



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



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In Reply Refer To:  
08ESMF00-2012-TA-0571-1

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AUG 13 2012

AUG 23 2012

City of San Rafael  
Community Development Department  
1400 Fifth Avenue  
San Rafael, California 94901

COMMUNITY DEVELOPMENT  
CITY OF SAN RAFAEL

Subject: Comments on the Draft and Final Environmental Impact Report for the San Rafael Airport Recreational Facility Adjacent to the North Fork of Gallinas Creek in the City of San Rafael, Marin County, California

Dear City of San Rafael Community Development Department:

This letter responds to your request for comments on the Draft and Final Environmental Impact Report for the San Rafael Airport Recreational Facility (proposed project) adjacent to the North Fork of Gallinas Creek in the City of San Rafael, Marin County, California. The proposed project involves the construction of 71,300 square feet of indoor sports fields/courts along with a lighted outdoor soccer field for games and unlighted soccer warm-up area on a 9.1-acre portion of the San Rafael Airport property adjacent to the North Fork of Gallinas Creek. At issue are the potential effects of the proposed project on the endangered California clapper rail (*Rallus longirostris obsoletus*) and endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) which are protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The proposed project would include the construction of a 14,400 square-foot viewing deck located above and between the soccer fields. Access to the proposed new recreational facility would be through an extension to the existing roadway currently serving the airport property. The roadway would terminate at a new 184-car paved parking lot that includes a circular drop-off zone at the end of the paved parking lot near the entry at the southeast corner of the building. Just past the end of the main paved parking lot, a gravel parking lot is proposed to be constructed to provide overflow parking facilities as well as access to the two outdoor soccer fields. As part of this project, the applicant has also proposed to install a new 25-foot wide steel truss bridge deck over the existing bridge that crosses the North Fork of the Gallinas Creek.

Both the California clapper rail and salt marsh harvest mouse are known to occur within suitable tidal marsh habitat along Gallinas Creek near the proposed project. Gallinas Creek contains one of the largest populations of California clapper rails within the San Pablo Bay Recovery Unit of

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the Service's *Draft Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* (draft recovery plan) (Service 2010). Between six and eight California clapper rails were observed near the proposed project area along the North Fork of Gallinas Creek during surveys in 2010, and three were observed in 2011 (Liu *et al.* 2012). An additional 10-14 California clapper rails were observed during surveys along the middle reach of Gallinas Creek just downstream of the proposed project area in 2010 (Liu *et al.* 2012). The tidal/microtidal marshes of Gallinas Creek also contain one of the major population centers of the northern subspecies of the salt marsh harvest mouse within the draft recovery plan's San Pablo Bay Recovery Unit. The draft recovery plan also identifies the protection, management, and restoration of viable habitat areas including the Gallinas Creek marsh as a criterion for the downlisting of the salt marsh harvest mouse from endangered to threatened. The area immediately northeast and across the creek from the proposed project area is identified in the draft recovery plan as a high priority area for tidal marsh restoration.

The Service is concerned that the proposed project will result in significant direct and indirect effects to salt marsh harvest mice and California clapper rails due to the construction of a large sports complex with additional parking and nighttime outdoor sporting events adjacent to the tidal marsh of the North Fork of Gallinas Creek. Additional noise and lighting from the sports complex and parking lot may result in California clapper rails avoiding the marshes near the new sports complex and the loss of California clapper rail breeding activity or nest abandonment. For example, Albertson (1995) documented a California clapper rail abandoning its territory in Laumeister Marsh in south San Francisco Bay shortly after a repair crew worked on a nearby transmission tower. The rail did not establish a stable territory within the duration of the breeding season. As a result of this territorial abandonment, the opportunity for successful reproduction during the breeding season was eliminated. Similarly, the loss of four California clapper rail breeding territories along the Greenbrae boardwalk in the Corte Madera Ecological Preserve in Marin County in 1993 was attributed to an increase in domestic and feral dogs and cats along the boardwalk resulting from new residents moving into the nearby residential areas (J. Garcia, pers. comm.).

The installation of lighting for the parking lot and outdoor sporting events could result in disturbance of salt marsh harvest mice and California clapper rail activities by disrupting activity cycles and the internal circadian system (Rich and Longcore 2006). Disruption of the circadian clock from artificial night lighting can result in changes to foraging efficiency, risk of predation, and parental care, which could have adverse effects on the salt marsh harvest mouse and California clapper rail. These individuals would be out of sync with their neighbors living in a natural light-dark cycle, and could affect mating success (Rich and Longcore 2006). Artificial night lighting has been shown to affect nocturnal rodents. Several species of small rodents harvested an average of 21 percent less seed in response to a single fluorescent or gasoline camping lantern. Although small mammals can respond to bright moonlight by shifting foraging activities to darker conditions, this is not an option for animals subjected to artificially increased illumination throughout the night. Unless they leave the lighted area, they are either at greater risk of predation from foraging in the lighted area, or reduce their food consumption to avoid increased predation risk (Rich and Longcore 2006). Lights should be designed with wildlife species in mind using appropriate wavelength light sources that are shaded to direct lights away from the marshes.

The proposed project will result in an increase in the presence of people, traffic, and trash near the marshes of the North Fork of Gallinas Creek. Trash left near the marsh will attract predators (e.g., foxes, raccoons, rats, feral cats, corvids, and gulls) that may prey on salt marsh harvest mice and California clapper rails in the adjacent marsh.

The proposed project area currently floods every winter since it is below sea level and behind agricultural levees on historic baylands. The water is pumped from the airstrip, hangars, and buildings directly into the marsh without being treated. The introduction of additional traffic and paved surfaces within the project area will result in the pumping of additional untreated contaminated water containing petroleum hydrocarbons and other toxins into the marsh which will degrade the water quality of Gallinas Creek. The degradation of the water quality and introduction of petroleum hydrocarbons and other contaminants into the Gallinas Creek marshes may have direct toxic effects to salt marsh harvest mouse and California clapper rail or indirectly affect the California clapper rail due to a reduction in the invertebrate prey base.

Urban development and the installation of dikes for agriculture throughout the San Francisco Bay Area has resulted in a reduction of the range of the salt marsh harvest mouse and California clapper rail to less than 10 percent of their historic ranges. The amount of suitable tidal marsh habitat available for the salt marsh harvest mouse and California clapper rail is expected to decrease in the future with sea level rise. Development adjacent to the tidal marsh prevents the ability of the tidal marsh to migrate landward in the face of sea level rise and eliminates important marsh ecotone buffers and high tide refugia for the salt marsh harvest mouse and California clapper rail. Thus diked baylands, such as within the proposed project area, provide the few remaining opportunities within the San Francisco Bay Area for the restoration of tidal marsh and high tide refugia/marsh ecotone to allow for the landward migration of the marsh in the face of sea level rise.

The proposed project may result in an increase in the cover of invasive plant species including non-native perennial pepperweed in all areas temporarily disturbed and adjacent areas. Also, an increase in vehicles and pedestrians near the marsh may introduce additional invasive plant species into the upland refugia and tidal marsh habitat along Gallinas Creek. Perennial pepperweed provides poor upland refugia cover for the salt marsh harvest mouse and California clapper rail because it is leafless in the winter when the mouse and rail most require upland refugia cover during the frequent winter extreme high tides and storm events. Without suitable upland refugia cover, the salt marsh harvest mouse and California clapper rail are more susceptible to predation during extreme high tide events. Perennial pepperweed displaces higher quality upland refugia cover such as marsh gumplant and may also displace essential salt marsh plant species such as pickleweed. The construction of the additional parking and sports complex near the marsh may further degrade the upland refugia cover the salt marsh harvest mouse and California clapper rail depend on during extreme high tide events or may prevent the mouse and the rail from seeking upland refugia cover near the parking lot and sports complex; this would increase the risk of predation of salt marsh harvest mice and California clapper rails during extreme high tide events.

We recommend evaluating all direct and indirect effects of the proposed project on the salt marsh harvest mouse and California clapper rail and their habitats and include appropriate

City of San Rafael Community Development Department

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measures that will avoid and minimize any adverse effects on these listed species. Please contact Joseph Terry, Senior Biologist, or Ryan Olah, Coast Bay/Forest Foothills Division Chief, at the letterhead address, electronic mail (Joseph\_Terry@fws.gov; Ryan\_Olah@fws.gov), or at telephone (916) 414-6600, if you have any questions regarding this response.

Sincerely,



Eric Tattersall  
Deputy Assistant Field Supervisor

cc:

Tim Dodson, California Department of Fish and Game, Napa, California

**Literature Cited**

- Albertson, J.D. 1995. Ecology of the California Clapper Rail in South San Francisco Bay. Unpublished Master's Thesis. San Francisco State University. San Francisco, California. 199 p.
- Liu, L., J. Wood, L. Salas, and N. Nur. 2012. 2011 Annual Report to U.S. Fish and Wildlife Service: California Clapper Rail (*Rallus longirostris obsoletus*) TE-807078-12. Submitted to U.S. Fish and Wildlife Service, Sacramento, California, January 31, 2012. Submitted by PRBO Conservation Science.  
[http://www.prbo.org/cms/docs/wetlands/2011CLRA\\_USFWSReport\\_PRBO\\_FINAL.pdf](http://www.prbo.org/cms/docs/wetlands/2011CLRA_USFWSReport_PRBO_FINAL.pdf). Accessed on August 9, 2012.
- Rich, C. and T. Longcore (eds.). 2006. Ecological Consequences of Artificial Night Lighting. Washington D.C.: Island Press. pp. 19, 23, 28-29, 30-31.
- U.S. Fish and Wildlife Service. 2010. Draft Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California. U. S. Fish and Wildlife Service. Sacramento, California. 141 pp.

**Personal Communications**

- Garcia, John. Principal and Aquatic Systems Ecologist, Garcia and Associates, San Anselmo, California.

# SAN RAFAEL AIRPORT LLC

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2165 EAST FRANCISCO BOULEVARD, SUITE A  
SAN RAFAEL, CALIFORNIA 94901  
TEL 415/453-0212  
FAX 415/453-0421

November 8, 2012

Mayor Phillips & Members of the City Council  
San Rafael City Council  
1400 Fifth Avenue  
PO Box 151560  
San Rafael, CA 94915-1560

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PLANNING

Re: Airport Response To Recent Comment Letters on Community Recreational Facility

Dear Mayor Phillips and Members of the City Council:

The City has received several new comment letters since the Planning Commission recommended certification of the Final EIR on January 24, 2012 and approval of the sports facility project on June 6, 2012. Shute Mihaly law firm sent a letter dated July 31, 2012, followed shortly thereafter (August 13) by similarly worded comments from the US Department of Fish & Wildlife Service (USFWS). Also a letter was received on Sept. 24, 2012 from attorney's representing Captain's Cove Owners' Association.

Generally speaking, the issues raised in the letters have been thoroughly explored and analyzed in the project EIR, which is now going on 6 years and over \$650,000. We understand that the City has asked its biological consultant, Monk & Associates, to analyze and respond to the biological concerns raised by the Shute Mihaly/USFWS letters. We, as project applicant, would also like to provide our response to these and other comments.

Regarding the USFWS letter, it erroneously states that the proposed project area currently floods every winter, and that our stormwater is not treated before being pumped into Gallinas Creek. We suspect the author received this statement from project opponents and failed to verify its accuracy, because it is completely false. We did experience some temporary flooding in the big New Year's Eve storm of 2005 (that flooded the Ross Valley), but that was because the power was knocked out to our stormwater pumps. Normally our pumps very quickly evacuate stormwater from the airport property (we are not after all a float plane base). Stormwater from paved areas passes through grease trap interceptors which filter out hydrocarbon contaminants. It then passes into grass lined swales and ditches which provide further natural filtration (in accordance with Regional Water Quality Control Board policies) before the water is pumped into Gallinas Creek. This system very effectively filters and drains the stormwater, and a hydrologic analysis contained in the project EIR (11-29) determined that the pumps have sufficient capacity to handle increased stormwater run-off from the roofs and parking lots of the proposed new project. We have also added a back-up diesel powered generator to our pumphouse in case of a power outage.

Another claim made in the USFWS letter, a repeat from the Shute Mihaly letter, is that the project will (1) bring people to the site, which will (2) result in increased trash, which will (3) attract predators that could (4) prey on salt marsh harvest mice and clapper rail in the adjacent marsh. This argument – an attenuated hypothetical chain of cause/effect -- is based on pure speculation and therefore fails the CEQA requirement to provide substantial evidence for a claimed biological impact. The project has been the subject of numerous site specific biological studies and reports, all of which have shown that the Project will not adversely impact the salt marsh harvest mouse or the clapper rail. In addition, the claim is based on factually incorrect assumptions. The sports project includes a number of measures to control and properly store trash that could be generated on the site. For example, the sports project facility plans include a roofed trash enclosure that will house a sturdy metal commercial trash container with a heavy metal lid. Even if animals could get inside the roofed enclosure, they couldn't lift the heavy lid. As for the outside fields, no food is allowed, and access to the outside fields will be through the building, so this restriction will be easily and effectively enforced.

The Shute Mihaly (SM) letter makes several additional claims that we would like to address and refute based on our experience as the longtime airport owner and property manager (since 1983).

1. SM offers an attenuated argument that the continued maintenance of the existing levees will harm marsh species in the event of global sea level rise. SM's claim is founded on a false premise. Our ongoing airport levee maintenance practices will be the same *whether or not the sport project is approved*, so this is not a project related impact. Our existing levee maintenance practices are outlined on page 695 of the FEIR. Whether or not the sports project ever gets built, we will continue to maintain the levees in this same manner, because the levees protect a substantial investment in our existing airport facilities, which include 232,500 square feet of buildings, 418,000 square feet of paved taxiways and runways, and a 1 megawatt solar energy generation facility. The levees also protect 400+ homes at Contempo Marin Mobile Home Park (which is located 2 feet below base flood elevation), as well as the SMART train right of way, which is built out of ballast (crushed rock) and is susceptible to damage from flood waters. SM's speculation is without foundation and does not constitute evidence (let alone substantial evidence) of an unanalyzed project impact.

2. SM argues that the project is inconsistent with the California Airport Land Use Handbook (ALUH), and claims this constitutes a significant impact under CEQA. The alleged inconsistency does not constitute a significant impact under CEQA. The ALUH is not a governing land use document or regulation and thus cannot be a source of a purported significant impact under CEQA. The ALUH is applicable only to public use airports with much higher traffic and larger planes. San Rafael Airport is a small private airport. The ALUH specifically states that it does not apply to private airports. This has been confirmed by two co-authors of the ALUH, Meade Hunt and Gatske, Dillon &

Balance, who provided extensive evidence to the Planning Commission in writing (see letters dated May 16, 2012 and May 17, 2012) and at the public hearing on May 29, 2012, demonstrating that the project IS in fact consistent with the ALUH.

3. SM argues that the project will not comply with FAA obstruction regulations, hypothesizing that mobile obstructions such as school buses or delivery trucks may incorrectly park across parking lanes and soccer balls flying through the air will create a hazard. The simple fact is that the project has been designed to meet FAA clearance zone requirements. Small *potential* intrusions were identified in the EIR process, and final project plans will be modified to eliminate these intrusions. EIR Mitigation Measure Haz-2 (Elimination of Flight Hazards), requires that we submit those final plans to the FAA and obtain from them a determination of "*No Hazard to Air Navigation*".

4. SM argues that the new requirement to include obstruction lighting could potentially create light impacts that have not been analyzed. However, obstruction lighting will only be required for project elements that intrude into the obstruction zones, and as stated above, our final plans will eliminate any such unintentional intrusions. Even in the event the FAA were to require obstruction lights, there is absolutely no evidence to show that this could create a significant light impact on homes or species. FAA approved L-810 obstruction lights are low wattage and fully comply with the City's lighting thresholds. Furthermore they are commonly used at airports around the state, many of which are located near sensitive wetlands. SM incorrectly states that no obstruction lights currently exist at San Rafael Airport. In fact, there is an obstruction light located on a PGE power line overlooking Gallinas Creek near the end of the runway, and of course there are the runway lights themselves, which are similar intensity to obstruction lights.

5. SM argues that lead deposits from combusted leaded avgas may endanger children, and claims that the City has failed to quantify or consider this potential impact. As a threshold matter, this argument turns CEQA on its head. CEQA looks at a project's impact on the environment, not vice versa. This argument takes issue with the environment's impact on the project. Nonetheless, the EIR and the record thoroughly considers potential avgas impacts. Robert Dobrin first raised this issue in a letter to the Planning Commission dated January 19, 2012. He cited an EPA study on lead emissions at Santa Monica Airport, and claimed it constituted evidence of the risks of lead emissions for users of the proposed project. In fact, as outlined in our detailed response letter to the Planning Commission, also dated January 19, 2012, the EPA study actually concluded that all measured lead levels at and near Santa Monica Airport (a much busier airport than San Rafael Airport) were far below EPA safe thresholds for lead, thus supporting City Staff's conclusion that lead exposure from avgas at San Rafael Airport would be insignificant.

Our final comment refers to the September 24, 2012 letter from Hughes Gill Cochrane, attorneys for Captain's Cove Owners' Association, our neighbors located



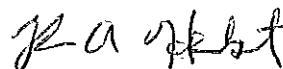
along Smith Ranch Road. Mr. Cochrane primarily repeats a number of concerns previously raised by his clients, all of which have been thoroughly addressed in the EIR (see e.g., FEIR Master Response AES-2 regarding potential vehicle light impacts and Master Response 19, DEIR at 12-19 to 21 regarding noise impacts). In addition, Mr. Cochrane makes two new erroneous assertions that we wanted to correct for the record. First, he stated that the outdoor fields will host games lasting beyond 10 pm. In fact, outdoor games will finish at 9:45 pm, with lights out at 10 pm. Second, he stated that the traffic intensity from the sports project will exceed the scope of a private driveway easement serving the airport, and he cites the 1984 Captain's Cove Subdivision Map page that created the easement. However the map page (copy attached) simply says "Access Easement", and there is no limitation on the scope or intensity of use; it is an unencumbered access easement.

In summary, the recent letters submitted to the City are a rehash of issues that have already been thoroughly explored and analyzed in the 6 year project EIR. They contain numerous errors and false assertions regarding the airport property and the proposed community recreational facility. In particular we are surprised that the US Fish & Wildlife Service would parrot claims from opposition groups without independent verification.

Their assertions regarding flooding and lack of stormwater filtration are simply untrue, and are flatly contradicted by City Staff's in depth analysis on these topics contained within the project EIR.

Please feel free to contact us with any questions or concerns about the project. We look forward to your decision on December 3<sup>rd</sup>.

Sincerely,

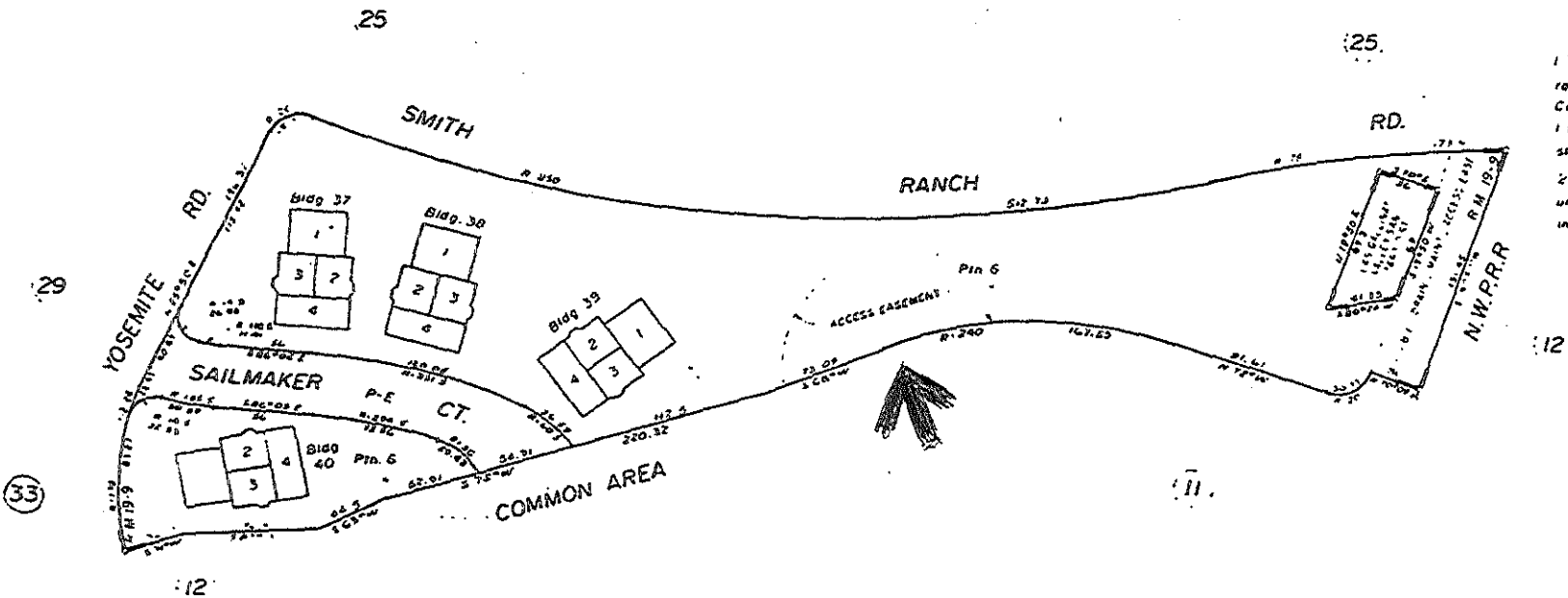


Bob Herbst  
San Rafael Airport

**GENERAL CONDOMINIUM NOTES**

- The "Common Area" of this project is the land & real property included within the boundary of the Captains Cove condominium, except therefrom units 1 through 4 in each of buildings 37 through 40 as shown and defined in G.R. 84-34920
- Assessor's parcel numbers shown opposite each unit include rights held in fee 1/2 plus the interest in lot 6, which is an equal 1/16th.

UNIT NO.	BLDG. NO.	PARCEL NO.
1	37	155-300-01
2	37	155-300-02
3	37	155-300-03
4	37	155-300-04
1	38	155-300-05
2	38	155-300-06
3	38	155-300-07
4	38	155-300-08
1	39	155-300-09
2	39	155-300-10
3	39	155-300-11
4	39	155-300-12
1	40	155-300-13
2	40	155-300-14
3	40	155-300-15
4	40	155-300-16
(Common Area) Lot 6		
Parcel E		
L.G.V. Sanitar, Dist		
155-300-19		
(Not Part of this Subdivision)		



THIS MAP WAS PREPARED FOR  
AS SHOWN. P.M.C.'S ONLY.  
NO WARRANTY IS ASSURED FOR  
THE ACCURACY OF THE DATA SHOWN.  
ASSESSOR'S PARCELS MAY NOT  
COMPLY WITH LEGAL LOT-PLAT  
OR BUILDING SITE REQUIREMENTS

R.M. Bk. 19, Pg. 9 Captains Cove - Lot 6

Assessor's Map Bk. 155-Pg. 31  
County of Marin, Calif.

"The information on this plat is provided for your convenience as a guide to the general location of the subject property. The accuracy of this plat is not guaranteed, nor is it a part of any policy, report or guarantee to which it may be attached."

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*San Rafael*

Community Development Department  
MEMORANDUM

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**DATE:** November 20, 2012  
**TO:** Mayor Phillips and Councilmember's  
**FROM:** Kraig Tambornini, Senior Planner [KT]  
**SUBJECT:** Transmittal of Response to USFWS Letter regarding San Rafael Airport Recreational Facility Project; 397-400 Smith Ranch Road.

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Enclosed please find a response from Monk & Associates regarding the US Fish and Wildlife Service comments on the above referenced project. This response has been forwarded to FWS staff for its information.

Please feel free contact me if you have any questions. Phone: (415) 485-3092. Email: [Kraig.Tambornini@cityofsanrafael.org](mailto:Kraig.Tambornini@cityofsanrafael.org).

Thank you.

**MONK & ASSOCIATES**  
**Environmental Consultants**

November 16, 2012

Lamphier-Gregory  
1944 Embarcadero  
Oakland, California 94606

Attention: Mr. John Courtney

**RE: Response to United States Fish and Wildlife Service (USFWS) - Comments on the Draft and Final Environmental Impact Report Proposed San Rafael Airport Recreational Facility, San Rafael, California**

Dear Mr. Courtney:

This letter presents Monk & Associates' (M&A) response to a letter prepared by the United States Fish and Wildlife Service (USFWS) on August 13, 2012 regarding the Draft and Final Environmental Impact Reports prepared by the City of San Rafael (City) for the proposed San Rafael Airport Recreational Facility (the project). The USFWS' letter was received by the City on August 23, 2012.

M&A appreciates the concerns raised by the USFWS in their comment letter; however, these concerns have already been analyzed and addressed in the project's environmental review process. In full compliance with the California Environmental Quality Act (CEQA), the project and the project's Draft Environmental Impact Report (DEIR) were previously circulated for review and comment. Similarly, the project Final Environmental Impact Report (FEIR) was prepared in consultation with responsible and trustee agencies, including the USFWS and the California Department of Fish and Game (CDFG). In particular Mr. Jim Browning of the USFWS was consulted in the earliest stages of the project environmental review process. Nevertheless, the following responses are provided to address the USFWS' concerns raised in its August 13, 2012 comment letter; these responses demonstrate that all of the USFWS' concerns were addressed in the project environmental review process, which the City decision-making authority must consider prior to taking action on this proposal.

*The draft recovery plan [USFWS 2010<sup>1</sup>] also identifies the protection, management, and restoration of viable habitat areas including the Gallinas Creek marsh as a criterion for the downlisting of the salt marsh harvest mouse from endangered to threatened. The area immediately northeast and across the creek from the proposed project area is identified in the draft recovery plan as a high priority area for tidal marsh restoration.*

**M&A Response:**

Viable habitat areas (VHAs) are defined in the *Draft Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* (USFWS 2010) (Draft Recovery Plan) as including "...1) extensive *Sarcocornia* (pickleweed) on a mid to high *marsh* plain 200 meters or more deep (from shore to bay); 2) adjacent wide high *marsh* transition zone, wherever

<sup>1</sup> [USFWS] United States Fish and Wildlife Service. 2010. Draft recovery plan for tidal marsh ecosystems of Northern and central California. Sacramento, California. 141 pp.

possible, that acts as a refugia for the mice during the highest *tides* with sufficient area and cover to minimize predation risks and; 3) stands of *Grindelia* (and in San Pablo Bay area, *Scirpus* spp.) or tall forms of *Sarcocornia*, interspersed among shorter forms of *Sarcocornia* to provide additional high *tide refugia* within the *marsh* and away from the upland edge.”

The portions of the North Fork of Gallinas Creek (hereafter Gallinas Creek) within an area of influence of the proposed project do not meet the definition of salt marsh harvest mouse VHA's as defined in the Draft Recovery Plan. The average depth of the *Salicornia* (referred to as *Sarcocornia* in the Draft Recovery Plan) marsh plains within the Gallinas Creek channel averages approximately 20 meters, with the deepest plains only reaching approximately 35 meters. Also, most of the Gallinas Creek channel in the vicinity of the proposed project lacks a high marsh transition zone; on the south side of Gallinas Creek, the upper extent of the marsh plain terminates at a steeply-sloped levee. The levee and the land beyond it are dominated by upland vegetation, which has been continuously mowed and/or disked for at least the past 30 years (such maintenance and fire suppression is required by FAA regulations and will continue into the future regardless of the status of the proposed project). Thus, salt marsh harvest mouse habitat (be it core habitat or refugia) is not supported beyond the top-of-bank of Gallinas Creek in the vicinity of the proposed project. It should also be noted that the area identified in the Draft Recovery Plan as a high priority for tidal marsh restoration is well over 700 linear feet from the proposed project site. Thus, it is not being impacted by the proposed project, nor is it within a sphere of influence of the proposed project.

USFWS concerns regarding salt marsh harvest mouse have been discussed in the DEIR (p. 7-48 to 7-49), including detailed impact and mitigation measures (Impact Bio-7, MM Bio-7). Salt marsh harvest mouse was also discussed in the FEIR response to comments. M&A concludes that: “Protective buffers that are well over 100 feet from the top-of-bank of the North Fork of Gallinas Creek ensure that there would be no impacts to the salt marsh harvest mouse from implementation to the proposed project.” These protective buffers are mowed/disked fields that do not constitute suitable salt marsh harvest mouse habitat. It is also worth noting that the recreational facility footprint is entirely contained within the existing airport setting; the recreational facility footprint does not provide habitat conditions that would be regarded as suitable salt marsh harvest mouse habitat. Furthermore, the proposed bridge reconstruction project will not impact any marsh habitat within Gallinas Creek that could support the salt marsh harvest mouse. Rather all reconstruction activities will be within the existing road alignment, fully above the top-of-banks in compacted, asphalt-paved existing road surface areas. Furthermore, the levee along the southern banks of Gallinas Creek stands approximately six feet above the existing grade of the proposed project and buffer area. Thus, this levee will serve to shield the Gallinas Creek marsh plains nearest the proposed project, which lie approximately nine feet below the levee top, from any sound and/or indirect light that may originate from the proposed project.

*The Service is concerned that the proposed project will result in significant direct and indirect effects to salt marsh harvest mice and California clapper rails due to the construction of a large sports complex with additional parking and nighttime outdoor sporting events adjacent to the tidal marsh of the North Fork of Gallinas Creek. Additional*

*noise and lighting from the sports complex and parking lot may result in California clapper rails avoiding the marshes near the new sports complex and the loss of California clapper rail breeding activity or nest abandonment.*

M&A Response:

As is shown on page C&R 21 of the FEIR, *current* land uses immediately north of the North Fork of Gallinas Creek (hereafter Gallinas Creek) includes soccer fields, baseball fields, and a golf course, as well as lighted parking lots, access roads, a driving range, and shops and restaurants; a heavily-trafficked recreational trail also traverses the upper-extent of the marsh plain in the Gallinas Creek. These facilities are not separated from Gallinas Creek by a distance buffer, nor is there a line-of-sight obstruction such as a levee to shield wildlife in Gallinas Creek from the lights, sounds, and other activities now associated with these facilities. Despite this plethora of disturbances, California clapper rail detections in the Gallinas Creek marsh complex have increased during recent survey efforts (Liu et al 2012<sup>2</sup>). In fact, the timing of these surveys, combined with continual positive detections of California clapper rails in the Gallinas Creek marsh complex from 2005-2011, indicates that clapper rails have established nesting territories along Gallinas Creek and that these birds are successfully reproducing. The continued presence of California clapper rails in the Gallinas Creek marsh complex is partially-attributable to the ability of wildlife to acclimatize to human beings and anthropogenic disturbances, especially when such disturbances are predictable (routine or repeated sounds) and indirect (*i.e.* not linearly-directed towards the animal) (Knight and Temple 1995<sup>3</sup>, Knight and Cole 1995<sup>4</sup>, and Riffell et al 1996<sup>5</sup>).

Despite the demonstrated ability of the California clapper rail to acclimatize to anthropogenic disturbance, wildlife in the Gallinas Creek marsh complex will be buffered from any potential disturbances associated with the proposed project. First, as noted in the FEIR, an earthen levee that stands approximately nine feet above the Gallinas Creek marshlands, will shield wildlife inhabiting the marshlands closest to the proposed project site from potential anthropogenic disturbances that may originate from the proposed project. Second, a 100-foot setback buffer shall separate the Gallinas Creek marshlands from the proposed project site. Third, a state of the art lighting system will be used in

<sup>2</sup> L Liu, L Wood, L Salas, and N Nur. 2012. 2011 Annual Report: California clapper rail (*Rallus longirostris obsoletus*) TE-807078-12. Submitted to the U.S. Fish and Wildlife Service, Sacramento on January 31, 2012. [http://www.prbo.org/cms/docs/wetlands/2011CLRA\\_USFWSReport\\_PRBO\\_FINAL.pdf](http://www.prbo.org/cms/docs/wetlands/2011CLRA_USFWSReport_PRBO_FINAL.pdf). Accessed on September 19, 2012.

<sup>3</sup> Knight and Temple 1995. Chapter 6: Origins of wildlife responses of recreationists, *Wildlife and Recreationists: Coexistence Through Management and Research*. Editors: Richard L. Knight and Kevin J. Gutzwiller, Island Press, 1995 Washington, D.C.

<sup>4</sup> Knight and Cole 1995. Chapter 5: Factors that influence wildlife responses to recreationists, *Wildlife and Recreationists: Coexistence Through Management and Research*. Editors: Richard L. Knight and Kevin J. Gutzwiller, Island Press, 1995 Washington, D.C.

<sup>5</sup> Samuel K. Riffell, Kevin J. Gutzwiller, Stanley H. Anderson. 1996. Does repeated human intrusion cause declines in avian richness and abundance. *Ecological Applications* 6(2): 492-505.

conjunction with lighting curfews to reduce lighting impacts to less than significant pursuant to the CEQA:

1. **MM Bio-3a Nocturnal Lighting.** Lighting of the outdoor soccer field located near the North Fork of Gallinas Creek will be designed by Musco Lighting; it uses 50 percent less electricity and produces 50 percent less spill and glare than traditional fixtures. These lighting fixtures will also have focused illumination areas that will ensure no direct lighting of off-site areas, such as the North Fork of Gallinas Creek. All lighting fixtures on the perimeter of the Project shall be outfitted with hoods and cut-off lenses so that the light source itself is not visible to the naked eye from neighboring properties, thereby avoiding indirect light "trespassing" into adjacent habitat areas. This shall be verified by the Design Review Board when it reviews the final lighting plans prior to the issuance of building permits, and verified again at the Project site during the inspection occurring 90 days following lighting installation.
2. **MM Bio-3b Lighting Curfew.** The recreational facility shall establish a 10:00 p.m. outdoor event lighting restriction. When there are evening outdoor soccer events, the 10:00 p.m. end time will ensure that light generated from the recreational facility will not disrupt nocturnal wildlife species' activity patterns, allowing nocturnal migration movements through the project area after that time.

It should also be noted that the top of the levee is regularly mowed/disked in accordance with FAA regulations, which legally-dictate many aspects of airport operations; such mowing/disking of the levee will continue regardless of the status of the proposed project. Levee maintenance renders the levee almost completely barren and void of sufficient cover to provide wildlife escape from predators. Thus, wildlife use of the top of the levee is anticipated to be extremely uncommon and exceedingly rare, particularly for California clapper rail and salt marsh harvest mouse. Finally, extraneous lights from vehicles will be mostly shielded from the Gallinas Creek marshes closest to the project site by an intervening levee that stands approximately nine feet higher than the marshlands below.

Finally, it is worth noting that the proposed project will not result in any direct adverse or potentially adverse impacts to the California clapper rail or the salt marsh harvest mouse as the proposed project is removed from suitable California clapper rail and salt marsh habitat by a 100-foot protection buffer. That is, the project is 100 feet removed from the tidal prism, and the highest edge of potential refugia habitat. Thus, direct take of this species is extremely unlikely as neither species is likely to migrate through 100 feet of unsuitable habitat to access the project footprint, which also consists entirely of unsuitable habitat. It is also worth noting that potential indirect effects (such as lighting, noise, increased foot and vehicle traffic, and others) have also been fully addressed in the DEIR. As part of the proposed project, the implementation of these mitigation measures will ensure no significant adverse effects to listed species in Gallinas Creek, pursuant to the CEQA.

*For example, Albertson (1995) documented a California clapper rail abandoning its territory in Laumeister Marsh in south San Francisco Bay shortly after a repair crew worked on a nearby transmission tower.*

M&A Response:

The proposed project, as discussed in the FEIR and shown in Appendix A, is distinctly different from the example cited by the USFWS as cause for concern. At Laumeister Marsh, PG&E transmission towers occur *within and along the perimeter of the marsh*; there is no line-of-sight buffer between the transmission towers and the marshlands, and crews must enter the marshlands to access the transmission towers. Thus, people are working *within* the marsh, and are *within* a direct line-of-sight of wildlife. At the proposed project site, however, no marshlands will be impacted, nor will the marshlands be entered or accessed by any personnel or equipment. The entirety of the project site is separated from the marshlands of the North Fork of Gallinas Creek by a 100-foot setback buffer, and a chain-link fence will be installed along the northern project perimeter (at the 100-foot setback line). Similarly, line-of-sight between the marshlands and the project site is interrupted by a levee that stands approximately nine feet above the marsh plain, as well as a row of eucalyptus trees that are approximately 35 feet tall.

*Similarly, the loss of four California clapper rail breeding territories along the Greenbrae boardwalk in the Corte Madera Ecological Preserve in Marin County in 1993 was attributed to an increase in domestic and feral dogs and cats along the boardwalk resulting from new residents moving into the nearby residential areas.*

M&A Response:

The proposed project, as discussed in the FEIR and shown in Appendix A, is distinctly different from the example cited by the USFWS as cause for concern. The Greenbrae boardwalk was constructed *within* the Corte Madera Ecological Preserve, immediately behind approximately 35 waterfront homes that line the northern edge of the Corte Madera Ecological Preserve, along Corte Madera Creek. Thus, the homes and the boardwalk are *in direct contact with or contained within* the marshland of the Corte Madera Ecological Preserve; that is, residential and recreational development occurred *within and immediately adjacent to* the marsh. At the proposed project site, however, no marshlands will be impacted, nor will the marshlands be entered or accessed by any personnel or equipment. The entirety of the project site is separated from the marshlands of the North Fork of Gallinas Creek by a 100-foot setback buffer, and a chain-link fence will be installed along the northern project perimeter (at the 100-foot setback line). Similarly, line-of-sight between the marshlands and the project site is interrupted by a levee that stands approximately nine feet above the marsh plain, as well as a row of eucalyptus trees that are approximately 35 feet tall.

The increased presence of dogs and cats on the Greenbrae Boardwalk were undoubtedly due to the construction of residential housing within the Corte Madera Ecological Preserve. As it is reasonable to expect people to have pets living in their homes, an increase of cats and dogs in the marsh is a predictable consequence of these residences. Thus, the impacts to Clapper rail breeding territories noted by the commenter are likely directly associated with the residential development within the Corte Madera Ecological Preserve.

It is also worth noting that the proposed project does not provide for any temporary or permanent housing. Thus, an increase in the local domestic or feral cat population as a



result of the proposed project is extremely unlikely. Similarly, any dogs that may accompany recreationalists to the proposed project site would be barred access to Gallinas Creek owing to the installation of a six-foot chain-link fence at the 100-foot setback line.

*The installation of lighting for the parking lot and outdoor sporting events could result in disturbance of salt marsh harvest mice and California clapper rail activities by disrupting activity cycles and the internal circadian system (Rich and Longcore 2006). Disruption of the circadian clock from artificial night lighting can result in changes to foraging efficiency, risk of predation and parental care, which could have adverse effects on the salt marsh harvest mouse and California clapper rail. These individuals would be out of sync with their neighbors living in a natural light-dark cycle, and could affect mating success (Rich and Longcore 2006). Artificial night lighting has been shown to affect nocturnal rodents. Several species of small rodents harvested an average of 21 percent less seed in response to a single florescent or gasoline camping lantern. Although small mammals can respond to bright moonlight by shifting foraging activities to darker conditions, this is not an option for animals subjected to artificially increased illumination throughout the night. Unless they leave the lighted area, they are either at greater risk of predation from foraging in the lighted area, or reduce their food consumption to avoid increased predation risk (Rich and Longcore 2006). Lights should be designed with wildlife species in mind using appropriate wavelength light sources that are shaded to direct lights away from the marshes.*

M&A Response:

According to Beier (2006<sup>6</sup>), there is little to no empirical evidence to support a deleterious relationship between artificial lighting and wild mammal populations. In fact, the purported effects of disrupted activity cycles and internal circadian rhythms, changed foraging patterns, increased predation risk, reduced parental care, reduced mating success, and altered movement patterns are all presented as classes of *likely* effects. That is, there is an insufficient body of peer-reviewed evidence (or even anecdotal evidence) to definitively support a deleterious relationship between artificial lighting and wild mammal populations. *However*, where such empirical evidence does exist, its applicability is limited. For example, the case study cited above, in which rodent seed harvesting was reduced by 21% in response to a single fluorescent or gasoline camping lantern, was conducted in the American desert southwest where cover is sparse (Kotler 1984<sup>7</sup>). Conversely, salt marsh harvest mice obligatorily occupy habitats (*Salicornia*-dominated marsh plains) where cover is plentiful and virtually continuous. Since the Kotler study did not examine the effects of artificial lighting in the presence of ample cover, the effects of this study cannot be correlated to a rodent of a different genus (*Reithrodontomys*) living in a markedly different habitat (*Salicornia* tidal marsh).

Land use on the north side of the North Fork of Gallinas Creek includes numerous lighted

<sup>6</sup> Beier P. 2006. Effects of artificial night lighting on terrestrial mammals. Pages 19-42 in C. Rich and T. Longcore, editors. *Ecological Consequences of Artificial Night Lighting*. Island Press, Washington, DC, USA.

<sup>7</sup> Kotler B. 1984. Effects of illumination on the rate of resource harvesting in a community of desert rodents. *American Midland Naturalist* 111(2): 383-389.

facilities: parking lots, access roads, a driving range, and shops and restaurants. These facilities are not separated from Gallinas Creek by a distance buffer, nor is there any line-of-sight obstruction to shield wildlife in Gallinas Creek from the lights, sounds, and other activities associated with these facilities. Despite this plethora of disturbances, California clapper rail detections in the Gallinas Creek marsh complex have increased during recent survey efforts (Liu et al 2012<sup>8</sup>). In fact, the timing of these surveys, combined with continual positive detections of California clapper rails in the Gallinas Creek marsh complex from 2005-2011, indicates that clapper rails have established nesting territories along Gallinas Creek and that these birds are successfully reproducing. The continued presence of California clapper rails in the Gallinas Creek marsh complex is partially-attributable to the ability of wildlife to acclimatize to human beings and anthropogenic disturbances, especially when such disturbances are predictable (routine or repeated sounds) and indirect (*i.e.* not linearly-directed towards the animal) (Knight and Temple 1995<sup>9</sup>, Knight and Cole 1995<sup>10</sup>, and Riffell et al 1996<sup>11</sup>).

Despite the demonstrated ability of the California clapper rail to acclimatize to anthropogenic disturbance, wildlife in the Gallinas Creek marsh complex will be buffered from any potential disturbances associated with the proposed project, including lighting. First, an earthen levee that stands approximately nine feet above the Gallinas Creek marshlands will shield wildlife inhabiting the marshlands from potential anthropogenic disturbances that may originate from the proposed project. Second, a 100-foot setback buffer shall separate the Gallinas Creek marshlands from the proposed project site.

Regardless of the above discussions on salt marsh harvest mouse and California clapper rail, a state of the art lighting system will be used *in conjunction with lighting curfews* to render lighting impacts less than significant pursuant to the CEQA: These mitigation measures were included on Pages C&R 23 to C&R 24 of the FEIR to mitigate potential impacts to California clapper rail and salt marsh harvest mouse that may result from the proposed project.

1. **MM Bio-3a Nocturnal Lighting.** Lighting of the outdoor soccer field located near the North Fork of Gallinas Creek will be designed by Musco Lighting; it uses 50 percent less electricity and produces 50 percent less spill and glare than traditional

<sup>8</sup> L Liu, L Wood, L Salas, and N Nur. 2012. 2011 Annual Report: California clapper rail (*Rallus longirostris* *obsoletus*) TE-807078-12. Submitted to the U.S. Fish and Wildlife Service, Sacramento on January 31, 2012. [http://www.prbo.org/cms/docs/wetlands/2011CLRA\\_USFWSReport\\_PRBO\\_FINAL.pdf](http://www.prbo.org/cms/docs/wetlands/2011CLRA_USFWSReport_PRBO_FINAL.pdf). Accessed on September 19, 2012.

<sup>9</sup> Knight and Temple 1995. Chapter 6: Origins of wildlife responses of recreationists, *Wildlife and Recreationists: Coexistence Through Management and Research*. Editors: Richard L. Knight and Kevin J. Gutzwiller, Island Press, 1995 Washington, D.C.

<sup>10</sup> Knight and Cole 1995. Chapter 5: Factors that influence wildlife responses to recreationists, *Wildlife and Recreationists: Coexistence Through Management and Research*. Editors: Richard L. Knight and Kevin J. Gutzwiller, Island Press, 1995 Washington, D.C.

<sup>11</sup> Samuel K. Riffell, Kevin J. Gutzwiller, Stanley H. Anderson. 1996. Does repeated human intrusion cause declines in avian richness and abundance. *Ecological Applications* 6(2): 492-505.

fixtures. These lighting fixtures will also have focused illumination areas that will ensure no direct lighting of off-site areas, such as the North Fork of Gallinas Creek. All lighting fixtures on the perimeter of the Project shall be outfitted with hoods and cut-off lenses so that the light source itself is not visible to the naked eye from neighboring properties, thereby avoiding indirect light “trespassing” into adjacent habitat areas. This shall be verified by the Design Review Board when it reviews the final lighting plans prior to the issuance of building permits, and verified again at the Project site during the inspection occurring 90 days following lighting installation.

2. **MM Bio-3b Lighting Curfew.** The recreational facility shall establish a 10:00 p.m. outdoor event lighting restriction. When there are evening outdoor soccer events, the 10:00 p.m. end time will ensure that light generated from the recreational facility will not disrupt nocturnal wildlife species’ activity patterns, allowing nocturnal migration movements through the project area after that time.

*The proposed project will result in an increase in the presence of people, traffic, and trash near the marshes of the North Fork of Gallinas Creek. Trash left near the marsh will attract predators (e.g., foxes, raccoons, rats, feral cats, corvids, and gulls) that may prey on salt marsh harvest mice and California clapper rails in the adjacent marsh.*

M&A Response:

To ensure that the marsh habitat and the upland buffer along the North Fork of Gallinas Creek is protected, a fence shall be installed around the perimeter of the proposed Project area, and human access into this buffer area will be prohibited except as required by maintenance/operation personnel for continued levee maintenance and other required airport operational tasks that are routinely practiced today. In addition, signs will be posted stating that public access into the buffer area is strictly prohibited owing to the sensitivity of the marsh habitat and to ensure the continued use of this habitat by special-status wildlife species. The applicant shall designate the marsh habitats along the North Fork of Gallinas Creek and the 100-foot upland buffer area on the Project site adjacent to the North Fork of Gallinas Creek as a permanent “conservation area.” The City shall have review and approval authority over the deed restriction language and ability of the owner or subsequent owners to make any modifications to the restrictions, hence the City will enforce the preservation of this wildlife conservation area to ensure that the clapper rail will not be negatively affected by the proposed project. Hence, there will not be an increase in the presence of people, traffic, and trash near the marshes of the North Fork of Gallinas Creek as a result of the proposed project.

*The proposed project area currently floods every winter since it is below sea level and behind agricultural levees on historic baylands. The water is pumped from the airstrip, hangars, and buildings directly into the marsh without being treated. The introduction of additional traffic and paved surfaces within the project area will result in the pumping of additional untreated contaminated water containing petroleum hydrocarbons and other toxins into the marsh which will degrade the water quality of Gallinas Creek. The degradation of the water quality and introduction of petroleum hydrocarbons and other contaminants into the Gallinas Creek marshes may have direct toxic effects to salt marsh harvest mouse and California clapper rail or indirectly affect the California clapper rail*

*due to a reduction in the invertebrate prey base.*

M&A Response:

*The proposed project area currently floods every winter since it is below sea level and behind agricultural levees on historic baylands.*

The project area *does not* flood every winter as claimed. All land within the airport levees, including the project area, are drained effectively via a system of grass lined swales and ditches that lead to an existing pump station, which has more than sufficient capacity to handle existing plus additional project generated stormwater flow. A Hydrologic Analysis dated Nov. 6, 2005 conducted by Oberkamper & Associates determined that "the existing pump house is capable of handling all drainage flows from this site" (p. 11-29, Draft EIR) (see also FEIR Page C&R 32).

The project area did experience temporary minor flooding on New Year's Eve 2005, when an intense storm hit Marin County, causing widespread flooding and \$30 million damage throughout the County (including flooding of sports fields at McInnis Park next door). Normally the airport pumps would quickly evacuate even a storm of this magnitude. However, there was an extended PG&E power outage so the pumps were off-line. The Airport has subsequently purchased a diesel powered back-up generator to keep the pumps running even during a power outage.

*The water is pumped from the airstrip, hangars, and buildings directly into the marsh without being treated.*

Most stormwater from the existing improved areas is filtered through Grease and Sediment Traps located in the paved areas, which are designed to remove hydrocarbons such as grease and oil that may come from aircraft and vehicles visiting the airport facility. Most developed areas surrounding Gallinas Creek, including McInnis Park and Santa Venetia, use similar filtration methods before releasing their water into Gallinas Creek.

In the case of San Rafael Airport, the stormwater goes through a second filtration process. After leaving the developed areas of the property and being filtered through sediment and grease traps, the water is released into a system of grass-lined swales that drain to the evacuation pump. The grasses/vegetation in these swales naturally filters contaminants from the water as it passes through the swales on the way to the pump station. This is an effective, natural filtration process, and is a preferred method of filtration/treatment that is embraced by the California Regional Water Quality Control Board. Thus there are two effective means of filtration treatment of stormwater draining from impervious surfaces prior to the time it is discharged from the site into Gallinas Creek. Water treatment measures are further discussed in the FEIR on Pages C&R 35 to 36.

*The introduction of additional traffic and paved surfaces within the project area will result in the pumping of additional untreated contaminated water containing petroleum hydrocarbons and other toxins into the marsh which will degrade the water quality of Gallinas Creek.*

This statement incorrectly presumes that the new project will not include provisions for stormwater filtration and treatment. As stated on page 11-28 of the Draft EIR, "No new sources of pollution are expected from the site and the Project would be required to maintain consistency with state and local water quality and waste discharge requirements." Mitigation Measure Hydro-1c contains a standard project approval condition to submit a Stormwater Pollution Prevention Plan to the City prior to issuance of grading or building permits. Specific treatment measures included in the submitted project plans include 1) the installation of permeable pavement in the parking areas that effectively will encourage vertical percolation and natural treatment of first flushes; and 2) directing all project stormwater through landscaped areas and grassy bio-swales, where it will be naturally filtered/treated consistent with the requirements of the National Pollutant Discharge Elimination System as administered by the California Regional Water Quality Control Board. Thus all stormwater falling on impervious surfaces that are constructed as part of the proposed project will also be treated prior to the time it can be discharged from the project site to Gallinas Creek.

*Urban development and the installation of dikes for agriculture through the San Francisco Bay Area has resulted in a reduction of the range of the salt marsh harvest mouse and California clapper rail to less than 10 percent of their historic ranges. The amount of suitable tidal marsh habitat available for the salt marsh harvest mouse and California clapper rail is expected to decrease in the future with sea level rise. Development adjacent to the tidal marsh prevents the ability of the tidal marsh to migrate landward in the face of sea level rise and eliminates important marsh ecotone buffers and high tide refugia for the salt marsh harvest mouse and California clapper rail. Thus, diked baylands, such as within the proposed project area, provide the few remaining opportunities within the San Francisco Bay Area for the restoration of tidal marsh and high tide refugia/marsh ecotone to allow for the landward migration of the marsh in the face of sea level rise.*

M&A Response:

As is stated in the FEIR, the proposed project does not involve the construction of new dikes or the filling of baylands; it is completely confined to regularly-maintained (mowed/disked) ruderal habitat, which has been in place and providing upland habitat services and functions (mostly as an airport facility) since *at least* the early 1940s. Such an ecological state renders the proposed project footprint unsuitable for salt marsh harvest mouse or California clapper rail as it is outside of the Gallinas Creek tidal prism (*i.e.*, there is no core habitat) and it lacks cover (*i.e.*, there is no refugia habitat). Therefore, salt marsh harvest mouse and California clapper rail habitat will not be impacted by the proposed project.

While the prospect of sea level rise is well-documented within the scientific literature, most potential ecological effects are unknown and speculative. However, if the landward migration of tidal marsh habitats were generally assumed to be plausible, such change is

implausible at the proposed project site. According to the San Francisco Bay Conservation and Development Commission (2011<sup>[1]</sup>), a rise in sea level of 55 inches is expected within the Gallinas Creek marsh complex by the end of the 21<sup>st</sup> century (87 years from this date). However, an existing 108-inch levee separates the proposed project site from the waters of Gallinas Creek. Thus, even in the presence of sea level rise, the proposed project site would retain its upland ecological services and functions, continuing its status as unsuitable for salt marsh harvest mouse and California clapper rail. Hence, sea level rise and its effects in Gallinas Creek will not be influenced by the proposed project. It is also equally implausible that the Airport, which now services the City of San Rafael, would be abandoned in favor of marsh restoration.

It is also worth noting that the reduction of California clapper rail and salt marsh harvest mouse habitat to less than 10 percent of their historic ranges is in the process of being reversed throughout the San Francisco Bay region owing to a variety of impressive marsh restoration projects. For example, in the last few years Cargill has donated significant land holdings along San Francisco Bay for marsh and wildlife habitat restoration. In 2003, 1,400 acres of Napa River marshlands were donated by Cargill to the California Department of Fish and Game; much of these lands were opened to tidal action in 2010. Also in 2003, state and federal wildlife agencies acquired 16,500 acres of salt pond properties: a land acquisition that was aided by donations from four private foundations and Cargill's donation of \$100 million worth of land. This acquisition launched the South Bay Salt Pond Restoration Project, the largest wetland restoration project on the West Coast. Finally, The USFWS is restoring tidal influence to 1,579 acres as part of the Cullinan Ranch Restoration Project in San Pablo Bay National Wildlife Refuge near the northern shore of San Pablo Bay in the Counties of Solano and Napa. In light of these impressive projects, the historic loss of salt marsh harvest mouse and California clapper rail habitats have without doubt been partially ameliorated within the San Francisco Bay Area.

*The proposed project may result in an increase in the cover of invasive plant species including non-native perennial pepperweed in all areas temporarily disturbed and adjacent areas. Also, an increase in vehicles and pedestrians near the marsh may introduce additional invasive plant species into the upland refugia and tidal marsh habitat along Gallinas Creek. Perennial pepperweed provides poor upland refugia cover for the salt marsh harvest mouse and California clapper rail because it is leafless in winter when the mouse and rail most require upland refugia cover during the frequent winter extreme high tides and storm events. Perennial pepperweed displaces higher quality upland refugia cover such as marsh gumplant and may also displace essential salt marsh plant species such as pickleweed. The construction of the additional parking and sports complex near the marsh may further degrade the upland refugia cover near the parking lot and sports complex; this would increase the risk of predation of salt marsh harvest mice and California clapper rails during extreme high tide events.*

<sup>[1]</sup> [BCDC] San Francisco Bay Conservation and Development Commission. 2011. Living with a rising bay: vulnerability and adaptation in San Francisco Bay and on its shoreline. BCDC Staff Report. 187 pp.

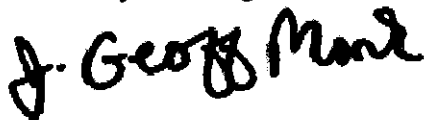
The Gallinas Creek channel in the vicinity of the proposed project lacks a high marsh transition zone; on the south side of Gallinas Creek, the upper extent of the marsh plain terminates at a steeply-sloped levee. As previously noted and discussed in the FEIR, the levee and the land beyond it are dominated by upland vegetation, which has been continuously mowed and/or disked for at least the past 30 years in accordance with FAA regulations, and such levee maintenance practices will continue into the future regardless of the status of the proposed project. Thus, salt marsh harvest mouse and California clapper rail habitat (be it core habitat or refugia) is not supported beyond the top-of-bank of Gallinas Creek in the vicinity of the proposed project. Regardless, a 100-foot setback will be established between the top-of-bank of Gallinas Creek and the proposed project. Furthermore, a chain-link fence will be installed at the 100-foot setback line that will serve to keep pedestrians, vehicles, and all other unauthorized traffic away from the marsh. This 100-foot setback area will also continue to be maintained by airport personnel to remain in compliance with FAA conditions. As such, the vegetation in Gallinas Creek will not be influenced by people using the proposed project site. Finally, as the proposed project site will consist of hard-pack surfaces including parking lots, the soccer recreation facility, and manicured soccer fields, Invasive plants are not expected to colonize developed surfaces, and manicured or landscaped areas are not expected to support invasive species that could spread into a brackish marsh setting.

This concludes the response to USFWS comments regarding the Draft and Final Environmental Impact Report for the proposed San Rafael Airport Recreational Facility. Should you have any questions about this response please do not hesitate to contact the signatories below.

Sincerely,



Brian Spirou  
Senior Project Biologist



J. Geoff Monk  
Principal Biologist