

August 31, 2020

Memorandum: SAG Review of Draft ARWP 8-1-2020

From:

Scientific Advisory Group (SAG)

To:

Gary Willey, San Luis Obispo Air Pollution Control District (SLO APCD)
Jon O'Brien, California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division (OHMVR)

Summary statement:

The Scientific Advisory Group (SAG) is generally pleased with the draft 2020-21 Annual Report and Work Plan (ARWP). The ARWP demonstrates tangible progress on dust mitigation treatments during the 2019-20 work year, including initiation of the 48-acre foredune restoration project. The draft ARWP also sets forth a comprehensive 2020-21 work plan, which includes continuing progress on existing and new dust mitigation treatments, as well as advancements on modeling and monitoring capabilities to inform adaptive management. The SAG is also pleased with how OHMVR has displayed a spirit of cooperation with SAG through ongoing consultation in the ARWP drafting and writing process.

The SAG is aware that the draft ARWP proposes to add only 40 acres of additional dust mitigation treatments in the 2020-21 work year, which may be insufficient to achieve the level of dust mitigation required by the Stipulated Order of Abatement (SOA) in a timely manner. The SAG therefore recommends that the 2020-21 ARWP plan for an increase in the amount of new dust mitigation treatment areas beyond the 40 acres stated in the draft ARWP to at least double this amount. To inform this recommendation, the SAG reviewed a map of existing (to February 2020) dust mitigation treatments as well as the most current Desert Research Institute (DRI) dust emission attribution maps (based on 2013 winds and the PI-SWERL testing grid) for both the CDF and Mesa2 monitoring stations. Noting extensive recent dust mitigation efforts in the north-central portion of the Oceano Dunes State Vehicular Recreation Area (ODSVRA) (e.g., BBQ Flats, Bigfoot, Eucalyptus) the SAG recommends that OHMVR focus on installing new mitigation "islands" in the south-central region of the ODSVRA, as shown in the attached Figure 1. Such areas could have additional emissions reductions benefits for Mesa2, in particular.

The SAG recognizes the challenges imposed by the terrain and other site logistics, such as maintaining safety, restroom access, and vehicle transport corridors, and indicates three general areas for consideration. Although these areas do not correspond with the most highly emissive surfaces attributed to PM10 concentrations at either Mesa2 or CDF (see attached Figures 2 and 3), such as the "sand highway," they would provide dust mitigation benefit not only within their footprint areas but also by a sheltering effect that would reduce surface shear stress, sand saltation, and resulting dust emissions downwind of the treatment areas. Possible locations for transportation/access corridors to accompany these mitigation islands are also indicated in the attached Figure 1.

In making a final selection among these possible treatment areas, the SAG urges OHMVR to consider the full available scientific evidence to determine the relative effectiveness of possible treatment alternatives. Notably, the draft ARWP includes significant activities in the 2020-21 work year to improve DRI dust model predictions by assimilating improved emissivity maps (from recent PI-SWERL surveys) and meteorological data (from the recently-installed SODAR station). In addition, planned fluid dynamic modeling during the 2020-21 work year will help to quantify secondary effects on dust emissions reductions downwind of the foredune treatment area. Therefore, as such modeling improvements are made, the SAG recommends that OHMVR revisit the specific scope and placement of planned dust mitigation treatment areas.

In addition, the SAG recommends that OHMVR engage with a subset of SAG members to seriously consider scientifically-justified alternatives to the current 50% emissions reduction target that may more directly reflect the impact of dust mitigation treatments on downwind airborne dust concentrations.

Members of the SAG offer additional specific comments on the draft ARWP below. Three figures are also attached with this review.

Respectfully,
Scientific Advisory Group (SAG)

Additional comments from SAG members

Carla Scheidlinger:

1. Typo: page 2-2, paragraph 2 line 2: remove the word “be”
2. Typo: page 2-2, remove last empty bullet from Plot 1
3. For Plot 2 description on page 2-2, indicate what the densities of “high” and “low” are in terms of nodes/acre.
4. Page 2-3, specify planting density for Parks Classic.
5. Typo: Page 2-7, capitalize the M in PM in the heading for section 2.3.1
6. Page 3-2, section 3.1.1. If the information on the foredune is not acquired before summer of 2021, there will be no opportunity to carry out planting during the current work year. The statement about planting in this section then conflicts with the timeline shown in Table 5-1 on page 5-1.
7. In Table 5-3 on page 5-2, the schedule for removing the sand fence and then replanting leaves a pretty long time between fence removal and planting; this time period should be shortened.

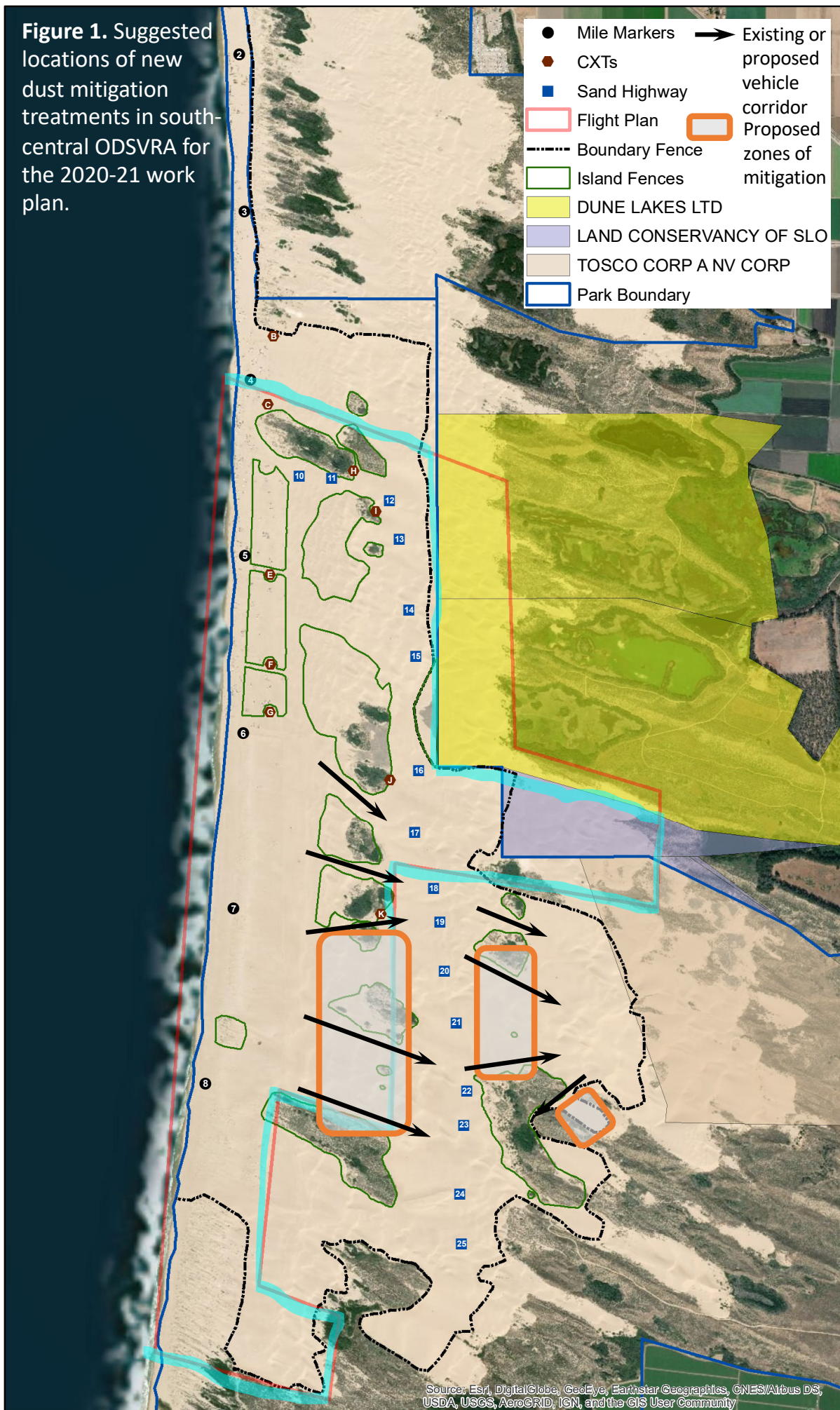
Raleigh Martin:

1. **Project Manager.** Please identify the name of the current project manager, as per item 13 in the amended SOA. I assume this is Jon O’Brien, but please confirm this within the ARWP text.
2. **Sec. 2.2. Statement of Progress Achieved.** Please also provide a value for the modeled concentration change at Mesa2.
3. **Sec. 2.3.1. Monitoring Activities Conducted Over the Previous Year: Meteorological, Pm, and Saltation Monitoring.** It appears that many Normalized Sand Flux (NSF) values reported here are from the 2018-19 ARWP period, not the 2019-20 ARWP period that is the subject of this report. Please provide NSF values specifically for each of the 2019-20 control measures listed in Table 2-1, as available. Please also make it clear how the reported NSF values relate to each of the specific treatment areas. (For example, does Table 2-3 refer to the 2019-WF-01 and 2019-WF-02 treatments?)
4. **Table 2-3.** Please clarify what treatment area the “two temporary sand fence arrays” are referring to – are these 2019-WF-01 and 2019-WF-02?
5. **Attachment 6. “Defining the SOA 10 Baseline Days.”** The current attachment does not actually define the SOA 10 baseline days. It instead performs an analysis to justify an existing choice that is not described anywhere in the ARWP. The SAG provided a preliminary definition of the SOA 10 Baseline Days, which was included as Attachment 5 for the revised 2019-20 ARWP issued on December 31, 2020. To reflect changes that were agreed to at the February 2020 SAG meeting and which were incorporated into subsequent DRI modeling, I provided OHMVR with an update to this file on March 1, 2020. I strongly recommend including this as an attachment with the 2020-21 ARWP. This would formally settle the lingering matter over selection of the 10 baseline days.
6. **Table 3-6.** Please replace the “tbd” entries with “Consult with SAG on selection of specific dust control treatment” and “Install dust control treatment.”
7. **Sec. 3.2.3. Planned Field Measurements: Baseline Sand Flux Measurements.** This subsection as currently written is not helpful, because it only describes the theory of BSNEs without any specific plans. It would be much more useful to describe the actual

plan for BSNE data collection and analysis in 2020-21, following on the deployment of BSNE arrays described in Sec. 2.3.1.

8. **Sec. 3.2.3.** Planned Field Measurements: PM10 Measurements. This subsection as currently written is also not helpful. Please provide more specific detail on expected PM10 Measurements in 2020-21.
9. **Exhibit 2.** Please update the numbering of foredune treatment areas to match what is in the report.
10. **Attachments 1 & 2: 2019-20 and 2020-21 metrics.** These need to be updated. For 2019-20 (Attachment 1), many of the values (i.e., P7-P16) are listed as “TBD – 2020 ARWP.” Please provide these values or give an explanation for why the values are not included. For 2020-21 (Attachment 2), many of the target values (i.e., P4-P16) are listed as “TBD.” Will an attempt be made to define these targets? If OHMVR is unable to provide these values now, could it commit to a target date for consultation with SAG on these items? In addition, to avoid confusion, I suggest removing “TBD – 2020 ARWP” in the Attachment 2 “Value” column, as well as updating or removing the items in the “Notes / Plan” column of this file.

Figure 1. Suggested locations of new dust mitigation treatments in south-central ODSVRA for the 2020-21 work plan.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 2. General locations of recommended dust mitigation treatments for the 2020-21 work plan shown overlain on the map of source attribution to the Mesa2 monitoring station. Produced by DRI using 2013 data.

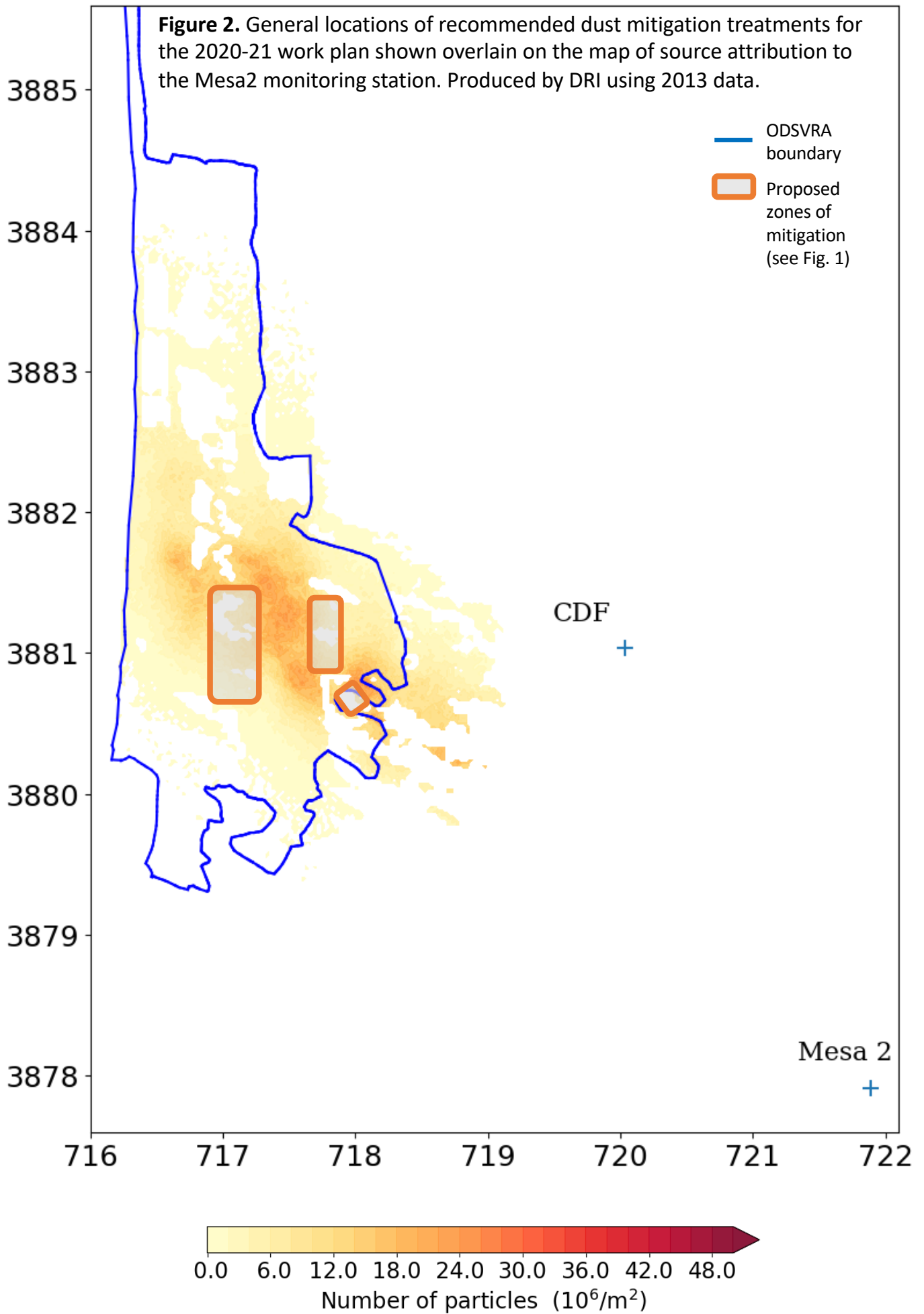


Figure 3. General locations of recommended dust mitigation treatments for the 2020-21 work plan shown overlain on the map of source attribution to the CDF monitoring station. Produced by DRI using 2013 data.

