



RESOURCE MANAGEMENT AGENCY PLANNING & BUILDING

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MEMORANDUM

DATE: August 23, 2013

TO: Madera County Planning Commission

FROM: Norman L. Allinder, Planning Director

RE: Workshop on Proposed Policy Governing Groundwater Consumption and Recharge for Large Developments

The Madera County Engineering Department has been working with the Groundwater Advisory Commission to formulate a policy to govern groundwater consumption and recharge for large development projects. The Groundwater sub-committee has had several workshops in collaboration with engineers, developers, farmers, City Agencies, Irrigations Districts, Water Districts, and outside legal counsel to draft the proposed policy. The Engineering Department has this proposal tentatively scheduled to go before the Board of Supervisors for direction on September 17, 2013.

This item is scheduled as a workshop for the Planning Commission to review and discuss the proposal being formulated by the Groundwater Advisory Commission.

PROPOSED POLICY GOVERNING GROUNDWATER CONSUMPTION AND RECHARGE FOR LARGE DEVELOPMENTS

Introduction

A substantial portion of the water utilized in Madera County is groundwater. Because the reliable supplies of surface water available within the County are not expected to grow (and are in fact likely to decrease due to reallocations of San Joaquin River water to meet environmental requirements), reliance on groundwater is expected to increase as the County experiences growth in the coming decades.

Groundwater within the County is already in a state of overdraft, and it is imperative that the County's groundwater resources be preserved and protected to ensure that future generations will have adequate water supplies. New urban development in the County that relies in whole or in part on groundwater represents a particular challenge to groundwater management, in that development is important to the County's economic viability while creating a firm water demand that must be supplied during all shortage conditions.

This Policy addresses groundwater use by large scale developments as a first step in addressing the longer-term issues raised by groundwater use in the County and in protecting the sustainable yield of the County's aquifers.

Application

The Policy applies only to developments in the unincorporated areas of the County subject to Water Code Section 10910 & 10912 (SB 610) and Government Code Section 65857.5 & 66473.7 (SB 221) that are seeking entitlements, permits or other development approvals from the County ("Entitlements"). The developments to which this Policy applies are referred to herein as "Large Developments."

Goal and Purpose of Policy

The goal of this Policy is to ensure that Large Developments in the County have no long-term adverse impact on the County's groundwater resources by contributing to or exacerbating overdraft, and this Policy is to be so interpreted.

The purpose of this Policy is to establish a countywide Groundwater Recharge Program (Program) that will create the framework for imposing groundwater recharge fees and volumetric surcharges on Large Development to fund activities and programs to perform groundwater recharge and replenishment. The Program activities may include, but not be limited to, the following:

- Acquisition of surface water rights, contractual rights to surface water, and surface water supplies.

- Development of and/or participation in groundwater recharge facilities.
- Reconfiguration of storm water facilities to retain as much storm water as possible within the County.
- Enhancement of cooperative programs with local water management agencies and companies.
- Development of more efficient water delivery systems.
- Groundwater level monitoring.
- Groundwater management and planning.

The County intends that Large Developments will comply with the County's net zero-balance criteria, and that those developments will, on a long-term average annual basis, only consume their proportionate share of the "sustainable yield" of the groundwater basin underlying the development as determined by the County. For purposes of this Policy, a Large Development's proportionate share of the "sustainable yield" of the groundwater basin, subbasin, or zone within a sub basin as defined by the Updated Groundwater Management Plan (GWMP), underlying the development will be calculated on a per acre basis in accordance with the procedures described on the attached Exhibit A.

Requirements

All Entitlements for Large Development issued after the date this Policy is adopted will be conditioned on compliance with this Policy. Compliance with this Policy does not guaranty the issuance of Entitlements for a Large Development, and the County reserves all of its discretionary authority with respect to the review of Large Developments and the approval, denial and conditioning of Entitlements.

The County will establish a groundwater recharge fee to be imposed on each parcel in a new Large Development when a building permit is issued (the "Groundwater Recharge Fee"). The Groundwater Recharge Fee will be in an amount determined by the County in its sole discretion designed to achieve the goals of this Policy when combined with the other measures described herein. Groundwater Recharge Fees will be collected by the County.

The County will require the owner(s) of all land included in a proposed Large Development to enter into an agreement with the County that implements this Policy. Such agreement will (i) run with the land and binds all successors and assigns, (ii) be senior in priority to all other monetary liens and encumbrances on the subject land, (iii) require that the owner(s) of all land included in a proposed Large Development will, upon connection to a municipal water system, on a long-term average annual basis, only consume their proportionate share of the "sustainable yield" of the groundwater basin underlying the development as determined by the County, (iv) impose in perpetuity a flood control/groundwater recharge assessment on the land that includes a surcharge based on the amount of groundwater pumped for use within the Large Development (the "Surcharge") and (v) be readily enforceable by the County. For purposes of determining the Surcharge, groundwater pumpage will be based on actual metered pumping volumes, as determined by the County in its sole discretion taking into consideration the Groundwater Recharge Fee and the goal of this Policy.

The revenues generated by Groundwater Recharge Fees and Surcharges will be used to develop and implement Program the pursuant to which surface water that would not otherwise be used, captured, delivered or recharged within the County will be acquired and recharged within the County in a manner that offsets groundwater pumped and maintains the “sustainable yield” for the applicable Large Development . The Program may involve recharge in facilities owned by the County and/or facilities owned by other parties, including without limitation water agencies within the County. The Program will be coordinated with the County’s GWMP and will identify the most beneficial areas to perform groundwater recharge.

The initial estimated Surcharge will be \$0.000XX/gallon of groundwater consumed for use in connection with the Large Development. Groundwater Recharge Fees and Surcharges will be set by evaluating the groundwater consumption of a proposed Large Development and its proportionate share of the existing groundwater overdraft and calculating the cost of the water and facilities necessary to perform groundwater recharge to maintain the sustainable yield. A technical study shall be prepared by the Large Development, signed by a registered engineer, identifying all of the data available to make such determination, which may include the Water Supply Assessment Report in accordance with SB 610, and the verification of water supplies pursuant to SB 221. Both the Groundwater Recharge Fee and the Surcharge will be subject to annual adjustment to reflect and cover the actual costs of the groundwater acquisition, conveyance, recharge and recovery, as well as increases in the Consumer Price Index, pursuant to County policies, so that on an average annual basis the Groundwater Recharge Fees and Surcharges paid by the land within a Large Development will be sufficient to acquire and recharge not less than the amount of groundwater consumed for use within that Large Development in excess of the proportionate share of the “sustainable yield” of the groundwater basin underlying the development as determined by the County .

Surcharges will be collected by the municipal water purveyor to a Large Development as part of the utility bills paid by landowners in the development. Groundwater Recharge Fee and Surcharge revenues will be promptly deposited by the collecting parties into a trust fund administered by the Madera County Flood Control and Water Conservation Agency, which will be responsible for the development and implementation of the Program. All funds collected shall be used exclusively for the purposes specified in this Policy and will not be part of the County’s General Fund.

EXHIBIT A TO POLICY GOVERNING
GROUNDWATER CONSUMPTIONS FOR
LARGE DEVELOPMENTS

Each development subject to the requirement for preparation of a Water Supply Assessment shall comply with **Water Code Section 10910(f)(5)**, which states:

Analyze the sufficiency of the groundwater from the basin from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.

Determination of the adequacy of the groundwater supply requires calculation of the aquifer's sustainable yield, the amount of water that is naturally and/or artificially recharged to the aquifer each year and may be extracted without reducing the remaining volume of the aquifer.

In order to calculate the sustainable aquifer yield, there must be analysis of both the current rate of water surface decline and overdraft, along with an estimated future trend for these items.

These values are derived from Hydrogeological measurements and calculations for the specific basin, subbasin, or zone within a sub basin as identified in the GWMP.

To estimate the overdraft, the specific yield of the alluvium (percentage of water per foot of aquifer thickness) and the rates of water-level decline must be known. The estimated average regional groundwater level decline should be calculated from available well log data over a period of at least 10 and not more than 15 years leading up to the current year.

The last piece of analysis required to determine the adequacy of the groundwater supply is to estimate the sustainable yield of the aquifer, which is the quantity of groundwater that can be withdrawn annually, year after year, without producing drawdown of the aquifer surface. It's important to note that the fact that an aquifer is being overdrafted does not mean that its sustainable yield is zero, or that the aquifer does not have natural recharge. The sustainable yield is the difference between the total groundwater pumped less the total overdraft.

The GWMP will be used as a basis for determining the sustainable ground water pumping for the study area acreage. See the following equation.

Regional Sustainable Yield:

$$\text{Annual pumpage} - \text{Annual overdraft} = \text{Annual Sustainable Yield}$$

The annual sustainable yield can be divided by the regional (basin, subbasin, or zone within a sub basin) aquifer area to determine the sustainable yield per acre.

$$\left(\frac{\text{Annual Sustainable yield}}{\text{Area of Regional Aquifer}} \right) = \text{Sustainable Yield per acre}$$

The project acreage can now be applied to determine the average annual yearly amount of groundwater that can be used by the project.

$$\text{Project Acreage} \times \text{Sustainable Yield Per Acre} = \text{Total Sustainable Annual Use}$$

The project demand and annual sustainable use values can now be subtracted to determine if the groundwater supply by itself is adequate or if there is a shortfall.

This calculation must also account for imported surface water used for direct or in-lieu recharge, and for direct or in-lieu recharge of other waters within the groundwater sub-basin, all of which directly offset groundwater pumping by the project. In the equation below, "Total Recharge" means the average annual acre-feet of water recharged via any and all of these methods, including recharge and re-use of reclaimed wastewater, stormwater and irrigation water.

Use of surface water or reclaimed wastewater supplies by the project will reduce the demand on groundwater to be pumped, but does not directly offset groundwater pumping, so is not included in this calculation. Any beneficial recharge claimed shall be included in Total Recharge, which directly offsets groundwater pumping, as indicated above.

Project Groundwater Budget:

$$\begin{aligned} & \text{Total Groundwater Pumped} - \text{Total Recharge} - \text{Sustainable Annual Use} \\ & = \text{Annual Surplus or (Deficit) of Groundwater} \end{aligned}$$