Exhibit A-1

a. The City of Oakland is located in Climate Zone 3 which is characterized by periods of extremely hot, dry weather during the summer and fall months. During these months, emissions generated within or transported to the Bay Area can combine with abundant sunshine to create conditions conducive to the formation of pollutants, such as ozone and secondary particulates, such as nitrates and sulfates. In addition, during the winter, the City of Oakland frequently experiences cold days with temperature inversions that trap certain air pollutants near the ground and exacerbate conditions leading to respiratory disease and other health risks. These local features contribute to the Bay Area's status as a "nonattainment area" under the federal Clean Air Act for ozone and particulate matter.

   The City of Oakland is located on the east side of San Francisco Bay. About two-thirds of Oakland is within a flat alluvial plain while the other third is located in the foothills of the East Bay Hill range. It is also a major port City and the regional transportation hub for the East Bay.

   Most Oakland residents have experienced the effects of poor air quality at one time or another. While the meteorology is generally favorable due to marine air traveling through the Golden Gate, the Oakland area is often considered a source for regional pollutants that contribute to elevated concentration in downward communities. This is especially the case in mobile or transportation sources. Resident populations in West and East Oakland have been the subject of many recent public health studies related to industry, multiple freeways, diesel trucks and port operations. Most of these studies have concluded that there is a serious health risk due to poor air quality including respiratory problems such as asthma, heart ailments, suppressed resistance to disease, infant mortality and finally reduced life span. Therefore, Oakland's geographic location and infrastructure makes it especially vulnerable to the climatic affects.

b. In June 2006, ICLEI – Local Governments for Sustainability in partnership with the Alameda County Waste Management Authority & Recycling Board (StopWaste.Org) and the Alameda County Conference of Mayors launched the Alameda County Protection Project. The City of Oakland committed to the project and embarked on an ongoing, coordinated effort to reduce the emissions that cause global warming, improve air quality, reduce waste, cut energy use and save money. On July 6, 2009, the Oakland City Council set a preliminary target to reduce community-wide greenhouse gas emissions by 36% below 2005 levels by 2020, and recommended a path to reduce GHG emissions by 83% below 2005 levels by 2050, to be analyzed as part of the preparation of a City-wide Energy and Climate Action Plan. While climate change is a global problem influenced by an array of interrelated factors, climate change is also a local problem with serious impacts foreseen for California, the Bay Area and City of Oakland. Local impacts include:

   i. **Sea level rise:** According to the Union of Concerned Scientists, the sea level in the State of California is expected to rise up to 12 inches of the next hundred years. The California Energy Commission's Public Interest Energy

Research (PIER) Climate Change Program predicts that a medium to high greenhouse gas emissions scenario is expected to result in sea level rises in San Francisco Bay of 16 inches by 2050 and 55 inches by 2100 if no actions are taken to protect the coast1. The Pew Center on Climate Change has reported that this would result in the erosion of beaches, bay shores and river deltas, marshes and wetlands and increased salinity of estuaries, marshes, rivers and aquifers. In addition, sea level rise will damage coastal roads and other infrastructure (port, bridges, and roads), and low-lying property.

Modeling by the San Francisco Bay Conservation and Development Commission (SFBCDC) show that under medium to medium-high greenhouse gas emissions scenarios, sections of Interstate 880, much of the Oakland International Airport (72-93%), portions of West Oakland, EBMUD's water treatment plant, areas around Lake Merritt, much of Oakland's shoreline, and areas near the coliseum would be underwater. The modeling also shows a drastic impact to the movement of goods from the Port of Oakland, the third largest port in California. Further modeling by Researcher Matt Heberger of The Pacific Institute estimates that with a 55-inch sea level rise, the area in Oakland flooded by the unimpeded 100-year tide would be 8.6 square miles – over 15% of Oakland's land area.[2]

ii. **Impacts on water**: Water quality and quantity in Oakland are at risk as a result of changing temperatures. With warmer average temperatures, more winter precipitation will fall in the form of rain instead of snow, shortening the winter snowfall season in the Sierra's and accelerating the rate at which the snowpack melts in the spring. Not only does such snow melt increase the threat for spring flooding, it will decrease the Sierras' capacity as a natural water tower, resulting in decreased water availability for agricultural irrigation, hydro-electric generation and the general needs of a growing population.

The Sierra snow-pack is the origin of the Mokelumne River, the primary source of water for the jurisdictions within Alameda County including the City of Oakland. The East Bay Municipal Utility District (EBMUD) provides water and sewage treatment for Alameda County customers. In 2008, EBMUD staff conducted a study on climate change impacts on water quality and water supply for the EBMUD service area, with many of its findings relevant to the City of Oakland. That study found the Sacramento/San Joaquin River Delta and its aging levee system exceptionally susceptible to storm damage. Although EBMUD does not divert its water supply from the delta, failure of the delta's levees could result in catastrophic damage to EBMUD's nearby water supply aqueducts, interrupting water deliveries to EBMUD's service area, including Oakland.[3]

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[1] Heberger *et. al.* Pacific Institute, 2009. "The Impacts of Sea-Level Rise on the California Coast." Pp. xi.
[2] Heberger, Matt. 2009. <http://www.pacinst.org/reports/sea_level_rise/files/Ca_coast_yr2100_flood.html.>
[3] Wallis *et. al.*, EBMUD, 2008. Pp. 74.

Rising water temperatures may affect water quality by promoting algae growth in Lake Merritt, the Estuary, and Oakland's many above ground creeks and marshes, resulting in increased algal by-products such as taste-and-odor compounds[4] and hypoxia.[5]

iii. **Natural disasters:** Climate models predict a 4°F temperature increase in the next 20 to 40 years, with an increase in the number of long dry spells, as well as a 20-30% increase in precipitation in the spring and fall. More frequent and heavier precipitation causes flooding, mudslides and landslides, incurring considerable costs in damages to property, infrastructure and even human life.

As mentioned above, a large portion of Oakland is located in the foothills of the East Bay Hills range and many properties are located on extremely steep slopes. During winters with an extreme storm event or a series of storm events with heavy rainfall, Oakland typically experiences landslides in these areas due to saturated ground-water conditions. Approximately 43 landslides occurred in a single El Niño (extreme wet weather) season.[6]

An increasing number of wildfires, due to continued dry periods and high temperatures, are another expected impact of continued climate change. As indicated in Oakland's Safety Element, wildfires are the most severe fire hazard in Oakland, especially in the hills above the Warren Freeway. Because the Oakland Hills are a fire-dependent ecosystem, there is a severe wildfire every 10 to 20 years when the area's natural vegetation is dry and extremely flammable. Urbanization of Oakland's fire hazard areas has increased the potential for more frequent and severe wildfires with an additional likelihood of severe damage and loss of life. The 1991 fire is notorious for being the most destructive wildfire in California history.

iv. **Public health impact:** Warming temperatures and increased precipitation can also encourage mosquito-breeding, thus engendering diseases that come with mosquitoes, such as the West Nile Virus, a disease of growing concern in Oakland and the surrounding region.

Heat waves are also expected to have a major impact on public health and be a determinant factor of mortality. Increased temperatures also pose a risk to human health when coupled with high concentrations of ground-level ozone and other air pollutants, potentially leading to increased rates of asthma and other pulmonary diseases. The incidence of bad air days in California's urban areas has increased, mostly in hot summer days. In the summer of 2006, the

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[4] Wallis *et. al.*, EBMUD, 2008. Pp. 75.
[5] SFBCDC, 2009. Pp. 78.
[6] Coe, Jeffrey, Jonathan W. Godt, Dianne Brien, and Nicolas Houdre, 1999. "Map Showing Locations of Damaging Landslides in Alameda County, California, resulting from 1997-98 El Niño Rainstorm."

Bay Area Air Quality Management District (BAAQMD) registered 11 Spare the Air days for the region and exceeded the California 1-hour standard for ozone (set at 90 ppb) 18 times. As noted above, parts of Oakland are already impacted by poor air quality due to the adjacent port, major highway system, and industry within the city borders.

Impacts on plants and vegetation: Native plants and animals are at risk as temperatures rise and scientists are reporting more species moving to higher elevations or more northerly latitudes in response to climate change. This could affect the 31 plant and 20 animal species that are either in danger of extinction or present in very limited numbers and make Oakland their home. On the list of special status animals, there are two mammals, one reptile, fifteen birds, one fish, and one insect. Of these, 14 are federal special status and 19 are state special status creatures. Six threatened plant species in Oakland are state status and 14 plant species are federal status threatened, endangered, or rare plants.
The absence of these native species would allow invasive species of weeds and insects to gain a foothold in these areas and to threaten other native species and their habitat. This change would be particularly devastating to Oakland as wildlife actually composes nearly 20% of Oakland's total land area. Furthermore, these special species and their habitats as they are already struggling to survive in an infill, urban area.

c. The City of Oakland's local climatic, topographic, and geological conditions exacerbate the impacts of global climate change in several ways to make the adoption of green building requirements reasonably necessary:

   i. Increasing summer temperatures increase the need for air conditioning, thereby increasing average load demand and peak load demand for energy within the City of Oakland. This heightened demand increases the risk of power outages and power shortages, with associated adverse public safety and economic impacts. Increased energy demand and usage also increases local and regional air pollution impacts. Decreasing energy consumption through energy efficiency and other green building techniques reduces each of these impacts.

   ii. Increasing summer and year-round temperatures also adversely affect the City of Oakland's water supply, which is already subject to periodic drought conditions and potential water cutback. Decreasing water usage through conservation, sustainable landscaping (such as Bay-Friendly Landscaping), use of drought-tolerant and native plants, and other green building techniques reduces these adverse impacts.

d. The City of Oakland finds that the design, construction, and maintenance of buildings and landscapes within the City of Oakland can have a significant impact on the City of Oakland's environmental sustainability, resource usage and efficiency, waste management, and the health and productivity of residents, workers, and visitors to the

City of Oakland. In 2005, Oakland enacted Chapter 15 of the Oakland Municipal Code, which requires all new City construction and major renovation projects to achieve a LEED Silver certification. In 2006, Oakland adopted as the Alameda County Residential Green Building Guidelines, the U.S. Green Building Council's LEED Rating Systems and the Bay-Friendly Landscape Guidelines as official City reference documents.

e. Green buildings play a significant role in reducing the amount of waste sent to landfills. Construction and demolition debris comprise up to 30% of all materials disposed of in California's landfills and over 21% of materials disposed of in Alameda County. Many of these materials have greenhouse gas implications once landfilled. The breakdown of organic materials in landfills produces methane and other greenhouse gases, as does the process of making new building materials from raw materials.

f. This green building ordinance furthers the City of Oakland's efforts to enhance the community's social, economic, and environmental well-being and to mitigate the efforts of global warming on the City of Oakland's weather, water supply, physical infrastructure, ecological diversity, human health and economy.