



CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: August 9, 2016

TO: Mayor and Councilmembers

FROM: Creeks Division, Parks and Recreation Department

SUBJECT: Contract For Measuring The Impact Of Neonicotinoid Pesticides On Estuaries And Coastal Streams

RECOMMENDATION:

Authorize the Parks and Recreation Director to execute a Joint Funding Agreement with the United States Geological Survey (USGS) in the amount of \$50,000 to conduct laboratory testing in support of the "Impact of Neonicotinoid Pesticides on Estuaries and Coastal Streams Research Project."

DISCUSSION:

Project Background

Neonicotinoid pesticides (neonics) are a relatively new class of pesticides that have rapidly gained market share and are now the most widely-used pesticides worldwide. Agricultural use throughout the United States has grown rapidly in both geographic range and amount applied. In addition, neonics are used in non-agricultural applications such as structural pest control (termites, ants), professional landscaping, home garden care, and pet treatments. In California, imidacloprid accounts for most of the neonics used.

The Creeks Division found that imidacloprid is pervasive in urban runoff in Santa Barbara. Samples were collected during multiple storm events from Arroyo Burro, Mission, Laguna, and Sycamore Creeks, and from sites where runoff was collected directly from paved surfaces. All wet weather samples have tested positive for imidacloprid; a stark contrast to the relatively rare detections of pesticides found in hundreds of samples tested over the past fifteen years. The concentrations of imidacloprid are in line with newly documented toxic effects on aquatic organisms, even at very low levels. While much is known about the impacts of neonics on terrestrial pollinators, including bees, far less is known about impacts on aquatic insects, which can be an important source of food for fish and birds. In Europe, research has revealed that bird diversity has decreased in some areas due to persistent, low-level imidacloprid poisoning of non-target aquatic insects.

In July 2015, the Creeks Division partnered with the University of California, Santa Barbara (UCSB), and USGS to submit a grant proposal to California SeaGrant to research the effects of neonics on local creek and estuarine environments. The proposal was funded in February 2016. The Creeks Division FY 2016 Water Quality Monitoring and Research Plan, which was approved by the Creeks Advisory Committee in June 2015, includes the Creeks Division work that is included in the grant.

Project Description

The “Impact of Neonicotinoid Pesticides on Estuaries and Coastal Streams Project” (Project) is a collaborative effort among the Creeks Division, UCSB and USGS. The Project was designed to understand the potential ecological impacts of neonics in local creeks and estuaries and is comprised of three integrated elements: 1) field testing to measure the concentrations of neonics in creeks and estuaries, 2) laboratory toxicity tests to understand the impact of neonics on aquatic insects, and 3) modeling to project the laboratory results to broader ecological impacts in creeks. The project is funded largely by a \$250,000 grant from the National Oceanic and Atmospheric Administration’s California SeaGrant Grant Program to Principal Investigator Dr. Hunter Lenihan (UCSB). Toxicity testing and mathematical modeling will be completed by UCSB. Field sampling will be conducted by the Creeks Division, with laboratory testing by Dr. Michele Hladik (USGS Pesticide Fate and Transport Group). The contract includes analysis of at least 100 samples for a suite of neonics pesticides.

Contractor Selection

The Creeks Division selected Dr. Hladik (USGS) as the sole source provider of an academic laboratory located in California with the ability to test for neonicotinoid pesticide contamination in local waters. Dr. Hladik was selected as a partner for the grant proposal because of her expertise in the field of neonic pesticides. Dr. Hladik is the leader of the USGS Pesticide Fate and Transport Group, and has published several peer-reviewed scientific articles on this topic.

Timeline

With Council approval of the contract, dry-weather sampling will begin in August 2016. Wet weather sampling will be conducted during the 2016-2017 rainy season. Laboratory work and reporting will be completed by December 2017.

BUDGET/FINANCIAL INFORMATION:

The cost to complete laboratory analysis and prepare reports is \$50,000. Creeks Division staff time and the contract with USGS will be used as matching funds for the grant. The time period is August 9, 2016 to December 1, 2017. The Fiscal Year 2017 Creeks Division operating budget includes sufficient funds for this contract.

A copy of the contract/agreement is available for public review in the City Clerk's Office.

SUSTAINABILITY IMPACT:

The purpose of the Project is to improve water quality in creeks and estuaries in Santa Barbara. In addition, it supports wildlife, such as birds, that feed on aquatic insects.

PREPARED BY: Jill Murray, Water Quality Research Coordinator

SUBMITTED BY: Jill E. Zachary, Parks and Recreation Director

APPROVED BY: City Administrator's Office