

Reclaiming LA’s “Mulholland Moment”: Wastewater Recycling, the Public Trust Doctrine, and Saving the LA River

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Los Angeles is experiencing an unprecedented “Mulholland Moment”: a period of bustling enterprise, skyrocketing socioeconomic inequality, and dwindling water resources. After years of yellow lawns and increasing water use restrictions, Angelenos are thirsty for local, reliable, and affordable water supplies even as climate change and prolonged periods of drought become the norm. To quench this thirst, Los Angeles promised to recycle 100 percent of its wastewater by 2035 to help the city wean off over-tapped and expensive imported water sources. But while city planners and water advocates rejoice, some ask: should Los Angeles recycle all its wastewater? For many, the answer is “no.” Wastewater discharges comprise nearly 90 percent of instream flows in the Los Angeles River, a fifty-one-mile waterway that connects millions of residents in Southern California. Even in its concrete straitjacket, the Los Angeles River has survived. Its flows support many critical recreational, educational, and ecological uses open for all. But if Los Angeles recycles all its wastewater, the discharges that feed the river’s flows will disappear. As a result, Angelenos will lose summer kayaking, communal space, and habitats for endangered species, especially in sweltering dry seasons.

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As a trustee for the people of California, the State Water Resources Control Board must consider its public trust obligations before it approves any future Los Angeles city plans, which could reshape the Los Angeles River as Angelenos know it today. In its assessment, the State Water Resources Control Board must acknowledge the traditional, recreational, and ecological uses of the river and balance the protection of these interests with the projected benefits of increasing the local water supply. It is critical for decision-makers to think about the future of the river before pursuing projects that could permanently change its character. As Los Angeles's need for continued water ingenuity grows in response to the region's evaporating water supply, the conflict between development—even development that may benefit the public—and preserving natural spaces will only increase. However, honoring public trust resources can help cities, community members, and local leaders navigate the course.

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Cement will turn back,
 into sand someday. Today there's
 thirty guys with jackhammers, leveling
 the pavement
 ahead of an airport runway paving machine.
 It makes an unholy noise,
 so we address ourselves to the river.
 We ask if we can
 speak on its behalf
 in the human realm.
 We can't hear the river saying no
 so we get to work.¹

INTRODUCTION

In February 2019, former Los Angeles (LA) Mayor Eric Garcetti announced that LA would recycle 100 percent of its residents' wastewater by 2035.² While some environmental advocates viewed this proclamation as "visionary,"³ others had pushed LA to increase its wastewater recycling and reuse program for years.⁴ What many in the traditional environmental space have not asked, however, is whether LA *should* recycle all of its wastewater. This Note posits and responds to this question.

Most of LA's efforts to achieve its goal center on large-scale infrastructure improvements at the Hyperion Water Reclamation Plant (Hyperion), which

1. Lewis MacAdams, *The River: Book One* (1993), *reprinted in* DEAR OXYGEN: NEW & SELECTED POEMS, 1966-2011 (Kevin Opstedal ed., 2011).

2. *Mayor Garcetti: Los Angeles Will Recycle 100% of City's Wastewater by 2035*, L.A. DEP'T WATER & POWER (Feb. 21, 2019), <https://www.ladwpnews.com/mayor-garcetti-los-angeles-will-recycle-100-of-citys-wastewater-by-2035/> [<https://perma.cc/8CDZ-JAA4>]. The new mayor of LA, Karen Bass, has yet to comment on the specifics of her administration's wastewater recycling goals, but all signs point to Garcetti's commitment outliving his time as mayor. Hayley Smith, *Los Angeles Is Running Out of Water, and Time. Are Leaders Willing to Act?*, L.A. TIMES (Oct. 13, 2022), <https://www.latimes.com/environment/story/2022-10-13/as-election-nears-future-l-a-water-supply-gains-focus> [<https://perma.cc/DJ8N-L29D>] ("Bass . . . said her top water priority as mayor would be modernizing aging infrastructure . . . Garcetti said he believes [Bass] will be able to see the city's water goals through to completion—so long as [she] stay[s] the course."); *see also* Jaimie Ding, *Los Angeles Could Soon Put Recycled Water Directly in Your Tap. It's Not 'Toilet to Tap'*, L.A. TIMES (July 22, 2022), <https://www.latimes.com/environment/story/2022-07-22/los-angeles-may-be-the-first-in-california-to-put-recycled-water-directly-in-your-tap> [<https://perma.cc/H8YQ-AXYT>] (detailing several water recycling projects planned in Los Angeles in support of Garcetti's pledge).

3. *Mayor Garcetti*, *supra* note 2.

4. *See, e.g., Let's Talk: RECYCLE-Expanding Wastewater Purification Program*, L.A. WATERKEEPER (Nov. 23, 2021), <https://www.lawaterkeeper.org/news/recycle-wastewater> [<https://perma.cc/M2DY-424X>] (advocating for increased wastewater recycling efforts in LA).

already receives 81 percent of the city's wastewater and discharges treated wastewater directly into the Pacific Ocean.⁵ But because achieving LA's wastewater recycling goals will also require rethinking wastewater reuse efforts at the Donald C. Tillman Water Reclamation Plant (Tillman) and Los Angeles-Glendale Water Reclamation Plant (LA-Glendale),⁶ which discharge wastewater effluent into the Los Angeles River (LA River),⁷ it is important to understand how complementary projects at these plants will impact the river.

Treated discharges from wastewater reclamation plants comprise at least 70 percent of instream flows in the LA River on dry days,⁸ providing robust support for the river's recreational, educational, and ecological beneficial uses throughout its entire fifty-one-mile⁹ range.¹⁰ However, as critics and community groups have pointed out, if there are no flows (or too-low flows) in the river's banks, the public will not have a river to kayak, park-poor communities will lose free open space, and fragile aquatic ecosystems will dry out.¹¹ Therefore, recycling 100 percent of LA's wastewater may effectively erase the LA River as it exists today: one of the region's oldest natural and cultural public institutions.

But LA is facing an unprecedented water crisis. As the effects of climate change intensify, Californians across the state can expect to experience higher temperatures, prolonged periods of extreme drought, and increasingly

5. See *Mayor Garcetti*, *supra* note 2; see also CITY OF L.A. DEP'T OF PUB. WORKS, LA SANITATION & ENV'T, 30-DAY REPORT ON UNPLANNED DISCHARGE TO 1-MILE OUTFALL OF UNTREATED WASTEWATER ON JULY 11 AND 12, 2021 9 (2021) [hereinafter HYPERION OUTFALL REPORT]

<https://www.lacitiesan.org/cs/groups/public/documents/document/y250/mdy0/~edisp/cnt064342.pdf> [https://perma.cc/6TJG-KT5A] (“Hyperion treats an average of 260 million gallons per day (MGD) of which 225 MGD is discharged to the 5-Mile Outfall to the Santa Monica Bay[.]”).

6. See *Mayor Garcetti*, *supra* note 2; see also LADWP, *Notice of Preparation of an Environmental Impact Report* 1–2 (Mar. 15, 2021) (explaining that the OperationNEXT program will involve LADWP increasing “recycled water facilitates, water conveyance pipelines, and groundwater recharge and extraction capacities” in the areas in which the Tillman and Burbank plants operate).

7. L.A. CNTY. & L.A. PUB. WORKS, LA RIVER MASTER PLAN 98 (2022) [hereinafter LA RIVER MASTER PLAN].

8. See Jordyn M. Wolfand, Anneliese Sytsma, Victoria L. Hennon, Eric D. Stein & Terri S. Hogue, *Dilution and Pollution: Assessing the Impacts of Water Reuse and Flow Reduction on Water Quality in the Los Angeles River Basin*, 2 ACS ES&T WATER 1309, 1309–10 (2022) (stating that wastewater discharges comprise at least 70 percent of the water in the LA River in dry weather); Louis Sahagún, *Could the L.A. River Dry Up? Fears Grow as Cities Work to Recycle More Wastewater*, L.A. TIMES (Feb. 1, 2022), <https://www.latimes.com/environment/story/2022-02-01/l-a-river-runoff-recycle-wastewater> [https://perma.cc/Z8GJ-ULSV] (stating that wastewater discharges comprise 90 percent of the flows in the LA River, while the remaining 10 percent comes from stormwater discharge).

9. See *History of the Los Angeles River*, L.A. CNTY. PUB. WORKS, <https://ladpw.org/wmd/watershed/LA/History.cfm> [https://perma.cc/G33W-ZQBR] [hereinafter *Los Angeles River*].

10. See Sahagún, *supra* note 8.

11. See *id.*; *Keep the River Wet*, FRIENDS OF THE LA RIVER, <https://keeptheriverwet.com> [https://perma.cc/SN47-PH2C] (arguing that increased wastewater reclamation and stormwater capture “could drastically reduce [LA] River flows, potentially threatening our shared vision for parks, restoration, and recovery of key wildlife species at the [r]iver”).

devastating wildfires.¹² Less precipitation, particularly during the dry season, will significantly affect the state's water supplies, especially in arid Southern California.¹³ LA County primarily relies on groundwater and water imports from the Sacramento-San Joaquin Delta, Owens Valley, and the Colorado River to serve its more than ten million residents'¹⁴ water needs.¹⁵ As California's snowpack vanishes and over-pumping depletes groundwater stock, supplying water to an estimated four million LA city residents¹⁶ will be more contentious—and expensive.¹⁷ Angelenos cannot afford water insecurity. Garcetti is correct in thinking that wastewater reuse can, and should, play a significant role in diversifying LA's water portfolio.¹⁸

This Note does not argue against increasing LA's wastewater recycling efforts to support its local water supply. Instead, it provides a nuanced view of Garcetti's wastewater recycling commitment, using the public trust doctrine to show that the LA River, and its publicly accessible, recreational, and ecological uses, is worth saving. Ultimately, this Note concludes that the California State Water Resources Control Board (SWRCB or State Water Board) must carefully weigh the public's interests in the LA River before it allows LA to move forward with its reclamation plans, especially for the city's treatment plants that directly discharge treated wastewater into the waterway.¹⁹ Failure to consider the many benefits a flowing LA River provides would violate the SWRCB's obligation to protect the state's public trust resources. And while the SWRCB may conclude that the benefits of increasing LA's local water supply outweigh the preservation of the LA River, this Note calls on state decision-makers to deviate from past

12. *Climate Change*, CAL. WATER BDS. L.A. – R4, https://www.waterboards.ca.gov/losangeles/water_issues/programs/climate_change/ [<https://perma.cc/V279-33GN>].

13. *Id.*

14. This count is an accurate estimation as of the April 1, 2020, U.S. Census. *Quick Facts: Los Angeles County, California*, U.S. CENSUS BUREAU, <https://www.census.gov/quickfacts/losangelescountycalifornia> [<https://perma.cc/9JHU-NXM5>].

15. *Where Does My Tap Water Come From? Greater Los Angeles County Water Supply*, WATERTALKS, <https://watertalks.csusb.edu/where-does-my-tap-water-come-from#:~:text=The%20water%20supply%20for%20the,water%2C%20and%203%20groundwater> [<https://perma.cc/98N9-WBHR>].

16. *Demographics*, L.A. CITY PLANNING, <https://planning.lacity.org/resources/demographics> [<https://perma.cc/AR67-GFR3>] (listing "Total Persons" in the City of L.A. as 3,973,278).

17. Chris Austin, *Western Groundwater Congress: California Water Transfer Price Forecast*, MAVEN'S NOTEBOOK (Oct. 22, 2020), <https://mavensnotebook.com/2020/10/22/western-groundwater-congress-california-water-transfer-price-forecast/> [<https://perma.cc/7JS7-8KZT>] ("Water market activity responds to surface water availability. Prices and transfer activity typically increase during dry years, particularly for spot market transfers, which are single year transfers of surface water.").

18. See L.A. WATERKEEPER, *supra* note 4 ("The partnership between LASAN and LADWP, known as OperationNEXT, is moving forward and could result in 170 MGD-180 MGD of reclaimed water in the next 15 years.").

19. See Sahagún, *supra* note 8.

practice and think about the river as a living, community-building institution before they rush to change it.

This Note proceeds in four parts. Part I explores the natural and cultural history of the LA River and examines how the LA River fits into society today. This Part particularly emphasizes the many public trust uses the LA River supports, a significant portion of which depend on its current instream flows. Part II provides a glimpse into the current state of water use and wastewater reclamation in LA. It also outlines what recycling all the city's wastewater truly means and examines how the city's current and projected wastewater reclamation efforts may affect the river's wide-ranging public uses.

Part III introduces the origins and expansion of the public trust doctrine in California, including the state of California's affirmative duty to protect public trust resources when feasible. This Part also considers whether the LA River, an unconventional urban river, is a protected public trust resource. Part IV builds on Parts I, II, and III, providing a detailed analysis of the public trust interests that the SWRCB must weigh before allowing LA to reduce wastewater discharges into the LA River via the California Water Code section 1211 Change Petition process (1211 Change Petition(s)). In doing so, this Part explicitly explores the effects on traditional, recreational, and ecological public trust uses of the LA River, separately and in conversation with one another. Finally, Part IV concludes by outlining factors and alternatives that the State Water Board should consider in determining whether recycling 100 percent of LA's wastewater or protecting flows in the LA River is feasible.

I.

THE LA RIVER AS A PUBLIC RESOURCE

Many Angelenos have long regarded the LA River as “a large gutter, a storm drain surrounded by concrete.”²⁰ But it is much more than a storm drain. To help dispel this misunderstanding, this Section outlines the river's historical cultural and ecological importance to the LA region, its human-led channelization, and its many public values for Angelenos in the modern day. Ultimately, this discussion intends to provide a comprehensive background to establish that the LA River is, in fact, worthy of saving.

A. *The LA River: A Natural and Cultural History*

While concrete channels currently define much of the LA River today, it was once a wild waterway that supported life in the LA Basin, and violence along with it. The LA River originates in the southwest San Fernando Valley, traveling

20. Susan Harris, “*Pigs Will Fly*”: *Protecting the Los Angeles River by Declaring Navigability*, 39 B.C. ENV'T. AFF. L. REV. 185, 185 (2012).

fifty-one miles to the Pacific Ocean.²¹ Historically, the LA River had “naturally shallow” flows, which gently poured for many years when the region experienced low rainfall.²² However, during heavy rain years, the LA River often changed course and overtook its banks, flooding everything in its path.²³ These floods resulted in nutrient-rich soils and floodplains that supported a variety of biologically diverse plant ecosystems, including willow forests and aquatic and semi-aquatic plants.²⁴ In addition, the soils and plant networks were prime habitats for a diverse community of animals, including California grizzly bears and mountain lions.²⁵ The LA River was also home to steelhead trout, the only native fish in Southern California that traveled from mountainous headwaters to the sea.²⁶

The LA River and its surrounding environs also supported human life. The Tongva First Peoples are known to be the original settlers along the river,²⁷ but the LA River’s life-giving power also benefited others in the area, including the Fernandeño Tataviam and the Ventureño Chumash.²⁸ The Tongva respected the LA River’s natural oscillation between gentle flows and raging floods, using its calm waters as a means of transportation and building their homesteads outside the floodplain, safe from overflow.²⁹ Native settlers fashioned their dwellings using bark from the bountiful willow forests and used its rich soils to grow food.³⁰

When Spanish colonizers arrived in 1769, they opened a floodgate of heavy-handed river management that continued through LA’s establishment and growth. The first Spanish colonizers marveled at the flourishing region nourished by the LA River, with Padre Juan Crespí describing the area as “lush and pleasing . . . southward there is a great extent of soil, all very green, so that really

21. KATIE MIKA, ELIZABETH GALLO, LAURA READ, RYAN EDGLEY, KIM TRUONG, TERRI HOGUE, STEPHANIE PINCELT & MARK GOLD, *LA SUSTAINABLE WATER PROJECT: LOS ANGELES RIVER WATERSHED* 5 (2017).

22. FRIENDS OF THE LOS ANGELES RIVER, *Chapter 2: Natural History of the Los Angeles River*, in *THE LOS ANGELES RIVER AND THE ADVENTURES OF THE COLA KAYAK: TEACHER RESOURCE GUIDE* 10, 10, <https://sepulvedabasinwildlife.org/pdf/FoLARWatershedWonderspg1-65.pdf> [<https://perma.cc/872Y-93H4>].

23. *See id.* at 11. The LA River is known to have changed course at least nine times in the recorded history of LA. *Id.*

24. *Id.* at 12.

25. *Id.*

26. *Id.*

27. *Id.* at 4.

28. This list is likely not exhaustive, as the First Peoples in the area lived in many different communities, forming “multiple distinct nations, lineages, dialects, and identities.” LA RIVER MASTER PLAN, *supra* note 7, at 74. While this section of the Note centers on the historical populations that the LA River supported, many Native Peoples and communities continue to live near the river and maintain close relationships with the natural environment. *Id.*

29. FRIENDS OF THE L.A. RIVER, *Chapter 1: Cultural History of the Los Angeles River*, in *THE ADVENTURES OF THE COLA KAYAK*, *supra* note 22, at 4, 4.

30. *Id.*

it can be said to be a most beautiful garden.”³¹ Shortly after, the Spanish built the first missions in present-day LA County and violently enslaved, exterminated, and stole from the Indigenous Peoples living in the area.³² Then, in 1781, the Spanish built what became the city of LA on the river’s banks.³³ By 1783, the Spanish had dug the Zanja Madre (Mother Ditch), which brought water from the LA River to their pueblo for irrigation and domestic use.³⁴ As the Spanish pueblo grew, so did the Zanja Madre ditch system.³⁵ Mexican settlers flocked to the LA Basin after Spanish colonization, building on the Zanja Madre public works projects the Spanish had utilized to prosper in the region.³⁶ As a result, wetlands near the river dried as farmers diverted water for irrigation; willow forests disappeared to make room for crop and livestock grazing land.³⁷ After California became a state in 1850, newcomers erected buildings in the floodplain, increasing flood risk during the rainy season.³⁸

Unfortunately, the flood risks exacerbated by human intervention materialized in devastating fashion, signaling a new, aggressive era of LA River management. By 1913, LA’s population reached more than 500,000,³⁹ and intensive urbanization resulted in miles of residential and industrial development that increasingly encroached on the river’s unstable banks.⁴⁰ A series of winter storms hit LA in early 1914, which caused the river to surmount its banks and wreak havoc on the developing metropolis.⁴¹ Although no lives were lost, the floods inundated newly constructed roads, swept away homes and bridges, and destroyed agricultural fields.⁴² Yet, as environmental historian Jared Orsi argues, the damage from the 1914 floods cannot be attributed to higher-than-average rainfall alone.⁴³ As he writes, several previous storms resulted in much more

31. *The LA River: Past, Present & Future*, THE RIVER PROJECT, <https://www.riverproject.org/lariver> [https://perma.cc/PNY3-JJVT].

32. See, e.g., LA RIVER MASTER PLAN, *supra* note 7, at 76 (describing Spanish colonization in modern-day LA County); Hadley Meares, *Genocide, Slavery, and L.A.’s Role in the Decimation of Native Californians*, KCET (June 29, 2016), <https://www.kcet.org/shows/lost-la/genocide-slavery-and-l-a-s-role-in-the-decimation-of-native-californians> [https://perma.cc/C2EV-DFN4] (summarizing the genocide of Native Californians that occurred in the nineteenth century).

33. THE RIVER PROJECT, *supra* note 31.

34. See FRIENDS OF THE L.A. RIVER, *supra* note 29, at 5–6.

35. *Id.*

36. *Id.*

37. *Id.* at 6.

38. *Id.*

39. WILLIAM L. KAHRL, WATER AND POWER: THE CONFLICT OVER LOS ANGELES WATER SUPPLY IN THE OWENS VALLEY 86 (1982).

40. LA RIVER MASTER PLAN, *supra* note 7, at 78–81.

41. Vittoria Di Palma & Alexander Robinson, *Willful Waters*, PLACES J. (May 2018), <https://placesjournal.org/article/willful-waters-los-angeles-river/?cn-reloaded=1> [https://perma.cc/4ZDY-LRVV].

42. *Id.*

43. JARED ORSI, HAZARDOUS METROPOLIS: FLOODING AND URBAN ECOLOGY IN LOS ANGELES 33–35 (2004).

extensive flooding.⁴⁴ For Orsi, development in LA made the 1914 floods all the more disastrous because Angelenos had built a new ecosystem without accounting for the dangers periodic floodwaters presented.⁴⁵ And so, public outcry for taming unpredictable flood events surged, and regional decision-makers subsequently formed the LA County Flood Control District.⁴⁶

Tensions between the river's hydrologic qualities and Angelenos' concentrated urbanization only rose as the city grew. On New Year's Day in 1934, a flood killed at least forty residents and consumed hundreds of homes in northeast LA.⁴⁷ The city saw its worst water surge in history just four years later. In late February and early March 1938, raging floodwaters collapsed a bridge in the San Fernando Valley,⁴⁸ caused an estimated \$1.7 billion in damage (in 2023 dollars),⁴⁹ and killed at least 87 people.⁵⁰ These tragedies "solidified public opinion in favor of a comprehensive flood control plan" for LA,⁵¹ and for that, the city looked to the U.S. Army Corps of Engineers (Army Corps).⁵² Thirty years and more than two million cubic yards of concrete later, the Army Corps transformed the once erratic waterway into an unbending flood channel.⁵³ The Army Corps "narrowed, straightened, deepened, and encased in concrete" over four hundred miles of the LA River and its tributaries.⁵⁴ This system transformed the LA River's life-giving ecosystem into a "freeway for moving [floodwater] efficiently and safely from the mountains to the sea."⁵⁵

The Army Corps's channelization projects also altered the public function and perception of the LA River well into the late twentieth century. In creating this artificial storm drain, the Army Corps erased the river's once meandering

44. *Id.*

45. *See id.* at 34–35 ("By 1914, in contrast, a city had emerged on the plain, and with it a new [urban] ecosystem. Even though the ecological changes remained invisible to the sun-drenched populace until 1914, it was a much more hazardous ecosystem.")

46. L.A. CNTY. PUB. WORKS, *supra* note 9.

47. Di Ionescu, *The 1934 New Year's Flood*, MEDIUM (May 25, 2019), <https://medium.com/to-die-in-la/the-1934-new-years-flood-d63fc356f77b> [<https://perma.cc/6ZUB-RC33>].

48. *See* Patt Morrison, *How the Deluge of 1938 Changed Los Angeles—and Its River*, L.A. TIMES (Feb. 28, 2023), <https://www.latimes.com/california/story/2023-02-28/explaining-l-a-with-patt-morrison-the-legacy-of-the-1938-los-angeles-flood> [<https://perma.cc/3S84-ZMJB>] ("Five died when a bridge across the L.A. River at Universal City collapsed as they stood looking down at the waters.")

49. Gustavo Arellano, *Column: It's Flooding in Southern California. 85 Years Ago, the Damage Was Way Worse*, L.A. TIMES (Jan. 11, 2023), <https://www.latimes.com/california/story/2023-01-11/1938-flood-southern-california> [<https://perma.cc/8REK-V98K>].

50. *See id.* However, estimates of the number killed vary widely. *See, e.g.*, LA RIVER MASTER PLAN, *supra* note 7, at 78 (listing 115 deaths); Harris, *supra* note 20, at 190 (listing 688 deaths).

51. Ionescu, *supra* note 47.

52. *See* Harris, *supra* note 20, at 190.

53. *Id.*

54. *See* FRIENDS OF THE L.A. RIVER, *supra* note 29, at 7.

55. Emily Guerin, *LA Explained: The Los Angeles River*, LAIST (June 22, 2018), <https://laist.com/news/climate-environment/los-angeles-river-explained> [<https://perma.cc/8A6Q-8Z25>].

corridors.⁵⁶ Such structural changes, combined with building the Hansen and Sepulveda dams and several massive flood control reservoirs upstream, effectively reduced the river's seasonal water rises to a year-round dribble.⁵⁷ As a result, much of the flora and fauna that had thrived in the region for millennia suffered devastating food and habitat losses.⁵⁸ Angelenos' subconsciouses quickly erased the past flood events from LA's collective memory. The channelization morphed the river into an obscure trough that sometimes starred in feature films alongside the likes of John Travolta.⁵⁹ Developers continuously placed new homes and apartments, businesses, and governmental facilities directly against the river's now seemingly docile banks.⁶⁰

The extensive modifications of the LA River also led to disproportionate hardship for many communities living adjacent to it. As developers erected more buildings and freeways along the tamed concrete river, Indigenous communities faced displacement and erasure over multiple generations.⁶¹ Many Tribal members who remained in their ancestral homelands lost a cultural and spiritual lifeline.⁶² Black, Chinese, Japanese, and Latinx communities—many of which were physically responsible for the development throughout the twentieth century—also suffered.⁶³ This new “urbanized river” divided White and non-White communities, arguably making it easier for the “redlining”⁶⁴ phenomenon to take hold and “produce[] landscapes of segregation that both created and reinforced ethnic and racial ‘enclaves’ along the river.”⁶⁵

Over the past 300 years, *people* have transformed the LA River from an untamed waterway into an engineered water conveyor belt built for the convenience of anthropocentric prosperity. Although the LA River had some

56. See LA RIVER MASTER PLAN, *supra* note 7, at 69–72.

57. Jack Eidt, *Los Angeles River Revitalization: A City Rediscovered Its Flow*, WILDER UTOPIA (Apr. 9, 2013), <https://wilderutopia.com/sustainability/land/los-angeles-river-revitalization-city-rediscovered-flow/> [<https://perma.cc/6RMD-VGK2>].

58. LA RIVER MASTER PLAN, *supra* note 7, at 82.

59. Ellie Watts-Russell, *The LA River, a Favourite Hollywood Backdrop, Cleans Up Its Act*, THE GUARDIAN (Sept. 3, 2017), <https://www.theguardian.com/travel/2017/sep/03/los-angeles-la-river-regeneration-hollywood-movies-frogtown> [<https://perma.cc/P2TU-B5X9>].

60. Di Palma & Robinson, *supra* note 41 (“High tension power lines and freight rails lined the levees, while prisons and other facilities the city wanted to marginalize were sited along the banks”); see also LA RIVER MASTER PLAN, *supra* note 7, at 82 (explaining how “the presence of structured channels and dams” enabled “[n]ew homes and businesses [to] buil[d] their backs to the channel”).

61. LA RIVER MASTER PLAN, *supra* note 7, at 82.

62. *Id.* at 75, 82.

63. *Id.* at 82.

64. The term “redlining” originates from the U.S. government’s homeownership financial-assistance programs that systematically excluded communities of color from beneficial government-insured mortgages during the 1930s. During this process, the federal government marked communities of color, mostly neighborhoods with Black residents, as “red” areas, signaling that these neighborhoods were low-value and not worthy of inclusion for its lending programs. Candace Jackson, *What Is Redlining?*, N.Y. TIMES (Aug. 17, 2021), <https://www.nytimes.com/2021/08/17/realestate/what-is-redlining.html> [<https://perma.cc/B3PE-Z9LK>].

65. LA RIVER MASTER PLAN, *supra* note 7, at 82.

advocates throughout its transfiguration,⁶⁶ by the mid-twentieth century, most Angelenos either merely viewed the river in terms of its flood management use⁶⁷ or “dismiss[ed] its concrete-encased trickle as a joke when they didn’t ignore it altogether.”⁶⁸ In Hollywood terms, the LA River was a mere extra on set for much of LA’s recent history. But such integral public waterways do not evaporate so easily.

B. *A Renaissance? The LA River Today*

Although the LA River has significantly changed from the life-giving water source that defined the region before its channelization, one thing is true: it is iconic—and not just for Angelenos. Today, almost one million LA County residents live within one mile of the LA River.⁶⁹ More strikingly, over a third of Californians live within an hour’s drive of the river’s banks.⁷⁰ For some, it may be hard to believe that individuals would *choose* to visit the LA River, given the changes that have been made to it. Still, people do—to kayak, create art, exercise, enjoy its biking trails, and more.⁷¹ In addition, several local stakeholders view the river as a key player in creating open spaces⁷² and tackling climate change.⁷³ While the LA River certainly has its pollution, ecological health, and accessibility issues, the growing public use and appreciation of the river keep it alive, and decision-makers must recognize all that LA’s river does for the public in return. This Section sketches a picture of the LA River today to highlight the public benefits it provides the region.

Human intervention again transformed the LA River in 1985 by establishing the Tillman Reclamation Plant in the San Fernando Valley in northwest LA.⁷⁴ Once open and operational, the Tillman plant began discharging

66. *Id.* at 18 (citing Olmsted and Bartholomew’s 1930 regional plan, “Parks, Playgrounds, and Beaches for the Los Angeles Region,” which advocated for establishing parks, open spaces, and public access points along the river).

67. *Id.* at 82 (“The river was spoken of almost exclusively in terms of its flood management functions, and its role in the greater ecosystem began to wane.”).

68. Di Palma & Robinson, *supra* note 41.

69. LA RIVER MASTER PLAN, *supra* note 7, at 17.

70. *Id.*

71. *See id.* at 107–11.

72. *See id.* at 166.

73. *See, e.g., Our County Supervisors and Public Works Team Need to Hear from You!, FRIENDS OF THE L.A. RIVER* (2019), <https://folar.org/county-plan/> [<https://perma.cc/8C9X-ERMB>] (“Join the chorus of community voices that are calling for the LA River Master Plan to bring together people and nature, while protecting all of us from climate change and flooding.”).

74. Donald C. Tillman Water Reclamation Plant, LASAN, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-dctwrp?_afLoop=1559614598358363&_afWindowMode=0&_afWindowId=null&_adf.ctrl-state=rf01v0ob6_82#!%40%40%3F_afWindowId%3Dnull%26_afLoop%3D1559614598358363%26_afWindowMode%3D0%26_adf.ctrl-state%3Drf01v0ob6_86 [<https://perma.cc/S7UF-DDAX>].

an average of thirty-five million gallons of treated wastewater directly into the LA River daily.⁷⁵ As a result, areas of the LA River that previously housed only a trickle of water now had a sizeable flow that supported human and non-human uses throughout the year.⁷⁶ This year-round flow was a new characteristic for the LA River, even considering its state before channelization. Its historical hydrological flow regime featured seasonal fluctuations between flooding and dryness, not strong perennial flows.⁷⁷ While some may argue that this new flow regime is not “natural” because the river relies on human-constructed infrastructure for its flowing water, this is the LA River that Angelenos have known for almost four decades. This instream flow, “natural” or not, actively supports the river’s navigational, recreational, and ecological uses today.⁷⁸

Although LA police once forced canoers out of the LA River for illegally recreating within its banks,⁷⁹ today, enthusiasts can legally take vessels like canoes or kayaks on the river during seasonal recreational periods.⁸⁰ This management change can be attributed to Senate Bill 1201 (SB 1201) in 2012.⁸¹ SB 1201 placed particular emphasis on public access to and the public trust values of the LA River as a *river*, not solely as a flood control channel:

[T]he river is subject to Section 4 of Article X of the California Constitution, which guarantees the public a right of access to the navigable waters of the state . . . and to case law protecting the public trust. . . . [T]he river must be held in trust for the public and managed for public access and use.⁸²

After SB 1201 became law, the Mountains Recreation and Conservation Authority, LA County Flood Control District, the Army Corps, and the city of LA began managing two “Recreation Zones”⁸³ that open each summer where the

75. Esther Grace Kim, *Restoring a River to Reclaim a City?: The Politics of Urban Sustainability and Environmental Justice in the Los Angeles River Watershed* 75 (2017) (Ph.D. dissertation, University of California, Berkeley).

76. *Id.*

77. *Id.*

78. Jordyn M. Wolfand, Kristine T. Taniguchi-Quan, Reza Abdi, Elizabeth Gallo, Katie Irving, Daniel Philippus, Jennifer B. Rogers, Eric D. Stein & Terri S. Hogue, *Balancing Water Reuse and Ecological Support Goals in an Effluent Dominated River*, 15 J. HYDROLOGY X 1, 2 (2022).

79. See generally Lisa Kaas Boyle, *Rock the Boat: Interview with LA River Activists Who Made History and a Movie*, HUFFINGTON POST (Aug. 23, 2011), https://www.huffpost.com/entry/rock-the-boat-interview-w_b_883214 [<https://perma.cc/5USL-UCRA>].

80. See generally Gwynedd Stuart, *So, When Is It OK to Float Down the L.A. River?*, L.A. MAG. (Mar. 20, 2018), <https://www.lamag.com/citythinkblog/los-angeles-river-rules/> [<https://perma.cc/P8E2-G56X>]; Mountains Recreation & Conservation Authority, *Questions and Answers*, L.A. RIVER RECREATION ZONE, <https://lariverrecreation.org/questions-and-answers/> [<https://perma.cc/2XS3-F7BU>].

81. S.B. 1201, 2011-2012 Leg., Reg. Sess. (Cal. 2012).

82. *Id.*

83. The two recreation zones include a two-mile stretch in the Sepulveda Basin (San Fernando Valley) and a 1.7-mile stretch in Elysian Valley (in Downtown LA). Mountains Recreation and Conservation Authority, *About the Los Angeles River Recreation Zone*, L.A. RIVER RECREATION ZONE

public can legally canoe, kayak, and fish directly in the river.⁸⁴ As a result, hundreds of Angelenos now beat the city heat and enjoy these portions of the LA River annually, with LA River Expeditions, a nonprofit organization, estimating that it alone has “put 10,000+ people on LA River kayak tours” since 2010.⁸⁵

Beyond the paddle-based context, recreation connects Angelenos with the LA River and the natural world. The Mountains Recreation and Conservation Authority refers to the LA River as a “recreational treasure in the midst of a large city.”⁸⁶ A 2019 technical review of the recreational uses of the LA River published by the Southern California Coastal Water Research Project and Council for Watershed Health listed walking and jogging, cycling, and art and photography as the most popular public uses of the river in its entirety.⁸⁷ The researchers also recognized wildlife viewing, educational activities, horseback riding, and community-organized events as other common uses of the LA River at various reaches⁸⁸ and times of the year.⁸⁹ While activities may occur at various points throughout the year, the researchers noted a significant relationship between the likelihood of public use and flow volume in the LA River, especially for aesthetic uses like photography and educational activities. When there are reductions in flow, the likelihood of such uses also diminishes.⁹⁰

The LA River and its surrounding environs also tie together millions of Angelenos who live in different cities, experience distinctive cultures, and nurture diverse communities. Over the last forty years, local and state governments have built dozens of public parks immediately adjacent to the LA River, the largest being Los Angeles State Historic Park (located in Downtown LA’s Chinatown) and Rio de Los Angeles State Park constructed on Taylor Yard (located in Elysian Valley near Dodger Stadium).⁹¹ Many of these parks are located in high-density communities of color and offer some of the only green

(2023), <http://lariverrecreation.org/2017/05/19/about-the-los-angeles-river-recreation-zone/> [https://perma.cc/K7AA-QTEU].

84. *Id.*

85. *About Us*, LA RIVER EXPEDITIONS, <https://www.lariverexpeditions.org/about-us/> [https://perma.cc/MZP9-UCXJ].

86. *Learn About Recreational Use of the LA River*, LA RIVER RECREATION (Aug. 2, 2016), <http://lariverrecreation.org/2017/05/09/news-story-3/> [https://perma.cc/MB26-EU7M].

87. See YARELI SANCHEZ & ERIC D. STEIN, REVIEW OF RECREATIONAL USES AND ASSOCIATED FLOW NEEDS ALONG THE MAIN-STEM OF LOS ANGELES RIVER 6 (2019), https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1088_LARiverRecreationalUses.pdf [https://perma.cc/3S9L-PN4C].

88. *What Is a Reach?*, U.S. GEOLOGICAL SURVEY, <https://www.usgs.gov/faqs/what-reach> [https://perma.cc/6HTP-M9GQ]. This Note uses “reach” to mean the length of a river segment.

89. SANCHEZ & STEIN, *supra* note 87, at 8.

90. *Id.* at 7.

91. Kim, *supra* note 75, at 100.

space accessible to people in LA's most park-poor neighborhoods,⁹² especially economically marginalized residents in the lower reaches of the LA River like industrial South LA.⁹³ Studies show that the positive correlation between accessible green space and individuals' perceived health is especially strong for those in lower socioeconomic groups.⁹⁴ Because the LA River is a major source of green space for several historically underserved communities in the LA area, it is a critical tool for environmental health justice.

The LA River also boasts pedestrian and bike trails that provide the public access to thirty-two river miles.⁹⁵ Although no contiguous system connects all fifty-one miles of the LA River, some Angelenos use the longest stretches of the LA County River Bike Path as a regular (and inexpensive) mode of transportation to traverse the region.⁹⁶ Efforts to fully line the LA River with accessible pedestrian and bike paths remain ongoing. As of March 2022, the LA City Council voted to seek \$197 million from California to close the gaps before LA hosts the 2028 Summer Olympics.⁹⁷

Despite being extremely urbanized, the LA River's effluent-dominated flows support diverse ecological communities.⁹⁸ 11.3 miles of the river survived total concretization and feature soft-bottom riverbeds "at Sepulveda Basin, the Glendale Narrows, and the tidal estuary."⁹⁹ Because the soft-bottomed sections of the river are the most natural portions in the urban city area, they are also the most ecologically healthy and provide habitat for many riparian-dependent and aquatic species¹⁰⁰—132 of which are classified as "rare" or "threatened."¹⁰¹ For instance, the river and surrounding areas provide resting and insect-feeding

92. *Los Angeles, CA*, TR. FOR PUB. LAND, <https://www.tpl.org/city/los-angeles-california> [<https://perma.cc/LM3C-DZ6T>] (explaining that LA ranks 78 out of the 100 largest cities in the United States on the Trust for Public Land's "2022 Trust for Public Land ParkScore Ranking"). LA scored the lowest number of points concerning park accessibility (44 out of 100); equity, the distribution of parks according to race and income (31 out of 100); and amenities (25 out of 100). *Id.*

93. See Robert Garcia, *Los Angeles River Health and Environmental Justice*, KCET (Aug. 12, 2013), ("Children of color living in poverty with no access to a car have the worst access to parks and green space . . . [They] disproportionately live along the length of the [r]iver that lies within the county from Vernon to the ocean . . . [C]ommunities along a one-mile corridor on each side of the [r]iver are disproportionately Latino compared to the county as a whole.").

94. Jolanda Maas, Robert A Verheij, Peter P Groenewegen, Sjerp de Vries & Peter Spreuwenberg, *Green Space, Urbanity, and Health: How Strong Is the Relation?* 60 *J. EPIDEMIOLOGY & CMTY. HEALTH* 587, 587–92 (2006).

95. See LA RIVER MASTER PLAN, *supra* note 7, at 10.

96. The longest continuous segments of the LA County River Bike Path are a twelve-mile stretch between industrial southeast LA and the river's mouth in Long Beach and a seven-mile stretch from the Burbank-Glendale border to the Glendale Narrows in Elysian Valley. *Id.*

97. City News Service, *LA Seeks \$197 Million from State to Complete Valley Bike Path Along LA River*, NBC L.A. (Mar. 4, 2022), <https://www.nbclosangeles.com/local-2/la-seeks-197-million-from-state-to-complete-valley-bike-path-along-la-river/2841129/> [<https://perma.cc/N3PF-PS4H>].

98. See Wolfand et al., *supra* note 78, at 2–3.

99. LA RIVER MASTER PLAN, *supra* note 7, at 102.

100. See Wolfand et al., *supra* note 78, at 2–3.

101. LA RIVER MASTER PLAN, *supra* note 7, at 104.

grounds for several migratory species, including the American yellow warbler, the endangered willow flycatcher, and the endangered least Bell's vireo.¹⁰² Angelenos have also caught fish such as the common carp (also known as "sewer salmon"¹⁰³) in the Glendale Narrows¹⁰⁴ and lower LA River reaches near Long Beach.¹⁰⁵ Many of these bird and fish species and an array of aquatic insects are found throughout the river.¹⁰⁶

Although the LA River supports aquatic and non-aquatic life, no summary of its current ecological conditions would be complete without recognizing that it desperately needs help. While researchers did not find dead zones in the LA River, even its healthiest urban reaches scored poorly on ecological health metrics.¹⁰⁷ Most of the LA River has also been listed as "impaired" under section 303(d) of the Clean Water Act for pollutants such as ammonia, metals, bacteria, trash, pesticides, and sediment for years.¹⁰⁸ Much of this pollution comes from

102. See Wolfand et al., *supra* note 78, at 3.

103. Jesse Pearson, *Fly Fishing for 'Sewer Salmon' in the L.A. River*, L.A. TIMES (July 11, 2019), <https://www.latimes.com/food/story/2019-07-10/sewer-salmon-and-the-secrets-of-the-l-a-river> [<https://perma.cc/5A8P-ZH8J>].

104. See U.S. ARMY CORPS OF ENG'RS, LOS ANGELES RIVER CHANNEL AT GLENDALE NARROWS REACH 5C AND REACH 6A ACCUMULATED MATERIAL REMOVAL PROJECT ENVIRONMENTAL ASSESSMENT 15 (2018), https://folar.org/wp-content/uploads/2018/08/USACE_SedimentRemoval_EA_reach_5.pdf [<https://perma.cc/6QLF-QL6C>].

105. FRIENDS OF THE L.A RIVER, STATE OF THE RIVER: THE LONG BEACH FISH STUDY 37 (2016), https://folar.org/wp-content/uploads/2017/04/FOLAR_Fish_Study_2016.pdf [<https://perma.cc/9X8K-ZPL3>].

106. Surprisingly, researchers have also observed that some fully concretized areas of the LA River have more robust populations of biological indicator species (e.g., small invertebrates) than soft-bottomed sections of the LA River. MELISSA VON MAYRHAUSER, L.A. WATERKEEPER, RIVER ASSESSMENT FIELDWORK TEAM REPORT 36–37, 46 (2020), <https://www.dropbox.com/s/olcqvfhfhyb20a6k/LA%20Waterkeeper%20RAFT%20Report.pdf?dl=0> [<https://perma.cc/8SL5-UN5Q>] (naming midges, seed shrimp, aquatic worms, soldier flies, mayflies, caddisflies, aquatic moths, scuds, and snails as the species most found throughout all reaches of the LA River in multi-year field studies). In this study, biological indicator species (BIMs) were used to measure the overall ecological health (FLI scores) of LA River segments. *Id.* at 16, 31, 36–37.

107. *Id.* at 86 ("The majority of our [examined] sites did not receive high FLI scores, which speaks to an interconnected system that is struggling.")

108. See, e.g., CAL. REG'L WATER QUALITY CONTROL BD., TRASH TOTAL MAXIMUM DAILY LOADS FOR THE LOS ANGELES RIVER WATERSHED 1, 15 (2007), https://folar.org/wp-content/uploads/2020/01/2007_LARiver_Trash-TMDL_Final-Staff-Report.pdf [<https://perma.cc/KBG7-SN98>] (noting several reaches of the LA River as being impaired due to trash based on California's 1996 and 1998 303(d) list); COUNCIL FOR WATERSHED HEALTH, LOS ANGELES RIVER 2012 STATE OF THE WATERSHED REPORT 19 (2012), <https://www.lacitysan.org/cs/groups/public/documents/document/y250/mda4/~edisp/cnt008746.pdf> [<https://perma.cc/26FJ-J67B>] (noting that most of the LA River was considered impaired for "pH, ammonia, a number of metals, coliform bacteria, trash, odor, algae, oil, DDT, as well as other pesticides and volatile organics" in the 2010 Clean Water Act 303(d) list assessment); KATHERINE PEASE, HEAL THE BAY, ASSESSING MICROBIAL WATER QUALITY OF THE LOS ANGELES RIVER RECREATION ZONES 4 (2016), <https://healthebay.org/sites/default/files/LA-RIVER-STUDY-FINAL-FOR-RELEASE.pdf> [<https://perma.cc/4BHF-B6KU>] (noting that the LA River was designated as impaired "due to excessive amounts of coliform bacteria" on the 303(d) list as of the release date of the report in 2016).

private residences that directly discharge harmful chemicals, fertilizers, grease, and oils into the LA River via stormwater drains.¹⁰⁹ And although treated wastewater effluent from the Tillman and LA-Glendale wastewater treatment plants helps dilute pollution,¹¹⁰ American Rivers ranked the LA River as number nine on its list of “America’s Most Endangered Rivers of 2022” because of its poor management, high pollutant concentrations, and susceptibility to climate change.¹¹¹

But hope flows. For over twenty years, revitalizing and restoring the LA River has been a hot topic for local leaders, community groups, environmental advocacy organizations, architects, and government entities.¹¹² As Angelenos have begun to recognize the recreational, aesthetic, and ecological benefits that the LA River provides even in its concretized state, decision-makers have organized to create plans that will bring the river back to health, promote economic growth along the river corridor, and incorporate the river into an integrated water management plan for the region.¹¹³ Others are concerned about green gentrification and the displacement of longstanding communities of color as proximity to the river becomes more desirable.¹¹⁴ One thing is clear: LA’s leaders must recognize all that the LA River *does* and *can* offer residents before choosing plans that foreclose such benefits.

II.

SATISFYING LA’S THIRST THROUGH THE YEARS

Tracing the sources of LA’s water is a complicated venture. The LA River once provided LA’s early residents with potable and non-potable water to nourish themselves and build a metropolis. But today, most Angelenos wash their cars, water their lawns, and hydrate themselves with a blend of imported water, groundwater, and local surface and recycled waters—but most do not rely on the LA River to fulfill their water needs.¹¹⁵ This Section briefly explores the

109. Adam Shaham, *An Earth5R Approach to Pollution in the Los Angeles River*, EARTH5R (July 8, 2020), <https://earth5r.org/earth5r-approach-pollution-los-angeles-river/> [<https://perma.cc/3ZNN-DL3J>].

110. *Id.*

111. *America’s Most Endangered Rivers of 2022: #9 Los Angeles River, CA*, AM. RIVERS (Apr. 2022), <https://endangeredrivers.americanrivers.org/la-river/> [<https://perma.cc/PGP8-4BZJ>]; *see also The Los Angeles River, One of America’s Most Endangered Rivers*, L.A. WATERKEEPER (Apr. 19, 2022), <https://www.lawaterkeeper.org/reports/la-river-most-endangered-egg93> [<https://perma.cc/PRK6-XRFR>].

112. LA RIVER MASTER PLAN, *supra* note 7, at 6, 17–18.

113. *See generally id.*

114. Jon Christensen & Becky Nicolaides, Opinion, *How to Make Sure the LA River Master Plan Fulfills Its Promise to the Gateway Cities*, L.A. TIMES (Feb. 21, 2021), <https://www.latimes.com/opinion/story/2021-02-21/los-angeles-river-master-plan-gateway-cities-frank-gehry-gentrification-equitable-development> [<https://perma.cc/8GQN-ECJN>].

115. *See* WATERTALKS, *supra* note 15, at 15 (noting that surface water from the LA and San Gabriel Rivers comprise 1 percent of the Greater LA County water supply).

river's historical role in quenching LA's thirst and sketches LA's modern water landscape. A high-level overview of the city's water portfolio reveals the complexities of local water management that prompted Garcetti's plan to recycle 100 percent of LA's wastewater. This Section concludes by outlining the logistics of Garcetti's wastewater recycling commitment and highlights what it will mean for the vitality of the LA River.

A. *The LA River's Historical Importance*¹¹⁶

Angelenos depended on the LA River for water until prospectors sought to transform the region from a successful settlement to a "major American metropolis" in the early twentieth century.¹¹⁷ The Section details some major shifts in LA's water management over time. Whether due to demand, drought, or precarious water supplies, LA has always needed to be nimble to meet its pressing water needs.

Water rights in the LA region underwent drastic legal, institutional, and physical transformations during the city's earliest days. Under Spanish colonial rule, the Zanja Madre network of open-faced ditches transferred water from the LA River to settlers' lands.¹¹⁸ Water rights were allocated according to Spanish communal law, which "provided the legal framework for how societal organization was to be set up around . . . water allocation, distribution, and utilization."¹¹⁹ This arrangement established common water rights (known as pueblo rights) and equal access to the LA River for settlers and community members "to maintain the necessary improvements to the zanja system."¹²⁰ A *zanjero*, or watermaster, oversaw much of what the State Water Board does today—water allocation, administration, and rights enforcement.¹²¹

After statehood, an important question emerged: who owned the right to use the river's flows? In 1881, the California Supreme Court held that LA owned the rights to all surface and subterranean waters of the LA River and its tributaries within the city's boundaries.¹²² The Court also clarified that the city's water rights were superior to riparian and appropriated rights because pueblo rights existed before statehood and continued after annexation.¹²³ The declaration was consequential for the city; it had "full rights and control over a

116. For brevity, this Section begins at the transition from Spanish-Mexican rule to U.S. statehood. See generally Part I.A. for a more detailed summarization of the importance of the LA River to pre-colonial Indigenous communities.

117. *Los Angeles Aqueduct*, HISTORY (Mar. 7, 2019), <https://www.history.com/topics/landmarks/los-angeles-aqueduct> [https://perma.cc/4NHD-4MEB].

118. Kim, *supra* note 75, at 29.

119. *Id.*

120. *Id.*

121. *Id.*

122. *Id.* at 30.

123. *Id.*

steady water supply” and, thus, could allocate water resources to promote urban development.¹²⁴ The city’s LA River pueblo rights continue today.¹²⁵

After flooding in the late nineteenth and early twentieth centuries destroyed businesses and residences, Angelenos began to view the LA River in conflicting ways: some celebrated its life-giving flows, while others viewed them as impeding growth.¹²⁶ In 1898, under the direction of William Mulholland, the local Board of Water Commissioners drilled into reservoirs and expanded the LA River’s distribution network.¹²⁷ Soon enough, however, the municipal water company set its sights on using imported water to accomplish the city’s development goals. In 1905, city leaders announced their plan to construct an aqueduct in the Owens River Valley that promised to deliver four times more water than LA’s then-current population required.¹²⁸ The project’s completion in 1913 did not merely establish a new water supply; it also represented the promise of unhindered economic and population growth.¹²⁹ As drought, reservoirs and dams, and concretization reduced and heavily polluted the LA River’s flows, the LA Aqueduct expanded into the Mono Lake Basin and, at its height, supplied more than 70 percent of LA’s water resources.¹³⁰

While water from the LA Aqueduct helped the city’s population and economic development skyrocket,¹³¹ its takings from Mono and Owens Lakes proved unsustainable. LA’s diversions drained Owens Lake completely dry between 1913 and 1926—decimating the health of the ecologies and humans that called the Owens Valley home.¹³² Similarly, a dispute regarding LA’s water diversions from Mono Lake formed the basis of the seminal California Supreme Court case *National Audubon Society v. Superior Court (National Audubon)*.¹³³ The case arose out of LA’s increasing diversions of water from the streams that fed Mono Lake, which by 1979 had “shrunk” the lake’s square mileage

124. *Id.* at 31.

125. *Pueblo Water Rights*, WATER EDUC. FOUND., <https://www.watereducation.org/aquapedia/pueblo-water-rights> [<https://perma.cc/7DKK-MVLC>].

126. Kim, *supra* note 75, at 32.

127. *Id.* at 38–41.

128. *Los Angeles Aqueduct and Owens Valley*, WATER EDUC. FOUND., <https://www.watereducation.org/aquapedia/los-angeles-aqueduct-and-owens-valley> [<https://perma.cc/EMA6-E4VP>].

129. Kim, *supra* note 75, at 41.

130. *Los Angeles Water Issue: Why It’s Not Just the Drought*, UNIV. S. CAL. SCH. ENG’G, <https://viterbi.usc.edu/water/> [<https://perma.cc/UHF8-4BBX>].

131. See Louis Sahagún, *The L.A. Aqueduct at 100*, L.A. TIMES (Oct. 28, 2013), <https://graphics.latimes.com/me-aqueduct/> [<https://perma.cc/CN2R-8669>] (“Like a magnet, [the LA Aqueduct] pulled in millions of people from around the country . . . In 1913, [LA] covered 107 square miles. Seven years later, it had expanded to 364 square miles with a population of nearly 800,000.”).

132. See generally Marith C. Reheis, *Owens (Dry) Lake, California: A Human-Induced Dust Problem*, IMPACT OF CLIMATE CHANGE & LAND USE IN THE SW. U.S., <https://geochange.er.usgs.gov/sw/impacts/geology/owens/> [<https://perma.cc/CJZ6-58E2>].

133. *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709 (Cal. 1983).

significantly and lowered its surface level forty-three feet.¹³⁴ As a result, LA's diversions directly harmed the ecological and aesthetic value of Mono Lake.¹³⁵ Although the court's decision in *National Audubon* did not prescribe LA's water diversion rights in the controversy, the court held that California, via the State Water Board, has the affirmative duty to consider the effects of water diversions on public trust resources (and protect them whenever feasible)—even if it previously approved the diverting parties' water rights.¹³⁶ In 1994, the State Water Board established diversion limitations in an effort to balance the lake's public trust values with LA's water supply needs.¹³⁷ Today, LA reports that it has decreased its take from Mono Lake tributaries by 80 percent.¹³⁸ While the LA Aqueduct's role in supplying LA's water has waned, the region's reliance on imported water supplies had only begun.

B. Water Use in LA: The Current State of Affairs

Today, approximately 86 percent of the water in LA comes from imported sources hundreds of miles away.¹³⁹ Water from the Bay Delta comprises 48 percent of LA's yearly water via the State Water Project.¹⁴⁰ Los Angeles Department of Water and Power (LADWP), LA's water supplier,¹⁴¹ buys this

134. Timothy J. Conway, *National Audubon Society v. Superior Court: The Expanding Public Trust Doctrine*, 14 ENV'T L. 617, 628–29 (1984).

135. *Nat'l Audubon*, 658 P.2d at 715–16.

136. *Id.* at 727–29; Conway, *supra* note 134, at 630–34, 636.

137. *Mono Lake Basin*, STATE WATER RES. CONTROL BD. (Mar. 30, 2023), https://www.waterboards.ca.gov/waterrights/water_issues/programs/mono_lake/ [<https://perma.cc/T5ER-ARMA>] (“In 1994, the State Water Board adopted Mono Lake Basin Water Right Decision 1631 (D-1631), amending LADWP’s water rights licenses to establish . . . instream flow requirements, water export limitations, and conditions to protect public trust resources in and around Mono Lake.”); *see also* STATE WATER RES. CONTROL BD., *MONO LAKE BASIN WATER RIGHT DECISION 1631*, at 2 (1994), https://www.waterboards.ca.gov/publications_forms/publications/general/docs/monolake_wr_dec1631_a.pdf [<https://perma.cc/VVD3-YZWA>] (official State Water Board action).

138. Even with this reduction, drought and climate change have increased calls to completely stop water diversions from Mono Lake. Louis Sahagún & Ian James, *As Drought Hammers Mono Lake, Thirsty Los Angeles Must Look Elsewhere for Water*, L.A. TIMES (Apr. 15, 2022), <https://www.latimes.com/california/story/2022-04-15/l-a-gets-less-water-from-mono-lake-due-to-declining-levels> [<https://perma.cc/KRD9-XC9N>].

139. *Know the Flow*, HEAL THE BAY, PAVA WORLD & PACOIMA BEAUTIFUL [hereinafter *Know the Flow*], <http://knowtheflow.la/IMAGES/MAP.pdf> [<https://perma.cc/5N5K-PJC3>].

140. *Id.* The water source is snowmelt from the Northern Sierra Mountains that flows into the Bay-Delta. *Bay-Delta*, U.S. GEOLOGICAL SURV., <https://www.usgs.gov/centers/california-water-science-center/science/science-topics/bay-delta#:~:text=The%20Sacramento%20san%20Joaquin%20River,inputs%20that%20impact%20its%20Quality> [<https://perma.cc/TTD4-NFRN>] (explaining that the Bay-Delta consists of the San Francisco Bay and the Sacramento-San Joaquin River Delta).

141. *Water*, LADWP, https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-pastandpresent?_adf.ctrl-state=19nbvg6onn_34&_afriLoop=591219903386338 [<https://perma.cc/B762-WFQS>].

water directly from water retailers, the largest being Metropolitan Water District (MWD).¹⁴² Twenty-nine percent of LA's water comes from the historic LA Aqueduct, owned and operated by LADWP.¹⁴³ Lastly, 9 percent of LA's water travels to the city from the Colorado River via the Colorado River Aqueduct.¹⁴⁴ Because California is one of seven states that rely on water from this waterway, which is significantly over-allocated, California faces stiff competition for Colorado River water.¹⁴⁵

Local water sources account for much less of LA's water than imports.¹⁴⁶ Over the past five years, local groundwater has supplied 12 percent of LA's water.¹⁴⁷ But, because the city has used groundwater to stabilize its water supply portfolio, groundwater has reached upwards of 23 percent of LA's water supply during drought cycles.¹⁴⁸ LADWP has water rights, or entitlements, in five local groundwater basins: the San Fernando, Sylmar, Eagle Rock, Central, and West Coast groundwater basins.¹⁴⁹ The San Fernando groundwater basin is the city's largest source, supplying nearly 80 percent of the groundwater LADWP pumps annually.¹⁵⁰

Finally, and perhaps most relevant here, LA receives 2 percent of its water supply from local recycled water.¹⁵¹ Wastewater recycling (i.e., wastewater reclamation) is a process through which wastewater treatment plants use highly sophisticated technologies to purify wastewater to the point that it can be used for either potable (e.g., drinking) or non-potable (e.g., landscape irrigation) purposes.¹⁵² LA currently uses most of its recycled wastewater for non-potable uses.¹⁵³ But as explained in Part II.C., the city is expanding its water recycling

142. See *Know the Flow*, *supra* note 139.

143. *Id.* This water originates from snowmelt in Mono Lake and the Owens River, located in the Eastern Sierra Mountains.

144. See *id.* The Colorado River receives its water from snowmelt from the Rocky Mountains. *Id.* And like the city's water traced from the Sacramento-San Joaquin Delta, LA purchases this water from MWD.

145. *Id.*

146. However, discussing these local sources is still helpful in understanding LA's overall water landscape.

147. *Groundwater*, LADWP, https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-sourcesofsupply/a-w-sos-localgroundwater?_adf.ctrl-state=ma8x0278s_4&_afzLoop=593999631572523 [https://perma.cc/763F-ALQ6].

148. *Id.*

149. *Id.*

150. *Id.* The Central groundwater basin produces an estimated 11 percent of LADWP's groundwater supply. *Id.* Because there has not been pumping in the West Coast basin since 1980, LADWP likely gets the remaining 9 percent of groundwater supply from the Sylmar and Eagle Rock basins. See *id.*

151. *Know the Flow*, *supra* note 139.

152. See L.A. WATERKEEPER, *supra* note 4.

153. See *id.*

efforts by improving its “purple pipe” distribution system¹⁵⁴—allowing it to move larger quantities of non-potable recycled water in more areas—and launching groundwater replenishment programs that use advanced water purification technologies to increase potable supplies.¹⁵⁵

Of course, because climate change affects precipitation patterns and prolongs drought,¹⁵⁶ most of LA’s water supply is unstable. LA heavily relies on Sierra Nevada snowpack to nourish the Bay Delta, Owens River, and Mono Basin so that water can be distributed to the city through the State Water Project and the LA Aqueduct.¹⁵⁷ But as extreme drought becomes the norm in California, mountainous snowpack will decline, and there will be less snowmelt to transport to thirsty farms, municipalities, and industries.¹⁵⁸ The Colorado River faces the same reductions in supply.¹⁵⁹ As a result, Californians throughout the state are already experiencing decreased water transfer allocations.¹⁶⁰ Therefore, many surmise that business-as-usual water consumption practices combined with drought-induced water scarcity will continue to bring fierce competition and

154. Generally, “purple pipe” distribution systems are dedicated networks of pipes that transport recycled water for non-potable uses. See Sara Jerome, *Purple Pipes vs. Indirect Potable Reuse*, WATER ONLINE (Jan. 23, 2015), <https://www.wateronline.com/doc/purple-pipes-vs-indirect-potable-reuse-0001> [https://perma.cc/X62K-MALP].

155. See *Recycled Water*, LADWP, https://www.ladwp.com/ladwp/faces/wcnav_externalId/a-w-rcycl-wtr?_afzLoop=641238936929561#%40%3F_afzLoop%3D641238936929561%26_adf.ctrl-state%3D10xv8q5hzg_46 [https://perma.cc/FXJ6-4W9X]; see also Brian Eckhouse and Laura Bliss, *Los Angeles Is Building a Future Where Water Won't Run Out*, BLOOMBERG (Jan. 31, 2022), <https://www.bloomberg.com/news/features/2022-01-31/los-angeles-plans-a-future-where-water-always-flows?leadSource=verify%20wall> [https://perma.cc/NBF6-59KG] (chronicling former Mayor Garcetti’s interest in increasing LA’s wastewater recycling and treatment portfolio).

156. See L.A. WATERKEEPER, *supra* note 4.

157. *Supra* notes 140–144 and accompanying text.

158. Diana Leonard, *California Snowpack Vastly Depleted After Record Dry Start to Year*, WASH. POST (Apr. 1, 2022), <https://www.washingtonpost.com/weather/2022/04/01/california-snowpack-summer-drought/> [https://perma.cc/V6BD-L94R].

159. Henry Fountain, *In a First, U.S. Declares Shortage on Colorado River, Forcing Water Cuts*, N.Y. TIMES (Aug. 27, 2021), <https://www.nytimes.com/2021/08/16/climate/colorado-river-water-cuts.html> [https://perma.cc/FU4B-768K].

160. Cresencio Rodriguez-Delgado, *How California's Drought Is Stressing a Water System that Delivers Water to Millions of Residents*, PBS NEWS HOUR (Sept. 3, 2021), <https://www.pbs.org/newshour/nation/how-californias-drought-is-stressing-a-water-system-that-delivers-water-to-millions-of-residents> [https://perma.cc/GA84-AWMW]; see also Hayley Smith, *California Slashes State Water Project Allocation as Year Begins with Record Dryness*, L.A. TIMES (Mar. 18, 2022), <https://www.latimes.com/california/story/2022-03-18/california-cuts-state-water-project-allocation-to-5-percent> [https://perma.cc/29VR-BAW3]; Associated Press, *California Drought: Another Round of Water Cuts*, ABC10 (Mar. 18, 2022), <https://www.abc10.com/article/news/local/california/california-drought-more-water-cuts/103-72176840-0fca-4e93-9efb-9b0f52b6034d> [https://perma.cc/XM9V-9WAW] (“California’s urban water users and farmers who rely on supplies from state reservoirs will get less than planned this year as fears of a third consecutive dry year.”).

higher rates for water consumers.¹⁶¹ It is no wonder that cities like LA are attempting to diversify their water sources by focusing on local strategies that will allow them to wean off water from diminishing sources. LA is setting its sights on wastewater recycling to help achieve this goal.

Increasing wastewater recycling reuse in LA is a necessary strategy to diversify LA's water portfolio, support its water independence, and ensure all Angelenos have access to clean water.¹⁶² However, water users and decision-makers should fully understand what we will sacrifice if LA moves too quickly. Part II.C outlines the city's recent wastewater recycling planning efforts to understand what wastewater recycling would mean, especially for flows in the LA River.

C. Wastewater Recycling: One's Trash Is Another's Treasure

The recent trend toward wastewater reclamation reframes the effluent in the LA River as a resource that must be put to beneficial use rather than rushed into the ocean. Increasing wastewater recycling in LA is not an idea that originates with Garcetti, but his leadership may have brought its expansion back to life. More than twenty years ago, the city planned to build a \$55 million wastewater reclamation project “that would have provided the equivalent of the annual water needs of 200,000 city residents.”¹⁶³ However, a candidate in the 2001 mayoral race widely criticized the wastewater reclamation project for having too much of a “yuck”¹⁶⁴ factor.¹⁶⁵ Alarmed at the thought of drinking

161. See, e.g., Lori Pottinger, *Why Drought Makes Water Rates Rise*, PUB. POL'Y INST. OF CAL. (June 14, 2017), <https://www.ppic.org/blog/drought-makes-water-rates-rise/> [https://perma.cc/G3C8-JYME] (interviewing an economist specializing in water pricing about the effects of water scarcity on water price). For a current take rather than a prediction, see also *Water Rates Going Up for Some in LA in 2022*, FOX11 L.A. (Jan. 5, 2022), <https://www.foxla.com/news/water-rates-going-up-for-some-in-la-in-2022> [https://perma.cc/3DKH-RXR2] (stating that the water rate increase “comes as the state faces a historic drought, despite heavy precipitation in the final weeks of 2021”).

162. See L.A. WATERKEEPER, *supra* note 4.

163. Anjali Athavaley, *Sewer to Spigot: Recycled Water*, WALL ST. J. (May 15, 2008), <https://www.wsj.com/articles/SB121081371900793887> [https://perma.cc/358M-CWT5].

164. The “yuck” factor colloquially refers to consumer reluctance to embrace “toilet-to-tap” wastewater recycling as a viable (or safe) source of potable and non-potable water. See, e.g., Anna Sklar, *From the Archives: The History of ‘Toilet-to-Tap’ in Los Angeles*, 48 L.A. CITY. HIST. SOC'Y NEWSL. 1 (2015), reprinted in CAL. WATER ENV'T ASS'N, <https://www.cwea.org/news/from-the-archives-the-history-of-toilet-to-tap-in-los-angeles/> [https://perma.cc/5XSH-ASXH] (tracing the public's fears of drinking “sewage water” in Los Angeles beginning in the 1990s); C.F. Michaud, *The Art of the Recycle, Part 1: The Challenge of the ‘Yuck Factor’*, WATER CONDITIONING & PURIFICATION INT'L MAG. (July 15, 2016), <https://wcponline.com/2016/07/15/art-recycle-part-1-challenge-yuck-factor/> [https://perma.cc/T2AJ-9XGQ] (“[T]he yuck factor . . . is a real phobia among [wastewater recycling] critics. . . [T]here are folks who believe that once water touches something, it is forever contaminated by that something.”).

165. Mark Haefele, *Opinion: Wastewater Recycling Got Derailed in Los Angeles. Now It's Back on Track*, L.A. TIMES (May 17, 2021), <https://www.latimes.com/opinion/story/2021-05-17/op-ed-wastewater-recycling-got-derailed-in-los-angeles-now-its-back-on-track>. [https://perma.cc/2QHXPFFH].

dirty wastewater, public outcry against the project grew exponentially, and the city eventually scrapped its plans altogether.¹⁶⁶ As a result, LADWP treated wastewater recycling as a relative afterthought for more than a decade. LA's four wastewater treatment plants—Tillman, LA-Glendale, Hyperion, and Terminal Island—provide only 2 percent of LA's water supply, and most of the recovered water goes toward non-potable uses, such as golf courses and park irrigation.¹⁶⁷

While public sentiment around potable reuse has improved since the early 2000s, and many Angelenos even support Garcetti's commitment to recycling 100 percent of LA's wastewater by 2035, LA-area reclamation plants still dump an average of 270 million gallons of treated wastewater into local rivers and coastal waters every single day.¹⁶⁸ In fact, "Hyperion alone discharges enough treated wastewater into the [Pacific O]cean to fill the Rose Bowl [2.5] times over" daily.¹⁶⁹ LA has a long road ahead before it can redirect 100 percent of its wastewater discharges for beneficial uses.

The following Section provides a brief overview of LA's current wastewater recycling portfolio and outlines in practical terms how it hopes to achieve its goal of recycling all its wastewater by 2035. The Section concludes with an exploration of the dynamic connection between wastewater effluent and flows in the LA River. Understanding the city's current and projected wastewater reclamation landscape is critical to assessing the effects that drastically increasing wastewater recycling will have on local public trust resources like the LA River.

1. How Will Recycling 100 Percent of LA's Wastewater Work?

Wastewater reclamation is a process in which wastewater treatment plants use highly sophisticated technologies to purify already-used water from toilets, showers, and sinks "so that it can be beneficially reused and thus reduce our dependence on imported water."¹⁷⁰ In California, wastewater treatment facilities must follow regulations set by several regional, state, and federal agencies to

166. *Id.*

167. *Id.*; *see also* *Water Reclamation Plants*, LASAN, https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p?_adf.ctrl-state=cbjivi1ma_5&_afzLoop=2783651577307351#! [<https://perma.cc/H782-T8TD>] (describing the four treatment plants LASAN operates and uses of recycled wastewater in its service area).

168. Press Release, Los Angeles Waterkeeper, Los Angeles Waterkeeper Prevails in Historic Wastewater Recycling Suit (Aug. 12, 2020), <https://www.businesswire.com/news/home/20200812005105/en/Los-Angeles-Waterkeeper-Prevails-in-Historic-Wastewater-Recycling-Suit> [<https://perma.cc/986N-GY2N>].

169. *Id.*

170. L.A. WATERKEEPER, *supra* note 4; *see also* CAL. WATER CODE § 13050(n) (2020) (defining "recycled water" as "water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur").

ensure treated wastewater is suitable for either disposal or reuse.¹⁷¹ The Tillman and LA-Glendale treatment plants pipe treated wastewater effluent that is not reused into the upper reaches of the LA River, just north of the Glendale Narrows.¹⁷² The Tillman and LA-Glendale plants are currently able to treat up to eighty and twenty million gallons of wastewater per day (MGD), respectively.¹⁷³ The Tillman, LA-Glendale, and Burbank wastewater treatment plants discharge a combined average of 45.9 MGD of treated wastewater into the LA River each year.¹⁷⁴ Meanwhile, the Hyperion and Terminal Island treatment plants discharge treated wastewater effluent directly into the ocean in the Santa Monica Bay and Los Angeles Harbor.¹⁷⁵ Hyperion currently receives 450 MGD of water flow on dry days and a peak wet weather flow of 800 MGD,¹⁷⁶ treats and recycles about 20 percent of it, and treats and discharges the rest

171. See WATER EDUC. FOUND., LAYPERSON'S GUIDE TO CALIFORNIA WASTEWATER 8–15 (2013), <https://www.fssd.com/wp-content/uploads/2019/12/Laypersons-Guide-to-California-Wastewater.pdf> [<https://perma.cc/MXB6-6SYU>] (listing the “[p]rimary [a]gencies [i]nvolved in [w]astewater” and outlining the wastewater purification process).

172. See *Water Resources: Wastewater Treatment*, L.A. CNTY. PUB. WORKS, <https://dpw.lacounty.gov/landing/wr/sewer/wwTreatment.cfm> [<https://perma.cc/L72V-W7XX>]; see also Mika et al., *supra* note 21, at 13. It is worth mentioning that the city of Burbank operates a wastewater treatment plant adjacent to the LA-Glendale plant that also discharges into the LA River. The city of Burbank has made efforts to increase its wastewater recycling activities in recent years as well. Sahagún, *supra* note 8 (“Burbank already has its mind made up. . . . it is ‘exploring options to use more of its recycled water’ to increase ‘reliable, sustainable[,] and high-quality potable supplies to Burbank residents and businesses.’”).

173. See *Donald C. Tillman Water Reclamation Plant*, LASAN, *supra* note 74 (stating that the Tillman plant can process up to 80 MGD); *Los Angeles-Glendale Water Reclamation Plant*, LASAN, https://www.lacitiesan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-lagwrp/s-lsh-au-lg?_adf.ctrl-state=1a6wv4xo9j_86&_afriLoop=3019570460472527#! [<https://perma.cc/P2TC-6RA6>] (“The [LA-Glendale] plant processes approximately 20 million gallons of wastewater per day.”).

174. Wolfland et al., *supra* note 78, at 2. But these estimates may vary. For instance, a 2016 Nature Conservancy study found that the Tillman, LA-Glendale, and Burbank plants discharged a combined 56.6 MGD of treated wastewater effluent into the LA River in 2012–2013 (a dry weather year). See THE NATURE CONSERVANCY, *Chapter 3: Hydrology and Hydraulics*, in WATER SUPPLY AND HABITAT RESILIENCY FOR A FUTURE LOS ANGELES RIVER: SITE-SPECIFIC NATURAL ENHANCEMENT OPPORTUNITIES INFORMED BY RIVER FLOW AND WATERSHED-WIDE ACTION 3-1, 3-30 (2016), <https://www.scienceforconservation.org/assets/downloads/TNC-LARiver-Study-2016.pdf> [<https://perma.cc/X4FY-CD5M>]. According to this study, the Tillman, LA-Glendale, and Burbank plants discharged 34.8 MGD, 11.5 MGD, and 10.3 MGD into the LA River in the study year, respectively. *Id.*

175. See LASAN HYPERION OUTFALL REPORT, *supra* note 4, at 9 (explaining that Hyperion discharges effluent into the Santa Monica Bay); CAL. REG'L WATER QUALITY CONTROL BD. L.A. REGION, ORDER R4-2021-0095, NPDES No. CA0053856, at 1 (June 10, 2021) (listing the Los Angeles Outer Harbor as the “receiving water” for Terminal Island’s “[t]ertiary-treated effluent and brine waste”).

176. *Hyperion Water Reclamation Plant Treatment Process*, LASAN, https://www.lacitiesan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-hwrp/s-lsh-wwd-cw-p-hwrp-tp?_adf.ctrl-state=wprmt2wx_82&_afriLoop=5926435948681764# [<https://perma.cc/AV5Y-JZJY>].

(approximately 220 MGD) into the sea.¹⁷⁷ Hyperion is LA's largest treatment plant—receiving 81 percent of the city's wastewater annually.¹⁷⁸ Terminal Island pales in comparison, with a flow capacity of 30 MGD of wastewater.¹⁷⁹

Given the sheer amount of treated wastewater that goes unrecycled, how would LA's plan to recycle all its wastewater by 2035 be executed? LA officials have not been entirely clear regarding the logistics of recycling all the city's wastewater. The city has primarily focused on increasing recycling capacity at Hyperion via Operation NEXT.¹⁸⁰ Operation NEXT is a \$2 billion project spearheaded by LADWP and LA Sanitation and Environment (LASAN) that will retrofit Hyperion to treat and augment LA's local water supply by up to 217 MGD.¹⁸¹ Planned improvements include constructing "new treatment, conveyance, storage, and distribution infrastructure."¹⁸² If Operation NEXT is successful, wastewater will comprise nearly one-third of LA's water sources.¹⁸³ The city plans to use this treated wastewater to replenish local groundwater aquifers and invest in direct potable reuse.¹⁸⁴

Given that all four of LA's wastewater recycling plants are operating at full capacity, city leaders have acknowledged that reaching Garcetti's goals will require infrastructure improvements and wastewater treatment capacity-building throughout LA's reclamation network.¹⁸⁵ But what role should each treatment plant play in these efforts? Many Angelenos fear that local plans to increase municipal wastewater recycling and reuse efforts at the Tillman, LA-Glendale, and Burbank wastewater treatment plants will cause the LA River to run dry.¹⁸⁶ As the next Section of this Note reveals, this fear is well justified.¹⁸⁷ While Operation NEXT currently focuses on retrofitting the Hyperion wastewater

177. *Hyperion Water Reclamation Plant: Hyperion 2035*, LASAN, <https://www.lacitysan.org/san/sandocview?docname=cnt066745> [<https://perma.cc/KTH7-DKZ6>].

178. *Mayor Garcetti*, *supra* note 2.

179. LASAN, TERMINAL ISLAND WATER RECLAMATION PLANT 1, 1, <https://www.lacitysan.org/san/sandocview?docname=cnt067744> [<https://perma.cc/A6VL-RKW7>].

180. *See generally Operation NEXT*, LADWP [hereinafter *Operation NEXT*], https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-sourcesofsupply/a-w-sos-operationnext?_adf.ctrl-state=nymhgz8ew_4&_afriLoop=1285934918327658 [<https://perma.cc/6P86-NR5Y>].

181. *Id.*

182. LADWP, *supra* note 6, at A-1.

183. *Id.*

184. *Id.*; *see also Operation NEXT*, *supra* note 180.

185. *See Mayor Garcetti*, *supra* note 2; LADWP, *supra* note 5, at 2. For instance, LASAN is currently working to construct an advanced water purification facility project at the Tillman reclamation plant that will allow the facility to recycle and purify an additional 15.5 MGD of wastewater to "replenish the San Fernando Basin and its aquifers." *Los Angeles Receives \$224M WIFIA Loan*, WATERWORLD (Oct. 26, 2021), <https://www.waterworld.com/drinking-water/infrastructure-funding/press-release/14212909/los-angeles-receives-224m-epa-water-infrastructure-loan> [<https://perma.cc/XXF5-38ZW>]. LA expects to finish the \$458 million project by 2027. *Id.*

186. Sahagún, *supra* note 8.

187. *See generally infra* Part II.B.2.

treatment plant, which already receives 81 percent of the city's wastewater and does not dump treated wastewater directly into the LA River (and, thus, does not sustain river flows),¹⁸⁸ it is important for stakeholders to understand how complementary improvements at the treatment plants farther upstream can affect the LA River.

As Garcetti expressed, the city is at another “Mulholland moment”—in the same way LA needed more water to support development in the early twentieth century, the city now requires a reliable water supply that can nourish Angelenos in the face of climate change, drought, and continued growth.¹⁸⁹ But LA does not need to take a “Mulholland” approach. Instead of pursuing its water supply goals by using infrastructure projects to dominate nature,¹⁹⁰ the city must first appreciate the effects of its efforts on local waterways like the LA River. Mulholland abandoned the LA River when he set his sights on the Owens Valley.¹⁹¹ LA should not do the same in its quest to reclaim wastewater.

2. Wastewater Recycling and the LA River

As mentioned in Part I.B, the LA River today is effluent dominated. Three wastewater treatment plants in the northern LA River watershed—Tillman, LA-Glendale, and Burbank—discharge approximately 45.9 MGD of treated wastewater directly into the river annually.¹⁹² Except for rainy days, almost 90 percent of the water flowing in the LA River originates from discharges by the Tillman, LA-Glendale, and Burbank plants; stormwater runoff comprises the remaining 10 percent.¹⁹³ While the stormwater runoff entering the river is heavily polluted, wastewater discharges into the LA River are treated to comport with federal standards under the Clean Water Act.¹⁹⁴ Once the wastewater effluent and runoff enter the river, its concrete features rush the flow down the river corridor and out into the Pacific Ocean in Long Beach.¹⁹⁵

188. See *Mayor Garcetti*, *supra* note 2.

189. Jim Newton, *Eric Garcetti: LA Water, Past, and Future*, UCLA BLUEPRINT (2016), <https://blueprint.ucla.edu/feature/eric-garcetti-l-a-s-water-history-and-future/> [<https://perma.cc/2TH9-FK7F>].

190. See Kim, *supra* note 75, at 39–42 (describing the chain of events and ideological shifts leading to the search for non-local sources of water and a “material-symbolic transformation of the river” from a “natural advantage” to “a limiting factor [of LA’s] potentially explosive growth”).

191. See *id.*

192. Wolfand et al., *supra* note 78, at 2. Although this Note is not focused on the Burbank plant because it is located beyond LA city limits, the Burbank plant also discharges treated wastewater into the LA River. See also *Burbank Water Reclamation Plant (BWRP)*, CITY OF BURBANK, <https://www.burbankca.gov/web/public-works/burbank-water-reclamation-plant> [<https://perma.cc/8ZG9-ABMG>] (stating that the Burbank plant currently treats “9 million gallons of sewage per day” and “was built . . . to meet the wastewater and sewer needs of the growing residential population and expanding commercial industries located in the City of Burbank”).

193. Sahagún, *supra* note 8.

194. Shaham, *supra* note 109. While it is clean, treated wastewater effluent in the LA River is also unnaturally warm. *Id.*

195. See LA RIVER MASTER PLAN, *supra* note 7, at 98.

The Tillman, LA-Glendale, and Burbank treatment plants are inextricably linked to the health and success of the LA River—its instream flows and the recreational, ecological, and cultural uses they support heavily rely on wastewater effluent.¹⁹⁶ An important health benefit of the treatment plants' discharges into the river is that the treated effluent dilutes pollutants entering the river from other sources.¹⁹⁷ The three plants are located less than twenty miles upstream from the Glendale Narrows,¹⁹⁸ one of the most ecologically rich and healthy portions of the river,¹⁹⁹ at least in part because of the flows the treatment plants provide.²⁰⁰ For instance, researchers who studied the relationship between wastewater effluent and the ecological and recreational beneficial uses of the Glendale Narrows agree that wastewater discharges are integral to supporting the median baseflow needed to support its riparian habitat and kayaking capacity.²⁰¹ The same can be said for the lower, more concretized portions of the LA River. Although the lower portions of the river do not have the thriving habitat that the Glendale Narrows offers, wastewater effluent does flow to (and

196. See Sahagún, *supra* note 8.

197. Shaham, *supra* note 109.

198. A Google search reveals that Tillman plant is located 13.1 miles northwest of the Glendale Narrows, the LA-Glendale plant is located 4.2 miles north of the Glendale Narrows, and the Burbank plant is located 2.6 miles north of the Glendale Narrows. See Driving Directions from Tillman Plant to Glendale Narrows, GOOGLE MAPS (follow "Directions" hyperlink; search starting point field for "Donald C. Tillman Reclamation Plant, Van Nuys, CA" and search destination field for "Glendale Narrows Riverwalk, Glendale, CA"); Driving Directions from LA-Glendale Plant to Glendale Narrows, GOOGLE MAPS (follow "Directions" hyperlink; search starting point field for "LA Reclamation Plant, LA, CA" and search destination field for "Glendale Narrows Riverwalk, Glendale, CA"); Driving Directions from Burbank Plant to Glendale Narrows, GOOGLE MAPS (follow "Directions" hyperlink; search starting point field for "Burbank Reclamation Plant, Burbank, CA" and search destination field for "Glendale Narrows Riverwalk, Glendale, CA").

199. See LA RIVER MASTER PLAN, *supra* note 7, at 102 ("[T]he river's capacity to support biologic life is determined by hydraulic conditions, channel geometry and connectivity across and along the river to adjacent patches and habitat areas. . . . Sepulveda Basin, the Glendale Narrows, and the tidal estuary are the most ecologically healthy[.]").

200. See *id.*; see also Katie Mika et al., *supra* note 21, at 135 (noting that while groundwater upwelling also contributes to the river flow in the Glendale Narrows, "this contribution is not significant relative to effluent from [wastewater treatment plants]"); U.S. ARMY CORPS OF ENG'RS, *supra* note 104, at 33 ("The major sources of water at Glendale Narrows are storm flows and nuisance flows from urban areas that enter the [LA River] through major storm outfalls and treated wastewater from . . . Tillman . . . and the Glendale Water Reclamation Plant.").

201. Wolfand et al., *supra* note 78, at 7; see also Sanchez & Stein, *supra* note 87, at 27 (finding that water depth is important to boating activity and that study respondents "noted that boating is best in the afternoon, when releases from Publicly Owned Treatment Works (POTW) [e.g., wastewater treatment plants] provide enough water for kayaking and worse in the mornings when . . . releases are reduced"); ERIC D. STEIN, JORDYN WOLFAND, REZA ABDI, KATIE IRVING, VICTORIA HENNON, KRIS TANIGUCHI-QUAN, DANIEL PHILIPPUS, ANNA TINOCO, ASHLEY RUST, ELIZABETH GALLO, COLIN BELL & TERRI S. HOGUE, S. CAL. COASTAL WATER RSCH. PROJECT, ASSESSMENT OF AQUATIC LIFE USE NEEDS FOR THE LOS ANGELES RIVER 33–54 (2021), https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1154_LARiverAquaticLifeUses.pdf [<https://perma.cc/76RW-X2GS>] (finding that current flow conditions support a variety of wildlife).

through) these lower reaches, supporting aquatic species, migratory birds, and various recreational uses of the river (e.g., aesthetics, wildlife viewing, and kayaking).²⁰²

Reducing wastewater effluent entering the LA River could erase the river's capacity to support beneficial public uses—navigational, recreational, ecological, or otherwise. The cities that operate the three plants that most affect LA River flows have each announced plans to increase wastewater reuse.²⁰³ In recent years, LA and Burbank have filed several 1211 Change Petitions with the State Water Board to significantly decrease their reclamation plants' wastewater discharges into the LA River.²⁰⁴ As this Note will explore in more detail in Part IV, studies have shown that increasing wastewater reuse from the Tillman, LA-Glendale, and Burbank plants will reduce flows in the LA River in segments downstream from the facilities.²⁰⁵ Significant reductions in flows will make it harder for the already struggling waterway to sustain the ecological and recreational benefits it currently provides.²⁰⁶

Of course, the effects of recycling all of LA's wastewater (and increasing Burbank's recycling activity) on the river will depend on just how much effluent is retained, whether the city plans to operate Tillman and LA-Glendale at maximum recycling capacity on rainy days, and the extent to which LA plans to integrate the efforts at Hyperion into the mix. These are questions that the city, its local water agencies, and the State Water Board will need to answer. Luckily, the State Water Board has a process to do just that.

Even though LA has the exclusive right to the treated wastewater its plants produce,²⁰⁷ it cannot merely choose to begin recycling all its wastewater at the Tillman and LA-Glendale plants without getting approval from the State Water Board. Enter the Wastewater Change Petition Process. Under California Water

202. See Wolfland et al., *supra* note 78, at 3, 9 (while finding that lower reaches of the LA River are “less sensitive” to reductions in wastewater discharge than the Glendale Narrows, the lower portions of the river currently support a variety of aquatic and non-aquatic species and recreational uses); see also Sanchez & Stein, *supra* note 87, at 7 (listing art and photography uses in the lower reaches of the LA River as activities for which river flow is an important support metric).

203. See *supra* Part II.C.1 for a summary of LA's plans and promises for the LA-Glendale and Tillman plants.

204. STATE WATER RES. CONTROL BD., NOTICE OF WASTEWATER CHANGE PETITION WW0091, https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/petitions/2017/ww0091_not.pdf [<https://perma.cc/NT6K-7736>]; see also CAL. STATE WATER RES. CONTROL BD., NOTICE OF WASTEWATER CHANGE PETITION WW0097, https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/petitions/2017/ww0097_not.pdf [<https://perma.cc/6X6J-7JDA>].

205. See Wolfland et al., *supra* note 78, at 1–2.

206. *Id.* at 1, 10.

207. CAL. WATER CODE § 1210 (2018) (“The owner of a wastewater treatment plant operated for the purpose of treating wastes from a sanitary sewer system shall hold the exclusive right to the treated wastewater as against anyone who has supplied the water discharged into the waste water collection and treatment system[.]”).

Code section 1211, if an owner of a wastewater treatment plant wants to “mak[e] any change in the point of discharge, place of use, or purpose of use of treated wastewater,” and that change will result in the decrease of flow in “any portion of a watercourse,” the State Water Board must approve this change.²⁰⁸ In its review of 1211 Change Petitions, the State Water Board cannot accept an applicant’s plans unless and until it considers the effects of reusing this wastewater on the cultural, recreational, and ecological benefits of the LA River.²⁰⁹

As a part of the SWRCB’s duty to protect public trust resources where feasible,²¹⁰ the 1211 Change Petition Process is a potentially powerful tool for preventing unilateral—albeit beneficial—action that completely disregards LA’s river. While the State Water Board may find that harming the LA River is a necessary cost of increasing water supply in an arid, drought-prone region, at least river advocates know that its consideration of the feasibility of preserving instream flows must be meaningful.²¹¹ Although some practitioners have argued that the public trust doctrine may be used to protect natural resources without regard to resulting societal consequences,²¹² it is one of the first external lines of defense to ensure the State Water Board considers the good, the bad, and the ugly of LA’s wastewater recycling commitments.

III.

THE PUBLIC TRUST DOCTRINE: A TOOL TO SAVE THE LA RIVER

Traditional applications of the public trust doctrine in court cases have focused on projects in direct tension with sustainability (e.g., economic development).²¹³ However, given the reality of climate change and the associated frequency of multi-year megadroughts, many cities and states have increasingly pushed for large-scale water reclamation infrastructure projects to alleviate water

208. *Id.* § 1211(a); *Wastewater Change Petitions*, STATE WATER RES. CONTROL BD. (May 2, 2023), https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/wastewater.html [<https://perma.cc/LM7R-X8VZ>].

209. CAL. WATER CODE § 1243(a).

210. *See id.*; *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709, 712 (Cal. 1983).

211. *S.F. Baykeeper, Inc. v. State Lands Comm’n*, 194 Cal. Rptr. 3d 880, 905 (Cal. Ct. App. 2015) (“[A]ny action which will adversely affect traditional public rights in trust lands is a matter of general public interest and should therefore be made only if there has been full consideration of the state’s public interest in the matter; such actions should not be taken in some fragmentary and publicly invisible way.” (quoting *Zack’s, Inc. v. City of Sausalito*, 81 Cal. Rptr. 3d 797, 816–17 (Cal. Ct. App. 2008))).

212. *See, e.g.*, Russell M. McGlothlin & Scott S. Slater, *No Fictions Required: Assessing the Public Trust Doctrine in Pursuit of Balanced Water Management*, 17 U. DENV. WATER L. REV. 53, 91–92 (2013) (arguing, for example, that reliance on the public trust doctrine as applied in the water management context “[w]ould [f]oster [e]xtremism” because public trust proponents often argue for the protection of public trust resources without considering its associated societal consequences).

213. Alexandra B. Klass, *Renewable Energy and the Public Trust Doctrine*, 45 U.C. DAVIS L. REV. 1021, 1036 (2012).

supply shortfalls.²¹⁴ Garcetti’s water recycling commitment is representative of this push toward water reuse in California. Expanding wastewater recycling activities may help arid cities like LA create affordable, stable, and efficient local water supplies.²¹⁵ However, it can also result in unintended environmental harms that interfere with public trust resources—in this case, reduced flows in the LA River.²¹⁶

The idea that protecting public trust resources can run against attempts to increase climate resiliency is not new. For instance, several scholars and courts have attempted to balance the public benefits of environmental development projects, including wind turbines and solar farms, against these projects’ potential harms.²¹⁷ Such harms are detrimental to critical habitats and human enjoyment of natural lands, both of which are protected under the public trust doctrine.²¹⁸ This tension is central to LA’s plan to recycle all its wastewater. The public needs reliable sources of affordable water, but significantly decreasing the amount of treated wastewater discharged to the LA River could negatively impact local wildlife habitats and Angelenos’ ability to use and enjoy them.²¹⁹

This Section reviews the development and expansion of the public trust doctrine in California and concludes that the LA River is a protected public trust resource. Understanding the long-running spirit of the public trust doctrine and its applicability to non-traditional beneficial uses will lay a foundational understanding of the State Water Board’s public trust analysis mandate, which Part IV will explore.

214. In fact, the California Legislature passed a water reclamation law in 1970 that declared that Californians have a “primary interest” in the development of water recycling plants “to supplement existing . . . water supplies” and “to minimize the impacts of growing demand for new water on sensitive natural water bodies.” CAL. WATER CODE §§ 13510, 13511, 13512, 13529(c)–(d) (2022), 13560 (2021). In 2009, the legislature declared that using potable water for residential landscaping, building-related maintenance, and flushing is an improper waste or unreasonable use of water when recycled water “of adequate quality” is available. *Id.* §§ 13550, 13552.2 (residential landscaping), 13552.6 (floor trap priming, cooling towers, and air conditioning), 13553 (toilet and urinal flushing) (2022).

215. See generally L.A. WATERKEEPER, *supra* note 4.

216. See generally Gokce Sencan & Caitrin Chappelle, *The LA River and the Trade-Offs of Water Recycling*, PUB. POL’Y INST. OF CAL. (June 24, 2019), <https://www.ppic.org/blog/the-la-river-and-the-trade-offs-of-water-recycling/> [<https://perma.cc/NBF2-TTN2>].

217. See, e.g., Klass, *supra* note 213, at 1040, 1045–47, 1053–58, 1061–65 (discussing conflicts over onshore wind energy, offshore wind energy, and solar energy projects and balancing public trust interests).

218. See *id.*; see also Lance Noel & Jeremy Firestone, *Public Trust Doctrine Implications of Electricity Production*, 5 MICH. J. ENV’T & ADMIN. L. 169, 191–202 (2015) (outlining the effects of electricity production—by various means—on water ecosystems, wildlife mortality, and climate change).

219. See Sahagún, *supra* note 8.

A. *The Origins of the Public Trust Doctrine*

At its most fundamental, the public trust doctrine is an ancient²²⁰ judicial principle that establishes the state as a trustee of certain natural resources, including navigable waterways, to benefit everyone in exercising certain public rights.²²¹ Historic public rights include navigation, fishing, and commerce,²²² but many states have expanded protected public uses to include recreation, scenic beauty, and water quality.²²³ Scholars have extensively chronicled public trust law since its emergence in Roman and English law.²²⁴ However, we need only a brief historical account of public trust law here.

Even in its earliest forms, the public trust doctrine embodied the unique “nature of property rights in rivers, the sea, and the seashore.”²²⁵ Public trust law at this time recognized that the “perpetual use” of flowing waters on “certain common properties . . . was dedicated to the public.”²²⁶ Eventually, English common law evolved to recognize the public trust as a system whereby sovereign states own “all of [their] navigable waterways and the lands lying beneath them ‘as trustee[s] of a public trust for the benefit of the people.’”²²⁷

The United States adopted elements of the Roman and English legal systems at its inception, including traditional public trust doctrine principles.²²⁸ While the U.S. Supreme Court has long recognized the federal government’s duty to protect public rights to certain natural resources, applications of the public trust doctrine to waterways were limited to traditional public uses,

220. Rebecca LaGrandeur Harms, *Preserving the Common Law Public Trust Doctrine: Maintaining Flexibility in an Era of Increasing Statutes*, 39 U.C. DAVIS L. REV. 97, 98 (2015).

221. The contours of the public trust doctrine vary state by state. For a comprehensive account of states’ treatment of the public trust doctrine, see generally THE PUBLIC TRUST DOCTRINE IN 45 STATES (Michael C. Blumm ed., 2014).

222. See LaGrandeur Harms, *supra* note 220, at 99.

223. See, e.g., Robin Kundis Craig, *A Comparative Guide to Western States’ Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 ECOLOGY L.Q. 53, 55, 93–197 (2010) (documenting public trust doctrines in nineteen western U.S. states); Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries*, 16 PENN ST. ENV’T. L. REV. 1, 5, 21–24, 26–113 (2007) (listing states that have expanded their public trust doctrines to “fit the changing needs of society” and providing “state-by-state summaries” of public trust doctrines in thirty-one eastern U.S. states).

224. See, e.g., Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475–78 (1970); Barton H. Thompson, Jr., *The Public Trust Doctrine: A Conservative Reconstruction and Defense*, 15 SE. ENV’T L.J. 47, 50–54 (2006); Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources Law: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 633–36 (1986).

225. Sax, *supra* note 224, at 475.

226. *Id.*

227. *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709, 718 (Cal. 1983) (quoting *Colberg, Inc. v. State ex rel. Dep’t Pub. Works* 432 P.2d 3, 8 (Cal. 1967)).

228. See Noel & Firestone, *supra* note 218, at 176–79.

including navigation, fishing, and commerce.²²⁹ The U.S. Supreme Court first acknowledged that states assumed public trust obligations “upon their admission to the Union” as the titleholders of submerged lands—including tidal lands and submerged lands under navigable waterways—within their boundaries.²³⁰ Later, the U.S. Supreme Court changed course, deciding that a state’s public trust doctrine duties originated not from the Constitution, but from each state’s residual sovereign power.²³¹ No matter the public trust doctrine’s origins in the United States, scholars and courts agree that today, “[p]ublic trust law . . . [in the United States] is . . . a species of state common law.”²³²

B. *Development and Expansion of the Public Trust Doctrine in California*

The public trust doctrine in California has long played an influential role in protecting navigable waters for public trust purposes, both traditional—navigation, fisheries, and commerce—and expansive—recreation and environmental protection. State legislators codified public trust principles in various legislative acts, including Water Code section 102, which states that “[a]ll water within the State is the property of the people of the State.”²³³ Thus, California’s time-honored embrace and extension of the public trust doctrine establishes a strong obligation on state and municipal decision-makers to consider the impacts of water diversions (or reuse from water reclamation, in this case) on public trust resources like the LA River, which offer “the people” numerous public benefits.

1. *Scope of the Public Trust Doctrine in California*

The judicial expansion of the public trust doctrine in California launched with *Marks v. Whitney*, a case in which the California Supreme Court extended the doctrine’s applicability to the protection of ecological purposes:

Public uses . . . are sufficiently flexible to encompass changing public needs . . . There is growing public recognition that one of the most important public uses of the tidelands—a use encompassed within the

229. See *Ill. Cent. R.R. Co. v. Illinois*, 146 U.S. 387, 452–53 (1892).

230. *Sax*, *supra* note 224, at 476–77 (citing *Shively v. Bowlby*, 152 U.S. 1, 57–58 (1894)); *Ill. Cent. R.R. Co.*, 146 U.S. at 452–53.

231. See *PPL Mont., LLC v. Montana*, 565 U.S. 576, 603–04 (2012).

232. Robin Kundis Craig, *A Comparative Guide to Western States’ Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, *supra* note 223, at 58.

233. CAL. WATER CODE § 102 (2022); see also *Light v. State Water Res. Control Bd.*, 173 Cal. Rptr. 3d 200, 209 (Cal. Ct. App. 2014); *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709, 726 (quoting CAL. WATER CODE § 1234.5 (1969) as directing the State Water Board to “take into account, whenever it is in the public interest, the amounts of water needed to remain in the source for protection of beneficial uses”), CAL. WATER CODE § 1243 (2022) (identifying “preservation and enhancement of fish and wildlife resources” as a beneficial use); *id.* § 85023 (“The longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta.”).

tidelands trust—is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.²³⁴

And that was just the beginning. The same year, the Third Appellate District Court held in *People ex rel. Baker v. Mack* that the public's right to traverse navigable waterways extended to navigation for recreational purposes—i.e., boating.²³⁵ While *Marks v. Whitney* and *People ex rel. Baker v. Mack* helped develop the public trust doctrine in California into what it is today, it was greatly expanded in the California Supreme Court case, *National Audubon*.²³⁶

National Audubon was the first California court case to square the public trust doctrine with the state's appropriative water rights system, potentially limiting LA's diversion of water from navigable and non-navigable tributaries of Mono Lake.²³⁷ The case also prescribed a role for the State Water Board in protecting public trust resources.²³⁸ The conflict arose because the SWRCB granted LADWP a permit to divert so much water from the tributaries that fed into Mono Lake, a waterway in the Sierra Nevada, that LADWP took "virtually the entire flow" of the streams.²³⁹ These massive diversions caused the water levels in Mono Lake to drop by at least forty-three feet, which led to high salinity and damage to the lake's aesthetic, recreational, and ecological values.²⁴⁰ Plaintiffs brought suit under the public trust doctrine, claiming that the lake's recession and increase in salinity adversely affected the local public health, reduced public enjoyment of the lake, depressed local shrimp hatcheries, and disturbed a previously balanced population of nesting and migratory birds.²⁴¹ The court agreed, holding that the SWRCB had "an affirmative duty to take the public trust into account in the planning and allocation of water resources."²⁴² Moreover, the SWRCB's "continuing supervision" of water rights gave the

234. *Marks v. Whitney*, 491 P.2d 374, 380 (Cal. 1971).

235. *People ex rel. Baker v. Mack*, 97 Cal. Rptr. 448, 451, 454 (Cal. Ct. App. 1971).

236. *Nat'l Audubon*, 658 P.2d at 709.

237. *See id.* at 727–29; *see also* Jordan Browning, *Unearthing Subterranean Water Rights: The Environmental Law Foundation's Efforts to Extend California's Public Trust Doctrine*, 34 ENVIRONS ENV'T L. & POL'Y J. 231, 236–38 (2011) ("[B]y interpreting the doctrine as capable of modifying water rights, even in non-navigable tributaries of navigable waters, the court [in *National Audubon*] orchestrated an unprecedented doctrinal expansion.").

238. *See* Erin Ryan, *The Public Trust Doctrine, Private Water Allocation, and Mono Lake: The Historic Saga of National Audubon Society v. Superior Court*, 45 ENV'T L. 561, 608–09 (2015) ("[T]he [State] Water Board was directed to balance the legitimate water needs of [LA] with the state's obligation to protect the scenic, ecological, and recreational values in the Mono Basin as much as feasible." (citing *Nat'l Audubon*, 658 P.2d at 728–29)).

239. *Nat'l Audubon*, 658 P.2d at 711.

240. *Id.* at 711–12, 714–17.

241. *Id.* at 716.

242. *Id.* at 728.

SWRCB the authority to “reconsider allocation decisions” already made.²⁴³ But, as the Court held, the SWRCB erred because it failed to consider the impact of LADWP’s water diversions on Mono Lake, a public trust resource.²⁴⁴

Although *National Audubon* established a duty for the SWRCB to consider impacts on public trust resources, the Court also recognized that this obligation was not absolute.²⁴⁵ The Court determined that the affirmative duty of the State to protect public trust resources only extended as far as avoiding or minimizing harm to the resource is *feasible*.²⁴⁶ Unfortunately, the California Supreme Court did not define “feasible” for public trust purposes. The Court further weakened the novel requirement by acknowledging that there would be times that the SWRCB authorizes water appropriations, or other related permits, that harm public trust resources “[a]s a matter of practical necessity.”²⁴⁷

Overall, *National Audubon* strengthened California’s public trust doctrine because the Court applied it to non-navigable tributaries affecting a navigable waterway and established an affirmative duty on state entities to consider implications for public trust resources in their decision-making processes.²⁴⁸ The case also expanded public trust uses to include beneficial uses such as recreation, scenery, wildlife habitat, and even air quality above Mono Lake.²⁴⁹

Other California courts have built upon what is considered beneficial public trust uses, including water quality.²⁵⁰ California courts have also expanded the public trust’s relationship to groundwater. For example, in 2018, the Third Appellate District case *Environmental Law Foundation v. State Water Resources Control Board* held that the public trust doctrine applied to a county-level groundwater pumping permitting program when groundwater aquifers adversely affected public trust uses in a navigable waterway.²⁵¹

C. *The LA River Is a Protected Public Trust Resource*

The expansive nature of the public trust doctrine in California is a great advantage to the LA River. It is not a conventional river: it is encased in concrete,²⁵² largely dependent on wastewater effluent for its instream flows,²⁵³

243. *Id.* at 728–29.

244. *Id.*

245. *See id.* at 728.

246. *Id.*

247. *Id.* at 727–28.

248. *See* Browning, *supra* note 237, at 236–38; Ryan, *supra* note 238, at 608–09.

249. *Nat’l Audubon*, 658 P.2d at 716, 719.

250. *See* United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 200–01 (Cal. Ct. App. 1986); Richard M. Frank, *The Public Trust Doctrine: Assessing Its Recent Past & Charting Its Future*, 45 U.C. DAVIS L. REV. 665, 677 (2012).

251. *Env’t L. Found. v. State Water Res. Control Bd.*, 237 Cal. Rptr. 3d 393, 402–05 (2018); Adam Bowling & Elizabeth Vissers, *The Public Trust Doctrine and Its Groundwater Application in California*, 18 U. DENV. WATER L. REV. 468, 468–70 (2015).

252. *See* FRIENDS OF THE L.A. RIVER, *supra* note 29, at 7.

253. Sahagún, *supra* note 8.

and surrounded by at least one million Angelenos.²⁵⁴ However, the flexible spirit of the public trust doctrine can accommodate the public uses this eccentric urban river serves today, whether traditional, recreational, or ecological.²⁵⁵ This flexibility is also critical when encountering tensions between the protection of public trust uses of instream flows and large-scale development projects that may threaten public resources. But before analyzing how the State Water Board should balance the LA River's public trust uses when deciding whether to allow LA to increase wastewater recycling at the Tillman and LA-Glendale plants, it is critical to establish that the public trust doctrine applies to the LA River, even in its altered state.

The U.S. Environmental Protection Agency (EPA or Agency) legally labeled the entirety of the LA River a "navigable" waterway in 2010, just two years after community activists kayaked from the upper river to its outfall in the San Pedro Bay.²⁵⁶ Previous efforts to declare the entire stretch of the river navigable had failed, with the Army Corps finding that a mere four-mile stretch of the river could support "traditionally navigable" uses, "implying that most of the [LA River] was not a river at all."²⁵⁷ But the EPA saw things differently. The Agency acknowledged that various Tribal communities had used the river for transportation when its flows could support canoes and other waterborne vessels before Spanish colonization.²⁵⁸ The Agency also looked beyond whether the LA River could support navigation and considered the river's recreational use, budding commercial potential, public access, and present and future ecological restoration and public education efforts.²⁵⁹ After the kayaking spectacular, the EPA's scientific assessments found that 90 percent of the river could support "small recreational watercraft," even in low-flow conditions during the dry season.²⁶⁰ Additionally, the Agency expanded its consideration of recreational and public uses to include trail accessibility and public parking lots.²⁶¹ It even weighed the fact that LA was planning to expand recreational activities on the river at the time.²⁶²

The impact of the EPA's navigability declaration opened the floodgates to the LA River's regulation and defense. Even in California, navigability is an

254. See LA RIVER MASTER PLAN, *supra* note 7, at 17.

255. See *Marks v. Whitney*, 491 P.2d 374, 380 (Cal. 1971).

256. Harris, *supra* note 20, at 194.

257. *Id.* at 193–94.

258. *Id.*

259. *Id.* at 194.

260. *Id.*

261. *Id.*

262. *Id.*

important trigger for public trust protection²⁶³—regardless of whether the protected waterway in question is itself navigable.²⁶⁴ Fortunately, the EPA’s navigability determination silenced questions about whether or how much of the LA River would be considered a public trust resource if navigability is the sole metric of applicability. All fifty-one miles of the LA River are protected by the public trust because the entire river is classified as navigable.²⁶⁵

However, some may argue that determining whether the LA River is a protected public trust resource is not clear-cut. Does it matter that 90 percent of the LA River’s instream flow does not originate from a local, natural source?²⁶⁶ The relevant case law demonstrates that it should not. While California courts have not explicitly decided this precise question, the First Appellate District of the California Court of Appeal has held that the public trust doctrine applied to a waterway whose flows originated from non-local sources.²⁶⁷ In *Light v. State Water Resources Control Board*, a California Court of Appeal held that the State Water Board had the authority to weigh the “beneficial *public trust use* of maintaining stream levels to avoid salmonid deaths” in the Russian River with “the beneficial use of diversion for frost protection by water rights holders.”²⁶⁸ As it turns out, the Russian River is largely fed by a complex and non-natural web of water management processes much like the LA River.²⁶⁹ Water from Lake Mendocino flows into the Russian River near its headwaters during the dry season.²⁷⁰ Downstream, water from Lake Sonoma also joins the Russian River.²⁷¹ Further complicating this network of flow transfers is the fact that much of the water in Lake Mendocino (the uppermost feeder of the Russian River) consists of water from the Eel River, which also has two dams that divert water into the Russian River via a mile-long tunnel.²⁷² The Russian River’s flow

263. California courts have long found “the public trust fully applicable to inland navigable waters.” Frank, *supra* note 250, at 671–72 (citing *State v. Super. Ct. (Lyon)*, 625 P.2d 239, 244–46 (Cal. 1981) and *State v. Super. Ct. (Fogerty)*, 625 P.2d 256, 259 (Cal. 1981)).

264. See Browning, *supra* note 237, at 236–38; Ryan, *supra* note 238, at 608–09.

265. See Harris, *supra* note 20, at 194.

266. See Sahagún, *supra* note 8.

267. See *Light v. State Water Res. Control Bd.*, 173 Cal. Rptr. 3d 200, 205 (Cal. Ct. App. 2014), *as modified on denial of reh’g* (July 11, 2014) (concluding that the State Water Board can weigh the public uses of water in a dispute over water diversion curtailments in the Russian River); Ruth Langridge, *Changing Legal Regimes and the Allocation of Water Between Two California Rivers*, 42 NAT. RES. J. 283, 285–303 (2002) (tracing historical water management projects and controversies concerning the diversion of water from the Eel River to feed the Russian River’s instream flows).

268. *Light*, 173 Cal. Rptr. 3d at 219.

269. See *The Water in Our River*, RUSSIAN RIVERKEEPER [hereinafter RUSSIAN RIVERKEEPER], <https://russianriverkeeper.org/got-water/> [<https://perma.cc/9ZJX-6Y8B>]; Langridge, *supra* note 267, at 285–303.

270. RUSSIAN RIVERKEEPER, *supra* note 269.

271. *Id.*

272. *Id.*

appears more complicated than the LA River, which gets most of its water from three main sources: the Tillman, LA-Glendale, and Burbank treatment plants.²⁷³

Even if doubt remains about whether the public trust doctrine applies to the LA River under the common law, the California Legislature has already determined that the LA River is a public trust resource. Senate Bill 1201, which Governor Jerry Brown signed into law in 2012, required the "Los Angeles County Flood Control District . . . to provide for public use of the [r]iver for recreational and educational purposes, when such uses are not inconsistent with flood control and water conservation."²⁷⁴ It also emphasized that the LA River "must be held in trust for the public and managed for public access and use."²⁷⁵ Therefore, the LA River is a public trust resource under California law, no matter where its instream flow originates.

But how is the State Water Board to balance the protection of the beneficial uses of preserving instream flows in the LA River with LA's efforts to increase wastewater reuse for the public as a rights holder? The following Section hopes to shed light on this analysis.

IV.

APPLYING THE PUBLIC TRUST DOCTRINE TO LA'S WATER RECYCLING INITIATIVE

In California, the state (and its assignees) must protect to the extent feasible a wide range of public uses of a trust resource when a city, county, or state action could harm or destroy them.²⁷⁶ California courts have expanded public uses under the public trust doctrine to include traditional water activities, recreation, education, and ecological health and preservation.²⁷⁷ Therefore, as the State administrator of California water rights, the SWRCB must consider how allowing LA to recycle 100 percent of its wastewater will affect the public's opportunities to enjoy traditional, recreational, and ecological uses of the LA River when determining whether it should grant LA any necessary permits.²⁷⁸ This includes 1211 Change Petitions, which can allow the city to reclaim

273. See Sahagún, *supra* note 8.

274. M. Rhead Enion, *The Significance of SB 1201 for the Los Angeles River*, LEGAL PLANET (Oct. 25, 2012), <https://legal-planet.org/2012/10/25/the-significance-of-sb-1201-for-the-los-angeles-river/> [https://perma.cc/P5GA-AZ98].

275. *Id.*

276. See *infra* Part III.B.

277. *Id.*

278. See SWRCB, *supra* note 208 ("[T]he State Water Board has an independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible."); see also *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709, 728 (Cal. 1983) (establishing that the State Water Board has "an affirmative duty to take the public trust into account in the planning and allocation of water resources").

additional wastewater flow.²⁷⁹ If the SWRCB deems protecting the LA River and its instream flow “feasible” after balancing the competing interests of increasing wastewater reclamation and maintaining minimum flows, the State Water Board is obligated to protect the river (i.e., by modifying or denying any 1211 Change Petition).²⁸⁰

Although the State Water Board must consider the effect on public trust resources of the proposed projects involved in the 1211 Change Petitions and protect them where feasible, it has yet to publish a strict guide detailing the steps in its analysis. This Note aims to fill this gap concerning wastewater reuse at the Tillman and LA-Glendale plants. The Section will give an overview of the public trust considerations the State Water Board must contemplate in considering whether to grant 1211 Change Petitions to LA to reduce instream flows in the LA River. Ultimately, this Note will show that allowing LA to recycle and reuse all water that flows through the Tillman and LA-Glendale plants is likely incompatible with supporting a LA River that meets instream flow requirements for aquatic species, provides the public with recreational opportunities, and contributes to a more inclusive, and greener, urban environment. While the SWRCB may feel that the public need for reclaimed water outweighs these benefits, the SWRCB should think before it grants.

A. *Traditional Public Trust Concerns*

As explained in Part III.A, the traditional uses of a trust resource protected by the public trust doctrine were confined to navigation, commerce, and fishing. Because users of the LA River for navigational and fishing purposes typically do so for recreation, the public’s navigation and fishing interests in the LA River will be assessed in the following Section. Therefore, this Section necessarily focuses on commerce.

California public trust law embraces a broad definition of “commerce” as a public trust use of navigable waters; it is not limited to surface water transport.²⁸¹ Rather, California courts have recognized that modern-day activities and demands “require that the state . . . should not be burdened with an outmoded classification favoring one mode of utilization over another” when considering the use of public trust waters.²⁸² Therefore, the SWRCB should consider the

279. See SWRCB, *supra* note 208 (“If a water re-use project will decrease the amount of water in a stream or other waterway, the owner of the wastewater treatment plant needs to file a wastewater change petition”); see also CAL. WATER CODE § 1211(a) (2022) (“Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of any treatment plant shall obtain approval of the [SWRCB]”); *id.* § 1211(b) (“Subdivision (a) does not apply to changes in discharge or use of treated wastewater that do not result in decreasing flow in any portion of a watercourse.”).

280. See SWRCB, *supra* note 208; see also *Nat’l Audubon*, 658 P.2d at 727–29 (recognizing that the State’s protection of public trust resources for public use extends only so far as doing so is feasible).

281. See *Colberg Inc. v. State ex rel. Dep’t of Pub. Works*, 432 P.2d 3, 12 (Cal. 1967).

282. *Id.*

potential commercial effects of reducing flows in the LA River if LA can recycle 100 percent of its wastewater.

As explored in Part II.B, private, state, and federal actors have invested in restoration and revitalization projects along the LA River. Developers have taken a particular interest in the LA River near segments with bustling green space, such as the Elysian Valley near the Glendale Narrows.²⁸³ But commercial interest has expanded to concretized areas as well, such as in LA's Chinatown.²⁸⁴ While high-end apartments have already been built along the LA River,²⁸⁵ two recently proposed development projects received special attention due to their size and economic opportunity—Casitas Lofts and Elysian Lofts. Casitas Lofts was a proposed residential development project of up to 419 units that would feature commercial activity (e.g., restaurants and offices) immediately along 5.7 acres of the LA River.²⁸⁶ The Casitas Lofts project will no longer be built following advocacy by a coalition that included local residents and organizations such as Friends of the LA River.²⁸⁷ The Elysian Lofts project is a much larger proposed effort hoping to bring six residential buildings along the LA River near Los Angeles State Historic Park.²⁸⁸ The Casitas and Elysian Lofts are particularly infamous because they have threatened to displace many families that have lived adjacent to the LA River for generations and could constrain future restoration or green-space projects in the area.²⁸⁹ However one feels about

283. See, e.g., *LA River Becomes a Hot Property*, THE EASTSIDER (May 23, 2019), https://www.theeastsiderla.com/real_estate/development/l-a-river-becomes-a-hot-property/article_a76e6081-31ca-5c53-bfca-53f55a6e4073.html [https://perma.cc/KB5M-VJ38] (listing "LA River-adjacent properties . . . being developed or up for sale or lease" in Elysian Valley as of the time of writing); JONES LANG LASALLE IP, INC., *REINVENTING THE LOS ANGELES RIVER THROUGH PUBLIC AND PRIVATE PARTNERSHIP* 1–12 (2015), https://marketing.joneslanglasalle.com/SouthWest/Research/InvestmentOutlook_LARiver_Report_2015.pdf (comprehensive report detailing potential redevelopment opportunities in an 11.5-mile stretch of the LA River, including Elysian Valley).

284. See Damon Nagami, *Planning for Equitable Development Along the LA River*, NAT. RES. DEF. COUNCIL (July 23, 2019) [hereinafter *Planning for Equitable Development Along the LA River*], <https://www.nrdc.org/experts/damon-nagami/planning-equitable-development-along-river> [https://perma.cc/T5LH-RVV3].

285. The apartments at 1901 W. Blake Ave. in Frogtown are an example. Steven Sharp, *LA River-Adjacent Apartments Fully-Framed in Frogtown*, URBANIZE L.A. (Jan. 3, 2022), <https://la.urbanize.city/post/la-river-adjacent-apartments-fully-framed-frogtown> [https://perma.cc/HHK2-4JNL].

286. See *2800 Casitas Avenue Project (Formerly the Bow Tie Yard Lofts Project)*, L.A. CITY PLANNING, <https://planning.lacity.org/development-services/eir/2800-casitas-avenue-project-formerly-bow-tie-yard-lofts-project-0> [https://perma.cc/PT4U-RD5J].

287. See Damon Nagami, *Developer Withdraws Casitas Project in Win for LA River*, NAT. RES. DEF. COUNCIL (Feb. 22, 2022), <https://www.nrdc.org/experts/damon-nagami/developer-withdraws-casitas-project-win-river> [https://perma.cc/E3F7-K4XM].

288. See *Planning for Equitable Development Along the LA River*, *supra* note 284.

289. See *id.* (stating that the Elysian Lofts and the (now-defunct) Casitas Lofts "are bellwethers of potential displacement and gentrification of the area, and do not" facilitate "safe and meaningful

redevelopment efforts in LA River-adjacent spaces, it is clear that at least some members of the public have a commercial interest in the river—a clear public trust use.²⁹⁰

Development along the LA River is likely supported by the river's provision of recreational activities and green space.²⁹¹ If LA can reclaim all the wastewater effluent that enters the LA River above these areas, much of the riparian habitat and scenic atmosphere attracting new residents and commercial enterprises will be impacted.²⁹² Therefore, in assessing whether it should allow LA to reduce wastewater flows into the LA River from the Tillman and LA-Glendale plants, the State Water Board should consider the commercial activity that has occurred, and has yet to occur, along the LA River across a variety of flow scenarios—no flow, substantially reduced flows, and current flow levels.

If private developers stand to lose investment value if the LA River loses its instream flows, government investment will suffer, too. For instance, in 2017, the city of LA purchased 42 acres of land adjacent to the state-owned portion of Taylor Yard²⁹³ for \$60 million seeking to “develop a combination of park space, walking trails, wetlands, wildlife habitat, river access, public recreation, and other amenities.”²⁹⁴ The purchase of land was just the beginning. Current estimates place the project's cost at more than \$1 billion.²⁹⁵

It appears that government decision-makers continue to assume that the LA River will maintain instream flow levels capable of supporting wildlife and ecological restoration, but flow reductions may negatively affect their plans.²⁹⁶ In January 2022, local leaders announced that the LA River Ecosystem Restoration Project, which seeks to restore eleven miles of the LA River from Griffith Park to Downtown LA (including in the Taylor Yard area),²⁹⁷ is slated

access to[] the river” or “protect critical river and watershed functions.”); *see also FOLAR and Coalition Partners Request Comment Window Extension for Casitas Lofts*, FRIENDS OF THE L.A. RIVER (Feb. 5, 2020), <https://folar.org/casitas/> [<https://perma.cc/S4BD-SMNC>] (urging real estate developers to engage with the diverse community surrounding the proposed development).

290. *See Colberg Inc. v. State ex rel. Dep't of Pub. Works*, 432 P.2d 3, 12 (Cal. 1967).

291. *See JONES LANG LASALLE IP, INC.*, *supra* note 283, at 5–7 (reviewing opportunities to increase greenspace and recreation that will benefit “all property types along the river”).

292. *See Wolfland et al.*, *supra* note 78, at 2–3.

293. LA's planned project is in Cypress Park and Glassell Park (Northeast LA) and has been identified as “a large opportunity for open space, access, ecosystem services, and habitat along the LA River.” LA RIVER MASTER PLAN, *supra* note 7, at 361.

294. Nathaniel Bahadursingh, *The Cost of LA River Park's Taylor Yard G2 Project Could Surpass \$1 Billion According to New Bureau of Engineering Study*, ARCHINECT (May 4, 2022), <https://archinect.com/news/article/150308811/the-cost-of-la-river-park-s-taylor-yard-g2-project-could-surpass-1-billion-according-to-new-bureau-of-engineering-study> [<https://perma.cc/PN4J-ZKTQ>].

295. *Id.*

296. *See Wolfland et al.*, *supra* note 78, at 2–3 (listing species that may be impacted by flow reductions).

297. *See* Steven Sharp, *LA River Restoration Gets \$28 Million from Federal Infrastructure Bill*, URBANIZE L.A. (Jan. 20, 2022), <https://la.urbanize.city/post/la-river-restoration-gets-28-million-federal-infrastructure-bill> [<https://perma.cc/CS35-VGJ2>].

to receive \$28 million in federal funding.²⁹⁸ The funding will go towards “restor[ing] hundreds of acres of habitat along the river, add[ing] trails to connect people with nature and the river, and support[ing] equity, environmental justice, and climate resilience for underserved communities that are adjacent to the river.”²⁹⁹

But what will come of these public trust-protected investments if the Tillman and LA-Glendale plants stop supplying the LA River with clean wastewater effluent? If the river’s instream flows cannot support aquatic species and the wildlife that depends on them, what species will benefit from these investments? As such, the State Water Board should consider the commercial impact on both private developers and governmental investments before allowing LA to reduce wastewater discharges into the LA River.³⁰⁰

B. *Recreational Concerns*

Consistent with the idea that public trust uses are sufficiently flexible to change with the public’s evolving needs,³⁰¹ the contours of what uses qualify as recreation under the public trust doctrine have become extensive. For instance, the California Supreme Court included scenic value as a public trust use in *National Audubon*.³⁰² Shortly thereafter, a California court recognized “kick[ing] back and enjoy[ing] the sights, sounds, and the smells” of a public resource as beneficial uses under the public trust doctrine.³⁰³

As noted previously, the urban areas of the LA River downstream from the Tillman and LA-Glendale plants are bursting with public recreational activity that can depend on the presence of instream flows.³⁰⁴ Researchers have used flow gauge data and social media to make a critical determination: “there [is] a significant relationship between the likelihood of use and flow volumes for

298. See *id.*; Cameron Edinburgh, *Rep. Gomez Announces \$28 Million in New Funding For LA River Ecosystem Restoration Project*, REPRESENTATIVE JIMMY GOMEZ CAL.’S 34TH DIST. (Jan. 19, 2022), <https://gomez.house.gov/news/documentsingle.aspx?DocumentID=2542> [https://perma.cc/D6CM-DWLR].

299. Edinburgh, *supra* note 298.

300. See *Colberg Inc. v. State ex rel. Dep’t of Pub. Works*, 432 P.2d 3, 12 (Cal. 1967); *Nat’l Audubon Soc’y v. Super. Ct.*, 658 P.2d 709, 728 (Cal. 1983).

301. See *Nat’l Audubon*, 658 P.2d at 728–29; see also Michael C. Blumm & Thea Schwartz, *Mono Lake and the Evolving Public Trust in Western Water*, 37 ARIZ. L. REV. 701, 709 (1995) (“A second important aspect of [*National Audubon*] is the court’s declaration that the purpose of the public trust doctrine was coincident with changing public needs. . . . [P]ublic trust purposes . . . change with the felt necessities of the current generation.”).

302. See *Nat’l Audubon*, 658 P.2d at 719.

303. Brian E. Gray, *Ensuring the Public Trust*, 45 U.C. DAVIS L. REV. 973, 992 (2012) (quoting Reporter’s Transcript of Judge’s Ruling, Putah Creek Water Cases, Judicial Counsel No. 2565 (Sacramento Cnty. Super. Ct. filed Apr. 8, 1996)).

304. See *supra* Part I.B. and accompanying notes.

photography and educational activities.”³⁰⁵ And even at current wastewater discharge levels, the baseline flow levels in the Glendale Narrows are at the lower end of the instream flow volume recommended to support kayaking in the area.³⁰⁶ Studies also suggest that decreases of wastewater discharges into the LA River could conceivably negatively impact the river’s suitability for current and future fishing activity,³⁰⁷ particularly in the Glendale Narrows³⁰⁸ where instream ecological conditions may be more sensitive to changes in discharges.³⁰⁹ Reductions in wastewater discharges may also affect the public’s ability to watch birds and view wildlife along the LA River if its local habitat can no longer support the aquatic and non-aquatic organisms that feed them.³¹⁰ Even slight changes in wastewater discharges may adversely impact the public’s ability to kayak or fish in the LA River in summer months.³¹¹ It is also important to note that these effects may be particularly harmful to the adjacent park-poor and historically underserved communities that can rely on the river to recreate.³¹²

Therefore, because of the close relationship between instream flows in the LA River and the likelihood of the occurrence (or even possibility, in the case of kayaking in the Glendale Narrows) of recreational activity, the State Water Board must consider the impacts of increasing wastewater reuse at the Tillman and LA-Glendale plants on the LA River’s flows. A comprehensive review of the relevant scientific literature is necessary to achieve this assessment meaningfully. The State Water Board should also recognize that the LA River’s

305. Sanchez & Stein, *supra* note 87, at 7. However, it worth noting that the researchers also found that there was a negative relationship between flow volume and the presence of educational activity at the river. *Id.*

306. Wolfland et al., *supra* note 78, at 7.

307. See Sanchez & Stein, *supra* note 87, at 1–2 (concluding that “water depths ranging from 6–36 inches are needed to sustain activities such as . . . fishing activities” even though experts have had difficulty identifying precise flow requirements to support current and future fishing use).

308. See *id.* at 3, 6 (stating that fishing activity was “dependable” along LA River reaches 1, 3, 4, and 5 at various points, which includes the Glendale Narrows); see also Wolfland et al., *supra* note 78, at 3–4 (noting that both the Glendale Narrows and lower reaches of the LA River support fishing activities).

309. See Wolfland et al., *supra* note 78, at 9–10.

310. See *id.* at 7, 9–10 (concluding that this may be particularly the case in dry seasons, when the LA River is most reliant on wastewater effluent).

311. See *id.* at 7–8; see also Sanchez & Stein, *supra* note 87, at 2, 27 (writing that some experts noted that “boating” conditions were best “when releases from . . . POTW [e.g., wastewater treatment plants] provide enough water for kayaking”).

312. See Sahagún, *supra* note 8 (“Critics . . . warn that [increasing wastewater recycling] will lead to a grim domino effect: . . . [that] popular riverside activities including hiking, bicycling, fishing, and kayaking will disappear in some of the most densely populated, park-poor areas in the United States.”); see also Madeline Tolle, *Documenting Los Angeles’s Unlikely Urban Fishermen*, N.Y. TIMES (Jan. 31, 2022), <https://www.nytimes.com/2022/01/31/travel/urban-fishing-los-angeles.html> [https://perma.cc/U3YW-JJ27] (describing fishing in the Elysian Valley); Lisa Seidman & Andrew J. Campa, *Fishing in the L.A. River Is More than a Quarantine Hobby. For Some, It’s Therapy*, L.A. TIMES (Aug. 4, 2020), <https://www.latimes.com/california/story/2020-08-04/la-river-fishing-safe-respite-covid-19> [https://perma.cc/U6H4-RRPD] (describing fishing on the LA River as a pandemic-era escape).

baseline conditions are not necessarily its ideal conditions. As such, the State Water Board cannot treat current conditions as equivalent to river health. The State Water Board should also consciously include environmental justice in its analysis of the potential impacts on recreational use.

C. Ecological Concerns

In its public trust review of a proposed project's 1211 Change Petition, the SWRCB Division of Water Rights assesses "all claims of instream water needs" to determine whether any treated wastewater entering a stream must remain there to support ecological health.³¹³ The SWRCB requires all wastewater change petitioners to send the California Department of Fish and Wildlife a copy of their change petition so that the Division of Water Rights can assess Department of Fish and Wildlife's evaluation of a stream's flow needs, along with other sources of information.³¹⁴ The SWRCB recognizes that "[s]ome stream system's flows and the associated ecosystems are dependent on wastewater discharge during portions or all of the year. Due to the variability of stream conditions and species involved, the scope of the analysis is determined on a [case-by-case] basis."³¹⁵

The State Water Board's analysis of the effects of allowing LA to recycle all its wastewater from the Tillman and LA-Glendale treatment plants on the ecological health of the LA River will necessitate nuance. Unlike some wild waters, the LA River is not healthy.³¹⁶ Because stormwater runoff comprises 10 percent of the river's instream flows, a significant portion of the water entering the river contains pollutants harmful to human and aquatic life.³¹⁷ However, the LA River does have an ecosystem—studies have shown that there is life even in concretized or heavily degraded segments.³¹⁸ Soft-bottomed river segments like the Glendale Narrows even support relatively strong riparian habitats for insects, fish, and migratory birds.³¹⁹ Even beyond current ecological conditions, the LA River Master Plan lists ecological restoration as a key component of revitalizing the LA River, which will necessarily involve the support of instream flows.³²⁰ Therefore, in conducting its public trust analysis about the ecological use of the

313. *FAQs*, STATE WATER RES. CONTROL BD. (Nov. 7, 2022), https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/faqs.html [<https://perma.cc/G2NM-Y3RT>] (including quote in section pertaining to "What is evaluated in determining whether any of the treated wastewater will need to remain instream to satisfy environmental concerns?").

314. *Id.* Other sources include CEQA information provided by the petitioner and information brought by protestants. *Id.*

315. *Id.*

316. *See supra* Part I.B.

317. *See* Sahagún, *supra* note 8; Shaham, *supra* note 109.

318. *See* MAYRHAUSER, *supra* note 106, at 36.

319. *See* LA RIVER MASTER PLAN, *supra* note 7, at 102. But of course, this does not mean that these sections are necessarily ecologically healthy. *See* MAYRHAUSER, *supra* note 106, at 36–37.

320. *See* LA RIVER MASTER PLAN, *supra* note 7, at 178–82.

LA River, the State Water Board should not limit itself to the river's current conditions, especially while restoration projects are planned or underway.

Multiple studies have shown that even slight increases in wastewater reclamation at upstream wastewater treatment plants may negatively impact habitat for critical indicator species in the LA River.³²¹ For example, as little as a 4 percent reduction in wastewater effluent entering the LA River from the three wastewater treatment plants situated by the LA River could impact sensitive flora in the LA River during the dry season.³²² On the other end of the spectrum, an 87 percent decrease in wastewater discharges entering the LA River at these points was projected to allow only one ecological beneficial use in the LA River: willow trees.³²³ Interestingly, the ecologies of the lower reaches of the LA River would not be as drastically impacted by increases in wastewater reclamation as ecological hotspots such as the Glendale Narrows.³²⁴ Researchers have suggested that wastewater discharges can be significantly reduced from current levels “without impacting suitability for steelhead migration and green algae.”³²⁵

Species-by-species or habitat-by-habitat assessments of the ecological ramifications of allowing LA to recycle all its wastewater from the Tillman and LA-Glendale plants may be inappropriate for the State Water Board to rely on alone. Thus, the State Water Board should recruit community and ecological experts to help piece the puzzle together.³²⁶ It should also consider the relationship between wastewater discharge and pollution concentrations in the LA River; in California, water quality is a protected use under the public trust doctrine.³²⁷ For instance, researchers recently found that increasing wastewater reuse at the Tillman, LA-Glendale, and Burbank treatment plants could increase concentrations of several pollutants in the LA River, at least in part because there is less treated wastewater to dilute them.³²⁸ Lastly, the State Water Board should also consider the finality that can accompany choices to affect habitats negatively—after all, regional decision-makers are still working to restore the LA River decades after the Army Corps covered it in concrete.³²⁹

The previous Sections in Part IV have thus far established that if LA reduces wastewater discharges into the LA River from the Tillman and LA-

321. See Wolfland et al., *supra* note 78, at 1.

322. See *id.*

323. Of course, this conclusion is limited to the beneficial uses included in the study. *Id.* at 9.

324. See *id.* at 9.

325. Green algae support the prey that wading birds rely on. *Id.* at 6, 9.

326. This is particularly true because studies have shown that river segments may be more or less sensitive to reductions in wastewater effluent during different seasons. See *id.* at 3, 8–9.

327. See *United States v. State Water Res. Control Bd.*, 227 Cal. Rptr. 161, 201 (Cal. Ct. App. 1986).

328. Wolfland, *supra* note 8, at 1309, 1316–17.

329. See, e.g., LA RIVER MASTER PLAN, *supra* note 7, at 18 (describing the updated LA River Master Plan as “building on [a] history of planning [that] includes over two decades of planning and implementation efforts” to revitalize and restore the LA River).

Glendale plants in its effort to recycle 100 percent of its wastewater, this reduction in wastewater effluent will very likely negatively impact several traditional, recreational, and ecological uses of the river. Given this information, LA must undergo the 1211 Change Petition process, which requires the State Water Board to perform a public trust doctrine analysis before it can allow LA to proceed with its wastewater reuse plans.³³⁰ But how does the State Water Board balance the need to increase wastewater recycling with protecting the river's public trust uses? Part IV.D addresses this important question.

D. Is Protecting the LA River Feasible?

The feasibility analysis baked into the SWRCB's obligation to consider public trust uses before creating or altering water rights is a powerful policy-making tool. While *National Audubon* confirmed that the State "has an affirmative duty to take the public trust into account in the planning and allocation of water resources" and protect public trust uses wherever feasible,³³¹ subsequent public trust cases in California have clarified that the State Water Board has the *discretion* to balance public trust uses with competing beneficial uses, so long as its ultimate decision is consistent with the public interest.³³² As long as the State Water Board can show it is serving the public interest—whichever interest that may be—by meaningfully analyzing relevant information, courts typically allow the State Water Board's public trust analysis to stand.³³³ Because of the significance of the State Water Board's discretion in reaching its conclusion, the next Section hopes to provide a preliminary overview of the different outcomes the SWRCB should consider.

It will not be easy to decide whether to allow LA to dramatically increase wastewater reuse at its upper river wastewater plants. Much like in *Light v. State Water Resources Control Board*, which involved a contest between the public interest value of salmonoids in the Russian River and the beneficial use of water to protect rights holders' vineyards,³³⁴ the State Water Board will be confronted by competing public uses in this case. As the preceding Sections have shown, even slight reductions in wastewater discharge entering the LA River from these plants may adversely affect public trust uses in the LA River. Many of the public trust uses of the LA River are historically and culturally significant. The urban portion of the river runs through seventeen cities and provides millions of diverse Angelenos open space, recreational opportunity, and unique riparian

330. See SWRCB, *supra* note 208.

331. *Nat'l Audubon Soc'y v. Super. Ct.*, 658 P.2d 709, 728 (Cal. 1983).

332. *State Water Res. Control Bd. Cases*, 39 Cal. Rptr. 3d 189, 272 (Cal. Ct. App. 2006).

333. See *S.F. Baykeeper, Inc. v. State Lands Comm'n*, 194 Cal. Rptr. 3d 880, 892 (Cal. Ct. App. 2015).

334. See *Light v. State Water Res. Control Bd.*, 173 Cal. Rptr. 3d 200, 205–09 (Cal. Ct. App. 2014).

ecosystems.³³⁵ It has taken numerous decades for interest in revitalizing and restoring the LA River to come to the forefront of LA politics; after it was channelized, it was largely forgotten about until the late 1980s.³³⁶ In weighing the feasibility of protecting the LA River's instream flows, the State Water Board should consider this intricate history. However, at the same time, for an arid, drought-prone region like LA, prolonged dry seasons caused by climate change already threaten the imported water supplies on which millions of Angelenos rely.³³⁷ Water is a necessity for life,³³⁸ and wastewater reclamation is undoubtedly a valuable tool to help supplement the region's water supply.³³⁹

Because protecting the LA River and creating a local source of water for Angelenos are both critical uses of water that serve the public interest, the State Water Board should consider whether the region can achieve both goals. Does LA *need* to recycle 100 percent of the wastewater from the Tillman and LA-Glendale plants? Perhaps the LA River could still support most recreational activities and ecological needs with less water?

The answers to these questions likely depend on *how much* wastewater reuse would increase at the Tillman, LA-Glendale, and Burbank plants. For example, if the wastewater treatment plants were to retain 50 percent of the wastewater they currently discharge into the LA River, the Glendale Narrows segment of the LA River would not be able to support kayaking or sensitive aquatic plants but could support willow habitat.³⁴⁰ If current dry season wastewater discharges drop to 30 percent of their current levels, however, the river's suitability for most aquatic habitat dramatically decreases throughout all segments downstream of the wastewater plants.³⁴¹ Researchers have also determined that the LA River would be the least sensitive to wastewater effluent reductions during the rainy season.³⁴² These studies were developed with input from stakeholders throughout the watershed, representing many views.³⁴³ Therefore, these studies could be a useful tool for the State Water Board to use in making its 1211 Change Petition public trust feasibility determinations. After all, the study suggests that the LA River and the beneficial uses its flows support

335. *See generally* Part I.

336. *See id.*

337. *See generally* Mayor Garcetti, *supra* note 2; *Climate Change*, *supra* note 12.

338. *See* CAL. WATER CODE § 106.3 (2012); *see also* *The Human Right to Water in California*, CAL. OFF. OF ENV'T HEALTH HAZARD ASSESSMENT (Jan. 28, 2021), <https://oehha.ca.gov/water/report/human-right-water-california> [<https://perma.cc/D3VK-862N>] (“Since 2012, California law . . . has declared that every person in the state has a right to clean, safe, and affordable drinking water.”).

339. *See* Mayor Garcetti, *supra* note 2; L.A. WATERKEEPER, *supra* note 4.

340. Wolfland et al., *supra* note 78, at 9.

341. *See id.*

342. *Id.* at 8, 9.

343. *Id.* at 9.

could tolerate at least some reductions in wastewater effluent if Angelenos are willing to accept that not every public use may survive.³⁴⁴

The State Water Board should next ask whether reclaiming all the wastewater from the Tillman and LA-Glendale plants is necessary to supplement LA's regional water supply. After all, increasing wastewater recycling is only one strategy to become more water independent. For instance, in 2018, LA County voters passed Measure W (establishing the Safe Clean Water Program) to make more than \$285 million available for projects that "focus on stormwater capture, water quality improvements[,] and community benefits" throughout the county.³⁴⁵ LA has an estimated \$36.57 million in Safe Clean Water Program funds for the 2021-2022 fiscal year alone.³⁴⁶ Investing in stormwater capture can serve many of the same goals as increasing wastewater reuse, including recharging groundwater aquifers.³⁴⁷ More extreme alternative strategies to increase LA's local water supply could also include ocean desalination,³⁴⁸ though desalination is unlikely to play a significant role in LA's water independence anytime soon.³⁴⁹

Even given the alternatives presented to the State Water Board, like limiting full wastewater reuse to wet seasons or limiting additional reuse to preserve effluent in the LA River during prolonged droughts, the State Water Board could still allow LA to recycle 100 percent of its wastewater at the Tillman and LA-Glendale plants. Therefore, LA should consider whether it should do more to protect the public uses of the LA River before it even begins the 1211 Change Petition process. Although Angelenos' visions for the future of the LA River

344. *See id.* at 8-9.

345. LA RIVER MASTER PLAN, *supra* note 7, at 29.

346. SAFE CLEAN WATER PROGRAM, SAFE CLEAN WATER PROGRAM FY 2021-2022 LOCAL TAX RETURN ESTIMATED LOCAL TOTAL: \$112.54M 1, <https://safecleanwaterla.org/wp-content/uploads/2021/12/FY-21-22-Estimated-Local-Funds-by-Municipality-20211021.pdf> [<https://perma.cc/62HV-GSHZ>].

347. *See* LA RIVER MASTER PLAN, *supra* note 7, at 229; *see also Let's Talk: REUSE Investing in Multi-Benefit Stormwater Capture and Use*, L.A. WATERKEEPER (Nov. 4, 2021), <https://www.lawaterkeeper.org/news/reuse-stormwater> [<https://perma.cc/AA5J-U2HW>] (discussing the role that stormwater capture could play in LA's water future through the Safe Clean Water Program, including "help[ing to] infiltrate water into our depleting aquifers, contributing to cleaner air, and reducing the heat island effect by providing shade"). In fact, a greater use of stormwater capture may be less energy-intensive than wastewater recycling because wastewater treatment plants use a lot of energy to purify wastewater. *See* Angineh Zohrabian & Kelly T. Sanders, *The Energy Trade-Offs of Transitioning to a Locally Sourced Water Supply Portfolio in the City of Los Angeles*, 13 ENERGIES 1 (2020).

348. *See* Hayley Smith, *They Used to Call California Ocean Desalination a Disaster. But Water Crisis Brings New Look*, L.A. TIMES (Nov. 7, 2022), <https://www.latimes.com/california/story/2022-11-07/drought-drives-new-interest-in-desalination> [<https://perma.cc/82VM-D5GJ>].

349. In 2021, the West Basin Municipal Water District Board of Directors voted to terminate its previously proposed desalination project in El Segundo. *The West Basin Ocean Water Desalination Project*, W. BASIN MUN. WATER DIST. (Dec. 2021), <https://www.westbasin.org/desalination/> [<https://perma.cc/KPN8-ED9N>].

deviate widely, the city has spent extensive time and resources to rehabilitate, restore, and revitalize the portions of the LA River that run through its city limits.³⁵⁰ The city should not abandon these efforts to pursue its wastewater recycling plans without considering the potential consequences for the entire region. But of course, politicians often move slowly and do not always represent those most in need of accessible natural spaces. Luckily, private individuals and nongovernment entities have standing under California law to protect public trust resources under the public trust doctrine.³⁵¹ If the city and State ignore calls for a meaningful public trust analysis of the LA River, Angelenos can hold them accountable.³⁵²

CONCLUSION

As Garcetti so aptly described, LA is experiencing an unprecedented “Mulholland moment”.³⁵³ Angelenos are desperately thirsty for local, reliable, and accessible water supplies in the face of catastrophic climate change and prolonged periods of drought.³⁵⁴ Undoubtedly, increasing wastewater recycling from the city’s wastewater treatment plants can help quench this thirst.³⁵⁵ LA is well on its way to substantially increasing water reuse in LA, particularly at its Hyperion plant through the Operation NEXT program.³⁵⁶

But what of the city’s wastewater treatment plants that discharge treated water into the LA River? While there are no Hyperion-sized projects currently slated for either Tillman or LA-Glendale,³⁵⁷ in thinking about how to increase water reuse at these plants, LA cannot repeat Mulholland-era mistakes.³⁵⁸ The LA River is a vital natural resource that knits millions of diverse Angelenos and Californians together,³⁵⁹ providing access to green space,³⁶⁰ recreation,³⁶¹ and ecological habitat³⁶² in the middle of a highly urbanized metropolis. And it just so happens that much of the instream flows that support public activity in the LA River heavily rely on wastewater discharges from the Tillman and LA-Glendale

350. See generally Part IV.A. and accompanying notes; see also LA RIVER MASTER PLAN, *supra* note 7, at 6, 18 (noting that the LA River Master Plan is a twenty-five-year effort that builds on several previous and ongoing projects to revitalize and restore the LA River).

351. See Nat’l Paint & Coatings Ass’n v. State, 68 Cal. Rptr. 2d 360, 365 (Cal. Ct. App. 1997) (“California authority supports the conclusion that a suit by a citizen in the undifferentiated public interest is ‘justiciable,’ or appropriate for decision in a California court.”).

352. See Karrigan Bork, *Targeting Public Trust Suits*, 29 ENV’T L. NEWS 3, 3 (2020).

353. See Newton, *supra* note 189.

354. See generally *Mayor Garcetti*, *supra* note 2.

355. See generally L.A. WATERKEEPER, *supra* note 4.

356. See generally OPERATION NEXT, *supra* note 180.

357. See *id.*

358. See Kim, *supra* note 75, at 39–42.

359. See LA RIVER MASTER PLAN, *supra* note 7, at 17.

360. *Id.* at 106–07.

361. *Id.* at 108–11.

362. *Id.* at 102–05.

wastewater treatment plants.³⁶³ Decision-makers should not ignore that increasing wastewater reuse at these plants will diminish flows in the LA River,³⁶⁴ likely negatively impacting the public interest in this cultural icon.³⁶⁵ Although not foolproof, the State's public trust obligations are an essential stopgap to ensure decision-makers think before they act. In its public trust analysis of LA's future 1211 Change Petitions, which would allow the city to reduce wastewater discharges into the LA River if granted,³⁶⁶ the State Water Board must meaningfully consider the traditional, recreational, and ecological uses of the LA River.³⁶⁷ It must balance the protection of these interests with the projected benefits of allowing LA to move forward with its water recycling plans. This Note does not purport to have an answer as to how to achieve harmony between such competing uses, but it hopes to have explained why this assessment is so critical to preserving (and encouraging) the LA River's role in supporting local plant and animal life, recreational activities, and the expansion of regional open space.

363. See Sahagún, *supra* note 8.

364. See Wolfland et al., *supra* note 78, at 6–9.

365. See Sanchez & Stein, *supra* note 87, at 7.

366. See SWRCB, *supra* note 208.

367. See Nat'l Audubon Soc'y v. Super. Ct., 658 P.2d 709, 728 (Cal. 1983).