



US Army Corps
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Public Notices

Updated Map and Drawing Standards

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Updated Map and Drawing Standards for the South Pacific Division Regulatory Program

February 10, 2016

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Introduction: This notice establishes updated standards and guidelines for maps and drawings submitted as part of delineations and applications for U.S. Army permits and jurisdictional determinations. The intent of these standards is to improve the quality and consistency of maps and drawings and simplify and improve review and processing by Corps Regulatory project managers. We estimate that at least 70-80% of maps and drawings submitted to the Corps Regulatory Program in South Pacific Division (comprised of Albuquerque, San Francisco, Sacramento, and Los Angeles districts) already meet the majority of these standards. By adhering to a single standard for maps and drawings, applicants and consultants should have a clear and concise product, and project managers should be able to provide permit decisions and jurisdictional determinations in a more consistent and timely manner. In addition, electronic mapping of permit-related maps and drawings will enable data sharing with other resource agencies for coordination of mitigation decision-making.

Applicability: These standards apply to all submittals to Regulatory Divisions, within the Districts of the Corps' South Pacific Division, and supersede all previous SPD district-specific standards related to map and drawing requirements. At the Corps' discretion, these standards may be modified or waived on a case by case basis, for example, projects or activities with small or temporary impacts to waters of the U.S. (for example, less than a tenth of an acre of permanent impact), projects where the applicant possesses limited financial resources (for example, private homeowners and small land owners), emergencies, and restoration projects with limited grant funding. Additional examples where these standards may be modified or waived include reauthorization of previously-authorized work and maintenance, repair, and/or rehabilitation projects where the original authorization included adequate drawings that are available. In general, compensatory mitigation plans must adhere to these standards, regardless of whether the standards are waived for the overall project.

Standards:

1. General:

- a. Documents must include at a minimum: location (vicinity) map(s) and plan view map(s). Mitigation plans and construction drawings should also include representative cross-sectional views. Delineation maps must be provided for the project area, staging areas, disposal sites, access routes, and proposed mitigation sites, etc.
- b. The orientation of the map on the page (as it is read) must be the same for all maps submitted.
- c. By convention, North will normally be toward the top of the page.

- d. For plan view maps where specific elevations are shown, and for all cross sections, the reference elevation datum (e.g. North American Vertical Datum of 1988, National Geodetic Vertical Datum of 1929, etc.) must be indicated.
 - e. Procedure: the Corps will review submitted maps and drawings for conformance with these standards. Documents not meeting the standards may be returned for revision.
 - f. Base maps:
 - a. If aerial photographs are used, these must be orthorectified, date-stamped, and with the imagery source identified on the map.
 - b. Date of imagery must be chosen such that aquatic resources have maximum visibility (e.g., during wet season).
 - c. At least one map showing topography must be included.
 - g. Format:
 - a. Both paper and electronic versions of documents are required; however, submittal of electronic documents may be waived on a project-specific basis for applicants without access to the appropriate software. For electronic documents, Adobe PDF format is preferred.
 - b. Size: If larger than 11 x 17 inches, documents must be folded to fit within a 8.5 x 11 inch binder.
 - c. GIS: All GIS data and associated metadata shall be provided on a digital medium (for example, CD or DVD), preferably using the Environmental Systems Research Institute (ESRI) shapefile format. Other data types may be accepted at the Corps project manager's discretion.
 - h. Plan view :
 - a. At least two control points on opposite corners with latitude and longitude clearly annotated.
 - b. North arrow.
 - c. Bar scale and text scale (e.g., "1 inch = 250 ft") not to exceed 1 inch = 400 feet.
 - d. Legend for any relevant items shown (e.g., wetlands and/or other water types), including the area (acres or square feet) in parenthesis for all relevant items shown on the map (e.g. project boundary, project construction footprint, waters of the U.S., impacts to waters of the U.S., etc.). Such items must be clearly identified in the legend. Annotate clearly showing the location of cross-sectional views (e.g., "A-A' ")
 - e. Date prepared/revised.
 - f. Name and organization of map preparer.
 - g. Appropriate landmarks (on-site and nearby roads, prominent structures and/or topographic features, etc.).
 - i. Cross-sectional view:
 - a. Must include a bar scale and text scale (e.g., "1 inch = 100 ft") for horizontal and vertical dimensions.
 - b. If there are tidal areas within the survey area, identify the location and elevation of Mean High Water and the High Tide Line on all maps and cross-section drawings when appropriate.
2. Location (vicinity) map(s):
- a. One or more vicinity maps must be submitted, at least one of which must use a USGS 7.5- minute quadrangle sheet as its basemap (if no USGS quadrangle is available, another accurate local map may be used as a basemap) with the project study boundary clearly outlined and the quadrangle name included on the map.
 - b. Does not need to be to-scale, but must include commonly recognizable landmark(s).
 - c. Must include north arrow.
 - d. Project location must be clearly marked and annotated.
 - e. Must include adjacent local roadways.

3. Proposed projects:

- a. Show all proposed fills, structures, and /or limits of work within and adjacent to potential waters of the U.S., including wetlands.
- b. Show the location of delineated waters of the U.S. within the project area.
- c. All impact areas within waters of the United States must be labeled with a unique name (For example, RSP1, RSP2, Cofferdam1, BoxCulvert1, AccessRoad1, etc.).
- d. Clearly annotate all fills, structures, and /or limits of work as either permanent or temporary.
- e. Pre-construction drawings (grading plans) and post-construction drawings (as-built plans) must include name, company/agency, and signature of preparer, date signed, drawing title, and total number of sheets.
- f. Both plan view and cross-sectional view maps must be provided.
- g. The proposed project drawing(s) must also be accompanied by a completed copy of the Impacts sheet in the Consolidated ORM Upload Workbook (ORM-Upload_Sheet_Consolidated_Rapanos20151022.xlsm from the attached [Zip file](#)).

4. Post-construction drawings (as-built plans):

- a. Both plan view and cross-sectional view maps must be provided.
- b. Must be the same size and alignment (spatial) as authorized grading plans (i.e., grading plans and as-built plans must overlay such that structures, boundaries, etc. align).
- c. Show any deviations from the fills and/or structures authorized as part of an approved pre-construction drawing in red.

5. Delineations of waters of the United States (see [attached example map](#)):

- a. Plan view maps must be provided.
- b. Cross-sectional view drawings must be provided at the Corps project manager's discretion. Examples of when cross-sectional view drawings would be appropriate include stream or wetland restorations, stream crossings, proposed structures, and delineations of tidal areas.
- c. The survey area boundary must be clearly annotated and/or symbolized. The survey area boundary encloses the spatial area for which a Corps jurisdictional determination is being requested.
- d. Clearly show location and extent of all areas within the survey area potentially meeting the criteria for waters of the U.S., including special aquatic sites (e.g., wetlands, sanctuaries and refuges, mudflats, vegetated shallows, and riffle and pool complexes), and/or navigable waters. Each type of boundary (for example, ordinary high water mark, mean high water, wetlands or other special aquatic sites, and high tide line) must be clearly annotated and/or symbolized to ensure they are differentiable on the map.
- e. Show locations of any wetland delineation or ordinary high water mark data points, labeled according to the number of the corresponding wetland delineation form or ordinary high water mark data sheet. Generally, a wetland boundary must be based on at least one set of paired wetland delineation data points, with one within the proposed wetland boundary and one immediately outside it.
- f. Include representative ordinary high water mark (OHWM) widths where measured in the field (averages may be acceptable for uniform channel reaches). OHWM widths must be shown with a transect/profile line (e.g., A-A') labeled with the corresponding width measurement in feet. In some cases, a corresponding cross section may be required, in which case the cross section must include the corresponding OHWM elevations.
- g. Include information not directly related to a delineation of waters of the U.S. on a separate map(s).
- h. If there are tidal areas within the survey area, identify the location and elevation of Mean High Water and the High Tide Line on all maps and cross-section drawings. Annotate boundaries with the corresponding elevation (ft) and the tidal (vertical) datum used (NAVD88, NGVD29, MLLW, etc.).
- i. For non-tidal zones, identify the Ordinary High Water Mark.
- j. Each line or polygon representing a water of the U.S. must be labeled with a unique name (For example, WL1, WL2, VP1, VP2, STR1, STR2, etc.). Multi-geometry features, such as streams split by a culvert crossing, shall be separated into

individual sections, each with their own unique names (For Example, STR1a, STR1b, etc.).

- k. The delineation report must be accompanied by a completed copy of the Aquatic Resources sheet in the Consolidated ORM Upload Workbook (ORM_Upload_Sheet_Consolidated_Rapanos_20151022.xslm from the attached [Zip file](#)).
 - l. If submitted, delineation-related GIS data must use the same unique names as on the map and the Consolidated ORM Upload Workbook, and must include a text file of metadata, including datum, projection, and mapper contact information.
6. Mitigation plans and long-term preservation (LTP) maps (see [attached example map](#)):
- a. Both plan view and cross-sectional view maps must be provided.
 - b. Mitigation areas must be clearly differentiable based on both the type of aquatic resource and the type of mitigation. Aquatic resource types must be differentiated by color, and mitigation types must be differentiated using different fill symbols, as described below and shown in the example ArcMap layer package (Regulatory_mitigation_template_20160115.lpk in the attached [Zip file](#)). Establishment areas must use a line fill symbol with lines at a 45° and 315° angles. Re-establishment areas must use a line fill symbol with lines at a 0° angle. Rehabilitation areas must use a line fill symbol with lines at a 45° angle. Enhancement areas must use a line fill symbol with lines at a 90° angle. Aquatic resources preserved as compensatory mitigation (preservation) must use a simple fill symbol. For a definition of mitigation terms, see 2008 Mitigation Rule (33 CFR Part 332).
 - c. All mitigation sites and LTP boundaries must be clearly labeled with a unique name (for example, LTP1, WetEstab1, WetEstab2, StrmEnhance1, etc.).
 - d. Locations of mitigation sites must be shown relative to other landscape features and habitat types (e.g., riparian corridor, wetland complex, etc.).
 - e. The mitigation plan must be accompanied by a completed copy of the Permittee Responsible Mitigation sheet of the Consolidated ORM Upload Workbook (ORM_Upload_Sheet_Consolidated_Rapanos_20151022.xslm from the attached [Zip file](#)).
 - f. If submitted, GIS data for mitigation projects must use the unique names as described above, conform to the data dictionary below, and must include a text file of metadata, including datum, projection, and mapper contact information.
7. Mitigation monitoring report maps:
- a. Each discrete mitigation site must be shown on a map as indicated in Section 6 above.
 - b. Any sampling presented in the monitoring report must be shown on a map, including locations and extent of sampling points, transects, quadrats, etc.
8. Ground photograph Maps:
- a. Any ground photographs included with proposed project, post-construction (as-built), delineation, mitigation plan, or mitigation monitoring maps or reports must be accompanied by a map of photo-points.
 - b. Each photo-point must be labeled with a unique name and the compass direction in which the photograph was taken (e.g., a dot with an arrow or labels such as P1-NW and P1-315°).
 - c. A table must be provided either on the map or as a separate attachment, which lists each uniquely named photograph, its geographic coordinates (latitude, longitude), the compass direction in which the photograph was taken (e.g., N, NW, 45°, 270°, etc.), and a brief explanation of the photograph's relevance.

Updates: These standards may be updated periodically. The most current version will be posted on the SPD Regulatory Program website.

Attachments:

Attachment 1. [Delineation of Wetlands and Other Waters of the U.S.](#)

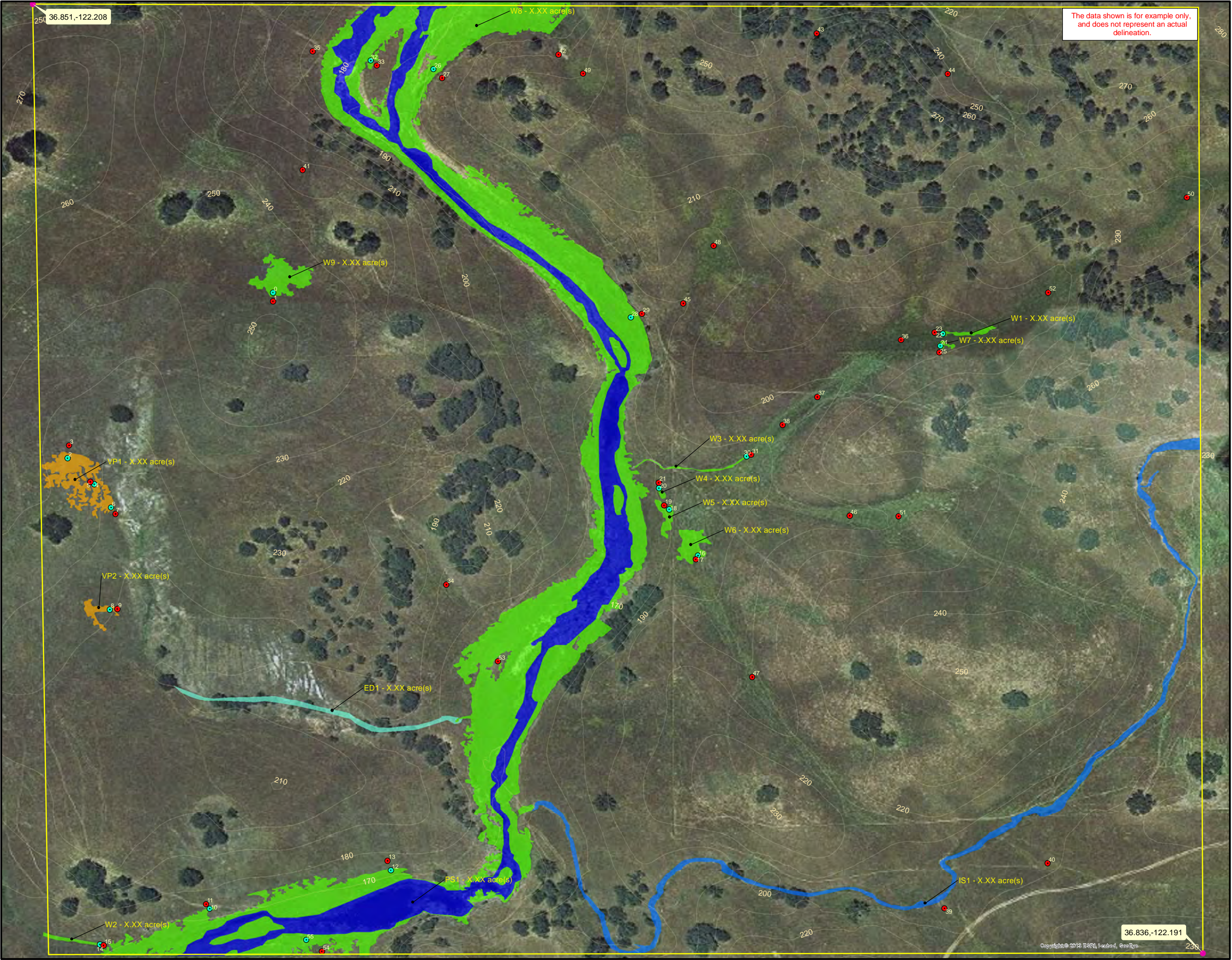
Attachment 2. [Mitigation Plan and Long-term Preservation Map](#)

Related Story: [Delineation of Wetlands and Other Waters of the U.S.](#)

<http://www.spd.usace.army.mil/Portals/13/docs/regulatory/standards/delex2016.pdf>

Related Story: [**Mitigation Plan and Long-term Preservation Map**](#)

<http://www.spd.usace.army.mil/Portals/13/docs/regulatory/standards/mitex2016.pdf>



The data shown is for example only, and does not represent an actual delineation.



Figure X:
Delineation of Wetlands and
Other Waters of the U.S.
for the Hypothetical Project Site

Legend

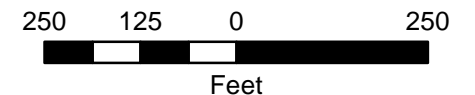
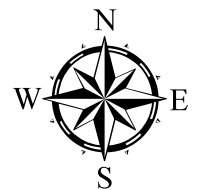
- Map Reference Point
- ▭ Survey Area Boundary (X.XX Acres)
- Upland Sampling Point
- Wetland Sampling Point
- Topography (10-foot Contour Interval)

Wetlands (X.XX acres)

- Vernal Pool (X.XX acres)
- Wetland (X.XX acres)

Other Waters (X.XX acres)

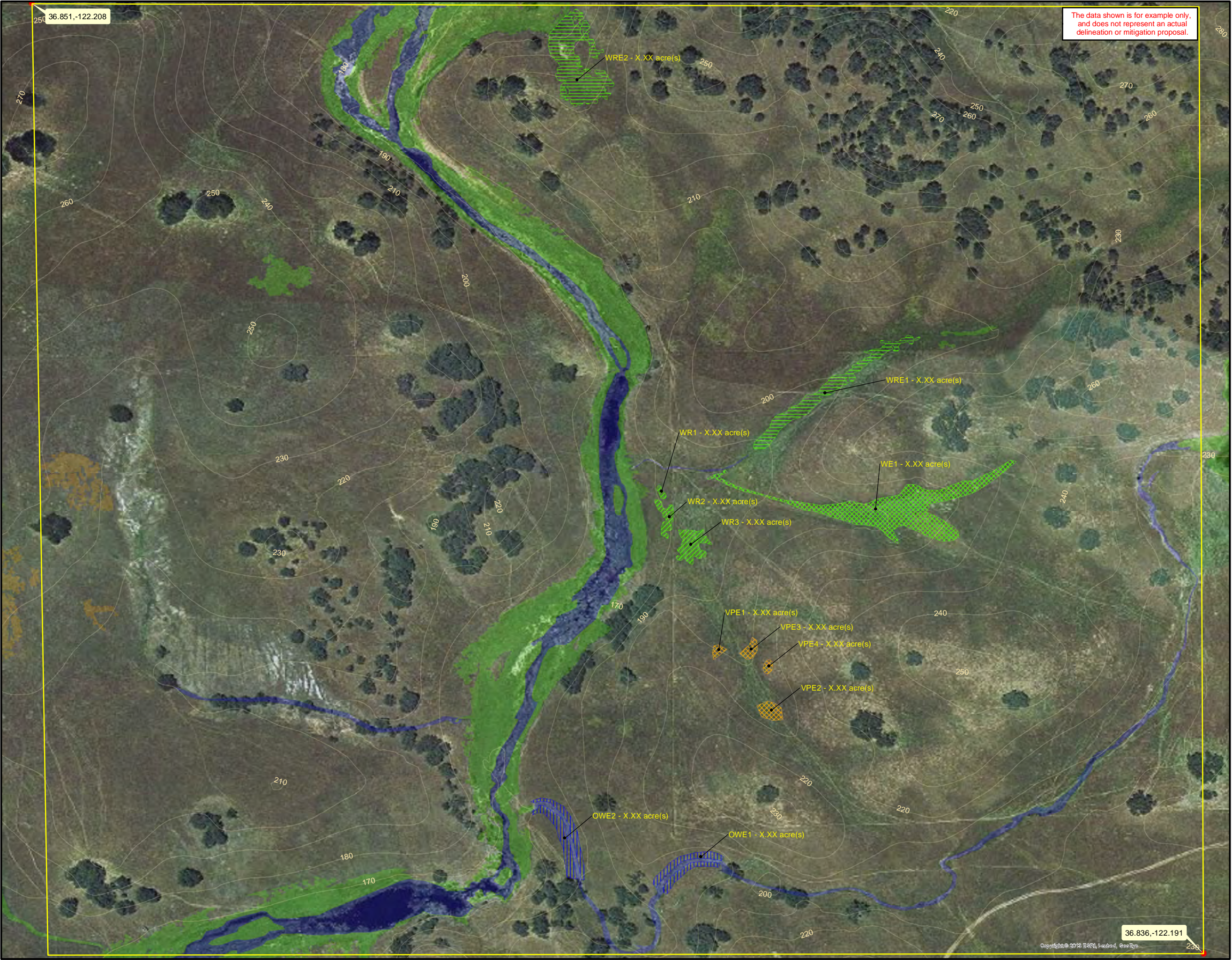
- Ephemeral Drainage (X.XX acres)
- Intermittent Stream (X.XX acres)
- Perennial Stream (X.XX acres)



Coordinate System: NAD 1983 UTM Zone 10N
 Projection: Transverse Mercator
 Datum: North American 1983
 Vertical Datum: NAVD88, U.S. Feet
 1 inch = 250 feet

Created on April 30, 2013
Revised on February 8, 2016

Made in accordance with the
Updated Map and Drawing Standards for the
South Pacific Division Regulatory Program,
 as amended on February 10, 2016, by:
 Jason Deters, Project Manager
 Enforcement and Special Projects Unit
 U.S. Army Corps of Engineers
 South Pacific Division
 Sacramento District, Regulatory Division
 1325 J Street, Room 1350
 Sacramento, California 95814-2922



The data shown is for example only, and does not represent an actual delineation or mitigation proposal.



Figure X:
Mitigation Plan and
Long-term Preservation Map for the
Hypothetical Mitigation Project Site

Legend

- Project/Preserve Boundary (X.XX Acres)
- Topography (10-foot Contour Interval)
- Map Reference Point

Pre-project Delineation

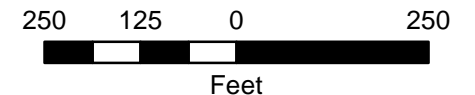
Waters Type

- Open Water (X.XX acres)
- Vernal Pool (X.XX acres)
- Wetland (X.XX acres)

Proposed Mitigation

Mitigation Type

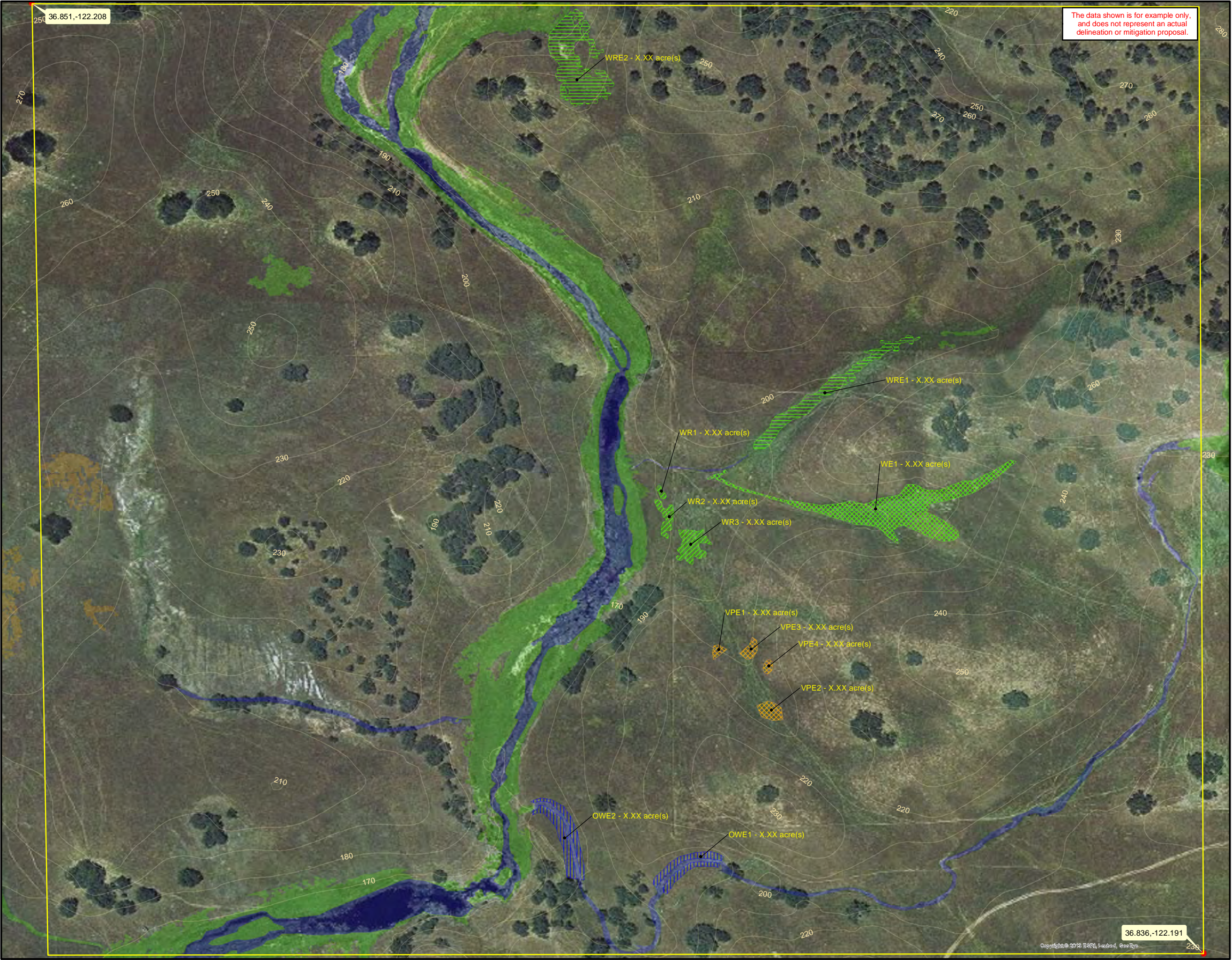
- Open Water Enhancement (X.XX Acres)
- Vernal Pool Establishment (X.XX acres)
- Wetland Establishment (X.XX acres)
- Wetland Re-establishment (X.XX acres)
- Wetland Rehabilitation (X.XX acres)



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Mitigation Plan and
Long-term Preservation Map for the
Hypothetical Mitigation Project Site

Legend

- Project/Preserve Boundary (X.XX Acres)
- Topography (10-foot Contour Interval)
- Map Reference Point

Pre-project Delineation

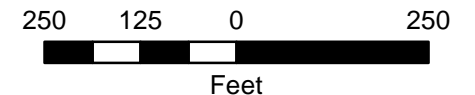
Waters Type

- Open Water (X.XX acres)
- Vernal Pool (X.XX acres)
- Wetland (X.XX acres)

Proposed Mitigation

Mitigation Type

- Open Water Enhancement (X.XX Acres)
- Vernal Pool Establishment (X.XX acres)
- Wetland Establishment (X.XX acres)
- Wetland Re-establishment (X.XX acres)
- Wetland Rehabilitation (X.XX acres)



Coordinate System: NAD 1983 UTM Zone 10N
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