

April 2, 2015

To: Planning Commission

Mayor Vincent Francia

Cave Creek Town Council

From: V. Kerry Smith

7265 E. Continental Mountain Estates Drive

Cave Creek, AZ. 85331

Subject: Comments as Provided under ARS 9-461.06 on the Draft General Plan for Cave Creek

There are three significant problems with the current draft for the 2015 General Plan for Cave Creek. These problems compromise the ability of the revised plan to meet the Town Vision statement. More specifically the vision suggests that:

"Over the next decade and beyond everything we do:

- Shall contribute to our unique character and diverse Lifestyles
- Shall be within the carrying capacity of our land and resources
- Shall conserve our rich, varied, self-sustaining natural environment
- Encourage tourism and development in the Historic Town Core compatible with the Town's unique heritage" (p.1)

The problems described below constitute direct failures to recognize the implications of land use decisions for goals 2 and 3 in the above list. They also indicate a failure of planning staff to do the

necessary analysis of current water resources that avoid inconsistency between the plan's assessment of water resources and current information readily available on impending threats to water availability.

After outlining each of these problems I will discuss in more detail the reasons these problems are serious mistakes that need to be addressed.

- (1) The parcel size requirement for two categories of rural zoning is modified without explanation¹. These modifications are not consistent with the objectives stated on page 38 of the draft plan that:

"...the Desert Rural category is to protect the natural setting of Cave Creek and ensure development is harmonious and sensitive to the natural environment"

It appears the category of Desert Country calling for a maximum of one dwelling unit per 190,000 square feet (approximately 4.4 acres) has been eliminated². In addition the category Desert Rural has been modified from 70,000 square feet (approximately 1.6 acres) to 43,000 square feet (approximately .99 acres) minimum lot size.

These modifications will irreversibly alter one of the most important attributes of land uses that Cave Creek provides its residents for the landscapes within its boundaries. This is a rural desert environment with large undisturbed vistas that complement the Sonoran desert views. Once the increased density associated with a 39% increase in residential density on new Desert Rural zoning is allowed, it is impossible to reverse. Such changes create a cascading set of subsequent changes. One of these implications are discussed or considered. Indeed the language of the draft does not acknowledge the significant change being introduced.

The losses likely to be experienced by current residents include: reduced property values and further insecurity in the town's

¹ The draft indicates on page 2 that the Plan does not change existing zoning. However, the amendment process on page 45 of the draft indicates that changes to Desert Rural land use to higher densities is a major amendment. It does not specify how the parcels designated as Desert Mountain or Desert Rural under the earlier larger size restriction will be treated under the new smaller size definitions.

² See the redline changes on pages 24-25 of the draft

water supplies. I document the sources supporting these conclusions below.

- (2) The water resources assumed available to Cave Creek do not take account of the well documented uncertainty of the Central Arizona Project water. The current draft cites the 2013 Cave Creek Water Master Plan as the source for the detailed analysis of water availability for future population growth (page 102 of the draft). The draft plan acknowledges that:

"Ultimately the Town's water service will be dictated by its CAP water allocation, its ability to pump ground water as determined by the ADWR, the number of private wells that exist and the amount of person use (gallons/capita/day)"
(p.102)

The draft plan notes that current water use is 308 gcd. The final 2013 Water Master Plan assumed either 200 or 250 gcd. Actual use is 25% greater than the estimates used for planning. The plan does not acknowledge the expected reduction in Arizona's share of CAP water that is likely to arise in 2017. The recent Arizona Republic article "As the River Runs Dry: Crisis on Tap" by Brandon Loomis, March 1, 2015 describes that government assessments of the water levels in Lake Meade. These analyses indicate there is a 60% chance that for a declared shortage and the associated restrictions to CAP allocations by 2017. The CAP Colorado River Shortage Issue Brief posted on the CAP web site on October 2014 describes the plans for reductions to CAP allocations to Arizona based on a 2017 shortage. The initial effects of the restrictions on CAP water availability will be on agricultural users in Arizona. Nonetheless, about 80% of Cave Creek's water comes from CAP allocation.³ There is no recognition of the existence of this planning document in the draft general plan or in the Water Master Plan. The latter was written after the planning document was released so it could not have been expected to reflect it. However the **draft general plan should have taken it into account as an important new source of information.** This document identifies the priorities in allocating shortfalls. In addition the 2013 Water Master Plan uses 2,590 plus the requested 1,100 acre-feet as the town's CAP allocation. As of the most recent CAP Subcontracting Status Report (October 2014 again after the Water Master Plan), this added allocation was **not** made. Cave Creek's contracted

³ The 2005 General Plan had alternative water usage scenarios. These were not updated in the draft master plan.

allocation is 2,606 acre feet per year. Given high likelihood of a 2017 shortage, it is reasonable to plan as if the 1,100 acre feet will not be allocated in the near future. As a result, the usage projected in the Master Plan for the combined TOCC and Desert Hills system for 2015 **exceeds what we actually have in available water supplies. Fortunately, a shortfall has not yet occurred because our current population is lower than projected so that even though per capita usage levels are higher than assumed the TOCC used 2,515.3 acre feet in 2013.** These adjustments imply special attention should be given to any change in zoning that would increase population in Cave Creek and exacerbate the likely water shortage. That is, changes in zoning should be expected to influence the assumptions about new housing units and population to be served. The three issues are clearly interrelated -that is the density of land use affects the number of housing units that can be built and the people to be served. This change in turn affects water needs. This connection is ignored in this draft.

- (3) Under the circulation element the draft general plan identifies six roads as major collector roads serving traffic to more major roadways. Five of the six roads have designations changed from minor to major collector roads. The structure of Spur Cross Road does not meet the designation of a major collector road. It is not paved throughout the full length of the road as identified in the master plan. Moreover, the winding nature of the road with narrow shoulders raises questions about the designation. The recent assessment of Cave Creek's roadway infrastructure would also raise questions in the western extension of Cave Creek. This misclassification is important because it gives the impression that roadway capacity is able to accommodate the increased density of land use and associated population growth.

In the remainder of these comments I will provide some technical documentation for my comments that the changes in density will seriously impact land values in Cave Creek and that the water use planning is seriously flawed.

Desert Landscapes and Undeveloped Vistas Enhance Private Home Values

My assertion of these effects should be regarded as my expert opinion. I am a PhD economist and have spent 45 years developing methods to

estimate the private households' willingness to pay for enhanced environmental amenities such as those provided by the Desert Rural zoning with large lots and undeveloped mountain sides⁴. The most widely accepted method for measuring the economic worth of these amenities relies on the increased sales prices for homes that adjoin land parcels with access to undeveloped desert lands and with scenic vistas. We do not have a specific estimate for how zoning changes would affect Cave Creek properties because they have not as yet taken place. Under these circumstances one must use other evidence to estimate the likely effects. Several recent published studies for landscape protection plans around Tucson indicate as much as a 16 percent premium above the mean sales price for homes that adjoin an undeveloped desert wash that provided a riparian corridor. Several of these studies were used to develop an evaluation of the benefits and costs of the Sonoran desert Conservation Plan. Moreover the gains were not limited to the adjoining homes. Parcels within a one mile band of the protected landscapes gained from 1 to 6 % over the average home prices in another related study of the same protected Sonoran desert. These are not isolated examples an undeveloped landscape that creates integral vistas has widespread effects on private property values. Density increases creates more home sites but they diminish the housing values for the existing homes when the density change affects these landscapes. Moreover changes to integral vistas will affect the attraction of Cave Creek to tourists. These impact are more difficult to estimate but should also be considered.

A few examples of studies documenting these effects are:

R. Bark, D.E. Osgood, B.G. Colby and E.B. Harper, "How do Homebuyers Value Different Types of Green Space?" *Journal of Agricultural and Resource Economics* Vol 36 (2), 2011, pp. 305-415.

R. Bark, D.E. Osgood, B.G. Colby, G. Katz and J. Stromberg, "Habitat Preservation and Restoration: Do Homebuyers Have preferences for Quality Habitat?" *Ecological Economics* Vol 68 2009, pp1465-1475.

R. Bark-Hodgins and B.G. Colby, "An Economic Assessment of the Sonoran desert Conservation Plan" *Natural Resources Journal* Vol 46, Summer 2006 pp. 709-725.

⁴ I can document if required the credentials substantiating my expert opinion. I am currently advising the US Environmental Protection Agency and have advised public and private parties on the valuation of private landscapes under a wide variety of conditions.

B. G. Colby and S. Wishart, "Quantifying the Influence of Desert Riparian Areas on Residential Property Values" *The Appraisal Journal*, Vol 70 July 2002, pp 304-307.

Colorado River Shortage Process

Colorado River Shortage Process:

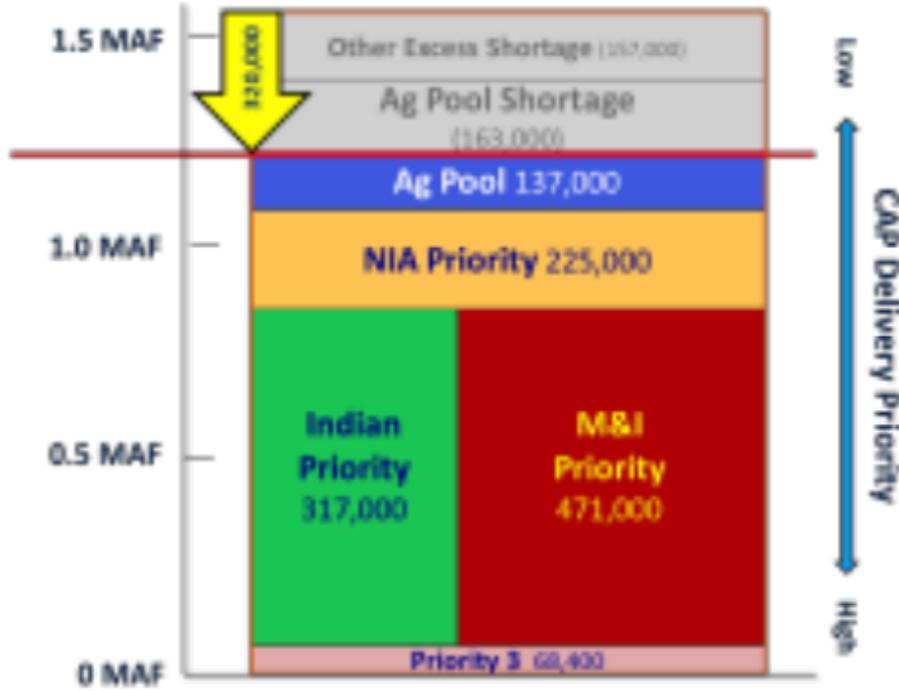
1. Shortage Notice



2. Shortage Sharing: There are 3 tiers of shortage reductions triggered by water elevations in Lake Mead. Arizona bears the brunt of the reductions; with CAP taking most of the reductions.

Entity	Tier 1 (1,075')	Tier 2 (1,050')	Tier 3 (1,025')
CAP ²	Up to 320,000 af	Up to 400,000 af	Up to 480,000 af
Other Arizona ³	0 to 32,000 af	0 to 40,000 af	0 to 48,000 af
Nevada	13,000 af	17,000 af	20,000 af
Mexico ⁴	50,000 af	70,000 af	125,000 af

3. Shortage Reductions to CAP Pools (based on a 2017 shortage)



- Notes:**
- 1 USBR provides 24-month water forecasts, updated monthly.
 2. CAP's portion of shortage is related to water uses by other Arizona "on-river" users, which varies annually.
 3. Other Arizona water users' portion of shortage is based on their annual water usage.
 4. Mexico's share of shortage is subject to Minute 319.

Source:



October 2014

COLORADO RIVER SHORTAGE