(12/17/15) Public Workshop
Emergency Reg for Measuring & Reporting Diversions
Deadline: 12/17/15 by 12:00 noon

Los Angeles Department of Water & Power

December 16, 2015

Jeanine Townsend, Clerk to the Board
State Water Resources Control Board (SWRCB)
1001 I Street, 24th Floor
Sacramento, California 95814

Dear Mrs. Jeanine Townsend, Clerk to the Board:

Subject: Comment Letter – Emergency Regulation for Measuring and Reporting the Diversion of Water

The city of Los Angeles Department of Water and Power has reviewed the draft Emergency Regulations for Measuring and Reporting the Diversion of Water that was published by the SWRCB on December 7, 2015. We appreciate the opportunity to provide the following comments to the draft emergency regulation for measuring and reporting the diversion of water. LADWP's comments are structured in two parts:

Part 1. Specific Comments to the proposed emergency regulation for measuring and reporting, agency draft for public comment dated December 7, 2015

Part 2. General Comments In response to list of concepts and SWRCB staff recommendations provided and presented at the stakeholder outreach meetings that were conducted during the first two weeks of November 2015

A copy of this comment letter and enclosures will also be submitted electronically in PDF format to the Clerk to the Board via email addressed to commentletters@waterboards.ca.gov.

If you have any questions or need more clarification, please contact Lizbeth Calderon, Civil Engineering Associate, at (213) 367-2501.

Sincerely,

James G. Yannotta
Manager of Aqueduct

LC:fj
Enclosures

111 N. Hope Street, Los Angeles, California 90012-2607 *Mailing address:* Box 51111, Los Angeles, CA 90051-5700
Telephone: (213) 367-4211 www.LADWP.com

PART 1:
SPECIFIC COMMENTS

PREPARED IN RESPONSE TO
PROPOSED EMERGENCY REGULATION FOR
MEASURING AND REPORTING
AGENCY DRAFT FOR PUBLIC COMMENT
DATED DECEMBER 7, 2015

REFER TO ATTACHMENT "A" FOR COPY OF
PROPOSED EMERGENCY REGULATION

SECTIONS CITED REFER TO
CALIFORNIA CODE OF REGULATIONS
TITLE 23, DIVISION 3, CHAPTER 2.7
AS PRESENTED IN PROPOSED EMERGENCY REGULATION
(UNLESS OTHERWISE NOTED)

LADWP appreciates the opportunity to provide input, and appreciates consideration of our comments as the emergency regulation is refined.

§917. Reporting – Insufficient Flows to Support All Diversions.

When flows or projected available supplies in a watershed or subwatershed are sufficient to support some but not all projected diversion demand, the Deputy Director for the Division of Water Rights may require water diverters located within the watershed or subwatershed to electronically submit monthly or more frequent reports of water diversion.

LADWP COMMENTS:

LADWP held water rights in the Owens and Mono Valleys are predominantly pre-1914 appropriative and riparian water rights. Additionally, the City of Los Angeles owns over 310,000 acres of land in the Eastern Sierra. As one of the principal land and senior water right holders in the Eastern Sierra, LADWP operates consistent with the current legal water rights hierarchy or as adjudicated by court decree. This provision should only apply in watersheds or subwatersheds where the Deputy Director makes a determination of urgent, drought, or emergency conditions. Otherwise, this provision unduly regulates water rights holders.

§ 920. Supplemental Statements of Water Diversion and Use.

(e) If ~~the use of an alternative supply of water or any~~ water conservation efforts have resulted in a cessation or reduction in use, the report should include a description of the conservation efforts employed and indicate the extent and monthly amount of the reduction in water use due to these water conservation efforts.

LADWP COMMENTS:

The monthly amount of reduction in water use due to water conservation efforts should only be required when claiming credit for the amount of water conserved towards the authorized use pursuant to Water Code section 1011.

§931 Definitions.

(g) "Qualified individual" means:

(1) For diversions greater than or equal to 100 acre-feet per year:

(A) A California-licensed contractor authorized by the State License Board for C-57 well drilling or C-61 Limited Specialty/D-21 Machinery and Pumps; or

(B) a California-registered Professional Engineer.

(C) a professional subject to oversight by a California-registered Professional Engineer and employed to install, operate, and maintain water measurement and reporting devices or methods.

(2) For diversions less than 100 acre-feet per year, a person trained and experienced in water measurement and reporting. This may include the water right holder or the water right holder's agent.

LADWP COMMENTS:

- **For Diversions greater than or equal to 100 acre-feet per year, "qualified individuals" should include trained hydrographers and hydrologists with a minimum of 5-years of experience in the operation and maintenance of water measurement and reporting devices or methods.**

- **"Professional" as referenced in Section 931(g)(1)(c) does not appear to be defined and may be subject to interpretation. LADWP recommends a "professional" could consist of a person trained and experienced in water measurement and reporting devices or methods, and spends more than 20% of their average work day dealing with water measurement and reporting.**
- **Oversight of "a professional" pursuant to Section 931(g)(1)(c) should be available as an option to all "qualified individuals" pursuant to Section 931, rather than only California-registered Professional Engineers.**

§932 Applicability.

(c) Effective Dates. The deadlines for the installation and certification of measuring devices or method shall be:

(1) On or before July 1, 2016, for a water right holder with a right or a claimed right to divert 1000 acre-feet of water per year or more.

(2) On or before January 1, 2017, for a water right holder with a right or a claimed right to divert 100 acre-feet of water per year or more.

(3) On or before January 1, 2018, for a water right holder with a right or a claimed right to divert greater than 10 acre-feet of water per year.

LADWP COMMENTS:

- **LADWP, a public utility, holds many water rights in the Eastern Sierra and potentially uses hundreds of measurement stations that employ numerous devices or methods to monitor and record diversions of water. The effective dates are counterintuitive for water right holders such as LADWP that have to evaluate hundreds of measurement stations for compliance with these regulations.**
- **For certain circumstances, such as LADWP which has hundreds of measurement stations to evaluate for compliance, the effective dates should include a deadline option to submit implementation plans for measurement stations that need to be brought into compliance. Water right holders with approved implementation plans or actively working with the Board to develop an acceptable plan should be considered compliant with these regulations.**

§932 Applicability.

(d) Increasing the Measurement Threshold

(1) Beginning January 1, 2017, [t]he executive director may issue orders to increase the 10 acre-feet reporting threshold of subdivision (a) in a watershed or subwatershed incrementally to or above 25 acre-feet. The executive director may authorize an increased reporting threshold after:

(A) Considering the total monthly quantities diverted in relation to the monthly quantity of water available within the watershed or subwatershed; the requirements of any policy, decision or order of the board or a court; and the need for diversion and bypass information to evaluate impacts to public trust resources; and

(B) Reviewing any relevant information submitted by affected water right holders or other interested parties regarding a proposed increase in reporting threshold; and

(C) Determining the benefits of the additional reporting information at a specific reporting threshold are substantially outweighed by the cost of installing measuring devices or employing methods for measurement.

(D) The executive director shall not increase the measurement threshold in a watershed or subwatershed above those established in any other regulation, policy, decision, order or other legal requirement adopted by the board, a Regional Water Quality Control Board, or a court, unless the change is authorized by previous requirements.

LADWP COMMENTS:

Factors considered by the executive director to evaluate whether to authorize increases to the measurement threshold should include:

- **The benefit of the reporting information when**
  - **No other water right holders, except for the one exercising the diversion, are located downstream of the source waterway and diversion.**
  - **Other water right holders are not impacted, such as for diversions from springs that are beneficially used or consumed or terminated all on property under the same ownership (even if water traverses property lines).**
- **Environmental considerations such as diversions located on Forest Service land, BLM land, or in a Wilderness designated area such that installing a measuring device (and perhaps a new roadway to access the location) will unduly disturb the environment.**

§932 Applicability.

(d) Increasing the Measurement Threshold

(3) The executive director may review each proposal to increase the reporting threshold on a case-by-case basis.

(4) The executive director may authorize an increased reporting threshold for a period not to exceed five years. If changing conditions warrant, the executive director may modify or cancel any such authorization.

(5) The executive director shall maintain a list of reporting thresholds for watersheds or subwatersheds greater than 10 acre-feet.

(6) A decision or order issued under this section by the executive director is subject to reconsideration under article 2 (commencing with section 1122) of chapter 4 of part 1 of division 2 of the Water Code.

LADWP COMMENTS:

- **For 932(d)(3), Clarify that the executive director may issue orders to increase the 10 acre-feet reporting threshold on a case-by-case basis and that orders to increase the measurement threshold are not limited to entire watersheds or subwatersheds.**
- **For 932(d)(4), clarify that once the authorization threshold expires, authorizations to increase the reporting threshold may be renewed, if conditions warrant.**

§933 Measuring Device Requirements.

(b) Data

LADWP COMMENTS:

LADWP turns off and removes the recording equipment from hundreds of stations each winter to protect against freezing. The data collection and recording requirements should not apply to diversions when flow is turned off through the diversion for the off-season (such as during the winter months for irrigation diversions). A requirement to leave recording equipment at the diversion site

and continue to inspect and collect data when there is no plan to divert flows for the winter months would be an unreasonable expectation and waste of resources.

§933 Measuring Device Requirements.

(b) Data

(1) Data Recording. The measuring device shall be capable of recording the date, time, and at least one of the following: total volume of water diverted, flow rate, water velocity, or water elevation. The data shall be recorded in a format retrievable and viewable using Microsoft Xcel, Microsoft Access, or other software program authorized by the Deputy Director. The measuring device shall be capable of recording the required information as follows:

(A) For direct diversion:

i. On an hourly or more frequent basis for a water right holder with a right or a claimed right to divert 1000 acre-feet of water per year or more.

ii. On a daily or more frequent basis for a water right holder with a right or a claimed right to divert 100 acre-feet of water per year or more.

iii. On a weekly or more frequent basis for a water right holder with a right or a claimed right to divert more than 10 acre-feet of water per year.

LADWP COMMENTS:

For some diversions, LADWP measures and records data using a propeller meter (totalizers). In most of these cases, a propeller meter is used because the slope of the diversion ditch is very flat so a flume or weir will not function accurately. In other cases where a propeller meter is used, the diversion goes into a pipe where the water flows under a road or goes down a very steep slope. In these areas, power lines are not available so mechanical measuring devices or solar powered ones are the only options. LADWP has found that mechanical propeller meters to work best in these situations.

Propeller meters measure total volume, and LADWP reads the meters every two weeks and every time a flow change is made to a diversion. The readings on the meter are recorded and average daily flow between readings is calculated.

LADWP Recommended Regulation change: Where flow conditions are not appropriate for devices such as flumes and weirs (specifically areas with very little ground slope), volumetric dial meters can be used instead (such as propeller meters or AVFM meters). Readings from such meters should be taken on at least a monthly basis and any time the flow into the diversion point is substantially changed.

Additionally, LADWP uses spreading diversions to divert water from creeks during very wet years (and rarely during flash flooding events) where there isn't enough capacity downstream of the creek. There are dual purposes in the water spreading practice: 1) To recharge ground water basins and 2) To protect downstream facilities from possible damage caused by high flows. Many spreading diversion locations are on Forest Service or BLM land. Typically, LADWP spreads water approximately once every 5 or 6 years and only for part of the peak runoff period. The water rights of others are not affected by these diversions.

Flow measurement and recording for LADWP spreading diversions varies depending on many different factors. Some spreading diversions have flumes installed, but do not have recording devices installed. In cases where flumes are installed, recording devices are installed temporarily just prior to spreading operations (except in cases of flash flooding where LADWP could not anticipate the spreading operation). The vast majority of LADWP spreading diversions do not have a measuring device installed. When the spreading diversions without a measuring device are operated, flows are

recorded by estimating the flows on a daily basis by using a known cross section of the diversion ditch near the diversion point and estimating the flow velocity. The daily flow recordings are then interpolated between readings.

LADWP Recommended Regulation Modification: Where diversions are not consistently operated on a year-to-year basis for the purposes of groundwater recharge and/or flood protection, then flow recordings can be made on a daily basis instead of an hourly basis. In addition, flow measurement at such diversion points can be estimated using a known cross section and estimated velocities by qualified professionals.

§933 Measuring Device Requirements.

(b) Data

(2) Data Submittal.

(B) By January 1, 2020, a water right holder who either diverts more than 10,000 acrefeet annually or, on a monthly basis diverts more than 50 percent of the monthly median flow of the watershed (Hydrologic Unit Code (HUC) 10 as shown on the Division's eWRIMS database) where the diversion is located shall provide real-time telemetered diversion data via a public website that displays the data on at least a daily bases, that is updated weekly, at minimum. The data shall be provided to the board upon the request of the executive director in a format retrievable and viewable using Microsoft Xcel, Microsoft Access, or other software program authorized by the deputy director.

LADWP COMMENTS:

Asking LADWP to provide real-time data for tens of measuring stations, many of which are located in remote locations such as Forest Service and BLM land with no access to power and no cell phone coverage is an unreasonable expectation. The effort and expense would be significant and the benefit questionable, as LADWP operates consistent with the current legal water rights hierarchy or as adjudicated by court decrees. This provision should only apply in watersheds or subwatersheds where the Deputy Director makes a determination of urgent, drought, or emergency conditions. Otherwise, this provision unduly regulates water rights holders.

§933 Measuring Device Requirements.

(g) Installation, Maintenance and Performance Requirements.

A measuring device shall be installed, maintained, operated, inspected, and monitored to ensure the accuracy standards of subdivision (d) of this section are met. The installation of a measuring device shall be performed by a qualified individual.

(h) Calibration. The measuring device shall be calibrated by a qualified individual upon installation and at least once every three years thereafter. The water right holder shall be responsible for more frequent calibration of measuring device(s) as necessary to ensure the accuracy requirements of subdivision (d) of this section are met.

LADWP COMMENTS:

A "professional" subject to oversight by a "qualified individual" should also be permitted to install and calibrate the measuring device. Refer to LADWP comments for Section 931(g); LADWP recommends a "professional" could consist of a person trained and experienced in water measurement and reporting devices or methods, and spends more than 20% of their average work day dealing with water measurement and reporting.

§933 Measuring Device Requirements.

(l) Inadequate Measuring Device. If a measuring device fails to meet the accuracy requirements of subdivision (d) of this section, the water right holder shall repair or replace the measuring device to meet such requirements.

(1) Notification. A water right holder shall timely notify the board in writing upon detecting that the holder's measuring device does not comply with the accuracy requirements of subdivision (d) of this section. The notification shall include the water right holder's plan to take appropriate, timely corrective action to comply with the accuracy requirements of subdivision (d) of this section.

(2) Enforcement. Failure to timely repair or replace a measuring device that does not comply with the accuracy requirements of subdivision (d) of this section is a violation of this regulation.

LADWP COMMENTS:

The board should notify water right holders of impending enforcement action, to allow an opportunity for self-corrective action.

§934 Measurement Method.

A measurement method is a protocol for measuring water diversions, other than through a measuring device at each authorized point of diversion, where the method is found by the deputy director to reasonably achieve the accuracy requirements of subdivision (d) of this section. The board encourages water right holders on a local or regional basis to cooperate and establish a measurement method or methods to measure direct diversion, diversion to storage, and withdrawal or release from storage in an efficient and cost effective manner which meets the accuracy requirements of subdivision (d) of this section. Any measurement method must be able to quantify the amount of water diverted under all separate priorities of rights being exercised.

(a) Request for Measurement Method.

(2) Action by the deputy director. Only complete forms accompanied by maps will be accepted for review. No action will be taken on incomplete requests.

(A) The measurement method will be reviewed and, if found to reasonably meet the purposes of this section, authorized by the deputy director. A measurement method may be conditionally authorized if it meets the requirements of this Chapter.

(B) A measurement method shall not be authorized for any project with an existing or prior gage, or where any requirement of any contract, , policy, order, decision, judgment, determination, or other regulatory requirement of the board, a Regional Water Quality Control Board, or a court requires that diversions be gaged. A measurement method shall not be authorized for any project where it can reasonably be interpreted that gaging is necessary to meet such regulatory requirements.

LADWP COMMENTS:

Certain circumstances warrant consideration of measurement methods despite existing or prior gages. Measurement devices in need of upgrades or replacement may trigger unintended consequences such permits or certifications from federal agencies (such as Forest Service, BLM, Fish & Wildlife Service, and ACOE), or approval from private land owners when the measurement device is not located on property owned by the water right holder. LADWP recommends the provision of section 934(a)(2)(B) be preceded by the term, "Generally" to allow consideration for site-specific evidence.

§934 Measurement Method.

(f) Operation and Performance Requirements. A measurement method shall be operated and maintained to ensure the accuracy standards of subdivision (c) of this section are met. Field testing and re-analysis that the measurement method meets the requirements of this section shall be performed by a California-registered Professional Engineer upon installation, and at least once every three years thereafter.

LADWP COMMENTS:

- **LADWP recommends consistency in criteria for individuals performing field-testing. Subsection (d), Certification of Measurement Method Accuracy, permits field-testing performed by an individual trained in the use of relevant field-testing equipment, so long as the results are documented in a report approved by a California-registered professional engineer. Meanwhile, this subsection (f) requires field testing and re-analysis be performed by a California-registered Professional Engineer upon installation, and at least once every three years thereafter.**
- **A "professional" subject to oversight by a "qualified individual" should also be permitted to perform field testing and re-analysis. Refer to LADWP comments for Section 931(g); LADWP recommends a "professional" could consist of a person trained and experienced in water measurement and reporting devices or methods, and spends more than 20% of their average work day dealing with water measurement and reporting.**

§934 Measurement Method.

(g) Inadequate Measurement Method. If a measurement method fails to meet the accuracy standards of subdivision (c) of this section or the conditional approval by the deputy director, the measurement method shall be corrected to ensure it complies with these requirements.

(1) Notification. The water right holders employing a measurement method shall notify the board in writing within 30 days of finding a measurement method does not comply with the accuracy standards of subdivision (c) of this section or the conditional approval by the deputy director. The notification shall include a plan to take appropriate, timely corrective action.

(2) Enforcement. Failure to correct defects or to ensure the measurement method complies with the accuracy standards of subdivision (c) of this section is a violation of this regulation.

(3) Measuring Devices Required. If defects in the measurement method are not timely corrected, measuring devices shall be installed at each point of diversion previously covered by a measurement method within 90 days of notification from the board that such measurement method has been deemed inadequate.

LADWP COMMENTS:

The board should notify water right holders of impending enforcement action, to allow an opportunity for self-corrective action.

§935 Alternative Compliance for a Measuring Device or Measurement Method Requirement.

(a) The deputy director may consider alternative compliance to one or more of the requirements of section 933 and section 934 of this title upon finding that strict compliance is not feasible, would be unreasonably expensive, would unreasonably affect public trust uses, or would result in the waste or unreasonable use of water.

(b) The deputy director may authorize alternative compliance for a specific measuring device or measurement method, for a type of measuring device, or for similar measurement methods.

(c) Request from a Water Right Holder for Alternative Compliance. A water right holder may file a request alternative compliance with the deputy director.

(1) The request shall be filed electronically on a form available on the board's website.

(2) The request shall describe how strict compliance with one or more of the requirements of section 933 and/or section 934 of this title is not feasible, would be unreasonably expensive, would unreasonably affect public trust uses, or would result in the waste or unreasonable use of water:

(3) The request shall describe how the proposal is a reasonable alternative to one or more of the requirements of section 933 and/or 934 of this title.

(4) The deputy director may review each request for alternative compliance on a case-by-case basis. Alternative compliance proposals may be conditionally approved.

(5) The deputy director may require a water right holder to submit annual reports or a compliance plan to ensure the conditions of approval of the alternative compliance are met.

LADWP COMMENTS:

Factors considered by the deputy director when evaluating alternative compliance requests should include:

- **Benefit (or lack of benefit) of data, in circumstances such as when:**
  - **No other water right holders, except for the one exercising the diversion, are located downstream of the source waterway and diversion.**
  - **Other water right holders are not impacted, such as for diversions from springs that are beneficially used or consumed or terminated all on property under the same ownership (even if water traverses property lines).**
- **Environmental considerations such as diversions located on Forest Service land, BLM land, or in a wilderness designated area such that installing a measuring device (and perhaps a new roadway to access the location) will unduly disturb the environment.**
- **Technological and scientific considerations of best application for certain circumstances (see comments on section 933 above)**
- **Location and type of diversions, such as spreading diversions during flash floods that are not easily predicted, or spreading diversions that provide flood control and groundwater recharge only during very wet years**
- **Circumstances where applicable permits, approvals, or certification cannot be acquired, whether it be a definitive denial by issuing agency, or acquisition timeline.**

§936 Request for Additional Time.

A water right holder may submit a request for additional time to comply with the provisions of this Chapter on a form available on the board's website. Additional time may be granted by the deputy director upon a showing of good cause. The additional time granted by the Deputy Director shall not exceed 24 months, combined, under all extension requests.

LADWP COMMENTS:

- **Water right holders with approved implementation plans or actively working with the Deputy Director to develop an acceptable plan should be considered compliant with these regulations.**
- **Timeline for action plan, included as part of approved implementation plan should be considered separate and independent of the "request for additional time (which shall not exceed 24 months, combined, under all extension requests, per this section)."**

PART 2:
GENERAL COMMENTS

PREPARED IN RESPONSE TO
LIST OF CONCEPTS & SWRCB STAFF RECOMMENDATIONS
DISTRIBUTED AT THE INFORMATIONAL MEETINGS HOSTED BY
WATER BOARD STAFF IN NOVEMBER 2015

REFER TO ATTACHMENT "B" FOR CITED
LIST OF CONCEPTS AND SWRCB STAFF RECOMMENDATIONS

LADWP appreciates the opportunity to provide input, and appreciates consideration of our comments as the emergency regulation is shaped and formulated.

1.) Timeline for Compliance

Under the new legislation, the measurement requirements could go into effect as early as January 1, 2016. What is a reasonable amount of time for diverters to install measurement devices or methods? (Concept 10)

State Water Board Staff Recommendation: *The measurement requirements should be implemented on a staggered basis. Staggered implementation could lead to increased compliance. Timelines for compliance should consider the size of diversion and the characteristics of the watershed that the diversion is located in.*

Where appropriate, the regulation should allow for interim and multi-year plans to allow diverters to achieve full compliance.

LADWP Recommendation:

LADWP generally agrees with SWRCB staff recommendation that the emergency regulations should accommodate multi-year implementation plans with appropriate timelines for compliance. However we would like to emphasize that proper time allowance for planning, budgeting, acquisition of needed permits, applicable CEQA documentation, and compliance with applicable water quality regulations are essential. Additionally, reasonable alternatives submitted to the board for consideration should be considered compliant while those requests are being evaluated by the board.

2.) Measurement devices and methods

Should measuring devices that are approved as meeting the existing requirements of other state and federal agencies be grandfathered in? If so, which ones, and under what conditions? (Concept 5)

SWRCB Staff Recommendation: *Measuring devices or methods meeting the existing requirements of other state and federal agencies should be grandfathered in as much as possible provided they approximate the accuracy standards set forth in the regulation. The State Water Board should review the measurement requirements of cited agencies*

Should the measurement requirements be based on accuracy standards, a specific list of approved devices, or another approach? (Concept 7)

SWRCB Staff Recommendation: *The regulation should not list specific measuring devices or specify methods. Measurement devices and methods should be required to meet reasonable accuracy standards.*

LADWP Recommendation:

LADWP generally agrees with SWRCB staff recommendation for concept 5, that measuring devices or methods meeting the existing requirements of other agencies (such as USGS) should be grandfathered as much as possible.

LADWP generally agrees with SWRCB staff recommendation for concept 7, that measurement devices and methods should be required to meet reasonable accuracy standards. However, a universal standard may not be appropriate for all circumstances and the regulation should be flexible and provide a framework for considering reasonable alternatives for compliance. Additionally, published examples (uncodified) of pre-approved devices and methods satisfactory to the board would streamline compliance.

Devices currently used by LADWP and suggested for pre-approval:

Flumes: **Parshall, Replogle, Trapezoidal, Short Throated, Ramp Flume or Long-Throated, and H Flumes**

Weirs: **Rectangular, Rectangular Contracted, V-notch; Cipolletti, Sharp Crested, and Broad Crested**

Flow Meters: **Ultrasonic, Magnetic, Venturi**

Acoustic meters (such as produced by SonTek)

Volumetric dial meter (where low ground slope or other conditions do not allow for accurate standard measurement)

Langemann Gate

Level measurement in meter section (with properly calibrated rating curve based on manual current metering)

Alternative compliance methods recommended by LADWP for pre-approval are detailed in section 3.

3.) Alternative Compliance

Should the regulation specify areas or circumstances where the diversion threshold for required measurement may be greater than 10 acre-feet per year? If so, in what areas of the state, or under what circumstances, should a higher diversion threshold be established? (Concept 6)

SWRCB Staff Recommendation: *The regulation should not list specific areas or specific circumstances where a diversion threshold greater than 10 acre-feet per year may be established. The regulation should include a framework that allows the State Water Board to establish a higher diversion threshold in specific watersheds or under specific circumstances. The cost of measurement and the relative size of the diversions compared to the natural flow, overall diversion demand, and instream uses in the watershed should be factors in determining if a higher threshold may be established.*

What reasonable alternatives should be considered for complying with the measurement requirements if strict compliance is considered infeasible, unreasonably expensive, or unreasonably affect public trust uses, or result in the waste or unreasonable use of water? (Concept 9)

SWRCB Staff Recommendations: *Determination of these circumstances is situation dependent.*
The regulation should establish a framework for considering alternative approaches to compliance for a specific measuring device or measurement method, or for a type of measuring device.
When reviewing a request for an alternative, the State Water Board should consider the impact of the diversion(s) on the watershed based on watershed characteristics and the relative size of the diversion(s) to the overall amount of natural stream flow.
A water user requesting an alternative approach should submit a reasonable plan for attaining compliance. A water user should be required to diligently implement the proposed plan.

LADWP Recommendation:

For water right holders diverting 10 acre-feet of water per year or more, the new requirements include maintaining a record of all diversion monitoring at time intervals of one hour or less. However, a universal standard may not be appropriate under all circumstances and the 10 acre-feet threshold and hourly data collection requirement should only apply where appropriate. LADWP generally agrees with SWRCB staff recommendations that the regulation should: include a framework that allows the State Water Board to establish a higher diversion threshold in specific watersheds or under specific circumstances; and establish a framework for considering alternative approaches to compliance for a specific measuring device or measurement method, or for a type of measuring device. However, providing published examples (uncodified) identifying commonly encountered scenarios and acceptable alternative compliance may streamline compliance. Common scenarios encountered during LADWP operations are detailed below along with LADWP suggested alternative standards.

LADWP Recommended Alternative Compliance Standards for Common Scenarios:

a) Spreading Diversions

LADWP uses spreading diversions to divert water from creeks during very wet years (and rarely during flash flooding events) where there isn't enough capacity downstream of the creek. There are dual purposes in the water spreading practice: 1) To recharge ground water basins and 2) To protect downstream facilities from possible damage caused by high flows. Many spreading diversion locations are on Forest Service or BLM land. Typically, LADWP spreads water approximately once every 5 or 6 years. The water rights of others are not affected by these diversions.

Flow measurement and recording for LADWP spreading diversions varies depending on many different factors. Some spreading diversions have flumes installed, but do not have recording devices installed. In cases where flumes are installed, recording devices are installed temporarily just prior to spreading operations (except in cases of flash flooding where LADWP could not anticipate the spreading operation). The vast majority of LADWP spreading diversions do not have a measuring device installed. When the spreading diversions without a measuring device are operated, then flows are recorded by estimating the flows on a daily basis by using a known cross section of the diversion ditch near the diversion point and estimating the flow velocity. The daily flow recordings are then interpolated between readings.

> **LADWP Recommended Alternative Standard: Where diversions are not consistently made on a year-to-year basis for the purposes of groundwater recharge, then flow recordings can be made on a daily basis instead of an hourly basis. In addition, flow measurement at such diversion points can be estimated using a known cross section and estimated velocities by qualified professionals (qualified professionals being registered engineers or trained hydrographers and hydrologists who spend more than 20% of their average work day dealing with flow measurement devices and data collection).**

b) Volumetric Dial Meters (such as propeller meters / area-velocity-flow meters)

For some diversions, LADWP measures and records data using a propeller meter. In most of these cases, a propeller meter is used because the slope of the diversion ditch is very flat so a flume or weir will not function accurately. In other cases where a propeller meter is used, the diversion goes into a pipe where the water flows under a road or goes down a very steep slope. In these areas, power lines are not available so mechanical measuring devices or solar powered ones are the only options. LADWP has found that mechanical propeller meters to work best in these situations.

Propeller meters measure total volume, and LADWP reads the meters every two weeks AND every time a flow change is made to a diversion. The readings on the meter are recorded and daily average flow between readings is calculated.

LADWP Recommended Alternative Standard: Where flow conditions are not appropriate for devices such as flumes and weirs (specifically areas with very little ground slope), volumetric dial meters can be used instead (such as propeller meters or AVFM[1] meters). Readings from such meters must be taken on at least a monthly basis and any time the flow into the diversion point is substantially changed.

c) Spring Flow

LADWP generally agrees with SWRCB staff recommendation for concept 6 that the regulation should include a framework that allows the State Water Board to establish a higher diversion threshold in specific watersheds or under specific circumstances. However, factors cited for consideration to make a determination should clearly be denoted as non-exclusive.

Additional LADWP Recommended Factors to consider if higher diversion thresholds may be established (non-exclusive list):

i. **Diversion is located on Forest Service land, BLM land, or in a Wilderness designated area such that installing a measuring device (and perhaps a new roadway to access the location) will unduly disturb the environment.**
ii. **No other water right holders, except for the one exercising the diversion, are located downstream of the waterway and the diversion.**
iii. **Sites where the water source originates (such as from a spring), is diverted, and is consumed or terminated all on property under the same ownership (even if water traverses property lines).**

LADWP Recommended Alternative Standard: For scenarios where strict compliance with 10-acre feet threshold is infeasible or diversions do not affect the water rights of downstream water right holders, then flow measurement at such diversion points may be estimated using a known cross section or other estimation method by qualified professionals and recorded at least on a monthly basis and any time the flow into the diversion point is substantially changed.

d) Reservoir Outflows & Langemann Gate Locations

LADWP Recommended Alternative Standard: LADWP records some flows such as Reservoir Outflows and at Langemann Gates as a Daily average that is calculated in the field by a RTU[2] unit that records a read (generally every 15 minutes) and computes a daily average to be sent back to the office over a SCADA[3] system. Only the daily averages are kept as part of the permanent record. LADWP would like to see this method of measurement and recording to be considered sufficient to meet the new regulations.

[1] AVFM: Area-velocity-flow meters
[2] RTU: Remote terminal unit
[3] SCADA: Supervisory control and data acquisition system

e) **Diversions turned off for the season**

LADWP turns off and removes the recording equipment for hundreds of stations each winter to protect against freezing.

> **LADWP Recommendation: The hourly data collection requirement should not apply to diversions when flow is turned off through the diversion for the off-season (such as during the winter months for irrigation diversions). Requiring to leave recording equipment at the diversion site (and continue to inspect and collect data) when there is no plan to divert flows for the winter months would be an unreasonable expectation.**

4.) **Installation of Measuring Devices**

Who should be allowed to install or maintain a water measuring device or method? Should a certification process be required for measuring devices or methods to ensure they meet the regulation's accuracy standards? (Concept 11)

SWRCB Staff Recommendations: *The regulation should be flexible to allow qualified individuals to install and maintain water measurement devices that have been lab certified, provided the installation is made in accordance with the protocols specified by the manufacturer.*
Where lab certification is not applicable, field certification of a measurement device or method should require a licensed engineer or other qualified professional.
The regulation should require periodic field inspections to verify the device or method continues to provide measurements meeting the regulation's accuracy standard.
The inspection process could be prioritized based on the size of a diversion or other criteria.

LADWP Recommendations:

LADWP generally agrees with SWRCB staff recommendations, aside from who should be allowed to install water measurement devices, and offers the following input:

a) **Who should be allowed to certify and maintain flow measuring devices?**
SWRCB Staff recommendation for concept 10 does not define "qualified individuals" or "other qualified professionals".
LADWP Recommendation: A qualified professional could consist of registered engineers or trained hydrographers and hydrologists who spend more than 20% of their average work day dealing with flow measurement devices and flow measurement data collection.

b) **Who should be allowed to install flow measuring devices?**
LADWP Recommendation: Anyone should be allowed to install a flow measuring device as long as it is certified by a qualified professional who would be in responsible charge.

c) **What is reasonable frequency for periodic field inspections?**
LADWP Recommendation: Semi-annual field inspection is reasonable to account for seasonal variations, namely the runoff and non-runoff season.

d) **What kind of "evidence" should be provided to the board to demonstrate device functioning properly?**
LADWP Recommendation: For standard devices such as flumes and weirs, record of semi-annual inspection reports confirming flow conditions and that the device conditions are satisfactory should be sufficient. For other devices, perhaps a manual current metering of the flow to confirm the installed device is measuring correctly can be required (if manual current metering is appropriate for the flow conditions).