

SUMMARY OF BOARD ITEM

ITEM # 02-9-1: Board Update on Health Effects of Air Pollution: Effects of Particulate Matter on the Cardiovascular System

STAFF RECOMMENDATION: Informational item.

DISCUSSION: The ARB staff is providing the Board with monthly updates on the health effects of air pollution. This month staff would like to focus on the short-term health impacts of particulate matter.

SUMMARY AND IMPACTS: Over the past decade a number of epidemiologic studies have reported a significant association between exposure to air-borne particulate matter (PM) and deaths and hospital admissions for cardiovascular causes. Staff will briefly discuss a recent study that reported a significant relationship in human subjects between ambient PM exposure and a specific abnormal electrical activity of the heart. This physiological response was exercise induced and is known to be a risk factor for coronary heart disease. While abnormal cardiac activity seemed to be associated with short-term increases in fine (PM_{2.5}) and ultrafine particles, an association with coarse particles could not be made. The results from this study provide a possible biological link between ambient levels of particulate matter and risk of mortality from coronary heart disease.

