California Underground Facilities Safe Excavation Board

November 9, 2021

Agenda Item No. 5 Information Item – Staff Report

Update on Safety Standards – Next Steps

PRESENTERS

Brittny Branaman, Policy & Budget Manager

SUMMARY

In its continuing work on safety standards, the Board conducted information gathering via an online workshop and survey on road construction and earthwork excavation through which it continued to hear a theme from stakeholders that safety increases when information sharing between parties increases. After analyzing the ideas discussed in the workshop and survey, staff recommends that the Board focus its next efforts in safety standards around the issue of abandoned facilities as this is a safety concern which exists at the intersection of information sharing and communication as well as is universally applicable to all excavation subtypes.

STRATEGIC PLAN

2021 Strategic Plan Objective: Improve Excavation Safety and Location Practice Safety

Strategic Activity: Develop Safety Standards

BACKGROUND

Building on its earlier efforts from July 2018 and to fulfill its statutory charge to develop safety standards,[1] the Board built a general framework in July 2020[2] for how to approach the development of these standards considered through the lens of different types of excavation. These efforts began that fall as the Safety Standards Committee[3] began information gathering through a survey and

[1] Gov't Code § 4216.18

[2] July 13-14, 2020, Agenda Item No. 7, *Discussion on Reasonable Care Standards Development*

[3] This committee previously went by the name Reasonable Care Committee.

workshops exploring practices into areas such as trenchless excavation[4,5,6] and then in 2021 moved on to information gathering on excavation for road construction and maintenance, efforts that proceeded through the summer.[7]

While not intended initially to be a part of the scope of safety standards, the Board discussed the issue of abandoned lines at its June 2020 meeting, during which it determined that this topic would be best addressed through the ongoing work being conducted by what is now the Safety Standards Committee, and the Board directed staff to proceed with the topic via that avenue.[8]

DISCUSSION

Earthwork and Road Construction Workshop and Survey

To gather additional information about safety standards in the excavation subtype of earthwork and road construction and gain further insight into the safety practices and experiences of stakeholders, the Safety Standards Committee released a survey and hosted a workshop in July 2021. To allow those who were not able to attend the workshop an opportunity to participate, an online form was also made available to submit responses to the workshop questions. In total, the workshop was attended by approximately 130 stakeholders and the survey drew thirteen responses.

Following the survey, Board staff had conversations with eight of the survey respondents who indicated an openness for such follow-up in their responses and were representative of various stakeholder groups such as contractors and engineering firms. Through these conversations staff gathered additional qualitative information on the practices and safety standards these firms apply to their work.

Increasing Information Sharing and Verification Increases Safety

California's Dig Safe Act and the Board's mission is to improve safety outcomes by facilitating communication and learning among operators and excavators.[9] This is illustrated through

- requirements mandating communication between parties such in onsite meetings around high priority facilities[10] to coordinate how to verify the

[4] August 10-11, 2020, Agenda Item No. 6, *Discussion of Reasonable Care Standards Workshop*
[5] September 14, 2020, Agenda Item No. 18, *Discussion on Reasonable Care Standards Development for Trenchless Excavation Techniques*
[6] November 16, 2020, Agenda Item No. 9, *Update on Reasonable Care Standards Development for Trenchless Excavation Techniques*
[7] May 11, 2021, Agenda Item No. 8, *Update on Safety Standards*
[8] June 8, 2020, Item No. 5, Abandoned Underground Facilities in California
[9] Board Policy B-02, *Mission*
[10] Gov't Code § 4216.2 (c)

location of utilities[11],

- requirements for locators to use other sources to verify locates if necessary[12], and
- requirements for excavators to determine the location of subsurface facilities prior to using power tools in the tolerance zone.[13]

In looking at safety standards through the lens of different excavation subtypes over the past several years, the Board continues to hear from stakeholders that safety improves with increased communication via information sharing about the location of underground facilities. However, such practices can only be applied where information about the location of existing facilities is accurate and provided timely to those planning and conducting such work.

An example of how excavators approach the information they are provided from operators is highlighted in a quote from one of the workshop attendees to "trust but verify"—a concept that was echoed by several of the other attendees.

Excavators and operators apply this concept of "trust but verify" in their use of secondary locating techniques—either during the planning phase or prior to excavation—such as Ground Penetrating Radar (GPR)[14] or, for excavators, using their own locating equipment to verify the accuracy of the marks and to identify potential unmarked abandoned lines.[15]

While the sample size of the survey was low, there was clear consensus among respondents that they would prefer to have utility maps in addition to field marks to better understand the location of facilities, thus improving safety.[16] However, there was also wide agreement among excavators that even when they request maps from operators, they rarely receive them. Some excavators stated that certain operators appear to have a universal policy of not ever providing maps. Additionally, stakeholders noted that even when they are provided maps, that the quality of the maps is often poor, limiting the potential benefits such information sharing intends to provide.[17]

Stakeholders also highlighted ongoing communication obstacles with operators, such as an inability to reach operators via available contact information or

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[11] Gov't Code § 4216.10
[12] Gov't Code § 4216.3 (a)(3)
[13] Gov't Code § 4216.4 (a)(1)
[14] Earthwork and Road Construction Excavation Workshop
[15] Attachment A: *Earthwork and Road Construction Survey Data*, Question 9, Page 4; Earthwork and Road Construction Excavation Workshop
[16] Attachment A: *Earthwork and Road Construction Survey Data*, Question 22 and 23, Pages 13 and 14; Earthwork and Road Construction Excavation Workshop
[17] Attachment A: *Earthwork and Road Construction Survey Data*, Question 24 and 25, Pages 14 and 15

delayed responses which causes delays scheduling meetings or standbys.[18] While this information is largely anecdotal, some data is available which may indicate the scope of this concern. Data provided by USA North 811 shows that, as of the end of September 2021, approximately 47% of California members of USA North 811 have not updated their contact information within the past year and that a further approximately 21% of have not updated it within the past two years.[19] Given employee turnover and other changes, and that nearly half of operators have not updated their information recently, it is feasible that inaccurate, outdated contact information hinders excavators' ability to reach and communicate with some operators.

Determining a Path Forward

In its work on Safety Standards thus far, the Board has looked at deep excavations using trenchless methods and the comparably shallow excavations involved in earthwork and road construction. The Board has gained insights into safety practices and requirements project owners, such as operators, apply to these projects. A key theme staff is that situations vary such that a best practice in one situation may either not be applicable to, or may be detrimental to, safety in a different situation. Creating or introducing a single safety standard that could be applied generally could be a challenge.

The Standards Committee and staff proposes to direct focus on a systemic issue that impacts all excavation types and stakeholder groups—abandoned facilities.

Abandoned facilities are a consistent topic in the Board's discussions. They are at intersection of locate and mark practices, mapping, information sharing, determination of exact facility location, and communication between parties.

Abandoned Facilities

While statute does not currently provide a definition of abandoned facilities, for the purposes of this discussion staff has considered it to be a facility for which an excavation notification is submitted by an excavator but for which the applicable current or former operator does not provide a positive response in the form of locating and marking, providing information, or responding that the excavation is not in conflict. This may occur either by not being a member of the one-call center or by not maintaining accurate records.

Abandoned facilities undermine the 811 process. They pose risks which undermine bypass established risk controls in several ways. Abandoned facilities are unknown to the excavator and will likely only be discovered once the excavation process has begun, denying the excavator the opportunity to design around it or apply

[18] Attachment A: *Earthwork and Road Construction Survey Data*, Question 19 and 20, Pages 10 and 11

[19] USA North 811 Board of Directors Meeting Packet October 27th, 2021, Page 37

appropriate safety techniques.

Abandoned lines also interfere with locate and mark practices. The 2020 Common Ground Alliance (CGA) Damage Information Reporting Tool (DIRT) report shows that the root cause of a pipeline damage in more than 20,000 instances, the third largest among all causes identified, was due an inaccurately marked facility that was caused due to an abandoned facility.[20] This could lead to an excavator mistaking an abandoned facility for an active one or to excavate nearer to an active line than indicated by the locate marks.

Mistaking an unknown or abandoned facility for an active facility is a major safety issue. A similar situation is featured in the Kansas City incident in the Board's Education Course where damage to a gas line led to an explosion and a fatality after excavation inadvertently proceeded with the false understanding that the location of all facilities had been determined.[21]

As stated in a 2020 staff report on abandoned lines, in 2019 nearly 10% of the Board's investigations, 19 total, involved abandoned facilities in some way.[22] The investigations in that report show that problems with abandoned facilities often involve old or outdated maps. For instance, one involved an operator who was no longer in operation. The abandoned facility was noted on maps held by the city, but the maps were not available to the excavator at the time the excavation took place. A second investigation involved the opposite, where a facility was abandoned but maps had not been updated to include that information, which led an excavator to assume that an active facility which was not located and marked or included on the maps was an abandoned one. These mapping concerns underscore the importance of information sharing between parties and how such communication is not necessarily considered in the current call before you dig process.

Stakeholder comments made during board meeting and through the information gathering activities call in a clear voice the significant impact of abandoned lines.

Statute provides insight for future information-gathering. Statute speaks of the marking of abandoned lines[23], that all facilities be considered active[24], and that the Board consider the risk that mistaking an inactive line may cause in cases it is located above an active facility.[25]

Additional areas that could be considered include

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[20] Common Ground Alliance DIRT 2020 Analysis and Recommendations, Page 19
[21] September 14, 2021, Agenda Item No. 3, *Presentation of the Board's Education in Lieu of Fines Course: "Dig Safe Basics: Excavation Safety Near Subsurface Installations"*
[22] June 8, 2020, Item No. 5, Abandoned Underground Facilities in California
[23] Gov't Code § 4216.3(a)(1)(C)
[24] June 8, 2020, Item No. 5, Abandoned Underground Facilities in California Page 3
[25] Gov't Code § 4216.18

- resource impacts to operators and excavators caused by abandoned facilities such as project delays or the need to determine an owner,
- how information about abandoned facilities could be shared among parties when such facilities are discovered, and
- requirements other regulatory bodies such as CAL FIRE Office of the State Fire Marshal Pipeline Safety Division place on the abandonment of facilities.[26]

Ultimately, if the Board decides to proceed with information gathering in the area of abandoned facilities, staff will work with the Safety Standards Committee on a path forward.

RECOMMENDATION

Staff recommends that the Board discuss the issue of abandoned facilities and weigh whether it should be the next topic area for further investigation by staff and the Safety Standards committee to consider.

ATTACHMENTS

A. Earthwork and Road Construction Survey Questions
B. Earthwork and Road Construction Survey Data

[26] CAL FIRE Office of the State Fire Marshal Pipeline Safety Division, Pipeline Abandonment

California Underground Facilities Safe Excavation Board

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Agenda Item No. 5 (Information Item) – Staff Report

Attachment A: Earthwork and Road Construction Survey Data

Earthwork and Road Construction Survey

Results for July 14th, 2021 to August 7th, 2021

13 Survey Responses

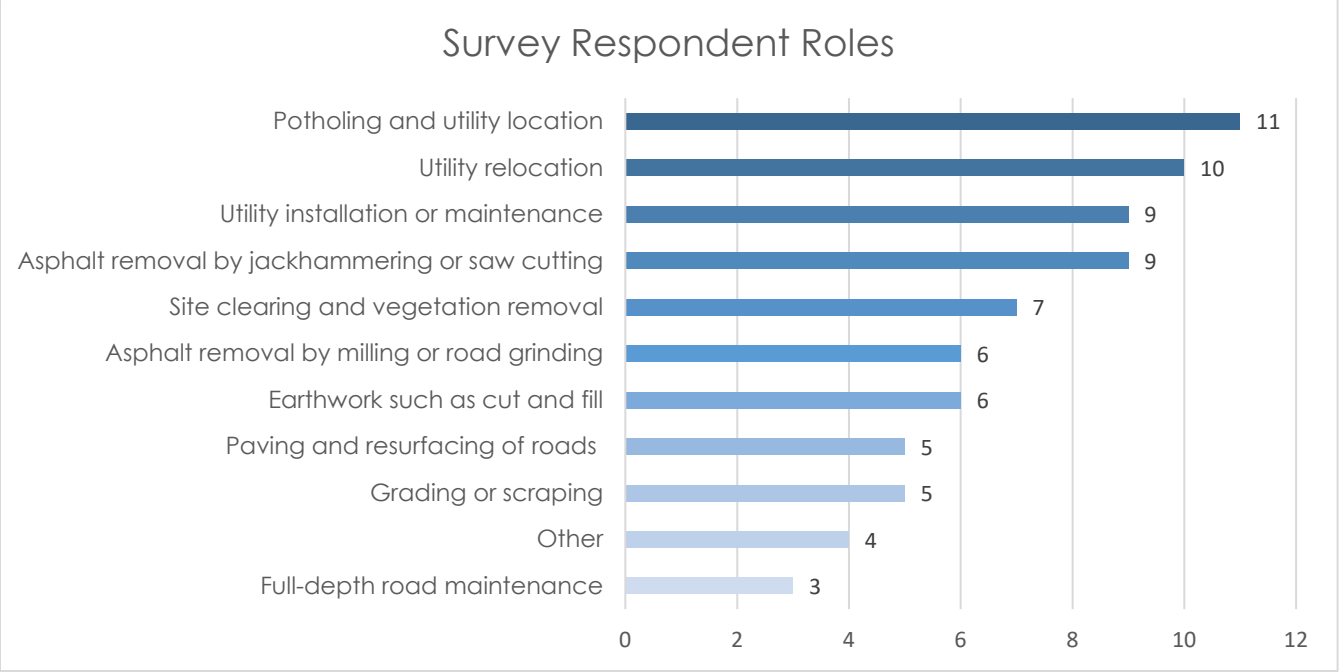
1. Your Name (optional)
   (12 Responses of 13)

   - Dave Smith
   - Ray Fugal
   - Erich Metzger
   - Jason Dennis
   - Jim O'Kane
   - Frank
   - Derek Perner
   - William Griffith
   - Tony Storelli
   - Sarah Goodfellow
   - Paul Sutter
   - Casey

2. Title (optional)
   *(11 Responses of 13**)***

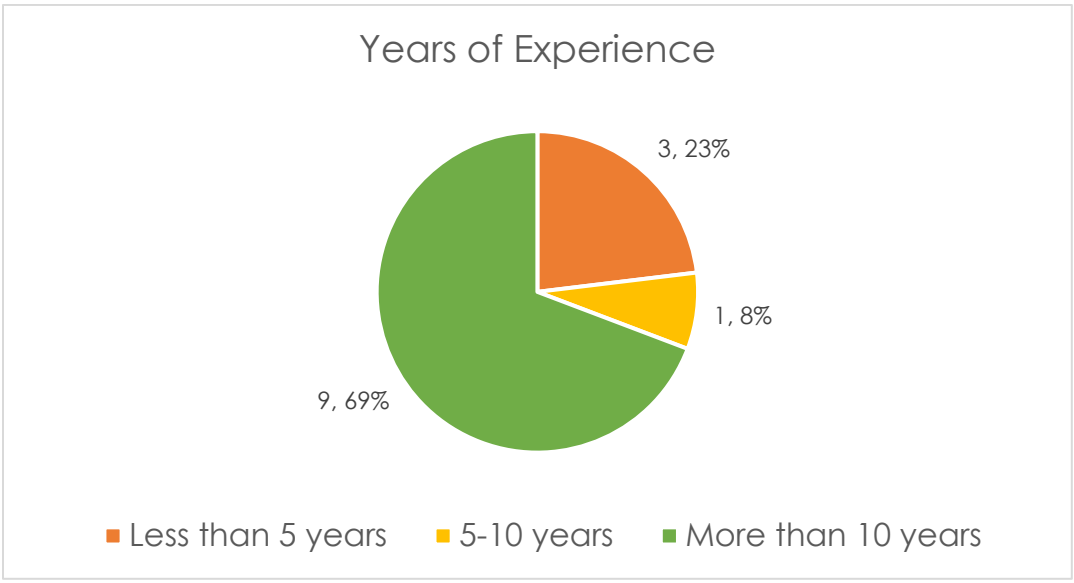
   - Vice President of Niels Fugal Sons Company
   - Sr. Director of Safety and Quality
   - Chief Estimator
   - Excavator
   - President
   - Project Engineer
   - Regional Safety Manager
   - COO
   - Sales Representative
   - Safety
   - Safety Manager

3. What roles in road construction or earthwork do you have experience with? (Select any)
(13 Responses of 13)

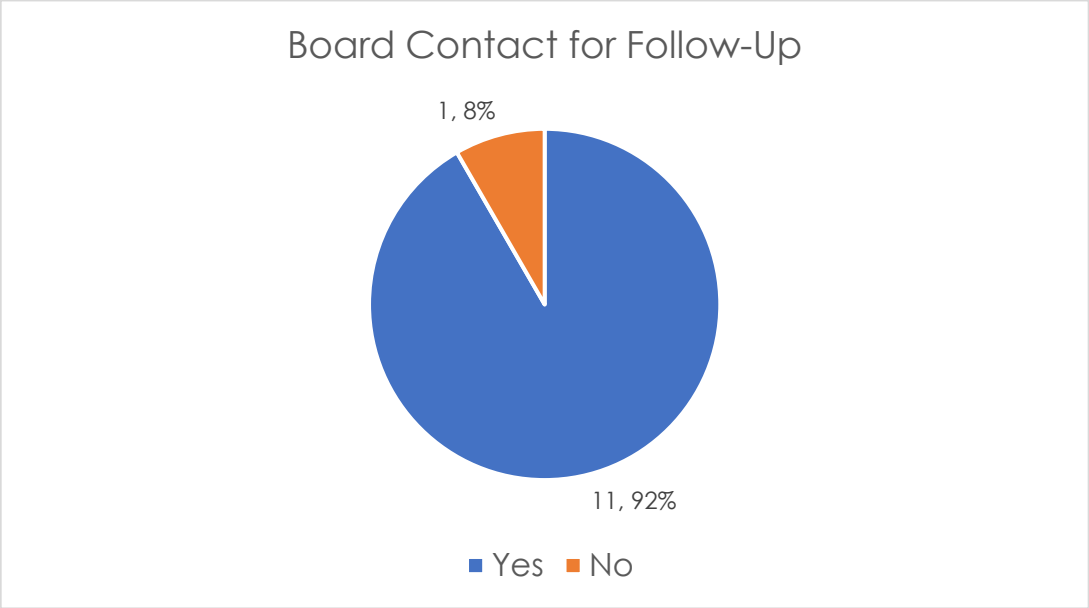


Other:
- All types of general engineering construction
- Soil stabilization
- Drilled piles
- Locating, mapping, marking, identifying underground facilities

4. How many years of experience do you have in earthwork, road construction, or roadway excavation? (Select one)
(13 Responses of 13)

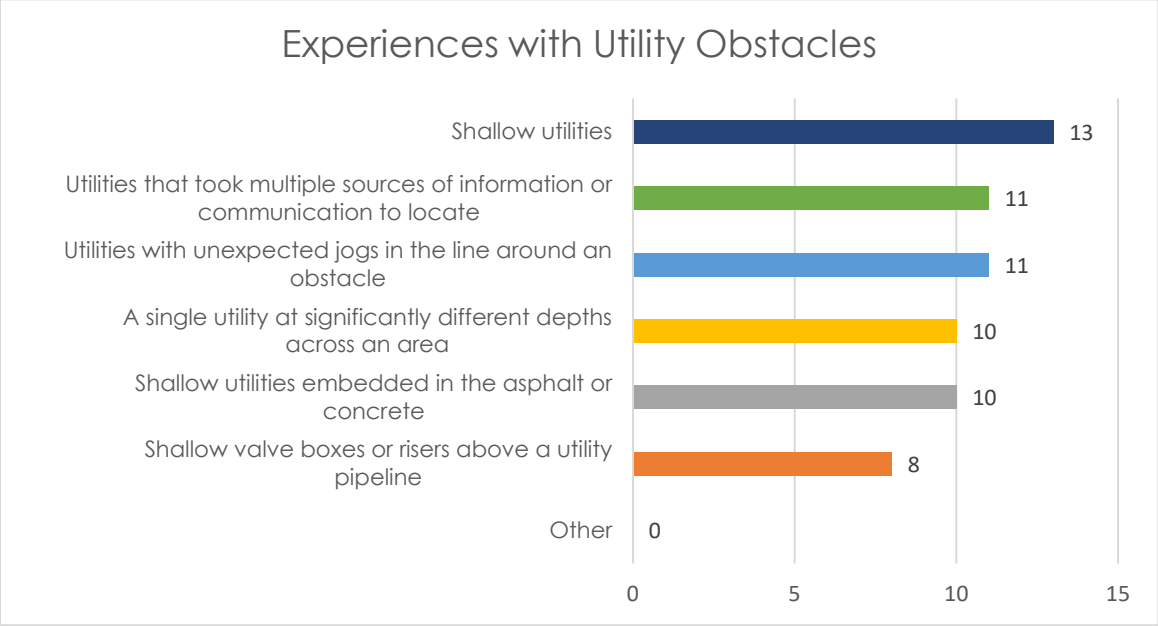


5. May we contact you for a follow up conversation if we have a question?
(12 Responses of 13)



6. Please provide your preferred contact information (email and/or phone number)
(11 Responses of 13)

7. Have you experienced any of the following in working in or around roads?
(13 Responses of 13)



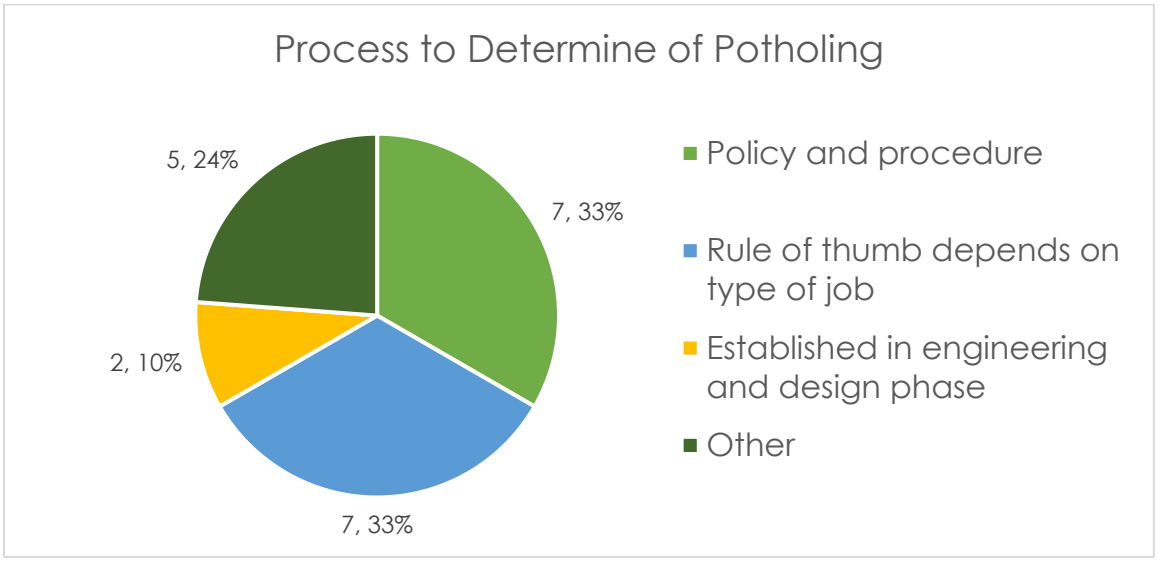
8. Suppose you are excavating near to a shallow utility such as a traffic loop or car detector iembedded within or a few inches beneath the pavement. What steps would you take to safely remove the pavement and proceed to full depth work in the area?
   (12 Responses of 13)

- How would I know the utility was shallow? They never give depth info! Code says that stuff must be at least 18 inches!
- Stop saw cut within two feet of utility and dig underneath the utility.
- Use vacuum excavation as the primary means, depending on soil condition we might have to hand dig and or use the clay spade (which is safer than the use of a sharp shooter).
- Delineate, markout, safeoff, proceed with the excavation.
- You can't remove the pavement without damaging the shallow utility. contact owner and operator and have them remove pavement and then start full depth work
- Have traffic signals set on timer, in lieu of loop sensor, excavate, pave replace loop or loops as required. If not acceptable to knock out loops, tunnel underneath loop.
- Follow all Golden Shovel best practices, notify 811 (U.S.A.), make sure the utilities are located, marked and kept visible prior to digging, utilize potholing and hand digging, and carefully evaluation the conditions while excavation to the full depth.
- As a utility Contractor, this is usually identified during preconstruction. The local public works department in coordination with the contractor will give directions on how to excavate around their infrastructure.
- Mark for USA, identify potential utility conflicts, meet with utility owners and make a plan, then do the work.
- Locate the correct spot via maps/ locator to ensure you are digging in the correct spot
- City's don't normally mark loops. We train to look for boxes, gas meters or any signs that shows sub-surface utility's. we try and leave loop wire cut in place and tunnel under wires.
- Potholing If the loops need to be retained the depth of asphalt would be determined and cut to that depth. Then removed to exposed the conduit.

9. Are there any additional actions beyond notifying 811 that you recommend to avoid striking underground utilities while grading?
   (12 Responses of 13)

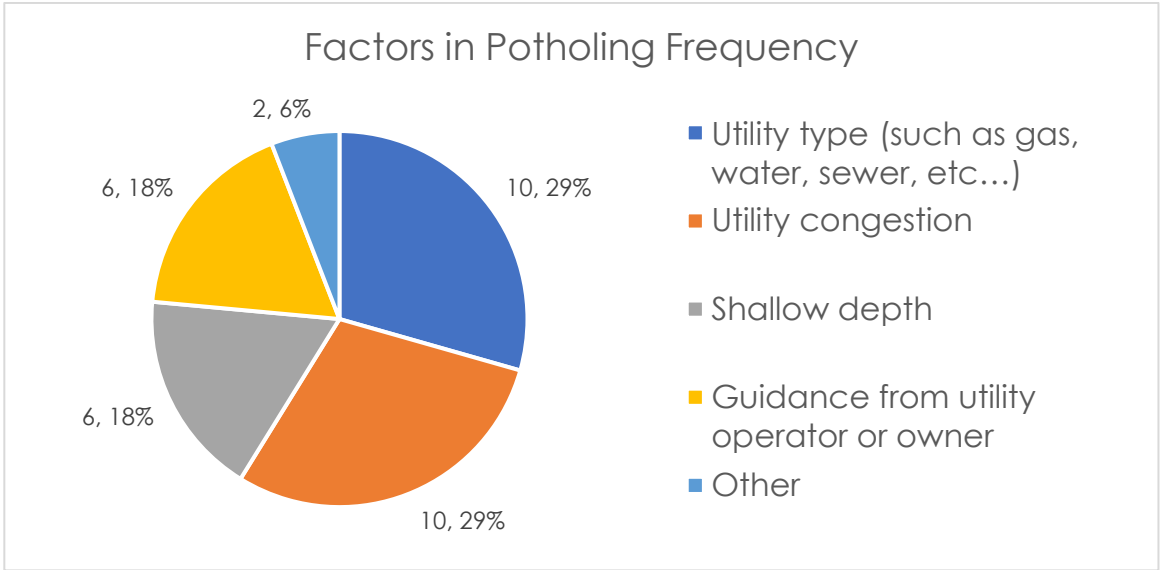
- I don't grade.
- N/A
- Direct contact with facility owners, field meets prior to excavation tend to reduce the risk. The challenge is getting the owners to commit and show up for the meetings.
- Pothole logs, locate standpipes, and utility markers
- Use 5 steps to safe excavation
  Delineate Contact 811 Wait required time Confirm response Dig with care
- Make contact with utility locator and request a meet and mark.
- Complete a utility locating survey, review all existing utility and project records, as-built drawings, utility maps, etc. and ask local property owner and utility personnel to share any available information about the utilities in the area where grading will be done.
- Request as built drawings and plat maps. Use additional forms of locating such as GPR. use addition locating equipment such as pipe horns etc.
- In my opinion, most project design teams do not put enough effort into locating utilities prior to a project being designed. This causes many problems that could save time and money because delays to schedule and cost impacts usually are more than what it would take to properly identify utilities during the design process.
- Early warning tape, gives a tug on the core material within the tape to prevent dig ins via excavators
- N/A
- Check existing locations of valves/services/meters. Check private and as built plans from property where work is planned for know utilities. Ask other contractors onsite if they know of any unmarked utilities.

10. How does your organization determine the number of times, the frequency, or the specific locations at which to pothole and visually inspect a buried utility in the work area? (Select any)
(11 Responses of 13)



Other:
- We don't do that.
- Reasonable care
- Evaluate the locations based on available info
- Client Requirements
- There is no USA policy on number of potholes

11. What factors cause you to pothole more frequently over a particular utility to determine its location? (Select any)
(11 Responses of 13)

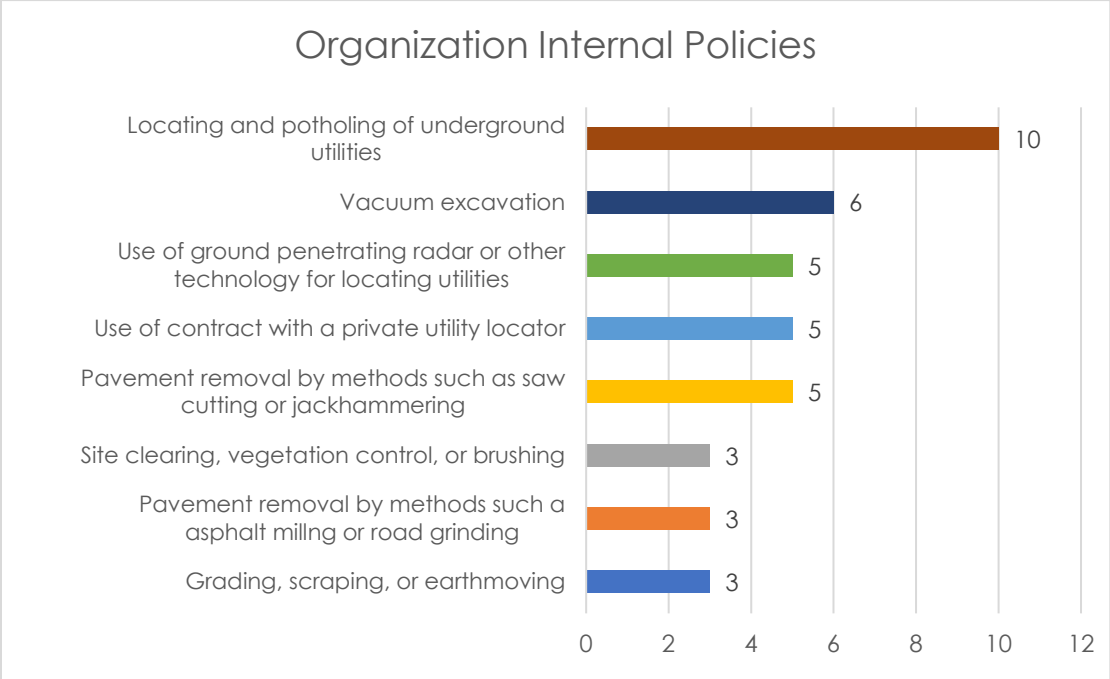


Other:
- Probability of unknown utility being undetectable.
- Type of pipe, is it locatable?

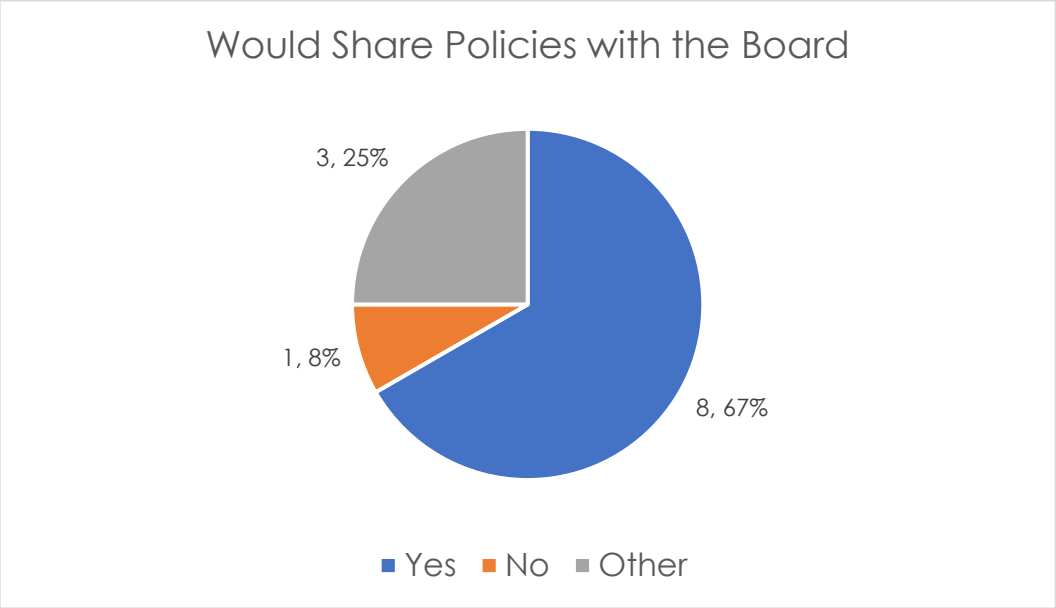
12. If you have one, what is your general practice for the number of times or intervals at which to pothole and visibly locate a utility?
    (10 Responses of 13)

- Any time we cross, paralleling the utility within within 5 feet we pothole every 15 feet.
- Every identified (marked) utility within the proposed excavation must be potholed and located. The pothole must exposed the top as well as the sides a minimum of 12", The bottom of the pothole should go down to the planned excavation depth.
- New excavations, changes in direction, refresh markout
- Reasonable care. at least one at each end and one in the middle.
- Dig until you've located the utility in conflict.
- Every 50'
- This depends on the depth of our excavation and the type of equipment we plan to use to excavate. A general idea would be approximately 100' intervals.
- Every 12 ft to ensure no directional changes occur
- First we maintain a relationship with the locators and have them mark only the location where excavation well take place. This keeps the marks fresh, and saves time for the locators. We call ahead for remarks before the job changes location. We pothole more frequently if there is plastic gas lines.
- At suspected changes in depth or alignment within the area of utilities crossing or being within 2' of each other.

13. Does your organization have any internal standards, policies, or other safety and utility damage prevention requirements for any of the following topics: (Select any)
    (10 Responses of 13)



14. Would you be willing to share your damage prevention policies with the Board?
(12 Responses of 13)

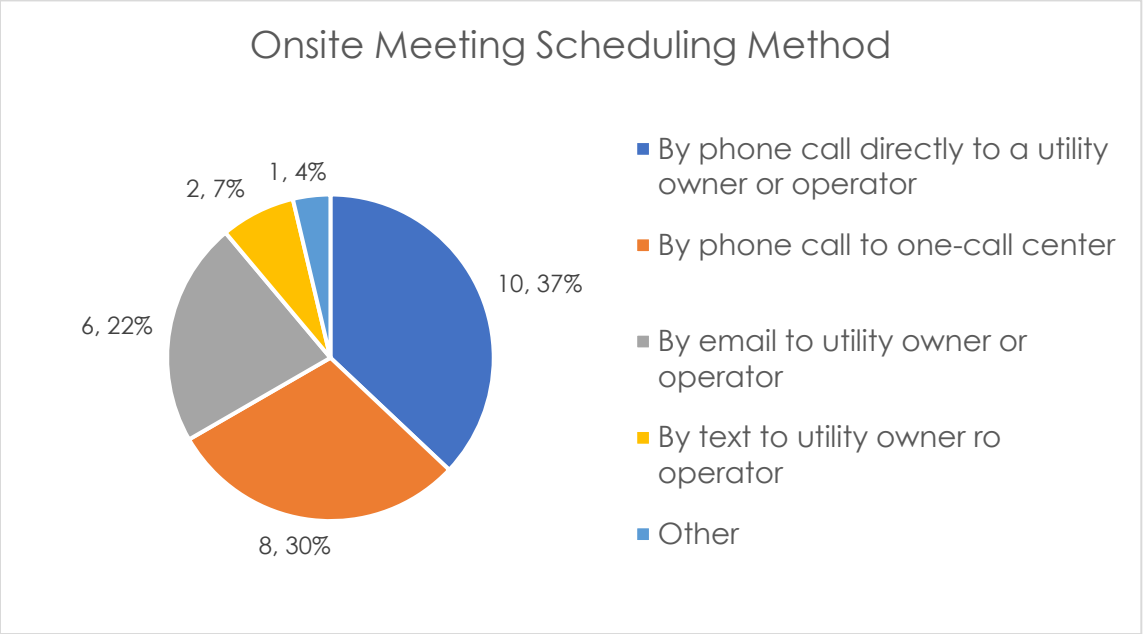


Other:
- Don't have one
- Perhaps
- The ones we have come from UCON

15. What certifications for earthwork, grading, asphalt removal, or other excavation methods does your organization require?
(9 Responses of 13)

- None.
- Damage prevention training
- All of our labor is union labor so we depend on them to provide qualified (trained) personal. Than we do internal safety, and additional qualification training including manufacture specific training such as vacuum excavation or bore operations.
- OSHA Training, IIPP Training, CPR training, Confined Space training, and all trenching supervisors have competent persons training.
- All our operators all union trained
- The only certifications used in performing this work would be Gold Shovel Certification in Damage Prevention
- We have an extensive safety program and policies. We are members for IS Networld. We do drug screenings. We are also members of Gold Shovel. We train our employees at time of hire and then do annual refreshers.
- N/A
- Competent person must be onsite. Pre work planning/layout of excavation

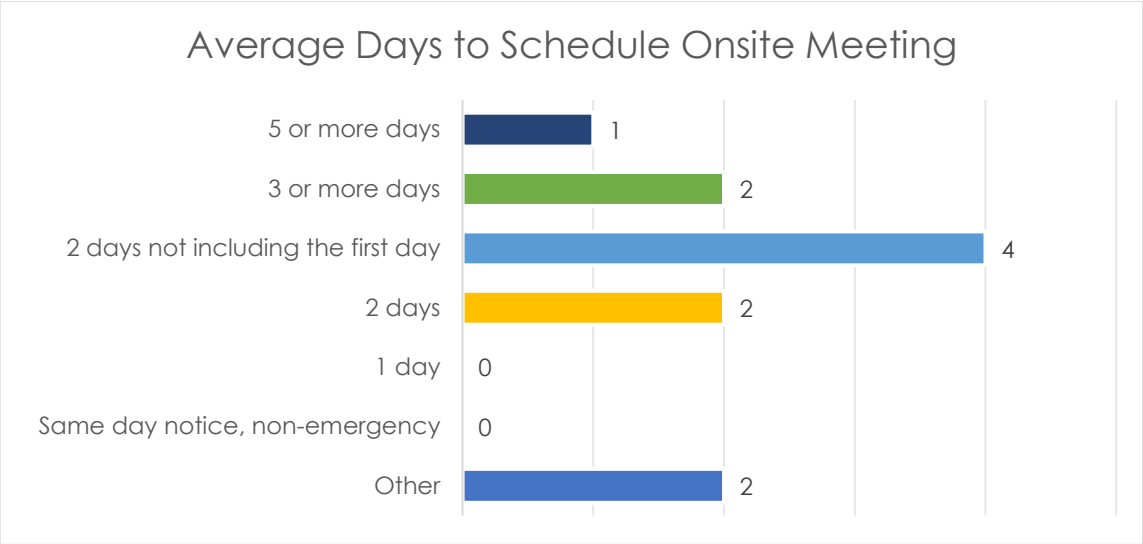
16. How do you schedule an onsite meeting with a utility owner or operator? (Select any)
(12 Responses of 13)



Other:

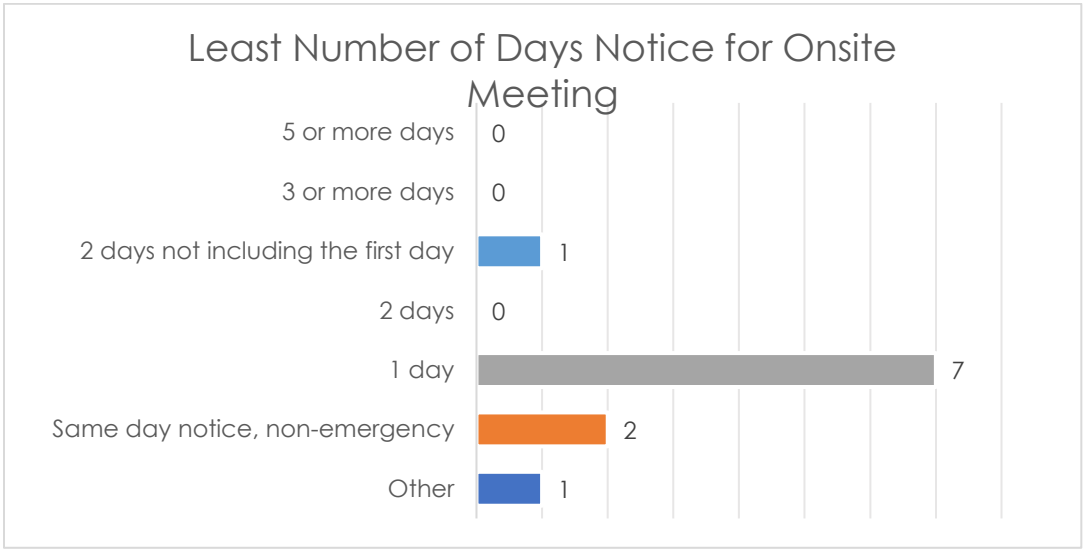
- Never

17. On average, how many business days does it take to schedule an onsite meeting with a utility owner or operator? (Select one)
(11 Responses of 13)



Other:
- I've never had to attend an onsite meeting
- I don't personally call, foreman do

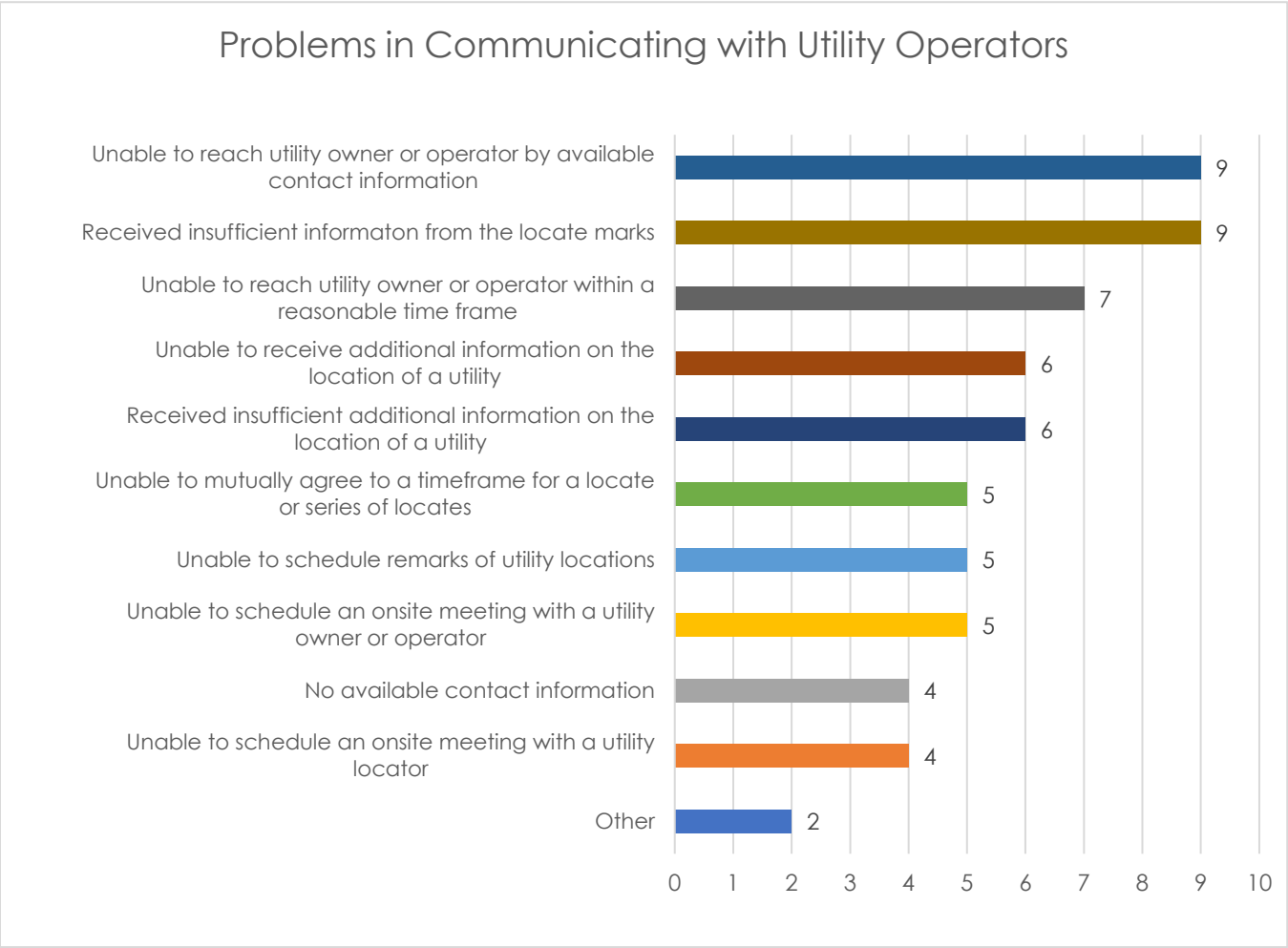
18. What is the least number of business days of notice that a utility owner or operator has provided for an onsite meeting or standby? (Select one)
(11 Responses of 13)



Other:
- They don't control my work.

19. Have you had any of the following problems communicating with utility owners or operators? (Select any)

(11 Responses of 13)

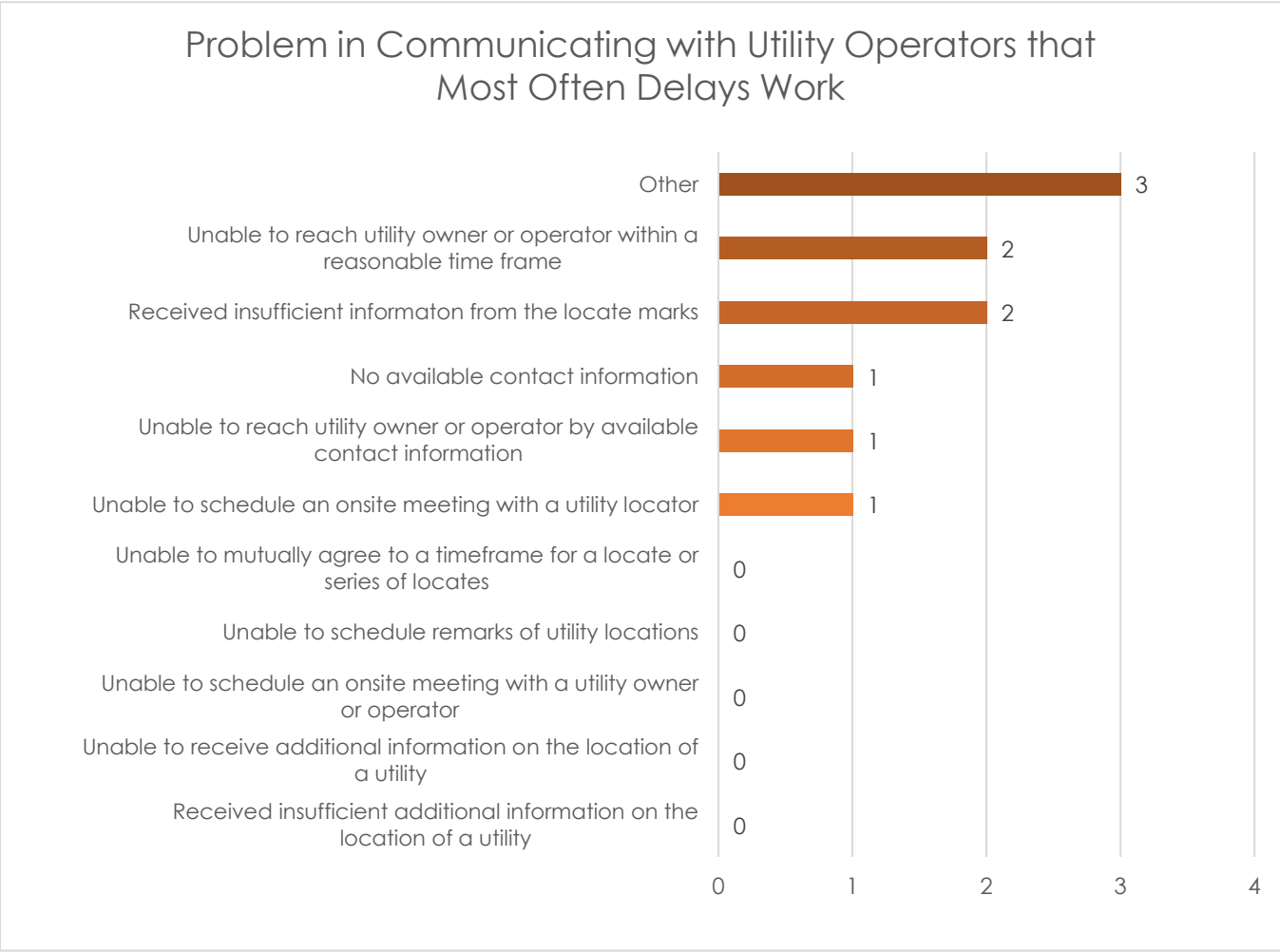


Other:

- We have heard every excuse in the book. There should be a tracking mechanism that allows the excavator to report back that an operator has fulfilled their obligation.
- This rarely happens

20. What communication problem with utility owners or operators most often delays your work? (Select one)

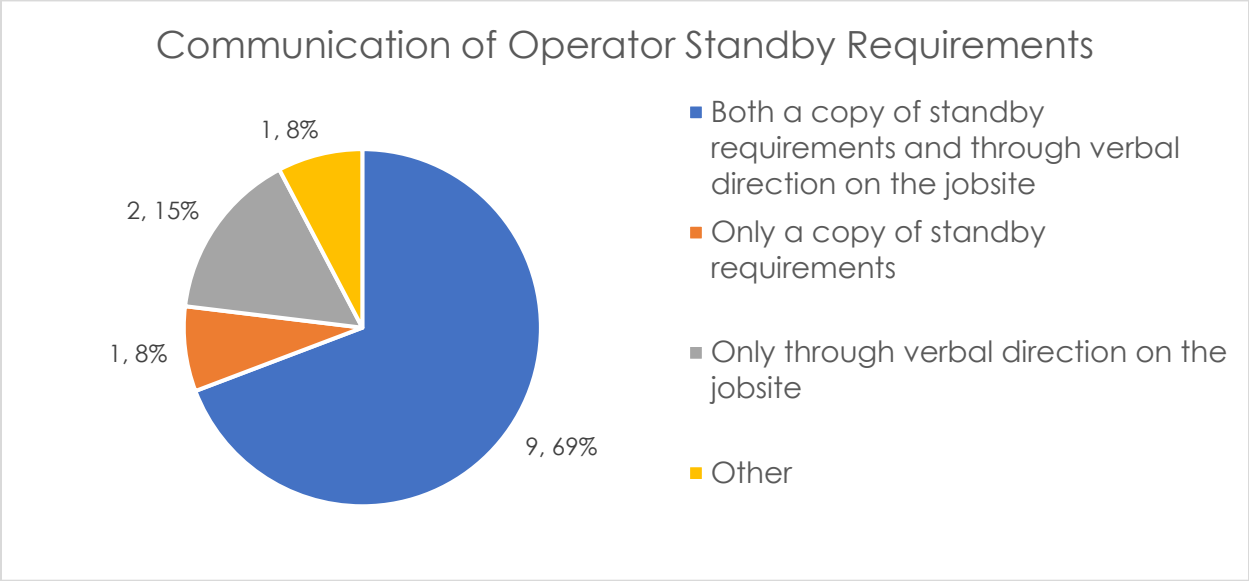
(10 Responses of 13)



Other:

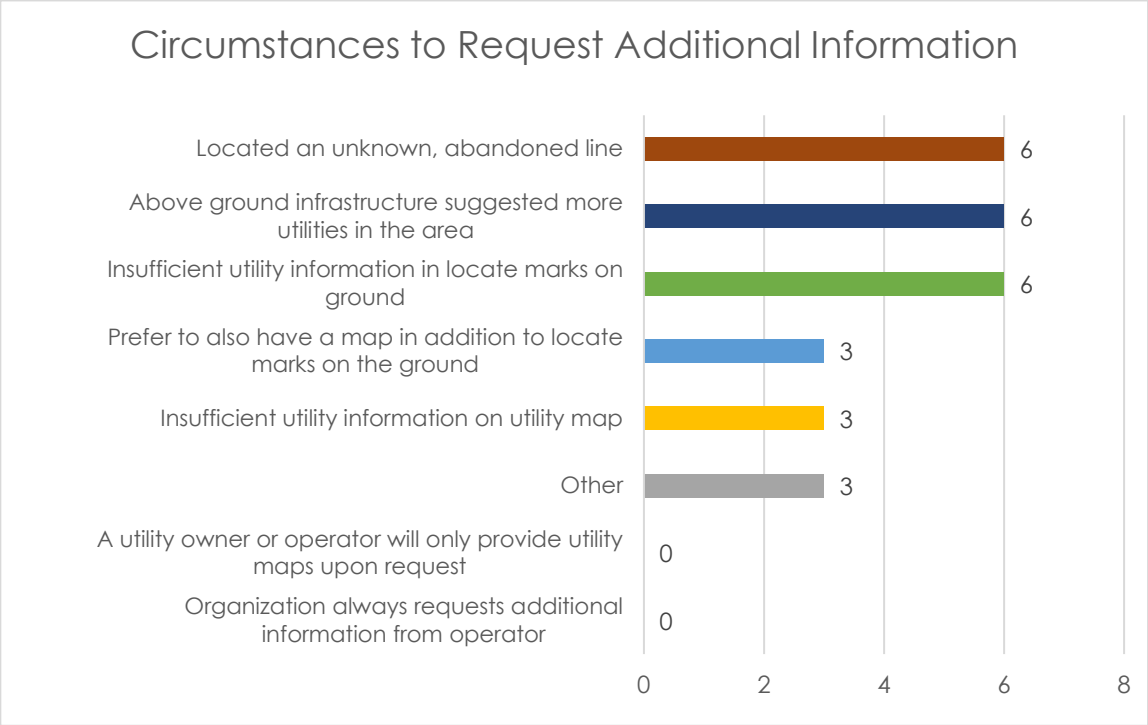
- Finding out who the utility owner is
- Bad locates
- Comcast and ATT are sometimes hard to reach.

21. How have utility owners or operators informed you of their requirements for an onsite standby when excavating near their utility? (Select any)
(11 Responses of 13)



Other:
- Other

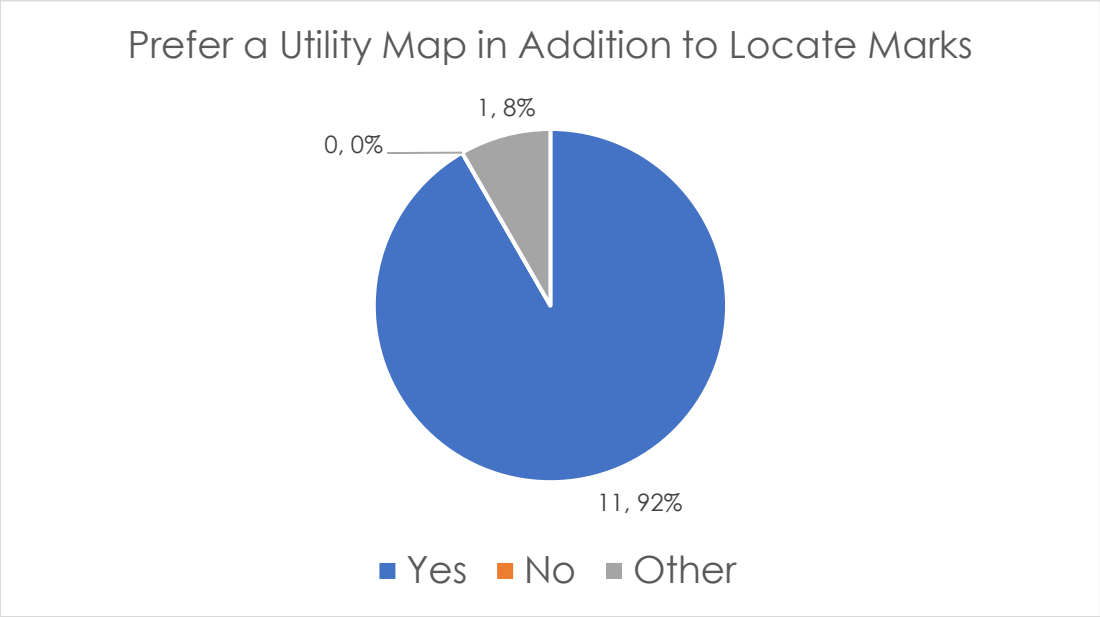
22. Under what circumstances have you requested additional utility location information such as a map from a utility owner or operator? (Select any)
(10 Responses of 13)



Other:

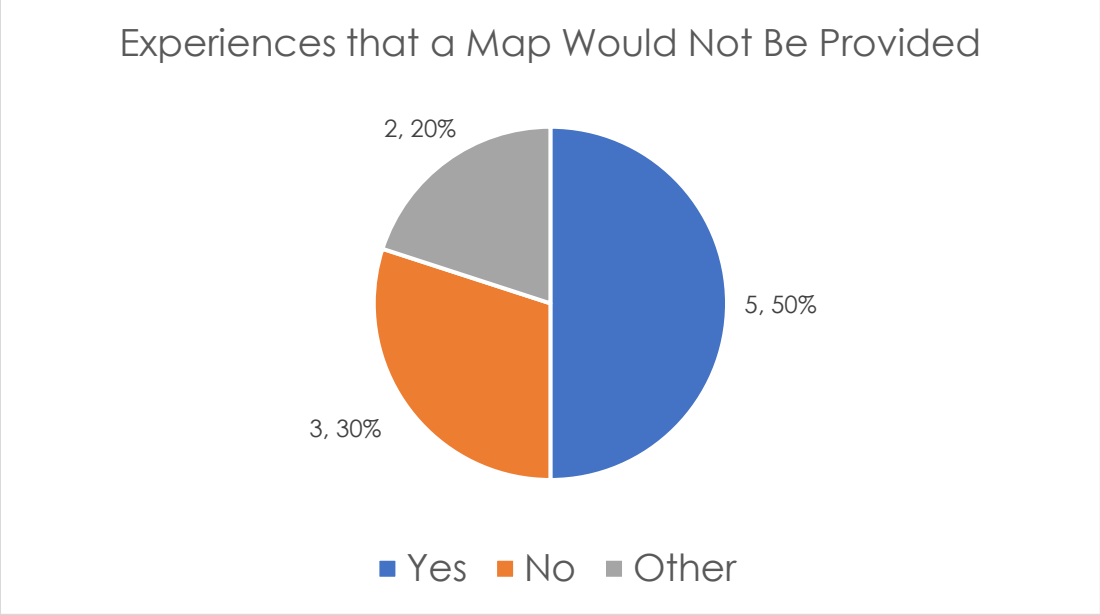
- Cannot locate the marked utility
- When we are unable to locate marked utility
- Cal Trans ROW intersections for interconnect and signal wiring

23. In general, would you prefer to have a utility map from the utility owner or operator in addition to locate marks?
(12 Responses of 13)



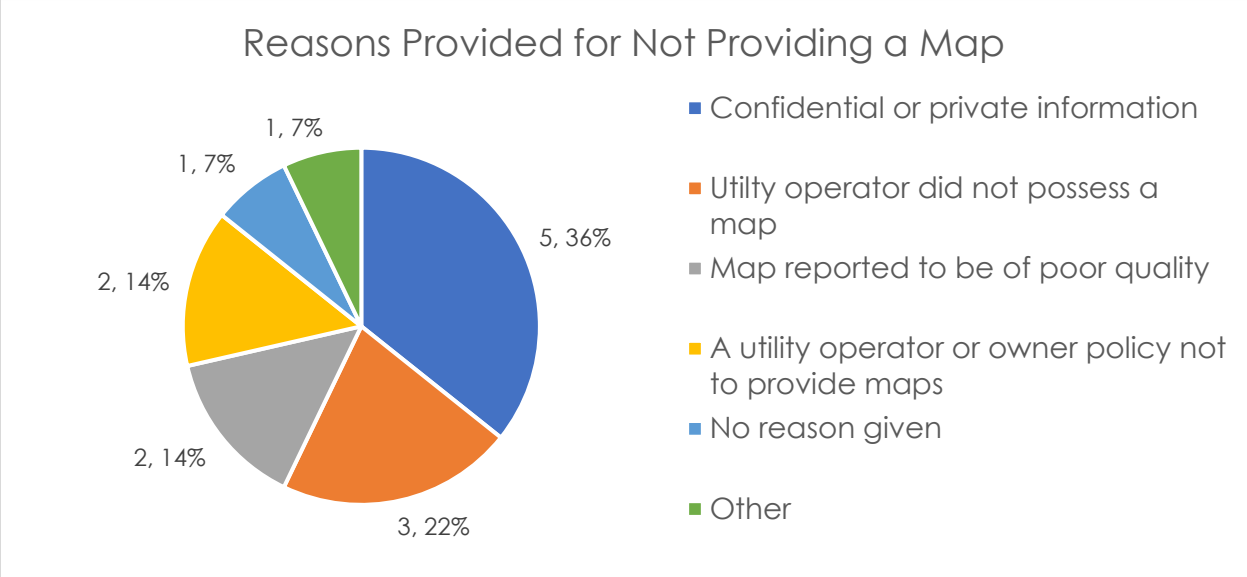
Other:
- It depends on the project.

24. Have you experienced any cases when a utility owner or operator would not provide a utility map in addition to locate marks?
(10 Responses of 13)



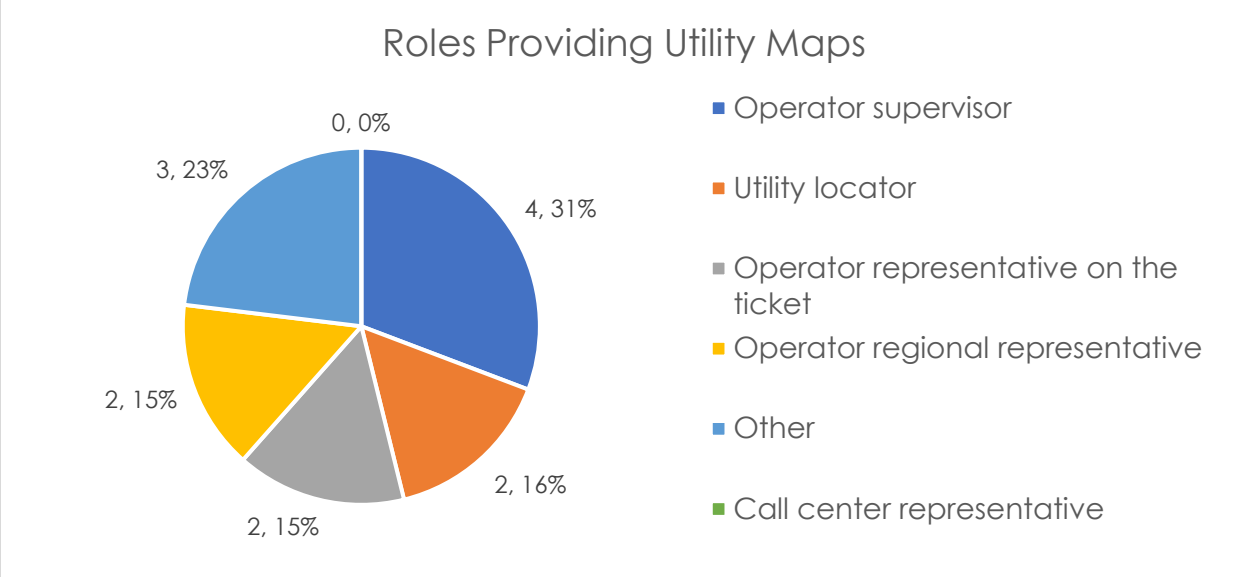
Other:
- Never asked for one
- Not sure

25. If yes, was there any reason given for not providing a utility map? (Select any)
(7 Responses of 13)



Other:
- N/A

26. From which of the following utility owner or operator representatives have you received a utility map? (Select any)
(9 Responses of 13)



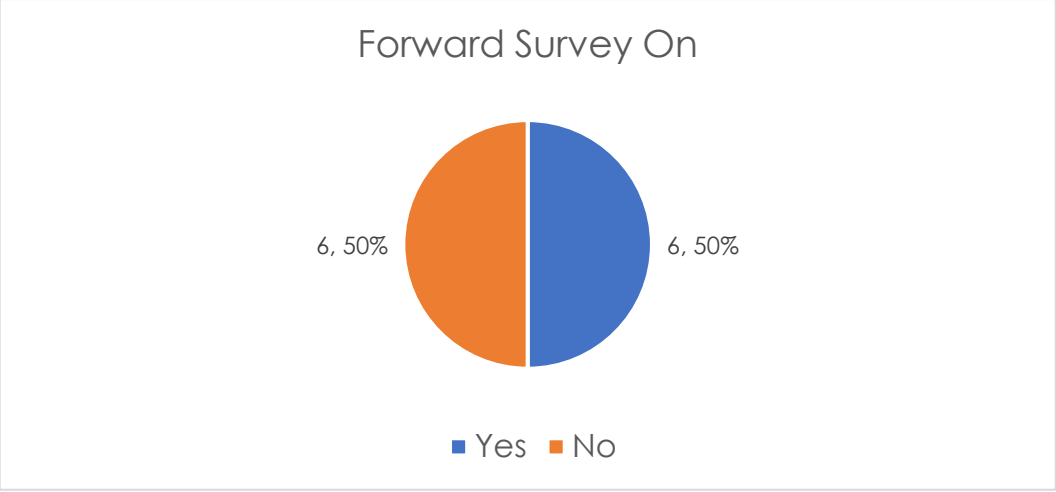
Other:
- N/A
- Field representatives
- Mike gave me one once.

27. What types of actions have utility operators undertaken to foster a positive working experience, and what types of actions or inactions they may have made to create a negative experience.
    (10 Responses of 13)
    - It's difficult getting ahold of them.
    - Responding to phone calls and meeting on site.
    - We haven't experienced any action that fosters positive work experience.
    - Positive - there to help. Negative - too busy, do not excavate until we are available.
    - They take advantage of excavators and bully them into paying for disputed damages
    - Positive - show up, mark and explain their facilities. Negative - Bad marks and no explanation.
    - NA
    - POSITIVE: Good attitude. Willing to meet on the job at mutually agreeable times.
      NEGATIVE: Not being able to meet on a job within a normal timeframe. Requiring to call 1-800 numbers that take forever to get through to someone who can help or never get through to someone.
    - PGE has held Dig-Safe meeting anytime upon request. These are always a positive transmission of the rules. Comcast, Verizon and ATT automatically send a billing invoice to a bill collector, "Even when its their fault" Now you are fighting a relentless company that only gets paid for collecting money.
    - Providing contacts for who might own the unidentified utility, warning of suspected new or unmarked lines they encountered close by.

28. Is there anything else you'd like to tell the Board about your experiences in managing safety when working or directing work around underground utilities?
    (6 Responses of 13)

    - It is a three-pillar system and everyone must do their part for it to succeed.
    - DO NOT ALLOW MICRO-TRENCHING!!!! it's a long-term disaster if it's allowed to take place. stymies roadway reconstruction.
    - NA
    - I believe the construction industry and other industries would benefit from having a website that would allow anyone to view utilities on an interactive map such as Google Maps or Google Earth.
    - I think the system in place works. Especially when you follow the steps. This is the training we follow Call before digging, wait for the marks and above all "Respect the Marks"
    - USA responses that utilities give often sound like bad excuses, i.e. they say extraordinary circumstances exist too often.

29. Thank you for your time today and your help improving public safety. Would you please forward this to someone else that you know who can speak to these topics?
    (12 Responses of 13)



California Underground Facilities Safe Excavation Board

November 9, 2021

Agenda Item No. 5 (Information Item) – Staff Report

Attachment B: Earthwork and Road Construction Survey Questions

Earthwork and Road Construction Survey

July 14th, 2021 to August 7th, 2021

Thanks for participating in this survey and your help improving public safety.

The California Underground Facilities Safe Excavation Board works to reinforce jobsite safety by improving communication between parties involved in excavation and the 811 safe digging process. The Board is currently developing standards for you and your colleagues to use in performing road construction, grading, and earthwork around buried utilities. Your input here will help the Board understand current practices and communication obstacles in your industry.

You are also invited to submit excavation safety issues that you encounter to digboard@fire.ca.gov at any time.

To learn more about the Board's work visit www.dig.fire.ca.gov.

1. Your Name *(optional)*
    a. Text

2. Title *(optional)*
    a. Text

3. What roles in road construction or earthwork do you have experience with? (Select any)
    a. Site clearing and vegetation removal
    b. Earthwork such as cut and fill
    c. Grading or scraping
    d. Asphalt removal by jackhammering or saw cutting
    e. Asphalt removal by milling or road grinding
    f. Utility installation or maintenance
    g. Utility relocation
    h. Potholing and utility location
    i. Full-depth road maintenance
    j. Paving and resurfacing of roads
    k. Other

4. How many years of experience do you have in earthwork, road construction, or roadway excavation? (Select one)
    a. Less than 5 years
    b. 5-10 years
    c. More than 10 years

5. May we contact you for a follow up conversation if we have a question?
    a. Yes
    b. No

6. Please provide your preferred contact information (email and/or phone number)
    a. Text

7. Have you experienced any of the following in working in or around roads?
    a. Shallow utilities
    b. Shallow utilities embedded in the asphalt or concrete
    c. Shallow valve boxes or risers above a utility pipeline
    d. Utilities with unexpected jogs in the line around an obstacle
    e. A single utility at significantly different depths across an area
    f. Utilities that took multiple sources of information or communications to locate
    g. Other

8. Suppose you are excavating near to a shallow utility such as a traffic loop or car detector embedded within or a few inches beneath the pavement. What steps would you take to safely remove the pavement and proceed to full depth work in the area?
    a. Text

9. Are there any additional actions beyond notifying 811 that you recommend to avoid striking underground utilities while grading?
    a. Text

10. How does your organization determine the number of times, the frequency, or the specific locations at which to pothole and visually inspect a buried utility in the work area? (Select any)
    a. Policy and procedure
    b. Rule of thumb depends on type of job
    c. Established in the engineering and planning phase
    d. Other

11. What factors cause you to pothole more frequently over a particular utility to determine its location? (Select any)
    a. Utility type (such as gas, water, sewer, etc…)
    b. Utility congestion
    c. Shallow depth
    d. Guidance from utility operator or owner
    e. Other

12. If you have one, what is your general practice for the number of times or intervals at which to pothole and visibly locate a utility?
    a. Text

13. Does your organization have any internal standards, policies, or other safety and utility damage prevention requirements for any of the following topics: (Select any)
    a. Grading, scraping, or earthmoving
    b. Pavement removal by methods such as saw cutting or jackhammering
    c. Pavement removal by methods such as asphalt milling or road grinding
    d. Locating and potholing of underground utilities
    e. Vacuum excavation
    f. Site clearing, vegetation control, or brushing
    g. Use of or contract with a private utility locator
    h. Use of ground penetrating radar or other technology for locating utilities

14. Would you be willing to share your damage prevention policies with the Board?
    a. Yes
    b. No
    c. Other

15. What certifications for earthwork, grading, asphalt removal, or other excavation methods does your organization require?
    a. Text

16. How do you schedule an onsite meeting with a utility owner or operator? (Select any)
    a. By phone call directly to utility owner or operator
    b. By phone call to one-call center
    c. By email to utility owner or operator
    d. By text to utility owner or operator
    e. Other

17. On average, how many business days does it take to schedule an onsite meeting with a utility owner or operator? (Select one)
    a. Same day notice, non-emergency
    b. 1 day
    c. 2 days
    d. 2 days not including the first day
    e. 3 or more days
    f. 5 or more days
    g. Other

18. What is the least number of business days of notice that a utility owner or operator has provided for an onsite meeting or standby? (Select one)
    a. Same day notice, non-emergency
    b. 1 day
    c. 2 days
    d. 2 days not including the first day
    e. 3 or more days
    f. 5 or more days
    g. Other

19. Have you had any of the following problems communicating with utility owners or operators? (Select any)
    a. No available contact information
    b. Unable to reach utility owner or operator by available contact information
    c. Unable to reach utility owner or operator within a reasonable timeframe
    d. Unable to mutually agree to a timeframe for a locate or series of locates
    e. Unable to schedule remarks of utility locations
    f. Received insufficient information from the locate marks
    g. Unable to schedule an onsite meeting with a utility locator
    h. Unable to schedule an onsite meeting with a utility owner or operator
    i. Unable to receive additional information on the location of a utility
    j. Received insufficient additional information on the location of a utility
    k. Other

20. What communication problem with utility owners or operators most often delays your work? (Select one)
    a. No available contact information
    b. Unable to reach utility owner or operator by available contact information
    c. Unable to reach utility owner or operator within a reasonable timeframe
    d. Unable to mutually agree to a timeframe for a locate or series of locates
    e. Unable to schedule remarks of utility locations

f. Received insufficient information from the locate marks
g. Unable to schedule an onsite meeting with a utility locator
h. Unable to schedule an onsite meeting with a utility owner or operator
i. Unable to receive additional information on the location of a utility
j. Received insufficient additional information on the location of a utility
k. Other

21. How have utility owners or operators informed you of their requirements for an onsite standby when excavating near their utility? (Select any)
    a. Both a copy of standby requirements and through verbal direction on the jobsite
    b. Only a copy of standby requirements
    c. Only through verbal direction on the jobsite
    d. Other

22. Under what circumstances have you requested additional utility location information such as a map from a utility owner or operator? (Select any)
    a. Insufficient utility information on utility map
    b. Insufficient utility information in locate marks on ground
    c. Above ground infrastructure suggested more utilities in the area
    d. Prefer to also have a map in addition to locate marks on the ground
    e. Organization always requests additional information from operator
    f. A utility owner or operator will only provide utility maps upon request
    g. Located an unknown, abandoned line
    h. Other

23. In general, would you prefer to have a utility map from the utility owner or operator in addition to locate marks?
    a. Yes
    b. No
    c. Other

24. Have you experienced any cases when a utility owner or operator would not provide a utility map in addition to locate marks?
    a. Yes
    b. No
    c. Other

25. If yes, was there any reason given for not providing a utility map? (Select any)
    a. Utility operator did not possess a map
    b. Map reported to be of poor quality
    c. Confidential or private information
    d. A utility operator or owner policy not to provide maps
    e. No reason given
    f. Other

26. From which of the following utility owner or operator representatives have you received a utility map? (Select any)
    a. Utility locator
    b. Operator representative on the ticket
    c. Operator supervisor
    d. Operator regional representative
    e. Call center representative
    f. Other

27. What types of actions have utility operators undertaken to foster a positive working experience, and what types of actions or inactions they may have made to create a negative experience.
    a. Text

28. Is there anything else you'd like to tell the Board about your experiences in managing safety when working or directing work around underground utilities?
    a. Text

29. Thank you for your time today and your help improving public safety. Would you please forward this to someone else that you know who can speak to these topics?
    a. Yes
    b. No