# Santa Clara County Creeks Coalition

***Advocates for living streams***

**Member Organizations**

Friends of Coyote Creek

Western Waters Canoe Club

Northern California Council Federation of Fly Fishers

6 February 2017

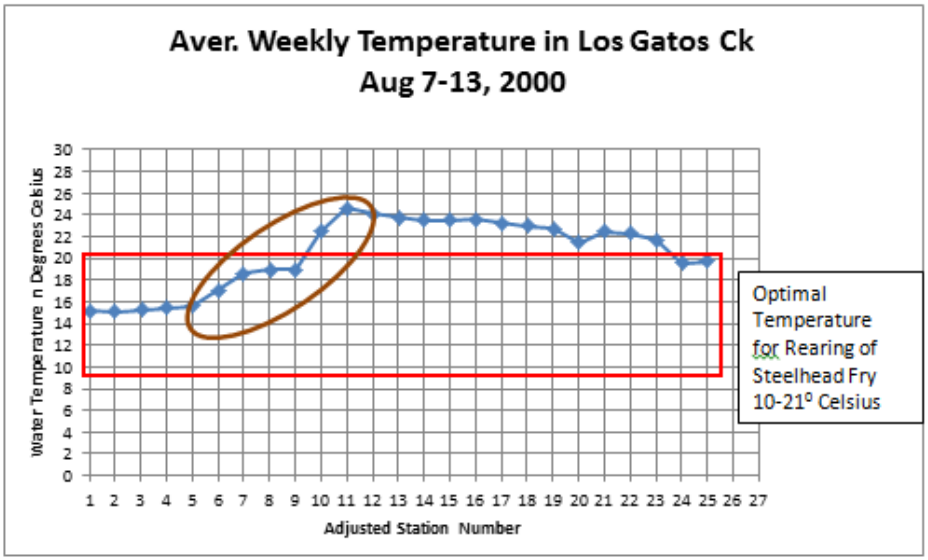
Mr. Mark Martarano
State Water Board Surface Water Quality Assessment Unit
By email (nicholas.martarano@waterboards.ca.gov &WQAssessment@waterboards.ca.gov)

Re: Solicitation for Water Quality Data for 2018 California Integrated Report

Dear Mr. Martarano,

As instructed in the November 8, 2016 memo about data that can not be submitted to CEDEN, I am pleased to submit hourly temperature data collected from along the 12 mile length of Los Gatos Creek in Santa Clara County between the confluence with the Guadalupe River and Lexington Reservoir between January 2000 and December 2012 at up to 28 stations using continuous/hourly temperature loggers.

Illustrative of the significance of this data is the following graph of the average weekly temperature during August 2000.




| Key Stations | |
|---|---|
| 1 | Downstream of Lexington Reservoir |
| 5 | Downstream of Highway 9 in Los Gatos |
| 7 | Downstream of Lake Vasona |
| 9 | Downstream of Vasona Valve Yard |
| 11 | Downstream of Camden Drop Structure |
| 25 | Confluence with Guadalupe River |

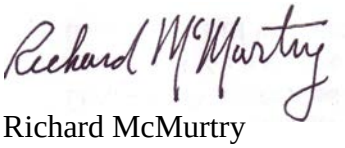
The data shows that temperature coming out of Lexington Reservoir (station 1) is solidy within the optimal range for rearing of steelhead fry, but the temperature

increases between stations 5 and 11 about 9 degrees Centrigrade (16 degrees Fahrenheit) which causes the temperature to exceed the optimal rearing temperatures for steelhead all the way to almost the confluence with the Guadalupe River (station 25), a distance of 6 miles. We suggest that this constitutes impairment of this water body for cold water habitat beneficial use. We request that this data be analyzed for determining whether to list this water body as an impaired water body.

Attached are:

1. Attachment 1: Enclosure 3: 2018 Integrated Report Data Submittal Information Form
2. Attachment 2: Discussion of Conformance with Section 3 Data Requirements
3. Attachment 3: Map of Project Study Area as shown on USGS 7.5' Quadrangles
4. Attachment 4: Google Earth Map Showing Sampling Stations
5. Attachment 5: Excel Spreadsheet showing Sampling Stations (descriptions, northing/easting, lat/long)
6. Attachment 6: SWAMP "Station Template" for each of the sampling stations
7. Attachment 7: Excel Spreadsheet files of hourly temperature data Jan 2000 to December 2012 at each station.
8. Attachment 8: Los Gatos Creek Temperature Deployment Lab Calibration Check

Sincerely,



Richard McMurtry

Enclosure 3

# 2018 Integrated Report Data Submittal Information Form

| Contact Information | | | | |
|---|---|---|---|---|
| First Name | Richard | Last Name | McMurtry | |
| Organization | Santa Clara County Creeks Coalition | | | |
| Mailing Address | 24010 Summit Road | | | |
| | Los Gatos CA 95033 | | | |
| Email | Richard@SCCreeks.org | | Preferred Contact Method | |
| Phone | 408-442-4932 | | [x] email | __Phone |

| Submittal Information | | | |
|---|---|---|---|
| Submittal Date: 20 Jan 2017 | | | |
| Region Date Intended For: | (1 )North Coast | [x] (2) San Franicso | (3 )Central Coast |
| | (4) Los Angeles | (5 )Central Valley | (6 )Lahontan |
| | (7) Colorado River | (8) Santa Ana | (9) San Diego |
| GIS Layers | [ ] Yes | | |
| Pollutant Categories | [ ] Hydromodificat'n | [ ] Other Organics | [ ] Toxicty |
| | [ ] Metals/Metalloids | [ ] Pathogens | [ ] Trash |
| | [ ] Nuisanace | [ ] Pesticides | [x] Miscellaneous |
| | [ ] Nutrients | [ ] Salinity | |
| | [ ] Other Organics | [ ] Sediment | |
| Time Period Collected: | 2000-2012 | | |
| Summary of Data | | | |
| Continuous hourly temperature data was collected between 2000 and 2012 at 27 locations along the 12 mile length of Los Gatos Creek in Los Gatos, Campbell, and San Jose CA by the Santa Clara Valley Water District. Onset Optic Stowaway sensors were used up until 2006 and thereafter Hobo Water Temperature Pro v2 devices were used as the temperature logging device. Devices were calibrated using a controlled water bath. The data showed that two major temperature "sinks" along the length of the creek that elevate temperature about $15^0$ F during the summer months compared to the temperatures in the waters released to the Los Gatos Creek from Lexington Reservoir and that the temperatures remained elevated above levels considered optimal for the rearing of steelhead trout for the 6 miles downstream of these sinks. These 6 miles are accessible by steelhead trout.<br>List of contents of submittal is contained in transmittal letter. | | | |
| Submittal Format: | [x] Electronic | | |

| Internal Use Only (by Water Boards) | | | | |
|---|---|---|---|---|
| Reviewer: | | Date Reviewed | | |
| Status: | [ ] Returned | Flagged | [ ] Forwarded | |
| Comments: | | | | |
| | | | | |
| Control #: | | | Date Rec'd | |
| Reference #: | Ref#### | | QC Complete | [ ] Yes |

Attachment 2:

Discussion of Conformance with Data Quality Specifications of Section 3 and 4 of "Data Submittal Requirements for Data That Cannot Be Submitted Via CEDEN"

3. Quality Criteria
   a. All available monitoring station data for the segments of Los Gatos Creek relevant for this submission is being submitted using SWAMP "Station Template (updated 12/07/2012). All continuous (hourly) temperature data is being submitted on Excel Spreadsheets.
   b. Name of Water Body is: Los Gatos Creek. Area of Water Body: 12 miles between confluence with the Guadalupe River in San Jose to Lexington Reservoir in Los Gatos.
      Monitoring Sites: Two maps and spreadsheet:
      (1) USGS 7.5' Quadrangles (San Jose West and Los Gatos) showing 12 mile length of creek addressed in temperature study.
      (2) Google Earth Map showing locations of monitoring stations
      (3) Excel Spreadsheet showing sampling stations with latitude/longitude of station. The table below shows the data in the spreadsheet for Station 16 as an example:

| | | |
|---|---|---|
| GIS ID | 30200 | |
| Facility Name | Los Gatos Creek | |
| Station Code | 30200-16 | |
| Description | D/S Camden Drop Structure | |
| Author/Group Name | JAE | |
| Northing | 1925226 | |
| Easting | 6140409 | |
| Latitude | 37.24793734 | |
| Longitude | -121.9473202 | |
| Coordinate Source | GPS | |
| Legacy Codes | | |
| Establishment Date | 05/Mar/2000 | |

   c. Metadata for Temperature Loggers:
      Samples were taken hourly using a Onset Optic Stowaway between 2000 and 2006 and a Hobo Water Temp Pro v2 deployed between 2006 and 2012 at a maximum of 38 stations of which stations 1-28 were between Lexington Reservoir and the Confluence with the Guadalupe River, a distance of 12 miles, and therefore relevant for this data submission. Values for each hourly sample for each station are reported as shown below:

| Gis_Name | Station_Code | Station_Description | Param_Type_Name | Units | Meas_Date | Meas_Value |
|---|---|---|---|---|---|---|
| LOS GATOS CREEK | 30200-1 | Lincoln Ave. at Gauge SF50 | Water Temperature | C | 02-May-2000 14:00 | 21.92 |

      (1) Date and time are given column 6.
      (2) Location (water body, text description, code, lat/long) are given in the Attachment 5.

(3) Duplicate sensors were used for Water Temperature measurements.
(4) Analyte: Limited to temperature for this submission; however, Air Temperature measurements were also conducted as part of the study.
(5) Units of Measurement: Degrees Centrigrade
(6) Methods: Duplicate sensors were installed at locations in the streams to be representative of the various reaches of the stream through the entire 12 mile study area. Sensors were deployed at locations in the stream where sufficient mixing occurred such that the measurement would be representative of that section of the stream. Pre-deployment and post-deployment calibration checks against a controlled water bath were conducted to assure accuracy of sensor output.
Detection Limits: Device operates over a much wider range of temperatures than those encountered in field conditions customary for Santa Clara County streams; so detection limits are not relevant for this study. The manufacturer, Onset Computer Company, certifies the unit as operating with a 0.01 degrees Centigrade with +- 0.2 degree Centrigrade accuracy.

d. Supporting Data: Air temperature data were collected as part of this study but are not included with this submittal to the SWRCB.
e. QAPP (Quality Assurance Project Plan): See attached: "Los Gatos Creek Temperature Deployment DataQA Lab Calibration Check". This document is summarized and contextual data is provided as follows:
(1) Objectives: The study was initiated in 1995 as part of a larger effort of the Santa Clara Valley Water District to gather baseline environmental condition data on Santa Clara County Streams. The number of stations was significantly increased in 2000 to provide more robust data over a longer stretch of the creek as part of an interagency/public/private collaboration to develop a plan to manage several Santa Clara County streams, including Los Gatos Creek, to better achieve conditions suitable for the restoration of sustainable populations of steelhead trout.
(2) Methods: Between 1995 and 2006, Onset Optic Stowaway sensors were utilized in the temperature study and from 2006 to 2012 HOBO Water Temp Pro v2 were utilized.

Typical deployment at a stream measurement station includes redundant sensors placed in the surface water enclosed in protective housings and a single sensor placed in the air at a station. Instruments deployed are those that have successfully passed their previous accuracy tests, being found within the manufacturer's specification. Detailed field notes are recorded during deployment and recovery of instruments to characterize the deployment interval and prevailing environmental conditions.

(3) Field and Laboratory Measurement and Analysis: Temperature loggers are tested for accuracy after field deployment with the applied test geared toward detecting the most likely type of compromise of the logger accuracy: the drift in condition of the thermistor and signal processing components of data registration.

The logger is operated in a very controlled water bath that is adjusted and stabilized at standard stepped temperature interval points typically ranging between 0-35C. This is intended to capture the majority of the range of temperature that a device would be logging in a field deployment. Thus the correction, as needed, would mostly be of interpolation rather than extrapolation. The test environment is developed as a highly regulated water bath and pump circulator with built in precision temperature control. Loggers can be tested in batches for time efficiency.

During a test run deployment in the water bath environment, the temperature is regulated by a preprogrammed step change sequence to adjust and hold the waterbath temperature at fixed temperature targets. The intervals need not be exactly at a target temperature but must be stable within a precision approximately equal to (and ideally greater than) the instruments being tested. At the end of the step through run of the entire temperature range, the data from individual loggers is offloaded, compiled and compared to the readings from the NIST autologging instrument recording the "true" conditions of the waterbath environment.

The average of multiple readings at each interval is compared to the average automated NIST standard thermometer readings recorded coincidently to develop the differential (device error) at those intervals. The collection of differentials at each step interval is used to develop the linear regression equation. Thus, the step test compares the logger performance against an NIST standard throughout the range of typical temperature exposure of our field setting. The results of this test tell us whether the device is performing within calibration specification. As well, from that linear regression, a correction of the field data measurements of the matching logger can be achieved.

(4) Data Management and Record Keeping: Data outputs from the devices are converted using the manufacturer's software to electronic file format that can be managed in a relational database environment, EM-IMS (Oracle v9 engine) with outputs converted to MS-Excel files. During data processing various QA/QC tests are applied including inherent checks that the software conducts on the electronic file structure and instrument power condition. During upload of data files to the EM-IMS, file metadata checks for field note matches during deployment record creation and data string upload are executed. Upload checks also include inspection for data formats, expected record counts and sequencing, data string checks for suspected outlier measurements such as out-of-expected-range values, unexpected changes in successive measurements, etc. During the "Publishing" routine, data are further inspected and either tagged for excising or annotating unexpected measurement values and the instrument's lab test results are applied to make adjustments to measurements from instruments that were found out of calibration, post-deployment. Data that have been successfully vetted to the Published form are suitable for outputs.

(5) Quality Assurance and Quality Control Requirements: The manufacturer, Onset Computer Company, identifies a 0.01C precision with +/- 0.2C accuracy for the instruments used in this study. Data quality is assured by pre-deployment and post-deployment calibrations using

controlled water bath comparisons with instrument readouts. In the event of instrument drift, the field data is "corrected" for accuracy based on a Least Squares linear tegression of the logger's error from a step test of the device. Corrections are applied typically for devices that are found by the lab results to fall out of manufacturer's calibration limits.

f. Sampling and Analysis Plan:

(1) Data Quality Requirements of the Project: The data quality requirements are to produce temperature data that demonstrate whether or not temperature conditions are within the 10 to 21 degrees Celius range considered optimal for the rearing of steelhead trout. The manufacturer's identification of 0.01 Degree C precision with +/- 0.2C accuracy far exceeds the requirements of the study.

(2) Achievement of Data Quality Objectives: The use of pre-deployment and post-deployment calibration using controlled water baths and subsequent linear adjustments of data to account for thermistor drift achieves the data requirements of this study.

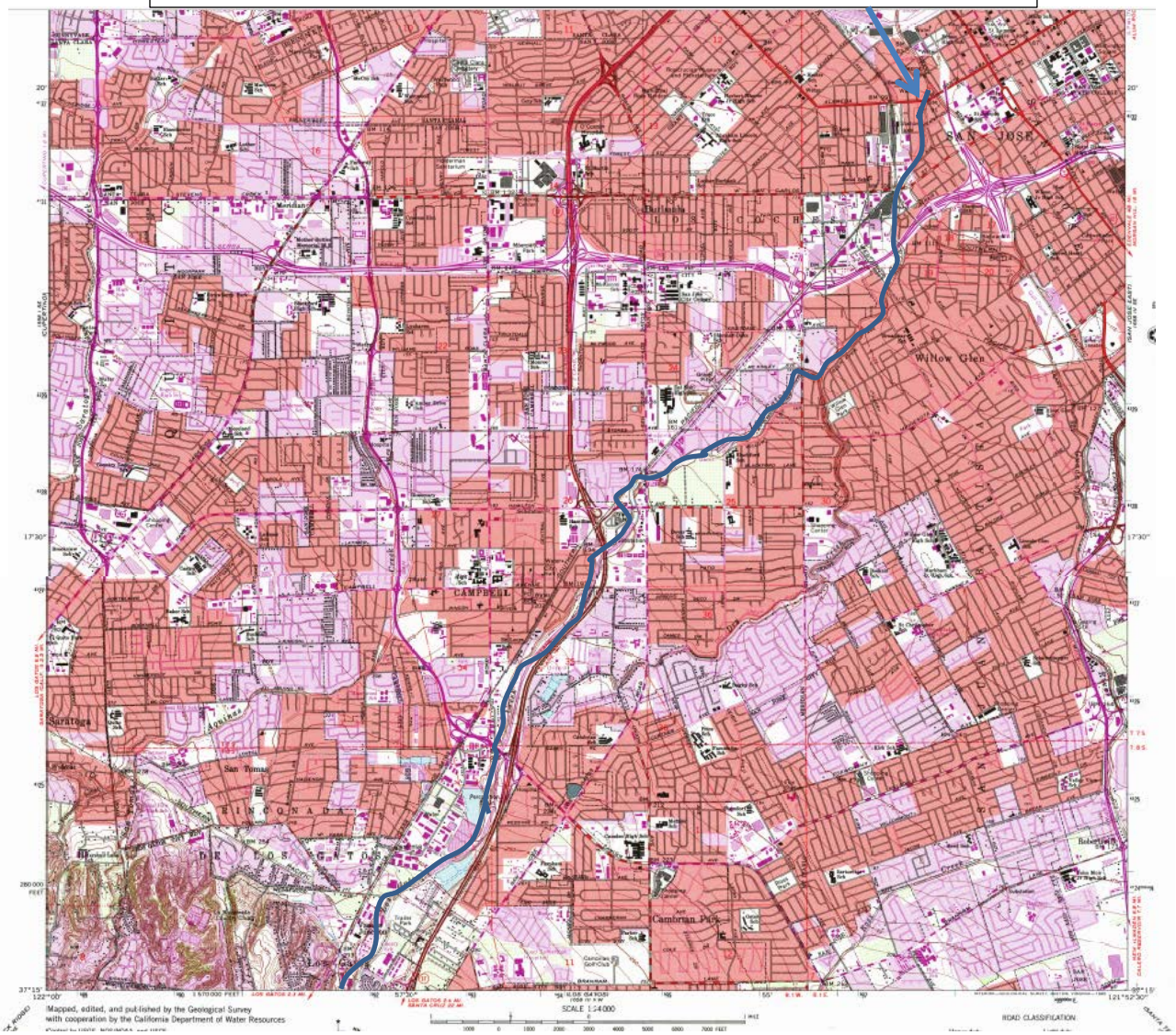
(3) Rationale for selecting sampling sites, water quality parameters, sampling frequency and methods to assure representative samples:
Sites were selected to enable sufficient samples to measure the range of habitat conditions existing along the 12 mile length of the study reach of Los Gatos Creek. Sensors were placed in locations where sufficient normal flow mixing was sufficient to assure that sensors were representative of the stream in that reach. Temperature was selected as the water quality parameter to measure because of the importance of temperature to assure optimal growth and sustainability of steelhead trout. Hourly sampling was selected to assure that monitoring would reveal the range of temperatures and duration of suitable and unsuitable temperature conditions on various temporal scales.

Map of Los Gatos Creek Temperature Study Area

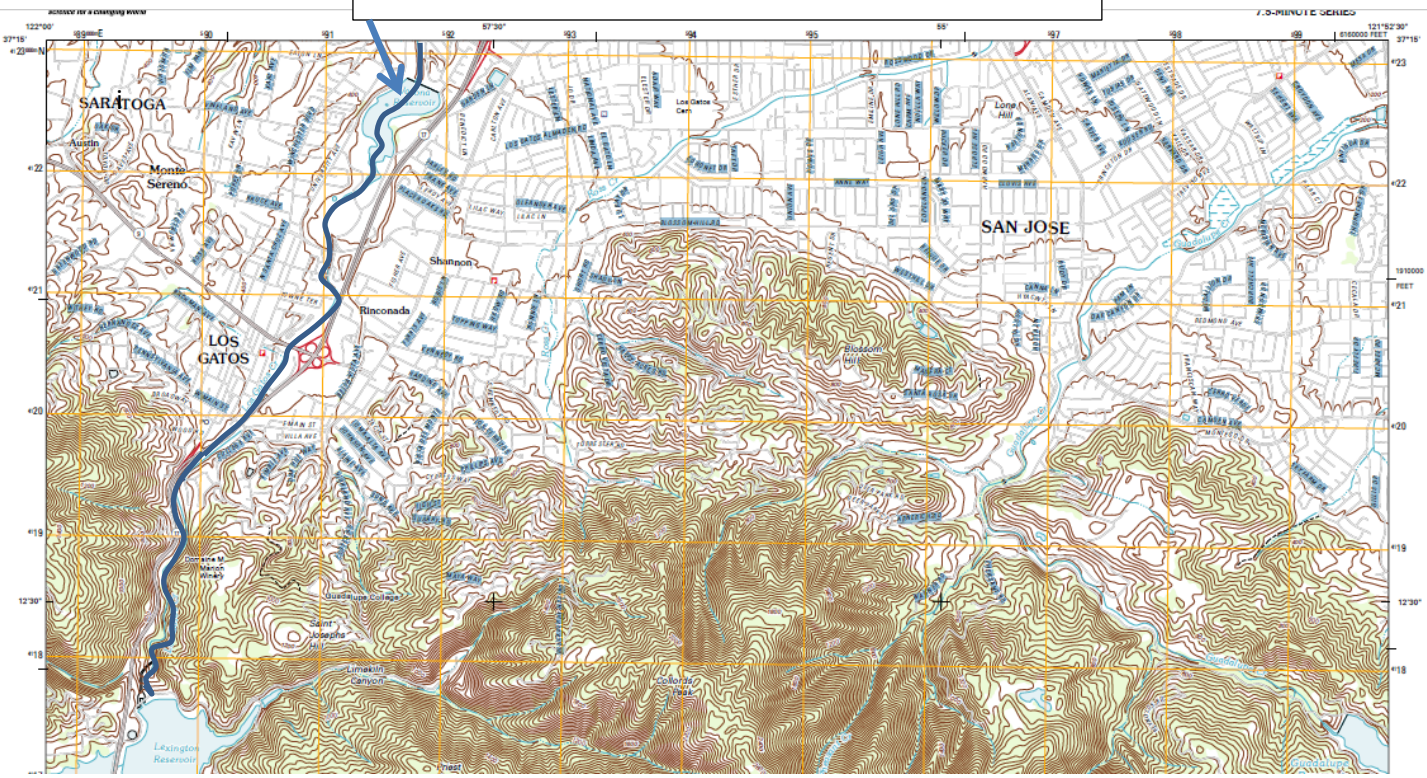
Confluence with the Guadalupe River (San Jose) to Lexington Reservoir (Los Gatos): 12 miles

Portion of San Jose West USGS 7.5’ Quadrangle

Los Gatos Creek from Confluence with Guadalupe River to Lake Vasona

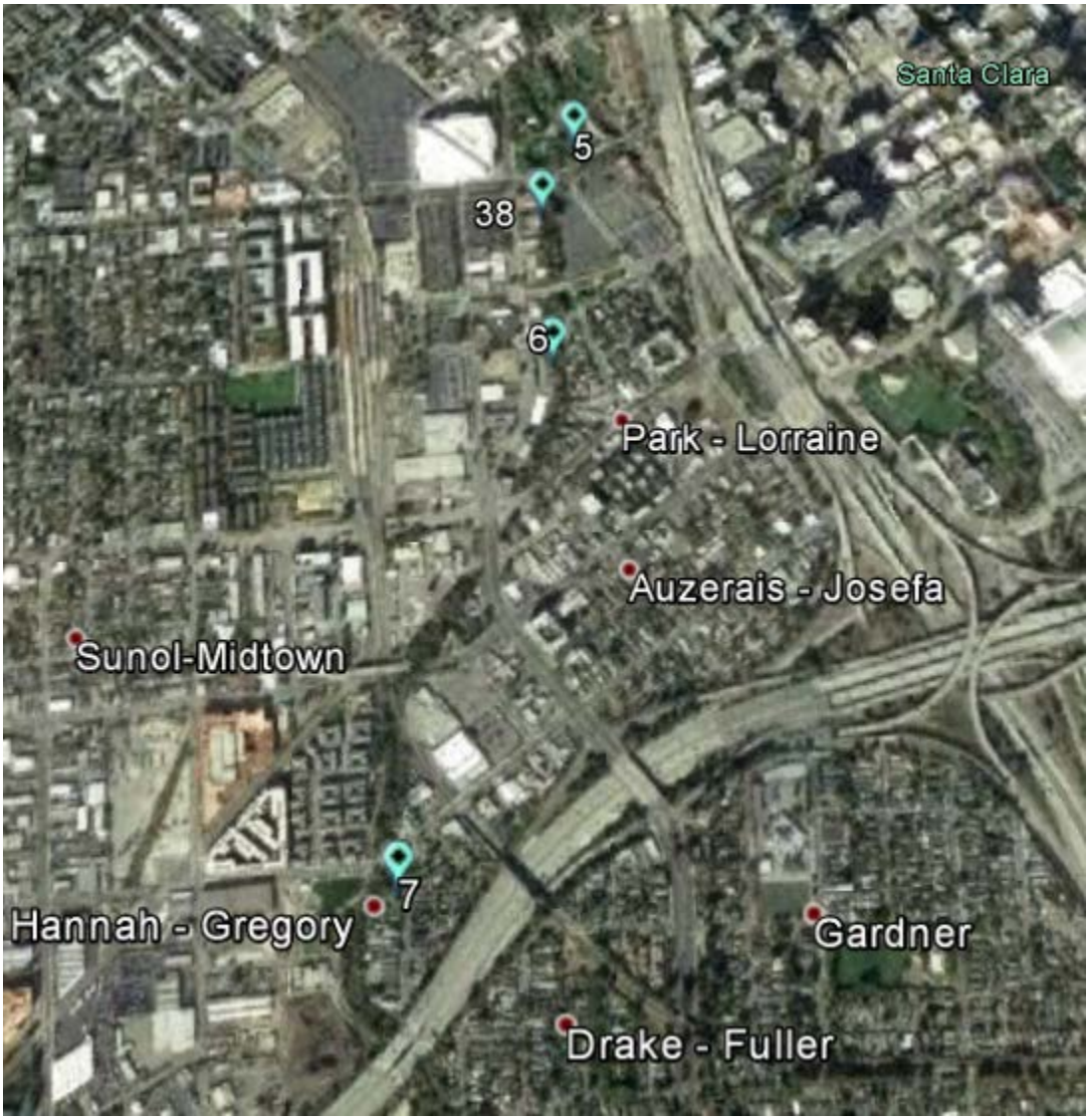


Portion of Los Gatos 7.5’ USGS Quadrangle
Los Gatos Creek from Lake Vasona to Lexington Reservoir

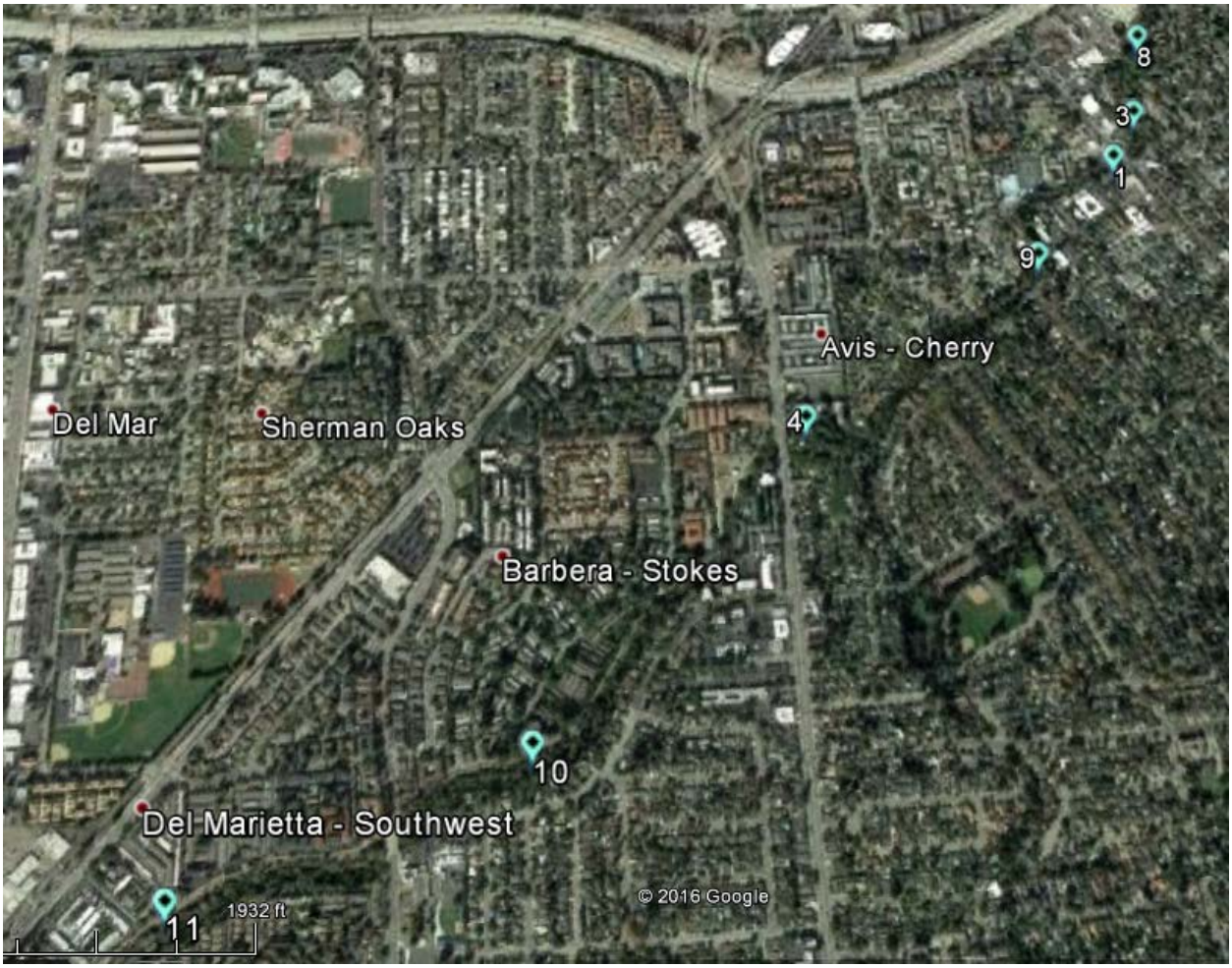


Attachment 4
Google Earth Map of
Los Gatos Creek, Santa Clara County
Temperature Logging Stations
Going south from confluence with the Guadalupe towards Lexington Reservoir
Sampling Stations as Defined in Attachment 5

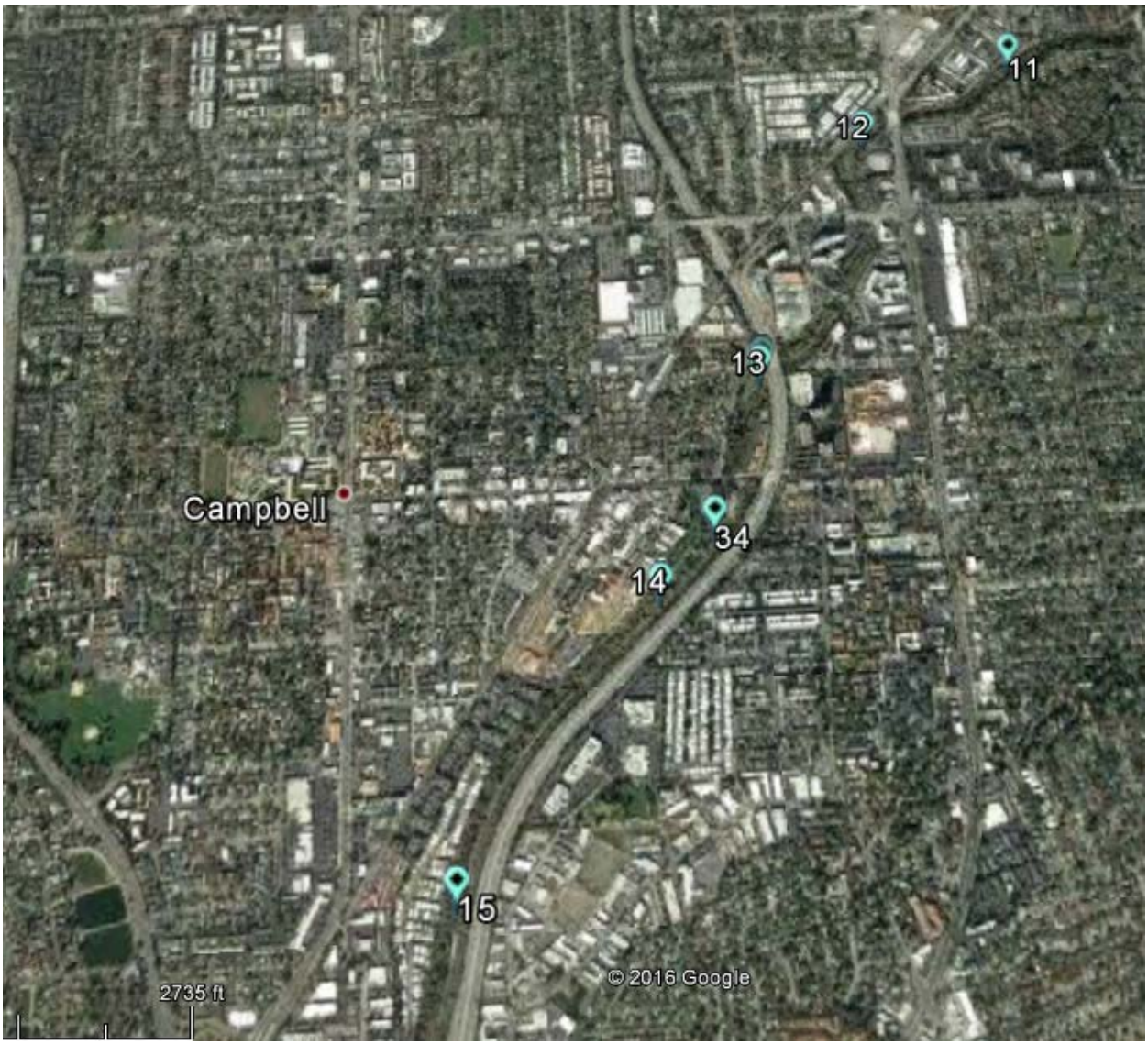
Map 1: Confluence with Guadalupe River to I-280



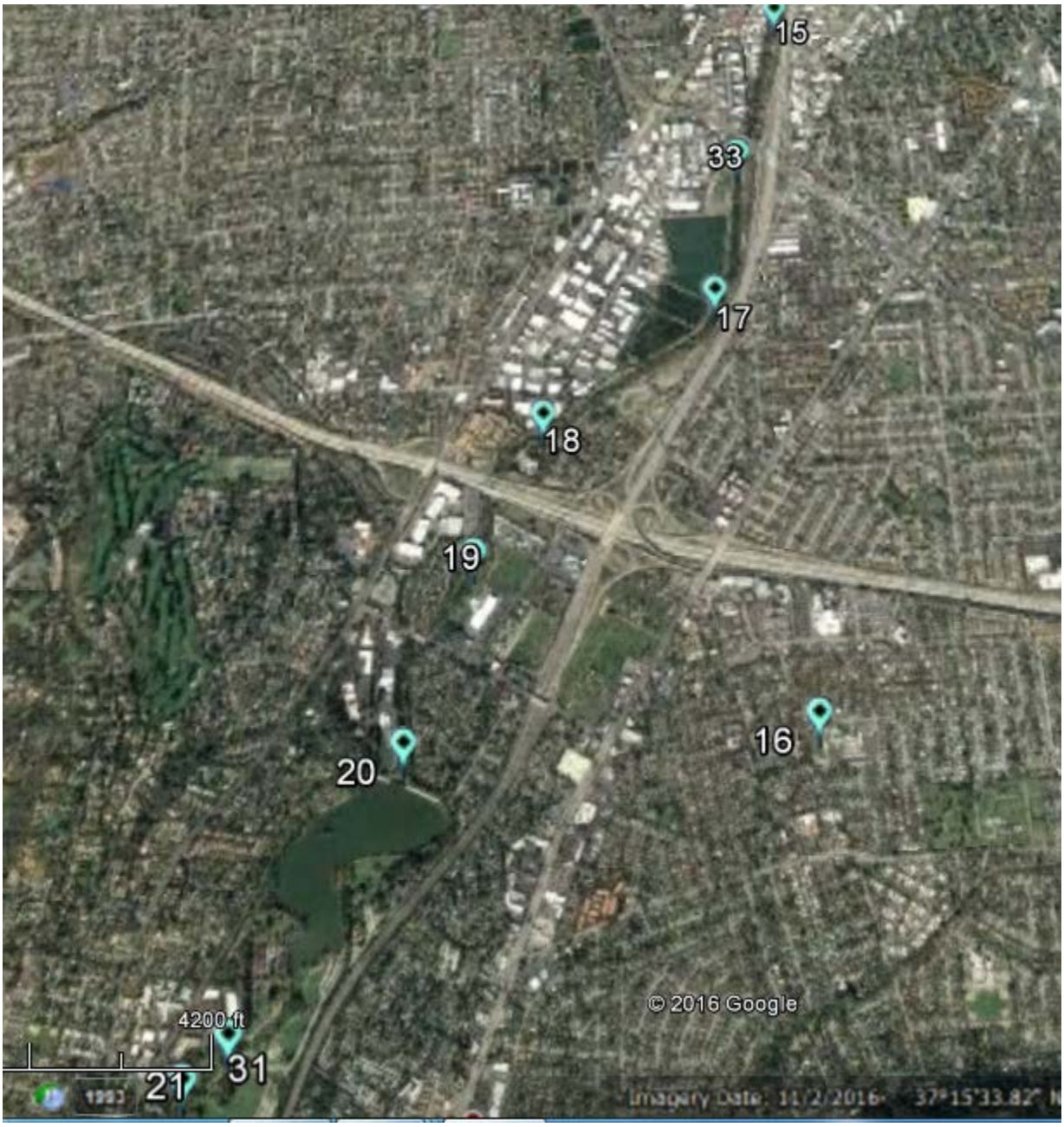
Map 2:  I-280 to Leigh Avenue



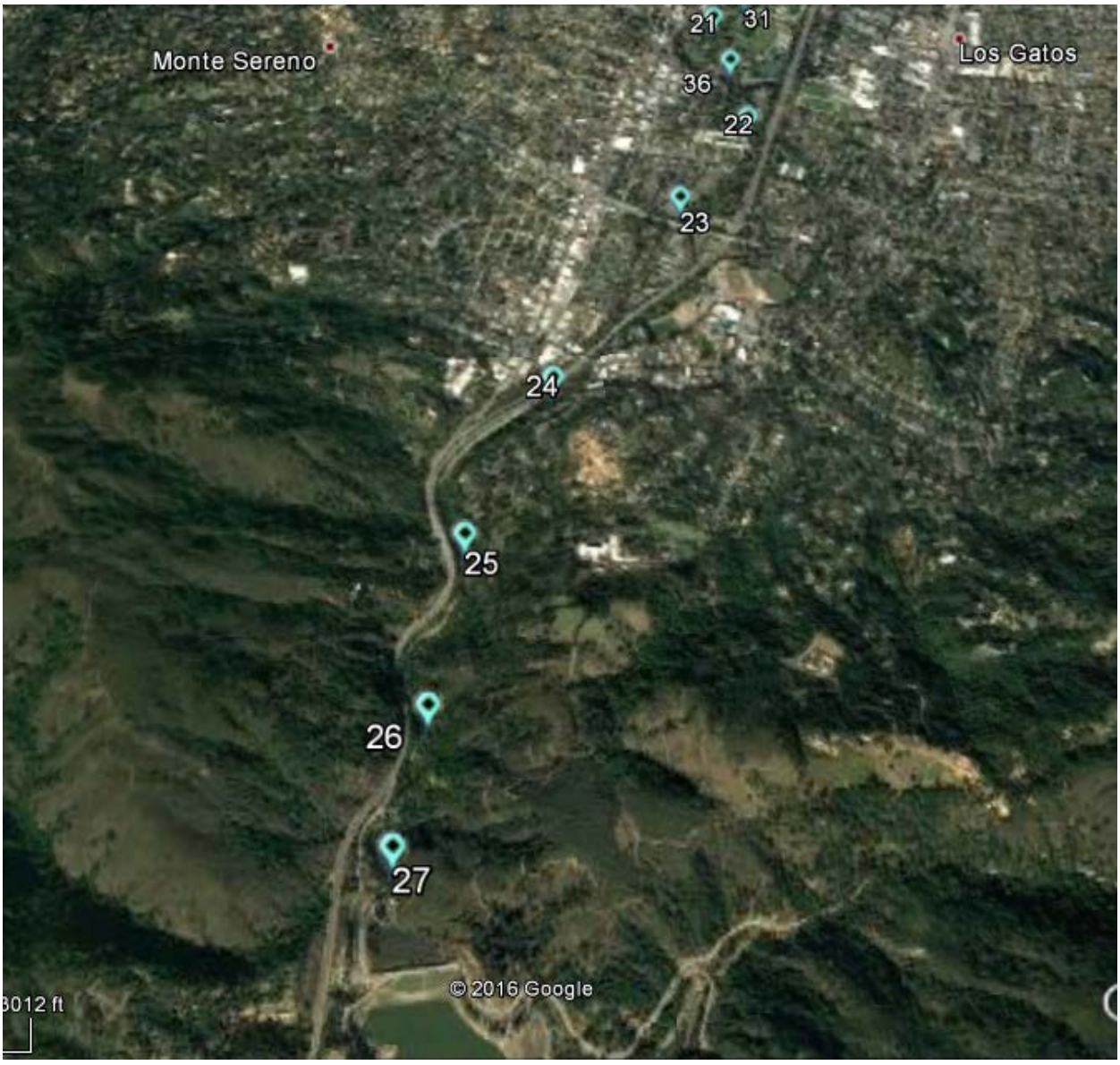
Map 3: Leigh to Timber Cove Mobile Home Park



Map 4: Timber Cove Mobile Home Park to Lake Vasona

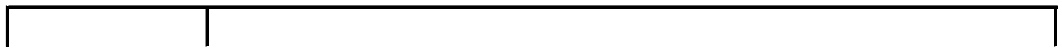


Map 5 : Lake Vasona to Lexington Reservoir



Monitoring Station Descriptions and GPS Locations: Los Gatos Creek Temperature Logging Project

| Station Code | Station Description | Station# | Station Ordered By Location | | |
|---|---|---|---|---|---|
| 30200-27 | d/s Lexington Outlet | 27 | 1 | 37.205646 | -121.989567 |
| 30200-26 | Los Gatos Creek u/s of Alma Presentation | 26 | 2 | DATA NOT AVAILABLE | |
| 30200-25 | Upstream of Oak Grove Ct. | 25 | 3 | 37.215124 | -121.987373 |
| 30200-24 | Main Street Upstream | 24 | 4 | 37.221381 | -121.982444 |
| 30200-23 | Downstream of Hwy 9 | 23 | 5 | 37.227853 | -121.97628 |
| 30200-22 | Upstream of Roberts Road | 22 | 6 | 37.232298 | -121.973761 |
| 30200-20 | Downstream of Vasona Reservoir. | 20 | 7 | 37.247413 | -121.96527 |
| 30200-19 | D/s Lark at JCC | 19 | 8 | 37.253114 | -121.963321 |
| 30200-18 | D/s Vasona Valve Yard | 18 | 9 | 37.258782 | -121.960141 |
| 30200-17 | Middle Page Impoundment Inlet | 17 | 10 | 37.269299 | -121.949122 |
| 30200-16 | D/S Camden Drop Structure | 16 | 11 | 37.272772 | -121.948101 |
| 30200-15 | @ Timber Cove Mobile Home Park | 15 | 12 | 37.275955 | -121.947087 |
| 30200-14 | Upstream of Campbell Park | 14 | 13 | 37.283826 | -121.940952 |
| 30200-12 | U/S Bascom Avenue. | 12 | 14 | 37.296828 | -121.932682 |
| 30200-11 | Bascom/Leigh @ De Loach Ct. | 11 | 15 | 37.298779 | -121.927042 |
| 30200-10 | Stokes between Leigh and Meridian. | 10 | 16 | 37.30399 | -121.916547 |
| 30200-4 | d/s Meridian Ave. | 4 | 17 | 37.307198 | -121.913038 |
| 30200-9 | Glen Eyrie @ Carolyn. | 9 | 18 | 37.310046 | -121.907277 |
| 30200-1 | Lincoln Ave. at Gauge SF50 | 1 | 19 | 37.312586 | -121.904335 |
| 30200-3 | Lincoln Ave Outfall Outfall downstream of Lincoln Ave. | 3 | 20 | 37.313662 | -121.90384 |
| 30200-2 | u/s RR Trestle d/s Lincoln Ave. | 2 | 21 | 37.314586 | -121.903679 |
| 30200-8 | Lonus Street, d/s SPRR trestle | 8 | 22 | 37.315715 | -121.903270 |
| 30200-7 | Auzerais Street | 7 | 23 | 37.321246 | -121.902768 |
| 30200-6 | West San Fernando St. | 6 | 24 | 37.329356 | -121.899478 |
| 30200-5 | Upstream of Confluence w/ Guad River | 5 | 25 | 37.333812 | -121.899001 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



37.32881 -121.9200447

37.32897 -121.9071488

37.32901 -121.9035793
37.32902 -121.902606

Deployment_DataQA_LabChecks
Jae Abel, Biologist, SCVWD
Draft Date: 01-Jul-2013

## Data collection and Accuracy discussion

We have used Onset Optic Stowaway sensors from 1995-2006 with BoxCar software to manage the devices. In late 2006, the company declared those devices 'Obsolete'. At that time we adopted HOBO Water Temp Pro v2 as our normal temperature logging device with HOBOWare v2.3-v3.4 as the device programming software.

IDENTIFICATION OF THE DEVICES & SOFTWARE IS INFORMATIONAL ONLY. NO ENDORSEMENT OF THESE PRODUCTS IS OFFERED OR IMPLIED.

Data processing:
Data outputs from the devices are converted using the manufacturer's software to electronic file format that can be managed in a relational database environment, EM-IMS (Oracle v9 engine) with outputs converted to MS-Excel files. During data processing various QA/QC tests are applied including inherent checks that the software conducts on the electronic file structure and instrument power condition. During upload of data files to the EM-IMS, file metadata checks for field note matches during deployment record creation and data string upload are executed. Upload checks also include inspection for data formats, expected record counts and sequencing, data string checks for suspected outlier measurements such as out-of-expected-range values, unexpected changes in successive measurements, etc. During the "Publishing" routine, data are further inspected and either tagged for excising or annotating unexpected measurement values and the instrument's lab test results are applied to make adjustments to measurements from instruments that were found out of calibration, post-deployment. Data that have been successfully vetted to the Published form are suitable for outputs.

Device deployment:
Instruments deployed are those that have successfully passed their previous accuracy tests, being found within the manufacturer's specification. Detailed field notes are recorded during deployment and recovery of instruments to characterize the deployment interval and prevailing environmental conditions. Typical deployment at a stream measurement station includes redundant sensors placed in the surface water enclosed in protective housings and a single sensor placed in the air at a station. Phreatic and Hyporhreic sensors are typically deployed singly per the limitations of the standpipe. Redundant water temperature sensors are insurance against device failure in the rougher deployment environment of surface water. Air placement is not controlled for small-scale microclimate effects. We typically have not observed sufficient water temperature differences in the stream water column to warrant additional control and assume normal flow conditions provide sufficient mixing that redundant sensors are recording equivalent/equal conditions. Other deployment patterns may be applied for other types of more specialized study comparisons (e.g. water column, groundwater detection, flow event detection and chronicle, soil temperature and profile, container environment, etc.)

Instrument checks:
The manufacturer recommends a single step, 0C (ice bath) test of calibration condition of an individual logger. After looking at the 1998-1999 data and exercising a coarser version of the present lab test, we found a significant number of the devices drifted from factory calibration over their operating range for various suspected reasons. So in 2000 and since, coincident with expansion of the monitoring program, redundant loggers and additional deployment details are included in the records we kept. We amped up our QA/QC control and produce this more rigorous laboratory testing of the devices, post-field deployment to allow "salvage" as it were of data that one might otherwise be forced to reject. We go to the trouble of checking at this level beyond the manufacturer's suggested test because some of the model work we produced we observe/intuit the volume of data points

involved can skew results with statistical significance based on precision but with reduced accuracy and vice-versa. Accuracy vs. precision is always a question with which to contend.

Temperature loggers are tested for accuracy after field deployment with the applied test geared toward detecting the most likely type of compromise of the logger accuracy: the drift in condition of the thermistor and signal processing components of data registration. Loggers record to a fixed precision with little opportunity to practically test this. (Testing for precision is a very fine-tuned program not readily executed in an end-user environment. The precision standard of the devices we use is typically an order of magnitude beyond the typical study application need, thus gross deviation in precision standard would likely be reflected in the accuracy results and lesser deviation will likely not affect the typical study application.) Standard programming in a field environment is for an 1-hr. increment but you may find on occasion the data string has something different. This may be purposeful or may be a programming error, but the data should still stand based on deployment standards, record keeping QA/QC and per the following test results.

Temperature loggers are warranted by the manufacturer for a certain precision and accuracy. For our current standard model, Hobo Water Temp Pro V2, the manufacturer, Onset Computer Company, identifies a 0.01C precision with +/- 0.2C accuracy. Over time, in a field deployment, drift off of calibration limits may be observed. This is assumed to be a step-wise inherent state of the individual device over the range of corrections we apply. If the drift is not too great, data can be "salvaged" by applying a correction to some standard test. The field data is "corrected" for accuracy based on a Least Squares linear regression of the logger's error from a step test of the device. Corrections are applied typically for devices that are found by the lab results to fall out of manufacturer's calibration limits. Assumptions embedded in this QA/QC testing include that the device's observed drift off of accurate occurred early on in the deployment so the entire data string is corrected equally-i.e. a correction is not applied proportional to deployment time for the alternate assumption of a continuous or progressive drift condition. A linear regression correction is judged to be sufficient against the engineered accuracy of these devices for our typical application and scale of correction for both accuracy and precision. There is no practical laboratory test for a drift and return test scenario since that would occur over protracted time frames unavailable for efficient use of the data. The inspection and application of QA/QC test results is accomplished through upload and query applications that test the integrity of the data string off of the intended deployment parameters and simultaneously adjust the "Published" data with corrections as necessary. For water temperature data where redundant sensors are installed, the correction is not applied if the data string of the primary device is found >2.0 C off of lab test results. In that case, the backup instrument data string is used in the published data. If no backup/redundant device is available, the QA/QC publishing routine stops and no data is published.

<u>QA Lab Test of Temperature Logging Instruments</u>

Loggers are programmed per the usual manner but with a small time increment to compress the lab test deployment time.

The logger is operated in a very controlled water bath that is adjusted and stabilized at standard stepped temperature interval points typically ranging between 0-35C. This is intended to capture the majority of the range of temperature that a device would be logging in a field deployment. Thus the correction, as needed, would mostly be of interpolation rather than extrapolation. The test environment is developed as a highly regulated water bath and pump circulator with built in precision temperature control. Loggers can be tested in batches for time efficiency.

During a test run deployment in the water bath environment, the temperature is regulated by a pre-programmed step change sequence to adjust and hold the waterbath temperature at fixed temperature targets. The intervals need not be exactly at a target temperature but must be stable within a precision approximately equal to (and ideally greater than) the instruments being tested. At the end of the step through run of the entire temperature range, the data from individual loggers is offloaded, compiled and compared to the readings from the NIST autologging instrument recording the "true" conditions of the waterbath environment.

The average of multiple readings at each interval is compared to the average automated NIST standard thermometer readings recorded coincidently to develop the differential (device error) at those intervals. The collection of differentials at each step interval is used to develop the linear

regression equation. Thus, the step test compares the logger performance against an NIST standard throughout the range of typical temperature exposure of our field setting. The results of this test tell us whether the device is performing within calibration specification. As well, from that linear regression, a correction of the field data measurements of the matching logger can be achieved.

Thus use of the published data conforms to all of the quality assurance tests including inspection for out-of-limits data, programming and data formats, data normalization, and accuracy checks.

*We make every effort to ensure the quality of the result at the time we provide data; however, NO WARRANTY OR OTHER GUARANTEE IS OFFERED OR IMPLIED AS TO THE ACCURACY, PRECISION OR COMPLETENESS OF THE DATA WE HAVE SUPPLIED. ALL CONSEQUENCES OF THE USE OF THE DATA ARE THE SOLE RESPONSIBILITY OF THE USER. ABSOLUTELY NO LIABILITY IS ASSUMED BY US AS THE PROVIDER.*