Laguna Creek Restoration Project

The project is located at

- The Hacienda de las Flores near the Pavilion building

The culvert is not adequately sized

These photos show damages from the flooding

These show more damages from the flooding

We have two sources of peak flow rates at this location

	FEMA	CCCFD
10-year Peak Flow	660	1,110
50-year Peak Flow	1,100	1,560
100-Year Peak Flow	1,300	1,720

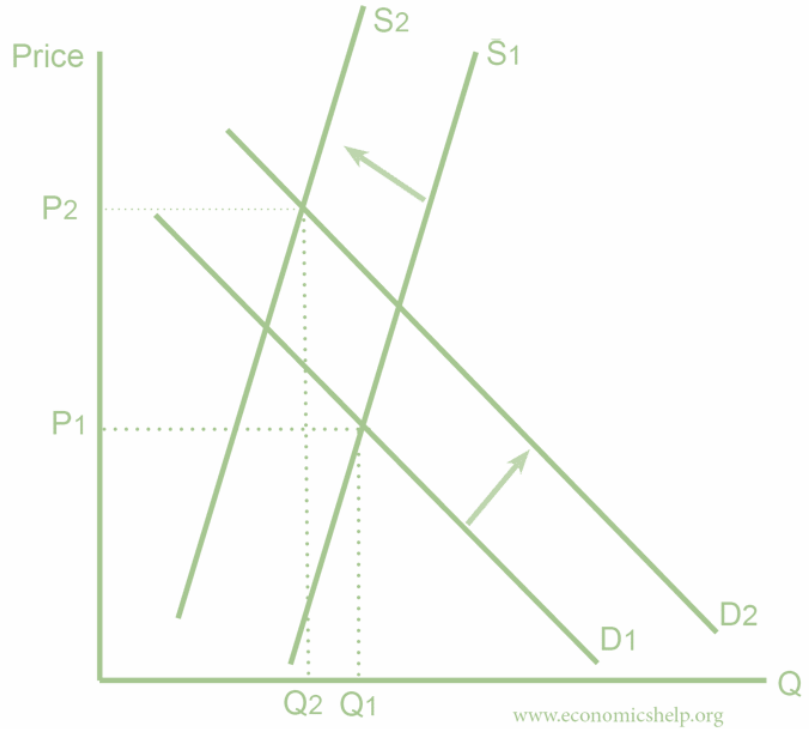
- FEMA peak flow rates are derived from regression equations from gauges in other watersheds
- Contra Costa County Flood Control District rates are from 1992 and assume “full buildout”

* The capacity of the 8-foot culvert is about 500 cubic feet per second

In 2014, ten alternatives to correct the problem were studied

1. No build (i.e., do nothing)
2. Line inside of existing culvert with smooth lining
3. & 4. Configurations of parallel 9-ft reinforced concrete pipe culvert
5. Replace existing culvert with larger 14-ft by 12-ft culvert
6. Install upstream detention basin
7. Raise Pavilion floor elevation above 100-year flood elevation
8. Relocate entire Pavilion structure outside 100-year floodplain
9. Construct flood wall around Pavilion
10. Daylight and restore Laguna Creek to contain 100-year flow

The results of the analysis



Two alternatives would reduce flood water surface elevations:

Alt.	5. Install 14-ft by 12-ft culvert	$2,820,000
Alt.	10. Restore the creek	$1.58 million

- Alt. 10 eligible for grant funding due to habitat improvements

Preferred alternative selected by Council was Alternative 10: restoring the creek

The Project consists of:

- Removing the existing 8-foot diameter culvert adjacent to the Pavilion building
- Constructing a natural channel with habitat for endangered species
- Relocating a sanitary sewer line
- Constructing a vehicular bridge over the creek
- Installing public improvements such as the trail

Funding Sources

- Proposition 13 River Parkways Grand Program (CNRA)
  - Award amount: $400K

- Measure WW Urban Creeks Grant Program (EBRPD)
  - Maximum possible award amount: $600K

- Hazard Mitigation Grant Program (FEMA)
  - Award amount: $800K

- Grants applicable only to natural channel restoration

Phase 1, Design and Environmental

- Field investigations and survey
- Hydraulic study
- Biological resources study
- CEQA and environmental studies
- Design (up to 65%)
- With the 65% design, FEMA will determine whether to authorizing Phase 2
- The design contract was competitively bid and awarded to BKF Engineers

BKF ENGINEERS

RESTORATION DESIGN GROUP

Phase 1, Design and Environmental

- Public Workshop: Feb. 23
- Planning Commission: March 2
- Parks and Recreation Comm: March 15
- Council Update: March 24

Phases 2 and 3

Phase 2, Final Design and Permitting

- 100% Design
- Bid Documents
- Bid Phase Support
- Resource Agency Permits

Phase 3, Construction

- Construction
- Construction Management
- Construction Support

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