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ATTN: Ms Erin Jones, CESPL-PD-RN  
Los Angeles, CA 90053-2325

**Los Angeles River Ecosystem Restoration Feasibility Study, Draft Integrated  
Feasibility Report**

Dear Dr. Axt:

The Santa Monica Mountains Conservancy (Conservancy) commends the City of Los Angeles Bureau of Engineering and the U.S. Army Corps of Engineers' efforts on the Los Angeles River Ecosystem Restoration Feasibility Study, Draft Integrated Feasibility Report (ARBOR) and offers this comment letter regarding the potential for transformation of the Los Angeles River. The Santa Monica Mountains Comprehensive Plan, adopted in 1979 to preserve and protect what is now the Santa Monica Mountains National Recreation Area and other areas, is a direct parallel to the Los Angeles River Ecosystem Restoration. While considered a daunting endeavor at the time, the past three decades have witnessed the investment of \$750 million in land acquisition and park improvements, creating an interlinked system of parkland protecting the mountains' many jewels. River restoration is at a similar moment today: the path forward is long and arduous, but in 30 years our children will look back and view a restored Los Angeles River as an inevitable outcome and an essential part of the City's fabric.

We appreciate the time and efforts the Corps and City have expended to work with the community and prepare the ARBOR study. We have reviewed the report in detail and we are providing comments in support of Alternative 20 presented in the document. While Alternative 13 has been identified in the ARBOR study as the Tentatively Selected Plan, we found this alternative to lack the comprehension in key areas essential for adequate ecosystem restoration of the Los Angeles River.

### **Institutional & Technical Recognition**

“Per USACE Engineering Regulation (ER) 1105-2-100, significance of resources and effects will be derived from institutional, public, or technical recognition,” page xx. The Santa Monica Mountains Conservancy (Conservancy) is listed on pages xxi and 1-13 as being involved in revitalization activities on the Los Angeles River since the 1990s by constructing a series of pocket parks along its banks.

It should also be noted that the Conservancy has invested approximately \$70 Million in building parks along the Los Angeles River and its tributaries to fulfill our mission to strategically buy back, preserve, protect, restore, and enhance treasured pieces of Southern California to form an interlinking system of urban, rural and river parks, open space, trails and wildlife habitats that are easily accessible to the general public. Since 1980, the Conservancy has preserved over 69,000 acres of parkland in both wilderness and urban settings, and has improved more than 114 public recreational facilities throughout Southern California. We should also be recognized as an institute at the forefront of science-based open space preservation and habitat restoration in the 2<sup>nd</sup> largest metropolis in the nation. The ecosystem restoration proposed in ARBOR is consistent with two of our framework landscape planning documents:

- *Santa Monica Mountains Comprehensive Plan (1979)*
- *Common Ground from the Mountains to the Sea, San Gabriel and Los Angeles River Watershed and Open Space Plan (2001)*

The Common Ground plan is cited in ARBOR on pages 1-16. We urge you to consider adding the Santa Monica Mountains Comprehensive Plan as it demonstrates the importance of riparian habitat restoration and connections to the biodiversity (biological diversity) of the Santa Monica Mountains.

Additionally, we have funded the following studies and reports that should be reviewed as part of ARBOR:

- *Harvard Graduate School of Design Studio, Los Angeles River (2002)*
- *Harvard Graduate School of Design Studio, Supernatural Urbanism (2003)*
- *UC Berkley College of Environmental Design Studio, The Los Angeles River Urban Wildlife Refuge a vision for parks, habitat, and urban runoff (2005)*
- *Friends of the Los Angeles River and the Los Angeles River Revitalization Corporation's, Piggyback Yard Feasibility Study (2013)*

By all accounts, the current state of the Los Angeles River is **unacceptable and degraded**. On pages 2-17 through 2-19, ARBOR enumerates the ecological problems with the River especially as impacted by urbanization and flood risk management. The need for restoration is demonstrated by our institutional and technical recognition of the importance of the Los Angeles River and its tributaries to the region's ecosystem function and resiliency.

### **Public Recognition**

The Conservancy has funded nature education programming in the ARBOR study area for **more than 20 years**, serving thousands of children and their families. These programs include public campfire programs at pocket parks along the River, 12-week Junior Ranger Programs with community-based partners, field trips for local schools and organizations, and interpretive programs for all ages. One pre-school program is even called "Mommy, the River and Me." The popularity of these programs, serving and audience that is both local and regional, illustrates a widespread interest and engagement on the part of the public.

### **Importance of Connectivity**

Per page 6-3, the ARBOR study objectives are: 1) Restore Valley Riparian Strand and Freshwater Marsh Habitat; 2) Increase Habitat Connectivity; and 3) Increase Passive Recreation. Despite these clear goals, the value of the ecosystem restoration appears to have been determined solely using the Combined Habitat Assessment Protocols (CHAP) model. The CHAP model is designed to address wildlife habitat on a site-specific basis but does not capture values for restoring wildlife connectivity and hydrologic connectivity. These connectivity values are critical to achieving resilient and sustainable ecosystem restoration. The CHAP model is insufficient because it does not properly consider the richness of this biodiversity hotspot, the rarity of the region's Mediterranean climate, or the intense habitat destruction and overdevelopment in the second-largest city in the United States. These are values that were essentially eliminated when the Los Angeles River was channelized and that must be considered in reaching a decision on a meaningful ecological restoration alternative. Pre-channelization values can be and need to be recreated.

As a primary example, a principal value not considered by the model is the enormous benefit of connecting major tributary and mountainous areas to the river. The quality of connectivity provided by river restoration is of exceptional significance because it provides opportunity for the greatest diversity of plants and animals from water-loving species to upland species. Having spoken with several members of the Corps/City/resource agencies team who designated specific values for the model, we believe these connections were not valued or weighted in the model. Our determination is verified in Section 6.3 Objectives Comparison of Alternative Plans, page 6-8 and in Appendix G: Habitat Evaluation (CHAP), page 61, Section 9.0, the last paragraph, which recognizes the *“Additional benefits not captured in CHAP were used to evaluate and compare the final array of alternatives. These benefits include hydrologic connectivity to support biotic and abiotic functions, and nodal connectivity to support wildlife movement and dispersal. An assessment of these benefits is applied outside of the CHAP analysis as part of the environmental impact analysis.”* While the document compares the alternatives, we did not find evidence to support selection of Alternative 13 over Alternative 20 except the cost differential. In fact, we find much evidence in the document that supports selection of Alternative 20 for these other benefits that are not captured in the CHAP model. The discussion of Wildlife Connectivity in Section 7.1.2 of Appendix G: Habitat Evaluation (CHAP), page 59, clearly supports selection of Alternative 20 because it best meets the need and criteria presented in the document.

The key paragraphs supporting the selection of the more robust connectivity in Alternative 20 state:

*“Generally, nodes have a greater overall interaction when they are larger and closer together (Linehan et al 1995). Well connected systems prevent inbreeding depression and disease, and have a lower extinction rate as populations can more easily colonize if they are highly connected (Noss 1983; Schippers et al 1996). Without connections between habitat areas, isolation and loss of genetic diversity is imminent (Hobbs & Saunders 1990).”*

*“In order to benefit the biological integrity of a landscape, corridors should be restored to allow for dispersal between habitat areas. More corridors equal more routes to suitable habitat, creating more opportunities for dispersal. A complex network of nodes and corridors is therefore critical to restoration in an urban environment, as suitable habitat often remains unused if isolated (Hanski & Thomas 1994).”*

A well-balanced ecosystem needs these mountainous connections to be sustainable genetically and in terms of food, cover, refuge, and territories for the flora and fauna that once thrived in and along the Los Angeles River. Connectivity greatly influences the distribution of species on the landscape, the distribution of a single species, and the distribution of genetics or gene flow. Discontinuous fragments or nodes of habitat change the organisms and their relationships, especially in the food chain. The connectivity to other large expanses of habitat ensures ecological resiliency and long term sustainability. It is precisely these types of historic connections and corridors provided in Alternative 20 that could enable the reintroduction of Steelhead Trout and other native species into and adjacent to the River by restoring the historic aquatic habitat that once existed in this area.

Improving the habitat and the connections to the River, particularly transitions to large open space areas is important. Habitats on both sides of the River, tributaries, and other expanses of land create corridors that mammals, birds, reptiles, and other species heavily utilize. Medium and large mammals cross the Los Angeles River and are monitored by the Natural History Museum (NHM). The habitats, substrate, and hydrology on those corridors play important roles in the connections these animals use.

Verdugo Wash and Piggyback Yard are of particular importance in creating a sustainable ecosystem. The Verdugo Wash tributary to the Los Angeles River northeast of Griffith Park connects both of these waterways to the San Rafael Hills and the Verdugo Mountains. The River corridor to the mountains provides life-supporting connections for the animals in the ecosystem. During times of biological stress caused by urbanization, fires, floods, and climate change, the survivability of plant and animal life and sustainability of the ecosystem depends on the large expansive connections of the rivers and mountains. The benefit of connectivity of the Verdugo Wash to the mountains is a critical component of any ecosystem plan and must be included in the Federal project.

Alternative 20 also increases connectivity through the Los Angeles River State Historic Park (Cornfields) to the Elysian Hills. The hydrologic connection from the Cornfields site would be restored with terracing to the Los Angeles River. Wetlands would be restored at this site.

The Alternative 20 restoration plan for Piggyback Yard is important because it connects the Los Angeles River with over 100 acres of open space by removing concrete from the

channel and replacing it with terracing and new riparian habitat in a highly urbanized area of the City. Alternative 13 retains the concrete channel wall, which limits the usefulness of Piggyback Yard to only creatures that can fly or terrestrial species that can scale the channel wall. Alternative 20 creates an important hydrologic connection between upland restoration and the River at Piggyback Yard, Verdugo Wash and the State Historic Park. Water quality and temperature is a primary objective when restoring for riverine species, especially fish, which need shaded, cool pools of water for reproduction. The value of land and water connectivity to the ecosystem is again the biodiversity created and the ability of species to find refuge in biologically stressed situations. To this end, Alternative 20 includes daylighted stormdrains, which provide opportunity for an increase of plants, of which a co-benefit is improved water quality and cool water temperature to improve habitat quality.

Alternative 20 provides the greatest connectivity of the final four plans. Alternative 20 adds 205% connectedness in the Study Area over Alternative 13. The restoration of a more natural connection to Verdugo Wash substantially enhances the benefits of the ecosystem restoration by providing connectivity for wildlife and plants into the historic floodplain of the Verdugo Wash and into the Los Feliz Golf Course, the Verdugo Mountains, and the San Gabriel Mountains.

As stated on page 6-27 of the Integrated Feasibility Report:

*“Restoration of the Verdugo Wash confluence would also provide 34 acre habitat node in the Study Area, with connectivity to the Los Feliz Golf Course via existing habitat in the Glendale Narrows (Figure 6-11) and connectivity through the downstream reaches. The added restoration at the Cornfields site in Reach 7 provides a 9 acre riparian habitat node that decreases the distance between habitat nodes in the resource poor downtown area (Figure 6-11). In Alternative 20, local habitat connectivity would increase 120% within the study area over Alternative 16, through restoration of the natural hydrology and habitat at the Verdugo Wash site and its connection to Taylor Yard via existing in-channel habitat in the Glendale Narrows, as well as through restoration of hydrology and habitat at the Cornfields site, which adds a habitat node and decreases distance between nodes in the resource poor downtown area.”*

*“Alternative 20, in addition to the regional connectivity in Alternative 13, adds the Verdugo Wash tributary, which provides a future connection between the LA River and the Verdugo Mountains, a connection that also historically supported a habitat corridor for movement of wildlife. Urbanization has eliminated this habitat corridor,*

*and without restoration of the confluence at Verdugo Wash reconnection of the river to the Verdugo Mountains could not be realized. Restoration at the Verdugo Wash confluence would restore opportunity for passage to the Verdugo Mountains, a 26 square mile area serving as a stepping stone to the western San Gabriel Mountains (Figure 6-12). Additional habitat in the community of San Rafael Hills could also be incorporated into the movement corridor as a regional habitat node. Regional habitat connectivity is further improved by restoring connections between the river and the 575-acre habitat node at Elysian Park via restoration of the Cornfields site.”*

These connections to large areas of land create connectivity of habitats and species. By providing connections between habitat areas, corridors enable wildlife migration and breeding of plants and animals. As a general rule, the wider the corridor, the better because of the ability to include multiple habitat zones in the restoration activities. Wider corridors also suffer fewer impacts from adjoining land uses and have fewer edge threats from invasive weeds and predators. Additionally, the multiple large habitat areas provided in Alternative 20 will enable populations to survive and repopulate after disasters impacting the main stem of the Los Angeles River. Thus, the habitats and species will be more resilient and self-sustaining over the life of the project.

The CHAP model should be considered as an important tool in the planning process, but should not be the only or primary factor used in selecting the alternative plan. The model itself is probably as good as any other; it just did not recognize the appropriate weighted value of other ecosystem restoration benefits. For example, the inclusion of the Verdugo Wash and Piggyback Yard, coupled with the other elements of the Alternative 20 plan, provides double the length of channel restoration as Alternative 13, and would demonstrate an exponential benefit in the ultimate sustainability of the entire ecosystem.

### **Importance of Biodiversity**

California is part of the Mediterranean ecosystem, which only covers 2% of the Earth's land surface, yet accounts for 20% of all known plant species. The California Floristic Province has been declared a “hotspot” by the non-profit Conservation International. To qualify as a hotspot, a region must meet two strict criteria: it must contain at least 1,500 species of vascular plants (> 0.5 percent of the world's total) as endemics, and it

has to have lost at least 70 percent of its original habitat. Today only 24% of California's original vegetation remains in more or less pristine condition.

ARBOR does not cite important local studies authored by highly respected biologists and others. The Feasibility Study concludes that few Federally-listed species are found in the Los Angeles River area. No State species of concern are listed. We recommend looking at the species whose range is biogeographically in the surrounding areas, mountains, and tributaries. Habitat loss and fragmentation lead to a breakdown in ecological processes such as wildlife migration, seed dispersal, pollination of plants, and other natural functions that are essential for ecosystem health. The result is decline in biodiversity and local extinction of sensitive species. Habitats should be created and managed to enable the reintroduction of the native species that once inhabited the Los Angeles River basin. The studies show there are many species that are progressively "blinking out" or being extirpated from the LA River system because channelization and urbanization have diminished their habitat dramatically over the last 50 years. The Corps has the opportunity now to lead the way to substantial and meaningful restoration for many of these species by implementing Alternative 20.

Alternative 20 significantly increases the amount of habitat restored. Alternative 13 restores 588 acres of habitat compared to 719 acres restored in Alternative 20. More importantly, the quality of the restoration is significantly superior in Alternative 20 than in Alternative 13. The Piggyback Yard is an excellent example of the improved quality of habitat created through Alternative 20 versus Alternative 13. Both alternatives claim the 113 acres for restoration of the Piggyback Yard. Alternative 13 does not include channel modifications but uses the existing storm drains in the channel wall to convey flows from the historical wash. In Alternative 20 (Page 4-58) "*the historical wash would be restored through the property with a riparian fringe as well as other side channels, and river flows would be diverted out of the River into Piggyback Yard creating a large wetland area. A railroad trestle would be included with this alternative to allow the described restoration to occur and allowing for the connection of the river channel and the adjacent restored areas.*" The Los Angeles River would primarily connect birds to the site because mammals, reptiles, and other wildlife that cannot fly will not be able to scale the wall to connect to the restored Piggyback Yard. The minimal connections through the storm drains in Alternative 13 do not perform the same value or quality of restoration as Alternative 20. Alternative 20 removes the concrete wall and the restores the hydrological connection in a more natural way than the culverts through concrete wall.



Alternative 20 reintegrates the hydrology and biology from the Piggyback Yard with the Los Angeles River.

The Cornfields site is another good illustration of the quality of restoration. In Alternative 13, Reach 7, the channel wall remains in place with vegetation being planted on the top of the bank in planter boxes. This will improve the aesthetics, but will not improve the habitat and wildlife value much. However in Alternative 20, the wall is removed and replaced with terracing; freshwater marsh and/or wetlands are restored; and the site is connected under a railroad trestle to the main channel of the Los Angeles River. This reconfiguration costs more but results in a far greater quality of habitat than Alternative 13. Higher valued habitats are achieved because of the restored hydrologic connection and the redesign of the habitat connections through terracing and streams. Thus, both the quantity and quality of restoration is greatly enhanced in Alternative 20. Additionally, as noted in Section 4.14.1, page 4-51, Alternative 20 represents "*the most intensive and largest footprint of restoration*" of the four final plans.

### **Considerable Co-benefits**

Other values also should be considered in the decision in determining an adequate alternative. These include air quality benefits in a heavily stressed air quality region, hydrologic values, river water quality and storm water capture, which are essential to sound habitat restoration. Another value to be considered is the human environment and diverse minority communities, in particular, in a city with seriously inadequate open space and recreational opportunities.

### **The Value of Recreation**

Per page 6-3, the third ARBOR study objective is to Increase Passive Recreation. As a local agency, we know there is a great demand for active and passive recreation in the adjacent neighborhoods. In America's second largest city there is a serious lack of open space and recreational opportunities. We urge the Corps to revise the proposed recreation plan for Alternative 20. The recreation plan should take advantage of such locally popular passive recreation opportunities as kayaking, bicycling, hiking, bird-watching and community gathering by maximizing the relationship between nature and people. The recreation plan will be the way the Corps garners public support for the

restoration efforts if the plan is as robust as possible. Furthermore, the opportunity to use the restored wetlands and habitat areas as an educational resource for local schools and the community at large. Design of trails, for example, should accommodate group gathering on the edges near educational opportunities, and allow for placement of interpretive signs.

### **Cost-effectiveness**

Cost is a factor in today's constrained economic environment, but any real ecosystem restoration plan will take several decades to implement. We cannot take a shortsighted view of today's economics for this vital long-term plan. The Verdugo Wash and other components of Alternative 20 capture the long-term watershed value by linking the Los Angeles River to multiple large corridors and refuges in the mountains and along the river banks. In so doing, we will provide benefits in restoring a balance for the species in the ecosystem and the public within an urban setting.

Real estate costs are a major factor in any development in an urban area, including ecosystem restoration developments. Land acquisitions in the City of Los Angeles will be expensive. However, the scarcity of habitat and ecosystems in an urban area are far more valuable than in other parts of the nation because of that scarcity. The City of Los Angeles is the second largest city in population in the U.S. The value of the ecosystem should be valued even higher in light of the dearth of such habitat in the area.

Alternative 20 is a "Best Buy" plan. It was determined to be efficient but not the most efficient of the four final plans as measured by the cost effectiveness/ incremental cost analysis (CE/ICA). Throughout the discussion of CE/ICA in the Integrated Feasibility Report, statements are made that this is a tool to assist in plan formulation and evaluation "to help inform a decision" (Section 4.11, pages 4-34 and 4-35). However, Alternative 20 is the most complete, cost effective, and acceptable plan in terms of true ecosystem restoration and sustainability. We believe that if the decision criteria are structured to conform to the Corps' own analysis, and other values discussed above are given adequate consideration, either in additional habitat units or by some other means, it will become clear that the incremental benefits of Alternative 20 relative to the costs will make Alternative 20 the Preferred Plan.

The increased effectiveness of the Alternative 20 is commensurate with the increased costs:

- Alternative 20 restores 6.4 miles of habitat or 58% of the ARBOR length which is two times the length of habitat restored in Alternative 13 (3.2 miles or 29% of ARBOR).
- According to the estimated quantities for demolition of concrete presented in the Appendix C: Cost, Alternative 20 removes 117,918 cubic yards of concrete while Alternative 13 only removes 36,891 cubic yards. Thus, Alternative 20 removes 3.2 times more concrete than Alternative 13.
- Alternative 20 provides the greatest connectivity of the final four plans. Alternative 20 adds 205% connectedness in the Study Area over Alternative 13. The restoration of a more natural connection to Verdugo Wash substantially enhances the benefits of the ecosystem restoration by providing connectivity for wildlife and plants into the historic floodplain of the Verdugo Wash and into the Los Feliz Golf Course, the Verdugo Mountains, and the San Gabriel Mountains.

## **Plan Selection**

Ecosystem restoration projects provide valuable quality and quantity of aquatic and riparian systems. The selection of the final plan should be determined by using multiple factors. The CHAP model and CE/ICA are only some of the tools that should be used in the selection process.

The Corps set numerical decision criteria for adequacy which are artificially low and led to selection of the "low hanging fruit" for restoration rather than a plan that truly restores the historic values for species, habitat and people. The study narrowed its focus on an 11 mile stretch of the 32 mile river running through the City that has the best chance for restoration. Alternative 13 reduces the length of restoration to only 3 miles. This minimal criterion is inconsistent with the stated objectives of the study and seems to be based only on the costs without comprehensively addressing the significantly greater benefits for species and habitat in Alternative 20.

While costs are a consideration, Alternative 20 is the most costly of the four best buy plans (Table 4-10 Final Array Costs and Outputs, page 4-47) because it restores more habitat and creates major connectivity to large blocks of land than just the relatively "low hanging fruit" restored in Alternative 13. Alternative 20 requires more land

acquisition, much more concrete removal, raising a railroad trestle, and restoring several additional hydrological and biological connections to the Los Angeles River. These actions are indeed costly, but create tremendous benefit by restoring an ecosystem that can survive the next 50 years because of its size and robust connectivity. These elements were not valued in the CHAP model, CE/ICA, or the selection of the TSP. Alternative 20 achieves true restoration for the impacts caused by channelization of the river. Alternative 20 is practical and can be implemented as the Federal project. The Integrated Feasibility Report itself supports selection of Alternative 20 except in the conclusions based on the cost of Average Annual Habitat Units and total cost. Implementing Alternative 20 will substantially restore the River in this 6.4 mile segment. Alternative 20 is the opportunity to select the Best Buy plan that provide the best scenario for long term success and sustainability of the habitat, species, environment, and people in the urbanized Los Angeles River study area and beyond.

Performance targets for ecosystem restoration were established for the two major objectives: Objective 1: Restore Valley Foothill Riparian and Freshwater Marsh Habitat and Objective 2: Increase Habitat Connectivity. In Section 4.12 SELECTION OF THE FINAL ARRAY Table 4-8 and Table 4-9 analyzed all the alternatives to determine which ones meet the 19 specific targets developed for the two objectives. Alternative 20 meets every one of the 19 targets developed for the two objectives with the highest score and often with an incremental increase. Alternative 13 does not.

### **Evaluation Criteria**

NEPA utilizes the perspective of *significance* of resources to address impacts. Alternative 20 exhibits the most short term impacts primarily because of additional construction of the larger plan. None of these impacts rise to a level of significance. However, Alternative 20 generates the most beneficial impacts for the biological, human, and physical environment. The long term beneficial impacts caused by Alternative 20 are significant based on institutional, public recognition, and technical recognition criteria. Implementing Alternative 20 will have profound positive impacts on the biological resources, hydrological and hydraulic resources, air quality, water quality and recharge, education, recreation, health, economics, human ecology, disadvantaged communities, environmental justice, and the general sense of well being in the urbanized area. These positive benefits in the Integrated Feasibility Report are greatest in Alternative 20. The USACE was the first to lead the nation in addressing

Environmental Operating Principles in water resources planning process and decision making. Alternative 20 is the embodiment of those principles. Given all these reasons, the USACE should support Alternative 20 as the Federally Selected Plan.

Utilizing the USACE Planning Guidance (ER 1105-2-100) objectives stated in Section 6.3 (Page 6-8), Alternative 20 is clearly the superior choice of plans. Alternative 20 comes the closest to mimicking the natural conditions and processes that would have occurred had the Los Angeles River not been channelized. It exhibits the best ability “*to continue to function and produce the desired outputs with minimum of continuing human intervention*” because of the size, regional and local connectivity, and restored hydrological and biological connections that create the ecosystem and enable a high degree of self-sustainability of landscape and species. Additionally, the document states “*Restoration projects should be conceived in a systems context ... in order to improve the potential for long-term survival as self-regulating, functioning systems... Considerations should be given to the interconnectedness and dynamics of natural systems...*” Again, these criteria and objectives should lead to the selection of Alternative 20.

The Principles and Guidelines, as shown in Section 6.5.5 (Page 6-42), identified four decision criteria to be used in selecting measures and plans. The criteria are effectiveness, completeness, efficiency, and acceptability.

Alternative 20 “*is judged to be the **most effective** of the four final alternatives. It maximizes contribution toward achievement of the planning objectives, including key nodal connections for wildlife and habitat. It also maximizes the potential for near and long term RED and OSE benefits.*”

Alternative 20 is the **most complete** by virtue of including the maximum connectivity to large land areas, the most acres for restoration, the most substantial and natural hydrologic connections, and the greatest length of restoration. These same factors render it the most resilient for long term benefits, survivability, and sustainability.

Alternative 20 is **efficient** and all features are cost effective. It is the most expensive and is less efficient than Alternative 13 because of the high incremental cost per habitat unit. This is due to Alternative 20 being the “game changer” for ecosystem restoration by technically providing substantially greater natural connections to the tributaries, mountains, and large expanses of land that will permanently be restored to open space and habitat restoration similar to that which historically occurred in this area. The cost

to acquire land and construct the Los Angeles River as we know it today was high, and the cost to restore segments of it by removing the concrete and replacing it with terraces and natural connections will likewise be high.

Alternative 20 is the most **acceptable** alternative. All four alternatives are acceptable, but 20 most fully meets the requirement of the authorization in the Water Resources Development Act of 2007 to develop a plan *“that is consistent with the goals of the Los Angeles River Revitalization Master Plan published by the city of Los Angeles...”* Alternative 20 is also the plan that is most acceptable to the public because it is the farthest reaching restoration plan and provides the most benefits to the physical, cultural, and human ecology.

Comparing the ranking of the four criteria for the four final plans shows Alternative 20 to be ranked first in three of the four evaluation criteria with 1 being the best.

<b>Criteria</b>	<b>Alt 13</b>	<b>Alt 20</b>
Effectiveness	3	<b>1</b>
Completeness	3	<b>1</b>
Efficiency	2	<b>3</b>
Acceptability	3	<b>1</b>

Alternative 13 does not satisfy all the general goals and specific objectives of the study. The decision to pursue Alternative 13 instead of 20 does not account for the benefits of a number of environmental values important to river ecosystem restoration.

The effectiveness of an urban ecosystem restoration project should not rely solely on the cost effectiveness of the creation of habitat units, but must also consider its relationships to the people and communities it serves. Congress in the 1970 Flood Control Act identified four equal national accounts for use in water resources development planning - national economic development (NED); regional economic development (RED); environmental quality (EQ); and social well-being (OSE, other social effects). As the report states,

*“The four categories, known as the System of Accounts as suggested by the U.S. Water Resources Council, address long-term impacts and are defined in such a manner that each*

*proposed plan can be easily compared to the No Action plan and other alternatives. Collectively, the four accounts are required to include all significant effects of a plan on the human environment” (Page 6-31).*

The selection process of Alternative 13 over Alternative 20 does not appear to have given proper significance to all the categories of the System of Accounts – specifically, the RED and OSE accounts – especially with regards to “effects of a plan on the human environment.” The measurement of the effectiveness of an urban ecosystem restoration plan is not just habitat units. The measurement must include its interaction with the people and communities it will serve now and into the future.

Appendix B: Economics of the report indicates that nearly 129,000 residents live within a half mile of the footprint of Alternative 20 – considerably higher than Alternative 13 given its lesser size (Page14). Specific to Alternative 20 is its ecosystem restoration development in connection with the Los Angeles State Historic Park, an area referred to as Chinatown-Cornfields. This general area, south of the SR110 freeway, has nearly 26,000 residents that are not particularly served by Alternative 13. According to Table 3-4 of the Appendix the overall poverty rate of this area is 22 percent. Further, Table 3-1 indicates this population is a minority population with it being 92 percent non-white. As is common in an urban area of low income/minority population, the availability of parks is scarce. This area covered by City Council District 1 ranks 9<sup>th</sup> out of the city’s 15 districts with less than 5 acres of parkland per 1,000 residents (Page 106). Alternative 13 does little to address the concerns of this area.

The selection of Alternative 13 looks to have not fully recognized the difference with Alternative 20 on a RED basis. Table 6-8 of the report indicates that the construction period of Alternative 20 would produce 9,001 jobs with wages of over \$500 million in comparison to Alternative 13 with its 1,986 jobs and \$114 million in wages, and these numbers are only for the construction.

Ecosystem restoration provides the “seed capital” for revitalization. The RED analysis of Appendix B shows Alternative 20 would spur redevelopment creating over 5,000 jobs with wages in excess of \$336 million over the long-term as compared to Alternative 13 with nearly 1,300 jobs and \$85 million in wages (Appendix B, Table 8-49).

Along with this redevelopment come permanent jobs. After all, businesses and houses that are constructed are not intended to be vacant. Appendix B, Table 8-53 displays the

difference between Alternative 13 and Alternative 20 on an average annual basis over the life of the project. Alternative 20 is estimated to have 1,464 permanent jobs (nearly 1,100 more than Alternative 13) with wages of \$83 million (a wage differential of \$62 million over Alternative 13) on average for each year of the analysis. Of additional significance to these numbers is where the majority of the difference comes. Tables 8-43 thru 8-46 of Appendix B reveal the Chinatown-Cornfields area as the primary source for Alternative 20's greater impacts. Potential long-term economic improvements in this challenged area should be considered when comparing Alternative 20 to Alternative 13.

<b>Redevelopment Long-Term Average Annual Impacts</b>		
	Alternative 20	Alternative 13
Jobs	1,464	370
Labor Income	\$83,046,000	\$20,990,000

Appendix B reports,

*“In a recent Environmental Science and Technology article the authors report that there is evidence that urban residents living in greener environments may be significantly healthier than those living in environments with less green space, and the presence of water may create even greater health improvements. Most notably for low-income and minority residents, inequitable urban development and the privatization of natural amenities has contributed to environmental injustices in the distribution of green space and water features. Collectively, this can cause disparities in health-related behaviors and obesity.” (B-95)*

As documented in Appendix B, the CCPHA found the total annual estimated cost to California for overweight, obesity and physical inactivity was \$41.2 billion with \$20.2 billion of this amount attributable to physical inactivity. (B-97)

The appendix also indicates in Figure 9.5 that obesity for minority children as compared to whites can be 70% higher for Hispanics and nearly 50% for African Americans.

The Centers for Disease Control and Prevention supports the goal of creating or enhancing access to places for physical activity, the enhancing physical education and activity in schools, and supports urban design and land use policies to encourage physical activity. The additional and upgraded ecosystem restoration features of Alternative 20 should be considered in light of these goals, especially as there is



proximity to nearly double the number of schools in this Alternative, and its physical coverage area also doubles as compared to Alternative 13.

Additional trails, access points, parking areas, and bridges are included in the alternatives. These would provide linkage and connectivity to the restoration areas as well as to existing parks, thereby improving community cohesion. Benefits would be seen under the alternatives and would provide a common place for residents of various socio-economic backgrounds to recreate and interact. This would help create a sense of community and belonging. In turn, these beneficial social effects would potentially influence the enhancement of surrounding areas to conduct similar activities. Alternative 20 with its larger scope will produce a greater connectivity with the people and communities of the study area.

Key benefits achieved by Alternative 20 as described above include:

- Three times more concrete removed.
- The length of restoration is two times greater in Alternative 20 than in Alternative 13 and adds more than twice the value by including additional tributary and large expanses of open space into the plan.
- More connectivity remedies the extreme biological stress caused by urbanization, fires, floods, and climate change.
- Other societal effects: environmental justice, water quality, public health, will be significantly improved with Alternative 20 over Alternative 13. This is an opportunity for the Federal government to positively affect these resources for a change.

Alternative 20 is most compatible with the numerous initiatives and programs, particularly the President's American Great Outdoors Initiative and the Urban Waters Public Partnership, that recognize the importance of the Los Angeles River to habitats, species and people.

Dr. Axt  
October 29, 2013

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### **The Time is Now**

Cost and construction feasibility will always be factors that hem in a plan, which why as a planning document, the ARBOR study should be visionary and recommend Alternative 20. If not now, then when? The country has little patience for public investment re-studying an area. We urge the Corps to select Alternative 20 as the final Federal plan, as it provides the greatest net sum of economic and restoration benefits. The local sponsor, the City of Los Angeles, has committed to its cost-sharing responsibilities. This is the right plan for restoring the ecosystem values lost by the construction of the Los Angeles River and for the people of our great City.

Sincerely,

IRMA MUÑOZ  
Chairperson

cc: Dr. Carol Armstrong, City of Los Angeles, River Project Office  
Lewis MacAdams, Friends of the Los Angeles River

Atch: Photos of the Los Angeles River in the ARBOR study area  
(following pages)





