

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF SEPTEMBER 2, 2010

Prepared on August 1, 2010

ITEM NUMBER: 19

SUBJECT: Central Coast Ambient Monitoring Program Website Update

SUMMARY

The new Central Coast Ambient Monitoring Program (CCAMP) web data browser (http://www.ccamp.info/2010/view_data_01.php) has been online for several months now, and overall has received very positive input from users. The website provides dynamic access to CCAMP data through Google maps and other new web-based features. We are continuing to upgrade features on the website. For example, the website now provides access to our coastal confluences project and associated measured flow data. It also provides access to modeled flow data, so that users can estimate loading of chemicals to the ocean. We have also added access to land use and pesticide use data, and have provided a tool to allow direct download of data of interest. Karen Worcester, Staff Environmental Scientist and Program Manager of the Central Coast Ambient Monitoring Program, will do a demonstration on the basic features of the website at the Board meeting.

DISCUSSION

The Central Coast Ambient Monitoring Program website was first released in 2000. At that time, we provided graphical and map-based access to monitoring data, but maps and graphs were pre-prepared and static. In spite of the “low tech” approach of that original website, it remained one of the few in the State of California that provided access to actual data time series and report card style evaluation of monitoring locations in a “red, yellow, green” color scheme.

This spring we released a revised version of the website’s data browser that represents an enormous step forward, in terms of use of new web technology and the many benefits it can provide. From the CCAMP main page (www.ccamp.org), the user can reach the new browser via the “CCAMP Data Browser” link. Dave Paradies, who works through the Bay Foundation of Morro Bay as our CCAMP software consultant, has done all of the software development for this site, and CCAMP staff have worked closely with him on the design. We feel it brings important new levels of accessibility to data viewers, and it has generated a high level of interest from others in the monitoring community in California. We have not encountered a website elsewhere that has a similar level of utility.

The website data browser uses a “foundation” of Google and Bing internet map servers, and overlays our own maps on top of these, using Geoserver, which is a free, “open source” map server available on the Web. This allows us, for example, to customize map overlays to include

information on agricultural use areas, pesticide use areas, groundwater nitrate concentrations, human population areas, and marine protected areas. It also allows us to create site mapping where sites can be colored according to water quality status and trends in a fashion that is dynamic and driven directly by our database. The consequence of this is that when data is updated in the database, the website will be automatically updated as well, which will vastly reduce the turn-around time for data to be uploaded to the Web.

We have developed a series of “rules” to score analytes collected at each site as good, fair, impacted, very impacted, and severely impacted. The rules evaluate the data relative to percent exceedance of specific criteria or other guideline values of concern. Over the many years of record, early data collected at a site may be statistically different from data collected in later years at the same site. When the software detects a statistically significant difference between two time periods, it changes the site icon to an arrow, and colors the two segments of the arrow according to how each time block scores according to the rules. This results in some site icons that appear as two-tone arrows on the website.

The website allows access to data at the major watershed, water body, and monitoring site level. The user can view the data a number of ways, including on log or linear scale; expressed as bar charts, “box and whiskers” charts, or scatter plots; and expressed as straight concentration or as “instantaneous load”, where flow is taken into account so that data can be expressed in “kilograms per day”.

Data summary tables include basic site statistics on minimum, mean, median, maximum, sample count, data range. Where change is significant, the tables also show the p-statistic (the significance of the statistical test), year of change and the means of each of the two time-periods.

Latest additions to the website include access to Department of Pesticide Regulation Pesticide Use data, to National Land Cover Database data, and to loading data associated with our Coastal Confluences monitoring project. Also, we have provided a way for users to directly download the data that they are interested in. This last feature will save CCAMP staff a large amount of time and effort, because we frequently receive requests for CCAMP data from the public.

We have established a CCAMP performance measure for website visitation, based on an average of past user activity since 2005. The baseline to which we will be comparing web use in the future is 132 hits per day on average (which discounts search engine hits). We will strive to maintain at least this level of usage in the future.

Another CCAMP performance measure related to the website is the data turn-around time. We want to get data posted to the website in increasingly shorter time periods until we achieve 30 days from receipt from the laboratory. We hope to achieve this goal in the course of the next year. The necessary changes to our data management approach are in progress to achieve this goal.