



Midpeninsula Regional  
Open Space District

R-19-83  
Meeting 19-17  
June 26, 2019

## AGENDA ITEM 4

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Contract Amendment with Phytosphere to Continue Sudden Oak Death Research

### GENERAL MANAGER'S RECOMMENDATION

Authorize the General Manager to amend a contract with Phytosphere Research, in the amount of \$10,000, for a total not-to-exceed contract amount of \$86,500, to continue monitoring treatment methods to suppress the spread of Sudden Oak Death in Open Space Preserves through the end of Fiscal Year 2019-20.

### SUMMARY

The Board of Directors (Board) approved a contract with Phytosphere Research (Phytosphere) to provide monitoring of treatment methods to suppress the spread of Sudden Oak Death (SOD) on Midpeninsula Regional Open Space District (District) lands on February 24, 2016 (R-16-17). The work under the contract amendment will provide one additional year of continued SOD monitoring, research, and assistance in responding to SOD in Open Space Preserves (OSP) through the end of Fiscal Year (FY) 2020-21. The District's cost for the additional services is \$10,000 for a total not-to-exceed amended contract amount of \$86,500. The proposed FY2019-20 budget includes sufficient funds for this contract amendment.

### DISCUSSION

SOD, a plant disease caused by the fungus-like pathogen *Phytophthora ramorum*, is responsible for killing millions of oaks and tanoaks throughout California's forests and District OSPs since the mid 1990's. The US Forest Service (USFS) created the Forest Health Protection Project. The objectives of this multi-agency project include:

- Develop methods and strategies to prevent, treat, manage, and mitigate the impacts of *P. ramorum*, and respond to the hazards it creates;
- Improve early detection and monitoring methods for SOD and related diseases; and
- Elucidate the ecological, economic, and social impacts of *P. ramorum* and other forest *Phytophthora* species.

Drs. Ted Swiecki and Elizabeth Bernhardt, with Phytosphere, have been working with the District and the USFS since 2007 to assess the status of SOD in District OSPs. Phytosphere is monitoring two preventative treatment methods: removal of bay trees (a known host for SOD) near oak and tanoak trees, and annual application of the systemic fungicide Reliant, which may help oaks and tanoaks resist SOD infection if applied early enough.

This research to evaluate the effectiveness of preventative treatments to slow or stop infection in oaks began in 2009. Unfortunately, drought conditions followed for many years following these experimental treatments, which confounded the experimental design. Subsequent research has shown that SOD pressure and spread in California forests is lower during droughts than wet years, when the majority of SOD spread occurs. Because of this, treatment and science-based monitoring for several wet years is recommended in order to determine if these preventative treatment methods are effective.

#### *Interim Results and Land Management Implications*

Phytosphere continues to compile and present data on SOD symptom incidence by treatment and location in progress reports. These progress reports, shared with the multi-agency California Oak Mortality Task Force, are prepared under a contract with the coordinated USFS Forest Health Protection Project. Results for the different treatment methods will inform future management actions throughout the range of SOD in California (16 counties have confirmed wildland infestations). Future District management actions include a SOD Response Plan for Bear Creek Redwoods OSP (anticipated for the FY2020-21 Action Plan).

One of the first major findings of this research includes documentation and analysis of the unintended negative effects of the fungicide applied at the recommended label rate on the trees the District was aiming to protect. Application of the fungicide at the then label rate was leading to necrosis (premature death of cells and living tissue) at the application site and surrounding area. Ultimately, Phytosphere and the District successfully petitioned the United States Environmental Protection Agency to lower the legal application rates of the fungicide to be more protective of the trees and the environment.

Past researchers have published data, based on a relatively short timeline, that the fungicide is effective. So far, the research conducted by Phytosphere only has data to the contrary. Phytosphere's experiment for San Francisco Public Utility Company showed that fungicide is ineffective at preventing SOD in large diameter tanoak. However, there is not enough data yet on smaller trees to evaluate if there is some tree diameter for which the treatment works. Data from the El Corte de Madera OSP site would help answer the question as to whether the fungicide works against SOD under field conditions. Because there are already published results contrary to Phytosphere's initial findings, Phytosphere needs to have solid data to challenge those results. From a management standpoint, it is the difference between considering fungicide to be an effective tool against SOD or not.

In January of 2019, the District received the final report from Phytosphere on the testing protocols and Best Management Practices to determine if a species is infected with *Phytophthora*. Phytosphere's research showed that increased false negative results could result under certain conditions. In addition, data showed that spread of the pathogen in nursery-grown stock can occur within a short period. Ensuring that the nurseries, which are growing plants for the District's restoration and/or mitigation projects, follow the testing protocols allows for more confidence that these pathogens will not be inadvertently spread into wildland areas. If *Phytophthora* were to spread into surrounding wildlands, scientists consider control impossible.

#### *Recommended Activities Under this Contract to be Continued*

Table 1 shows the SOD management projects recommended for inclusion in the research contract. In the past, fungicide application also occurred at Rancho San Antonio and Los Trancos OSPs. Phytosphere has compiled the data for these two sites and a preliminary analysis

shows that there is enough information to produce scientific significant findings. With the scientific significant finding completed, no more fungicide applications are required at these sites. Analysis of the data has not been completed. Phytosphere Research will continue to coordinate and monitor the fungicide application at the El Corte de Madera OSP tanoak study plot. A contractor hired by the District under a separate contract performs fungicide application and staff report usage during the Integrated Pest Management (IPM) Program's Annual IPM Report.

**Table 1: SOD management projects on District preserves to be continued.**

<b>Treatment(s)</b>	<b>Host Species</b>	<b>Location</b>	<b>Original Funding Source</b>	<b>Year Established</b>
<b>Area-wide bay removal</b>	Shreve Oak, canyon live oak	Monte Bello OSP	District/USFS	2008
	Coast live oak	Rancho San Antonio OSP	District/USFS	2008
<b>Localized bay removal</b>	Canyon live oak	Russian Ridge OSP	District/USFS	2009
	Canyon live oak, coast live oak	Los Trancos OSP	District/USFS	2009
	Coast live oak	Rancho San Antonio OSP	District/USFS	2008
<b>Fungicide stem spray application</b>	Tanoak, coast live oak, canyon live oak	El Corte de Madera OSP	District/USFS	2009

## **FISCAL IMPACT**

There are sufficient funds in the amended FY2018-19 Budget to cover the cost of the recommendation through the end of June 2019. This contract spans multiple fiscal years. Future fiscal year budgets will include additional amounts to fund later years. To support this research during FY2019-20, the USFS will award an additional \$10,000 in grant funds to Phytosphere to match District expenditures.

## **BOARD COMMITTEE REVIEW**

The full Board reviewed and supported the SOD 10-year work program during the meeting of February 10, 2016 (R-16-06). This research and the SOD Response Plan that the research informs are components of that work program.

## **PUBLIC NOTICE**

Public notice was provided as required by the Brown Act. Public notice was sent to interested parties by postal or electronic mail.

## **CEQA COMPLIANCE**

The Environmental Impact Report (EIR) prepared for the District's IPM Program, which the Board approved on December 10, 2014 (R-14-148), analyzed the vegetation management activities in the recommended contract amendment and the incorporated mitigation measures

have reduced all potential impacts to less-than-significant levels. On February 27, 2019, the Board unanimously voted to adopt a resolution approving an addendum to the Final EIR for the IPM Program (R-19-11). Staff have incorporated the associated mitigation measures and Best Management Practices from the environmental review documents into the project.

**NEXT STEPS**

Upon approval by the Board, the General Manager will amend the contract with Phytosphere to continue research into SOD. Staff will continue to provide research results to the Board via the Annual IPM Report.

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