Site Development Plan for PA 1
Orchard Hills Development

UCI Samueli School of Engineering | Department of Civil and Environmental Engineering

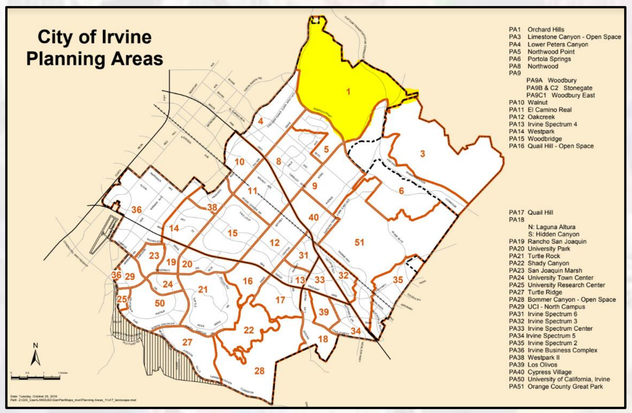
Project Team Members: Loay Bahadur, Clarissa Teng, Calvin Njotowidjojo, Cesar Martinez

Project Overview

LCC is assigned a project that proposes a site development plan for Planning Area 1 (PA 1), which is located within the City of Irvine. LCC's goal is to develop an environment-friendly and recreational neighborhood that brings the Irvine community together, as to preserve the environment, improve city tourism, and foster economic growth. The main theme of the site development project focuses on structural infrastructure while also incorporating transportation, water, and environmental features. Plans for the land development hence aims to not only maintain the City's vision, but to also promote the City's efforts for efficiency, diversity, and sustainability.

Project Site Location

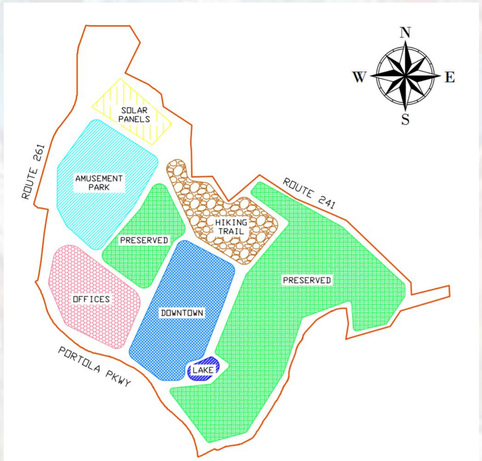
PA 1, also specified as Orchard Hills, is located in the northern region of Irvine bordered by Portola Parkway, and State Routes 241 and 261. This particular project cite has a total land area of 3,911 acres.



Site Constraints

- Varied Topography
- Traffic Flow Management
- Water Management
- Amusement Park Seismic Standards
- Traffic Impact
- Environmental Impact
- Topography
- Noise Pollution
- Toll Freeways

Zoning and Land Use



Land Use Type	Land Area (acres)	Percentage of Land (%)
Wildlife Preserve	1299	33.23
Conserved Open Space	1092	27.94
Amusement Park	399	10.21
Corporate Office	290	7.42
Downtown Area	418	10.71
Hiking Trail	253	6.49
Solar Panels	118	3.04
Lake	38	0.98
Total Area	**3911 acres**	

Environmental and Traffic Impacts

LCC has performed environmental impact studies, in compliance with CEQA guidelines, to assess the effects of the proposed plan on the surrounding area. Environmental factors potentially affected include: air quality, geology, soils, hydrology, water quality, traffic, and noise. A traffic study has also been performed to ensure adequate traffic flow, parking sizes, and street layout.

Infrastructure Elements

Traffic System
- Shuttle Bus System -Red Colored Pavement
- Bike Lanes - Green Colored Pavement
- Fixed-Signalization

Lights
- LED bulbs
- Intelligent Environment for Cities by General Electric

Hardscaping and Landscaping
- Ponds
- Big Plaza
- Permeable Pavements
- Stones Partition Walls
- Drought Tolerant Vegetation

Drainage
- Catchment Basins
- Crowned Streets
- LID method (green buildings)
- Permeable Pavements
- NTS (Natural Treatment System)

Electricity
- Solar Panel Farm
- Solar Panel on Building's Roof
- Distributed underground
- Area Transformer method

Acknowledgement

- Professor Joel Lanning
- Professor Stephen Bucknam
- Jared Brant Wilson

Contact Information

Loay Bahadur
(949) 558-7160
lbahadur@uci.edu