

## Caltrans Niles I Safety Project Tree Cutting Impacts and Remediation

The Alameda Creek Alliance and Caltrans staff met twice in November and December of 2015 to survey some of the trees cut in 2011 as part of the Niles I Safety Project, between the roadway and Alameda Creek along SR 84, from mile marker (mm) 13.2 to mm 11.9. The condition of those trees that were readily visible was examined throughout the 1.3 mile survey area. Tree species, general location, mortality, extent of re-sprouting and approximate heights, and diameter at breast height were noted.

There has been an unquantifiable loss of habitat and ecosystem services associated with the Niles I tree cutting. Impacts to California sycamores are of particular concern, since this tree species is limited in distribution and the large sycamores in Niles Canyon likely generated from one or two flood events more than 130 years ago. The habitat values of mature sycamore trees in Niles Canyon (such as bank stabilization, shade, and bird and bat habitat) are important to the ecosystem. As such, on-site plantings and additional monitoring of the cut sycamore trees is warranted.

Caltrans surveys after the cutting documented that at least 143 native trees were cut along Alameda Creek during the Niles I project. On May 26, 2011, Caltrans biologists conducted a field visit to count and identify the tree stumps in the project footprint (table from Caltrans):

Species	# Removed
Coast live oak ( <i>Quercus agrifolia</i> )	8
Alder ( <i>Alnus rhombifolia</i> )	1
Bay-laurel ( <i>Umbellularia californica</i> )	20
Big-leaf maple ( <i>Acer macrophyllum</i> )	15
Sycamore ( <i>Platanus racemosa</i> )	30
Willow ( <i>Salix sp.</i> )	59
Oregon ash ( <i>Fraxinus latifolia</i> )	8
Black walnut ( <i>Juglans nigra</i> )	2
<b>Total</b>	<b>143</b>

### Site Observations – Nov/Dec 2015

- Many of the impacted trees in the project area were cut at a height from waist- to breast-level. Sprouting from cut trees is predominantly occurring at the site of the cut, and cut trees in general have multiple re-sprouts.
- Many of the impacted trees that were observed exhibit seemingly healthy re-sprouting. Many re-sprouting trees have established or are establishing dominant leaders. In some cases the re-sprouts have attained 25 feet to 40 feet in height.
- Willow trees (*Salix sp.*) were the most frequently cut tree in the project area (41% of all trees cut), but were the most difficult to locate outside of one particular reach. There is not readily observable willow mortality, or gaps where one might expect willows. Willows are some of the most vigorously-re-sprouting species of trees. A combination of bushy re-growth and a buildup of woody debris from high flows that accumulated above many of the cut stumps likely contributed to the difficulty in finding all of the impacted willows.

- There are some re-sprouting cottonwoods (*Populus sp.*) that were cut in the project area that are not listed from the 2011 Caltrans site visit.
- The 2015 site visits revealed numerous sycamore stumps in the project area; there may have been more than 30 cut sycamores.
- The tree cutting had impacts that are difficult to quantify, such as reduction in canopy cover, shading, and leaf litter inputs to the ecosystem. For some of these impacts, the re-sprouting is assumed to make this a temporary loss of these ecosystem services.
- There are a few small areas of the project site where multiple cut stumps have died, leaving gaps in the vegetation that have yet to be filled. These areas would benefit from replacement plantings.
- There are no clear signs of ground disturbance from the tree cutting during Niles I Safety Project, though there are disturbance-related invasive plants scattered throughout the project site. Invasive plants observed in the project area include pampas grass (*Cortaderia sp.*), French broom (*Genista monspessulana*), periwinkle (*Vinca major*), and tree-of-heaven (*Ailanthus altissima*). Given the maturity of the individuals invasive plants, it is likely that most existed in the project area before the tree cutting.
- Large logs with cut ends were observed in the creek. They likely were cut in an upstream area and travelled downstream in higher flows, and are not associated with the Niles I Safety Project tree cuttings.

### **Mitigation Measure**

As mitigation for the Niles I Safety Project tree cutting impacts, Caltrans Agency Agreement:

#### **1) Replace the Stonybrook Creek culvert under Palomares Road with a free-span bridge.**

This will provide for future fish passage for steelhead trout into Stonybrook Creek, identified as an important spawning and rearing habitat for steelhead. Caltrans proposes the culvert replacement be completed as part of the Caltrans Niles Canyon Medium Term Safety Project.

There are concerns that coupling the Stonybrook Creek culvert replacement to the Medium Term Safety Project could further delay the Niles I mitigation, which has already been delayed for 4 ½ years. The proposed Medium Term Safety Project includes cutting of native riparian trees along Alameda Creek. There may be further impacts on native trees from the culvert replacement itself. Caltrans conceptual designs for the bridge would require the removal of two large California sycamore trees on either side of the culvert that were cut in 2011 and have since re-sprouted. As the bridge replacement design is developed, Caltrans will take all reasonable efforts to avoid these sycamores stumps / re-sprouts. These are especially large sycamore stumps with 30' re-sprouts and healthy root wads (providing bank stabilization and erosion control at the exit of the culvert).

To address these concerns, the design for the Stonybrook culvert replacement will be done in consultation with regulatory agencies and coordination with the Alameda Creek Alliance, and will avoid as much as possible any further impacts to sycamores, including those re-sprouting at the base of Stonybrook Creek. Any replanting done in conjunction with the culvert replacement will prioritize replanting of native sycamores.

Caltrans Stewardship Proposal:

**1) Remove tree-of-heaven and pampas grass in the reaches with cut trees in the Niles I project area where feasible, with stump treatments.**

Caltrans proposes to remove tree-of-heaven and pampas grass along Niles Canyon Road, between Palomares Road PM 13.2 and PM 11.9 on the creek side of Hwy 84, including stump treatment of the tree-of-heaven to prevent re-sprouting. Tree-of-heaven and pampas grass are aggressive invasive plants that can be difficult to remove once established, and the individuals in the project area constitute a risk for downstream infestations. Caltrans will monitor these locations for the 3 year plant establishment period where Caltrans will be doing site preparation and planting.

**2) Conduct restoration plantings, primarily sycamores, in the areas where trees were cut that are identified as having gaps, either due to stump mortality or the future removal of invasive plants.**

Caltrans will plant and establish an appropriate number of native trees in the Niles I reach areas where invasive plants are removed, as well as 2-3 other areas identified as having canopy gaps, that are safely accessible from Niles Canyon Road for watering. Caltrans will delineate these areas and quantify the number, species, and size of trees to be planted in cooperation with the Alameda Creek Alliance. Caltrans will determine a restoration planting that prioritizes sycamores and native species with known mortality due to Niles I project impacts. The replacement plantings will be irrigated during the dry months for a minimum of 3 years. Caltrans proposes the use of a passive irrigation system using gray water. The replacement plantings will be monitored by Caltrans for mortality for the 3 year plant establishment period, with replacement of individual plants as needed due to mortality. Caltrans will also conduct a survey of this location at year 5 to evaluate invasive control and planting mortality. Caltrans will provide regular status updates of the restoration plantings.

**3) Monitor cut sycamores in the Niles I project reach that have re-sprouted, and manage re-sprouting trees for healthy re-growth.**

Caltrans / ACA will collaboratively identify and tag, and quantify the sprouting response of the stumps of all cut sycamores within the project reach beginning in 2016. Caltrans will collect data on cut sycamores including diameter of the cut base, distance of the tree from Alameda Creek, number of re-sprouts, diameter of dominant leader, and height of dominant leader. The potential for weak branch attachments is greatly increased on re-sprouting growth. To manage the health of cut sycamores, Caltrans maintenance will manage the potential risk associated with attachments on cut sycamores. Caltrans may retain a certified arborist to evaluate the risk of potential fail of these sprouts.

**5) Caltrans will conduct public outreach in cooperation with ACA.**

Caltrans has offered to organize an additional site tour to view the Niles I tree cutting impacts for concerned members of the community, upon request. Caltrans will provide status updates on the invasive removal and re-planting effort associated with the Niles 1 planting. The Alameda Creek Alliance will continue to dialogue with the local community to help inform about these restoration efforts, and to update the community on the ongoing progress.