CHANNEL ENHANCEMENTS

Channel Enhancements

The literal centerpiece of the river is the 19-mile long channel that conveys river flow from the upper reach to the outflow in Long Beach. Already along the river there are areas of very distinct character - in some places it is simply a monolithic gray line, while in others it has a soft bottom and has become quite green. While there are numerous very real constraints to making significant structural changes to the channel, the sheer size of this element provides broad opportunities for enhancements that will change the way the river is perceived. As with other signature templates, this change will not happen all at once but will be incremental over time as different projects come to the forefront.

Two primary themes guide this template, and should serve as a reference for future projects focused on the channel:

River Channel Access

Enhancements are a prime opportunity to open access to the channel itself and create an entirely new way to experience the river.

Visual Interest

Changes to the channel bottom as well as banks can contribute to a new kind of visual interest in the river in many ways. These opportunities range from art, to texture, opportunities for plant growth that may only last for one season and be washed away by the next flood event. Each of these interventions can also serve to support the unique sense of identity of the river itself, as well as the individual communities in which these projects will happen.

Existing Conditions

Channel conditions vary along the length of the river. In the northern stretch, from Vernon to Long Beach, the concrete bottom and banks are mostly intact. In these areas, the bank is either vertical or v-shaped, with little to no public access into the channel. A low-flow channel contains dry weather flow, and in some places volunteer vegetation follows cracks in the concrete.

Closer to the mouth of the river, primarily in Long Beach, concrete gives way to a soft bottom condition. Banks here are primarily v-shaped, with little to no public access into the channel. There is a much higher volume of water, and better conditions for permanent vegetation. The lower reach of the river already provides habitat to birds and other aquatic wildlife.

Concrete Channel Enhancements

Description

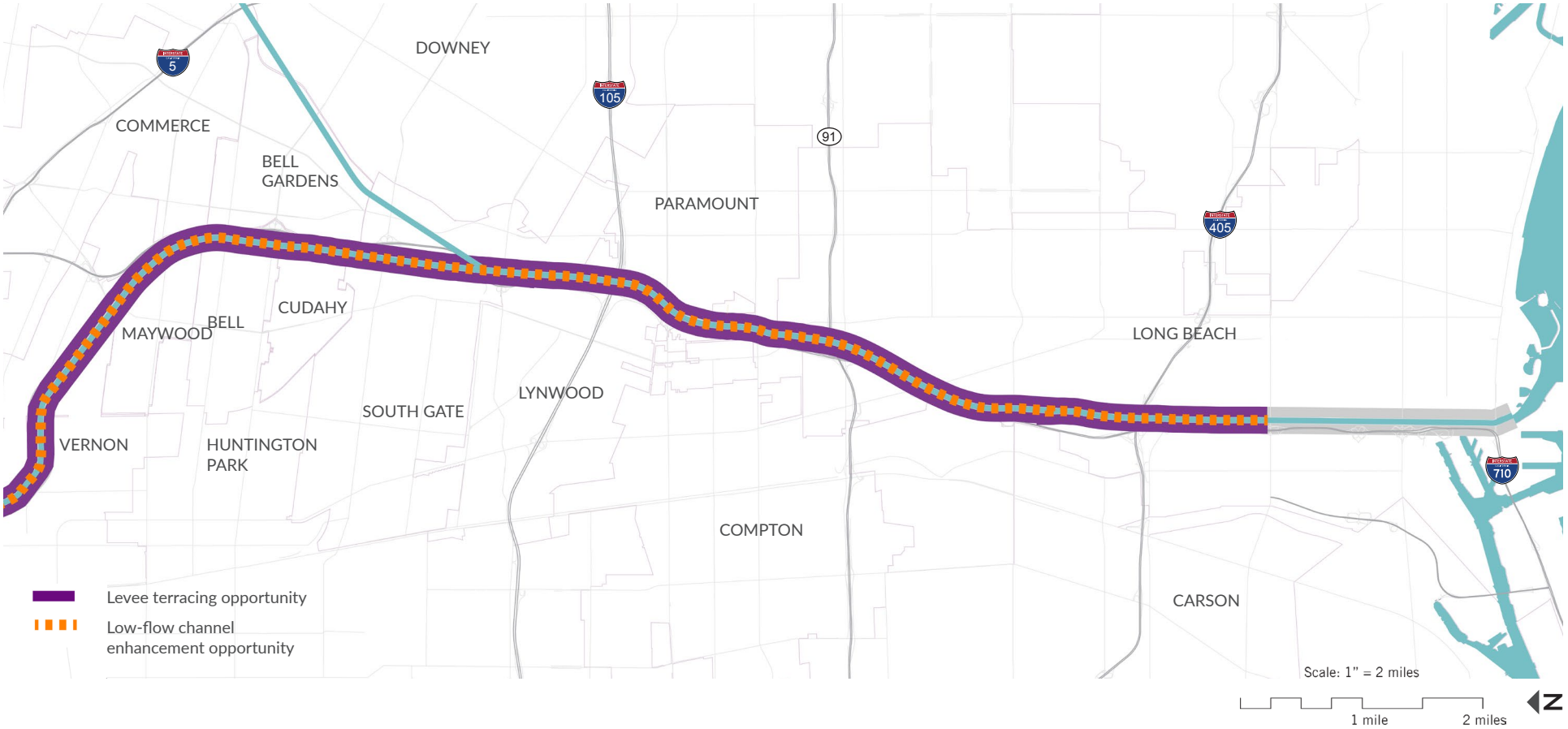
Along the length of the river there is a continuous opportunity for site-specific changes and enhancements to the concrete river channel. While some sections may not be changed drastically (or at all), others might be reconfigured in order to improve hydraulic function, stormwater management, habitat provision, safe public access, or a combination of these goals.

The two primary elements subject to modification are the low-flow channel at the center of the river bed (except for soft-bottom conditions), and the side levees or river banks. With any proposed modification, hydraulic flow modeling would be completed to minimize impact on river flow and safety. All improvements and modifications should be leveraged as an opportunity to create unique, river-specific open spaces for the public to enjoy.

Physical Components

- Multi-Use Access Ramps
- Levee Terracing
- Low-flow Channel Modifications
- River Overlooks

Concrete Channel Enhancement Map



Existing and New Multi-Use Path Improvements

Channel Enhancements: Accessing the River

Channel Enhancements Illustrative Rendering

Channel enhancements may be as simple as texturing parts of the concrete bottom, or as complex as creating meandering levee terraces. Overall the goal is to create a series of strategic places that will improve visual interest, habitat, and public accessibility, as well as safety and comfort in the river channel.

Channel Enhancements: Multi-Use Access Ramp

Objective

The flat bottom and generally dry nature of large portions of the river provide unique opportunities for public access to the river bed in non-rain conditions. Key access points, high-profile project sites, and other unique opportunity areas should consider the feasibility of pedestrian and bike access ramps across the face of the levee. This strategy is most appropriate in concrete-bottom sections.

Design Criteria

- Any changes to the levee in order to provide an access ramp should be mitigated by further channel modifications to minimize impact on river flow.
- ADA guidelines should be followed wherever possible.
- Ramps should be paved with asphalt or other durable, non-slip surface.
- Markings and/or signage for entrance and exit to the river should be highly visible to ensure the safety of users.
- Ramp access to be controlled by a gate or temporary bollard system to close access during storm events or other unsafe conditions.

Channel Enhancements: Levee Terracing

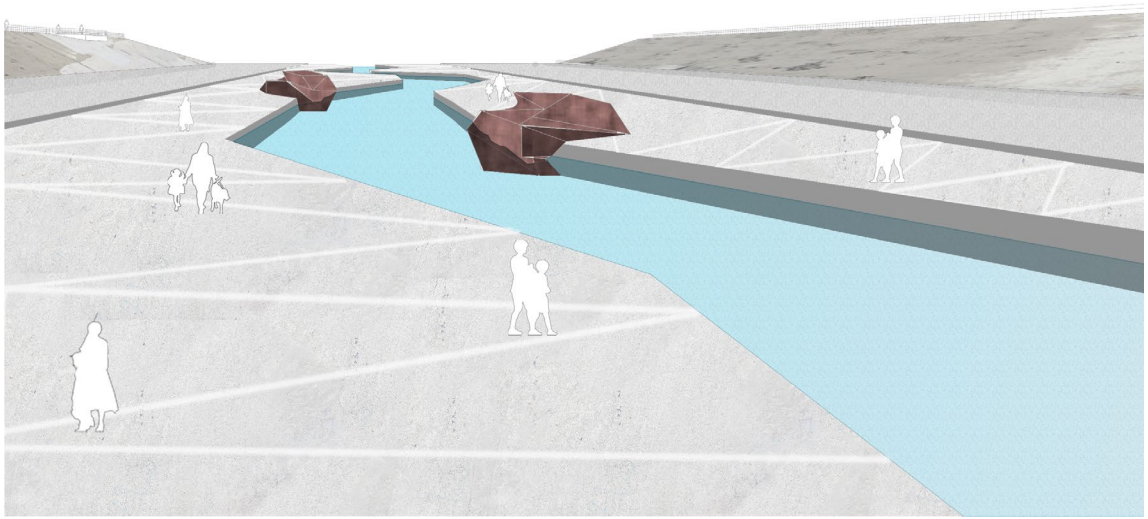
Objective

Changing the profile of the levee system is a prime opportunity for the addition of public open space as well as habitat area along the length of the river, as these elements often cannot be safely included in the river bottom or levee top. Terraces should be considered as places to rest and view the river, spaces for community activities, opportunities for habitat creation and other environmental improvements, as well as potential placement of stormwater capture and detention. Site-specific considerations and constraints will dictate what is appropriate, but any modification to the levee should be considered as a multi-benefit solution.

Design Criteria

- Any changes to the levee for terracing purposes should be mitigated by further channel modifications to minimize impact on river flow.
- ADA guidelines should be followed wherever possible.
- Community input may guide design and programming of terracing to contribute to the sense of community identity in each portion of the river.
- All landscape enhancements will be consistent with the LA River Master Plan Landscaping Guidelines and Plant Palettes.

Channel Enhancements: Low-Flow Channel Modifications



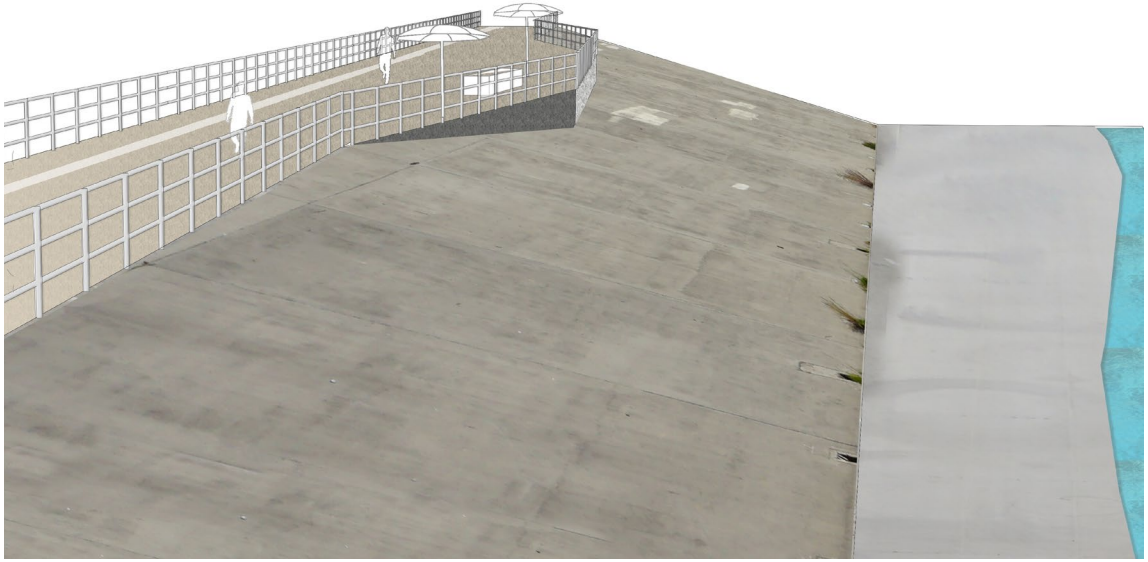
Objective

The low-flow channel currently serves to contain river flow to the center of the channel in dry periods. Future modifications to the low-flow channel should be designed to create visual interest, enhance hydrological function, and provide opportunities for environmental and habitat improvements, or some combination of these goals. Not every section will be modified, and not every strategy will be applied to each modification; site- and design-specific solutions should be created on a case-by-case basis. A series of potential modifications have already been modeled for safety and function as part of this Plan and can be used in design solutions as appropriate.

Design Criteria

- Modifications may include: widening, "meander" or course modifications, addition of "pockets" for silt collection and volunteer vegetation, extrusions that may serve as seating or viewing, and similar.
- Any modification should meet river flow goals, or have a plan to mitigate any reduction in flow levels.
- All additions to the low-flow channel (such as extrusions) should be permanent and resistant to erosion or being swept away during storm events.

Channel Enhancements: River Overlooks



Objective

The ability to interact with the river at many different scales and in many different ways is central to the quality of experience of visitors to the river. In areas of interest, such as habitat enhancement or public art, space should be created along the multi-use path for users of all modes to rest and contemplate the river.

Design Criteria

- Adjacent to the multi-use path.
- Minimum 10 feet width, wider where possible.
- Include site furnishing, especially lighting, seating, and trash receptacles.
- Modifications to the levee bank must not significantly change the hydraulic function of the river channel. Major changes should be modeled to ensure proper mitigation can be provided.

Channel Enhancements: Shade on the Lower LA River

Simple shade structures provide protection from the sun and will be key to increasing comfort along the multi-use path. They should be paired with seating or other activity areas and not be placed or attached so as to impact the levee structure.

Templates (Concrete Channel Enhancements) Next Steps

Additional required analyses and next steps for the Concrete Channel Enhancements template include:

- LA River Master Plan Landscaping Guidelines and Plant Palettes should be applied for all landscaping and plantings,
- Structural analyses of all new and improved access ramps should be performed,
- Geotechnical evaluations for all new and improved access ramps and proposed terracing should be conducted,
- Impacts on shorebird habitat due to widening of the low flow channel upstream should be determined,
- Water demand analysis for "volunteer" vegetation in the low flow channel should be conducted,
- Water demand analysis for terracing and vegetation on the terrace steps should be determined,
- Hydraulic modeling of potential modifications to the channel should be conducted,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- Permitting requirements, including through USACE and LACFCD, should be determined,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and
- Key studies to assess the potential for environmental and habitat restoration should be performed, including adding vegetation to the river and restoring the ecological function of the river, while still maintaining the primary function—reduce flood risk for the communities adjacent to the river. Local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

- Community Benefits Agreements
- Inclusionary Housing Policies
- Locally Owned Business Support
- No Net Loss Housing Policies
- Rent Control Ordinances
- Workforce Development
- Community Land Trusts