

# MEMO for RECORD

## MITIGATION RATIO-SETTING CHECKLIST

**FILE:** Potrero Hills Landfill Expansion Project, Corps File #2001-260240N

**DATE:** September 28, 2011

**PROJECT DESCRIPTION:** (33 C.F.R. § 325.1(d) and 325.3(a)(5); 40 C.F.R. § 1508.20): Mr. James Dunbar, Potrero Hills Landfill, Inc., through his agent Environmental Stewardship & Planning, Incorporated (contact: Mr. Steve Peterson), has applied for a Department of the Army permit to expand the existing Potrero Hills Landfill operation onto an adjacent 167.63 acre site identified as the "Phase II-area" to increase the landfill's capacity and waste processing capabilities. Potrero Hills Landfill, Inc. is seeking Department of the Army authorization to permanently fill of approximately 1.86 acres of waters of the United States (approximately 1.42 acres of seasonal wetlands, 0.44 acre [3,970 linear feet] of discontinuous intermittent stream segments at the headwaters of Spring Branch Creek, and a 0.004 acre pond) to allow a proposed 167.63-acre eastward expansion of the Landfill site. Components of the Potrero Hills Landfill Expansion Project (the Project or a.k.a. Phase II) would consist of: extending the landfill footprint horizontally to the east by approximately 164 acres; increase the landfill height to an elevation of 345 feet MSL; excavate on dry land a 6,500 linear foot surrogate bypass channel to route water formerly developed within the Phase II footprint away from the landfill; construct infrastructure to allow the potential for future landfill gas-to-energy power plant; installation of new power lines; construct a new visitor's center; and modification of night-lighting.

**PROJECT IMPACTS TO WATERS OF THE UNITED STATES:** The project would result in the permanent fill of approximately 1.86 acres of waters of the United States, including 1.42 acres of seasonal wetlands and seeps, 0.44 acre (3,970 linear feet) of intermittent/ephemeral jurisdictional drainages, and one 0.004 acre pond located within the Phase II Project area.

The following project elements would require a permit pursuant to the provisions of Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 *et seq.*): The Project footprint would be about 164 acres. As mentioned above, all aquatic features within the footprint would be filled. The Project also proposes to divert water away from the Phase II footprint via a buried pipeline and surface channel which would span the entire southern boundary of Phase I and Phase II (6,500 linear feet). No reduction of surface water-carrying capacity is proposed. The two separate drainage systems would be constructed to prevent the landfill from flooding and to accept sheetflow runoff from the capped landfill. The drainage system would be constructed over the life of the proposed landfill (35 years), with additional detention basins installed concurrently with the build-out of each landfill cell. The drainage systems would convey water west from the

landfill. The upstream end of the pipeline would be located near the southeast corner of the Phase II. The downstream end of the pipeline would be located near the southwest corner of Phase I. The pipeline would be designed to handle the 1,000-year storm to protect the landfill from flooding. Along its length, the pipeline would be bedded in native soil and overtopped entirely with soil materials. The pipeline would be constructed of pre-cast sections or of concrete poured in place with the segments being built in increments of approximately 200-600 feet every 3-5 years. The second, above ground, drainage system would be a drainage channel excavated on dry land to convey runoff from the southern portion of the landfill. The surface channel would be protected from scouring with erosion control fabric.

**PROPOSED Mitigation and Monitoring Plan (MMP):** (33 C.F.R. §§ 320.4(r) and 332.4(b); 40 C.F.R. §§ 230.70-230.77 and 1508.20): The project would result in a permanent discharge of fill into all 1.86 acres of waters of the United States located within the Phase II footprint which would consist of: 1.42 acres of seasonal wetlands; 0.44 acre, 3,970 linear feet of unnamed, intermittent streams at the headwaters of Spring Branch Creek; and a 0.004 acre pond.

To compensate for permanent impacts to waters of the United States a would complete a Mitigation and Monitoring Plan (MMP), as revised March 4, 2011, prepared by LSA Associates, Inc., and Environmental Stewardship & Planning, Inc. Mitigation will occur on 963.28 acres within the Suisun Marsh Secondary Management Area of the Suisun Marsh on land owned by the applicant. The mitigation for impacts to wetlands and other waters of the United States would consist of the following components:

- a) Establishment of 4.49 acres of seasonal wetlands;
- b) Establishment of 1.80 acres (5,600 linear feet) of stream channel;
- c) Establishment of 1.78 acres of pond habitat (breeding habitat for the California tiger salamander);
- d) Wetland Enhancement of 65.12 acres of seasonal wetlands;
- e) Stream Enhancement on 1.49 acres (11,980 linear feet) of stream channel;
- f) Preservation of 4.73 acres of pond habitat (breeding habitat for the California tiger salamander);
- g) Preservation of 863.13 acres of California tiger salamander upland buffer habitat; and
- h) Preservation of 20.74 acres of upland buffer grassland habitat (California tiger salamander upland habitat).

The above-described MMP components would occur at the following six sites:

- a) **Southern Hills Site, 428.70 acres:** CTS upland habitat preservation would be 420.33 acres; CTS open water pond habitat preserved would be 3.78 acres; CTS open water pond habitat created would be 1.05 acres; Seasonal Wetlands Preservation would be 2.92 acres; and intermittent stream channel preserved would be 0.62 acres (4,230 linear feet).
- b) **Pond 5 Buffer Area, 41.23 acres:** CTS Upland Habitat Buffer Preservation would be 40.78 acres; CTS Pond Habitat Preservation would be 0.45 acre.
- c) **Eastern Valley Site, 160 acres:** CTS upland Habitat Buffer Preservation would

be 159.16 acres; CTS Pond Habitat Preservation would be 0.50 acre; Seasonal wetland preservation would be 0.20 acre; and stream preservation would be 0.14 acre (1,540 linear feet).

- d) **Eastern Hills Site, 137.39 acres:** CTS upland habitat buffer preservation would be 136.87; seasonal wetlands preserved would be 0.004 acre; and seasonal stream preserved would be 0.51 acres (5,175 linear feet).
- e) **Griffith Ranch Site, 112.16 acres:** CTS upland habitat buffer preservation would consist of 105.99 acres; CTS pond habitat establishment would be 0.73 acre; Preservation of seasonal wetlands would be 0.34 acre; establishment of wetland habitat would be 4.07 acres; establishment of intermittent stream habitat would be 1.03 acres (3,702 linear feet).

**Director's Guild Site, 83.80 acres:** CTS upland grassland habitat would be 20.74 acres; Seasonal wetlands preserved would be 61.66 acres; Seasonal wetlands established would be 0.42 acre; intermittent stream preservation of 0.21 acre (1,035 linear feet) of stream; and creation of 0.77 acre (1,898 linear feet) of stream channel.

**MITIGATION RATIO-SETTING CHECKLIST:** The project proposes to fill all aquatic features within the Phase II footprint and proposes to place an existing drainage ditch into pipe. I completed a checklist for each of the aforementioned types of aquatic features: **WETLANDS** (1.42 acres); **POND** (0.004 acre); **STREAMS** located within the Phase II footprint (0.44 acre, 3,490 linear feet) and; existing **DRAINAGE DITCH** at the southern boundary of Phase I, (1.21 acres, 4,830 linear feet).

## **WETLANDS**

**WETLAND IMPACTS:** Impact amount is 1.42 acres. The wetlands primarily occur in linear strips in the landscape, subject to unidirectional surface flow. This condition has been exacerbated with cattle traffic and cattle grazing that has converted unconsolidated sheet flow fed from the surrounding Potrero Hills. Given the disturbed condition of the wetlands classification is best described as: Palustrine/Riverine System; Intermittent Subsystem; emergent wetland Class. Facultative non-native grasses dominate these wetlands. The wetlands are grazed by cattle.

In my jurisdictional determination (JD) MFR from December 30, 2009 I described the wetland areas in the Phase II boundary this way:

*"The vast majority of the land within the study area is upland. Runoff from the grassy hillsides seems to collect and then flow west in two main channels that were created within the cattle paths on the property."*

**PROPOSED WETLAND MITIGATION:** The applicant proposes an array of mitigation for wetland impacts consisting of establishment, enhancement, preservation, and buffer protection for a total mitigation amount of approximately 69.61 acres. For the purposes of simplifying the use of the Mitigation Ratio-Setting Checklist I compared impacts to proposed establishment only. The applicant proposes a total of 4.49 acres of

wetland establishment. Wetland Establishment would occur as described below:  
Griffith Ranch Mitigation Site--establishment of a wetland vernal pool pond/swale complex, 4.07 acres. This mitigation site will provide increased habitat value for both common and special-status plant and animal species such as Contra Costa goldfields (*Lasthenia conjugens*), California tiger salamanders, vernal pool tadpole shrimp, Conservancy fairy shrimp, and vernal pool fairy shrimp.

Director's Guild Mitigation Site--re-establishment of 0.42 acre of wetland playa pool to its pre-disturbance configuration and re-configuration of pre-disturbance natural drainage. Five special-status plants have been found on the parcel: San Joaquin spearscale (*Atriplex joaquiniana*), crownscale (*Atriplex coronate*), pappose tarplant (*Centromadia parryi ssp. parryi*), alkali milk vetch (*Astragalus tener var. tener*), and Contra Costa goldfields (*Lasthenia conjugens*). The proposed mitigation will expand and increase the amount of wetland habitat for the aforementioned special-status plant species and provide habitat for the following special-status animal species: California tiger salamanders, vernal pool tadpole shrimp, Conservancy fairy shrimp, and vernal pool fairy shrimp.

The Checklist:

1. Site information is filled in.
2. I used the Qualitative impact-mitigation comparison procedure outlined in the Instructions for completing the Mitigation Ratio-Setting Checklist.
  - a. Short and long term surface water storage should be in favor of the mitigation sites. Both the pond/swale complex at Griffith Ranch Site and the increased capacity (via removing an old road berm) at Director's Guild site should be greater than the degraded, down-cutting impact wetland sites.
  - b. Subsurface water storage should be greater at the mitigation sites because water will be held at the mitigation sites for a longer duration than occurs at the impact sites.
  - c. Moderation of groundwater flow—slight advantage to the mitigation sites. Again, because water will be detained and sequestered at the mitigation sites, unlike the current condition at the impact sites.
  - d. Dissipation of energy should be greater at the mitigation sites because they should have capacities to detain water as opposed to the “flashy-ness” of the impact sites that are down-cutting due to cattle traffic and a reduction of vegetation due to cattle grazing.
  - e. Cycling nutrients should occur to a greater extent at the mitigation sites due to detainment of flow, but also due to a denser vegetative stem count.
  - f. Removal of elements and compounds should favor the mitigation site based on vegetation densities.
  - g. Retention of particulates should benefit the mitigation sites because storm velocities should be desynchronized, particulates should fall out of suspension in the mitigation sites.
  - h. Export of organic carbon should benefit the mitigation sites because of the plant/water interface. However, also because the export of organic carbon will not be discontinuous as in the situation at the impact sites.

- i. Maintenance of plant and animal communities will favor the mitigation sites which will have planting and monitoring plans. These plans are designed to benefit plant and animal communities, of which there are several special-status species.

For every potential function listed above the advantage predicted is with the mitigation sites.

3. Not applicable.
4. The mitigation site location is within the same watershed as the impacted wetlands which results in a +0 of the mitigation ratio.
5. Re-establishment and establishment of wetlands results in a +0 to the mitigation ratio.
6. The conversion scenario is a conversion from a common habitat to a highly valuable/rare plant habitat.
7. Factors of uncertainty:
  1. Permittee responsible mitigation was given a +0.1 ratio increase. This increase at the bottom of the ratio increase range. This is because the applicant has assembled a very large, very in-depth mitigation plan within a specially managed area (Secondary Management Area of the Suisun Marsh) which involved input and development from multiple regulatory agencies. Upon implementation, several state and federal agencies (including the Corps) will monitor the MMP for success.
  2. The Director's Guild Mitigation Site involves returning playa wetlands to pre-existing condition, thus ration adjustment of +0.
  3. The impacted wetlands are not difficult to replace. Ratio adjustment of +0.
  4. No major modifications to hydrology proposed. Ratio adjustment of +0.
  5. No artificial hydrology proposed at the mitigation sites. Ratio adjustment of +0.
  6. No structures proposed. Ratio adjustment of +0.
  7. Vegetation maintenance is not proposed. Ratio adjustment of +0.
  8. There are no buried structures. Ratio adjustment of +0.
  9. There is a long term preservation mechanism. Ratio adjustment of +0.
8. Temporal loss does not apply because mitigation construction is proposed to happen concurrently with project construction (immediately). Ratio adjustment of +0.
9. The final mitigation ratio is a default to 1:1. However, in consideration of wetland re-establishment/establishment alone, the applicant proposes to create 4.49 acres of wetlands to compensate for 1.42 acres of impacts.
10. **CONCLUSION FOR WETLAND MITIGATION PROPOSAL:** The applicant's proposed compensation for wetland impacts is adequate. When considering the applicant's proposal for mitigation in totality (considering preservation and buffer amounts in addition to the re-establishment/establishment proposal), from a watershed perspective, the proposal is very robust.

## **POND**

**POND IMPACT:** 0.004 acre.

**PROPOSED POND MITIGATION:** The applicant proposes to create three ponds totaling 1.05 acres at the Southern Hills Mitigation Site. In addition, the applicant also proposes to enhance "Pond 5" and protect a large upland buffer area adjacent to Pond 5 to allow California tiger salamander migration corridor to/from the pond. For the sake of simplicity, I have compared the impact site only to the pond creation proposal at the Southern Hills Mitigation Site.

The Checklist:

1. Site information is filled in.
2. I used the Qualitative impact-mitigation comparison procedure outlined in the Instructions for completing the Mitigation Ratio-Setting Checklist.
  - a. Short and long term pond surface water storage should be compensated for. I set the result at =.
  - b. Subsurface water storage at the pond mitigation site should be equal to the impact site. I set the result at =.
  - c. Moderation of groundwater flow should be equal.
  - d. Dissipation of energy should be equal.
  - e. Cycling nutrients should equal.
  - f. Retention of particulates should equal.
  - g. Export of organic carbon should be equal.
  - h. Maintenance of plant and animal communities should favor the mitigation site which will have planting and monitoring plans. These plans are designed to benefit plant and animal communities, of which there are several special-status species.

For the potential functions listed above the advantage predicted is with the mitigation site.

3. Not applicable.
4. The mitigation site location is within the same watershed as the impacted wetlands which results in a +0 of the mitigation ratio.
5. Re-establishment and establishment of wetlands results in a +0 to the mitigation ratio.
6. The conversion scenario is equal.
7. Factors of uncertainty:
  1. Permittee responsible mitigation was given a +0.1 ratio increase. This increase at the bottom of the ratio increase range. This is because the applicant has assembled a very large, very in-depth mitigation plan within a specially managed area (Secondary Management Area of the Suisun Marsh) which involved input and development from multiple regulatory agencies. Upon implementation, several state and federal agencies (including the Corps) will monitor the MMP for success.

2. The mitigation site was not formerly “pond”, ratio adjustment is +0.1.
  3. The impacted pond is not difficult to replace. Ratio adjustment of +0.
  4. No major modifications to hydrology proposed. Ratio adjustment of +0.
  5. No artificial hydrology proposed at the mitigation site. The plan is to excavate a pond that should receive surface runoff water. Ratio adjustment of +0.
  6. No structures proposed. Ratio adjustment of +0.
  7. Vegetation maintenance is not proposed. Ratio adjustment of +0.
  8. There are no buried structures. Ratio adjustment of +0.
  9. There is a long term preservation mechanism. Ratio adjustment of +0.
  8. Temporal loss does not apply because mitigation construction is proposed to happen concurrently with project construction (immediately). Ratio adjustment of +0.
  9. The final mitigation ratio is a default to 1:1. However, it should be noted that mitigation for pond impacts is very robust.
10. **CONCLUSION FOR POND MITIGATION PROPOSAL:** The applicant’s proposed compensation for pond impacts is adequate. When considering the applicant’s proposal for mitigation in totality (considering preservation and buffer amounts in addition to the re-establishment/establishment proposal), from a watershed perspective, the proposal is very robust.

## **STREAM**

**STREAM IMPACTS:** 0.44 acre, 3,490 linear feet.

**PROPOSED STREAM MITIGATION:** The applicant proposes establishment of a total of 1.80 acres, 5,600 linear feet of stream. The proposed mitigation would occur on the Griffith Ranch Mitigation Site and the Director’s Guild Mitigation Site.

The stream establishment proposal at the Griffith Ranch Mitigation Site would consist of the “swale” portions of the vernal pool/swale mitigation. At the Director’s Guild Mitigation Site the applicant proposes to establish and re-establish the pre-existing condition in which the playa pond was connected to an unnamed stream that allowed water to flow off the site to the west.

The Checklist:

1. Site information is filled in.
2. I used the Qualitative impact-mitigation comparison procedure outlined in the Instructions for completing the Mitigation Ratio-Setting Checklist.
  - a. Short and long term pond surface water storage. The mitigation sites should provide better storage than the impact site because the impact site is down-cut and flashy.
  - b. Subsurface water storage should be equal to the impact site. I set the result at =.
  - c. Moderation of groundwater flow should be more advantageous at the mitigation sites because the impacted stream segments are flashy and very intermittent (probably ephemeral).

- d. Dissipation of energy should be equal. However, it would be reasonable to believe the advantage would be with the mitigation sites because shouldn't be downcutting and probably will have more dense vegetation.
- e. Cycling nutrients. Slight advantage to the mitigation sites. The mitigation sites will channel concentrated flows through high functioning wetland systems as opposed to the impact site that does not.
- f. Removal of elements and compounds. Advantage should be with the mitigation sites as the streams will flow through highly developed, high functioning wetlands.
- g. Retention of particulates should be advantage to the mitigation sites for the same reasons listed in f.
- h. Export of organic carbon. Advantage to the mitigation sites because those streams will have high connectivity to higher functioning wetlands.
- i. Maintenance of plant and animal communities should favor the mitigation sites which will have planting and monitoring plans. These plans are designed to benefit plant and animal communities, of which there are several special-status species.

For the potential functions listed above the advantage predicted is with the mitigation site.

- 3. Not applicable.
- 4. The mitigation site location is within the same watershed as the impact site which results in a +0 of the mitigation ratio.
- 5. Re-establishment and establishment of stream channel results in a +0 to the mitigation ratio.
- 6. The conversion scenario is: conversion of a common type to a highly valuable type. This scenario does not increase the mitigation ratio.
- 7. Factors of uncertainty:
  - 1. Permittee responsible mitigation was given a +0.1 ratio increase. This increase at the bottom of the ratio increase range. This is because the applicant has assembled a very large, very in-depth mitigation plan within a specially managed area (Secondary Management Area of the Suisun Marsh) which involved input and development from multiple regulatory agencies. Upon implementation, several state and federal agencies (including the Corps) will monitor the MMP for success.
  - 2. The Griffith Ranch mitigation site did not formerly support a stream channel, however, there is some re-establishment of stream channel at the Director's Guild Site, ratio adjustment is +0.
  - 3. The impacted stream segments are not difficult to replace. Ratio adjustment of +0.
  - 4. No major modifications to hydrology proposed. Ratio adjustment of +0.1 because the proposal is re-establishing or establishment of stream channel I find that that in-and-of itself is modifying hydrology that is more than minimal.
  - 5. No artificial hydrology proposed at the mitigation site. The plan is to excavate

stream channel that should receive surface sheet runoff water. Ratio adjustment of +0.

6. No structures proposed. Ratio adjustment of +0.
  7. Vegetation maintenance is not proposed. Ratio adjustment of +0.
  8. There are no buried structures. Ratio adjustment of +0.
  9. There is a long term preservation mechanism. Ratio adjustment of +0.
  8. Temporal loss does not apply because mitigation construction is proposed to happen concurrently with project construction (immediately). Ratio adjustment of +0.
  9. The final mitigation ratio is a default to 1:1. However, it should be noted that mitigation for stream impacts is very robust. The applicant also proposes to preserve stream channel at the Eastern Valley Mitigation Site, Southern Hills Mitigation Site, Eastern Hills Mitigation Site, and Director's Guild Mitigation site for a total of 1.48 acres/11,980 linear feet of preservation compensation.
10. **CONCLUSION FOR STREAM MITIGATION PROPOSAL:** The applicant's proposed compensation for stream impacts is adequate. When considering the applicant's proposal for mitigation in totality (considering preservation and buffer amounts in addition to the re-establishment/establishment proposal), from a watershed perspective, the proposal is very robust.

## **DRAINAGE DITCH**

**DRAINAGE DITCH IMPACTS:** 4,830 linear feet.

**PROPOSED DITCH MITIGATION:** The applicant proposes preservation of 0.51 acre, 5,175 linear feet of stream. The proposed mitigation would occur on the Eastern Hills Mitigation Site.

**Note:** the impacted drainage ditch was excavated on dry land as part of Corps File #21252E95. The drainage ditch meets the definition of a drainage ditch that is maintained regularly (regular excavation of accumulated sediments to the original engineered contours). The drainage ditch is man-made, excavated on dry land, regularly maintained, ephemeral, and does not take the appearance of a naturally occurring aquatic feature. It is an engineered ditch with the sole purpose of conveying water away from Phase 1 of the PHLF. Despite these facts, I chose to run the mitigation checklist against the proposed impacts to the drainage ditch (applicant proposes to enclose the drainage ditch in pipe).

The Checklist:

1. Site information is filled in.
2. I used the Qualitative impact-mitigation comparison procedure outlined in the Instructions for completing the Mitigation Ratio-Setting Checklist.
  - a. Short and long term pond surface water storage. The mitigation sites should provide better storage than the impact site because the impact site was not designed to store water.
  - b. Subsurface water storage should be greater at the mitigation site because the

- impacted drainage ditch was not designed for subsurface water storage.
- c. Moderation of groundwater flow should be greater at the mitigation site because the impacted drainage ditch is ephemeral.
  - d. Dissipation of energy should be slightly better at the drainage ditch because it was designed to dissipate energy (designed not to down cut, and seems to be working per design because regular sediment removal is required).
  - e. Cycling nutrients. Advantage to the mitigation site.
  - f. Removal of elements and compounds. Advantage to the mitigation site.
  - g. Retention of particulates should be better at the mitigation site.
  - h. Export of organic carbon. Advantage to the mitigation site.
  - i. Maintenance of plant and animal communities should be greater at the mitigation site.

For the potential functions listed above the advantage predicted is with the mitigation site.

3. Not applicable.
4. The mitigation site location is within the same watershed as the impact site which results in a +0 of the mitigation ratio.
5. Preservation compensation of stream channel results in a +1.0 to the mitigation ratio.
6. The conversion scenario is: conversion of a common type to a valuable type. This scenario does not increase the mitigation ratio.
7. Factors of uncertainty:
  1. Permittee responsible mitigation was given a +0.1 ratio increase. This increase at the bottom of the ratio increase range. This is because the applicant has assembled a very large, very in-depth mitigation plan within a specially managed area (Secondary Management Area of the Suisun Marsh) which involved input and development from multiple regulatory agencies. Upon implementation, several state and federal agencies (including the Corps) will monitor the MMP for success.
  2. Preservation of stream channel results in a ratio adjustment of +0.
  3. The impacted drainage ditch is not difficult to replace. Ratio adjustment of +0.
  4. No major modifications to hydrology proposed. Ratio adjustment of +0.
  5. No artificial hydrology proposed at the mitigation site. Ratio adjustment of +0.
  6. No structures proposed. Ratio adjustment of +0.
  7. Vegetation maintenance is not proposed. Ratio adjustment of +0.
  8. There are no buried structures. Ratio adjustment of +0.
  9. There is a long term preservation mechanism. Ratio adjustment of +0.
  10. Temporal loss does not apply. Ratio adjustment of +0.
  11. The final mitigation ratio is a default to 1:1. However, it should be noted that mitigation for the drainage ditch impact is very robust.

12. **CONCLUSION FOR DRAINAGE DITCH MITIGATION PROPOSAL:**  
The applicant's proposed compensation for ditch impacts is adequate. When

considering the applicant's proposal for mitigation in totality, from a watershed perspective, the MMP proposal is very robust.

**CONCLUSION:** The compensatory mitigation proposed in the MMP adequate.

Applicant's proposed Contingency Funding. The applicant has purchased the following credits from the Gridley Preserve to be kept in reserve as a contingent mitigation measure: 1.1 acres preserved seasonal pond/CTS breeding habitat; 1.0 acre preserved channel 10 block in which to create/construct 1.0 acre seasonal pond/CTS breeding; 1.9 acres of vernal pools.

I recommend the Corps find this contingency measure acceptable for the following reasons: The PHLF Phase II Project is within the approved service area of the Elsie Gridley Preserve. Bank service areas are typically watershed based. The PHLF Phase II is located within the Elsie Gridley Phase II watershed; the amount of credits purchased adequately compensates for project impacts.

Applicant's proposed compensatory mitigation types:

**Establishment.** The applicant would create the following aquatic features: 1.78 acres of pond habitat at Southern Hills Mitigation Site and Griffith Ranch Mitigation Site; 4.49 acres of wetland habitat at Griffith Ranch Mitigation Site and Director's Guild Mitigation Site; and 1.80 acres (5,600 linear feet) of stream habitat at Griffith Ranch Mitigation Site and Director's Guild Mitigation Site.

**Re-establishment.** Re-establishment of stream channel and wetlands is proposed at the Director's Guild Mitigation Site. The applicant's MMP Compensatory Ratio's Table (Table I) does not separate out re-establishment from establishment (as it occurs at the Director's Guild Mitigation Site). I believe it is acceptable to simply tally the compensatory mitigation that occurs at Director's Guild as establishment, as opposed to creating a further subset of compensation at the risk of accidentally "double counting" mitigation amounts.

**Preservation.** The applicant's preservation proposal would set aside aquatic features (wetlands, vernal pools, playa pools) that are unique, rare, and difficult to replace. The applicant's preservation proposal would remove those resources from the amount that could someday become subject to future development. To cite the wetlands and playa pool/vernal pools that occur on the Director's Guild Mitigation Site as an example: five special status plant species occur; the vernal pools support two federally listed vernal pool crustaceans.--The applicant proposes to preserve all 61.66 acres of these unique/rare, hard to replace wetlands on the property. The applicant also proposes to preserve and manage the 20.74 acres uplands (buffer) on the property that surround these wetlands.

Per 33 CFR Part 332 Section 332.3(h) I believe the applicant's preservation proposal meets the criteria of (1)(i), (ii), (iii), (iv), (v), and (2).

**Buffer.** The applicant proposes a large amount of upland buffer. It is my finding that the buffer proposed by the applicant can substantially benefit habitat connectivity of

mitigation sites and supplement the aquatic resource overall. Be it, contributing to the long term viability of the goals outlined in pond creation, wetland preservation, or wetland/stream channel establishment, the applicant's buffer proposal should benefit the mitigation goals. To cite Pond 5 and its adjacent buffer component as an example: Pond 5 provides important habitat for California tiger salamander. A key component to meeting the goals of Pond 5 (habitat for California tiger salamanders) is protection of a buffer zone around the pond. The buffer zone contains the required upland habitat which works in conjunction with Pond 5, providing the breeding habitat. Both habitats are required to achieve success when establishing or preserving California tiger salamander habitat.

Per 33 CFR Part 332 Compensatory Mitigation for Losses of Aquatic Resources, Section 332.4, paragraphs (c)(2) through (c)(14), the applicant's MMP incorporates all elements at a level of detail commensurate with the scale and scope of the impacts.

Applicant's proposed grazing plan: The applicant proposes grazing activities to maintain upland areas protected as "buffer" and in wetland areas for the purpose of maintaining and enhancing biodiversity.

The applicant's grazing plan is not in-and-of-itself a form of compensatory mitigation. Instead, it is part of the management plan to protect and conserve the aforementioned aquatic resources and the special-status plant and animal species. I find that the grazing plan as part of the long term conservation plan is acceptable.

**NOTE: The checklist worksheets and notes are attached to the MFR.**

**PREPARED BY:**

  
\_\_\_\_\_  
David Wickens  
Regulatory Permit Manager

  
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Date