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**California Underground Facilities Safe Excavation Board  
("Dig Safe Board")**

**August 12, 2019**

**Agenda Item No. 04 (Information Item) – Staff Report**

*Update on Education-in-Lieu of Fines Course Development*

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**Presenter:**

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**Summary:**

This document demonstrates the research, fact mapping, and structure building staff have completed in the process of developing the Board's education-in-lieu of fines course, and serves as an update to members, stakeholders, and the public.

**Background:**

The Dig Safe Act of 2016 (SB 661, Chapter 809, Statutes of 2016 ("the Act")), calls for the Dig Safe Board ("the Board") to coordinate the state's education and outreach activities that encourage safe excavation practices. The Legislature also directed the Board to enforce California's safe digging laws progressively, providing the opportunity to educate violators about safe digging practices where appropriate. In an effort to do that, the Board's 2019 Plan<sup>1</sup> establishes the creation of a relevant, affordable educational course to offer violators in-lieu of fines. As discussed in the Board's 2018 Results Report<sup>2</sup>, "the curriculum is expected to focus on case studies of past dig-in accidents in California and across the nation to provide context, and will emphasize the importance of communication, and how different work practices related to underground facilities affect one another."

Development of such a course began at the end of 2018, when the Board directed staff to assist in creating an in-house educational course. Staff started by researching past dig-in accidents in California, and other parts of the country, to identify cases with a distinct set of circumstances that provide an opportunity to educate on safe excavation practices. Staff partnered with curriculum development experts at ehs Inc to discuss the development of the Board's educational course and the best methods to use to engage students and maximize their retention of information. Board and ehs Inc staff presented the outline, and the potential case studies the course would focus on, to the Board at its November meeting in Fontana.

**Update:**

Since that initial update, staff has continued its course development work, and refined the identity of the course to focus on human factors and motivating a safety culture change,

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<sup>1</sup> The 2019 Plan is available on the Dig Safe Board's website: <http://digsafe.fire.ca.gov>

<sup>2</sup> The 2018 Results Report is available on the Dig Safe Board's website: <http://digsafe.fire.ca.gov>

instead of focusing on specific technical skills and procedures. Over the past nine months, staff has worked diligently to identify relevant case studies for the course, gather the information needed to develop the course curriculum and case study videos, and research and gather the images, videos, and graphics needed to produce the case study videos.

### Case Studies Identified

Research into past dig-in accidents across California and the United States began in October 2018. At the direction of Members Del Toro and Johnson, staff identified several relevant incidents that could be used as case studies in the Board's education in-lieu of fines course. After reviewing those incidents, staff has focused efforts on developing the following three cases:

- **Paso Robles, California:** An excavator struck a water line in 2008, flooding a trench and killing two people. Misreading of a map of the excavation site and a lack of positive identification of the line were likely factors in this case.
- **Kansas City, Missouri:** A gas distribution line was struck in 2013, causing an explosion that killed one and injured 15 others. Improper potholing was a likely factor in this case.
- **Walnut Creek, California:** A high-priority petroleum pipeline was struck in 2004, causing an explosion that killed five, and injured four others. A lack of an onsite meeting and positive identification of the line were likely factors in this case.

These cases were chosen because they each embody a unique set of circumstances that allow the Board an opportunity to discuss the danger of assumptions from all parties involved. In each case, staff has identified instances where assumptions were made by project owners, excavators, locators, and operators which will allow course instructors to lead a discussion on lessons learned, the importance of safety checks, and the violations of Government Code 4216.

### Case Study Research & Information Gathering

Once the case studies were identified, staff began researching the facts, gathering information in the form of investigations, news articles, and reports; mapping those facts, identifying the violations of 4216, and working with ehs Inc to build the course curriculum. Since November, staff has identified city, county, and state agencies who responded to each incident and requested investigation documents and reports.

The process to obtain these reports has proven to be challenging and time-consuming, as some agencies were slow to respond to staff requests, and others had trouble locating the information. In one instance, a police department had the case marked as confidential, even though it had been closed. It took staff months of calling and talking to different departments to finally get the information request approved. In another case, the agency had trouble locating the relevant reports because they were split up between several regional offices, and some had been destroyed when a roof collapsed during a rain storm. In a third case, staff had to wait for a detective to review and approve the release of the information. That detective was in the middle of responding to multiple homicide cases. In the final case, staff only received the information requested, after sending a follow up email to the agency in question a month after the request was made. It turns out, the request never reached the right person's desk. Currently, staff is still awaiting the delivery of a handful of reports needed for the development the course case study videos.

During the process of gathering the information, staff also spent time reading through each report and mapping the facts of the case to identify the who, what, when, where, why, how, and sequence of events for each case. The fact-mapping process is necessary for staff to develop a narrative for the course videos. Creation of the narrative for each case study can take several weeks. The scripts are first written, then go through several rounds of internal staff review and editing, prior to being presented to the Board's education committee members for edits and approval. Currently, staff has finished two of the three scripts and is awaiting reports for the final case study to create the narrative and begin the review and editing process.

### Case Study Video Development

The decision to use video to introduce the facts of each case came from the desire to create a course that not only taught students important safety information, but kept them engaged. Each video will use photographs, video, graphics, and a descriptive narrative to introduce students to the relevant incidents.

Since November, staff has spent significant time working to gather relevant visuals to tell the stories of these incidents. For each case, requests for images and video have been made to the appropriate news organizations and investigating agencies. In some cases, staff have received photographs, maps, and diagrams included in reports requested during the information gathering process. In other cases, staff have struggled to obtain permission to use certain photographs or video from news organizations and even investigating agencies. The process has taken months of outreach, but staff have managed to gather images and diagrams to be used in the courses case study videos and is currently waiting for responses to outlying requests.

For portions of the video narrative that do not have video, staff are working with production companies and stakeholders to shoot b-roll footage<sup>3</sup> and reenactments, and with the CAL FIRE Communications Office to design and create graphics. Staff are also working to identify a host or several hosts to do some on camera work, and narrate. The videos will be edited in-house by staff, a process that can take up to a month.

### Course Completion Timeline

Per the 2019 Plan, the Board expected to have its course operational by summer 2019. While staff has managed to overcome the obstacles that arose, the amount of work that remains to complete this course will push the Board's completion date back.

The following timeline details the work ahead, and when the Board's course will be released:

- ***PHASE ONE: CASE STUDY VIDEO PRODUCTION***

- ❖ Case One: Paso Robles

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| August 1, 2019:  | --Finish Gathering Investigative Reports, Photos, Videos, and Other Images  |
| Month of August: | --Set Up Video Shoots to Collect Generic Video Not Covered by Photos, Videos, and Other Images<br>--Find Volunteers for, Hold Auditions for, and Choose Video |

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<sup>3</sup> In film and television production "B-roll" refers to supplemental footage including atmospheric shots or location or inanimate objects, undirected footage of people, establishing shots, stock footage, or archival imagery.

- Host
- Research Potential Costs for Reenactments Not Covered by Images Already Gathered
- Month of September: --Shoot Generic Videos
- Shoot Standups with Video Host
- Record Narrative Audio
- Create Graphics
- Begin Editing Case Study Video
- Month of October: --Finish Editing Case Study Video and Screen Video with Committee Members
- Month of November: --Finalize Case Study Video and Add to Course Curriculum PowerPoint
- ❖ Case Two: Kansas City
- August 1, 2019: --Finish Gathering Investigative Reports, Photos, Videos, and Other Images
- Finalize Narrative Script
- Month of August: --Research Stock Video Not Covered by Photos, Videos, and Other Images
- Research News Footage Not Covered by Images and Video Already Gathered
- Set Up Video Shoots to Collect Generic Video Not Covered by Photos, Videos, and Other Images
- Find Volunteers for, Hold Auditions for, and Chose Video Host
- Month of September: --Shoot Generic Videos
- Shoot Standups with Video Host
- Record Narrative Audio
- Create Graphics
- Begin Editing Case Study Video
- Month of October: --Finish Editing Case Study Video and Screen Video with Committee Members
- Month of November: --Finalize Case Study Video and Add to Course Curriculum PowerPoint
- ❖ Case Three: Walnut Creek
- Month of August: --Gather Investigative Reports, Photos, Videos, and Other Images
- Research and Request Available News Footage and Photos
- Continue Fact Mapping Case Information
- September 1, 2019: --Finish Information Gathering, Research, and Fact Mapping
- Month of September: --Craft, Edit and Finalize Narrative Script
- Set Up Video Shoots to Collect Generic Video Not Covered by Photos, Videos and Other Images
- Find Volunteers for, Hold Auditions for, and Chose Video Host
- Research Potential Costs for Reenactments Not Covered by Images Already Gathered
- Month of October: --Shoot Generic Videos
- Shoot Standups with Video Host
- Record Narrative Audio

- Create Graphics
- Begin Editing Case Study Video
- Month of November: --Finish Editing Case Study Video and Screen Video with Committee Members
- Month of December: --Finalize Case Study Video and Add to Course Curriculum PowerPoint

- *PHASE TWO: COURSE CURRICULUM DEVELOPMENT*

- Month of September: --Develop Line Employee Course Introduction Section & PowerPoint, Including: Board Mission, Enforcement Philosophy, and Course Objective/Agenda
- Develop Line Employee 4216 Overview Section & PowerPoint
- Identify Line Employee Engagement Points in Each Case Study Video Using Narrative Scripts Developed for Videos.
- Month of October: --Develop Supervisor Course Introduction Section & PowerPoint, Including: Board Mission, Enforcement Philosophy, and Course Objective/Agenda
- Develop Supervisor 4216 Overview Section & PowerPoint
- Identify Supervisor Engagement Points in Each Case Study Video Using Narrative Scripts Developed for Videos.
- Month of November: --Develop Paso Robles Case Study Section PowerPoint, Discussion & Review for Line Employees & Supervisors
- Develop Kansas City Case Study Section PowerPoint, Discussion & Review for Line Employees & Supervisors
- Develop Walnut Creek Case Study Section PowerPoint, Discussion & Review for Line Employees & Supervisors
- Month of December: --Develop Review Section for Line Employees & Supervisors
- Develop Course Evaluation Sheet
- Develop Course Certificate of Completion
- Month of January: --Create Any Student Handouts Not Being Purchased
- Create Trainer Guides for Line Employee & Supervisor Courses
- Month of February: --Present Courses to Committee Members for Review
- Finalize Courses and Determine Method of Presentation to the Board

- *PHASE THREE: COURSE LOGISTICS*

- Month of September: --Determine Cost per Student to Run Course, and Decide on Fee Amount
- Month of November: --Identify Supplies Needed to Run the Course Including: Engagement Devices/Games, Name Tags, Pens/Pencils, Notepads, etc.
- Identify Course Materials to Purchase for the Course
- Identify Potential Classroom Locations in Northern and Southern California & Research Costs, Potential Contracts, etc.
- Month of December: --Determine Method of Registration for Course
- Determine Course Evaluation Intake and Review Process
- Determine Online Plan for Course Materials and Resources

--Determine Classroom Locations in Northern and Southern California and Begin Necessary Processes

Month of January:

--Create Course Registration System and Form on the Dig Safe Board Website  
--Create Course Resources Page on Dig Safe Board Website  
--Purchase Materials and Supplies for the Course  
--Determine Beta Testing Plan for Courses

• *PHASE FOUR: PRESENT COURSE TO BOARD*

Month of March:

--Present Courses to Dig Safe Board in Manner Determined by Committee, Staff and Legal Counsel  
--Make Any Adjustments to Courses Based on Board Feedback

• *PHASE FIVE: COURSE BETA TESTING*

Month of April:

--Begin Beta Testing Courses

Month of May:

--Adjust Courses Based on First Round of Beta Testing  
--Continue Beta Testing Courses

Month of June:

--Adjust Courses Based on Second Round of Beta Testing  
--Continue Beta Testing Courses

Month of July:

--Adjust Courses Based on Final Round of Beta Testing  
--Finalize Courses for Release

• *PHASE SIX: COURSE GOES LIVE*

Following beta testing of the Dig Safe Board's education in-lieu of fines course, it will go live in the month of July. Per statute, Board enforcement begins July 1, 2020. The Board's education course will be ready in time to be applied as an enforcement action by the Board.