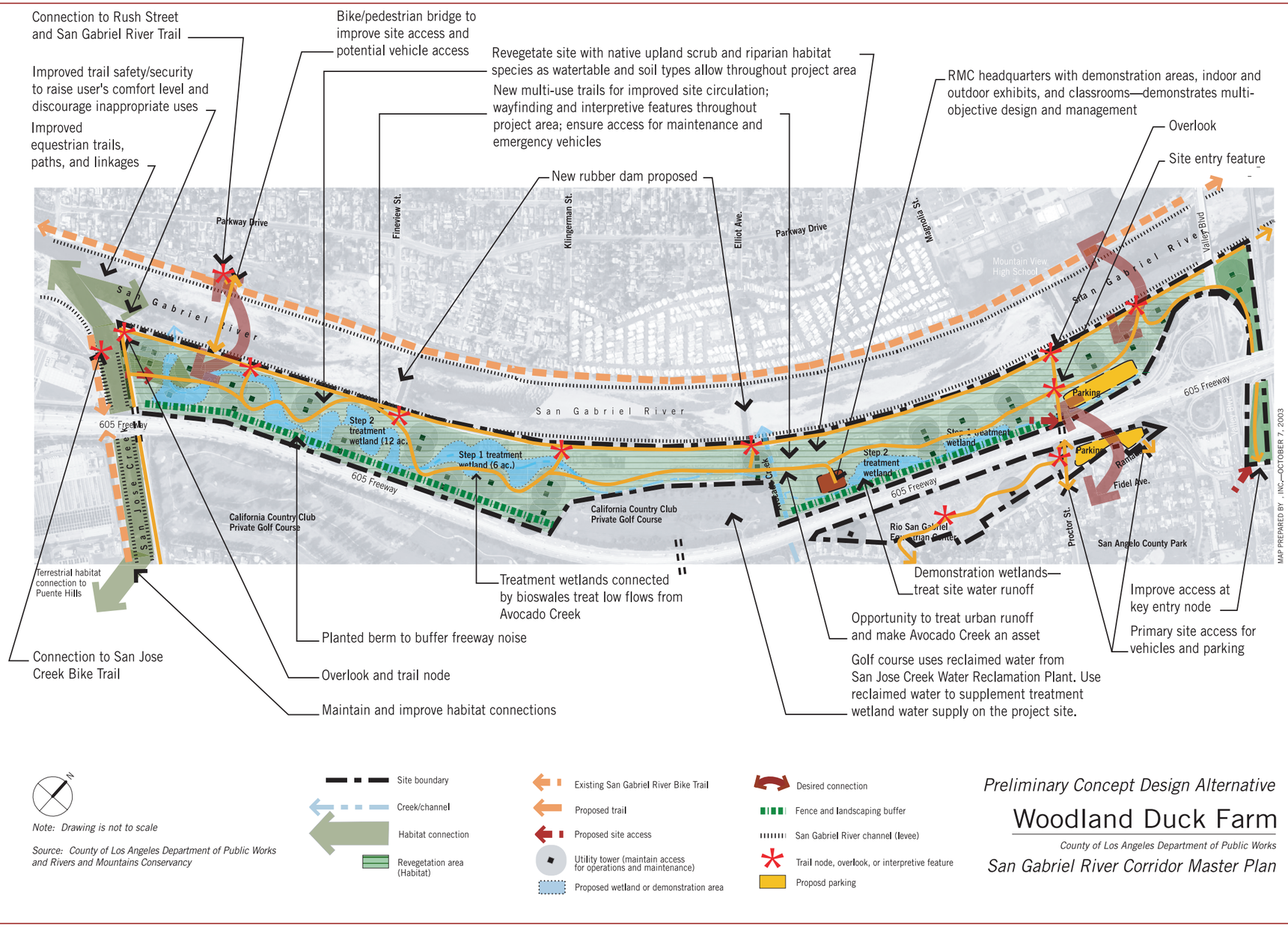


Map 3-13. Preliminary Concept Design Alternative—Woodland Duck Farm. For illustration purposes only.

3.8.3 San Gabriel River Discovery Center at Whittier Narrows

Project Description

A new, regional education center will be a multi-faceted showcase at the heart of the San Gabriel River, providing residents and area visitors a chance to explore and reconnect with the river. The new center will be built at the site of the well-used Whittier Narrows Nature Center—at the geographic and hydrologic middle of the San Gabriel River. It will model environmentally-sensitive design, featuring a museum, conference center, and indoor/outdoor programming focused on the watershed. It will also provide information about other locations in the watershed that can be visited (including nearby Lario Creek, the Woodland Duck Farm, and the Rio Hondo). The principal groups involved in the project are County of Los Angeles Department of Parks and Recreation, the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy and the Upper San Gabriel Valley Municipal Water District.

Opportunity

The 320-acre Whittier Narrows Nature Area is owned by the U.S. Army Corps of Engineers for flood control purposes. Lario Creek (the Zone 1 Ditch) also passes through the area. The existing Nature Center was originally operated by the Audubon Society as a bird sanctuary because of the large numbers of resident and migratory birds. The County of Los Angeles Department of Parks and Recreation took over operations when Legg Lake and the Whittier Narrows Regional Park opened.

Many visitors and school nature programs enjoy the recreational opportunities of the Whittier Narrows Regional Park, visit the current Center, and use the lakes and nature trails. Yet, few realize the historic importance of the San Gabriel River to all the people who have lived in the area for hundreds of years. The river has done its job so well that it has allowed area residents to forget about it as it runs through the valley.

The current Nature Center includes a small museum, picnic area, exhibits and about 320 acres of native but somewhat degraded habitat. The Nature Reserve section, adjacent to Lario Creek, is a riparian habitat dominated by sycamore, cottonwood and willows. However, large areas of low quality ruderal (weedy) habitat are dominated by non-native grasses and invasive species such as castor bean and *arundo donax* (giant reed). Replanting with native vegetation can increase habitat and provide demonstration gardens.

Figure 3-67. An outdoor terrace can visually link the indoor exhibits with the native landscape and trails outside.

The current building was constructed in the 1960s. It is small and badly needs renovation and updating. A new Center, built to "green" standards, will replace the current dated facility, expanding educational and community-building opportunities.

The Discovery Center complex will link the San Gabriel River to Lario Creek and its new wetlands (see Section 3.8.4). The Center's river showcase will help community members, schools and visitors reconnect with the sense of place the river offers, encourage stewardship, and raise public understanding about the importance of the river and its watershed.

Issues and Challenges

The site is on high ground within the floodplain behind the Whittier Narrows Dam. Designers will need to include mitigation measures to ensure that there will be no reduction in available flood storage.

The current entrance to the Nature Center is on a blind curve, making it very difficult and dangerous to enter and exit. There is little signage so visitors often miss the entrance and need to turn around. South El Monte High School is across from the center, but there is no safe way to cross. The entrance will need to be redesigned, with new signage and safe pedestrian crossings that will encourage more student participation at the Center.

Figure 3-68. The existing Whittier Narrows Nature Center will be replaced.

The connections between the Center and the river are tenuous. The San Gabriel River Bike Trail runs quite close by, but there is no signage marking a trail to the Center. At the Center, there is no indication that one can easily walk to the river and the trail. In fact, it is difficult to see the river at all because flood control levees entirely block views. It may be possible to redesign part of the site to offer at least some views of the river.

Parking will need to be increased to accommodate more visitors, which will also increase stormwater runoff. That water will need to be treated and returned to the river or Lario Creek, in keeping with the green design of the Center.

Design Concepts

BUILDING. The new facility will be a model of environmentally-sensitive design, touching the river as lightly as possible. It is planned as a Leadership in Energy and Environmental Design (Leeds)-certified green building, incorporating environmentally-friendly and recycled building materials, solar electricity and heating, and the native landscape palette.

PROGRAMMING. The 16,000-square-foot Discovery Center will include about 8,000 square feet of exhibit space, offering a comprehensive view of the formation of the San Gabriel River Watershed (natural and cultural history and water-related topics such as water quality and supply, recycling and conservation). It will include an orientation center for area visitors, conference center, theater, library, and exhibit space.

There will also be an outdoor amphitheater and outdoor exhibits (such as fossils, water cycles, and natural history) with interpretive signage.

The grounds will offer a demonstration garden of watershed-friendly landscape practices, including using rainwater for irrigation. Near the Discovery Center, inviting blooms can display an array of Californian natives. Farther away, visitors will see the open growth patterns of the natural ecology of the landscape.

TRAILS. The site will be easily accessible from the San Gabriel River Bike Trail and a trail loop being developed along the Rio Hondo, across Peck Road Water Conservation Park, and down the San Gabriel River Trail back to Whittier Narrows.

A variety of trails will draw visitors to the Lario Creek demonstration wetlands and the San Gabriel River. Water-themed signage can lead trail users along paths, with interpretive elements to expand on the exhibit topics. Equestrian trails will intermingle on the site with bike trails.

TREATMENT WETLANDS. Stormwater runoff from the site, including the parking lot, can be sent through a bioswale filtration system down to the demonstration wetlands between Lario Creek and the Center. That area is currently low quality ruderal habitat. That system could also treat low-flow runoff coming from the Peck Road and Durfee Road drains. The wetland area, about 3-6 acres, could treat the first 3/4" of stormwater runoff

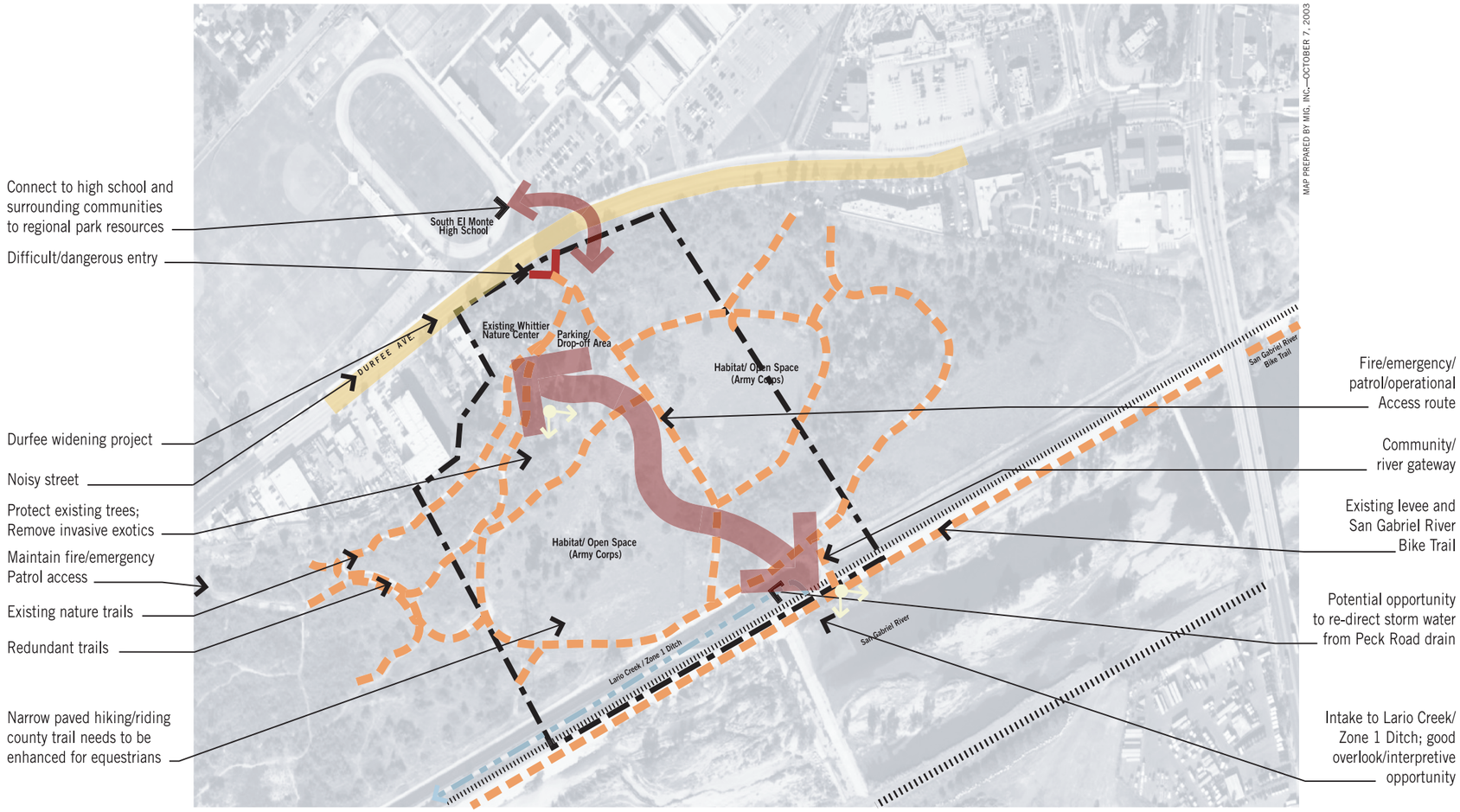
Figure 3-69. Interpretive signage, such as this display by North East Trees, will provide additional visitor education.

from about 120 acres. These demonstration wetlands will be designed to minimize mosquito production, which can become an additional educational component. Supplemental water can be directed from Lario Creek. Once treated, this water will be returned to Lario Creek.

HABITAT. Areas surrounding the constructed wetland could be planted with cottonwood and willow. Dominant invasive species can be replaced with riparian/mule fat scrub, walnut, and Mexican elderberry woodland. Maintenance removal of exotic invasives throughout the site will allow natives to establish and spread. Extending native habitat areas will dramatically increase the value of the land to wildlife for foraging and nesting.

Key Components of the Concept Design Study

- New Education Center facilities with expanded functions
- Green building and design techniques
- Indoor/outdoor exhibits: natural/cultural history, watershed, conservation, water quality
- Watershed-appropriate demonstration gardens
- Conference center for community use
- New demonstration wetland (part of Lario Creek)
- Enhanced riparian habitat
- Multi-use trails with wayfinding system
- On-site stormwater runoff treatment



Map 3-14. Preliminary Site Analysis—San Gabriel River Discovery Center.

Map 3-15. Preliminary Concept Design Study—San Gabriel River Discovery Center. For illustration purposes only.

3.8.4 Lario Creek/Zone 1 Ditch

Project Description

The Lario Creek project, which is adjacent to the San Gabriel River Discovery Center at Whittier Narrows, will integrate a man-made water conveyance channel with the natural systems of Whittier Narrows. Located within the 50-year flood zone of the San Gabriel River, the Creek diverts water from the San Gabriel River to the Rio Hondo, where it flows into productive spreading grounds to recharge the groundwater. Its primary purpose is to carry imported water from the San Gabriel River to the Rio Hondo for recharge. North East Trees, a local non-profit organization, LADPW, and the California State Department of Water Resources have partnered to revitalize the channel. Improvements will demonstrate new bioengineering techniques, increase the creek's capacity and enhance the downstream spreading grounds, divert high flows to treatment wetlands, expand high quality habitat, and link regional multi-use trails. Proposed site improvements include channel improvements, interpretive trails, overlook points, habitat restoration, and a treatment wetland.

Opportunity

The project site is about 75 linear acres just north of the Whittier Narrows Dam. Historically, the San Gabriel River and the Rio Hondo commingled here—there were braided streams, wetlands, and sandbar islands in a rich natural habitat. Lario Creek was created in the 1950s when the two rivers were channelized and the complex floodplain hydrology was simplified into single purpose flood flow conduits.

The alternative name for Lario Creek best describes its current character: Zone 1 Ditch. It is a functional, human-made 1.8-mile waterway operated by LADPW. The Creek's intake is near the Whittier Narrows Nature Center, on the west side of the San Gabriel River. It heads southwest, parallel to Durfee Road, and empties into the Rio Hondo on the west side of Rosemead Boulevard.

During the dry season—most of the year—the flow contains reclaimed and imported water. A temporary EPA outfall discharges treated groundwater that had been contaminated with volatile organic compounds. Reclaimed and imported water is released into the San Gabriel River, upstream of the creek. LADPW uses the creek to divert some or all of the water from the San Gabriel River to the Rio Hondo and to the Rio Hondo Spreading Grounds in Pico Rivera to recharge the groundwater.

During the winter, the flow also includes stormwater runoff. The Creek is currently too small to divert all the water during heavy rains. However, the channel is critical to LADPW and the Water Replenishment District's water conservation operations and LADPW already has plans to widen it. That offers an opportunity to enhance its functioning as a hydrological system, provide educational opportunities and create another link in the habitat corridor between the Puente Hills on the east and the Montebello Hills on the west.

Issues and Challenges

Lario Creek is now steeply embanked with levees. Its highly compacted banks are subject to steady erosion and reinforced with riprap in some locations. The current practice of clearing vegetation in the channel increases the flow capacity, but leaves the banks barren and dry. Parts of the creek have been taken over by exotic and invasive vegetation such as non-native grasses, castor bean and arundo. What little vegetation remains does not shade the water, increasing the water temperature. Replanting with native vegetation, allowing the Creek to meander, and adding wetlands would improve the aesthetics and increase habitat.

The channel is almost flat; there is very little change in elevation between its intake and where it empties. As a result, the water moves very slowly and is thick with algae. To better serve its primary purpose of conveying water, the water needs to flow faster, without increasing the elevation

Figure 3-70. A meandering stream provides riparian habitat and shade for trail users.

change. One challenge to be addressed is that replanting with native vegetation could slow down water flow. Because the creek is human-made and flows are controlled, there is no real seasonal pattern to the water flow. The flow can vary throughout the year from zero to full capacity depending on the availability of water for groundwater recharge. It has a capacity of 250cfs, although the mean daily flow is only about 40cfs.

The imported water in the ditch is costly and evaporation is deducted from the purchased amount. This is a cost factor to the replenishing agencies. One proposal is to widen Lario Creek, which would increase evaporation although not significantly. This will be verified during the design of the project.

A major constraint is the concern that Lario Creek could become a vector control problem. If water is diverted to support restored wetlands and other habitats, there could be a problem during dry seasons when slower flows could create conditions that support mosquito proliferation. The planning and design of Lario Creek will need to be coordinated with the local mosquito and vector control agency to avoid mosquito breeding. An ongoing, sustainable, and well-funded vegetation maintenance management program will be essential to keep out non-native vegetation and for vector control.

There are some trails along the creek that are poorly marked and do not connect. Power line corridors, roads, levees, and trails criss-cross the site, fragmenting it and making wayfinding difficult.

Figure 3-71. Lario Creek begins at the San Gabriel River, just below the Whittier Narrows Nature Center.

Figure 3-72. There is now practically no vegetation along the banks.

Design Concepts

LADPW and North East Trees are now working on concept plans, under a grant from the California State Department of Water Resources Urban Streams Grant Program.

LADPW plans to increase the creek's capacity to a minimum of 300cfs to provide more flexibility for its groundwater recharge operations. Additional water from the upstream San Jose Creek Water Reclamation Plant could be released and diverted to Lario Creek to increase the flow. And during the wet season, an upstream rubber dam on the San Gabriel River collects water that has a valve that can release up to 400cfs.

The original proposal was to widen the channel to increase capacity and increase habitat. It called for a stepped design: a deep, narrow low-flow channel and wide, vegetated terraces to handle increased flows during the wet season.

Stakeholders have now proposed a dual channel model—two parallel channels would run between the two rivers. In the dual channel proposal, the existing conveyance channel would be widened but would not be vegetated. A new habitat channel would be planted with native vegetation and meander like a natural creek. Natural-looking terraces built over engineered levees can stabilize the banks. During the wet season, that channel would provide water for the dry lake beds near the creek.

In both proposals, urban runoff from the area north of Lario Creek and the Whittier Narrows Area, supplemented with water from the creek, could flow to a constructed wetland near the north bank of the creek (between the creek and the Discovery Center). The new wetland will mimic the natural water purification process, sending water through an "obstacle course" of vegetation and soils that cleanse it. The water would then flow back into the Creek and on to the Rio Hondo. An elevated trail system and interpretive signage can lead visitors through the process.

A wetland treatment facility would enhance the water quality from the area by reducing various pollutants accumulated through stormwater runoff, such as phosphorus, bacteria and sediment.

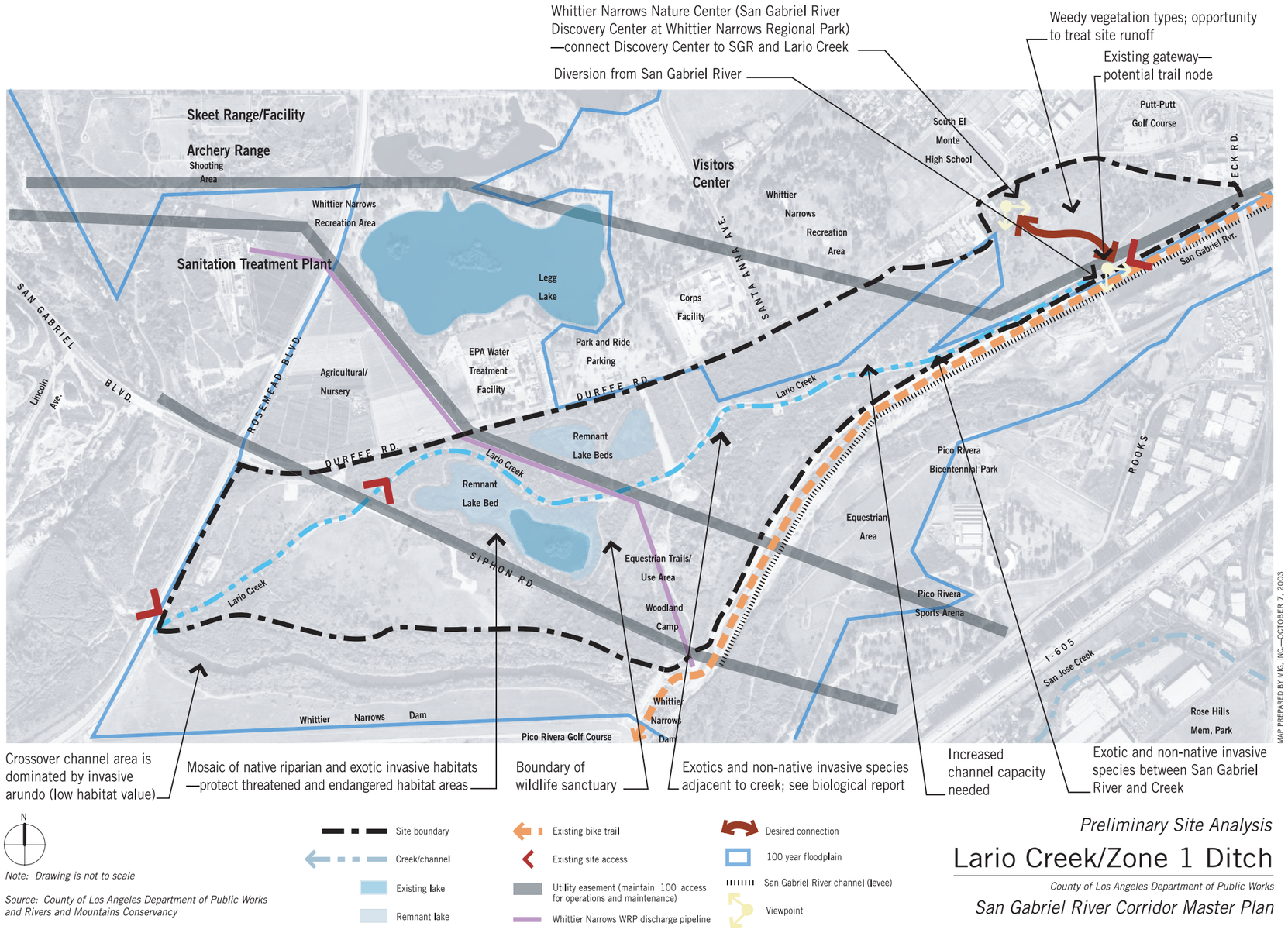
The new habitat channel (or the terraces of a widened single channel) will also provide areas for replanting native vegetation and developing valuable restored riparian habitat for birds on the Pacific Flyway. Native vegetation that can be restored include a riparian forest dominated by sycamore, cottonwood, and willows, and a mosaic of Mexican elderberry woodland, willow riparian scrub, coffeeberry scrub, annual grasslands, and small patches of coastal sage scrub and freshwater marsh.

The proposed design can consolidate trails, access nodes and facilities for all trail uses, including equestrian. The new Lario Creek trail, wayfinding and signage system can link the San Gabriel River with the Rio Hondo, the new Discovery Center, and the demonstration wetland, increasing outdoor educational and recreational opportunities.

Since Lario Creek and the San Gabriel River Discovery Center at Whittier Narrows are directly adjacent to each other, site design and programming can be done jointly. However, from a planning and funding perspective, they are distinct. Each project has a different set of sponsors and stakeholders, with their own unique needs and requirements. In addition, given the distinct goals of the two projects, each project can pursue different funding sources. Overall funding for the two projects would likely be more limited were they combined into a single planned entity.

Key Components of the Concept Design Study

- Widened channel to increase capacity and flow
- New habitat channel with native vegetation
- Removal of exotic, invasive species
- Multi-use trails consolidation
- Interpretive signage
- Vector control in project design and maintenance



Map 3-16. Preliminary Site Analysis—Lario Creek/Zone 1 Ditch.