

**Adaptations for Climate Resilience in Downtown Oakland**

Oakland, CA

Skyline High School

12th grade Sustainable Systems

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**ISSUE**

The urban heat island effect causes many cities with large swaths of asphalt to absorb and retain heat more than suburban or rural areas in the same climate. This increases health risks for residents and causes greater greenhouse gas (GHG) emissions through reliance on air conditioning units. California is also experiencing more severe years of drought due to overall climate change related to GHG emissions.

Currently, the City of Oakland is preparing a specific plan that will provide suggestions for developing the downtown area including the topics of land use, housing, and public space. It is crucial that the City take into consideration future severe weather events related to climate change, including drought, sea level rise, and the heat island effect.

**QUESTION**

How can we make Downtown Oakland a more equitable place for all to access and enjoy now and in the future? What does it mean to create a resilient, sustainable, and equitable downtown?

**COMMUNITY OF PRACTICE**

* Instructor: Anna Gomberg
* Students: 12th grade Sustainable Systems Class
* Client(s): City of Oakland, Association of Bay Area Governments
* Community Partner(s): Center for Cities and Schools, UC Berkeley
* Other Resources: n/a

**YOUTH DRIVEN DATA AND INSIGHTS**

* Rooftop gardens: It costs 25-30% more to install a green roof than to install a traditional roof.
* On average, bioswales cost about $16.95 per square foot to install.
* Parklets range considerably in cost, starting at $5,000 all the way up to $25,000, depending on architecture and additional fees.

**RECOMMENDATIONS**

In order to promote livability, health, and sustainability in Downtown Oakland, we recommend that the city invest resources into short-term and long-term resilient infrastructure and systems.

**LONG-TERM (1-3 Years)**

* Permeable Pavers: Interlocking concrete paving blocks, porous concrete, or gravel paving that allows for rainwater to absorb into the ground, maintain groundwater systems, and effectively filter pollutants from the water.
* Rooftop Gardens: Green roofs moderate daily temperatures in cities, improve air quality, and manage storm water.
* Bioswales: These storm water runoff conveyance systems provide green alternatives to storm sewers. Bioswales reduce heat and filter water before it goes back into the ground.
* Parklets: A parklet is a public extension of a sidewalk that is installed over the location of a traditional parking space. They offer places to sit and relax in the city and, if planted, provide fresh air and cooler temperatures.
* Recycled Water: Using recycled water to hydrate plants and for other non-consumable water uses in the City to promote water reuse, especially in times of drought.

**NEXT STEPS AND SHARED ACCOUNTABILITY:**

* Students participated in a college panel with Y-PLAN mentors to learn more about college life, choosing a major related to sustainability, and finding internships.
* We look forward to receiving a response to comment on each of our proposals from the City of Oakland’s Planning and Building Department.