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To: Coastal Commissioners and Interested Parties

From: Stephanie Rexing, North Central Coast District Manager
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Subject: Mussel Rock Landfill – Informational Item

The Mussel Rock Landfill, owned and managed by the City of Daly City, is a since-capped and closed landfill located at the southern end of Daly City, directly north of Pacifica, in an area of high geologic instability running along the Pacific Ocean (see **Exhibit 1**). The capped landfill area is currently used as a park (Mussel Rock Park) and is designated by the City's Local Coastal Program for open space and public access. The area is actively used by the public, with surveys showing about 100 visitors per day who pursue recreational activities such as hiking, sandy beach access, dog walking, fishing, and hang-gliding. The site is served by a public parking lot located at the southern end of the site (at the end of Westline Drive, next to a former solid waste transfer station) through a pedestrian gate, and includes a series of crisscrossing roads and paths used by the public, including a compacted maintenance road that runs along the top of the entire length of a revetment that fronts the site (see photos of the area in **Exhibit 2**).

The landfill at Mussel Rock[1] opened in 1957 as a Class III (i.e., general, and non-hazardous waste) municipal landfill serving the Cities of Daly City and Pacifica, where it operated for twenty years until it was closed by order of the Regional Water Quality Control Board (RWQCB) in 1978. The primary issue with the site is that it is located at a confluence of serious hazards that significantly undermine its stability, including not only erosion, landslides,[2] and storm/wave action, but also seismic activity, where the landfill is located at roughly the point where the San Andreas Fault makes landfall south of San Francisco. As a result, the site is subject to significant coastal hazards, which leads to substantial regular, ongoing, and costly maintenance, monitoring, and remediation needs. While this kind of hazardous site would be problematic for any number of developments and uses, it is particularly problematic when the site includes over a million cubic yards of solid waste immediately adjacent to the Pacific Ocean.

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[1] The site is named for the prominent offshore rock formation that was apparently historically the site of an abundance of such shellfish.

[2] The site includes one of the largest active landslide complexes on the California coast. (Heiser, 2010; Sloan, 2006)

To 'hold in' and contain the landfill materials, an approximately 35-foot high and roughly half-mile long riprap revetment fronting the site was built as part of RWQCB requirements back when the landfill was in operation, as garbage was being washed into the ocean due to instability. That revetment exists in largely that same form today (albeit modified and expanded, see further below), and continues to be the City's chosen method to contain the landfill, prevent landslides, and control waste and contaminated runoff from the site from entering the ocean. As might be expected given the armoring has been present at this location for over 50 years, limited sandy beach area remains seaward of the revetment, and the revetment is essentially located directly at the ocean's edge where continuous tidal and wave action, severe winter storm events, site instability, and episodic landslides all combine to destabilize both the revetment and the overall site.

The Coastal Commission's involvement at the site began in 1978 when it issued a CDP that authorized capping the landfill (CDP P-77-182), installing trails and other public access amenities atop the capped landfill, implementing other related closure activities, and constructing a new solid-waste transfer station[3] at the southern part of the site, all intended to meet RWQCB closure requirements. Ultimately, the City found itself in violation of that CDP when the required public access improvements were never initiated, and the City also violated the Coastal Act when it continued to undertake development at the site to comply with RWQCB requirements (to manage drainage and reduce the risks of landslides and daylighting waste, including revetment modifications), without a CDP. Ultimately, it wasn't until some 25 years later that the City pursued another CDP, when problems with the revetment in the early 2000s required remediation and the Commission authorized the repair and expansion of a 50-foot section of the revetment and a roughly 150-foot section of gabion retaining wall above that in 2002 (CDP 2-01-011). In any case, after development was completed pursuant to that CDP, the City continued to modify and augment the revetment without a CDP for the next decade.

In 2012, the Commission authorized the past revetment work done without CDPs after-the-fact, as well as new revetment and access road development (CDP 2-11-024; see **Exhibit 3**). By this time it was clear that the site was becoming even more problematic, which raised concerns that either an episodic event and/or gradual destabilization was going to lead to significant trash and related materials finding their way to the beach and into the ocean. Additionally, Commissioners and staff expressed a strong concern that there was no comprehensive plan to address the problem, including where the revetment had proven to need relatively constant augmentation, and was continuing to lead to significant coastal resource impacts, including a direct and ongoing loss of beach. At that time, the Commission wanted additional detail and analysis related to the long-term future of the landfill site and the revetment; identified the need to develop a long-term solution to address the issues raised by the continued protection of the closed landfill; and required the City to consider options for planning for retreat of the landfill,

[3] The transfer station was intended to allow residents to continue to bring their trash to the site, but instead of placing it in the landfill it would be held at the transfer station and then trucked to other operating landfills in the area. The transfer station operated in this way until 2016, but has been shuttered since, although it is physically still present above the parking lot area.

including a detailed feasibility study and cost assessment for relocation of some or all of the landfill and restoration of the site.

Thus, that CDP limited the armoring authorization to three years (until 2015) and required that a Planned Retreat Management Plan (PRMP) be submitted for review and approval by the Executive Director by 2014. The PRMP was required to fully evaluate potential relocation of the landfill, removal of the revetment, remediation and restoration of the site, potential constraints (including geotechnical and engineering constraints), potential phasing options and timelines, estimated project costs, and potential funding sources. Ultimately, that CDP required the City to come back to the Commission for a CDP amendment to implement the Executive Director-approved PRMP, where the intent was to foster landfill relocation, revetment removal, and site restoration as much as possible unless conclusively demonstrated to be infeasible. Ultimately, although the City has submitted multiple iterations of PRMPs over the years (including a revised edition last year), such PRMPs not been sufficient to meet the CDP requirements and have been returned to the City by the Executive Director with direction regarding what needs to be modified to allow for Executive Director review and approval.[4]

In the interim, the revetment authorization under the Commission's 2012 CDP approval expired in 2015, and thus the revetment has been unauthorized for ten years (while the authorization for other improvements in the permit remain). Although currently out of compliance with the deadlines established for the PRMP, lack of compliance does not alleviate the need for such a plan, and the PRMP is in fact still required by the CDP. At the same time, conditions at the site have continued to deteriorate, and the Commission has issued five emergency CDPs (ECDPs), including two this year alone, to continue to address ongoing and active landslides, and to prop up the revetment at the site.[5]

Within this framework, staff notes two things. First, the site is extremely problematic and will likely only become more so as coastal hazard risks intensify, including considering rising sea levels. Further, it is not clear that continued landslide remediation and revetment augmentation at the site will be sufficient – or even possible to a certain extent – in the longer run to contain the landfill in situ, nor whether that is the best public policy and coastal resource option for this site. As is, the landfill continues to sporadically shed trash onto the beach and into the ocean, and the RWQCB requires active monitoring for leachate, which continues to be a significant concern.[6] Staff

[4] Executive Director comments have focused on the need to further outline and evaluate alternatives, including comparing the feasibility of partial and full removal of material, adopting a phased approach for removing material, providing cost estimates for disposing materials off site, incorporating best available science for long-term sea-level rise, and selecting a preferred alternative. The City is currently working on a revised PRMP and anticipates submitting an updated version for review in late 2025.

[5] See, for example, ECDPs G-2-16-0075, G-2-21-0030, G-2-23-0079, G-2-25-0010, and G-2-25-0021 which, among other things cumulatively allowed approximately 35,000 tons of new rock to be installed in the revetment.

[6] The RWQCB continues to implement order number R2-2015-0007, which replaced previous orders that were issued in the 1960s through the 1980s, all of which have aimed to protect and preserve water quality and mitigate the adverse impacts of the landfill on water resources. RWQCB orders note that groundwater monitoring has shown evidence of some volatile organic compound impacts above drinking

believe that the former landfill site poses a severe threat to marine resources, especially due to its hazardous location along the coast, and are concerned about the risk of a catastrophic failure, driven by any one, or a combination of, the various hazards that exist here. In addition to the landfill and hazard issues, the site is also culturally sensitive, but such cultural resources have not been effectively addressed either.[7]

Second, given that context, staff believes that it is critical that the City complete the PRMP process, and that the Commission takes action to require implementation of the PRMP, all as was envisioned in the 2012 CDP. Critical decisions about the future of the site have been left unanswered, leading to ongoing resource degradation and the lack of a long-term plan. Thus, staff intends to bring the City's PRMP – in whatever form it is in at that time[8] – to the Commission as a condition compliance item later this year. Although the PRMP was originally structured by the 2012 CDP to come back for Executive Director review and approval, the Executive Director believes it is prudent that a decision of this magnitude be something that the Commission as a body weighs in on.

For several reasons, including because of its somewhat overlooked location, the above-described issues surrounding the Mussel Rock site have been under the environmental radar. In staff's view it will be important to raise its profile in the public arena, as a major remediation project that proposes the removal of material of this magnitude would be quite expensive and would require partnerships and engagement at all levels. Such a process is critical in this case so that more awareness is brought to what is a serious environmental problem, but also so that such awareness can help to spark action.

Exhibits
Exhibit 1: Location Maps
Exhibit 2: Site Area Photos
Exhibit 3: Commission-Adopted CDP 2-11-024 Report

water environmental screening levels, and some metals above drinking water maximum contaminant levels.

[7] Archeological finds have demonstrated there was once a seasonal Ohlone village at Mussel Rock, with excavation and grading in 1978 uncovering Ohlone artifacts.

[8] Although staff would prefer a complete PRMP for review, it is possible that the document will not be complete, and staff may have to fill in any blanks at that time. In any case, staff intends to bring as much information to bear on relevant PRMP questions as soon as is feasible.