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Water Availability Analysis



A Tradition of Stewardship
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Department of Public Works

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WATER AVAILABILITY ANALYSIS - PHASE ONE STUDY

Introduction: As an applicant for a permit with Napa County, It has been determined that Chapter 13.15 of the Napa County Code is applicable to approval of your permit. One step of the permit process is to adequately evaluate the amount of water your project will use and the potential impact your application might have on the static groundwater levels within your neighborhood. The public works department requires that a Phase 1 Water Availability Analysis (WAA) be included with your application. The purpose of this form is to assist you in the preparation of this analysis. You may present the analysis in an alternative form so long as it substantially includes the information required below. Please include any calculations you may have to support your estimates.

The reason for the WAA is for you, the applicant, to inform us, to the best of your ability, what changes in water use will occur on your property as a result of an approval of your permit application. By examining the attached guidelines and filling in the blanks, you will provide the information we require to evaluate potential impacts to static water levels of neighboring wells.

Step #1:

Provide a map and site plan of your parcel(s). The map should be an 8-1/2"x11" reproduction of a USGS quad sheet (1:24,000 scale) with your parcel outlined on the map. Include on the map the nearest neighboring well. The site plan should be an 8-1/2"x11" site plan of your parcel(s) with the locations of all structures, gardens, vineyards, etc in which well water will be used. If more than one water source is available, indicate the interconnecting piping from the subject well to the areas of use. Attach these two sheets to your application. If multiple parcels are involved, clearly show the parcels from which the fair share calculation will be based and properly identify the assessor's parcel numbers for these parcels. Identify all existing or proposed wells

Step #2: Determine total parcel acreage and water allotment factor. If your project spans multiple parcels, please fill a separate form for each parcel.

Determine the allowable water allotment for your parcels:

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. There are 3 different location classifications. Valley floor areas include all locations that are within the Napa Valley, Pope Valley and Carneros Region, except for areas specified as groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the public works department as having a history of problems with groundwater. All other areas are classified as Mountain Areas.

Please underline your location classification below (Public Works can assist you in determining your classification if necessary):

Valley Floor	1.0 acre feet per acre per year
Mountain Areas	0.5 acre feet per acre per year
MST Groundwater Deficient Area	0.3 acre feet per acre per year

Assessor's Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)

Step #3:

Using the guidelines in Attachment A, tabulate the existing and projected future water usage on the parcel(s) in acre-feet per year (af/yr). Transfer the information from the guidelines to the table below.

EXISTING USE:

Residential	_____ af/yr
Farm Labor Dwelling	_____ af/yr
Winery	_____ af/yr
Commercial	_____ af/yr
Vineyard*	_____ af/yr
Other Agriculture	_____ af/yr
Landscaping	_____ af/yr
Other Usage (List Separately):	
_____	_____ af/yr
_____	_____ af/yr
_____	_____ af/yr

PROPOSED USE:

Residential	_____ af/yr
Farm Labor Dwelling	_____ af/yr
Winery	_____ af/yr
Commercial	_____ f/yr
Vineyard*	_____ af/yr
Other Agriculture	_____ af/yr
Landscaping	_____ af/yr
Other Usage (List Separately):	
_____	_____ af/yr
_____	_____ af/yr
_____	_____ af/yr

TOTAL: _____ af/yr
 _____ gallons**

TOTAL: _____ af/yr **TOTAL:**
TOTAL: _____ gallons**

Is the proposed use less than the existing usage? () Yes () No () Equal

Step #4:

Provide any other information that may be significant to this analysis. For example, any calculations supporting your estimates, well test information including draw down over time, historical water data, visual observations of water levels, well drilling information, changes in neighboring land uses, the usage if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

Conclusion: Congratulations! Just sign the form and you are done! Public works staff will now compare your projected future water usage with a threshold of use as determined for your parcel(s) size, location, topography, rainfall, soil types, historical water data for your area, and other hydrogeologic information. They will use the above information to evaluate if your proposed project will have a detrimental effect on groundwater levels and/or neighboring well levels. Should that evaluation result in a determination that your project may adversely impact neighboring water levels, a phase two water analysis may be required. You will be advised of such a decision.

Signature: _____ **Date:** _____ **Phone:** _____

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Attachment A: Estimated Water Use Guidelines

Typical Water Use Guidelines:

Primary Residence	0.5 to 0.75 acre-feet per year (includes some landscaping)
Secondary Residence	0.20 to 0.30 acre-feet per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year

Non-Residential Guidelines:

Agricultural:

Vineyards

Irrigation only	0.2 to 0.5 acre-feet per acre per year
Heat Protection	0.25 acre feet per acre per year
Frost Protection	0.25 acre feet per acre per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year

Irrigated Pasture 4.0 acre-feet per acre per year

Orchards 4.0 acre-feet per acre per year

Livestock (sheep or cows) 0.01 acre-feet per acre per year

Winery:

Process Water	2.15 acre-feet per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-feet per 100,000 gal. of wine

Industrial:

Food Processing	31.0 acre-feet per employee per year
Printing/Publishing	0.60 acre-feet per employee per year

Commercial:

Office Space	0.01 acre-feet per employee per year
Warehouse	0.05 acre-feet per employee per year

WATER USE ESTIMATE CALCULATIONS				
	Estimated Water Use (Acre-Feet / Year)			Notes
	Existing		Proposed	
Residential Domestic Water Use				
Existing Residence	0.75		0.75	Based on Napa County Phase 1 Water Availability Analysis Guidelines (Primary Residence)
Total Residential Domestic Water Use	0.75		0.75	
Winery Domestic & Process Water Use				
Winery - Daily Visitors	0.00		0.29	Based on 85 visitors / day average @ 3 gallons per visitor ⁽¹⁾
Winery - Events with Meals Prepared Onsite	0.00		0.10	Based on 72 events @ 24 people & 7 events @ 50 people @ 15 gallons per guest ⁽²⁾
Winery - Events with Catered Meals	0.00		0.01	Based on 3 events @ 150 people @ 5 gallons per guest ⁽³⁾
Winery - Employees	0.00		0.16	Based on 16 employees @ 0.01 ac-ft/yr per employee per Napa County Phase 1 Water Availability Analysis Guidelines
Winery - Process	0.00		1.72	Based on 7 gallons of water per gallon of wine ⁽⁴⁾ @ 80,000 gallons max production
Total Winery Water Use	0.00		2.27	
Existing Office Water Use				
Office Employees	0.04		0.04	Based on 4 employees @ 0.01 ac-ft/yr per employee per Napa County Phase 1 Water Availability Analysis Guidelines
Irrigation Water Use				
Landscape	2.00		4.00	Estimated for 1 acre of existing and 1 acre of new moderate water use landscaping at 2 ac-ft/ac/yr
Other Agriculture	4.00		4.00	1 acre of garden & orchard @ 4 ac-ft/ac/yr
Total Irrigation Water Use	6.00		8.00	
Total Combined Water Use	6.79		11.06	

⁽¹⁾ 3 gallons of water per visitor is based on project wastewater disposal feasibility report by Applied Civil Engineering.

⁽²⁾ 15 gallons of water per guest is based on project wastewater disposal feasibility report by Applied Civil Engineering.

⁽³⁾ 5 gallons of water per guest is based on project wastewater disposal feasibility report by Applied Civil Engineering.

⁽⁴⁾ Napa County Phase 1 Water Availability Analysis Guidelines estimate 7 gallons of water per gallon of wine produced.