TO: BOARD OF DIRECTORS

FROM: MICHAEL S. LEBRUN MSL
GENERAL MANAGER

DATE: FEBRUARY 7, 2014

AGENDA ITEM
E-1

FEBRUARY 12, 2014

REVIEW WATER SHORTAGE RESPONSE AND MANAGEMENT PLAN

ITEM

Review draft drought triggers and response actions. [RECOMMEND APPROVE PLAN]

BACKGROUND

Staff is working with members of the Nipomo Mesa Management Area (NMMA) Technical Group to develop a set of drought stage triggers and response actions that will be universally adopted by all purveyor members of the NMMA.

Development of shortage criterion and response plans is a requirement of 2005 Stipulation agreed to by all members of the NMMA. In its 2008 Final Judgment, the court ordered the Stipulation to be implemented. The NMMA Technical Group adopted *Water Shortage Conditions and Response Plan, April 2009* (Attachment A). This Plan defines water shortage condition criteria - Potentially Severe and Severe – that are the cornerstone for the proposed drought stages and response actions.

The 2005 Stipulation and April 2009 Plan require the purveyor members of the NMMA, namely Nipomo CSD, Golden State Water Company, Woodlands Mutual Water Company, and Rural Water Company, to develop response plans in the event Potentially Severe or Severe conditions are triggered.

The management area entered Potentially Severe conditions in 2008. In response to Potentially Severe conditions, the area purveyors instituted voluntary conservation measures. Groundwater pumping across the management area dropped by more than 15% between 2008 and 2011. In 2012 and 2013, dry conditions prevailed across the area while development and the local economy began to recover. Throughout this time, the District aggressively pursued supplemental water sources. Additionally, new development continued to be permitted throughout the area – although the Stipulation specifically lists a moratorium on new development as an action to be considered during Potentially Severe conditions.

In Spring 2013, the index of wells the technical group uses as a criteria for shortage conditions dropped to its lowest level on record and nearly reached Severe condition. The April 2009 plan and 2005 Stipulation specify that should Severe conditions be triggered, Overlying Owners reduce their production to 110% of their collective previous use. The Santa Maria Refinery (Phillps 66) is also required to reduce its groundwater production to 110% of highest previous single year. During Severe conditions, the four purveyor members of the NMMA are required to implement "mandatory conservation measures".

According to NMMA data, the four purveyor members account for 39% of the estimated 11,000 acre-feet of annual groundwater production across the Mesa. For this reason, it is hoped that all groundwater users, upon hearing of the severity of the groundwater condition as measured

and reported by the NMMA and seeing the actions taken by the large urban purveyors, will take action to reduce their demand during Severe conditions as well.

It is proposed that five drought stages are defined based on the Technical Group's established water shortage criterion. Beginning with proposed Stage III, mandatory reductions in groundwater production are specified(see Attached B). Again, the reductions would apply only to the purveyor members of the NMMA.

The NMMA purveyors are unique to each other in their organization and business model; Nipomo CSD is a public water district, Golden State and Rural are private water company, and Woodlands is a mutual water company. For this reason, each entity will be taking independent action to reach the agreed to reductions. None of the purveyors has authority to penalize the other for non-compliance. Ultimately, it is the court that is overseeing the implementation of the stipulation and basin management measures which holds authority over each of the purveyors.

While the proposed triggers and responses have been developed in concert with the other NMMA purveyors, each entity is working to develop its own specific drought response program.

In addition to reducing groundwater production, staff is looking for guidance on how and when processing requests for new water service would be impacted during advanced stages of drought. Capacity charges collected from new water customers provide a major funding source for supplement water development – both planning and construction. However developing water resources projects can take decades and allowing new customers to join the existing water system during drought may be confusing and/or controversial to existing customers who are being asked to reduce water use.

New connections to the District's water system follow a process that requires:

- Application for service
- Conditional agreement (Intent to Serve)
- Commitment to serve (Will Serve); and
- Physical connection (water meter is set and account is activated).

Your Board may consider an escalating approach to suspending new water service connections as follows:

Drought Stage	New Water Service Allowance
I and II	Normal application processing
III	No new applications accepted, active applications continue processing, new meters set
IV	Cease processing applications. Meters set only for existing Will Serves (all fees previously paid and all conditions of connection previously met)
V	No new water service allowed

The District supplies water to a fraction of the area overlying the local groundwater source and has no authority to halt development outside its services boundary. For this reason, your Board may consider coordinating with the County and the NMMA to adopt area-wide policies to address drought conditions and require new supplemental water to serve all new water demands under all conditions.

Once the Board approves a water shortage response and management plan, the plan will be provided to the District's rate consultant who will draft a set of drought rates intended to solicit reduction in water sales and in turn result in the desired reduction in groundwater pumping. A proposed rate structure will be brought before the District's Finance and Audit Committee and then to the full Board. Once a drought rate structure is agreed to by the Board, a rate hearing will be scheduled. The process will include a 45-day public notice, mail protest ballot, and public hearing ("Proposition 218 Hearing").

FISCAL IMPACT

Reducing groundwater production during drought equates to reducing water sales and income to the water fund. Additionally, the cost of providing water service during drought typically increases due to the administrative burden of implementing new rate structures. When active enforcement of detailed policy is required, cost can increase drastically. A point of rate volatility can be reached where high rates drive usage lower than expected, which in turn requires further rate increases to maintain solvency of the water fund.

STRATEGIC PLAN

Strategic Plan Goal 1.1 – Protect, Enhance, and Assess available Water Supplies
Strategic Plan Goal 6.1 – Operate all enterprise funds to be financially sound

RECOMMENDATION

1. By motion and roll call vote, approve the Water Shortage Response and Management Plan.
2. Consider timing for suspension of new water connections, direct staff, and/or by motion and roll call vote approve criteria for suspension of new water service connections during drought conditions.

ATTACHMENT

A. NMMA Water Shortage Conditions and Response Plan, April 2009
B. Draft NCSD Water Shortage Response and Management Plan – February 7, 2014 revision

FEBRUARY 12, 2014

ITEM E-1

ATTACHMENT A

FINAL 4/13/09

Nipomo Mesa Management Area

Water Shortage Conditions and Response Plan

Nipomo Mesa Management Area
Technical Group

April 2009

The Santa Maria basin was divided into three management areas as a result of the adjudication of the Santa Maria groundwater basin. The June 30, 2005 Stipulation ("Stipulation"), the terms of which are incorporated into the Court's Judgment dated January 25, 2008 ("Judgment"), established the boundaries of the Nipomo Mesa Management Area ("NMMA"), and provided for a technical group (NMMA Technical Group) to oversee management of the NMMA. As part of the Stipulation, the Technical Group was tasked to develop a Monitoring Program that shall include the setting of well elevations and groundwater quality criteria that trigger the responses set forth in Paragraph VI(D) of the Stipulation.

The NMMA Technical Group prepared a Monitoring Program dated August 5, 2008 that was submitted to the Court in accordance with the Judgment. This Water Shortage Conditions and Response Plan is an addendum to the Monitoring Program and completes the Monitoring Program requirements as defined in the Stipulation.

This document is divided into three sections:

I. Water Shortage Conditions Nipomo Mesa Management Area,
II. Response Plan for Potentially Severe and Severe Water Shortage Conditions, and
III. Discussion of Criteria for Potentially Severe and Severe Water Shortage Conditions.

I. Water Shortage Conditions Nipomo Mesa Management Area

Water shortage conditions are characterized by criteria designed to reflect that groundwater levels beneath the NMMA as a whole are at a point at which a response would be triggered to avoid further declines in groundwater levels (Potentially Severe), and to declare that the lowest historic groundwater levels beneath the NMMA as a whole have been reached or that conditions constituting seawater intrusion have been reached (Severe).

Groundwater levels beneath the NMMA as a whole impact the cost of pumping, the quality of groundwater pumped, and the overall flow of fresh water to the ocean that balances potential seawater intrusion. Lowering of groundwater levels below certain thresholds is to be curtailed by importing supplemental water, increasing conservation, and decreasing consumptive use of groundwater produced.

The NMMA Technical Group has developed criteria for declaring the existence of Potentially Severe and Severe Water Shortage Conditions. These criteria represent the conditions in both coastal and inland wells, and depend upon measurements of groundwater elevation and groundwater quality.

While this Response Plan relies on quantitative measurements of groundwater levels, the Technical Group acknowledges these measurements are subject to many variables so that

any given measurement may only be accurate within a percentage range; no given measurement is exact or precise. For example, water level measurements obtained from groundwater production wells may be influenced by a range of factors, including but not limited to temperature, the method, protocol, and equipment used to obtain the measurement, the condition of the well, the time allowed for water levels in a previously producing well to equilibrate, and any nearby wells that remain pumping while the measurements are taken. As well, the historic data used as the basis to set action levels for Severe and Potentially Severe Water Shortage Conditions may be influenced by these and other factors. Finally, while there is sufficient historical data to reliably set Severe and Potentially Severe Water Shortage Conditions criteria, as more data is gathered pursuant to the NMMA Monitoring Plan, the Technical Group expects its understanding of NMMA characteristics will become increasingly more sophisticated and accurate. As a result of these considerations, the Technical Group acknowledges and expects that it will recommend modifications to the Severe and Potentially Severe Water Shortage Conditions criteria as more data are obtained on a consistent basis and as the Technical Group's understanding of the NMMA characteristics improves over time.

Seawater intrusion is a condition that could permanently impair the use of the principal producing aquifer to meet water demands of the NMMA. For coastal areas, the criteria described here are set either to indicate conditions that, if allowed to persist, may lead to seawater intrusion or increasing chloride concentrations, or that actual seawater intrusion has occurred.

Monitoring Wells

As with the NMMA Monitoring Plan, primary data for this Water Shortage Conditions and Response Plan is derived from a select group of wells located within the NMMA. Identification of these wells and the selection criteria are as follows.

Coastal sentinel wells, installed by the Department of Water Resources in the 1960s, are monitored to characterize any condition for the advancement of seawater into the freshwater aquifer. Specifically, the groundwater elevation and concentration of indicator constituents are evaluated to determine the threat or presence of seawater intrusion to the fresh water aquifer. These coastal monitoring wells are as follows:

Coastal Well	Perforation Elevation (ft msl)	Aquifer
11N/36W-12C1	-261 to -271	Paso Robles
11N/36W-12C2	-431 to -441	Pismo
11N/36W-12C3	-701 to -711	Pismo
12N/36W-36L1	-200 to -210	Paso Robles
12N/36W-36L2	-508 to -518	Pismo

For inland areas, criteria for water shortage conditions are based on annual Spring groundwater elevation measurements made in key wells located inland from the coast (the "Key Wells Index"). The inland Key Wells are as follows:

Key Wells
11N/34W-19
11N/35W-5
11N/35W-8
11N/35W-9
11N/35W-13
11N/35W-22
11N/35W-23
12N/35W-33

Potentially Severe Water Shortage Conditions

The Stipulation, page 25, defines Potentially Severe Water Conditions as follows:

Caution trigger point (Potentially Severe Water Shortage Conditions)[1]

(a) Characteristics. The NMMA Technical Group shall develop criteria for declaring the existence of Potentially Severe Water Shortage Conditions. These criteria shall be approved by the Court and entered as a modification to this Stipulation or the judgment to be entered based upon this Stipulation. Such criteria shall be designed to reflect that water levels beneath the NMMA as a whole are at a point at

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[1] The multiple citations to and partial restatements of the Stipulation are intended to provide context to this Water Shortage Conditions and Response Plan. However, neither the restatement of a portion of the Stipulation herein, nor the omission of a portion of a quotation from the Stipulation, is intended to override or alter the mutual obligations and requirements set forth in the Stipulation.

which voluntary conservation measures, augmentation of supply, or other steps may be desirable or necessary to avoid further declines in water levels.

Inland Areas: The NMMA Technical Group set the criteria for a Potentially Severe Water Shortage Condition to the elevation of groundwater as determined by the Key Wells Index. If the Spring groundwater elevations indicate that the Key Wells Index is less than 15 feet above the Severe Water Shortage criterion (equal to **31.5 ft msl**[2]), the Technical Group will notify the Monitoring Parties of the current data, and evaluate the probable causes of this low level as described below. If the Key Wells Index continues to be lower than **31.5 ft msl** in the following Spring, the Technical Group will report to the Court in the Annual Report that Potentially Severe Water Shortage Conditions are present and provide its recommendations regarding the appropriate response measures. During the period a Potentially Severe Water Shortage Condition persists, the NMMA Technical Group shall include in each Annual Report an assessment of the hydrologic conditions and any additional recommended response measures. A discussion of how the groundwater elevations criteria were determined is presented in discussion Section III. Potentially Severe Water Shortage Conditions will no longer be considered to exist when: 1) the Key Well Index is above the Potentially Severe criterion of 31.5 ft msl for two successive Spring measurements, or 2) the Key Well Index is 5 ft or higher above the Potentially Severe criterion (which calculates to 36.5 ft msl) in any Spring measurement. Alternatively, the NMMA Technical Group may determine that the Potentially Severe Water Shortage Condition no longer exists when the Key Well Index is above the Potentially Severe criterion of 31.5 ft msl and conditions warrant this conclusion.

The Key Well Index criteria for Potentially Severe Water Shortage Conditions may be modified in the future by the Technical Group as more data are developed on the accuracy of measured data and Key Well construction or condition.

Coastal Areas: The NMMA Technical Group set the coastal criteria for a Potentially Severe Water Shortage Condition using both groundwater surface elevation and groundwater quality measured in the coastal monitoring wells, as presented in the table below. The groundwater elevation criteria are discussed in Section III. The groundwater quality portion of the coastal criteria is set at **250 mg/L** chloride. There is no water quality criterion for the shallow alluvium. Potentially Severe Water Shortage Conditions are determined if either the Spring groundwater elevation drops below the criteria elevation, or chloride concentration exceeds the criteria concentration, in any of the coastal monitoring wells subject to the Response Plan data analysis and verification described below.

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[2] The decimal point does not imply the accuracy of the historical low calculation.

The NMMA Technical Group will report to the Court in the Annual Report that Potentially Severe Water Shortage Conditions are present and provide its recommendations regarding the appropriate response measures. During the period a Potentially Severe Water Shortage Condition persists, the Technical Group shall include in each Annual Report an assessment of the hydrologic conditions and any additional recommended response measures.

When Spring groundwater elevations or groundwater quality subsequently improves so that the criteria threshold for two successive measurements are no longer exceeded, Potentially Severe Water Shortage Conditions will no longer be considered to exist. Alternatively, the Technical Group may determine that the Potentially Severe Water Shortage Condition no longer exists when the Spring groundwater elevation or groundwater quality criteria threshold are no longer exceeded in a single measurement and conditions warrant this conclusion.

The coastal threshold criteria for Potentially Severe Water Shortage Conditions may be modified in the future by the Technical Group as more data are developed on the accuracy and extent of the coastal data, including the potential for inclusion of additional coastal monitoring wells into the Monitoring Plan.

Criteria for Potentially Severe Water Shortage Conditions, Coastal Area

Well	Perforation Elevation (ft msl)	Aquifer	Elevation Criteria (ft msl)	Chloride Concentration Criteria (mg/L)
11N/36W-12C1	-261 to -271	Paso Robles	5.0	250
11N/36W-12C2	-431 to -441	Pismo	5.5	250
11N/36W-12C3	-701 to -711	Pismo	9.0	250
12N/36W-36L1	-200 to -210	Paso Robles	3.5	250
12N/36W-36L2	-508 to -518	Pismo	9.0	250

Severe Water Shortage Conditions

The Stipulation, page 25, defines Potentially Severe Water Conditions as follows:

Mandatory action trigger point (Severe Water Shortage Conditions)

(a) Characteristics. The NMMA Technical Group shall develop the criteria for declaring that the lowest historic water levels beneath the NMMA as a whole

have been reached or that conditions constituting seawater intrusion have been reached. These criteria shall be approved by the Court and entered as a modification to this Stipulation or the judgment to be entered based upon this Stipulation.

Inland Areas: A Severe Water Shortage Condition exists when the Key Wells Index is less than **16.5 feet msl**, using Spring groundwater elevation measurements. The Mandatory Response Plan will remain in effect until groundwater elevations as indicated by the Key Wells Index are 10 ft above the Severe criterion (which calculates to **26.5 feet msl**). Alternatively, the NMMA Technical Group may determine that the Severe Water Shortage Condition no longer exists when the Key Well Index is above the Severe criterion of 16.5 ft msl and conditions warrant this conclusion.

The criteria for Severe Water Shortage Conditions may be modified in the future by the Technical Group as more data are developed on the accuracy of measured data and Key Well construction or condition.

Coastal Areas: The NMMA Technical Group set the coastal criteria for Severe Water Shortage Condition to the occurrence of the chloride concentration in groundwater greater than the drinking water standard in any coastal monitoring well. Thus, the coastal criterion for a Severe Water Shortage Condition is the chloride concentration exceeding **500 mg/L** in any of the coastal monitoring wells. If the criterion is exceeded, an additional sample will be collected and analyzed from that well as soon as practicable to verify the result. The response triggered by the measurement will not be in effect until the laboratory analysis has been verified. If the chloride concentration subsequently improves above the criterion threshold for two successive Spring measurements, Severe Water Shortage Conditions will no longer be considered to exist. Alternatively, the Technical Group may determine that the Severe Water Shortage Condition no longer exists when groundwater quality criteria threshold are no longer exceeded in a single measurement and conditions warrant this conclusion.

The coastal threshold criteria for Severe Water Shortage Conditions may be modified in the future by the Technical Group as more data are developed on the accuracy and extent of the coastal data, including the potential for inclusion of additional coastal monitoring wells into the Monitoring Plan.

II. Response Plan for Potentially Severe and Severe Water Shortage Conditions

("Response Plan")

Introduction

This Response Plan is triggered by criteria designed to reflect either Potentially Severe Water Shortage Conditions or Severe Water Shortage Conditions. Nothing in this Response Plan is intended to, nor shall operate so as to reduce, limit or change the rights, duties, and responsibilities of the parties to this Response Plan as those rights, duties, and responsibilities are stated in the Stipulation and the Judgment.

1. Potentially Severe Water Shortage Conditions

The responses required by the Stipulation are set forth as follows:

VI(D)(1b) Responses [Potentially Severe]. *If the NMMA Technical Group determines that Potentially Severe Water Shortage Conditions have been reached, the Stipulating Parties shall coordinate their efforts to implement voluntary conservation measures, adopt programs to increase the supply of Nipomo Supplemental Water[3] if available, use within the NMMA other sources of Developed Water or New Developed Water, or implement other measures to reduce Groundwater use.*[4]

VI(A)(5). ...In the event that Potentially Severe Water Shortage Conditions or Severe Water Shortage Conditions are triggered as referenced in Paragraph VI(D) before Nipomo Supplemental Water is used in the NMMA, NCSD, [GSWC[5]], Woodlands and RWC agree to develop a well management plan that is acceptable to the NMMA Technical Group, and which may include such steps as imposing conservation measures, seeking sources of supplemental water to serve new customers, and declaring or obtaining approval to declare a moratorium on the granting of further intent to serve or will serve letters.[6]

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[3] A defined term in the parties' Stipulation. The following terms, when used in this Response Plan, are terms whose definitions are found in the Stipulation and that definition is specifically incorporated herein and adopted as the meaning of these terms: "Developed Water," "Groundwater," "Native Groundwater," "New Developed Water," "Nipomo Supplemental Water," "Nipomo Supplemental Water Project," "Stipulating Parties" and "Year."

[4] Ibid at p.25.

[5] Name changed from Southern California Water Company (SCWC) in 2005.

[6] Ibid at p.22.

The Response Plan shall be implemented when the Potentially Severe Water Shortage Conditions occur within the NMMA. The Response Plan is a combination of technical studies to better determine the nature of the threat, water supply and demand actions to mitigate overall conditions in the NMMA, and compliance with the Stipulation and the Judgment. The Response Plan includes, where applicable, the following:

1. Coastal Groundwater Elevation and/or Groundwater Quality Conditions:
   a. Verify that the measurement is not an anomaly by retesting at the site(s) of exceedence as soon as practicable and again in the following month.
   b. Characterize the extent of either low groundwater elevation(s) or increased chloride concentration(s) near the coast, which might include adding and/or installing additional monitoring points.
   c. Identify, to the extent practical, factors that contributed to the low groundwater elevations in coastal monitoring wells.
   d. Investigate whether increased chloride concentration(s) indicate intrusion of seawater or other causes through chemistry/geochemistry studies.

2. Inland Groundwater Elevation Condition:
   a. Verify that the measurement is not an anomaly by retesting at the site(s) of exceedence as soon as practicable and again in the following month.
   b. Characterize the extent of the area where groundwater elevation(s) have decreased sufficiently to lower the Key Wells Index.
   c. Identify factors that contributed to the low groundwater elevation(s) in coastal monitoring wells.

3. Implement sections VI(D)1(b) and VI(A)(5) of the Stipulation, as reproduced above.

4. When either the groundwater quality or groundwater elevation conditions are confirmed, the following provisions apply to the Response Plan for Potentially Severe Water Shortage Conditions:

   a. ConocoPhillips shall have the right to the reasonable and beneficial use of Groundwater on the property it owns as of the date of the Stipulation located in the NMMA without limitation.[7]

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[7] Ibid at p. 23.

b. Overlying Owners that are Stipulating Parties that own land located in the NMMA as of the date of the Stipulation shall have the right to the reasonable and beneficial use of Groundwater on their property within the NMMA without limitation.[8]

c. Woodlands shall not be subject to restriction in its reasonable and beneficial use of Groundwater, provided it is concurrently using or has made arrangements for other NMMA parties to use within the NMMA, the Nipomo Supplemental Water allocated to Woodlands. Otherwise, Woodlands shall be subject to reductions equivalent to those imposed on NCSD, GSWC, and RWC.[9]

2. *Severe Water Shortage Conditions*

The responses required by the Stipulation are set forth following:

VI(D)(1b) Responses [Severe]. *As a first response, subparagraphs (i) through (iii) shall be imposed concurrently upon order of the Court. The Court may also order the Stipulating Parties to implement all or some portion of the additional responses provided in subparagraph (iv) below.*

(i) For Overlying Owners other than Woodlands Mutual Water Company and ConocoPhillips, a reduction in the use of Groundwater to no more than 110% of the highest pooled amount previously collectively used by those Stipulating Parties in a Year, prorated for any partial Year in which implementation shall occur, unless one or more of those Stipulating Parties agrees to forego production for consideration received. Such forbearance shall cause an equivalent reduction in the pooled allowance. The base Year from which the calculation of any reduction is to be made may include any prior single Year up to the Year in which the Nipomo Supplemental Water is transmitted. The method of reducing pooled production to 110% is to be prescribed by the NMMA Technical Group and approved by the Court. The quantification of the pooled amount pursuant to this subsection shall be determined at the time the mandatory action trigger point (Severe Water Shortage Conditions) described in Paragraph VI(D)(2) is reached. The NMMA Technical Group shall determine a technically responsible and consistent method to determine the pooled amount and any individual's contribution to the pooled amount. If the NMMA Technical Group cannot agree upon a technically responsible and consistent method to determine the pooled amount, the matter may be determined by the Court pursuant to a noticed motion.

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[8] Ibid.
[9] Ibid at p. 23.

(ii) ConocoPhillips shall reduce its Yearly Groundwater use to no more than 110% of the highest amount it previously used in a single Year, unless it agrees in writing to use less Groundwater for consideration received. The base Year from which the calculation of any reduction is to be made may include any prior single Year up to the Year in which the Nipomo Supplemental Water is transmitted. ConocoPhillips shall have discretion in determining how reduction of its Groundwater use is achieved.

(iii) NCSD, RWC, SCWC, and Woodlands (if applicable as provided in Paragraph VI(B)(3) above) shall implement those mandatory conservation measures prescribed by the NMMA Technical Group and approved by the Court.

(iv) If the Court finds that Management Area conditions have deteriorated since it first found Severe Water Shortage Conditions, the Court may impose further mandatory limitations on Groundwater use by NCSD, SCWC, RWC and the Woodlands. Mandatory measures designed to reduce water consumption, such as water reductions, water restrictions, and rate increases for the purveyors, shall be considered.

(v) During Severe Water Shortage Conditions, the Stipulating Parties may make agreements for temporary transfer of rights to pump Native Groundwater, voluntary fallowing, or the implementation of extraordinary conservation measures. Transfer of Native Groundwater must benefit the Management Area and be approved by the Court.[10]

The following Response Plan for Severe Water Shortage Conditions is premised on the assumption that the Nipomo Supplemental Water Project within the NMMA is fully implemented and yet Severe Water Shortage Conditions exist.

If either the coastal or inland criteria occur for Severe Water Shortage Conditions within the NMMA, a Response Plan shall be implemented. The Response Plan is a combination of technical studies to better determine the nature of the threat, water supply and demand actions to mitigate overall conditions in the NMMA that triggered a Response Plan, and compliance with the terms of the Stipulation and the Judgment. It includes, where applicable, the following NMMA Technical Group actions:

1. Groundwater Quality Condition:
   a. Verify data.

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[10] Ibid at pp. 25-27.

b. Investigate whether increased chloride concentration(s) indicate intrusion of seawater or result from other causes through chemistry/geochemistry studies.

c. Characterize the extent of the increase in chloride concentration(s), which may include adding additional monitoring points and/or installing new monitoring points.

d. Given information from sections (a) and (b) above, identify the factors that may have caused the groundwater quality degradation.

2. Groundwater Elevation Condition:

a. Verify that the measurement is not an anomaly by retesting at the site(s) of exceedence as soon as practicable and again in the following month.

b. Characterize the extent of the area where groundwater elevation(s) have decreased sufficiently to lower the Key Wells Index.

c. Identify the factors that contributed to the low groundwater elevation(s) in key wells.

3. As a first response, the NMMA Technical Group shall request the Court to order concurrently sections VI(D)(1b)(i) through (iii) of the Stipulation, as reproduced above.

4. Prepare a semi-annual report on the trend in chloride concentration for the Court. If chloride concentration(s) continue to increase at the coastline, request the Court to implement section VI(D)(1b)(iv) of the Stipulation, as reproduced above.

5. During Severe Water Shortage Conditions, the Stipulating Parties may make agreements for temporary transfer of groundwater pumping rights in accordance with section VI(D)(1b)(v) of the Stipulation, as reproduced above.

III. Discussion of Criteria for Potentially Severe and Severe Water Shortage Conditions

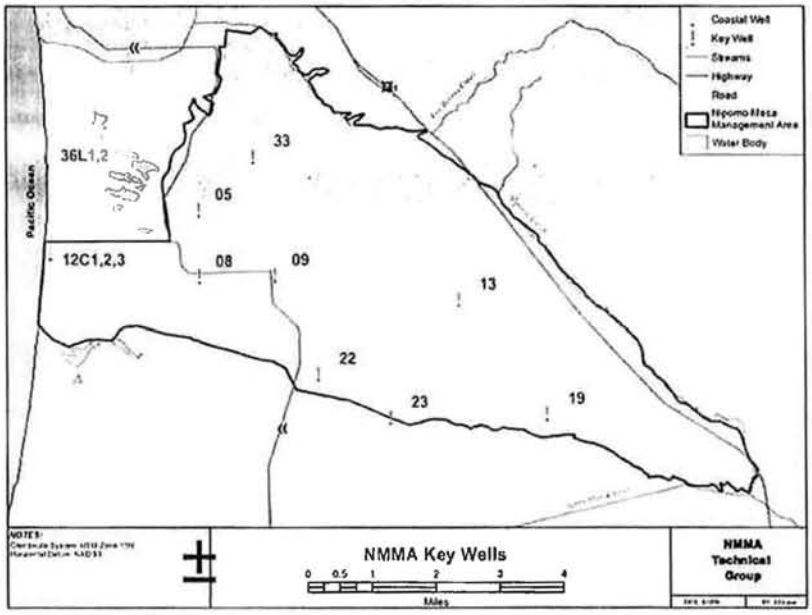
1. Water Shortage Conditions as a Whole

The Stipulation established that the Severe Water Shortage Conditions is characterized by the lowest historic groundwater levels beneath the NMMA as a whole. The NMMA Technical Group selected the data from eight inland key wells to represent the whole of the NMMA. These wells are listed in the following tabulation and are shown on the

figure entitled "NMMA Key Wells". The average Spring groundwater elevation of these key wells is used to calculate the Key Wells Index ("Index").

Key Wells For Inland Criterion

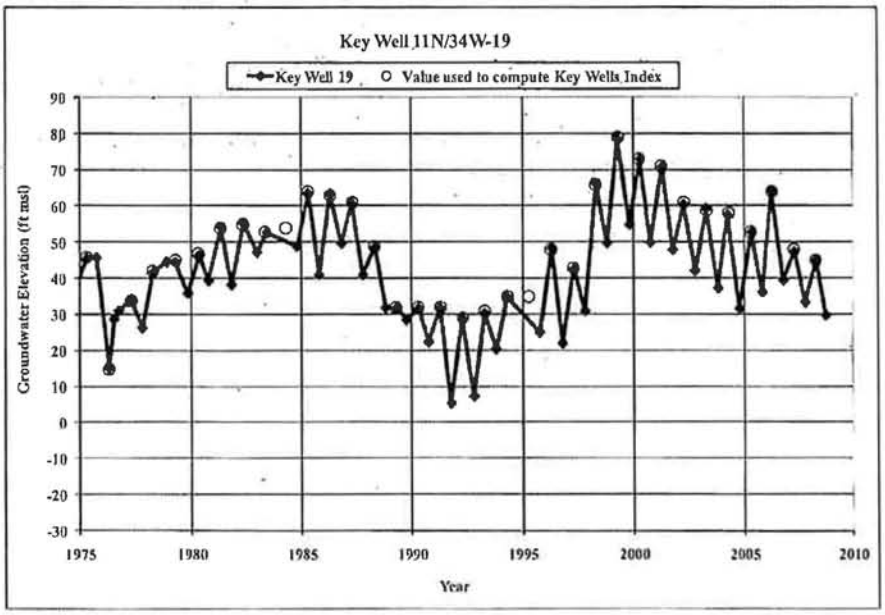
11N/34W-19
11N/35W-5
11N/35W-8
11N/35W-9
11N/35W-13
11N/35W-22
11N/35W-23
12N/35W-33

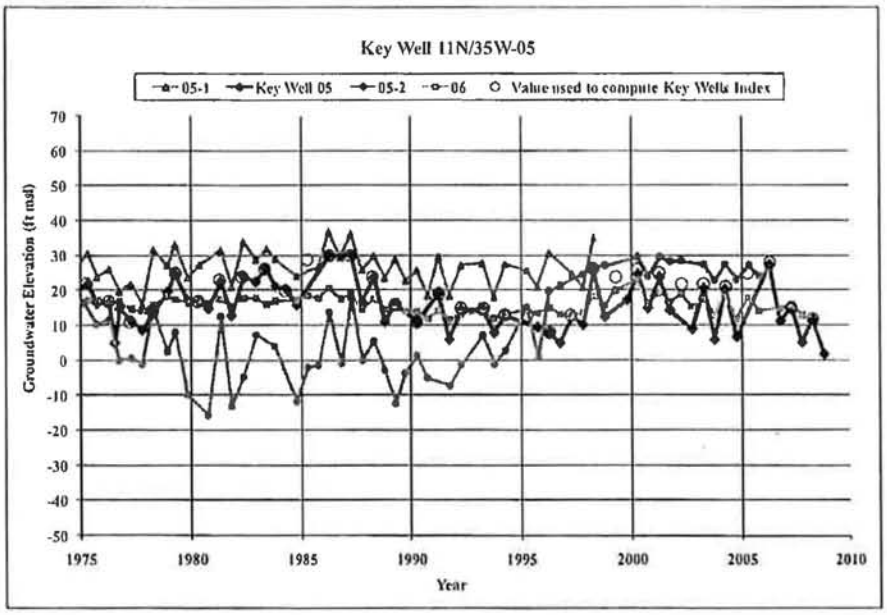


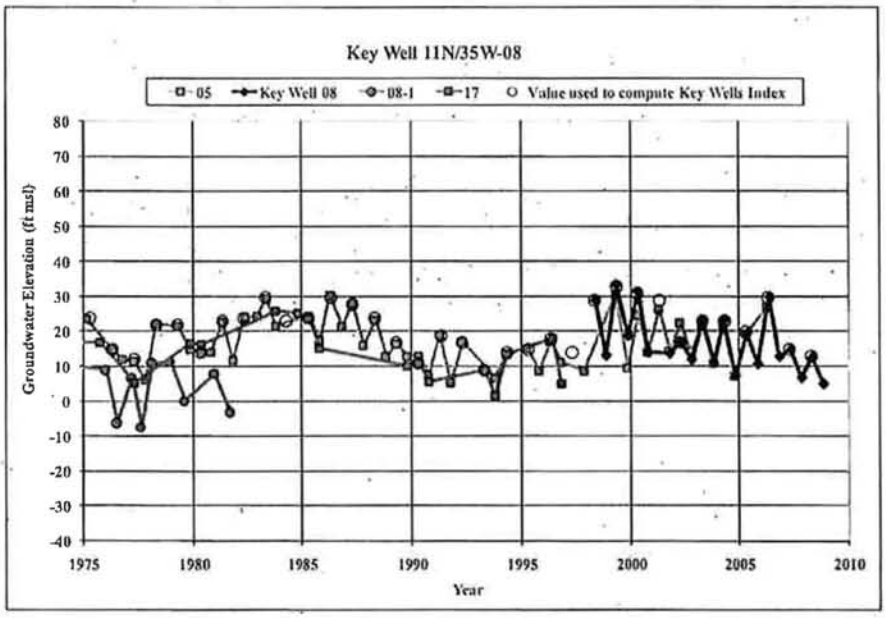
The Index was calculated annually using Spring groundwater elevation measurements from 1975 to 2008. The Key Wells were selected to represent various portions of the groundwater basin within the NMMA. The following charts display the hydrographs for each Key Well and surrounding wells. The open circles represent the actual Spring value for that year or a correlation of that value for each year that was used to compute the Index.

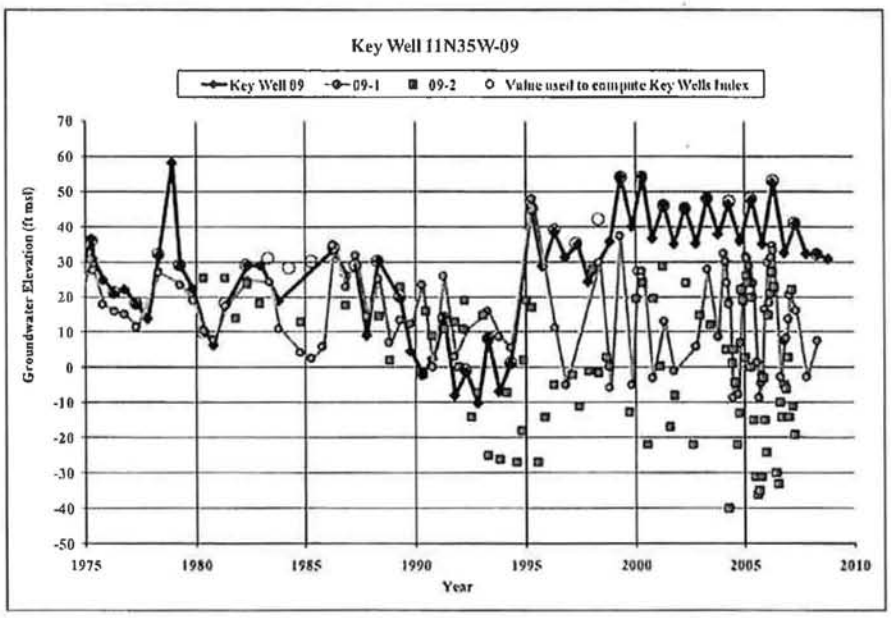
When there was no Spring groundwater elevation measurement for a particular year, the value was determined by either 1) interpolating between Spring measurements in adjacent years or 2) computing the Spring elevation by taking the Fall measurements in adjacent years and increasing the value by the typical increase in groundwater elevations

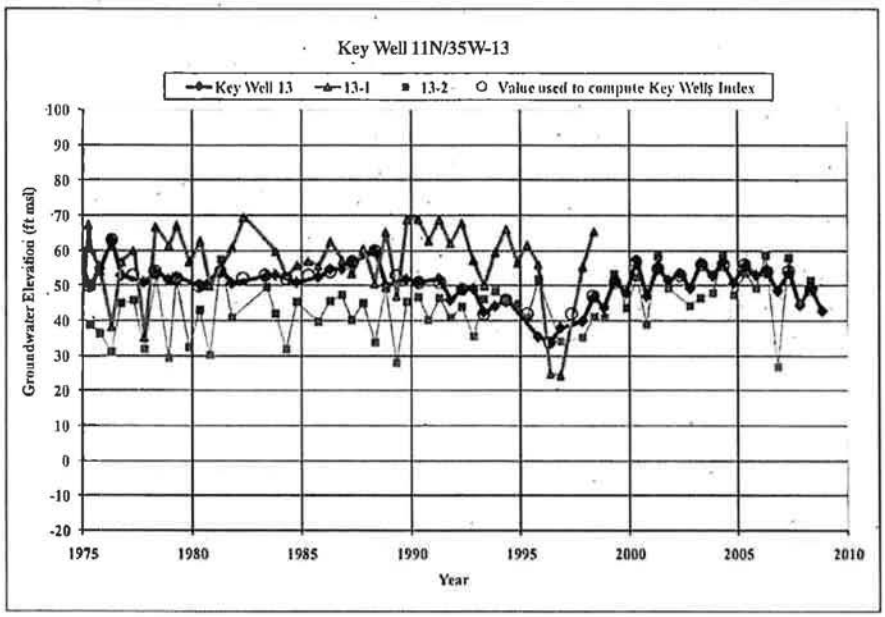
between Spring and Fall measurements in that well. If there is a significant data gap in the record for a particular well (e.g., 22 well below), a nearby well was used to fill the gap.

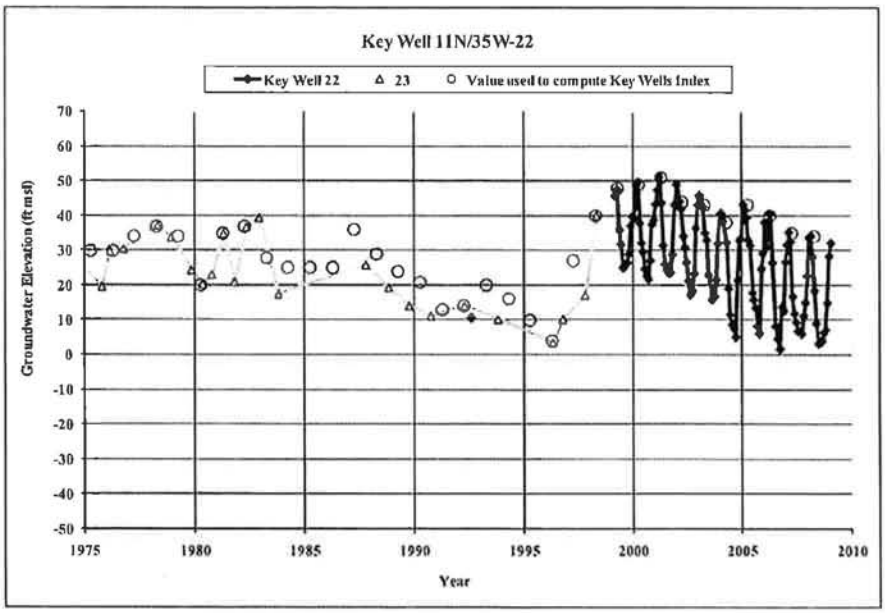


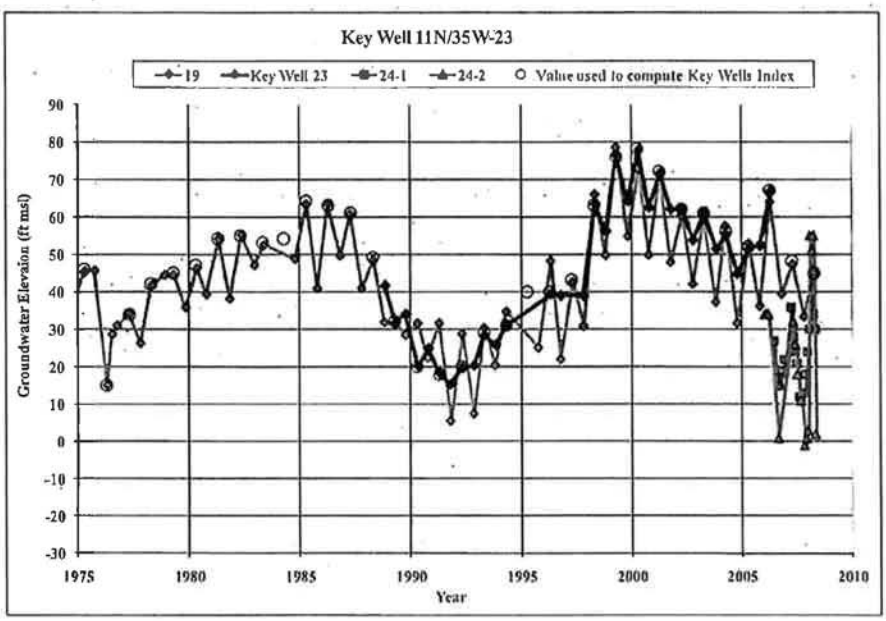


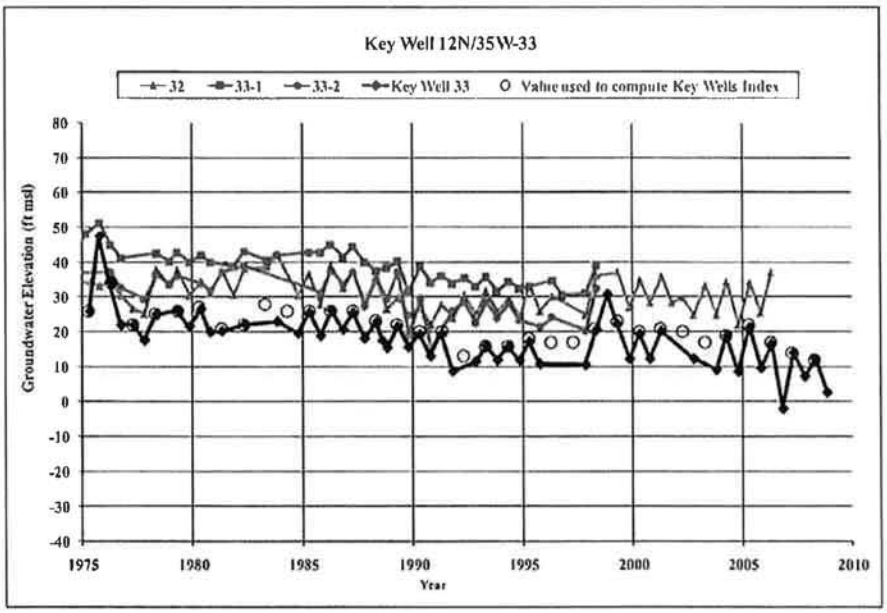












In selecting the eight key wells, the following criteria were applied so that the wells generally represent the NMMA as a whole:

(1) The wells are geographically distributed.

(2) No single well overly influences the Index.

The first criterion was met in the selection of the wells. To meet the second criterion, groundwater elevations from each well were normalized so that any well where elevations were on the average higher or lower than the other wells did not overly influence the overall Index. This normalization was accomplished by dividing each Spring groundwater elevation measurement by the sum of all the Spring groundwater elevation data for that well.

The Index was defined for each year as the average of the normalized Spring groundwater data from each well. The lowest value of the Index could be considered the "historical low" within the NMMA. The sensitivity of that "historical low" was tested by examining the effect of eliminating a well from the Key Wells Index. Eight separate calculations of the Index from 1975 to 2008 were made by excluding the data from one of the eight wells, and computing the average value for each year from the remaining wells' normalized Spring groundwater data.

The criterion for a Potentially Severe Water Shortage Conditions should provide for enough time before the Severe criterion occurs to allow pumpers time to implement voluntary measures to mitigate a falling Key Wells Index. Based on the assumption that two years is adequate for this early warning, then the historical Index can be used to determine the potential rate of fall of the Index. The maximum drop in the historical Index over a two-year period was about 15 feet, during the last two years of the 1986-1991 drought. Thus, the criterion for Potentially Severe Water Shortage Conditions is set at 15 feet above the Severe Water Shortage Condition criterion, which calculates to **31.5 ft msl**. The Key Wells Index for all eight wells, which will be computed each year in the future, will be compared to the Potentially Severe and Severe criteria discussed above. The Index through 2008 is shown below.

FEBRUARY 12, 2014

ITEM E-1

ATTACHMENT B

DRAFT NCSD WATER SHORTAGE RESPONSE AND MANAGEMENT PLAN

STAGE	TRIGGER	RESPONSE*	DE-TRIGGER
I	All times	Voluntary conservation measures and outreach	Not Applicable.
II	Potentially Severe Water Shortage exists	More aggressive voluntary conservation and outreach.	Potentially Severe Water Shortage does not exist.
III	Severe Water Shortage exists	Mandatory 30% reduction in production (Equating to a 752 acre foot reduction in production on an annual basis)	Severe Water Shortage does not exist for >2 years.**
IV	Severe Water Shortage exists for >1YEAR or is triggered by both the Key Wells Index and the Coastal Criterion.	Mandatory 50% reduction in production (Equating to a 1,254 acre foot reduction in production on an annual basis)	Severe Water Shortage does not exist.
V	Severe Criterion for >2 years with BOTH triggers (Key Wells Index and Coastal Criterion).	Mandatory 60% reduction in production (Equating to a 1,504 acre foot reduction in production on an annual basis)	Severe Water Shortage does not exist.

* This is a general descriptor. Detailed response to meeting the goal will be defined in subsequent work efforts.

** The Nipomo Mesa Management Area (NMMA) Technical Group may determine Severe Water Shortage Conditions no longer exist when groundwater quality criteria threshold are no longer exceeded in a single measurement.

General Notes

1. Potentially Severe conditions, Severe Conditions, Key Wells Index, and Coastal Criterion are as defined in the NMMA Technical Group, Water Shortage Conditions Response Plan, April 2009. A non-exhaustive summary of the criterion is provided below:

Potentially Severe Water Shortage Conditions	***Severe Water Shortage Conditions***
• *Key Wells Index less than 31.5 ft msl*	• *Key Wells Index is less than 16.5 ft. msl*
• *Greater than 250 mg/l chloride in any NMMA coastal monitoring well*	• *Greater than 500 mg/l chloride in any NMMA coastal monitoring well*

2. Reduction goals are applicable to production from the Paso Robles aquifer zone underlying the mesa. They do not apply to production from the perched aquifer zones.
3. Reduction goals are a percentage of average annual production volumes for the five calendar years prior to the first year Nipomo Supplemental Water is delivered. NCSD's 2009-2013 average (2507 AFY) is used in the table above.
4. The three other NMMA water purveyors are working on meeting similar goals and will implement programs to meet the same reduction targets as NCSD.
5. If a drought Stage III or higher is in effect, the Managers of NMMA water agencies will meet monthly to review production totals and coordinate conservation efforts.

Revision: February 7, 2014