

## INTRODUCTION

This Worker Environmental Awareness Program (WEAP) training brochure was prepared as a general overview of the environmental requirements for construction personnel on the project. It is not intended as a comprehensive list of environmental requirements and mitigation measures, and is not a substitute for contract documents or permits.

### Cultural Resources

Cultural resources are protected by state and federal laws. Penalties can occur for intentionally disturbing or collecting resources in the event of an unanticipated discovery. In the unlikely event that sensitive resources are uncovered during project activities, the following procedures shall be implemented, but not limited to:

- All work within 100 feet of the discovery will be halted and redirected to another location
- The site area will be secured and the find will be avoided and left in place; PG&E's cultural resources specialist or designated representative will be contacted **immediately**

#### Prehistoric Resources

- Presence of human remains and/or animal bones
- Artifacts (shell beads, arrowheads, stone mortars)

#### Historic Resources

- Structural remains (foundations, walls, footings)
- Manufactured materials (cans, bottles, hardware, broken dishes) and trash pits, privies, or wells



### Paleontological Resources (Fossils)

Fossils are the remains of ancient plants and animals. At Cressey Substation, excavations have potential to affect paleontological sediments, and a paleontological monitor must be present when drilling exceeds 80 feet in depth. If you think you have found a fossil, pause work in the immediate area and notify the Environmental Inspector or onsite monitor **immediately**. The find shall be avoided and left in place until it can be evaluated. Refer to the project's Paleontological Worker Environmental Awareness Training brochure for additional information and responsibilities.

## CONTACTS

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## THE BASICS

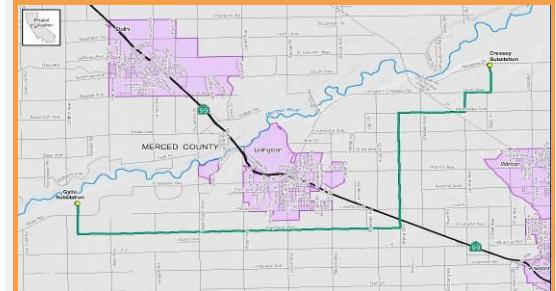
- All project personnel must receive Environmental Awareness Training prior to beginning work onsite
- Park only in designated locations, and work only in designated project areas
- Minimize idling times by shutting equipment or commercial motor vehicles off when not in use, or reducing the maximum idling time to 5 minutes
- All food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers
- Smoking will not be permitted during fire season, except in a paved or cleared barren area of 10 ft. diameter, or in vehicles and enclosed equipment cabs
- Install appropriate barriers between work zones and transportation facilities, and post adequate signs
- Be courteous to landowners, farmers, residents, and the general public. Direct questions and concerns to the designated public liaison.

### Best Management Practices

- Install erosion and sediment controls and BMPs in accordance with the project's SWPPP
- All onsite unpaved roads and offsite unpaved access roads, disturbed areas, stockpiles including storage piles will be effectively stabilized against dust emissions using water or chemical stabilizer/suppressant
- Inspect vehicles and equipment regularly for leaks and maintain spill cleanup materials on site
- Report all spills and contaminated soil to the Environmental Inspector immediately

# ENVIRONMENTAL TRAINING

## Cressey - Gallo 115 kV Power Line Project



2014 - 2015



Pacific Gas and Electric Company®

## BIOLOGICAL RESOURCES MITIGATION SUMMARY

- Observe wildlife exclusion fencing (e.g., at wetlands and seasonal ponds) to prevent wildlife from entering the work area. Inspect fencing on a daily basis
- Keep out of exclusion areas, including nesting bird buffers; observe all fencing, flagging and field signs
- Ensure a Biological Monitor is present for work in sensitive areas and has cleared site for work
- Limit speeds on project access roads to 15 mph or less to minimize dust and collisions with wildlife
- Do not handle any wildlife and immediately report observations of injured or dead wildlife, sensitive species, or nests to the Environmental Inspector or Biological Monitor. Do not disturb/remove nests.
- Watch for and report any birds nesting in vehicles, equipment, and stored materials
- Conduct refueling and staging of equipment in designated staging areas 100 feet from down gradient aquatic habitat unless isolated from the habitat
- Maintain spill prevention and cleanup equipment in all refueling areas
- Excavations in excess of 2 feet deep will be sloped, have escape ramps installed for wildlife escape or be thoroughly covered at the end of the day
- Do not store debris of any kind (including soil or sand) or other construction materials, wastes, or petroleum products where they could enter sensitive habitats, including surface waters
- Construction equipment must be clean before it arrives onsite to reduce the introduction of weeds
- Restore disturbed areas with seeding and erosion controls, as appropriate



**Swainson's Hawk**  
(*Buteo swainsoni*)

**Status:** State Threatened

**Habitat:** Nests in scattered trees within grassland, shrubland, or agricultural habitat. Often forages in agricultural areas.



**White-tailed Kite**  
(*Elanus leucurus*)

**Status:** State Fully Protected Species

**Habitat:** Occurs in low elevation grassland, agricultural, wetland, oak-woodland, or savannah habitats.



**Burrowing Owl**  
(*Athene cunicularia*)

**Status:** California Species of Special Concern

**Habitat:** Roost and nest in cavities in the ground, usually associated with ground squirrels.



**Western Red Bat**  
(*Lasiurus blossevillii*)

**Status:** California Species of Special Concern

**Habitat:** Riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores. Roosts in tree foliage.



**Valley Elderberry Longhorn Beetle**  
(*Desmocerus californicus dimorphus*)

**Status:** Federally Threatened

**Habitat:** Associated with elderberry trees in the Central Valley during its entire life cycle.



**Western pond turtle**  
(*Actinemys marmorata*)

**Status:** California Species of Special Concern

**Habitat:** Ponds, streams, creeks, marshes in woodlands, forest, and grasslands.



**Western Spadefoot**  
(*Spea hammondi*)

**Status:** California Species of Special Concern

**Habitat:** Open areas with sandy or gravelly soils in a variety of habitats



**Blainville's Horned Lizard**  
(*Phrynosoma blainvillii*)

**Status:** California Species of Special Concern

**Habitat:** Open areas with sandy soil and low vegetation in valleys, foothills and semiarid mountains.

## Key Contacts

### PG&E Project Manager

Donald Hellier (209) 402-7888

### PG&E Environmental Compliance Lead

Tom Johnson (559) 250-2960

### PG&E Paleontological Lead

Matt Armstrong (559) 396-5704

### Lead Environmental Inspector

Brian Arnold—BioMaAS (619) 301-7586

### Paleontological Monitor

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## Cressey-Gallo Paleontological Resource Monitoring

At Cressey Substation, excavations have potential to affect sediments with high paleontological sensitivity. The ground anode installations at Cressey Substation are expected to reach a depth below 100 feet, which is the approximate depth at which the Corcoran Clay is expected to begin at this location. A paleontological monitor will be present when this drilling exceeds 80 feet depth to monitor for paleontological resources that may be encountered in the Corcoran Clay layer. (from APM PR-2)

- Construction shall coordinate in advance with the PG&E Environmental Lead to arrange for paleontological monitoring at Cressey Substation when drilling is expected to exceed 80 feet depth.
- Do not drill below 80 feet at Cressey Substation without a paleontological monitor present to monitor for paleontological resources.

## Your Responsibility for Unanticipated Paleontological Resource Discovery

PG&E is committed to the protection of paleontological resources. Remember: it is your duty to help with this protection effort. If you think you have found a fossil, pause work in the immediate area and ask your Construction Supervisor to notify the Environmental Inspector so that your “find” can be evaluated as quickly as possible. You may not know what it is, but if it looks strange, it should be reported.

*Be on the lookout for fossils!*

## State and Federal Regulations

State and federal regulations protect paleontological resources. Violations of these regulations may be punishable by civil or criminal penalties, and could result in the revocation of project certification, and shut-down of the project at the direction of the appropriate state agency. Regulations that may apply to paleontological resources on this project are:

- Antiquities Act of 1906
- National Environmental Policy Act of 1969
- Omnibus Public Land Management Act of 2009
- California Environmental Quality Act
- California Public Res Code, Secs 5097.5/5097.9
- Native American Historic Resource Protection Act



## PG&E Cressey-Gallo 115 kV Power Line Project

## Paleontological Worker Environmental Awareness Training



*At PG&E, we are committed to being an environmental leader and demonstrating this through our actions. We pledge to think creatively, work cooperatively, and be results-oriented in our environmental stewardship efforts.*

*We expect everyone working on PG&E Cressey-Gallo 115 kV Power Line Project to honor this commitment by following the practices outlined in this brochure.*

*When in doubt:  
Ask before you act!*



## Paleontological Resources

Paleontological resources are fossils, the remains of ancient plants and animals that have been preserved in rock or sediment. The first fossils were found in California during the Gold Rush, and since then scientists have recovered the fossils of an array of extinct animals including mammoth, mastodon, sabertooth cats, the dire wolf, ground sloths, camel, and extinct horse. In older sediments dating to the time that the ocean covered this area, the remains of marine animals can be found including an array of mollusks, the bones of whales and seals, and the teeth of giant sharks.

Fossils include the remains of animals and plants now extinct, which often represent ecosystems that no longer occur, and because of that they are non-renewable resources. They are valuable for not only scientific purposes, but also for education. If they are destroyed, or collected by non-scientists, the evidence that these remains provide about past life, including the evolution of these organisms, ancient ecosystems, and even climate change is lost forever. Fossils are protected by both Federal and State laws and regulations to ensure that they will be available for future generations to study and learn from.

If a potential fossil is discovered during excavations, it will be evaluated to determine whether or not it is a scientifically significant fossil. *The Environmental Inspector or the Paleontological Monitor has the authority to stop or redirect work in the immediate vicinity of a potential fossil find to support evaluation and possible scientific recordation and recovery.*

## Examples of Paleontological Resources

In this part of the Central Valley, fossils that can be expected to be unearthed are of two types:

- extinct animal bones, or
- plant remains such as wood, seeds or pine cones.

The bones are likely to be stained a dark color, and covered in dirt so they may not be as obvious as cleaned specimens.



*A mammoth femur, approximately 3 feet long, found while excavating a pipeline trench.*



*A mammoth tooth stained brown by the acid soil it was preserved in.*

## Examples, continued




*The cross-section view of a whale vertebra encountered during bridge construction.*



*A walnut recovered from drill spoils that penetrated the Corcoran Clay at a depth of about 150 feet near Turlock. It is one of more than a half-dozen fossil plant species between 500,000 and a million years old that were recovered from the drill spoils brought to the surface.*

## Conclusion

There is the potential for anyone to find paleontological resources during excavations. These resources have considerable scientific value to us all. Protect yourself, your supervisor, and your company from legal and financial liability by reporting all possible finds of historic and prehistoric remains.



**Supervisory and Key Staff  
Environmental Training**

**Cressey-Gallo 115 kV  
Power Line Project**

SWCA Environmental Consultants

### Welcome and Introductions

- \* Your Name
- \* Company
- \* Role on Project
- \* Last Project You Worked On

### Today's Agenda

- \* Goals of Environmental Awareness Training
- \* Project Background and Overview
- \* Environmental Compliance Management Plan (ECMP) Implementation
- \* Project-Specific Environmental Requirements
- \* Agency Expectations
- \* Questions and Answers
- \* Wrap-up and Evaluations

### Environmental Awareness Training

- \* Required for all onsite construction personnel before the start of construction activities
  - \* Supervisory training
  - \* Crew environmental training (generally 20-30 minutes long)
- \* All trainees (supervisors and crew members) will
  - \* Receive a hard-hat sticker
  - \* Sign a training log that acknowledges they received environmental training and understand their commitment to environmental compliance while working on the project

### Environmental Training Objectives

- \* Meet project personnel
- \* Understand the Environmental Compliance Management Plan (ECMP)
- \* Review environmental requirements, resources, and PG&E and CPUC expectations
- \* Understand our environmental compliance responsibilities

### PG&E's Commitment

“At PG&E, we are committed to being an environmental leader and demonstrating this through our actions. We pledge to think creatively, work cooperatively, and be results-oriented in our environmental stewardship efforts.”

## Environmental Responsibility

- \* Environmental compliance is a **shared** responsibility and applies to **EVERYONE!**
- \* Know and understand the requirements of federal, state and local regulatory agencies and organizations
- \* If you don't know or understand a requirement, **ASK!**



## Non-Compliance

- \* Understand that Non-Compliance activities can have serious consequences for the project
- \* Non-compliance is not acceptable to PG&E or CPUC
- \* Could result in delays or shutdowns
- \* Individuals can be held accountable
- \* Violations could result in penalties and agency enforcement actions

## Project Expectations

- \* The project team (construction management, supervisors, foremen, subcontractors, inspectors, and monitors) will work together to:
  - \* Keep the project in compliance with all laws, regulations, and permits
  - \* Keep the project moving forward

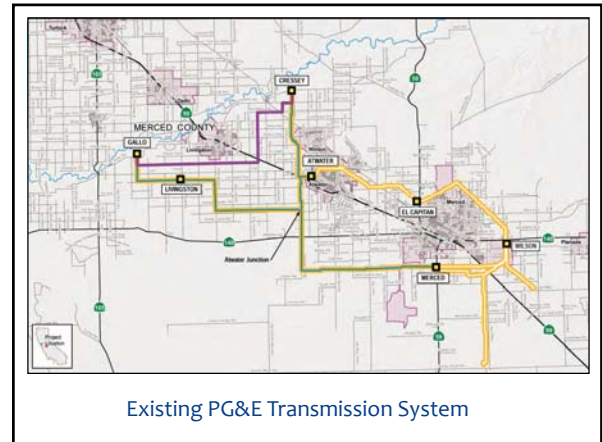
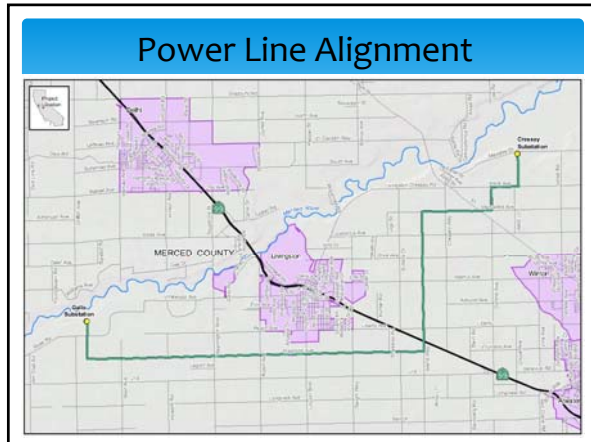
## Project Overview

## Scope of Work

- \* Construct a new, approximately 14.4-mile, single-circuit 115 kV power line between Cressey and Gallo Substations
- \* Upgrade bus configurations at Cressey Substation and replace the existing power line transition
- \* Expand Gallo Substation to add switchgear and upgrade bus configurations

## Project Location

- \* Located in the San Joaquin Valley in Merced County near the community of Cressey and the City of Livingston
- \* Generally oriented east-to-west between Cressey Substation and Gallo Substation
- \* Intersects State Route / Highway 99 south of the City of Livingston



### Project Purpose and Need

- \* Connects the Cressey and Gallo Substations to form a power line loop with two other area substations (Livingston and Atwater).
- \* Allows power to flow from another direction when there is an outage on a line feeding the loop to avoid customer service interruptions
- \* Will improve transmission system reliability for customers in north-central Merced County

Preliminary Construction Schedule		June 2015	July	Aug	Sept	Oct 2	Nov	Dec	Jan 2016	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan 2016	Feb	Mar	April	May	June	July	
Transmission Line Construction:																												
Permitting, ROW Acquisition																												
Transmission Line Construction																												
Testing and Commissioning																												
Cressey Substation Work:																												
Site Preparation																												
Building Construction																												
Substation Interconnection																												
Substation Installation																												
Testing and Commissioning																												
Gallo Substation Work:																												
Site Preparation																												
Building Construction																												
Substation Interconnection																												
Substation Installation																												
Testing and Commissioning																												
In-Service Date																												

### Cressey Substation Project Schedule


- \* Site Preparation
  - \* October 15 – November 2014
- \* Building Construction
  - \* November 2014 – February 2015
- \* Substation Interconnection
  - \* June – July 2015
- \* Substation Installation
  - \* November 2014 – July 2015
- \* Testing & Commissioning
  - \* June – July 2015



(Existing)

### Gallo Substation Project Schedule

- \* Site Preparation
  - \* October 15 – November 2014
- \* Building Construction
  - \* November 2014 – February 2015
- \* Substation Interconnection
  - \* June – July 2015
- \* Substation Installation
  - \* November 2014 – July 2015
- \* Testing & Commissioning
  - \* June – July 2015
- \* In-Service Date
  - \* July 2015



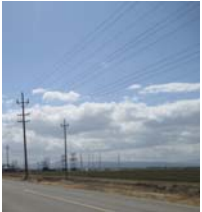
(Existing)

## Shoo-Fly

- \* Between Magnolia Avenue and the Gallo Substation
- \* Routed along the Gallo Winery vineyard/access road approximately 25 feet from the existing line
- \* Consists of approximately 22 temporary poles
- \* Will be one of the first activities with a start date of approximately October 1, 2014
- \* Will be removed once construction is complete

## Pole Line Installation

- \* The project will include installation of wood poles, light-duty steel poles, and several tubular steel poles
- \* Temporary guard structures will be installed over obstacles such as railroads, roadways, existing power lines, and other structures
- \* Route is located along existing roads and traverses private property, active orchards, and Gallo vineyards
- \* Route crosses State Route 99 and Southern Pacific Railroad



## Regulatory Setting

## California Environmental Quality Act (CEQA)

- \* CPUC is the project's Lead Agency
- \* CPUC reviewed PG&E's application for a Permit to Construct in compliance with CEQA and issued an Initial Study/Mitigated Negative Declaration (IS/MND)
- \* The proposed project was determined not have a significant effect on the environment with the incorporation of the Applicant Proposed Measures (APMs) and Mitigation Measures (MMs)
- \* *The IS/MND serves as the project's primary CEQA compliance document*

### State Permits and Approvals

Permit, Approval, or Exemption	Agency	Jurisdiction or Purpose
<b>State</b>		
Permit to Construct (PTC) per General Order Number 131-D	California Public Utilities Commission	Overall project approval and CEQA review (construction, modification, or alteration of power line facilities)
Standard Encroachment Permit	California Department of Transportation (Caltrans)	For within state road/highway rights-of-way for other than normal transportation purposes
National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit	State Water Resources Control Board (SWRCB)	Activities disturbing one acre or more of soil (submit a Notice of Intent to comply with the Construction General Permit)

### Local Permits and Approvals

Permit, Approval, or Exemption	Agency	Jurisdiction or Purpose
<b>Local</b>		
Air Pollution Control District	San Joaquin Valley Pollution Control District (SJVPCD)	For conducting activities which may result in air pollution
Encroachment Permit	Merced County	For use of local roads for purposes other than normal transportation



## Additional Compliance Documents

- \* PG&E Environmental Compliance Management Plan (ECMP)
- \* Mitigation and Monitoring Plan (MMP)
- \* Stormwater Pollution Prevention Plan (SWPPP)
- \* California Joint Utility Traffic Control Plan
- \* Site Safety Plan (includes Hazardous Substation Control and Emergency Response Procedures)
- \* Dust Plan (SJVPCD)

## Quiz

\* What document serves as the project's primary CEQA compliance document?

## Environmental Compliance Management Plan (ECMP)

## Goals and Background

- \* Goals of ECMP
  - \* Enable consistent and thorough management of environmental compliance during construction
  - \* Provide a framework for environmental management that we can communicate to licensing and permitting agencies
  - \* Enable environmental management that is consistent with environmental leadership
- \* Background
  - \* Developed in 2010 based on successful programs for past PG&E projects as well as industry standards
  - \* ECMP Standard established in 2011; Revisions and larger rollout in 2012

## 13 Key Concepts

1. Compliance responsibilities and communication protocols are clearly defined and include:
  - \* Project Manager
  - \* One Environmental Compliance Lead
  - \* One Construction Lead
2. A project-specific **communication flowchart** illustrates how environmental compliance information will flow within the project team.
3. The project team defines a primary and secondary **PG&E contact** for communications with each permitting agency.
4. Mitigation measures, permit conditions, and other requirements are summarized in a **compliance matrix**, which is distributed to key project staff along with copies of relevant source documents.

## 13 Key Concepts (cont.)

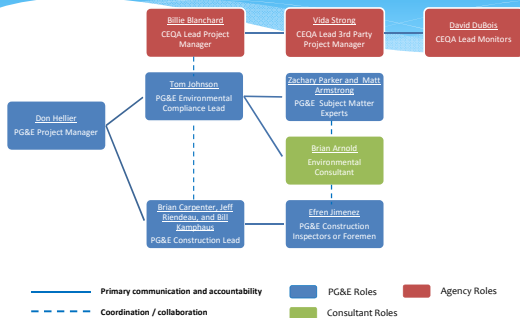
5. Construction activities are assessed by **qualified environmental inspectors** at an appropriate frequency based on project-specific regulatory and resource sensitivities.
6. Environmental inspection activities and specialty monitoring activities are documented using defined **compliance levels in standardized forms or databases**.
7. Environmental **compliance summary reports** are distributed at least monthly to identified key staff on the project team and to permitting agencies as required.
8. **Regular communications** occur between key environmental and construction personnel regarding construction work plans and associated environmental compliance concerns.
9. **Noncompliance events** and their resolution are **communicated and documented** using a consistent form and notification process.

## 13 Key Concepts (cont.)

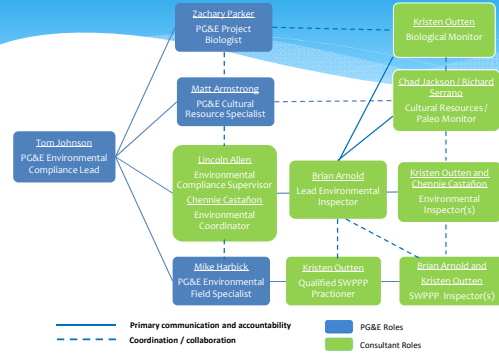
10. A process exists for reviewing all **project changes** for environmental concerns and obtaining approval from permitting agencies where required.
11. All project staff receives basic **environmental training** and key staff receives a more detailed training, including training on the ECMP.
12. **Construction specifications** include clear language regarding environmental compliance.
13. Location-specific environmental requirements are accurately **mapped and clearly signed, flagged, and fenced** in the field to facilitate compliance.

## Roles and Responsibilities

### Communication Flowchart



### Communication Flowchart



## 5 Key PG&E Roles

- \* **PG&E Project Manager**
  - \* Manages the project team to ensure that appropriate communication, staffing, and coordination occurs to keep the project in compliance.
- \* **PG&E Construction Lead**
  - \* Provides direction, management, leadership, and coordination to ensure the contractor or PG&E crews make environmental compliance a top priority.
- \* **PG&E Construction Inspectors**
  - \* Coordinates in the field daily with the contractor and environmental team to ensure compliance and timely resolution of issues.
- \* **PG&E Environmental Compliance Lead**
  - \* Coordinates input from multiple disciplines and oversees compliance with all environmental mitigation measures, permit conditions, and regulatory requirements.
- \* **PG&E Subject Matter Experts**
  - \* Oversee implementation of specific technical mitigation measures and permit conditions and ensure projects follow appropriate technical protocols.

## Contractor Key Roles

- \* **Contractor Superintendent**
  - \* Ensures that sufficient labor and materials are provided to fully implement the environmental requirements during construction and communicates daily regarding the construction schedule.
- \* **Contractor Foreman**
  - \* Ensures workers attend environmental training and confers daily with the Environmental Inspectors to discuss upcoming construction activities and associated environmental concerns.
- \* **Contractor Environmental Coordinator**
  - \* Assesses areas ahead of construction for compliance concerns, coordinates daily with the Lead Environmental Inspector, and facilitates resolution of compliance concerns.

## Environmental Consultant Roles

- \* **Environmental Compliance Supervisor**
  - \* Supervises the consultant's field personnel and supports the PG&E Environmental Compliance Lead with environmental compliance management.
- \* **Environmental Inspector(s)**
  - \* Functions as a multi-disciplinary resource to the construction team to keep the project in compliance with environmental requirements. Draws on extensive construction experience to anticipate compliance concerns, documents daily field compliance status, and trains construction workers.
- \* **Specialty Monitors**
  - \* Conducts preconstruction surveys, monitors construction activities for specific resource requirements, and evaluates unanticipated discoveries.
- \* **SWPPP Inspector(s)**
  - \* Works under the direction and training of the Qualified SWPPP Practitioner to verify stormwater BMPs are performing adequately and repaired as needed.

## Communications

- \* **Day to day compliance communications**
  - \* Follow communication flow charts
  - \* Field staff should attend onsite construction meetings
- \* **Weekly coordination meetings or conference calls**
  - \* Project meeting coordinated by PM including all key team members
  - \* Compliance meeting coordinated by environmental team

## Environmental Inspection and Reporting

## Documentation

- \* **Environmental Inspection Reports**
  - \* Submitted by Environmental Inspectors to the PG&E Environmental Compliance Lead and PG&E Subject Matter Experts by the end of each day
- \* **Specialty Monitoring Reports**
  - \* Submitted by Specialty Monitors to the PG&E Environmental Compliance Lead and PG&E Subject Matter Experts by the end of each day
- \* **Compliance Summary Reports**
  - \* Distributed weekly to a defined distribution list by COB every Monday to a defined distribution list (ECMP Appendix A)

## Reporting Database

## Compliance Levels

- \* **SAP-EC: Reporting, tracking, and archiving**
  - \* Field crews and other team members will have access to the system
  - \* Allows for simple and consistent management of reports and documentation that is gathered in the field
  - \* Run reports to obtain compliance data for the project
  - \* Manage and archive project observations
  - \* Easily follow-up and track compliance issues and their resolution
- \* **Customizable from project to project**
  - \* Cressey-Gallo Project has a customized version of SAP-EC to fit project design and expectations.

**Acceptable:** Full compliance with environmental requirements

**Occurrence:** An occurrence that needs to be addressed, but that doesn't reflect the project's compliance record

**Minor problem:** Slight deviation from the environmental requirements with little or no impact to sensitive resources

**Compliance issue:** Situation that needs to be addressed immediately to prevent resource damage or environmental noncompliance.

**Noncompliance:** Violates the environmental requirements and results in an impact to resources or places environmental resources at risk

**Considerations:** Resource damage, Compliance history, Intent

## Noncompliance Documentation

- \* **Noncompliance Notice**
  - \* Issued via the reporting database to contractor by PG&E Environmental Compliance Lead and PG&E Construction Lead when Environmental Inspector documents a noncompliance
  - \* Identifies required corrective action
  - \* Copied to distribution list specified in Appendix A
- \* **Noncompliance Resolution Report**
  - \* Issued to contractor once the noncompliance has been resolved
  - \* Copied to the same distribution list

## Key Compliance Source Documents

- \* **Environmental Permit Binder**
  - \* All environmental permits, mitigation measures, and plans
  - \* Permit applications
  - \* Distributed to project team
  - \* Must be kept up to date and on site
- \* **Environmental Compliance Matrix**
  - \* Summarizes mitigation measures, permit conditions, and other requirements organized by pre, during, and post construction
  - \* Distributed to key project staff along with copies of relevant source documents
- \* **Project Maps and Drawings**
  - \* Ensure project team has the most recent versions

## Noncompliance Notification

- \* PG&E Environmental Compliance Lead will notify
  - \* Project Manager
  - \* PG&E Construction Lead
  - \* Manager, Environmental Planning and Permitting
  - \* Manager, Environmental Operations (Transmission)
  - \* Manager, Environmental Compliance
  - \* Relevant PG&E Environmental Discipline Leads
- \* Assigned PG&E representatives will notify agencies when required

## Stop Work Protocols

- \* Some non-compliances require immediate action
  - \* Such as when sensitive resources are in immediate jeopardy
- \* EI and/or Specialty Monitor will:
  - \* Contact onsite PG&E construction representative before temporarily halting or redirecting an activity
  - \* Work will only be stopped when it is safe to do so
- \* If a PG&E construction representative is not available, EI and/or Specialty Monitor will:
  - \* Communicate directly with the crew to halt or redirect work to prevent irreparable harm to sensitive resources
- \* Afterwards, the EI and/or Specialty Monitor will
  - \* Notify PG&E Construction Inspector, Construction Lead, Environmental Compliance Lead, and PG&E Subject Matter Expert

## Environmental Training

- \* **Key project staff training**
  - \* PG&E's project team
  - \* PG&E's environmental consultant
  - \* Contractor's supervisors and key foremen
  - \* Agencies invited
- \* **General crew training**
  - \* All project personnel and visitors
  - \* Delivered by Environmental Inspector
  - \* Hard hat sticker, brochure, and SWPPP handouts
- \* **Tailboard training**
  - \* As needed to address site-specific issues or compliance concerns

## Project Changes

- \* Formal process for internal and agency review of all project changes
- \* Internal review of all project changes
  - \* Environmental Inspector
  - \* Chief Construction Inspector
  - \* Right-of-Way/Land Agent
  - \* PG&E Subject Matter Expert
  - \* PG&E Environmental Compliance Lead
- \* Project change process has been coordinated with CPUC and is part of the ECMP



## Project Change Levels

- \* **Level 1: Minor Project Changes**
  - \* Will not trigger other permit requirements unless the appropriate agency has approved the change
  - \* Clearly and strictly complies with the intent of the mitigation measure or applicable law or policy
  - \* May be subject to a less formal approval process by CEQA lead
  - \* To initiate a project minor change request, PG&E will fill out a Project Minor Change Request Form, prepare the appropriate supporting documentation, and obtain the required signatures

## Project Change Levels

- \* **Level 2: Temporary Extra Workspace (TEWS)**
  - \* Defined as a preexisting work space (i.e., no site preparation is required) that would be used during construction for a period of up to 60 days, and that was not specifically identified/evaluated during the CEQA process.
    - \* Anything required to be utilized for a period longer than 60 days will require a minor project change approval
  - \* **PG&E must demonstrate that:**
    - \* TEWS is located in a disturbed area with no sensitive resources or land uses onsite or within proximity of the proposed work space
    - \* PG&E has permission of the applicable landowner
    - \* Use of the TEWS will not result in any significant environmental impacts

## Project Change Levels

- \* **Level 3: Project Modification**
  - \* PG&E must seek changes by a Petition for Modification (PFM)
  - \* Formal review and approval by the CEQA Lead Agency Project Manager
    - \* Supplemental environmental review under CEQA would be required
  - \* This process will take months to complete and obtain approvals
    - \* PFMs Should be avoided unless absolutely necessary

## Quality Assurance Assessments

- \* **PG&E will conduct project reviews to**
  - \* Verify ECMP is applied consistently to all projects that meet the applicable criteria
  - \* Confirm projects are kicked off appropriately with adequate training
  - \* Assess the effectiveness of the ECMP in reducing permit violations and impacts to resources
  - \* Conduct field visits to test the plan's effectiveness on the ground
  - \* Gather feedback and suggestions on how to improve the ECMP

## Questions?

## Environmental Requirements

## The Basics


- \* Ensure that environmental training is provided to all new construction personnel
- \* Communicate so that a qualified biological monitor is onsite during ground-disturbing construction activities in sensitive habitat or resource areas
- \* Review project plans and ensure that resources and/or work area limits are clearly marked
- \* Avoid resource areas to the extent possible during construction

## The Basics

- \* Deposit food scraps, wrappers, food containers, cans, bottles, and other trash from the project area in closed trash containers
- \* Remove trash containers from the project area at the end of each work day
- \* Park vehicles and equipment on pavement, existing roads, and previously disturbed or developed areas
  - \* Off-road parking will only be permitted in previously identified and **designated** work areas


## The Basics

- \* Confine vehicles to established roadways and pre-approved access roads, overland routes and access areas
- \* Limit access routes and construction work areas to the minimum necessary to achieve the project goals
- \* Maintain all equipment such that there will be no leaks of automotive fluids such as fuels, solvents, or oils



## The Basics

- \* Restrict refueling and maintenance of vehicles and other construction equipment to designated staging areas located at least **100 feet from any aquatic habitat** unless otherwise isolated from habitat
- \* Maintain proper spill prevention and cleanup equipment in all refueling areas



## Exclusion Fencing and Flagging

- \* Exclusion zones may be necessary
  - \* Around active bird nests
  - \* 10 feet outside of wetlands or regulated waters
  - \* At vernal pools
  - \* If western spadefoot toad, Blainville's horned lizard, or western pond turtle are found near any proposed construction areas
  - \* At least 25 feet surrounding the drip line of each valley elderberry longhorn beetle host plant
  - \* Around any unanticipated cultural or paleontological resource discoveries
  - \* Within 10 feet of a historical resource (or portion thereof) immediately adjacent to the project area

## Environmental Signage

- \* Watch for and adhere to signs installed by environmental inspectors and biological monitors





## Air Quality

Dust  
Exhaust  
Greenhouse Gas

### Air Quality: Fugitive Dust

- Stabilize all disturbed areas, unpaved roads, and inactive stockpiles using water or chemical stabilizer/suppressant
- Cover transported materials or **wet and maintain at least 6 inches of freeboard** space from the top of the container
- Limit or remove the mud or dirt from adjacent public streets at the end of each workday
- Immediately remove track-out when it extends 50 or more feet from the site and at the end of each workday
- Limit vehicle speeds to **15 miles per hour** on unpaved roads




### Air Quality: Fugitive Dust

- \* Within 1,000 feet of residences or other sensitive receptors:
  - \* Limit area subject to excavation, grading, and other construction activity at any one time
  - \* Increase frequency of dust suppression or watering whenever wind speeds exceed 20 miles per hour (mph) and visible dust emissions occur



### Air Quality: Exhaust Emissions

- \* Properly maintain construction equipment
- \* Apply a "common sense" approach to vehicle use
  - \* if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off
  - \* Construction foremen will provide briefings to crews on vehicle use as part of daily safety briefings
  - \* Construction workers will be encouraged to carpool to the work site to the extent feasible
- \* Minimize welding and cutting by using compression or mechanical applications where practical and within standards
- \* Encourage the recycling of construction waste where feasible

## Biological Resources

### Laws and Regulations

- \* Federal Endangered Species Act (FESA) of 1973
  - \* Take: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct"
- \* Federal Migratory Bird Treaty Act 1918
- \* California Department of Fish and Game Codes (3511 – fully protected birds, and 3503 – native birds' nests and eggs)
- \* California Native Plant Protection Act (California Fish and Game Code Sections 1900-1913)
- \* California Endangered Species Act (CESA)
  - \* Take: "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"
- \* California Environmental Quality Act (CEQA)



## Wildlife Protection Measures

- \* Ensure all construction personnel have received environmental training
- \* Ensure preconstruction surveys have been completed ahead of planned construction work
- \* Ensure a biological monitor is present during work (as required)
- \* Follow project-specific APMs and MMs contained in the project's Mitigation and Monitoring Plan
- \* Consult the project's Permit Binder (stored onsite)
- \* Utilize the project's Mitigation and Monitoring Matrix
- \* Coordinate with the project's Environmental Team (PG&E, CPUC, and SWCA)
- \* Stay out of buffer and exclusion zones

## Wildlife Protection Measures

- \* Do not approach or harm any wildlife
- \* If special status species are encountered, stop construction activity in immediate vicinity and notify the Lead Environmental Inspector (LEI) or onsite biologist
- \* If active bird nests are encountered, do not disturb the nest and notify the LEI or onsite biologist
- \* Notify LEI or onsite biologist of any trapped, injured, or dead animals

## Pre-Construction Surveys


- \* Be aware that preconstruction surveys are required in sensitive habitats such as
  - \* Vernal pools, seasonal ponded areas, wetlands, and regulated waterways
  - \* Prior to and during the avian nesting season (Feb 1 – Sept 15)
  - \* In areas with valley elderberry longhorn beetle host plants
  - \* Bat roosting habitat or maternal bat roosts
  - \* Special-status species habitat for western spadefoot toad, Blainsville's horned lizard and western pond turtle
- \* Coordinate with the LEI on a daily basis to keep the environmental team apprised of work schedules to ensure all surveys have been performed prior to activities

## Pre-Construction Surveys

- \* Pre-construction biological and cultural resources surveys will be needed for any new work areas not previously surveyed or evaluated in the CEQA document
  - \* Examples:
    - \* Line reroute
    - \* New staging area
    - \* Expanded facility footprint

## Tree Protection

- \* Avoid impacts to ornamental, native, and cultivated trees
- \* Always notify environmental team before performing tree removal activities (pre-activity surveys or notifications may be required)
- \* Avoid placing materials, equipment or stockpiles within the tree's dripline



## Trenches, Excavations, and Open Pipes

- \* Ensure that all excavations in excess of **2 feet deep** are sloped, have suitable escape ramps installed, or covered at the end of the day
- \* Inspect all trenches and excavations for wildlife **at the beginning of the work day and prior to backfilling**
- \* Cap all open-ended pipes **4 inches or greater** in diameter if left overnight and inspect for wildlife prior to being moved
- \* Redirect work if a special-status species is discovered in a trench, excavation, or pipe and allow the animal to leave on its own accord
- \* **Notify the environmental inspector or biological monitor immediately** in the event any special-status species is trapped in a trench or an excavation and unable to leave on its own accord

*\*\*Never attempt to relocate species on your own\*\**

## Seasonal Ponded Areas and Other Water Features

- \* Construction activities will not take place within any potential wetland or regulated water
- \* Exclusion fencing or flagging will be installed 10 feet out side of the regular high-water line of any wetland or regulated water located adjacent to a construction site and no construction will be allowed within the fenced exclusion area

## Irrigation Canals and Ditches

### \* Irrigation Canals

- \* A qualified biologist shall determine appropriate buffer distances/setbacks and/or other protective measures to minimize impacts of project construction activities on at-grade irrigation canals
- \* All plans related to work **within 10 feet of irrigation canals** shall be evaluated by the qualified biologist and submitted to CDFW to determine if the canal is subject to CDFW streambed jurisdiction.
- \* If it is determined that the CDFW has jurisdiction and the project may result in direct impacts to a stream subject to CDFW jurisdiction, a Streambed Alteration Agreement may be required



## Noxious Weeds

- \* Take precautions to minimize the introduction of any invasive weeds
- \* Clean construction equipment **before it arrives** to the project area
- \* Ensure that any landscaping involving vegetation other than trees and/or shrubs consists of **native seed mix** or other ecologically appropriate, non-invasive, plants
- \* Use only **weed-free straw or mulch**



## Migratory Birds

### \* Fact

- \* Active nests of most bird species, including species that we see everyday, are protected under the Migratory Bird Treaty Act
- \* Over 800 bird species, including raptors and song birds, receive special protection under the MBTA

### \* Habitat Onsite

- \* Nests may be built in
  - \* trees
  - \* shrubs
  - \* buildings
  - \* construction equipment

## Nesting Birds

- \* Coordinate with the EI on the activity schedule to ensure nesting bird surveys are conducted within 7 days of the work
- \* If there is no work in an area for 7 days, it will be considered a **new work area** if construction or vegetation trimming or removal begins again
- \* Nesting bird buffers
  - \* 1/2 mile for Swainson's hawk and white-tailed kite
  - \* 500 feet for raptors
  - \* 250 feet for passerine birds
- \* Buffers will not apply to construction related traffic using existing roads



## Buffer Reductions

- \* The specified buffer sizes for birds may be reduced on a case-by-case basis:
  - \* Compelling biological or ecological reasoning (e.g. the biology of the bird species, concealment of the nest site by topography, land use type, vegetation, and level of project activity)
  - \* As determined by a qualified wildlife biologist that implementation of a smaller buffer distance will still avoid project-related "take"
- \* Requests to reduce standard buffers will be submitted to the independent avian biologist (CPUC) to be reviewed in coordination with the California Department of Fish and Wildlife (CDFW)

## Nesting in Equipment

- \* As appropriate, use exclusion techniques for any construction equipment that is left unattended for more than 24 hours to reduce the possibility of birds nesting in the construction equipment

- \* An example exclusion technique is covering the equipment with tarps

## Nesting Birds

### \* Disclaimer

- \* If you find a nest, stop activity in the vicinity of the nest, do not disturb the nest, and alert the onsite environmental inspector, biologist and foreman



## Sensitive and Listed Species

## Swainson's Hawk

### \* Status

- \* State: California Threatened

### \* Habitat

- \* Nests in scattered trees within grassland, shrubland, open riparian areas, or agricultural habitat. Known to forage in agricultural areas with abundance of small mammal burrows.

### \* Description

- \* Approximately 19 inches long (slightly smaller than red-tailed hawk)
- \* Typically two-toned underwing with a reddish bib on the chest and white throat and face patch
- \* Dark morph may be all dark brown except for light patch under tail



## White-tailed Kite

### \* Status

- \* State: California fully protected

### \* Habitat

- \* Occurs in low elevation grassland, agricultural, wetland, oak-woodland, or savannah habitats.

### \* Description

- \* Approx. 15 - 17 inches in length
- \* Pale grey or whitish in appearance with a white head, long pointed wings and long white tail



## Burrowing Owl

### \* Status

- \* State: Species of special concern

### \* Habitat

- \* A yearlong resident of open, dry grassland and desert habitats.
- \* Roost and nest in cavities in the ground, usually associated with ground squirrels

### \* Description

- \* Approximately 9.5 inches long
- \* Brown head and wings with white spotting; white chest and abdomen with brown spotting or barring; bright yellow eyes




## Loggerhead Shrike

- \* **Status**
  - \* State: Species of Special Concern
- \* **Habitat**
  - \* Common resident and wintering bird in lowlands and foothills in California. Breeds primarily in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground
- \* **Description**
  - \* Thick bodied songbirds approximately 8 inches tall with a 1 foot wingspan
  - \* Large, blocky heads with a defined thick bill
  - \* Gray with a black mask over eyes, and white throat
  - \* Wings are black with white patches




## Mountain Plover (wintering)

- \* **Status**
  - \* State: Species of Special Concern (wintering)
- \* **Habitat**
  - \* Mountain plovers are not found near water, and will only inhabit areas with sparse vegetation or bare ground. The San Joaquin Valley support many wintering mountain plovers.
- \* **Description**
  - \* Medium-sized bird just smaller than the American Robin.
  - \* It has relatively long legs and short beak
  - \* Light brown with a lighter-colored breast
  - \* Lacks the contrasting dark breast-belt common to many other plovers.




## Western Red Bat

- \* **Status**
  - \* State: Species of Special Concern
- \* **Habitat**
  - \* Western red bat is a fall migrant who prefers riparian areas dominated by broad-leaved trees in which it roosts
- \* **Description**
  - \* Wingspan is approx. 11.4 – 13.1 inches
  - \* Western red bats have dense shaggy brownish-yellow to an almost bright orange fur




## Blainville's Horned Lizard

- \* **Status**
  - \* State: Species of Special Concern
- \* **Habitat**
  - \* Inhabits open areas of sandy soil and low vegetation in valleys and foothills
  - \* Often found in lowlands along sandy washes with scattered shrubs and along dirt roads
- \* **Description**
  - \* Approx. 2.5 – 4.5 inches long
  - \* Flat and wide oval shaped body with large crown of horns or spines on the head
  - \* Color is reddish-brown, yellow or grey with lighter colored belly (cream, beige or yellow)




## Western Pond Turtle

- \* **Status**
  - \* State: Species of Special Concern
- \* **Habitat**
  - \* Water bodies with abundant vegetation and rocky or muddy bottoms.
  - \* Ponds, streams, creeks, marshes in woodland, forest, and grassland. Females dig a nest, usually along stream or pond margins, where they lay eggs
- \* **Description**
  - \* Small to medium-sized drab dark brown, olive brown, or blackish turtle with a low unkeeled carapace; usually with pattern of lines or spots radiating from centers of scutes



## Western Spadefoot

- \* **Status**
  - \* State: California Species of Special Concern
- \* **Habitat**
  - \* Prefers open areas with sandy or gravelly soil
  - \* Found in a variety of habitats such as: mixed-woodlands, grasslands, sandy washes, river floodplains, and foothills.
- \* **Description**
  - \* Approx. 1.5 – 2.5 inches long
  - \* Stout-bodied toad
  - \* Colored greenish-brown, cream or gray
  - \* Eyes are pale gold and no bump found between eyes





## Valley Elderberry Longhorn Beetle

\* **Status**

- \* Federal: Threatened

\* **Habitat**

- \* Associated with elderberry trees in California's Central Valley
- \* The elderberry tree is associated with riparian forests which occur along rivers and streams

\* **Description**

- \* Medium-sized beetle, approximately 2 cm long
- \* **Male:** Primarily red with dark green spots
- \* **Female:** Dark Metallic green with red margins



VELB Exit Hole

## Elderberry Plants

- \* Flag, fence, or by other highly visible means identify buffer zones at least 20 feet wide surrounding the drip line of each potential valley elderberry longhorn beetle host plant (at least one stem with a diameter of one inch or greater).
- \* Buffer zones will be monitored during construction by a qualified biological monitor



## Penalties Related to Wildlife

- \* USFWS and CDFW can levy fines and make arrests for harming special status species
- \* Violations can result in penalties of up to \$100,000 (\$200,000 for eagles) and one year in jail.
  - \* Illegal to "take" any species that is listed as endangered or threatened
  - \* "Take" means to "harass, harm pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in such conduct"
- \* Intentionally and maliciously killing any animal, including rodents and snakes, without a license or permit is a violation of California law

## Quiz

\* **True or false:**

- \* It's not necessary to inform the environmental team if a landowner approves a tree to be removed on their property



## Cultural and Paleontological Resources

## Cultural Resources

- \* All project workers involved with ground-disturbing activities will receive a pamphlet with instructions on how to identify cultural resources and what to do if an unanticipated discovery is made during construction.

## Agencies, Laws , and Regulations

- \* Cultural resources and human remains are protected under local, state and federal laws. The applicable agencies, laws, and regulations for the project include:
  - \* California Environmental Quality Act
  - \* State Office of Historic Preservation
  - \* California Public Resources Code, Penal Code, and Health and Safety Code
- \* Paleontological Resources are protected under state law
  - \* California Environmental Quality Act
  - \* Paleontological Resources Preservation Act of 2002
  - \* California Public Resources Code Section 5097.5 (public lands)

## What to Look For - Prehistoric

- \* Prehistoric Archaeological Site:
  - \* Concentrations of stone tools or stone flakes, ground stone tools such as mortars and pestles
  - \* Evidence of fire (e.g., ash deposits, charcoal, burnt earth etc.)
  - \* Any bones (human or animal), teeth, or shells



## What to Look For - Historic

- \* Historic Archaeological Site:
  - \* Concentrations of glass bottles, broken dishes, buttons, cut animal bones, hardware, household items, etc.
  - \* Buildings or other structural foundations
  - \* Trash pits
  - \* Privies (buried outhouses)
  - \* Wells
  - \* Stone walls or footings
  - \* Gravestones



## What to Look For - Paleo

- \* Paleontological Resources:
  - \* Fossils are the remains of prehistoric plants and animals.
  - \* They include artifacts like bones and teeth of extinct animals.
  - \* They can also include petrified wood, fossil leaves, shells, animal skeletons, and other types of artifacts such as fossilized tracks, trails, and burrows.



## Avoidance of Known Historical Resources

- \* Avoid known historical resources during construction
- \* Mark the portions of historical resources that cross into or are immediately adjacent to the project area (i.e., within 25 feet) with visible flagging tape to create a 10-foot buffer around the site
- \* Instruct construction crews that no vehicle access, travel, equipment staging, storage, or other construction-related work shall occur outside the flagged areas

## Paleontological Resources

- \* The Cressey Substation has been identified as a location where ground-disturbing activities have potential to impact sediments with a high paleontological sensitivity
- \* The ground anode installations at Cressey Substation are expected to reach a depth below 100 feet, which is the approximate depth at which the Corcoran Clay is expected to exist
- \* A paleontological monitor will be present during this anode drilling when a depth of approximately 80 feet or greater is reached to monitor for paleontological resources that may be encountered

## Unanticipated Discoveries

- \* In the unlikely event that previously unidentified cultural resources are uncovered during project
  - \* **Halt or redirect all work within 100 feet of the discovery**
  - \* Secure the find and contact PG&E's cultural resources specialist and/or designated representative including the Lead Environmental Inspector or onsite environmental monitor **immediately**
  - \* The specialist will inspect the discovery and determine whether further investigation is required.

**DO NOT RESUME WORK UNTIL DIRECTED BY PG&E**

## Unanticipated Discoveries- Human Remains

- \* In the unlikely event that human remains or suspected human remains are uncovered during construction:
  - \* **Halt or redirect all work within 100 feet of the discovery**
  - \* Secure the find and contact PG&E's cultural resources specialist and/or designated representative including the Lead Environmental Inspector or onsite environmental monitor **immediately**
  - \* The Cultural Resource Specialist will inspect the find and determine whether the remains are human
  - \* If the remains are not human, the cultural resources specialist will determine whether the find is an archaeological deposit and whether APM CU-2 applies
  - \* If the remains are human, the cultural resources specialist will immediately implement the provisions in PRC Sections 5097.9 through 5097.996, beginning with the immediate notification to the County coroner

**DO NOT RESUME WORK UNTIL DIRECTED BY PG&E**

## Unanticipated Discoveries- Paleontological Resources

- \* If paleontological resources are observed during construction activities:
  - \* Immediately stop work and contact the onsite Environmental Inspector or Monitor
  - \* A qualified paleontologist will be notified to review the need for monitoring
  - \* The qualified paleontologist will be responsible for the reassessment of paleontological sensitivity
  - \* Additional information from ongoing excavations may result in reducing, or increasing, the amount of monitoring required


## Penalties Related to Cultural Resources

- \* Unauthorized removal or intentional disturbance can result in fines and imprisonment
  - \* Removal or possession of Native American remains or grave goods is a felony
  - \* It is a misdemeanor to damage archaeological or historic objects or sites on private or public land

## Agriculture and Land Use

## Agricultural Impacts Avoidance

- \* Work with the farmers and ranchers to schedule project work, to the extent feasible, around their harvest and planting periods
- \* Be mindful of active agricultural operations and landowner concerns
- \* Ensure 30-day advance notice of the start of construction-related activities is provided to all properties within 300 feet of the project route
- \* Negotiate access across active fields with the farmer and/or landowner in advance of any construction activities
- \* Direct any inquiries from landowners affected by the project to the designated PG&E Land Agent and/or the Environmental Compliance Lead



# Noise

## Noise Abatement


- \* Shield compressors and other small stationary equipment used during construction with portable barriers if located near a residence
- \* Use quiet equipment (e.g., equipment that incorporates noise control elements into the design; compressors can be quiet models) during construction whenever possible
- \* Direct equipment exhaust stacks and vents away from buildings
- \* Route truck traffic away from noise sensitive areas where feasible
- \* In the event that nighttime construction is necessary because of clearance restrictions, notify affected residents in advance by mail, personal visit, or door-hanger and inform them of the expected work schedule

## Noise Abatement

- \* Limit grading, scraping, augering and pole installation to daylight hours
- \* Exceptions for work outside of these hours will be allowed for project safety or to take advantage of the limited times when the power line can be taken out of service
- \* If nighttime work is needed because of clearance restrictions on the power line:
  - \* Take appropriate measures to minimize disturbance to local residents and inform them of the work schedule and probable inconveniences

# Traffic

## Traffic



- \* Follow PG&E's standard safety practices, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques
- \* Coordinate construction traffic access at Gallo Substation with Gallo Winery during the E. & J. Gallo Winery Eastside Expansion Project construction
- \* Follow the recommendations in the *California Joint Utility Traffic Control Manual (2010)* regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC
- \* Comply with all notification requirements as prescribed by County of Merced and Caltrans encroachment permits

# Water Quality

## Storm Water Pollution Prevention Plan (SWPPP)

- \* Implement the SWPPP to help stabilize impacted areas and minimize erosion and sedimentation
- \* Install erosion and sediment control measures, such as straw wattles, covers, and silt fences before the onset of winter rains or any anticipated storm events
- \* Use suitable stabilization measures to protect exposed areas during construction activities
- \* Maintain an updated copy of the SWPPP onsite and update the SWPPP as required



## Storm Water Pollution Prevention Plan (SWPPP)

- \* The Project will be a LUP Type 1 with Receiving Water (RW) Risk of Medium
- \* BMPs anticipated to be used on the project will be bio-wattles (straw wattles), storm drain inlet protection, track-out protection, etc.
- \* SWPPP inspections will occur at least once a month and prior to, during, and after storm events based on the criteria set forth in the Construction General Permit (CGP)



## Erosion and Sediment Control BMPs

## Erosion Control Objectives

- \* Erosion Control Measures
  - \* Differ from sediment control measures
  - \* Minimize the effects of rain drop impact on exposed soils or stockpiles
  - \* Aim to prevent soil particles from mobilizing during a rain event
  - \* Consist of plastic sheeting, erosion control matting, etc.

## Sediment Control Objectives

- \* Sediment Control Measures
  - \* Used once soil particles have been mobilized
  - \* Intercept runoff, reduce flow velocity, and allow sediment to drop out of suspension before leaving the work area
  - \* Divert runoff from less stable to more stable areas
  - \* Consist of silt fencing, straw wattles, gravel bags, etc.

## Silt Fencing

- \* Allows sediment in runoff to settle out before water leaves construction site
- \* Install silt fencing:
  - \* At the base of exposed slopes
  - \* On the down-slope side of exposed soil areas
  - \* Around temporary stockpiles
  - \* Along streams and channels
  - \* Along project perimeter





### Fiber Rolls or Straw Wattles

- \* Consist of certified weed-free wood excelsior, rice or wheat straw, or coconut fibers
- \* Install fiber rolls/straw wattles:
  - \* Along the toe, top, face, and at grade breaks of exposed and erodible slopes
  - \* Down-slope of exposed soil areas
  - \* Around temporary stockpiles
  - \* Along project perimeter



### Storm Drain Inlet Protection

- \* Reduce flow velocity and detain and/or filter sediment-laden runoff
- \* Allow sediment to settle and/or to filter sediment prior to discharge into storm drainage systems or watercourses
- \* Install storm drain inlet protection:
  - \* Where ponding will not encroach into road traffic
  - \* Where sediment laden surface runoff may enter an inlet
  - \* Where upslope disturbed work areas or V-ditches have not yet been permanently stabilized



### Hazardous Materials Management and Spill Prevention and Response

### Hazardous Materials

- \* Examples of hazardous materials:
  - \* Fuels, oils, and lubricants
  - \* Solvents and cleaners
  - \* Uncured concrete



### Hazardous Material Product Storage

- \* Maintain compliance with Site Safety Plan
- \* Store products properly in original containers with original label
- \* Keep material safety data sheets (MSDS) sheets onsite
- \* Store minimum amounts needed
- \* Keep covered or in containers
- \* Place bagged materials on pallets and under cover



### Spill Response Equipment

- \* Spill clean-up supplies:
  - \* Clearly label supplies
  - \* Keep adequate supply of spill kit materials onsite and in staging areas
  - \* A proper spill kit consists of
    - \* Absorbent pads, diapers, and socks
    - \* Booms (if spill is in water)
    - \* Rubber gloves (e.g. Nitrile gloves)
    - \* Kitty litter
    - \* Disposal bags

## Spill Response

- \* Immediately notify Lead EI of **ANY** spill
- \* Small spills – remove all contaminated soil and/or water and coordinate with Lead EI on proper disposal
- \* Large spills
  - \* Assess safety of situation
  - \* If safe to do so:
    - \* Stop the leak from the source
    - \* Contain spilled material
  - \* Coordinate with environmental team on proper disposal and reporting if required



## Equipment Maintenance

- \* Maintain all equipment such that there will be no leaks of automotive fluids such as fuels, solvents, or oils
- \* Inspect equipment for leaks and repair immediately
- \* Inspect incoming vehicles for leaks
- \* Use drip pans and absorbent pads
- \* Repair leaking equipment before using it again within the work area



## Quiz

- \* True or False:
  - \* Placing a fuel can for a few minutes on the ground next to a dry irrigation ditch is okay to do.



## Scenario 1

- \* An operator goes to start / warm-up a piece of heavy equipment on Monday morning and notices a bird nesting in a nearby tree
- \* The bird nest is about 200 feet away and does not seem bothered by the noise or his presence
  - \* What should he do?

## Scenario 1 Answer

- \* Turn off the equipment and alert the onsite environmental inspector or monitor

## Scenario 2

- \* A fuel truck pulls up and begins refueling an excavator near a canal.
- \* What should the fuel truck driver do?

### Scenario 2 Answer

- \* The driver needs to request that the equipment be moved to an approved staging area before refueling the equipment.
- \* The driver needs to confirm that spill response materials are readily available at the staging area

### Scenario 3

- \* A worker sees a toad on the ground that has entered a work area. The toad looks like a common garden toad. What should she do?

### Scenario 3 Answer

- \* She should alert the onsite environmental inspector or monitor immediately
- \* She should not attempt to move the toad on her own, and should not attempt to confine or trap it until the biologist arrives

### Agency Expectations

- \* Questions/Discussion
- \* Wrap-Up and Evaluations