Sustainable Silicon Valley, Phase II

Ranking of Environmental Pressures

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Materials and Resources	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.a. Use of energy from non-renewable sources** Use of non-renewable energy sources (fossil fuel, nuclear) both depletes natural stocks of the fuels and creates environmental impacts to air, water and land when extracted, refined or processed, and when used.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.b. Use of energy from renewable sources** Use of renewable energy sources (hydro, wind, solar, biomass) creates environmental impacts to land, air and water. However, impacts of renewable energy sources to air and water are generally lower than impacts from non-renewable sources. With the exception of hydropower, and in some cases wind energy, energy from renewable sources has been more expensive to produce than power from non-renewable sources.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.c. Use of fresh water** Supplies of fresh water are local or regional, and finite. They can be contaminated by surface or groundwater sources or over-taxed by expanded residential, commercial and agricultural use. Over-use of fresh water resources reduces water flows, which can impact aquatic ecosystems and lead to saltwater intrusion in surface or groundwater. A mature collection treatment and distribution infrastructure is in place.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.d. Use of recycled water** Recycled water can replace fresh water in some commercial, agricultural and residential uses if the treated water is of sufficient quality to address concerns about health and safety. To use this resource, a collection, treatment and delivery infrastructure must be put in place.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.e. Use of non-renewable raw materials** Use of non-renewable raw materials depletes natural stocks. Reducing the use of non-renewable materials will extend the lifespan of the resource and reduce impacts from extraction, transportation, processing, use and disposal.

○ Do More ○ Watch ○ Maintain ○ Don't Know	**1.f. Use of renewable/sustainably harvested raw materials** Use of renewable/sustainably harvested raw materials slows the depletion of non-renewable materials. Use creates environmental impacts from extraction, processing transportation and disposal.
Materials Management	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**2.a. Material, product and packaging disposal - business** Discarded materials create environmental impacts to air, water, land and ecosystems because they require a collection and disposal infrastructure. Material reuse and recycling, either by the originating business or use as feedstock to a second business, slows the depletion of raw materials and reduces the environmental impact of their extraction and processing. Collection and processing of recycled materials adds its own environmental impact and added costs.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**2.b. Product and packaging reuse and disposal - consumer** Discarded materials create environmental impacts to air, water, land and ecosystems because they require a collection and disposal infrastructure. Product and packaging reuse and recycling slows the depletion of raw materials and reduces the environmental impact of their extraction and processing. Collection and processing of recycled materials adds its own environmental impact and added costs. Also, few markets are available, resulting in limited types of materials collected in curbside recycling programs, and some products and packaging materials are costly to collect and separate.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**2.c. Construction material reuse, recycling or disposal** Materials generated by demolition and construction of buildings and infrastructure constitute a significant portion of the waste stream and hence add to collection and disposal impacts. Both activities present opportunities for resource conservation, for reducing the environmental impact of disposal, and for cost savings through reuse and recycling.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**2.d. Organic material beneficial use or disposal** Organic materials such as vegetation, food wastes, paper etc. constitute a significant portion of the waste stream and hence add to collection and disposal impacts. Composting these materials presents opportunities to both reduce disposal and create useful products, including compost and mulch, that can improve agricultural soils, reduce use of pesticides, control weed growth and reduce water use.
Releases to Air	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.a. Ozone generating releases (ground-level)** Chemicals emitted by motor vehicles, power plants, some industries and solvent-containing products create ozone through chemical interactions stimulated by sunlight. Even in small quantities this gas can be a major irritant and a health and environmental hazard. Improved control technology on industrial and vehicle emissions has reduced ozone levels, but increases in vehicles and miles traveled, traffic congestion and lower auto mileage offset this trend.

○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.b. Ozone depleting releases (upper atmosphere)** A number of halogen-containing (fluorine, chlorine or bromine) compounds used as refrigerants and cleaning solvents migrate to the upper atmosphere and react with ozone molecules that make up the protective ozone layer. These compounds have been controlled by international treaty and the U.S. Government for several years.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.c. Particulate emissions** Particulates - solid or liquid particles in the air - can affect human respiratory systems. They can also contribute to the spread of contaminants such as heavy metals through atmospheric deposition, and are a significant factor in global warming. They originate from a variety of mobile sources (e.g. diesel powered vehicles), stationary sources (e.g. oil-fired power plants, industrial boilers, incinerators and woodstoves) and natural sources (e.g. wind erosion and wildfires).
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.d. Acid rain generating releases** Sulfur dioxide and oxides of nitrogen from combustion combine with water vapor in the atmosphere, forming nitric and sulfuric acid, the principal constituents of acidic deposition. Acidic deposition, or "acid rain," negatively affects forest and aquatic systems and damages marble and concrete structures.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.e. Discharges of toxic chemicals to the air** Some toxic chemicals may be legally discharged to the atmosphere. Localized concentrations of these chemicals from permitted and unpermitted sources, and from illegal or accidental releases, have the potential to cause human or environmental harm.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.f. Greenhouse gas emissions** Climate change is primarily due to human sources of carbon dioxide emissions from combustion of fossil fuels. Other heat trapping gases, such as methane, CFCs and halons, come from a variety of human and natural sources.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**3.g. Indoor air pollution** Air pollution programs emphasize outdoor air quality. However, Californians spend only 6% of their time outdoors. Homes, offices and workplaces may contain a wide variety of airborne contaminants such as molds, spores, dusts, bacteria and toxic chemicals.
Releases to Water	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**4.a. Discharges of toxic chemicals to surface and groundwater** Some toxic chemicals may be legally discharged to ground or surface waters. Localized concentrations of these chemicals from permitted and unpermitted sources, and from illegal or accidental releases have the potential to cause human or environmental harm.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**4.b. Run-off to surface waters** Run-off of chemicals, pesticides, biological contaminants and sediment from shopping malls, buildings, farms, yards and roads contributes significant pollution loads to surface waters.

○ Do More ○ Watch ○ Maintain ○ Don't Know	**4.c. Non-permitted discharges of toxic chemicals to sewage plants** Disposal of hazardous materials to a sewage system, whether from regulated facilities in excess of permitted amounts, from unregulated facilities, or by members of the public can cause wastewater treatment plants to exceed discharge limits.
Hazardous Materials	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**5.a. Production, use, storage and transportation** Each step in the hazardous materials management process creates its own risk to human and environmental health. These activities are regulated; their impacts will depend upon company compliance with regulations, design of adequate procedures and use of best management practices.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**5.b. Disposal** Land disposal and incineration of hazardous wastes are regulated and monitored. Impacts will depend upon company compliance with regulations, design of adequate procedures and use of best management practices. Some hazardous wastes that are currently treated and disposed of can be recycled, thus reducing the potential for negative environmental impact of disposal.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**5.c. Accidental releases** Spills and accidental releases of hazardous materials can impact those who live and work in the vicinity, both in the short and long term.
The Built Environment	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**6.a. Urban sprawl** Population density and location affect the efficient use of land and material resources and may reduce the delivery efficiency of municipal infrastructures, transportation and other services, thus increasing their environmental impacts.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**6.b. Availability and cost of housing close to work** Lack of locally affordable housing increases commute time, vehicle miles traveled, and the environmental impacts to land, water and air associated with the automobile.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**6c. Transit System Availability** Integrated, convenient and frequent regional-scale public transportation between home, business and shops can reduce transportation related environmental impacts.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**6.d. Use of urban brownfields for redevelopment** Targeted cleanup of contaminated sites in urban areas and redevelopment for residential or industrial use can help minimize sprawl.

○ Do More ○ Watch ○ Maintain ○ Don't Know	**6.e. Urban development of flood plains** Development along creek channels and in flood plains puts urban areas at increased risk of downstream flooding by increasing the volume of storm water runoff.
Species and Habitat	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**7.a. Habitat development or fragmentation** Development of agricultural lands, wetlands, riparian lands, and open space at the urban periphery, and stream channelization projects reduce habitat availability and may result in the loss of indigenous species.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**7.b. Introduction of non-native species** Non-native species may compete with and displace native species. This can have unintended environmental or natural resource consequences.
Governance	
○ Do More ○ Watch ○ Maintain ○ Don't Know	**8.a. Regulations** Outdated or conflicting environmental and natural resource regulations can hinder improvement and conservation programs. Systems to identify such problems are not present or not well understood by either regulators or the regulated community.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**8.b. Coordination of improvement efforts** Failure to align and integrate the environmental improvement and resource conservation efforts of government, private and non-government organizations on a local and regional basis can dilute or derail improvement efforts.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**8.c. Public education** A lack of environmental and resource conservation awareness by the public, government and businesses can lead to behaviors that have significant negative environmental and resource impact.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**8.d. Land use decisions** Local concentration of land uses with toxic emissions may create low property values; adjacent communities, often low-income and minority neighborhoods, can be subject to disproportionate environmental risk.
○ Do More ○ Watch ○ Maintain ○ Don't Know	**8.e. Regional planning** When regional habitat conservation, land use and transportation plans are absent or insufficiently integrated with assessments of their environmental impact, there will be no consideration of the cumulative impacts of future growth or changes in land use patterns.

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