

Naturally Occurring Asbestos Frequently Asked Questions

Q: What is Naturally Occurring Asbestos?

A: Naturally Occurring Asbestos (NOA) refers to asbestos that is present naturally in soil and rock, as opposed to asbestos that was commercially mined and applied to building materials. NOA is found in many places in the United States and is present in at least 44 of California's 58 counties. When found, the amount of NOA ranges from less than 1 percent up to 25 percent concentration or more. Natural weathering and human activities may disturb NOA-bearing rock or soil and release mineral fibers into the air, which can result in adverse health effects if inhaled. However, measures can be taken to minimize the release of these mineral fibers.

Q: What were the test results and how much NOA is in the area?

A: Independent environmental engineering firms obtained and tested rock and soil samples from both NDOT Phase 1 and RTC Phase 2 project areas at depths ranging from ground level to more than 200 feet below the surface. Samples were tested to determine if NOA was present and, if so, where and at what concentrations.

- All 150 surface and subsurface rock and soil samples tested in the NDOT Phase 1 project area had NOA concentrations below 0.25 percent.
- Of the 194 surface rock and soil samples tested in the RTC Phase 2 project area, only one out of five had NOA detected and only 2 samples (approximately 1 percent) had concentrations above 1 percent.
- Of the 267 subsurface rock and soil samples tested in the RTC Phase 2 project area, more than half had NOA detected but only 12 samples (approximately 4 percent) had concentrations above 1 percent.
- Overall, the independently conducted soil and rock tests confirmed that NOA is present in the project areas, but NOA concentrations are generally low.

Q: What's significant about 0.25 percent and 1 percent amounts of asbestos found in the tests and are those safe concentrations?

A: In general, a material that contains 0.25 percent or greater is defined as a "Restricted Material" by the California Air Resources Board (CARB), which regulates the NOA mitigation measures in California where NOA is found at many project sites. A Restricted Material may not be used in California for surfacing applications, and there are requirements for covering or wetting surfacing materials if the NOA content is greater than 0.25 percent. The Boulder City Bypass project has adopted this standard for surfacing applications.. The Occupational Safety and Health Administration (OSHA) defines Asbestos Containing Material (ACM) as material (both commercially used and found naturally) that has greater than 1 percent asbestos. This level sets mandatory requirements for certain activities. This value does not have a "safe level" significance - it was designed to differentiate between building materials where commercial asbestos was applied and those where asbestos was not applied. The amount of NOA in natural material, like soil and rock, is not a direct indicator of safe levels of NOA in the air. Human

exposures and risks are determined based on measured air concentrations, not soil concentrations. If soil disturbance is high, uncontrolled, and does not include mitigation methods with water, a relatively small amount of asbestos (such as found at the Boulder City Bypass project site) could still produce large airborne concentrations. However, if controlled during construction using established mitigation methods, even very large concentrations of asbestos (such as found in California) produce negligible levels in the air. That is why we will be implementing strict mitigation processes to minimize the release of dust potentially containing NOA.

Q: How are areas where NOA concentrations exceed 1 percent going to be addressed? 2

A: In accordance with OSHA requirements, activities in geologic materials with an average content of greater than 1 percent will be classified as Class 2 Work and special provisions per OSHA standards will be implemented. Site restrictions, training, dust control, wet methods, personal and perimeter air monitoring, personal protection, decontamination, trackout prevention, and many other standard protocols will be applied regardless of NOA content.

Q: Can NOA cause me health problems?

A: According to the Agency for Toxic Substances and Disease Registry (ATSDR), “being exposed to asbestos does not mean you will develop health problems.” Many things need to be considered when evaluating whether you are at risk for health problems from asbestos exposure. From the ATSDR, the most important of these are:

- How long and how frequently you were exposed
- How long it has been since your exposure started
- How much you were exposed
- If you smoke cigarettes (cigarette smoking with asbestos exposure increases your chances of getting lung cancer)
- The size and type of asbestos to which you were exposed
- Other pre-existing lung conditions

Q: Is the project safe? Will it affect Boulder City’s short and long-term public health?

A: NDOT and RTC are taking extraordinary efforts for worker and public safety. They have developed NOA mitigation measures modeled after the EPA’s guidance for working with NOA, OSHA’s asbestos standard for construction, California’s NOA regulations for construction, and best-management practices employed at other asbestos sites across the country. Measures that will be incorporated into the project include special training of all workers, personal protection and respiratory protection, personal and perimeter monitoring, dust control measures that exceed Clark County Department of Air Quality requirements, third-party oversight to assure that specified practices are followed, and several other procedures and protocols designed to control NOA. Few construction projects in the country have

similarly stringent dust control and monitoring programs. These mitigation measures will minimize exposure to dust potentially containing NOA during construction.

Q: How do I know the proposed NOA mitigation measures will be effective and who developed them?

A: The mitigation measures chosen for this project were adopted from California's Asbestos Airborne Toxic Control Measures that have been in place and proven since the late 1990's. The specifications for the project were developed by expert consultants that are highly experienced with the health effects and control of NOA, and input was provided by an expert team of geologists, engineers, toxicologists and other scientists with extensive experience in their fields of expertise. The project team also benefited from direction provided by individuals representing agencies that regulate NOA or implement NOA protocols, such as EPA, Caltrans, California Geologic Survey, Clark County Department of Air Quality, OSHA, California Air Resources Board, and others. In addition to third party inspections, the mitigation measures will be verified by an extensive perimeter and ambient air monitoring system designed to capture daily levels and monitor long term averages. State of the art analytical tools will be used, including real time dust monitoring and air sample analysis by both Phase Contrast Microscopy and Transmission Electron microscopy.

Q: How will NOA mitigation compliance be enforced and by whom?

A: Air quality will be monitored continuously around work areas by the NDOT and RTC. The Clark County Department of Air Quality will be responsible for enforcing dust mitigation.

Q: Whom can I contact if I notice dust generated from the project during construction?

A: The NDOT and RTC will provide a project hotline for local residents to speak with project representatives who will address their concerns.

Q: Who can I contact if I notice dust coming from a location that is not the Boulder City Bypass Project?

A: The Clark County Department of air quality provides dust control oversight and would be the agency to contact.

Q: During construction, how will I be able to get the latest information update on NOA air quality construction related information?

A: A website will be developed for the project to keep everyone updated on the construction progress, ongoing rock and soil testing and ambient air monitoring.

Q: Do I have to take any precautionary measures for my personal safety during construction? Will my family be safe during construction?

A: Committed to public safety, rock and soil testing and air monitoring will be ongoing during construction and in accordance with the strict standards used in California, where construction projects

routinely encounter NOA. The mitigation measures and air monitoring program is designed to prevent adverse health effects to workers on site and residents and visitors to Boulder City off site.

Q: What's the purpose of ambient air monitoring and how will it be conducted? What information will be reported and how often?

A: Ambient air monitoring is already under way at 12 different locations throughout and near the project area with weekly reports being generated. Air monitoring will also be conducted throughout the life of the project and done in accordance with EPA procedures for asbestos sampling. By monitoring air quality, the effectiveness of mitigation measures can be evaluated and adjusted if necessary.

Q: What will become of the asbestos in the soil? Will NOA material be removed from the project area and disposed of offsite?

A: All rock and soil excavated for the project will be used for construction of the project and will remain onsite. Any material with NOA concentrations above 0.25 percent will be buried and covered with a layer of surfacing material having an NOA concentration of less than 0.25 percent. There is an abundance of material on-site which has NOA concentrations well below 0.25 percent.

Q: Will I be able to access adjacent recreational areas through the project area and if so, will I be safe doing this?

A: Access to public recreation areas will be maintained across the project area during construction. Mitigation measures will be in place only at locations crossing the project.

Q: Will exposed rock cuts within the project area be safe? It seems these areas represent a newly exposed source of elevated NOA. Were any of the rock-cut areas covered in the samples tested?

A: Rock-cut areas were tested and found to have varying concentrations of NOA. However, NOA is bound within the rock structure, and therefore, is unlikely to contribute to airborne emissions.

Q: After construction, how is asbestos going to be managed in the project area and with the newly exposed rock cut slopes?

A: Per CARB standards, surfacing material with NOA concentrations of less than 0.25 percent will permanently cover exposed fill areas. Loose material will be cleared from rock-cut areas, and exposed rock will be left to naturally weather.

Q: Who is going to educate the public at-large regarding naturally occurring asbestos?

A: Both NDOT and the RTC are working with experts in the field who have experience with projects that require NOA mitigation. Both agencies will provide the public with information on the issue and the project through public forums and via their websites, where citizens can stay abreast of the project activities and the ongoing test results in the project area.

Q: Why wasn't NOA discovered years ago and why are we concerned today?

A: Testing is required at the microscopic level to determine the presence of asbestos which may be present in low concentrations in the soil. UNLV geological research in 2013 was the first to document the presence of NOA in Southern Nevada, including near the project area. As a result, NDOT and RTC conducted extensive rock and soil testing to determine the presence and concentrations of NOA in the project area.

Q: Will the air be sampled while they are building the new road? Who will be doing this?

A: Yes. Air monitoring during construction will be performed by the contractors under the supervision of the NDOT and RTC.

Q: If all soils are stable and maintained in a wet condition, can the public be exposed to asbestos?

A: Mitigation measures to prevent dust, such as wetting, are the most effective in minimizing the likelihood that NOA would become airborne during construction.

Q: How will workers be protected during construction?

A: Worker protection is a high priority for NDOT and the RTC. As work starts, OSHA requires that an initial assessment of each type of work be conducted to measure the potential exposure to workers. Based on this assessment, the appropriate level of respiratory protection for each worker will be determined, and workers will be monitored throughout the project to assure that they are not exposed to OSHA mandated thresholds of NOA. Trackout of asbestos from the site is prevented by wearing protective clothing, most commonly Tyvek suits, which are removed and disposed of daily. Workers use HEPA vacuums and water to remove soil from shoes or residual dust from clothing. Most importantly, each worker receives special training that informs them of how exposure occurs and how it can be prevented, as well as site requirements for handling NOA and other topics as required by OSHA.