Appendices

Appendix 2-1 NOP and NOP Comment Letters

Appendices

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NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

DATE: November 1, 2024

TO: Agencies, Organizations, and Interested Parties

PROJECT TITLE: La Sierra High School Track and Field Project

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

NOTICE IS HEREBY GIVEN that the Alvord Unified School District (AUSD or District), as Lead Agency under the California Environmental Quality Act (CEQA), will prepare a Draft Environmental Impact Report (Draft EIR) for the La Sierra High School Track and Field Project pursuant to the California Public Resources Code (PRC), Division 13, Section 21000 et seq. (CEQA Statute) and the California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15000 et seq. (CEQA Guidelines).

The purpose of the Notice of Preparation is to (1) serve as a public notice of an EIR pursuant to the CEQA Guidelines Section 15082, and (2) advise and solicit comments and suggestions regarding the scope and content of the EIR to be prepared. The District, as Lead Agency, respectfully requests that any responsible and trustee agencies responding to this notice respond in a manner consistent with CEQA Guidelines Section 15082(b). Comments and suggestions should, at a minimum, identify the significant environmental issues, reasonable alternatives, and mitigation measures that should be explored in the EIR, in addition to whether the responding agency will be a responsible or trustee agency for the proposed project, and any related issues raised by interested parties.

In compliance with CEQA Guidelines Section 15060(d) and 15082, the District will not be preparing an initial study and will begin work directly on the Draft EIR.

PROJECT LOCATION: The project site consists of the track and field, parking lot(*), and tennis courts(*) at the La Sierra High School (La Sierra HS) campus located at 4145 La Sierra Avenue, in the La Sierra Neighborhood of Riverside, in Riverside County (see Figure 1, *Aerial Photograph*). The La Sierra HS campus is surrounded by residential uses, Collett Avenue, and Collett Elementary School to the north; and residential uses to the east, south, and west. The campus is zoned Single Family Residential Zone (R-1-7000), and the campus has a land use designation of Public Facilities/Institutions (PF). (*These areas of the project site, while included in the analysis, are intended for a potential future project and will not be included in the scope of the current project.)

PROJECT DESCRIPTION: The District is proposing to renovate the existing track and field; add field lighting, public address (PA) system, scoreboard, bleachers to accommodate 2,800 spectators(*); construct a 5,500-square-foot field house that would include restrooms, ticket office, storage, concessions stand, and team room(*); relocate the existing tennis courts(*); and repave and restripe the 134,000-square-foot parking lot(*). New access from the parking lot to the bleachers would be constructed(*). The proposed project would reduce the number of parking spaces by 136 parking stalls(*); (see Figure 2, *Conceptual Site Plan*). The proposed project would not impact student or staff capacity at La Sierra

HS. (*These design elements, while included in this analysis, are intended for a potential future project and will not be included in the scope of the current project; the current project would include a smaller scope and therefore the analysis in the DEIR will be conservative.)

POTENTIAL ENVIRONMENTAL EFFECTS: In accordance with Section 15082 of the CEQA Guidelines, the District has prepared this Notice of Preparation to provide agencies, organizations, and interested parties with information describing the proposed project and its potential environmental effects. Environmental factors that will be analyzed in the Draft EIR are:

and Forestry

• Aesthetics

Noise

Recreation

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•

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- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Cultural ResourcesGreenhouse Gas Emissions

Agriculture

Resources

- Land Use and Planning
- Population and Housing
- Transportation
- Utilities and Service Systems
- Wildfire

- Air Quality
- Energy
- Hazards and Hazardous Materials
- Mineral Resources
- Public Services
- Tribal Cultural Resources

PUBLIC REVIEW PERIOD: The 30-day public review period for the NOP is from **Friday, November 1, 2024, to Thursday, December 5, 2024**. In accordance with the time limits mandated by State law, if there are any concerns about the scope and content of the information to be addressed in EIR, please send written comments to the District, at the address below, at the earliest possible date but not later than 5:00 p.m. on **Thursday, December 5, 2024**. This NOP is also available at:

- Alvord Unified School District, Facilities Planning Department (address below)
- Alvord Unified School District website: https://www.alvordschools.org/8519_4

PUBLIC COMMENTS: Please send your comments to:

Alvord Unified School District Facilities Planning Department 9 KPC Parkway, Corona, CA 92879 ATTN: Ryan Carter, Director III, Facilities

Comments can also be sent by e-mail to ryan.carter@alvordschools.org. Please include "La Sierra HS Track and Field Project" in the subject line. If you require additional information, please contact Ryan Carter at (951) 509-5113.

SCOPING MEETING: The District will hold a scoping meeting from 5:00 p.m. to 7:00 p.m., on **Wednesday, November 13, 2024**. The meeting will be held in-person at 9 KPC Parkway, Corona, CA 92879 in the Board Room on the first floor.

The purpose of the scoping meeting is to present the proposed project, describe the EIR process, and to receive public comments. The District invites interested parties to participate in the scoping meeting for the proposed project in order to learn more about the project, ask questions, and submit comments.



Figure 1 - Aerial Photograph

Project Site Boundary

Source: Huckabee

Figure 2 - Conceptual Site Plan

NOTES

Community Development Department Planning Division

City of Arts & Innovation

November 5, 2024

Ryan Carter Facilities Director Facilities Planning Department 9 KPC Parkway Corona, CA 92879

Subject: **City of Riverside's Review** a Notice of Preparation of an Environmental Impact Report for the La Sierra High School Track and Field Project

Dear Mr. Carter:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the La Sierra High School Track and Field Project.

The City of Riverside (City) understands that the project consists of the renovation of the existing track and field including the construction of a 5,500 sq. ft. field house; numerous upgrades to the lighting, sound and pavement; and will provide new access to the bleachers from the parking lot.

Given the proximity to the City of Riverside, the City would like to provide the following comments:

Public Works Department - Traffic Engineering Division:

- The Traffic Division would like to request the opportunity to review the scope and traffic analysis reports. The Traffic Division also requests that the traffic impact analysis of the intersections and roadways located in the City of Riverside are evaluated in accordance with the traffic study guidelines published at https://www.riversideca.gov/publicworks/sites/riversideca.gov.publicworks/files/docs/Traffic/TIA%20Guidelines%20-%20July%202020-Final.pdf
- The study should evaluate pedestrian improvements at La Sierra and Spaulding in the form of high visibility crosswalks and the opportunity to adding bike racks / skateboard racks, etc. on site.

<u>Community & Economic Development Department – Planning Division</u>

- Potential noise impacts should be evaluated for compliance with Title 7 of the Riverside Municipal Code (RMC) as it relates to exterior noise level limits for residential land uses.
- Potential visual and aesthetic impacts from outdoor lighting should be evaluated for compliance with Chapter 19.556 of the RMC as it relates to light trespass reduction and compatibility with adjoining land uses.

The City appreciates your consideration of the comments provided in this letter. Should you have any questions regarding this letter, please contact me at (951) 826-5944, or by e-mail at <u>mtaylor@riversideca.gov</u>.

We thank you again for the opportunity to provide comments on this proposal and look forward to working with you in the future.

Sincerely,

Matthew Taylor Principal Planner

cc: Patricia Lock Dawson, Mayor Riverside City Council Members Mike Futrell, City Manager Rafael Guzman, Assistant City Manager Jennifer A. Lilley – Community and Economic Development Director Maribeth Tinio, City Planner Gil Hernandez, Public Works Director Jack Liu, Interim City Attorney

Department of Toxic Substances Control

Katherine M. Butler, MPH, Director 8800 Cal Center Drive Sacramento, California 95826-3200 dtsc.ca.gov

Gavin Newsom Governor

SENT VIA ELECTRONIC MAIL

November 5, 2024

Ryan Carter Director III, Facilities Alvord Unified School District 9 KPC Parkway Corona, CA 92879 ryan.carter@alvordschools.org

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE LA SIERRA HIGH SCHOOL TRACK AND FIELD PROJECT DATED NOVEMBER 1, 2024, STATE CLEARINGHOUSE NUMBER <u>2024110046</u>

Dear Ryan Carter,

The Department of Toxic Substances Control (DTSC) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the La Sierra High School Track and Field Project (Project). The District is proposing to renovate the existing track and field; add field lighting, public address system, scoreboard, bleachers to accommodate 2,800 spectators; construct a 5,500-square-foot field house that would include restrooms, a ticket office, concessions stand, team rooms, and storage. The Project will relocate the existing tennis courts; and repave and restripe the 134,000-square-foot parking lot. New access from the parking lot to the bleachers would be constructed.

After reviewing the project, DTSC recommends and requests consideration of the following comments:

Ryan Carter November 5, 2024 Page 2

> If the district plans to use California Department of Education (CDE) State funds for the Project, then the district shall comply with the requirements of Education Code (EDC), <u>§17210</u>, <u>§17213.1</u>, and <u>§17213.2</u>, unless otherwise specifically exempted under section <u>§17268</u>. If the district is not using CDE State funds for the Project, or is otherwise specifically exempt under section <u>§17268</u>, DTSC recommends the district continue to investigate, clean up the Site under the oversight of Riverside County and in concurrence with all applicable DTSC guidance documents, if necessary. For more information on the CDE State funding, please visit the <u>Office of Public-School Construction</u> webpage.

A local education agency may also voluntarily request the CDE site/plan approval for locally funded site acquisitions and new construction projects. In these cases, CDE will require DTSC to review and approve prior to its final approval, except when exempt under section 17268.

- 2. DTSC recommends that all imported soil and fill material should be tested to assess any contaminants of concern meet screening levels as outlined in <u>DTSC's Preliminary Endangerment Assessment (PEA) Guidance Manual</u>. Additionally, DTSC advises referencing the <u>DTSC Information Advisory Clean</u> <u>Imported Fill Material Fact Sheet</u> if importing fill is necessary. To minimize the possibility of introducing contaminated soil and fill material there should be documentation of the origins of the soil or fill material and, if applicable, sampling be conducted to ensure that the imported soil and fill material are suitable for the intended land use. The soil sampling should include analysis based on the source of the fill and knowledge of the prior land use. Additional information can be found by visiting <u>DTSC's Human and Ecological Risk</u> <u>Office (HERO) webpage</u>.
- 3. If buildings or other structures are to be demolished on any Project sites included in the proposed Project, surveys should be conducted for the presence of lead-based paints or products, mercury, asbestos containing materials, and polychlorinated biphenyl caulk. Removal, demolition, and disposal of any of the above-mentioned chemicals should be conducted in

Ryan Carter November 5, 2024 Page 3

compliance with California environmental regulations and policies. In addition, sampling near current and/or former buildings should be conducted in accordance with <u>DTSC's PEA Guidance Manual</u>.

DTSC appreciates the opportunity to comment on the NOP of a DEIR for the La Sierra High School Track and Field Project. If you would like to proceed with DTSC's school environmental review process, please visit <u>DTSC's Evaluating & Clean-up</u> <u>School 3-Step Process to begin a Phase I Environmental Site Assessment.</u>

Thank you for your assistance in protecting California's people and environment from the harmful effects of toxic substances. If you have any questions or would like clarification on DTSC's comments, please respond to this letter or via <u>email</u> for additional guidance.

Sincerely,

Tamara Purvis

Tamara Purvis Associate Environmental Planner HWMP - Permitting Division – CEQA Unit Department of Toxic Substances Control <u>Tamara.Purvis@dtsc.ca.gov</u> Ryan Carter November 5, 2024 Page 4

cc: (via email)

Governor's Office of Land Use and Climate Innovation

State Clearinghouse

State.Clearinghouse@opr.ca.gov

Malia Durand

Associate Principal

PlaceWorks

mdurand@placeworks.com

Dave Kereazis Associate Environmental Planner HWMP-Permitting Division – CEQA Unit Department of Toxic Substances Control Dave.Kereazis@dtsc.ca.gov

Scott Wiley Associate Governmental Program Analyst HWMP - Permitting Division – CEQA Unit Department of Toxic Substances Control <u>Scott.Wiley@dtsc.ca.gov</u> From: Cynthia Fan
Sent: Thursday, November 7, 2024 9:08 PM
To: Malia Durand <<u>mdurand@placeworks.com</u>
Subject: La Sierra High School Track and Field Project

You don't often get email from

why this is important

Hi Malia,

Will the La Sierra High School Track and Field Project (<u>SCH 2024110046</u>) leave the field with synthetic turf or natural grass?

-Cynthia

1995 MARKET STREET RIVERSIDE, CA 92501 951.955.1200 951.788.9965 FAX www.rcflood.org 259595

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT November 12, 2024

Alvord Unified School District Facilities Planning Department 9 KPC Parkway, Corona, CA 92879

Attention: Ryan Carter

Re: La Sierra High School Track and Field Project, APN 142-130-002

The District does not normally recommend conditions for land divisions or other land use cases in incorporated cities. The District also does not plan check City land use cases, or provide State Division of Real Estate letters or other flood hazard reports for such cases. District comments/recommendations for such cases are normally limited to items of specific interest to the District including District Master Drainage Plan facilities, other regional flood control and drainage facilities which could be considered a logical component or extension of a master plan system, and District Area Drainage Plan fees (development mitigation fees). In addition, information of a general nature is provided.

The District's review is based on the above-referenced project transmittal, received November 4, 2024. The District <u>has not</u> reviewed the proposed project in detail, and the following comments do not in any way constitute or imply District approval or endorsement of the proposed project with respect to flood hazard, public health and safety, or any other such issue:

- This project would not be impacted by District Master Drainage Plan facilities, nor are other facilities of regional interest proposed.
- □ This project involves District proposed Master Drainage Plan facilities, namely, _____. The District will accept ownership of such facilities on written request by the City. The Project Applicant shall enter into a cooperative agreement establishing the terms and conditions of inspection, operation, and maintenance with the District and any other maintenance partners. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required. All regulatory permits (and all documents pertaining thereto, e.g., Habitat Mitigation and Monitoring Plans, Conservation Plans/Easements) that are to be secured by the Applicant for both facility construction and maintenance shall be submitted to the District for review. The regulatory permits' terms and conditions shall be approved by the District prior to improvement plan approval, map recordation, or finalization of the regulatory permits. There shall be no unreasonable constraint upon the District's ability to operate and maintain the flood control facility(ies) to protect public health and safety.
- □ If this project proposes channels, storm drains larger than 36 inches in diameter, or other facilities that could be considered regional in nature and/or a logical extension a District's facility, the District would consider accepting ownership of such facilities on written request by the City. The Project Applicant shall enter into a cooperative agreement establishing the terms and conditions of inspection, operation, and maintenance with the District and any other maintenance partners. Facilities must be constructed to District standards, and District plan check and inspection will be required for District acceptance. Plan check, inspection, and administrative fees will be required. The regulatory permits' terms and conditions shall be approved by the District prior to improvement plan approval, map recordation, or finalization of the regulatory permits. There shall be no unreasonable constraint upon the District's ability to operate and maintain the flood control facility(ies) to protect public health and safety.

- An encroachment permit shall be obtained for any construction related activities occurring within District right of way or facilities, namely, ______. If a proposed storm drain connection exceeds the hydraulic performance of the existing drainage facilities, mitigation will be required. For further information, contact the District's Encroachment Permit Section at 951.955.1266.
- □ The District's previous comments are still valid.

GENERAL INFORMATION

The project proponent shall bear the responsibility for complying with all applicable mitigation measures defined in the California Environmental Quality Act (CEQA) document, and/or Mitigation Monitoring and Reporting Program, and with all other federal, state, and local environmental rules and regulations that may apply, such as, but not limited to, the Multiple Species Habitat Conservation Plan (MSHCP), Sections 404 and 401 of the Clean Water Act, California Fish and Game Code Section 1602, and the Porter Cologne Water Quality Control Act. The District's action associated with the subject project triggers evaluation by the District with respect to the applicant's compliance with federal, state, and local environmental laws. For this project, the Lead Agency is the agency in the address above, and the District is a Responsible Agency under CEQA. The District, as a Co-permittee under the MSHCP, needs to demonstrate that all District related activities, including the actions identified above, are consistent with the MSHCP. This is typically achieved through determinations from the CEQA Lead Agency (if they are also a Co-permittee) for the project. For the MSHCP, the District's focus will be particular to Sections 6.1.2, 6.1.3, 6.1.4, 6.3.2, 7.3.7, 7.5.3, and Appendix C of the MSHCP. Please include consistency determination statements from the Lead Agency/Co-permittee for the project for each of these sections in the CEQA document. The District may also require that an applicant provide supporting technical documentation for environmental clearance.

This project may require a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board. Clearance for grading, recordation, or other final approval should not be given until the City has determined that the project has been granted a permit or is shown to be exempt.

If this project involves a Federal Emergency Management Agency (FEMA) mapped floodplain, then the City should require the applicant to provide all studies, calculations, plans, and other information required to meet FEMA requirements, and should further require that the applicant obtain a Conditional Letter of Map Revision (CLOMR) prior to grading, recordation, or other final approval of the project and a Letter of Map Revision (LOMR) prior to occupancy.

Very truly yours,

Amy Mc Neill

AMÝ MCNEILL Engineering Project Manager

EM:zl

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT

Every Student. By Name.

DATE: November 1, 2024

TO: Agencies, Organizations, and Interested Parties

PROJECT TITLE: La Sierra High School Track and Field Project

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

NOTICE IS HEREBY GIVEN that the Alvord Unified School District (AUSD or District), as Lead Agency under the California Environmental Quality Act (CEQA), will prepare a Draft Environmental Impact Report (Draft EIR) for the La Sierra High School Track and Field Project pursuant to the California Public Resources Code (PRC), Division 13, Section 21000 et seq. (CEQA Statute) and the California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15000 et seq. (CEQA Guidelines).

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In compliance with CEQA Guidelines Section 15060(d) and 15082, the District will not be preparing an initial study and will begin work directly on the Draft EIR.

PROJECT LOCATION: The project site consists of the track and field, parking lot(*), and tennis courts(*) at the La Sierra High School (La Sierra HS) campus located at 4145 La Sierra Avenue, in the La Sierra Neighborhood of Riverside, in Riverside County (see Figure 1, *Aerial Photograph*). The La Sierra HS campus is surrounded by residential uses, Collett Avenue, and Collett Elementary School to the north; and residential uses to the east, south, and west. The campus is zoned Single Family Residential Zone (R-1-7000), and the campus has a land use designation of Public Facilities/Institutions (PF). (*These areas of the project site, while included in the analysis, are intended for a potential future project and will not be included in the scope of the current project.)

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HS. (*These design elements, while included in this analysis, are intended for a potential future project and will not be included in the scope of the current project; the current project would include a smaller scope and therefore the analysis in the DEIR will be conservative.)

POTENTIAL ENVIRONMENTAL EFFECTS: In accordance with Section 15082 of the CEQA Guidelines, the District has prepared this Notice of Preparation to provide agencies, organizations, and interested parties with information describing the proposed project and its potential environmental effects. Environmental factors that will be analyzed in the Draft EIR are:

and

Greenhouse Gas Emissions

Land Use and Planning

Population and Housing

Forestry

- Aesthetics
- Biological Resources
- Geology and Soils

Recreation

- Hydrology and Water
 Quality
- Noise

• Transportation

Agriculture

Resources

Cultural Resources

- Utilities and Service Systems
- Wildfire

- Air Quality
- Energy
- Hazards and Hazardous Materials
- Mineral Resources
- Public Services
- Tribal Cultural Resources

PUBLIC REVIEW PERIOD: The 30-day public review period for the NOP is from **Friday**, **November 1**, 2024, to **Thursday**, **December 5**, 2024. In accordance with the time limits mandated by State law, if there are any concerns about the scope and content of the information to be addressed in EIR, please send written comments to the District, at the address below, at the earliest possible date but not later than 5:00 p.m. on **Thursday**, **December 5**, 2024. This NOP is also available at:

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PUBLIC COMMENTS: Please send your comments to:

Alvord Unified School District Facilities Planning Department 9 KPC Parkway, Corona, CA 92879 ATTN: Ryan Carter, Director III, Facilities

Comments can also be sent by e-mail to ryan.carter@alvordschools.org. Please include "La Sierra HS Track and Field Project" in the subject line. If you require additional information, please contact Ryan Carter at (951) 509-5113.

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Figure 1 - Aerial Photograph

La Sierra High School Boundary

Project Site Boundary

Source: Huckabee

Figure 2 - Conceptual Site Plan

NOTES

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From: Mauricio Alvarez <<u>malvarez@riversidetransit.com</u>>
Sent: Tuesday, November 12, 2024 10:00 AM
To: Ryan Carter <<u>ryan.carter@alvordschools.org</u>>
Subject: [From Outside] La Sierra HS Track & Field Project

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Good Morning Ryan,

Thank you for including RTA in the review of the La Sierra HS Track & Field Project. After further review, there are no comments to submit for this particular project.

Thank you,

Mauricio Alvarez, MBA

Planning Analyst Riverside Transit Agency p: 951.565.5260 | e: <u>malvarez@riversidetransit.com</u> <u>Website</u> | <u>Facebook</u> | <u>Twitter</u> | <u>Instagram</u> 1825 Third Street, Riverside, CA 92507

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Commissioner Laurena Bolden Serrano

Commissioner **Reid Milanovich** Cahuilla

COMMISSIONER Bennae Calac Pauma-Yuima Band of Luiseño Indians

Acting Executive Secretary Steven Quinn

NAHC HEADQUARTERS

1550 Harbor Boulevard Suite 100 West Sacramento, California 95691 (916) 373-3710 nahc@nahc.ca.gov NAHC.ca.gov

NATIVE AMERICAN HERITAGE COMMISSION

November 21, 2024

Ryan Carter, Director III, Facilities Alvord Unified School District 9 KPC Parkway Corona CA 92879

Re: 2024110046 La Sierra High School Track and Field Project, Riverside County

Dear Mr. Carter:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015. If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). Both SB 18 and AB 52 have tribal consultation requirements. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of <u>portions</u> of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Page 1 of 5

<u>AB 52</u>

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:

Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is

on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a

<u>Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report</u>: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. <u>Mandatory Topics of Consultation If Requested by a Tribe</u>: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- a. Alternatives to the project.
- **b.** Recommended mitigation measures.
- c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
- 4. <u>Discretionary Topics of Consultation</u>: The following topics are discretionary topics of consultation:
 - a. Type of environmental review necessary.
 - **b.** Significance of the tribal cultural resources.
 - c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. <u>Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:</u> With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. <u>Discussion of Impacts to Tribal Cultural Resources in the Environmental Document</u>: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. <u>Conclusion of Consultation</u>: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. <u>Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:</u> Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. <u>Required Consideration of Feasible Mitigation</u>: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. <u>Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse</u> <u>Impacts to Tribal Cultural Resources</u>:

- **a.** Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

- i. Protecting the cultural character and integrity of the resource.
- ii. Protecting the traditional use of the resource.
- iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. <u>Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource</u>: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: <u>http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf</u>

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<u>SB 18</u>

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. <u>Tribal Consultation</u>: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe. (Gov. Code §65352.3 (a)(2)).

2. <u>No Statutory Time Limit on SB 18 Tribal Consultation</u>. There is no statutory time limit on SB 18 tribal consultation.

3. <u>Confidentiality</u>: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. <u>Conclusion of SB 18 Tribal Consultation</u>: Consultation should be concluded at the point in which:

a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or

b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <u>http://nahc.ca.gov/resources/forms/</u>.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- b. If any known cultural resources have already been recorded on or adjacent to the APE.
- c. If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

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3. Contact the NAHC for:

project's APE. consultation with tribes that are traditionally and culturally affiliated with the geographic area of the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the

project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the

does not preclude their subsurface existence. 4 Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources)

certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Lead agencies should include in their mitigation and monitoring reporting program plan provisions for

affiliated Native Americans. should monitor all ground-disturbing activities. **b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally

subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, for the treatment and disposition of inadvertently discovered Native American human remains. Health ? associated grave goods in a location other than a dedicated cemetery. followed in the event of an inadvertent discovery of any Native American human remains and Lead agencies should include in their mitigation and monitoring reporting program plans provisions

<u>Andrew.Green@NAHC.ca.gov.</u> If you have any questions or need additional information, please contact me at my email address:

Sincerely,

Andrew G

Andrew Green Cultural Resources Analyst

cc: State Clearinghouse

December 5, 2024

To: Alvord Unified School District Facilities Planning Department Attn: Ryan Carter, Director III, Facilities ryan.carter@alvordschools.org

Re: Comments on NOP for La Sierra High School Track and Field Project

Dear Ryan Carter,

As part of compliance with the California Environmental Quality Act (CEQA), a project's Environmental Impact Report (EIR) must inform government decision-makers and the public about the potential environmental effects of proposed activities and an alternative to prevent significant, avoidable environmental damage. In response to my inquiry about the <u>Notice of Preparation</u> of a Draft Environmental Impact Report (DEIR) for the La Sierra High School Track and Field Project (SCH No. 2024110046), you clarified that the proposal is for the field to be synthetic turf. As detailed in this letter, synthetic turf systems, even those that do not use crumb rubber or that are marketed as having no intentionally added PFAS, result in significant adverse environmental impacts. These impacts should be disclosed in the DEIR. They can not be reduced to less-than-significant-levels with mitigation measures or best management practices. A project alternative exists that can completely avoid this significant environmental damage while still achieving all of the Project objectives. That alternative is well-designed, well-constructed, well-managed natural turf.

Please add to the DEIR the environmental impacts I detail in this letter and add the following project alternative... Remove the artificial turf from the project and achieve the project objectives while avoiding significant environmental damage by (a) directly collaborating on the Project plans with a sports field management consultant that has a track record of keeping a high-use athletic field of natural turf in safe condition for 5+ years for a public agency, (b) revising the Project to include construction of a natural turf field with (b1) modern irrigation, (b2) soil high in both organic matter and microbial activity, and (b3) a modern, drought-tolerant natural turf cultivar, and (c) place the field under the management of a professional with the above track record or under the management of an in-house or outsourced individual that will be provided with training and coaching from such a professional.

I. PFAS pollution

The Lead Agency must consider "direct physical changes in the environment which may be caused by the Project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project." CEQA Guidelines § 15064(d). The significance determination must be based on "substantial evidence in the record of the lead agency." *Id.* § 15064(f). "Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence." *Consolidated Irrigation Dist. v. City of Selma*, 204 Cal. App. 4th 187 (2012).

One of the significant adverse environmental impacts of artificial turf is PFAS pollution. It wasn't until 2019 that toxic PFAS chemicals were first found in artificial turf.¹ That was in fact the first time that PFAS chemistry used in plastic production had been found in finished consumer products.² Testing of numerous artificial turf samples detected elemental fluorine, and specific PFAS chemicals. Turf patents and industry literature were found discussing the widespread use of PFAS as a plastic processing aid (PPA) to enhance smoothness and reduce friction.³ PFAS are used in the base material for artificial turf as a slip agent that is intentionally added to the molten hydrocarbons in order to make the plastic grass blades free of defects. PFAS are also used during the extrusion process for artificial turf's plastic fibers in order to avoid clogging of the extruding machines.

Meanwhile, in 2022, the U.S. Environmental Protection Agency (EPA) drastically reduced the lifetime health advisory levels for several PFAS, bringing PFOA down to 4

¹ Sharon Lerner, *Toxic PFAS Chemicals Found in Artificial Turf* — *The presence of the PFAS chemicals in turf adds to growing concerns about the grass replacement that covers more than 1,000 acres around the country* The Intercept (Oct. 8, 2019), available at https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/

² David Abel, *Toxic chemicals are found in blades of artificial turf* Boston Globe (Oct. 9, 2019), available at <u>https://www.bostonglobe.com/metro/2019/10/09/toxic-chemicals-found-blades-artificial-turf/1mlVxXjzCAqRahwgXtfy6K/story.html</u>

³ The Ecology Center *Toxic "Forever Chemicals" Infest Artificial Turf* (Oct. 10, 2019), available at <u>https://www.ecocenter.org/toxic-forever-chemicals-infest-artificial-turf</u>

parts per quadrillion (ppq) and PFOS down to 20 ppq.⁴ Parts per quadrillion levels are so tiny that this federal advisory means there are virtually no safe levels of these chemicals.

On April 5, 2024, the California Office of Environmental Health Hazard Assessment (OEHHA) set the <u>Protective Health Goal</u> for PFOA at 0.0078 ppt for PFOA and 1.0 ppt for PFOS.

The EPA in its 2021-2024 PFAS Strategic Roadmap⁵ also issued a directive to local governments, which includes school district boards and city/town/county councils/boards, to exercise increased and sustained leadership to prevent further PFAS contamination of the environment.

Conclusion

Every level of government – federal, Tribal, state, and local – needs to exercise increased and sustained leadership to accelerate progress to clean up PFAS contamination, prevent new contamination, and make game-changing breakthroughs in the scientific understanding of PFAS. This strategic roadmap represents the Agency's commitment to the American people on what EPA seeks to deliver from 2021 to 2024.

A CEQA analysis of this Project needs to discuss the impacts associated with PFAS in the artificial turf, their ability to leach into the groundwater, surface water, and drinking water, as well as potential impacts on the athletes using the fields and spectators.

Regulatory bodies and state and federal governments have, over the past several years, increasingly prioritized rules related to PFAS reduction and safety for good reason. PFAS is a very serious threat to the environment with irreversible consequences. PFAS are a class of human-made chemicals comprised of thousands that provide heat, stain, and water resistance. Due to the strong carbon-fluorine bonds that occur in these molecules, PFAS do not easily break down in the environment and

https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

⁴ United States Environmental Protection Agency *Questions and Answers: Drinking Water Health Advisories for PFOA, PFOS, GenX Chemicals and PFBS,* (June 2022), available at https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genz-chemicals-and-pfbs#q5

⁵ United States Environmental Protection Agency *PFAS Strategic Roadmap: EPA's Commitment to Action* 2021-2024, accessible at

are called "forever chemicals." Well-studied PFAS are toxic to humans in concentrations as small as parts per quadrillion (ppq).

Even minute amounts of PFAS are dangerous. Even if artificial turf has "minimal" PFAS or *less* PFAS than some other consumer products, that does *not* mean it's safe. As an example, consider PFOS. PFOS is a type of PFAS. *Any* amount of PFOS should be viewed as a risk given that the U.S. Environmental Protection Agency (EPA) has proposed a health-based value, the Maximum Contaminant Level Goal (MCLG), for PFOS, of zero,⁶ which is the same as the MCLG for lead⁷. In other words, there is no safe level of exposure to PFOS. California's Office of Environmental Health Hazard Assessment recommends, as health protective limits, 7 ppq of PFOA and 1 ppt of PFOS⁶. Tests show that PFAS compounds leach off artificial turf at levels much higher than this. "Every sample of artificial turf tested by academic institutions and NGOs have resulted in positive results for PFAS," writes Dr. Kyla Bennett of Public Employees for Environmental Responsibility. For evidence, refer to the testing from (a) Oak Bluffs⁸, MA, (b) Franklin¹⁰, MA, and (c) Woodbridge¹¹, CT. Also find evidence in that every sample of dozens of artificial turfs tested by university researchers, regardless of the manufacturer, have shown PFAS¹² in the grass blades, the backing, and sometimes the

https://www.federalregister.gov/documents/2023/03/29/2023-05471/pfas-national-primary-drinking-waterregulation-rulemaking

⁶ United State Environmental Protection Agency *Proposed Rule - PFAS National Primary Drinking Water Regulation Rulemaking* (Mar. 29, 2023), available at

⁷ United States Environmental Protection Agency, *Basic Information about Lead in Drinking Water* (Jan. 25, 2024), available at https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water

⁸ Pesticide and Environmental Toxicology Branch - Office of Environmental Health Hazard Assessment - California Environmental Protection Agency Second Public Review Draft — Perfluorooctanoic Acid and Perfluorooctane Sulfonic Acid in Drinking Water (July 2023), available at https://oehha.ca.gov/media/downloads/water/public-health-goal/pfoapfosseconddraft071423.pdf

⁹ Horsley Witten Group *Synthetic Turf Laboratory Testing and Analysis Summary Report Martha's Vineyard Regional High School* (Mar. 1, 2021), available at https://www.mvcommission.org/sites/default/files/docs/210301_Turf%20Laboratory%20Testing%20Report https://www.mvcommission.org/sites/default/files/docs/210301_Turf%20Laboratory%20Testing%20Report https://www.mvcommission.org/sites/default/files/docs/210301_Turf%20Laboratory%20Testing%20Report

¹⁰ Kristen Mello, *PFAS in Artificial Turf - NEWMOA Conference presentation links and slide deck* (Apr. 6, 2022), available at <u>https://www.oakbluffsma.gov/DocumentCenter/View/8437/Kristen-Mello-WRAFT---</u> <u>May-4-2022</u>

¹¹ Id.

shock pad and the infill. Moreover, Synthetic Precipitation Leaching Procedures (SPLPs) show that these PFAS leach off the fields into surrounding waters.¹³ ¹⁴

The results of testing performed on a sample of a FieldTurf product proposed for use by a southern California school show that 4 distinct PFAS and a number of metals and semi-volatile organic compounds will readily leach off the artificial turf into surrounding soil and waters and expose field users to these carcinogenic chemicals.¹⁵ Among the PFAS detected were perfluorooctanesulfonic acid (PFOS), perfluorooctanesulfonamide (PFOSA), and 6:2 fluorotelomer sulfonic acid (6:2 FTSA). A recent study shows that PFOSA can lead to cardiac diseases in fish.¹⁶ PFOSA is a precursor to PFOS. Studies conducted on the PFAS 6:2 FTSA show adverse impacts on animals and humans.¹⁷

Researchers are concerned about the possible impact of artificial turf additives on aquatic life.¹⁸ Risking the addition of more bioaccumulative PFAS to waterways via PFAS-laced microplastics and nanoplastics and PFAS-contaminated stormwater is of grave concern for biota. PFAS are already ubiquitous in bird eggs, harbor seals,¹⁹ and

¹³ Kristen Mello, *PFAS in Artificial Turf - NEWMOA Conference presentation links and slide deck* (Apr. 6, 2022), available at <u>https://www.oakbluffsma.gov/DocumentCenter/View/8437/Kristen-Mello-WRAFT---</u> <u>May-4-2022</u>

¹⁴ Horsley Witten Group Synthetic Turf Laboratory Testing and Analysis Summary Report Martha's Vineyard Regional High School, (Mar. 1, 2021), available at <u>https://www.mvcommission.org/sites/default/files/docs/210301_Turf%20Laboratory%20Testing%20Report t%20Review_HWSIGNED%281%29.pdf</u>

¹⁵ Public Employees for Environmental Responsibility *Summary of PFAS and Other Chemicals of Concern in Harvard-Westlake's Proposed Field Turf Vertex Core* 2.5 <u>https://docs.google.com/file/d/1S-edneZWm-bfoxL9GZVDnNAgYPaVewNg/edit?usp=docslist_api&filetype=msword</u>

¹⁶ HongHong Chen et al. *Perfluorooctane Sulfonamide (PFOSA) Induces Cardiotoxicity via Aryl Hydrocarbon Receptor Activation in Zebrafish* (Jun. 2, 2022), available at https://pubs.acs.org/doi/full/10.1021/acs.est.1c08875

¹⁷ PFAS-Tox Database - Easy Access to Health and Toxicology Data on PFAS, available at https://pfastoxdatabase.org

¹⁸ Elena Galkina, *Potential Impact of Additives in Artificial Turf Microplastics on Aquatic Life in the San Francisco Estuary*, May 18, 2023, available at https://repository.usfca.edu/cgi/viewcontent.cgi?article=2876&context=capstone#page3

¹² Kristen Mello, *PFAS in Artificial Turf - NEWMOA Conference presentation links and slide deck* (Apr. 6, 2022), available at <u>https://www.oakbluffsma.gov/DocumentCenter/View/8437/Kristen-Mello-WRAFT---</u> <u>May-4-2022</u>

fish, including sport fish, particularly sport fish, which in the most recent study²⁰ showed concentrations of PFAS exceeded thresholds established by other states for the development of consumption advisories. In addition, recent research highlights that cocktails of PFAS compounds can be additively toxic to wildlife, jeopardizing their reproductive success.²¹

There is potential for artificial turf fields to contribute to PFAS exposure for field users. Routes of exposure for PFAS include ingestion, inhalation, and dermal absorption. EPA states that routes of PFAS exposure include, "Breathing air containing PFAS [and] [u]sing products made with PFAS."²² Recent studies have shown that some PFAS can migrate from car seat fabric to sweat, showing a potential dermal exposure route.²³

Dr. Jamie DeWitt, current director of the Environmental Health Sciences Center at Oregon State University and former Professor of Pharmacology and Toxicology of the Brody School of Medicine at East Carolina University researching the toxicity of PFAS and how they affect the immune system, explains: "All PFAS, regardless of their specific chemistries present, have at least one 'characteristic of concern' associated with them. The vast majority of PFAS are persistent, which means that they will remain in the environment for years, to decades, to centuries, serving as continual sources of exposure. Many PFAS are known to bioaccumulate, or move from the environment into the bodies of living organisms where they can potentially interact with biological molecules to produce toxicity."²⁴

²⁰ Nina Buzby et al. *Contaminant Concentrations in Sport Fish from San Francisco Bay: 2019* (Apr. 30, 2021), available at

https://www.sfei.org/sites/default/files/biblio_files/2019%20Sport%20Fish%20Report%20-%20FINAL.pdf

²¹ Tyler D Hoskins et al. *Chronic Exposure to a PFAS Mixture Resembling AFFF-Impacted Surface Water Decreases Body Size in Northern Leopard Frogs (Rana pipiens)*, (Aug. 2023) available at https://pubs.acs.org/doi/10.1021/acs.est.3c01118 ga=2.268456433.1617854846.1708957681-879159149.1708957681

²² U.S. Environmental Protection Agency *Our Current Understanding of the Human Health and Environmental Risks of PFAS* https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas

²³ Yan Wu et. al, *Side-chain fluorotelomer-based polymers in children car seats,* (Jan. 1, 2021) <u>https://www.sciencedirect.com/science/article/abs/pii/S0269749120361650</u>

¹⁹ San Francisco Estuary Institute & The Aquatic Science Center *Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)*, available at <u>https://www.sfei.org/projects/pfas</u>

A compilation of PFAS toxicity studies shows that virtually every PFAS examined is correlated with adverse health outcomes.²⁵ PFAS are associated with cancer and have been linked to growth, learning, and behavioral problems in infants and children; fertility and pregnancy problems, including pre-eclampsia; interference with natural human hormones; increased cholesterol; and immune system problems.²⁶ Epidemiological studies have found decreased antibody response to vaccines, and associations between blood serum PFAS levels and both immune system hypersensitivity and autoimmune disorders like asthma and ulcerative colitis.²⁷ ²⁸ The Centers for Disease Control and Prevention released a "Statement on Potential Intersection between PFAS Exposure and COVID-19," which recognized the "evidence from human and animal studies that PFAS exposure may reduce antibody responses to vaccines… and may reduce infectious disease resistance."²⁹

For the time being, industry regulation of artificial turf remains sorely lacking. The term "PFAS-free" is not defined. The hype around "PFAS-Free" artificial turf amounts to greenwashing. Communities are repeatedly misled by manufacturer and vendor claims of "certified PFAS-free" synthetic turf. Learn from the cautionary tales of the public agencies that have become greenwashing victims. The City of Portsmouth, N.H. was promised a "certified PFAS-free" synthetic field by their engineering consultants and

²⁵ Northeastern University PFAS Project Lab, *PFAS Systematic Evidence Map*, available at <u>https://pfasproject.com/pfas-toxic-database/</u>

²⁶ U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry *Toxicological Profile for Perfluoroalkyls* (May 2021), available at https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf

²⁷ Sunderland, E. M. et. al., *A Review of the Pathways of Human Exposure to Poly- and Perfluoroalkyl Substances (PFASs) and Present Understanding of Health Effects*, 29 Journal of Exposure Science and Environmental Epidemiology, no. 2, (2018), available at https://pubmed.ncbi.nlm.nih.gov/30470793

²⁸ U.S. Environmental Protection Agency, *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA)*, 39 (May 2016), available at https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health <a href="https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health <a href="https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health <a href="https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health <a href="https://www.epa.gov/sites/production/files/2016-05/documents/pfoa health <a href="https://www.epa.gov/s

²⁹ Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry, *Statement on Potential Intersection between PFAS Exposure and COVID-19*, <u>https://www.atsdr.cdc.gov/pfas/health-effects/index.html</u> (last visited Feb. 26, 2024).

²⁴ Dr. Jamie DeWitt Letter recommending Harvard Westlake River Project not use artificial turf (Jul. 6, 2023), available at <u>https://drive.google.com/file/d/1DT-</u>UQ5bEeD4kfFhtxLcSNDYTmhLn8D9L/view?usp=drivesdk

manufacturer FieldTurf. This promise was not delivered; The community was deceived. The full story is recounted in the first-person³⁰ and by a third-party news source.³¹ Experts had advised the City to have comprehensive PFAS testing of the artificial turf system components performed and completed prior to approving construction. The City opted not to heed the advice, so concerned residents arranged to have brand new, unused samples tested for PFAS by a certified lab. The results indicated that both the plastic carpet and shock pad had elevated fluorine levels, indicating the presence of PFAS chemicals.³² This motivated the City to have its own testing performed, and indeed it confirmed the same. Those PFAS-free promises made by the manufacturer and consultant turned out to be false. The promise had been based on a narrow risk assessment that did not evaluate leaching and contamination of PFAS into the surrounding area. South Philadelphia is home to another community that fell prey to the greenwashing. The community spent \$7.5 million to install an artificial turf system at the rec center for which the turf manufacturer, Sprinturf, had provided a lab report to support its claim the turf did not contain the so-called forever chemicals. Three independent experts who separately reviewed the test results concluded the lab test is flawed and inadequate and that the turf likely still contains the PFAS chemicals.³³ The test selected was both inappropriate and of incredibly narrow scope. The lab used a PFAS detection limit set about 20,000 times higher than what is typically used to determine presence of PFAS.

Back in 2019, FieldTurf claimed their supplier confirmed their artificial turf filaments were free of PFAS.³⁴ However, there exist public records of test results for

³⁰ Diana Carpinone, email (July 5, 2023), available at https://drive.google.com/file/d/15sCXsM6BTgHyBmECg-GwOdcSvCOjUcP5/view?usp=drivesdk

³¹ E.A. Crunden and Ariel Wittenberg, 'Our Community has been Deceived': Turf Wars Mount over PFAS, E&E News (Aug. 3, 2022), available at <u>https://www.eenews.net/articles/our-community-has-been-deceived-turf-wars-mount-over-pfas/</u>

³² Non Toxic Dover New Hampshire *Tests Detect Dangerous PFAS Chemicals in Portsmouth's New Synthetic Turf Field* (Sep. 15, 2021), available at https://nontoxicdovernh.wordpress.com/2021/09/15/tests-detect-dangerous-pfas-chemicals-in-portsmouths-new-synthetic-turf-field/

³³ David Gambacorta and Barbara Laker. *City officials believed a new South Philly turf field was PFAS-free. Not true, experts say.* The Philadelphia Inquirer. (Feb. 23, 2024), available at https://drive.google.com/file/d/1xZUt9BzSfrvc8iiXzsRP4rETQ9Baqply/view?usp=drivesdk

³⁴ FieldTurf, "To Whom It May Concern" letter (Oct. 25, 2019), available at https://drive.google.com/file/d/10X3LteWvIC8t_nMa9SRJUGcFuSRoqN1q/view?usp=drivesdk

FieldTurf since that time, specifically the product FieldTurf Vertex Core. A 2021 lab report shows that FieldTurf Vertex Core samples from Portsmouth, NH were not PFAS free.³⁵ A separate set of lab test results from 2023 interpreted by credentialed experts from Public Employees for Environmental Responsibility also show the FieldTurf Vertex Core is not PFAS free and conclude PFAS will "readily leach off into surrounding soil and waters."³⁶ Specifically FieldTurf Vertex Core contains two PFAS of critical concerns, PFOS and PFOA. The authors warn that if FieldTurf Vertex Core artificial turf is installed, these PFAS "will contaminate the soil and waters around the project site, and expose both the athletes and others using the fields to these carcinogenic chemicals."

Citizens should not need a degree in analytical chemistry to debunk manufacturer claims and identify the ways in which interpretations of test reports have an inappropriately narrow focus, but thankfully they are stepping up. Kristen Mello, Masters in Analytical Chemistry from the University of Delaware and member of both the Analytical and Fluorine Divisions of the American Chemical Society, has interpreted for communities the PFAS Analytical Laboratory Reports from testing of artificial turf athletic field system components. In April 2022, she was invited, with Dr. Graham Peaslee from Notre Dame University, to give the presentation "PFAS in Artificial Turf" at the New England Waste Management Operators Association.

In July of 2022, on behalf of a group of concerned citizens, Mello reviewed for their local electeds a technical report that had been shared. She explained³⁷ some of the key takeaways they may have not otherwise fully digested, namely that PFAS was detected in the artificial turf carpet, shockpad, and infill. She also reminds the electeds that, with regards to determining how much PFAS is too much to risk, "On June 15, 2022 the EPA issued updated advisories reducing what they consider a 'safe amount' in drinking water to be 5 orders of magnitude smaller than they announced in 2016."

https://docs.google.com/file/d/1F7zgu3aPB3qe7O7Ozqzh-7iSDOUOu0Jd/edit?usp=docslist api&filetype=msword

³⁵ Galbraith lab report prepared for and sent via email to Ecology Center (Jul. 23, 2021), available at <u>https://nontoxicdovernh.files.wordpress.com/2021/09/pfas-testing-721-galbraith-cc-samples.pdf</u>

³⁶ Bennett, K, Public Employees for Environmental Responsibility (PEER.org) *Testing results for FieldTurf Vertex Core, proposed synthetic turf fields for Harvard-Westlake, Weddington Project, Studio City, CA* (Jul 2023), available at

³⁷ Kristen Mello, letter to the mayor and councilors of City of Portsmouth, NH (Jul. 5, 2022) available at <u>https://nontoxicdovernh.files.wordpress.com/2022/07/wraft-pfas-portsmouthletter-5july2022.pdf</u>

Then in July of 2023, on behalf of separate group of concerned citizens, this time in a California community, Mello writes in her public testimony³⁸ regarding the CEQA EIR for the proposed artificial turf project, "Based on all of the testing I have seen to date, there is every reason to believe that until there is a manufacturing revolution, any artificial turf field will be made with PFAS and PFAS will leach into the environment in communities where the field is manufactured, installed, and eventually disposed of." She then proceeds to provide explanatory comments regarding a FieldTurf Testing Report, dated November 22, 2022³⁹ that summarized lab tests of artificial turf fields are not a risk to human health based on the PFAS toxicity from dermal exposure to the players. Mello breaks down in her letter the errors and omissions in that FieldTurf Testing Report and reveals how the author "makes carefully true statements that don't tell the whole story." She includes an insightful summary in the appendix of her letter explaining the lacking context and the many risks not examined and addressed.

Based on the advice Mello shares in her letters to public agencies, it's clear an environmental analysis of artificial turf would be incomplete if it did not address at least all of the following with respect to the PFAS found in artificial turf system components:

- PFAS volatility
- exposures to users and spectators, especially for babies/toddlers
 - \circ dermal
 - \circ ingestion
 - \circ inhalation
- human toxicity⁴⁰
- leaching protocol and calculations, with concentrations propagated out for installation mass and size, of how much PFAS has been and will be leaching off the field materials and into the stormwater management system
- aquatic toxicity

³⁹ Final Environmental Impact Report Appendix E.3 *FieldTurf Testing Report* (Nov. 22, 2022), available at https://planning.lacity.gov/eir/Harvard-
 Westlake River Park Project/feir/FEIR%20Appendices/Appendix%20E.3%20 %20FieldTurf%20Testing%20Report.pdf

⁴⁰ Published toxicity information regarding PFAS <u>https://pfastoxdatabase.org/</u>

³⁸ Kristen Mello, letter to Department of City Planning for Los Angeles (Jul. 12, 2023) available at <u>https://drive.google.com/file/d/1qVPA1Clp7-UmTtas9hgDa6yWL9GFtKYI/view?usp=drivesdk</u>

- bioaccumulative effects of stormwater runoff
- groundwater contamination
- surface water contamination
- PFAS contamination incurred by environmental justice populations where these field components are manufactured and destroyed or disposed of
- environmental cleanup that may be later required
- cost to dispose of field components at end-of-life should the chemicals they leach be, at that time, designated as hazardous

Objective voices like Mello's must be a priority in environmental analyses. Signed affidavits from manufacturers and associated industries have been proven false, are reportable, and are not acceptable in lieu of independent third party testing. Independent experts should be consulted when it comes to questions around appropriate PFAS test methods. Dr. Graham Peaslee⁴¹ at University of Notre Dame is a leading researcher on the topic and would make an excellent resource.

When it comes to artificial turf, CEQA document authors and readers are urged to critically review any input provided by Gradient, described as "rented white coats",⁴² any input provided by Exponent, described as "science-for-hire,"⁴³ any input provided by Laura Green,⁴⁴ and any input provided by David Teter.

David Teter has been brought by Verde Design Inc, a landscape architect that has a number of California public agencies as artificial turf project clients, into local government meetings here in California to downplay environmental concerns about artificial turf. Mr. Teter's input can not be considered unbiased given his work as a paid industry consultant for the synthetic turf trade association and artificial turf manufacturers. His work for this trade association was specifically aimed at keeping

⁴¹ Graham Peaslee and Kristen Mello, *PFAS in Artificial Turf* (Apr. 6, 2022) available at <u>https://www.newmoa.org/wp-content/uploads/2023/02/PFAS-in-Artificial-Turf.pdf</u>

⁴² David Heath, *Meet the 'rented white coats' who defend toxic chemicals* (Feb.8, 2016), available at <u>https://publicintegrity.org/environment/meet-the-rented-white-coats-who-defend-toxic-chemicals/</u>

⁴³ Myron Levin and Paul Feldman, *Big Companies in Legal Scrapes Turn to Science-for-Hire Giant Exponent* (Dec. 13, 2016), available at <u>https://business-ethics.com/2016/12/13/1724-big-companies-in-legal-scrapes-turn-to-science-for-hire-giant-exponent/</u>

⁴⁴ E.A. Crunden and Ariel Wittenberg, *Toxicologist who belittled PFAS risks resigns from EPA role* (Dec. 12, 2021), available at <u>https://www.eenews.net/articles/toxicologist-who-belittled-pfas-risks-resigns-from-epa-role/</u>
synthetic turf from being investigated by California's Department of Toxic Substances Control (DTSC), an agency which could potentially require artificial turf manufacturers to label the toxic chemicals in their products. The Synthetic Turf Council⁴⁵ website at one point included the following text:



Mr. Teter ultimately failed in his mission to compel DTSC to drop artificial turf from the short list of products it is now prioritizing⁴⁶ and currently studying. The fact that our state's own Department of Toxic Substances Control has concerns over synthetic turf's hazards despite Teter's input suggests that his input may not represent a comprehensive and balanced professional opinion on synthetic turf hazards.

PFAS are manmade chemicals, not naturally occurring in the environment. Every bit found in the environment, soil, rainwater, tap water, dust is there because of human activity. The fact that our environment has already been polluted with PFAS is not a reasonable justification to pollute further, especially given that these chemicals are persistent and bioaccumulative.

Artificial turf promoters claiming a product contains no PFAS are routinely found guilty of citing the results of testing that uses very high detection limits designed to find no PFAS.

⁴⁵ Synthetic Turf Council, <u>https://www.syntheticturfcouncil.org</u>

⁴⁶ California Department of Toxic Substances Control Safer Consumer Products Program *Three Year Priority Product Work Plan* (2021-2023), available at <u>https://dtsc.ca.gov/wp-</u> <u>content/uploads/sites/31/2021/04/Final-2021-2023-Priority-Product-Work-Plan.pdf</u>

Often the referenced tests:

- fail to reflect real-world abuse the product takes during the years it is installed on the site, such as harsh weathering conditions, frequent mechanical abrasion, and extensive UV exposure
- fail to conduct Synthetic Precipitation Leaching Procedure (SPLP) tests, which shows what actually leaches off a field
- test for a mere fraction of the thousands of toxic PFAS (Absence of proof is not proof of absence when only a small percentage of PFAS are tested for.)

For example, the California Proposition 65 and US EPA Method 537 are not relevant standards⁴⁷ for asserting a product is PFAS-free. Although more appropriate EPA-approved testing exists, these two aforementioned standards continue to serve as the basis of PFAS-free confidence by many of the misled and under-informed electeds, school district and city/town/county staff, landscape architects, civil engineering firms, and construction firms across the country who are unaware of this critical detail or who are uninterested in it given determination to promote or defend the choice of artificial turf.

There are artificial turf manufacturers claiming "PFAS-free" products while presumably hoping customers won't notice they are self-defining "PFAS-free" to mean their product may contain no more than 100,000,000 ppt of fluorine (i.e. 100 ppm of fluorine).

100,000,000 ppt of fluorine can translate into a **very** significant amount of PFAS. Let's put this in perspective... PFOS is one of the PFAS chemicals routinely found in artificial turf. The U.S. Environmental Protection Agency states that PFOS is likely to cause cancer. EPA states that, similar to lead, there is no dose below which PFOS is considered safe. EPA has proposed a goal of 0 ppt of PFOS in drinking water but due to the limitations of testing will tolerate up to 4 ppt.⁴⁸ With a goal of 0 ppt PFOS and a limit of only 4 ppt PFOS, how could an artificial turf's whopping 100,000,000 ppt of fluorine possibly be safe??

⁴⁷ The Ecology Center *PFAS-free Turf Recommendations* (Dec. 19, 2021), available at https://docs.google.com/document/d/1H7jCbrN9vhIfvXpOaOAAftGSvbPdCIkbwZd4NpGa5kg/edit

⁴⁸ United State Environmental Protection Agency Proposed Rule - PFAS National Primary Drinking Water Regulation Rulemaking (Mar. 29, 2023), available at <u>https://www.federalregister.gov/documents/2023/03/29/2023-05471/pfas-national-primary-drinking-water-regulation-rulemaking</u>

The nonprofit Ecology Center recommends⁴⁹ that an artificial turf manufacturer claiming PFAS-free turf fiber be expected to produce testing results evidencing no more than 1,000,000 ppt of total organic fluorine (TOF) or total fluorine. Stated more simply, the recommendation is no more than 1ppm TOF. "A company claiming PFAS-free turf fiber should thus be able to produce testing results showing less than 1 part per million of total organic fluorine. We recommend that companies be required to test products and provide these results."

Insist the manufacturer prove that there are *zero* amounts of these specific PFAS and their precursors:

Perfluorooctanoic acid (PFOA) Perfluorooctanesulfonic acid (PFOS) Perfluorobutanesulfonic acid (PFBS) Hexafluoropropylene oxide-dimer acid (GenX) Perfluorononanoic acid (PFNA) Perfluorohexanesulfonic acid (PFHxS) Perfluorohexanoic acid (PFDA) Perfluorohexanoic acid (PFHxA) Perfluorobutanoic acid (PFBA)

The reason to add this stipulation on top of meeting the 1ppm TOF limit advised by Ecology Center is that the above 9 PFAS encompass the PFAS that are to be regulated in drinking water plus the PFAS that the EPA proposed on Jan 31, 2024 to be listed as hazardous constituents under RCRA⁵⁰. EPA has evidence that each of those 9 PFAS has "toxic, carcinogenic, mutagenic or teratogenic effects on humans and other life forms."

To summarize, **before the Lead Agency accepts an artificial turf system**, **verify the results of independent SPLP testing**. SPLP is a test method that demonstrates what leaches off the test subject. (Be vigilant! Manufacturers are notorious for choosing tests that do not reflect the real-world conditions to which artificial turf is subjected, for not specifying detection limits, or for setting detection limits too high.⁵¹) Verify that the results of SPLP testing indicate the system as a whole has

⁴⁹ Ecology Center *PFAS in Synthetic Turf Fiber* (Jun. 1, 2020), available at <u>https://nontoxicdovernh.files.wordpress.com/2020/06/june1_portsmouthpfas.pdf</u>

⁵⁰ United States Environmental Protection Agency *Proposal to List Nine Per- and Polyfluoroalkyl Compounds as Resource Conservation and Recovery Act Hazardous Constituents* (Feb. 8, 2024), available at https://www.epa.gov/hw/proposal-list-nine-and-polyfluoroalkyl-compounds-resource-conservation-and-recovery-act

(a) less than 1ppm TOF and (b) less than the lowest limits of detection available at commercial labs for each of these 9 PFAS:

PFOA PFOS PFBS GenX PFNA PFHxS PFDA PFHxA PFBA

This testing should not be limited to the synthetic turf carpet fibers. It should also include the turf carpet backing, infill, and shockpad.

Please request these test results for the artificial turf carpet, as well as the other artificial turf system components, and have the lab test selections, PFAS detection limits, and test results reviewed by an independent expert unaffiliated with the industry. The Lead Agency's procurement and sharing of such test results and interpretive reports is essential to providing the decision-makers and public with transparent disclosure about the environmental risks of the artificial turf.

CEQA requires a Lead Agency to determine the significance of all environmental impacts (California Public Resources Code [PRC] § 21082.2; 14 CCR [State CEQA Guidelines] §150641). A threshold of significance for a given environmental impact defines the level of effect above which the Lead Agency will normally consider impacts to be significant, and below which it will normally consider impacts to be less than significant (See State CEQA Guidelines §15064.7(a)). A threshold of significance may be defined as a quantitative set of criteria. The threshold must be backed by substantial evidence, which is defined in the CEQA statute to mean "facts, reasonable assumptions predicated on facts, and expert opinion supported by facts" (State CEQA Guidelines § 15064.7(b)).

"Lead Agencies are responsible for establishing the thresholds of significance for all documents they prepare... The development and use of thresholds of significance

⁵¹ David Gambacorta and Barbara Laker. *City officials believed a new South Philly turf field was PFAS-free. Not true, experts say.* The Philadelphia Inquirer. (Feb. 23, 2024), available at https://drive.google.com/file/d/1xZUt9BzSfrvc8iiXzsRP4rETQ9Baqply/view?usp=drivesdk

are not required by CEQA. However, it is good and accepted practice to do so in... EIRs because it allows readers to more easily understand the chain of facts and logic that led the Lead Agency to their significance conclusions... [B]ecause an EIR typically provides a more in-depth analysis of the project's environmental impacts, it typically also includes more detail to support the selection of significance thresholds...; a discussion of the chosen thresholds is commonly included in the methodology section of each EIR chapter."⁵²

In the CEQA report, please define the maximum concentration of PFAS chemicals, or concentration of each PFAS chemical⁵³, that can leach off of an artificial turf system yet still be considered by the Lead Agency to represent a less-than-significant environmental impact. Please provide the chain of facts and logic that support the Lead Agency's decision to choose this set of criteria as the significance threshold for the PFAS that can leach from an artificial turf system into the environment.

If the Lead Agency's chosen threshold is informed by "expert opinion supported by facts," it is relevant to disclose (a) that expert's qualifications and (b) any current or former artificial turf industry affiliation of that individual in order to reveal potential conflicts of interest.

Sources who can not be assumed to be free of conflicts of interest:

- Manufacturers, providers, and installers of artificial turf products.
- Landscape architects that use artificial turf products in designs.
- Gradient, Exponent, David Teter, and Laura Green for the reasons detailed earlier.

Expert sources, referenced earlier, with no conflict of interest:

- Dr. Graham Peaslee
- Dr. Kyla Bennett
- Kristen Mello

https://ceqaportal.org/tp/CEQA%20Portal%20Topic%20Paper_Thresholds%20of%20Signifcance_2020% 20Update.pdf

⁵² Association of Environmental Professionals, *CEQA Portal Topic Paper - Thresholds of Significance*, 2020, available at

⁵³ Safe Healthy Playing Fields Inc. *Letter to Los Gatos-Saratoga High School District*, March 2024, Top of page 4 lists PFAS found to date in synthetic turf components and plant based infill according to public records. <u>https://drive.google.com/file/d/1-25Q0EMQdIQEKaxuE7QPNvE-otItHHwi/view?usp=drivesdk</u>

• The Ecology Center, nonprofit

Leading researcher and independent expert, Dr. Graham Peaslee, discussed his findings that PFAS leaches from artificial turf and detailed his concerns about drinking water contamination at a March 26, 2024 online meeting hosted by a commission in Washington D.C.⁵⁴

Dr. Peaslee explains, "The baseline level of PFAS is... zero, because they are all manmade. They shouldn't be there... It's very hard to think of the level part per trillion, but that is the level of concentration we are worried about. So when [the artificial turf] industry proudly announces that we don't use PFAS or if we do use them, it's the safe kind..., that's true if you don't think in terms of what the numbers actually are... The most important point that I'd like you to take away is that... the turfgrass field, even after it's been played on and disposed of, continues to leach these chemicals for years to come. Forever. Similarly, even when they're in play and you have an acre or two of turfgrass exposed to sun and these extreme heats that Dr. Evans talked about, and sunlight particularly, and rain, [PFAS will] run off. And that's why we see these transient measurements of PFAS running off [artificial turf]... [Polymer processing aids] are added to all extruded polyethylene blades... They are fluoropolymers that are the safe kind, the industry tells us. However any industrial process is [only] about 80% pure... and this industrial process leads to the PFAS you DON'T want: the PFOA, the PFHxA, the PFHxS. All these other [PFAS] that could possibly occur come along with that in the industrial processes. There is no way for [the industry] to clean it up. They have never been able to. And they never will."

⁵⁴ Chevy Chase (DC) Advisory Neighborhood Commission online meeting: "*Is Artificial Turf Safe for Our Kids and Our Environment?*", Mar. 26, 2024, available at <u>https://youtu.be/i8xlCA9M8hl?si=NND3R2-h5BqsHy0l&t=3803</u>

Dr. Peaslee discusses a research paper for which they measured specific PFAS

from artificial turf blades. They were measured in parts per billion levels.



He explains that industry claims parts per billion of PFAS is a barely measureable amount. While that may be true, "parts per billion are what's [already] in our blood from accumulation of years of [PFAS] exposure."

Dr. Peaslee walks through the logic behind his calculation that approximately 12mg of PFAS would leach off an artificial turf field each year.



explains, "That sounds like a minute amount... but if you consider that's from a single field and the EPA limit for drinking water is now about 4ppt for PFOA and PFOS, this

would yield about 800,000 gallons of water contaminated by a single artificial turf field per year... I'm really worried about what's in our... community's drinking water based on the large use of plastics that involve just a little bit of PFAS added to them... There's nothing safe about what they're adding... These are toxic chemicals... They are coming off. They will get into your drinking water, and they'll stay there for a very long time, until we drink them, where they'll stay in your body for a very long time as well. Years... So this is the concern that I have that is environmental. It is not just for the players... I would argue very strongly there is a very strong sustainability [issue with this], as well as just the very low levels at which these [PFAS] are known to be toxic once they get in the drinking water. There is nothing safe about contaminating 800,000 gallons of water per field per year... It's just adding to our exposure levels of something that shouldn't be in the environment at all. It's all manmade. And it will lead to higher levels [of PFAS] in all the community, not just the players..'

In February 2024, independent expert, the nonprofit The Ecology Center, published testing criteria that could be considered for use as the significance threshold for an artificial turf system's leachable PFAS and "found a range of third-party labs capable of conducting this type of analysis."⁵⁵ In the document, this independent expert source explains:

- their organization has had many samples of artificial turf tested and continues to test more and have not found any that are "PFAS-free," highlighting "the need for companies to provide precise and meaningful test results if they claim PFASfree"
- "targeted testing results provided by the turf industry are inadequate to support a 'PFAS-free' claim"; targeted tests "can detect only a portion (typically 24 – 70 compounds, depending on the lab) of the hundreds of possible PFAS chemicals that may be present"; this is why U.S. EPA Method 537.1 is not sufficient to demonstrate a carpet or turf fiber is PFAS-free
- California Proposition 65 compliance is inadequate to support a 'PFAS-free' claim, because it regulates few PFAS chemicals
- the industry standard for certifying other types of products as PFAS-free requires total fluorine testing and this "should be the standard for polymer-based products like turf as well"

Once the Lead Agency has defined its significance threshold criteria for an artificial turf system's leachable PFAS, it is imperative the CEQA report provide

⁵⁵ The Ecology Center *Letter to Hamilton, Massachusetts Planning Board regarding school district athletic field project*, Feb. 6, 2024, available at <u>https://drive.google.com/file/d/1PDCplvVc-</u> lpeYeBhDSEd9yL3aRLRtghx/view?usp=drivesdk

evidence that there exists at least one artificial turf system suitable for the Project that does not exceed this significance threshold. If the Lead Agency is unable to provide this evidence, it can not be reasonably concluded that it is feasible for the Project to have a less-than-significant impact on the environment. To qualify as adequate evidence, PFAS test detection methods and detection levels must be identified and test data must be provided for the identified artificial turf system (including the turf carpet, the turf carpet backing, the infill, and the shockpad.)

II. Microplastic and nanoplastic pollution

A second significant adverse environmental impact from artificial turf is microplastic and nanoplastic pollution. As of 2020, research reports indicate that microplastics have become an "intense global concern. These particles are present in aquatic environments in high concentrations and may adversely affect aquatic organisms. An additional concern is the ability of microplastics to adsorb inorganic and organic pollutants and subsequently liberate them into marine and freshwater systems."⁵⁶ "Microplastic and now nanoplastic research [have] grown rapidly in the last 10 years" and it suggests they are "detrimental to ecosystems and species health, modifying mobility, fecundity and mortality."⁵⁷ Very recent research (in 2023) has identified artificial turf as "widespread pollutants of aquatic environments." The researchers found that "artificial turf fibers accounted for up to 15% of meso- and microplastic abundance" in rivers and sea surface waters.⁵⁸ Artificial turf systems therefore represent a significant source of plastic pollution to natural aquatic environments. Artificial turf fibers are found in Lake Tahoe.⁵⁹ They are found in the

⁵⁶ Xu, et al., *Microplastics in aquatic environments: Occurrence, accumulation, and biological effects*, Science of the Total Environment, Volume 703 (Feb. 10, 2020), available at https://www.sciencedirect.com/science/article/abs/pii/S004896971934690X.

⁵⁷ Steve Allen, Deonie Allen, Samaneh Karbalaei, Vittorio Maselli, Tony R. Walker, *Micro(nano)plastics sources, fate, and effects: What we know after ten years of research,* Journal of Hazardous Materials Advances, Volume 6 (2022), available at https://doi.org/10.1016/j.hazadv.2022.100057

⁵⁸ Haan, et al., *The Dark Side of Artificial Greening: Plastic turfs as widespread pollutants of aquatic environment*, Envtl. Pollution, Volume 334 (Oct. 1, 2023), available at https://www.sciencedirect.com/science/article/pii/S0269749123010965.

ocean.⁶⁰ There is risk that microplastics from the Lead Agency artificial turf are, and will continue to be, flushed into waterways and make their way into the Pacific Ocean.

Microplastics escape from synthetic turf into the environment. These microplastics include both primary and secondary microplastics. Primary microplastics are intentionally engineered particles; secondary microplastics are the result of degradation of larger plastics. Primary microplastics include plastic-based artificial turf system infill pellets, such as tire crumbs, polymer-fused cork, and plastic-coated sand. Secondary microplastics include pieces of synthetic turf fibers that detach from the carpet backing or break off the plastic carpet pile, as well as smaller fragments that plastic carpet fibers and plastic-based infills break down into. Despite synthetic turf industry claims that the plastic carpet fibers do not break down, real-world evidence proves otherwise.⁶¹ This degradation into secondary microplastics can result from the aging and weakening of the carpet and infill as it is subjected to ultraviolet rays, heat. wind, rain, and the extensive mechanical abrasion that results from repetitive friction that the carpet and infill are subjected to under grooming equipment, heavy foot traffic, and cleats, as well as the grinding action against infill materials (such as sand, plasticized pellets, walnut shells, olive pits, Zeolite, etc.), some of which are more abrasive than others. The degradation of the plastic carpet fibers may be the reason some artificial turf manufacturers only warranty that their plastic carpet will retain 50% of its pile height (and tensile strength) after 8 years,⁶² and it may be the reason some manufacturers, like FieldTurf, as shown in the warranty for the system installed at Saratoga High School in 2023, do not warranty fiber pile height retention at all.63

⁵⁹ Madison Schultz, *UC Davis Environmental Research Center fundamental at Lake Tahoe*, Sierra Sun (Dec. 25, 2022), available at <u>https://www.sierrasun.com/news/uc-davis-environmental-research-center-fundamental-at-lake-tahoe/</u>.

⁶⁰ Gerry Hadden, *Surfing scientists in Spain are hunting down microplastics*, The World (July 29, 2022), available at <u>https://theworld.org/stories/2022-07-29/surfing-scientists-spain-are-hunting-down-microplastics</u>.

⁶¹ Public Hearing Regarding Artificial Turf Proposal, Massachusetts (April 2021), available at <u>https://www.youtube.com/watch?v=A80LBfWmt7g</u>

⁶² SYNLawn Warranty (2021), available at <u>https://drive.google.com/file/d/1kENxS7B4-gRillKBSR2e8h3x7ksF--kb/view?usp=drivesdk</u>

⁶³ *FieldTurf Warranty for Saratoga High School* (2023), available at https://drive.google.com/file/d/1d6cRVDBDOpWIA_cCNVV7HmmtGi1T-RiE/view?usp=drivesdk

Because a single microplastic particle may break down into millions of nanoplastics⁶⁴, nanoplastics also escape from synthetic turf into the environment.

There is now evidence that microplastic pollution in the blood is related to a disease.⁶⁵ Preclinical studies show microplastics and nanoplastics are emerging as a potential risk factor for cardiovascular disease.⁶⁶

III. Greenhouse gas emissions

A third significant adverse environmental impact from artificial turf is its greenhouse gas emissions. In 2019, oceanographer and plastic degradation scientist Dr. Sarah-Jeanne Royer reported that the amount of GHGs emitted into the atmosphere in the form of ethylene, methane, and propylene by artificial turf carpet and shock pad represent a significant adverse environmental impact⁶⁷ and should be calculated as part of a public agency's CEQA analysis. The expert opinion of Dr. Royer, supported by recent research findings⁶⁸, is that "the environmental health impacts posed by plastic carpets and polypropylene shock pads are likely significant and should be at the forefront of any decision regarding these materials." Dr. Royer's research has revealed that the breakdown of plastic represents a significant source of greenhouse gas pollution. The amount of greenhouse gases (GHGs) emitted by artificial turf is especially significant due to the following:

https://www.mvtimes.com/2019/02/20/synthetic-turf-will-contribute-greenhouse-gas-problems/

⁶⁴ Yee MS, Hii LW, Looi CK, Lim WM, Wong SF, Kok YY, et al. *Impact of microplastics and nanoplastics on human health*. Nanomaterials (Basel) 11(2):496. (2021), available at https://doi.org/10.3390/nano11020496.

⁶⁵ Jacobs, Andrew *Microplastics Are a Big Problem, a New Film Warns— At SXSW, a documentary traces the arc of plastics in our lives, and highlights evolving research of the potential harm of its presence in our bodies* (Mar. 9, 2024) available at https://www.nytimes.com/2024/03/09/health/microplastics-sxsw-health-plastic-people.html

⁶⁶ Marfella, R. et. al *Microplastics and Nanoplastics in Atheromas and Cardiovascular Events* (March 7, 2024), available at https://www.nejm.org/doi/full/10.1056/NEJMoa2309822

⁶⁷ Sarah-Jeanne Royer *Synthetic turf will contribute to greenhouse gas problems* (Feb. 20, 2019), available at

⁶⁸ Sarah-Jeanne Royer *Production of methane and ethylene from plastic in the environment* (Aug 1., 2018), available at <u>https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0200574</u>

- The type of plastic from which synthetic turf is typically made is polyethylene.
- Old news: GHGs are released during the manufacturing of synthetic turf. (Producing one ounce of polyethylene releases⁶⁹ one ounce of carbon dioxide.)
- Much more recent news: Plastics emit GHGs when exposed to UV light and air, and polyethylene is the plastic found to release GHGs at the highest rate. This means that significant GHGs continue to be released while the synthetic turf and shockpads are in use and as they degrade.
 - Methane and ethylene are among the significant GHGs emitted by polyethylene. Methane has been shown to be 21 times more potent than carbon dioxide. Ethylene is produced in even greater amounts.
 - Land based plastics produce 2 times more methane and 76 times more ethylene than those found in our waterways and oceans.
 - While methane and ethylene offgassing is triggered by solar radiation, the offgassing continues in the dark and likely over the lifetime of the plastic.
 - The amount of offgassing is based on the surface area of the plastic. Synthetic turf represents enormous surface area because:
 - Synthetic turf occupies vast acreage when all of the Lead Agency's synthetic turf systems are accounted for.
 - Each individual blade of plastic grass represents additional surface area.
 - The surface area of the plastic further increases due to degradation from weather, foot traffic, ultraviolet radiation, and resulting fragmentation. As a result, the amount of GHGs emitted accelerates *exponentially*.

There is no evidence that attempts to mitigate environmental impacts are adequate. For example, there is no evidence that bioretention systems can adequately remove PFAS from the water that runs off an artificial turf system. PFAS in the dissolved form (i.e., less adherence to sediment) may leach through the mulch/biotreatment soil media and enter the underdrain of the bioretention systems and/or native soil. There is no evidence that even "state of the art" attempts to mitigate micro- and nano-plastic migration can adequately limit the escape of macro- and micro-

⁶⁹ Samantha Staley *The Link Between Plastic Use and Climate Change: Nitty-gritty* (Dec. 2009), available at https://stanfordmag.org/contents/the-link-between-plastic-use-and-climate-change-nitty-gritty#:~:text=Carbon%20Calculations,of%20polyethylene%20(PET)%20produced

particulate and chemically laced dust from the site of the synthetic turf system. While local filtration systems (drain filters installed beneath the field, along its perimeter, or in nearby drains on the property), catch basins, grates, barriers, netting, cleaning stations, walk-off mats, and regular grooming, can prevent some volume of plastic fragments from being washed by rain into a storm system, plastic fragments smaller than the pores of the filters would not be prevented from entering the storm system. These mitigation measures are unable to adequately capture the microplastics and nanoplastics carried much further from the field by wind, shoes, and clothing, where they would logically be rinsed into other storm drains, flowing to waterways and carrying PFAS with it. Citizen scientists have provided plenty of photographic and video evidence of the small plastic fibers and infill blowing long distances from artificial turf fields where they can contaminate the local watershed and also be washed into storm drains. This microplastic migration phenomenon is evidenced by the fact that broken fragments of plastic grass fibers sometimes collect in areas with a physical barrier such as walls of nearby structures or, to provide you with a recent, local, visual example, a curb near one of the Sunnyvale Fremont High School artificial turf fields. See the brief video at https://drive.google.com/file/d/1mNKjWoShiqUfin8CJeHwsx-dUEVw5WXs/view. It shows some of the plastic turf fibers and black tire crumbs, which are also considered microplastics, that are initiating their journey out into the world far from the field. It is reasonable to assume plastic grass fibers that don't encounter a physical barrier migrate further as they are readily lofted into air and washed into soil. It is also reasonable to assume that there are smaller fragments of plastic grass fibers that aren't visible to the naked eye, known as nanoplastics, also being carried similar distances from the field. What pollutes the land eventually pollutes the water. During rain events, land pollution is swept into storm drains where it then flows into local waterways.

Greenhouse gas emissions are cumulative. As the Lead Agency eliminates its grass, there are significantly fewer soil microbial communities and plants on Lead Agency land to draw down carbon. Successive iterations of artificial turf replacement projects, which will be necessary every 8-10 years ad infinitum, or until prohibited by law or regulation, therefore constitute significant cumulative adverse environmental impact. A narrow focus on a single field and failure to recognize the successive iterations of replacement projects would violate CEQA.

IV. Cumulative effect of relatively frequent generation of non-recycled plastic waste: voluminous and emitting long-lasting pollutants (nanoplastics, PFAS, etc.)

The cumulative impact of successive projects of the same type in the same place, over time is significant. Cumulative effects are the "change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355.

Periodic disposal of the artificial turf carpets for all of the Lead Agency's artificial turf fields will be necessary each time these carpets reach the end of their useful lives. The collective volume and weight of all of this material needs to be considered cumulatively, as these plastic turf carpets require replacement approximately every 10 years, forever. This also means the Lead Agency will require hundreds of tons of virgin-plastic turf carpet to be manufactured for it approximately every 10 years. These "successive projects" must be considered together, and disposal and the inability to genuinely recycle the fields causes some of the greatest long-lasting and severe environmental effects.

Due to ultraviolet rays and heavy use, so much of the plastic carpet pile height of artificial turf has broken off and/or matted down after a mere 8-10 years (typical warranty period) of use, that the carpet fibers become unable to keep the infill material contained, rendering the whole carpet due for replacement. The issue of how to handle artificial turf waste once it wears out is a significant environmental concern given both the sheer volume of the waste and the hazardous nature of its content. Each regulation-sized plastic turf soccer field covers 80,000 square-feet and when disposed of would fill between fifteen and twenty 30-yard dumpsters.⁷⁰ For a visual of the volume of waste generated by just *one* artificial turf sports field replacement (Saratoga High School, summer 2023), see the brief video at the following link:

https://twitter.com/banplasticturf/status/1691640297812627701?s=61&t=aykVGXwuYJp rFxosgnti2Q. Now, for agencies that own multiple artificial turf systems, imagine that many times that volume of waste. Now, imagine generating *that* volume of waste *every* eight years. "Where do the millions of square feet of synthetic turf go to die? ... to landfills, to rural and urban stockpiles and 'scattered in ravines, deserts, woods, and empty lots,' according to a FairWarning investigation."⁷¹ It can cost tens of thousands of

⁷¹ Marjie Lundstrom *Artificial turf, touted as recycling fix for millions of scrap tires, becomes mounting disposal mess* — *Where do the millions of square feet of synthetic turf go to die?* https://www.salon.com/2019/12/21/artificial-turf-touted-as-recycling-fix-for-millions-of-scrap-tires-becomes-mounting-disposal-mess_partner/

⁷⁰ Public Employees for Environmental Responsibility *Artificial Turf's Big Lie: Old Fields Not Recycled* (Jan 30, 2020), available at <u>https://peer.org/artificial-turfs-big-lie-old-fields-not-recycled/</u>

dollars to dispose of a single field's worth of plastic carpet in a landfill. This is likely why there have been a number of cases where the artificial turf waste has been illegally dumped.⁷² The environmental impacts of illegal dumping are especially concerning given the accelerated pollution shedding from degraded, end-of-life plastic turf.

How will the Lead Agency be adequately reassured that the artificial turf carpet from this Project is taken where the vendor claims and ultimately repurposed or ultimately recycled into other products? This concern is particularly pressing given that the Saratoga High School artificial turf Chain of Custody document was falsified.⁷³

While environmentally-conscious electeds are rightly uncomfortable with landfilling this much waste, the solution is well-managed natural grass. The Synthetic Turf Council (STC), the world's largest organization representing the synthetic turf industry (with over 200-member companies from over 10 countries) explains, "Synthetic turf systems have a limited lifespan that ranges between 8–10 years... As with any recycle, reuse and recovery effort, the diversity of component materials may represent economic or technical challenges."⁷⁴ "Artificial turf is extremely difficult and expensive to recycle since all the different plastics, rubber, and other materials used must be separated from each other" and "there are no turf recycling plants in the U.S.,"⁷⁵ explains a scientist and attorney formerly with the U.S. Environmental Protection Agency after Public Employees for Environmental Responsibility (PEER). However, this reality unfortunately hasn't dissuaded "artificial turf makers and vendors" from using "recycling claims as a promotional ploy to portray [artificial turf] as an environmentally responsible alternative to traditional grass fields." (PEER has "filed a complaint⁷⁶ with the Federal

https://cdn.ymaws.com/www.syntheticturfcouncil.org/resource/resmgr/guidelines/STC_Guideline_for_Rec ycle_Re.pdf

⁷² Public Employees for Environmental Responsibility *Artificial Turf's Big Lie: Old Fields Not Recycled* (Jan 30, 2020), available at <u>https://peer.org/artificial-turfs-big-lie-old-fields-not-recycled/</u>

⁷³ Bond, P, Letter to Los Gatos-Saratoga Union High School District Board "Letter regarding 3/12 Board Meeting agenda item 5F CMAS proposal for Helm Field" (Mar. 2024), available at https://drive.google.com/file/d/1ZEaj-4yp30garwyUkKAcMkaVMuH_WKTx/view?usp=drivesdk

⁷⁴ Synthetic Turf Council A Guideline to Recycle, Reuse, Repurpose and Remove Synthetic Turf Systems (Oct. 2017), available at

⁷⁵ Public Employees for Environmental Responsibility *False Artificial Turf Recycling Claims Ripped* — *FTC Enforcement Urged to End Deceptive Turf Industry Greenwashing* (Mar 7, 2022), available at https://peer.org/false-artificial-turf-recycling-claims-ripped/

Trade Commission (FTC), seeking FTC enforcement action to end misleading turf manufacturer and vendor claims.")

For manufacturers and vendors to promote artificial turf as being "recyclable" is misleading. The synthetic turf industry, like the broader plastics industry, has been greenwashing consumers for years when it comes to the subject of recycling. "Underpinning the plastic waste crisis is a campaign of fraud and deception that fossil fuel and other petrochemical companies have created and perpetuated for decades... Big Oil and the plastics industry have deceptively promoted recycling as a solution to plastic waste management for more than 50 years, despite their long-standing knowledge that plastic recycling is not technically or economically viable at scale."⁷⁷ As reported by Beyond Plastics Bennington College and The Last Beach Clean Up in "The Real Truth About the U.S. Plastics Recycling Rate,"78 the recycling rate for postconsumer plastic waste in the U.S. in 2021 was less than 6%. The report explains that the other 94% was disposed of in landfills, burned in incinerators, or ended up polluting our oceans, waterways, and landscapes. Even when millions of tons of plastic waste per year were counted as recycled when exported to China, the post-consumer plastic waste recycling rate still never even reached 10%. It was also revealed that while plastics recycling is on the decline, the per capita generation of plastic waste has increased by 263% since 1980. It is neither a safe nor realistic solution to bank on promises that plastic recycling will in future become a scalable tool for achieving meaningful reductions in plastic waste and pollution.

True recycling of artificial turf is a notoriously challenging task, not economically viable over the long-term, and constitutes a source of further microplastic and chemical pollution. Recycling of plastic is reported to pollute the air⁷⁹ around the facility. Like

⁷⁶ Public Employees for Environmental Responsibility *Complaint of Deceptive and Unfair Advertising of Artificial Turf* (Feb 28, 2022), available at https://peer.org/wp-content/uploads/2022/03/3_7_22-Filed-FTC-Complaint-2.28.22.pdf

⁷⁷ Center for Climate Integrity *The Fraud of Plastic Recycling — How Big Oil and the plastics industry deceived the public for decades and caused the plastic waste crisis*. (Feb. 2024), available at https://climateintegrity.org/uploads/media/Fraud-of-Plastic-Recycling-2024.pdf

⁷⁸ Bennington College Beyond Plastics and The Last Beach Cleanup *The Real Truth About the U.S. Plastics Recycling Rate* (May 2022)

https://static1.squarespace.com/static/5eda91260bbb7e7a4bf528d8/t/62b2238152acae761414d698/1655 841666913/The-Real-Truth-about-the-US-Plastic-Recycling-Rate-2021-Facts-and-Figures-_5-4-22.pdf

⁷⁹ Recycling can release huge quantities of microplastics, study finds — Scientists find high levels of microplastics in wastewater from unnamed UK plant – and in air surrounding facility The Guardian, available at

PEER, I am not aware of any facility in the country successfully recycling artificial turf at scale. Claims that facilities capable of recycling at scale will be operational in time for the replacements necessary 10 years down the road are a tired sales tactic. Despite decades of repeated assurances from industry that scalable artificial turf recycling is just-around-the-corner, attempts to make this a reality have encountered one failure after another⁸⁰⁸¹, like violating environmental laws, and may never come to fruition. Of course, from the industry's point of view, there's no incentive to let customers know that. If recycling of artificial turf were a long-term economically viable, environmentally safe, scalable solution, then massive stockpiles of unwanted, used turf wouldn't be a thing. Those stockpiles are a thing. Society can not afford to continue to rely on the future *potential* for scalable recycling to justify massive plastic purchases.

Being "recyclable" is not the same as being "recycled".

Repurposing is not recycling. It is nothing more than a temporary pitstop in the product's relatively short journey to its final long-lived resting places. Transferring the product's end-of-life challenges to the responsibility of another entity does not absolve the Lead Agency from its part in the production of this volume of plastic and consequent waste. The Lead Agency is the product's raison d'être.

Incineration is not recycling.

"Mechanical recycling" is not recycling. It's just chopping materials into smaller pieces.

"Advanced recycling", a.k.a. "chemical recycling", is not recycling. It's greenwashed terminology for pyrolysis, a form of incineration.⁸² "What they are doing is

⁸⁰ Bethany Rodgers *Turf recycler hit with environmental violations as it works to open PA plant* (Apr. 2, 2023) <u>https://www.phillyburbs.com/story/news/environment/2023/03/20/pa-officials-say-turf-recycler-is-violating-environmental-laws/69995371007/</u>

⁸¹ Barbara Laker and David Gambacorta 'Forever Fields': How Pennsylvania became a dumping ground for discarded artificial turf — Danish company Re-Match secured state incentives to open a recycling plant in 2022. It hasn't happened yet. Meanwhile, thousands of rolls of the fake grass, containing PFAS, are piled up on farms. (Dec. 13, 2023), available at https://bit.ly/foreverfields

⁸² Natural Resources Defense Council "Chemical Recycling" is Not Recycling: The Plastic Industry Is Greenwashing Incineration (Sep. 2022) <u>https://www.nrdc.org/sites/default/files/chemical-recycling-plastic-greenwashing-incineration-fs.pdf</u>

https://www.theguardian.com/environment/2023/may/23/recycling-can-release-huge-quantities-ofmicroplastics-study-finds

burning it. Burning it. It's incredibly environmentally harmful. It is probably the worst thing you could do with these fields, because it emits all sorts of chemicals to the fenceline communities... And it puts the PFAS that is in this field into the air where it then travels about 150km where it falls to the ground," explains Dr. Kyla Bennett, PhD in Ecology.⁸³

Downcycling is not recycling. Question the long-term viability of a waste management solution that depends on a high level of sustained demand for downcycled products, like plastic decking, plastic lumber and other construction materials incorporating plastic waste, especially given the materials would contain hazardous and undisclosed chemicals like PFAS that will continue to contribute to environmental and human health burdens.⁸⁴ Historically, industries have favored the low cost and high economic gain of virgin plastics so have not established high demand for recycled plastics.⁸⁵

As for downcycling artificial turf into plastic lumber, prolific use of plastic in the construction industry is likely a key contributor to plastic pollution and climate change and, in turn, global social injustice. Research shows that incorporating plastic waste into building materials and infrastructure:⁸⁶

- represents ongoing efforts at greenwashing
- delays and distracts from real solutions to the plastic pollution crisis
- exacerbates negative ecological impacts of plastic waste
- exacerbates negative health impacts of plastic waste
- increases demand for continued production of new (virgin) plastics by creating new markets for plastic wastes
- supports an unsustainable pattern of plastic production, use, and disposal

⁸³ Safe Healthy Playing Fields Inc. Advanced Recycling is the Latest Greenwashing of the Synthetic Turf Industry (Apr. 25, 2023) <u>https://www.youtube.com/watch?v=pzdi2cWWZdw</u>

⁸⁴ Swetlana Wagner Legacy additives in a circular economy of plastics: Current dilemma, policy analysis, and emerging countermeasures (Jul. 2020) https://www.sciencedirect.com/science/article/pii/S092134492030121X

⁸⁵ Merrington, A. *Recycling of plastics* in *Applied plastics engineering handbook: Processing, materials, and applications*. 2nd, 167–189. Elsevier, Amsterdam, Netherlands, (2017), available at https://www.sciencedirect.com/science/article/abs/pii/B9780323390408000092

⁸⁶ Erica Cirino et al. *Assessing benefits and risks of incorporating plastic waste in construction materials* Front. Built Environ., Sec. Sustainable Design and Construction (July 2023), available at <u>https://doi.org/10.3389/fbuil.2023.1206474</u>

- contributes to the rapidly escalating increase in global plastic production
- is responsible for significantly harming human health and driving serious societal injustices⁸⁷
- is not circular and does not address the core problem of plastic pollution
- greenlights continued manufacturing of plastic material items, perpetuating the cycle of increased pollution and injustice⁸⁸

A significant adverse environmental impact of shredding or pelletizing plastic waste for incorporation into composites and lumbers is that it generates microplastics and nanoplastics. These particles, along with chemical additives and sorbed contaminants travel widely through air⁸⁹, the ocean⁹⁰, and soils⁹¹ —and into living bodies including humans.⁹² The need to incorporate additive chemicals and/or new materials to plastic waste to maintain structural and performance integrity introduces additional environmental risk and diminishes a material's circularity and safety.⁹³

Repurposing, chopping, landfilling, and incinerating waste do not constitute true recycling and are not sustainable. True recycling, if it generates microplastic pollution, is also not sustainable. True recycling of a relatively small number of fields is not the same as true recycling at scale.

⁸⁹ Amato-Lourenço et al. *An emerging class of air pollutants: Potential effects of microplastics to respiratory human health?* (Dec. 20, 2020), availability at https://www.sciencedirect.com/science/article/pii/S0048969720352050

⁹⁰ Erikson et al. A growing plastic smog, now estimated to be over 170 trillion plastic particles afloat in the world's oceans—Urgent solutions required (Mar. 8, 2023) https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0281596

⁹¹ Cramer et al. *Microplastic induces soil water repellency and limits capillary flow.* (2023) <u>https://acsess.onlinelibrary.wiley.com/doi/10.1002/vzj2.20215</u>

⁹² Amobonye et al. *Environmental Impacts of Microplastics and Nanoplastics: A Current Overview* (Dec. 14, 2021) https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2021.768297/full

⁹³ Sara Parece et al. A Methodology to Qualitatively Select Upcycled Building Materials from Urban and Industrial Waste (Mar. 15, 2022) <u>https://www.mdpi.com/2071-1050/14/6/3430</u>

⁸⁷ Landrigan, P. J., Raps, H., Cropper, M., Bald, C., Brunner, M., Canonizado, E. M., et al. *The minderoo-Monaco commission on plastics and human health*. Ann. Glob. Health 89 (1), 23. (2023) <u>https://annalsofglobalhealth.org/articles/10.5334/aogh.4056</u>

⁸⁸ Plastic Pollution Coalition joined by frontline activists from communities of color across America's industrial plastic and petrochemical corridors. *From the Frontline: Petrochemicals, Plastics, and Cancer Alley* (Feb. 15, 2024) <u>https://www.youtube.com/watch?v=GfsRFM3VI4w</u>

If the Lead Agency contract is to include recycling, what makes the agency confident the taxpayer dollars being put toward recycling are indeed resulting in legitimate, sustainable, local, or at least domestic, recycling of 100% of the agency's artificial turf waste?

If you are told there's a facility doing *true* recycling of artificial turf *at scale*, please request and share the facility name, location, years in operation, evidence of the volume of artificial turf it recycles annually, and evidence that it is true recycling, as opposed to one of the situations listed above. Please also factor into the Project budget the cost of transporting the used turf to the facility, especially if it'd be sent to a facility across the country or overseas.

Another public agency was recently told FieldTurf would commit to recycling the agency's end-of-life artificial turf system carpets at a California facility, turning it into a PP/PE blend that will then be sent to third party consumer markets to be manufactured into products like plastic lumber, park benches, and trash receptacles. Who is the third party? Why aren't the third party and its customers concerned about the PFAS? Where is the third party? Is the third party even domestic? Is the third party facility sited in a sacrifice zone near disadvantaged communities? Are there social and environmental justice issues at play?⁹⁴

Is that California facility's acceptance of an agency's plastic carpets a small-scale performative operation crafted primarily as a strategy to increase artificial turf sales, i.e. to market to municipal and school district decision-makers, that have pre-purchase inquiries about the environmental sustainability of artificial turf? If recycled, how much waste would be generated by the recycling process for Lead Agency's artificial turf and will that waste be landfilled or incinerated?

Is the California facility Circular Polymers? Why doesn't Circular Polymers mention a purported ability to recycle artificial turf on its website, <u>https://circularpolymers.com</u>, especially given widespread demand for artificial turf recycling and plenty of online assertions that there's no facility in the U.S. that recycles artificial turf at scale?

Is the facility's artificial turf carpet "recycling" experimental? The process described by agency staff sounds similar to one of the recycling operations featured in a

⁹⁴ United Nations Environment Programme *Plastic pollution is an environmental injustice to vulnerable communities* (Mar. 30, 2021) <u>https://www.unep.org/news-and-stories/press-release/plastic-pollution-environmental-injustice-vulnerable-communities-new</u>

December 2023 news report which also alluded to artificial turf being extruded for use in plastic lumber. However that news report describes that operation as a "trial" and, curiously, the "partners" were kept secret from the reporters.⁹⁵

The City of San Francisco had 3 fields removed as part of FieldTurf's "take back" program to be recycled into products like park benches and trash receptacles. While FieldTurf's slideshow advertising the program failed to mention where the waste would ultimately go, city records state it was shipped over 8,000 miles to Malaysia.⁹⁶ Will any of the Lead Agency's plastic waste be shipped abroad?

With regard to the never-ending repetition of disposal of massive quantities of artificial turf product component waste not yet safely recyclable at scale, the Lead Agency lacks substantial evidence to support a finding that no significant cumulative adverse environmental impact exists. The inability to safely and genuinely recycle artificial turf at scale causes great long-lasting and severe environmental effects.

Plastic waste sent to a landfill will never decompose. The capacity of many landfills are reported to be rapidly depleting. Even if there's room in a landfill, the PFAS and nanoplastics may contaminate local groundwater. PFAS leach from landfills⁹⁷ and are released into the air by incineration⁹⁸. Please confirm local landfills have remaining capacity to house the volume of never-ending, never-decomposing artificial turf waste the Lead Agency would be regularly disposing of every ~10 years. Recognize the possibility that, especially as chemical regulation increases, artificial turf disposal in landfills may eventually be prohibited; It may become a requirement to treat artificial turf

⁹⁵ Barbara Laker and David Gambacorta *'Forever Fields': How Pennsylvania became a dumping ground for discarded artificial turf* (Dec. 13, 2023) <u>https://drive.google.com/file/d/1HMd-hqWeE0THBRcx_TWuB8hIM5uOtByT/view?usp=drivesdk</u>

⁹⁶ Marjie Lundstrom *Artificial turf, touted as recycling fix for millions of scrap tires, becomes mounting disposal mess* — *Where do the millions of square feet of synthetic turf go to die?* https://www.salon.com/2019/12/21/artificial-turf-touted-as-recycling-fix-for-millions-of-scrap-tires-becomes-mounting-disposal-mess_partner/

⁹⁷ Tolaymat et al. *A Critical Review of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Landfill Disposal in the United States.* Science of the Total Environment, Elsevier BV, AMSTERDAM, Netherlands, 905:167185, (2023). https://cfpub.epa.gov/si/si public record report.cfm?dirEntryId=359168&Lab=CESER

⁹⁸ Earthjustice and Sierra Club *Incineration is not a safe disposal method for PFAS* (2022) https://www.reginfo.gov/public/do/eoDownloadDocument?publd=&eodoc=true&documentID=251195

as hazardous waste, given known hazards, like PFAS, which may also increase the Lead Agency's future disposal costs.

Ongoing PFAS and microplastic pollution from plastic turf represent significant cumulative adverse environmental impacts. PFAS and microplastic pollution occur:

- from the facilities where PFAS, plastic, and plastic turf are manufactured
- during transport to the Lead Agency's site
- from the Lead Agency's sites where the plastic turf sits for 10ish years
- during transport from the Lead Agency sites to its next home
- from the sites where the plastic turf is taken after the Lead Agency is done with it (such as empty lots where they may be stored or sites on which they are repurposed, landfilled, or incinerated)
- from the PFAS-laced plastic products the plastic turf is downcycled into plastic lumber, park benches, and trash receptacles

Every 10 years, forever, literal tons of plastic carpet enters that pipeline. At some point, the market for plastic lumber, park benches, and trash receptacles will be saturated. Every batch of carpet will still exist in some form or another on this earth centuries from now, possibly spread between the post-consumer products it will theoretically be recycled into, stockpiles of crumbling plastic carpet rolls, and a "microlayer" of floating microplastics and nanoplastics in our oceans.

Because the artificial turf carpet is not truly and safely recyclable into new artificial turf carpet, this system is linear, not circular. This system takes as its input fossil fuels to create more virgin plastic turf, and as its output, it continuously generates a stream of PFAS-laced plastic pollution and every 10 years hundreds of rolls of degraded PFAS-laced plastic carpets. A linear system of plastic production, pollution, and waste inevitably represents a significant cumulative impact. This plastic and this pollution never go away. PFAS are called "forever" chemicals because they last essentially forever. Plastics also last essentially forever. Every bit of plastic manufactured for the Lead Agency's fields and every bit of PFAS and microplastic pollution that escape during the product's journey detailed above are forever. The PFAS and microplastics loose in the environment will circulate through our air, water, and soil forever. The amount of PFAS and microplastics we are breathing in, swallowing in our drinking water, and consuming in our food will continue to increase if our societies do not begin making radical changes in our approach to plastics. This is the premise of much scientific input that has been laid out in the recent discussions about the Global Plastics Treaty being developed.⁹⁹

Successive iterations of artificial turf replacement projects, which will be necessary every 8-10 years ad infinitum, or until prohibited by law or regulation, constitute significant cumulative adverse environmental impact in terms of both the volume of waste being produced and the emissions from this waste of long-lasting pollutants like microplastics and PFAS. A narrow focus on a single field and failure to recognize the successive iterations of replacement projects would violate CEQA.

V. The Environmental Injustice of Artificial Turf

Production, transport, use, and disposal of artificial turf all are guilty of contaminating water, soil, and air. As such, environmental justice issues span the lifecycle of artificial turf, a fossil-fuel-derived plastic product. This includes negative impacts on communities near fossil-fuel extraction sites. It includes negative impacts on communities near facilities manufacturing artificial turf, its plastics, and the hundreds of chemicals found in those plastics, many of which have been identified as toxic. For example, modern-day news abounds with stories of communities (like those in northern Georgia where carpet and artificial turf are manufactured) whose drinking water supplies have become contaminated with PFAS. PFAS are known as "Forever Chemicals", because they accumulate in our bodies and the environment and last essentially forever. As artificial turfs reach their useful end-of-life, a massive amount of waste is being incinerated or landfilled. Incinerators and landfills are often sited in sacrifice zones, i.e. near disadvantaged communities. Both incineration and landfilling pollute soil, air, and water. Note that PFAS is not destroyed by incineration nor wholly contained by landfills.

Does CEQA not require you to consider the upstream and downstream impacts of a project if they are out of the local area or out of state? Are California public agencies permitted to choose upstream sourcing and downstream disposal options out of the area or state to avoid having to acknowledge its responsibility for some of the significant adverse environmental impacts of its actions??

⁹⁹ United Nations Environment Programme *Historic day in the campaign to beat plastic pollution: Nations commit to develop a legally binding agreement* (Mar. 2, 2022) <u>https://www.unep.org/news-and-stories/press-release/historic-day-campaign-beat-plastic-pollution-nations-commit-develop</u>

The State of California's Office of Attorney General, under the heading "Environment & Public Health," has a lot to say about plastics:

Plastic manufacturing itself is highly hazardous, with the pollution burden being primarily borne by low-income communities and communities of color. Plastics manufacturing plants and materials recovery facilities, which are often sited in or near marginalized communities, generate hundreds of millions of tons of toxic air pollution each year. Ninety-nine percent of plastic is made from fossil fuels. The process of making plastic — from the extraction of oil and gas through the stages of manufacturing polymers — is a highly polluting process and a significant source of greenhouse gas emissions. The plastic industry's greenhouse gas emissions are expected to surpass those of coal-fired power in the United States by 2030. While California has aggressive programs in place to reduce greenhouse gas emissions and transition to a clean economy, plastic production remains on the rise, threatening state climate goals and exacerbating the impacts of the climate crisis.

Source: https://oag.ca.gov/plastics

VI. Feasibility of Natural Grass

A proper evaluation of the feasibility of well-managed natural grass needs to be documented and publicly shared by the Lead Agency. The infeasibility of well-managed natural grass fields is often implied by CBOs, elected officials, bond/construction managers, field design firms, field construction firms, athletic directors, league directors, coaches, athletes, etc. However, to my knowledge, none of them have the professional credentials to conclude natural grass is infeasible. They also do not have the professional credentials to conclude artificial turf has no significant adverse environmental consequences. And unless the Lead Agency informs these well-meaning individuals of the environmental consequences or of the option to have well-managed natural grass, it would not be surprising if many of them lobby for artificial turf. For the most part, those lobbying for artificial turf have been misled into believing the only realistic options are either natural grass that is poorly managed, unavailable during and after rain, offline for long stretches of time during the playing season, etc. or artificial turf.

The Lead Agency and the public need to be educated about the environmental consequences of artificial turf and the alternatives to using artificial turf prior to a final decision to approve the Project. This is the purpose of undertaking the CEQA review

process. Once educated on the environmental and health risks of artificial turf, public opinion appears to strongly favor natural grass.

Before rushing into an ill-advised decision to approve artificial turf, consult with professional sports field managers who have had long-term success keeping natural grass sports fields, fields that have high-volume heavy-usage and all-weather, year-round availability needs comparable to the Lead Agency's, in safe condition on a public agency budget. They are the only experts qualified to conclude whether natural grass is infeasible for the Lead Agency's needs. Design firms and construction firms typically do not have sufficient first-hand successful experience with long-term management of natural grass sports fields to adequately advise the Lead Agency regarding their potential use, and the Lead Agency should not settle for their opinions on the issue. The Lead Agency is urged to consult professional sports field managers that have a record of long-term success (5+ years) with year-round, high-volume natural grass sports fields to them.

Experts recommended for consideration:

 Professional sports field managers made available to public agencies by the nonprofit Beyond Pesticides through their "Parks for a Sustainable Future" program. Reach out to this organization's team at sustainableparks@beyondpesticides.org to learn more. Through this program, the Lead Agency's staff can be trained to economically keep natural grass in safe condition. This program is teaching public schools and Parks & Rec departments how to prevent worn/bare spots, mud, and pests on high-use natural grass playing fields in order to give the kids a consistent, level playing surface. The program would serve as an ideal vehicle for demonstrating to the community that real grass sports fields can be affordably kept in safe condition for the Lead Agency's year-round high-volume usage needs. The program's emphasis would be on training the managers of the Lead Agency's natural grass fields and supporting their success. With the professional development gained via this training program, the Lead Agency's grounds team would learn to keep soil rich with microbial life, enabling resilient, thriving natural grass. (Both a bonus and a key to success of this program is that the field management methods are organic and create more resilient turf that retains moisture and requires less watering. Organic management is safer for the grounds crew, field users, and the environment.)

- <u>Certified Sports Field Managers</u> ("CSFMs") that have demonstrated years of success managing real grass fields on a public school budget for communities with usage and availability needs similar to the Lead Agency's. Most field design firms and most field construction firms do not have a CSFM, especially not one that fits this description. Note also that many public agency field manager(s) are not yet certified as CSFMs. CSFMs are certified by the professional association called Sports Field Management Association ("SFMA"). The SFMA board president, Sun Roesslain, may be particularly helpful in helping the Lead Agency assess the feasibility of natural grass. She is a CSFM that is part of a 2-person <u>crew</u> managing national-award winning natural grass fields for a set of 6 public high schools. She is also networked with a number of the 250ish CSFMs across the country and may therefore be able to recommend other CSFMs for the Lead Agency to talk to regarding strategies for successful management with natural grass under the Lead Agency's year-round high-volume usage needs. She should also be able to refer you to professional development opportunities for the Lead Agency's field manager(s) to supplement information and training from the Beyond Pesticides training program. Consider supporting the Lead Agency's field manager(s) in earning CSFM certification.
- National field management expert, <u>Jerad Minnick</u>, and his consulting business, National Grass Advisory Group, are dedicated to proving how grass can take more use by focusing "on the most important elements of natural grass field maintenance to deliver stronger, safer, and more affordable playing fields." His unique approach involves data-driven, targeted maintenance to offer economical field management . For example, rather than aerating the field once a year, his method involves performing more frequent mechanical aeration of areas that his tools detect to be more compacted. As you can imagine, the goal mouths would be targeted, but so would other areas of the field where compaction is inhibiting drainage and at risk of causing the grass not to thrive. Do a consultation with him to learn more about his firm's education and advisory services.

Provided below is evidence to address the common conviction that natural grass can't meet the Lead Agency's usage demands, starting with the fallacy that natural grass, managed on a budget, can't sustain high use 7 days per week, and that it can't possibly support high-volume use by football, soccer, marching band, lacrosse, other sports, summer usage, winter usage, and constant rentals.

For starters, please watch this <u>4-minute video</u> describing how using soil science in the approach to managing the field enables this community athletic field to sustain 49

hours per week of play. You will see this theme of emphasizing management of the soil, as opposed to exclusively focusing on management of the grass, repeated below where the Beyond Pesticides field management approach is detailed.



The above adequately debunks the myth often amplified by the underinformed that safe condition natural grass requires infrequent use. Below, further evidence will be provided to debunk the myth that well-managed natural grass requires inaccessibly high levels of maintenance.

Most youth sports advocates will acknowledge they'd actually prefer real grass fields rather than plastic fields. However, many believe grass surfaces can not be kept consistent and level while being made available relatively soon after rain and while supporting the year-round carrying capacity that they get, or envision getting, from plastic fields. They mistakenly assume natural grass fields suffer from poor conditions and/or extended closures for rain or recovery due to modest budgets or inherent limitations of real grass.

Poor conditions and availability reductions are not inherent grass field limitations but rather a sign that the land manager opted to NOT invest in building and managing the grass field according to best practices. As evidence that poor conditions and reduced availability can be economically avoided by building and managing natural grass fields according to best practice, consider the dramatic playability improvements sustained at the Middle Head Oval field once best practices were applied, as shared in the news video above and in the case study (7 minute video). The soccer club and football league there that had formerly lobbied for plastic turf were shocked and enthusiastically pleased by the outcome. This once struggling grass field now enables year-round play, 55 hours per week in peak season, including about 30 hours of soccer

and football training and 20 hours of games. This is comparable to the usage limits advertised for plastic fields and dramatically higher than the ~25 hour per week limit frequently cited for natural grass fields.

While the above case study is not local, the case study is directly applicable to the La Sierra High School field because both climates can support year-round play and according to the <u>this Growing Degree Days Calculator</u>, the annual growing units for Riverside zipcode 92505 are ~2400 which is decently comparable to the ~2800 growing units for the case study site, Mosman, New South Wales.

The foundational argument used in attempt to justify artificial turf is that natural grass can't support the play the community gets out of artificial turf. With evidence and science to the contrary, the arguments stacked on top fall away, leaving nothing to support a case for artificial turf. For more of the science and evidence supporting best practice natural grass fields over plastic fields, refer to "Best Practice Sporting Fields," a peer-reviewed guide developed with funding from an environmental protection agency and state water supplier.

Isn't best practice grass field construction and especially maintenance prohibitively expensive? No. A land manager (such as a nonprofit or public agency like a city, county, or school district) that can come up with the funds to own and operate a safe plastic field should be able to come up with comparable funds to instead own and operate a best practice grass field. <u>Here's</u> an example of a cost comparison developed by a public agency and its contracted field designer (in California's San Francisco Bay area in California 2022) demonstrating that installation plus maintenance for a best practice natural grass field costs no more over a 20 year period than a plastic field.

It's important to recognize that while there are countless examples of poorlymanaged grass fields, that alone is insufficient evidence that it is infeasible for the Lead Agency to achieve well-managed grass fields. Even if there are no directly comparable fields to copy (i.e. no high school football fields in the area that have well-managed grass fields with comparable use), there exist well-managed high-use grass fields in different settings that can be learned from. It behooves us to approach this with an open-mind and progressive attitude. Wouldn't it be wonderful for the Lead Agency to be trendsetters responsible for a widespread movement to safe, healthy natural grass playing fields throughout area public agencies? Consider the acreage of plastic turf out there. (Bothman Construction boasts they've already Saran Wrapped over <u>27 million</u> <u>square feet of Northern California</u>). Imagine the positive impacts that could be achieved by challenging the status quo and being role models when it comes to environmental responsibility and children's health. In regards to poor condition natural grass fields often cited, these are simply not examples of what is feasible with well-managed natural grass. Many are poorly managed. In many cases, modern field management methods that include soil aeration have not yet been adopted. In many cases, public agencies deliberately opt to not dedicate resources to adequately maintain fields so that it can prioritize other things.

It is a myth that compacted goal mouths are inevitable and that using grass in wet winter weather will inevitably tear up natural grass. These myths will be debunked below.

To address concerns for overuse by competitive marching band, well-managed natural grass can handle this type of heavy use. Here is a <u>social media post</u> showing a beautiful example of a natural grass field after 32 marching band performances and 3 football games in one week. This field is managed by Sun Roesslein. Above, it was suggested she be contacted to learn more about the approach her 2-person team employs to manage fields for 6 high schools on a public school budget.



Busy start to the week, pushing recovery from 3 🟈 games + 32 marching band performances last week. Cross tine aerated, swept and got a good drink yesterday, nutrition boost today, paint tomorrow then we're week 8 ready! Soccer field will get some 💜 after XC League meet tomorrow



To all convinced natural grass will be destroyed if used during or after rain, that is a valid fear with poorly managed fields. But there are field management methods that can be employed to keep soil decompacted so that water infiltrates easily and does not result in a squishy or muddy field. When water infiltrates easily, compaction while the soil is wet is less of a concern. <u>Click here to play a video</u> of an example from <u>Field Fund</u> Inc., a 501c3 community-based organization launched by three working moms "eager to

prove that healthy, organically maintained grass playing fields are the safest, most environmentally and financially responsible choice." If they can do it, why can't the Lead Agency? They got educated on field management methods from Jerad Minnick, suggested above.



Above are a few stills from the Field Fund Inc. video, captioned "Rainy day following a rainy night but these healthy grass fields were draining beautifully and totally playable."



That's Jerad Minnick in the middle of their team photo.

There appears to be some level of conviction that, despite the revelatory information now before us regarding the climate crisis, plastics crisis, and PFAS crisis, we must resign ourselves to a decision made a decade ago when we were less

informed. If we open ourselves to seeking out the truth about our options, the outlook needn't be quite so bleak.

Synthetic turf industry talking points, like downtime estimates needed for natural grass repairs and renovations, tend to be biased. They need to be countered with natural grass industry talking points. Please be aware that field design firms and field construction firms that offer to design and/or build clients their choice of either natural turf fields or artificial turf fields, even if they claim to be agnostic about the client's decision, are not motivated to reveal to you that with modern, affordable field management methods, a natural grass field can be kept in such good condition that it does not require redesign or reconstruction for 25+ years¹⁰⁰, and at that time, the field may merely be due for irrigation system updates. These firms would lose repeat business on fields for clients successful with well-managed natural grass. In contrast, once these firms hook a client on artificial turf, that client will become due for costly reconstruction services every 8-10 years forever. Over the short-term, a client's choice of natural versus artificial turf may not make much difference to the firm's bottom line, but when it comes to long-term profit, artificial turf fields are an infinite profit center. Be skeptical of the bias in the input field design and field construction firms provide you.

To assure you this is not a conspiracy theory of mine, review the 2023 letter in which Bothman Construction lobbies against California bill SB499, a bill designed to protect students from extreme heat on school campuses. As living landscapes have been replaced on school campuses with plastic turf, rubberized surfaces, blacktop, and other hardscape materials, campuses have lost the benefit of cooling that comes with evapotransporation. This bill, perhaps if Bothman and the lobbyists at CASH hadn't objected to it, would have required schools to, among other things, replace artificial turf with natural grass at the next renovation. Since Bothman Construction emphasizes they are capable of constructing a client's choice of artificial or natural turf fields, as a forprofit business, it's hard to imagine Bothman Construction would have bothered to lobby against SB499's artificial turf regulations if Bothman Construction didn't benefit financially over-the-long-term from a widespread preference for artificial turf. If Bothman Construction stands to make just as much or more money over the long-term when clients opt for natural turf, you have to admit this lobbying effort of theirs calls into question their insistence that they are "agnostic" on the subject of whether clients choose natural or artificial turf. By now, surely you realize that once Bothman persuades

¹⁰⁰ Minnick, Jerad "The infrastructure of a natural grass field will last for 25 years at minimum," page 27 of Letter to School Committee regarding Martha's Vineyard Regional High School Athletic Field Master Plan & Phase 1 (Feb 4, 2019) <u>https://www.oakbluffsma.gov/DocumentCenter/View/5234/Review-of-Athletic-Field-Master-Plan-and-Phase-1---Jerad-Minnick-Oct-16-2020</u>

a client to install artificial turf, costly reconstruction services from Bothman (or a competitor) are needed every 8-10 years. Couple that with the fact that switching back to natural turf can be, if viewed only on the short-term, prohibitively costly. As you can see, clients with plastic turf fields essentially represent an infinite profit center for construction firms, whereas clients with *well-managed* natural grass, as I explained above, do not.

To address a potential concern that upgrading fields to natural grass would mean band and girls' flag football would lose access to the field during winter while the field recovers from football season, the points above offer reassurance this is not the case. There are multiple management methods that enable grass to sustain heavy use and enable play during and after rains. As explained in the 11/29/23 <u>Beyond Pesticides</u> webinar, organic management of sports fields is an option for enabling high use fields to be used year-round.

This 90-second clip (extracted from this <u>full webinar recording</u>) in which organic sports field management expert, Chip Osborne, with his decades of experience managing natural grass athletic fields for public agencies, explains that it is a myth that natural grass can't be economically managed to sustain heavy use or that the field needs to be shut down and rested. "I have never worked yet, in 25 years, on a field that does not get heavy use... I have never worked on a property where the field has been closed and rested so that organic had a chance to work... It's not too expensive. Costs decrease over time. Parks and fields do not deteriorate... We are not talking about organic by neglect. We're talking about a thoughtful, proactive approach to management, a management practice/protocol that is founded in science."

Let's debunk some myths



"It is too expensive. I can't afford it" "It does not work. A field or park will deteriorate" "My fields get used too heavily. Organic will not perform" "You need to shut down and rest when using organic methods"

Industry talking points

This is not organic by neglect. It is a thoughtful, proactive approach to management. Slide from the webinar clip where sports field management expert debunks myths about organically managed natural grass fields.

To address concerns regarding water availability during drought, community athletic fields can be watered. While there may have been watering prohibitions for non-functional turf, there are no such prohibitions for watering community athletic fields. As an example, even at the highest stage of water conservation, San Jose Water considers watering community athletic fields a <u>well-justified use of water</u>. When it comes to water conservation, <u>the bigger picture</u> needs to be considered.

To conserve water, consider a drought-friendly cultivar. As one option, researchers at University of California Riverside have developed a new drought-resistant bermudagrass cultivar for sports fields, called <u>Coachella</u>, that uses up to 65% less water than other commonly used turfgrasses. Compared to other turfgrasses that go dormant and turn brown in winter, this cultivar maintains its turf color and quality much better year-round.

Artificial turf advocates often fault natural turf for requiring gas-powered mowing equipment and many manhours for mowing. This is a tired claim. The natural turf industry has advanced significantly. You can now find auto-mowers and auto-painters for athletic fields. They look like Roomba vacuums. A CSFM working for a municipality on the east coast that we talked to was developing a plan to run the mowers overnight and have them return to a small shed. If he can do that, why can't the Lead Agency? This brings up another tired claim of artificial turf advocates... pesticides.

Concerns over exposure to pesticides and childrens' long-term exposure to chemicals are valid. Organically-managed natural turf should be explored as an alternative to both artificial turf and conventionally-managed natural turf (i.e. grass managed with synthetic pesticides and/or synthetic fertilizers). Keep in mind that pesticides are regulated by the federal government whereas artificial turf is *not* regulated by the federal government. Because of this, if the Lead Agency will not consider an organic field management approach, it is still preferable to carefully use regulated pesticides as part of natural grass rather than risk childrens' exposure to plastic turf's unregulated and undisclosed chemical cocktails, which are, by the way, protected from public scrutiny under Confidential Business Information laws. Please direct Lead Agency staff to consult directly with the nonprofit Beyond Pesticides about their Parks for a Sustainable Future program. Surely, you must be intrigued by the potential for organic management of natural grass sports fields to be a feasible option

after watching that 90-second clip. You owe it to the youth to have the Lead Agency legitimately dig into the feasibility question with Beyond Pesticides before concluding that organically managed natural turf fields are not an option. Parroting the comebacks of those that get any benefit from choosing artificial turf, financial or otherwise, is inadequate without making the due diligence to source the story of natural grass promoters and critically evaluate the merits of the debate, and motives of the debaters, for yourselves.

Speaking of motives, I can't emphasize strongly enough that the Beyond Pesticides' Parks for a Sustainable Future program is not for-profit. Allow me to explain in more detail my understanding of this program, based on conversations I've had with Rika Gopinath, one of the program contacts...

The Parks for a Sustainable Future program, offered by the nonprofit Beyond Pesticides, offers 3 years of consultant services to help public agencies (i.e. school districts and municipalities) keep natural grass sports fields in safe condition while enabling year-round, high-volume, heavy use.

Their outreach is directed at school superintendents, city managers, and the electeds that oversee them.

It is a fallacy that plastic turf is the only practical solution to, on a tight public budget, conserve water and keep athletic fields in safe condition under year-round, high-volume, heavy use.

These are well-recognized pain points when it comes to managing natural grass:

- short-staffing and/or short-funding
- athletic fields that get heavy usage, meaning desired to be available 12 months/year, 12 hours/day for:
 - practices and competitions of high-school-level band, football, soccer, etc.
 - gathering events like track meets
 - P.E. classes
 - and more
- community frustration with poor natural grass field conditions, including:
 - uneven surfaces
 - divots
 - \circ mud
 - bare spots
- goose feces
- community unwilling to tolerate frequent field closures intended to reduce field damage during/after rain
- high prioritization of water conservation

This program is designed to serve as a solution for all of the above. It is a 3-year program that starts by teaching your in-house or outsourced staff how to economically employ science-based methods to enable actively-organically-managed natural grass to serve as a feasible and affordable solution to all of the above concerns. After teaching the methods and getting the agency launched on the right foot, the consultant remains available for troubleshooting and as-needed guidance for the remaining years of the program.

A very common reason natural grass athletic fields get compacted, patchy, muddy (i.e. fall into poor condition) is a lack of healthy soil microbial activity, a condition that results from (a) failure to add organic matter to the soil and/or (b) application of synthetic pesticides. Without soil microbes tunneling through the soil, the soil becomes compacted through heavy field usage. Compacted soil hinders extension of the grass's roots and reduces infiltration of water and air, leaving the grass to struggle. The economical solution is to feed the soil microbes organic matter and refrain from synthetic pesticide usage. A high population of healthy soil microbes provide free natural aeration of the soil, reducing soil compaction, enabling natural grass to thrive, fill in bare spots and crowd out weeds. Aerated soil helps water percolate through the soil, reducing mud and enabling field usage during/after rain. This free natural aeration also reduces irrigation needs and labor needs. Work with nature, not against it.

The mission of the nonprofit, Beyond Pesticides, is to reduce pesticide usage. They want cities and schools to succeed with pesticide-free athletic fields. Towards that goal, the nonprofit has raised funds to enable operation of a Parks for a Sustainable Future Program, a program in which the nonprofit pays seasoned experts (like Chip Osborne from that 90-second webinar clip I shared earlier) to consult for and train staff of public agencies, or their outsourced landscape maintenance contractors, on active, organic management of heavily-used natural grass athletic fields.

The only cost incurred by the agency would be approximately \$1000 for annual soil testing of 2 fields and that would need to be paid directly to a third-party testing facility of the agency's choosing. Beyond Pesticides has no financial motives. The organization, the consultants, and the Parks for a Sustainable Future Program do NOT require, sell or promote specific products or service contracts. The program does NOT compete with or replace any of an agency's staff or any of an agency's contracts

outsourcing design, construction, or landscape maintenance. The program is intended exclusively to COMPLEMENT the work of the agency's staff and the work of any firms the agency contracts with. The program's consultant works as a peer, ALONGSIDE those the agency has already selected to design, build, and manage the field. The intent is that at the conclusion of an agency's 3 year participation in the program, the field management team has the knowledge and skill to successfully continue keeping all the agency's athletic fields in safe condition without any further assistance from the consultant.

Beyond Pesticides welcomes a chance to share more with you. Beyond Pesticides can be reached at info@beyondpesticides.org or 202-543-5450. Should the Lead Agency decide to apply for the Parks for a Sustainable Future Program, the school superintendent or city manager or their representative can get the process started. If accepted to the program, a consultant will be assigned to provide the agency with training and troubleshooting for TWO (no more, no less) of the agency's most heavily used fields. Selection of applicants is based on intent to follow through with prescribed methods of active field management. Selection is not based on sociodemographics. While donations are NOT required for participation in the program, the organization greatly appreciates donations by agencies that can afford to make donations so that the nonprofit can broaden its reach, stretching its budget so it can offer this program to as many public agencies as possible.

In the case where a new natural grass field is being designed, it is beneficial to enroll in the program at the very beginning of the project design phase. This enables the program consultant to provide input to best support the agency in both saving money and best preparing field conditions to support year-round high-volume heavy use from the start. The consultant can offer invaluable input on RFP language, construction specifications, and construction contract language on topics that help the agency succeed with natural grass, such as testing specifications for native and imported loads of soil for proper pH, contaminants, and minimum levels of organic content and healthy soil microbe activity prior to seeding or sodding the field.

What are you waiting for? But seriously, this option needs to at least be considered. If choosing between artificial and natural turf still feels difficult, then direct staff to develop a feasibility study, a more formal comparison between the two, factoring in the many issues. Such a study would be an asset to well-informed, transparent decision-making.

The critical caveat is to ensure the data sourced for this formal comparison regarding costs, labor manhours, field availability, etc. do not reflect a bias toward

artificial turf as seems to be common when such comparisons are prepared with the exclusive input of civil engineering firms, field designers, and field installers. It is critical to include the voice of professional sports field managers that have a record of long-term success (10+ years) with year-round, high-volume natural grass sports fields for public agencies, as opposed to settling for the input of groundskeeping staff that have struggled to keep grass in safe condition, clearly not having had the training or been given the resources to be successful with it.

VII. If you reject artificial turf, you'd be in great company.

- <u>Santa Clara County Medical Association</u> has previously cautioned against the use of artificial turf, providing many citations evidencing its harms.
- The California government itself, specifically its Department of Toxic Substances Control, now acknowledges there are <u>hazardous chemicals</u> in the blades of plastic grass. (In the past, concerns around artificial turf had been focused primarily on the hazardous chemicals in the tire crumbs that were used as infill, but this new concern for the chemicals in the plastic grass itself means that even Organically-infilled artificial turf systems are hazardous.)



 In 2023, a state bill was signed into law after passing through both houses of the California legislature by wide margin, allowing cities and counties to <u>ban artificial</u> <u>turf</u>. This new state law redefines "drought-tolerant landscaping" to explicitly *exclude* the installation of artificial turf.

- In 2023, a bill to <u>ban PFAS-laced artificial turf</u> also passed through both houses of the California legislature by wide margin. Among AB1423 supporters were Santa Clara Valley Water District, <u>Environmental Working Group</u>, and the state legislators representing many of the same constituents you were elected to represent. <u>Governor Newsom</u> "strongly" supported the intent of the legislation but didn't ultimately sign it, concerned about the state's ability to determine and enforce compliance. He suggested the issue could return. He also directed the state Department of Toxic Substances Control to explore "approaches to regulating the use of these harmful chemicals in consumer products".
- <u>Millbrae</u> just recently banned artificial turf by unanimous vote of the city council.
- In December of 2023, a state agency (the California Coastal Commission) denied a school (<u>University of California - Santa Barbara</u>) the option to install artificial turf based on its obligations under CEQA.
- Los Gatos Union School District board recently unanimously rejected the proposal to artificial turf its elementary school playing fields, after receiving broad support for natural grass from the community and considering input from <u>experts</u>, <u>government agencies</u>, <u>and organizations</u>, including 12 that weighed in directly on the LGUSD project. Community support for natural grass was clear from both a <u>petition</u> that netted nearly 500 signatures as well a <u>district-designed</u>, <u>district-administered survey</u> with record-setting participation that showed nearly 80% of respondents wanted natural grass. LGSUHSD board members, recognize these are your constituents.
- <u>Sunnyvale's City Council</u> just recently voted unanimously to keep artificial turf out of Lakewood Park.
- Santa Clara County discourages the installation of artificial turf.
- <u>Santa Clara Valley Water District</u> promotes water conservation but, even in severe drought emergency, NOT by installing plastic grass. It has produced an excellent information sheet to explain why artificial turf is discouraged.
- Santa Clara Valley Water District <u>will not issue a water conservation rebate</u> to customers that install artificial turf: "Artificial grass lawn turf does not meet goals set forth by Valley Water's Landscape Rebate Program."

VIII. Requests if you ultimately choose artificial turf

Once the CEQA analysis is complete, if artificial turf is ultimately chosen for the Project, please direct staff to do the following:

- Reduce artificial turf users' exposure to PFAS and watershed contamination. As recommended by independent experts, before signing a purchase contract, confirm via test results that each of the artificial turf components meets the PFAS standards detailed earlier. For assistance defining the details, reach out to the independent experts at PEER.org or EcoCenter.org.
- Reduce artificial turf users' risk of heat-related illness and bacterial infection. If not already installed, install irrigation for cooling and cleaning the field.
- Reduce pollution caused by end-of-life artificial turf waste. Require recycling of all artificial carpet and infill being removed from the site. Require covered transport. Require Chain of Custody documentation, including the addresses where the waste is taken as well as photographic proof that all of the waste makes it there and is housed indoors.
- Reduce pollution caused by the field. Because infill will degrade over time and spread into the environment despite best management practices, choose a 100% plant-sourced infill, rather than an infill product that contains plastic. For example, do not choose a product like TrueBlend, a 50/50 polymer/cork infill, which means it has plastic in it and can release microplastics as it grinds down. It's bad enough that the plastic grass sheds microplastics, but to dump literal tons of loose plastic pellets into the environment is an egregiously poor choice.
- Amend the standard artificial turf purchase contract to include GMAX testing after install and one test per year for the length of the warranty.

IX. Conclusion

Either remove artificial turf from the proposed Project in favor of natural grass, or halt all actions in furtherance of the Project. As discussed, natural grass is a feasible and environmentally preferable alternative.

The CEQA analysis must transparently explore:

- 1. the breadth and gravity of the environmental consequences that come with continually covering and re-covering acres of land with artificial turf and
- 2. the true feasibility and practicality of well-managed, drought-tolerant natural grass.

At the conclusion of the CEQA review, it is expected that the Lead Agency and the community will recognize that, over the long-term, modern, well-managed droughttolerant natural grass reduces significant adverse environmental impacts and therefore deserves fair and thorough consideration.

Please acknowledge receipt of this letter and promptly provide notice of any actions taken in response.

Sincerely, Cynthia Fan