacity may create increased risks of impacts to surrounding land. See Settlement, *supra* note 59, at 8. *But see id.* at 15.

⁶² *SJRRP: Interim Flow*, *supra* note 24; *SJRRP: Fisheries Reintroduction*, *supra* note 24.

⁶³ See E-mail from Mari Locke Martin to author, *supra* note 3 (summarizing the findings in the Harvey Study). See generally MICHAEL D. HARVEY, EXPERT REPORT OF DR. MICHAEL D. HARVEY REGARDING GEOMORPHIC REQUIREMENTS FOR RESTORATION OF AN ANADROMOUS FISHERY IN THE UPPER SAN JOAQUIN RIVER, CA (Aug. 18, 2005), available

count the structural improvements that have not been completed and even with those improvements many landowners expressed belief that this was an overly conservative figure.⁶⁴

While the concerns of landowners about impacts to their land are varied, there are three primary issues that have been argued: the direct flooding of lands, seepage issues, and erosion of levees.⁶⁵

1. Direct Flooding

The path of the water releases is primarily down the historic riverbed, but to some degree water has been, and will likely continue to be, directed through the Eastside and Mariposa flood bypasses.⁶⁶ The landowners holding title to the land under these bypasses assert that the land was only to be subject to occasional flood flows while the SJRRP will cause a constant flow of water over the land.⁶⁷ These water releases would prevent their use of the land during normally dry seasons and also create issues of access to parts of their property that typically would have occurred through the dry flood bypasses.⁶⁸ In addition, many landowners along the San Joaquin River hold title to the center-line of the river bed.⁶⁹ While active debate over the validity of this ownership exists, the land within the riverbed will likely be consistently flooded once the restoration flows are fully established.⁷⁰

2. Seepage and Salinity Push

During the 2010 interim flow releases, water backed up at the Sand Slough structure along a reach of the river and caused seepage beneath

at http://www.restoresjr.net/program_library/05-Pre-Settlement/ (expand "Friant Water User Authorities Expert Reports") [hereinafter HARVEY I].

⁶⁴ See E-mail from Mari Locke Martin to author, *supra* note 3.

⁶⁵ See *id.*

⁶⁶ The flood bypasses are portions of privately owned land that is used for redirecting water during infrequent flood seasons. See *id.*

⁶⁷ Wolfsen, *supra* note 22, at 18.

⁶⁸ *Id.* at 20-21.

⁶⁹ E-mail from Mari Locke Martin to author, *supra* note 3.

⁷⁰ *Id.*; The land below the ordinary high water mark is likely subject to a public trust easement. If the restoration flows are classified as within the scope of this easement, compensation for such land would not be given. However, the fact that the legislation protects against any harmful impacts of third party landowners may allow landowners to seek compensation for their lost productivity and improvements on this land. E-mail from Mari Locke Martin, Chair of San Joaquin River Resource Management Coalition, and Chris White, General Manager of Central California Irrigation District, to author (Aug. 5, 2011, 11:16 PST) (on file with author).

the levees and into the surrounding cropland.⁷¹ The San Joaquin River Exchange Contractors Water Authority, an agency representing landowners along the San Joaquin, commissioned a study to determine the potential impacts of the full restoration flows.⁷² The study, focusing on issues of seepage, showed a direct correlation between a rise in water level in the river and a rise in the water table of crops along certain portions of the river.⁷³ Further, the study showed increased salinity in the tomato plants that were impacted by the water rise and a corresponding reduction in total yield for the crop.⁷⁴ The study concluded that the impacts to surrounding water tables were likely to be greater than initially expected due to a process known as capillary rise.⁷⁵ This process pulls moisture into the root zone of growing plants, as well as salts that can be harmful to growing crops.⁷⁶ The BOR acknowledged some of the problems associated with the 2010 releases and adjusted the flow rates in the following year to minimize the impacts.⁷⁷ Heavy precipitation and snow fall in 2011 led to necessary flood releases, outside the scope of the settlement.⁷⁸ This increased flow rate mimicked the amount of water that would be released once full restoration flows were achieved, and impacted the water table of surrounding lands up to three miles out from the river.⁷⁹ Many have argued that the allowable water table impacts and the seepage monitoring system set forth in the SJRRP are inadequate to fully mitigate the problem and that actual damages are likely to be much greater than predicted.⁸⁰ The Seepage Management Plan set out in the SJRRP is under continual revision, indicating the uncertainty of the degree of mitigation that will be necessary when full restoration flows are

⁷¹ Grossi II, *supra* note 8.

⁷² DR. CHARLES BURT AND DR. BEAU FREEMAN, IRRIGATION TRAINING AND RESEARCH CENTER, SAN LUIS OBISPO, CALIFORNIA, IMPACTS OF THE SAN JOAQUIN RIVER RESTORATION FLOWS ON AGRICULTURAL FIELDS ADJACENT TO REACH 4A OF THE SAN JOAQUIN RIVER IV (Nov. 12, 2010) (on file with author).

⁷³ *Id.* at xvii.

⁷⁴ *Id.*

⁷⁵ *See id.* at xii; Capillary rise is a process by which water moves above the water table and brings water and salts higher into the soil. The amount of this rise varies with soil type but the soil in some reaches of the river is prone to significant capillary rise. *See id.*

⁷⁶ *See id.* at ix; Salts in the rooting zone of plants damages the plants ability to absorb water from surrounding soil and can cause accumulation of toxic levels of chloride ions which cause leaf burn and tissue damage. *See* Dr. Leonard Perry, *Salt Damage to Plants*, UVM.EDU, <http://www.uvm.edu/pss/ppp/articles/salt1.htm> (last visited Nov. 8, 2011).

⁷⁷ E-mail from Mari Locke Martin to author, *supra* note 3.

⁷⁸ *See Swollen river raises Valley farmers' restoration fears*, *supra* note 5.

⁷⁹ *See* E-mail from Mari Locke Martin to author, *supra* note 3.

⁸⁰ *See id.*

initiated.⁸¹ Those representing the landowners along the river have argued that more test sites and controlled releases are needed to observe and possibly prevent damage.⁸²

3. *Erosion of Levees*

Many of the levees surrounding the historic riverbed and flood bypasses are not built to accommodate the full restoration flows.⁸³ A study completed during the litigation suggested that great improvements to the levee system and river channel would be necessary to fully restore the river.⁸⁴ Thus far, the burden of ensuring that the levees are functioning adequately has fallen on varied state, federal, and local agencies.⁸⁵ Many argue that the continuous flows will naturally erode the levees throughout the river system and make the surrounding properties more susceptible to seepage and flooding.⁸⁶

D. *BOR's Response*

The BOR has not taken an official stance in dealing with these issues, promising compensation for those effected, but citing complex statutory requirements that would delay any action.⁸⁷ The SJRRP's enacting legislation itself, requires this mitigation, including the adjustment of water flows to eliminate the negative impacts.⁸⁸ However, the protections in the statute are limited by the monitoring program that initiates the mitigation actions, a program that is deemed inadequate by many of the landowners.⁸⁹ Complicating this matter further, the SJRRP has already seen budget shortfalls, leading to fears that the BOR will be unable to

⁸¹ See *Draft Seepage Management Plan*, RestoreSJR.net, 1 (Mar. 28, 2011), <http://www.restoresjr.net/flows/Groundwater/index.html#SMP>.

⁸² E-mail from Mari Locke Martin to author, *supra* note 3 (arguing the current monitoring plan is inadequate).

⁸³ See *id.*

⁸⁴ See MICHAEL D. HARVEY, SUPPLEMENTAL EXPERT REPORT OF DR. MICHAEL D. HARVEY REGARDING GEOMORPHIC REQUIREMENTS FOR RESTORATION OF AN ANADROMOUS FISHERY IN THE UPPER SAN JOAQUIN RIVER, CA 6-7 (Sep. 15, 2005), available at http://www.restoresjr.net/program_library/05-Pre-Settlement/ (expand "Friant Water User Authorities Expert Reports") [hereinafter HARVEY II].

⁸⁵ See *California Levees Round Table: Purpose and Goals*, SAFCA.ORG, <http://www.safca.org/protection/CalifRoundtable.html> (last visited Nov. 10, 2011).

⁸⁶ See HARVEY II, *supra* note 84, at 6-7.

⁸⁷ See Grossi I, *supra* note 6.

⁸⁸ San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, §10004 (c)(3), 123 Stat. 992 (2009).

⁸⁹ See E-mail from Mari Locke Martin to author, *supra* note 3.

implement all the necessary measures to protect third parties.⁹⁰ With the continuing debate over the extent of mitigation that will be necessary and unanswered questions of whether adequate resources exist to complete what has been promised,⁹¹ many landowners may consider an alternative solution, inverse condemnation.

III. INVERSE CONDEMNATION AND THE RESTORATION FLOWS

Inverse condemnation arises out of the law of Eminent Domain and is vested in the Fifth Amendment of the United States Constitution.⁹² The pertinent portion of the amendment states, “nor shall private property be taken for public use without just compensation.”⁹³ Application of this concept creates a narrow exception to the strong belief in private property rights which is essential to U.S. law and culture.⁹⁴ Generally, eminent domain allows the government to take private property through condemnation proceedings so long as there is a sufficient public need, an appropriate governing body authorizes the action, and just compensation is rendered to the property owner.⁹⁵ However, when the government has failed to undertake condemnation proceedings and shows no intention of doing so, but has nonetheless taken property, an action in inverse condemnation is appropriate.⁹⁶ The inverse condemnation action is brought after a taking of property has occurred and is brought by the landowner rather than the government.⁹⁷ A typical eminent domain action will assess the need for privately owned land and this need is presented during a condemnation proceeding.⁹⁸ For an inverse condemnation action, the property is often taken as part of some unrelated or indirectly related project where the land in question was either not expected to be needed or not considered in the planning.⁹⁹ The taking of the property is not limited to actual occupation and seizure of physical lands.¹⁰⁰ The theory

⁹⁰ See E-mail from Mari Locke Martin to author, *supra* note 3; See also Letter from Sen. Dianne Feinstein, U.S. Senator, to James L. Nickel (March 16, 2011) (on file with author) (indicating concern that available funds for the project were being rapidly depleted).

⁹¹ See E-mail from Mari Locke Martin to author, *supra* note 3.

⁹² See *Kirby Forest Indus., Inc. v. United States*, 467 U.S. 1, 5-11 (1984).

⁹³ U.S. CONST. amend. V.

⁹⁴ See EDWARD J. HANLON, *INVERSE CONDEMNATION BY PHYSICAL INVASION*, 32 AM. JUR. PROOF OF FACTS 3D 405, §3 (1995).

⁹⁵ See *id.*

⁹⁶ See *id.* §4.

⁹⁷ See *id.*

⁹⁸ See *id.* §3.

⁹⁹ See *id.* §4.

¹⁰⁰ See *id.*

has been applied to physical invasions of the land by sound or water; actual adverse possession of portions of a property that render the rest of the property useless; and even regulatory actions that limit the rights of a property user to utilize their property.¹⁰¹ The specific rules regarding the designation of a taking in an inverse condemnation proceeding have not been reduced to a single formula, but are interpreted with the goal of preventing a small number of private individuals from having to bear the burden of something that will benefit the public as a whole.¹⁰²

The physical invasion of water onto a property due to releases from a dam or similar structure is a well-recognized source of taking for inverse condemnation.¹⁰³ However, a taking by the flow of water onto a property has not been limited to direct intrusion of water onto the physical surface of land; it also applies to seepage or percolation into the water table of lands adjacent to waterways over which the government has control.¹⁰⁴ In effect, the continual invasion of water into a property represents a taking of a seepage or flowage easement¹⁰⁵ on the property, for which just compensation must be paid.¹⁰⁶ This classification has also been applied to situations where the government's operation of an adjacent waterway creates conditions that impair the drainage of a property on a connected waterway.¹⁰⁷ Even if a property is already subject to a flowage easement, releases of water in excess of the terms of the easement is considered a taking and compensation for the continued devaluation of the land due to the increased flows is appropriate, so long as the plaintiff meets the burden of showing the particular releases are in excess of the express terms of the easement.¹⁰⁸

Of primary importance to a determination of whether an inverse condemnation claim is appropriate is whether the action by the government

¹⁰¹ See *id.* The reintroduction of salmon into the San Joaquin river could possibly lead to regulatory taking if the use of surrounding farmland is restricted in compliance with the federal Endangered Species Act. See E-mail from Mari Locke Martin to author, *supra* note 3.

¹⁰² See *Armstrong v. United States*, 364 U.S. 40, 49 (1960).

¹⁰³ See generally, *e.g.*, *United States v. Kansas City Life Ins. Co.*, 339 U.S. 799 (1950); *George Family Trust ex rel. George v. United States*, 97 Fed. Cl. 625 (2011).

¹⁰⁴ See *Kansas City*, 339 U.S. at 810.

¹⁰⁵ A flowage easement gives the government the right to flood private land subject to the terms of the easement. It is typically used as an alternative to the direct purchase of land when water flow is the only use the government needs in the property. Larry Kunzler, *Flowage Easements*, SKAGITRIVERHISTORY.COM (Mar. 31, 1996), <http://www.skagitriverhistory.com/PDFs/Flowage%20Easements.pdf>.

¹⁰⁶ *Ridge Line, Inc. v. United States*, 346 F.3d 1346, 1352-53 (2003).

¹⁰⁷ *Kansas City*, 339 U.S. at 810.

¹⁰⁸ *Hendricks v. United States*, 14 Cl. Ct. 143, 149 (1987).

risers to the level of a taking or is more appropriately governed by tort law.¹⁰⁹ When applied to flooding, it must be determined if the type of damage caused by the government action is sufficient to constitute the taking of an easement on a property or was an incidental occurrence that would necessitate a claim of nuisance or trespass.¹¹⁰

IV. THE RIDGE LINE TEST

A generally accepted test for determining when an inverse condemnation taking has occurred through a physical invasion of land, including flooding, was set forth in *Ridge Line, Inc. v. U.S.*, 346 F.3d 1346 (2003).¹¹¹ *Ridge Line* provides a two-prong analysis to determine the success of a takings claim.¹¹² The first prong analyzes whether the action of the government and resulting impacts constitute a taking or a tort.¹¹³ The second prong determines whether there is a legally recognized property interest that the government has claimed as part of an authorized project and for public purposes.¹¹⁴ State law determines the extent to which property rights are afforded legal protection in a takings claim.¹¹⁵

A. First Prong of Ridge Line: Taking or Tort?

The first prong itself is broken into two elements to determine if the impacts reach the level of a taking.¹¹⁶ The first element establishes whether the potential taking itself was intended by the government or is a “direct, natural, or probable result of an authorized activity and not the incidental or consequential injury inflicted by the action.”¹¹⁷ The second element requires a determination of whether the magnitude of the government action was sufficient to constitute a taking, specifically if the

¹⁰⁹ See *Ridge Line*, 346 F.3d at 1355; Tort claims against the federal government require an administrative hearing before a claim can be brought to trial, making it a more difficult path to compensation. See generally 14 CHARLES ALAN WRIGHT AND ARTHUR R. MILLER, FEDERAL PRACTICE AND PROCEDURE § 1006 (3d ed. 2011).

¹¹⁰ See *Ridge Line*, 346 F.3d at 1355.

¹¹¹ *Id.*

¹¹² *Id.* at 1355-56.

¹¹³ *Id.*

¹¹⁴ *Id.* at 1356.

¹¹⁵ See *United States v. 131.68 Acres of Land, More or Less, Situated in St. James Parish, State of La.*, 695 F.2d 872, 875 (1983).

¹¹⁶ See *Ridge Line*, 346 F.3d at 1355-56.

¹¹⁷ *Id.* (defining predictable as the contemplation or reasonable anticipation of occurrence); See also *George Family Trust ex rel. George v. United States*, 97 Fed. Cl. 625, 631 (2011) (interpreting the predictability determination requirement of the Ridge Line test as an analysis of foreseeability).

owner's rights in use of the property are preempted for an "extended period of time, rather than merely inflict an injury that reduces [the property's] value."¹¹⁸

1. *First Element: Predictable Result of an Authorized Government Activity*

The first prong of the *Ridge Line* test requires a determination that a particular impact was a "predictable" result of an authorized government activity and therefore not merely "incidental" to the particular project.¹¹⁹ Also necessary is a showing of causation between the authorized government action and the particular impacts being claimed for, with no major breaks in the causal chain.¹²⁰ In determining causation for damages resulting from scheduled water releases or similar operations of a dam, the courts have determined that the releases must not be necessitated by natural flood conditions, such as abnormally high precipitation.¹²¹ The burden falls on the plaintiff to show that the government's operation of the dam was the direct cause of the flooding of the property as opposed to the natural flood conditions.¹²² To discern a required water release from one that would be considered a taking, the courts have often compared what the impacts on the property would have been without any artificial barriers against the impacts caused by the operation of the dam in a particular situation.¹²³ Further, the courts have asserted that where the government's operation of a dam causes loss of physical land due to erosion it is liable for the eroded land as well as land directly flooded and that this damage is not merely incidental.¹²⁴

Addressing the authorization of the SJRRP water releases, the program outlines the particulars of the water releases including their frequency and rate with some allotted discretion.¹²⁵ This program was authorized by the passing of the San Joaquin River Restoration Act.¹²⁶ The statute

¹¹⁸ *Ridge Line*, 346 F.3d at 1356.

¹¹⁹ *Id.*

¹²⁰ See *George*, 97 Fed.Cl. at 635.

¹²¹ See *Bartz v. United States*, 224 Ct. Cl. 583, 593-94 (1980).

¹²² See *id.* (determining heavy precipitation was the cause of the flooding not the government's operation of the dam and therefore compensation was inappropriate).

¹²³ See *id.* at 594; The relative benefit test weighs the benefits conferred to taken land by the project in question against the damage caused by the project's operation. If the benefits outweigh the harm caused by the project's operation, no taking has occurred. See *Laughlin v. United States*, 22 Cl. Ct. 85, 111 (1990).

¹²⁴ *United States v. Dickinson*, 331 U.S. 745, 750 (1947).

¹²⁵ See *Settlement*, *supra* note 59, at Exhibit B.

¹²⁶ San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, § 10002, 123 Stat. 992 (2009).

provides the authority to obtain lands, as necessary, to achieve the goals of restoration which implicitly supports actions of eminent domain.¹²⁷ Where eminent domain is available, an action of inverse condemnation would be appropriate.¹²⁸ The restoration flows are clearly an authorized government action.

In determining predictability, a certain amount of extrapolation is required as there has only been a year's worth of water releases from which to gauge potential impacts, and these interim releases do not represent the full extent of flows that will be seen when full restoration flows are established.¹²⁹ However, early in the litigation, landowners along the river have expressed concern over the potential impacts associated with the mandated releases.¹³⁰ At least one study established a correlation between the increased river flows in 2010 and a rise in the water table on adjacent property.¹³¹ Further, the BOR admitted that some seepage went beyond their expectations in certain reaches of the river.¹³² Data from independent monitoring equipment combined with the monitoring program implemented as part of the restoration project provides significant data as to water table levels all along the river and the corresponding water release.¹³³ The existence of this data, and the very fact that seepage monitoring was included in the legislation that implemented the plan, would tend to show that any damage caused was a predictable result of the water releases.¹³⁴ Therefore, any previous or future impacts to landowners would be a probable and natural result of the restoration flows.¹³⁵

The difficulty of establishing direct causation between the restoration flows and impacts to the land would vary depending on the type of impact.¹³⁶ For lands that would be subject to the constant flow of water, such as the Eastside and Mariposa Bypass and privately-owned sections

¹²⁷ *Id.* § 10005 (3). (establishing procedure for the purchase of land and return of land taken through eminent domain).

¹²⁸ See HANLON, *supra* note 94, §4.

¹²⁹ See Settlement, *supra* note 59, at Exhibit B.

¹³⁰ See E-mail from Mari Locke Martin to author, *supra* note 3.

¹³¹ See BURT ET AL., *supra* note 72, at xvii.

¹³² See E-mail from Mari Locke Martin to author, *supra* note 3.

¹³³ White, *supra* note 19.

¹³⁴ See Ridge Line, Inc. v. United States, 346 F.3d 1346, 1356 (2003) (establishing predictability as a factor in a takings analysis).

¹³⁵ See *id.* at 1355.

¹³⁶ See George Family Trust *ex rel.* George v. United States, 97 Fed. Cl. 625, 635 (2011) (holding that causation between the damage to the land and an authorized government activity must be established to establish a takings claim).

of the San Joaquin River bed, causation can be directly established.¹³⁷ The water releases for the restoration are clearly the source of that water, and the project, as it is currently set up, will continue to direct flows through the bypass.¹³⁸ The primary question will likely be whether a legally protected right to use of the land is threatened. Since flowage easements exist to some extent on these properties, the determining factor is whether the water releases are in excess of the designated amount and purpose of the original easement.¹³⁹ The landowners should have minimal difficulty showing that the easements for the bypasses were limited to flood releases only and therefore causation would be established for takings during non-flood periods.¹⁴⁰

Causation of land impacts due to seepage can also be established.¹⁴¹ In 2010, when releases were made, absent an abnormally high water year, there was considerable evidence linking the mandated water release to a rise in the water table of properties along some reaches of the river.¹⁴² In fact, the BOR has acknowledged the legitimacy of at least some of these claims, though little action was taken beyond that point.¹⁴³ In the 2011 season, impacts were more difficult to causally connect due to required flood releases from the dam necessitated by naturally heavy precipitation and snowmelt as well as artificially reduced flows along certain reaches of the river to prevent a reoccurrence of seepage along known problem areas.¹⁴⁴ A plaintiff would be required to show that the impacts are beyond what would be experienced from natural flooding if the dam was not in operation, which would be more difficult to prove for 2011 or any future year with natural flood conditions.¹⁴⁵ However, the fact that the restoration flows occur both before and after any required flood releases from the dam may allow a plaintiff to prove causation of

¹³⁷ See *Swollen river raises Valley farmers' restoration fears*, *supra* note 5 (indicating potential use of the bypasses for the flow of the restored river).

¹³⁸ See E-mail from Mari Locke Martin & Chris White to author, *supra* note 70 (confirming the use of the flood bypasses in the final path of the river).

¹³⁹ See *Hendricks v. United States*, 14 Cl. Ct. 143, 149 (1987). The scope of a flowage easement can only be disputed by the property owner at the time the easement was taken. *Id.* at 154.

¹⁴⁰ See Wolfson, *supra* note 22, at 18.

¹⁴¹ See, e.g., Wolfson, *supra* note 22, at 19.

¹⁴² Natural canal seepage or irrigation practices in the area were eliminated as the cause of the flooding on the property impacted. See BURT ET AL., *supra* note 72, at xvii.

¹⁴³ See E-mail from Mari Locke Martin to author, *supra* note 3.

¹⁴⁴ See *Swollen river raises Valley farmers' restoration fears*, *supra* note 5. The water flow along reach 4A of the river was reduced from 700 cubic feet per second ("CFS") to 5 CFS to prevent backup of water. E-mail from Mari Locke Martin to author, *supra* note 3.

¹⁴⁵ See *Bartz v. United States*, 224 Ct. Cl. 583, 593 (1980).

impacts separate from those caused by the flooding alone.¹⁴⁶ This is especially true where the restoration flows prolong or increase the severity of the flooding.¹⁴⁷

The erosion of levees also presents a number of issues in showing direct causation.¹⁴⁸ While damage to the levees themselves could clearly be measured and therefore proved in association with restoration flows, damages to lands beyond the levee would be more difficult to causally connect.¹⁴⁹ Where the levee itself was eroded and the adjacent land flooded as one continuous action the causation would be clear.¹⁵⁰ However, if the levee was weakened or damaged and thus made the surrounding property more susceptible to natural flooding, the damage from the floodwater itself would likely be incidental to the restoration flows and thus not eligible as a taking.¹⁵¹

For a vast majority of the impacts that have been or are likely to be experienced by landowners along the river, it can be shown that the impacts were both predictable and directly caused by the SJRRP water releases.¹⁵²

2. *Second Element: Sufficiently Permanent or Reoccurring*

The second element of the first prong of the *Ridge Line* test requires that the impact be more than a single occurrence and have some level of permanence.¹⁵³ Specifically applied to flooding in conjunction with the construction or operation of a dam, the courts have held that a takings claim can only stand when the flooding is frequent or intermittent and inevitably reoccurring.”¹⁵⁴ The rate of occurrence that meets this standard has been subject to much debate, with periodic flooding in several

¹⁴⁶ The water releases for the restoration project typically occur before and after normal flood flows and can aggravate the damage caused by preventing the water table from draining. See E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

¹⁴⁷ See E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

¹⁴⁸ See E-mail from Mari Locke Martin to author, *supra* note 3 (highlighting levee degradation as a major concern of landowners).

¹⁴⁹ See *HARVEY II*, *supra* note 84, at 4 (indicating that the levees are highly variable and subject to overflow and seepage).

¹⁵⁰ Where high water levels caused the water to seep under and through the levees, damaging a neighboring field, the BOR acknowledged the water releases were to blame. See E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

¹⁵¹ See *Barnes v. United States*, 538 F.2d 865, 870 (1976).

¹⁵² See *BURT ET AL.*, *supra* note 72, at i.

¹⁵³ See *Ridge Line, Inc. v. United States*, 346 F.3d 1346, 1357 (2003).

¹⁵⁴ See *United States v. Cress*, 243 U.S. 316, 328 (1917).

year intervals being deemed appropriate for a takings claim.¹⁵⁵ It is appropriate to bring a claim of taking for flood impacts when it is clear that the condition of flooding will be permanent and the full extent of damage caused by the flooding is foreseeable.¹⁵⁶ However, in a physical takings claim such as flooding, the claim can be delayed when there is uncertainty regarding how permanent the condition may be due to a promise by the government to mitigate the damages or cease the disputed activity.¹⁵⁷ What is less clear is whether a promise or requirement to mitigate damages will cause a flooding activity to no longer be permanent and therefore ineligible for a takings claim.¹⁵⁸ In cases involving the flooding of lands, the courts have held that a takings claim is inappropriate when the flooding is “inherently temporary” and therefore does not meet the required level of reoccurrence or permanence.¹⁵⁹ However, when a land is flooded and later reclaimed, a takings claim is still appropriate since the land was claimed initially and the “nature of the government's action remained permanent, even though the reclamation had mitigated some of the effects.”¹⁶⁰

While only a couple of instances of provable flooding have occurred since the 2010 releases, by comparing the rate of release at that time and the impacts of flood flows to the legally required releases under the strict schedule of the restoration settlement, the extent of future impacts could be reasonably calculated.¹⁶¹ The releases performed at the end of 2009 and maintained through 2010 were representative of the expected levels to be implemented by the project and the flood flows effectively represent the level that will be preserved in the river after the reintroduction of the salmon.¹⁶² Even though mitigation efforts are mandated in the SJRRP, the continual debate over the extent of damage due to restoration

¹⁵⁵ See *Baird v. United States*, 5 Cl. Ct. 324, 329 (1984) (holding that one occurrence of flooding was insufficient to maintain a takings claim but that an infrequent reoccurrence may still meet the standard).

¹⁵⁶ See *Mildenberger v. United States*, 91 Fed. Cl. 217, 234 (2010).

¹⁵⁷ See *id.* at 235.

¹⁵⁸ See *Banks v. United States*, 88 Fed. Cl. 665, 671 (2009) (holding a plaintiff was justified in holding off their takings claim when promises of mitigation created a question of the takings permanence).

¹⁵⁹ See *Ark. Game & Fish Comm'n v. U.S.*, 637 F.3d 1366, 1378 (2011).

¹⁶⁰ See *id.* at 1375 (citing *United States v. Dickinson*, 331 U.S. 745, 751 (1947)). Any promise by BOR to mitigate damages will have to be carried out after the impacts are observed, making the mitigation action a reclamation of land rather than a measure that would prevent any damage from occurring. BOR is only authorized to adjust flows or implement additional measures after impacts are seen, creating a situation similar to that set forth in *Dickinson. Id.*; see also E-mail from Mari Locke Martin to author, *supra* note 3.

¹⁶¹ See E-mail from Mari Locke Martin to author, *supra* note 3.

¹⁶² See *id.*; Settlement, *supra* note 59, at Exhibit B.

flows and the failure to properly mitigate damages thus far would not meet the standard for making the impacts “inherently temporary.”¹⁶³ Even if the structural improvements to the river bed and mitigation projects were fully realized and were able to offset all damage to the land around the river, a less than probable outcome, the initial flood related impacts were still the result of the scheduled restoration flows and are outlined in the SJRRP as continual.¹⁶⁴ With a clear and unrelenting schedule of future water releases mandated to continue indefinitely, the release of water for restoration flows would be “inevitably” reoccurring and the resulting impacts to the land would be subject to a takings claim.¹⁶⁵

B. Second Prong of Ridge Line: Property Interest Invaded

The final prong of the *Ridge Line* test determines whether the action of the government is taking a legally recognized interest of a private landowner for the public's benefit.¹⁶⁶ The SJRRP in general is clearly intended for public benefit and is advocated for both its environmental benefit and the recreational opportunities it will provide for the public.¹⁶⁷ In addition, case law supports the recognition of wildlife restoration projects as legitimate sources of taking for a public purpose.¹⁶⁸

To be a valid taking, a landowner must show that the restoration flows are impacting a legally protected property interest.¹⁶⁹ Water table and salinity issues associated with the water releases would severely limit the ability of the landowners to utilize their land for crop production.¹⁷⁰ If the water table is driven too high for annual crops the land loses almost all agricultural use, though even a lesser impact on the water table may render land unsuitable for permanent tree crops due to the deeper rooting

¹⁶³ San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, § 10004 (h)(1)(c), 123 Stat. 992 (2009).

¹⁶⁴ See *United States v. Dickinson*, 331 U.S. 745, 751 (1947) (holding the government liable even where later efforts reclaimed the flooded land and offset the damage caused).

¹⁶⁵ See *United States v. Cress*, 243 U.S. 316, 328 (1917).

¹⁶⁶ *Ridge Line, Inc. v. United States*, 346 F.3d 1346, 1357 (2003).

¹⁶⁷ See *San Joaquin River Litigation Settlement: Question and Answers*, RESTORESJR.NET, 2 http://www.restoresjr.net/program_library/06-Settlement_Related/Fin alQ&A.pdf (last visited Oct. 6, 2011).

¹⁶⁸ See, e.g., *United States v. Sixty Acres, More or Less, of Land in Williamson Cnty.*, 28 F.Supp. 368, 371 (1939); *United States v. 1,972.27 Acres of Land, More or Less, in Texas Cnty., State of Okla.*, 297 F.Supp. 1137, 1137 (1969); *United States v. Union Cnty. 16.29 Acres of Land*, 35 F.Supp.2d 773, 776 (1997).

¹⁶⁹ *Ridge Line*, 346 F.3d at 1357.

¹⁷⁰ See BURT ET AL., *supra* note 72, at i.

zone of crop trees.¹⁷¹ The right to utilize property for the growing of crops is a generally recognized and legally protected property interest, for which compensation has been given under inverse condemnation.¹⁷² California statutes also recognize the rights in both mature and growing crops as well as an implied right to the use of land for growing crops.¹⁷³ Since recognition of property rights typically defer to state law, the limitation in use of crops would be recognized in an inverse condemnation claim.¹⁷⁴

For a majority of the potential and actual impacts likely to be the subject of claims by San Joaquin River landowners, the restoration flow releases outlined in the SJRRP meet the standard of a taking under the *Ridge Line* test.

V. ADDITIONAL CONSIDERATIONS: NAVIGATIONAL SERVITUDE

Inverse condemnation is a claim of strict liability, requiring no actual fault or intent on the part of the defendant, but only the establishment of certain criteria that rises to the stringent standard of what defines a Fifth Amendment taking.¹⁷⁵ One such exception occurs when the federal government uses its authority to regulate the flow of water within a navigable waterway.¹⁷⁶ This power, referred to as a navigational servitude, is vested in the Commerce Clause and holds that the interest of the government in maintaining waterways for navigation is superior to any personal property right within the boundaries of the waterway and therefore no takings claim will arise from this action.¹⁷⁷ The extent of this servitude is limited in both purpose and physical boundaries.¹⁷⁸

Navigational servitude is limited to land below the “ordinary high water mark” of a navigable waterway.¹⁷⁹ A water body is classified as a navigable waterway where it would be capable of being commercially

¹⁷¹ See *id.* at i, xiv.

¹⁷² See *Barnes v. United States*, 538 F.2d 865, 872 (1976) (acknowledging the plaintiff's property interest in growing crops).

¹⁷³ CAL. CIV. PROC. CODE § 1263.250 (West, Westlaw through 2011 Sess.) (mandating compensation for growing crops taken under eminent domain).

¹⁷⁴ *United States v. 131.68 Acres of Land, More or Less, Situated in St. James Parish, State of Louisiana*, 695 F.2d 872, 875 (1983).

¹⁷⁵ Steve McNichols, *From Sovereign Immunity to Strict Liability: Using Inverse Condemnation in Water Damage Actions*, 11 J.F.K. U. L. Rev. 75, 77 (2007).

¹⁷⁶ *Owen v. United States*, 851 F.2d 1404, 1408 (1988).

¹⁷⁷ *Id.*

¹⁷⁸ See generally, *id.*

¹⁷⁹ *Id.* at 1410.

navigated in its natural condition.¹⁸⁰ The boundaries of the “ordinary high water mark” are subject to varied interpretation but generally include the normal high point of the waterway excluding flood waters.¹⁸¹ The courts have consistently held that any damage done to land above or outside the ordinary high water mark is not subject to application of navigational servitude.¹⁸² This has been applied even when the government’s maintenance of water at the high water mark in a river prevented drainage from a nearby property and thus caused the accumulation of water beneath the property.¹⁸³

Courts have remained relatively rigid on the concept that a particular project must be related to commerce in order to invoke federal authority and thus navigational servitude.¹⁸⁴ However, they have been more flexible where the purpose of the project is for navigation, deferring to congressional intent in a project’s underlying legislation to determine if the project was intended to provide some benefit to navigation.¹⁸⁵ There are legal theories arguing that navigational servitude may be appropriate for application in cases of environmental restoration or remediation dealing with the restoration of fish species that may have commercial value, in spite of the lack of a clear connection to navigation.¹⁸⁶ As recently as 2010, courts have reaffirmed that the purpose of a particular project cannot be “wholly unrelated to navigation,” but did indicate that absent an intent by Congress in the authorizing legislature to compensate landowners directly, navigational servitude may be applied even when indirectly related to a navigational purpose.¹⁸⁷

Although BOR may attempt to assert navigational servitude as a defense to liability, there are a number of key limitations that make navigational servitude inapplicable to the SJRRP water releases.¹⁸⁸ First, to the

¹⁸⁰ *United States v. Cress*, 243 U.S. 316, 323 (1917).

¹⁸¹ *Owen*, 851 F.2d at 1408.

¹⁸² *See United States v. Kansas City Life Ins. Co.*, 339 U.S. 799, 806 (1950) (holding that a water level cannot be maintained at the ordinary high water mark for an extended period without liability for damage to lands beyond that mark). *But see id.* at 812-13. (dissent argues that water naturally levels and that compensation should not be required when water is kept at or below the high water mark of a navigable waterway).

¹⁸³ *See id.* at 800-01.

¹⁸⁴ *See Mildenberger v. U.S.*, 91 Fed. Cl. 217, 248 (2010).

¹⁸⁵ *See id.*

¹⁸⁶ *See generally* Richard G. Hildreth, Carrie Dahlstrom, Marshal L. Wilde, *Western Water Rights, the Federal Navigational Servitude, and Salmon Restoration*, 45 Ocean and Coastal Law Memo 1 (1998) (advocating the use of navigational servitude to avoid compensation for taking of water rights for use in river restoration projects).

¹⁸⁷ *See Mildenberger*, 91 Fed. Cl. at 252.

¹⁸⁸ *See id.* at 249 (requiring a project to have a “substantial relation” to navigation to invoke the navigational servitude).

extent that a large number of the lands in question, particularly those subject to seepage issues, are beyond or above the high water mark, impacts to those lands would be beyond the navigational servitude.¹⁸⁹ Further, to the extent that the SJRRP utilizes flood bypasses they are privately owned lands that are not sufficient for navigation for all but possible flood years.¹⁹⁰ These structures would be outside the bounds of a normal navigable waterway and servitude would not be applicable.¹⁹¹ While the San Joaquin River itself can be designated as a navigable waterway based on its historical use before the building of Friant Dam,¹⁹² the determination of the ordinary high water mark is difficult to establish in a river that has remained substantially dry for over sixty years. Any designation of land as within this mark and thus subject to navigational servitude is likely to be a point of contention among parties in a takings claim.¹⁹³

Perhaps the strongest argument against the application of the navigable servitude doctrine comes from the clear lack of a navigational purpose or furtherance within the SJRRP or its supporting legislation.¹⁹⁴ The Friant Dam itself was established as a reclamation project and the restoration project states very little about the navigational benefit of restoring the flows of the San Joaquin River.¹⁹⁵ Further, the actual text of the San Joaquin River Restoration Settlement Act and the supporting settlement documents propose a process of mitigation of third party impacts that includes the authority for the potential acquisition of lands and the use of funds to acquire property as necessary to achieve the goals of the Settle-

¹⁸⁹ Some lands in Reach 3 of the river are farmed beneath the ordinary high water mark. E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

¹⁹⁰ See E-mail from Mari Locke Martin to author, *supra* note 3 (asserting that the owners of bypass land only expect water flow periodically).

¹⁹¹ See *Kaiser Aetna v. United States*, 444 U.S. 164, 178-79 (1979) (holding that an undeveloped pond on private land was not subject to full application of navigational servitude, though subsequent development to make the pond navigable did allow for the application of the servitude).

¹⁹² See *Historical Conditions in the San Joaquin River Watershed*, *supra* note 1, at 7 (highlighting early navigation on the San Joaquin River before the building of Friant Dam).

¹⁹³ The ordinary high water mark is typically determined by the action of water on soil and vegetation which may be difficult to determine on the dry river bed of the San Joaquin River. See *Owen v. United States*, 851 F.2d 1404, 1410 (1988).

¹⁹⁴ See generally San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, §§ 10001-10203, 123 Stat. 992 (2009); Settlement, *supra* note 59.

¹⁹⁵ See *United States v. Gerlach Live Stock Co.*, 339 U.S. 725, 736-37 (1950) (holding that Friant Dam was reclassified as a reclamation project primarily for irrigation and flood control and that by authorizing the taking of water rights by eminent domain, Congress indicated an intent to compensate riparian landowners).

ment.¹⁹⁶ This would indicate a Congressional intent to compensate landowners for taken property and would naturally invalidate a subsequent claim of navigational servitude.¹⁹⁷

VI. THE COST OF MOVING FORWARD: VALUATION OF LANDS TAKEN

The process of determining the value of land in inverse condemnations proceedings is identical to that of traditional eminent domain actions with both vesting in the Fifth Amendment.¹⁹⁸ The requirement set forth by the Fifth Amendment is one of “just compensation.”¹⁹⁹ The courts have clarified this requirement, “[t]he basic principle underlying the constitutional requirement of ‘just compensation’ is one of indemnity. The condemnee is entitled to be put in as good a position pecuniarily as if his property had not been taken. He must be made whole but he is entitled to no more.”²⁰⁰ In most cases, just compensation has been designated as “fair market value” and represents a price that would be accepted by a willing seller and the price that would be paid by a willing buyer without outside constraints.²⁰¹ The courts have held that market value may not always represent full indemnity but where there is an active market for particular land, the market value will usually be sufficient.²⁰² Where the government takes an easement over land, compensation is set as the market value of the land before the easement less its value after the easement.²⁰³ While methods vary for determining market value, such as the use of comparable sales and expert testimony, it is generally held that no single formula can be provided for all situations and the particular facts of each case must be decided in light of the indemnification goal.²⁰⁴

¹⁹⁶ See San Joaquin River Restoration Settlement Act § 10005 (c); *Draft Seepage Management Plan*, *supra* note 81, at 10 (authorizing the purchase of land or taking of easements to respond to seepage issues).

¹⁹⁷ The fact that the SJRRP acknowledges the potential need to purchase land and easements suggests an intent to compensate landowners and therefore suggests that navigational servitude will not be invoked. See *Gerlach*, 339 U.S. at 739.

¹⁹⁸ See *Kirby Forest Indus., Inc. v. United States*, 467 U.S. 1, 5 (1984) (applying an identical valuation standards to both traditional eminent domain actions and inverse condemnation).

¹⁹⁹ U.S. CONST. amend. V

²⁰⁰ *United States v. 564.54 Acres of Land, More or Less, In Monroe and Pike Cntys., Commonwealth of Pa.*, 506 F.2d 796, 799 (1974) (citing *Olson v. United States*, 292 U.S. 246, 255(1934)).

²⁰¹ *Kirby*, 467 U.S. at 10.

²⁰² *564.54*, 506 F.2d at 799.

²⁰³ *United States v. 329.73 Acres of Land, Situated in Grenada and Yalobusha Cntys., State of Miss.*, 666 F.2d 281, 283 (1982).

²⁰⁴ *See id.*

For croplands, the value of the crop itself is not to be measured separately but included in the determination of full market value.²⁰⁵ However, compensation is to be given for the loss of any crops on condemned lands as well as a consideration in the market value for the lost opportunity to receive future earnings from the property.²⁰⁶ In addition, an owner may obtain compensation for land not directly taken due to severance when the condemnation of a portion of their property renders the remaining property less valuable.²⁰⁷ In determining the value of irrigated croplands, the value of water access for irrigation cannot be factored in favor of the landowner when, absent the project that caused the alleged taking, the benefit of irrigation would not have existed in the first place.²⁰⁸

With potential liability for takings claim being established, the total potential cost to the Bureau, and indirectly to the project as a whole requires analysis of the amount of land that is likely to be taken, the degree that land is devalued by the taking, and the market value of the cropland.²⁰⁹

A full determination of the amount of land that will be impacted is difficult to assess as the full extent of impacts have not been observed.²¹⁰ This will further depend on the amount of mitigation that is implemented and channel improvements completed before full flows are established.²¹¹ While the study associated with the litigation estimated the total land needed for the SJRRP at around five thousand acres, subsequent research and observations have suggested this number to be overly conservative.²¹² Based only on the single claim filed thus far for inverse condemnation related to the SJRRP, 12,973 acres of land and associated water rights were taken by the 2010 water releases.²¹³ This included land

²⁰⁵ See *Barnes v. United States*, 538 F.2d 865, 874 (1976).

²⁰⁶ Valuation of an easement on cropland factors current and future production of the land being taken but future profits from crops cannot be calculated independently as this would lead to double compensation. See *United States v. 131.68 Acres of Land, More or Less, Situated in St. James Parish, State of La.*, 695 F.2d 872, 875 (1983).

²⁰⁷ See *United States v. Smith*, 355 F.2d 807, 809 (5th Cir. 1966) (holding that plaintiff has burden of showing loss in value of non-condemned land due to the condemnation of the remainder).

²⁰⁸ See *Turner v. United States*, 23 Cl. Ct. 447, 459 (1991).

²⁰⁹ See generally *id.* (calculating compensation for the flooding of plaintiff's property).

²¹⁰ To date, the interim flows have been reduced to avoid adverse impacts, but these flows are not at a level necessary to do the tests required by the SJRRP. See E-mail from Mari Locke Martin to author, *supra* note 3.

²¹¹ See *id.*

²¹² See *id.* (summarizing the findings in the Harvey study). See generally HARVEY I.

²¹³ See Wolfson, *supra* note 22, at 1 (including claims for both physical and regulatory takings).

subject to direct water flow in the historic river bed and flood bypasses, as well as land subject to seepage, direct construction, and severance due to loss of access when the river is restored.²¹⁴ The validity of the acreage presented in this claim however, is currently subject to confidential alternative dispute resolution and cannot be confirmed.²¹⁵ Observations of natural flood flows in 2011 that were at a level comparable to mandated restoration flows showed impacts from a half mile to three miles on either side of the river, which could easily exceed the five thousand acre estimate set forth in the pre-settlement study.²¹⁶ Overall, there is significant disparity in estimates of the acreage of land that has been and will be taken as part of the SJRRP and total acreage will be difficult to determine until increased monitoring is initiated.²¹⁷

The land that will potentially be impacted by these restoration flows is primarily agricultural with the majority of the land being utilized for mixed annual and permanent tree crops.²¹⁸ In the regions where most of the impacts were observed, the land was mostly range land and annual crop land.²¹⁹ Where water completely floods the land, (bypass or river bed) or land is utilized for infrastructure purposes, the government would be liable for the full value of the property.²²⁰ The cost of the flowage easements will depend on the value of land after the easement.²²¹ For land affected by seepage, this will be determined by the ultimate rise and water table and salinity push associated with that rise.²²² Permanent crops on average tend to have a deeper root zone than annual crops and thus are less tolerant to a rise in the water table.²²³ However, a study has

²¹⁴ See Wolfsen, *supra* note 22, at 15-23.

²¹⁵ Michael Doyle, *Feds, farmers talk damage from river restoration*, FRESNO BEE, June 8, 2011 <http://www.fresnobee.com/2011/06/08/2420213/feds-farmers-talk-damage-from.html>.

²¹⁶ See E-mail from Mari Locke Martin to author, *supra* note 3 (indicating observed impacts of up to three miles out in certain reaches of the river during high flood flows and absent any channel improvements or modification).

²¹⁷ See *id.*

²¹⁸ See *id.*

²¹⁹ See *id.* See also Wolfsen, *supra* note 22, at 20 (indicating use of impacted lands for cattle grazing).

²²⁰ See *United States v. Dickinson*, 331 U.S. 745, 750 (1947) (holding the government liable for the full extent of land they either flood or carry away through erosion).

²²¹ *United States v. 329.73 Acres of Land, Situated in Grenada and Yalobusha Cntys., State of Miss.*, 666 F.2d 281, 283 (1982).

²²² See BURT ET AL., *supra* note 72, at xvii (indicating potential conflicts from the water table impacts with the future planting of annual and permanent crops).

²²³ See *id.* at xii; Almonds, one of the major permanent crops grown along the San Joaquin River have a rooting zone of at least six feet. *Almond Crop Data Sheet*,

shown that capillary rise in certain soil types present in the area will create a saturated zone around 4.5 feet above the existing water table that may also detrimentally impact the crops.²²⁴ Due to this, the report recommends a water table depth of at least 7.5 feet to ensure continued production of annual crops and an even deeper level for permanent crops.²²⁵ Where the seepage causes a water table rise above 7.5 feet, the land will no longer be usable for annual or permanent crops, and compensation would be owed for that reduction in value.²²⁶ Farther out, where the water table has risen to below the annual danger zone but is still deleterious to permanent crop growth, compensation would be owed for the reduction in value between the current or potential future use of the land for permanent tree crops and its continued value for production of annual crops.²²⁷

The actual values of individual plots of land will vary considerably with the level of improvements to the land, age of crops or trees, and general yields of the land.²²⁸ As of 2011, almond orchards in Fresno County were assessed at values of around \$15,000 an acre and irrigated farmland at around \$10,000 an acre, with range land in the same region being under \$1,000 an acre.²²⁹ Limiting the actual land taken to just the 5,000 acres initially estimated as necessary to complete the river, this value could be as much as \$75,000,000 (if primarily almond orchards).²³⁰ With many arguing that the acreage impacted will be significantly higher than the initial estimate, potential costs could be in the hundreds of millions.²³¹ In the arid San Joaquin Valley, the fact that a majority of potentially condemned land contain riparian or pre-1914 appropriative water

WESTLANDWATER.ORG, www.westlandswater.org/resources/wmh/almond.pdf (last visited Oct. 8, 2011).

²²⁴ See BURT ET AL., *supra* note 72, at xvii.

²²⁵ See *id.*

²²⁶ See *id.*

²²⁷ A water table depth between 7.5 ft and 9.5 feet would be deleterious to permanent tree crops while still permitting the growing of some annual crops. See BURT ET AL., *supra* note 72, at xvii.

²²⁸ See generally, Michael E. Salassi et al., *Valuation of Perennial Crops Associated with Agricultural Land Sales: The Case of Sugarcane in Louisiana*, 63 *Journal of the ASFRMA* 11, 11-22 (2000), available at <http://portal.asfmra.org> (follow “publications”, “journal of the ASFRMA”, “journals”) (providing a methodology for determining the fair market value for actively producing permanent and semi-permanent cropland).

²²⁹ Steve Runyan, *2011 Trends in Agricultural Land and Lease Values*, CALAS FMRA.COM, 10 http://www.calasfmra.com/db_meetings/2011%20Land%20Values%20Presentation%20-%20Steve%20Runyan.pdf (last visited June 30, 2011).

²³⁰ See *id.*; See E-mail from Mari Locke Martin to author, *supra* note 3.

²³¹ See E-mail from Mari Locke Martin to author, *supra* note 3.

rights would push these values even higher.²³² Since the availability of this irrigation water was not dependent on the construction of Friant Dam, the value of the rights can be factored into a determination of the overall value of the land condemned.²³³ Also, where the restored flows bisect properties that would normally be able to use the dry riverbed or bypass to move equipment, severance damages may be assessed for the reduced value of the land to which there is now limited access.²³⁴

In addition, those farmers utilizing land for permanent crops have multi-year investments in the land for which a standard market price determination may not account.²³⁵ While a proper assessment of market value may absorb these factors through comparable sales and assessment of replacement costs, higher compensation than the market value may be required for the remedy to meet the indemnity standard for the landowner.²³⁶

Another principle of eminent domain law is the concept of “highest and best use” of land which holds that in determining the value of lands subject to a full or partial taking the value of land not for its current use but its “highest and best” possible use is factored.²³⁷ This theory has been applied to agricultural land where the highest and best use of the land is crops that would be the most profitable to the landowner.²³⁸ In such cases, the value of the land is determined by the most profitable crop type for the land in question that can reasonably be cultivated.²³⁹

For many farmers along the San Joaquin River, land that may currently be used for row crops is capable of or slated for conversion to permanent tree crops.²⁴⁰ Since farmers often convert their land in phases, much of the land with sufficient water table depth and proper soils would have a reasonable chance of being converted to permanent crops as its

²³² See E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

²³³ See *Turner v. United States*, 23 Cl. Ct. 447, 459 (1991) (denying compensation where irrigation of and was only possible due to the construction and operation of the condemning water project).

²³⁴ See *United States v. Smith*, 355 F.2d 807, 809 (5th Cir. 1966). Lands bisected by the flood bypasses may have claims of severance due to lack of access to parts of their property caused by continual flooding of the bypasses. See *Wolfsen*, *supra* note 22, at 20-21.

²³⁵ See *Salassi*, *supra* note 228, at 15.

²³⁶ See *Salassi*, *supra* note 228, at 20-21.

²³⁷ See *Turner*, 23 Cl. Ct. at 458.

²³⁸ See *id.* (calculating the “highest and best use” of the property based on the type of crop it was capable of growing).

²³⁹ See *id.*

²⁴⁰ See E-mail from Mari Locke Martin to author, *supra* note 3; E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

“highest and best use.”²⁴¹ Where the clear intent to undergo this conversion could be proven, the land values used to determine compensation would need to reflect this potential improvement.²⁴²

Given the high value of the farmland surrounding the restored river and the potential for condemnation of large amount of property through direct flowage easements, seepage easements, or severance, there may be considerable costs to the BOR if mitigation procedures are inadequate.

VII. CONCLUSION

The San Joaquin River Restoration is a complex and important endeavor that represents the desire to balance the needs of all communities while maintaining a healthy environment. The conflicts surrounding the potential third party impacts are not the result of poor design but of insufficient execution. The SJRRP and its supporting legislation outline the clear intent to prevent or, failing that, compensate landowners for, any impacts associated with the restoration water flows.²⁴³ However, even with these protections the pressure of meeting restoration deadlines and disparities in the extent of predicted impacts between the landowners and the BOR creates ample opportunity to realize adverse impacts.²⁴⁴ The BOR is understandably cautious in its approach to these potential issues, limited by both statutory requirements and budget limitations.²⁴⁵ Failure to adjust flows or mitigate damages completely, though, may give rise to claims of inverse condemnation.²⁴⁶ The type of impacts presented by the SJRRP water releases, direct flooding, seepage, and erosion of levees are applicable to a takings claim. These releases are unlikely to be protected under the federal government's navigational servitude, leaving the BOR liable for the full extent of its actions. Given the high value of much of this farmland for its water rights and agricultural

²⁴¹ The land that is capable of sustaining permanent tree crops is particularly valuable due to the fact that it has a stable water supply. E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

²⁴² The market price will typically reflect the lands ability to produce permanent crops. E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

²⁴³ See San Joaquin River Restoration Settlement Act, Pub.L. No. 111-11, § 10004 (h)(3), 123 Stat. 992 (2009).

²⁴⁴ See E-mail from Mari Locke Martin to author, *supra* note 3 (highlighting the inadequacy of the current seepage monitoring program).

²⁴⁵ See E-mail from Mari Locke Martin to author, *supra* note 3; See also Letter from Sen. Dianne Feinstein to James Nickel, *supra* note 90 (indicating concern that available funds for the project were being rapidly depleted).

²⁴⁶ See, e.g., Wolfson, *supra* note 22, at 19.

productivity, the takings could cost the BOR millions, straining an already limited budget.

In the end, it would be more efficient to address any potential problems before the full releases are initiated. The fish introduction date, date for full restoration flows, and other deadlines outlined in the SJRRP must be delayed until all the structural improvements necessary to facilitate the water flow can be completed.²⁴⁷ Monitoring of seepage must be extended to account for the results of the studies and observations produced by the landowners. Where statutory requirements limit the ability of BOR to initiate mitigation or compensate for damages, a legislative solution may be necessary to facilitate necessary corrections before impending SJRRP deadlines.²⁴⁸

For the restoration of the San Joaquin River to be realized, all groups with vested interests in the water's resources must be included in the process. Failure to ensure that all potential impacts to landowners along the river are either compensated for or mitigated will only lead to greater total costs and a resurgence of litigation, both of which could be detrimental to the SJRRP's success.

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²⁴⁷ The Act actually requires substantial completion of some of these projects before full releases can be initiated. *See* E-mail from Mari Locke Martin & Chris White to author, *supra* note 70.

²⁴⁸ *See* Letter from Sen. Dianne Feinstein, U.S. Senator, to Hon. Michael Connor, Commissioner, USBR (July 5, 2011) (on file with author) (inquiring of the BOR if statutory relief is needed to make the process of compensation for landowners more efficient).