DUDEK

MEMORANDUM

To:	Keeton Kreitzer – KK Consulting
From:	Brock Ortega
Subject:	Qualitative Comparative Review of the West Coyote Hills Site – 2008 to 2014
Date:	August 8, 2014
cc:	Kelly Buffa
	Jim Pugliese – Chevron Land and Development Company
Attachment(s):	Dudek 1998 Vegetation Map
	Dudek 2010 Vegetation Map

Dudek was requested to provide a qualitative analysis of the current status of the vegetation communities on the West Coyote Hills project site compared to the coverages outlined within the 2008 Recirculated EIR. This memorandum addresses that request.

1998 to 2008

Based on a review of the January 2008 Recirculated EIR, the vegetation mapping at that time was based on the 2002 Dudek USFWS Biological Assessment and 2003 Biological Resources Report. This data was used to develop figures and impact analysis by Project Design Consultants in March 2006 (Exhibit 4.12-1 in the 2008 REIR) for the EIR and subsequent REIR. All of this was based on a vegetation map prepared by Dudek in 1998. In September 2003, the City of Fullerton's biological consultant reviewed the vegetation map and site conditions and concluded that the vegetation map was still substantially accurate.

2010

In 2010, Dudek was requested to weigh in on the validity of 2008-2009 EIR statements regarding the vegetation communities, habitat quality, and relative conclusions drawn during previous EIR iterations. For that effort, Dudek conducted a combination of quantitative and qualitative assessments to derive an opinion. That assessment resulted in the following points:

- Overall, areas, that had been previously mapped as being disturbed sage scrub or other disturbed native communities had recovered to varying degrees. In some instances, the recovery was nearly complete, while in other areas not as much, but still generally with

fewer weeds or more filling in of native shrubs. In the eastern portion of the site, a large patch of mulefat scrub had changed into a more typical sage scrub community. In the west, more previously disturbed areas within the planned development area were now sage scrub and the main canyon, which had been primarily mapped as mulefat scrub and disturbed phases of sage scrub, were now mapped as disturbed due to flood control projects. Areas, that had previously been mapped as poison oak scrub, were now reclassified to a chaparral community.

- On-going site maintenance maintained the amount of land available for habitat restoration.

- Approximately 101.5 acres of coastal sage scrub communities was analyzed to be permanently impacted in the 2004 Biological Opinion (BO). In 2010, using the 2010 vegetation mapping and the current project design at that time (that analyzed in the 2008/2009 EIR), permanent impacts to 157.40 acres of coastal sage scrub communities would occur; an increase of 55.90 acres. This indicated that there was a combination of an increase in project footprint (either from permanent or temporary impacts) and natural habitat recovery.

- Approximately 289.3 acres of combined preservation, enhancement, and restoration was proposed for the 2004 BO. Through the 2010 evaluation, a total of 314.00 acres of combined mitigation was proposed (not including non-CSS communities); an increase of 24.70 acres. This was primarily the result of the inclusion of some off-site restoration areas.

- Overall, the project, as analyzed using the 2010 vegetation map, was deficient by 31.20 acres (55.90 acres – 24.70 acres). However, the analysis did not take into account the fact that Chevron, in an effort to abide by the 2004 BO, allowed vegetation to recover and deferred site maintenance. Despite this, there were several reasons why the habitat quality would be better after the proposed mitigation was accomplished. These included the following:

    - After habitat restoration occurs, the habitat will be uniformly high quality instead of the current state, which is a mixture of high quality and low quality habitat, or non-functioning habitat.

    - Large patches of weedy and invasive materials, (e.g., mustard, fennel, tree tobacco, grasses) will be removed from otherwise good habitat, creating more

suitable habitat and higher quality habitat for gnatcatchers and other scrub species.

- Individual and groves of pepper trees will be removed. This will provide for more suitable high quality habitat for gnatcatchers and will reduce the available perch and observation sites for brown-headed cowbirds, a nest parasite. Because a few important raptorial species (e.g., Cooper's hawk, red-shouldered hawk, great horned owl) have been known to nest in these trees onsite in the past, this measure would be implemented in a fashion which would preserve them. Trees would be surveyed for raptor nests before removal. Trees found to support nesting raptors would be spared until replacement groves of similar native trees could be grown nearby and their nests successfully transferred.

- Large blocks of non-habitat would be restored to suitable habitat, thus creating more high quality habitat.

- The current habitat onsite is notably species poor. That is, it has poor species diversity. Through the habitat enhancement and restoration process, the habitat restoration plan will increase the diversity of shrub and annual species identified for planting or seeding in order to increase the botanical species richness. This can be implemented in a cost-effective manner and would utilize native stock from the close vicinity. Increased botanical diversity would result in increased insect diversity. By doing this, the overall habitat quality would increase by providing enhanced foraging opportunities for wildlife species. Over time, the diversity would help create a more stable platform for avian use.

- Adjacent areas, which will be temporarily impacted, will be planted with native scrub species. This will enhance movement and foraging opportunities throughout the site. In addition, through the planting of cactus and other species, this will function as a pet and people deterrent at open-space interface areas.

- Over time, cactus patches have over-run quality coastal sage scrub areas, and now some of those areas are now entirely unsuitable to gnatcatchers. Where larger patches include 100% coverage of cactus species and no other scrub species are present, they become much less suitable for cactus wren as well. Cactus wren are rapidly disappearing from coastal southern California. During the habitat enhancement process, patches of cactus that are too dense, will be managed to support inclusions of sage scrub species to the degree that they become optimal

for gnatcatchers and cactus wren. This will help create more usable habitat for both species.

- A result of the project would be that brown-headed cowbirds will be monitored and managed as necessary, thus enhancing the gnatcatcher and other avian species populations.

- A result of the project is that a habitat and gnatcatcher management plan will need to be developed which spells out management and monitoring methods, and articulates the adaptive management feedback loop and strategy. This active management will provide assurances for the species long-term survival on this island of habitat.

At the end of the day, the overall conclusion was that, while there had been some changes to the general habitat and vegetation community distribution and quality, the general site character and usefulness to species on site had not changed. Further, with the program outlined above, the ultimate project goals to maintain all non-developed habitat in a high quality native community would not change. All temporary impact areas and disturbed habitat areas would be restored to sage scrub suitable for CAGN occupation, existing habitat would be enhanced, and high quality habitat would be maintained. This plan had not changed since the first iteration of the project.

2014

The current review was conducted by reviewing the previous map iterations, comparing them to recent aerial photographs for obvious changes, and conducting a brief site visit in late July and early August 2014. Dudek biologist Brock Ortega conducted both visits and had aerial photographs and past maps available on an iPad equipped with georeferenced maps and aerials. Mr. Ortega drove the site and visually compared the maps and aerials to the site conditions. In particular, he concentrated on comparing the 2010 mapping effort to the 2014 condition. This effort did not include refining existing vegetation maps or mapping vegetation communities.

Based on those site visits, the site appears to be in the same general condition as mapped in 2010. Overall, the same analysis provided in 2010 is still applicable. While there may be some slight additional native vegetation regeneration in some areas, other areas seemed to have experienced some stress and retreated. Historically large clusters of castor bean (*Ricinus communis*) and tree tobacco (*Nicotiana glauca*) – both weedy species – had retreated and appeared to be heavily stressed by near constant drought. Areas that had been cleared of eucalyptus for native scrub enhancements were now experiencing more regrowth of eucalyptus.

Between 2010 and 2014, southern California has experienced mostly drought conditions (2010 to 2011 wet season was about 3 inches above average, while the 2011/2012, 2012/2013, and 2013/2014 wet seasons were all below normal (roughly -3, -4, and -5 inches respectively). This has had the effect of limiting plant growth and limiting the amount of habitat enhancements. While weedy species are impacted to a larger degree than native species, the native species don't receive enough water to make many inroads toward reclaiming land previously occupied by the weeds.

As a result, it appears that the conditions of the site are much the same as they were in 2010 and the last EIR circulation. It is anticipated that the conditions are effectively the same and the analysis presented within the REIR would be the same.

Please contact me with question.