SLO COUNTY apcd | Air Pollution Control District
San Luis Obispo County

September 3, 2026

Sarah Miggins
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SUBJECT: Comments on the California Department of Parks and Recreation's Oceano Dunes SVRA Draft 2026 Annual Report and Work Plan in Response to Stipulated Order of Abatement Number 17-01

Dear Ms. Miggins:

On August 13, we received the Draft 2026 Annual Report and Work Plan (ARWP) for the Oceano Dunes State Vehicular Recreation Area (ODSVRA), which is dated August 15. At your request, we had extended the due date from August 1, as specified in the Stipulated Order of Abatement (SOA), to August 17; thank you for submitting the Draft ARWP by the modified deadline. On August 27, we received a memo from the Scientific Advisory Group (SAG) with their comments on the Draft ARWP.

The Draft ARWP documents the substantial ongoing effort by State Parks to control windblown dust emissions from the ODSVRA, and it reports on the ambitious research and monitoring activities that continue there. For the 2026-2027 cycle, it proposes 42.2 acres of supplemental plantings in previously restored areas. No changes to the extent of the dust controls are proposed, but "preliminary planning" is mentioned for possible new control areas and for a possible return of some of the Plover Exclosure to seasonal access. Additional PI-SWERL emissivity measurements and other monitoring activities are also planned.

As documented in the Draft ARWP and the District's Annual Air Quality Report for 2025, air quality measurements continue to demonstrate significant, real improvements both in emissions from the park and in PM_{10} levels downwind. This year's Draft ARWP—like last year's—reports that current emissions from the park are estimated to be lower than emissions in the pre-disturbance scenario, and concludes that, "In this respect, the ODSVRA is in compliance with the SOA." However, unlike last year, the modeling assumptions that support this conclusion are much more reasonable. The current modeling largely resolves the concerns the District had expressed about previous versions.

Nonetheless, for several reasons, it would be advantageous for State Parks to implement new dust controls in the coming year. First, the modeling demonstrates compliance by the narrowest of margins—1.9 metric tons/day—and future modeling updates will change the emissions estimates, possibly yielding the opposite result, i.e., demonstrating non-compliance. These modeling updates include incorporating additional PI-SWERL data into emissivity profiles and refinements to the boundaries of vegetation areas. Second, the ODSVRA is a dynamic landscape, and current restoration projects may become inundated with sand or otherwise fail, becoming emissive again. Third, remaining in compliance will require new offsetting dust controls to be in place before returning any portion of the Plover Exclosure (or other closed area) to vehicular access.

Finally, as amended, the Stipulated Order of Abatement in Case 17-01 (SOA) requires State Parks to obtain, by October 16, 2028, the Hearing Board's approval that the emission reduction goal has been met. Currently, certain areas are modeled as non-emissive even though they have not achieved the level of vegetation coverage needed to suppress dust generation. While the District agrees with the rationale for modeling these areas this way now, the SOA requires the emissions goal to be achieved in practice by the 2028 deadline, not simply that there are sufficient projects in progress to eventually meet the goal.

For these reasons, the 1.9 metric tons/day margin of compliance is insufficient to ensure future compliance. Additional dust mitigations need to be initiated in this ARWP cycle to increase the compliance "buffer." These additional controls need not be within the remaining off-roading area.

The SAG memo contains insightful comments and requests for revisions. The next draft of the ARWP should address their comments.

According to the timelines required by the SOA, State Parks has 21 days or until September 24, 2026, to submit a revised ARWP for SAG and District review. After receipt of a provisionally approvable ARWP the APCD will schedule a public workshop, as required by the SOA. As we did last fall, the District plans to schedule the public workshop concurrently with a Hearing Board public meeting planned for October 14, 2026. This meeting will be held in-person at 9:00 a.m. in the San Luis Obispo County Board of Supervisors Chambers located at 1055 Monterey Street, San Luis Obispo, CA 93401. Thank you and feel free to contact me with any questions.

Respectfully,

KARL A. TUPPER
Air Pollution Control Officer

Enclosures

cc: Liz McGuirk & Jon O'Brien, CA DPR, APCD Hearing Board, APCD District Board, APCD District Counsel, Coastal Commission Staff & SAG

General Comments

As with the previous Annual Reports and Work Plans (ARWPs),[1] the DRAFT 2026 ARWP[2] documents the substantial ongoing effort by State Parks to understand and control windblown dust emissions from the ODSVRA over the past year. Between August 1, 2025, and August 1, 2026, State Parks completed the work proposed in the previous year's ARWP.

While no new portions of the open-riding and camping area have been converted to dust mitigations since 2022, State Parks continues to manage 740.1 acres of the park for dust control benefits. No temporary controls (e.g. wind fence arrays) remain; all previous temporary projects have been converted to permanent dune vegetation projects. Over the last year, State Parks completed 44.3 acres of supplemental planting and seeding in previously restored areas, slightly more than the 42.5 acres proposed in the approved 2025 ARWP.

For the 2026-2027 cycle, 42.2 acres of supplemental plantings are proposed in previously restored areas. The District strongly supports supplemental planting, and encourages State Parks to do more, if possible. The ARWP also states that "preliminary planning" has begun for "[a]ny new dust control measures that may be required to maintain long-term compliance with the SOA," and for "[r]eopening a portion of the PE [Plover Exclosure] to seasonal recreation activities," but it does not contemplate installing any new controls or reopening any of the PE during this ARWP cycle.

The ARWP also reports on the continuing research and monitoring activities at the ODSVRA, including several model refinements and other work intended to implement last year's ARWP. Much of this work was performed by or in close consultation with the Scientific Advisory Group (SAG), and the District appreciates the tremendous effort expended by State Parks and the SAG on these activities. Additional work is planned for the coming year, and the District supports these continued data collection and model refinement activities.

Critically, this ARWP addresses key concerns about the modeling raised by the District and/or the SAG in comments on previous year's ARWPs. With these issues largely resolved, the modeling estimates lower emissions from the ODSVRA today than before significant disturbance by vehicles, i.e., the modeling indicates compliance with the goal of the SOA. This is a significant milestone, however the emissions estimates for the contemporary and pre-disturbance scenarios are nearly the same, with only a 1.9 ton/day "buffer" between compliance and non-compliance. For a variety reasons discussed below, sustained compliance may prove illusory unless this buffer can be augmented.

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[1] Previous and current Annual Reports and Work Plans as well as comment letters, approval letters, and related documents can be found on the District's website at https://www.slocleanair.org/air-quality/oceano-dunesefforts.php.

[2] California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division, "Oceano Dunes State Vehicular Recreation Area Dust Control Program: Draft 2026 Annual Report and Work Plan," August 15, 2025. Available online at https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/2026ARWP_APCD_Draft_20260815_Reduced.pdf (main document) and https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/2026_ARWP_APCD_Draft_Attachments_reduced.pdf (attachments).

Modeling Issues Addressed

Vegetation Mask

One issue raised in previous ARWP reviews and resolved here is the accuracy of the vegetation mask. As noted last year in our comments on the First Draft 2025 ARWP[3] as well as the SAG's,[4] there were areas of bare sand within the ODSVRA that were being modeled as though they were vegetated and thus non-emissive. These areas included the seaward edges of certain vegetation islands, which had become inundated with sand, as well as treatment areas in which plantings had failed for various reasons. In modeling these areas as non-emissive, emissions from the ODSVRA were underestimated.

The current modeling resolves this issue in a few ways. First, it employs a redrawn vegetation mask based on more recent imagery to determine which model grid cells have sufficient vegetation to be considered non-emissive.[5] Next, open sand areas within vegetation islands and older vegetation treatments are now modeled as emissive. In earlier versions of the model, these areas were considered completely non-emissive. Finally, vegetation treatment areas less than 5 years old are still modeled as non-emissive, regardless of actual vegetation coverage. The District believes this 5-year "grace period" is reasonable, as State Parks has documented that this how long it takes a new vegetation treatment area to become established. (See Draft ARWP Attachment 8). Furthermore, State Parks has committed to track the success of treatments and refresh them with supplemental plantings as needed (within resource constraints).

Contemporary Emissions from the Plover Exclosure

Another issue that has been resolved is the current emissivity of the Plover Exclosure (PE). As discussed in detail in earlier ARWP reviews, the emissivity of this area was assumed to be lower that of other non-riding riding areas based on PI-SWERL measurements. For various reasons, the timing of these measurements made it impossible to determine whether the observed lower emissivity of this area (as compared to other non-riding areas) was a true spatial effect or rather an artifact of when the measurements were conducted. Now, with multiple years of measurements and with concurrent control measurements from elsewhere within the ODSVRA, low emissivity in this area is much more justified.

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[3] Karl A. Tupper to Sarah Miggins, "Comments on the California Department of Parks and Recreation's August 15, 2025, Oceano Dunes SVRA Draft 2025 Annual Report and Work Plan in Response to Stipulated Order of Abatement Number 17-01," dated September 5, 2025. Available on at https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/APCD%20Comments%20SP%20Draft%202025%20ARWP%20-%201st%20Draft.pdf.

[4] Scientific Advisory Group, "Memo: SAG Review of '2025 ARWP_APCDDraft_20250815'," August 29, 2025. Available online at https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/SAG%20Memo%20-%20SAG%20Review%20of%202025%20ARWP%20%28August%2015%20version%29_20250829.pdf.

[5] The updated model also revises the amount of vegetation that must be present within a grid cell for the cell to be considered non-emissive. Previously, a 50% coverage threshold was applied; the updated model uses a 15% threshold. A cell is also considered non-emissive—regardless of its vegetation coverage—if it is immediately downwind of a cell with at least 40% coverage. As discussed in Attachment 8 of the ARWP, these revised thresholds are based on a review the scientific literature. The result of this change is to lower emissions from both the contemporary and pre-disturbance scenarios.

Pre-disturbance Emissions from Areas Closed Today

Most importantly, the updated modeling largely resolves the related issue of how to handle the PE and the Foredune Restoration Area (FRA) in the pre-disturbance versus contemporary scenarios. As discussed extensively in our comments on last year's ARWP[3] and the references therein, previous versions of the model generated higher emissions from these areas under the pre- disturbance scenario than from the contemporary scenario, despite their recent history of vehicular disturbance.As we noted last year, "Fundamentally, the District objects to the notion that the emissivity of the Plover Exclosure is lower today—after being closed to vehicular activity for approximately 5 years—than it was prior to vehicular activity, as assumed in the pre-disturbance scenario."

The latest modeling introduces a new emissivity zone into the pre-disturbance model. This new "Beach Foredune" zone spans the western edge of the ODSVRA from the southern boundary of the PE to north of the FRA and is 200 m wide. See 2-34 in the Draft 2026 ARWP. The emissivity of this zone, per the SAG recommendation in Attachment 8 ("Contemplating DRI model refinements in anticipation of the 2026 ARWP"), is in between that of the PE and FRA and is much less than the emissivity of the NRA-C zone.

With these changes, FRA emissions now appear to be lower in the pre-disturbance scenario than today, as shown in Figure 2-36 of the Draft 2026 ARWP. PE emissions in the pre-disturbance scenario are reduced relative to previous model versions, though overall they still appear to be somewhat higher than emissions from the contemporary scenario. Pre-disturbance emissions from the strip of beach north of the FRA are also reduced relative to previous model versions. The net effect of these changes is to reduce the estimated emissions from the pre-disturbance scenario.

With these changes, the PE still appears to be somewhat more emissive in the pre-disturbance scenario than in the contemporary scenario, but by a much smaller margin than in previous versions of the model. On the other hand, the FRA emissions are estimated to be lower in the pre-disturbance scenario than today, and this will partially offset the "excess" from the PE. Overall, these changes largely resolve the District's previous reservations about how this area was modeled.

Nonetheless, the District has some residual concerns about the extent of the new Beach Foredune zone, which is based on recommendations in the SAG memo in ARWP Attachment 8. The SAG recommended two options for the new zone: "the footprint of the current management zones known as the Plover Exclosure, Foredune Restoration Area, and Seasonal Exclosure Area," or a "north-south trending strip of land bounded by the ocean shoreline to the west and an eastern boundary line placed approximately 200 - 400 m inland from the shore." The first option would have completely resolved the District's concerns as it includes the entire PE and FRA. State Parks has chosen the second option and set the width of the zone at 200 m, however, this choice is not entirely consistent with the SAG's recommendation. The memo envisions a strip of varying width, approximately 200 m wide at its narrowest and up to 400 m wide at its widest, with the actual width informed by PI-SWERL measurements and other factors. It also states, "the detailed outline of such a new sub-zone would require further discussion," which does appear to have occurred. **Thus, further refinement of the shape of the Beach Foredune zone must be undertaken.**

Compliance Margin

As noted, the modeling in the Draft 2026 ARWP concludes that the current ODSVRA is in compliance with the SOA emission reduction goal by a margin of 1.9 ton/day. While very encouraging, it is premature to conclude that no further dust controls will be necessary. This is because there are many factors that could erase this razor-thin margin:

- As noted immediately above, the shape of the new Beach Foredune zone needs refinement, which could lower the emissions estimate for the pre-disturbance scenario, eroding or even erasing the 1.9 ton/day buffer.
- Additional PI-SWERL measurements planned for future years will change the emissivity profiles used in the model, potentially reducing emissions in some areas and/or enhancing it in others. The net effect on the balance of compliance could be to increase or reduce the compliance margin.
- The ODSVRA is a dynamic landscape, with sand constantly encroaching on vegetation areas. The boundaries of vegetated areas will continue to evolve, potentially changing the emissions from the contemporary scenario.
- As noted earlier, certain sandy areas within revegetation projects are still being modeled as non-emissive if the project is less than 5 years old. This means actual emissions from the ODSVRA are somewhat higher than what the model currently estimates. While this 5-year grace period reasonably accounts for the time needed for vegetation projects to become established, the SOA requires the emissions goal to be achieved in practice by October 2028, not simply that there be sufficient projects in progress to eventually meet the goal once fully mature.
- Finally, State Parks is contemplating eventually returning at least a portion of the PE to seasonal or year-round vehicular access. For example, the Draft 2026 ARWP notes "preliminary planning" for "[r]eopening a portion of the PE to seasonal recreation activities," the recently approved Habitat Conservation Plan and associated planning documents[6] include reopening portions of the PE, and State Parks officials have mentioned reopening it at various public meetings. To stay in compliance with the SOA, emissions from the ODSVRA will need to remain below emissions from the pre-disturbance scenario; State Parks has committed to fully offset the increased emissions associated with any reopening (see footnote 10 in the Draft 2026 ARWP). Without offsetting projects, reopening even a relatively small portion of the PE will likely consume the entire 1.9 ton/day buffer.

Conclusion

The Draft 2026 ARWP documents the remarkable work by State Parks to control wind-blown dust from the ODSVRA over the last decade. In collaboration with the SAG, State Parks and its contractors have also conducted an immense amount of data collection, research, and analysis to understand how dust is generated at the park, how to control it, and how much control is needed. The ARWP concludes that compliance with the SOA's emission reduction goal has been achieved, and this

[6] California Department of Parks and Recreation, Off-Highway Motor Vehicle Recreation Division, "Final Habitat Conservation Plan for the California Department of Parks and Recreation Oceano Dunes District," April 2026. Available online at https://www.oceanoduneshcp.com/document-library.

conclusion rests on much firmer ground now that previous modeling concerns have largely been addressed.

Nonetheless, the SOA requires that "By October 16, 2028, in consultation with the SAG and CARB, [State Parks] shall obtain Hearing Board approval that the approved excess emissions goal has been met."[7] To make a convincing case that this goal has indeed been achieved, the 1.9 ton/day buffer needs to be grown, presumably with additional dust controls. The need for additional controls now is especially acute if State Parks intends to eventually allow off-roading to return to the Plover Exclosure.

[7] Hearing Board of the San Luis Obispo County Air Pollution Control District, "Order To Modify Existing Stipulated Order Of Abatement," Case 17-01, filed October 21, 2024. Available online at https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/Modified%20Stipulated%20Order%20of%20Abatement%2017-01_FILED%2010-21-2024.pdf.