

**APPENDIX C. RESPONSES
TO BCDC COMMENTS**

Appendix C1. Botanical Resources

Date: May 18, 2007

To: Daniel Airola, Jennifer Feinberg

From: Ayzik Solomeshch

Subject: Response to BCDC Comments on Draft Scientific Review of Biological Resource Impacts and Proposed Mitigation for the Potrero Hills Landfill Phase II Expansion (BCDC Permit No. MD88-09): Chapter 2, Botanical Resources

Your comments and questions raise many important issues. The review is an expert assessment based on information provided by the Potrero Hills Landfill (PHLF) and my personal observations during several field trips in spring and summer 2006. Ideally, it would have been based on long-term observations on permanent plots, but even with the time constraints for this review, I believe that conclusions about proposed mitigation are correct and scientifically defensible. Before presenting my answers to your comments and questions, I would like to explain the general concept that I kept in mind while working on the review.

The vegetation of the PHLF parcels is highly modified; invaded by non-native species; and represents various successional stages, most of which are rather unstable and far from their natural conditions. Approximately 179 acres of these grasslands will be buried by the Phase II of landfill expansion. This habitat will be lost forever. In my view, adequate mitigation for such loss requires vegetation improvement by increasing the abundance of native species, which will offset their loss on the Phase II parcel.

My recommendations are intended to enhance natural vegetation on mitigation parcels. The mitigation proposed in the Project Environmental Impact Report (EIR) and Mitigation and Monitoring Plan (MMP) focuses only on maintaining existing vegetation conditions on mitigation parcels. I consider this mitigation approach inadequate for several reasons. First, even if measures in the MMP are successfully implemented, the plan does not provide adequate mitigation because the overall cover of native species will decline. Second, maintaining unstable ecosystems that are on their downhill trajectory (becoming increasingly invaded by non-native species) is not an optimal mitigation strategy.

Grasslands proposed for landfill mitigation are degrading under current management and strong pressure of non-native species. The Phase II project will cause the loss of a considerable amount of area grasslands. The grasslands in mitigation areas should not be grazed in the traditional manner but rather should be managed more “aggressively,” including use of restoration to increase the cover of natives on mitigation areas in an amount that would offset their loss in the project area.

Response to comments:

Summary of Requested Change	Response
Questions to be Addressed by all Panelists	
<p>1. There were several specific details of the proposed project that were not available for your review prior to writing the draft report. These project details are as follows: (a, b, c, d, e, f, g). Given that these project details were missing during your original review, do you believe it is necessary to conduct additional fieldwork or analyses to evaluate the impacts of these project components on the expansion and mitigation areas? Do you need any additional information from Potrero Hills Landfill, Inc. to adequately evaluate the impacts of the project?</p>	<p>Missing project details on the exact locations of the installation project components, such as the power plant, screening beams, sedimentation control basin, water well, water conveyance line, water tanks, and new roads in addition to the lack of visual field benchmarks for the final width and height of the landfill at Phase II limited the scope of my review. Nevertheless, I believe that I had enough information to evaluate the impacts of the project on vegetation. Additional study is necessary to define restoration targets and mitigation strategy but not for evaluation of project impacts.</p>
<p>2. Site visits and surveys conducted by each of you at the expansion and mitigation areas were limited to a few months this summer. Do you believe it is important to survey the Potrero Hills during winter and spring months for an adequate understanding of the value of the botanic resources, ecology, and animal species and of the project impacts? Or, do you believe the review you have undertaken adequately assess the values and project impacts?</p>	<p>I conducted a limited field survey in the PHLF area. The data that I collected during my field visits confirmed the high quality of botanical information provided in the EIR, MMP, and other documents provided by PHLF. Consequently, I feel comfortable basing my analysis primarily on the data provided by PHLF. The recommendations and suggestions in my review do not question the quality of botanical information but rather the interpretation, conclusions, and management recommendations provided in the EIR and MMP.</p> <p>One thing requires additional field study. The recommendation to use 33 acres of 100-percent native grassland as a measurement of mitigation success to offset the impacts of the proposed expansion on grasslands is based on the estimate that grasslands in the Phase II area have 14-percent cover of native species. This estimate is based on limited observations and an ocular estimate of species cover. The percent of vegetative cover should be measured more thoroughly and should be based on a statistically defensible number of observations and on more objective measurements of species cover. I</p>

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	<p>could conduct such a study and believe that it would increase the quality and adequacy of mitigation for the Phase II project. This recommendation is an innovative environmental mitigation technology that can be applied to many other projects in California and other states.</p>
<p>3. Can you identify for us those pieces of information, recommendations, and conclusions that you have provided that are new and were not provided or identified in the certified EIR?</p>	<p>New information, conclusions, and recommendations include:</p> <ol style="list-style-type: none"> 1. <u>Focus on mitigation of upland habitat loss.</u> The EIR and MMP stated that the impact on upland habitats that represent nearly 99 percent of the project area is insignificant and no mitigation measures (beyond land acquisition and protection) are required. I compared Phase II grassland with those from other parcels and showed that the richness of native species is similar or even higher in this grassland than in most of the other parcels. I concluded that adequate mitigation for the loss of upland habitat should include a restoration component that will increase cover of native species on protected parcels. 2. <u>New method of evaluation of loss and measure of mitigation success.</u> I estimated native species cover in Phase II grasslands and suggested a new quantitative measure of mitigation effectiveness that will improve mitigation performance for the project and potentially can be applied to many other projects. 3. <u>Defining targets for restoration and mitigation.</u> The MMP recommends grassland management based on the assumption that grassland is the only target ecosystem for management at remaining parcels. Consequently, the MMP is focused on using grazing as a management tool for maintenance of these parcels. I concluded that the mitigation strategy should assume multiple targets. For ecosystems other than grasslands, grazing is not a desirable tool but rather a disturbance that prevents them from reestablishment. The need for additional ecological information and determination of the successional status of upland habitats was pointed out, and additional study to clarify this subject was suggested. 4. <u>Mitigation for two special-status species.</u> The project EIR states that impacts on two special-status species (<i>Atriplex joaquiniana</i> and <i>Atriplex coronata</i> var. <i>coronata</i>) are less than significant and that mitigation for the loss of their habitat is not required

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	<p>because the species were last seen onsite in 1998. My conclusion is that this impact should be mitigated.</p> <p>5. <u>Mitigation for impacts on stock pond flora:</u> Mitigation measures in the EIR and MMP are focused almost entirely on wetlands. I concluded that six stock ponds in the Phase II area are dominated by exotic species, do not support specific vernal pool flora, cannot be considered as a vernal pool habitat, and do not require mitigation for impacts on stock pond flora. However, losses of stock pond habitats warrant mitigation for loss of hydrological functions and wildlife values.</p> <p>6. Characterization of impacts to grassland habitat as “permanent.” I conclude that the loss of 179 acres of grasslands is a permanent, not temporal, loss because “new” grassland that potentially can be created on the tops and slopes of the landfill cells will be different from those that are to be eliminated (e.g., different geology, hydrology, and soil chemistry). Also, no studies or detailed restoration design has been proposed that demonstrates the ability to reestablish pre-project conditions on the landfill after individual cells are filled.</p>
Questions for Ayzik Solomeshch (Chapter 2: Botanical Resources)	
<p>4. You indicate that at least 33 acres of 100 percent native grassland should be restored for mitigation to offset the impacts of the proposed expansion on grasslands. Do you have any suggestions on the acreage for mitigation of the two special-status species and sensitive plant communities or is this acreage included in the 33 acres?</p>	<p>Mitigation acreage for impacts on sensitive plant communities is included in the 33 acres. However, the 33-acre amount needs clarification:</p> <p>The amount of 33 acres represents the actual loss of native grassland species cover given that 14-percent estimate of the cover of natives on the 238.8 acres of the Phase II area. It does not mean that mitigation on only 33 acres of grasslands outside the Phase II area can be considered adequate mitigation. I suggested this number as a criterion for assessment of the adequacy of mitigation.</p> <p>Given that restoration of grassland with 100-percent cover of native species is not achievable, I suggested that management and restoration on other parcels (Hills, Griffith Ranch, Director’s Guild, Eastern Valley) could be considered as an adequate mitigation if total cover of native species at all those parcels collectively encompassed 33 acres.</p>

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	<p>The measurement of mitigation success for two special-status species should be based not on acreage but on the population characteristics of those species, such as the number of individuals (i.e., according to Eva Buxton, there were 300 to 400 individuals), their reproductive activities, and seed bank.</p>
<p>5. You have focused on the loss of native grassland species for the purpose of mitigation. However, the project will result in the loss of approximately 600 acres of valley bottom and sloping hillside grasslands for the duration of the Phase I and Phase II project. Do you think the loss of the larger overall acreage of grasslands should be mitigated?</p>	<p>According to the EIR, the total loss of grasslands due to Phase II expansion is 238.8 acres, which includes both slope sides and valley bottom. My estimate is based on that number. In the memorandum from PHLF dated November 3, 2006, Steve Peterson stated that the project's actual impact area will be reduced from 238 to 179 acres. Consequently, the estimated acreage of actual loss of native species cover was reduced from 33 acres to 25 acres of grassland with 100-percent cover of natives.</p> <p>I am not aware of a loss figure for grasslands of approximately 600 acres. The acreage of loss reported in the EIR was 238.8, which was later amended to 179 acres. If 600 acres of loss is correct, the estimated area of the native species cover loss should be increased from 33 to 84 acres. The 84 acres is not the total area needed to achieve mitigation for loss of native cover, given that 100-percent cover by natives cannot be achieved, but is the total acreage of native cover required. The actual acreage required would need to be determined based on the percent cover of natives achievable (also see Response 4 above).</p>
<p>6. Other than controlling for exotics on the wet meadow in the Southern Hills parcel, do you have any suggestions for how to restore and manage this area for native plants?</p>	<p>Yes, I do have suggestions. The relatively narrow bottom of the valley in the Southern Hills parcel is covered mostly by non-native species, has bare ground along the cattle paths, and is obviously eroded. This indicates that the area was heavily overgrazed and was eroded by storm water. My impression is that the narrow bottom of this valley represents the temporal stream habitat that used to be covered by riparian vegetation, including trees and shrubs.</p> <p>I did not have the resources or opportunity to conduct a special study to address this question and how to restore and manage this area. But I believe that such a study is necessary and should be conducted to</p>

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	provide the scientific background for adequate mitigation of the loss of grasslands at the Phase II area.
7. In your introduction section, we would like you to delete the phrase “as they relate to BCDC polices under Solano County’s LPP.”	It has been deleted.